

February 18, 2026



Mendocino County Employees' Retirement Association

Asset Allocation Paradigms

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Outline



What is the role of Investment Policy and Asset Allocation?



Three broad paradigms of Investment Policy/Asset Allocation

Strategic Asset Allocation (SAA)

Liability Driven Framework (LDI or Cashflow Driven Investing)

Total Portfolio Approach (TPA)



What aspects of total portfolio approach are new, and what parts already exist under the strategic asset allocation framework?



Who is total portfolio best suited for? Under what circumstances can it succeed?



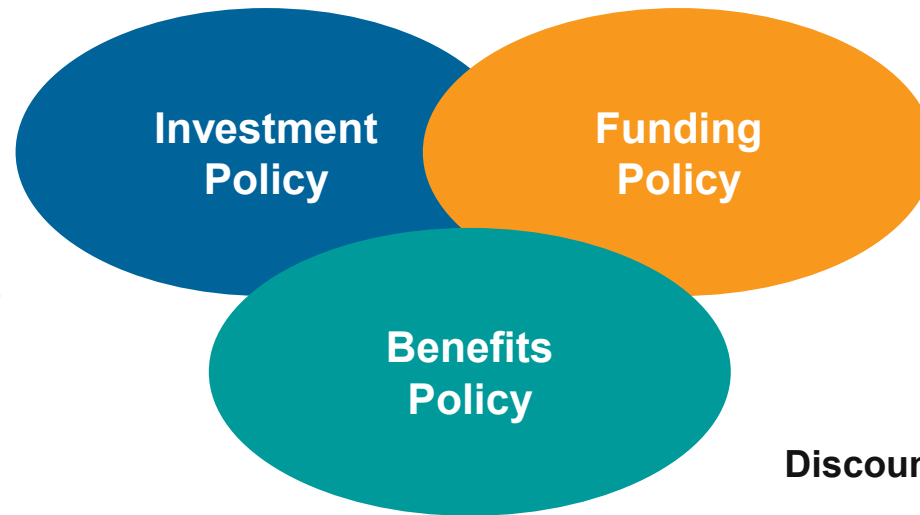
Questions

What is the Role of Investment Policy?

Investment Policy and Funding Policy Provide Retiree Benefits

Investment Policy

- 62% Public Equity
- 21% Fixed Income
- 17% Real Assets
 - 11% Real Estate
 - 6% Infrastructure



Funding Policy

- Normal Cost plus Amortization of unfunded liability
- FY25 contributions ~\$46m

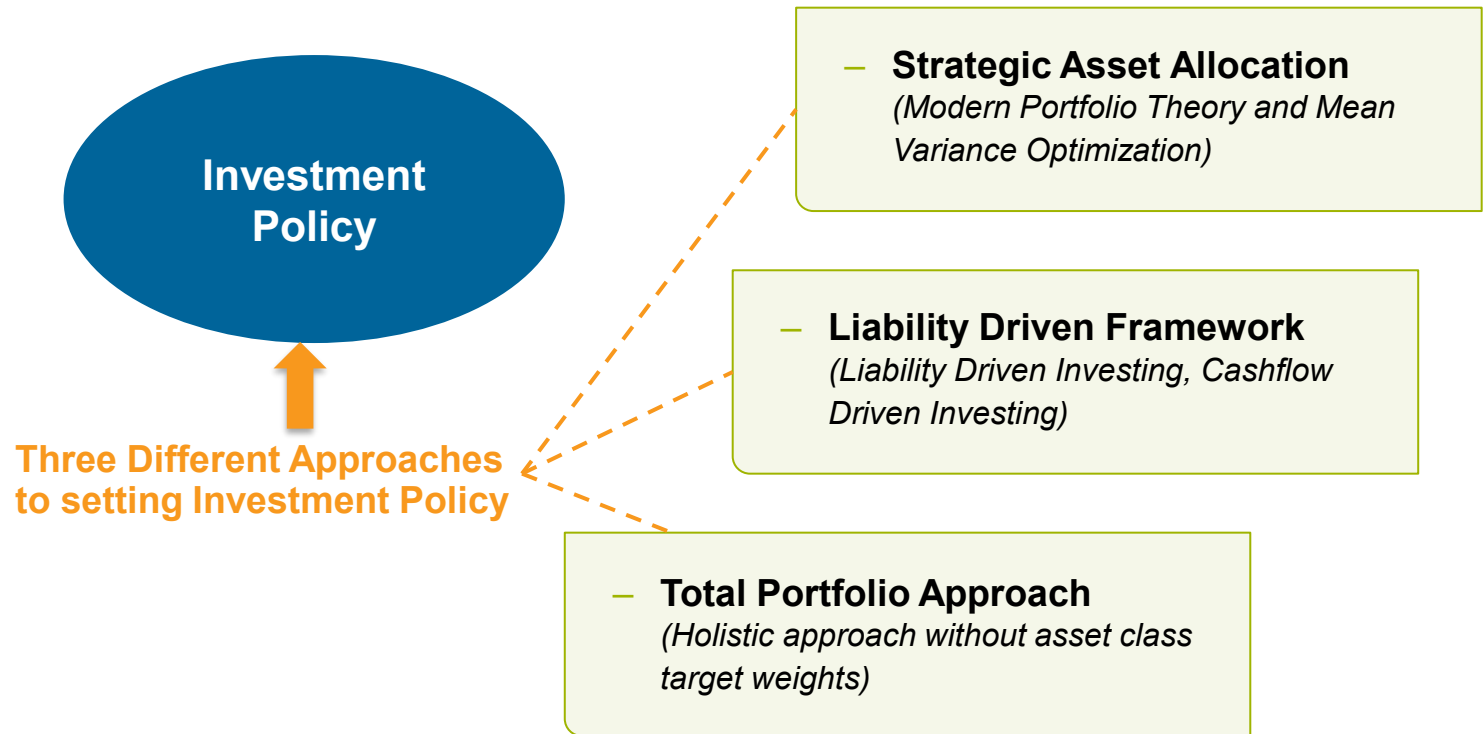
Discount Rate: 6.5%

Benefits Policy

- ~\$53m per year
- ~6-7% of the market value of assets
- Cost of Living Adjustments for applicable members

Three Broad Paradigms of Investment Policy

What Approaches Are There to Setting Investment Policy?



Three Broad Paradigms of Investment Policy

1) Strategic Asset Allocation / Mean Variance Optimization

Process

Capital Market Assumptions

Expected Returns
Risks
Correlations

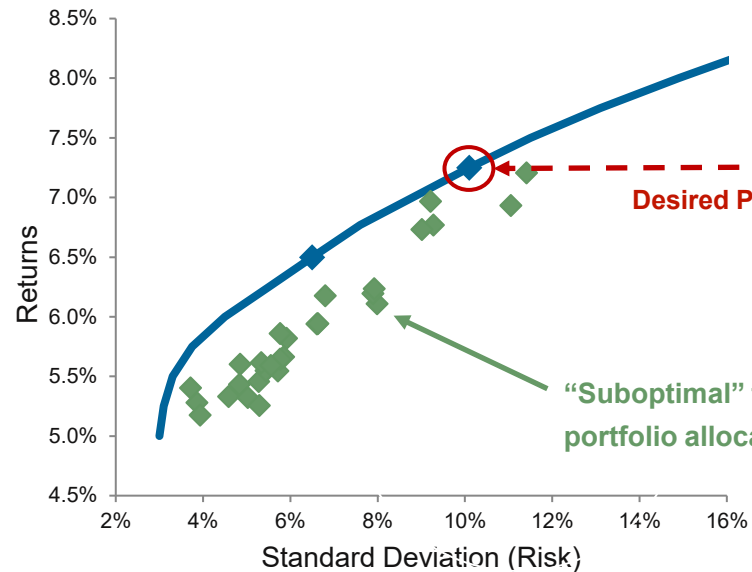
Mean-Variance Optimization

Mathematically finds the highest returning portfolio for each level of risk – an “efficient portfolio”

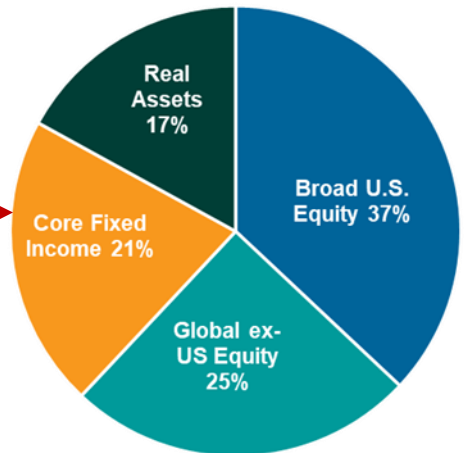
Select Portfolio

An efficient portfolio is selected based on multiple factors

Portfolio Risk vs. Return



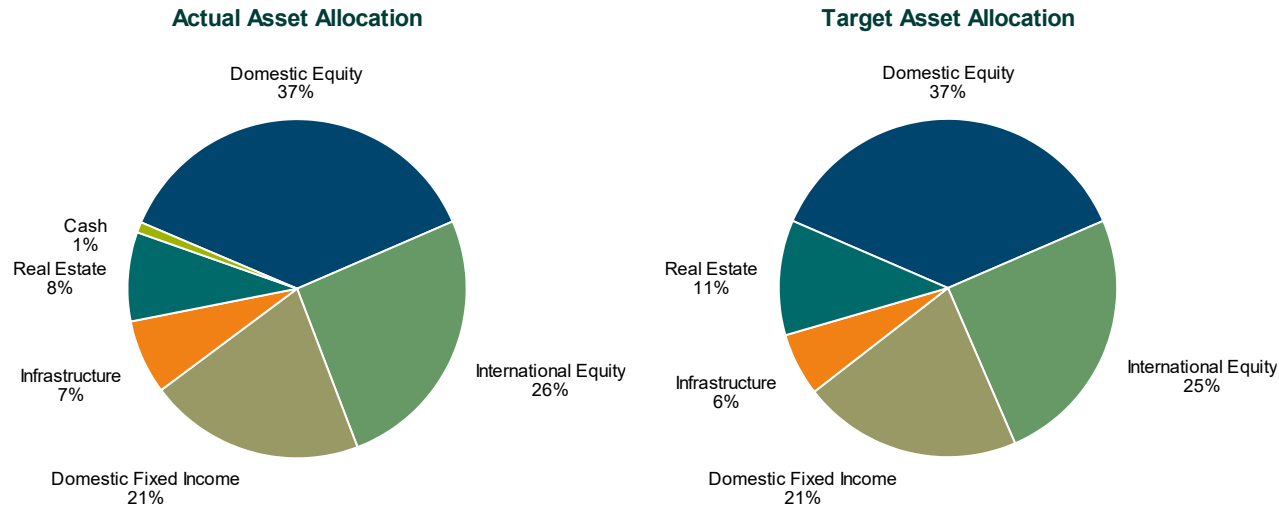
MCERA Target



- Strategic Asset Allocation is MCERA’s current approach to setting investment policy (as with the majority of peers)
- Capital Market Assumptions by asset class are used to establish an efficient frontier of portfolios that have maximized return for varied levels of risk
- The Board or Investment Committee selects the portfolio that achieves the desired return at an appropriate risk level
- This Portfolio has clearly defined target weights by asset class and ranges around those targets

Three Broad Paradigms of Investment Policy

1) Strategic Asset Allocation / Mean Variance Optimization



Relative Attribution Effects for Quarter ended December 31, 2025

Asset Class	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equities	38%	37%	2.56%	2.40%	0.06%	(0.00%)	0.06%
International Equities	26%	25%	4.98%	5.05%	(0.02%)	0.02%	(0.00%)
Domestic Fixed Income	21%	21%	1.50%	1.10%	0.08%	0.00%	0.09%
Infrastructure	7%	6%	2.94%	0.77%	0.15%	(0.02%)	0.14%
Real Estate	9%	11%	0.95%	0.77%	0.02%	0.04%	0.06%
Cash	0%	0%	0.01%	0.01%	0.00%	(0.00%)	(0.00%)
Total			2.85%	2.51%	+ 0.30%	+ 0.04%	0.33%

- Deviations from target weights can be measured, and performance attribution helps identify the sources of return.
 - How much value did manager selection add or detract?
 - How much value did asset allocation decisions (e.g., under- or overweight positions) add or detract?
- Asset class ranges serve as guardrails, preventing excessive drift from long-term targets.
- Those ranges can also be used opportunistically to implement tactical asset allocation decisions.

Three Broad Paradigms of Investment Policy

1) Strategic Asset Allocation / Mean Variance Optimization

Equities	Fixed Income	Other
<p>U.S. equities</p> <ul style="list-style-type: none"> – Large cap – Small / mid cap <p>Global ex-U.S. equities</p> <ul style="list-style-type: none"> – Developed markets (ex U.S.) – Emerging markets 	<p>Short duration / cash</p> <p>U.S. fixed income</p> <ul style="list-style-type: none"> – High yield – Bank loans <p>Global ex-U.S. fixed income</p> <ul style="list-style-type: none"> – Emerging debt <p>Long duration</p> <ul style="list-style-type: none"> – Long government – Long credit 	<p>Private real estate</p> <p>Private equity</p> <p>Hedge funds</p> <p>Liquid real assets</p> <ul style="list-style-type: none"> – Commodities – TIPS – REITs – Listed infrastructure

Strategic asset allocation typically focuses on broad asset classes (above); however, the process is also holistic in that it looks at the role of each asset class in the portfolio as well (below)

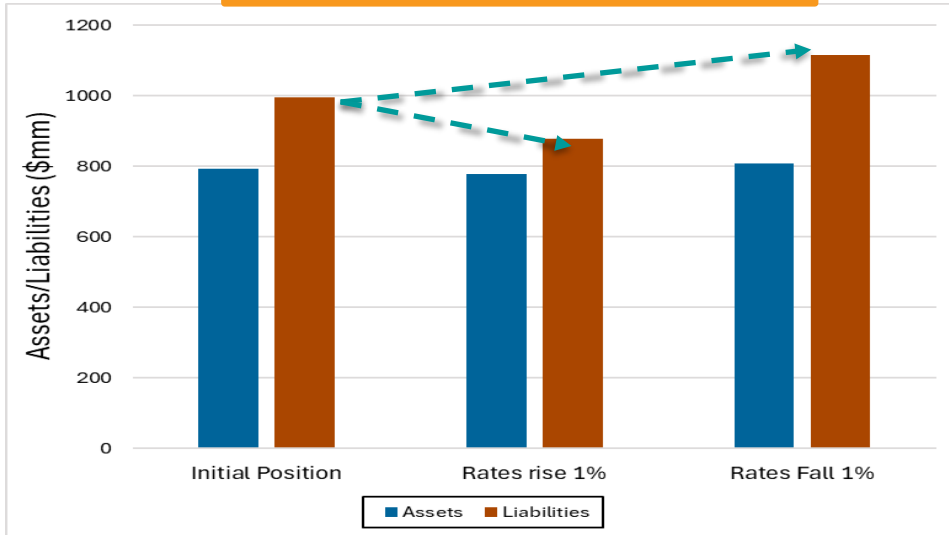
Growth	Risk Mitigation	Real Assets	Diversifying Assets
<p>Equities</p> <ul style="list-style-type: none"> – Global public equity – Private equity – Alternative beta <p>Credit Sensitive</p> <ul style="list-style-type: none"> – High yield – Emerging debt – Bank loans – Long credit – Private debt 	<p>Income Producing</p> <ul style="list-style-type: none"> – Short duration – Core U.S. fixed income – Global ex-U.S. fixed income <p>Rising Rate Protection</p> <ul style="list-style-type: none"> – Cash equivalents – Short duration – Floating rate securities <p>Liability Hedging</p> <ul style="list-style-type: none"> – Long government – Long credit 	<p>Short / Intermediate Hedge</p> <ul style="list-style-type: none"> – Inflation-linked debt – Commodities <p>Growth-Oriented</p> <ul style="list-style-type: none"> – REITs – MLPs – Natural resource equity – Core real estate – Infrastructure – Timber – Agriculture 	<ul style="list-style-type: none"> – Multi-asset class strategies – Hedge funds

Three Broad Paradigms of Investment Policy

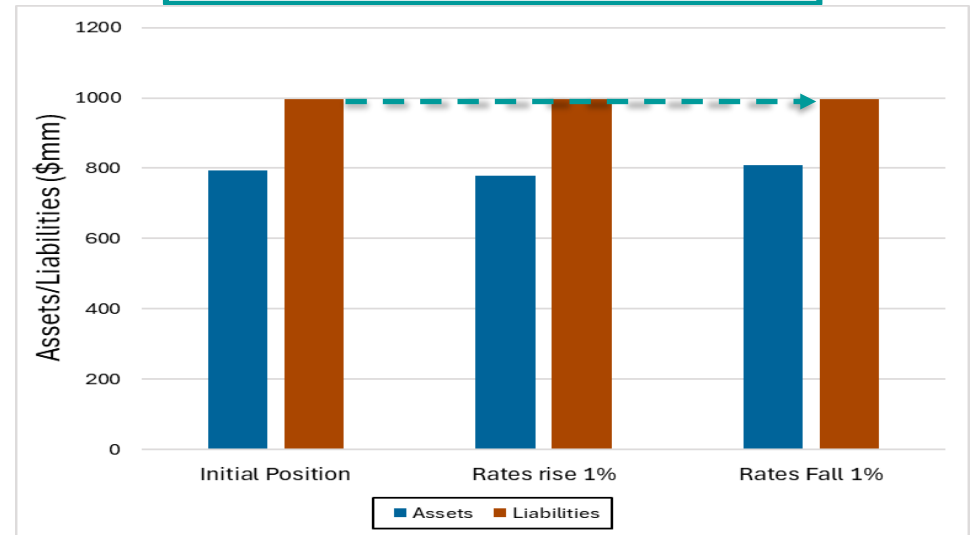
2) Liability Driven Framework (Liability Driven Investing)

- Liability driven approaches are prevalent among corporate plan sponsors, but rarely adopted among public plans
- The concept of Liability Driven Investing, or LDI, is to invest assets in a way that hedges potential changes to the liability due to the markets (interest rates and credit spreads). For corporate pensions, the accounting liability is marked to market
- In contrast, public pension liabilities are typically not marked to market and instead are sensitive to changes in expected return assumption
- As a result, the LDI framework is more popular with corporate plans where investing in fixed income to reduce the total plan's interest rate risk can be attractive to reduce funded status volatility

**Corporate Pension Plan:
Liability is Sensitive to Interest Rates**



**Public Pension Plan:
Liability is Not Sensitive to Interest Rates**

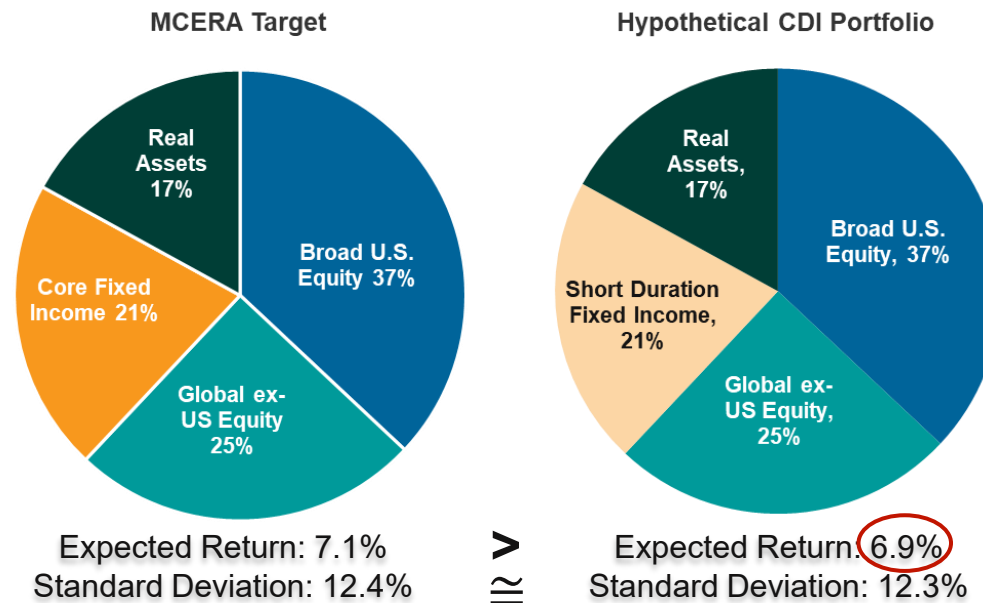


Hypothetical Liability Duration = 12 yrs, Asset duration = 2 yrs

Three Broad Paradigms of Investment Policy

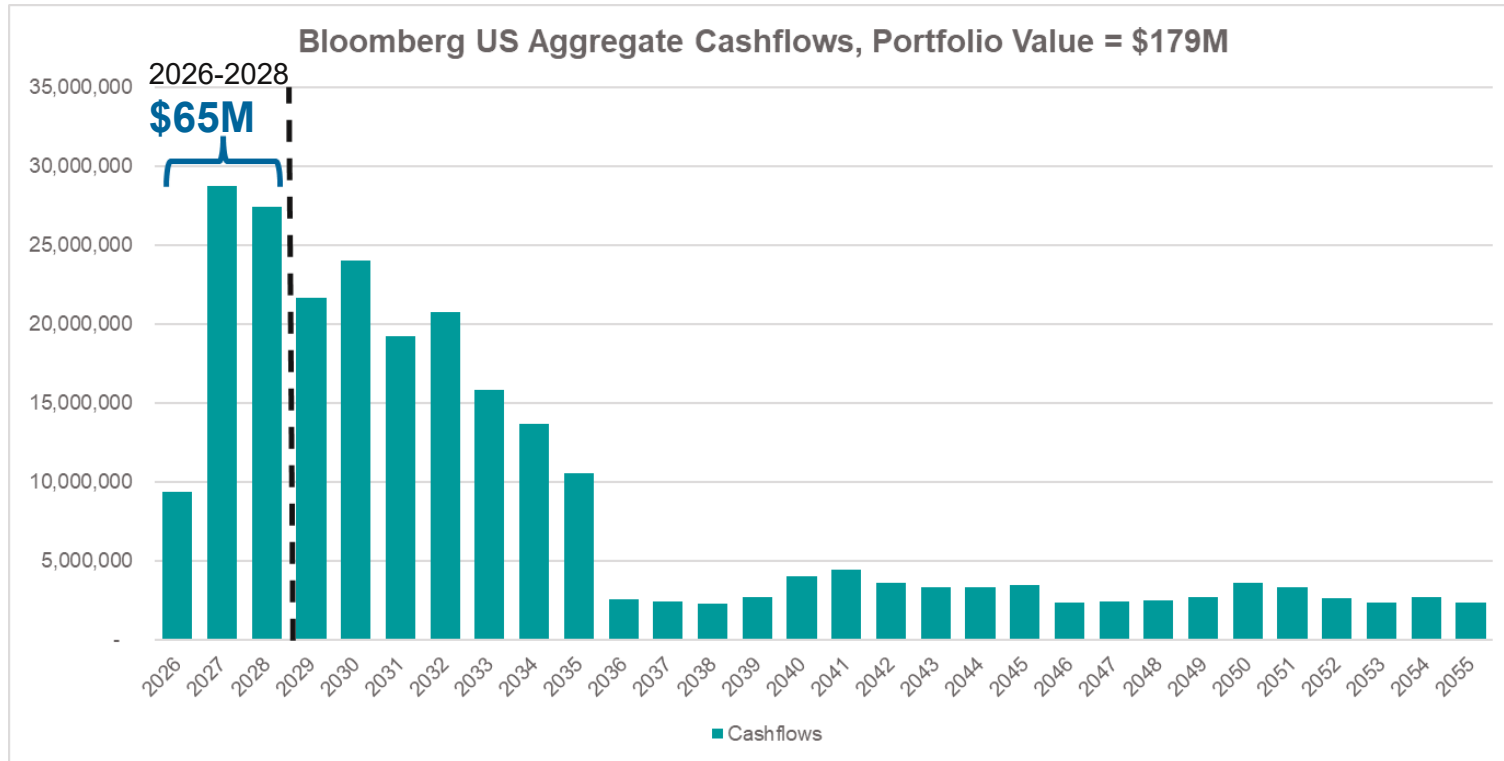
2) Liability Driven Framework (Cashflow Driven Investing)

- Cashflow Driven Investing is a subset of liability-driven approaches that has had more traction with public funds and Taft-Hartley plans
- The general idea is to carve out a portion of assets to generate positive cashflow from fixed income investments to match the next few years of benefit payments
- This approach can be attractive under the following scenarios:
 - High net negative cashflows (i.e. outflows projected to consistently exceed inflows)
 - High allocations to illiquid investments, which increase liquidity needs and the potential for forced-selling
 - Expected return from short duration fixed income is similar to core fixed income
- Mendocino is running a very slight net outflow (approx. \$7M per year, or less than 1% of assets), and expected return of a hypothetical CDI portfolio is ~20 bps lower (6.9% vs 7.1%)



Three Broad Paradigms of Investment Policy

2) Liability Driven Framework (Cashflow Driven Investing)



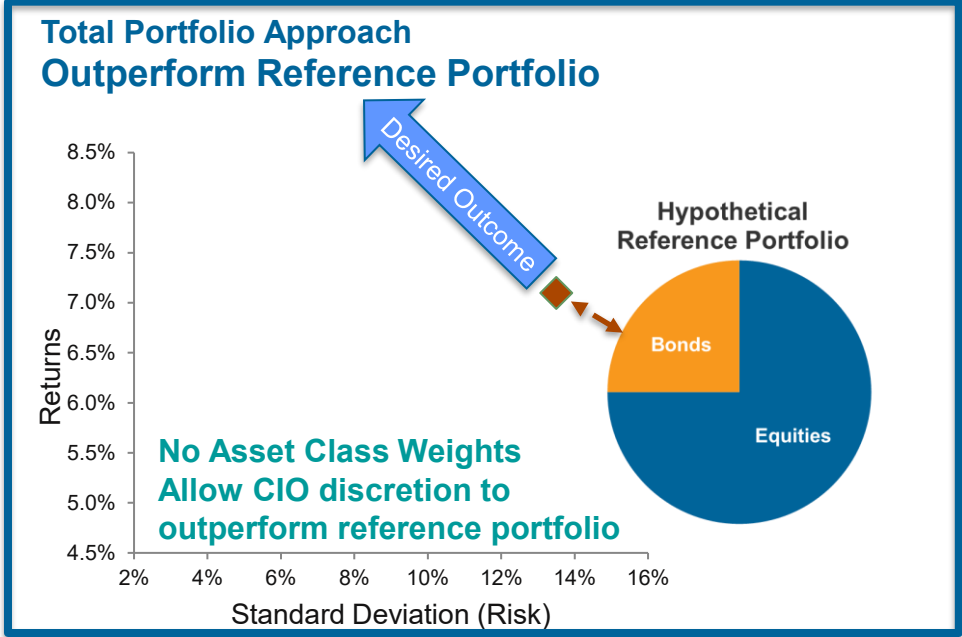
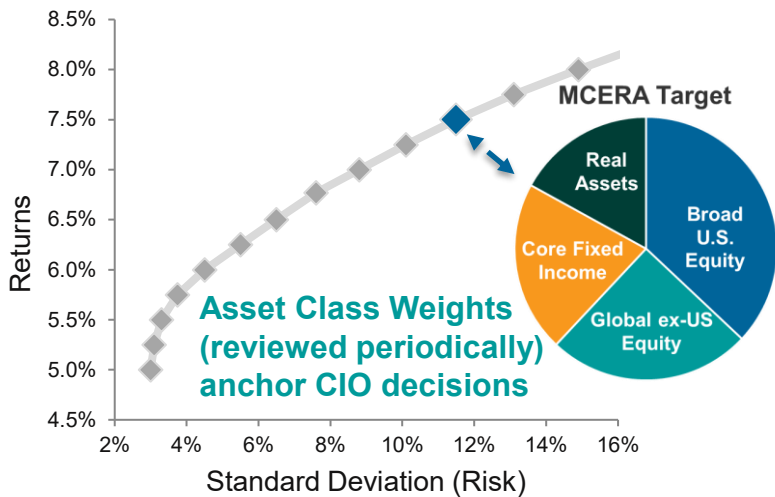
Source: Bloomberg, Moodys as of December 31, 2025

- The chart above shows the cashflows of the US Aggregate (coupons and principal)
- If MCERA were invested in fixed income index fund(s) at the current target fixed income allocation of \$179M, there would be significant bond coupons and principal expected over the next three years (approx. \$65M)
- This amount of fixed income cashflow is expected to be enough to cover Mendocino's net outflow over the next three years
- In addition to fixed income cashflows, equity dividends could potentially be used as well for liquidity needs

Three Broad Paradigms of Investment Policy

3) Total Portfolio Approach (“TPA”)

SAA Approach
Choose optimal portfolio given a level of Risk



- Total Portfolio Approach treats the portfolio as a single entity and removes the concept of asset class targets
- TPA implementation typically starts with the board/committee adopting a simple reference portfolio of stocks and bonds that is expected to deliver a level of return at a prudent total fund risk sufficient to satisfy plan objectives
- CIO and investment staff strive to deliver superior risk adjusted returns relative to the reference portfolio
- A variety of approaches and degrees of TPA exist among practitioners. Commonly cited advantages to TPA vs SAA are:
 - 1) Cross-portfolio decision making instead of “asset class silos” could lead to more efficient capital allocation and improved outcomes
 - 2) Investment staff can be faster to act and more responsive to evolving market opportunities
 - 3) Holistic approach focuses entirely on absolute return goals, rather than beating individual asset class benchmarks (relative return goals); relative return goals may be suboptimal relative to overall fund goals.

Three Broad Paradigms of Investment Policy

3) Total Portfolio Approach (CalPERS Case Study)

- CalPERS approach to TPA comprises the following key elements:
 - Board adopts a simple reference portfolio (75 stocks /25 bonds) in line with long term return objectives of plan
 - Compared to SAA approach, Board sets an active risk limit (400 bps) relative to reference portfolio, allowing for significant amount of active management and tactical asset allocation
 - Organization develops governance framework to measure and monitor active risk and manage liquidity
 - CIO and Investment Staff construct portfolio holistically in a way that “synthesizes strategies, risk factors, ...into a cohesive active risk budgeting framework”
 - Organization updates policies, procedures, and communication to stakeholders
 - Implement performance and risk reporting framework
- CalPERS believes this approach (adopted in November 2025) will increase transparency, give staff more flexibility to capitalize on market opportunities across asset classes, and encourage greater collaboration among the investment team

Source: CalPERS ALM 2025 PERF Recommendations Agenda Item 05a Attachment 1, November 2025

How Does the Total Portfolio Approach Differ from Strategic Asset Allocation?

TPA vs SAA Comparison:

Element	TPA	SAA	TPA Merits	Considerations
Performance Assessed vs.	Single Reference Portfolio	Total Fund Benchmark w/ Asset Class Weights	<ul style="list-style-type: none"> • Asset allocation opportunity set opened to staff • Faster decision making 	<ul style="list-style-type: none"> • Board does not control asset allocation • SAA can include secondary benchmarks
Risk Controlled By	Active Risk Targets	Asset Allocation Limits	<ul style="list-style-type: none"> • Explicit total fund risk targeting • SAA approach (asset allocation limits as a proxy for risk taking) may be imperfect 	<ul style="list-style-type: none"> • Less precise attribution between allocation vs. manager selection • Board does not control rebalancing • Risk systems are imperfect, especially with illiquid investments
Opportunities Set Defined By	Contribution to total fund return	Asset Classes	<ul style="list-style-type: none"> • Typically broader, unconstrained opportunity set 	<ul style="list-style-type: none"> • SAA has additional tools in place to allow opportunistic investments with flexibility via wider ranges or dedicated opportunistic allocations
Diversification Framework	Risk factors	Asset Classes	<ul style="list-style-type: none"> • Holistic total plan, cross asset class risk-factor focus 	<ul style="list-style-type: none"> • Traditional mean-variance focuses on asset classes but also accounts for their intended roles (growth, risk-mitigating, diversifying) within the broader portfolio
Tactical Asset Allocation (TAA)	Core to framework	Can be incorporated	<ul style="list-style-type: none"> • Greater tactical flexibility 	<ul style="list-style-type: none"> • SAA approach can also employ TAA by rebalancing decisions or dedicated opportunistic allocations • TAA is difficult to execute consistently • Attribution of tactical decision can be less transparent
Investment Staffing Model	Often generalists	Often asset class specialists	<ul style="list-style-type: none"> • Promotes organization-wide alignment (one portfolio, one objective) 	<ul style="list-style-type: none"> • SAA structures can also be generalist depending on size, governance, and type of organization

Under What Circumstances Can the Total Portfolio Approach Succeed?

- The investment philosophy behind total portfolio approach appears attractive—managing the portfolio holistically to improve outcomes, but it also introduces meaningful governance and implementation complexities.
- We believe TPA can be successful under the following conditions:
 - **Strong governance:** With fewer built-in “guardrails” around asset allocation decisions, there must be 1) clear accountability and reporting around decision making and 2) risk management framework to ensure assets are managed prudently
 - **Institutional buy-in:** Board and committee turnover, along with investment staff turnover, can lead to confusion over accountability when things go south. There should be total buy-in and understanding from stakeholders. If there is underperformance relative to peers and the asset allocation is also very different, stakeholders’ support could be challenged
 - **Staff depth and expertise:** Larger organizations with separate “teams” for equities, fixed income, real estate, etc. can potentially reap bigger benefits to moving to a cross-asset infrastructure vs smaller organizations which don’t have asset class “silos”; depth of expertise/staff is necessary to take advantage of investment opportunities
 - **Technology and investment in risk systems:** Integrating risk systems across asset classes and monitoring can be complicated and costly. Having strong performance and risk measurement at the total portfolio level is important
 - **Sufficient scale:** Adequate asset size is important to support the infrastructure, staffing, and analytical resources required for a total portfolio framework, particularly when managing illiquid investments and opportunistic allocations

MCERA Investment Beliefs

1. Focus on the Long-Run

- MCERA is a long-term investor and holds a 50+ year investment horizon
- Asset allocation decision is the single most important determinant of long-term investment returns

2. Diversification Adds Value

- Diversification is prudent and provides value by reducing volatility
- Lower investment volatility leads to more stable contribution rates

3. Understand and Manage Risk

- Willing to accept risk that is understood for which they receive compensation
- Seek to avoid risk that is not understood, or for which there is insufficient compensation

4. Simple is Often Better

- Research has shown that complexity in the investment program often provides no net benefit to the plan
- Avoid overly complex investment structure or vehicles

5. Public Investment Markets are Largely Efficient

- Utilize index funds in efficient market segments

6. Investment Costs Matter

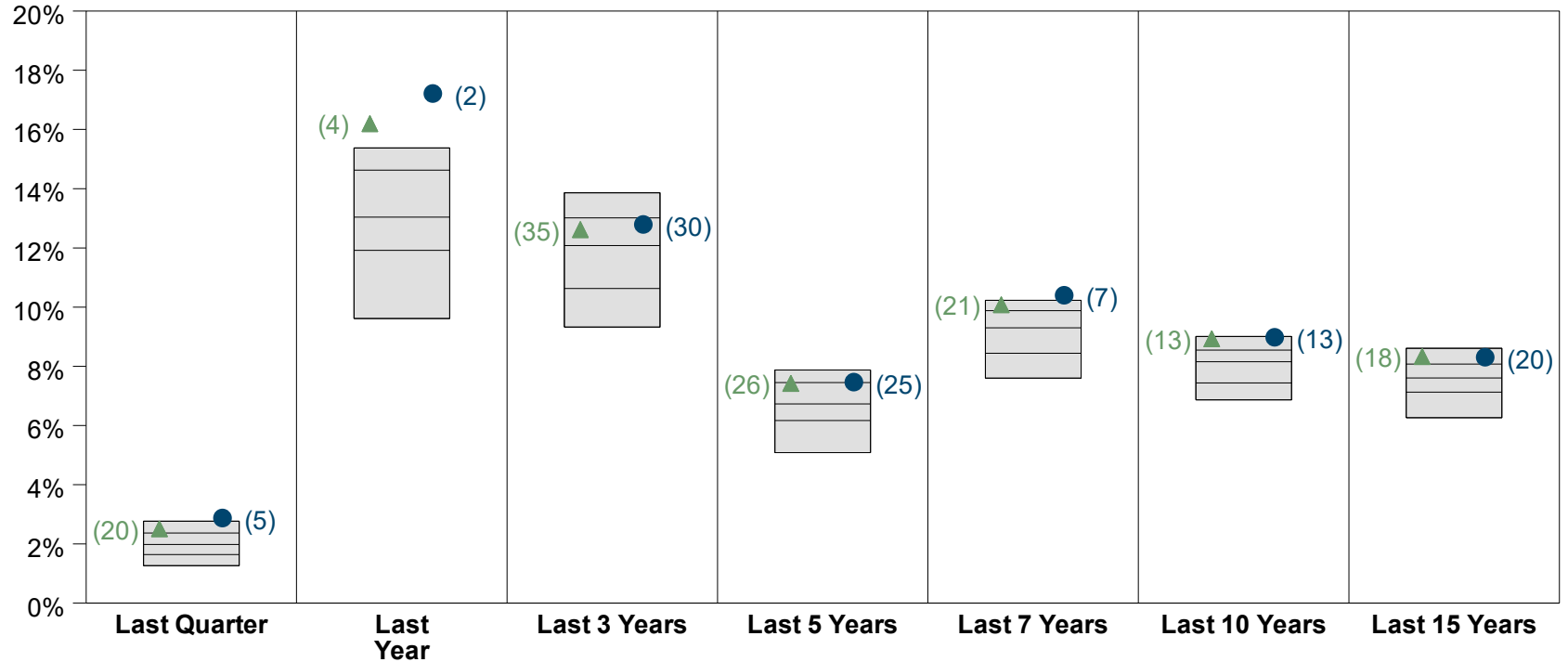
- Evaluate value provided by various experts that require expenditure of funds

7. Strong Governance is Vital

- Implement and maintain documented governance policies and monitor said policies

MCERA Total Fund Performance as of December 31, 2025

Performance vs Callan Public Fund Sponsor Database (Net)



10th Percentile	2.77	15.37	13.86	7.87	10.23	9.01	8.61
25th Percentile	2.37	14.62	13.01	7.45	9.88	8.55	8.08
Median	1.98	13.04	12.08	6.73	9.30	8.16	7.61
75th Percentile	1.64	11.92	10.63	6.17	8.44	7.44	7.13
90th Percentile	1.26	9.61	9.33	5.09	7.60	6.86	6.26
Total Fund ●	2.85	17.19	12.76	7.44	10.37	8.95	8.28
Total Fund Benchmark ▲	2.51	16.20	12.62	7.42	10.08	8.93	8.33

The Callan Public Fund Sponsor Database consists of public employee pension total funds including both Callan LLC client and surveyed non-client funds. Returns greater than one year are annualized.

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