



Merced County Employees' Retirement Association

**AGENDA
AD HOC INVESTMENT SUBCOMMITTEE MEETING**

Monday, April 8, 2024, 9:30 A.M.

Location: Merced County Administration Building

2222 M Street, Merced, CA 95340

Atwater Conference Room, Basement

Zoom Conference Information:

<https://us06web.zoom.us/j/93030195748?pwd=NGhFeGltSVhaSTIsK2JGWE83TVFydz09>

Dial In Number: 669-900-6833, MEETING ID: 930 3019 5748, PASSCODE: 095484

(For use only if Zoom Connection Malfunctions)

Telephone Number: 1-310-372-7549, Conference Code: 975839

1. Call to Order- 9:30 A.M.

2. Roll Call

3. Public Comment:

Members of the public may comment on any item under the Board's jurisdiction including items on the Board's agenda. Matters presented under this item will not be discussed or acted upon by the Board at this time. Persons addressing the Board will be limited to a maximum of five (5) minutes in total. Please state your name for the record.

4. Open Session Items:

- a. Review Asset Allocation Scenarios with Cliffwater and Meketa.
- b. Review Risk Survey Results.
- c. Review tasks for *Chief Investment Officer* classification.

5. Adjournment

Merced County Employees' Retirement Association

April 8, 2024

Asset Allocation Review and Risk Analysis – Part II

Background

- Meketa kicked off MercedCERA's Asset Allocation Review at the February 22 Board Meeting, presenting their 2024 Capital Market Expectations (CME's) that are published annually, and applying these new estimates to the MercedCERA Plan.
- In addition to reviewing the updated return/ risk estimates to the Plan, Meketa presented on alternative policy options for the Board to consider based on information received from Trustees' responses to the Risk Survey they were asked to complete at year-end 2023.
- Part II of the Asset Allocation is presented today, and reflects feedback collected from Trustees as well as discussions had with Staff and Cliffwater. Meketa presents the three refined options with the goal of reaching final consensus ahead of the April meeting to the full Board.
- The analytics presented are consistent with what has been presented in previous meetings – we review the expected return, standard deviation, and historical and prospective risk scenarios. As noted previously, expected returns for most asset classes decreased in 2024. This is due partially to the strong rallies in 2023 resulting in higher valuations at year end.

Proposed Policy Options

Asset Allocation Policy Options¹

	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
Public Equity	41	39	44	40
US Equity	22	22	24	22
Developed Market Equity (non-US)	11	12	12	12
Emerging Market Equity	8	5	8	6
Private Equity	15	13	11	15
Public Fixed Income	16	21	20	22
US Fixed Income	11	17	16	18
Opportunistic Credit	5	4	4	4
Direct Lending	5	5	5	5
Core Private Real Estate	8	8	8	6
Natural Resources (Private)	2.5	2.5	2.5	2.5
Infrastructure (Core Private)	2.5	2.5	2.5	2.5
Hedge Funds	10	7	5	5
Cash Equivalents	0	2	2	2
Expected Return (10 years) ²	7.3	7.1	7.1	7.2
Expected Return (20 years)	8.5	8.2	8.3	8.4
Standard Deviation	13.2	12.1	12.4	12.5
Probability of Achieving 6.75% over 10 Years ³	66.5	65.0	65.0	65.6
Probability of Achieving 6.75% over 20 Years	72.6	70.7	70.7	71.5

¹ Expected return and standard deviation are based upon Meketa Investment Group's Annual Capital Markets Expectations. Throughout this document, returns for periods longer than one year are annualized.

² Expected 10 Year Returns are based upon Meketa Investment Group's 10 Year Capital Markets Expectations

³ Probability of Achieving 6.75% are based on Meketa Investment Group's 20 Year Capital Market Expectations

Historical Negative Scenario Analysis¹ (Cumulative Return)

Scenario	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
Post-COVID Rate Hikes (Jan 2022-Oct 2023)	-6.0	-6.3	-7.0	-6.6
COVID-19 Market Shock (Feb 2020-Mar 2020)	-17.6	-16.4	-17.7	-16.7
Taper Tantrum (May - Aug 2013)	0.7	0.6	0.3	0.5
Global Financial Crisis (Oct 2007 - Mar 2009)	-27.4	-24.5	-26.1	-24.9
Popping of the TMT Bubble (Apr 2000 - Sep 2002)	-16.9	-13.5	-15.4	-14.6
LTCM (Jul - Aug 1998)	-8.3	-7.1	-7.9	-7.2
Asian Financial Crisis (Aug 97 - Jan 98)	2.3	3.2	1.9	3.0
Rate spike (1994 Calendar Year)	3.8	3.6	3.0	3.5
Early 1990s Recession (Jun - Oct 1990)	-5.4	-4.6	-5.5	-4.7
Crash of 1987 (Sep - Nov 1987)	-10.9	-9.8	-11.0	-9.9
Strong dollar (Jan 1981 - Sep 1982)	1.2	3.8	3.3	3.5
Volcker Recession (Jan - Mar 1980)	-3.6	-3.8	-3.9	-4.1
Stagflation (Jan 1973 - Sep 1974)	-21.7	-19.0	-20.5	-19.4

¹ See the Appendix for our scenario inputs. In periods where the ideal benchmark was not yet available we used the next closest benchmark(s) as a proxy.

Historical Positive Scenario Analysis¹ (Cumulative Return)

Scenario	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
Covid Recovery (Apr 2020-Dec 2021)	56.3	52.0	52.6	53.4
Global Financial Crisis Recovery (Mar 2009 - Nov 2009)	33.6	30.6	33.6	31.8
Best of Great Moderation (Apr 2003 - Feb 2004)	30.4	27.6	29.8	28.3
Peak of the TMT Bubble (Oct 1998 - Mar 2000)	48.1	42.4	43.5	43.8
Plummeting Dollar (Jan 1986 - Aug 1987)	50.9	48.1	52.0	49.0
Volcker Recovery (Aug 1982 - Apr 1983)	29.2	28.8	30.7	29.4
Bretton Wood Recovery (Oct 1974 - Jun 1975)	27.4	25.8	27.7	26.4

¹ See the Appendix for our scenario inputs. In periods where the ideal benchmark was not yet available we used the next closest benchmark(s) as a proxy.

Stress Testing: Impact of Negative Market Movements (Expected Return under Negative Conditions)¹

Scenario	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
10-year Treasury Bond rates rise 100 bps	4.5	3.8	4.1	3.9
10-year Treasury Bond rates rise 200 bps	-1.1	-1.6	-1.5	-1.7
10-year Treasury Bond rates rise 300 bps	-2.9	-3.3	-3.0	-3.5
Baa Spreads widen by 50 bps, High Yield by 200 bps	0.1	0.4	0.3	0.4
Baa Spreads widen by 300 bps, High Yield by 1000 bps	-21.7	-19.7	-20.9	-20.1
Trade Weighted Dollar gains 10%	-4.2	-3.6	-4.0	-3.8
Trade Weighted Dollar gains 20%	-1.8	-1.0	-1.3	-1.4
U.S. Equities decline 10%	-6.1	-5.3	-5.6	-5.6
U.S. Equities decline 25%	-17.0	-15.4	-16.0	-15.7
U.S. Equities decline 40%	-25.2	-23.2	-24.5	-23.6

¹ Assumes that assets not directly exposed to the factor are affected nonetheless. See the Appendix for further details.

Stress Testing: Impact of Positive Market Movements (Expected Return under Positive Conditions)¹

Scenario	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
10-year Treasury Bond rates drop 100 bps	1.9	1.9	1.8	1.9
10-year Treasury Bond rates drop 200 bps	9.2	9.1	9.7	9.4
10-year Treasury Bond rates drop 300 bps	11.4	11.5	12.2	11.8
Baa Spreads narrow by 30bps, High Yield by 100 bps	7.5	7.0	7.2	7.1
Baa Spreads narrow by 100bps, High Yield by 300 bps	13.4	12.1	13.1	12.5
Trade Weighted Dollar drops 10%	7.6	7.0	7.4	7.2
Trade Weighted Dollar drops 20%	20.2	19.3	20.6	19.9
U.S. Equities rise 10%	6.6	6.1	6.3	6.3
U.S. Equities rise 30%	15.4	14.4	15.3	14.8

¹ Assumes that assets not directly exposed to the factor are affected nonetheless. See the Appendix for further details.

Inflation Stress Testing: Negative Scenarios
(Expected Return under Negative Inflationary Conditions)¹

Scenario	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
Inflation slightly higher than expected	-0.2	-0.3	-0.3	-0.3
Inflation meaningfully higher than expected	-4.0	-4.1	-4.4	-4.1
Low Growth and Low Inflation	-6.7	-6.2	-6.7	-6.3
Low Growth and High Inflation	-9.6	-8.9	-9.7	-9.0
Brief, moderate inflation spike	-3.2	-2.8	-3.0	-2.9
Extended, moderate inflation spike	-6.2	-5.6	-5.9	-5.7
Brief, extreme inflation spike	-8.2	-7.4	-7.8	-7.5
Extended, extreme inflation spike	-10.9	-9.8	-10.4	-9.9

¹ See the Appendix for further details.

Inflation Stress Testing: Positive Scenarios
(Expected Return under Positive Inflationary Conditions)¹

Scenario	Current Policy Targets (%)	Option D: 2% Cash, 3% FI addition (%)	Option E: Reduction in PE & HF (%)	Option F: Reduction in Public Equity & HF (%)
High Growth and Low Inflation	11.3	10.1	11.0	10.4
High Growth and Moderate Inflation	9.6	8.5	9.1	8.7
High Growth and High Inflation	7.4	6.5	6.9	6.7

¹ See the Appendix for further details.

Appendices

CMEs for Selected Asset Classes

Asset Class	Geometric Expected Return (%)	Standard Deviation (%)
Cash Equivalents	2.5	1.0
Investment Grade Bonds	4.8	4.0
High Yield Bonds	6.8	11.0
Bank Loans	6.6	10.0
Direct Lending	8.4	15.0
US Equity	8.5	17.0
Developed Market Equity (non-US)	8.9	18.0
Emerging Market Equity	8.9	22.0
Private Equity	11.2	25.0
Core Private Real Estate	6.9	12.0
Natural Resources (Private)	9.3	22.0
Infrastructure (Core Private)	8.0	14.0
Hedge Funds	5.8	7.0

Scenario Return Inputs

Asset Class	Benchmark Used
Investment Grade Bonds	Bloomberg US Aggregate
TIPS	Bloomberg Global Inflation Linked: US TIPS
Intermediate Government Bonds	Bloomberg US Treasury: Intermediate
Long-term Government Bonds	Bloomberg US Treasury: Long
Emerging Market Bonds (local)	Bloomberg EM Local Currency Government Diversified
Bank Loans	Credit Suisse Leveraged Loan
High Yield Bonds	Bloomberg US Corporate High Yield
Direct Lending	Cliffwater Direct Lending Index
Real Estate	NCREIF Property Index
Core Private Real Estate	Cambridge Associates Proxy IRR Returns
Value-Added Real Estate	Cambridge Associates Proxy IRR Returns
Opportunistic Real Estate	Cambridge Associates Proxy IRR Returns
REITs	FTSE NAREIT All Equity REITS
Infrastructure (Private)	Cambridge Associates Proxy IRR Returns
Natural Resources (Private)	Cambridge Associates Proxy IRR Returns
Timberland	NCREIF Timberland
Commodities	Bloomberg Commodity Index
US Equity	Russell 3000
Developed Markets Equity (non-US)	MSCI EAFE
Emerging Markets Equity	MSCI Emerging Markets
Private Equity	Cambridge Associates Proxy IRR Returns
Long-Short	HFRI Equity Hedge
Global Macro	HFRI Macro
Hedge Funds	HFRI Fund Weighted Composite
Private Debt	Cambridge Associates Proxy IRR Returns

Negative Historical Scenario Returns - Sample Inputs

	Post-COVID Rate Hikes (Jan 2022-Oct 2023)	Covid-19 Market Shock (Feb 2020-Mar 2020)	Taper Tantrum (May - Aug 2013)	Global Financial Crisis (Oct 2007 - Mar 2009)	Popping of the TMT Bubble (Apr 2000 - Sep 2002)	LTCM (Jul - Aug 1998)
Cash Equivalents	5.5	0.4	0.0	2.6	9.9	0.8
Short-term Investment Grade Bonds	-1.6	0.4	-0.1	7.9	21.9	1.6
Investment Grade Bonds	-15.4	-0.9	-3.7	8.5	28.6	1.8
Long-term Corporate Bonds	-30.7	-18.4	-9.3	-10.3	26.9	-0.6
Long-term Government Bonds	-38.5	12.7	-11.6	24.2	35.5	4.1
TIPS	-13.2	-0.4	-8.5	8.2	37.4	0.7
Global Inflation Linked Bonds	-25.7	-6.5	-7.4	-3.9	39.7	0.7
High Yield Bonds	-7.1	-20.8	-2.0	-22.8	-6.3	-5.0
Bank Loans	8.8	-20.3	0.8	-23.7	6.3	0.7
Direct Lending	12.2	-4.8	2.6	-3.3	-2.0	-2.6
Foreign Bonds	-22.0	-4.5	-3.2	2.1	8.5	3.5
Emerging Market Bonds (major)	-15.8	-15.3	-11.5	-5.0	6.3	-28.2
Emerging Market Bonds (local)	-12.9	-13.9	-14.3	-7.9	7.2	-34.1
US Equity	-11.6	-35.0	3.0	-45.8	-43.8	-15.4
Developed Market Equity (non-US)	-12.1	-32.7	-2.2	-52.1	-46.7	-11.5
Emerging Market Equity	-21.8	-31.2	-9.4	-51.2	-43.9	-26.7
Global Equity	-12.9	-33.6	-0.7	-49.3	-46.7	-14.0
Private Equity/Debt	7.5	-7.8	5.7	-27.7	-23.6	-3.2
Private Equity	1.7	-7.4	5.8	-28.2	-26.2	-3.3
Private Debt	13.6	-10.1	4.6	-22.3	-1.8	-2.3
REITs	-31.4	-41.0	-13.3	-63.0	45.4	-15.3
Core Private Real Estate	-1.9	0.7	3.6	-10.6	23.6	2.3
Value-Added Real Estate	-4.0	-3.5	3.0	-32.2	25.4	0.0
Opportunistic Real Estate	9.1	-8.6	4.0	-25.7	21.4	1.5
Natural Resources (Private)	16.0	-22.1	2.5	-31.2	-3.9	-16.9
Timberland	18.4	0.1	1.3	20.7	-1.5	0.5
Farmland	12.5	-0.1	3.3	26.7	11.4	0.8
Commodities (naïve)	12.4	-18.9	-2.4	-36.9	18.5	-12.0
Infrastructure (Core Private)	13.6	-1.3	3.7	-0.8	24.8	-0.3
Hedge Funds	-2.1	-9.1	-0.4	-17.8	-2.1	-9.4
Long-Short	-9.5	-10.9	1.0	-26.4	-8.8	-8.3
Hedge Fund of Funds	-3.3	-7.6	-0.5	-19.5	-0.4	-7.7

Negative Historical Scenario Returns - Sample Inputs (continued)

	Rate spike (1994 Calendar Year)	Crash of 1987 (Sep - Nov 1987)	Strong dollar (Jan 1981 - Sep 1982)	Volcker Recession (Jan - Mar 1980)	Stagflation (Jan 1973 - Sep 1974)
Cash Equivalents	3.9	1.4	24.4	2.9	13.5
Short-term Investment Grade Bonds	0.5	2.3	29.9	-2.6	4.3
Investment Grade Bonds	-2.9	2.2	29.9	-8.7	7.9
Long-term Corporate Bonds	-5.8	1.5	29.6	-14.1	-12.0
Long-term Government Bonds	-7.6	2.6	28.4	-13.6	-1.8
TIPS	-7.5	2.8	15.6	-7.8	4.3
Global Inflation Linked Bonds	-7.9	2.9	16.5	-8.3	4.5
High Yield Bonds	-1.0	-3.6	6.9	-2.3	-15.5
Bank Loans	10.3	-1.7	3.3	-1.1	-7.5
Direct Lending	7.6	-2.3	3.2	-1.0	-7.2
Foreign Bonds	5.3	-0.3	34.8	-6.5	-1.4
Emerging Market Bonds (major)	-18.9	-9.2	-1.6	-2.6	-20.2
Emerging Market Bonds (local)	-22.8	-11.0	-2.0	-3.2	-23.9
US Equity	1.3	-29.5	-2.3	-4.1	-42.6
Developed Market Equity (non-US)	7.8	-14.5	-18.0	-7.0	-36.3
Emerging Market Equity	-7.3	-25.3	-12.1	-6.6	-44.2
Global Equity	5.0	-20.5	-11.1	-5.4	-40.4
Private Equity/Debt	13.2	-0.7	-2.7	-2.5	-18.2
Private Equity	14.2	-0.5	-3.9	-2.7	-20.1
Private Debt	6.2	-1.8	3.0	-1.0	-6.9
REITs	-3.5	-19.5	2.5	-3.6	-33.9
Core Private Real Estate	6.4	2.5	23.9	5.5	-4.4
Value-Added Real Estate	6.5	4.3	44.2	9.6	-7.6
Opportunistic Real Estate	18.8	3.1	30.7	7.0	-5.6
Natural Resources (Private)	12.6	-9.9	-9.5	-9.1	19.3
Timberland	15.4	9.2	23.6	-7.4	5.5
Farmland	9.4	5.3	13.3	-4.2	3.1
Commodities (naïve)	16.6	1.8	-16.0	-9.6	139.5
Infrastructure (Core Private)	-11.5	-0.1	-0.2	-0.1	-0.5
Hedge Funds	4.1	-7.8	-3.8	-1.9	-15.7
Long-Short	2.6	-10.0	-4.9	-2.5	-19.8
Hedge Fund of Funds	-3.5	-5.7	-2.7	-1.4	-11.5

Positive Historical Scenario Returns - Sample Inputs

	Covid-19 Recovery (Apr 2020 - Dec 2021)	Global Financial Crisis Recover (Mar 2009 - Nov 2009)	Best of Great Moderation (Apr 2003 - Feb 2004)	Peak of the TMT Bubble (Oct 1998 - Mar 2000)	Plummeting Dollar (Jan 1986 - Aug 1987)	Volcker Recovery (Aug 1982 - Apr 1983)	Bretton Wood Recovery (Oct 1974 - Jun 1975)
Cash Equivalents	0.1	0.1	0.9	6.7	10.0	6.0	4.5
Short-term Investment Grade Bonds	1.1	4.3	2.8	5.3	13.2	15.4	5.0
Investment Grade Bonds	2.6	9.0	4.6	1.7	14.4	26.4	9.2
Long-term Corporate Bonds	18.0	28.8	11.3	-3.1	15.9	42.1	17.5
Long-term Government Bonds	-7.2	2.0	4.9	-2.3	15.4	33.6	11.8
TIPS	15.6	14.3	9.1	6.3	10.2	11.5	4.1
Global Inflation Linked Bonds	18.9	24.7	9.6	6.6	10.8	12.1	4.3
High Yield Bonds	29.1	49.1	21.8	2.1	24.9	23.3	19.3
Bank Loans	24.8	32.9	10.1	6.1	11.1	10.4	8.7
Direct Lending	25.0	9.4	23.7	26.8	5.4	8.2	8.3
Foreign Bonds	5.2	23.4	15.2	-7.0	44.5	32.3	17.9
Emerging Market Bonds (major)	15.7	27.0	20.6	49.0	38.9	21.6	21.0
Emerging Market Bonds (local)	7.0	37.5	25.2	61.0	48.4	26.5	25.7
US Equity	92.0	51.6	37.2	50.2	64.8	59.3	55.1
Developed Market Equity (non-US)	55.4	60.5	56.7	53.0	140.0	29.6	34.6
Emerging Market Equity	50.9	94.6	79.4	101.3	126.5	52.1	53.4
Global Equity	75.2	59.9	46.2	54.8	98.7	46.3	43.8
Private Equity/Debt	97.8	18.8	23.3	82.4	19.0	13.7	18.4
Private Equity	101.5	16.7	23.7	90.0	21.6	14.8	20.2
Private Debt	41.2	28.7	20.4	21.3	5.9	7.9	8.0
REITs	75.1	82.5	44.6	-5.2	51.8	47.4	42.5
Core Private Real Estate	21.4	-12.1	9.0	18.1	13.1	6.8	4.5
Value-Added Real Estate	36.6	-22.4	10.9	22.0	23.6	11.9	7.8
Opportunistic Real Estate	41.1	-14.8	13.6	27.9	16.7	8.6	5.7
Natural Resources (Private)	45.4	57.6	36.1	22.2	78.3	30.2	14.8
Timberland	9.9	-3.7	8.5	20.5	28.6	20.0	8.7
Farmland	11.3	4.5	9.6	10.4	15.9	11.3	5.0
Commodities (naïve)	60.5	28.9	30.6	17.1	27.6	6.2	-20.2
Infrastructure (Core Private)	32.7	6.9	8.5	33.0	1.4	0.6	0.6
Hedge Funds	39.3	20.1	22.4	52.8	30.6	13.8	14.5
Long-Short	54.1	25.9	25.3	81.4	40.8	18.0	18.9
Hedge Fund of Funds	29.1	10.3	13.3	36.8	21.3	9.7	10.3

Stress Test Return Assumptions - Sample Inputs¹

	10-year Treasury Bond rates rise 100 bps	10-year Treasury Bond rates rise 200 bps	10-year Treasury Bond rates rise 300 bps	Baa Spreads widen by 50 bps, High Yield by 200 bps	Baa Spreads widen by 300 bps, High Yield by 1000 bps	Trade Weighted Dollar gains 10%	Trade Weighted Dollar gains 20%	US Equities decline 10%	US Equities decline 25%	US Equities decline 40%
Cash Equivalents	-0.2	-0.4	-0.5	2.8	1.1	3.6	1.3	2.8	2.3	0.4
Short-term Investment Grade Bonds	-1.2	-2.4	-3.6	2.2	1.5	0.8	1.4	0.8	0.7	0.8
Investment Grade Bonds	-4.0	-7.6	-10.7	3.9	-0.4	0.8	4.2	1.3	0.7	-1.0
Long-term Corporate Bonds	-8.2	-15.1%	-19.8	2.6	-13.4	-1.0	8.1	-1.4	-8.3	-12.3
Long-term Government Bonds	-9.5	-17.2	-21.8	7.8	7.3	1.8	12.8	1.0	2.6	2.4
TIPS	-4.3	-8.5	-11.6	2.8	-6.1	-2.4	-0.2	1.6	-2.3	-8.7
Global Inflation Linked Bonds	-1.9	-9.1	-11.9	2.4	-11.1	-4.0	-4.8	1.1	-5.4	-16.3
High Yield Bonds	2.4	-4.6	-3.6	-1.8	-23.0	-4.1	-0.6	-5.4	-15.5	-21.2
Bank Loans	1.5	-1.1	-5.1%	-2.8	-20.8	-2.9	-0.6	-3.6	-13.2	-17.4
Direct Lending	0.3	-2.4	-6.3	-1.8	-9.5	-3.3	-0.8	-3.3	-7.8	-5.9
Foreign Bonds	-4.6	-9.9	-15.7	6.6	-2.9	-4.5	-8.8	0.1	-4.6	-9.2
Emerging Market Bonds (major)	0.7	-6.5	-3.6	-0.1	-14.7	-2.6	-4.2	-4.4	-12.5	-15.4
Emerging Market Bonds (local)	1.6	-6.6	-3.0	0.1	-12.4	-2.8	-11.7	-3.8	-12.9	-19.8
US Equity	6.8	-1.8	2.8	-1.1	-31.6	-3.4	1.9	-10.0	-25.0	-40.0
Developed Market Equity (non-US)	8.6	0.1	-5.5	0.4	-34.6	-12.8	-8.6	-8.4	-22.2	-39.2
Emerging Market Equity	9.2	1.4	0.1%	-1.0	-41.9	-15.2	-14.4	-10.7	-28.3	-43.0
Global Equity	7.2	-0.8	-0.5	-0.6	-33.0	-8.8	-5.3	-9.2	-23.8	-39.0
Private Equity/Debt	6.0	0.6	-5.5	-0.1	-22.1	-2.7	-6.8	-9.0	-22.1	-25.0
Private Equity	6.3	0.6	-5.3	0.0	-22.3	-2.7	-6.0	-9.8	-22.9	-25.3
Private Debt	2.3	-1.1	-6.2	-1.8	-15.8	-2.3	-4.2	-3.9	-12.8	-14.9
REITs	3.3	-5.1	1.1	-3.7	-36.4	-1.3	12.1	-7.0	-31.9	-54.1
Core Private Real Estate	1.9	4.3	5.0	2.0	-7.1	2.7	9.7	1.1	-8.5	-14.0
Value-Added Real Estate	4.2	7.1	14.1	7.2	-13.5	13.7	6.4	1.9	-13.6	-23.1
Opportunistic Real Estate	3.8	6.7	9.9	1.1	-20.6	2.3	15.6	-0.6	-17.1	-26.3
Natural Resources (Private)	9.2	3.5	-7.5	-0.3	-25.0	-5.6	-14.5	-1.7	-14.5	-24.8
Timberland	1.6	2.6	-9.9	5.0	6.9	2.9	8.6	0.7	2.7	3.9
Farmland	2.4	0.9	-9.2	3.9	10.1	1.3	8.0	1.1	4.9	10.3
Commodities (naïve)	8.7	6.1	-6.6	-4.3	-25.0	-3.4	-24.0	5.2	-11.1	-37.8
Infrastructure (Core Private)	0.6	-4.2	-6.1	1.2	0.1	-0.7	3.6	-0.4	-5.0	-7.8
Hedge Funds	2.6	-1.9	-5.1	-0.6	-14.5	-2.2	-1.7	-4.3	-12.2	-15.7
Long-Short	4.7	-2.3	-4.2	-0.1	-21.0	-3.7	-4.3	-7.5	-17.7	-23.5
Hedge Fund of Funds	1.8	-2.5	-5.7	-1.3	-14.8	-2.9	-2.4	-4.9	-12.5	-16.0

¹ Assumptions are based on performance for each asset class during historical periods that resembled these situations.

'Anti' Stress Test Return Assumptions - Sample Inputs¹

	10-year Treasury Bond rates drop 100 bps	10-year Treasury Bond rates drop 200 bps	10-year Treasury Bond rates drop 300 bps	Baa Spreads narrow by 30bps, High Yield by 100 bps	Baa Spreads narrow by 100bps, High Yield by 300 bps	Trade Weighted Dollar drops 10%	Trade Weighted Dollar drops 20%	US Equities rise 10%	US Equities rise 30%
Cash Equivalents	0.2	0.3	0.4	0.8	0.2	2.0	4.5	2.3	3.1
Short-term Investment Grade Bonds	1.2	2.5	3.8	0.4	2.0	1.5	3.3	0.7	1.6
Investment Grade Bonds	4.3	8.9	14.0	1.1	3.9	2.5	9.4	1.8	3.8
Long-term Corporate Bonds	9.4	20.9	33.8	3.6	14.5	5.6	15.8	3.6	7.7
Long-term Government Bonds	11.6	24.9	40.5	0.1	-0.6	1.8	22.2	3.4	5.7
TIPS	4.7	9.8	15.6	0.9	5.9	3.8	7.8	1.5	2.2
Global Inflation Linked Bonds	3.0	6.4	7.7	1.8	7.4	5.9	8.4	1.6	3.2
High Yield Bonds	2.8	8.9	9.8	6.8	25.7	7.7	8.6	4.8	10.6
Bank Loans	-0.2	2.2	2.9	4.0	16.4	4.3	0.6	2.2	4.5
Direct Lending	-0.5	0.3	1.2	4.8	5.6	1.5	4.1	1.8	3.7
Foreign Bonds	5.7	11.3	18.8	1.4	7.4	9.9	21.3	2.2	6.8
Emerging Market Bonds (major)	3.1	7.4	8.1	5.2	15.5	7.4	15.4	5.4	11.1
Emerging Market Bonds (local)	3.7	9.7	10.4	5.3	17.5	10.3	19.1	5.9	12.7
US Equity	3.4	15.2	18.6	11.2	18.7	7.9	24.4	10.0	30.0
Developed Market Equity (non-US)	-2.4	16.3	18.0	9.3	18.2	13.1	47.3	6.1	17.8
Emerging Market Equity	0.5	17.6	22.9	8.9	34.1	19.7	46.9	8.6	26.5
Global Equity	0.7	15.1	18.1	9.4	19.5	11.1	35.4	8.1	24.1
Private Equity/Debt	2.4	4.3	5.1	9.8	9.5	7.3	16.3	10.2	13.4
Private Equity	2.5	4.3	5.0	9.9	8.3	7.2	16.9	10.9	14.1
Private Debt	0.8	1.8	2.7	7.2	12.7	4.8	5.9	4.5	6.6
REITs	2.6	14.2	18.5	8.8	27.0	6.5	24.8	9.5	23.0
Core Private Real Estate	1.0	1.6	1.5	3.8	-3.5	1.2	5.5	2.8	3.6
Value-Added Real Estate	2.7	6.4	6.3	4.8	-9.4	0.9	12.6	5.8	7.4
Opportunistic Real Estate	0.1	3.9	4.0	5.5	-5.5	-0.4	11.4	4.6	6.2
Natural Resources (Private)	0.5	11.0	14.6	8.0	23.5	13.0	23.9	5.1	12.6
Timberland	6.4	9.2	11.6	4.8	-0.6	3.8	12.9	6.3	5.5
Farmland	3.2	4.2	5.6	6.3	3.8	3.4	7.8	5.2	4.1
Commodities (naïve)	-2.6	-3.2	-3.0	2.5	9.8	13.6	-2.5	3.0	4.0
Infrastructure (Core Private)	0.8	-4.3	-3.7	6.8	4.8	3.5	-2.3	2.0	2.9
Hedge Funds	3.3	4.8	4.8	5.4	11.3	6.0	9.3	5.5	9.8
Long-Short	3.3	5.8	5.5	6.4	12.3	7.8	15.2	6.9	13.3
Hedge Fund of Funds	2.5	3.9	4.0	4.5	10.2	5.1	8.3	4.6	8.8

¹ Assumptions are based on performance for each asset class during historical periods that resembled these situations.

Inflation Scenario Description

Scenario	Scenario Description
Inflation slightly higher than expected	Inflation is .05% above inflation expectation (i.e. surprise inflation is .05%). .05% is the 25th percentile of positive, historical surprise inflation.
Inflation moderately higher than expected	Inflation is .15% above inflation expectation (i.e. surprise inflation is .15%). .15% is the median of positive, historical surprise inflation.
Inflation meaningfully higher than expected	Inflation is .3% above inflation expectation (i.e. surprise inflation is .3%). .3% is the 75th percentile of positive, historical surprise inflation.
High Growth and Low Inflation	The real GDP growth rate is 1% and inflation is .07%. 1% GDP growth is the 75th percentile of historical GDP growth and .07% inflation is the 25th percentile of historical inflation.
High Growth and Moderate Inflation	The real GDP growth rate is 1% and inflation is .25%. 1% GDP growth is the 75th percentile of historical GDP growth and .25% inflation is the median of historical inflation.
High Growth and High Inflation	The real GDP growth rate is 1% and inflation is .5%. 1% GDP growth is the 75th percentile of historical GDP growth and .5% inflation is the 75th percentile of historical inflation.
Low Growth and Low Inflation	The real GDP growth rate is .3% and inflation is .07%. .3% GDP growth is the 25th percentile of historical GDP growth and .07% inflation is the 25th percentile of historical inflation.
Low Growth and Moderate Inflation	The real GDP growth rate is .3% and inflation is .25%. .3% GDP growth is the 25th percentile of historical GDP growth and .25% inflation is the median of historical inflation.
Low Growth and High Inflation	The real GDP growth rate is .3% and inflation is .5%. .3% GDP growth is the 25th percentile of historical GDP growth and .5% inflation is the 75th percentile of historical inflation.
Very brief, moderate inflation spike	Inflation is .45% and lasts for 1-2 months. .45% is the 75th percentile of historical inflation.
Brief, moderate inflation spike	Inflation is .45% and lasts for 4-8 months. .45% is the 75th percentile of historical inflation.
Extended, moderate inflation spike	Inflation is .45% and lasts for 12+ months. .45% is the 75th percentile of historical inflation.
Very brief, extreme inflation spike	Inflation is .9% and lasts for 1-2 months. .9% is the 95th percentile of historical inflation.
Brief, extreme inflation spike	Inflation is .9% and lasts for 4-8 months. .9% is the 95th percentile of historical inflation.
Extended, extreme inflation spike	Inflation is .9% and lasts for 12+ months. .9% is the 95th percentile of historical inflation.

2024 Capital Markets Expectations

Summary of Capital Markets Expectations

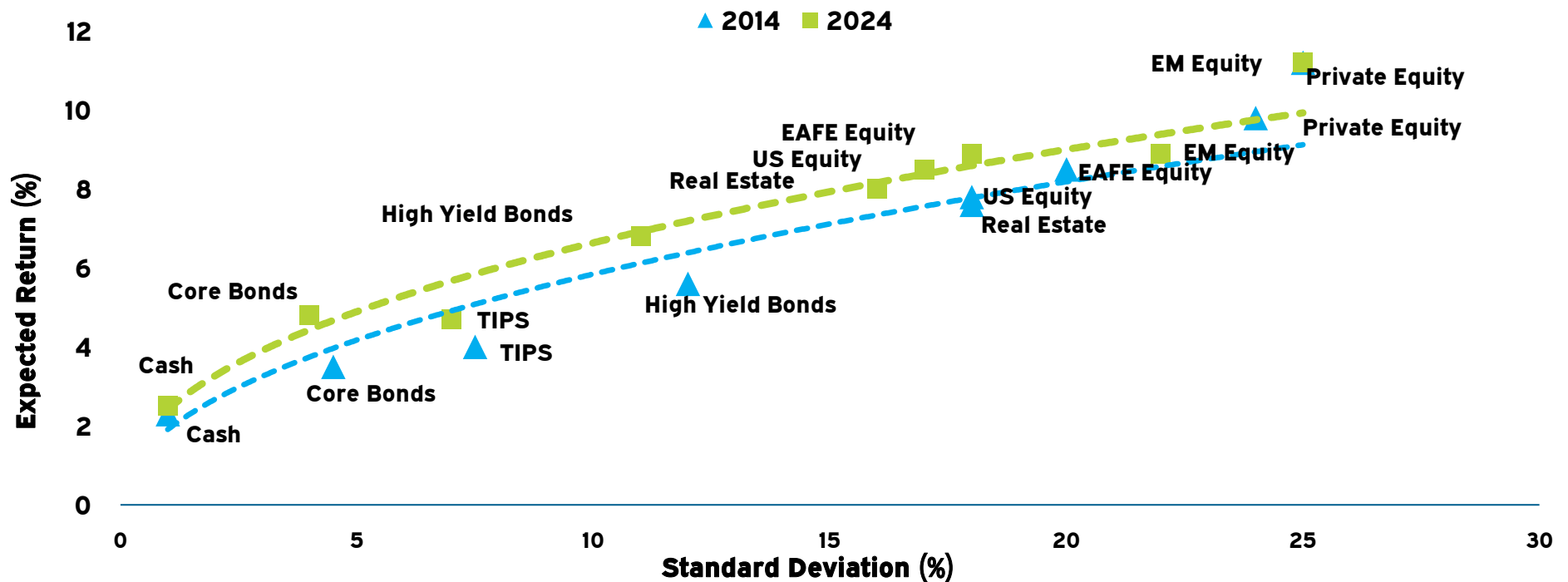
- We update our capital markets expectations each year in January.
 - Changes are driven by many factors, including interest rates, credit spreads, cap rates, and equity prices.
- 2023 was a volatile year for most investors, but ultimately most asset classes experienced positive returns, including double-digit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

20-year Geometric Expected Returns

	2024 E(R) (%)	2023 E(R) (%)	Δ From 2023 (%)	Notes
Cash Equivalents	2.5	2.9	-0.4	Lower projected short-term rates
Investment Grade (Core) Bonds	4.8	4.7	0.1	
Long-term Government Bonds	5.0	5.0	0.0	
TIPS	4.7	4.5	0.2	
High Yield Bonds	6.8	7.3	-0.5	Tighter spreads
Bank Loans	6.6	7.0	-0.4	Tighter spreads
Private Debt	9.2	9.0	0.2	
US Equity	8.5	8.7	-0.2	Higher valuations
Developed Non-US (EAFE) Equity	8.9	9.8	-0.9	Higher valuations, lower projected earnings growth
Emerging Market Equity	8.9	10.0	-1.1	Higher valuations, lower projected earnings growth
Global Equity	8.7	9.2	-0.5	Higher valuations
Private Equity	11.2	11.0	0.2	Mixed valuations and slightly lower borrowing costs
Real Estate	8.0	7.8	0.2	Higher cap rates
Infrastructure	9.0	8.3	0.7	Lower borrowing costs, model changes
Natural Resources (Private)	9.3	9.8	-0.5	Higher valuations
Commodities	5.3	5.7	-0.4	Lower cash yield
Hedge Funds	5.8	6.1	-0.3	Lower cash/credit yield, higher equity valuations

The Big Picture: Higher Return for the ~Same Risk¹

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



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

Annualized Risk and Return Expectations for Major Asset Classes

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

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

Correlation Data

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

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ASSISTANT PLAN ADMINISTRATOR - Investments

Class Code:
7539

Bargaining Unit: "B" Level Unrepresented Management

MERCED COUNTY
Established Date: XXXX, 2023
Revision Date: XXXX

SALARY RANGE

\$60.12 - \$73.19 Hourly
\$4,809.60 - \$5,855.20 Biweekly
\$10,420.80 - \$12,686.27 Monthly
\$125,049.60 - \$225,000 Annually

DESCRIPTION:

Under direction of the Plan Administrator, assists in the implementation and administration of the Investment Program of the Merced County Employees' Retirement Association (MercedCERA); monitors and analyzes investment performance; evaluates the performance of investment service providers; and assists in the planning and development of investment strategies and may coordinate the work of the fiscal staff and the MercedCERA Investment Consultants. This class is characterized by the responsibility to assist and provide direction in the management and implementation of the MercedCERA investment strategy and policies and to monitor and analyze fund investments and maintain and discharge discretionary authority and responsibility over some aspects of the Program. This class performs the most complex and specialized investment related duties, works under general supervision and may play a role in coordinating the work of staff.

EXAMPLES OF DUTIES:

Duties may include, but are not limited to, the following:

- Assist in developing objectives and guidelines for the MercedCERA investment program and writing policies; assist in the formulation of investment strategies and tactics;
- Research and analyze pension fund trends and new product developments in the institutional investment industry; analyze economic and financial markets on a global basis;
- Prepare special analysis of the investment portfolio; develop investment improvement recommendations; conduct research and screen investment opportunities and oversee the general investment process;
- Prepare and present written and oral reports to and conduct workshops for the MercedCERA Board, and stakeholders including but not limited to retirees, employees, and other groups as directed;
- Provide primary support to Investment Manager Searches, Watch Status and Terminations;

- Oversee investment contract processes with knowledge of current market terms; prepare Request for Proposals; assist in benchmarking investment services providers performance; meet with investment managers to evaluate products and firms; assist in the review, negotiation and administration of contracts for services, including alternative investments;
- Attend monthly Board meetings; develop and present the results of analytical projects to the Board; study and make recommendations to the Retirement Board based on internal research and/or advice received from outside consultants; properly maintain the asset allocation plan approved by the Retirement Board;
- Participate in evaluating the investment performance of investment managers and MercedCERA's portfolio; evaluate trade cost analysis of MercedCERA's investment managers; act as primary liaison to investment managers in monthly and quarterly reporting and monitors their compliance with Board established reporting deadlines and report formats; monitor and assist in ensuring compliance of the Retirement System's investment managers with the Board's investment policies and guidelines;
- Coordinate portfolio rebalancing; monitor allocation mix of short-term investment funds; recommend changes to the MercedCERA Investment Policy Statement;
- Perform compliance audits of investment managers; verify and track fees for investment managers and consultants.
- Calculate, analyze and reconcile alternative investment account fee structures, expenses and performance measures;
- Review investment training opportunities with the Board and Staff; attend Client and Investment Conferences; meet with banking, financial and investment organizations to discuss investments, financial markets and economic trends;
- Apply statistical principles and methodologies to data sets. Principles and methodologies may include such things as linear regression, multiple linear regression, regime switching return models, mean reversion models, auto regressive/moving average models, asset liability modeling, confidence intervals, hypothesis testing and tests for collinearity;
- Provide peer review and technical direction and guidance to staff;
- Perform special projects as assigned; and
- Perform related duties as assigned.

KNOWLEDGE OF:

- The principals and practices of institutional investing for a public pension plan;
- Financial analysis;
- The principals of pension administration and retirement benefits administration;
- Risk monitoring, economic and market trends and conditions;
- Applicable investment laws, rules and regulations;
- Benchmarking;
- Administrative analysis; and
- Statistics and actuarial analysis.
- 1937 (California) County Employees Retirement Act, and other applicable State, Federal and local regulations.
- Principles and practices of policy development and implementing.
- Modern office procedures, methods and computer equipment.

ABILITY TO:

- Think strategically related to the management of a public pension system investment portfolio;
- Analyze and communicate the strategies related to complex financial investments;
- Perform complex financial and statistical analysis;
- Prepare and write reports or presentations;
- Establish and maintain effective working relationships with all MercedCERA stakeholders;
- Effectively communicate verbally and in writing;
- Make presentations to Boards and management groups;
- Develop complex plans and reports;
- Ability to work collaboratively with staff in a small office;

MINIMUM QUALIFICATIONS:

Experience:

Any combination of education and experience that would provide the opportunity to acquire the knowledge and abilities listed. Normally this would include possession of a Bachelor's degree, or equivalent, in finance, statistics, actuarial science, mathematics, applied mathematics, economics, business administration or closely related field; **AND**

Four (4) years of investment experience in a public agency or financial institution which involved investment portfolio management, formulating, recommending and implementing investment strategies, economic analysis, and/or investment reporting or performance measurement; **OR**

A Master's degree, or equivalent, with an emphasis in any of the above listed areas and three years of experience in the above listed areas. Experience in retirement benefits administration and pursuit or possession of the Chartered Financial Analyst (CFA) designation is highly desirable.

SKILLS AND ABILITIES:

ESSENTIAL FUNCTIONS

Communicate effectively with others in person and over the telephone and teleconferencing software.

- Think strategically related to the management of a public pension system investment portfolio;
- Analyze and communicate the strategies related to complex financial investments;
- Perform complex financial and statistical analysis;
- Prepare and write reports or presentations;
- Establish and maintain effective working relationships with all MercedCERA stakeholders;
- Effectively communicate verbally and in writing;
- Make presentations to Boards and management groups;
- Develop complex plans and reports;
- Ability to work collaboratively with staff in a small office;
- Frequent use of depth perception, peripheral vision and color perception.
- Frequently lift, carry, reach, push, pull, twist and manipulate large and small objects.

- Frequent use of hand-eye coordination; Normal dexterity, frequent holding and grasping.
- Occasionally lift and carry up to 40 pounds.
- Regular in person attendance in the office is an essential function.

ADDITIONAL INFORMATION:

FLSA: Exempt

Probationary Period: At Will Classification