San Joaquin County Employees Retirement Association

A G E N D A

BOARD MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, AUGUST 12, 2022
AT 9:00 AM

Location: SJCERA Board Room, 6 S. El Dorado Street, Suite 400, Stockton, California.
Alternate Teleconference Location: 1485 Cerro Verde, Tracy, CA 95376

In accordance with current State mandates, appropriate face coverings are strongly recommended for all attendees.

The public may also attend the Board meeting live via Zoom by (1) clicking here https://us02web.zoom.us/j/82293471713 and following the prompts to enter your name and email, or (2) calling (669) 219-2599 or (669) 900-9128 and entering Meeting ID 82293471713#.

Persons who require disability-related accommodations should contact SJCERA at (209) 468 -9950 or ElainaP@sjcera.org at least forty-eight (48) hours prior to the scheduled meeting time.

1.0 ROLL CALL

2.0 PLEDGE OF ALLEGIANCE

3.0 APPROVAL OF MINUTES

3.01 Minutes for the Board Meeting of July 8, 2022 04

3.02 Board to consider and take possible action on minutes

4.0 PUBLIC COMMENT

4.01 The public is welcome to address the Board during this time on matters within the Board's jurisdiction, following the steps listed below. Speakers are limited to three minutes, and are expected to be civil and courteous. Public comment on items listed on the agenda may be heard at this time, or when the item is called, at the discretion of the Chair.

If joining via Zoom, Public Comment can be made in the following ways:

PC or Mac: select "Participants" in the toolbar at the bottom of your screen, then select the option to raise or lower your hand.

Mobile Device: select the "More" option in the toolbar at the bottom of your screen, then select the option to raise or lower your hand.

Tablet: select the icon labeled "Participants," typically located at the top right of your screen, then select the hand icon next to your device in the Participants column.

If dialing in from a phone for audio only, dial *9 to "raise your hand."

If attending in person, members of the public are encouraged to complete a Public Comment form, which can be found near the entry to the Board Room.

Except as otherwise permitted by the Ralph M. Brown Act (California Government Code Sections 54950 et seq.), no deliberation, discussion or action may be taken by the Board on items not listed on the agenda. Members of the Board may, but are not required to: (1) briefly respond to statements made or questions posed by persons addressing the Board; (2) ask a brief question for clarification; or (3) refer the matter to staff for further information.

5.0 CONSENT ITEMS

5.01 Service Retirement (18) 09

5.02 Board to consider and take possible action on consent items

6.0 ACTUARIAL ASSUMPTIONS DISCUSSION 12

6.01 Presentation by Graham Schmidt and Anne Harper of Cheiron

01 Actuarial Assumptions Review 18

02 Actuarial Experience Study Report - January 1, 2019 through December 31, 2021 29

6.02 Board to receive and file reports

6.03 Board to consider and take possible action on actuarial assumptions

7.0 INVESTMENT CONSULTANT REPORTS

7.01 Presentation by Eric White of Meketa Investment Group

01 Monthly Investment Performance Updates

a Manager Performance Flash Report - June 2022 96

b Economic and Market Update - June 2022 101

02 Total Portfolio Fee Review 122

03 Annual Investment Roundtable Update and Preliminary Agenda Review 124

7.02 Board to receive and file reports

8.0 STAFF REPORTS

8.01 Trustee and Executive Staff Travel

01 Conferences and Events Schedule for 2022 126

02 Summary of Pending Trustee and Executive Staff Travel 127

03 Summary of Completed Trustee and Executive Staff Travel 128

a NCPERS 2022 Chief Officers Summit 129

8.02 Board to consider and take possible action on any new travel requests

8.03 Legislative Summary Report 133

8.04 CEO Report 136

8.05 Board to receive and file reports

9.0 CORRESPONDENCE

9.01 Letters Received (0)

9.02 Letters Sent (0)

9.03 Market Commentary/Newsletters/Articles

10.0 CLOSED SESSION

10.01 Personnel Matters
California Government Code Section 54957
Employee Disability Retirement Application(s) (2)

11.0 BOARD OF RETIREMENT COMMITTEE ASSIGNMENTS

11.01 Chair to review committee assignments and announce changes as appropriate

12.0 CALENDAR

12.01 Board Meeting September 9, 2022

13.0 ADJOURNMENT

M I N U T E S

BOARD MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, JULY 8, 2022
AT 9:00 AM

Location: SJCERA Board Room, 6 S. El Dorado Street, Suite 400, Stockton, California
Alternate Location: 1485 Cerro Verde, Tracy, CA 95376

1.0 ROLL CALL

1.01 **MEMBERS PRESENT:** Phonxay Keokham, Emily Nicholas, Jennifer Goodman, Michael Duffy, Robert Rickman (out at 11:55 AM, in at 12:05 PM), JC Weydert, Steve Moore, Raymond McCray (via Zoom; out at 12:30 PM), Michael Restuccia presiding
MEMBERS ABSENT: Chanda Bassett
STAFF PRESENT: Chief Executive Officer Johanna Shick, Management Analyst III Greg Frank, Information Systems Analyst II Lolo Garza, Information Systems Specialist II Jordan Regevig, Administrative Secretary Elaina Petersen
OTHERS PRESENT: Deputy County Counsel Jason Morrish, David Sancewich, Judy Chambers (via Zoom) of Meketa Investment Group

2.0 PLEDGE OF ALLEGIANCE

2.01 Led by Steve Moore

3.0 APPROVAL OF MINUTES

3.01 Minutes for the Board Meeting of June 3, 2022

3.02 Minutes for the Administrative Committee Meeting of June 13, 2022

3.03 The Board voted unanimously (8-0) to approve the Minutes of the Board Meeting of June 3, 2022 and the Minutes of the Administrative Committee Meeting of June 13, 2022. (Motion: Duffy; Second: Goodman)

4.0 PUBLIC COMMENT

4.01 There was no public comment

5.0 CONSENT ITEMS

5.01 Service Retirement (20)

5.02 Mid-Year Administrative Budget Update and Proposed Adjustment

5.03 Board Policies not Requiring Amendments

01 Correction of Errors or Omissions Policy

02 Declining Employer Payroll Policy

03 Dissolution of Marriage or Registered Domestic Partnership

04 Ex-Parte Communications Policy

05 Member Contributions and Interest Posting Policy

5.04 Board Policies Requiring Amendments

01 Age Verification Policy

- a Age Verification Policy - Mark-up
- b Age Verification Policy - Clean

02 CEO Performance Review Policy

- a CEO Performance Review Policy - Mark-up
- b CEO Performance Review Policy- Clean

03 Communication Policy

- a Communication Policy - Mark-up
- b Communication Policy - Clean

04 Computer Equipment Policy

- a Computer Equipment Policy - Mark-up
- b Computer Equipment Policy - Clean

05 Conflict of Interest Policy

- a Conflict of Interest Policy - Mark-up
- b Conflict of Interest Policy - Clean

06 Employer Termination Policy

- a Employer Termination Policy - Mark-up
- b Employer Termination Policy - Clean

07 Statement of Funding Policy

- a Statement of Funding Policy - Mark-up
- b Statement of Funding Policy - Clean

08 Statement of Reserve Policy

- a Statement of Reserve Policy - Mark-up
- b Statement of Reserve Policy - Clean

09 Staff Transportation and Travel Policy

- a Staff Transportation and Travel Policy - Mark-up
- b Staff Transportation and Travel Policy - Clean

10 Trustee Education Policy

- a Trustee Education Policy - Mark-up
- b Trustee Education Policy - Clean

11 Trustee and Executive Travel Policy

- a Trustee and Executive Travel Policy - Mark-up
- b Trustee and Executive Travel Policy - Clean

5.05 Proposed Electronic Signature Policy

5.06 Resolution 2022-07-01 titled “Board Policy Amendments”

5.07 The board voted unanimously (8-0) to approve the Consent Calendar items. (Motion Duffy; Second: Nicholas)

6.0 ADMINISTRATIVE APPEAL - MASCORRO

6.01 The Board voted (6-2) to approve the service connected death benefit on the Administrative Appeal regarding Angelique Moscorro. (Motion: Duffy; Second: Weydert Ayes: Nicholas, Restuccia, Rickman, McCray; Nays: Keokham, Goodman)

7.0 PRIVATE EQUITY MANAGER PRESENTATION

7.01 Presentation by Mark Florian (via Zoom), Michael Ferrero and Sydney McConathy of Blackrock

01 BlackRock Global Infrastructure Fund IV

8.0 CLOSED SESSION

THE CHAIR CONVENED CLOSED SESSION AT 10:20 AM AND ADJOURNED THE CLOSED SESSION AND RECONVENED THE OPEN SESSION AT 11:26 AM.

8.01 Purchase or Sale of Pension Fund Investments
California Government Code Section 54956.81

County Counsel noted there was nothing to report out of closed session on this item.

8.02 Personnel Matters
California Government Code Section 54957
Employee Disability Retirement Application(s) (3)

01 Consent Items

a Mark Jones
Deputy Sheriff II
Service Connected Disability

b Christopher Ollis
Deputy Sheriff II
Service Connected Disability

c Joshua Tasabia
Deputy Sheriff II
Service Connected Disability

02 The Board voted unanimously (7-0) to grant the applications for service disability retirement.

8.03 Public Employee Performance Evaluation
California Government Code Section 54957
Title: Retirement Administrator/Chief Executive Officer

County Counsel noted there was nothing to report out of closed session on this item.

9.0 REPORT OF CLOSED SESSIONS

9.01 On October 6, 2021, the Board voted 7-0 (Trustee McCray motion, Trustee Bassett second, Trustees Keokham and Duffy absent) to divest the allocation of approximately $113 million with Doubleline Capital and reinvest those funds with Loomis Sayles Core Disciplined Alpha fund, and to authorize the CEO to sign the necessary documents. (Board Resolution 2022-07-02 titled “Loomis Sayles and DoubleLine.”)

10.0 ACTUARIAL VALUATION AND ECONOMIC ASSUMPTIONS

10.01 Actuarial Experience Study for January 1, 2019 through December 31, 2021 presented by Anne Harper and Timothy Doyle of Cheiron

01 Cherion presentation link below
https://presentation.cheiron.us/presentation/view/SJCERAExpStudy?token=K4Kt

10.02 Summary of Preliminary Actuarial Valuation as of January 1, 2022 presented by Anne Harper and Timothy Doyle of Cheiron

01 Cheiron presentation link below
https://presentation.cheiron.us/presentation/view/SJCERAPrelimAVR?token=o1Ze

10.03 The Board voted unanimously to retain all economic assumption at their current level. Accept Cheiron's assumption changes (Motion: McCray; Second: Rickman)

11.0 INVESTMENT CONSULTANT REPORTS

11.01 Presented by David Sancewich of Meketa Investment Group

01 Monthly Investment Performance Updates

a Manager Performance Flash Report - May 2022

b Economic and Market Update - May 2022

02 Investment Fee Transparency Report

11.02 The Board received and filed reports

12.0 ASSET LIABILITY STUDY: IMPLEMENTATION OF NEW POLICY

12.01 Presentation by David Sancewich of Meketa Investment Group

12.02 The Board discussed the Asset Liability Study, and accepted the implementation schedule.

13.0 2022 ANNUAL INVESTMENT ROUNDTABLE

13.01 The Board provided suggestions on format, topics and speaker. Trustee Keokham asked that the date be moved in 2023.

14.0 STAFF REPORT

14.01 Trustee and Executive Staff Travel

01 Conferences and Events Schedule for 2022

02 Summary of Pending Trustee and Executive Staff Travel

03 Summary of Completed Trustee and Executive Staff Travel

14.02 The Board received and filed reports

14.03 Pending Retiree Accounts Receivable - Second Quarter 2022

14.04 Disability Quarterly Report - Statistics

14.05 Legislative Summary Report

14.06 CEO Report

In addition to the written report, CEO Shick mentioned the Conducting Business of the Board seminar she attended and inquired if the Trustees were interested in receiving any additional material on Board Self-Evaluation.

14.07 The Board received and filed reports

15.0 CORRESPONDENCE

15.01 Letters Received (0)

15.02 Letters Sent (0)

15.03 Market Commentary/Newsletters/Articles

01 Invesco:
Digital Currencies: The (coming of) Age of Central Bank Digital Currencies
May 2022

02 NCPERS
Monitor
June 2022

03 Fundfire
Investors want more Emerging Markets Debt, but War adds Uncertainty
June 10, 2022

04 Fundfire
Decade-High Yield Surge “Restoring Value” to Bond Market: Pimco
June 22, 2022

05 CALAPRS
Newsletter
Summer 2022

16.0 COMMENTS

16.01 There were no comments from Board of Retirement

17.0 ELECTION OF OFFICERS

17.01 Board to elect officers for 2022-2023

17.02 The Board voted unanimously (7-0) to re-elect Michael Restuccia as Chairperson, Michael Duffy as Vice Chairperson and Raymond McCray as Secretary. (Motion: Weydert; Second: Keokham)

18.0 CALENDAR

18.01 Board Meeting August 12, 2022 at 9:00 AM

19.0 ADJOURNMENT

19.01 There being no further business the meeting was adjourned at 12:45 p.m.

Respectfully Submitted:

____
Michael Restuccia, Chair

Attest:

____
Raymond McCray, Secretary

PUBLIC

San Joaquin County Employees Retirement Association

August 2022

5.01 Service Retirement — Consent

01 DAVID P BAKER
Crafts Worker
Facilities Management

Member Type: General
Years of Service: 08y 06m 14d
Retirement Date: 7/1/2022
Comments: Tier 2 member - eligible to retire with 5 years of service.

02 KENNEY R BULLOCK
Deferred Member
N/A

Member Type: General
Years of Service: 06y 06m 13d
Retirement Date: 7/1/2022
Comments: Deferred from SJCERA since January 2019.

03 JOAQUIN ESCOBAR
Automotive Mechanic
Fleet Services

Member Type: General
Years of Service: 13y 02m 16d
Retirement Date: 7/1/2022

04 AQUILINA Q GENERAO
Dialysis PatientCare Technician
Hospital - Hemodialysis Center

Member Type: General
Years of Service: 16y 01m 08d
Retirement Date: 6/20/2022

05 DANNY M GOMES
Transfer Truck Driver
SW-Lovelace Transfer Op

Member Type: General
Years of Service: 05y 00m 02d
Retirement Date: 6/27/2022
Comments: Tier 2 member - eligible to retire with 5 years of service.

06 TAMMY M GONZALES
Collections Supervisor
Office of Revenue - Recovery

Member Type: General
Years of Service: 21y 07m 04d
Retirement Date: 7/2/2022

07 LENETTE M MCGILLVRAY
HSA Staff Analyst II
HSA - Admin Support

Member Type: General
Years of Service: 24y 11m 02d
Retirement Date: 3/9/2022

08 SALLY A MCGINNIS
Staff Nurse V
Hospital Med-Surg 2D

Member Type: General
Years of Service: 10y 08m 29d
Retirement Date: 7/1/2022

09 JOHN B MONIZ
Special District Class Code
SJ Co Mosquito Abatement

Member Type: General
Years of Service: 13y 00m 00d
Retirement Date: 6/9/2022

10 **CHRISTOPHER S NAVA** — Sterile Processing Tech II, Hospital Sterile Processing

Member Type: General
Years of Service: 10y 03m 04d
Retirement Date: 6/21/2022

11 **QUTINA T REINSCHELL** — Employment Training Spec II, Employment Economic Development

Member Type: General
Years of Service: 25y 04m 06d
Retirement Date: 7/1/2022

12 **RANDOLPH A RIGATO** — Deferred Member, N/A

Member Type: General
Years of Service: 23y 03m 11d
Retirement Date: 7/1/2022
Comments: Deferred from SJCERA since February 2021. Outgoing reciprocity and concurrent retirement with CalPERS.

13 **RENE L RODDEWIG** — Probation Officer III, Probation

Member Type: General
Years of Service: 01y 03m 23d
Retirement Date: 7/1/2022

14 **RENE L RODDEWIG** — Probation Officer III, Probation

Member Type: Safety
Years of Service: 23y 11m 05d
Retirement Date: 7/1/2022

15 **KIMBERLY A RUSS-REITE** — Social Worker IV, HSA - Admin Support

Member Type: General
Years of Service: 34y 02m 07d
Retirement Date: 6/30/2022

16 **JOCELYN N SALACUP** — Staff Nurse IV - Inpatient, Hosp Med-Surg 2D

Member Type: General
Years of Service: 30y 11m 13d
Retirement Date: 7/1/2022

17 **STEVEN I SASSON** — Deferred Member, N/A

Member Type: General
Years of Service: 07y 10m 10d
Retirement Date: 7/1/2022
Comments: Deferred from SJCERA since May 2001. Outgoing reciprocity and concurrent retirement with CalPERS.

18 **STEPHEN E SKED** — Crafts Worker IV, Stockton Metropolitan Airport

Member Type: General
Years of Service: 12y 10m 24d
Retirement Date: 6/13/2022

19 **JOHN R WALLIOR** Deferred Member
N/A

Member Type: General
Years of Service: 01y 11m 14d
Retirement Date: 6/30/2022
Comments: Deferred from SJCERA since August 2008. Outgoing reciprocity and concurrent retirement with CalPERS.

Board of Retirement Meeting
San Joaquin County Employees' Retirement Association

Agenda Item 6.0

DATE August 12, 2022

SUBJECT: Actuarial Assumptions Discussion

SUBMITTED FOR: ___ CONSENT _X_ ACTION ___ INFORMATION

RECOMMENDATION

Determine, in light of additional information, whether the Board prefers to retain the existing 7 percent investment return assumption, or lower it to 6.75 percent.

PURPOSE

To set a return assumption the Board reasonably believes the portfolio will achieve on average over the long term given the adopted asset allocation, and economic and market forecasts.

DISCUSSION

Actuarial assumptions, in particular the assumed rate of return (also referred to as the discount rate), are vitally important decisions the Board of Retirement makes, which affect, among other things, the long-term financial stability of the plan, funding progress, and member and employer contribution rates.

At the July Board meeting, the presentation and discussion regarding actuarial assumptions were compressed, and some inadvertent, uncorrected misstatements were made, which may have affected the Board's decision regarding the investment return assumption. Further, additional information (such as Cheiron's assessment of the likelihood of achieving certain returns) is now available. To ensure the Board has complete, accurate information upon which to base their decision, the topic is being revisited at the August meeting.

Reasons to Consider Lowering Assumed Rate of Return to 6.75 Percent Now

1. **Demographic assumption savings more than offset the cost of lowering the assumed rate of return, decreasing the aggregate member and employer rate by 1 percent**. Normally, lowering the assumed rate of return increases both employer and member contribution rates. However, this year SJCERA is in the rare situation when the cost savings as a result of demographic assumption changes more than offset the cost of lowering the assumed rate of return. SJCERA has the opportunity to lower the assumed rate and still modestly decrease the aggregate member and employer contribution rate. The cost offset applies for the entire 15-year amortization period (not just a single year). See "Attachment A: Contribution Rate Change by Source."
2. **Increase the probability of attaining the assumed rate of return and making continued funded ratio improvement.** Based on information provided by Cheiron, the average likelihood of achieving a 7 percent nominal return less than 50 percent over both the 10- and 20-year time periods. Over 10 years, the average likelihood is 39.8 percent, whereas the average likelihood of achieving 6.75 percent is 42.5 percent. Over 20 years, the average likelihood of attaining 6.75

percent increases to 52.6 percent, whereas the likelihood for attaining 7 percent remains below 50 percent.

Likelihood of Achieving Average Returns				
Time Period (Consultant)	**Nominal**		**Real**	
	6.75%	**7.00%**	**4.00%**	**4.25%**
10 years (Meketa)	42.1%	39.5%	43.7%	41.0%
10-years (Horizon)	42.8%	40.1%	49.5%	46.8%
Avg. Likelihood 10-year	**42.5%**	**39.8%**	**46.6%**	**45.25%**
20-years (Meketa)	52.7%	50.0%	58.6%	55.9%
20-years (Horizon	52.5%	47.8%	60.3%	56.6%
Avg. Likelihood 20-year	**52.6%**	**48.9%**	**59.45%**	**56.25%**

In order to continue to improve our funded status, SJCERA must meet or exceed our actuarial assumptions. The portfolio's investment performance relative to our assumed rate of return has, by far, the greatest effect on our funding progress (or lack thereof). However, investment returns are highly uncertain: Markets are often volatile and are especially so currently, with many anticipating a recession.

By lowering the assumed rate of return, the Board increases the probability that the adopted asset allocation will generate returns that meet or exceed the assumed rate and thus continue SJCERA's funding progress. Additionally, adopting a lower assumed rate of return minimizes the decrease to funding status if investment returns fall short.

3. **Buffers future employer contribution rates if returns are less than 7 percent.**

   Under the County Employees Retirement Law (CERL) employers are responsible for the cost of the unfunded liability. Thus, employer rates increase when investment returns fall short of the assumed rate of return. Adopting a lower assumed rate of return means any shortfall in investment return relative to the assumption would be less than it would have been had we retained the higher, 7 percent assumption; therefore, the impact on employer contributions would be less.

4. **Ten-Year Capital Market Assumptions Indicate our Asset Allocation Will Earn 6 percent.** At the July Board meeting, it was inadvertently stated that the Capital Market Assumptions indicated our portfolio would earn on average about 6.7 percent over the 10-year period, or slightly higher if private markets outperform public markets. Unfortunately, this was a misstatement: Over the10-year period the newly adopted asset allocation is projected to earn 6 percent. By keeping the assumed rate of return at 7 percent, based on the Capital Market Assumptions, it would be anticipated SJCERA's investment earnings would underperform on average for 10 years, resulting in deteriorating funded status. Although Meketa has updated

their Capital Market Assumptions resulting in improved return projections, our consultant, David Sancewich, has indicated he still thinks lowering the assumed rate of return to 6.75 percent at this time would be reasonable.

5. **Aligns with the Board's stated goals in the Risk Tolerance Survey**

   The Board's results from the Risk Tolerance Survey revealed that exceeding the assumed rate of return (currently 7 percent) was tied for the most important way to assess the portfolio. Similarly, the Board identified not achieving the assumed rate of return as the number one concern over the next three years. Finally, the Board identified maximizing funded status and consistent funded status improvement as two of the top three most important goals of the asset allocation (in addition to maximizing long-term returns) .

6. **Retirement Systems Nationwide are Lowering Return Assumptions**

   There has been a strong trend nationwide among retirement systems to lower the return assumptions over the last 20 years. Cheiron reports the median in 2021 for SACRS systems is 6.9 percent. Unfortunately, 2022 data is not yet available; however, as of 2021, Sacramento, Stanislaus, Marin, Merced and Mendocino had adopted a 6.75 percent assumption, Fresno had adopted a 6.5 percent rate and San Mateo had adopted a 6.25 percent rate.

Risks of Waiting to Consider Lowering the Discount Rate at a Later Date

1. **"Double Whammy" to employer rates.** It is highly likely that SJCERA's investment returns will fall short of our current 7 percent assumed rate of return this calendar year. The year-to-date return as of May 31 is negative 4.8 percent, meaning we would have to earn about 12 percent during the remainder of the year to reach 7 percent. Given increasing layoffs and the increasing possibility of a recession, earning 12 percent over the remainder of the year seems unlikely. If the Board waits to decide to lower the assumed rate of return until next year, employer contribution rates will be increased by both of the following: investment earnings fell short of the 7 percent return assumption and the Board's decision to decrease the return assumption.
2. **Contribution rates in 2023 would decrease despite likely increased funding needs.** Again, it's highly unlikely SJCERA's 2022 investment earnings will meet the 7 percent assumed rate. If this proves to be the case, it will increase the 2024 contribution rates, whereas rates in 2023 would decrease substantially. This would result in a mismatch between known funding needs and contributions paid. In other words, members and employers would contribute less to the plan at the very time when it would be prudent to contribute more in order to recover from an investment earnings shortfall in 2022. Then, in 2024, rates would increase fairly substantially to account for any 2022 investment earnings shortfall. By lowering the assumed rate of return now, SJCERA has the opportunity to recover any investment shortfalls more quickly and less expensively.

CONCLUSION

It's impossible to reliably predict what will happen with the various influencers of investment returns (inflation, economy, geo-political dynamics, etc.). Institutional investment outlets are paying increased attention to topics like successfully weathering a recession, investing in a bear market, etc. News sources report increased layoffs in private sector companies and car repossessions have increased. In the face of significant economic and financial uncertainty (resulting in corresponding uncertainty about our investment return, which is the greatest influencer of our funded status) it is prudent to implement mitigating strategies (to the extent possible) in an attempt to increase the likelihood of SJCERA's long-term success. Lowering the assumed rate of return to 6.75 percent now, while changes in the demographic assumptions absorb the cost of it, helps mitigate the uncertainty. It protects the fund, protects employer rates, and increases the likelihood that SJCERA's funding progress will continue to improve over time.

ATTACHMENT

Attachment A: Contribution Rate Change by Source

JShick

Johanna Shick
Chief Executive Officer

Attachment A: The “Contribution Rate Change by Source” Graph

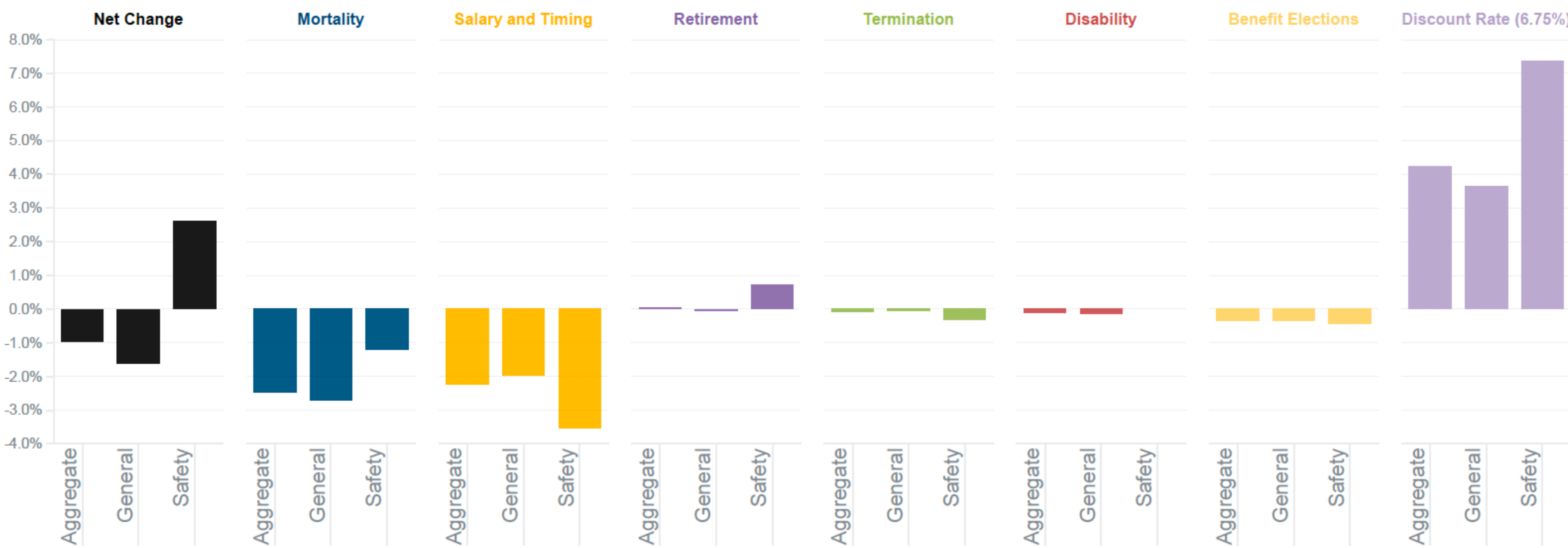
The net change of lowering the return assumption to 6.75 percent is shown in the black bars on the left of the graph. Lowering the return assumption to 6.75 percent results in:

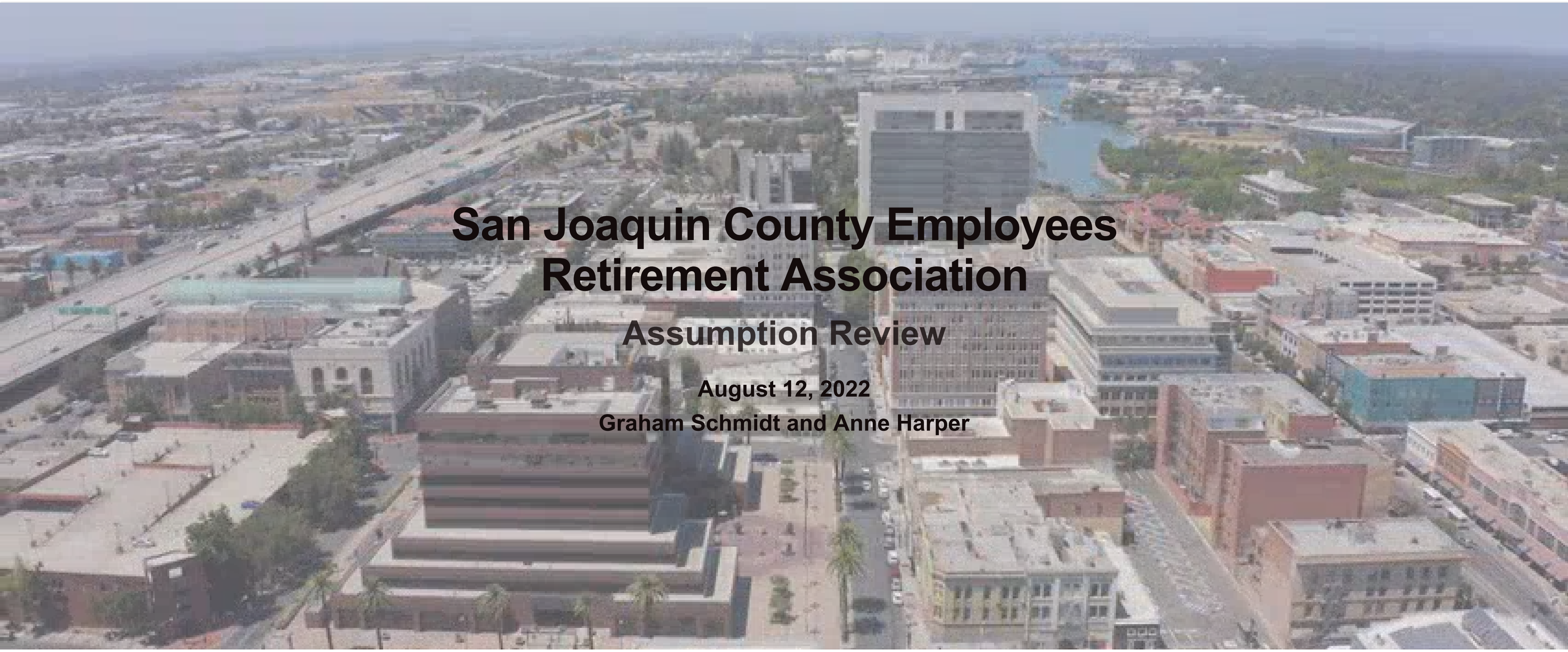
- A net **1 percent <u>reduction</u> in the total contribution rate** (employer and employee) in aggregate
    - The rate for the General population decreases by 1.6 percent.
    - The rate for the Safety population increases by about 2.6 percent because (1) the demographic changes did not provide as much of an offset for that population, and (2) the benefit is more expensive, so actuarial changes have about double the impact on contribution rates as they do for the General population.
        - Safety represents about 904 of the 7,321 total SJCERA active member population, or about 12 percent of SJCERA’s active member population. There are three primary Safety employers: two fire districts with about 64 Safety employees and three departments of the County (Sheriff, Probation and District Attorney Investigators) with approximately 840 employees.
- A **slight increase in funded ratio** of about 0.8 percent.

Attachment A: The "Contribution Rate Change by Source" Graph

This would result in a net *reduction* in the total contribution rate (employer plus employee) of about 1.0% of pay in aggregate, and 1.6% for the General population, but an *increase* of 2.6% of pay for Safety. It would also result in a slight increase in the funded ratio: from 71.6% to 72.4%.

Contribution Rate Change by Source





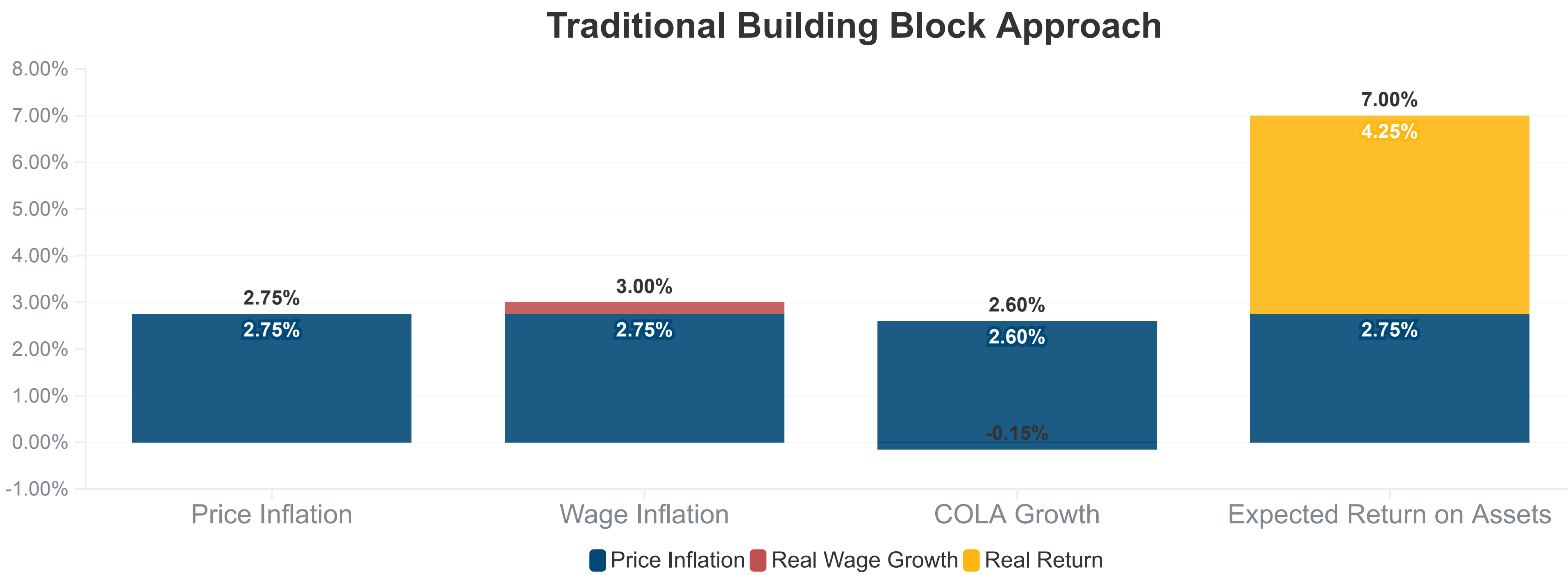
San Joaquin County Employees Retirement Association

Assumption Review

August 12, 2022

Graham Schmidt and Anne Harper

At the July meeting, we reviewed our recommended assumption changes with the Board, both demographic and economic. Of the economic assumptions, we are not recommending any changes to the price inflation, wage inflation, or COLA growth assumptions. The only assumption we recommend the Board consider changing is the expected return on assets / discount rate.



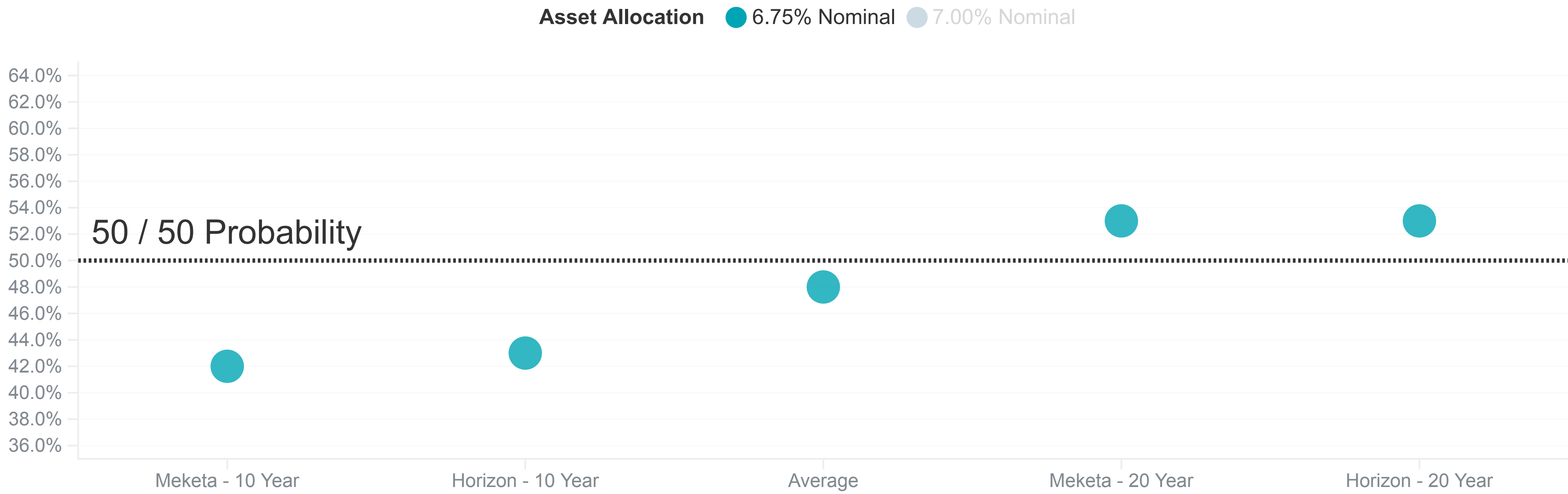
As part of the July presentation, we provided information on the expected return for the new asset allocation based on information from Meketa and a survey of investment consultants (performed by Horizon Actuarial Services), under different time horizons. The average nominal return expectation was 6.50%.

Here we show the likelihood of achieving the current 7.00% assumption for each set of expectations, as well as the average across all assumptions sets. The likelihood of achieving 7.00% is 50% or less in all cases, with the average being only 45%.

CHEIRON

If the nominal return assumption is reduced to 6.75%, the expectation is expected to be achieved more than 50% of the time under the 20+ year time horizons, and 48% of the time under the average expectation.

Expected Nominal Returns

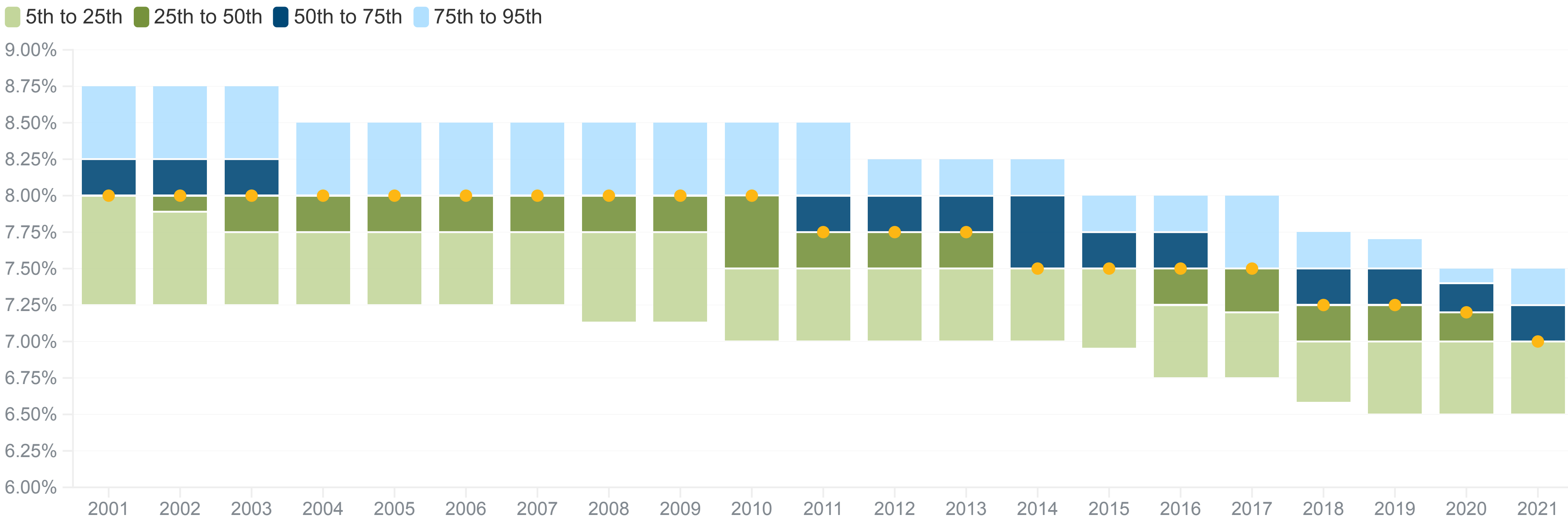


CHEIRON

The trend amongst public plans has been to reduce the discount rate. Below is the history of discount rates for over 200 plans included in Public Plan Database for the past 20 years. The median rate fell to 7.0% in 2021.

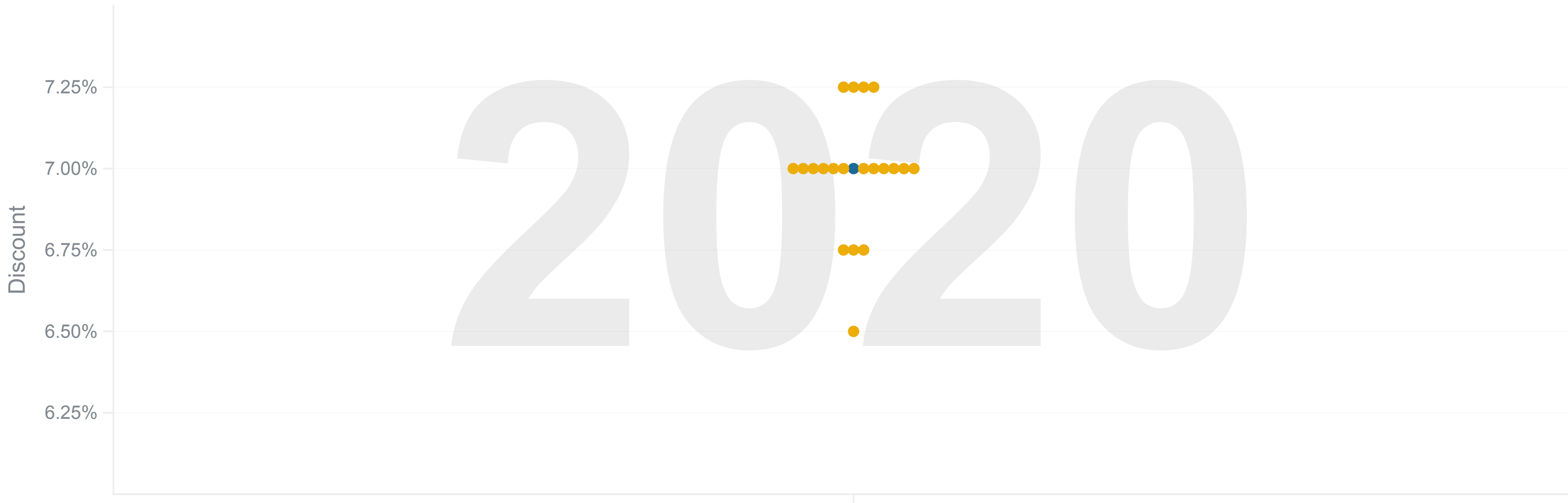
Distribution of Discount Rates

Median



Below we show discount rates for the 20 SACRS plans in 2020, including the average assumption (shown in blue), which was also 7.0%.

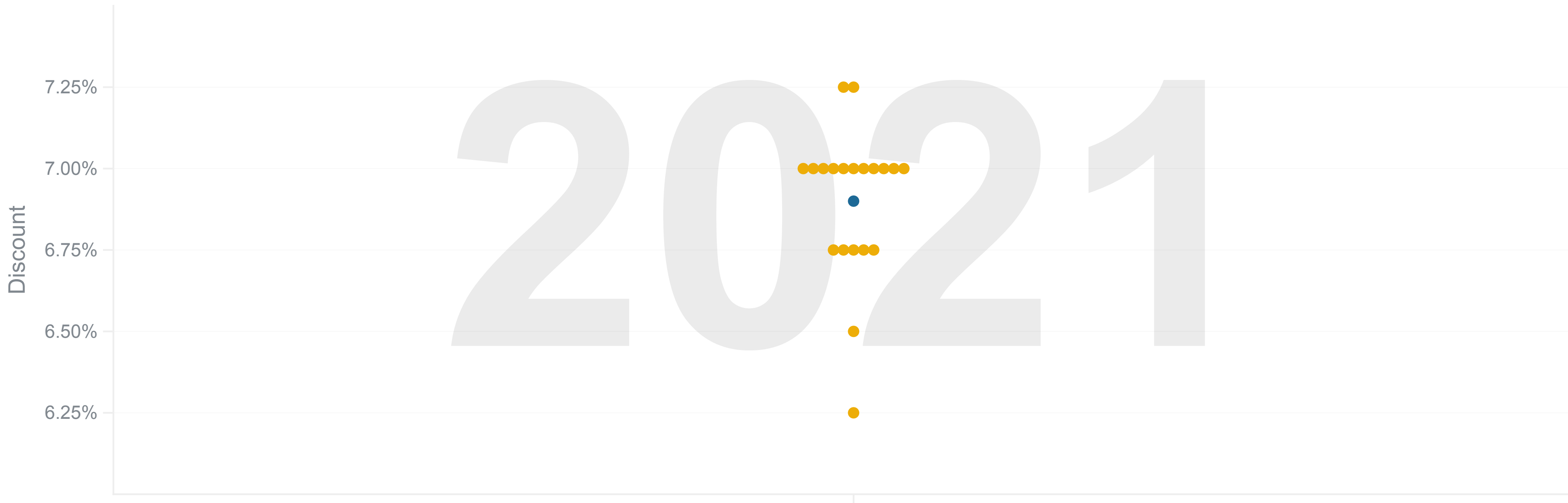
Year 2020 SACRS



Hover over a dot to see that plan's data

Discount rates for several systems were reduced in 2021, and the average fell to 6.90%.

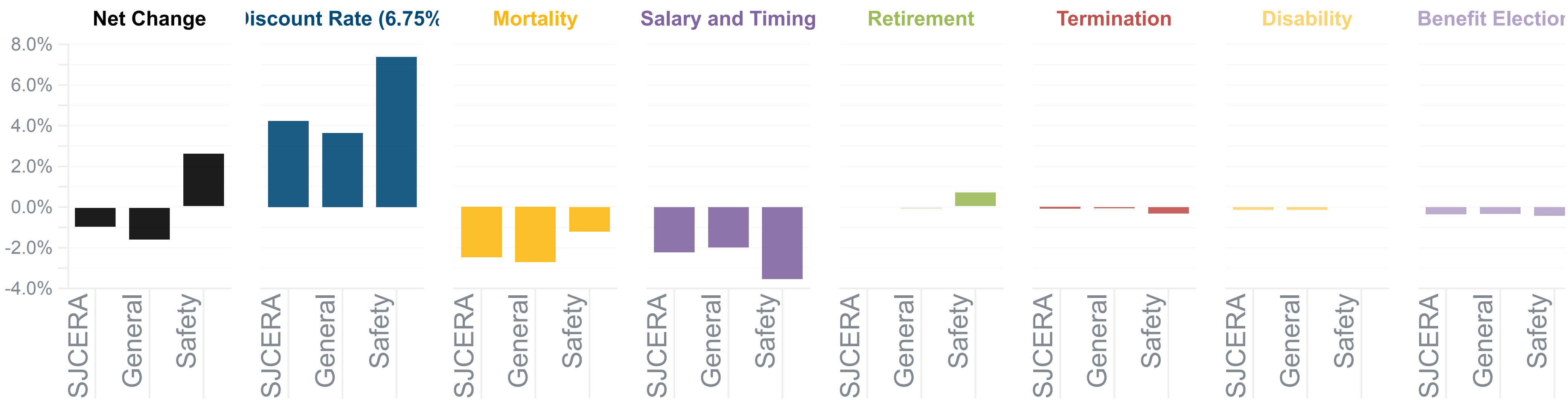
Year 2021 SACRS



Hover over a dot to see that plan's data

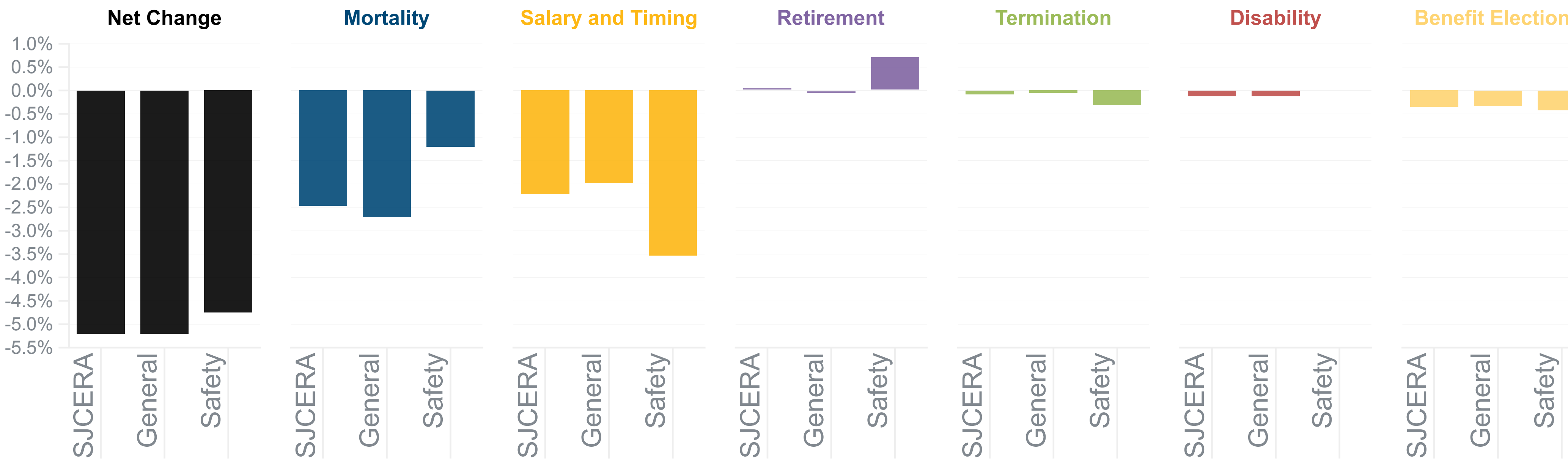
As discussed at the July meeting, if all of the demographic assumption changes recommended by Cheiron were to be adopted, **and the discount rate were to be reduced by 25 basis points (to 6.75%)**, the net impact on the total contribution rates (employee + employer) would be **a reduction of about 1%of pay for SJCERA in aggregate** (black bars in left graph). The total General rates would drop by about 1.5% of pay, while the Safety rates would increase by just over 2.5% of pay, because the discount rate change has about 2x the impact on the Safety rates as the General rates. These changes in rates would apply for the length of the amortization period (15 years).

Contribution Rate Change by Source



If the discount rate is not reduced and remains at 7.00%, the net impact of the proposed demographic changes would result in a much larger reduction in the overall contributions, by more than 5% of pay in total. We note that this reduction may be temporary because of the poor asset performance thus far in 2022, which could result in a rebound in the contribution rates beginning in 2024, unless assets recover significantly in the 2nd half of 2022.

Contribution Rate Change by Source



Certification

The purpose of this report is to present the preliminary results of the SJCERA Actuarial Experience Study covering the period from January 1, 2019 through December 31, 2021. This report is for the use of SJCERA in selecting assumptions to be used in actuarial valuations beginning January 1, 2022.

In preparing our presentation, we relied on information (some oral and some written) supplied by SJCERA. 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.

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.

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 SJCERA 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.

Classic Values, Innovative Advice

San Joaquin County Employees' Retirement Association

Actuarial Experience Study for January 1, 2019 through December 31, 2021

Produced by Cheiron

August 2022

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August 3, 2022

Board of Retirement
San Joaquin County Employees' Retirement Association
6 South El Dorado St, Suite 400
Stockton, CA 95202

Dear Members of the Board:

The purpose of this report is to provide the results of an Actuarial Experience Study of the San Joaquin County Employees' Retirement Association (SJCERA) covering actuarial experience from January 1, 2019 through December 31, 2021. This report is for the use of the SJCERA Retirement Board in selecting assumptions to be used in actuarial valuations beginning January 1, 2022.

In preparing our report, we relied on information (some oral and some written) supplied by SJCERA. 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.

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

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

This report was prepared for the SJCERA Retirement Board for the purposes described herein. This report is not intended to benefit any other party, and Cheiron assumes no duty or liability to any such party.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,
Cheiron

Graham A. Schmidt, ASA, FCA, MAAA, EA
Consulting Actuary

Anne Harper, FSA, FCA, MAAA, EA
Principal Consulting Actuary

Timothy S. Doyle, ASA, MAAA, EA
Associate Actuary

SECTION I – EXECUTIVE SUMMARY

Actuarial assumptions (economic and demographic) are intended to be long-term in nature and should be both individually reasonable and consistent in the aggregate. The purpose of this experience study is to evaluate whether or not the current assumptions adequately reflect the long-term expectations for SJCERA, and if not, to recommend adjustments. It is important to note that frequent and significant changes in the actuarial assumptions are not typically recommended, unless there are known fundamental changes in expectations of the economy, or with respect to SJCERA's membership or assets that would warrant such frequent or significant changes.

SUMMARY OF ECONOMIC ASSUMPTION ANALYSIS

The specific economic assumptions analyzed in this report are price inflation, wage inflation, COLA growth, and the discount rate. These assumptions have a significant impact on the contribution rates in the short-term and the risk of negative outcomes in the long-term.

The economic assumptions used in the last actuarial valuation below are all still reasonable.

- 7.00% long-term rate of return on Plan assets (net of investment expenses),
- 2.75% annual increase in prices measured by the Consumer Price Index (CPI),
- 4.25% average annual real rate of return on assets
- an average annual wage increase equal to 0.25% basis points greater than price inflation (3.00% in total), and
- 2.60% post-retirement COLA average growth rate.

Based on Meketa's capital market assumption and the new asset allocation adopted by the Board at their June 2022 meeting, the likelihood of achieving an average annual return of 7.0% over the next 20 years is 50%. However, the likelihood over the next 10 years is only 40%.

It is important to consider the potential cost impact of the lower short-term expected returns from Meketa, the Plan's investment consultants, as well as other investment consultants. Meketa's assumptions indicated a 6.0% expected nominal 10-year geometric return based on the new asset allocation, which reflects a 3.4% expected real return with 2.6% inflation. If these projections are realized, the Plan would experience a pattern of actuarial losses from the assets in the near term. Thus, we propose reducing the long-term rate of return to 6.75% to increase the likelihood of achieving the expected return in both the short and long-term.

SECTION I – EXECUTIVE SUMMARY

SUMMARY OF DEMOGRAPHIC ASSUMPTION ANALYSIS

This experience study specifically analyzes and makes the following recommendations for the demographic assumptions.

- **Merit salary increases** – No changes to rates for General or Safety members recommended.
- **Retirement rates** – General members: extend ultimate retirement age from 70 to 75, Safety members: Small increases for most service-groupings.
- **Termination rates** – Increases rates at various service levels for both General and Safety members. Decrease rates for both General and Safety members with less than 15 years of service taking a refund of contributions. Only change for members terminating and going to a reciprocal employer is to increase the rate for General members with 15 or more years of service.
- **Disability rates** – Lower female General member rates using an adjusted version of the most recent State Miscellaneous Female CALPERS table. No changes to the Safety or male General disability rates. Increase the percentage of disabilities assumed to be service related for General female members.
- **Mortality rates** – Use adjusted new CalPERS base tables instead of PUB-2010 base tables, projected using 80% of the MP-2020 generational improvement scale.
- **Other assumptions** – Include a final average pay load for Safety members, modify projection of pay to remove additional wage growth component, modify benefit payment timing, and add an assumption for percentage of married members electing the unmodified benefit option

The body of this report provides additional detail and support for our conclusions and recommendations.

SECTION I – EXECUTIVE SUMMARY

IMPACT OF DEMOGRAPHIC ASSUMPTION CHANGES ON CONTRIBUTIONS

Among the demographic assumptions, the recommended changes to mortality and salary timing and load assumptions have the largest impact on contributions. This table summarizes the estimated impact on total contributions (employer and employee) for the General, Safety, and combined membership of the recommended changes to demographic assumptions contained in this report.

Table I-1

Preliminary Summary of Changes in Total Contributions from Demographic Assumption Changes
($ in Millions)

	General Contributions		Safety Contributions		SJCERA Contributions	
	Dollars	Rate (% Payroll)	Dollars	Rate (% Payroll)	Dollars	Rate (% Payroll)
Change in Contributions Due to:						
Retirement Rates	$ 0.0	(0.1%)	$ 0.5	0.7%	$ 0.6	0.0%
Termination Rates	(0.1)	0.0%	(0.2)	(0.2%)	(0.3)	(0.0%)
Disability Rates	(0.2)	(0.1%)	0.0	0.0%	(0.2)	(0.1%)
Mortality Rates	(11.0)	(2.6%)	(0.9)	(1.2%)	(11.9)	(2.4%)
Unmodified Option Percentage	(1.3)	(0.3%)	(0.3)	(0.4%)	(1.6)	(0.3%)
Benefit Payment/Salary Increase Timing and Final Average Pay Load	(9.9)	(2.0%)	(3.4)	(3.5%)	(13.4)	(2.2%)
Total Impact of Demographic Assumptions	**$ (22.5)**	**(5.0%)**	**$ (4.3)**	**(4.6%)**	**$ (26.8)**	**(4.9%)**

SECTION II – ECONOMIC ASSUMPTIONS
PRICE INFLATION

The economic assumptions used in actuarial valuations are intended to be long-term in nature and should be both individually reasonable and consistent with each other. The specific assumptions analyzed in this report are:

- **Price inflation** – used indirectly as an underlying component of other economic assumptions.
- **Wage inflation** – across the board wage growth used to project benefits and to amortize the unfunded liability as a level percentage of expected payroll.
- **COLA growth** – rate at which inflation-linked post-retirement COLAs are expected to change.
- **Discount rate** – used both to project long-term asset growth and to discount future cash flows in calculating the liabilities and costs of the Plan.

In order to develop recommendations for each of these assumptions, we considered historical data, both nationally and for the Plan, and expectations for the future, as expressed by the Plan's and other external investment consultants and the Board.

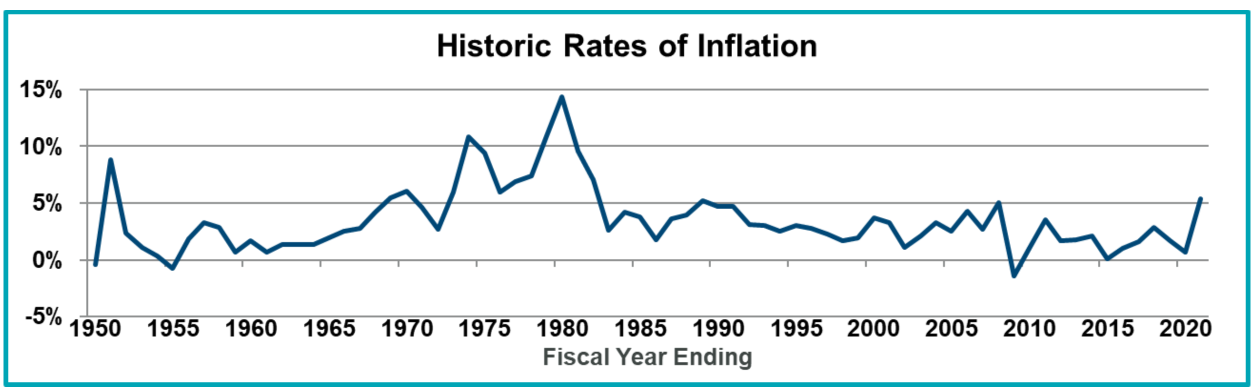
PRICE INFLATION

Long-term price inflation rates are the foundation of other economic assumptions. In a growing economy, wages and investments are expected to grow at the underlying inflation rate plus some additional real growth rate, whether it reflects productivity in terms of wages or risk premiums in terms of investments.

Historical Data

Chart II-1 below shows inflation for the U.S. by individual year since 1950.

Chart II-1



SECTION II – ECONOMIC ASSUMPTIONS
PRICE INFLATION

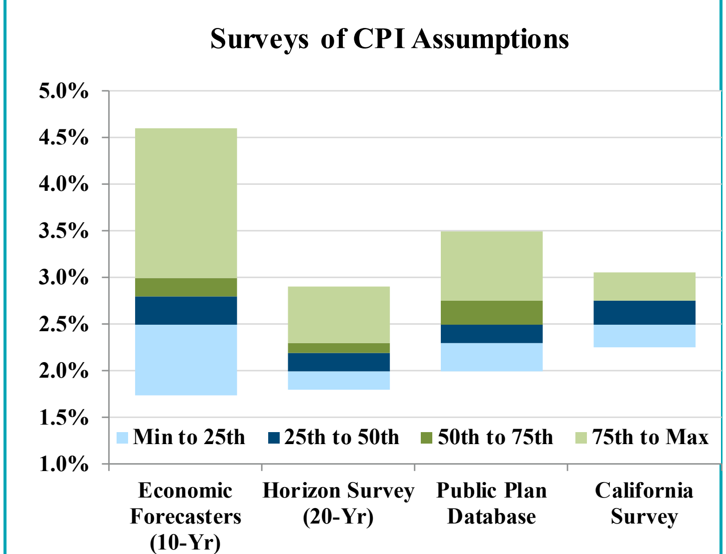
Over the 50 years ending December 2021, the geometric average inflation rate for the U.S. has been about 3.9%, but this average is heavily influenced by the high inflation rates in the 1970s and early 1980s. If you remove these periods of high inflations, the average inflation rate for the 30-year period is 2.9%, and it has been only 2.1% over the 10 years ending December 2021. However, current inflation is at record levels of 9.0%, the highest since the early 1980s.

Future Expectations

The Federal Reserve Bank of Philadelphia publishes a quarterly survey of professional economic forecasters. The survey for the second quarter of 2022 shows a median inflation forecast of 2.8%, with a range of future inflation expectations of almost 3.0%.

Chart II-2 below shows the distribution of the professionals' forecasts for average inflation over the next 10 years compared to assumptions from the Horizon Actuarial Services Survey of Capital Market Assumptions (2021 Edition), the 2020 Data Survey from US Public Plan (PPD) maintained by the Center for Retirement Research at Boston College and our 2021 internal survey of California public pension plans.

Chart II-2



	Economic Forecasters (10-Yr)	Horizon Survey (20-Yr)	Public Plan Database	California Survey
Minimum	1.74%	1.80%	2.00%	2.25%
25th	2.50%	2.00%	2.30%	2.50%
50th	2.80%	2.20%	2.50%	2.75%
75th	3.00%	2.30%	2.75%	2.75%
Maximum	4.60%	2.90%	3.50%	3.05%

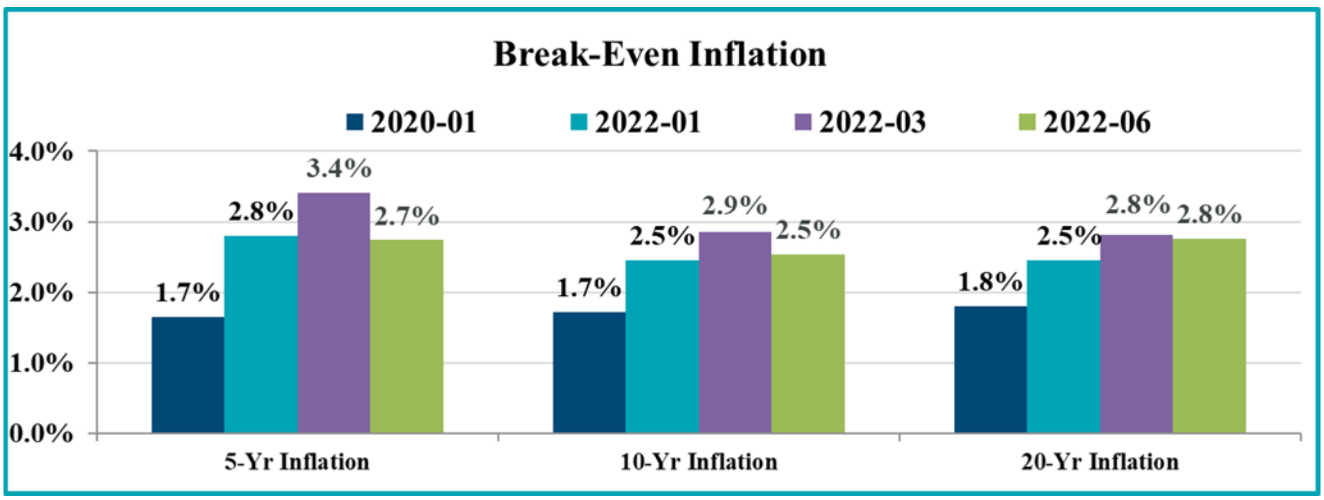
SECTION II – ECONOMIC ASSUMPTIONS
PRICE INFLATION

Meketa, the Board's investment consultant, uses an inflation assumption of 2.6% for the next 10 years and 2.2% over the next 20 years. The median assumption in the California survey is 2.75%, the same as SJCERA's current inflation assumption and consistent with the economic forecasters' expectation of 2.8% over the next 10 years.

Another measure of future inflation expectations is the "break-even inflation" rate which is the difference between the yields on conventional Treasury bonds and Treasury Inflation-Protected Securities (TIPS) at the same maturity. Break-even inflation is the level of inflation needed for an investment in TIPS to "break even" with an investment in conventional Treasury bonds of the same maturity. Table II-1 shows the break-even inflation rate for various historical dates.

Break-even inflation rates increased from January 1, 2020 to January 1, 2022 to 2.5% or higher for all maturities. Recent market data shows that the expectations have continued to increase during the first half of 2022 to 2.8% for the 20-year expectation.

Chart II-3



Data Source Federal Reserve, Constant Maturity Yields, Monthly Series

Based on all of these considerations, we believe a reasonable range for long-term price inflation for use in the Plan's actuarial valuations is between 2.50% and 2.75%. Therefore, we believe the Board's recent action to maintain the assumption of 2.75% is reasonable. Although actual inflation has accelerated in the latter half of 2021 and the beginning of 2022, the inflation assumption is consistent with current long-term market expectations and still slightly higher than the average expectations of many investment consultants.

SECTION II – ECONOMIC ASSUMPTIONS
WAGE INFLATION AND COLA GROWTH

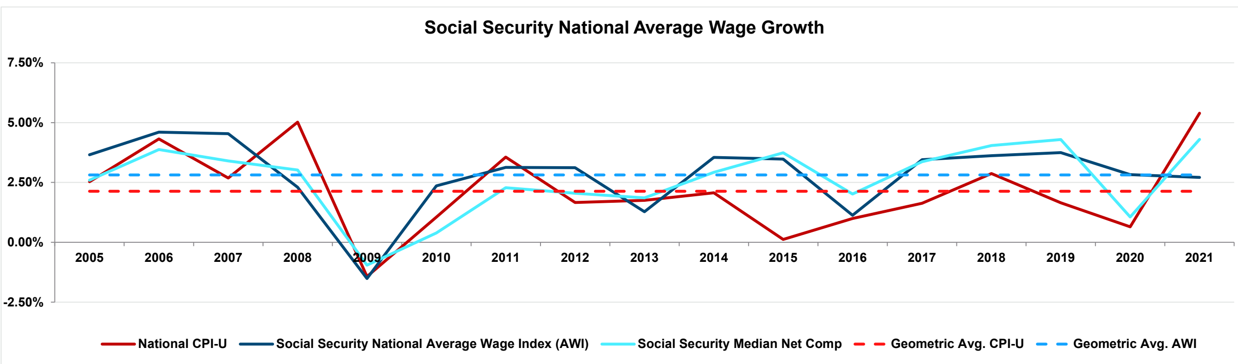
WAGE INFLATION

Wage inflation can be thought of as the annual across-the-board increase in wages. Individuals often receive salary increases in excess of the wage inflation rate, and we study these increases as a part of the merit salary scale assumption. Wage inflation generally exceeds price inflation by some margin reflecting the history of increased purchasing power.

Wage inflation is used in the actuarial valuation as the minimum expected salary increase for an individual and, for purposes of amortizing the unfunded actuarial liability, the rate at which payroll is expected to grow over the long term, assuming a stable active member population.

Chart II-4 shows the increase in national average wages (as reported by the Social Security Administration) compared to inflation from 2005 through 2021.

Chart II-4



Over this period, national wage inflation averaged approximately 2.8% compared to annual price inflation of 2.1%, making real wage increases about 0.7% above inflation. However, over the same time period the increase in the median real wage was only 0.5% per year, as much of the growth in wages was clustered at the top end of the wage scale.

It is acceptable to assume some additional level of base payroll increase beyond general inflation. Potential reasons contributing to the increase may include the presence of strong union representation in the collective bargaining process, competition in hiring among other similar employers, and regional factors – such as the local inflation index exceeding the national average, as has sometimes proven the case in parts of California. Also, the Social Security Administration projects real wage growth of 0.5% - 1.8% going forward in their Social Security solvency projections. However, governmental entities remain under financial stress, and other areas of employee compensation – most notably health care costs and pension contributions – have continued to increase faster than the CPI.

Cheiron agrees with the Board's recent action to maintain a small non-inflationary base payroll growth assumption of 0.25% annually. As a result, the annual expected increase in base payroll will remain at 3.00%. This rate is applied to all continuing active members and to starting pay for new entrants when projections of future populations are required. This rate is also used in the calculation of the unfunded liability amortization payment as a level percentage of payroll.

COLA GROWTH

Members of SJCERA are eligible to receive automatic Cost of Living Adjustments (COLAs) based on the growth in the Bay Area Consumer Price Index (CPI-U) and a 3% cap on the annual COLA increase. Any increase in the CPI above the maximum increase can be banked for future years in which the change in the CPI is below the maximum increase.

It is necessary to determine an assumed rate of COLA growth, reflecting both inflation (i.e. the growth in the CPI), and the interaction of the CPI with the COLA cap and banking mechanism. Simulations of inflation show us that the average growth in the COLA is expected to be below the cap, even if the expected increase in the CPI is equal to or higher than the cap itself. This is because if there is not a significant bank already in existence (such as in the early years of retirement) and there are years in which inflation is below the cap, this shortfall will not be made up in future years.

We have produced statistical simulations of inflation and then modeled how the COLA maximum and the banking process interact with the changes in CPI. For a given long-term estimate of inflation, we used a 30% autocorrelation factor with 1.5% annual inflation volatility. The results of the simulation are fairly sensitive to the size of the starting bank and initial inflation which was a 0.5% bank for current retirees and 5.0% inflation, reflecting the recent level of Bay Area inflation. For actives, no bank was assumed with a starting CPI of 2.75%, the current long-term inflation assumption.

The simulations results referenced above were developed our proprietary simulation tool for assessing average annual COLA growth under difference scenarios. We have relied on Cheiron colleagues who developed the tool, and we have used the tool in accordance with its purpose.

The results of the simulations produced a single equivalent rate for retirees of 2.64% and 2.61% for active members. We recommend maintaining the 2.60% COLA growth assumption.

DISCOUNT RATE

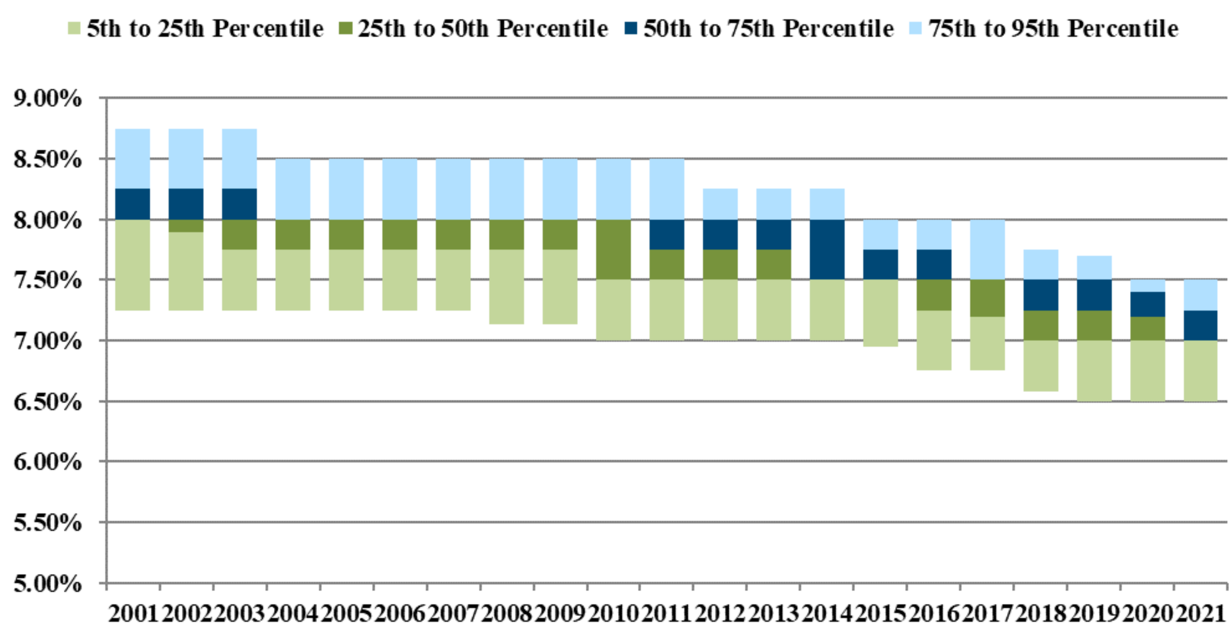
The discount rate assumption is generally the most significant of all the assumptions employed in actuarial valuations. The discount rate is based on the long-term expected return on plan investments. In the short-term, a higher discount rate results in lower expected contributions. However, over the long term, actual contributions will depend on actual investment returns and not the discount rate (or expected investment returns). If actual investment returns are lower than expected, contribution rates will increase in the future. It is important to set a realistic discount rate so that projections of future contributions for budgeting purposes will not be biased, particularly to be too low.

Other Large Public Retirement Plans

Based on the Public Fund Survey, developed by the National Association of State Retirement Administrators (NASRA) covering most of the largest public retirement systems in the country, there has been a general movement over at least the last decade to reduce the discount rate used in actuarial valuations. Chart II-5 below shows the change in the distribution of assumptions since 2001. The median assumption is now 7.00% and the number of plans using a discount rate of 7.00% or lower has increased significantly.

Chart II-5

Discount Rate

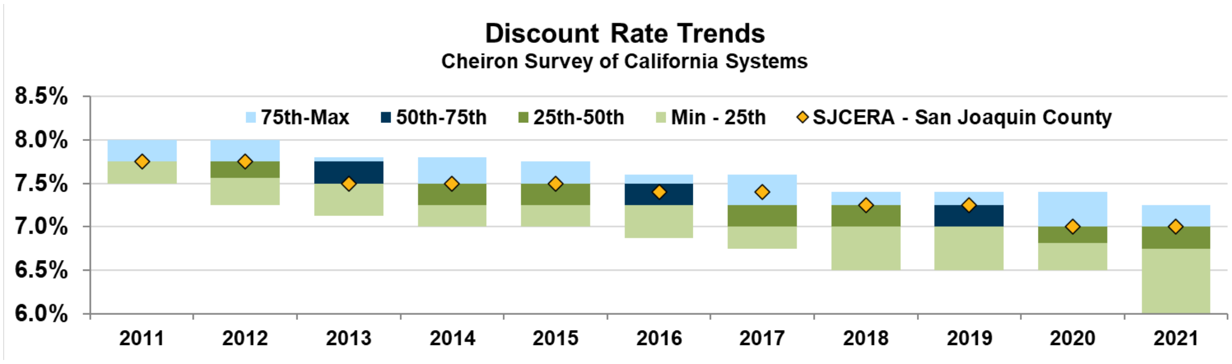


Survey Data from Public Plans Data as of 7/21/2022

SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

In our survey of California retirement systems, the median assumption is also 7.00% with over half of the 39 systems using the median rate. Only three systems were using a rate of 7.25% or higher in 2021. Chart II-6 below shows the change in discount rate assumptions for California systems from 2011 to 2021.

Chart II-6



Target Asset Allocation and Future Expectations

The discount rate assumption depends on the anticipated average level of inflation and the anticipated average *real rate of return.* The real rate of return is the investment return in excess of underlying inflation. The expected average real rate of return is heavily dependent on asset mix: the portion of assets in stocks, bonds, and other asset classes.

Table II-1 below shows the expected nominal geometric return based on the Board's current target asset allocation and the 10-year and 20-year capital market assumptions provided by the Plan's investment consultant, Meketa, and a survey of multiple investment consultants published by Horizon Actuarial Services. The table also shows the underlying inflation assumption used by each investment consultant in the development of their capital market assumptions and computes the expected real rate of return (investment return in excess of inflation).

Table II-1

SJCERA Target Portfolio Return Expectations			
Source	**Nominal**	**Inflation**	**Real**
Meketa (10-year)	6.01%	2.60%	3.41%
Meketa (20-year)	7.00%	2.20%	4.80%
Horizon (Survey, 10-year)	6.43%	2.13%	4.30%
Horizon (Survey, 20+ year)	7.32%	2.24%	5.08%
Average	6.69%	2.29%	4.40%

SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

The average expected geometric real return (i.e. the return above inflation) of these assumptions is 4.40%, which is above the Board's current real return assumption of 4.25%.

Table II-2 shows the likelihood of achieving the average returns of either a 7.00% or 6.75% nominal return, as well as 4.00% or 4.25% real rates of return.

Table II-2

Likelihood of Achieving Average Returns				
	Nominal		Real	
Consultant	6.75%	7.00%	4.00%	4.25%
Meketa (10)	42.1%	39.5%	43.7%	41.0%
Meketa (20+)	52.7%	50.0%	58.6%	55.9%
Horizon (10)	42.8%	40.1%	49.5%	46.8%
Horizon (20+)	52.5%	48.7%	60.3%	56.6%
Average	47.5%	44.6%	53.0%	50.1%

Based on the new asset allocation, over the next 10 years, Meketa's expectations reflect only a 40% likelihood of the portfolio achieving an annual average 7.00% return, with about a 50% likelihood of achieving the same return over a 20-year period. The average likelihood of achieving a 7.00% return across all expectations is just under 45%. If the Board decides to reduce the assumed rate of return to 6.75%, the expected likelihood of achieving the nominal return and real rate of return increase by almost 3%.

As of the 2013 valuation, the expected rate of return is expressed net of investment, but not administrative expenses. The returns above were modeled based on the expected returns of the portfolio benchmark indices, which are expected to have minimal expenses. The actuarial standards on selecting a return assumption (ASOP 27) state that in general superior or inferior returns (net of fees) should not be assumed for active versus passive management, therefore we do not recommend a significant adjustment to the modeled returns for the fees of the asset managers. However, a slight margin is appropriate to reflect the investment-related expenses other than those of the investment managers, which would include the investment advisor and custodian.

The current real return assumption of 4.25% is higher than Meketa's short-term real return of 3.41%, but consistent with the average of both Meketa and the Horizon Survey for the short and long-term of 4.40%. After combining the real return with the inflation assumption of 2.75%, we find the current discount rate of 7.00% to be a reasonable assumption. However, there are a number of factors that suggest that the near-term expected rate of return should be discussed.

SECTION II – ECONOMIC ASSUMPTIONS
DISCOUNT RATE

- If Meketa and much of the investment community are correct in their projections, we can expect returns below the 7.00% assumed rate for a number of years. This will result in actuarial losses and increases in employer contribution rates.
- We believe that near- and mid-term return projections should be considered along with long-term projections. Fund performance is usually measured over five to 10 years; longer measurement periods are often considered less relevant because of the potential for changes in the economy and in the investment markets.

Although 7.00% is a reasonable assumption, we recommend that the Board consider reducing the assumed rate of return to 6.75% to have a better chance of achieving the assumed return in the short and long-term. Regardless, we recommend that the Board and staff continue to conduct at least a brief discussion of this assumption annually, in consultation with the Plan's actuary and investment consultant, to determine if future changes are appropriate.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MERIT SALARY INCREASES

Demographic assumptions are used to predict membership behavior, including rates of retirement, termination, disability, and mortality. These assumptions are based primarily on the historical experience of SJCERA, with some adjustments where future experience is expected to differ from historical experience and with deference to standard tables where SJCERA experience is not fully credible and a standard table is available. For purposes of this study, merit salary increases are also considered a demographic assumption because the assumption is based primarily on SJCERA's historical experience.

MERIT SALARY INCREASES

Salary increases consist of three components: increases due to cost of living maintenance (inflation), increases related to non-inflationary pressures on base pay (such as productivity increases), and increases in individual pay due to merit, promotion, and longevity. Increases due to cost of living and non-inflationary base pay factors were addressed in an earlier section of this report.

The merit salary increase assumption is analyzed by employee group and by service. Generally, newer employees are more likely to earn a step increase or receive a promotion, so their salary increases tend to be greater than those for longer service employees are. A longitudinal approach was used to analyze the merit increases for this study.

A *longitudinal* study reviews the average increase in pay for each level of service. To analyze the merit component, we subtracted the Plan's real wage growth from the total pay increases experienced by each member during the experience study period. We have computed the real wage growth by calculating the increase in the average salary across all active members (calculated separately for General and Safety) each year and adjusting for changes in the average service level.

Charts III-1 and III-2 on the following page analyze the pay patterns for General and Safety members, respectively. The charts show the actual experience (blue line) compared to the proposed assumption (green line, which equals the current assumptions). The tables next to each chart summarize the current and proposed salary increase assumptions at each key year of service.

We are not proposing changes to the current merit salary increase assumptions, thus the red (current) and green (proposed) assumption lines overlap. The current assumption tracks closely with experience in recent years.

SECTION III – DEMOGRAPHIC ASSUMPTIONS

MERIT SALARY INCREASES

Chart III-1: General

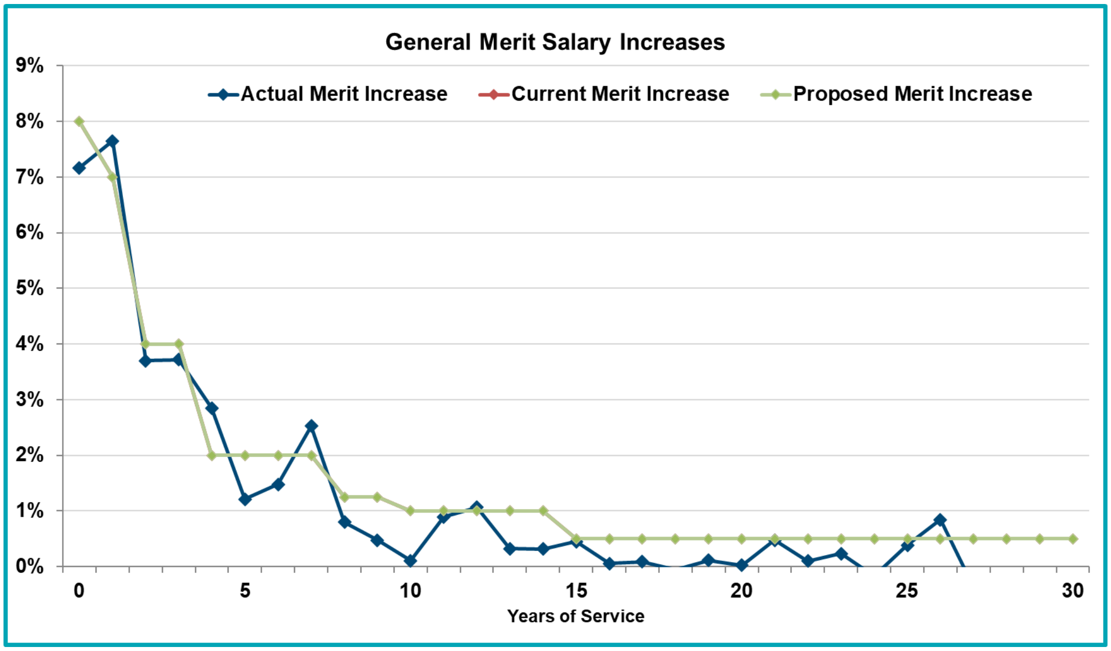
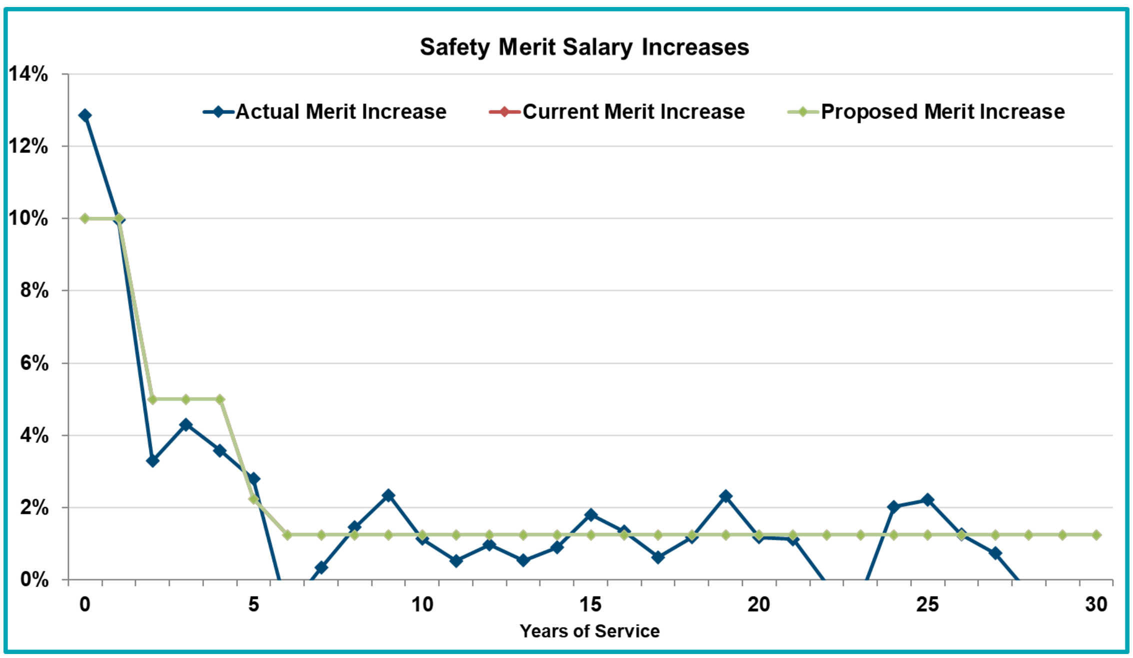


Chart III-2: Safety



ANALYSIS OF OTHER DEMOGRAPHIC ASSUMPTIONS

For all of the remaining demographic assumptions, we determined the ratio of the actual number of decrements for each membership group compared to the expected number of decrements (A/E ratio or actual-to-expected ratio). If the assumption is perfect, this ratio will be 100%. Otherwise, any recommended assumption change should move from the current A/E ratio towards 100% unless future experience is expected to be different than the experience during the period of study.

We also calculate an r-squared statistic for each assumption. R-squared measures how well the assumption fits the actual data and can be thought of as the percentage of the variation in actual data explained by the assumption. Ideally, r-squared would equal 1.00 although this is never the case. Any recommended assumption change should increase the r-squared compared to the current assumption making it closer to 1.00 unless the pattern of future decrements is expected to be different from the pattern experienced during the period of study.

In addition, we calculated the 90% confidence interval, which represents the range within which the true decrement rate during the experience study period fell with 90% confidence. (If there is insufficient data to calculate a confidence interval, the confidence interval is shown as the entire range of the graph.) We generally propose assumption changes when the current assumption is outside the 90% confidence interval of the observed experience. However, adjustments are made to account for differences between future expectations and historical experience and to account for the past experience represented by the current assumption. For mortality rates, we compare SJCERA's experience to that of a standard table and adjust the tables to bring the proposed assumption closer to an A/E ratio of 100%.

Finally, since the amount of data that is available over a three-year period to analyze the decrements is somewhat limited, we have added data from the prior study (calendar years 2016 through 2021) where noted to add more credibility to these calculations. However, we also reviewed the proposed assumptions against the 2013-2018 data (from the previous experience study) in order to exclude any impacts COVID may have had on participant behavior during 2020 and 2021. We found that all the proposed assumptions were still reasonable for the previous period.

RETIREMENT RATES

The current retirement rates vary by age and service and are applied to all members who are eligible to retire. Generally, at any given age, members with more service are generally more likely to retire than members with fewer years of service. SJCERA is not large enough to justify assumptions for each age and service combination. We continue to recommend separate assumptions by age and gender for each of the following three service groups for General members:

- Members with 5-9 years of service
- Member with 10-29 years of service
- Members with 30 or more years of service

SECTION III – DEMOGRAPHIC ASSUMPTIONS

RETIREMENT RATES

We continue to recommend separate assumptions by age for each of the following two service groups for Safety members:

- Members with less than 20 years of service
- Members with 20 or more years of service

Retirement data for all members between January 1, 2019 and December 31, 2021 was somewhat limited, so we have added data from the prior study, January 1, 2016 through December 31, 2018, to add more credibility to these calculations.

We continue to recommend using the same assumptions for Tier I and II members, with the exception that the rates will only be applied once the member is eligible for retirement. For example, the retirement rates for the Tier II General members will not be applied until the member has reached age 52.

Although some have speculated that the reduced multipliers reflected in the Tier II benefits may result in members working longer than they would have under the Tier I benefit formula, thus far Tier II General members have exhibited similar patterns and rates of retirement as Tier I members. The General male and female A/E ratios based on the current assumptions are 92% and 111%, respectively. There was very limited data for the General Tier II members, only for those members with less than 10 years of service. And for Safety members, the data was not sufficient to review. Finally, our modeling of the Tier II benefits revealed that the actuarially determined contribution rates required to fund these benefits are relatively insensitive to the actual retirement rates, as a result of the early retirement reductions reflected in the benefit formulas.

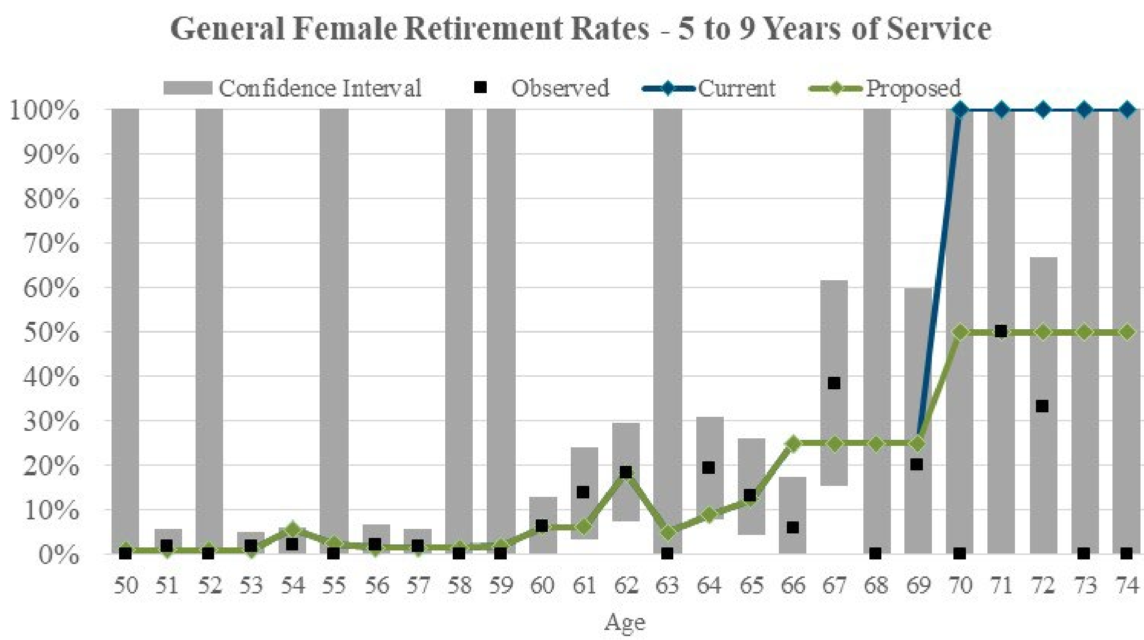
See Appendices A and B for a full listing of the proposed and prior rates for all groups.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R1 on the following page below shows the calculation of actual-to-expected ratios and the r-squared statistic for General female members with between five and nine years of service. Chart III-R1 below shows the information graphically along with the 90% confidence interval.

The data shows lower actual retirement rates than expected under the current assumption for ages 70 to 75, therefore we propose an increase in the ultimate retirement age from age 70 to age 75. The proposed assumption decreases the aggregate assumed rate of retirement and increases the aggregate A/E ratio from 72% to 83%. The r-squared also increases from 25% to 43%.

Chart III-R1 -General



SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R1 – General

General Female Retirement Rates - 5 to 9 Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	67	0	1	1	0.0%	1.0%	1.0%	0%	0%
51	53	1	1	1	1.9%	1.0%	1.0%	189%	189%
52	56	0	1	1	0.0%	1.0%	1.0%	0%	0%
53	59	1	1	1	1.7%	1.0%	1.0%	169%	169%
54	49	1	3	3	2.0%	5.8%	5.8%	35%	35%
55	50	0	1	1	0.0%	2.5%	2.5%	0%	0%
56	45	1	1	1	2.2%	1.5%	1.5%	148%	148%
57	53	1	1	1	1.9%	1.5%	1.5%	126%	126%
58	47	0	1	1	0.0%	1.5%	1.5%	0%	0%
59	39	0	1	1	0.0%	2.0%	2.0%	0%	0%
60	31	2	2	2	6.5%	6.3%	6.3%	103%	103%
61	29	4	2	2	13.8%	6.3%	6.3%	221%	221%
62	27	5	5	5	18.5%	18.5%	18.5%	100%	100%
63	24	0	1	1	0.0%	5.0%	5.0%	0%	0%
64	26	5	2	2	19.2%	9.0%	9.0%	214%	214%
65	23	3	3	3	13.0%	12.5%	12.5%	104%	104%
66	17	1	4	4	5.9%	25.0%	25.0%	24%	24%
67	13	5	3	3	38.5%	25.0%	25.0%	154%	154%
68	4	0	1	1	0.0%	25.0%	25.0%	0%	0%
69	5	1	1	1	20.0%	25.0%	25.0%	80%	80%
70	5	0	5	3	0.0%	100.0%	50.0%	0%	0%
71	4	2	4	2	50.0%	100.0%	50.0%	50%	100%
72	3	1	3	2	33.3%	100.0%	50.0%	33%	67%
73	1	0	1	1	0.0%	100.0%	50.0%	0%	0%
74	0	0	0	0	0.0%	100.0%	50.0%	0%	0%
TOTAL	**730**	**34**	**47**	**41**	**4.7%**	**6.5%**	**5.6%**	**72%**	**83%**
Confidence Interval %			**92%**	**96%**					
R-squared			**25%**	**43%**					

Table III-R2 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for General female members with service between 10 and 29 years, and Chart III-R2 shows the information graphically along with the 90% confidence interval.

The data shows actual retirement rates significantly lower than expected under the current assumption for ages 70 to 75, therefore we propose an increase in the ultimate retirement age from age 70 to age 75. However, actual retirement rates are higher for ages 65 to 69, so we recommend slight increases to rates at these ages. The proposed assumption decreases the aggregate assumed rate of retirement and increases the aggregate A/E ratio from 94% to 99%. The r-squared also increases from 63% to 83%.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Chart III-R2 – General

Table III-R2 – General

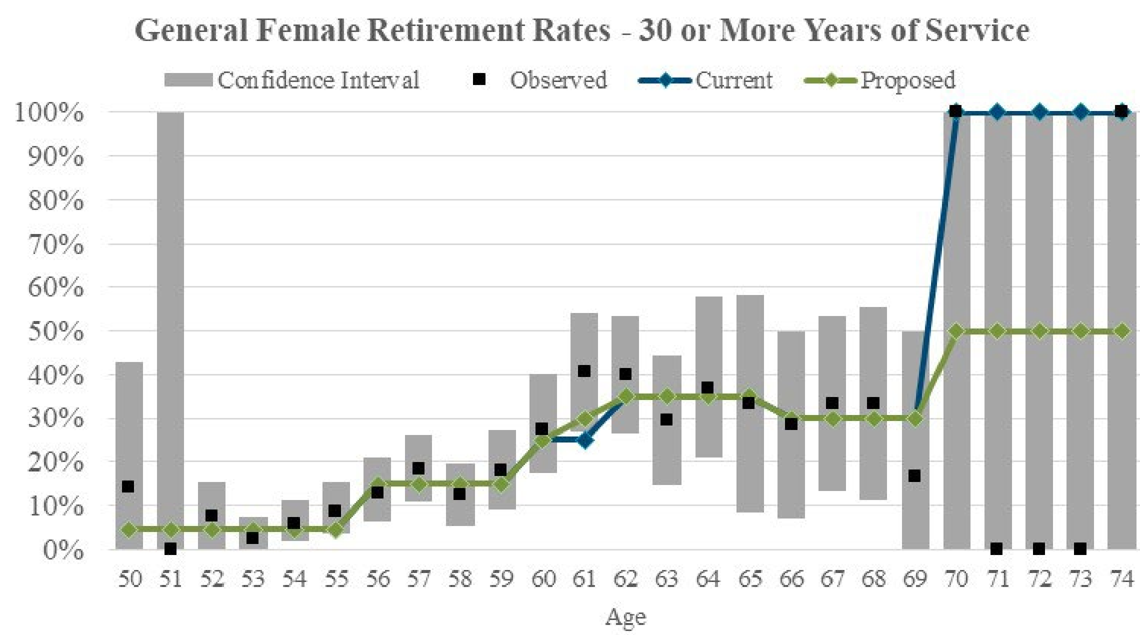
General Female Retirement Rates - 10 to 29 Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	362	18	13	13	5.0%	3.5%	3.5%	142%	142%
51	341	10	12	12	2.9%	3.5%	3.5%	84%	84%
52	334	13	12	12	3.9%	3.5%	3.5%	111%	111%
53	338	11	12	12	3.3%	3.5%	3.5%	93%	93%
54	359	11	13	13	3.1%	3.5%	3.5%	88%	88%
55	378	18	13	13	4.8%	3.5%	3.5%	136%	136%
56	361	26	25	25	7.2%	7.0%	7.0%	103%	103%
57	336	30	24	24	8.9%	7.0%	7.0%	128%	128%
58	315	19	22	22	6.0%	7.0%	7.0%	86%	86%
59	319	30	22	22	9.4%	7.0%	7.0%	134%	134%
60	304	34	38	38	11.2%	12.5%	12.5%	89%	89%
61	277	39	35	35	14.1%	12.5%	12.5%	113%	113%
62	253	59	63	63	23.3%	25.0%	25.0%	93%	93%
63	201	30	50	50	14.9%	25.0%	25.0%	60%	60%
64	169	43	42	42	25.4%	25.0%	25.0%	102%	102%
65	128	51	32	38	39.8%	25.0%	30.0%	159%	133%
66	79	33	20	24	41.8%	25.0%	30.0%	167%	139%
67	53	9	13	16	17.0%	25.0%	30.0%	68%	57%
68	52	18	13	16	34.6%	25.0%	30.0%	138%	115%
69	40	9	10	12	22.5%	25.0%	30.0%	90%	75%
70	35	13	35	18	37.1%	100.0%	50.0%	37%	74%
71	26	9	26	13	34.6%	100.0%	50.0%	35%	69%
72	19	5	19	10	26.3%	100.0%	50.0%	26%	53%
73	8	2	8	4	25.0%	100.0%	50.0%	25%	50%
74	6	1	6	3	16.7%	100.0%	50.0%	17%	33%
TOTAL	**5,093**	**541**	**577**	**548**	**10.6%**	**11.3%**	**10.8%**	**94%**	**99%**
Confidence Interval %			**68%**	**80%**					
R-squared			**63%**	**83%**					

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R3 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for General female members with 30 or more years of service. Chart III-R3 shows the information graphically along with the 90% confidence interval.

The data shows slightly lower actual retirement rates than expected under the current assumption for ages 70 to 75, therefore we propose an increase in the ultimate retirement age from age 70 to age 75. The proposed assumption slightly increases the aggregate assumed rate of retirement and maintains the aggregate A/E ratio at 109%. The r-squared increases from 89% to 92%.

Chart III-R3 – General



SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R3 – General

General Female Retirement Rates - 30 or More Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	7	1	0	0	14.3%	4.5%	4.5%	317%	317%
51	13	0	1	1	0.0%	4.5%	4.5%	0%	0%
52	26	2	1	1	7.7%	4.5%	4.5%	171%	171%
53	40	1	2	2	2.5%	4.5%	4.5%	56%	56%
54	53	3	2	2	5.7%	4.5%	4.5%	126%	126%
55	58	5	3	3	8.6%	4.5%	4.5%	192%	192%
56	62	8	9	9	12.9%	15.0%	15.0%	86%	86%
57	65	12	10	10	18.5%	15.0%	15.0%	123%	123%
58	56	7	8	8	12.5%	15.0%	15.0%	83%	83%
59	44	8	7	7	18.2%	15.0%	15.0%	121%	121%
60	40	11	10	10	27.5%	25.0%	25.0%	110%	110%
61	37	15	9	11	40.5%	25.0%	30.0%	162%	135%
62	30	12	11	11	40.0%	35.0%	35.0%	114%	114%
63	27	8	9	9	29.6%	35.0%	35.0%	85%	85%
64	19	7	7	7	36.8%	35.0%	35.0%	105%	105%
65	12	4	4	4	33.3%	35.0%	35.0%	95%	95%
66	14	4	4	4	28.6%	30.0%	30.0%	95%	95%
67	15	5	5	5	33.3%	30.0%	30.0%	111%	111%
68	9	3	3	3	33.3%	30.0%	30.0%	111%	111%
69	6	1	2	2	16.7%	30.0%	30.0%	56%	56%
70	1	1	1	1	100.0%	100.0%	50.0%	100%	200%
71	0	0	0	0	0.0%	100.0%	50.0%	0%	0%
72	0	0	0	0	0.0%	100.0%	50.0%	0%	0%
73	1	0	1	1	0.0%	100.0%	50.0%	0%	0%
74	1	1	1	1	100.0%	100.0%	50.0%	100%	200%
TOTAL	**636**	**119**	**109**	**110**	**18.7%**	**17.2%**	**17.2%**	**109%**	**109%**
Confidence Interval %			**96%**	**100%**					
R-squared			**89%**	**92%**					

Table III-R4 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for General male members with between five and nine years of service. Chart III-R4 shows the information graphically along with the 90% confidence interval.

The data shows lower actual retirement rates than expected under the current assumption for ages 70 to 75, therefore we propose an increase in the ultimate retirement age from age 70 to age 75. The proposed assumption decreases the aggregate assumed rate of retirement and increases the aggregate A/E ratio from 32% to 53%. The r-squared increases from 14% to 23%.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Chart III-R4 – General

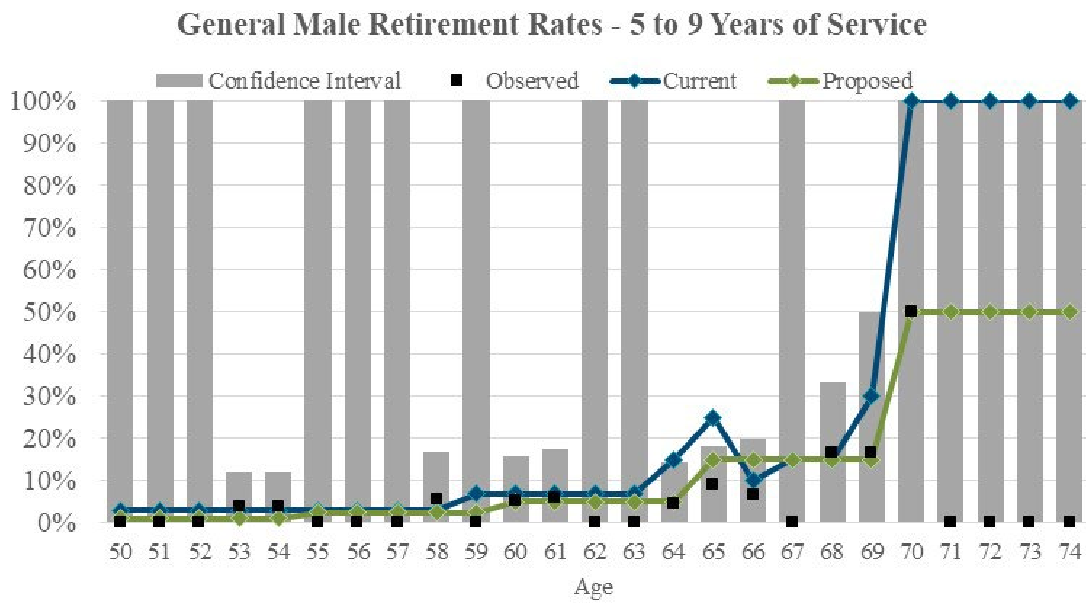


Table III-R4 – General

General Male Retirement Rates - 5 to 9 Years of Service										
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	30	0	1	0	0.0%	3.0%	1.0%	0%	0%
51	29	0	1	0	0.0%	3.0%	1.0%	0%	0%
52	25	0	1	0	0.0%	3.0%	1.0%	0%	0%
53	25	1	1	0	4.0%	3.0%	1.0%	133%	400%
54	25	1	1	0	4.0%	3.0%	1.0%	133%	400%
55	22	0	1	1	0.0%	3.0%	2.5%	0%	0%
56	18	0	1	0	0.0%	3.0%	2.5%	0%	0%
57	12	0	0	0	0.0%	3.0%	2.5%	0%	0%
58	18	1	1	0	5.6%	3.0%	2.5%	185%	222%
59	17	0	1	0	0.0%	7.0%	2.5%	0%	0%
60	19	1	1	1	5.3%	7.0%	5.0%	75%	105%
61	17	1	1	1	5.9%	7.0%	5.0%	84%	118%
62	23	0	2	1	0.0%	7.0%	5.0%	0%	0%
63	21	0	1	1	0.0%	7.0%	5.0%	0%	0%
64	21	1	3	1	4.8%	15.0%	5.0%	32%	95%
65	22	2	6	3	9.1%	25.0%	15.0%	36%	61%
66	15	1	2	2	6.7%	10.0%	15.0%	67%	44%
67	11	0	2	2	0.0%	15.0%	15.0%	0%	0%
68	12	2	2	2	16.7%	15.0%	15.0%	111%	111%
69	6	1	2	1	16.7%	30.0%	15.0%	56%	111%
70	2	1	2	1	50.0%	100.0%	50.0%	50%	100%
71	2	0	2	1	0.0%	100.0%	50.0%	0%	0%
72	3	0	3	2	0.0%	100.0%	50.0%	0%	0%
73	3	0	3	2	0.0%	100.0%	50.0%	0%	0%
74	2	0	2	1	0.0%	100.0%	50.0%	0%	0%
TOTAL	**400**	**13**	**40**	**24**	**3.3%**	**10.1%**	**6.1%**	**32%**	**53%**
Confidence Interval %			**92%**	**100%**					
R-squared			**14%**	**23%**					

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R5 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for General male members with service between 10 and 29 years, and Chart III-R5 below shows the information graphically along with the 90% confidence interval.

The data shows significantly lower actual retirement rates than expected under the current assumption for ages 70 to 75, therefore we propose an increase in the ultimate retirement age from age 70 to age 75. The proposed assumption decreases the aggregate assumed rate of retirement and increases the aggregate A/E ratio from 90% to 95%. The r-squared increases from 79% to 85%.

Chart III-R5

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R5 – General

General Male Retirement Rates - 10 to 29 Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	146	5	4	4	3.4%	3.0%	3.0%	114%	114%
51	144	1	4	4	0.7%	3.0%	3.0%	23%	23%
52	146	7	4	4	4.8%	3.0%	3.0%	160%	160%
53	145	7	4	4	4.8%	3.0%	3.0%	161%	161%
54	144	4	4	4	2.8%	3.0%	3.0%	93%	93%
55	155	7	10	10	4.5%	6.5%	6.5%	69%	69%
56	150	2	6	6	1.3%	4.0%	4.0%	33%	33%
57	153	7	6	6	4.6%	4.0%	4.0%	114%	114%
58	151	10	6	6	6.6%	4.0%	4.0%	166%	166%
59	152	8	14	14	5.3%	9.0%	9.0%	58%	58%
60	138	14	12	12	10.1%	9.0%	9.0%	113%	113%
61	110	13	17	17	11.8%	15.0%	15.0%	79%	79%
62	106	25	32	32	23.6%	30.0%	30.0%	79%	79%
63	82	17	21	21	20.7%	25.0%	25.0%	83%	83%
64	59	16	15	15	27.1%	25.0%	25.0%	108%	108%
65	44	13	11	11	29.5%	25.0%	25.0%	118%	118%
66	38	14	13	13	36.8%	35.0%	35.0%	105%	105%
67	32	11	10	10	34.4%	30.0%	30.0%	115%	115%
68	21	7	6	6	33.3%	30.0%	30.0%	111%	111%
69	23	11	9	9	47.8%	40.0%	40.0%	120%	120%
70	14	7	14	7	50.0%	100.0%	50.0%	50%	100%
71	6	2	6	3	33.3%	100.0%	50.0%	33%	67%
72	3	2	3	2	66.7%	100.0%	50.0%	67%	133%
73	1	0	1	1	0.0%	100.0%	50.0%	0%	0%
74	3	2	3	2	66.7%	100.0%	50.0%	67%	133%
TOTAL	**2,166**	**212**	**236**	**223**	**9.8%**	**10.9%**	**10.3%**	**90%**	**95%**
Confidence Interval %			**80%**	**88%**					
R-squared			**79%**	**85%**					

Table III-R6 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for General male members with 30 or more years of service. Chart III-R6 shows the information graphically along with the 90% confidence interval.

The data shows lower actual retirement rates than expected under the current assumption for ages 70 to 75, therefore we propose an increase in the ultimate retirement age from age 70 to age 75. The proposed assumption decreases the aggregate assumed rate of retirement and increases the aggregate A/E ratio from 83% to 85%. The r-squared remains at 89%.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Chart III-R6 – General

Table III-R6 – General

General Male Retirement Rates - 30 or More Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	3	1	0	0	33.3%	5.0%	5.0%	667%	667%
51	1	0	0	0	0.0%	5.0%	5.0%	0%	0%
52	8	0	0	0	0.0%	5.0%	5.0%	0%	0%
53	10	0	1	1	0.0%	5.0%	5.0%	0%	0%
54	13	0	1	1	0.0%	10.0%	10.0%	0%	0%
55	20	0	2	2	0.0%	10.0%	10.0%	0%	0%
56	21	2	2	2	9.5%	10.0%	10.0%	95%	95%
57	29	4	3	3	13.8%	10.0%	10.0%	138%	138%
58	33	2	3	3	6.1%	10.0%	10.0%	61%	61%
59	32	7	9	9	21.9%	27.5%	27.5%	80%	80%
60	30	6	8	8	20.0%	27.5%	27.5%	73%	73%
61	29	7	8	8	24.1%	27.5%	27.5%	88%	88%
62	24	12	10	10	50.0%	40.0%	40.0%	125%	125%
63	11	4	4	4	36.4%	40.0%	40.0%	91%	91%
64	5	1	2	2	20.0%	40.0%	40.0%	50%	50%
65	3	1	1	1	33.3%	40.0%	40.0%	83%	83%
66	1	1	1	1	100.0%	50.0%	50.0%	200%	200%
67	0	0	0	0	0.0%	40.0%	40.0%	0%	0%
68	2	0	1	1	0.0%	30.0%	30.0%	0%	0%
69	0	0	0	0	0.0%	30.0%	30.0%	0%	0%
70	1	0	1	1	0.0%	100.0%	50.0%	0%	0%
71	1	0	1	1	0.0%	100.0%	50.0%	0%	0%
72	1	1	1	1	100.0%	100.0%	50.0%	100%	200%
73	0	0	0	0	0.0%	100.0%	50.0%	0%	0%
74	0	0	0	0	0.0%	100.0%	50.0%	0%	0%
TOTAL	**278**	**49**	**59**	**58**	**17.6%**	**21.2%**	**20.7%**	**83%**	**85%**
Confidence Interval %			**100%**	**100%**					
R-squared			**89%**	**89%**					

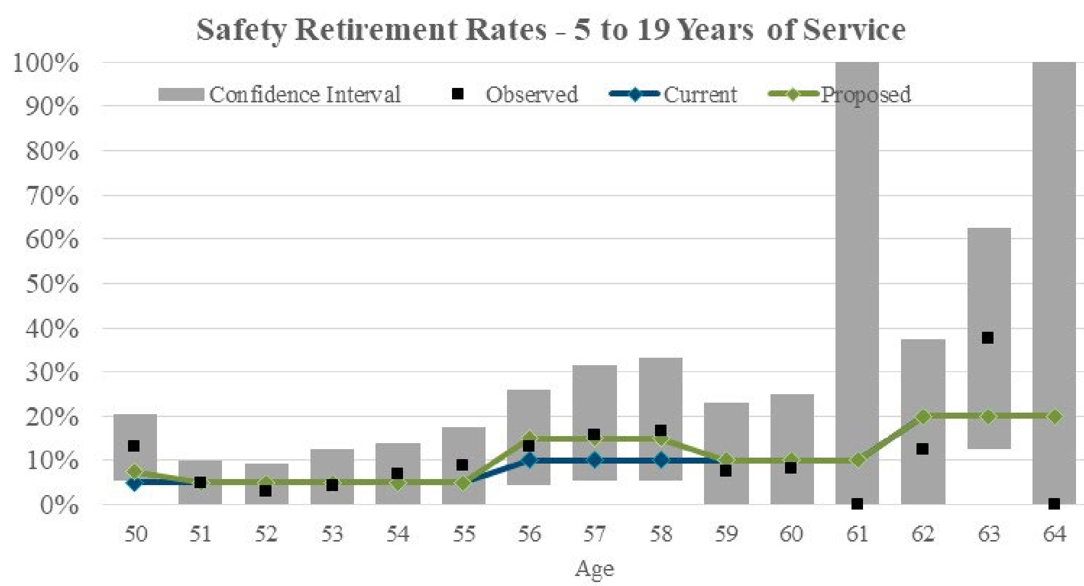
SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

We note that the current Safety retirement assumptions are split between those with less than 20 years of service and those with 20 or more years of service, with those having greater service levels assumed to experience higher retirement rates at the same age. The same pattern continues to hold in the recent retirement data; therefore, we have not recommended any changes to this approach.

Table III-R7 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for Safety members with service between five and 19 years, and Chart III-R7 below shows the information graphically along with the 90% confidence interval.

The data shows slightly higher actual retirement rates at ages 50 and 56 to 58 than expected under the current assumption. The ultimate retirement age remains at 65. The proposed assumption increases the aggregate assumed rate of retirement and decreases the aggregate A/E ratio from 128% to 108%, and the r-squared increases from 74% to 76%.

Chart III-R7 – Safety



SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

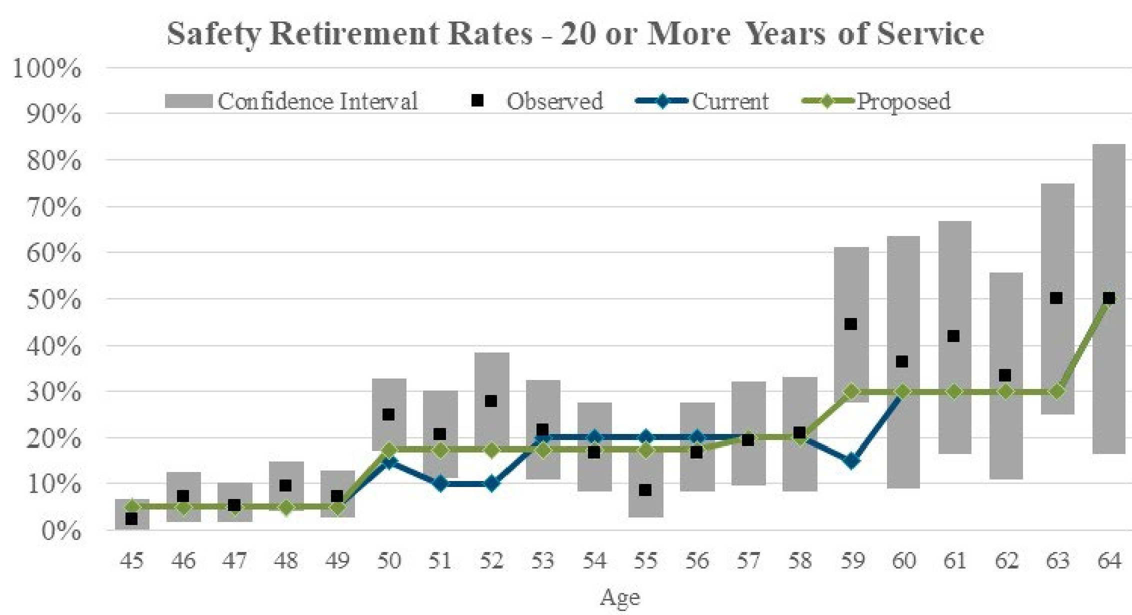
Table III-R7 – Safety

Safety Retirement Rates - 5 to 19 Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
50	54	7	3	4	13.0%	5.0%	7.5%	259%	173%
51	40	2	2	2	5.0%	5.0%	5.0%	100%	100%
52	32	1	2	2	3.1%	5.0%	5.0%	63%	63%
53	24	1	1	1	4.2%	5.0%	5.0%	83%	83%
54	29	2	1	1	6.9%	5.0%	5.0%	138%	138%
55	23	2	1	1	8.7%	5.0%	5.0%	174%	174%
56	23	3	2	3	13.0%	10.0%	15.0%	130%	87%
57	19	3	2	3	15.8%	10.0%	15.0%	158%	105%
58	18	3	2	3	16.7%	10.0%	15.0%	167%	111%
59	13	1	1	1	7.7%	10.0%	10.0%	77%	77%
60	12	1	1	1	8.3%	10.0%	10.0%	83%	83%
61	7	0	1	1	0.0%	10.0%	10.0%	0%	0%
62	8	1	2	2	12.5%	20.0%	20.0%	63%	63%
63	8	3	2	2	37.5%	20.0%	20.0%	188%	188%
64	5	0	1	1	0.0%	20.0%	20.0%	0%	0%
TOTAL	**315**	**30**	**24**	**28**	**9.5%**	**7.5%**	**8.8%**	**128%**	**108%**
Confidence Interval %			**93%**	**100%**					
R-squared			**74%**	**76%**					

Table III-R8 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for Safety members with service more than 20 years, and Chart III-R8 below shows the information graphically along with the 90% confidence interval.

The data shows slightly higher actual retirement rates than expected under the current assumption. The ultimate retirement age remains at 65. The proposed assumption increases the aggregate assumed rate of retirement and decreases the aggregate A/E ratio from 132% to 121%. The r-squared increases from 45% to 83%.

Chart III-R8 - Safety



SECTION III – DEMOGRAPHIC ASSUMPTIONS
RETIREMENT RATES

Table III-R8 – Safety

Safety Retirement Rates - 20 or More Years of Service									
		Retirements			Retirement Rates			A/E Ratios	
Age	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
45	44	1	2	2	2.3%	5.0%	5.0%	45%	45%
46	56	4	3	3	7.1%	5.0%	5.0%	143%	143%
47	58	3	3	3	5.2%	5.0%	5.0%	103%	103%
48	74	7	4	4	9.5%	5.0%	5.0%	189%	189%
49	70	5	4	4	7.1%	5.0%	5.0%	143%	143%
50	76	19	11	13	25.0%	15.0%	17.5%	167%	143%
51	53	11	5	9	20.8%	10.0%	17.5%	208%	119%
52	47	13	5	8	27.7%	10.0%	17.5%	277%	158%
53	37	8	7	6	21.6%	20.0%	17.5%	108%	124%
54	36	6	7	6	16.7%	20.0%	17.5%	83%	95%
55	35	3	7	6	8.6%	20.0%	17.5%	43%	49%
56	36	6	7	6	16.7%	20.0%	17.5%	83%	95%
57	31	6	6	6	19.4%	20.0%	20.0%	97%	97%
58	24	5	5	5	20.8%	20.0%	20.0%	104%	104%
59	18	8	3	5	44.4%	15.0%	30.0%	296%	148%
60	11	4	3	3	36.4%	30.0%	30.0%	121%	121%
61	12	5	4	4	41.7%	30.0%	30.0%	139%	139%
62	9	3	3	3	33.3%	30.0%	30.0%	111%	111%
63	8	4	2	2	50.0%	30.0%	30.0%	167%	167%
64	6	3	3	3	50.0%	50.0%	50.0%	100%	100%
TOTAL	**741**	**124**	**94**	**103**	**16.7%**	**12.7%**	**13.8%**	**132%**	**121%**
Confidence Interval %			**75%**	**95%**					
R-squared			**45%**	**83%**					

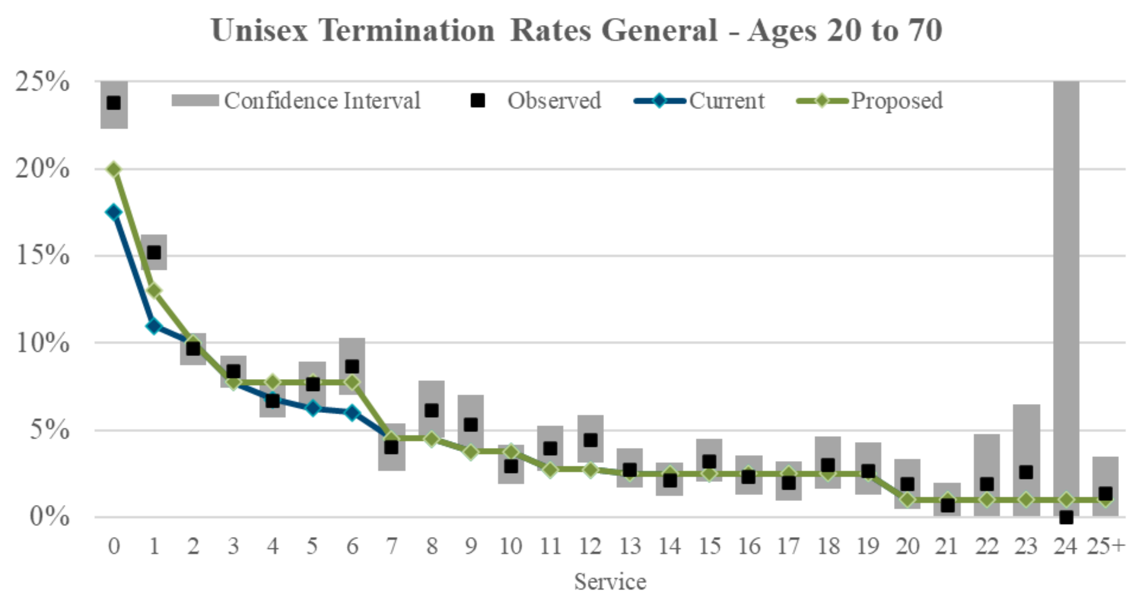
SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Termination rates reflect the frequency at which active members leave employment for reasons other than retirement, death, or disability. Currently, the termination rates are based on service for both Safety and General members. We have found that the rate of termination is more related to years of service rather than age. This methodology also avoids under-weighting the liabilities that can occur with using age-based rates only. The termination rates do not apply once members are eligible for a service retirement benefit. As with the retirement rate analysis, we have added data from the prior study to add more credibility to these calculations, for a total of six years of data.

See Appendices A and B for a full listing of the proposed and prior rates.

Table III-T1 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for General members, and Chart III-T1 below shows the information graphically along with the 90% confidence interval. The data shows slightly higher actual termination rates than expected under the current assumption and we are recommending increases in the General termination rates for some of the lower service bands. The proposed assumptions would reduce the aggregate A/E ratio from 121% to 110%, while the r-squared increases from 98% to 99%.

Chart III-T1



SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Table III-T1

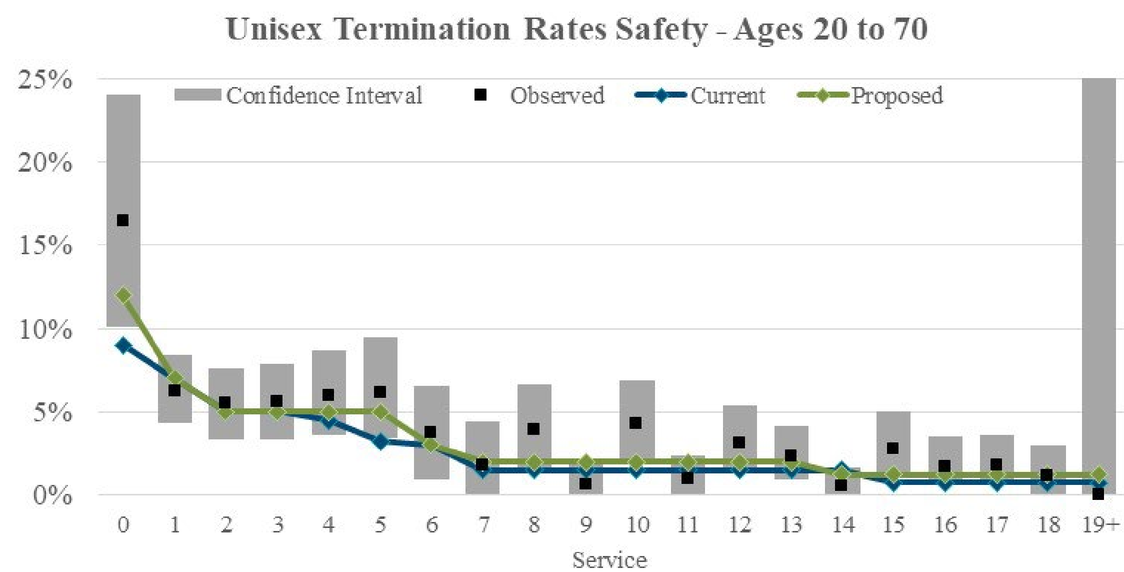
Unisex Termination Rates General - Ages 20 to 70									
		Terminations			Termination Rates			A/E Ratios	
Service	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
0	2,195	522	384	439	23.78%	17.50%	20.00%	136%	119%
1	3,366	512	370	438	15.21%	11.00%	13.00%	138%	117%
2	2,778	268	278	278	9.65%	10.00%	10.00%	96%	96%
3	2,347	196	182	182	8.35%	7.75%	7.75%	108%	108%
4	1,939	129	131	150	6.65%	6.75%	7.75%	99%	86%
5	1,132	86	71	88	7.60%	6.25%	7.75%	122%	98%
6	795	69	48	62	8.68%	6.00%	7.75%	145%	112%
7	597	24	27	27	4.02%	4.50%	4.50%	89%	89%
8	573	35	26	26	6.11%	4.50%	4.50%	136%	136%
9	544	29	20	20	5.33%	3.75%	3.75%	142%	142%
10	579	17	22	22	2.94%	3.75%	3.75%	78%	78%
11	608	24	17	17	3.95%	2.75%	2.75%	144%	144%
12	613	27	17	17	4.40%	2.75%	2.75%	160%	160%
13	586	16	15	15	2.73%	2.50%	2.50%	109%	109%
14	575	12	14	14	2.09%	2.50%	2.50%	83%	83%
15	534	17	13	13	3.18%	2.50%	2.50%	127%	127%
16	477	11	12	12	2.31%	2.50%	2.50%	92%	92%
17	410	8	10	10	1.95%	2.50%	2.50%	78%	78%
18	366	11	9	9	3.01%	2.50%	2.50%	120%	120%
19	303	8	8	8	2.64%	2.50%	2.50%	106%	106%
20	209	4	2	2	1.91%	1.00%	1.00%	191%	191%
21	154	1	2	2	0.65%	1.00%	1.00%	65%	65%
22	105	2	1	1	1.90%	1.00%	1.00%	190%	190%
23	77	2	1	1	2.60%	1.00%	1.00%	260%	260%
24	58	0	1	1	0.00%	1.00%	1.00%	0%	0%
25+	145	2	1	1	1.38%	1.00%	1.00%	138%	138%
TOTAL	**22,065**	**2,032**	**1,681**	**1,853**	**9.21%**	**7.62%**	**8.40%**	**121%**	**110%**
Confidence Interval %			**73%**	**77%**					
R-squared			**98%**	**99%**					

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Table III-T2 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for Safety members, and Chart III-T2 below shows the information graphically along with the 90% confidence interval.

The data shows slightly higher actual termination rates at most service levels than expected under the current assumption. In aggregate, the proposed assumptions increase the assumed rates of termination. The proposal decreases the aggregate A/E ratio from 129% to 113%. The r-squared increases from 86% to 90%.

Chart III-T2



SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Table III-T2

Unisex Termination Rates Safety - Ages 20 to 70										
		Terminations			Termination Rates			A/E Ratios	
Service	Exposures	Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
0	79	13	7	9	16.46%	9.00%	12.00%	183%	137%
1	368	23	26	26	6.25%	7.00%	7.00%	89%	89%
2	327	18	16	16	5.50%	5.00%	5.00%	110%	110%
3	265	15	13	13	5.66%	5.00%	5.00%	113%	113%
4	219	13	10	11	5.94%	4.50%	5.00%	132%	119%
5	147	9	5	7	6.12%	3.25%	5.00%	188%	122%
6	107	4	3	3	3.74%	3.00%	3.00%	125%	125%
7	113	2	2	2	1.77%	1.50%	2.00%	118%	88%
8	151	6	2	3	3.97%	1.50%	2.00%	265%	199%
9	160	1	2	3	0.63%	1.50%	2.00%	42%	31%
10	188	8	3	4	4.26%	1.50%	2.00%	284%	213%
11	207	2	3	4	0.97%	1.50%	2.00%	64%	48%
12	223	7	3	4	3.14%	1.50%	2.00%	209%	157%
13	216	5	3	4	2.31%	1.50%	2.00%	154%	116%
14	184	1	3	2	0.54%	1.50%	1.25%	36%	43%
15	179	5	1	2	2.79%	0.75%	1.25%	372%	223%
16	172	3	1	2	1.74%	0.75%	1.25%	233%	140%
17	167	3	1	2	1.80%	0.75%	1.25%	240%	144%
18	166	2	1	2	1.20%	0.75%	1.25%	161%	96%
19+	141	0	1	2	0.00%	0.75%	1.25%	0%	0%
TOTAL	**3,779**	**140**	**108**	**124**	**3.70%**	**2.86%**	**3.28%**	**129%**	**113%**
Confidence Interval %			**80%**	**90%**					
R-squared			**86%**	**90%**					

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Refund Rates and Reciprocity

When a vested member terminates employment, they have the option of receiving a refund of contributions with interest or a deferred annuity. If a member terminates employment and works for a reciprocal employer, the member's retirement benefit is ultimately based on the member's service with SJCERA and the highest Final Compensation based on employment with any reciprocal employer.

Tables III-T3 and III-T4 show the results of our analysis of refunds for General and Safety members for the period from January 1, 2016 through December 31, 2021. We are recommending decreases to the refund assumptions for General and Safety members with less than 15 years of service.

Table III-T3

General Members					
	Total		% of	Assumptions	
Service	Terminations	Refunds	Total	Current	Proposed
0 - 4	1,627	722	44.4%	60.0%	50.0%
5 - 14	339	73	21.5%	30.0%	25.0%
15+	66	8	12.1%	10.0%	10.0%
Total	2,032	803	39.5%		

Table III-T4

Safety Members					
	Total		% of	Assumptions	
Service	Terminations	Refunds	Total	Current	Proposed
0 - 4	82	37	45.1%	60.0%	50.0%
5 - 14	45	5	11.1%	30.0%	20.0%
15+	13	2	15.4%	15.0%	15.0%
Total	140	44	31.4%		

SECTION III – DEMOGRAPHIC ASSUMPTIONS
TERMINATION RATES

Table III-T5 below shows the results of our analysis of members who have retired from a deferred status, for the period from January 1, 2016 through December 31, 2021. We recommend increasing the reciprocity assumption for General members with 15 or more years of service.

Table III-T5

Service	Total Vested Retirees	Reciprocal Retirees	% of Total	Current Assumption	Proposed Assumption
General					
0 - 4	56	43	76.8%	75.0%	75.0%
5 - 14	153	39	25.5%	25.0%	25.0%
15+	46	22	47.8%	30.0%	40.0%
Total	255	104	40.8%		
Safety					
0 - 4	8	7	87.5%	66.7%	66.7%
5 - 9	15	8	53.3%	50.0%	50.0%
15+	10	3	30.0%	50.0%	50.0%
Total	33	18	54.5%		

Table III-T6 shows the results of our analysis of the age at which vested terminated and transferred members with outgoing reciprocity decide to retire. The current assumptions are that vested terminated General members will commence payment at age 58, and that vested terminated Safety members will commence payment at age 50, unless they have outgoing reciprocity, in which case they are assumed to begin receiving benefits at age 53. The recent experience is consistent with the current assumptions so we are not recommending any change to the commencement age assumptions for General or Safety members.

Table III-T6

Average Retirement Age for Retirees from Vested Status								
	General				Safety			
	Reciprocity		Vested		Reciprocity		Vested	
Calendar Year	# of New Retirees	Retirement Age	# of New Retirees	Retirement Age	# of New Retirees	Retirement Age	# of New Retirees	Retirement Age
2016	12	57.6	12	57.0	1	55.6	0	0.0
2017	13	61.3	14	58.0	4	53.3	5	52.2
2018	10	58.9	27	55.5	2	56.5	1	50.0
2019	19	61.0	19	60.8	1	53.0	1	54.3
2020	10	58.7	20	58.3	1	50.0	1	50.0
2021	11	59.9	9	57.0	4	55.2	1	50.0
Total	**75**	**59.8**	**101**	**57.7**	**13**	**54.3**	**9**	**51.7**

As stated earlier, if a member terminates employment and works for a reciprocal employer, the member's retirement benefit is ultimately computed using the highest Final Compensation based on employment any reciprocal employer. We recommend that the assumption used to project pay during employment with the reciprocal employer continue to be based on the wage growth assumption, compounded by the ultimate merit pay increase assumption described earlier in this report. Therefore, the recommended total pay growth assumptions for members in reciprocal status remain at 3.52% for General members and 4.29% for Safety members.

Upon further review of the data, we also continue to recommend projecting salary increases for reciprocal members from the year of the members' most recent reported salary to their assumed retirement age.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

This section analyzes the incidence of disability by the age of the employee. The rates analyzed are "total disability" rates that include both service and non-service related disabilities. Then a separate assumption is used to determine the percentage of the disabilities that are service versus non-service related. There are separate sets of assumptions for General male and female members and Safety members. The disability decrement is only applied after members are eligible for disability benefits.

The amount of disability experience is fairly limited. To improve the credibility of the data, we have aggregated the experience of the past three years with that of the prior experience study (2016-2021). There are only 98 disabilities during the last six years for Safety and General members combined.

See Appendices A and B for a full listing of the proposed and prior rates.

Table III-D1 on the following page shows the calculation of actual-to-expected ratios and the r-squared statistic for all disabilities for female General members, and Chart III-D1 shows the information graphically.

The data shows actual disability rates that are lower than the current assumption. We are recommending using the 75% of the most recent CalPERS' Miscellaneous State disability table for females. The proposed assumptions decrease the assumed disabilities for most age bands, resulting in an increase in the A/E ratio from 42% to 85%. The r-squared increases from 50% to 89%.

We are recommending a small change in the assumptions related to the incidence of duty-related vs. non-duty related disabilities for General female members only. Previously, it was assumed that 25% of female General disabilities were service related. During the previous six years about 44% of the disabilities were duty-related. As a result, we are recommending an increase in the assumption to 35% for duty-related female disabilities. The General male experience during this timeframe showed 90% of duty-related disabilities with an assumption of 80%. We are not recommending any change for males at this time.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

Chart III-D1

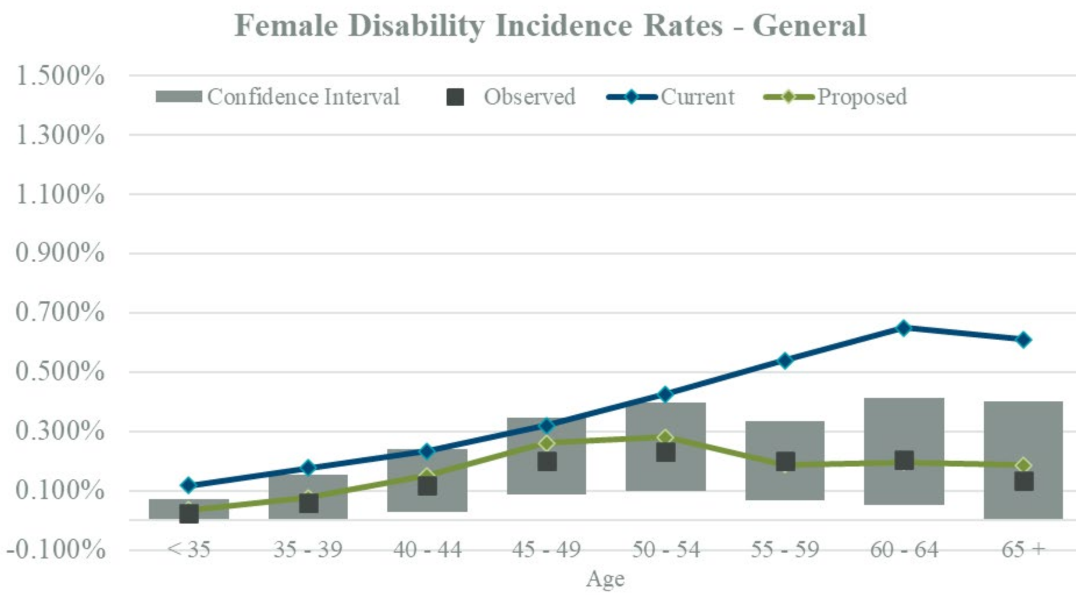


Table III-D1

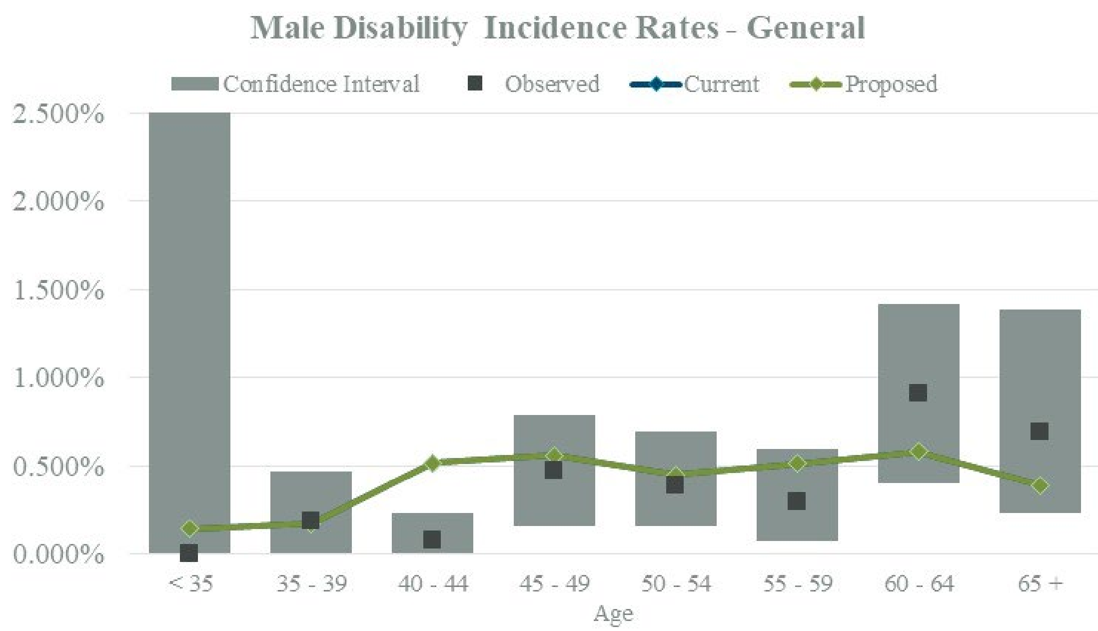
Female Disability Incidence Rates - General									
Age Band	Exposures	Disabilities			Average Disability Rates			A/E Ratios	
		Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
< 35	4,242	1.0	5.0	1.5	0.02%	0.12%	0.04%	20%	65%
35 - 39	3,274	2.0	5.8	2.5	0.06%	0.18%	0.08%	35%	81%
40 - 44	3,333	4.0	7.8	5.0	0.12%	0.23%	0.15%	51%	79%
45 - 49	3,472	7.0	11.1	9.1	0.20%	0.32%	0.26%	63%	77%
50 - 54	3,019	7.0	12.9	8.5	0.23%	0.43%	0.28%	54%	82%
55 - 59	2,983	6.0	16.1	5.6	0.20%	0.54%	0.19%	37%	106%
60 - 64	1,944	4.0	12.6	3.8	0.21%	0.65%	0.20%	32%	104%
Subtotal	**18,025**	**30.0**	**66.3**	**34.6**	**0.17%**	**0.37%**	**0.19%**	**45%**	**87%**
65 +	750	1.0	4.6	1.4	0.13%	0.61%	0.19%	22%	71%
TOTAL	**23,017**	**32.0**	**75.9**	**37.5**	**0.14%**	**0.33%**	**0.16%**	**42%**	**85%**
Confidence Interval %			**33%**	**100%**					
R-squared			**50%**	**89%**					

SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

Table III-D2 on the next page shows the calculation of actual-to-expected ratios and the r-squared statistic for male General members, and Chart III-D2 below shows the information graphically.

The data shows that the number of disabilities are slightly lower than the number expected under the current assumption. However, we are not proposing any changes to the total disability assumption for male General members. The current assumption has an A/E ratio of 79%. The r-squared is 9%.

Chart III-D2



SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

Table III-D2

Male Disability Incidence Rates - General									
Age Band	Exposures	Disabilities			Average Disability Rates			A/E Ratios	
		Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
< 35	1,646	0.0	2.4	2.4	0.00%	0.14%	0.14%	0%	0%
35 - 39	1,059	2.0	1.8	1.8	0.19%	0.17%	0.17%	108%	108%
40 - 44	1,266	1.0	6.6	6.6	0.08%	0.52%	0.52%	15%	15%
45 - 49	1,271	6.0	7.1	7.1	0.47%	0.56%	0.56%	85%	85%
50 - 54	1,296	5.0	5.9	5.9	0.39%	0.45%	0.45%	85%	85%
55 - 59	1,344	4.0	6.9	6.9	0.30%	0.51%	0.51%	58%	58%
60 - 64	985	9.0	5.7	5.7	0.91%	0.58%	0.58%	157%	157%
Subtotal	**7,221**	**27.0**	**34.0**	**34.0**	**0.37%**	**0.47%**	**0.47%**	**79%**	**79%**
65 +	433	3.0	1.7	1.7	0.69%	0.39%	0.39%	178%	178%
TOTAL	**9,300**	**30.0**	**38.1**	**38.1**	**0.32%**	**0.41%**	**0.41%**	**79%**	**79%**
Confidence Interval %			**83%**	**83%**					
R-squared			**9%**	**9%**					

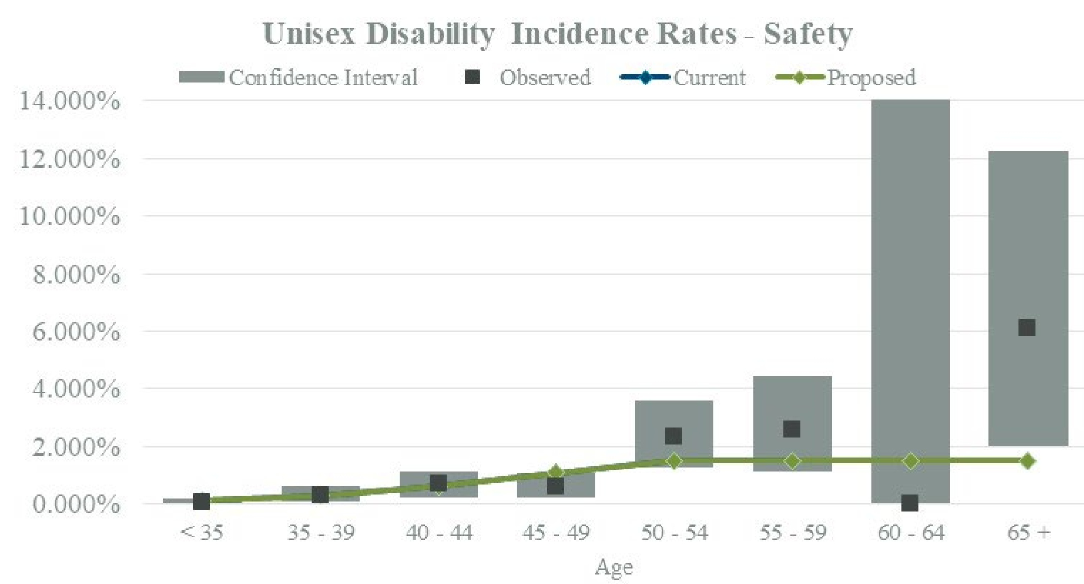
SECTION III – DEMOGRAPHIC ASSUMPTIONS
DISABILITY RATES

Table III-D3 on the next page shows the calculation of actual-to-expected ratios and the r-squared statistic for Safety members, and Chart III-D3 below shows the information graphically.

The data shows that the number of disabilities are slightly higher for ages 50 or greater than the number expected under the current assumption. This dynamic is not expected to have a significant impact on the value of the Plan's benefit since most Safety members who work after age 50 will receive a service retirement benefit greater than the disability benefit. For this reason, we are not proposing any changes to the total disability assumption for Safety members. The current assumption has an A/E ratio of 110%. The r-squared is 39%.

34 of the 36 Safety active members who became disabled during the experience study period (2016-2021) were service-connected disabilities, a percentage of 94.4%. We are continuing to recommend that 95% of Safety disabilities are assumed to be service-connected, and to assume a refund of contributions for nonservice-connected disabilities before a member reaches five years of service.

Chart III-D3



SECTION III – DEMOGRAPHIC ASSUMPTIONS

DISABILITY RATES

Table III-D3

Unisex Disability Incidence Rates - Safety									
Age Band	Exposures	Disabilities			Average Disability Rates			A/E Ratios	
		Actual	Current	Proposed	Actual	Current	Proposed	Current	Proposed
< 35	1,458	1.0	2.0	2.0	0.07%	0.14%	0.14%	50%	50%
35 - 39	938	3.0	2.9	2.9	0.32%	0.31%	0.31%	103%	103%
40 - 44	867	6.0	5.3	5.3	0.69%	0.61%	0.61%	113%	113%
45 - 49	830	5.0	9.1	9.1	0.60%	1.10%	1.10%	55%	55%
50 - 54	472	11.0	7.1	7.1	2.33%	1.50%	1.50%	155%	155%
55 - 59	271	7.0	4.1	4.1	2.58%	1.50%	1.50%	172%	172%
60 - 64	104	0.0	1.6	1.6	0.00%	1.50%	1.50%	0%	0%
Subtotal	**3,482**	**32.0**	**30.0**	**30.0**	**0.92%**	**0.86%**	**0.86%**	**107%**	**107%**
65 +	49	3.0	0.7	0.7	6.12%	1.50%	1.50%	408%	408%
TOTAL	**4,989**	**36.0**	**32.8**	**32.8**	**0.72%**	**0.66%**	**0.66%**	**110%**	**110%**
Confidence Interval %			**83%**	**83%**					
R-squared			**39%**	**39%**					

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Post-retirement mortality assumptions are typically developed separately by gender for both healthy annuitants and disabled annuitants. Pre-retirement mortality assumptions are developed separately for males and females. Unlike most of the other demographic assumptions that rely exclusively on the experience of the plan, for mortality, standard mortality tables and projection scales serve as the primary basis for the assumption.

In the prior study, SJCERA elected to use the following assumptions:

Active members

- Public General 2010 Above-Median Income - PUBG-2010(A) – Employee Mortality Table, adjusted by 105% for General female members and no adjustment for General male members
- Public Safety - 2010 PUBS-2010 – Employee Mortality Table, adjusted by 98% for Safety male members and by 106% for Safety female members (with 10% of active Safety member deaths assumed to occur in the line of duty)

Healthy retirees and beneficiaries

- Public General 2010 Above-Median Income - PUBG-2010(A) - Retiree Mortality Table, adjusted by 104% for General female members and no adjustment for General male members
- Public Safety 2010 – PUBS-2010 - Retiree Mortality Table, adjusted by 102% for Safety male members and by 105% for Safety female members

Disabled members

- Public General 2010 - PUBG-2010 - Disabled Annuitant Mortality Table, adjusted by 104% for General male members and adjusted by 107% for General female members
- Public Safety 2010 – PUBS-2010 - Disabled Annuitant Mortality Table, adjusted by 104% for Safety male members and by 98% for Safety female members

Mortality improvements were projected generationally using the MP-2018 mortality improvement scale for all types of mortality.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

CalPERS published new mortality tables in their 2021 experience study report which is based on data from 2000 to 2019. Overall, these tables are a better fit than the current Pub-2010 Mortality tables, based on national public sector plan data from 2008 to 2013. Therefore, we recommend using the new CalPERS tables for the analysis and SJCERA's mortality assumption.

The steps in our analysis are as follows:

1. Select a standard mortality table that is, based on experience, most closely matching the anticipated experience of SJCERA.
2. Compare actual SJCERA experience to what would have been predicted by the selected standard table for the period of the experience study.
3. Adjust the standard table either fully or partially depending on the level of credibility for SJCERA experience. This adjusted table is called the base table.
4. Select an appropriate standard mortality improvement projection scale and apply it to the base table.

As we have done in prior experience studies, we have combined the experience of the past three years with that of the prior three-year period in order to have a more robust dataset to review. After reviewing the data, we excluded 2020-2021 data, and used 2016-2019 data with a central study year of 2018 but also confirmed the reasonability of assuming using all six years.

Even with the use of six years of data, the SJCERA experience is only partially credible, based on standard statistical theory. We therefore recommend partially adjusting the 2021 CalPERS base tables to fit SJCERA's experience to develop a new base table. The rates for each age in the standard table are adjusted by a factor, where the factor is determined by multiplying the actual-to-expected ratio for the group (such as male retirees) by a credibility factor for the group. The credibility factor is equal to the square root of the number of deaths divided by 1,082, which is the number of deaths needed for full credibility (defined by a 90% probability that the observed rate is within 5% of the true rate). Where the adjustment is very close to 100%, we have elected not to recommend any adjustment to the base table.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Based on these adjustments, we are recommending the following base mortality table assumptions:

Active members

- CalPERS 2021 Preretirement Non-Industrial Mortality, with no adjustment, for General members
- CalPERS 2021 Preretirement Industrial Mortality blended with 2021 CalPERS Preretirement Non-Industrial Mortality, with no adjustment, for Safety members (with 10% of active Safety member deaths assumed to occur in the line of duty)

Healthy retirees and beneficiaries

- CalPERS 2021 Healthy Annuitant Mortality, adjusted by 105% for male members and no adjustment for female members, for both Safety and General members

Disabled members

- CalPERS 2021 Industrially Disabled Annuitant Mortality, with no adjustment, for Safety members and service-related disabilities for General members
- CalPERS 2021 Non-Industrially Disabled Annuitant Mortality for General members with non-service-related disability, with no adjustment

We recommend using 80% of the MP-2020 Scale for the basis of our analysis and projections, consistent with CalPERS mortality improvement projection scale that was adopted in their 2021 experience study. This projection scale aligns with CalPERS mortality improvement trends over the past 20 years.

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

As shown in Table III-M1 below, our proposed mortality rates for healthy annuitants are close to recent experience. As described above, we applied a partial adjustment of 1.05 to the "Standard" CalPERS 2021 tables for the healthy annuitants to bring the A/E rates closer to 100%. However, these rates still reflect a margin for conservatism, because the SJCERA data cannot be considered fully credible, particularly for the disability mortality experience. To perform our comparisons, the applicable CalPERS base rates were projected generationally from their base year 2017 to the central study year 2018.

Table III-M1

Annuitant Mortality for all Groups										
		Actual	Weighted	Weighted Deaths				Actual to Expected Ratios		
Annuitant Type	Exposures	Deaths	Exposures	Actual	Current	Standard	Recommended	Current	Standard	Recommended
General Healthy Females	11,366	318	322,776,322	6,950,471	6,465,326	6,732,113	6,732,113	108%	103%	103%
General Healthy Males	5,974	211	222,635,371	6,265,893	5,251,788	5,639,523	5,921,499	119%	111%	106%
General Healthy Total	**17,340**	**529**	**545,411,693**	**13,216,364**	**11,717,114**	**12,371,636**	**12,653,613**	**113%**	**107%**	**104%**
Safety Healthy Females	1,135	16	47,578,067	839,293	849,294	740,988	740,988	99%	113%	113%
Safety Healthy Males	1,892	37	132,781,143	2,013,183	2,080,243	1,951,395	2,048,965	97%	103%	98%
Safety Healthy Total	**3,027**	**53**	**180,359,210**	**2,852,476**	**2,929,537**	**2,692,384**	**2,789,953**	**97%**	**106%**	**102%**
General Service-Connected Disabled Females	532	11	12,759,288	322,708	195,607	250,805	250,805	165%	129%	129%
General Service-Connected Disabled Males	437	9	11,238,251	205,001	192,801	203,271	203,271	106%	101%	101%
General Nonservice-Connected Disabled Females	468	18	7,611,824	275,562	101,646	197,663	197,663	271%	139%	139%
General Nonservice-Connected Disabled Males	165	7	2,805,515	139,743	50,628	107,127	107,127	276%	130%	130%
General Disabled Total	**1,602**	**45**	**34,414,878**	**943,014**	**540,682**	**758,866**	**758,866**	**174%**	**124%**	**116%**
Safety Disabled Females	251	1	10,327,355	62,821	86,648	105,558	105,558	73%	60%	60%
Safety Disabled Males	605	12	33,604,732	642,203	627,550	710,478	710,478	102%	90%	90%
Safety Disabled Total	**856**	**13**	**43,932,087**	**705,024**	**714,198**	**816,036**	**816,036**	**99%**	**86%**	**86%**
Total	**22,825**	**640**	**804,117,868**	**17,716,878**	**15,901,530**	**16,638,922**	**17,018,468**	**111%**	**106%**	**104%**

SECTION III – DEMOGRAPHIC ASSUMPTIONS
MORTALITY RATES

Rather than weighting the experience based on the number of members living and dying, we have weighted the experience based on benefit size (salary for current active members). This approach has been recommended by the Retirement Plans Experience Committee (RPEC) of the Society of Actuaries, since members with larger benefits are expected to live longer, and a benefit-weighted approach helps avoid underestimating the liabilities.

The match between the actual and expected experience across all statuses (active, retired, and disabled) is close under the proposed assumptions: 104%.

Mortality Assumptions for Employee Contribution Rates

For purposes of determining employee contribution rates, the use of generational mortality improvements is impractical from an administrative perspective. Therefore, we recommend using the base mortality tables described above (various CalPERS 2021 tables with SJCERA-specific adjustments) projected using 80% of Scale MP-2020 from 2017 to 2043 for General and from 2017 to 2045 for Safety Members. These static projections are intended to approximate generational mortality improvements. Adjustments of 105% for male and 100% for female members for both General and Safety members are applied as well.

The projection periods are based upon the duration of active liabilities for the respective groups, and the period during which the associated employee contribution rates will be in use. The employee contribution rates are also blended using a male/female weighting of 29%/71% for General Members and 75% /25% for Safety members.

We anticipate that these mortality assumptions will be used to determine the employee contribution rates in effect for the period of January 1, 2023 through December 31, 2025. We also anticipate that the mortality assumptions for this purpose will be updated again after the next experience study covering the period from January 1, 2022 through December 31, 2024.

Projected Pay and Benefit Payment Methodology

Terminal Pay Loads

The prior experience study demonstrated that Sick Leave Bank service is unlikely to have a significant impact on benefits. We have updated our analysis for the current study period and confirmed that this conclusion is still valid in Table III-O1 below.

Table III-O1

	Count	Avg Years of Service	Avg Sick Leave Hours	Avg Add'l Service	Percent Increase
Eligible	77	24.0	926	0.4	1.85%
Ineligible	6,252	9.5	0	0.0	0.00%
Total	6,329	9.7	11	0.0	0.06%

We also performed a comparison of the actual versus expected final average pay used in the service retirement benefit calculations to confirm any other substantial/recurring terminal pay increases in Table III-O2 below. For all service retirements which occurred over the past three years, we compared the actual final average pay used in the member's benefit calculation to the expected final average pay for that member reflected in the prior actuarial valuation (as an active member). We recommend adding a 1% load to expected final average pay for Safety active members based on the plan's experience below.

Table III-O2

Year of Retirement	Retirements from Active Status	Total Final Average Pay	Expected Final Average Pay	Actual / Expected
General				
2016	206	1,274,555	1,283,534	99.3%
2017	191	1,218,822	1,239,945	98.3%
2018	221	1,481,446	1,482,479	99.9%
2019	180	1,243,873	1,239,961	100.3%
2020	186	1,336,278	1,331,099	100.4%
2021	193	1,320,779	1,330,713	99.3%
Total	**1,177**	**7,875,754**	**7,907,731**	**99.6%**
Safety				
2016	38	366,612	363,177	100.9%
2017	29	220,090	219,471	100.3%
2018	31	244,345	237,701	102.8%
2019	38	346,223	337,656	102.5%
2020	33	277,577	274,844	101.0%
2021	36	278,140	282,416	98.5%
Total	**205**	**1,732,985**	**1,715,265**	**101.0%**

SECTION III – DEMOGRAPHIC ASSUMPTIONS
OTHER DEMOGRAPHIC ASSUMPTIONS

Valuation Methods

We are recommending a change to the methodology for projecting pay for the valuation year and concur with the audit findings of the January 1, 2021 actuarial valuation that active member projected pay included an extra half-year of increase for the valuation year. Thus, we are updating our method to remove the additional increase in our valuation procedures.

We are also updating the benefit payment timing in our software to use end of the month instead of beginning of the month payments to be consistent with SJCERA's administrative practices.

Family Composition

The current assumption is that 75% of active male and 55% of active female SJCERA participants will have beneficiaries eligible for an unreduced (i.e. subsidized) 60% Joint and Survivor allowance (100% for Duty Disability). Table III-O3 shows the results of the analysis during the experience study period for members who retired or became disabled. We recommend maintaining this assumption. There are a small number of married retirees who elect a form other than the unreduced 60% Joint and Survivor allowance. Therefore we are also recommending an additional assumption that 90% of these non-duty disabled participants with eligible beneficiaries elect the unreduced benefit and 10% elect an optional form with a reduced benefit.

Table III-O3

Percent of Retired and Disabled Members with Spouses or Domestic Partners						
	Females			Males		
Calendar Year	Disabled and Retirees	Eligible Spouses	Percent Eligible	Disabled and Retirees	Eligible Spouses	Percent Eligible
2016	188	115	61.2%	102	73	71.6%
2017	160	83	51.9%	85	63	74.1%
2018	188	115	61.2%	102	73	71.6%
2019	160	83	51.9%	85	63	74.1%
2020	158	87	55.1%	90	72	80.0%
2021	163	93	57.1%	88	69	78.4%
Total	1,017	576	56.6%	552	413	74.8%

SECTION III – DEMOGRAPHIC ASSUMPTIONS
OTHER DEMOGRAPHIC ASSUMPTIONS

Age Difference of Qualified Beneficiary

The current assumption is the spouse of a male member is expected to be three years younger while the spouse of a female member is expected to be two years older. Table III-O4 compiles the average age difference for members who retired or became disabled during 2016 - 2021 between spouses and domestic partners. This information is used to predict spouse information for future retirees. We are not recommending any changes to this assumption.

Table III-O4

Age Difference Between Retired or Disabled Members and Their Spouses or Domestic Partners								
	Females				Males			
Calendar Year	Eligible Spouses	Member Age	Spouse Age	Difference	Eligible Spouses	Member Age	Spouse Age	Difference
2016	87	59.92	61.05	(1.13)	81	60.41	58.07	2.34
2017	85	61.07	62.58	(1.51)	86	60.04	56.42	3.63
2018	122	59.25	61.97	(2.72)	83	60.03	57.65	2.38
2019	90	59.94	61.51	(1.57)	68	58.74	56.48	2.26
2020	97	59.46	62.18	(2.72)	76	59.62	56.18	3.44
2021	101	59.92	61.88	(1.96)	78	59.77	57.30	2.47
Total	481	59.86	61.87	(2.01)	394	59.81	56.98	2.83

Plan Expenses

An allowance of $5,035,179 for Plan administrative expenses was included in the annual cost calculation in the prior valuation and was expected to increase with CPI by 2.75% to $5,174,000. In Table III-O5 below, the Plan's administrative expenses, adjusted for actual CPI increases to the current year, have averaged slightly less, $4,972,184, than this amount during the last three years. However, due to the higher CPI increase in 2022 and upcoming benefit system update, we recommend maintaining the Plan's assumed administrative expenses of $5,174,000 for 2022, to be split between employees and employers based on their share of the overall contributions. Expenses are expected to grow with the cost of living (by 2.75% per year) in future years.

Table III-O5

Calendar Year	Admin Expense	Bay Area CPI	Admin Expense w/ CPI to 2022
2019	$ 4,931,163	3.18%	$ 5,349,700
2020	$ 4,536,455	1.69%	$ 4,769,881
2021	$ 4,639,439	3.40%	$ 4,796,970
Average	$ 4,702,352		$ 4,972,184

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

The recommended assumptions were reviewed with the Board at their July 7, 2022 meeting. The demographic assumptions are based on an experience study covering the period from January 1, 2019 through December 31, 2021.

1. Rate of Return

Assets are assumed to earn 7.00% or 6.75% net of investment expenses.

2. Administrative Expenses

Administrative expenses are assumed to be $5,173,647 for the next year, to be split between employees and employers based on their share of the overall contributions. Expenses are expected to grow with the cost of living (by 2.75% per year.)

3. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.75% per year. This assumption is also used to project increases in the PEPRA wage cap.

4. Post Retirement COLA

Benefits are assumed to increase after retirement at the rate of 2.6% per year.

5. Increases in Pay

Assumed pay increases for active Members consist of increases due to base salary adjustments plus service-based increase due to longevity and promotion, as shown below:

Pay Increases											
	Years of Service										
	0	1	2	3	4	5	6	7	8-9	10-14	15+
Base Increase	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Longevity & Promotion											
General	8.00%	7.00%	4.00%	4.00%	2.00%	2.00%	2.00%	2.00%	1.25%	1.00%	0.50%
Safety	10.00%	10.00%	5.00%	5.00%	5.00%	2.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Total (Compound)											
General	11.24%	10.21%	7.12%	7.12%	5.06%	5.06%	5.06%	5.06%	4.29%	4.03%	3.52%
Safety	13.30%	13.30%	8.15%	8.15%	8.15%	5.32%	4.29%	4.29%	4.29%	4.29%	4.29%

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

6. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the following table. Male members are assumed to be three years older than their spouses, and female members are assumed to be two years younger than their spouses. It is assumed that 90% of participants with eligible beneficiaries who do not have a service-related disability elect the 60% Joint and Survivor allowance.

Percentage Married	
Gender	Percentage
Males	75%
Females	55%

7. Rates of Termination

Sample rates of termination are show in the following table.

Rates of Termination*		
Years of Service	General	Safety
0	20.00%	12.00%
1	13.00%	7.00%
2	10.00%	5.00%
3	7.75%	5.00%
4	7.75%	5.00%
5	7.75%	5.00%
6	7.75%	3.00%
7	4.50%	2.00%
8	4.50%	2.00%
9	3.75%	2.00%
10	3.75%	2.00%
11-12	2.75%	2.00%
13	2.50%	2.00%
14-19	2.50%	1.25%
20-29	1.00%	0.00%
30+	0.00%	0.00%

* Termination rates do not apply once a member is eligible for retirement.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

8. Withdrawal

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits.

50% of all General Member terminations with less than five years of service, 25% of those with five to 14 years of service, and 10% of those with 15 or more years of service, are assumed to take a refund of contributions.

50% of all Safety Member terminations with less than five years of service, 20% of those with five to 14 years of service, and 15% of those with 15 or more years of service, are assumed to take a refund of contributions.

9. Vested Termination and Reciprocal Transfers

Rates of vested termination apply to active Members who terminate their employment and leave their member contributions on deposit with the Plan.

50% of all General Member terminations with less than five years of service, 75% of those with five to 14 years of service, and 90% of those with 15 or more years of service, are assumed to leave their contributions on deposit.

50% of all Safety Member terminations with less than five years of service, 80% of those with five to 14 years of service, and 85% of those with 15 or more years of service, are assumed to leave their contributions on deposit.

Vested terminated General Members are assumed to begin receiving benefits at age 58; vested terminated Safety Members are assumed to begin receiving benefits at age 50, unless they have outgoing reciprocity, in which case they are assumed to begin receiving benefits at age 53.

75% of vested terminated General Members with less than five years of service, 25% of those with five to 14 years of service, and 40% of those with 15 or more years of service, are assumed to be reciprocal.

67% of vested terminated Safety Members with less than five years of service, and 50% of those with five or more years of service, are assumed to be reciprocal.

Final average pay for General Members who terminate with reciprocity is assumed to increase by 3.52% per year until their assumed retirement date. Final average pay for Safety Members who terminate with reciprocity is assumed to increase by 4.29% per year until their assumed retirement date.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

10. Rates of Service-Connected Disability

Sample service-connected disability rates of active participants are provided in the table below.

Rates of Svc Disability				
Age	General Male	General Female	Safety Male	Safety Female
22	0.094%	0.006%	0.048%	0.048%
27	0.107%	0.006%	0.086%	0.089%
32	0.122%	0.010%	0.161%	0.166%
37	0.139%	0.018%	0.296%	0.305%
42	0.414%	0.037%	0.565%	0.592%
47	0.446%	0.067%	1.023%	1.101%
52	0.361%	0.072%	1.425%	1.425%
57	0.410%	0.045%	1.425%	1.425%
62	0.470%	0.050%	1.425%	1.425%

11. Rates of Nonservice-Connected Disability

Sample nonservice-connected disability rates of active participants are provided in the table below.

Rates of Non-Svc Disability				
Age	General Male	General Female	Safety Male	Safety Female
22	0.023%	0.017%	0.003%	0.003%
27	0.027%	0.019%	0.005%	0.005%
32	0.030%	0.031%	0.008%	0.009%
37	0.035%	0.055%	0.016%	0.016%
42	0.104%	0.112%	0.030%	0.031%
47	0.112%	0.200%	0.054%	0.058%
52	0.090%	0.217%	0.075%	0.075%
57	0.102%	0.136%	0.075%	0.075%
62	0.118%	0.150%	0.075%	0.075%

12. Rates of Mortality for Healthy Lives

Mortality rates for General active members are based on the sex distinct 2021 CalPERS Pre-Retirement Non-Industrial Mortality Table, with generational mortality improvements projected from 2017 using 80% of Projection Scale MP-2020.

Mortality rates for Safety active members are based on the sum of the rates from the 2021 CalPERS Industrial and Non-Industrial Mortality tables, with generational mortality

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

improvements projected from 2017 using 80% of Projection Scale MP-2020. 10% of Safety member active deaths are assumed to occur in the line of duty.

Mortality rates for healthy General annuitants are based on the sex distinct 2021 CalPERS Healthy Annuitant Mortality Table, with generational mortality improvements projected from 2017 using 80% of Projection Scale MP-2020, and a partial credibility adjustment of 1.05 for males and no adjustment for females.

Mortality rates for Safety annuitants are based on the sex distinct 2021 CalPERS Healthy Annuitant Mortality Table, with generational mortality improvements projected from 2017 using 80% of Projection Scale MP-2020, and a partial credibility adjustment of 1.05 for males and no adjustment for females.

13. Rates of Mortality for Disabled Retirees

Mortality rates for General disabled annuitants are based on status. Rates for General disabled annuitants with a service-related disability are based on the sex distinct 2021 CalPERS Industrially Disabled Annuitant Mortality Table, with generational mortality improvements projected from 2017 using 80% of Projection Scale MP-2020. Rates for General disabled annuitants with a non-service-related disability are based on the sex distinct 2021 CalPERS Non-Industrially Disabled Annuitant Mortality Table, with generational mortality improvements projected from 2017 using 80% of Projection Scale MP-2020.

Mortality rates for Safety disabled annuitants are based on the sex distinct 2021 CalPERS Industrially Disabled Mortality Table, with generational mortality improvements projected from 2017 using Projection 80% of Scale MP-2020.

14. Mortality Improvement

The mortality assumptions employ a fully generational mortality improvement projection from the base year of the CalPERS mortality tables (2017) using 80% of Scale MP-2020.

15. Adjustment for Service Purchases

SJCERA provides Cheiron with the amount of service that active employees are eligible to purchase. We include this service when calculating the employees' benefit eligibility. Half of eligible service purchases, which have not been purchased by the members, are included in the employees' Credited Service, as employees will pay approximately half of the normal cost for these benefits when purchasing this service.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

16. Assumptions for Employee Contribution Rates

Mortality rates are the base mortality tables described above, projected using 80% of Scale MP-2020 from 2017 to 2043 for General Members and to 2045 for Safety Members. The projection periods are based on the duration of active liabilities for the respective groups, and the period during which the associated contribution rates will be in use. The employee contribution rates are also blended using a male/female weighting of 29%/71% for General Members and 75%/25% for Safety members.

APPENDIX A – SUMMARY OF PROPOSED ASSUMPTIONS

17. Rates of Retirement

Rates of retirement are based on age and service according to the following table.

Rates of Retirement								
	General Male Years of Service			General Female Years of Service			Safety Years of Service	
Age	5-9	10-29	30+	5-9	10-29	30+	5-19	20+
45	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
46	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
47	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
48	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
49	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
50	1.00%	3.00%	5.00%	1.00%	3.50%	4.50%	7.50%	17.50%
51	1.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	17.50%
52	1.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	17.50%
53	1.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	17.50%
54	1.00%	3.00%	10.00%	5.75%	3.50%	4.50%	5.00%	17.50%
55	2.50%	6.50%	10.00%	2.50%	3.50%	4.50%	5.00%	17.50%
56	2.50%	4.00%	10.00%	1.50%	7.00%	15.00%	15.00%	17.50%
57	2.50%	4.00%	10.00%	1.50%	7.00%	15.00%	15.00%	20.00%
58	2.50%	4.00%	10.00%	1.50%	7.00%	15.00%	15.00%	20.00%
59	2.50%	9.00%	27.50%	2.00%	7.00%	15.00%	10.00%	30.00%
60	5.00%	9.00%	27.50%	6.25%	12.50%	25.00%	10.00%	30.00%
61	5.00%	15.00%	27.50%	6.25%	12.50%	30.00%	10.00%	30.00%
62	5.00%	30.00%	40.00%	18.50%	25.00%	35.00%	20.00%	30.00%
63	5.00%	25.00%	40.00%	5.00%	25.00%	35.00%	20.00%	30.00%
64	5.00%	25.00%	40.00%	9.00%	25.00%	35.00%	20.00%	50.00%
65	15.00%	25.00%	40.00%	12.50%	30.00%	35.00%	100.00%	100.00%
66	15.00%	35.00%	50.00%	25.00%	30.00%	30.00%	100.00%	100.00%
67	15.00%	30.00%	40.00%	25.00%	30.00%	30.00%	100.00%	100.00%
68	15.00%	30.00%	30.00%	25.00%	30.00%	30.00%	100.00%	100.00%
69	15.00%	40.00%	30.00%	25.00%	30.00%	30.00%	100.00%	100.00%
70	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	100.00%	100.00%
71	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	100.00%	100.00%
72	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	100.00%	100.00%
73	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	100.00%	100.00%
74	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	100.00%	100.00%
75	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

The recommended assumptions were adopted by the Board at their July 12, 2019 meeting. The demographic assumptions are based on an experience study covering the period from January 1, 2016 through December 31, 2018. The rate of return, CPI, and pay increase assumptions were updated in the 2020 valuation.

1. **Rate of Return**

   Assets are assumed to earn 7.00% net of investment expenses.

2. **Administrative Expenses**

   Administrative expenses are assumed to be $5,035,179 for the next year, to be split between employees and employers based on their share of the overall contributions. Expenses are expected to grow with the cost of living (by 2.75% per year.)

3. **Cost of Living**

   The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.75% per year. This assumption is also used to project increases in the PEPRA wage cap.

4. **Post Retirement COLA**

   Benefits are assumed to increase after retirement at the rate of 2.6% per year.

5. **Increases in Pay**

   Assumed pay increases for active Members consist of increases due to base salary adjustments plus service-based increase due to longevity and promotion, as shown below:

Pay Increases											
	Years of Service										
	0	1	2	3	4	5	6	7	8-9	10-14	15+
Base Increase	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Longevity & Promotion											
General	8.00%	7.00%	4.00%	4.00%	2.00%	2.00%	2.00%	2.00%	1.25%	1.00%	0.50%
Safety	10.00%	10.00%	5.00%	5.00%	5.00%	2.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Total (Compound)											
General	11.24%	10.21%	7.12%	7.12%	5.06%	5.06%	5.06%	5.06%	4.29%	4.03%	3.52%
Safety	13.30%	13.30%	8.15%	8.15%	8.15%	5.32%	4.29%	4.29%	4.29%	4.29%	4.29%

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

6. Family Composition

Percentage married for all active members who retire, become disabled, or die during active service is shown in the following table. Male members are assumed to be three years older than their spouses, and female members are assumed to be two years younger than their spouses.

Percentage Married	
Gender	Percentage
Males	75%
Females	55%

7. Rates of Termination

Sample rates of termination are show in the following table.

Rates of Termination*		
Years of Service	General	Safety
0	17.50%	9.00%
1	11.00%	7.00%
2	10.00%	5.00%
3	7.75%	5.00%
4	6.75%	4.50%
5	6.25%	3.25%
6	6.00%	3.00%
7	4.50%	1.50%
8	4.50%	1.50%
9	3.75%	1.50%
10	3.75%	1.50%
11-12	2.75%	1.50%
13-19	2.50%	1.50%
20-29	1.00%	0.00%
30+	0.00%	0.00%

* Termination rates do not apply once a member is eligible for retirement.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

8. Withdrawal

Rates of withdrawal apply to active Members who terminate their employment and withdraw their member contributions, forfeiting entitlement to future Plan benefits.

60% of all General Member terminations with less than five years of service, 30% of those with five to 14 years of service, and 10% of those with 15 or more years of service, are assumed to take a refund of contributions.

60% of all Safety Member terminations with less than five years of service, 30% of those with five to 14 years of service, and 15% of those with 15 or more years of service, are assumed to take a refund of contributions.

9. Vested Termination and Reciprocal Transfers

Rates of vested termination apply to active Members who terminate their employment and leave their member contributions on deposit with the Plan.

40% of all General Member terminations with less than five years of service, 70% of those with 5 to 14 years of service, and 90% of those with 15 or more years of service, are assumed to leave their contributions on deposit.

40% of all Safety Member terminations with less than five years of service, 70% of those with five to 14 years of service, and 85% of those with more than 10 years of service, are assumed to leave their contributions on deposit.

Vested terminated General Members are assumed to begin receiving benefits at age 58; vested terminated Safety Members are assumed to begin receiving benefits at age 50, unless they have outgoing reciprocity, in which case they are assumed to begin receiving benefits at age 53.

75% of vested terminated General Members with less than five years of service, 25% of those with five to 14 years of service, and 30% of those with more than 15 years of service, are assumed to be reciprocal.

67% of vested terminated Safety Members with less than five years of service, and 50% of those with more than five years of service, are assumed to be reciprocal.

Final average pay for General Members who terminate with reciprocity is assumed to increase by 3.52% per year until their assumed retirement date.

Final average pay for Safety Members who terminate with reciprocity is assumed to increase by 4.29% per year until their assumed retirement date.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

10. Rates of Service-Connected Disability

Sample service-connected disability rates of active participants are provided in the table below.

Rates of Svc Disability				
Age	General Male	General Female	Safety Male	Safety Female
22	0.094%	0.019%	0.048%	0.048%
27	0.107%	0.024%	0.086%	0.089%
32	0.122%	0.033%	0.161%	0.166%
37	0.139%	0.044%	0.296%	0.305%
42	0.414%	0.058%	0.565%	0.592%
47	0.446%	0.080%	1.023%	1.101%
52	0.361%	0.106%	1.425%	1.425%
57	0.410%	0.135%	1.425%	1.425%
62	0.470%	0.164%	1.425%	1.425%

11. Rates of Nonservice-Connected Disability

Sample nonservice-connected disability rates of active participants are provided in the table below.

Rates of Non-Svc Disability				
Age	General Male	General Female	Safety Male	Safety Female
22	0.023%	0.057%	0.003%	0.003%
27	0.027%	0.072%	0.005%	0.005%
32	0.030%	0.099%	0.008%	0.009%
37	0.035%	0.131%	0.016%	0.016%
42	0.104%	0.174%	0.030%	0.031%
47	0.112%	0.239%	0.054%	0.058%
52	0.090%	0.319%	0.075%	0.075%
57	0.102%	0.406%	0.075%	0.075%
62	0.118%	0.493%	0.075%	0.075%

12. Rates of Mortality for Healthy Lives

Mortality rates for General active members are based on the sex distinct Public General 2010 Above-Median Income Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 1.05 for females and no adjustment for males.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

Mortality rates for Safety active members are based on the sex distinct Public Safety 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 0.98 for males and 1.06 for females. 10% of Safety member active deaths are assumed to occur in the line of duty.

Mortality rates for healthy General annuitants are based on the sex distinct Public General 2010 Above-Median Income Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 1.04 for females and no adjustment for males.

Mortality rates for Safety annuitants are based on the sex distinct Public Safety 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, and a partial credibility adjustment of 1.02 for males and 1.05 for females.

13. Rates of Mortality for Disabled Retirees

Mortality rates for General disabled annuitants are based on the sex distinct Public General Disabled Annuitant 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, with a partial credibility adjustment of 1.04 for males and 1.07 for females.

Mortality rates for Safety disabled annuitants are based on the sex distinct Public Safety Disabled Annuitant 2010 Mortality Table, with generational mortality improvements projected from 2010 using Projection Scale MP-2018, with a partial credibility adjustment of 1.04 for males and 0.98 for females.

14. Mortality Improvement

The mortality assumptions employ a fully generational mortality improvement projection from the base year of the Pub-2010 Mortality Tables using Scale MP-2018.

15. Adjustment for Service Purchases

SJCERA provides Cheiron with the amount of service that active employees are eligible to purchase. We include this service when calculating the employees' benefit eligibility. Half of eligible service purchases, which have not been purchased by the members, are included in the employees' Credited Service, as employees will pay approximately half of the normal cost for these benefits when purchasing this service.

APPENDIX B – SUMMARY OF PRIOR ASSUMPTIONS

16. Assumptions for Employee Contribution Rates

Mortality rates are the base mortality tables described above, projected using Scale MP-2018 from 2010 to 2040 for General Members and to 2041 for Safety Members. The projection periods are based on the duration of active liabilities for the respective groups, and the period during which the associated employee contribution rates will be in use. The employee contribution rates are also blended using a male/female weighting of 29%/71% for General Members and 75%/25% for Safety members.

17. Rates of Retirement

Rates of retirement are based on age and service according to the following table.

Rates of Retirement								
	General Male Years of Service			General Female Years of Service			Safety Years of Service	
Age	5-9	10-29	30+	5-9	10-29	30+	5-19	20+
45	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
46	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
47	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
48	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
49	0.00%	0.00%	5.00%	0.00%	0.00%	4.50%	0.00%	5.00%
50	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	15.00%
51	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	10.00%
52	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	10.00%
53	3.00%	3.00%	5.00%	1.00%	3.50%	4.50%	5.00%	20.00%
54	3.00%	3.00%	10.00%	5.75%	3.50%	4.50%	5.00%	20.00%
55	3.00%	6.50%	10.00%	2.50%	3.50%	4.50%	5.00%	20.00%
56	3.00%	4.00%	10.00%	1.50%	7.00%	15.00%	10.00%	20.00%
57	3.00%	4.00%	10.00%	1.50%	7.00%	15.00%	10.00%	20.00%
58	3.00%	4.00%	10.00%	1.50%	7.00%	15.00%	10.00%	20.00%
59	7.00%	9.00%	27.50%	2.00%	7.00%	15.00%	10.00%	15.00%
60	7.00%	9.00%	27.50%	6.25%	12.50%	25.00%	10.00%	30.00%
61	7.00%	15.00%	27.50%	6.25%	12.50%	25.00%	10.00%	30.00%
62	7.00%	30.00%	40.00%	18.50%	25.00%	35.00%	20.00%	30.00%
63	7.00%	25.00%	40.00%	5.00%	25.00%	35.00%	20.00%	30.00%
64	15.00%	25.00%	40.00%	9.00%	25.00%	35.00%	20.00%	50.00%
65	25.00%	25.00%	40.00%	12.50%	25.00%	35.00%	100.00%	100.00%
66	10.00%	35.00%	50.00%	25.00%	25.00%	30.00%	100.00%	100.00%
67	15.00%	30.00%	40.00%	25.00%	25.00%	30.00%	100.00%	100.00%
68	15.00%	30.00%	30.00%	25.00%	25.00%	30.00%	100.00%	100.00%
69	30.00%	40.00%	30.00%	25.00%	25.00%	30.00%	100.00%	100.00%
70	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

CHEIRON

Classic Values, Innovative Advice

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)[1] — June 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
TOTAL PLAN[1]			$ 3,768,693,310	100.0%	100.0%	-3.5	-6.8	-7.8	-3.1	5.8	6.1	7.6	Apr-90
Policy Benchmark [4]						*-3.0*	*-7.0*	*-8.4*	*-4.7*	*5.7*	*6.2*	*7.4*	
Difference:						-0.5	0.2	0.6	1.6	0.1	-0.1	0.2	
75/25 Portfolio [5]						*-7.1*	*-13.7*	*-18.4*	*-15.2*	*5.2*	*5.9*	*7.0*	
Difference:			.			3.6	6.9	10.6	12.1	0.6	0.2	0.6	
Broad Growth			$ 2,839,579,300	75.3%	75.0%	-4.2	-8.8	-10.1	-4.1	6.6	7.1	8.2	Jan-95
Aggressive Growth Lag[2]			$ 349,863,069	9.3%	10.0%	4.4	4.4	16.2	36.0	20.4	17.6	-2.2	Feb-05
MSCI ACWI +2%Lag						*4.8*	*1.2*	*8.9*	*19.2*	*16.7*	*12.4*	*0.0*	
Difference:						-0.4	3.2	7.3	16.8	3.7	5.2	-2.2	
BlackRock Global Energy&Power Lag[3]	*$50,000*	*Global Infrastructure*	$ 26,595,930	0.7%		2.3	2.3	5.3	10.6	--	--	10.1	Jul-19
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*--*	*--*	*16.6*	
Difference:						-0.1	7.1	3.1	0.7	--	--	-6.5	
Ocean Avenue II Lag[3]	*$40,000*	*PE Buyout FOF*	$ 41,562,241	1.1%		3.7	3.7	21.3	48.4	37.7	33.8	18.9	May-13
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*16.6*	*12.3*	*10.8*	
Difference:						1.3	8.5	19.1	38.5	21.1	21.5	8.1	
Lightspeed Venture Ptr Select V Lag[3]	*$40,000*	*PE Buyout FOF*	$ 4,191,123	0.1%		--	--	--	--	--	--	--	Jun-22
MSCI ACWI +2% Lag						*--*	*--*	*--*	*--*	*--*	*--*	*--*	
Difference:						--	--	--	--	--	--	--	
Ocean Avenue III Lag[3]	*$50,000*	*PE Buyout FOF*	$ 54,261,818	1.4%		9.1	9.1	23.6	53.9	29.2	35.8	27.4	Apr-16
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*16.6*	*12.3*	*11.7*	
Difference:						6.7	13.9	21.4	44.0	12.6	23.6	15.7	
Ocean Avenue IV Lag[3]	*$50,000*	*PE Buyout*	$ 52,263,369	1.4%		5.3	5.3	23.8	39.5	--	--	36.7	Dec-19
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*--*	*--*	*18.3*	
Difference:						2.9	10.1	21.6	29.6	--	--	18.4	
Morgan Creek III Lag[3]	*$10,000*	*Multi-Strat FOF*	$ 5,290,328	0.1%		0.0	0.0	-11.9	-24.4	-16.8	-5.1	-4.7	Feb-15
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*16.6*	*12.3*	*11.3*	
Difference:						-2.4	4.8	-14.1	-34.3	-33.4	-17.4	-16.0	
Morgan Creek V Lag[3]	*$12,000*	*Multi-Strat FOF*	$ 8,846,319	0.2%		0.0	0.0	6.5	19.9	14.4	13.8	14.1	Jun-13
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*16.6*	*12.3*	*10.8*	
Difference:						-2.4	4.8	4.3	10.0	-2.2	1.5	3.3	
Morgan Creek VI Lag[3]	*$20,000*	*Multi-Strat FOF*	$ 29,862,499	0.8%		0.0	0.0	16.5	42.1	25.0	22.1	12.8	Feb-15
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*9.9*	*16.6*	*12.3*	*11.3*	
Difference:						-2.4	4.8	14.3	32.2	8.4	9.8	1.5	
Stellex Capital Partners II Lag[3]	*$50,000*	*Special Situations PE*	$ 15,128,729	0.4%		11.4	11.4	8.7	--	--	--	-7.9	Jul-21
MSCI ACWI +2% Lag						*2.4*	*-4.8*	*2.2*	*--*	*--*	*--*	*5.1*	
Difference:						9.0	16.2	6.6	--	--	--	-13.0	
Non-Core Private Real Assets Lag[3]	*$341,100*	*Private Real Estate*	$ 111,860,713	3.0%		3.8	3.8	13.8	36.3	15.6	10.7	-1.8	Nov-04
MSCI ACWI +2% Lag						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*9.2*	
Difference:						-3.4	-3.6	-2.1	7.8	4.2	0.7	-11.0	
Opportunistic Private Real Estate													
Greenfield V[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 222,600	0.0%		-0.1	-0.1	-1.3	-2.0	-7.9	-5.7	-3.1	Jul-08
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*9.8*	
Difference:						-7.3	-7.5	-17.2	-30.5	-19.3	-15.7	-12.9	
Greenfield VI[3]	*$20,000*	*Opportunistic Pvt. RE*	$ 34,815	0.0%		-1.4	-1.4	0.0	-38.1	-40.4	-31.5	-13.0	Apr-12
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*14.3*	
Difference:						-8.6	-8.8	-15.9	-66.6	-51.8	-41.5	-27.3	
Greenfield VII[3]	*$19,100*	*Opportunistic Pvt. RE*	$ 5,422,943	0.1%		0.9	0.9	12.9	26.7	17.2	15.4	13.9	Oct-14
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*13.9*	
Difference:						-6.3	-6.5	-3.0	-1.8	5.8	5.4	0.0	

[1] Returns are preliminary and are finalized during each quarterly reporting cycle. Monthly returns since previous quarter are provided by the managers. Market values are provided by Northern Trust.

[2] Total class returns are as of 6/30/22, and lagged 1 quarter.

[3] Manager returns are as of 6/30/22, and lagged 1 quarter. Since Inception date reflects one quarter lag.

[4] 4/1/20 to present benchmark is **32%** MSCI ACWI IMI, **10%** BB Aggregate Bond Index, **17%** *50%* BB High Yield/*50%* S&P Leveraged Loans, 6% NCREIF ODCE +1% lag; **10%** T-Bill +4%, **10%** MSCI ACWI +2%, **15%** CRO Custom Benchmark. Prior to 4/1/20 benchmark is legacy policy benchmark.

[5] 4/1/20 to present **75%** MSCI ACWI, **25%** BB Global Aggregate. Prior to 4/1/20 60% MSCI ACWI, 40% BB Global Aggregate.

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)[1] — June 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Opportunistic Private Real Estate (continued)													
Grandview[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 19,658,666	0.5%		-0.4	-0.4	25.3	41.8	30.5	--	25.7	Apr-18
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*13.5*	
Difference:						-7.6	-7.8	9.4	13.3	19.1	--	12.2	
Miller Global Fund VI[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 86,092	0.0%		0.0	0.0	81.0	115.4	-6.1	1.1	0.7	May-08
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*9.8*	
Difference:						-7.2	-7.4	65.1	86.9	-17.5	-8.9	-9.1	
Miller Global Fund VII[3]	*$15,000*	*Opportunistic Pvt. RE*	$ 45,087	0.0%		0.0	0.0	-85.5	-88.3	-51.2	-36.0	-6.1	Dec-12
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*14.0*	
Difference:						-7.2	-7.4	-101.4	-116.8	-62.6	-46.0	-20.1	
Walton Street V[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 1,544,898	0.0%		-7.0	-7.0	-17.4	-17.5	-15.1	-12.1	-5.1	Nov-06
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*10.7*	
Difference:						-14.2	-14.4	-33.3	-46.0	-26.5	-22.1	-15.8	
Walton Street VI[3]	*$15,000*	*Opportunistic Pvt. RE*	$ 5,732,531	0.2%		2.4	2.4	14.6	16.5	2.7	3.8	7.8	Jul-09
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*12.6*	
Difference:						-4.8	-5.0	-1.3	-12.0	-8.7	-6.2	-4.8	
Value-Added Private Real Estate													
AG Core Plus IV[3]	*$20,000*	*Value-Added Pvt. RE*	$ 13,858,156	0.4%		1.7	1.7	9.6	14.1	9.8	10.5	6.1	Sep-15
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*13.5*	
Difference:						-5.5	-5.7	-6.3	-14.4	-1.6	0.5	-7.4	
Almanac Realty VI[3]	*$30,000*	*Value-Added Pvt. RE*	$ 4,249,408	0.1%		2.6	2.6	8.2	17.7	-7.2	-5.1	21.6	Feb-13
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*14.3*	
Difference:						-4.6	-4.8	-7.7	-10.8	-18.6	-15.1	7.3	
Berkeley Partners Fund V, LP	*$40,000*	*Value-Added Pvt. RE*	$ 27,886,236	0.7%		9.7	9.7	36.0	45.1	--	--	38.0	Aug-20
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	--	--	*24.4*	
Difference:						2.5	2.3	20.1	16.6	--	--	13.6	
Stockbridge RE III[3]	*$45,000*	*Value-Added Pvt. RE*	$ 33,189,276	0.9%		4.4	4.4	32.9	52.8	21.8	--	14.5	Jul-18
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*13.7*	
Difference:						-2.8	-3.0	17.0	24.3	10.4	--	0.8	
Traditional Growth[2]			**$ 1,279,055,876**	**33.9%**	**32.0%**	**-8.7**	**-15.4**	**-20.1**	**-15.2**	**4.3**	**5.7**	**8.6**	**Jan-95**
MSCI ACWI IMI Net						*-8.6*	*-15.8*	*-20.4*	*-16.5*	*6.6*	*7.5*	*7.4*	
Difference:						-0.1	0.4	0.3	1.3	-2.3	-1.8	1.2	
Global Equity			$ 1,233,490,495	32.7%									
Northern Trust MSCI World IMI		*All Cap Global*	$ 1,104,861,534	29.3%		-8.7	-15.9	-20.5	-14.9	--	--	4.1	Sep-20
MSCI World IMI Net						*-8.8*	*-16.3*	*-20.8*	*-15.3*	--	--	*3.6*	
Difference:						0.1	0.4	0.3	0.4	--	--	0.5	
SJCERA Transition		*All Cap Global*	$ 2,999	0.0%		NM	NM	NM	NM	--	--	NM	Jul-20
Emerging Markets			$ 128,625,962										
GQG Active Emerging Markets		*Emerging Markets*	$ 57,908,646	1.5%		-8.4	-11.2	-18.2	-22.6	--	--	-2.3	Aug-20
MSCI Emerging Markets Index Net						*-6.6*	*-11.5*	*-17.6*	*-25.3*	--	--	*-1.8*	
Difference:						-1.8	0.3	-0.6	2.7	--	--	-0.5	
PIMCO RAE Fundamental Emerging Markets		*Emerging Markets*	$ 70,717,316	1.9%		-10.4	-13.1	-16.3	-19.3	1.1	2.6	4.1	Apr-07
MSCI Emerging Markets Index						*-6.6*	*-11.3*	*-17.5*	*-25.0*	*0.9*	*2.5*	*3.3*	
Difference:						-3.8	-1.8	1.2	5.7	0.2	0.1	0.8	
REITS			$ 45,565,381	1.2%									
Invesco All Equity REIT		*Core US REIT*	$ 45,565,381	1.2%		-5.9	-12.6	-17.8	-4.2	4.0	6.0	8.6	Aug-04
FTSE NAREIT Equity Index						*-7.4*	*-17.0*	*-20.2*	*-6.3*	*4.0*	*5.3*	*8.2*	
Difference:						1.5	4.4	2.4	2.1	0.0	0.7	0.4	

[1] Returns are preliminary and are finalized during each quarterly reporting cycle. Monthly returns since previous quarter are provided by the managers. Market values are provided by Northern Trust.

[2] MSCI ACWI IMI Net as of 4/1/2020, MSCI ACWI Gross prior.

[3] Manager returns are as of 3/31/22, and lagged 1 quarter. Since Inception date reflects one quarter lag.

NM = Returns not meaningful

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)[1] June 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Stabilized Growth			$ 1,210,660,355	32.1%	33.0%	-1.3	-4.5	-4.0	0.8	5.8	6.0	3.9	Jan-05
Risk Parity			$ 380,259,428	10.1%		-8.0	-15.3	-19.5	-16.2	0.9	3.5	3.5	
T-Bill +4%						*0.3*	*1.1*	*2.1*	*4.2*	*4.7*	*5.2*	*4.5*	
Difference:						-8.3	-16.4	-21.6	-20.4	-3.8	-1.7	-1.0	
Bridgewater All Weather		*Risk Parity*	$ 190,102,200	5.0%		-7.4	-15.3	-18.6	-14.1	1.3	3.5	3.7	Mar-12
T-Bill +4%						*0.3*	*1.1*	*2.1*	*4.2*	*4.7*	*5.2*	*5.4*	
Difference:						-7.7	-16.4	-20.7	-18.3	-3.4	-1.7	-1.7	
PanAgora Diversified Risk Multi-Asset		*Risk Parity*	$ 190,157,228	5.0%		-8.5	-15.4	-20.3	-18.2	0.6	3.5	4.4	Apr-16
T-Bill +4%						*0.3*	*1.1*	*2.1*	*4.2*	*4.7*	*5.2*	*5.0*	
Difference:						-8.8	-16.5	-22.4	-22.4	-4.1	-1.7	-0.6	
Liquid Credit			$ 215,337,871	5.7%		-3.8	-6.4	-9.3	-9.1	-0.2	1.4	1.6	Oct-06
50% BB High Yield, 50% S&P/LSTA Leveraged Loans						*-4.4*	*-7.1*	*-9.4*	*-7.9*	*1.2*	*2.5*	*5.1*	
Difference:						0.6	0.7	0.1	-1.2	-1.4	-1.1	-3.5	
Neuberger Berman		*Global Credit*	$ 93,050,922	2.5%		-4.5	-8.1	-12.8	-12.6	-0.9	--	0.4	Feb-19
33% ICE BofA HY Constrained, 33% S&P/LSTA LL, 33% JPM EMBI Glbl Div.						*-5.0*	*-8.5*	*-13.0*	*-12.3*	*-1.0*	*--*	*0.5*	
Difference:						0.5	0.4	0.2	-0.3	0.1	--	-0.1	
Stone Harbor Absolute Return		*Absolute Return*	$ 122,286,949	3.2%		-3.2	-5.0	-6.5	-6.3	0.3	1.5	2.4	Oct-06
3-Month Libor Total Return						*0.0*	*0.1*	*0.0*	*0.1*	*0.8*	*1.3*	*1.3*	
Difference:						-3.2	-5.1	-6.5	-6.4	-0.5	0.2	1.1	
Private Credit Lag[2]			$ 375,926,496	10.0%		1.6	1.6	5.7	9.1	4.8	3.9	3.8	
50% BB High Yield, 50% S&P/LSTA Leveraged Loans						*-0.5*	*-2.5*	*-1.8*	*1.3*	*4.4*	*4.4*	*5.7*	
Difference:						2.1	4.1	7.5	7.8	0.4	-0.5	-1.9	
BlackRock Direct Lending Lag[3]	*$100,000*	*Direct Lending*	$ 79,782,155	2.1%		0.9	0.9	0.9	6.2	--	--	8.7	May-20
S&P/LSTA Leveraged Loans +3% Blend [5]						*0.3*	*0.6*	*0.6*	*10.6*	*--*	*--*	*14.4*	
Difference:						0.6	0.3	0.3	-4.4	--	--	-5.7	
Mesa West RE Income IV Lag[3]	*$75,000*	*Comm. Mortgage*	$ 25,277,225	0.7%		0.7	0.7	3.4	8.1	7.8	8.2	7.5	Mar-17
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*9.0*	*8.8*	*8.8*	
Difference:						0.4	0.1	-0.4	-2.5	-1.2	-0.6	-1.3	
Crestline Opportunity II Lag[7]	*$45,000*	*Opportunistic*	$ 17,738,175	0.5%		-1.2	-1.2	1.3	6.9	2.1	2.7	5.0	Nov-13
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*9.0*	*8.8*	*8.9*	
Difference:						-1.5	-1.8	-2.5	-3.7	-6.9	-6.1	-3.9	
Davidson Kempner Distr Opp V Lag[3]	*$50,000*	*Opportunistic*	$ 49,020,155	0.0%		2.9	2.9	6.7	14.3	--	--	31.8	Oct-20
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*--*	*--*	*10.3*	
Difference:						2.6	2.3	2.9	3.7	--	--	21.5	
Oaktree Lag	*$50,000*	*Leveraged Direct*	$ 31,237,534	0.8%		3.7	3.7	9.8	16.9	18.3	--	12.0	Mar-18
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*11.2*	*--*	*9.0*	
Difference:						3.4	3.1	6.0	6.3	7.0	--	3.0	
HPS EU Asset Value II Lag[3]	*$50,000*	*Direct Lending*	$ 32,790,932	0.9%		3.2	3.2	4.5	7.8	--	--	2.7	Aug-20
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*--*	*--*	*10.2*	
Difference:						2.9	2.6	0.7	-2.8	--	--	-7.5	
Raven Opportunity II Lag[7]	*$45,000*	*Direct Lending*	$ 5,440,481	0.1%		-1.6	-1.6	189.3	208.2	37.2	25.5	11.5	Aug-14
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*9.0*	*8.8*	*8.9*	
Difference:						-1.9	-2.2	185.5	197.6	28.2	16.7	2.6	
Raven Opportunity III Lag[3]	*$50,000*	*Direct Lending*	$ 54,263,543	1.4%		1.8	1.8	8.1	14.8	8.1	8.8	4.2	Nov-15
S&P/LSTA Leveraged Loans +3% Blend [4]						*0.3*	*0.6*	*3.8*	*10.6*	*9.0*	*8.8*	*8.8*	
Difference:						1.5	1.2	4.3	4.2	-0.9	0.0	-4.6	

[1] Returns are preliminary and are finalized during each quarterly reporting cycle. Monthly returns since previous quarter are provided by the managers. Market values are provided by Northern Trust.

[2] Total class returns are as of 6/30/22, and lagged 1 quarter.

[3] Manager returns are as of 6/30/22, and lagged 1 quarter. Since Inception date reflects one quarter lag.

[4] 9% Annual until 6/30/2018; CPI +6% Annual 7/1/2018 - 3/31/2022; S&P/LSTA Leveraged Loans +3% thereafter.

[5] 50% Bloomberg High Yield/50% S&P Leveraged Loan until 12/31/20 then CPI +6% Annual thereafter. Benchmark lagged one quarter.

[6] MSCI ACWI + 2% until 12/31/20 then CPI +6% Annual thereafter. Benchmark lagged one quarter

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)[1] June 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Private Credit Lag (continued)													
Medley Opportunity II Lag[3]	*$50,000*	*Direct Lending*	$ 4,378,784	0.1%		0.0	0.0	-9.9	-12.7	-11.4	-10.1	-2.3	Jul-12
S&P/LSTA Leveraged Loans +3% Blend[4]						*0.3*	*0.6*	*3.8*	*10.6*	*9.0*	*8.8*	*8.9*	
Difference:						-0.3	-0.6	-13.7	-23.3	-20.4	-18.9	-11.2	
White Oak Summit Peer Fund Lag[3]	*$50,000*	*Direct Lending*	$ 31,761,398	0.8%		0.2	0.2	3.0	-0.9	3.4	5.1	5.7	Mar-16
S&P/LSTA Leveraged Loans +3% Blend[4]						*0.3*	*0.6*	*3.8*	*10.6*	*9.0*	*8.8*	*8.8*	
Difference:						-0.1	-0.4	-0.8	-11.5	-5.6	-3.7	-3.1	
White Oak Yield Spectrum Master V Lag[3]	*$50,000*	*Direct Lending*	$ 44,236,114	1.2%		1.5	1.5	2.3	3.2	--	--	0.9	Mar-20
S&P/LSTA Leveraged Loans +3% Blend[4]						*0.3*	*0.6*	*3.8*	*10.6*	--	--	*9.3*	
Difference:						1.2	0.9	-1.5	-7.4	--	--	-8.4	
Core Private Real Estate Lag			$ 239,136,560	6.3%									
Principal US[3]	*$25,000*	*Core Pvt. RE*	$ 45,152,344	1.2%		7.3	7.3	23.9	28.4	11.3	10.0	10.2	Jan-16
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*13.1*	
Difference:						0.1	-0.1	8.0	-0.1	-0.1	0.0	-2.9	
Prologis Logistics[3]	*$35,000*	*Core Pvt. RE*	$ 130,605,773	3.5%		11.8	11.8	41.2	57.9	27.6	23.5	9.7	Dec-07
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*10.0*	
Difference:						4.6	4.4	25.3	29.4	16.2	13.5	-0.3	
RREEF America II[3]	*$45,000*	*Core Pvt. RE*	$ 63,378,443	1.7%		5.4	5.4	23.5	28.0	11.5	9.8	9.9	Jul-16
NCREIF ODCE + 1% Lag Blend						*7.2*	*7.4*	*15.9*	*28.5*	*11.4*	*10.0*	*13.0*	
Difference:						-1.8	-2.0	7.6	-0.5	0.1	-0.2	-3.1	
Diversifying Strategies			$ 839,607,554	22.3%	25.0%	-0.7	1.4	3.3	2.8	3.2	3.5	6.3	Oct-90
Principal Protection			$ 288,814,356	7.7%	10.0%	-2.0	-3.8	-8.4	-8.4	-1.0	1.1	5.9	Oct-90
BB Aggregate Bond Index						*-1.6*	*-4.7*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*5.5*	
Difference:						-0.4	0.9	1.9	1.9	-0.1	0.2	0.4	
Dodge & Cox		*Core Fixed Income*	$ 195,834,615	5.2%		-2.3	-4.7	-9.7	-9.9	0.3	1.9	6.7	Oct-90
BB Aggregate Bond Index						*-1.6*	*-4.7*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*5.5*	
Difference:						-0.7	0.0	0.6	0.4	1.2	1.0	1.2	
DoubleLine Capital		*MBS*	$ 25,209	0.0%		0.1	0.1	-2.7	-2.2	1.5	2.5	4.3	Feb-12
BB Aggregate Bond Index						*-1.6*	*-4.7*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.6*	
Difference:						1.7	4.8	7.6	8.1	2.4	1.6	2.7	
Loomis Sayles		*Core Fixed Income*	$ 92,954,532	2.5%		-1.7	-4.4	-4.4	--	--	--	-7.1	Mar-22
BB Aggregate Bond Index						*-1.6*	*-4.7*	*-4.7*	--	--	--	*-7.3*	
Difference:						-0.1	0.3	0.3	--	--	--	0.2	

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[2] Total class returns are as of 6/30/22, and lagged 1 quarter.

[3] Manager returns are as of 6/30/22, and lagged 1 quarter. Since Inception date reflects one quarter lag.

[4] 9% Annual until 6/30/2018; CPI +6% Annual 7/1/2018 - 3/31/2022; S&P/LSTA Leveraged Loans +3% thereafter.

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)[1] June 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Crisis Risk Offset			$ 550,793,198	14.6%	15.0%	0.0	5.2	12.7	11.9	6.2	5.2	6.9	Jan-05
CRO Custom Benchmark [2]						*0.0*	*-1.5*	*-1.7*	*1.5*	*4.5*	*4.5*	*5.2*	
Difference:						0.0	6.7	14.4	10.4	1.7	0.7	1.7	
Long Duration			$ 123,910,812	3.3%		-1.4	-11.4	-20.3	-18.2	-3.0	0.3	0.0	
BB US Long Duration Treasuries						*-1.5*	*-11.9*	*-21.3*	*-18.5*	*-2.9*	*0.5*	*0.7*	
Difference:						0.1	0.5	1.0	0.3	-0.1	-0.2	-0.7	
Dodge & Cox Long Duration		*Long Duration*	$ 123,910,812	3.3%		-1.4	-11.4	-20.3	-18.2	-3.0	0.3	0.0	Feb-16
BB US Long Duration Treasuries						*-1.5*	*-11.9*	*-21.3*	*-18.5*	*-2.9*	*0.5*	*0.7*	
Difference:						0.1	0.5	1.0	0.3	-0.1	-0.2	-0.7	
Systematic Trend Following			$ 249,113,064	6.6%		-0.3	10.0	35.9	30.2	16.5	9.2	9.7	
BTOP50 Index						*1.2*	*6.7*	*16.5*	*20.8*	*10.9*	*7.4*	*5.4*	
Difference:						-1.5	3.3	19.4	9.4	5.6	1.8	4.3	
Mt. Lucas Managed Futures - Cash		*Systematic Trend Following*	$ 126,881,962	3.4%		-3.7	8.8	34.4	28.0	17.7	8.8	9.1	Jan-05
BTOP50 Index						*1.2*	*6.7*	*16.5*	*20.8*	*10.9*	*7.4*	*5.4*	
Difference:						-4.9	2.1	17.9	7.2	6.8	1.4	3.7	
Graham Tactical Trend		*Systematic Trend Following*	$ 122,231,102	3.2%		3.4	11.2	37.4	32.5	15.1	9.5	5.7	Apr-16
SG Trend Index						*2.6*	*9.6*	*29.0*	*31.0*	*15.0*	*10.5*	*5.7*	
Difference:						0.8	1.6	8.4	1.5	0.1	-1.0	0.0	
Alternative Risk Premia			$ 177,769,322	4.7%		1.4	14.4	19.1	19.8	0.9	2.7	7.8	
5% Annual						*0.4*	*1.2*	*2.5*	*5.0*	*5.0*	*5.0*	*6.3*	
Difference:						1.0	13.2	16.6	14.8	-4.1	-2.3	1.5	
AQR Style Premia		*Alternative Risk Premia*	$ 52,906,269	1.4%		-9.5	12.4	25.2	31.9	3.3	-0.6	0.0	May-16
5% Annual						*0.4*	*1.2*	*2.5*	*5.0*	*5.0*	*5.0*	*5.0*	
Difference:						-9.9	11.2	22.7	26.9	-1.7	-5.6	-5.0	
PE Diversified Global Macro		*Alternative Risk Premia*	$ 66,777,377	1.8%		14.2	31.1	51.3	49.6	3.0	4.2	3.4	Jun-16
5% Annual						*0.4*	*1.2*	*2.5*	*5.0*	*5.0*	*5.0*	*5.0*	
Difference:						13.8	29.9	48.8	44.6	-2.0	-0.8	-1.6	
Lombard Odier		*Alternative Risk Premia*	$ 58,085,676	1.5%		-0.5	3.7	-2.3	-3.1	-4.7	--	-3.6	Jan-19
5% Annual						*0.4*	*1.2*	*2.5*	*5.0*	*5.0*	--	*5.0*	
Difference:						-0.9	2.5	-4.8	-8.1	-9.7	--	-8.6	
Cash[3]			$ 65,479,400	1.7%	0.0%	0.1	0.1	0.1	0.1	0.5	0.8	2.3	Sep-94
US T-Bills						*0.0*	*0.1*	*0.1*	*0.2*	*0.6*	*1.1*	*2.3*	
Difference:						0.1	0.0	0.0	-0.1	-0.1	-0.3	0.0	
Northern Trust STIF		*Collective Govt. Short Term*	$ 80,403,148	2.1%		0.1	0.1	0.2	0.2	0.5	0.8	2.5	Jan-95
US T-Bills						0.0	0.1	0.1	0.2	0.6	1.1	*2.3*	
Difference:						0.1	0.0	0.1	0.0	-0.1	-0.3	0.2	
Parametric Overlay[4]		*Cash Overlay*	$ 24,027,056	0.6%		0.0	0.0	0.0	0.0	--	--	0.0	Jan-20

[2] Benchmark is (1/3) BB Long Duration Treasuries, (1/3) BTOP50 Index, (1/3) 5% Annual.

[3] Includes lagged cash.

[5] 60% MSCI ACWI, 40% BB Universal

[4] Given daily cash movement returns may vary from those shown above.

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Economic and Market Update

June 2022 Report

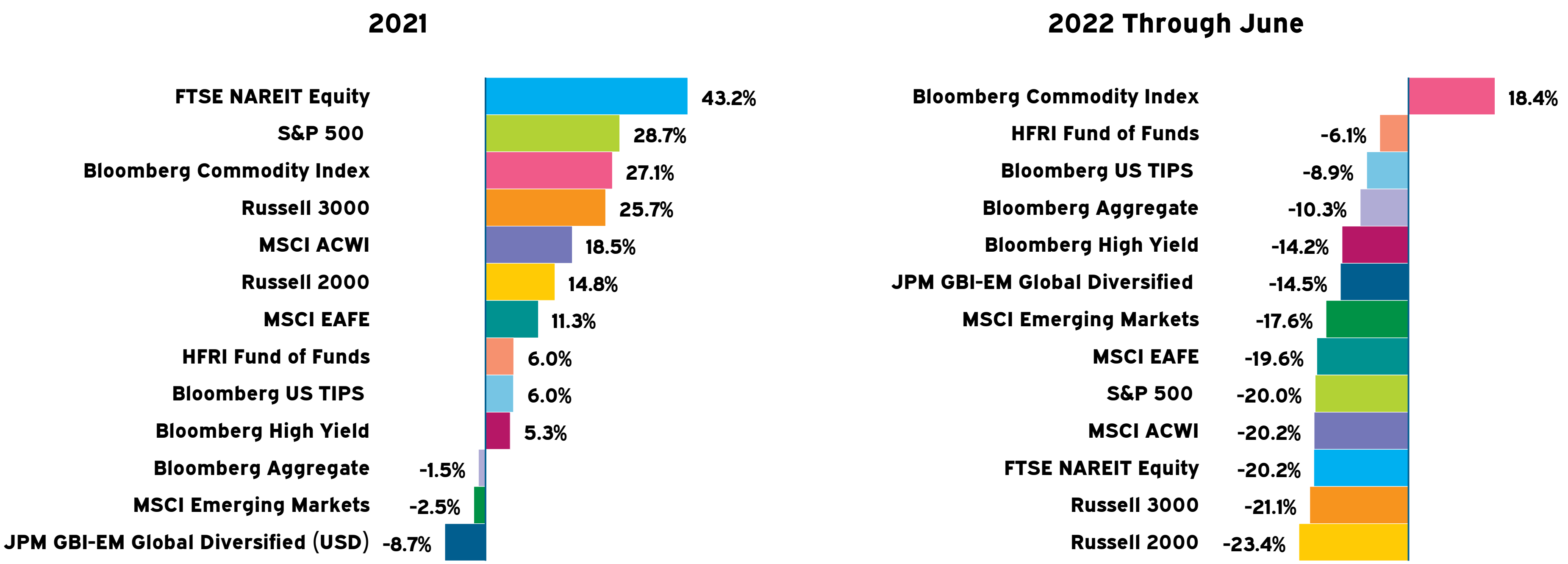
Commentary

→ Global markets resumed their sell-off in June as inflation surged in the US and Europe.

- In response, the US Federal Reserve increased interest rates 75 basis points (above prior expectations). Markets also repriced the growth outlook downward.
- All major equity indices suffered steep declines in June. Emerging markets proved slightly more resilient than developed markets on a partial re-opening in China from pandemic related lockdowns.
- In a reversal of the prior trend growth stocks outperformed value stocks in June.
- The global bond selloff resumed, as inflation fears, and policy expectations weighed on all major bond markets.

→ Persistently high inflation and the expected policy response, the war in Ukraine, lingering COVID-19 issues, and lockdowns in China will all have considerable economic and financial consequences for the global economy.

Index Returns[1]



→ Outside of emerging markets and the broad US investment grade bond market (Bloomberg Aggregate), most asset classes appreciated in 2021.

→ In June all major asset classes posted negative returns on renewed inflation and economic growth fears, with equities experiencing the largest declines.

[1] Source: Bloomberg and FactSet. Data is as of June 30, 2022.

Domestic Equity Returns[1]

Domestic Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-8.3	-16.1	-20.0	-10.6	10.6	11.3	12.9
Russell 3000	-8.4	-16.7	-21.1	-13.9	9.8	10.6	12.6
Russell 1000	-8.4	-16.7	-20.9	-13.0	10.2	11.0	12.8
Russell 1000 Growth	-7.9	-20.9	-28.1	-18.8	12.6	14.3	14.8
Russell 1000 Value	-8.7	-12.2	-12.9	-6.8	6.9	7.2	10.5
Russell MidCap	-10.0	-16.8	-21.6	-17.3	6.6	8.0	11.3
Russell MidCap Growth	-7.5	-21.1	-31.0	-29.6	4.3	8.9	11.5
Russell MidCap Value	-11.0	-14.7	-16.2	-10.0	6.7	6.3	10.6
Russell 2000	-8.2	-17.2	-23.4	-25.2	4.2	5.2	9.4
Russell 2000 Growth	-6.2	-19.3	-29.5	-33.4	1.4	4.8	9.3
Russell 2000 Value	-9.9	-15.3	-17.3	-16.3	6.2	4.9	9.0

US Equities: Russell 3000 Index declined 8.3%, and growth indices outperformed value in June.

→ US stocks experienced steep losses for the month, led by the energy and materials sectors.

→ Growth indices outperformed their value counterparts for the month but remain well behind for the year-to-date period.

→ Small company stocks slightly outperformed large company stocks in June but remain behind their larger peers year-to-date.

[1] Source: Bloomberg. Data is as of June 30, 2022.

Foreign Equity Returns[1]

Foreign Equity	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-8.6	-13.7	-18.4	-19.4	1.3	2.5	4.8
MSCI EAFE	-9.3	-14.5	-19.6	-17.8	1.1	2.2	5.4
MSCI EAFE (Local Currency)	-6.3	-7.8	-11.3	-6.6	4.4	4.3	8.3
MSCI EAFE Small Cap	-11.0	-17.7	-24.7	-24.0	1.1	1.7	7.2
MSCI Emerging Markets	-6.6	-11.5	-17.6	-25.3	0.6	2.2	3.1
MSCI Emerging Markets (Local Currency)	-4.6	-8.1	-13.7	-20.2	3.3	4.4	6.0
MSCI China	6.6	3.4	-11.3	-31.8	-0.6	2.1	5.5

International Equities (MSCI EAFE) declined 9.3% and Emerging Markets (MSCI EM) declined 6.6% in June.

→ Non-US developed market stocks slightly trailed the US for the month, while emerging markets stocks had better results due to China gaining 6.6%. Both remain notably negative for the year-to-date period, but ahead of the US.

→ The war in Ukraine, high inflation and the likely monetary policy response, and slowing growth continue to weigh on sentiment.

→ As in the US, growth stocks outperformed value stocks across developed and emerging markets.

[1] Source: Bloomberg. Data is as of June 30, 2022.

Fixed Income Returns[1]

Fixed Income	June (%)	Q2 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-2.0	-5.1	-10.9	-10.9	-0.9	0.9	1.8	4.2	6.4
Bloomberg Aggregate	-1.6	-4.7	-10.3	-10.3	-0.9	0.9	1.5	3.7	6.6
Bloomberg US TIPS	-3.2	-6.1	-8.9	-5.1	3.0	3.2	1.7	3.4	7.0
Bloomberg High Yield	-6.7	-9.8	-14.2	-12.8	0.2	2.1	4.5	8.9	4.8
JPM GBI-EM Global Diversified (USD)	-4.5	-8.6	-14.5	-19.3	-5.8	-2.3	-1.5	7.4	4.9

Fixed Income: The Bloomberg Universal declined 2.0% in June.

→ The above expectations CPI print led to renewed inflation fears driving interest rates higher and weighing on the broad US investment grade bond market (Bloomberg Aggregate).

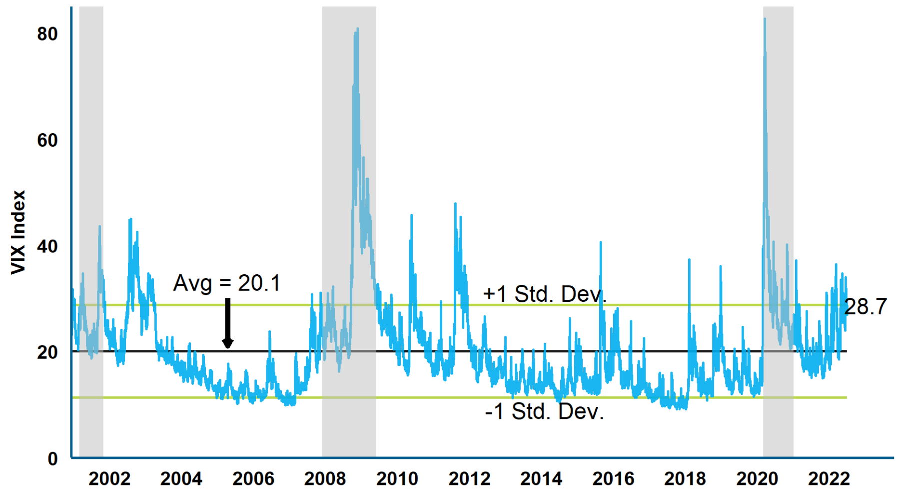
→ Despite the above expectation CPI prints, breakeven inflation rates have continued to move down driven by the decline in nominal rates. The nominal 10-year Treasury yield peaked at 3.47% before declining to 3.01% by month-end, while the 2-year Treasury yield declined from 3.43% to 2.95%.

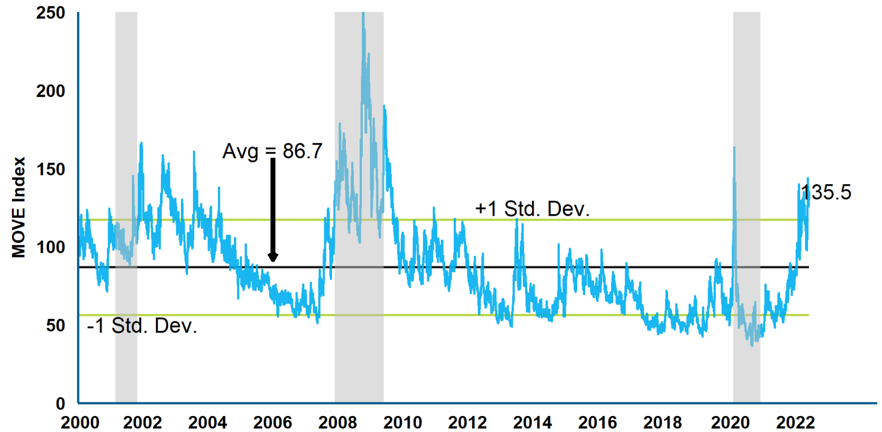
→ US credit spreads widened, particularly for high yield debt, leading to it having the worst results among bonds for the month.

→ Emerging market debt also declined for the month.

[1] Source: Bloomberg. JPM GBI-EM is from InvestorForce. Data is as of June 30, 2022.

Equity and Fixed Income Volatility[1]



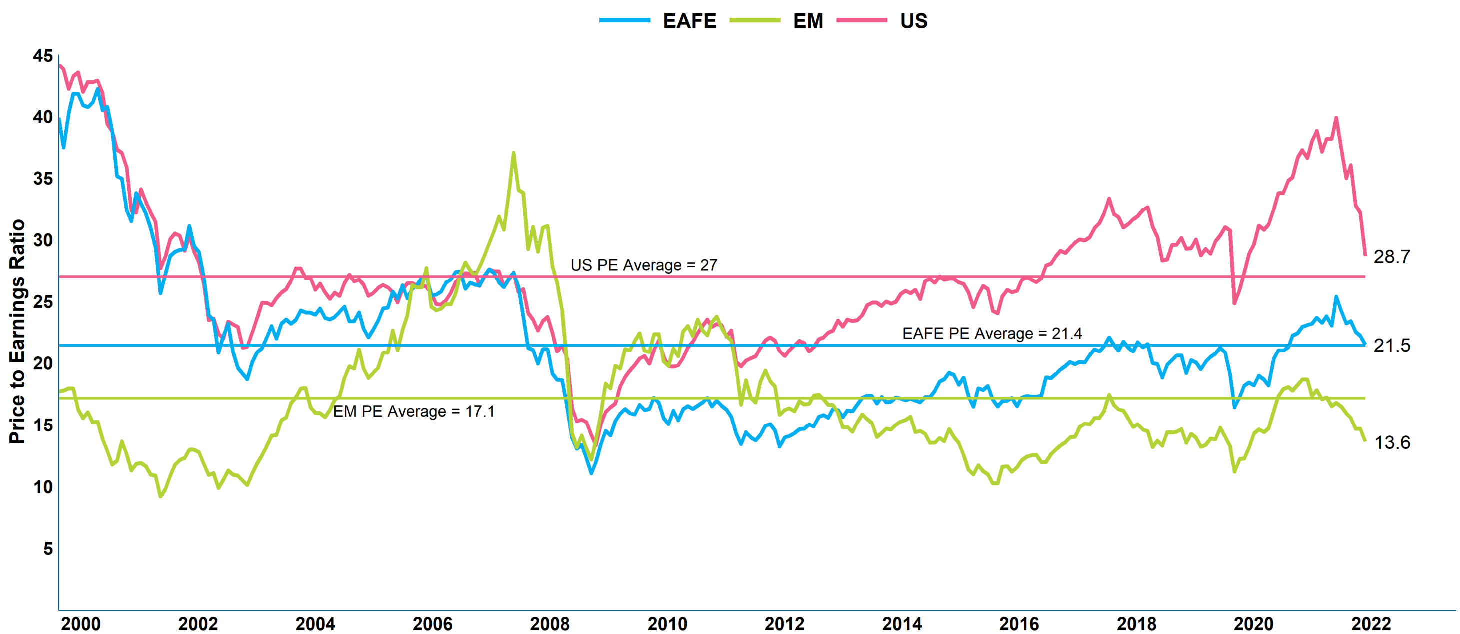


→ Volatility in equities (VIX) and fixed income (MOVE) rose in June on renewed inflation fears and on building signs of weakness in economic growth.

→ Fixed income volatility remains particularly high due to the uncertain path of short-term interest rates.

[1] Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of June 2022. The average line indicated is the average of the VIX and MOVE values between January 2000 and the recent month-end respectively.

Equity Cyclically Adjusted P/E Ratios[1]

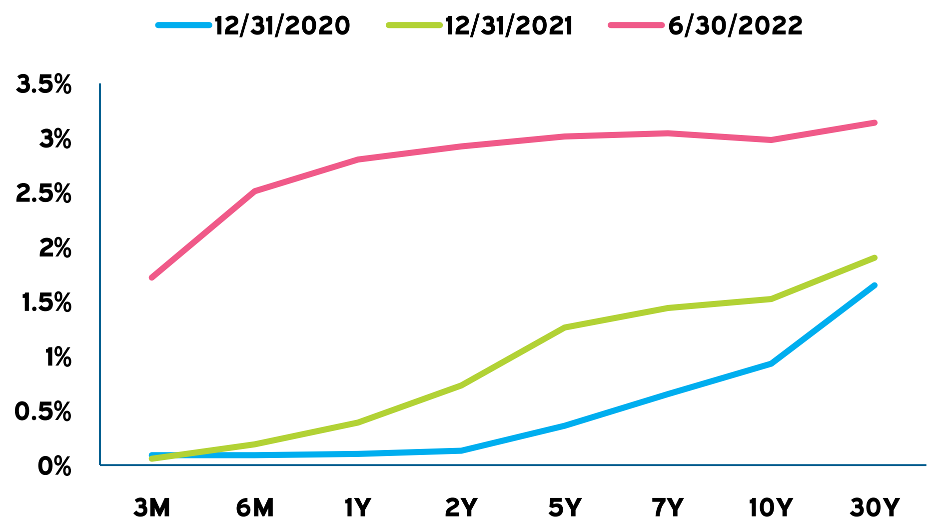


→ The steep decline in June in US equities pushed valuations lower, approaching the level of the long-term (post-2000) average.

→ International developed market valuations remain below the US and are slightly above their own long-term average, with those for emerging markets the lowest and under the long-term average.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of June 30, 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

US Yield Curve[1]



→ Rates across the yield curve remain much higher than at the start of the year.

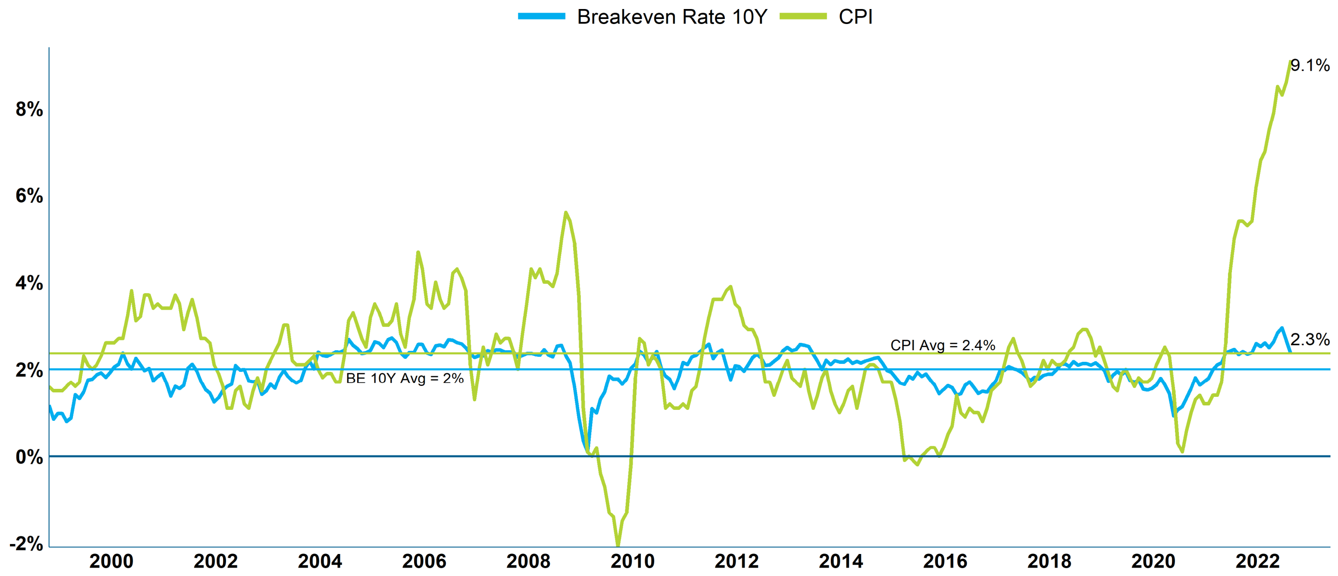
→ In June, rates rose across maturities (particularly short-dated), as markets continue to reflect elevated inflation and rate expectations.

→ The curve continued to flatten in June with the spread between two-year and ten-year Treasuries falling from 30 basis points at the end of May to just 5 basis points by the end of June.

→ Since month-end, the spread between two-year and ten-year Treasuries became negative which historically has often signaled a coming recession.

[1] Source: Bloomberg. Data is as of June 30, 2022.

Ten-Year Breakeven Inflation and CPI[1]



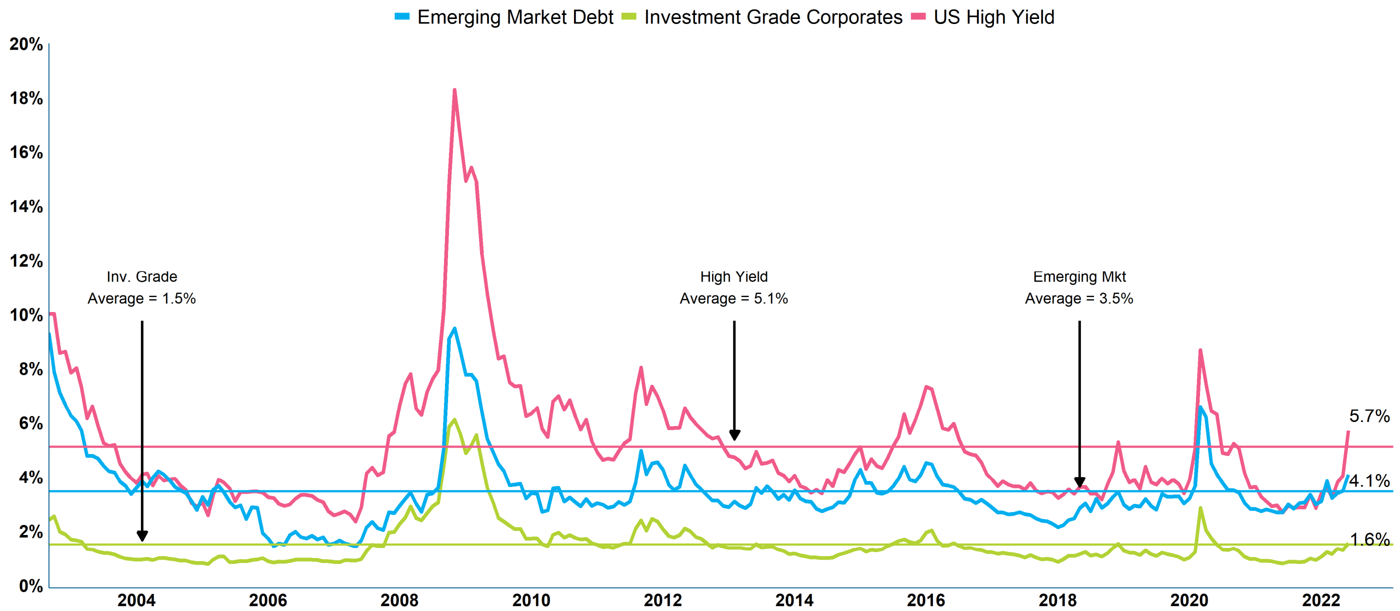
→ Inflation expectations (breakevens) fell further in June on declining growth expectations and anticipated tighter monetary policy.

→ Trailing twelve-month CPI rose in June (9.1% versus 8.6%) and notably came in above expectations. Inflation levels in the US remain well above the long-term average of 2.4%.

→ Rising prices for energy (particularly oil), food, housing, and for new and used cars, remain key drivers of higher inflation.

[1] Source: Bloomberg. Data is as of June 30, 2022. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

Credit Spreads vs. US Treasury Bonds[1]



→ Credit spreads (the spread above a comparable maturity Treasury) rose in June with high yield and investment grade corporate bonds breaking above their long-run averages.

→ In the US, spreads for high yield significantly increased from 4.0% to 5.7% in the risk-off environment, while investment grade spreads experienced a more modest increase (1.3% to 1.6%). Emerging market spreads also rose (3.5% to 4.1% during the month) but finished much lower than US high yield spreads.

[1] Sources: Bloomberg. Data is as of June 30, 2022. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

Global Economic Outlook

The IMF significantly lowered global growth forecasts again in their latest projections, driven by the economic impacts of persistent inflation in energy and food prices.

→ The IMF forecasts global GDP growth to come in at 3.2% in 2022 (0.4% below the prior estimate) and 2.9% in 2023 (0.7% below the prior estimate).

→ In advanced economies, GDP is projected to increase 2.5% in 2022 and 1.4% in 2023. The US saw another downgrade in the 2022 (2.3% versus 3.7%) and 2023 (1.0% versus 2.3%) growth forecasts largely due to policy tightening happening faster than previously expected given persistently high inflation. The euro area saw a downgrade too in expected growth (2.6% versus 2.8%) in 2022 and in 2023 (1.2% versus 2.3%) as rising energy prices particularly weigh on the region that is a net importer of energy. The Japanese economy is expected to grow 1.7% this year and next.

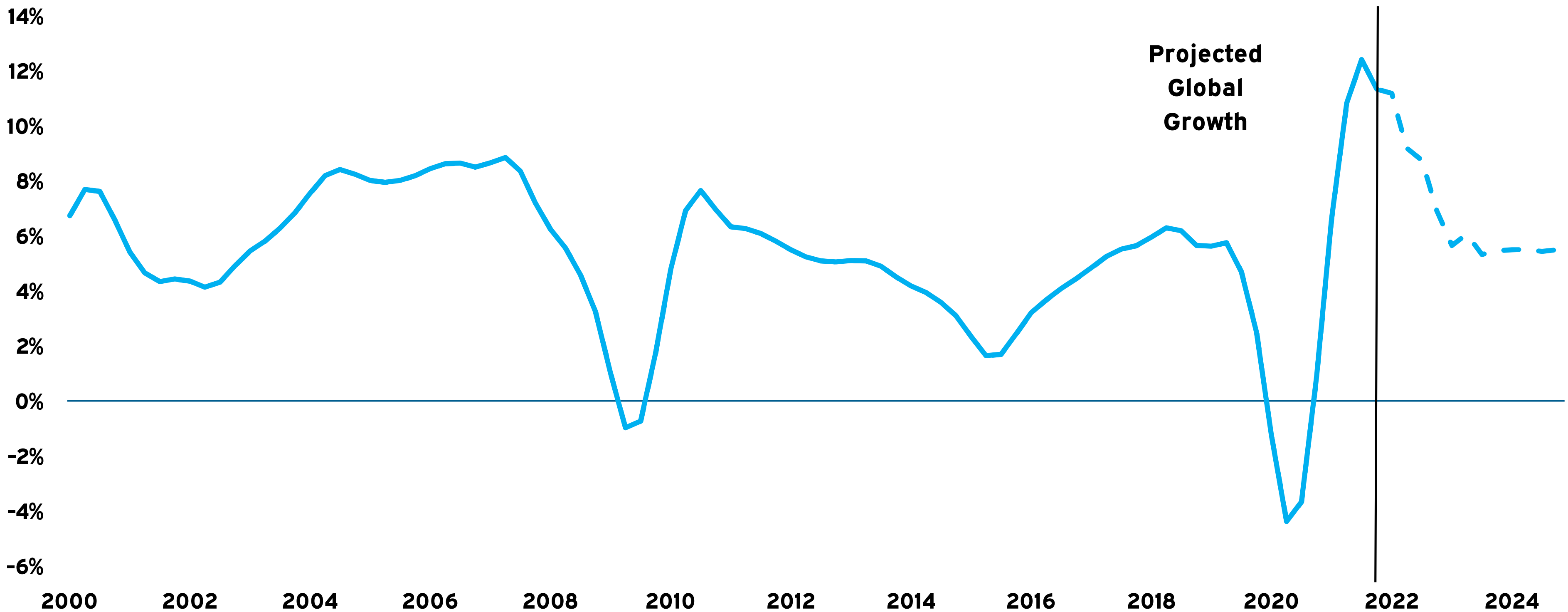
→ Growth projections for emerging markets are higher than developed markets, at 3.6% in 2022 and 3.9% in 2023. China's growth was downgraded for 2022 (3.3% versus 4.4%) and 2023 (4.9% versus 5.1%) given tight COVID-19 restrictions and continued property sector problems.

→ The global inflation forecast was significantly increased for 2022 (7.4% versus 3.8%).

	Real GDP (%)[1]			Inflation (%)[1]		
	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average
World	3.2	2.9	3.0	7.4	4.8	3.5
Advanced Economies	2.5	1.4	1.6	5.7	2.5	1.5
US	2.3	1.0	2.1	7.7	2.9	1.9
Euro Area	2.6	1.2	0.9	5.3	2.3	1.2
Japan	1.7	1.7	0.5	1.0	0.8	0.5
Emerging Economies	3.6	3.9	4.2	8.7	6.5	5.1
China	3.3	4.9	6.7	2.1	1.8	2.1

[1] Source: IMF World Economic Outlook. Real GDP forecasts from July 2022 Update. Inflation forecasts are as of the April 2022 Update." Actual 10 Year Average" represents data from 2012 to 2021.

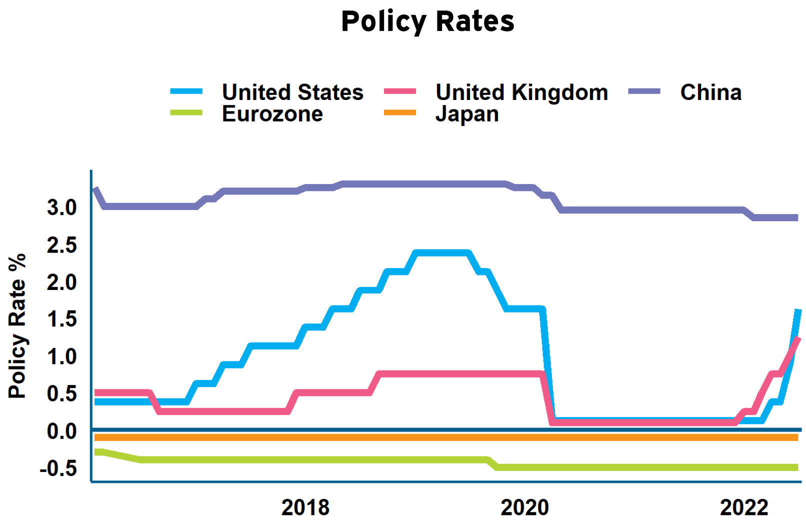
Global Nominal Gross Domestic Product (GDP) Growth[1]

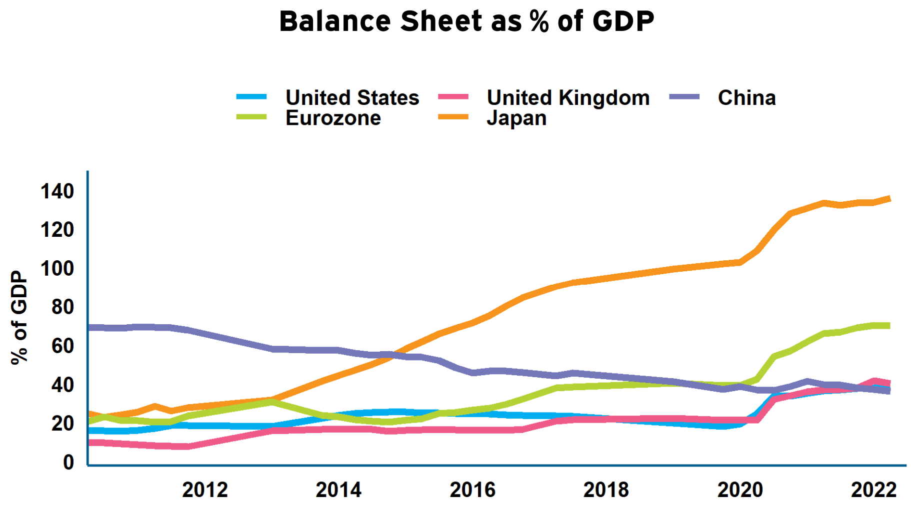


- → Global economies are expected to slow in 2022 compared to 2021 with fears of potential recessions in areas increasing recently given persistently high inflation and related tighter monetary policy.
- → Looking forward, the delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

[1] Source: Oxford Economics (World GDP, US$ prices & PPP exchange rate, nominal, % change YoY). Updated June 2022.

Central Bank Response[1]





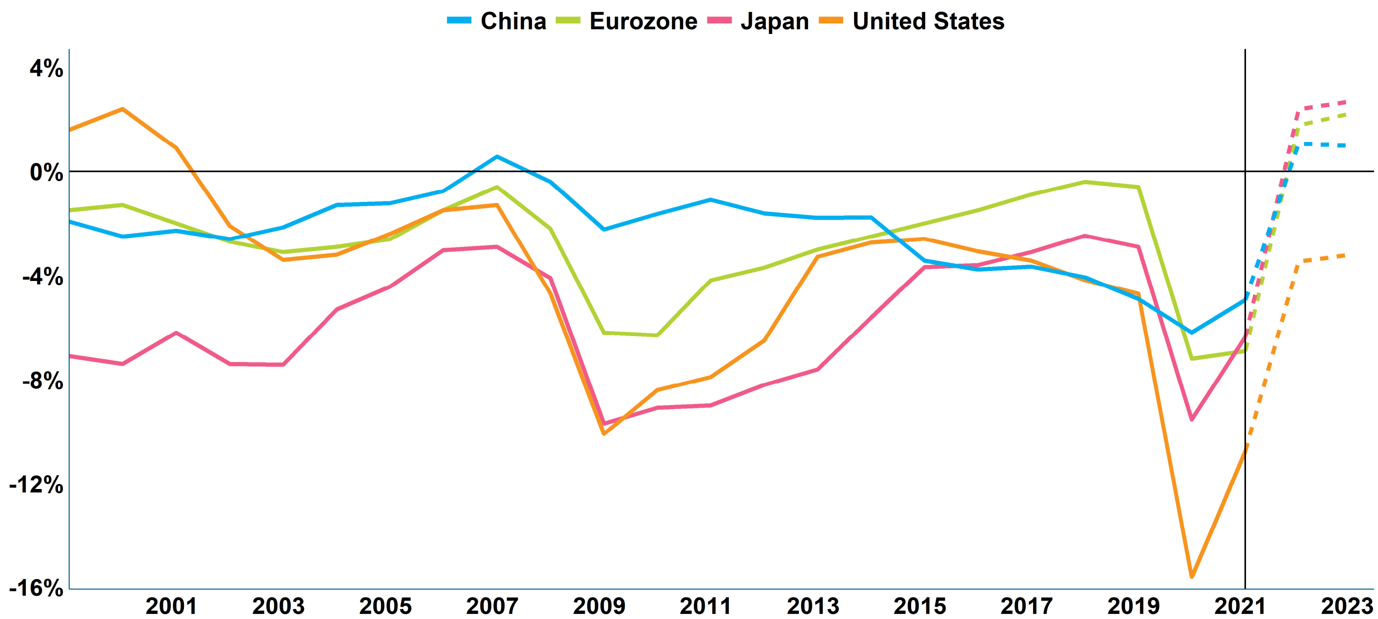
→ After global central banks took extraordinary action to support economies during the pandemic, including policy rate cuts and emergency stimulus through quantitative easing (QE), many are reducing or considering reducing support, in the face of high inflation.

→ The pace of withdrawing support will likely vary across central banks with the US expected to take a more aggressive approach. The risk remains for a policy error, particularly overtightening, as record inflation, the war in Ukraine, and a tough COVID-19 policy in China could suppress global growth.

→ The one notable central bank outlier is China, where the central bank recently lowered rates and reserve requirements in response to slowing growth.

[1] Source: Bloomberg. Policy rate data is as of June 30, 2022. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of June 30, 2022.

Budget Surplus / Deficit as a Percentage of GDP[1]

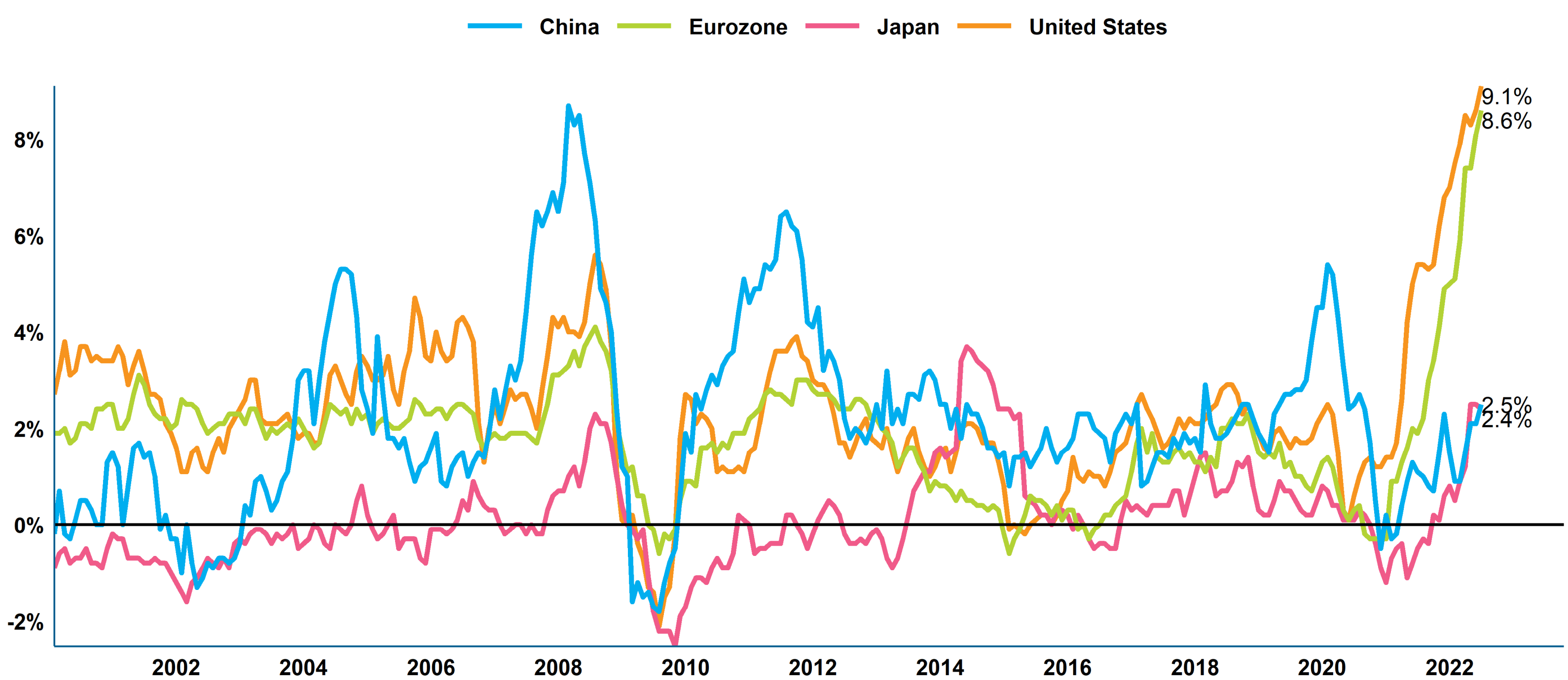


→ Budget deficits as a percentage of GDP drastically increased for major world economies, particularly the US, due to massive fiscal support and the severe economic contraction's effect on tax revenue in 2020 and 2021.

→ As fiscal stimulus programs end, and economic recoveries continue, deficits should improve in the coming years.

[1] Source: Bloomberg. Data is as of June 30, 2022. Projections via IMF Forecasts from April 2022 Report. Dotted lines represent 2022 and 2023 forecasts.

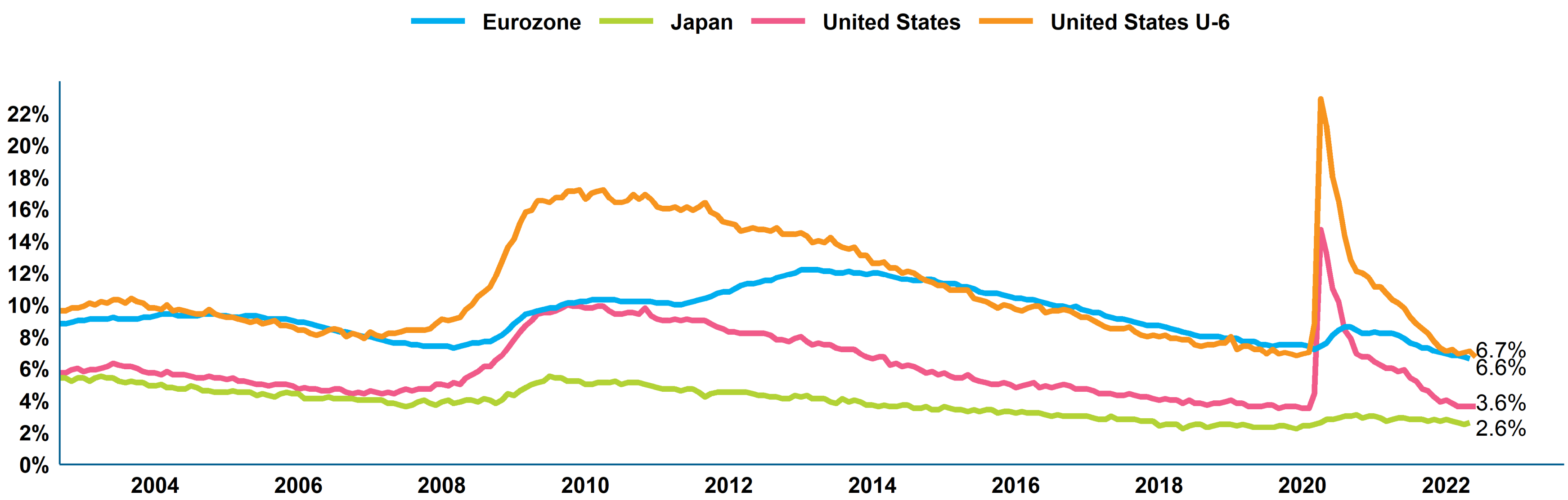
Inflation (CPI Trailing Twelve Months)[1]



- → Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- → Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher prices in many commodities driven by the war in Ukraine have been key drivers of inflation globally.

[1] Source: Bloomberg. Data is as of June 2022.

Unemployment[1]

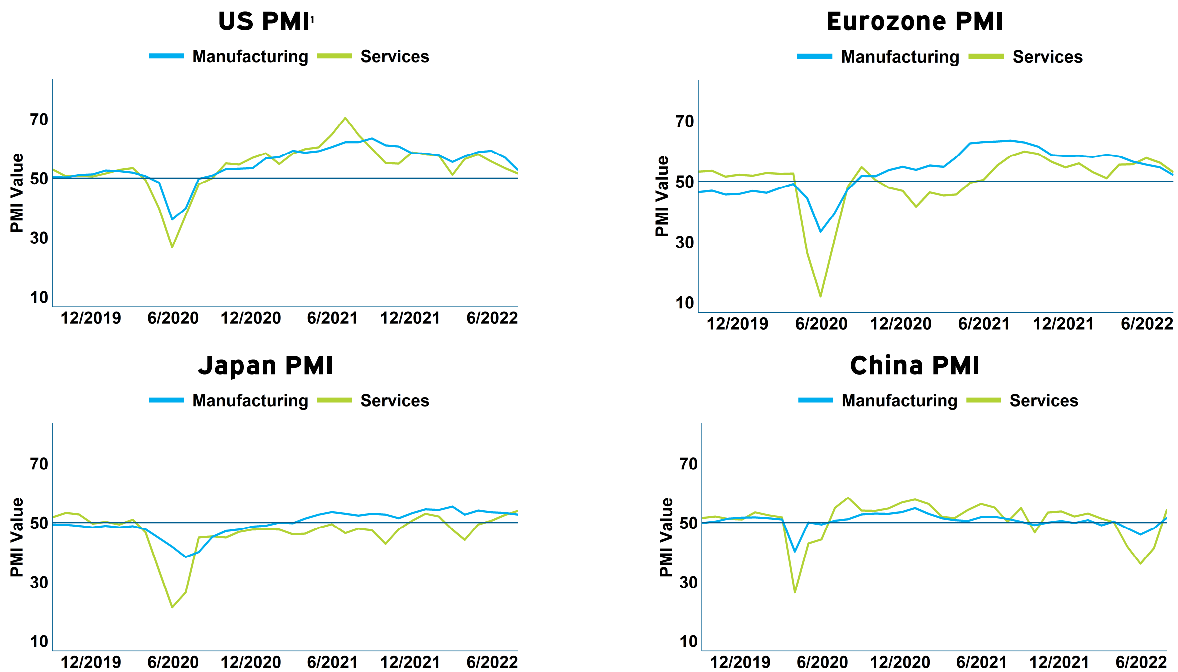


→ As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.

→ US unemployment, which experienced the steepest rise from the pandemic, declined back to pre-pandemic levels. The broader measure (U-6) that includes discouraged and underemployed workers declined but is much higher at 6.7%.

[1] Source: Bloomberg. Data is as of June 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of May 31, 2022.

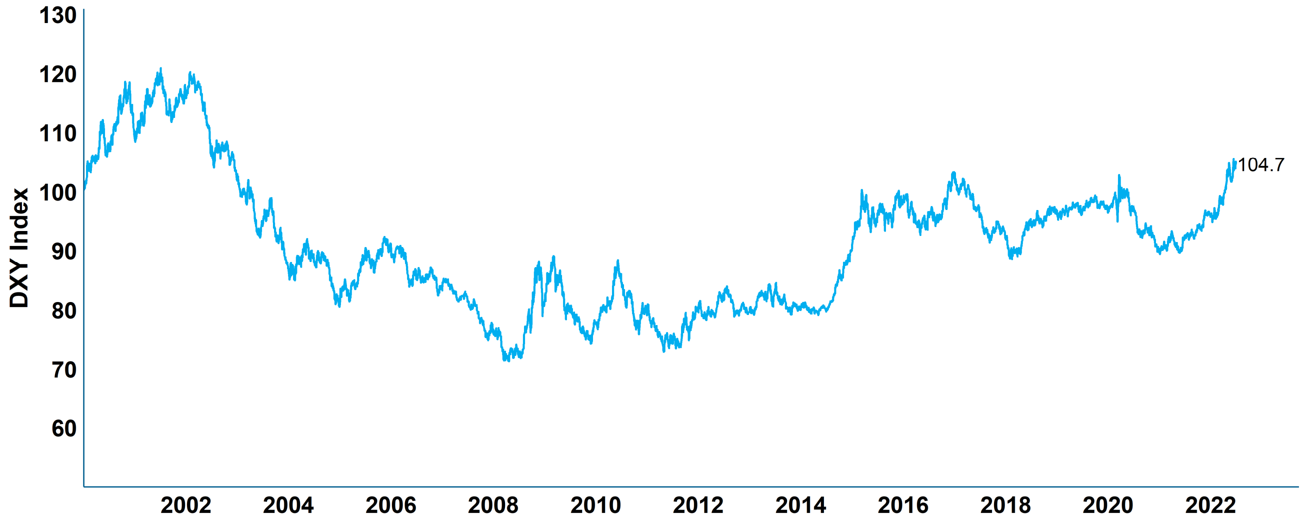
Global PMIs



- → After improvements from the lows of the pandemic, Purchasing Managers Indices (PMI), based on surveys of private sector companies, have experienced some pressures recently.
- → Service sector PMIs in the US and Europe have recently declined due to higher prices and supply issues, while they continue to improve in Japan as pandemic restrictions ease. In China the services PMI surged to expansion territory on an easing in lockdown measures.
- → Manufacturing PMIs are in expansion territory as pandemic-related production issues ease and orders increase. China also moved to expansion levels here on partial reopening.

[1] Source: Bloomberg. US Markit Services and Manufacturing PMI, Caixin Services and Manufacturing PMI, Eurozone Markit Services and Manufacturing PMI, Jibun Bank Services and Manufacturing PMI. Data is as of June 2022. Readings below 50 represent economic contractions.

US Dollar versus Broad Currencies[1]



→ The US dollar continued higher in June on safe-haven flows, relatively strong growth, and higher interest rates.

→ The euro, yen, and yuan have all experienced significant declines versus the dollar, adding to inflation and slowing growth concerns.

[1] Source: Bloomberg. Data as of June 30, 2022.

Summary

Key Trends in 2022:

→ The impacts of record high inflation will remain key going forward, with volatility likely to remain high.

→ The war in Ukraine has created significant uncertainty, with a wide range of potential outcomes.

→ Expect growth to slow globally in 2022 to the long-term trend or below. Inflation, monetary policy, and the war will all be key.

→ The end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices will depress consumers' spending in other areas.

→ Monetary policy will likely tighten globally but will remain relatively accommodative. The risk of overtightening policy remains.

→ Valuations have significantly declined in the US, approaching long-term averages.

→ Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including continued strength in the US dollar, higher inflation particularly weighing on Europe, and China maintaining its restrictive COVID-19 policies.

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MEMORANDUM

TO: SJCERA Board of Retirement
FROM: Meketa Investment Group (Meketa)
DATE: August 12, 2022
RE: SJCERA Total Fund: Fee Analysis

Summary

Over the last several years, Meketa and SJCERA staff have been working to lower the cost of fees across the total plan. This has been done by evaluating each asset class and investing with managers that can provide fees equivalent to their value-add. In addition, we made significant changes to the Global equity allocation by investing in passive mandates by investing assets in low-cost solutions in certain market segments

This memo reviews the estimated total fee paid by SJCERA over the last five calendar year periods. It also reviews the fees paid within the Global Equity and Principal Protection classes in 2021.

In short, the efforts made by SJCERA staff and Meketa has resulted in a more efficient portfolio that has seen a reduction in costs over the previous five years.

Estimated SJCERA Total Fund Fees

	YE $AUM	Net Investment G / (L)	Gross Return	Net Return	Fees (Bps)
2017	2,870,147	298,922	12.623	11.662	0.961
2018	2,823,692	(62,641)	-1.612	-2.333	0.721
2019	3,220,071	374,175	14.143	13.426	0.717
2020	3,501,606	267,803	8.829	8.282	0.547
2021	4,062,422	484,632	14.204	13.572	0.632

As seen above, the total plan fees have decreased significantly since 2017. However, in 2021 the total fund fees ticked up slightly due to the strong performance from SJCERA's private markets managers which have higher fees than their public market counterparts.

As shown below, SJCERA is paying roughly 7 bps for its current exposure to Global Equity. This includes a significant portion of the assets that are passively managed in a MSCI World index fund. It also includes actively managed strategies in both Emerging Markets equity and REITS. The result is a fee that is materially lower than the universe average of 62 bps.

Global Equity Fees (bps)

	Global Equity Universe
5th Percentile	23
25th Percentile	39
Median	50
75th Percentile	60
95th Percentile	80
Average	62
SJCERA Total	**7**

SJCERA is paying roughly 30 bps for its Principal Protection (Core Fixed Income) allocation. As of December 31, 2021, this included two managers; Dodge & Cox and DoubleLine. We will note that in the first half of 2022 this portion of the portfolio was restructured to better align with the asset class benchmark the BB Aggregate and has resulted in lower fees.

Fixed Income Fees (bps)

	Fixed Income Universe
5th Percentile	10
25th Percentile	17
Median	21
75th Percentile	25
95th Percentile	32
Average	23
SJCERA Total	**30**

2022 Annual SJCERA Investment Roundtable

October 6, 2022

7:15 a.m. – 5:00 p.m.

Wine & Roses
2505 Turner Road
Lodi, CA 95242
(209)334-6988

AGENDA - DRAFT

		Thursday, October 6, 2022	Duration (Minutes)
I.	7:15 a.m.	Roundtable Registration & Continental Breakfast	:45
II.	8:00 a.m.	Roll Call Pledge of Allegiance Welcome and Introduction of Participants	:15
III.	8:15 a.m.	Overview of SJCERA – Asset Allocation, return and risk (David Sancewich, Eric White - Meketa)	:30
IV.	8:45 a.m.	Keynote Speaker – The world markets in 2022 and beyond (TBD)	1h:00
V.	9:45 a.m.	Break	:30
VI.	10:15 a.m.	Private markets (Private Equity, Infrastructure, Credit) – What's next and where are the markets today. (Managers: TBD)	1h:00
VII.	11:15 a.m.	Inflation – Cost of Living, cost of investing, supply shortages, fed rates. Where is the world today and what is going on? (Manager: TBD)	1h:00
VIII.	12:15 p.m.	Lunch	1h:15

IX.	1:30 p.m.	Manager Debate: In a classic debate format; watch teams of managers debate various topics (David Sancewich: Meketa, Manager: TBD)	:45
X.	2:15 p.m.	Real Estate – Cap Rates, AirBnB, Affordable housing. What lies ahead in Real Estate and where are the opportunities? (TBD)	:45
XI.	3:00 p.m.	Open Discussion – Where do we go from here? (All in attendance)	:30
XII.	3:30 p.m.	Break	:30
XIII.	4:00 p.m.	Open Discussion and Re-Cap (David Sancewich - Meketa) Comments from the Board Comments from the Public	:45
XIV.	4:45 p.m.	Adjournment	
	5:00 p.m.	Networking and Dinner	

2022 CONFERENCES AND EVENTS SCHEDULE 2022

EVENT DATES 2022 BEGIN	END	EVENT TITLE	EVENT SPONSOR	LOCATION	REG. FEE	WEBLINK FOR MORE INFO	EST. BOARD EDUCATION HOURS
Aug 6	Aug 10	National Association of State Retirment Administrators	NASRA	Long Beach, CA	TBD	nasra.org	TBD
Aug 21	Aug 23	Public Pension Funding Forum	NCPERS	Los Angeles, CA	$720	ncpers.org	4.75 hrs *
Aug 29	Sep 1	Principles of Pension Governance for Trustees	CALAPRS	Tiburon, CA	$3000	calaprs.org	9 hrs*
Sep 6	Sep 8	2022 Fall Editorial Advisory Board Meeting	IREI	Pasadena, CA	$0	irei.com	TBD
Sep 8	Sep 8	Investments Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
23-Sep	23-Sep	Attorneys Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Sep 28	Sep 29	ILPA Institute: Private Equity for the Trustee San Francisco	ILPA	San Francisco, CA	$1499	ilpa.org	12 hrs*
Sep 28	Sep 30	Administrators' Institutue 2022	CALAPRS	Long Beach, CA	$1500	calaprs.org	14.4 hrs*
Oct 17	Oct 18	Nossaman's 2022 Public Pensions & Investments Fiduciaries' Forum	Nossaman's	Los Angeles, CA	TBD	nossaman.com	TBD
Oct 28	Oct 28	Trustees Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hours*
Nov 8	Nov 11	SACRS Fall Conference	SACRS	Long Beach, CA	$120	sacrs.org	11 hrs*

** Estimates based on prior agendas*

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SUMMARY OF PENDING TRUSTEE AND EXECUTIVE STAFF TRAVEL

2022 Event Dates	Sponsor / Event Description	Location	Traveler(s)	Estimated Cost	BOR Approval Date
Sep 6-8	IREI Fall Advisory Board Meeting	Pasadena, CA	Mike Restuccia	$1,000	6/3/22
Sep 23	Attorneys Round Table	Webinar	Jason Morrish	$50	N/A

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SUMMARY OF COMPLETED TRUSTEE AND EXECUTIVE STAFF TRAVEL

Event Dates 2022	Sponsor / Event Description	Location	Traveler(s)	Estimated Cost	Actual Cost	Event Report Filed
Feb 11	CALAPRS Administrators' Roundtable	Webinar	McKelvey, Shick	$100	$100	N/A
Feb 18	CALAPRS Attorneys' Roundtable	Webinar	Morrish	$50	$50	N/A
Mar 5 - 8	CALAPRS General Assembly	San Diego, CA	McKelvey, Shick	$4,000	$1,798.50	N/A
Apr 29	Special Virtual Trustee Round Table	Virtual Conference	Moore, Bassett, Weydert, McKelvey	$200	$200	N/A
May 10 - 13	SACRS Spring Conference	Rancho Mirage, CA	Weydert, Keokham, McKelvey, Morrish	$6,800	$5,979	N/A
May 27	CALAPRS Attorneys' Roundtable	Webinar	Morrish	$50	$50	N/A
Jun 24	CALAPRS Administrators' Round Table	Webinar	Johanna Shick, Brian McKelvey	$100	$100	N/A
Jun 27-29	NCPERS - 2022 Chief Officers Summit	San Francisco	Brian McKelvey	$1,750	$1,552.00	8/12/22
Jul 17-20	SACRS UC Berkeley Program	Berkeley, CA	JC Weydert	$4,500	$4,160.65	N/A

San Joaquin County Employees' Retirement Association

August 5, 2022

TO: Board of Retirement

FROM: Brian P. McKelvey
Asst. Chief Executive Officer

SUBJECT: 2022 NCPERS CHIEF OFFICER'S SUMMIT

Thank you for the opportunity to attend the NCPERS 2022 NCPERS CHIEF OFFICER'S SUMMIT on June 27-29, 2022. This report is intended to comply with the *Trustee and Executive Travel* Policy's requirement to provide a written report on the content and the continuing value for future attendance by other Board or staff members. This was SJCERA's first attendance at this national conference and although I found the event worthwhile and well-organized, I would not recommend staff attend this every year. The topics covered were more theoretical and informational at a very high and abstract level, and less actionable than other conferences I have attended this year.

Event Benefits

As you will see by the agenda sessions below, there are diverse topics across the CEO and CIO conference tracks. The nationwide scope of the conference is also beneficial as most California CERL systems focus training and development unique to California, obtaining a national perspective on pension administration also proved to be valuable. The networking opportunities to meet other medium size pension agency Executive and Investment Chiefs and hearing their challenges and successes proved for me to be the most valuable part of the conference experience.

Event Critique

Both CALAPRS and SACRS conference topics are more focused and actionable for California CERL Systems. This national event was attended by Chief Executive and Investment Officers of state and local pension systems. Attendees from New York, Ohio, Florida, Texas, Colorado, Washington, Oregon, and California. Although this was a national conference less than thirty (30) Chiefs were in attendance. To increase the networking value of the conference, I would hope more pension executives attend in future years.

The conference topics below were categorized as either General sessions which were attended by all conference attendees, the CEO Track focused on operational aspects of pension administration, while the CIO Track which focused on Investment related trends and strategic results. The items marked with * are sessions I personally attended.

General Sessions
- Using A.I. in Retirement Administration *
- Fintech Trend Outlook for Pension Funds to Maximize Investment Returns *
- Leadership Succession – Helping Ensure Plan Continuity *
- Pension Accounting Working Group
- Paying for Performance in Public Pension Plans *

CEO Track

- On Boarding Trustees: Perspectives from 3 Plans *
- Member Communication: Your Employer is Investing in YOU! *
- Employer/Plan Sponsor Communication: Why the DB Plan is an Indispensable Tool *
- Why Social Media Matters
- Improving the Benefits of Retirees without Damaging the Plan's Long-Term Viability

CIO Track

- Cutting Edge Developments in Venture Capital
- Liability-Aware Investing Framework for Public Funds *
- Plan-Level Leverage *
- New Methods Discussion Capital Markets Assumptions *
- What is the Future of Core Real Estate? *

Below, I summarize a few of the most impactful presentations I attended.

Using A.I. in Retirement Administration
This session was led by Steve Delaney, the CEO at OCERS. His leadership team is looking at ways to bring Artificial Intelligence (AI) into the operational areas of pension administration. He is leading a group of Pension Administrators, Technologists, Pension Administration System Vendors, and other thought leaders in determining the possible pension administration use cases for AI. Early uses of AI included business process management (BPM) and robotic process automation (RPA) that have been used to automate discrete business processes.

Fintech Trend Outlook for Pension Funds to Maximize Investment Returns
This session led by Modern Markets Initiative, a non-profit organization promotes education and advocacy on the role of financial technology (fintech) and the positive role of market automation. Five fintech trends were discussed.
Trend #1 – Market automation using technology to reduce fees and time of trades.
Trend #2 – AI/Machine Learning increasing utilization as a tool for investment managers for better outcomes in trading, risk and compliance. Data set owners will be the big beneficiaries here.
Trend #3 – Cloud technology continues to grow at an expected rate of 16% annually until 2026. All businesses are using Cloud technologies to lower technology capital investments, lower development cost, and increase software as a service (SAAS) offerings to the market. Global Cloud Computing Market is expected to be a $950B industry by 2026.
Trend #4 – Shortening the settlement cycle from T+2 to T+1 has been a priority of the SEC that will benefit all investors by reducing risk from delayed and outstanding trade settlement, expedited notification of breaks or fails in settlement, is a more efficient use of capital, and allows ability to conduct transactions more quickly.
Trend #5 – Regulation technology (RegTech) is the convergence of new and developing technologies that can increase efficiencies and operations cost by managing regulation compliance. This is an exciting new area for pension administration improvement that we will continue to monitor.
Trend

Leadership Succession – Helping Ensure Plan Continuity
Five key topics regarding succession planning included why succession planning is so important to pension funds, overview of "Emergency", "Deteriorating" and "Planned" success development, the roles played by various stakeholders in succession planning, monitoring and measuring methodologies, and common challenges organizations face with developing succession plans. Most funds operate under a "Planned" succession model, but the "Deteriorating" and "Emergency" plans are also important to address in case of lessening leadership effectiveness or resignation.

Paying for Performance in Public Pension Plans
This session, led by Kevin Mullally, focused on one key question, does CIO compensation affect fund performance, and if so how and why? The main finding is that higher paid CIOs outperform. Higher paid CIOS allocate higher percentage of assets and receive higher returns in Private Equity and Real Estate. The study showed that CIOs who earn in excess of $350k have higher associated returns annually of 47 – 60 bps higher than those that earn under $350k annually. At SJCERA, for example, 47bps would equate to an additional $18.8M in average investment returns annually.

On Boarding Trustees: Perspectives from 3 Plans (only 2 – Plan Executives were in attendance)
This session was presented by Timothy Johnson, Executive Director, JPFPF and Chris Hanson, Executive Director of COAERS. Both took different approaches to onboarding Trustees.

Mr. Johnson uses an engagement methodology where Mission + Skills + Incentives + Resources + Action Plan = Trustee Engagement. Mr. Johnson informed conference attendees initial Trustee training takes approximately 1 month, which he performs himself, and then continues to provide ongoing training to keep Trustees engaged.

MISSION: The task for which you've been charged. *Vision, Values, Journey Chart*

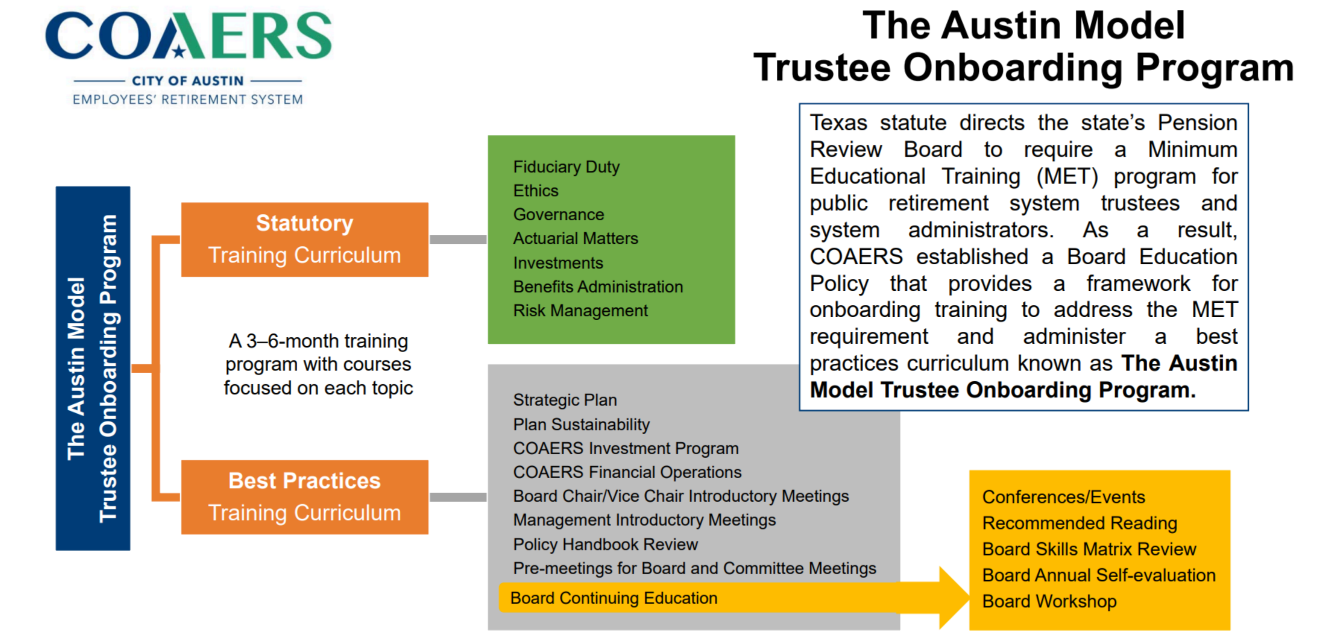
SKILLS: Your ability to perform with determined results and good execution. *NCPERS Accredited Fiduciary*

INCENTIVES: The thing that motivates or encourages you to engage. *Trustee Enneagram Chart*

RESOURCES: Money, materials, staff, and other assets that can be drawn on in order to function effectively. *Key Metrics*

ACTION PLAN: Actions needed to reach our goals. *Work Plans*

Mr. Hanson follows the Texas State law specifically when onboarding Trustees. This training takes up to 1 year with the Statutory training taking 3-6 months with the remaining training taking an additional 6 months. Mr. Hanson performs the Trustee training himself.



The Future of Core Real Estate

Mr. Edward Schwartz provided his presentation regarding current and future trends in Core Real Estate. Only a handful of conference participants attended this presentation. Most important topics discussed included:

- From 2018, Industrial diversification has increased from 18% to 33%, Apartment diversification has increased from 25% to 27%, Office diversification has decreased from 34% to 24% and Retail diversification has decreased from 19% to 10%.
- Today's market is expensive with low historical income returns and heightened risk.
- Fees have increased over the last number of years to include expensive carried interest for many funds.

For more information on a particular presentation you can view the PowerPoint slides at https://www.ncpers.org/summit-education.

2022 LEGISLATION

Last Updated: 7/28/2022

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
Legislation Impacting SJCERA:					
AB 1824	Cooper	This bill represents the annual omnibus bill to propose technical "housekeeping" amendments to the CERL and PERL. This bill would 1) allow members to designate a corporation, trust, or estate to receive their last check upon death, 2) prohibit retirement date from being earlier than date of application filed with Board or more than 60 days after the date of filing the application, 3) require any computation for absence related to death benefit calculation be based on the compensation held by member at beginning of absence, and 4) make other non-substantive changes to the CERL.	07/20/22	Senate APPR Comm. Postponed by Committee	SACRS
AB 1944	Lee/Garcia	This bill would amend the Brown Act to 1) require the agenda identify any member of the legislative body that would participate remotely, 2) require an updated agenda reflecting all of the members participating remotely, if a member elects to participate remotely after the agenda is published, 3) authorize, upon determination of majority vote by legislative body, a member to be exempt from identifying the address of the member's teleconference location or having the location accessible to the public, beginning January 1, 2024, if from a location that is not a public place, provided a quorum participates at the physical location, and 4) require legislative body that elects to use teleconferencing to provide a video stream accessible to members of the public and an option for members to address the body remotely during the public comment period. This bill would repeal these provisions on January 1, 2030.	06/22/22	Senate Hearing postponed by Committee	
AB 1971	Cooper	This bill would: 1) allow a member to purchase service credit for an uncompensated leave of absence due to the serious illness of a family member, 2) authorize the board to grant members subject to a temporary mandatory furlough the same service credit and FAC calculation as they would have received if there had been no furlough; 3) authorize a member retired for service to serve on a part-time governmental board or commission without reinstatement to membership, provided compensation does not exceed $60,000 annually, 4) authorize a member retired for service who is subsequently granted a disability retirement to change the type of optional or unmodified allowance that they elected at the time the service retirement was granted, 5) a member retired for service who subsequently files an application for disability retirement and, if eligible for disability, would require adjustments to be made in the retirement allowance retroactive to the disability retirement, and 6) require reclassifying a disability retiree's benefit to a service retirement in the same amount if they are subsequently determined not to be incapacitated and the employer will not reinstate them.	06/30/22	Senate L, PE & R Comm. To consent calendar	SACRS
AB 2449	Rubio	Existing law, until January 1, 2024, authorizes a local agency to use teleconferencing without complying with specified teleconferencing requirements when a declared state of emergency is in effect. This bill would authorize a local agency to use teleconferencing without complying with those specified teleconferencing requirements if at least a quorum of the members of the legislative body participates in person from a singular location clearly identified on the agenda that is open to the public and situated within the local agency's jurisdiction. The state of emergency circumstances for remote participation would be contingent upon an action by the legislative body.	07/13/22	Assembly APPR Comm. Hearing postponed by Committee	

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
AB 2493	Chen	This bill would authorize a county retirement system to adjust retirement payments based on disallowed compensation for peace officers and firefighters of that system. The bill would provide that if the retirement system determines that the compensation reported for a peace officer or firefighter is disallowed compensation, the system would require the employer to discontinue reporting the disallowed compensation. This bill would apply to determinations made on or after July 30, 2020. **This bill would authorize a retirement system that has initiated a process prior to July 1, 2022 to permanently adjust the benefit of affected members to reflect the exclusion of disallowed compensation in lieu of specified provisions that this bill would enact. This bill would authorize an employer to submit to a retirement system to review if proposed compensation in a MOU is pensionable. This bill is not intended to alter existing laws including the *Alameda* decision.** *Note - *The June 30 amendment appears to resolve the issues concerning SJCERA and the County.*	06/30/22	Senate JUD Comm. Ordered to 3rd reading	
AB 2647	Levine	This bill would require a local agency to make agendas and other writings distributed to the members of the governing board available for public inspection at a public office or location that the agency designates or post the writings on the local agency's internet website in a position and manner that makes it clear that the writing relates to an agenda item for an upcoming meeting.	06/30/22	Senate GOV & F Comm.	
SB 1100	Cortese	This bill would authorize the presiding member of the legislative body conducting a meeting to remove an individual for willfully interrupting the meeting. The bill would require removal to be preceded by a warning by the presiding member, that the individual is disrupting the proceedings, a request that the individual failure to cease their behavior may result in removal, and a reasonable opportunity to cease the disruptive behavior.	06/22/22	Assembly JUD Comm. Ordered to third reading	
SB 1328	McGuire, Cortese	This bill would prohibit boards of specified state and local public retirement systems from making additional or new investments in prohibited companies, as defined, domiciled in Russia or Belarus, as defined, companies that the United States government has designated as complicit in the aggressor countries', as defined, war in Ukraine, or companies that supply military equipment to the aggressor countries, and to liquidate the investments of the board in those companies.	06/21/22	Assembly PE & R and APPR. Comm. Hearing postponed by Committee	
Other Bills of Interest:					
AB 1722	Cooper	PERL, until January 1, 2023, provides state safety members who retire for industrial disability a retirement benefit equal to the greatest amount resulting from three possible calculations. This bill would delete the January 1, 2023 termination date which would make them operative in perpetuity.	06/29/22	Senate APPR Comm. To consent calendar	
AB 1795	Fong	This bill would require state bodies to provide all persons the ability to participate both in-person and remotely in any meeting and to address the body remotely.	2/18/22	Assembly G.O. Comm.	
SB 850	Laird	This bill, for purpose of the additional percentage of the special death benefit for service-connected deaths provided under PERL, would require that payment be made to the person having custody of the member's child or children, if the member does not have a surviving spouse or if the surviving spouse dies before each child marries or reaches ate 22. Provisions of this bill would be retroactive to January 1, 2013.	06/22/22	Assembly APPR Comm. To consent calendar	
SB 1114	Newman	This bill would make nonsubstantive changes to the PERL (spot bill).	02/23/22	Senate RLS Comm.	

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
SB 1168	Cortese	This bill would require PERS to determine the average benefit paid upon the death of a member and would require the board, beginning on July 1, 2023, to increase the $500 beneficiary payment annually in a specified amount, not to exceed the CPI increase, until the beneficiary payment reaches the average benefit paid.	06/22/22	Assembly APPR Comm. To consent calendar	
SB 1173	Gonzalez/ Wiener	This bill would prohibit the boards of PERS & STRS from making new investments or reinvestments of funds in fossil fuel companies and require liquidation of fossil fuel investments by July 1, 2027.	06/20/22	Assembly PE & R and JUD Comm. Hearing postponed by Committee	
SB 1420	Dahle	This bill would require a PERS agency that increases the compensation of a member who was previously employed by a different agency to bear all the actuarial liability for the action, if it results in an increase beyond what would have been reasonably expected for the member.	04/27/22	Senate L, PE & R Comm. (Failed, reconsideration granted)	
Federal Legislation:					
HR 2954	Neal	Called the "Securing a Strong Retirement Act of 2022", this bill would (1) increase RMD age to 75 from 72 over the next decade, (2) provide greater latitude to decide to recoup inadvertent overpayments, (3) permit first responders to exclude service-connected disability pension payments from gross income after reaching retirement age, and (4) expand the Employee Plans Compliance Resolution System (EPCRS) to allow more types of errors to be corrected through self-correction.	03/30/22	Senate Finance Comm.	
HR 3684	DeFazio	Called the "Infrastructure Investment and Jobs Act", better known as the $1 trillion infrastructure bill, includes a crypto tax-reporting provision requiring digital asset brokers to report their users' annual transactions to the IRS effective year-end 2022.	11/15/21	Became Public Law No. 117-58	
HR 4728	Takano	To amend the Fair Labor Standards Act to reduce the standard workweek from 40 hours per week to 32 hours per week.	07/27/21	House Comm. on Education and Labor	

2022 TENTATIVE State Legislative Calendar

Feb 18	Last day for new bills to be introduced
Apr 7	Spring Recess begins upon adjournment
May 27	**Last day for bills to be passed out of the house of origin**
Jun 15	Budget Bill must be passed by midnight
Jul 1 - Aug 1	Summer Recess upon adjournment provided budget bill passed
Aug 25	Last day to amend bills on the floor
Aug 31	Last day for each house to pass bills; Final Study Recess begins upon adjournment
Sept 30	Last day for Governor to sign or veto bills.

San Joaquin County Employees' Retirement Association

August 5, 2022

TO: Board of Retirement

FROM: Johanna Shick
Chief Executive Officer

SUBJECT: Chief Executive Officer Report

Strengthen the long-term financial health of the Retirement Plan

Evaluate the appropriateness of actuarial assumptions

- *Conduct Actuarial Experience Study to assess the appropriateness of, and impact of COVID-19 on key actuarial assumptions.*
  At the August Board meeting, SJCERA's Actuary, Graham Schmidt from Cheiron, will present SJCERA's final Actuarial Experience Study and assumption recommendations. Included in that discussion will be a more in-depth discussion of the assumed rate of return. The final actuarial valuation will be presented at the September Board meeting following the Board's final confirmation of the return assumption.

Modernize the operations infrastructure

Implement Pension Administration System (PAS)

- *Contract with Project Manager to lead PAS Implementation and Data Conversion projects*
  Completed: The Project Manager contract with Linea Solutions was signed on July 28, 2022.

- *Contract with Pension Administration System (PAS) vendor*
  As noted in the July CEO report, contract negotiations with Tegrit Software Ventures was re-prioritized until the Data Conversion contract was executed. SJCERA and Linea Solutions have now resumed contract negotiations with Tegrit in anticipation of starting the PAS project in February 2023.

- *Contract with Data Conversion vendor*
  Completed: The contract with MBS was executed on July 11, 2022, and the Data Conversion project officially kicked off on July 25, 2022. SJCERA, MBS, and Linea Solutions have already had four meetings in July and early August to discuss and document an initial project schedule, verify technical infrastructure and requirements are in place, establish early tasks and deliverables, and to walk through SJCERA's existing CORE-37 pension administration system. We anticipate MBS data experts will be onsite in early September to complete Joint Design sessions when we begin the deep dive into SJCERA member data.

Enhance the member experience

- *Complete improvements to website architecture and functionality*
  Communications Officer Kendra Fenner and IT Systems Specialist II Jordan Regevig have been working with Rolling Orange to get our new website loaded with existing and updated content. Kendra and Jordan have also been actively testing the new site in July to ensure all links work properly and all content is ready for production. On Wednesday, July 27, SJCERA IT Staff, Kendra Fenner, and Brian McKelvey were provided initial training by Rolling Orange on how to update and modify the new site that uses the Drupal Content Management System (CMS) platform. With multiple unexpected absences due to illness in July and refinements being made as a result of testing, we anticipate the new website will go-live in August 2022.

Improve technology for business operations

- *Begin Windows Server infrastructure implementation*
  Information Systems Manager Adnan Khan, and Information Systems Analyst II Lolo Garza, completed the installation of the new Windows Server infrastructure in time for the July 25 Data Conversion project start date. The virtual servers needed to support the Data Conversion project, including a Microsoft SQL Server and the data conversion data base, have been setup and configured. MBS verified all requirements for the environment and we will begin using these servers in August. Storage level data encryption and industry best practices are being applied and the overall migration of existing servers, data, applications and users are expected to start first week in September.

Align resources and organizational capabilities

- *Implement strategies designed to support staff and maintain morale during PAS project*
  Employees of the Month: The Finance Team, Finance Officer Carmen Murillo, Investment Accountant Eve Cavender, and Accounting Technician II Marissa Smith were named Employees of the Month for their work resulting in a clean audit and the successful completion and timely submission of the annual financial reports (Annual Comprehensive Financial Report, Popular Annual Financial Report, and Annual report to the State Controller's Office), despite various challenges such as some team members contracting COVID. Congratulations and thank you to Carmen, Eve and Marissa for their hard work, persistence and dedication!

Enhance education and development across all levels of the organization

- *Offer training and development opportunities intended to strengthen SJCERA's on-boarding and* succession planning
  - For five consecutive Wednesdays August 10 through September 7 staff responsible for various projects and I will attend a Franklin Covey online course in Project Management. If this pilot goes well, the course will be rolled out to the rest of the organization.
  - As SJCERA works towards our 100 percent compliance with County mandated training, we have discovered the goal is impossible to meet because County does not currently offer the required Emergency Preparedness course, yet it remains on the mandatory list. With this in mind, we have changed our reporting to reflect completion of courses offered. Based on that standard, SJCERA is 90 percent compliant with 7 staff in 100 percent compliance. We still plan to attain 100 percent compliance by year end.

Maintain Business Operations

Semi-Annual Interest Crediting in July

In compliance with Government Code Section 31591, SJCERA credits interest semiannually on June 30 and December 31 to all contributions in the retirement fund that have been on deposit for six months immediately prior to such date. SJCERA's Reserve policy requires semiannual interest be credited to the Member Reserve before any other reserve using the rate which, when compounded, produces the annual actuarial assumed rate of investment return. The current assumed rate of return is 7 percent, and the semiannual rate is 3.4408 percent. Thanks to the efforts of Investment Accountant Eve Cavendar, Finance Officer Carmen Murillo, Information Technology Specialist II Jordan Regevig, and Information Systems Manager Adnan Khan, SJCERA completed the June 30 interest posting on July 13. This is compared to July 12, 2020, and August 1, 2019.

Monitor Investment Managers

- *Lightspeed.* On July 12 Lightspeed announced its final closing of various funds, including Lightspeed Venture Partners Select Fund V, to which SJCERA made a $40 million commitment. Fund V closed with $2.26 billion in committed capital. Lightspeed Venture Partners Select V, L.P. seeks to accelerate existing Lightspeed portfolio companies and new investments globally as companies scale and enter the growth phase.

- *Medley*. Staff, counsel and Meketa are in regular contact with Medley regarding the wind-down of that investment.

- *Neuberger-Berman.* Staff has asked Meketa to work with Neuberger-Berman to streamline routine disbursement requests.

<u>Employer Communication</u>

- *Waterloo-Morada Fire District Sick Leave Bank Administration*. After researching internal historical records, staff worked with the District to clarify roles and responsibilities on sick leave bank administration and adjust accounting and invoicing accordingly.

- *County Assumed Rate of Return Discussion.* In preparation Agenda Item 6.0 on the August 12 Board meeting agenda, I am meeting with County Administrator Jay Wilverding on August 8 to discuss SJCERA's investment return assumption and the unique set of circumstances that currently exist that would allow the Board of Retirement to lower the return assumption without increasing the aggregate employer contribution rates.

<u>Optional Membership</u>

- *Elected Officials*. In accordance with Government Code Section 31553, Elected Official's membership in SJCERA is optional. Per our Bylaws, Elected Officials are required to submit a signed *Elected Official's Declaration of Intent* form if they wish to be or remain a member of SJCERA. Management Analyst III Greg Frank worked with newly elected Auditor-Controller Jeff Woltkamp, prior to him taking office August 1, to clarify whether Mr. Woltkamp wished to continue his SJCERA membership and provide instruction about the steps necessary to ensure continuous, uninterrupted membership.

  Beginning in January 2023, two new Board Supervisors and the newly elected District Attorney will begin their terms of office. As we approach the end of the year, Greg will reach out to these individuals regarding their elective membership.

- *New Members Over Age 60.* SJCERA Bylaws Section 6.1 - D Subsection 1 states - Persons who are age 60 or older when they are first employed in a position requiring SJCERA membership may make an irrevocable election to waive membership. The election shall be evidenced by the employee's signature on a waiver of membership form provided by SJCERA.

  Staff worked with Mountain House Community Service District employees to assist an eligible new hire to irrevocably waive membership at SJCERA. In the process, staff identified the need to clarify our administrative rules and procedures and plans to bring recommendation to the Administrative Committee in November with proposed changes, including deadlines within which the request must be made.

<u>Human Resources</u>

On April 1, 2019, the Board of Retirement adjusted the salary for the Retirement Investment Officer (RIO) to acknowledge the classification's role with SJCERA's investment consultants. The salary was based on similar Investment Officer positions providing high-level administrative and analytical support to investment consultants. The County Board of Supervisors formally adopted the salary adjustment on May 14, 2019, with an effective date of May 27, 2019.

At that time, it was determined that the classification would minimally maintain parity with the job classification of Management Analyst III (RM0226). Because the positions are in different representation units, the timing of increases may cause temporary disparity, as is the case currently. I have requested the Human Resources Division (HR) to propose equity increases to the RIO salary as necessary to reach the minimum salary parity if the COLA is insufficient to achieve parity. HR plans to make any needed proposals when the County Board of Supervisors adopts the Unrepresented Unit Resolutions, anticipated to occur in October 2022.

Conclusion

SJCERA staff continues to maintain production and make progress on strategic and action plan goals. This is particularly impressive given the number of staff who have been out due to long-planned summer vacations and/or absences due to personal and family illness and medical issues. To manage this, we've prioritized, allowed working from home when it meets the business needs, and reassessed deadlines. I am proud of staff for their continued focus, dedication and loyalty to the organization, their work and our members. Like the Energizer Bunny, despite significant challenges, we're still going!

THE NCPERS

MONITOR

The Latest in Legislative News

July 2022

In This Issue

Retirement Tax Breaks Disproportionately Favor the Wealthy, NIRS Finds

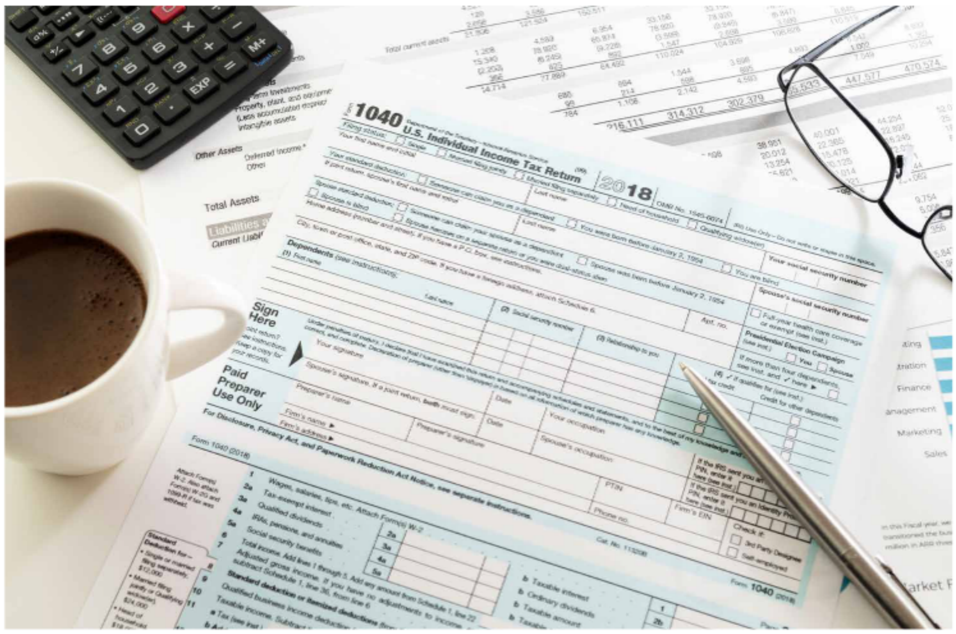


Photo Illustration © 2022, shutterstock.com

Tax breaks intended to increase retirement savings are doing little to help middle class families, according to new research from the National Institute on Retirement Security (NIRS).

Fully 90% of the tax benefits for defined contribution plans and individual retirement accounts (IRAs) go to families in the top 30% by income, and more than half the tax breaks go to the top 10%, NIRS found.

Middle class families are missing out because the structure of the tax code, uneven levels of retirement plan participation, and the growth of income inequality ensure that many of the benefits of tax incentives accrue to high-income earners, NIRS said in "The Missing Middle: How Tax Incentives for Retirement Savings Leave Middle-Class Families Behind."

The "missing middle" consists of working Americans for whom the tax code offers meager benefits to save for retirement, NIRS found. Yet middle class workers — who make up more than half of the workforce — face significant hurdles. These include rising costs in

CONTINUED ON PAGE 2

RETIREMENT TAX BREAKS CONTINUED FROM PAGE 1

retirement, lack of access to retirement plans at their jobs, and the need for more than Social Security income in retirement to maintain their standard of living.

The private sector's decades-long shift away from defined benefit pensions and the widespread dominance of 401(k) plans and their equivalents have also had an impact. "This trend not only shifted the responsibility and risks of retirement onto individuals, but also a significant portion (and often all) of the costs," NIRS noted.

This leaves a "missing middle" because the tax code offers meager benefits for these working Americans to save for retirement. At the same time, these middle class workers face rising costs in retirement, often lack retirement plans at their jobs, and need more than just Social Security income in retirement to maintain their standard of living.

As policy makers examine the nation's retirement savings shortfall, special focus is needed to understand how to make a difference for the millions of middle class Americans who are not accumulating adequate retirement savings, the report said.

The report identifies policy options, such as strengthening Social Security, increasing access and participation in retirement plans, reforming the deduction-based tax system, and ensuring the tax breaks are directed at generating retirement income.

Other solutions could focus on increasing access and participation in savings plans, which some states are doing for workers who lack workplace plans, thereby making it easier to participate. Additionally, curbing abuses of the existing system would ensure that the significant sums of federal tax revenue that are dedicated to retirement security are directed at generating retirement income, NIRS said.

In key findings, the reported noted:

- The progressive nature of the Social Security benefit helps to prevent old-age poverty, but income replacement from Social Security levels off more quickly than private savings accumulate.
- Tax expenditures for various retirement programs are heavily skewed toward high-income earners. Some of this reflects the design of the tax breaks themselves. Participation in employer retirement plans and having the financial resources to save for retirement also play a role,
- The value of tax incentives for saving is much greater for those at higher income levels who have higher marginal tax rates, but it is weak for much of the middle class. Those who are able to invest more and sooner reap greater advantage from the deferral of taxation on investment gains.
- The tax expenditures for retirement saving, oriented around the defined contribution system, give rise to inequities beyond income and wealth. Geographic and racial inequities related to retirement are both exacerbated by the tax incentives for saving. ◆

FUNDfire

San Diego Pension Overhauls EM Debt Portfolio

The pension will scrap two of its existing EM debt managers in favor of new multi-asset credit managers.

By Bridget Hickey | July 6, 2022

The **San Diego City Employees' Retirement System**, or Sdcers, is revamping its emerging market debt portfolio to create a broader return-seeking fixed income allocation that will include exposure to high-yield bonds and bank loans.

The move reflects a wider trend of public pensions rethinking their approach to fixed income amid low returns. Some are re-working their fixed income portfolios to focus on high-quality assets, while others are paring back their traditional exposures to chase higher returns in the private markets, as reported.

Trustees for the $10.9 billion San Diego pension will meet on Thursday to vote on a structure for the refurbished allocation, which will be 5% of the total fund or roughly $520 million. The board first approved the change in May last year.

“Expanding the [emerging market debt] allocation to include other areas of credit premium will serve to further diversify the portfolio and increase potential for value-add,” said the pension’s consultant **Aon**, in board materials for Thursday’s meeting.

The pension currently has three existing emerging market debt managers: **Wellington** with an opportunistic mandate; **Stone Harbor** a blended mandate; and **Ninety One** managing a local mandate.

Aon and Sdcers’ investment staff are recommending that the pension select two new multi-asset credit managers and allocate 40% of the revamped return-seeking sleeve to each to provide base exposures to emerging market debt, bank loans and high-yield bonds, plus “supplementary exposure to out-of-benchmark sectors.”

The additional sectors may include structured credit, contingent convertibles, convertibles, investment-grade credit, real estate debt and distressed debt.

Related Content

May 11, 2022
Pensions Rethink Fixed Income Exposure amid 'Stagflation' Risks

They recommend retaining one manager solely for emerging market debt, with a 20% allocation, to “ensure the appropriate base exposure.”

Aon and pension investment staff suggest keeping one of the existing managers, but do not say which one, according to a memo for Thursday’s meeting.

The board will meet in September to consider manager recommendations.

Some funds are scrapping their emerging market debt allocations altogether.

In April, the $2.9 billion **Policemen's Annuity and Benefit Fund of Chicago** cut its target 3% emerging markets debt portfolio and lowered its exposure to U.S. aggregate bonds from 13% to 5%, as reported. The money will be redirected to private real estate, private real assets, opportunistic credit, private credit and a higher allocation to U.S. Treasurys.

The **Alaska Permanent Fund Corporation** recently scrapped its emerging market debt exposure, which was 5% of the fund's fixed income portfolio, to redirect the capital to global rates, as reported.

FUNDfire

Endowments Face Limited Options amid Coming Private Markets Write-Downs

After an historic, private-asset-powered year in 2021, write-downs are now hitting endowment portfolios.

By Justin Mitchell | July 11, 2022

This year, university endowments will face write-downs of their private assets' values, testing their ability to access enough liquidity to keep their portfolios functional while staying open to new opportunities, consultants and investors say.

Last year, coming out of the coronavirus pandemic, endowments saw historically strong results, with private equity and especially venture capital super-charging returns for the top performers, as reported.

But with the public markets showing the largest first-half drop in 50 years, according to the Financial Times, endowments, which tend to invest more in private markets, will need to be ready when their lagged private returns catch up to that reality.

To some degree, it has already happened. As of June 30, both the average post-money valuation for venture capital holdings and the average deal size for buyouts declined from last year, according to data from **Preqin**.

"Investors should expect to see valuations moderate going forward as the lagged prices in these portfolios catch up with market realities," **Commonfund**, an outsourced chief investment officer, or OCIO, that serves nonprofits, wrote in a recent letter to investors.

The key issue is time, said **James Hille**, former chief investment officer at **Texas Christian University**. Hille, who retired last year, sits on several institutional investor boards where private investments have not yet been marked to these market conditions – and that may not happen until the end of this year.

"The longer this goes on … the more it's going to start eating into the private capital markets and it'll begin to erode everyone's balance sheets," he said.

At board meetings and in conversations with consultants, Hille has observed that many investors are overweight to private equity and venture capital. When an investor finds themselves in that situation, he said, there are three ways to respond: slow down the pace of future investments, sell off assets on the secondary market, or just wait it out.

If they have the liquidity, Hille strongly recommended investors choose the third option.

While there will be reversals for endowments that saw unprecedented write-ups last year, that does not mean they should abandon those investments, said **Mary Cahill**, former CIO at **Emory University** and current CEO and CIO of **Acansa Investment Management Group**, an OCIO.

“For endowments and foundations that have liquidity, investing now in new fund offerings should still be considered,” she told FundFire in an email.

Related Content

December 9, 2021
'Banner Year' Doesn't Mean 'Money in the Bank' for Endowments

September 28, 2021
Duke Endowment Soared a Record 56% Last Year

August 16, 2021
Endowments and Foundations Look Set for 'Crazy' Returns Bonanza

In the 2021 fiscal year, when endowments were still riding the crest of exploding private markets returns, Cahill suggested endowments consider “targeted opportunities” to sell off some holdings while valuations were high.

While in hindsight that was a great idea, Hille said “it’s probably a little late” for investors to sell their holdings. Secondary sales usually require the investor to sell their holdings at a discount, and because the secondary market is now flooded with potential sellers, the discount would now be extremely high.

The key for investors is making sure they have enough liquidity, Hille said. Some of the top-performing endowments from 2021 have large parts of their portfolios invested in private markets. **Washington University** posted a whopping 65% return, as reported. As of June 30, 2021, its portfolio was 51.9% allocated to “private capital,” according to its most recent investment report. The **University of Notre Dame** had a 53.2% return, and as of the same date, its allocation to private equity was 45.9%, according to its investment report. **Brown University** had the strongest return of the Ivy League schools, and its portfolio was 39% allocated to private equity.

These high private capital allocations don't necessarily spell trouble for the schools should the public markets continue to decline, Hille said, because oftentimes larger, wealthier endowments can access liquidity through lending or alumni donations. However, smaller schools should be cautious, he said.

“Liquidity is going to get tighter, and it's going to affect those who do not have contingency plans,” he said.

Another way for an endowment to have greater control over liquidity is to focus on co-investments rather than fund investments in its private equity portfolio, said **Jeff Mindlin**, chief investment officer at the **Arizona State University Foundation**.

“By doing more direct [co-investments] than primary funds, we’ve got a little more bit more customization on the timing of capital coming out, and that can help us … if we do get a liquidity constraint,” he said.

ASU is still in the process of building up its portfolio, Mindlin said. About 21% of the endowment’s portfolio is invested in private capital, and it just added an explicit venture allocation, so Mindlin said he sees the coming landscape as an opportunity.

"The next couple of vintages could be really interesting," he said. "The pendulum is probably going to swing too far, and that might present some interesting investment opportunities for high-quality managers."

FUNDfire

Investors Shift Equity Allocations amid Market Fears

Some institutional investors are paring back international equities in favor of U.S. stock exposure.

By Lisa Fu | July 21, 2022

After taking a pause to assess economic uncertainty, some institutional investors are now shifting their asset allocations to pull back from international stocks in favor domestic equity exposure, as fears over geopolitical and market upheaval grow.

The level of uncertainty resulted in "a pretty significant slowdown in search activity across the board," said **Matt Orton**, head of advisory solutions and market strategy at **Carillon Tower Advisers**. "There's really been a lull up until recently. There's been resistance to wanting to make turnover or make a decision into a market that can rapidly change."

In late May, the $645.4 million **Massachusetts Water Resources Authority Employee Retirement System** increased its U.S. equity allocation to 31% from 26%, as reported by sister publication MandateWire. At the same time, the retirement system decreased its non-U.S. equity allocation targets to 19% from 21%.

The **San Diego County Employees' Retirement Association** retirement board also approved new targets that shift allocations from international equities to domestic equities during a June 16 meeting. The $16.2 billion public pension boosted U.S. equity allocation to 25% from 22% and decreased exposure to international equities to 12% from 15%, as first reported by MandateWire.

Similarly, the **San Bernardino County Employees' Retirement Association** is considering revamping its asset allocation to favor domestic over international stocks. Investment staff for the $13.9 billion pension and consultant **NEPC** recommended upping U.S. equity targets to 17% from 13% and decreasing international equities from 15% to 13% in a July 7 meeting, MandateWire reported.

The proposed allocation shift, "attempts to address a world where supply chains are realigned due to macro political factors and a deglobalization trend away from China," the meeting documents stated. The move reduces exposure to equities in international developed markets, such as in European countries or Japan, that are "net commodity importers" to instead focus on "resource rich countries," the document states.

Institutional investors tilting their portfolios toward domestic stocks may be responding to uncertainty or a change in market capitalization, investment consultants said.

"There's a lot of uncertainty right now and a lot of U.S. investors tend to think of the U.S. as a bit of safer investment option," said **Jay Love**, a partner at **Mercer**. "The U.S. also has had very strong performance over the past decade, so there's probably an inherent momentum."

Many investors tend to slightly favor investments in their own country because of its familiarity and comfort, said **Thomas Toth**, managing director at **Wilshire**. "Japanese investors, German investors, investors in the U.K., … also tend to have a home country bias," he added.

Geopolitical turmoil stemming from the war between Russia and Ukraine and the situation in China risks slowing globalization at the very least, and investors likely see investments closer to home as safer, Love said. When there are meaningful economic slowdowns or a recession, emerging market counties often "bear the brunt" and investments dip more than equities in some other developed countries, he added.

Russia's invasion of Ukraine this year marked the start of a new macroeconomic cycle that will impact investor appetite, **Goldman Sachs** CEO **David Solomon** said in April. "We've grown used to low inflation, low interest rates and the free flow of people and goods across national borders," he said on the company's first-quarter earnings call. "I believe we're entering a period where that won't be the case."

Related Content

July 14, 2022
Equities 'Just OK,' Credit Markets Promising: BlackRock's Rieder

Similarly, **BlackRock** CEO **Larry Fink** proclaimed "an end to the globalization we experienced over the last three decades," in a letter to shareholders earlier in the year.

Mandates for emerging market equity strategies have slowed, Orton observed. This may also reflect investors responding to market uncertainty by pulling out of risker assets and putting their money in safer assets like fixed income, he said. During the pandemic, many public pensions became better funded due to strong equity markets. "As the world shut down, a lot of these plans got much closer to that [100%] funding level…so there's also just been a push in some cases, to de-risk," he said.

U.S. equities also benefited from strong performance in recent years. As of yesterday, the **S&P 500** index still maintained a 10-year annualized return greater than 11%. At the same time, the U.S. tends to have less cyclical sector exposure and fewer cyclical industries, which can lead some investors to see the U.S. as protected from economic volatility, Love said.

Market capitalization changes can also drive some investors to increase U.S. equity exposure, Toth said. "Any shifts from non U.S. [equities] to U.S. are typically done around asset allocation cycles and typically anchor on the global market capitalization," he said. Three to five years ago, the U.S. to non U.S. global market capitalization split was closer, with the U.S. accounting for around 53%. Now, he estimates the split is around 60% U.S. and 40% for non U.S. equities. "We really haven't seen…a more tactical shift towards the U.S. versus non-U.S. in any meaningful way," he added.

As some investors start repositioning portfolios amid the uncertainty, asset managers with a range of investment products can use the opportunity to cross sell.

Larger plans tend to rely more on their investment consultants, so it's important for managers to keep a strong relationship with the client and the consultant as they model various scenarios for various asset classes, Orton said. If the client decides to move down the risk spectrum and keep a certain return, an in-tune manager could propose a group of strategies that fit that allocation.

For smaller plans that don't use a consultant, "it becomes much more of a holistic level to show them different scenarios and outputs," Orton said. "Through a number of iterations, discussions, you can narrow down what that portfolio looks like."

During these discussions, Carillion Tower Advisers always involves a salesperson to follow up with the client and offers a call with the management team or a product specialist.

"On the flip side, we'll always try to be honest if there isn't a fit with what they're looking for… because it's a long-term relationship," he added.

FUNDfire

Pensions Return Expectations Fall Below 7% for First Time

Expectations have been ticking downward for the past decade.

By Bridget Hickey | July 25, 2022

The average assumed rate of return for public pensions in the U.S. has dropped below 7% this year for the first time in U.S. pension fund history.

The change occurred over the past several months.

In June, the average rate was 6.93%, according to an analysis of 167 statewide plans and 61 municipal plans by the **Equable Institute**, a nonprofit focused on pension issues. Data from the **National Association of State Retirement Administrators** shows the average assumed rate of return was 6.99% in March.

Eighty-four plans now assume investment returns below 7%, up from 65 pensions as of their 2020 valuations, Equable found. Sixty-four have assumed rates of return above the current 6.9% median, including 21 plans with a 7.5% return assumption or higher.

Assumed rates of return have been gradually declining over the past two decades. In 2001, the average rate was 8%, according to Equable's data.

"Getting to 6.9% is more just a reflection that we're coming off of three really, really strong calendar years in 2019, 2020 and 2021," said **Jonathan Camp**, a senior vice president and asset/liability management and liability driven investment consultant at **Meketa**. "The expectation is that they've been so significant that now future returns are less likely to be as high."

Over the last 12 months, multiple pensions reduced their assumed rates of return.

Last July, the $447.2 billion **California Public Employees' Retirement System**, or Calpers, reduced its investment target from 7% to 6.8%, after its fiscal year 2020-21 return of 21.3% triggered a risk-mitigation policy requiring it to lower its discount rate. The **New York State Common Retirement Fund** lowered its rate of return from 6.8% to 5.9% last August.

In May, trustees for the $26.5 billion **Kansas Public Employee Retirement System** lowered the assumed rate of return for the investment portfolio to 7% from 7.75%, after much discussion and despite pressure from some state lawmakers to keep the rate unchanged, board minutes show.

Related Content

July 11, 2022
Public Pensions Face Headwinds to Reach 7% Return Targets

May 11, 2022
Pensions Rethink Fixed Income Exposure amid 'Stagflation' Risks

Lowering the assumed rate of return has political ramifications. Because pensions typically calculate the present value of their future liabilities using their assumed rate of return, a reduction in the assumed rate means that state and local governments will need to cough up more money for contributions.

Kansas Senate President **Ty Masterson** and Senate Budget Chairman **Rick Billinger**, both Republicans, said in a letter to trustees that they weren't "convinced about the wisdom" of plans to lower the investment assumption, arguing that a reduction of just 0.25% would deepen the system's unfunded liability by $600 million, according to reporting from the Kansas Reflector.

"We hope that you will be dissuaded from lowering the investment return assumption any further or to present a comprehensive and compelling plan as to why this is deemed as a necessity, let alone a best practice," they said.

If assumed rates of return had matched interest rate trends over the past two decades, the national average would be 5.5%, according to Equable's analysis.

Despite lowering their expectations, pensions will fall far short of their return targets for the most recent fiscal year. Preliminary investment returns are -10.4% on average for state and local plans, Equable's analysis found. The net result is the largest single-year decline in assets since 2009.

Calpers, for example, said Wednesday that it had recorded a preliminary loss of 6.1% for the year ended June 30, its first down year since 2009.

The dip below a 7% assumed return “is less about this milestone” and more “a reflection of the volatility that we've seen over the last few years,” Camp said. "It just seems as if right now the volatility in the market, both positive and negative, has been so dramatic that we're constantly making updates to our forecasts."

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August 2022

In This Issue

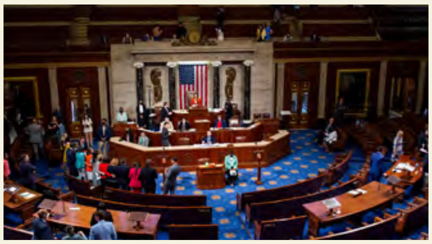

Photo Illustration © 2022, alamy.com

Throughout the Congressional process on the SECURE Act 2.0, NCPERS and many of its members have collaborated on an effort to improve the Healthcare Enhancement for Local Public Safety Act, known as HELPS.

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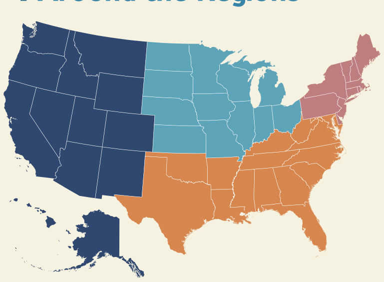
A year-long crusade to undermine confidence in Pennsylvania's teachers pension system came to a screeching halt on August 2 with a brief, 24-word admission.



This month, we will highlight Delaware, Virginia, Ohio, Louisiana and Hawaii.

NCPERS Offers a Shortcut as Surge in Smartphone Usage Sparks Need for Mobile Platforms

Photo Illustration © 2022, shutterstock.com

You only need to look around to know that people are constantly on their mobile devices nowadays. And they're not just texting friends or accessing their favorite social media platform. Increasingly consumers are tracking and managing their financial lives on the go, and they overwhelmingly choose smartphones for utility, ease of use, and efficiency.

It's not just young people who are shifting to smartphones. A staggering 97 percent of Americans owned some type of mobile phone in 2021 – and that includes 85 percent who owned a smartphone, up from 35 percent a decade earlier, according to a fact sheet by the Pew Research Center. The data showed that smartphone users are now in the majority across all age ranges: 18 to 29 (96 percent), 30 to 49 (95 percent), 50 to 64 (83 percent) and over 65 (61 percent.)

Pew also examined 15 demographic groupings other than age – broadly, sex, race, education, income, and geography – and not a single one had less than 75 percent smartphone usage.

CONTINUED ON PAGE 2

NEED FOR MOBILE PLATFORMS CONTINUED FROM PAGE 1

The unstoppable trend toward mobility and self-service is why NCPERS has teamed up with the premier digital platform for public pensions. Members have said they need a streamlined way to cross the digital divide, and a new strategic alliance with Digital Deployment delivers it. The partnership between NCPERS and Digital Deployment makes the company's PensionX™ digital platform available to NCPERS members at a 10 percent discount.

The alliance culminates a multiyear search that led NCPERS to engage and review numerous mobile apps developers. PensionX™ stood out because it integrates seamlessly with pension administration systems. It also includes a robust suite of tools that plans can leverage to create a compelling user experience, including website and member portal development and secure file upload capability.

NCPERS Executive Director and Counsel Hank Kim says the need is urgent. "Americans clearly have a growing preference for managing their finances via digital and mobile platforms rather than the web. Yet public pension plans have been slow to offer mobile access." He noted that as of December 2021, 71 percent of public pension systems provided account information to members via a website, but only 7 percent were offering access through a mobile app, according to the 2021 NCPERS Public Retirement Systems Study.

"Public pensions are conspicuous by our absence on the mobile platform," Kim added. "Other financial institutions have had mobile apps for at least the past 10 years. In our fast-paced, technologically driven world, pension plans have no time to lose. The longer we take to adapt to the mobile marketplace, the more we validate our critics who say pensions are dinosaurs and irrelevant."

PensionX™ was designed to meet the needs of public pension systems that want to deliver better member self-service without going through the time, expense, and ordeal of a major pension administration system overhaul, said Sandeep Mehta, CTO at Digital Deployment. "Our complete, front-end pension platform provides all the necessary tools, enabling pension systems to transform their growing array of portals, apps, and websites into a convenient format."

NCPERS members interested in learning more about Digital Deployment, Pension X™ and leveraging the exclusive member discount can visit https://www.pensionx.com/products. NCPERS will be hosting a webinar on the digital platform September 12. Look for the webinar details in the coming weeks. ◆

SJCERA BOARD OF RETIREMENT

STANDING COMMITTEES

	2018-19	2019-2020	2020-2021	2021-2022	2022-2023 (Appt @ 8/2022 Mtg.)	Membership Requirements
ADMINISTRATIVE COMMITTEE	McCray, Chair Bassett Duffy VanHouten	Bassett, Chair Duffy Goodman McCray	Bassett, Chair Keokham, Goodman, McCray	Goodman, Chair Bassett Keokham McCray	Goodman, Chair Bassett Keokham Nicholas	Charter: √ At least 1 elected by membership √ Charter does not require any specific experience. √ Note from staff: Committee's duties are budget, Executive HR planning, and policy administration so experience in those areas would be helpful (not required)
AUDIT COMMITTEE	Duffy, Chair McCray Restuccia Goodman	Duffy, Chair McCray Restuccia Van Houten	Duffy, Chair McCray Restuccia Van Houten	Duffy, Chair Keokham McCray Restuccia	Duffy, Chair Keokham McCray Restuccia	Charter: √ 3 to 4 members √ Expertise in accounting, auditing, financial reporting & internal control preferred
CEO PERFORMANCE REVIEW COMMITTEE	**Ad Hoc Committee:** Weydert, Chair Goodman Praus Restuccia	Goodman, Chair Keokham Restuccia Van Houten	Goodman, Chair Bassett Restuccia Van Houten	Bassett, Chair Nicholas Restuccia Weydert	Bassett, Chair Restuccia Keokham Rickman	Charter: √ Retain no more than 50% of members √ Mix of elected & appointed members √ Include a trustee w/ knowledge of County HR practices √ Note from staff: The Board Chair has historically served on this committee, which has been helpful; however, it's not required by the Charter