A G E N D A

BOARD MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, APRIL 14, 2023
AT 9:00 AM
Location: SJCERA Board Room, 6 S. El Dorado Street, Suite 400, Stockton, California

The public may also attend the Board meeting live via Zoom by (1) clicking here https://us02web.zoom.us/j/89034795028 and following the prompts to enter your name and email, or (2) calling (669) 219-2599 or (669) 900-9128 and entering Meeting ID 89034795028#.

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 MEETING MINUTES

3.01 Minutes for Board Meeting of March 10, 2023 05

3.02 Minutes for Audit Committee Meeting of March 10, 2023 09

3.03 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 Retirements (14) 11

5.02 General (1)

01 Required Minimum Distribution Policy 13

a Required Minimum Distribution Policy - Mark-up 14

b Required Minimum Distribution Policy - Clean 25

5.03 Board to consider and take possible action on consent items

6.0 DISABILITY RETIREMENT EDUCATION

6.01 Presentation by Disability Counsel Vivian Shultz 36

7.0 INVESTMENT CONSULTANT REPORTS

7.01 Presentation by David Sancewich of Meketa Investment Group

01 Manager Performance Flash Report 52

02 Economic and Market Update 57

7.02 Board to receive and file reports

7.03 Public Credit Review 75

7.04 Board to discuss and give direction to staff and consultant

8.0 PORTFOLIO LIQUIDITY AND CASH ANALYSIS

8.01 Presentation by David Sancewich of Meketa Investment Group 96

8.02 Board to discuss and give direction to staff and consultant

9.0 DIVERSIFIER STRATEGY MANAGER SEARCH UPDATE

9.01 Presentation by David Sancewich of Meketa Investment Group 99

9.02 Board to discuss and give direction to staff and consultant

10.0 SACRS BOARD OF DIRECTORS ELECTIONS 102

10.01 SACRS Board of Director Elections - 2023-2024 - Final Ballot 104

10.02 Board to consider and take possible action on candidates for SACRS 2023-2024 Board of Directors.

11.0 STAFF REPORTS

11.01 Trustee and Executive Staff Travel

01 Conferences and Events Schedule 2023 118

02 Summary of Pending Trustee and Executive Staff Travel 119

03 Summary of Completed Trustee and Executive Staff Travel 120

11.02 Board to consider and take possible action on any new travel request

11.03 Quarterly Operations Reports

01 Pending Member Accounts Receivable - First Quarter 2023 121

02 Disability Quarterly Report - Statistics 122

03 Pension Administration System Update 123

11.04 Legislative Summary Report 125

11.05 CEO Report 127

11.06 Board to receive and file reports

12.0 CORRESPONDENCE

12.01 Letters Received (0)

12.02 Letters Sent (0)

12.03 Market Commentary/Newsletters/Articles

01 Verus 132
The Investment World in 2023: Time for the New Simplicity?
March 2023

02 The NCPERS Monitor 167
March 2023

03 NCPERS 179
PERSist
Spring 2023

04 Meketa Investment Group 207
Whitepaper
Risk Mitigating Strategies (RMS) Framework
March 2023

05 Stone Harbor Investment Partners 227
Assessing and Tracking the Macro Fallout of Banking Stress
March 2023

06 BlackRock Alternatives 233
2023 Private Markets Outlook
A new era for investors
2023

13.0 COMMENTS

13.01 Comments from the Board of Retirement

14.0 CLOSED SESSION

14.01 Personnel Matters
California Government Code Section 54957
Employee Disability Retirement Application(s) (5)

14.02 Conference with Real Property Negotiator - California
Government Code Section 54956.8

01 Property: 6 S. El Dorado Street, Suite 400
Stockton, California 95202

Negotiating parties: Johanna Shick, Chief Executive Officer, SJCERA
Connie Hart, Assistant Director General Services,
San Joaquin County

Under negotiation: Lease price and terms

15.0 REPORT OUT OF CLOSED SESSION

15.01 On December 9, 2022, the Board voted unanimously to approve Resolution 2023-04-01 titled “Silver Rock Tactical Allocation Strategy Vintage 2022 Fund” and to authorize the CEO to sign the necessary documents to invest $62.5 million in the fund.

16.0 CALENDAR

16.01 Board Meeting May 5, 2023 at 9:00 a.m.

16.02 Audit Committee Meeting May 15, 2023 at 10:00 a.m.

16.03 Board Meeting June 2, 2023 at 9:00 a.m.

16.04 Administrative Committee Meeting June 22, 2023 at 10:00 a.m.

16.05 Board Meeting July 14, 2023 at 9:00 a.m.

16.06 Board Meeting August 11, 2023 at 9:00 a.m.

17.0 ADJOURNMENT

San Joaquin County Employees
Retirement Association

M I N U T E S

BOARD MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, MARCH 10, 2023
AT 9:00 AM
Location: SJCERA Board Room, 6 S. El Dorado Street, Suite 400, Stockton, California

1.0 ROLL CALL

1.01 **MEMBERS PRESENT:** Emily Nicholas, Chanda Bassett, Jennifer Goodman, Steven Ding, JC Weydert, Steve Moore (in at 9:03), Michael Duffy, Raymond McCray and Michael Restuccia presiding

MEMBERS ABSENT: Phonxay Keokham

STAFF PRESENT: Chief Executive Officer Johanna Shick, Assistant Chief Executive Officer Brian McKelvey, Retirement Investment Officer Paris Ba, Management Analyst III Greg Frank, Information Systems Analyst II Lolo Garza, Information Technology Systems Specialist II Jordan Regevig, Administrative Secretary Elaina Petersen

OTHERS PRESENT: Deputy County Counsel Jason Morrish, David Sancewich and Ryan Lobdell (via Zoom) of Meketa

2.0 PLEDGE OF ALLEGIANCE

2.01 Led by Michael Duffy

3.0 MEETING MINUTES

3.01 Minutes for the Board Meeting of February 10, 2023

3.02 The Board voted unanimously (8-0) to approve the Minutes of the Board Meeting of February 10, 2023 (Motion: McCray; Second: Bassett)

4.0 PUBLIC COMMENT

4.01 There was no public comment

5.0 CONSENT ITEMS

5.01 Service Retirement (13)

5.02 General (1)

01 Retirement Administrator/Chief Executive Officer Compensation

5.03 Following an oral report from counsel summarizing the recommendation in Item 5.02 -01, the Board voted unanimously (8-0) to approve the Consent Calendar items (Motion: Duffy; Second: Weydert)

6.0 INVESTMENT CONSULTANT REPORTS

6.01 Presentation by David Sancewich of Meketa Investment Group

01 Quarterly Reports from Investment Consultant for period ended December 31, 2022

a Quarterly Investment Performance Analysis b Manager Certification Report

c Manager Review Schedule

02 Manager Performance Flash Report

03 Economic and Market Update

NOTE: Item number 7.0 was taken next out of order.

6.02 2023 Capital Market Assumptions

6.03 Total Portfolio Expected Return Update - 2023 Assumptions

6.04 The Board received and filed reports

7.0 CRISIS RISK OFFSET EDUCATION

7.01 Presentation by Ryan Lobdell of Meketa Investment Group

7.02 The Board voted unanimously (8-0) to approve the staff recommendation to update the current naming structure within the Crisis Risk Offset: Long Duration U.S. Treasury, Systemic Trend Following and Alternative Risk Premia to First Responders, Second Responders and Diversifiers. (Motion: Duffy; Second: Goodman)

8.0 STAFF REPORTS

8.01 Trustee and Executive Staff Travel

01 Conferences and Events Schedule 2023

a Travel requiring approval (1)

02 Summary of Pending Trustee and Executive Staff Travel

03 Summary of Completed Trustee and Executive Staff Travel

8.02 The Board unanimously (8-0) to approve the travel request (Motion: Duffy; Second: Weydert)

8.03 Legislative Summary Report

8.04 CEO Report

In addition to the written report, CEO Shick noted: 1) the new Pension Administration System has been given a name, congratulations to Retirement Services Associate Ron Banez for his winning entry “PRIME”: Pension Related Information for Members and Employers; 2) all Form 700s are due to Management Analyst III Greg Frank by March 22, 2023; 3) there are four ESG articles this month in Market Commentary in preparation for discussions later this year to define the Board’s environmental, social, and governance philosophy, including diversity, equity, and inclusion for both the organization and the investment portfolio; 4) all employers were notified of the Bylaws change regarding Optional Membership Exclusion due within 30 days of hire.

8.05 The Board received and filed reports

9.0 CORRESPONDENCE

9.01 Letters Received (0)

9.02 Letters Sent (0)

9.03 Market Commentary/ Newsletters/Articles

01 Research Affiliates
How “Transitory” is Inflation? Presentation
January 2023

02 Research Affiliates
History Lessons: How “Transitory” is Inflation?
November 2022

03 Institutional Investor
This One Trick Could Improve Funded Status
for Almost All State Pensions
February 8, 2023

04 Route Fifty
The Politics of ESG Investing
February 10, 2023

05 Board Smart
ESG is Dead - Long Live ESG:
Guidance for US Pension Fiduciaries
February 2023

06 PLANSPONSOR
Exploring ESG Investing
February 2023

07 PLANSPONSOR
The Department of Labor OK’s ESG
February 2023

08 Fidelity Investor
2023 Outlook
The top five trends to monitor in the year ahead
February 2023

09 The NCPERS Monitor
February 2023

10.0 COMMENTS

10.01 Comments from the Board of Retirement

10.02 Trustee Weydert advised that the CALAPRS General Assembly was excellent this year.
Trustee Duffy thanked Meketa for providing information three to six months ahead of other information outlets and commented that the information was great.
Trustee Restuccia asked Meketa to provide the Board with the percentage of the portfolio invested in banks, noting some banks may struggle in the current environment.
Trustee McCray requested Liability-Driven Education for the Board.
Trustee McCray noted that Crisis Risk Offset tends to have a longer term duration and suggested in periods of rising rates we consider shorter (two - three year) duration.

11.0 CLOSED SESSION

The Chair convened Closed Session at 11:15 a.m. and adjourned Closed Session and reconvened Open Session at 11:37 a.m.

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

11.02 Personnel Matters
California Government Code Section 54957
Employee Disability Retirement Application(s) (0)

Counsel noted there was nothing to report out of closed session.

12.0 REPORT OUT OF CLOSED SESSION

12.01 At the February 10, 2023, meeting, the Board voted unanimously to redeem its alternative risk premia allocation of approximately $57.2 million in Lombard Odier and retain the funds in SJCERA's cash overlay program.

13.0 CALENDAR

13.01 Audit Committee Meeting immediately following the March 10, 2023 Board of Retirement Meeting

13.02 Board Meeting April 14, 2023 at 9:00 a.m.

13.03 Board Meeting May 5, 2023 at 9:00 a.m.

13.04 Board Meeting June 2, 2023 at 9:00 a.m.

14.0 ADJOURNMENT

14.01 There being no further business the meeting was adjourned at 11:38 a.m.

Respectfully Submitted:

____
Michael Restuccia, Chair

Attest:

____
Raymond McCray, Secretary

M I N U T E S

AUDIT COMMITTEE MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, MARCH 10, 2023
AT 11:42 AM

Location: SJCERA Board Room, 6 S. El Dorado Street, Suite 400, Stockton, California

1.0 ROLL CALL

1.01 **MEMBERS PRESENT**: Raymond McCray, Michael Restuccia, and Michael Duffy presiding

MEMBERS ABSENT: Phonxay Keokham

STAFF PRESENT: Chief Executive Officer Johanna Shick, Assistant Chief Executive Officer Brian McKelvey, Financial Officer Carmen Murillo, Retirement Investment Accountant Eve Cavender, Information Systems Specialist II Jordan Regevig, Information Systems Analyst II Lolo Garza, Management Analyst III Greg Frank, and Administrative Secretary Elaina Petersen

OTHERS PRESENT: Deputy County Counsel Jason Morrish, and Lindsey Zimmerman (via Zoom) of Brown Armstrong Accountancy Corporation

2.0 PUBLIC COMMENTS

2.01 There was no public comment

3.0 2022 AUDIT ENTRANCE CONFERENCE

3.01 Scope of Services Presentation by Lindsey Zimmerman, CPA of Brown Armstrong Accountancy Corportation

01 Ms. Zimmerman reviewed the Scope of Services presentation, which summarized the audit plan, significant areas the audit will focus on, expected timeline/due dates and the reports that will be issued. The draft audit report will be provided to the Committee for discussion on May 15. The final audit report will be provided to the full Board on June 2.

3.02 Audit Engagement Letter dated January 11, 2023 from Brown Armstrong Accountancy Corporation for audit objectives and procedures

4.0 COMMENTS

4.01 Comments from the Committee Members

4.02 Trustee McCray inquired if there were any new requirements or if anything had to be done differently. Ms. Zimmerman of Brown Armstrong advised there were no major changes to the audit plan; however she noted they may do some surprise audit testing during field work and GASB 87 becomes effective this year.

5.0 NEXT MEETING OF THE AUDIT COMMITTEE

5.01 Monday, May 15, 2023 at 10:00 a.m.

6.0 ADJOURNMENT

6.01 There being no further business, the meeting was adjourned at 11:54 a.m.

Respectfully Submitted:

____

Michael Duffy, Audit Committee Chair

San Joaquin County Employees Retirement Association

April 2023

5.01 Service Retirement — Consent

01 BEVERLEY A ARNOLD — Hospital Attendant, Hosp Med-Surg Intensive Care

Member Type: General
Years of Service: 05y 09m 29d
Retirement Date: 2/12/2023
Comments: Tier 2 member - eligible to retire with 5 years of membership.

02 KRISHNAMURTHY BALAJI — Deferred Member, N/A

Member Type: General
Years of Service: 01y 04m 01d
Retirement Date: 2/12/2023
Comments: Deferred from SJCERA since May 2022. Incoming and outgoing reciprocity with CalPERS. Concurrent retirement with CalPERS.

03 CARLA J BOMBEN — Deputy Director I-SJGH, Hosp Standards - Compliance

Member Type: General
Years of Service: 24y 03m 13d
Retirement Date: 2/13/2023

04 TAMESIA L BOONE — Mental Health Specialist II, Mental Health-Adult Outpatient

Member Type: General
Years of Service: 21y 09m 08d
Retirement Date: 1/30/2023

05 GRANT L BROOKS — Deputy District Attorney IV, District Attorney

Member Type: General
Years of Service: 25y 09m 02d
Retirement Date: 2/6/2023

06 HEATHER G FONTES — Probation Unit Supervisor, Probation - Adult

Member Type: Safety
Years of Service: 24y 08m 02d
Retirement Date: 2/4/2023

07 FELICIA HANSON — Non-Member, N/A

Member Type: General
Years of Service: 08y 09m 20d
Retirement Date: 2/2/2023
Comments: General retirement after DRO split account.

08 ANNALISA C POTTER — Deferred Member, N/A

Member Type: General
Years of Service: 26y 04m 20d
Retirement Date: 2/1/2023

09 CRAIG A ROBINSON — Deferred Member, N/A

Member Type: General
Years of Service: 00y 04m 04d
Retirement Date: 2/5/2023
Comments: Deferred from SJCERA since August 2000. Outgoing reciprocity and concurrent retirement with StanCERA.

10 WILLIAM C SMITH Crafts Worker IV
Facilities Management

Member Type: General
Years of Service: 07y 11m 29d
Retirement Date: 2/24/2023
Comments: Tier 2 member - eligible to retire with 5 years of service credit.

11 ANTONETTE J SUAN Deferred Member
N/A

Member Type: General
Years of Service: 12y 03m 11d
Retirement Date: 2/16/2023
Comments: Deferred from SJCERA since June 2022.

12 JORGE R TORRES Probation Officer II
Probation - Adult

Member Type: Safety
Years of Service: 24y 07m 27d
Retirement Date: 2/10/2023

13 VICTORIA M VERBER District Attorney
District Attorney

Member Type: General
Years of Service: 33y 01m 10d
Retirement Date: 2/21/2023

14 MARY ROSE R WILSON Deferred Member
N/A

Member Type: General
Years of Service: 01y 07m 27d
Retirement Date: 1/19/2023
Comments: Deferred from SJCERA since December 2007. Tier 1 member eligible to retire on age 70 requirement.

SAN JOAQUIN CERA

Board of Retirement Meeting

San Joaquin County Employees' Retirement Association

Agenda Item 5.02

April 14, 2023

SUBJECT: Required Minimum Distribution Policy Amendment

SUBMITTED FOR: _X_ CONSENT ___ ACTION ___ INFORMATION

RECOMMENDATION

Adopt the proposed amendments to the *Required Minimum Distribution* policy to bring the policy into compliance with recent changes in federal law.

PURPOSE

To amend the policy to comply with new federal legislation that increased the required minimum distribution (RMD) age to 73 and 75 as described below.

DISCUSSION

Internal Revenue Code section 401(a)(9) requires participants in retirement plans such as SJCERA initiate distribution by a certain age (known as the required minimum distribution or RMD). In the event the participant does not initiate distribution on their own, the retirement plan must attempt to locate the member and initiate payment.

Until recently, the RMD age was 70½. Federal bill HR 2617 (the Consolidated Appropriations Act of 2023, which included the SECURE 2.0 Act) was signed into law by President Biden on December 29, 2022. Among other things, the new law increased the RMD age to:

- 73 for a person who attains age 72 on or after January 1, 2023, and age 73 before January 1, 2033, and
- 75 for an individual who attains age 74 on or after January 1, 2033.

The recommended policy changes bring SJCERA's policy into compliance with the new federal requirements and have been reviewed by tax counsel.

ATTACHMENTS

Required Minimum Distributions IRC 401(a)(9) – mark-up
Required Minimum Distributions IRC 401(a)(9) – clean

JShick

JOHANNA SHICK
Chief Executive Officer

Required Minimum Distributions – IRC 401(a)(9)

I. Purpose

This policy reaffirms and clarifies the existing practices of the Association with respect to the limit on minimum distribution requirements under Internal Revenue Code section 401(a)(9) and Treasury regulations issued thereunder.

II. General Rules

A. Reasonable Good Faith Interpretation of Code

In accordance with section 823 of the Pension Protection Act of 2006 ("PPA"), this policy is promulgated in accordance with a reasonable good faith interpretation of Code section 401(a)(9), and the Treasury regulations thereunder, as applicable to a governmental plan within the meaning of Code section 414(d). For purposes of Code section 401(a)(9), Code means the Code and applicable Treasury regulations as they apply under a reasonable good faith interpretation of section 401(a)(9).

B. Elections Under TEFRA § 242(b)(2)

Notwithstanding the other requirements of this policy to the contrary, distributions may be made under a designation made before January 1, 1984, in accordance with section 242(b)(2) of the Tax Equity and Fiscal Responsibility Act.

III. Definitions

Capitalized terms used in this policy are defined below.

A. Annuity Starting Date

"Annuity Starting Date" means the first day of the first period for which a retirement benefit is payable as a Required Minimum Distribution (RMD) Annuity or, in the case of a retirement benefit not payable in the form of an RMD Annuity, the first day on which all events have occurred which entitle the Member to payment.

B. Applicable RMD Age

Applicable RMD Age means (a) age 70-1/2 if the Member attains age 70-1/2 prior to January 1, 2020; (b) age 72 if the Member attains age 70-1/2 on or after January 1, 2020 and age 72 before January 1, 2023; (c) age 73 if the Member attains age 72 on or after January 1, 2023 and age 73 before January 1, 2033; or (d) age 75 if the Member attains age 74 on or after January 1, 2033.

~~B.~~C. Designated Beneficiary

"Designated Beneficiary" means the individual who is designated by the

Member (or the Member's surviving Spouse) as the beneficiary of the Member's interest under the Association and who is also the designated beneficiary under Code section 401(a)(9) and section 1.401(a)(9)-4 of the Treasury regulations. Accordingly, entities other than individuals, such as the Member's estate or a trust, cannot be a Designated Beneficiary of a Member's interest in the Association. However, the individuals who are beneficiaries under a designated trust shall be treated as Designated Beneficiaries for purposes of determining the distribution period under this policy and Code section 401(a)(9) if all of the applicable requirements of Treasury regulation section 1.401(a)(9)-4, Q&A-5(b) are met. If all of such applicable requirements are not met, then the distribution of the Member's entire interest must be completed by December 31 of the calendar year containing the fifth anniversary of the Member's death.

~~C.~~D. Distribution Calendar Year

"Distribution Calendar Year" means a calendar year for which a minimum distribution is required. For distributions beginning before the Member's death, the first Distribution Calendar Year is the calendar year immediately preceding the calendar year which contains the Member's Required Beginning Date. For distributions beginning after the Member's death, the first Distribution Calendar Year is the calendar year in which distributions are required to begin pursuant to Section VI.A herein.

~~D.~~E. Required Beginning Date

"Required Beginning Date," means April 1 of the calendar year following the later of the calendar year in which the Member attains the Applicable RMD Age~~age 72 (or age 70½ if the Member attained age 70½ prior to January 1, 2020)~~ or the calendar year in which the Member retires.

~~E.~~F. RMD Annuity

"RMD Annuity" means, for purposes of the required minimum distribution rules in Code section 401(a)(9), a distribution form providing for periodic payments for a specified period of time. "RMD Annuity" for purposes of this policy does not mean "annuity" as defined in the County Employees' Retirement Law, but instead means a retirement benefit that is payable by the Association.

~~F.~~G. Spouse

Effective June 26, 2013, consistent with Federal tax rules, the term "Spouse" means a person who is lawfully married under California law, including marriages recognized under California Family Code section 308 that were entered into in another jurisdiction (another state, the District of Columbia, a United States territory or a foreign jurisdiction) which also include marriages of same-sex individuals that were validly entered into in another jurisdiction whose laws authorize the marriage of two individuals of the same sex even if the married couple is domiciled in a jurisdiction that does not recognize the validity of same-sex marriage. In accordance with Federal tax rules, the term "Spouse" does not include individuals who have entered into a registered domestic partnership, civil union, or other similar formal relationship recognized under the law of another jurisdiction that is not denominated as a marriage under the laws of that state (whether opposite-sex or same-sex relationships).

IV. Time and Manner of Distribution

A. Required Beginning Date

The Member's entire interest will be distributed, or begin to be distributed, no later than the Member's Required Beginning Date.

B. Form of Distribution

1. Periodic and Other Forms of Payments

A Member's entire interest in the Association shall be distributed in the form of RMD Annuity payments that meet the requirements of Section IV.B.2 or in the form of a single sum or an insurance company annuity contract that meets the requirements of Section IV.B.3.a. Payments may be made in a combination of these forms of payment and may include lump sum withdrawals of Member contributions or death benefits as provided in the CERL provided that these forms comply with a reasonable good faith interpretation of Code section 401(a)(9).

2. General Rules Regarding RMD Annuities

If the Member's interest is to be paid in the form of an RMD Annuity, the RMD Annuity must meet the following requirements:

a. Periodic

RMD Annuities must be paid over equal payment intervals, which intervals may not be longer than one year.

b. Distribution Period

RMD Annuities will be paid over the life or lives of the Member and a beneficiary or over a period certain that does not exceed the maximum length of the period described in Sections V or VI herein.

c. Increases

RMD Annuities may not increase over time except in accordance with the rules in Section VII.A

d. Change in Period Paid

The period over which an RMD Annuity is paid can be changed only in accordance with Q&A-13 of section 1.401(a)(9)-6 of the Treasury regulations.

e. Commencement

Payment of the RMD Annuity must start no later than the Required Beginning Date.

3. Other Forms

a. Annuity Contract

If the Member's interest is distributed in the form of an annuity contract purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of Code section 401(a)(9).

b. Individual Account

Any part of the Member's interest which is in the form of an individual account described in section 414(k) of the Code will be distributed in a manner satisfying the requirements of Code section 401(a)(9) that apply to individual accounts.

C. Amount Required to be Distributed by Required Beginning Date and Later Payment Intervals

The amount that must be distributed on or before the Member's Required Beginning Date is the payment that is required for one payment interval. The second payment need not be made until the end of the next payment interval even if that payment interval ends in the next calendar year. All of the Member's benefit accruals as of the last day of the first Distribution Calendar Year will be included in the calculation of the amount of the annuity payments for payment intervals ending on or after the Member's Required Beginning Date. If the Member dies before distributions begin, the same rules apply with reference to the date distributions are required to begin under Section VI.A, paragraphs 1 or 2.

V. RMD Annuity Distributions Beginning During Member's Life

The following rules must be met to comply with the requirements of the Code and this policy for RMD Annuities that begin during the Member's lifetime.

A. Single Life RMD Annuity

An RMD Annuity that begins no later than the Required Beginning Date and is paid for the Member's lifetime only, with no benefits paid to any other person, meets the requirements of the Code and this policy.

B. Joint and Survivor RMD Annuity – Death of Member after Benefits Begin

If Member dies after RMD Annuity payments have commenced to the Member, then distributions must continue to be made over the remaining period over which distributions commenced in accordance with the schedule of payments made to the Member. Reasonable delay for administration may occur, but in this case payments that should have been made in accordance with the original payment schedule must be made with the first resumed payment.

C. Joint and Survivor RMD Annuity With Spouse as the Sole Beneficiary

An RMD Annuity that begins no later than the Required Beginning Date and is paid for the Member's lifetime and the lifetime of the Member's surviving

Spouse, with no benefits paid to any other person, meets the requirements of the Code and this policy regardless of the difference in age of the Member and the Member's Spouse.

D. Joint and Survivor RMD Annuity When the Sole Beneficiary Is Not the Member's Spouse

1. Limit on Percentage of Member's RMD Annuity Paid to Non-Spouse Beneficiary

   The survivor annuity percentage of an RMD Annuity that begins no later than the Required Beginning Date and is paid for the Member's lifetime and the lifetime of a beneficiary other than the Member's surviving Spouse must not at any time exceed the applicable percentage of the RMD Annuity payment during the Member's lifetime, using the table set forth in Treasury regulation section 1.401(a)(9)-6, Q&A-2(c)(2), as determined in the manner described in Q&A-2(c)(1). This Treasury Regulation requires that the RMD Annuity payable to the Member's beneficiary after the Member's death not exceed the percentage of the RMD Annuity payable to the Member during the Member's life specified in the table if the adjusted age difference between the Member and the beneficiary is more than 10 years.

2. Rule Regarding Children of Member

   Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if a survivor benefit is payable to a surviving child of the Member for a limited period of time (such as until the child reaches the age of 22), the survivor benefit shall be treated as payable solely to the surviving Spouse of the Member.

3. Rule Regarding Other Beneficiaries

   Solely to the extent required by Code section 401(a)(9) and under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(c) and taking into account the vested rights in retirement benefits created by the California Constitution, if a survivor benefit is payable to a person other than a surviving Spouse of the Member (or surviving child under paragraph 2 of this subsection D), the survivors allowance may not exceed the percentage of the Member's benefit established under the Applicable Percentage Table in Q&A-2 of Treasury regulations section 1.401(a)(9)-6 for the calendar year that contains the Annuity Starting Date. If the Member is younger than age 70 in that year, then the age difference used in the Table is reduced by the number of years that the Member is younger than age 70 on the Member's birthday for that calendar year. If the Member is unable to elect Option 2 as result of a limitation under the Applicable Percentage Table, the Member will be allowed to elect an alternate allowance under Option 4, which will provide an actuarially equivalent benefit based on the highest survivor's allowance permissible under the Applicable Percentage Table payable to the Designated Beneficiary.

E. Period Certain RMD Annuity

1. Spouse Is the Sole Beneficiary

   If the Member's sole beneficiary is the Member's surviving Spouse, and the form of distribution is a period certain with no life annuity, the period certain may not exceed the joint life and last survivor expectancy of the Member and Spouse as determined in accordance with the Joint and Last Survivor Table set forth in section 1.401(a)(9)–9, Q&A-3, of the Treasury Regulations, using the Member's and Spouse's ages as of the Member's and Spouse's birthdays in the calendar year that contains the Annuity Starting Date.

2. Spouse Is not the Sole Beneficiary

   When the Member's surviving Spouse is not the sole beneficiary then the period certain may not exceed the period established under the Uniform Lifetime Table in Q&A-2 of Treasury regulations section 1.401(a)(9)-9 for the calendar year that contains the Annuity Starting Date. If the Member is younger than age 70 in that year, then the distribution period for the Member is the distribution period for age 70 increased by the difference between 70 and the age of the Member in the year of the Annuity Starting Date. Also see below regarding Designated Beneficiaries.

3. Rule Regarding Children of Member

   Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, the period certain distribution rules shall not apply to survivor benefits payable to children of the Member but the rules of section V.D above shall apply.

4. Rule Regarding Other Beneficiaries

   Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if a period certain survivor benefit is payable to a person other than a surviving Spouse of the Member, then the present value (if any) of any benefit that would be in excess of the amount that can be paid in accordance with such regulation shall be paid to such person in a lump sum payment no later than one year after such person becomes entitled to a survivor benefit.

VI. Distributions When Member Dies before Benefits Begin

If a Member dies before distributions begin, distributions after the death of the Member must meet the following requirements:

A. When Distributions Must Begin

1. Spouse is the Sole Designated Beneficiary

If the Member's sole Designated Beneficiary is the Member's surviving Spouse, then, except as provided in paragraph 5 of this Section VI.A, distributions to the surviving Spouse must begin by December 31 of the calendar year immediately following the calendar year in which the Member died or, if later, by December 31 of the calendar year in which the Member would have reached the Applicable RMD Age~~age 72 (or age 70½ if the Member attained age 70½ prior to January 1, 2020)~~.

2. Spouse is not the Sole Designated Beneficiary

   If the Member's sole Designated Beneficiary is not the Member's surviving Spouse, then, except as provided in paragraph 5 of this Section VI.A, distributions to the Designated Beneficiary must begin by December 31 of the calendar year immediately following the calendar year in which the Member died.

3. No Designated Beneficiary

   If there is no Designated Beneficiary as of September 30 of the year following the year of the Member's death, then distributions of the Member's entire interest must be completed by December 31 of the calendar year that contains the fifth anniversary of the Member's death.

4. Death of Surviving Spouse Who Is the Sole Designated Beneficiary

   If the Member's surviving Spouse is the Member's sole Designated Beneficiary and the surviving Spouse dies after the Member but before distributions to the surviving Spouse are required to begin, then this Section VI.A, other than Section VI.A.1, applies as if the surviving Spouse were the Member.

5. Election of Five-Year Rule

   A Designated Beneficiary may elect, at the time and in the manner determined by the Association, to have the five-year rule of Section VI.A.3 apply, but solely to the extent that the Designated Beneficiary may elect, under the CERL, a benefit which will be paid in the required time period.

B. When Distributions Are Considered to Begin

For purposes of this Section VI, unless Section VI.A.4 applies, distributions are considered to begin on the Member's Required Beginning Date. If Section VI.A.4 applies, distributions are considered to begin on the date distributions are required to begin to the surviving Spouse under Section VI.A.1. If distributions under an RMD Annuity meeting the requirements of this policy commence to the Member before the Member's Required Beginning Date (or to the Member's surviving Spouse before the date distributions are required to begin to the surviving Spouse under Section VI.A.1), the date distributions are considered to begin is the date distributions actually commence.

C. Length of Distribution Period

1. Member Is Survived by a Designated Beneficiary

a. General Rule

If a Designated Beneficiary survives the Member, the Member's entire interest in the Association shall be distributed over the life of the Designated Beneficiary or over a period certain that does not exceed the period specified in paragraph C.1.b below.

b. Period Certain

The period certain in paragraph C.1.a above may not exceed the Designated Beneficiary's life expectancy determined using the Single Life Table in Treasury regulations section 1.401(a)(9)-9, Q&A-1. If the Annuity Starting Date is in the first Distribution Calendar Year, the life expectancy shall be determined using the Designated Beneficiary's age as of the beneficiary's birthday in the calendar year immediately following the calendar year of the Member's death. If the Annuity Starting Date is before the first Distribution Calendar Year, then the life expectancy is determined using the Designated Beneficiary's age in the calendar year that contains the Annuity Starting Date.

2. No Designated Beneficiary

If there is no Designated Beneficiary as of the September 30 of the year following the year of the Member's death, distribution of the Member's entire interest must be completed by December 31 of the calendar year containing the fifth anniversary of the Member's death.

3. Death of Surviving Spouse before Distributions to Spouse Begin

If the Member's surviving Spouse is the Member's sole Designated Beneficiary, and the surviving Spouse dies before distributions to the surviving Spouse begin, this Section V I .C shall apply as if the surviving Spouse were the Member, except that the time that distributions are required to begin is determined without regard to Section VI.A.1.

VII. Special Rules

A. RMD Annuity Payment Increases

RMD Annuity payments will either not increase over time or increase only as follows:

1. Cost of Living Adjustments

a. Annual COLA Increases

RMD Annuity payments may increase by an annual percentage that does not exceed the percentage increase in an eligible cost-of-living index, as defined in Q&A-14(b) of section 1.401(a)(9)-6 of the Treasury regulations, for a 12-month period ending in the year during which the increase occurs or a prior year.

b. Cumulative COLA Increases

RMD Annuity payments may increase by a percentage increase that occurs at specified times and does not exceed the cumulative total of annual percentage increases in an eligible cost-of-living index, as defined in the preceding paragraph since the Annuity Starting Date, or if later, the date of the most recent percentage increase.

c. Additional COLA Increases

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b) and taking into account the vested rights in retirement benefits created by the California Constitution, RMD Annuity payments may increase by a percentage or amount that is determined by the Association, in accordance with the CERL, to represent an appropriate amount to take account of cost-of-living increases affecting retirees or beneficiaries.

2. "Pop-Ups"

RMD Annuity Payments may increase to the extent of the reduction in the amount of the Member's payments to provide for a survivor benefit, but only if there is no longer a survivor benefit because the beneficiary whose life was being used to determine the distribution period dies or is no longer the Member's beneficiary pursuant to a domestic relations order under applicable state law.

3. Plan Amendment

Benefits may increase if they result from an amendment to, or interpretation of, the CERL, PEPRA, or any other applicable law governing benefits for Members or from an ordinance, resolution or regulation pursuant to such law.

4. Other Benefits

Benefits may increase (i) to the extent increases are permitted in accordance with paragraph (c) or (d) of Q&A-14 of section 1.401(a)(9)-6 of the Treasury regulations dealing with additional permitted increases for annuity payments under annuity contracts purchased from an insurance company and additional permitted increases for annuity payments from a qualified trust; (ii) pursuant to section 31691.1 of the CERL; and (ii) pursuant to sections 31681.1 et. seq., and 31739 et. seq. of the CERL.

B. Additional Accruals after First Distribution Calendar Year

Any additional benefits accruing to the Member in a calendar year after the first Distribution Calendar Year will be distributed beginning with the first payment interval ending in the calendar year immediately following the calendar year in which such benefit accrues.

C. Domestic Relations Orders

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if Article 8.4 of the CERL applies (relating to the establishment of separate accounts under domestic relations orders), then both the Member and the Member's former Spouse shall be deemed to be separate Members of the Association for purposes of this policy and Code section 401(a)(9).

D. Reciprocal Member

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if a deferred Member is a current employee and a member of another retirement system with which the Association has reciprocity under California law, then for purposes of determining the Required Beginning Date under the Association the Member shall be treated as a current employee of the Association and as such, as if he or she had not retired, even if he or she has attained age 70½.

E. Public Safety Member Killed in Line of Duty

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, any additional retirement benefits paid under CERL section 31787.5 to the surviving Spouse of a public safety Member killed in the line of duty shall not be limited by Code section 401(a)(9) because they shall be treated as incidental death benefits.

F. Rollovers

Amounts that are required minimum distributions cannot be rolled over to another qualified retirement plan or other tax-favored vehicle. The amount that cannot be rolled over shall be determined in accordance with Treasury regulations section 1.402(c)-2, Q&A-7.

G. Payments to Surviving Child Treated as Made to Surviving Spouse

Solely to the extent required by Code section 401(a)(9) and under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(c) and taking into account the vested rights in retirement benefits created by the California Constitution, for purposes of Code section 401(a)(9) and is policy, payments to a Member's surviving child in accordance with the requirements of Q&A-15 of section 1.401(a)(9)-6 of the Treasury regulations shall be treated as if such payments had been made to the Member's surviving Spouse to the extent the payments become payable to the surviving Spouse upon the child's attainment of the age of majority, as determined in accordance with Q&A-15 of section 1.401(a)(9)-6 of the Treasury regulations, or upon the occurrence of such other event specified in Q&A-15 of section 1.401(a)(9)-6 of the Treasury regulations, or as otherwise specified in IRS guidance under Code section 401(a)(9).

VIII. This policy is intended to be in accordance with the Internal Revenue Code (Code) and the applicable Treasury regulations. To the extent there is a conflict between this policy and the Code and Treasury regulations, the applicable federal law will govern.

IX. Policy Review

Staff shall review this Policy at least once every three years to ensure that it remains relevant, appropriate, and in compliance. Any revisions or amendments to this policy must be approved by the Board of Retirement in accordance with the bylaws.

X. History

01/01/2015	Effective Date of Bylaw Section 25
03/20/2018	Bylaw Section 25 Converted to Board Policy and Board of Supervisors approved Bylaws
07/06/2018	Staff updated format
09/11/2018	Annual review, deleted Article 5.5 reference
04/12/2019	Policy Review section amended to at least once every three years
04/10/2020	Policy amended to reflect federal law increasing RMD to 72
07/09/2021	Minor edits by tax counsel
04/14/2023	Policy amended to reflect federal law increasing RMD to 73 and 75

Certification of Board Adoption:

04/14/2023

Clerk of the Board Date

Required Minimum Distributions – IRC 401(a)(9)

I. Purpose

This policy reaffirms and clarifies the existing practices of the Association with respect to the limit on minimum distribution requirements under Internal Revenue Code section 401(a)(9) and Treasury regulations issued thereunder.

II. General Rules

A. Reasonable Good Faith Interpretation of Code

In accordance with section 823 of the Pension Protection Act of 2006 ("PPA"), this policy is promulgated in accordance with a reasonable good faith interpretation of Code section 401(a)(9), and the Treasury regulations thereunder, as applicable to a governmental plan within the meaning of Code section 414(d). For purposes of Code section 401(a)(9), Code means the Code and applicable Treasury regulations as they apply under a reasonable good faith interpretation of section 401(a)(9).

B. Elections Under TEFRA § 242(b)(2)

Notwithstanding the other requirements of this policy to the contrary, distributions may be made under a designation made before January 1, 1984, in accordance with section 242(b)(2) of the Tax Equity and Fiscal Responsibility Act.

III. Definitions

Capitalized terms used in this policy are defined below.

A. Annuity Starting Date

"Annuity Starting Date" means the first day of the first period for which a retirement benefit is payable as a Required Minimum Distribution (RMD) Annuity or, in the case of a retirement benefit not payable in the form of an RMD Annuity, the first day on which all events have occurred which entitle the Member to payment.

B. Applicable RMD Age

Applicable RMD Age means (a) age 70-1/2 if the Member attains age 70-1/2 prior to January 1, 2020; (b) age 72 if the Member attains age 70-1/2 on or after January 1, 2020 and age 72 before January 1, 2023; (c) age 73 if the Member attains age 72 on or after January 1, 2023 and age 73 before January 1, 2033; or (d) age 75 if the Member attains age 74 on or after January 1, 2033.

C. Designated Beneficiary

"Designated Beneficiary" means the individual who is designated by the

Member (or the Member's surviving Spouse) as the beneficiary of the Member's interest under the Association and who is also the designated beneficiary under Code section 401(a)(9) and section 1.401(a)(9)-4 of the Treasury regulations. Accordingly, entities other than individuals, such as the Member's estate or a trust, cannot be a Designated Beneficiary of a Member's interest in the Association. However, the individuals who are beneficiaries under a designated trust shall be treated as Designated Beneficiaries for purposes of determining the distribution period under this policy and Code section 401(a)(9) if all of the applicable requirements of Treasury regulation section 1.401(a)(9)-4, Q&A-5(b) are met. If all of such applicable requirements are not met, then the distribution of the Member's entire interest must be completed by December 31 of the calendar year containing the fifth anniversary of the Member's death.

D. Distribution Calendar Year

"Distribution Calendar Year" means a calendar year for which a minimum distribution is required. For distributions beginning before the Member's death, the first Distribution Calendar Year is the calendar year immediately preceding the calendar year which contains the Member's Required Beginning Date. For distributions beginning after the Member's death, the first Distribution Calendar Year is the calendar year in which distributions are required to begin pursuant to Section VI.A herein.

E. Required Beginning Date

"Required Beginning Date," means April 1 of the calendar year following the later of the calendar year in which the Member attains the Applicable RMD Age or the calendar year in which the Member retires.

F. RMD Annuity

"RMD Annuity" means, for purposes of the required minimum distribution rules in Code section 401(a)(9), a distribution form providing for periodic payments for a specified period of time. "RMD Annuity" for purposes of this policy does not mean "annuity" as defined in the County Employees' Retirement Law, but instead means a retirement benefit that is payable by the Association.

G. Spouse

Effective June 26, 2013, consistent with Federal tax rules, the term "Spouse" means a person who is lawfully married under California law, including marriages recognized under California Family Code section 308 that were entered into in another jurisdiction (another state, the District of Columbia, a United States territory or a foreign jurisdiction) which also include marriages of same-sex individuals that were validly entered into in another jurisdiction whose laws authorize the marriage of two individuals of the same sex even if the married couple is domiciled in a jurisdiction that does not recognize the validity of same-sex marriage. In accordance with Federal tax rules, the term "Spouse" does not include individuals who have entered into a registered domestic partnership, civil union, or other similar formal relationship recognized under the law of another jurisdiction that is not denominated as a marriage under the laws of that state (whether opposite-sex or same-sex relationships).

IV. Time and Manner of Distribution

A. Required Beginning Date

The Member's entire interest will be distributed, or begin to be distributed, no later than the Member's Required Beginning Date.

B. Form of Distribution

1. Periodic and Other Forms of Payments

A Member's entire interest in the Association shall be distributed in the form of RMD Annuity payments that meet the requirements of Section IV.B.2 or in the form of a single sum or an insurance company annuity contract that meets the requirements of Section IV.B.3.a. Payments may be made in a combination of these forms of payment and may include lump sum withdrawals of Member contributions or death benefits as provided in the CERL provided that these forms comply with a reasonable good faith interpretation of Code section 401(a)(9).

2. General Rules Regarding RMD Annuities

If the Member's interest is to be paid in the form of an RMD Annuity, the RMD Annuity must meet the following requirements:

a. Periodic

RMD Annuities must be paid over equal payment intervals, which intervals may not be longer than one year.

b. Distribution Period

RMD Annuities will be paid over the life or lives of the Member and a beneficiary or over a period certain that does not exceed the maximum length of the period described in Sections V or VI herein.

c. Increases

RMD Annuities may not increase over time except in accordance with the rules in Section VII.A

d. Change in Period Paid

The period over which an RMD Annuity is paid can be changed only in accordance with Q&A-13 of section 1.401(a)(9)-6 of the Treasury regulations.

e. Commencement

Payment of the RMD Annuity must start no later than the Required Beginning Date.

3. Other Forms

a. Annuity Contract

If the Member's interest is distributed in the form of an annuity contract purchased from an insurance company, distributions thereunder will be made in accordance with the requirements of Code section 401(a)(9).

b. Individual Account

Any part of the Member's interest which is in the form of an individual account described in section 414(k) of the Code will be distributed in a manner satisfying the requirements of Code section 401(a)(9) that apply to individual accounts.

C. Amount Required to be Distributed by Required Beginning Date and Later Payment Intervals

The amount that must be distributed on or before the Member's Required Beginning Date is the payment that is required for one payment interval. The second payment need not be made until the end of the next payment interval even if that payment interval ends in the next calendar year. All of the Member's benefit accruals as of the last day of the first Distribution Calendar Year will be included in the calculation of the amount of the annuity payments for payment intervals ending on or after the Member's Required Beginning Date. If the Member dies before distributions begin, the same rules apply with reference to the date distributions are required to begin under Section VI.A, paragraphs 1 or 2.

V. RMD Annuity Distributions Beginning During Member's Life

The following rules must be met to comply with the requirements of the Code and this policy for RMD Annuities that begin during the Member's lifetime.

A. Single Life RMD Annuity

An RMD Annuity that begins no later than the Required Beginning Date and is paid for the Member's lifetime only, with no benefits paid to any other person, meets the requirements of the Code and this policy.

B. Joint and Survivor RMD Annuity – Death of Member after Benefits Begin

If Member dies after RMD Annuity payments have commenced to the Member, then distributions must continue to be made over the remaining period over which distributions commenced in accordance with the schedule of payments made to the Member. Reasonable delay for administration may occur, but in this case payments that should have been made in accordance with the original payment schedule must be made with the first resumed payment.

C. Joint and Survivor RMD Annuity With Spouse as the Sole Beneficiary

An RMD Annuity that begins no later than the Required Beginning Date and is paid for the Member's lifetime and the lifetime of the Member's surviving

Spouse, with no benefits paid to any other person, meets the requirements of the Code and this policy regardless of the difference in age of the Member and the Member's Spouse.

D. Joint and Survivor RMD Annuity When the Sole Beneficiary Is Not the Member's Spouse

1. Limit on Percentage of Member's RMD Annuity Paid to Non-Spouse Beneficiary

   The survivor annuity percentage of an RMD Annuity that begins no later than the Required Beginning Date and is paid for the Member's lifetime and the lifetime of a beneficiary other than the Member's surviving Spouse must not at any time exceed the applicable percentage of the RMD Annuity payment during the Member's lifetime, using the table set forth in Treasury regulation section 1.401(a)(9)-6, Q&A-2(c)(2), as determined in the manner described in Q&A-2(c)(1). This Treasury Regulation requires that the RMD Annuity payable to the Member's beneficiary after the Member's death not exceed the percentage of the RMD Annuity payable to the Member during the Member's life specified in the table if the adjusted age difference between the Member and the beneficiary is more than 10 years.

2. Rule Regarding Children of Member

   Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if a survivor benefit is payable to a surviving child of the Member for a limited period of time (such as until the child reaches the age of 22), the survivor benefit shall be treated as payable solely to the surviving Spouse of the Member.

3. Rule Regarding Other Beneficiaries

   Solely to the extent required by Code section 401(a)(9) and under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(c) and taking into account the vested rights in retirement benefits created by the California Constitution, if a survivor benefit is payable to a person other than a surviving Spouse of the Member (or surviving child under paragraph 2 of this subsection D), the survivors allowance may not exceed the percentage of the Member's benefit established under the Applicable Percentage Table in Q&A-2 of Treasury regulations section 1.401(a)(9)-6 for the calendar year that contains the Annuity Starting Date. If the Member is younger than age 70 in that year, then the age difference used in the Table is reduced by the number of years that the Member is younger than age 70 on the Member's birthday for that calendar year. If the Member is unable to elect Option 2 as result of a limitation under the Applicable Percentage Table, the Member will be allowed to elect an alternate allowance under Option 4, which will provide an actuarially equivalent benefit based on the highest survivor's allowance permissible under the Applicable Percentage Table payable to the Designated Beneficiary.

E. Period Certain RMD Annuity

1. Spouse Is the Sole Beneficiary

   If the Member's sole beneficiary is the Member's surviving Spouse, and the form of distribution is a period certain with no life annuity, the period certain may not exceed the joint life and last survivor expectancy of the Member and Spouse as determined in accordance with the Joint and Last Survivor Table set forth in section 1.401(a)(9)–9, Q&A-3, of the Treasury Regulations, using the Member's and Spouse's ages as of the Member's and Spouse's birthdays in the calendar year that contains the Annuity Starting Date.

2. Spouse Is not the Sole Beneficiary

   When the Member's surviving Spouse is not the sole beneficiary then the period certain may not exceed the period established under the Uniform Lifetime Table in Q&A-2 of Treasury regulations section 1.401(a)(9)-9 for the calendar year that contains the Annuity Starting Date. If the Member is younger than age 70 in that year, then the distribution period for the Member is the distribution period for age 70 increased by the difference between 70 and the age of the Member in the year of the Annuity Starting Date. Also see below regarding Designated Beneficiaries.

3. Rule Regarding Children of Member

   Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, the period certain distribution rules shall not apply to survivor benefits payable to children of the Member but the rules of section V.D above shall apply.

4. Rule Regarding Other Beneficiaries

   Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if a period certain survivor benefit is payable to a person other than a surviving Spouse of the Member, then the present value (if any) of any benefit that would be in excess of the amount that can be paid in accordance with such regulation shall be paid to such person in a lump sum payment no later than one year after such person becomes entitled to a survivor benefit.

VI. Distributions When Member Dies before Benefits Begin

If a Member dies before distributions begin, distributions after the death of the Member must meet the following requirements:

A. When Distributions Must Begin

1. Spouse is the Sole Designated Beneficiary

If the Member's sole Designated Beneficiary is the Member's surviving Spouse, then, except as provided in paragraph 5 of this Section VI.A, distributions to the surviving Spouse must begin by December 31 of the calendar year immediately following the calendar year in which the Member died or, if later, by December 31 of the calendar year in which the Member would have reached the Applicable RMD Age.

2. Spouse is not the Sole Designated Beneficiary

   If the Member's sole Designated Beneficiary is not the Member's surviving Spouse, then, except as provided in paragraph 5 of this Section VI.A, distributions to the Designated Beneficiary must begin by December 31 of the calendar year immediately following the calendar year in which the Member died.

3. No Designated Beneficiary

   If there is no Designated Beneficiary as of September 30 of the year following the year of the Member's death, then distributions of the Member's entire interest must be completed by December 31 of the calendar year that contains the fifth anniversary of the Member's death.

4. Death of Surviving Spouse Who Is the Sole Designated Beneficiary

   If the Member's surviving Spouse is the Member's sole Designated Beneficiary and the surviving Spouse dies after the Member but before distributions to the surviving Spouse are required to begin, then this Section VI.A, other than Section VI.A.1, applies as if the surviving Spouse were the Member.

5. Election of Five-Year Rule

   A Designated Beneficiary may elect, at the time and in the manner determined by the Association, to have the five-year rule of Section VI.A.3 apply, but solely to the extent that the Designated Beneficiary may elect, under the CERL, a benefit which will be paid in the required time period.

B. When Distributions Are Considered to Begin

   For purposes of this Section VI, unless Section VI.A.4 applies, distributions are considered to begin on the Member's Required Beginning Date. If Section VI.A.4 applies, distributions are considered to begin on the date distributions are required to begin to the surviving Spouse under Section VI.A.1. If distributions under an RMD Annuity meeting the requirements of this policy commence to the Member before the Member's Required Beginning Date (or to the Member's surviving Spouse before the date distributions are required to begin to the surviving Spouse under Section VI.A.1), the date distributions are considered to begin is the date distributions actually commence.

C. Length of Distribution Period

   1. Member Is Survived by a Designated Beneficiary

a. General Rule

If a Designated Beneficiary survives the Member, the Member's entire interest in the Association shall be distributed over the life of the Designated Beneficiary or over a period certain that does not exceed the period specified in paragraph C.1.b below.

b. Period Certain

The period certain in paragraph C.1.a above may not exceed the Designated Beneficiary's life expectancy determined using the Single Life Table in Treasury regulations section 1.401(a)(9)-9, Q&A-1. If the Annuity Starting Date is in the first Distribution Calendar Year, the life expectancy shall be determined using the Designated Beneficiary's age as of the beneficiary's birthday in the calendar year immediately following the calendar year of the Member's death. If the Annuity Starting Date is before the first Distribution Calendar Year, then the life expectancy is determined using the Designated Beneficiary's age in the calendar year that contains the Annuity Starting Date.

2. No Designated Beneficiary

If there is no Designated Beneficiary as of the September 30 of the year following the year of the Member's death, distribution of the Member's entire interest must be completed by December 31 of the calendar year containing the fifth anniversary of the Member's death.

3. Death of Surviving Spouse before Distributions to Spouse Begin

If the Member's surviving Spouse is the Member's sole Designated Beneficiary, and the surviving Spouse dies before distributions to the surviving Spouse begin, this Section V I .C shall apply as if the surviving Spouse were the Member, except that the time that distributions are required to begin is determined without regard to Section VI.A.1.

VII. Special Rules

A. RMD Annuity Payment Increases

RMD Annuity payments will either not increase over time or increase only as follows:

1. Cost of Living Adjustments

a. Annual COLA Increases

RMD Annuity payments may increase by an annual percentage that does not exceed the percentage increase in an eligible cost-of-living index, as defined in Q&A-14(b) of section 1.401(a)(9)-6 of the Treasury regulations, for a 12-month period ending in the year during which the increase occurs or a prior year.

b. Cumulative COLA Increases

RMD Annuity payments may increase by a percentage increase that occurs at specified times and does not exceed the cumulative total of annual percentage increases in an eligible cost-of-living index, as defined in the preceding paragraph since the Annuity Starting Date, or if later, the date of the most recent percentage increase.

c. Additional COLA Increases

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b) and taking into account the vested rights in retirement benefits created by the California Constitution, RMD Annuity payments may increase by a percentage or amount that is determined by the Association, in accordance with the CERL, to represent an appropriate amount to take account of cost-of-living increases affecting retirees or beneficiaries.

2. "Pop-Ups"

RMD Annuity Payments may increase to the extent of the reduction in the amount of the Member's payments to provide for a survivor benefit, but only if there is no longer a survivor benefit because the beneficiary whose life was being used to determine the distribution period dies or is no longer the Member's beneficiary pursuant to a domestic relations order under applicable state law.

3. Plan Amendment

Benefits may increase if they result from an amendment to, or interpretation of, the CERL, PEPRA, or any other applicable law governing benefits for Members or from an ordinance, resolution or regulation pursuant to such law.

4. Other Benefits

Benefits may increase (i) to the extent increases are permitted in accordance with paragraph (c) or (d) of Q&A-14 of section 1.401(a)(9)-6 of the Treasury regulations dealing with additional permitted increases for annuity payments under annuity contracts purchased from an insurance company and additional permitted increases for annuity payments from a qualified trust; (ii) pursuant to section 31691.1 of the CERL; and (ii) pursuant to sections 31681.1 et. seq., and 31739 et. seq. of the CERL.

B. Additional Accruals after First Distribution Calendar Year

Any additional benefits accruing to the Member in a calendar year after the first Distribution Calendar Year will be distributed beginning with the first payment interval ending in the calendar year immediately following the calendar year in which such benefit accrues.

C. Domestic Relations Orders

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if Article 8.4 of the CERL applies (relating to the establishment of separate accounts under domestic relations orders), then both the Member and the Member's former Spouse shall be deemed to be separate Members of the Association for purposes of this policy and Code section 401(a)(9).

D. Reciprocal Member

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, if a deferred Member is a current employee and a member of another retirement system with which the Association has reciprocity under California law, then for purposes of determining the Required Beginning Date under the Association the Member shall be treated as a current employee of the Association and as such, as if he or she had not retired, even if he or she has attained age 70½.

E. Public Safety Member Killed in Line of Duty

Under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(b), and taking into account the vested rights in retirement benefits created by the California Constitution, any additional retirement benefits paid under CERL section 31787.5 to the surviving Spouse of a public safety Member killed in the line of duty shall not be limited by Code section 401(a)(9) because they shall be treated as incidental death benefits.

F. Rollovers

Amounts that are required minimum distributions cannot be rolled over to another qualified retirement plan or other tax-favored vehicle. The amount that cannot be rolled over shall be determined in accordance with Treasury regulations section 1.402(c)-2, Q&A-7.

G. Payments to Surviving Child Treated as Made to Surviving Spouse

Solely to the extent required by Code section 401(a)(9) and under a good faith interpretation of the Code and Treasury regulations section 1.401(a)(9)-6, Q&A-2(c) and taking into account the vested rights in retirement benefits created by the California Constitution, for purposes of Code section 401(a)(9) and is policy, payments to a Member's surviving child in accordance with the requirements of Q&A-15 of section 1.401(a)(9)-6 of the Treasury regulations shall be treated as if such payments had been made to the Member's surviving Spouse to the extent the payments become payable to the surviving Spouse upon the child's attainment of the age of majority, as determined in accordance with Q&A-15 of section 1.401(a)(9)-6 of the Treasury regulations, or upon the occurrence of such other event specified in Q&A-15 of section 1.401(a)(9)-6 of the Treasury regulations, or as otherwise specified in IRS guidance under Code section 401(a)(9).

VIII. This policy is intended to be in accordance with the Internal Revenue Code (Code) and the applicable Treasury regulations. To the extent there is a conflict between this policy and the Code and Treasury regulations, the applicable federal law will govern.

IX. Policy Review

Staff shall review this Policy at least once every three years to ensure that it remains relevant, appropriate, and in compliance. Any revisions or amendments to this policy must be approved by the Board of Retirement in accordance with the bylaws.

X. History

01/01/2015	Effective Date of Bylaw Section 25
03/20/2018	Bylaw Section 25 Converted to Board Policy and Board of Supervisors approved Bylaws
07/06/2018	Staff updated format
09/11/2018	Annual review, deleted Article 5.5 reference
04/12/2019	Policy Review section amended to at least once every three years
04/10/2020	Policy amended to reflect federal law increasing RMD to 72
07/09/2021	Minor edits by tax counsel
04/14/2023	Policy amended to reflect federal law increasing RMD to 73 and 75

Certification of Board Adoption:

04/14/2023

Clerk of the Board　　　　　　　　　　Date

DISABILITY RETIREMENT Legal Standards

San Joaquin County Employees' Retirement Association

April 14 , 2023

Vivian W. Shultz, Esq.

DISABILITY RETIREMENT APPLICATION PROCESS

START	3 MONTHS	6 MONTHS	9 MONTHS	12 MONTHS	15 MONTHS	18 MONTHS
Incapacity is permanent Apply for Disability Retirement Provide Medical Evidence	SJCERA collects records	Independent Medical Exam Disability Attorney Review	Board of Retirement decides to grant, deny, refer to Administrative Law Judge, or remand to staff	If there is a conflict in the evidence or the Board makes a referral, Administrative Law Judge conducts hearing	Board reviews Administrative Law Judge recommendation and decides	If Granted, benefit begins If denied, you may appeal to the Superior Court within 90 days
Steps 1-3	Step 4	Steps 5-7	Step 8	Step 9	Step 10	Steps 11-12

LEGAL STANDARDS

- Permanent Incapacity
- Service Connection
- Effective Date
- Reinstatement
- Re-Employment

PERMANENT INCAPACITY

Incapacity:

- Substantial inability to perform usual job duties

Usual Job Duties:

- Duties that are usual and customary, not remote or uncommon
- “Full Range of Duties” is NOT the standard

Permanent:

- Further change in the incapacity is not reasonably to be anticipated under usual medical standards
- The incapacity is NOT permanent if:
  - Further treatment is available
  - Applicant can perform modified work duties within a permanent assignment

Case Study #1

- Applicant is a fish and game warden. He injured his right arm while apprehending a suspect. As a peace officer, the Applicant is required to be able to shoot a gun, arrest suspects, move animals, and perform other peace officer duties.
- The examining orthopedist opined that the Applicant could not engage in heavy lifting or carrying.
- Applicant testified that he was able to perform all duties of his job, except "lifting a deer or lifting a lobster trap out of kelp."

QUESTION:

IS THE APPLICANT INCAPACITATED FROM HIS <u>USUAL DUTIES</u>?

Case Study #2

- Applicant sustained a work related injury to his low back. He was examined by multiple doctors, who recommended conservative treatment and counseled against surgery due to substantial risks.
- Other doctors recommended surgery. The surgery was a relatively new procedure, and outcomes were variable.
- Applicant refused surgery.
- At hearing, all doctors essentially agreed that the Applicant should have surgery and that the risks were slight. This contradicted their own earlier advice.

QUESTION:

IS THE APPLICANT PERMANENTLY INCAPACITATED?

SERVICE CONNECTION

- **Incapacity must arise out of and in the course of employment:**
  - "Arising out of" refers to the RISK of injury presented by the employment
  - "In the course of" refers to the time, place and circumstances of employment
- **Substantial Contribution:**
  - A real and measurable connection between the incapacity and the employment
  - NOT inconsequential or infinitesimal
  - Percentage of causation is relevant but not dispositive
- **Aggravation of Pre-Existing Condition:**
  - Would the applicant have been permanently incapacitated absent the employment?

Case Study #3

- Applicant was a mail clerk driver. He twisted his left knee in separate work-related accidents.
- Pain in his left knee and his hip eventually forced him to retire. He applied for disability retirement based on his left knee.
- Three doctors examined the Applicant and opined that the left knee incapacity was caused in part by the work-related accidents. They assigned causation at a range between 10% and 60%
- The Applicant had pre-existing osteoarthritis in both knees.
- **QUESTION:**
- IS THE APPLICANT'S CONDITION SERVICE-CONNECTED?

EFFECTIVE DATE

General Rule:

A disability retirement allowance is effective on the date the application is filed, but not earlier than the day after last date of regular compensation.

Gov't Code §31724

Earlier Effective Date

The member may seek an earlier effective date as of the day after the last day of regular compensation, which in some cases can be substantial. Allowed <u>IF</u> application was delayed due to:

- Administrative oversight; OR
- Inability to ascertain the permanency of the incapacity until after the date following the day for which the member last received regular compensation

Earlier Effective Date: Inability to Ascertain Permanence

- Identify the last date of regular compensation
- Was the applicant able to ascertain the permanence of their incapacity on the day following the date they last received regular compensation?
- Based primarily on medical evidence

REINSTATEMENT

Permanent incapacity shall in all cases be decided by the Board. If denied:

- Notice of denial given to employer
- Employer may file a writ of mandate or intervene in the employee's writ of mandate proceeding
- If the employer has dismissed the member for disability, the employer shall **reinstate** the member to his employment effective as of the day following the effective date of the dismissal

Gov't Code § 31725

RETURN TO WORK

Supplemental Disability Allowance

Disability Granted

↓

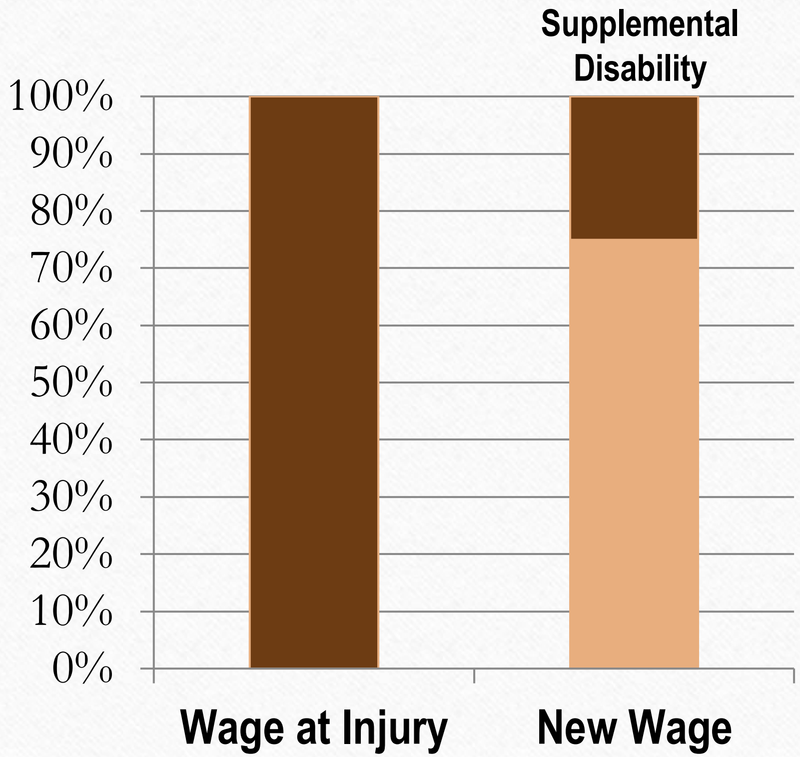
Re-employed by County

New job pays less

↓

Supplemental Disability Allowance

Pays the difference



The Supplemental Benefit and SCDR:

- Disability retirement allowance payments between eligibility for DR and commencement of alternate position
- No break in continuity of service
- No break in continuity of Safety member status
- Resumption of DR allowance after employment

Supplemental Benefit and NSCDR:

- Mostly the same as SCDR
- No re-employment plan
- Break in continuity of Safety membership

QUESTIONS AND DISCUSSION

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)[1] — **February 2023**

	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]			$ 3,882,617,795	100.0%	100.0%	-1.5	-0.3	2.1	-1.9	5.9	5.4	7.5	Apr-90
Policy Benchmark [4]						*-0.5*	*1.5*	*3.7*	*-2.8*	*5.7*	*5.5*	*7.4*	
Difference:						-1.0	-1.8	-1.6	0.9	0.2	-0.1	0.1	
75/25 Portfolio [5]						*-3.0*	*0.2*	*3.1*	*-9.1*	*6.4*	*5.0*	*7.0*	
Difference:			.			1.5	-0.5	-1.0	7.2	-0.5	0.4	0.5	
Broad Growth			$ 2,909,694,503	74.9%	76.0%	-2.1	-0.4	2.3	-2.1	7.8	6.3	8.1	Jan-95
Aggressive Growth Lag[2]			$ 322,062,266	8.3%	10.0%	2.0	2.0	18.3	28.1	20.3	17.5	-2.1	Feb-05
MSCI ACWI +2%Lag						*-1.8*	*-5.4*	*3.1*	*6.4*	*13.0*	*10.7*	*0.0*	
Difference:						3.8	7.4	15.2	21.7	7.3	6.8	-2.1	
BlackRock Global Energy&Power Lag[3]	*$50,000*	*Global Infrastructure*	$ 32,886,318	0.8%		4.7	4.7	10.6	10.6	7.0	--	10.1	Jul-19
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*--*	*6.8*	
Difference:						14.1	10.9	29.3	29.3	0.7	--	3.3	
Ocean Avenue II Lag[3]	*$40,000*	*PE Buyout FOF*	$ 38,708,381	1.0%		8.0	8.0	37.2	37.2	41.4	32.1	19.3	May-13
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*6.4*	*-20.4*	
Difference:						17.4	14.2	55.9	55.9	35.1	25.7	39.7	
Lightspeed Venture Ptr Select V Lag[3]	*$40,000*	*Growth-Stage VC*	$ 8,519,385	0.2%		-8.2	-8.2	--	--	--	--	--	Jun-22
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*--*	*--*	*--*	*--*	*--*	
Difference:						1.2	-2.0	--	--	--	--	--	
Ocean Avenue III Lag[3]	*$50,000*	*PE Buyout FOF*	$ 50,778,556	1.3%		-1.8	-1.8	28.7	28.7	26.8	33.4	25.8	Apr-16
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*6.4*	*7.0*	
Difference:						7.6	4.4	47.4	47.4	20.5	27.0	18.8	
Ocean Avenue IV Lag[3]	*$50,000*	*PE Buyout*	$ 49,621,478	1.3%		18.0	18.0	52.3	52.3	40.2	--	38.9	Dec-19
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*--*	*6.9*	
Difference:						27.4	24.2	71.0	71.0	33.9	--	32.0	
Morgan Creek III Lag[3]	*$10,000*	*Multi-Strat FOF*	$ 4,660,219	0.1%		5.4	5.4	-22.4	-22.4	-15.8	-8.3	-6.0	Feb-15
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*6.4*	*7.3*	
Difference:						14.8	11.6	-3.7	-3.7	-22.1	-14.7	-13.3	
Morgan Creek V Lag[3]	*$12,000*	*Multi-Strat FOF*	$ 6,974,665	0.2%		-1.7	-1.7	5.6	5.6	11.8	12.9	13.2	Jun-13
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*6.4*	*7.6*	
Difference:						7.7	4.5	24.3	24.3	5.5	6.5	5.6	
Morgan Creek VI Lag[3]	*$20,000*	*Multi-Strat FOF*	$ 23,692,977	0.6%		-4.4	-4.4	4.8	4.8	18.3	18.5	10.4	Feb-15
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*6.3*	*6.4*	*7.3*	
Difference:						5.0	1.8	23.5	23.5	12.0	12.1	3.1	
Stellex Capital Partners II Lag[3]	*$50,000*	*Special Situations PE*	$ 9,003,002	0.2%		0.3	0.3	19.9	19.9	--	--	1.1	Jul-21
MSCI ACWI +2% Lag						*-9.4*	*-6.2*	*-18.7*	*-18.7*	*--*	*--*	*-11.8*	
Difference:						9.7	6.5	38.6	38.6	--	--	12.9	
Non-Core Private Real Assets Lag[3]	*$341,100*	*Private Real Estate*	$ 97,217,285	2.5%		-11.1	-11.1	1.6	1.6	11.0	7.2	-2.4	Nov-04
MSCI ACWI +2% Lag						*0.4*	*0.6*	*22.1*	*22.1*	*12.5*	*10.3*	*9.2*	
Difference:						-11.5	-11.7	-20.5	-20.5	-1.5	-3.1	-11.6	
Opportunistic Private Real Estate			$ 28,307,473	0.5%									
Greenfield V[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 218,903	0.0%		-0.1	-0.1	-0.7	-2.1	-10.3	-4.6	-3.0	Jul-08
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*10.0*	
Difference:						-1.4	-1.4	-16.3	-27.7	-26.1	-18.2	-13.0	
Greenfield VI[3]	*$20,000*	*Opportunistic Pvt. RE*	$ 29,613	0.0%		-2.7	-2.7	-16.2	-22.3	-39.0	-34.2	-14.4	Apr-12
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*14.3*	
Difference:						-4.0	-4.0	-31.8	-47.9	-54.8	-47.8	-28.7	
Greenfield VII[3]	*$19,100*	*Opportunistic Pvt. RE*	$ 2,688,969	0.1%		6.1	6.1	10.2	22.0	17.2	15.7	14.2	Oct-14
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*13.9*	
Difference:						4.8	4.8	-5.4	-3.6	1.4	2.1	0.3	

[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 12/31/22, and lagged 1 quarter.

[3] Manager returns are as of 12/31/22, and lagged 1 quarter. Since Inception date reflects one quarter lag.

[4] 8/1/22 to present benchmark is 33% MSCI ACWI IMI, 9% BB Aggregate Bond Index, **16%** *50%* BB High Yield/*50%* S&P Leveraged Loans, 7% NCREIF ODCE +1% lag; **10%** T-Bill +4%, **10%** MSCI ACWI +2% Lag, **15%** CRO Custom Benchmark. Prior to 8/1/22 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] February 2023

	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*	$ 18,392,744	0.5%		-0.5	-0.5	-5.0	19.7	26.7	--	24.6	Apr-18
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*13.7*	
Difference:						-1.8	-1.8	-20.6	-5.9	10.9	--	10.9	
Miller Global Fund VI[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 107,955	0.0%		-6.8	-6.8	25.4	36.7	0.6	4.4	2.3	May-08
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*10.0*	
Difference:						-8.1	-8.1	9.8	11.1	-15.2	-9.2	-7.7	
Miller Global Fund VII[3]	*$15,000*	*Opportunistic Pvt. RE*	$ 59,626	0.0%		-9.9	-9.9	250.2	239.2	-23.5	-19.9	8.3	Dec-12
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*14.0*	
Difference:						-11.2	-11.2	234.6	213.6	-39.3	-33.5	-5.7	
Walton Street V[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 730,244	0.0%		-45.3	-45.3	-49.9	-55.7	-28.0	-22.4	9.7	Nov-06
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*10.0*	
Difference:						-46.6	-46.6	-65.5	-81.3	-43.8	-36.0	-0.3	
Walton Street VI[3]	*$15,000*	*Opportunistic Pvt. RE*	$ 6,079,419	0.2%		2.7	2.7	8.6	17.7	4.9	4.1	7.9	Jul-09
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*12.7*	
Difference:						1.4	1.4	-7.0	-7.9	-10.9	-9.5	-4.8	
Value-Added Private Real Estate			$ 68,010,326	1.8%									
AG Core Plus IV[3]	*$20,000*	*Value-Added Pvt. RE*	$ 11,082,534	0.3%		-5.7	-5.7	-5.9	-2.8	5.5	7.0	4.6	Sep-15
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*13.6*	
Difference:						-7.0	-7.0	-21.5	-28.4	-10.3	-6.6	-9.0	
Almanac Realty VI[3]	*$30,000*	*Value-Added Pvt. RE*	$ 4,004,118	0.1%		-0.1	-0.1	-3.3	-0.2	-9.3	-6.3	19.8	Feb-13
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*14.3*	
Difference:						-1.4	-1.4	-18.9	-25.8	-25.1	-19.9	5.5	
Berkeley Partners Fund V, LP	*$40,000*	*Value-Added Pvt. RE*	$ 25,893,627	0.7%		-2.9	-2.9	9.6	14.1	--	--	27.2	Aug-20
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*21.8*	
Difference:						-4.2	-4.2	-6.0	-11.5	--	--	5.4	
Stockbridge RE III[3]	*$45,000*	*Value-Added Pvt. RE*	$ 27,030,047	0.7%		0.9	0.9	6.9	16.2	20.9	--	13.4	Jul-18
NCREIF ODCE + 1% Lag Blend						*1.3*	*1.3*	*15.6*	*25.6*	*15.8*	*13.6*	*13.8*	
Difference:						-0.4	-0.4	-8.7	-9.4	5.1	--	-0.4	
Traditional Growth[2]			$ 1,372,492,973	35.3%	33.0%	-2.8	-0.3	4.2	-7.2	7.6	4.8	8.7	Jan-95
MSCI ACWI IMI Net						*-2.8*	*0.4*	*4.4*	*-8.1*	*9.3*	*6.4*	*7.5*	
Difference:						0.0	-0.7	-0.2	0.9	-1.7	-1.6	1.2	
Global Equity			$ 1,328,813,422	34.2%									
Northern Trust MSCI World IMI		*All Cap Global*	$ 1,196,071,409	30.8%		-2.6	-0.2	4.7	-6.9	--	--	6.3	Sep-20
MSCI World IMI Net						*-2.4*	*0.4*	*4.8*	*-7.2*	*--*	*--*	*5.9*	
Difference:						-0.2	-0.6	-0.1	0.3	--	--	0.4	
SJCERA Transition		*All Cap Global*	$ 3,044	0.0%		NM	NM	NM	NM	--	--	NM	Jul-20
Emerging Markets			$ 132,738,969										
GQG Active Emerging Markets		*Emerging Markets*	$ 56,329,910	1.5%		-3.8	-2.6	0.9	-12.8	--	--	-2.8	Aug-20
MSCI Emerging Markets Index Net						*-6.5*	*-0.5*	*0.9*	*-15.3*	*--*	*--*	*-2.1*	
Difference:						2.7	-2.1	0.0	2.5	--	--	-0.7	
PIMCO RAE Fundamental Emerging Markets		*Emerging Markets*	$ 76,409,059	2.0%		-4.6	0.0	0.6	-6.0	7.9	0.4	4.4	Apr-07
MSCI Emerging Markets Index Net						*-6.5*	*-0.5*	*0.9*	*-15.3*	*1.0*	*-1.9*	*2.6*	
Difference:						1.9	0.5	-0.3	9.3	6.9	2.3	1.8	
REITS			$ 43,679,551	1.1%									
Invesco All Equity REIT		*Core US REIT*	$ 43,679,551	1.1%		-5.9	-1.2	3.5	-10.8	1.9	6.1	8.0	Aug-04
FTSE NAREIT Equity Index						*-4.8*	*-0.1*	*5.4*	*-11.7*	*4.1*	*7.4*	*7.9*	
Difference:						-1.1	-1.1	-1.9	0.9	-2.2	-1.3	0.1	

[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 12/31/22, 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] — **February 2023**

	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			$ 1,215,139,264	31.3%	33.0%	-1.7	-0.5	0.8	-1.0	5.0	5.3	3.8	Jan-05
Risk Parity			$ 362,737,438	9.3%		-5.1	-3.4	1.3	-20.3	-1.8	1.5	3.0	
T-Bill +4%						*0.7*	*2.0*	*1.3*	*6.2*	*4.9*	*5.4*	*4.7*	
Difference:						-5.8	-5.4	0.0	-26.5	-6.7	-3.9	-1.7	
Bridgewater All Weather		*Risk Parity*	$ 185,160,319	4.8%		-5.1	-2.6	1.6	-18.6	-1.0	1.8	3.2	Mar-12
T-Bill +4%						*0.7*	*2.0*	*1.3*	*6.2*	*4.9*	*5.4*	*5.5*	
Difference:						-5.8	-4.6	0.3	-24.8	-5.9	-3.6	-2.3	
PanAgora Diversified Risk Multi-Asset		*Risk Parity*	$ 177,577,119	4.6%		-5.2	-4.2	1.0	-22.0	-2.7	1.2	3.0	Apr-16
T-Bill +4%						*0.7*	*2.0*	*1.3*	*6.2*	*4.9*	*5.4*	*5.2*	
Difference:						-5.9	-6.2	-0.3	-28.2	-7.6	-4.2	-2.2	
Liquid Credit			$ 229,863,321	5.9%		-0.6	2.7	2.2	0.0	1.3	2.0	1.9	
50% BB High Yield, 50% S&P/LSTA Leveraged Loans						*-0.4*	*2.8*	*2.9*	*-1.4*	*2.6*	*3.3*	*5.3*	
Difference:						-0.2	-0.1	-0.7	1.4	-1.3	-1.3	-3.4	
Neuberger Berman		*Global Credit*	$ 97,810,239	2.5%		-1.2	2.3	2.1	-4.3	-0.1	--	1.5	Feb-19
33% ICE BofA HY Constrained, 33% S&P/LSTA LL, 33% JPM EMBI Glbl Div.						*-1.0*	*2.2*	*2.2*	*-3.8*	*0.0*	*--*	*1.8*	
Difference:						-0.2	0.1	-0.1	-0.5	-0.1	--	-0.3	
Stone Harbor Absolute Return		*Absolute Return*	$ 132,053,082	3.4%		-0.1	3.0	2.3	3.5	2.4	2.3	2.8	Oct-06
3-Month Libor Total Return						*0.3*	*1.0*	*0.7*	*1.9*	*0.9*	*1.5*	*1.4*	
Difference:						-0.4	2.0	1.6	1.6	1.5	0.8	1.4	
Private Credit Lag[2]			$ 371,524,580	9.6%		0.4	0.4	6.4	6.4	4.8	3.5	3.7	
50% BB High Yield, 50% S&P/LSTA Leveraged Loans						*-3.1*	*0.4*	*-8.4*	*-8.4*	*0.9*	*2.3*	*5.1*	
Difference:						3.5	0.0	14.8	14.8	3.9	1.2	-1.4	
BlackRock Direct Lending Lag[3]	*$100,000*	*Direct Lending*	$ 89,801,555	2.3%		1.7	1.7	1.7	4.7	---	---	7.8	May-20
S&P/LSTA Leveraged Loans +3% Blend [5]						*-2.0*	*2.1*	*2.1*	*2.0*	*---*	*---*	*10.8*	
Difference:						3.7	-0.4	-0.4	2.7	---	---	-3.0	
Mesa West RE Income IV Lag[3]	*$75,000*	*Comm. Mortgage*	$ 20,938,833	0.5%		1.0	1.0	2.0	2.0	5.8	6.9	6.6	Mar-17
S&P/LSTA Leveraged Loans +3% Blend [4]						*-2.0*	*2.1*	*2.0*	*2.0*	*7.0*	*7.5*	*7.6*	
Difference:						3.0	-1.1	0.0	0.0	-1.2	-0.6	-1.0	
Crestline Opportunity II Lag[3]	*$45,000*	*Opportunistic*	$ 14,363,056	0.4%		-5.6	-5.6	-5.7	-5.7	0.2	0.1	3.9	Nov-13
S&P/LSTA Leveraged Loans +3% Blend [4]						*-2.0*	*2.1*	*2.0*	*2.0*	*7.0*	*7.5*	*8.2*	
Difference:						-3.6	-7.7	-7.7	-7.7	-6.8	-7.4	-4.3	
Davidson Kempner Distr Opp V Lag[3]	*$50,000*	*Opportunistic*	$ 47,540,041	0.0%		-0.8	-0.8	3.5	3.5	--	--	22.3	Oct-20
S&P/LSTA Leveraged Loans +3% Blend [4]						*-2.0*	*2.1*	*2.0*	*2.0*	*--*	*--*	*7.1*	
Difference:						1.2	-2.9	1.5	1.5	--	--	15.2	
Oaktree Lag[3]	*$50,000*	*Leveraged Direct*	$ 32,358,478	0.8%		0.0	0.0	13.0	13.0	15.4	--	11.3	Mar-18
S&P/LSTA Leveraged Loans +3% Blend [6]						*-2.0*	*2.1*	*2.0*	*2.0*	*8.9*	*--*	*7.6*	
Difference:						2.0	-2.1	11.0	11.0	6.5	--	3.7	
HPS EU Asset Value II Lag[3]	*$50,000*	*Direct Lending*	$ 36,246,712	0.9%		1.9	1.9	8.4	8.4	--	--	3.7	Aug-20
S&P/LSTA Leveraged Loans +3% Blend [4]						*-2.0*	*2.1*	*2.0*	*2.0*	*--*	*--*	*7.3*	
Difference:						3.9	-0.2	6.4	6.4	--	--	-3.6	
Raven Opportunity III Lag[3]	*$50,000*	*Direct Lending*	$ 58,435,316	1.5%		1.8	1.8	16.4	16.4	9.7	10.1	4.9	Nov-15
S&P/LSTA Leveraged Loans +3% Blend [4]						*-2.0*	*2.1*	*2.0*	*2.0*	*7.0*	*7.5*	*7.9*	
Difference:						3.8	-0.3	14.4	14.4	2.7	2.6	-3.0	

[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 12/31/22, and lagged 1 quarter.

[3] Manager returns are as of 12/31/22, 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] — February 2023

	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[2]	*$50,000*	*Direct Lending*	$	4,378,784	0.1%		0.0	0.0	-9.9	-9.9	-7.9	-10.1	-2.2	Jul-12
S&P/LSTA Leveraged Loans +3% Blend [3]							*-2.0*	*2.1*	*2.0*	*2.0*	*7.0*	*7.5*	*8.3*	
Difference:							2.0	-2.1	-11.9	-11.9	-14.9	-17.6	-10.5	
White Oak Summit Peer Fund Lag[2]	*$50,000*	*Direct Lending*	$	25,781,013	0.7%		-3.8	-3.8	-8.3	-8.3	-1.5	1.9	3.4	Mar-16
S&P/LSTA Leveraged Loans +3% Blend [3]							*-2.0*	*2.1*	*2.0*	*2.0*	*7.0*	*7.5*	*7.0*	
Difference:							-1.8	-5.9	-10.3	-10.3	-8.5	-5.6	-3.6	
White Oak Yield Spectrum Master V Lag[2]	*$50,000*	*Direct Lending*	$	41,680,792	1.1%		0.4	0.4	2.9	2.9	---	--	1.0	Mar-20
S&P/LSTA Leveraged Loans +3% Blend [3]							*-2.0*	*2.1*	*2.0*	*2.0*	*---*	*--*	*7.0*	
Difference:							2.4	-1.7	0.9	0.9	---	--	-6.0	
Core Private Real Estate Lag			$	251,013,925	6.5%									
Principal US[2]	*$25,000*	*Core Pvt. RE*	$	46,708,336	1.2%		0.4	0.4	11.0	22.1	11.5	9.8	10.0	Jan-16
NCREIF ODCE + 1% Lag Blend							*5.5*	*5.5*	*24.0*	*33.2*	*16.1*	*13.9*	*13.2*	
Difference:							-5.1	-5.1	-13.0	-11.1	-4.6	-4.1	-3.2	
Prologis Logistics[2]	*$35,000*	*Core Pvt. RE*	$	138,386,621	3.6%		0.2	0.2	18.5	34.4	26.4	22.4	13.6	Dec-07
NCREIF ODCE + 1% Lag Blend							*5.5*	*5.5*	*24.0*	*33.2*	*16.1*	*13.9*	*10.2*	
Difference:							-5.3	-5.3	-5.5	1.2	10.3	8.5	3.4	
RREEF America II[2]	*$45,000*	*Core Pvt. RE*	$	66,337,801	1.7%		-0.8	-0.8	11.8	23.6	12.6	10.4	10.1	Jul-16
NCREIF ODCE + 1% Lag Blend							*5.5*	*5.5*	*24.0*	*33.2*	*16.1*	*13.9*	*13.1*	
Difference:							-6.3	-6.3	-12.2	-9.6	-3.5	-3.5	-3.0	
Diversifying Strategies			$	768,498,236	19.8%	24.0%	0.4	0.2	1.3	0.1	0.6	2.8	6.1	Oct-90
Principal Protection			$	287,202,243	7.4%	9.0%	-2.4	0.8	1.1	-6.1	-2.8	0.7	5.8	Oct-90
BB Aggregate Bond Index							*-2.6*	*0.0*	*0.4*	*-9.7*	*-3.8*	*0.5*	*5.3*	
Difference:							0.2	0.8	0.7	3.6	1.0	0.2	0.5	
Dodge & Cox		*Core Fixed Income*	$	196,285,201	5.1%		-2.4	1.1	1.2	-6.4	-1.5	1.8	6.5	Oct-90
BB Aggregate Bond Index							*-2.6*	*0.0*	*0.4*	*-9.7*	*-3.8*	*0.5*	*5.3*	
Difference:							0.2	1.1	0.8	3.3	2.3	1.3	1.2	
Loomis Sayles		*Core Fixed Income*	$	90,910,937	2.3%		-2.4	0.2	-4.4	--	--	--	-9.3	Mar-22
BB Aggregate Bond Index							*-2.6*	*0.0*	*-4.7*	*--*	*--*	*--*	*-9.7*	
Difference:							0.2	0.2	0.3	--	--	--	0.4	
DoubleLine Capital		*MBS*	$	6,105	0.0%		NM	NM	NM	NM	NM	NM	NM	Feb-12

[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] Manager returns are as of 12/31/22, and lagged 1 quarter. Since Inception date reflects one quarter lag.

[3] 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] February 2023

	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			$ 481,295,993	12.4%	15.0%	1.9	-0.2	1.4	5.3	3.1	4.3	6.5	Jan-05
CRO Custom Benchmark [2]						*-1.0*	*1.0*	*1.2*	*-2.7*	*1.5*	*4.0*	*4.9*	
Difference:						2.9	-1.2	0.2	8.0	1.6	0.3	1.6	
Long Duration			$ 113,903,596	2.9%		-4.8	-0.4	1.8	-22.8	-10.5	-0.7	-1.2	
BB US Long Duration Treasuries						*-4.7*	*-0.4*	*1.4*	*-24.1*	*-11.0*	*-0.7*	*-0.7*	
Difference:						-0.1	0.0	0.4	1.3	0.5	0.0	-0.5	
Dodge & Cox Long Duration		*Long Duration*	$ 113,903,596	2.9%		-4.8	-0.4	1.8	-22.8	-10.5	-0.7	-1.2	Feb-16
BB US Long Duration Treasuries						*-4.7*	*-0.4*	*1.4*	*-24.1*	*-11.0*	*-0.7*	*-0.7*	
Difference:						-0.1	0.0	0.4	1.3	0.5	0.0	-0.5	
Systematic Trend Following			$ 241,858,796	6.2%		2.2	-0.7	0.3	17.4	15.5	8.2	9.1	
BTOP50 Index						*1.3*	*1.7*	*1.2*	*13.1*	*10.8*	*7.0*	*5.2*	
Difference:						0.9	-2.4	-0.9	4.3	4.7	1.2	3.9	
Mt. Lucas Managed Futures - Cash		*Systematic Trend Following*	$ 118,919,097	3.1%		-0.4	-2.3	-3.0	12.1	16.0	7.2	8.4	Jan-05
BTOP50 Index						*1.3*	*1.7*	*1.2*	*13.1*	*10.8*	*7.0*	*5.2*	
Difference:						-1.7	-4.0	-4.2	-1.0	5.2	0.2	3.2	
Graham Tactical Trend		*Systematic Trend Following*	$ 122,939,699	3.2%		4.8	0.9	3.6	23.0	15.0	9.0	5.2	Apr-16
SG Trend Index						*1.9*	*0.2*	*0.5*	*19.2*	*13.9*	*9.3*	*5.0*	
Difference:						2.9	0.7	3.1	3.8	1.1	-0.3	0.2	
Alternative Risk Premia			$ 125,533,601	3.2%		6.4	0.8	2.7	16.3	0.4	2.0	7.6	
5% Annual						*0.4*	*1.2*	*0.8*	*5.0*	*5.0*	*5.0*	*6.2*	
Difference:						6.0	-0.4	1.9	11.3	-4.6	-3.0	1.4	
AQR Style Premia		*Alternative Risk Premia*	$ 59,453,794	1.5%		6.3	4.9	7.8	20.0	10.4	-0.3	1.7	May-16
5% Annual						*0.4*	*1.2*	*0.8*	*5.0*	*5.0*	*5.0*	*5.0*	
Difference:						5.9	3.7	7.0	15.0	5.4	-5.3	-3.3	
PE Diversified Global Macro		*Alternative Risk Premia*	$ 66,079,807	1.7%		10.4	-2.4	-1.6	31.5	-1.9	4.2	2.9	Jun-16
5% Annual						*0.4*	*1.2*	*0.8*	*5.0*	*5.0*	*5.0*	*5.0*	
Difference:						10.0	-3.6	-2.4	26.5	-6.9	-0.8	-2.1	
Lombard Odier		*Alternative Risk Premia*	$ -	0.0%		2.0	0.4	2.7	1.9	-5.5	--	-3.4	Jan-19
5% Annual						*0.4*	*1.2*	*0.8*	*5.0*	*5.0*	*--*	*5.0*	
Difference:						1.6	-0.8	1.9	-3.1	-10.5	--	-8.4	
Cash[3]			$ 178,101,334	4.6%	0.0%	0.2	0.8	0.4	1.9	0.7	1.0	2.3	Sep-94
US T-Bills						*0.3*	*1.0*	*0.6*	*2.1*	*0.8*	*1.3*	*2.3*	
Difference:						-0.1	-0.2	-0.2	-0.2	-0.1	-0.3	0.0	
Northern Trust STIF		*Collective Govt. Short Term*	$ 128,612,187	3.3%		0.2	0.9	0.6	1.9	0.7	1.0	2.5	Jan-95
US T-Bills						0.3	1.0	0.6	2.1	0.8	1.3	*2.3*	
Difference:						-0.1	-0.1	0.0	-0.2	-0.1	-0.3	0.2	
Parametric Overlay[4]		*Cash Overlay*	$ 26,323,722	0.7%		0.0	0.0	0.0	0.0	--	--	0.0	Jan-20

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

[3] Includes lagged cash.

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

MEKETA | 45

CELEBRATING A MILESTONE | YEARS

Economic and Market Update

February 2023 Report

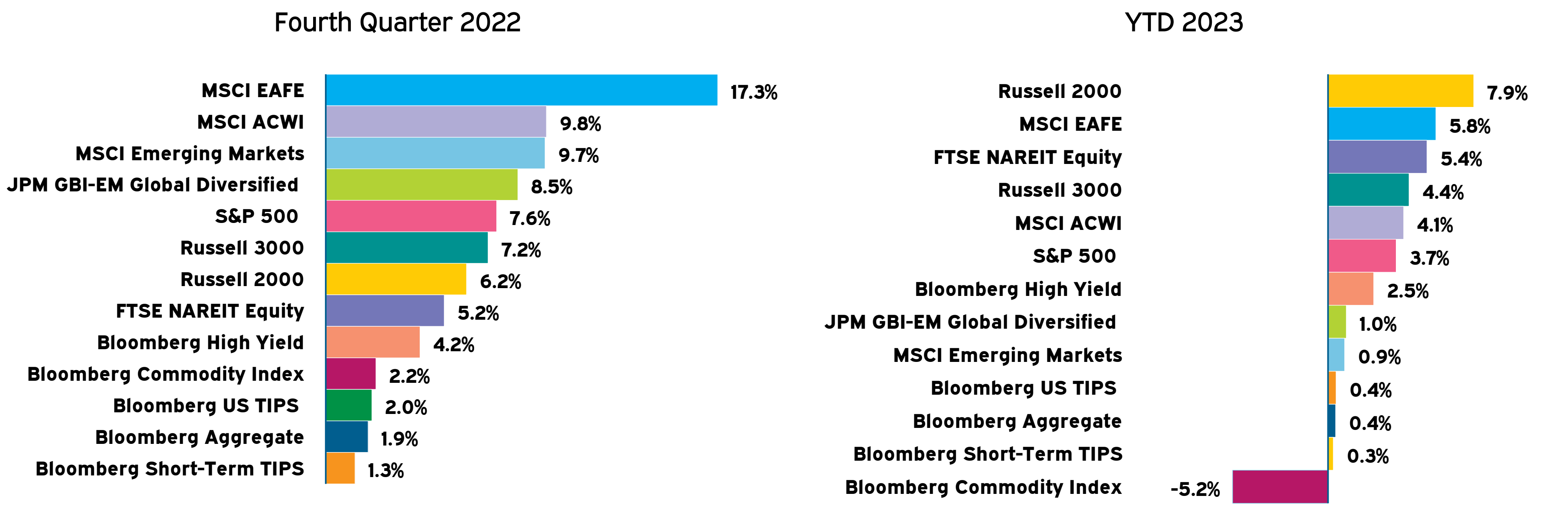
Commentary

→ After a strong start to the year, markets sold-off as better-than-expected economic data pushed investors to raise their inflation and interest rate expectations. Despite the sell-off most asset classes remain positive year-to-date.

- Chair Powell's February press conference where he reiterated previous messaging on high and persistent inflation and the need for an extended period of high interest rates weighed on both stocks and bonds.
- US equity markets declined in February with the Russell 3000 falling 2.3% and growth continuing to outperform value.
- Developed equity markets outside the US were up slightly in local terms for the month but a strengthening dollar brought returns negative for US investors. The MSCI EAFE fell 2.1% for the month.
- Emerging market equities had the weakest returns in February (-6.5%) driven by renewed tensions between the US and China, as well as the strengthening dollar.
- On expectations for higher rates for longer, bonds gave back most of their January gains with the broad US bond market (Bloomberg Aggregate) declining 2.6%.
- After month-end, concerns in the banking sector created considerable market volatility with dramatic declines in interest rates and significant pressure in the financial sector. Support from the Fed and others in the US related to Silicon Valley and Signature Banks helped somewhat to ease concerns but risks remain.

→ This year, the path of inflation and monetary policy, slowing global growth, China reopening its economy, and the war in Ukraine, as well as recent pressures in the banking sector, will all be key.

Index Returns[1]



→ After a strong fourth quarter and start to 2023, markets sold off in February as investors revised higher their interest rate assumptions for the year.

[1] Source: Bloomberg and FactSet. Data is as of February 28, 2023.

Domestic Equity Returns[1]

Domestic Equity	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-2.4	7.6	3.7	-7.7	12.1	9.8	12.2
Russell 3000	-2.3	7.2	4.4	-8.1	11.8	9.4	11.9
Russell 1000	-2.4	7.2	4.2	-8.2	11.9	9.7	12.1
Russell 1000 Growth	-1.2	2.2	7.0	-13.3	12.0	11.5	14.2
Russell 1000 Value	-3.5	12.4	1.5	-2.8	10.9	7.2	9.6
Russell MidCap	-2.4	9.2	5.7	-5.0	11.4	8.4	10.7
Russell MidCap Growth	-1.0	6.9	7.7	-8.3	8.7	8.7	11.4
Russell MidCap Value	-3.2	10.5	4.6	-3.4	11.9	7.3	9.6
Russell 2000	-1.7	6.2	7.9	-6.0	10.1	6.0	9.1
Russell 2000 Growth	-1.1	4.1	8.8	-7.9	6.5	5.1	9.3
Russell 2000 Value	-2.3	8.4	7.0	-4.4	12.9	6.4	8.5

US Equities: Russell 3000 Index fell 2.3% in February after rising sharply in January.

→ US stocks fell in February as persistently strong labor and inflation data prompted investors to expect further interest rate increases by the Federal Reserve.

→ Growth stocks again outperformed value stocks across the market capitalization spectrum. Technology stocks continue to fare better this year after steep declines in 2022. This contributed to the divergence between the growth and value indices year-to-date.

→ Energy was the worst performing sector in the S&P 500 index. Investors lowered their expectations for global growth as central banks continue to fight inflation.

[1] Source: Bloomberg. Data is as of February 28, 2023.

Foreign Equity Returns[1]

Foreign Equity	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-3.5	14.3	4.3	-7.2	5.3	1.6	3.9
MSCI EAFE	-2.1	17.3	5.8	-3.1	6.8	2.6	4.8
MSCI EAFE (Local Currency)	0.6	8.7	7.0	5.5	9.4	5.7	7.5
MSCI EAFE Small Cap	-2.2	15.8	5.1	-9.7	5.3	0.7	6.1
MSCI Emerging Markets	-6.5	9.7	0.9	-15.3	1.0	-1.9	1.5
MSCI Emerging Markets (Local Currency)	-4.7	6.6	1.6	-10.5	3.1	1.1	4.7
MSCI China	-10.4	13.5	0.2	-16.1	-6.2	-5.5	2.4

Foreign Equity: Developed international equities (MSCI EAFE) fell 2.1% in February and emerging markets (MSCI EM) declined 6.5%.

→ Non-US equities also reversed course in February after a strong start to the year.

→ Developed market equities were up for the month in local terms but the strengthening US dollar made them negative for US investors. An improved economic outlook for Europe and a rebound in tourism for Japan both contributed to results.

→ Emerging market equities were the worst performer for the month, driven by returns from China. The MSCI China index was down sharply in February due to heightened tensions with the US. The strong US dollar also proved an additional headwind for emerging market equities.

[1] Source: Bloomberg. Data is as of February 28, 2023.

Fixed Income Returns[1]

Fixed Income	February (%)	Q4 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Barclays Universal	-2.5	2.2	0.6	-9.3	-3.4	0.7	1.4	5.2	6.2
Bloomberg Barclays Aggregate	-2.6	1.9	0.4	-9.7	-3.8	0.5	1.1	4.8	6.5
Bloomberg Barclays US TIPS	-1.4	2.0	0.4	-10.4	0.2	2.6	1.2	4.6	7.0
Bloomberg Short-term TIPS	-0.4	1.3	0.3	-2.9	2.3	2.7	1.4	5.1	2.5
Bloomberg Barclays High Yield	-1.3	1.3	2.5	-5.5	1.3	2.9	4.1	8.6	4.3
JPM GBI-EM Global Diversified (USD)	-3.2	8.5	1.0	-6.1	-4.3	-3.0	-2.0	7.1	5.0

Fixed Income: The Bloomberg Universal fell 2.5% in February as global sovereign debt yields rose on monetary policy expectations.

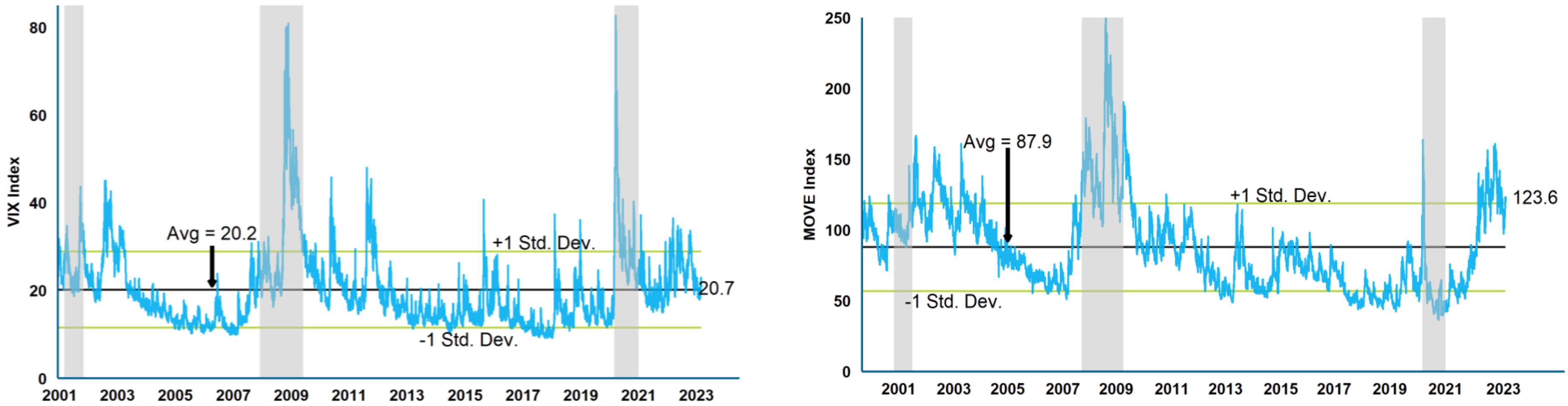
→ Global inflation risks have been improving, but the pace of price declines slowed over the month, prompting central bank officials to recast expectations for higher policy rates in the coming year.

→ TIPS outperformed the broad US bond market (Bloomberg Aggregate) on a modest increase in longer-dated inflation expectations.

→ High yield debt declined less than the broad US bond market while emerging market debt was the worst performer for the month.

[1] Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of February 28, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

Equity and Fixed Income Volatility[1]

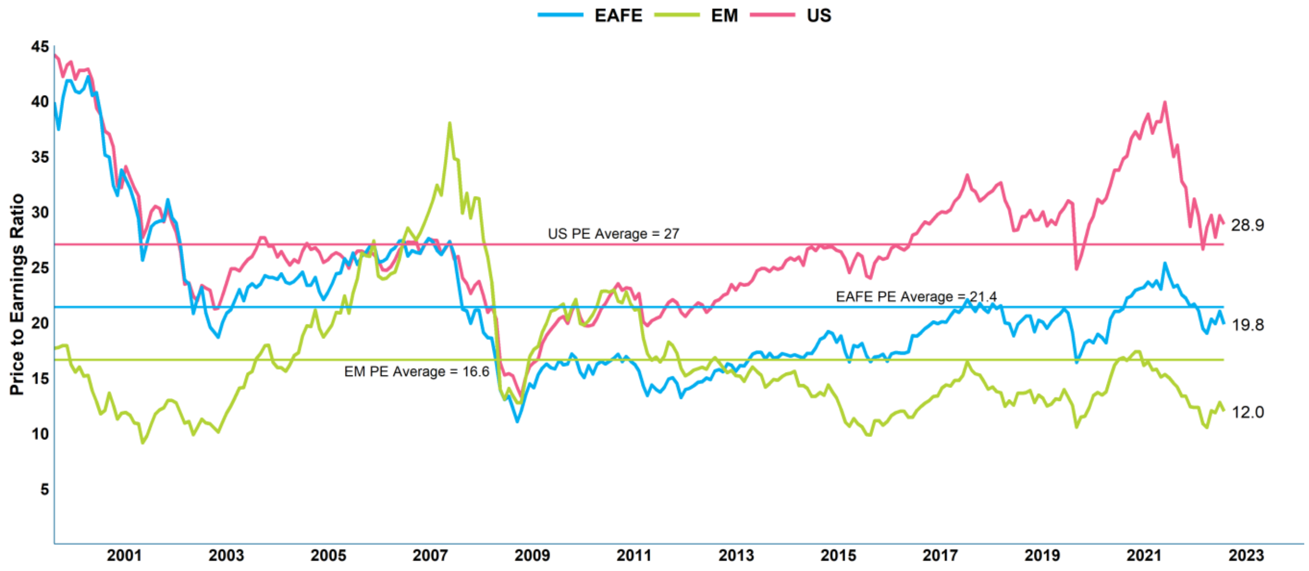


→ Volatility in equities (VIX) remained subdued through the end of February as investors continue to anticipate the end of the Fed's policy tightening.

→ The Fed's continued hawkish stance on inflation has led to the more policy sensitive MOVE (fixed income volatility) to remain well above its long-run average though.

[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 February 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and February 2023.

Equity Cyclically Adjusted P/E Ratios[1]

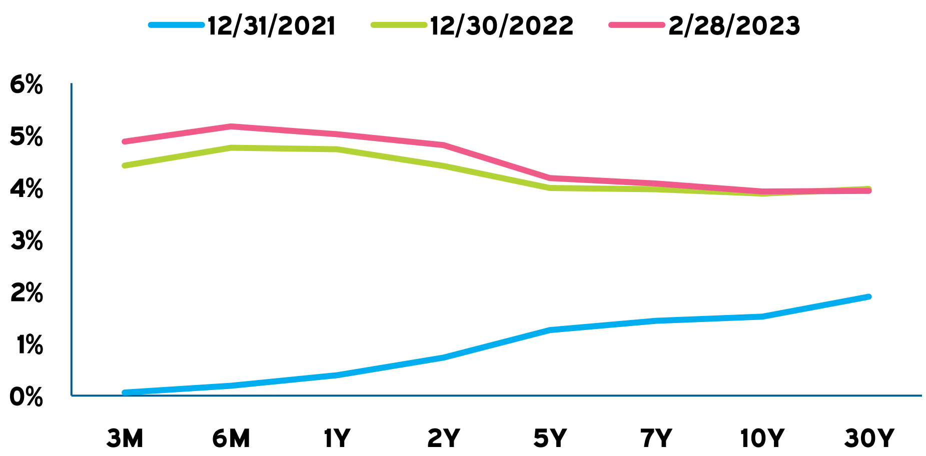


→ The US equity price-to-earnings ratio remains slighly above its long-run (21st century) average.

→ International developed market valuations are slightly below their own long-term average, with those for emerging markets the lowest and well 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 February 2023. 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]



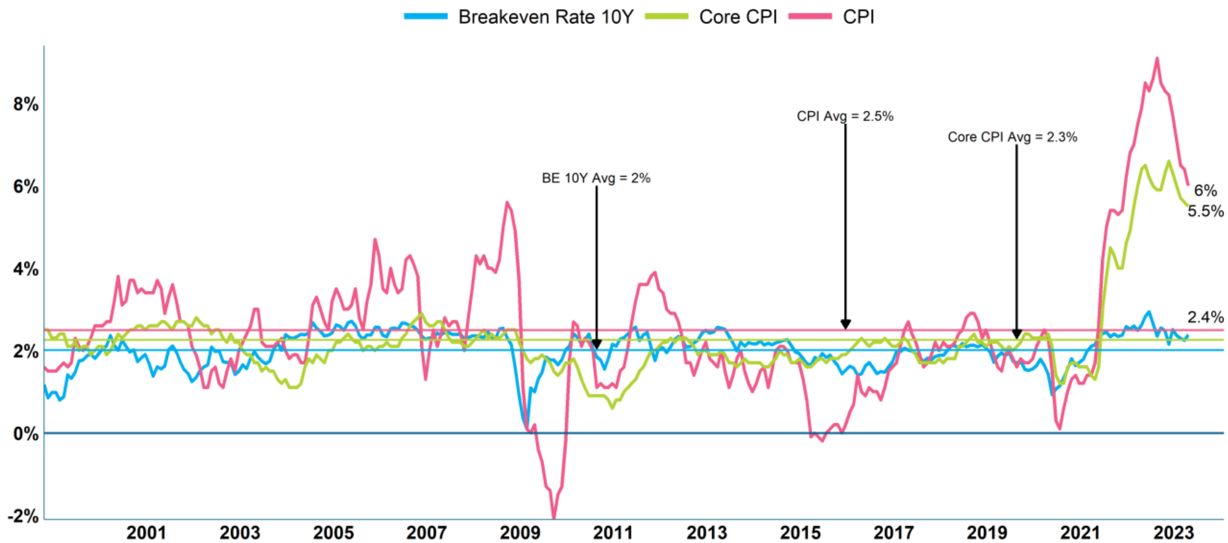
→ In February, policy-sensitive interest rates at the front-end of the curve rose, with the two-year Treasury yield increasing from 4.2% to 4.8%. Longer dated ten-year Treasury yields rose (3.5% to 3.9%) to a level close to where they started the year.

→ The yield spread between two-year and ten-year Treasuries widened to -0.90% in February a level not seen since the early 1980s. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Inversions in the yield curve have often preceded recessions.

→ The Fed remained committed to fighting inflation, as it increased rates another 25 basis points to a range of 4.5% to 4.75% at its February meeting. Questions remain about the pace of future rate hikes and the ultimate terminal rate as the Fed tries to balance fighting inflation and maintaining stability in markets.

[1] Source: Bloomberg. Data is as of February 28, 2023.

Ten-Year Breakeven Inflation and CPI[1]



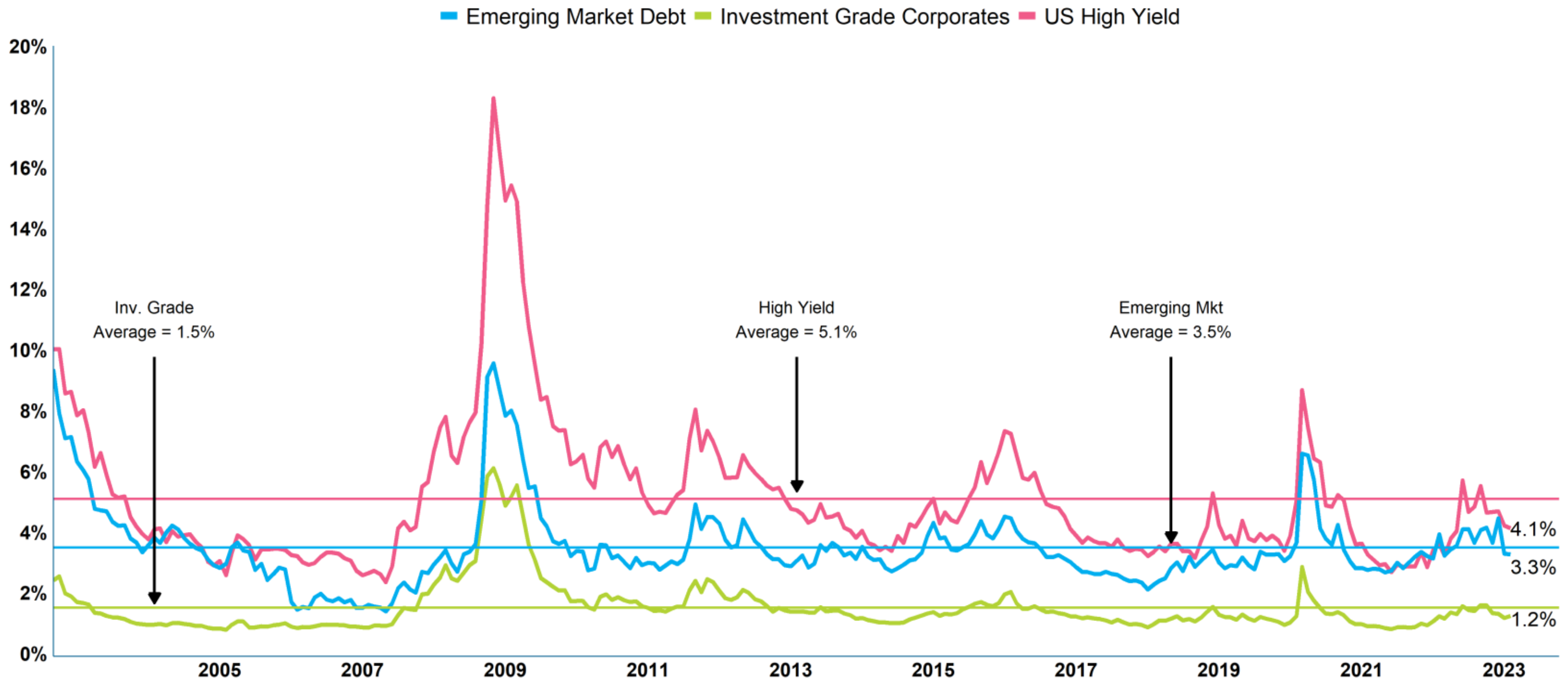
→ Inflation continued to decline in February with the year-over-year reading falling from 6.4% to 6.0% matching expectations. Prices rose 0.4% month-over-month with food prices increasing (0.4%) and energy prices falling (-0.6%).

→ Core inflation – excluding food and energy – also continued to decline year-over-year (5.5% versus 5.6%) but increased month-over-month (0.5% versus 0.4%) driven by housing.

→ Inflation expectations (breakevens) rose over the month but remain well below current inflation levels as investors anticipate a significant moderation in inflation.

[1] Source: Bloomberg. Data is as of February 2023. 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]

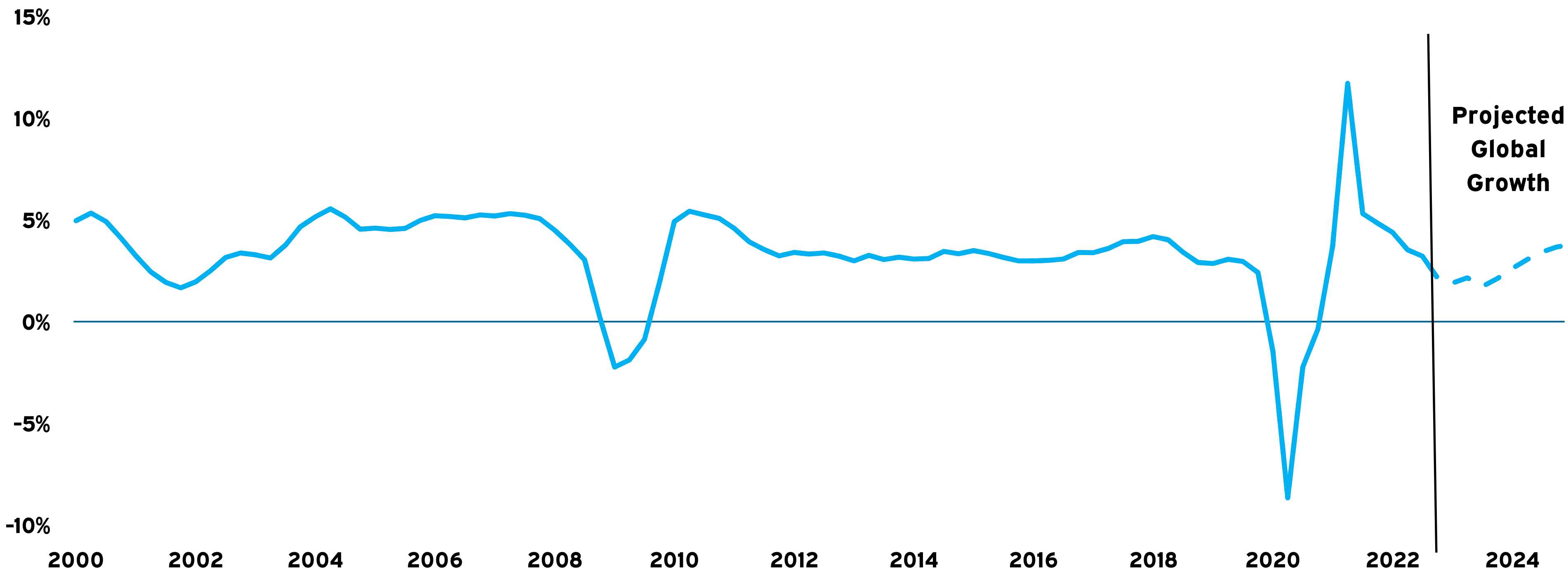


→ Spreads (the added yield above a comparable maturity Treasury) largely remained the same in February as both credit markets and government bonds declined on the anticipation that rates would stay higher for longer.

→ High yield spreads fell from 4.2% to 4.1% in February while investment grade spreads remained steady at 1.2%. Emerging market spreads were also stable at 3.3%.

[1] Sources: Bloomberg. Data is as of February 28, 2023. 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 Real Gross Domestic Product (GDP) Growth[1]

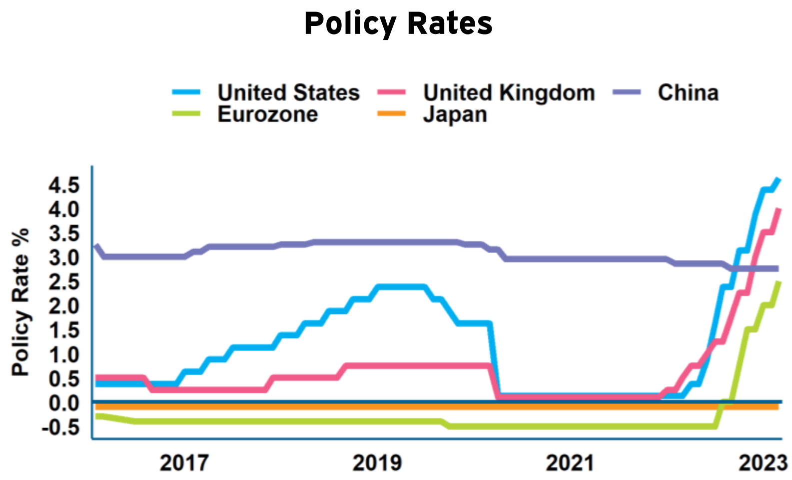


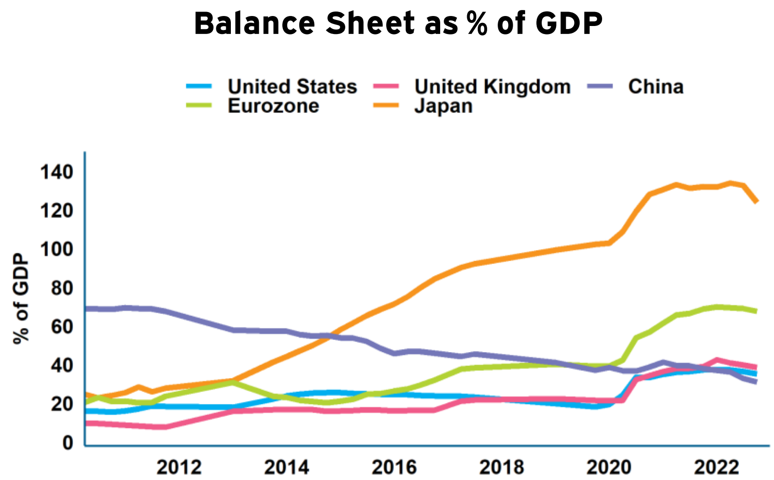
→ Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.

→ 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, real, % change YoY). Updated February 2023.

Central Bank Response[1]





→ In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking the most aggressive approach. However, global inflation has begun to moderate, and markets anticipate a slowing in the rate of policy tightening in the future.

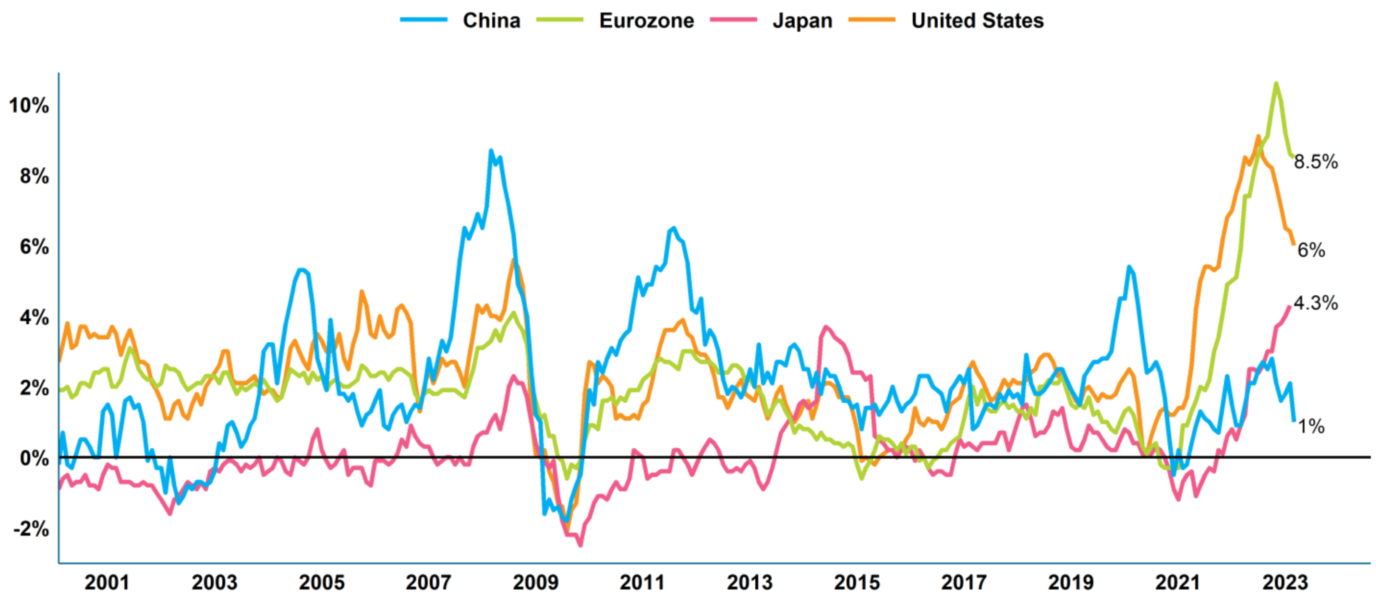
→ In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.

→ China's central bank is expected to maintain its accommodative monetary stance to support consumer demand and investment as well as offer liquidity to the troubled real estate sector.

→ The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

[1] Source: Bloomberg. Policy rate data is as of February 28, 2023. 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 December 31, 2022.

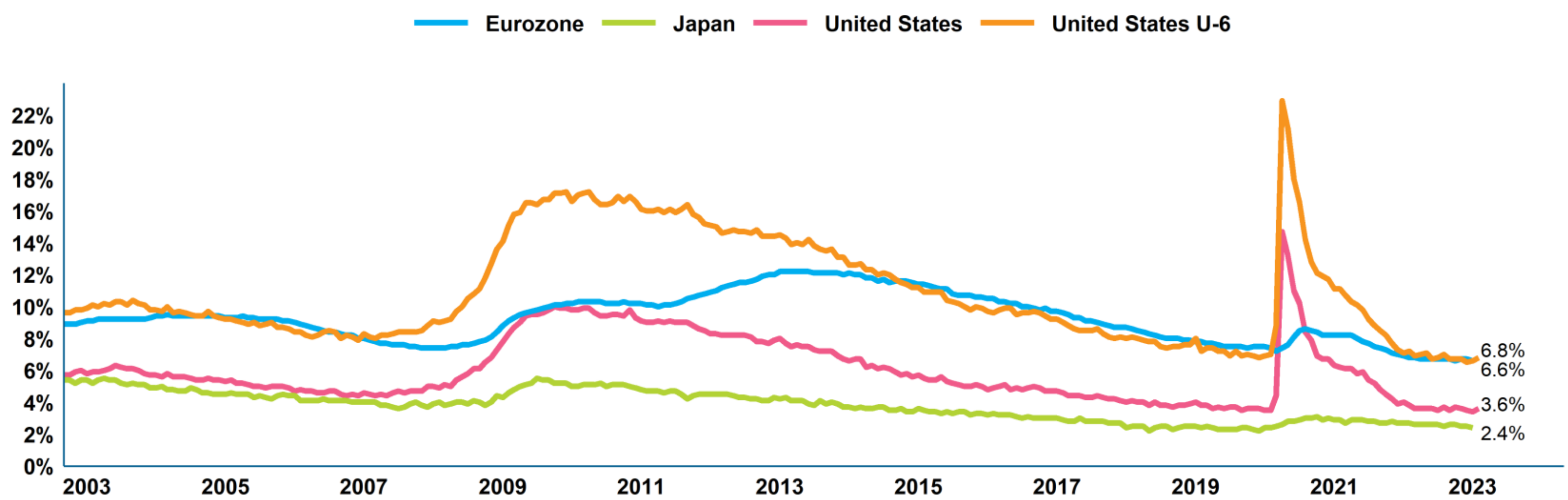
Inflation (CPI Trailing Twelve Months)[1]



- → 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.
- → Inflation pressures are slowly declining in the US as supply issues ease, but they remain elevated, while in Europe they have also started to fall as energy prices have eased.
- → Lingering supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

[1] Source: Bloomberg. Data is as of February 2023. The most recent Japanese inflation data is as of January 2023.

Unemployment[1]



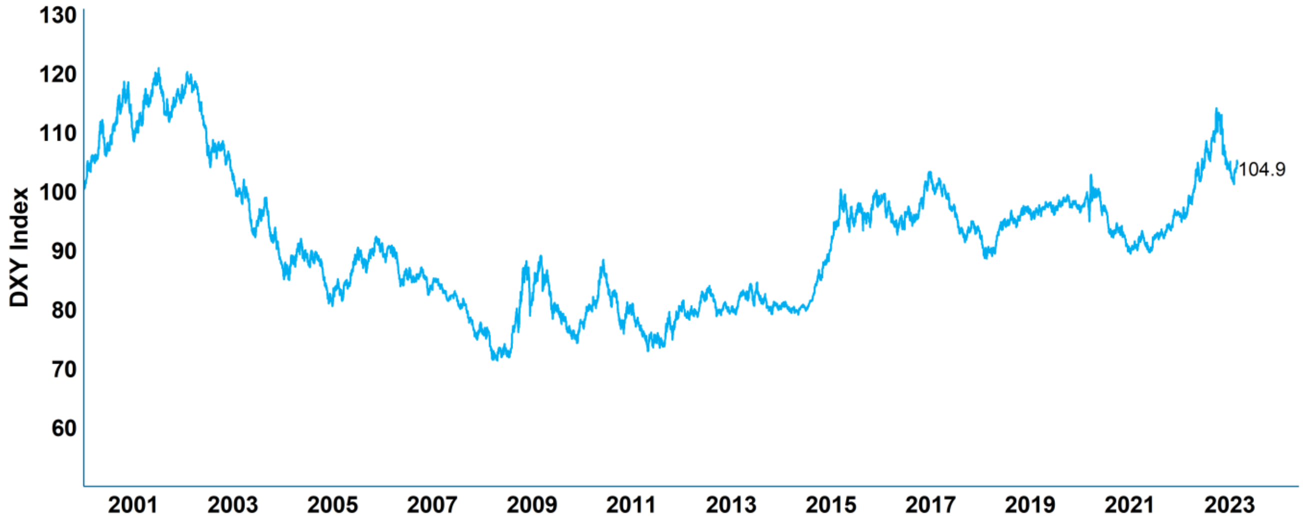
→ Labor markets have significantly improved from the pandemic as economies have largely reopened.

→ Despite slowing growth and high inflation, the US labor market remains a particular bright spot. Unemployment in the US, which experienced the steepest rise, recently has returned to pre-pandemic levels. Broader measures of unemployment (U-6) remain higher at 6.8% but have also declined dramatically from their peak.

→ The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

[1] Source: Bloomberg. Data is as February 28, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of January 31, 2023.

US Dollar versus Broad Currencies[1]



→ The dollar finished 2022 much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows. Late last year and into early this year, the dollar experienced some weakness though as investors anticipated the end of Fed tightening.

→ Overall, the US dollar appreciated in February as better-than-forecasted economic data drove expectations for higher interest rates in the US.

→ This year, the track of inflation across economies and the corresponding monetary policies will likely be key drivers of currency moves.

[1] Source: Bloomberg. Data as of February 28, 2023.

Summary

Key Trends:

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

→ Recent issues related to the banking sector have created a delicate balance for central banks to continue to fight inflation but also try to maintain financial stability.

→ Global monetary policies could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors remains elevated given persistent inflation pressures and a strong US labor market.

→ Growth is expected to slow globally this year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.

→ In the US, the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices could weigh on consumer spending.

→ Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key going forward will be whether earnings can remain resilient if growth continues to slow.

→ Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

MEKETA | 45 YEARS
CELEBRATING A MILESTONE

San Joaquin County Employee's Retirement Association (SJCERA)

April 14, 2023

Class Review: Public Credit

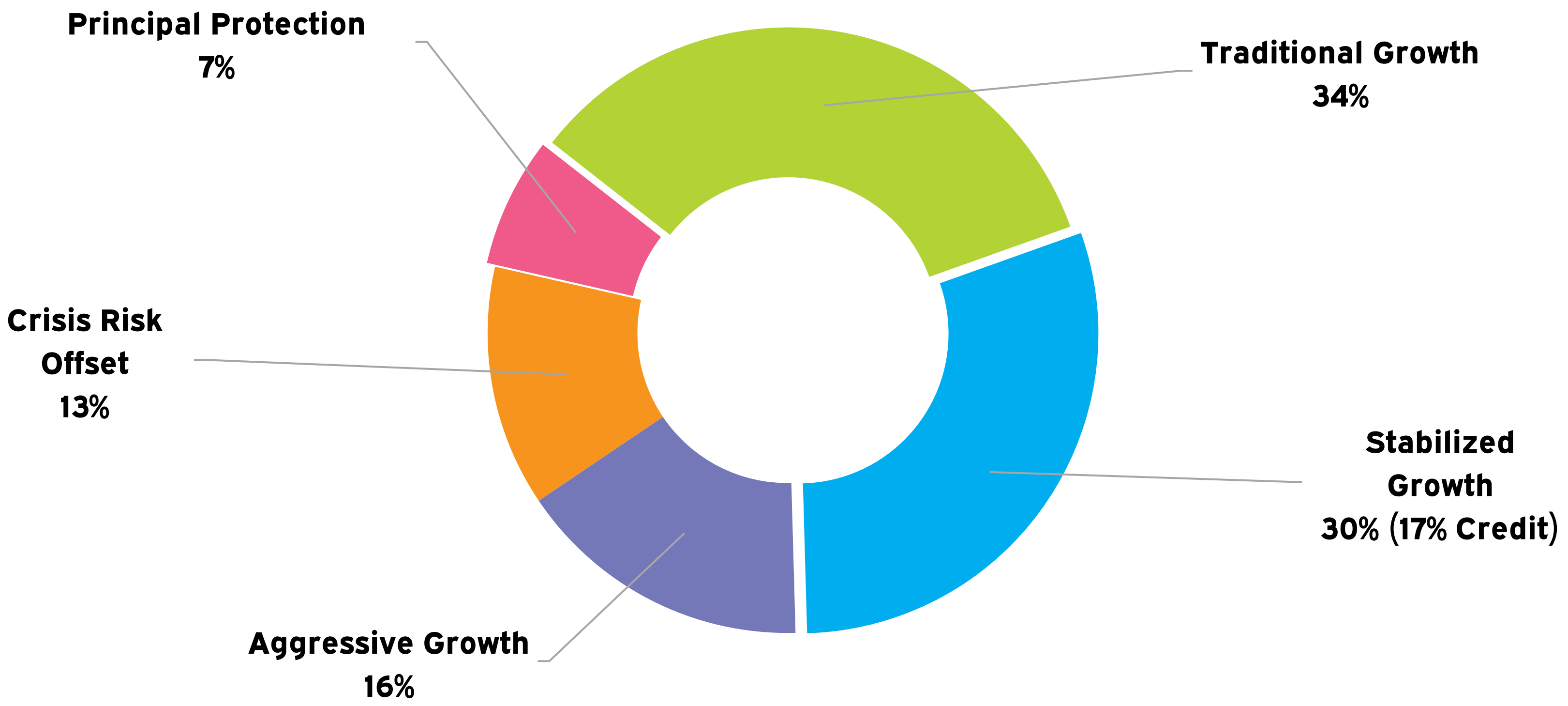
Table of Contents

1. Overview of Credit in Stabilized Growth
2. Public Credit Review
3. Summary and Recommendations

Overview of Credit in Stabilized Growth

In 3Q 2022, SJCERA approved a new long-term allocation policy…

SJCERA's Long-term Allocation Policy



…and SJCERA's Credit portfolio, while decreasing into new policy allocations should be reviewed.

Broad Growth	Target Allocation
Aggressive Growth	16.0%
Traditional Growth	34.0%
Stabilized Growth	
Risk Parity	6.0%
Credit	15.0%
Core Real Assets	9.0%

→ SJCERA's Fixed Income portfolio is bucketed into purpose-driven strategic classes:

- Two segments:
  - Broad Growth strategies => Equities and Credit (Stabilized Growth component)
  - Diversifying strategies => Principal Protection and CRO class
  - Objective: increase risk transparency; better clarify roles

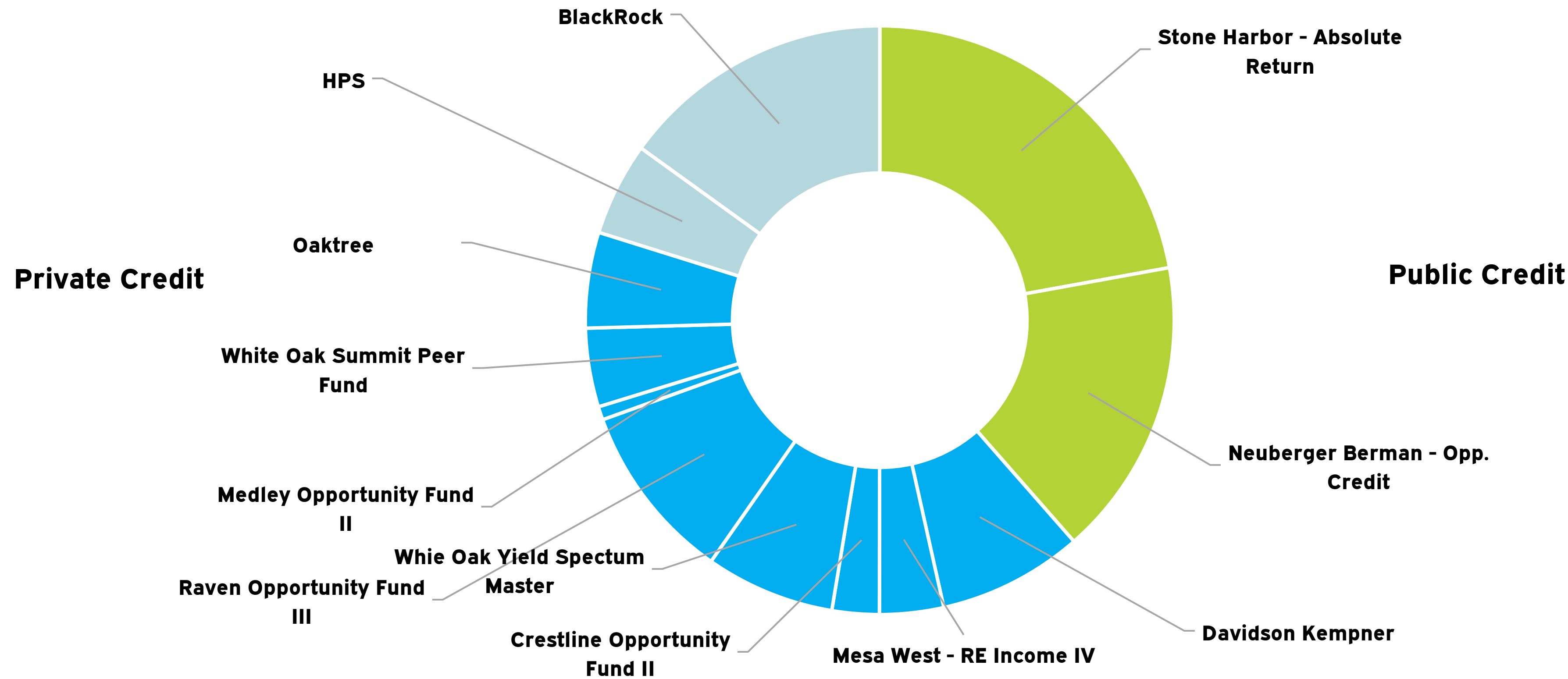
→ Rationale: improved visibility into major fixed income risk drivers; clearer delineation of fixed-income class' roles: principal protection, income production

→ Credit is set to have a 15% long-term target allocation (role: income production)

Principal Protection is set to have an 7% long-term allocation (Role: continual availability of liquidity)

Page Heading (First Level)

SJCERA's Credit Allocation - February 2023



→ 12 mandates; 11 are managed by different firms

→ Mandates range from public credit to direct/specialty lending

→ Assets are differentiated by public and private

Public Credit Review

Definition

A high paying bond with a lower credit rating than investment grade bonds, Treasury bonds and municipal bonds. Because of the higher risk of default, these bonds pay a higher yield than investment grade bonds. Issuers of high-yield debt tend to be startup companies or capital-intensive firms with high debt ratios.

Size of Market

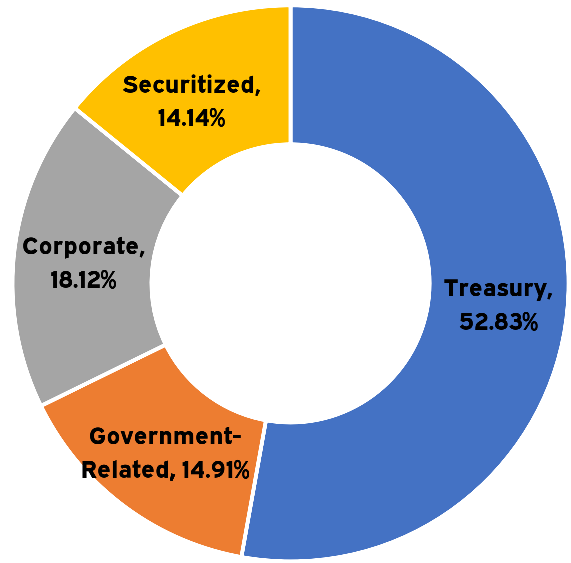
$62.2 trillion total market capitalization as of 3/31/2023– Barclays Global Aggregate Index.

Strategic Role

Credit has attractive risk-adjusted returns, low correlations to Treasuries.

Credit securities generally have lower sensitivity to interest rates than Treasuries and high-grade corporate bonds.

SECTOR BREAKDOWN OF BB Global Agg Index
(percentage of market cap as of 3/31/2023)



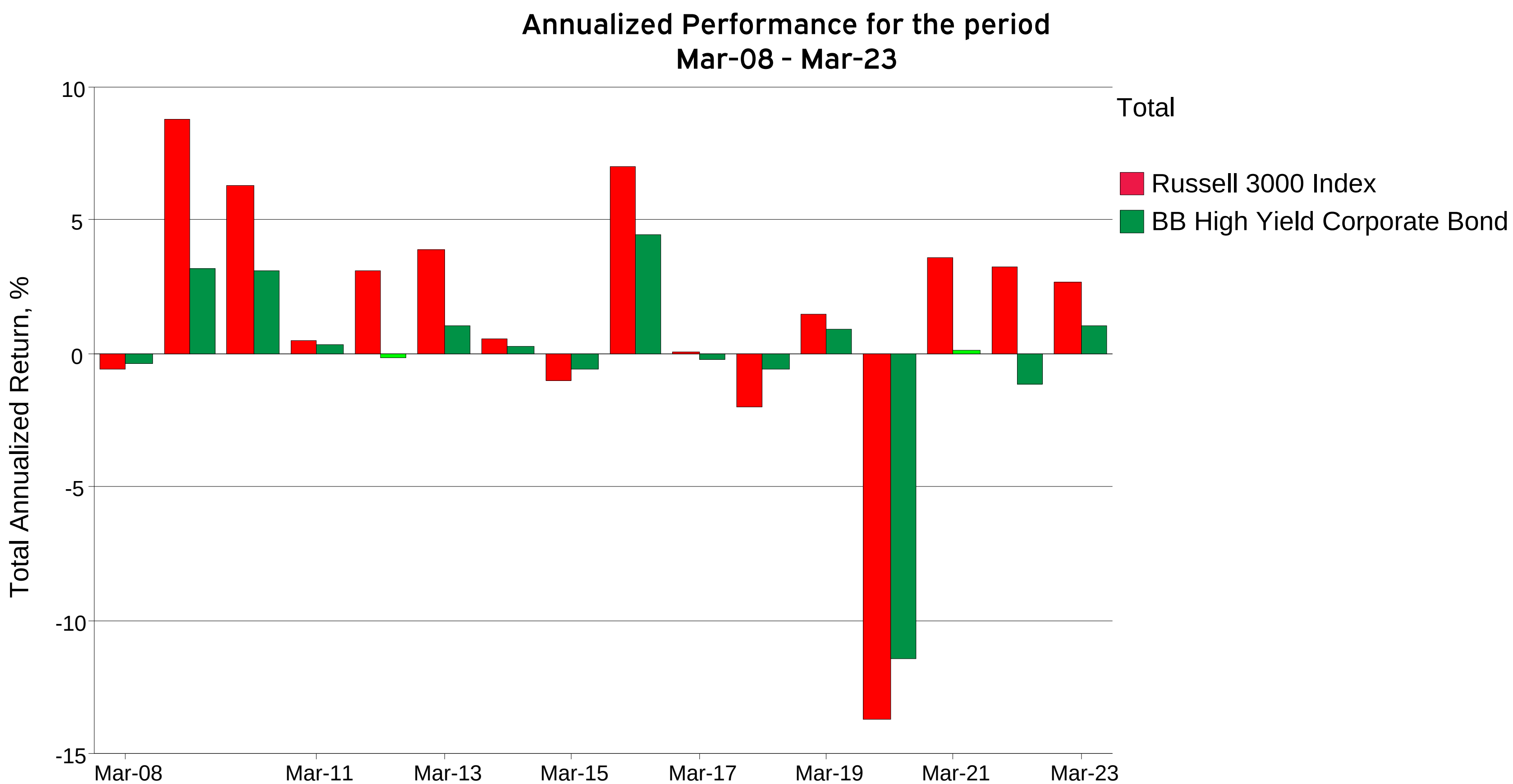
BB Global Aggregate Index
Sector Exposure as of March 31, 2023

	Global Agg
Treasuries	52.9%
Securitized (CMBS, ABS)	14.14%
Government Related	14.9%
Corporate	18.1%

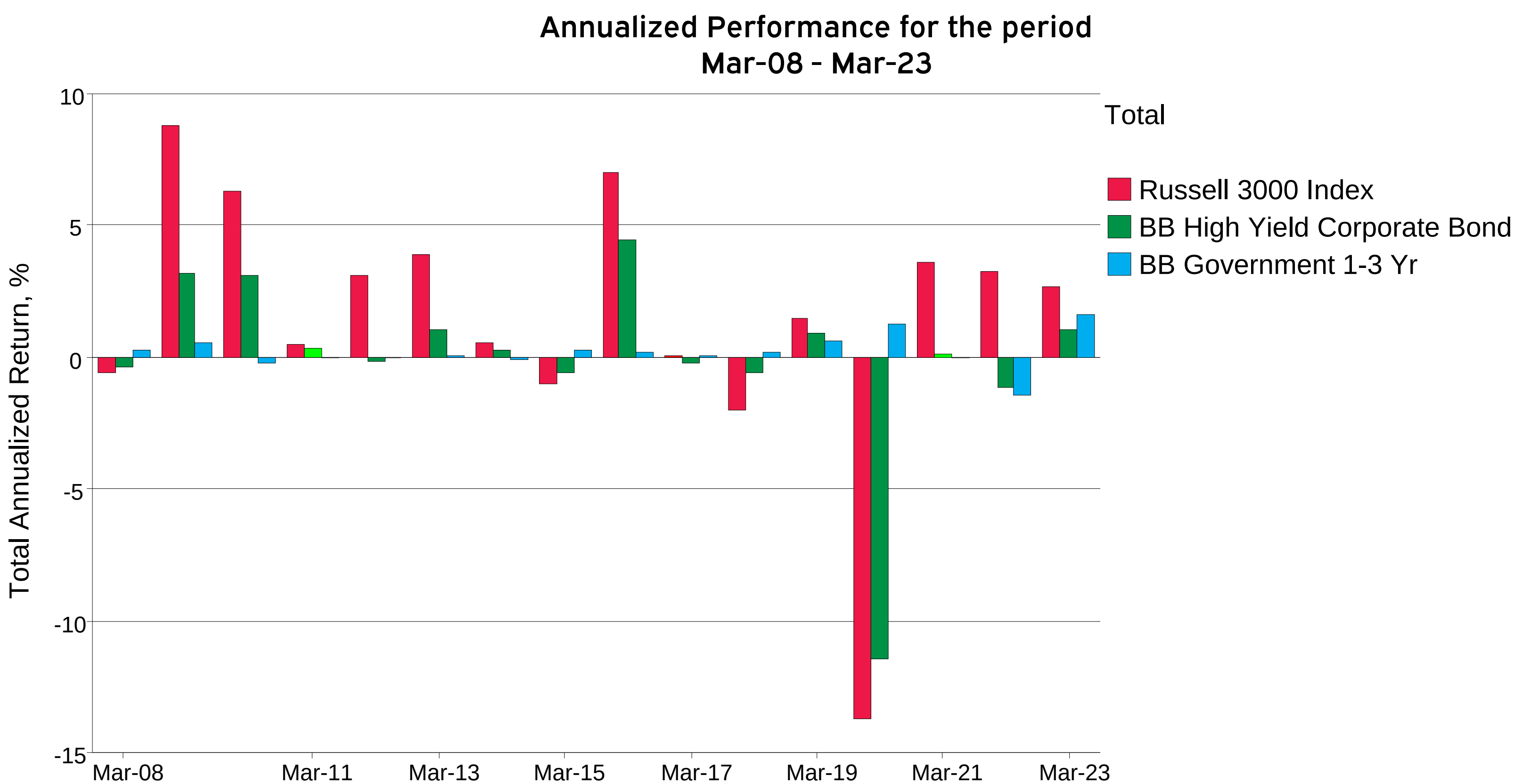
Index Statistics as of March 31, 2023

	Global Aggregate
Weighted Average Duration (YRS)	6.81
Maturity (YRS)	8.61
Yield to Maturity (%)	3.54
Yield to Worst (%)	3.54
Weighted Average Coupon	2.39

High Yield Credit exhibits High correlation to equities– providing minimal diversification



However, when compared to the BB Government 1-3 Yr index, correlation benefits increase.



Public Credit Overview

→ Exposure to Credit helps stabilize equity-oriented returns

- During normal times – credit can be complimentary to equities
- During bad times – essentially the same risk

→ Higher Yield and Return than other major fixed income segments.

→ Provides Yield and Income

→ Major segments of publicly-traded Global Credit Market:

- Investment-grade Credit
- High Yield
- Emerging Market Debt
- Bank Loans

→ Currently Neuberger (equal weight) and Stone Harbor invest across these various public segments.

SJCERA currently gains exposure to credit through active investment managers

→ Stone Harbor – Absolute Return (Active)

→ Neuberger Berman – Multi-strategy Credit(Active)

These managers invest in both domestic (US) and international markets.

The objectives of the asset class are to:

→ Achieve a total return, net of fees, which exceeds the blended portfolio of BB High Yield/Leveraged Loan index

→ On a regular basis, it is important to review the structure and performance of the different asset classes that comprise the SJCERA portfolio.

→ This review should focus on the three factors listed below in order to determine if the asset class under review is accomplishing its role within the greater SJCERA portfolio.

1. **Market Exposure:** Are the managers providing the desired capital market exposure (e.g., to High Yield) that they were hired to provide?

2. **Diversification:** Are the managers complementary to the other asset classes and to one another (exhibiting low correlation)?

3. **Performance:** Has the asset class produced satisfactory returns and have active managers outperformed their benchmarks?

Neuberger Berman
Sector Exposure as of February 28, 2023

	Neuberger	Custom Benchmark
Treasury Bullets	5.7%	0.0%
Securitized (CLO's, CMB.CRT)	11.1%	0.0%
Developed Market IG Credit	5.9%	0.0%
Developed Market HY Credit	24.3%	33.0%
Senior Floating Rate Loans	27.4%	33.3%
Emerging Market Debt	24.6%	33.7%

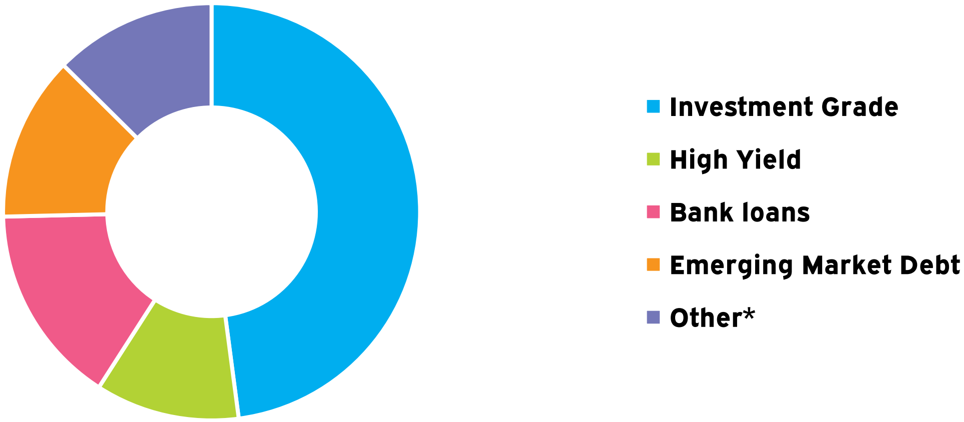
Portfolio Statistics as of February 28, 2023

	Neuberger	Custom Benchmark
Weighted Average Duration (YRS)	3.64	3.72
Maturity (YRS)	7.39	6.99
Yield to Maturity (%)	8.37	8.46
Yield to Worst (%)	8.37	8.44
S&P Rating	BB+	BB-
Moodys Rating	Ba1	Ba3
Weighted Average Coupon	5.32	6.15

Custom Benchmark: 33.34% S&PLSTA Leveraged Loan
33.33% BoA ML U.S. High Yield Constrained Index
33.33% JP Morgan EMBI Global Diversified Index

Stone Harbor

February 28, 2023 Sector Allocation



Portfolio Statistics as of February 28, 2023

	Stone Harbor
Weighted Average Duration (YRS)	0.52
Maturity (YRS)	7.61
Yield to Maturity (%)	4.74
Yield to Worst (%)	4.74
S&P Rating	BBB
Moodys Rating	Baa2
Weighted Average Coupon	4.49

*Other includes Cash and Cash Equivalents
Benchmark: ICE BoA ML 3 Month LIBOR

Current Manager Performance

Annualized Performance – Net of Fees
As of February 28, 2023

	Sub-Segment	Market Value	Physical % of Total	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	7-Yrs	10-Yrs	SI Return	SI Date
Liquid Credit		$ 229,863,321	5.9%	(0.6)	2.7	2.2	0.0	1.3	2.0	(0.6)	(0.6)	1.9	
50% BB High Yield, 50% S&P/LSTA Leveraged Loans				*(0.4)*	*2.8*	*2.9*	*(1.4)*	*2.6*	*3.3*	*(0.4)*	*(0.4)*	*5.3*	
Difference:				(0.2)	(0.1)	(0.7)	1.4	(1.3)	(1.3)	(0.2)	(0.2)	(3.4)	
Neuberger Berman	*Global Credit*	$ 97,810,239	2.5%	(1.2)	2.3	2.1	(4.3)	(0.1)	--	(1.2)	(1.2)	1.5	Feb-19
33% ICE BofA HY Constrained, 33% S&P/LSTA LL, 33% JPM EMBI Glbl Div.				*(1.0)*	*2.2*	*2.2*	*(3.8)*	*0.0*	*--*	*(1.0)*	*(1.0)*	*1.8*	
Difference:				(0.2)	0.1	(0.1)	(0.5)	(0.1)	--	(0.3)	(0.3)	(0.3)	
Stone Harbor Absolute Return	*Absolute Return*	$ 132,053,082	3.4%	(0.1)	3.0	2.3	3.5	2.4	2.3	(0.1)	(0.1)	2.8	Oct-06
3-Month Libor Total Return				*0.3*	*1.0*	*0.7*	*1.9*	*0.9*	*1.5*	*0.3*	*0.3*	*1.4*	
Difference:				(0.4)	2.0	1.6	1.6	1.5	0.8	(0.4)	(0.4)	1.4	

Observations

In light of the Fed raising rates, Stone Harbor and Neuberger have produced mixed results relative to their benchmarks.

Summary and Recommendations

Conclusion

→ Managing Credit Risk is a complex topic; economic theories continue to evolve.

- Is the Fed done raising rates?
- Do we care about unexpected or expected rate hikes? Short-term vs. long-term inflation?
- Can active Managers continue to outperform the markets?

→ Contrary to recent history, sustained and high interest rates is a relatively new phenomenon.

→ For institutional investors such as SJCERA, investing in active managers that can steer the portfolio through these market conditions is critical.

→ Generating a long-term real rate of return is the goal. This sometimes comes at the expense of short-term market movements.

- Nearly all assets that rely on economic growth and corporate profitability (real return metrics), are expected to produce positive real returns over the long-term.

Conclusion (continued)

→ Meketa does not believe SJCERA needs to materially alter the Public (liquid) credit portfolio to address the current credit environment.

→ While changes in the interest rates may impact the SJCERA portfolio over shorter periods of time, we expect the portfolio to generate a long-term real rate of return.

→ The SJCERA portfolio currently contains a diverse set of investments that are expected to help navigate a variety of interest rate cycles over long periods of time.

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

MEKETA | 45
CELEBRATING A MILESTONE | YEARS

2175 NW Raleigh Street
Suite 300A
Portland, OR 97210

503.226.1050
Meketa.com

MEMORANDUM

TO: SJCERA Board of Retirement
FROM: Meketa Investment Group
DATE: April 14, 2023
RE: SJCERA Liquidity Analysis and Cash Review

Summary and Recommendations:

During the July 2022 SJCERA Board meeting, Meketa recommended, and the Board approved, a new long-term asset allocation policy. This new policy moved roughly 5% of the assets into return-seeking/growth classes. In particular this increased the allocation to Aggressive Growth from 10% to 16% over time. This class includes allocation to Private Equity, Value-add Real Estate and Opportunistic Real Estate. As a result, Meketa and SJCERA staff thought it would be prudent to conduct a liquidity review of the portfolio.

In addition, given the rising rates of treasuries and the fixed income market over the previous 12+ months we also reviewed the current cash overlay strategy currently being implemented by Parametric. **Following this review, Meketa recommends the board change its cash overlay strategy from 75%/25% equities (MSCI ACWI) and bonds (U.S. Agg) to 100% bonds (U.S. Agg).**

Discussion – Portfolio Liquidity:

Liquidity risk is a meaningful risk that is generally not captured in traditional asset allocation processes. SJCERA's total Fund must maintain adequate liquidity to satisfy benefit payments and to avoid having to sell illiquid assets at distressed prices if possible.

In 2022 SJCERA approved a new long-term allocation that increased the amount of assets in Aggressive growth (illiquid Assets). This allocation is shown on the next page.

SJCERA's Long-term Allocation

Strategic Classes	New
Broad Growth	**80.0**
Aggressive Growth	16.0
Traditional Growth	34.0
Stabilized Growth	30.0
Risk Parity	*6.0*
Credit	*15.0*
Core Real Assets	*9.0*
Diversifying Strategies	**20.0**
Principal Protection	7.0
CRO	13.0

As a result of this increase, Meketa conducted an extreme stress test to analyze the SJCERA's total Fund liquidity. Specifically, we evaluated whether the Fund could:

1. Continue to meet its benefit obligations and expenses (including any obligations to fund commitments to Private Market managers),
2. While staying within its target allocation ranges,
3. And at what cost (i.e., to what extent would it be forced to sell stressed or distressed assets)?

The scenario is designed to be extreme.

1. In Years 1 – 3, we use the returns produced by each asset class in 4Q07, 2008, and 1Q09, respectively. In Years 4 – 5, we assume flat (0%) returns for each asset class (i.e., no rebound).
2. We assume net inflows of $48 mm in Year 1, $48 mm in Year 2, and $0 mm per year in net outflows for years 3 - 5
3. We assume closed-end funds offer no liquidity in years 1 – 4, and very limited liquidity in year 5.
4. We assume SJCERA would rebalance toward its policy targets each year.

We show these results on the following page.

Liquidity Stress Test: Summary

Metric	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Ending Market Value	$4,000,000,000	$4,109,169,577	$3,289,401,127	$3,141,801,623	$3,141,801,623	$3,141,801,623
Net flows	$0	$48,000,000	$48,000,000	$48,000,000	$0	$0
Flows as percentage of Market Value	0.00%	1.20%	1.17%	1.46%	0.00%	0.00%
Assets Sold in Duress	0.00	0.00	0.00	0.00	0.00	0.00
Percentage of Outflows sold in Duress	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage of Assets sold in Duress	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Remaining liquid Market Value	$2,760,000,000	$2,833,705,921	$2,302,022,236	$2,199,404,741	$2,199,404,741	$2,199,404,741
Total Illiquid Assets	$1,240,000,000	$1,275,463,656	$987,378,891	$942,396,883	$942,396,883	$942,396,883
Percentage of Illiquid Assets	31.00%	31.04%	30.02%	30.00%	30.00%	30.00%
Portfolio Return	0.00%	1.53%	-21.12%	-5.95%	0.00%	0.00%

Even under this extreme scenario, the current portfolio would maintain sufficient liquidity to pay benefits and other expenses. Thanks to SJCERA's employer contributions, the retirement association has sufficient cash and high-quality bonds to cover the portfolio's liquidity needs.

In this analysis, in years three through five when we assumed no cash flow, SJCERA would not need to sell some of its assets in order to meet its obligations (assuming it rebalanced to its target allocations).

Discussion – Cash Overlay:

With any portfolio there is a balance between the asset allocation and the need to manage and maintain cash to pay benefits and expenses. In the case of SJCERA, Parametric has been overlaying the cash portion of the portfolio with a 75/25 equity bond allocation. This has allowed residual cash to not be a drag on the portfolio. However, since bonds have yielded little to nothing over previous periods, the overlay program has needed an equity component to help increase its return potential and mimic the overall allocation of the SJCERA total portfolio.

Starting in 2021 and continuing through 2023, the federal reserve has been increasing interest rates on U.S. treasuries in an attempt to combat rapidly rising inflation. As a result, this has created a stronger expected return environment for the bond market moving forward. We therefore recommend that SJCERA eliminate the equity component of its cash overlay strategy. This change will reduce the volatility of the cash portfolio, help simplify the allocation, and focus the program on assets with a higher yield/income.

DS/RF/mn

MEKETA
INVESTMENT GROUP

2175 NW Raleigh Street
Suite 300A
Portland, OR 97210

503.226.1050
Meketa.com

MEMORANDUM

TO: SJCERA Board of Retirement
FROM: Meketa Investment Group (Meketa)
DATE: April 14, 2023
RE: 2023 SJCERA Crisis Risk Offset (CRO); Diversifiers Search Update

Summary

During the February/March 2023 SJCERA Board meeting, Meketa provided an update reviewing SJCERA's allocation to Lombard Odier's Alternative Risk Premia strategy. Following discussion, SJCERA approved Meketa's recommendation to conduct a search to replace the strategy within the Diversifiers component of CRO. This memo provides SJCERA with an update of the Diversifiers search process.

Recommendation

Meketa recommends publicly posting a short Request for Information (RFI) questionnaire to its website in order to get updated manager information and bring forward the most attractive candidates for review and interview with the SJCERA board. We will update the board as we move through this search process.

This RFI will be short and concise and meant to serve two purposes:

1) Refresh Meketa's database/list of asset manager alternative risk premia and global macro offerings for use as part of the Diversifiers component;
2) Provide a mechanism in which to conduct a narrowing of the offerings for SJCERA's review.

Discussion

As part of the 2022 Asset-Liability Study and ongoing monitoring of SJCERA's investment managers, Meketa recommended the termination of Lombard Odier's ARP strategy based on investment process and performance concerns. Lombard managed assets as part of the Crisis Risk Offset ("CRO") class. The role of this class is to provide an offset to the portfolio's economic growth risk through liquid exposures to systematic market and non-market-based risk premiums. Strategies dominated by economic growth risk have risk and return attributes that are closely linked with economic success or failure (e.g., public equities, REITs, high yield bonds, etc.). The exposures in the CRO class are expected to exhibit offsetting behavior to growth investments (the most dominant risk in the SJCERA portfolio) during periods of significant drawdowns. The CRO class includes investments in three separate strategies: First Responders, Second Responders, and Diversifiers. Within CRO, Lombard was a part of the Diversifiers strategy group within CRO. Lombard failed to meet SJCERA's return and risk expectations.

Diversifiers Review Process

Over the last several years, Meketa has been conducting research with respect to Diversifiers and their implementations in client portfolios. As a result, Meketa is intimately familiar with the majority of the asset managers who have offerings in the space. With that said, the asset management community is continually developing new strategies and we seek to be comprehensive in our review. This review will focus on diversifiers in the global macro and alternative risk premia categories which are already part of SJCERA's diversifier portfolio.

Disclosure

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Agenda Item 13.0

April 14, 2023

SUBJECT: SACRS Board of Director Elections 2023-2024
Nominating Committee's Recommended Ballot

SUBMITTED FOR: ___ CONSENT _X__ ACTION ___ INFORMATION

RECOMMENDATION

Staff recommends the Board direct its voting delegate to vote in favor of the SACRS Nominating Committee's recommended ballot for the SACRS Board of Directors.

PURPOSE

(1) To determine which candidates SJCERA will support for the SACRS Board of Director elections.
(2) To fulfill the requirement of SACRS systems to communicate the Nominating Committee's recommended ballot and final ballot to each trustee and place the election of SACRS Officers on the Retirement Board's agenda.

DISCUSSION

The SACRS Nominating Committee Recommended Nominees/Candidates for the SACRS Board of Director 2023-2024 Elections are:

President	David MacDonald, Contra Costa CERA *(last year's Vice President)*
Vice President	Adele Tagaloa, Orange CERS *(last year's Secretary)*
Treasurer	Jordan Kaufman, Kern CERA *(incumbent)*
Secretary	Zandra Cholmondeley, Santa Barbara CERS *(new candidate)*
Regular Member	David Gilmore, San Diego CERA *(incumbent)*
Regular Member	Open

The only new member being nominated to this year's Board of Directors is Zandra Cholmondeley of Santa Barbara. She is serving her fifth term as SBCERS elected retired trustee. She also serves on the SACRS Program Committee.

The open Regular Member position is due to a late withdrawal. The SACRS Nominating Committee has reached out to the regular membership to fill the vacancy.

SACRS received no other letters of intent or submissions from any other candidates.

The delegate will vote at the SACRS Business Meeting to be held on Friday, May 12, 2023, at the SACRS Spring Conference. The SACRS officers elected at that Business Meeting will hold office for one year and until a successor is elected.

JOHANNA SHICK
Chief Executive Officer

SACRS™

March 24, 2023

To: SACRS Trustees & SACRS Administrators/CEO's
From: Dan McAllister, SACRS Immediate Past President, Nominating Committee Chair
SACRS Nominating Committee
Re: SACRS Board of Director Elections 2023-2024 Elections – Final Ballot

SACRS BOD 2023-2024 election process began January 2023. Please provide the final ballot and voting instructions to your Board of Trustees and Voting Delegates.

DEADLINE	DESCRIPTION
March 1, 2023	Any regular member may submit nominations for the election of a Director to the Nominating Committee, provided the Nominating Committee receives those nominations no later than noon on March 1 of each calendar year regardless of whether March 1 is a Business Day. Each candidate may run for only one office. Write-in candidates for the final ballot, and nominations from the floor on the day of the election, shall not be accepted.
March 25, 2023	The Nominating Committee will report a final ballot to each regular member County Retirement System prior to March 25
May 12, 2023	Nominating Committee to conduct elections during the SACRS Business Meeting at the Spring Conference, May 9-12, 2023
May 12, 2023	Board of Directors take office for 1 year (until Spring 2024 Elections)

Per SACRS Bylaws, Article VIII, Section 1. Board of Director and Section 2. Elections of Directors:

Section 1. Board of Directors. The Board shall consist of the officers of SACRS as described in Article VI, Section 1, the immediate Past President, and two (2) regular members.

> ***A. Immediate Past President.*** *The immediate Past President, while he or she is a regular member of SACRS, shall also be a member of the Board. In the event the immediate Past President is unable to serve on the Board, the most recent Past President who qualifies shall serve as a member of the Board.*
> ***B. Two (2) Regular Members****. Two (2) regular members shall also be members of the Board with full voting rights.*

Section 2. Elections of Directors*. Any regular member may submit nominations for the election of a Director to the Nominating Committee, provided the Nominating Committee receives those nominations no later than noon on March 1 of each calendar year regardless of whether March 1 is a Business Day. Each candidate may run for only one office. Write-in candidates for the final ballot, and nominations from the floor on the day of the election, shall not be accepted.*

The Nominating Committee will report its suggested slate, along with a list of the names of all members who had been nominated, to each regular member County Retirement System prior to March 25.
The Administrator of each regular member County Retirement System shall be responsible for communicating the Nominating Committee's suggested slate to each trustee and placing the election of

SACRS Directors on his or her board agenda. The Administrator shall acknowledge the completion of these responsibilities with the Nominating Committee.
Director elections shall take place during the first regular meeting of each calendar year. The election shall be conducted by an open roll call vote, and shall conform to Article V, Sections 6 and 7 of these Bylaws.

Newly elected Directors shall assume their duties at the conclusion of the meeting at which they are elected, with the exception of the office of Treasurer. The incumbent Treasurer shall co-serve with the newly elected Treasurer through the completion of the current fiscal year.

The elections will be held at the SACRS Spring Conference on Friday, May 12, 2023, during the scheduled business meeting at the Paradise Point Resort & Spa, San Diego, CA.

SACRS Nominating Committee Recommended Slate:

- President – David MacDonald, Contra Costa CERA
- Vice President – Adele Tagaloa, Orange CERS
- Treasurer – Jordan Kaufman, Kern CERA
- Secretary – Zandra Cholmondeley, Santa Barbara CERS
- Regular Member – David Gilmore, San Diego CERA
- Regular Member – Open

The Regular Member listed as "Open" is due to a late withdrawal of a submission by an interested candidate. We are past the deadline to submit a nomination, and we received no other submissions of interest. SACRS Bylaws do not allow nominations or write-in candidates from the floor, therefore the Nominating Committee will be reaching out to the regular membership in search of interested parties that would like to serve.
Bylaws- Article VIII Board of Directors/Section 2/ Elections of Directors*

The Bylaws state that the Board of Directors can make an appointment if there is a vacant position on the Board. Once the Board of Directors are elected, at their first meeting in June, they will fill the vacancy.
Bylaws- Article VIII Board of Directors/Section 6/ Elections of Directors*

Regular members interested in serving as a "Regular Member" of the SACRS Board of Directors may complete a supplemental candidate form for consideration. Send the supplemental candidate form, no later than April 21, 2023, to sulema@sacrs.org to be reviewed by the Nominating Committee. At the SACRS Business meeting in May, the Nominating Committee will update the membership on submissions received and make a recommendation to the newly elected Board of Directors.

Please prepare your voting delegate to have the ability to vote by the recommended ballot and by each position separately.

If you have any questions, please contact me at Dan McAllister, Dan.McAllister@sdcounty.ca.gov or Sulema Peterson, sulema@sacrs.org (916) 701-5158.

Continued

Thank you for your prompt attention to this timely matter.

Sincerely,

Dan McAllister

Dan McAllister, San Diego CERA Trustee
SACRS Nominating Committee Chair

CC: SACRS Board of Directors
SACRS Nominating Committee Members
Sulema H. Peterson, SACRS Executive Director

Attached: 2023-2024 Candidate submissions
Candidate Form

SACRS Nomination SUPPLEMENTAL Submission
Form SACRS Board of Directors Elections

All interested candidates that would like to be considered for appointment to the Board of Directors for the 2023-2024 OPEN REGULAR MEMBER position must complete this form and submit along with a letter of intent. **Both the form and the letter of intent must be submitted no later than April 21, 2023.** Please submit to the Nominating Committee Chair at Dan.McAllister@sdcounty.ca.gov AND to SACRS at sulema@sacrs.org. If you have any questions, please feel free to contact Sulema Peterson at SACRS at (916) 701-5158.

Name of Candidate	Name:
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: Email Address: Phone:
Name of Retirement System Candidate Currently Serves On	System Name:
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	○ Chair ○ Alternate ○ **General Elected** ○ Retiree ○ Other ____________
Applying for SACRS Board of Directors Position (select only one)	~~○ President~~ ~~○ **Vice President**~~ ~~○ Treasurer~~ ~~○ Secretary~~ ○ Regular Member
Brief Bio in Paragraph Format	

President Candidate Form - David MacDonald, Contra Costa CERA

SACRS Board of Directors Elections 2023-2024

All interested candidates must complete this form and submit along with a letter of intent. **Both the form and the letter of intent must be submitted no later than March 1, 2023.** Please submit to the Nominating Committee Chair at Dan.McAllister@sdcounty.ca.gov AND to SACRS at sulema@sacrs.org. If you have any questions, please feel free to contact Sulema Peterson at SACRS at (916) 701-5158.

Name of Candidate	Name: David J. MacDonald, MD
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: [redacted] Email Address: dmacdcccera@gmail.com Phone: [redacted]
Name of Retirement System Candidate Currently Serves On	System Name: CCCERA
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	○ Chair ○ Alternate ○ General Elected ○ Retiree ○ **Other - Vice Chair X (elected board member)**
Applying for SACRS Board of Directors Position (select only one)	○ **President X** ○ Vice President ○ Treasurer ○ Secretary ○ Regular Member
Brief Bio	* SACRS Board of Directors, Member – 2020-2021 & 2021-2022 * SACRS Vice President – 2022-2023 * Vice Chair, CCCERA Board of Retirement * Elected general member trustee of CCCERA since 2016 * President, Physicians' and Dentists' of Contra Costa (PDOCC), since 2010 (Union for health care providers working at Contra Costa County). * 29 years serving on the PDOCC Executive Board, including many years as Vice President and President. * 32 years of service to Contra Costa County as a physician working in the Department of Health Services. * Education/Pension Trustee Certificates: - Bachelors of Science, Biology – UC Irvine - Doctor of Medicine – UC Irvine - UC Berkeley (SACRS) – Modern Investment Theory & Practice for Retirement Systems - Wharton Business School – Portfolio Concepts & Management - IFEBP – CAPPP program, Trustees Masters Program - CALAPRS Trustee Education – Principles of Pension Governance

Vice President Candidate Form - Adele Tagaloa, Orange CERS

SACRS

SACRS Nomination Submission Form
SACRS Board of Directors Elections 2022-2023

All interested candidates must complete this form and submit along with a letter of intent. **Both the form and the letter of intent must be submitted no later than March 1, 2022.** Please submit to the Nominating Committee Chair at Dan.McAllister@sdcounty.ca.gov AND to SACRS at sulema@sacrs.org. If you have any questions, please feel free to contact Sulema Peterson at SACRS at (916) 701-5158.

Name of Candidate	**Adele Tagaloa**
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: [redacted] Email Address: **atagaloa@ocers.org** [redacted] Phone: [redacted]
Name of Retirement System Candidate Currently Serves On	System Name: **Orange County Employees Retirement System (OCERS)**
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	○ Chair ○ Alternate ● General Elected ○ Retiree ○ Other ___________
Applying for SACRS Board of Directors Position (select only one)	○ President ● Vice President ○ Treasurer ○ Secretary ○ Regular Member
Brief Bio	• **Secretary,** [redacted] **ram and Bylaws Committee** • **Elected General Member Trustee, OCERS, 2020 to present** Over 13 years of service to the County of Orange Proudly serving 1.8 million registered voters at the Registrar of Voters office • **Chair, OCERS Disability Committee 2020 to present** • **Vice- Chair, OCERS Investment Committee 2022 to present** • **Member, OCERS Governance Committee member 2022 to present** • **Union Steward, Orange County Employees Association (OCEA) 2012 to present** • **Board of Directors, OCEA 2018 to present** • **Political Action Committee and Scholarship Committee member, OCEA** **Public Pension Trustee Certificates:** Public Pension Investment Management Program - UC Berkeley CALAPRS Principles of Pension Governance and Principles for Trustees Completed 190 hours of education, 2020 - present

Treasurer Candidate Form - Jordan Kaufman, Kern CERA

SACRS Nomination Submission Form
SACRS Board of Directors Elections 2023-2024

All interested candidates must complete this form and submit along with a letter of intent. **Both the form and the letter of intent must be submitted no later than March 1, 2023.** Please submit to the Nominating Committee Chair at Dan.McAllister@sdcounty.ca.gov AND to SACRS at sulema@sacrs.org. If you have any questions, please feel free to contact Sulema Peterson at SACRS at (916) 701-5158.

Name of Candidate	Name:
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	[redacted] Email Address: jkaufman@kerncounty.com [redacted]
Name of Retirement System Candidate Currently Serves On	System Name: Kern CERA
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	o Chair o Alternate o **General Elected** o Retiree x Other __Statutory__
Applying for SACRS Board of Directors Position (select only one)	o President o **Vice President** x Treasurer o Secretary o Regular Member
Brief Bio in Paragraph Format	I am the current SACRS Treasurer and am excited for the opportunity to continue in this role. I am in my second term as the elected Kern County Treasurer-Tax Collector with fiduciary responsibility over the $5.2 billion Treasury Investment Pool and the responsibility of annually collecting over $1.4 billion in local property taxes. I am also the Plan Administrator for the $670 million deferred compensation plan for County employees. Prior to being elected, I became the assistant Treasurer-Tax Collector in 2006. Prior to 2006, I spent over a decade in the County Administrative Office where I performed budget and policy analysis and was involved in the issuance of various types of municipal bonds for the County. I am the Treasurer and past Chairman of the United Way of Kern County, Trustee and past Chairman of the Kern County Employees Retirement Association (KCERA), Commissioner on the California Statewide Communities Development Authority (CSCDA), Treasurer of the Boy Scouts of America Southern Sierra Council. I have a Bachelor of Science degree in Industrial Technology from Cal Poly San Luis Obispo. I live in Bakersfield with my beautiful wife Kristen and we have four children.

Secretary Candidate Form - Zandra Cholmondeley, Santa Barbara CERS

SACRS Nomination Submission Form
SACRS Board of Directors Elections 2023-2024

All interested candidates must complete this form and submit along with a letter of intent. **Both the form and the letter of intent must be submitted no later than March 1, 2023.** Please submit to the Nominating Committee Chair at Dan.McAllister@sdcounty.ca.gov AND to SACRS at sulema@sacrs.org. If you have any questions, please feel free to contact Sulema Peterson at SACRS at (916) 701-5158.

Name of Candidate	Name: Zandra Cholmondeley
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: [redacted] Email Address: zcholmondeley@gmail.com Phone: [redacted]
Name of Retirement System Candidate Currently Serves On	System Name: Santa Barbara County Employees' Retirement System (SBCERS)
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	○ Chair ○ Alternate ○ General Elected ⦿ Retiree ○ Other ___________
Applying for SACRS Board of Directors Position (select only one)	○ President ○ Vice President ○ Treasurer ○ Secretary ⦿ Regular Member
Brief Bio in Paragraph Format	Zandra Cholmondeley was elected to represent County retirees as a trustee on the governing board of the Santa Barbara County Retirement System (SBCERS) in November 2008. She joined the SBCERS Board in January 2009 and starting in January 2010, served two terms as Chair of the Board. She has also served three terms as the President of the Retired Employees of Santa Barbara County (RESBC). Zandra retired in July 2008. As Principal Analyst for Santa Barbara County she was charged with overseeing the development of the County's annual budget and performed numerous special projects for the County Executive Officer (CEO). Her budget responsibilities included working with County departments to ensure the accuracy of projections and overall preparation of the budget document. Special projects experience included implementing fiscal policy for the County Executive and oversight of internal service funds including the fleet and self-insurance funds.

Regular Member Candidate Form - David Gilmore, San Diego CERA

SACRS™

SACRS Nomination Submission Form
SACRS Board of Directors Elections 2023-2024

All interested candidates must complete this form and submit along with a letter of intent. **Both the form and the letter of intent must be submitted no later than March 1, 2023.** Please submit to the Nominating Committee Chair at Dan.McAllister@sdcounty.ca.gov AND to SACRS at sulema@sacrs.org. If you have any questions, please feel free to contact Sulema Peterson at SACRS at (916) 701-5158.

Name of Candidate	Name: David Gilmore
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: [redacted] Email Address: DGilmore@sdscera.org Phone: [redacted]
Name of Retirement System Candidate Currently Serves On	System Name:
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	o Chair o Alternate ox **General Elected** o Retiree o Other ___________
Applying for SACRS Board of Directors Position (select only one)	o President o **Vice President** o Treasurer o Secretary oxx Regular Member
Brief Bio in Paragraph Format	I have over 25 years with the County of San Diego and have been in management for the past 13 years. I am currently in my second term at SDCERA as a trustee and occupy the safety seat. I was elected to the SACRS Board of Directors last year and am seeking re-election for the upcoming year. I have a degree in accounting and a graduate degree in public administration. Thank you for your consideration and please see my letter of intent attached.

2023 CONFERENCES AND EVENTS SCHEDULE

2023 EVENT DATES		EVENT TITLE	EVENT SPONSOR	LOCATION	REG. FEE	WEBLINK FOR MORE INFO	EST. BOARD EDUCATION HOURS
Apr 17	Apr 19	The Pension Bridge Annual	With Intelligence	San Francisco, CA	$0	with.intelligence.com	11-14
Apr 19	Apr 21	Real Estate Client Conference	DWS	Dana Point, CA	$0	TBD	5
May 5	May 5	Trustee Roundtable	CALAPRS	Online webinar	$50	calaprs.org	4
May 9	May 12	SACRS Spring Conference	SACRS	San Diego, CA	$120	sacrs.org	10-12
May 21	May 24	Annual Conference & Exhibition	NCPERS	New Orleans	$900	ncpers.org	12
May 26	May 26	Attorneys Round Table	CALAPRS	Online webinar	$50	calaprs.org	4
Jun 19	Jun 20	Chief Offiers Summit	NCPERS	Denver, CO	$750	NCPERS.org	N/A
Jun 23	Jun 23	Administrators' Round Table	CALAPRS	Online webinar	$50	calaprs.org	4
Jul 16	Jul 19	SACRS/UC Berkeley Program	SACRS	Berkeley, CA	$2500	sacrs.org	24
Aug 28	Aug 31	Principles of Pension Governance for Trustees	CALAPRS	Malibu, CA	TBD	calaprs.org	*9
Sep 12	Sep 14	IREI Editorial Advisory Board Meeting	IREI	Santa Monica, CA	$0	IREI.com	TBD
Sep 27	Sep 29	Administrators' Institutue 2023	CALAPRS	Carmel-by-the-Sea	TBD	calaprs.org	*14.4
Oct 27	Oct 27	Trustee Roundtable	CALAPRS	Online webinar	$50	calaprs.org	4
Nov 7	Nov 10	SACRS Fall Conference	SACRS	Rancho Mirage, CA	$120	sacrs.org	*11

** Estimates based on prior agendas*

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SUMMARY OF PENDING TRUSTEE AND EXECUTIVE STAFF TRAVEL

2023 Event Dates	Sponsor / Event Description	Location	Traveler(s)	Estimated Cost	BOR Approval Date
Apr 17-19	Pension Bridge Annual Conference	San Francisco	Ray McCray, Paris Ba	$2,360	2/10/2023 3/10/2023
May 9-12	SACRS Spring Conference	San Diego	JC Weydert, Phonxay Keokham, Jennifer Goodman, Chanda Bassett, Ray McCray, Johanna Shick, Paris Ba, Jason Morrish	$13,600	N/A
Jul 16-19	SACRS UC Berkeley Program	Berkeley, CA	Brian McKelvey, JC Weydert	$8,400	N/A

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SUMMARY OF COMPLETED TRUSTEE AND EXECUTIVE STAFF TRAVEL

Event Dates 2023	Sponsor / Event Description	Location	Traveler(s)	Estimated Cost	Actual Cost	Event Report Filed
Jan 17-20	IREI 2023 Visions, insights & Perspectives America	Rancho Palos Verdes, CA	Michael Restuccia	$1,250.00	$1,736.78	2/10/2023
Feb 7	2023 Employee Benefits Update	Webinar	Johanna Shick	$0	$0	N/A
Feb 11	CALAPRS Administrators' Round Table	Online	Johanna Shick	$50.00	$50.00	N/A
Mar 4-7	CALAPRS General Assembly	Monterey	Johanna Shick, JC Weydert	$2,857	$2,788.65	N/A
Mar 29-31	Advanced Principles of Pension Governance for Trustees	Los Angeles	Steve Moore	$4,150	Pending	N/A

Board Member	Travel (not including SACRS & CALAPRS)	Dates	Amount used of $2500:	Balance Left of $2500
RESTUCCIA	IREI	1/2023	$1,736.00	$764
BASSETT				
DING				
DUFFY				
GOODMAN				
KEOKHAM				
MCCRAY				
NICHOLAS				
WEYDERT				
MOORE				

Board of Retirement Meeting

San Joaquin County Employees' Retirement Association

Agenda Item 11.03-01

April 14, 2023

SUBJECT: Pending Member Accounts Receivable – 1st Quarter

SUBMITTED FOR: ___ CONSENT __ ACTION _X_ INFORMATION

RECOMMENDATION

This report is submitted for the Board's information.

PURPOSE

To report the quarterly summary of pending accounts receivables for SJCERA retired or deferred members as of March 31, 2023.

DISCUSSION

This quarter's Pending Accounts Receivable Report, below, includes all receivables owed by either retirees, beneficiaries or deferred members.

QUARTERLY SUMMARY REPORT OF PENDING ACCOUNTS RECEIVABLE - SJCERA MEMBERS

1st Quarter - January through December 2023

	Action Date	Total Receivable	Payments Began	Current Balance	Current Payment	Payment Description	Payment End Date	First Reported To Board
1	07/15/09	$11,475.48	05/01/11	$ 5,165.93	$163.00	Fixed Dollar Amount	10/01/25	Jul-11
2	09/01/12	$13,580.90	02/01/14	$ 2,366.34	$297.00	Fixed Dollar Amount	09/01/23	Jan-16
3	05/19/02	$35,537.23	11/01/15	$ 13,172.18	$293.14	Fixed Dollar Amount	12/01/27	Jul-21
4	03/11/21	$12,035.49	06/01/21	$ 4,665.49	$335.00	Fixed Dollar Amount	05/01/24	May-21
5	12/31/22	$25,062.14	02/01/23	$ 23,883.42	$589.36	Fixed Dollar Amount	12/01/26	Apr-23
	Total Accounts Receivable as of 3/1/2023			**$ 49,253.36**				

One new receivable in the first quarter of 2023.

BRIAN MCKELVEY
Asst. Chief Executive Officer

Pending Disability Application Statistics
1st Quarter 2023
Open Cases

SJCERA received 8 disability applications during Q1 2023

Time Elapsed From Application Date	
01 - 03 Months	6
04 - 06 Months	4
07 - 09 Months	4
10 - 12 Months	1
13 - 15 Months	0
16 - 18 Months	3
19 - 21 Months	0
22 - 24 Months	0
Over 24 Months	0
Total	**18**

Break Down By Application Type	
Service-Connected	15
Nonservice Connected	1
Service & Nonservice Connected	2
Total	**18**

Breakdown By Department	Service	Nonservice	Service & Nonservice	Total	SJCERA Members	Ratio
Hospital	1	0	0	1	1,272	0.08%
Human Services Agency	3	0	0	3	1,179	0.25%
Mental Health	0	0	2	2	540	0.37%
Probation	2	0	0	2	273	0.73%
Public Works	3	0	0	3	349	0.86%
Recreation	1	0	0	1	36	2.78%
Sheriff	5	1	0	6	781	0.77%
Totals	15	1	2	18	4,430	0.41%
Total SJCERA Active Members For All Departments As of 3/31/2023					**6,489**	**0.28%**
Total Number of Department Groups					**7**	

2023 Total Cases Resolved = 2

Goal #1 - 100% of applications that do not require a hearing will go to the Board within 9 months
Goal #2 - 80% of applications requiring a hearing will go to the Board within 18 months

Goal #1	100%	Completed within 9 months
Goal #2	N/A	No completed applications went to hearing.

Of the two cases that were resolved in first quarter 2023, both were completed without a hearing and within 9 months, meeting Goal #1. Staff and our disability attorney continue to meet weekly and are taking action to ensure all cases are moving through the process as timely as possible.

Calendar Year Comparison
1/1 to 12/31

	2018	2019	2020	2021	2022	2023
New	41	13	7	16	14	8
Granted	21	19	10	8	12	1
Denied	3	2	4	3	3	0
Dismissed	4	6	2	0	0	1
Withdrawn	0	4	0	0	2	0
Rejected						2
Total Closed	28	31	16	11	17	2

Agenda Item 11.03-03

Q1 2023 - Pension System Project Status Report

	Overall Project Status
	The overall project is progressing as planned.
	Scope
	There have been no changes to project scope.
	Schedule
	Project start date March 2023 instead of February 2023 has low or no overall impact to schedule due to overall schedule.
	Risks / Issues
	Data extracts from CORE-37 posed initial challenges for both SJCERA and MBS. Initial data extract challenges have a low or no probability of impacting the overall project schedule or cost.

LEGEND
- On track with no risk to schedule, scope, or cost
- Identified potential risk to schedule, scope, or cost
- Known delay or risk resulting in delay to schedule, change to project scope, or impact to cost

Schedule & Milestones

Phase 1 – Project Initiation – Expected Completion 04/10/2023

Phase 2 – Infrastructure and Hosting Setup – Expected Completion 04/24/2023

Phase 3 – PAS Implementation – Expected Completion March 2026

- August 2023 – Member Demographics
- April 2024 – Employer Reporting
- May 2024 – Benefit Calculator
- September 2024 – Active Member Services
- April 2025 – Retiree Member Services
- July 2025 – Retiree Payroll
- September 2025 – Accounting and Periodic Processes
- December 2025 – Correspondence and Reports
- March 2026 – Administration Tools

Phase 4 – Imaging Integration – Expected Completion May 2026

Phase 5 – Member Portal – Expected Completion June 2026

Phase 6 – Partner Portal – Expected Completion June 2026

Phase 7 – System Readiness – Expected Completion July 2026

Go-Live – Expected Completion August 2026

Post Go-Live Warranty Support – Expected Completion August 2027

Activities Completed

1. Tegrit Kickoff & 12 Requirement Meetings in March
2. Project Schedule – Delivered to SJCERA 04/03/2023
3. Project Management Plan – Delivered to SJCERA 04/03/2023

Activities Planned (Q2 – 2023)

1. Complete Phase 1 – Project Initiation
2. Complete Phase 2 – Infrastructure and Hosting Setup
3. Complete Data Conversion Cycle 1 – Member, Beneficiary and Demographics
4. Continued Requirements Revision and Confirmation with Linea and Tegrit
5. Approve Member Demographics System Requirements Document

Brian P. McKelvey
Assistant Chief Executive Officer

2023 LEGISLATION

Last Updated: 4/3/2022

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
Legislation Impacting SJCERA:					
AB 557	Hart	This bill would extend the expiration date of the state of emergency provisions from January 1, 2024 to January 1, 2026 and make additional non-substantive changes to the Ralph M. Brown Act.	02/17/23	Assembly L. Gov. Comm.	
AB 739	Lackey	This bill would revise the conditions for suspending contributions to a public defined benefit plan from a threshold of more than 120 percent fund to more than 130 percent funded.	03/13/23	Assembly P.E. & R. Comm. Hearing canceled req. of author	
AB 817	Pacheco/ Wilson	~~This bill would make non-substantive changes to the Ralph M. Brown Act.~~ **This bill would authorize use of teleconferencing provisions similar to the emergency provisions indefinitely if the legislative body annually approves the provisions.**	03/20/23	Assembly L. Gov. Comm.	
AB 1020	Grayson	~~This bill would make non-substantive changes to the safety heart presumption provisions.~~ **This bill would expand the scope of the Safety member heart presumption (which applies to members with five or more years of service) to include hernia and pneumonia. It also expands other Safety member presumptions to include post-traumatic stress disorder, tuberculosis and meningitis.**	03/14/23	Assembly P.E. & R. Comm.	
AB 1637	Irwin	This bill, no later than January 1, 2025, would require a local agency's website and emails to utilize a ".gov" top-level domain or a "ca.gov" second level domain.	03/20/23	Assembly L. Gov. Comm.	
SB 411	Portantino/ Menjivar/ Luz Rivas	This bill would authorize a board to use alternate teleconferencing provisions similar to the emergency provisions indefinitely and without regard to a state of emergency.	02/22/23	Senate Gov. & F. & Jud Comm's.	
SB 537	Becker	~~This bill would state the intent of the Legislature to enact legislation that expands local government's access to hold public meetings through teleconferencing and remote access.~~ **This bill would 1) authorize a board to use alternate teleconferencing provisions similar to the emergency provisions indefinitely and without regard to a state of emergency, 2) require Boards to provide attendance on the website within seven days after the teleconferencing meeting, and 3) expand circumstances of "just cause" to include having specified relatives who are immunocompromised.**	03/29/23	Senate Gov. & F and Jud. Comm.	

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
SB 769	Gonzalez	Existing law imposes ethics training and sexual harassment prevention training and education to be two hours and requires each training every two years. This bill would add two hours of fiscal and financial training every two years.	03/21/23	Senate Gov. & F. Comm. Hearing set for April 12	
Other Bills of Interest:					
AB 1246	Nguyen	~~This bill would make non-substantive changes to the PERL optional retirement allowance provisions.~~ **This bill would extend the ability of a PERL retiree who elected one of the specified optional benefit settlements to change their beneficiary to include naming a new spouse following the retiree's divorce and subsequent remarriage.**	03/20/23	Assembly P.E. & R. Comm.	
SJR 1	Cortese	This measure would request the U.S. Congress to enact, and the President to sign, legislation that would repeal the Government Pension Offset and the Windfall Elimination Provision from the Social Security Act.	03/30/23	Assembly P.E. & R. Comm.	
Federal Legislation:					
None to report.					

	2023 TENTATIVE State Legislative Calendar
Mar 30 - Apr 9	Spring Recess begins upon adjournment
Jun 2	Last day for bills to be passed out of the house of origin
Jun 15	Budget Bill must be passed by midnight
Jul 14 - Aug 13	Summer Recess upon adjournment provided budget bill passed
Sep 8	Last day to amend bills on the floor
Sep 14	Last day for each house to pass bills; Interim Study Recess begins upon adjournment
Oct 14	**Last day for Governor to sign or veto bills.**

San Joaquin County Employees' Retirement Association

April 7, 2023

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

<u>Review and confirm or refresh asset allocation</u>

- *Initiate implementation of new asset allocation policy*
  Staff updated the *Strategic Asset Allocation* policy to reflect the Board's decision at the March 10, 2023, meeting to implement a functional naming framework for the component groups of the Crisis Risk Offset (CRO) class. Specifically, Long US Treasury Bonds was changed to First Responders, Trend Following was changed to Second Responders, and Alternative Risk Premia was changed to Diversifiers. If Investment Officer Paris Ba and Meketa recommend modification to any of the definitions of these three categories, they will bring those additional policy changes to the Administrative Committee in June and to the full Board for approval shortly thereafter.

<u>Determine the future vision for the investment program operating model</u>

- *Evaluate SJCERA's policy on liquidity/cash, and refresh as appropriate*
  - *Liquidity Analysis Completed.*
    At the April meeting, Meketa will present the results of a Liquidity Analysis as part of SJCERA's strategic goals for 2023. Meketa conducted an extreme stress test to analyze SJCERA's total Fund liquidity. Even under various extremely negative scenarios, the current portfolio would still maintain sufficient liquidity to pay benefits and other expenses. Because SJCERA is cash-flow positive (thanks in part to additional contributions from employers), SJCERA has sufficient cash and high-quality bonds to cover the portfolio's liquidity needs without having to sell assets to meet its obligations.

  - *SJCERA Cash Overlay Program.*
    Also at the April Board meeting, Meketa will present an assessment of SJCERA's cash overlay program. Based on the analysis, staff and consultant recommend the Board approve changing the Cash Overlay program's allocation from 75% equity, 25% bonds (as a rough proxy of the total portfolio's allocation) to 100% bonds. This modification will benefit SJCERA by reducing risk in the overlay program and taking advantage of the current higher rate environment.

<u>Optimize the investment manager lineup</u>

- *Conduct Global Equity and Crisis Risk Offset asset class reviews, assessing managers'/mandates' alignment with our Strategic Asset Allocation policy and goals*
  - *CRO Manager Search*
    During the March 10 Board meeting, the Board approved Meketa's recommendation to terminate Lombard Odier and to conduct a search to replace the strategy within the Diversifiers component of Crisis Risk Offset (CRO). At the April 14 Board meeting, the Board will be asked to approve conducting a Request for Information (RFI) to solicit updated information on Alternative Risk Premia and Global Macro managers. Meketa will assess the responses and bring forward the most attractive candidates for review and interview with the SJCERA Board.

- *Public Credit Review.*
  At the April Board meeting, Meketa will present their assessment of public credit and how both the mandates, in general, and SJCERA's public credit managers, in particular, align with SJCERA's policy and goals. Despite the recently challenging environment for public credit, Meketa recommends staying the course primarily for two reasons: (1) SJCERA's public credit managers are active managers that can steer the portfolio through various market conditions, and (2) the value of diversification and long-term return prospects outweigh the relatively short period of the challenging high-interest rate environment.

- *Evaluate the portfolio for investment efficiency (e.g., fees, risk, return, consolidation)*
  - *Medley Liquidation Update*.
    Investment Officer Paris Ba and Investment Consultant David Sancewich participated in the Medley Opportunity Fund II's Limited Partner Advisory Committee (LPAC) meeting with Upwelling Capital Group. The liquidation process is well underway, and Upwelling was able to recover some value from companies previously valued at $0. Upwelling plans to distribute $20 million to the LPs in second quarter 2023, and staff and Meketa will continue to monitor the process and risk exposure.

  - *Ridgemont Equity Partner Most Favored Nation (MFN) Side Letter Election.*
    In consultation with Investment Counsel, Sean Byrne of Rimon Law, Investment Officer Paris Ba compared the new provisions to our existing side letter and elected to add those terms that were more favorable to SJCERA.

Modernize the operations infrastructure

Implement Pension Administration System (PAS)

Five Tegrit representatives visited SJCERA March 7-9 to kick off the project, conduct eight meetings with staff subject matter experts, and provide all staff a high-level overview of the project, schedule, and anticipated efficiencies the new system will provide. In this month's staff reports, Assistant CEO Brian McKelvey provides the Board his first quarterly project implementation report, the "Pension System Project Status Report". The report includes a color-coded rating of four elements: the overall project status, scope, schedule, and risks/issues, all of which are currently rated "green", indicating they are on track with no risk to schedule, scope or cost. The Board can expect to receive these update reports quarterly each January, April, July, and October until the project is completed. In the event there is an issue that cannot or should not wait for the routine quarterly report, staff will bring that to the Board as needed rather than wait for the quarter end.

- *Complete refinement of business requirements on planned processes*
  Retirement Services Associate, Ron Banez and Benefits staff have been working with project management consultant Linea Solutions to review and revise requirements for eight functional areas including, but not limited to, Service Credit, Employer Reporting, New Member Enrollment, Reciprocity, and Termination in advance of the PAS project kickoff. Continued refinement of business requirements for Member Death, Retirement Estimates, Service Retirement, Disability, Tax Reporting and Member Correspondence areas will be completed in second quarter 2023.

- *Maintain functionality of legacy PAS until new PAS is implemented and stabilized*
  In March, Information Systems Manager Adnan Khan identified a data integrity risk which allowed staff to delete previous payment records within CORE-37. Under the direction of ACEO Brian McKelvey, IT disabled this feature and Retirement Services Officer Melinda DeOliveira established a review and approval process to address those rare situations where a data entry error might require deleting a pending payment record before a payment is processed. This system change increases the integrity of historical pension payment data in CORE-37. Kudos to Adnan for identifying and resolving the risk, and to Melinda for implementing appropriate controls to use when a legitimate need arises.

Improve technology for business operations

- *Adopt industry standard business processes wherever possible*
  - *Document adoption of standard industry practices in PAS requirements*

    Staff, with the assistance of Tegrit and Linea, evaluates options for adopting standard industry practices as part of the refinement of business requirements efforts described above. Adopting industry standard processes will result in a more efficient and maintainable PAS. Changes with policy implications will be brought to the Board for approval; we anticipate at least two will come to the June Administrative Committee meeting and subsequently to the July Board meeting.

Align resources and organizational capabilities

Develop and implement a workforce planning process

- *Address project staffing and training needs*
  - *Implement a detailed project staffing plan based on the PAS project plan, that identifies which staff will be pulled onto the project at which phase, who will be assigned to cover their duties, and whether temporary staff will be needed*

    Linea Solutions and ACEO Brian McKelvey met March 24 to begin documenting the detailed project staffing plan. The initial staffing plan will identify the quantity, type, and duration of staffing needed across all phases, activities, and functional areas of the PAS and Data Conversion projects. Assessments are currently being done to identify what and when resources are needed to complete project milestones. Additional resources being considered include temporary staff to back-fill operational activities, and temporary or consulting staff to assist in software testing. The staffing plan will be completed in time to take any necessary budget adjustments to the Administrative Committee in June.

Enhance education and development across all levels of the organization

- *Offer training and development opportunities intended to strengthen staff's depth and breadth of knowledge and experience*
  - Staff Education: Communications Officer Kendra Fenner attended three online courses: *Presentation Rules and Communications Myths Debunked*, *Standing out While Standing in*, and *Using PowerPoint to Create Compelling Presentations for Virtual Learning Courses Online* with the goal of further enhancing our online presence. Investment Accountant Eve Cavender attended *CALAPRS Compliance Roundtable*. Financial Officer Carmen Murillo attended the Secure 2.0 webinar which discussed significant changes to all types of retirement plans. CEO Johanna Shick attended Meketa's *State of the Banking Industry Panel Discussion* webinar.

- Document annual procedures and link to annual work plan

  On February 28, SJCERA managers met and reviewed the annual work plan and were successful in documenting and linking 51% of quarterly, semiannual, and annual procedures to the plan. As the Leadership team (Johanna, Brian, Adnan, Carmen, Melinda, Greg, Kendra and Elaina) continues to meet quarterly and procedures will be linked to the annual work plan as the functional business areas finalize them.

Maintain a Positive Work Environment

Rainbows and a bit of the "luck of the Irish" brought cheer on St. Patrick's Day. Staff relished a potluck including corned beef with cabbage and all the vegetables, a rainbow fruit tray, and many other decadent and delicious treats. The day was made even more memorable when retired ACEO Kathy Herman, stopped by after a meeting, and joined us for lunch.

Employee of the Month

Congratulations to Retirement Technicians Kathleen Goodwin and Margarita Arce, for being named Employees of the Month. A recent article sited the top qualities of excellent employees: reliability, problem solving skills, teamwork, conflict resolution, communication skills, and a willingness to learn and ask questions. Kathleen and Margarita demonstrate these skills every day and most recently on their contributions to the data clean-up project and their efficient and cheerful handling of customers impacted by the Post Office's delay in distributing the 2022 1099-R forms. Kathleen and Margarita are two people SJCERA staff and members can rely on to get the job done and to ensure members leave feeling good about SJCERA because they felt heard and helped. The positive impact they have on our members and SJCERA's reputation is impressive!

Maintain Business Operations

Cybersecurity Update. SJCERA has experienced an increase in phishing attempts over the past month: A few emails have successfully bypassed both Microsoft's and SJCERA's automated security measures. The IT team (Manager Adnan Khan, Information Systems Analyst II Lolo Garza, and Information Systems Specialist II Jordan Regevig) actively monitor email traffic and are configuring and testing multi-factor authentication (MFA) methods to be implemented early April. Although MFA won't prevent phishing attempts, it will provide additional security if any staff or trustee credentials are obtained by bad actors. Hackers continually improve their tactics; therefore, SJCERA must continually improve our defenses. Many thanks to our IT team for improving our identification and monitoring capabilities, and strengthening our ability to prevent and mitigate cybersecurity threats!

Build Effective Relationships with Employers. I provided guidance to Mountain House Community Service District regarding hiring retired and deferred members of other California public retirement systems.

Provide Excellent Customer Service

A few quotes from our members:

"Leonor was extremely knowledgeable, helpful, and patient! Several staff members who walked by always made sure to inquire whether or not I was being helped."

"Kathleen was so very understanding and helpful. My computer had been hacked and I had to close out my bank account and open a new one. I was worried about my retirement check being deposited into my new account, since it was so close to the 1st of the month. I was a nervous mess! Kathleen was so understanding, she was able to email the forms to me and I emailed them back completed. It was all handled so smoothly and efficiently. I was so relieved! A big THANK YOU to Kathleen!"

Recognizing Service

On April 28, 2023, Accounting Technician II Marissa Smith will mark her 15-year anniversary with SJCERA (and with the County). Congratulations Marissa!

Manage Emerging Organizational Needs

SJCERA's exposure to the Banking Crisis is limited. As Investment Officer Paris Ba previously shared with the Board, SJCERA's exposure to Silicon Valley Bank (SVB) and Signature Bank is limited.

- On the investment side, SJCERA's portfolio had a total of $268,100 exposure to the two banks, representing 0.0069% of its portfolio market value. In addition to SVB and Signature Bank's collapses, UBS took over Credit Suisse and wrote down about $17.3 billion of Credit Suisse's Additional Tier 1 (AT1) bonds. Investment Officer Paris Ba examined SJCERA's portfolio, and we are happy to report that SJCERA has zero exposure to Credit Suisse's AT1 bonds.

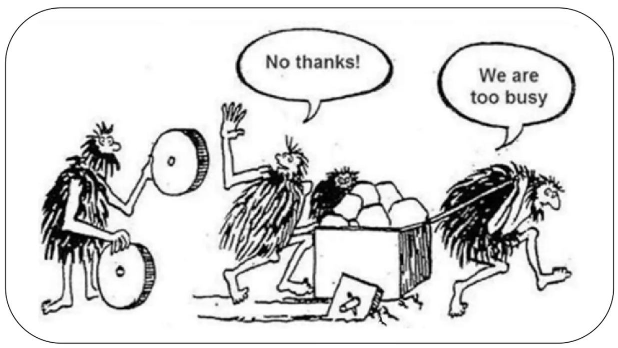
- On the banking/deposit side, two of SJCERA's investment managers used SVB for capital calls, and a third manager used Signature Bank. All wiring activities to the three managers were suspended and redirected. A few of SJCERA's Private Equity managers also had deposits with the two banks, and all deposits were recovered in full on March 13, 2023.

- On the member services front, staff investigated to see if any members banked with any of the struggling banks. No members banked with SVB or Signature Bank; however, two members had direct deposits with First Republic Bank. Fortunately, due to the assistance received, First Republic Bank remains operational, so no change in direct deposits instructions was required.

Conclusion

Clearly, SJCERA has a lot going on: Staff has been very productive and is making good progress. I eagerly anticipate the benefits we'll see as we implement the process improvements we identify as part of implementing our new pension administration system "PRIME" and elsewhere. It's an exciting time at SJCERA, full of opportunity. Together we are laying the foundation for our future.

The Challenge to Process Improvement.



The Reward of Process Improvement!

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

MARCH 2023

CALAPRS

The Investment World In 2023: Time For The New Simplicity?

Agenda

The Fed giveth and the Fed taketh away: Unprecedented monetary stimulus, but now a sudden reversal

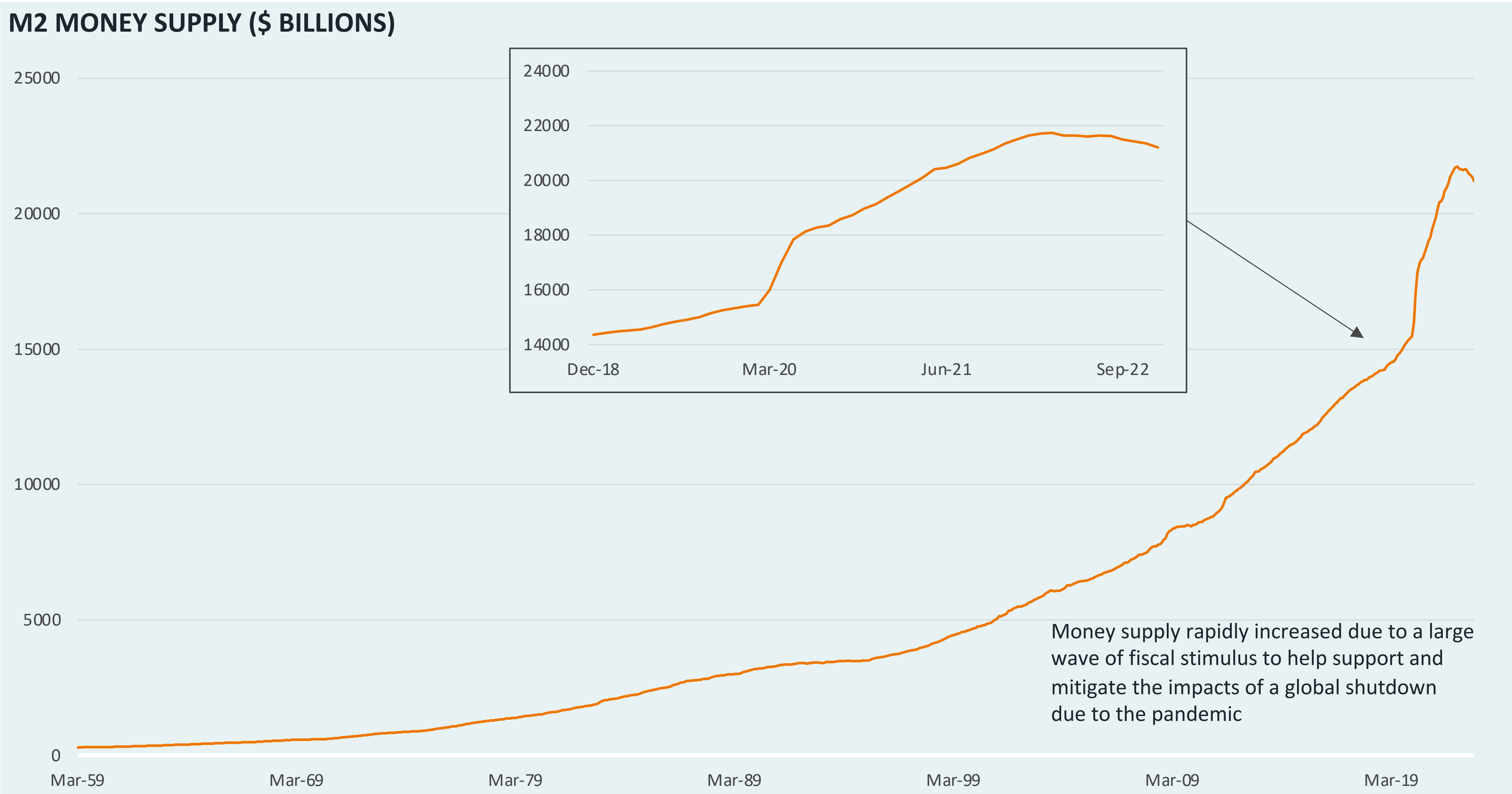
Are we now in a 'lender's market'?: The end of extremely easy credit conditions

An upside to the pain of 2022: An incredibly painful market environment during 2022 has led to far higher return expectations

Simple is sophisticated: Why we believe that portfolio simplicity may once again be a sophisticated option for investors

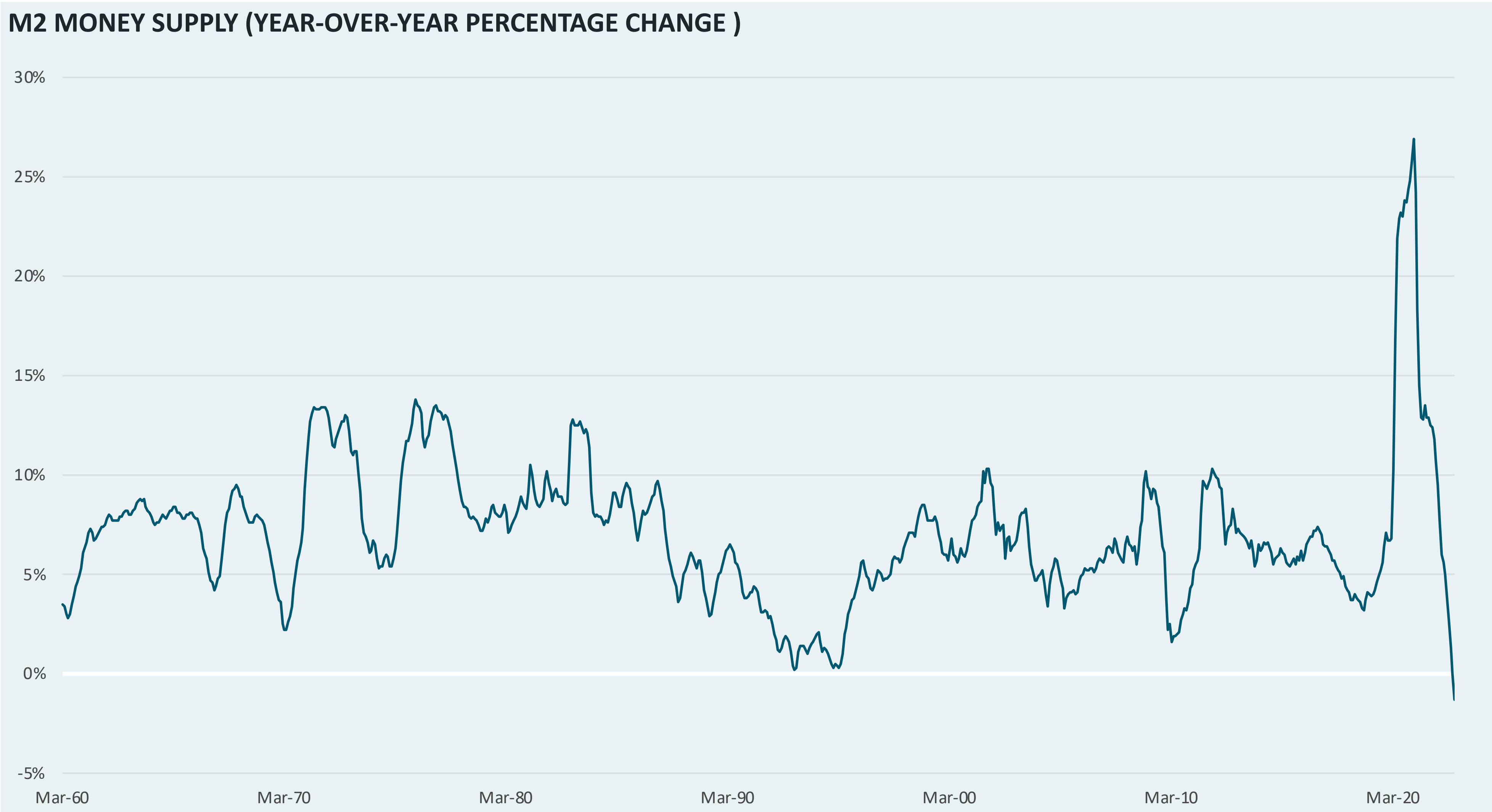
The Fed giveth and the Fed taketh away

Money supply *had* rapidly increased



Source: Federal Reserve

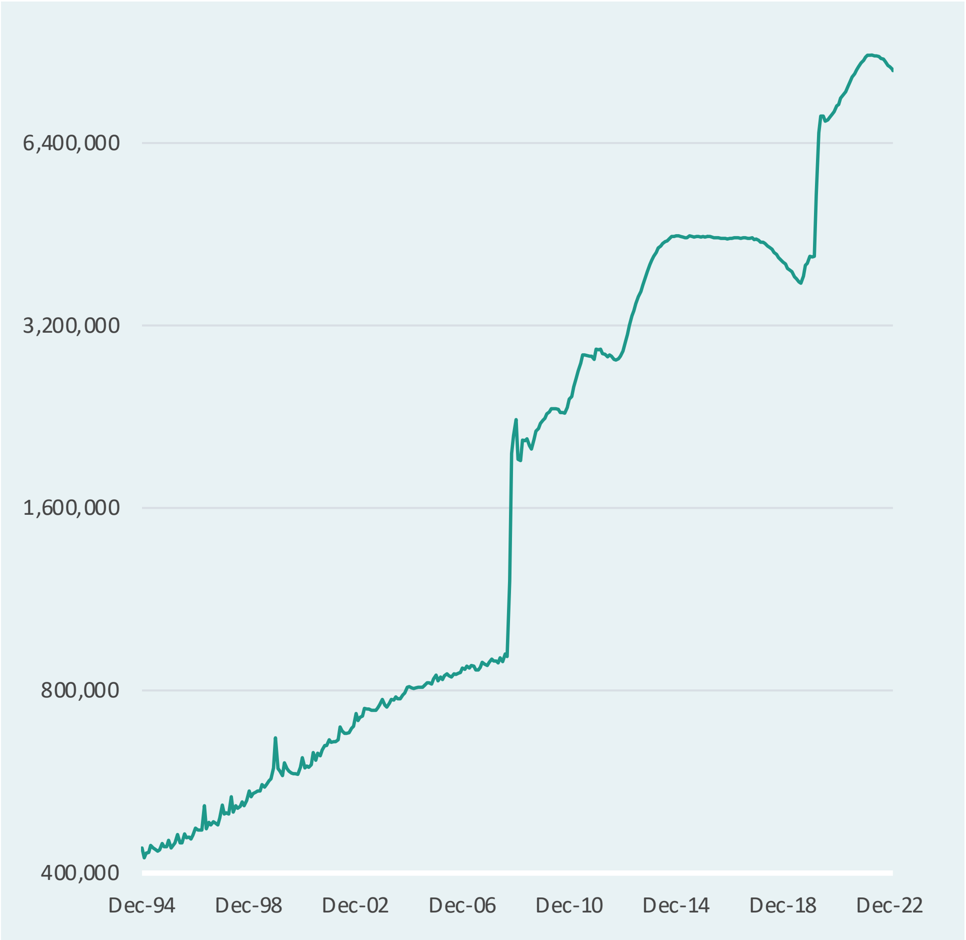
But that directionality quickly shifted …



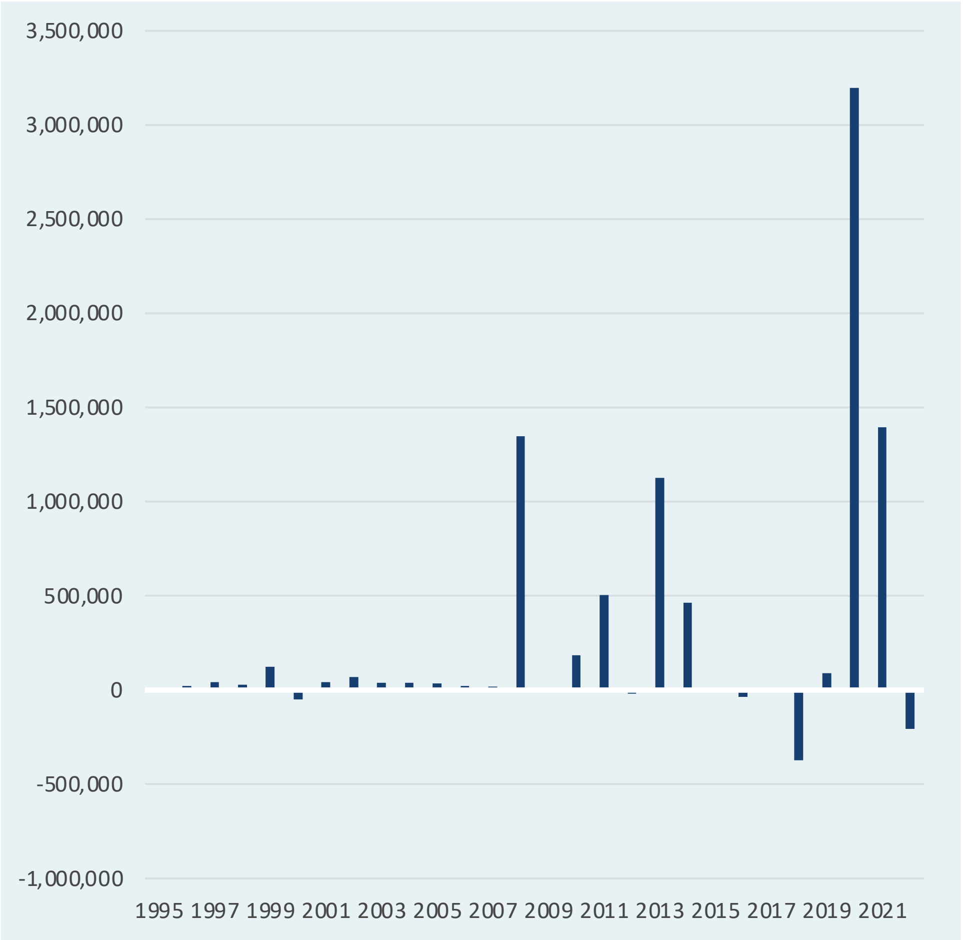
Source: Federal Reserve

The Federal Reserve's balance sheet

FEDERAL RESERVE BALANCE SHEET (LOG)



CHANGE IN THE FEDERAL RESERVES BALANCE SHEET (NOMINAL)



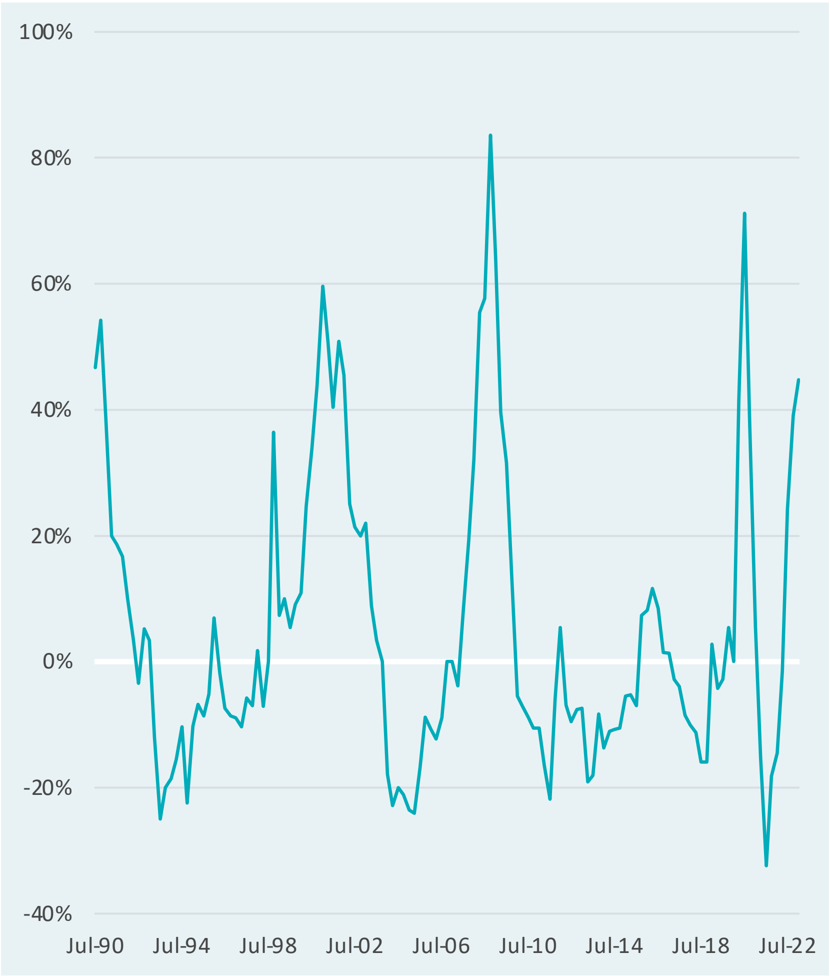
Source: Federal Reserve, as of 2/8/23

Velocity of money

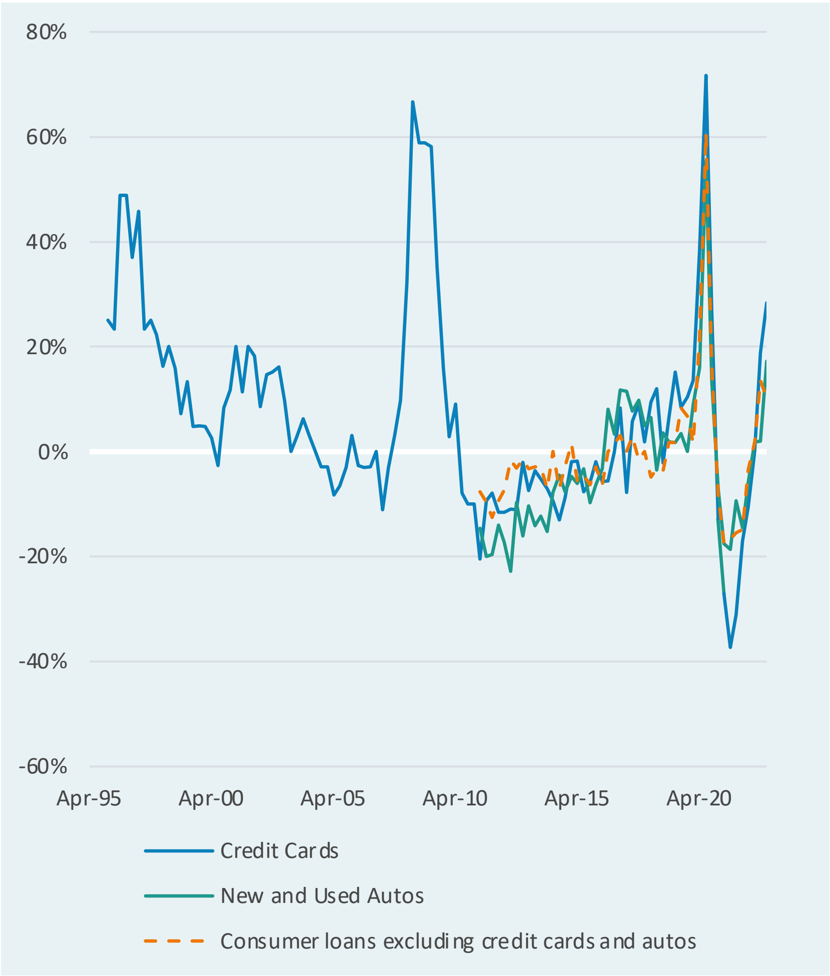
Source: Fed Reserve Bank of St. Louis, as of 12/31/22

Lending standards have tightened

PERCENTAGE OF SENIOR LOAN OFFICERS TIGHTENING LENDING STANDARDS TO MID-LARGE FIRMS



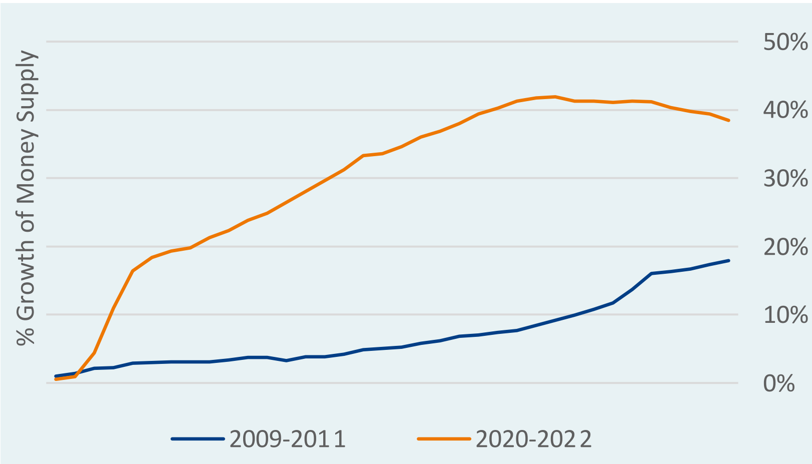
PERCENTAGE OF SENIOR LOAN OFFICERS TIGHTENING LENDING STANDARDS ON CONSUMER LOANS



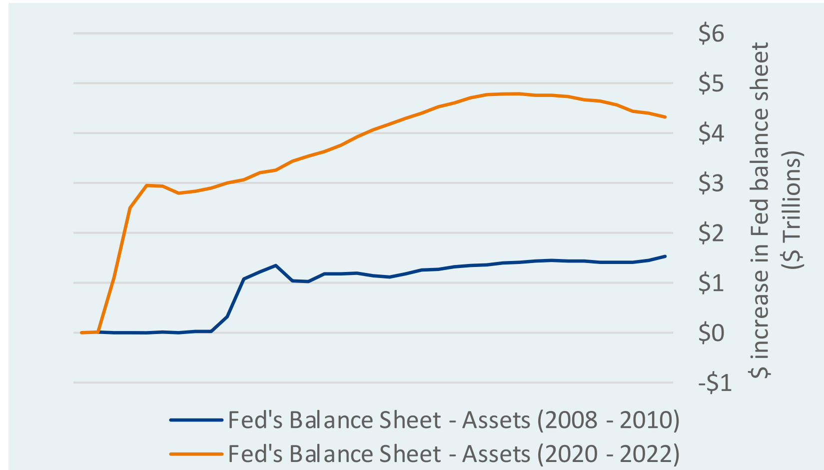
Source: Federal Reserve

How recent years compare to the 2008-2009 Global Financial Crisis

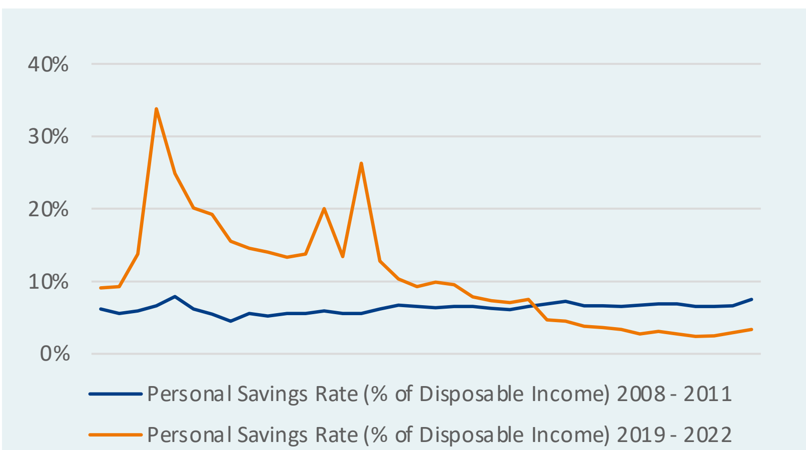
CHANGE IN MONEY SUPPLY (M2)



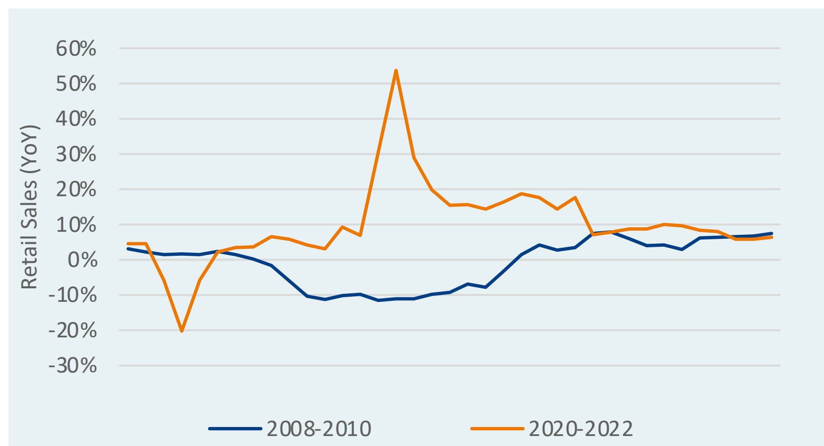
FED BALANCE SHEET



SAVING RATES



TOTAL CONSUMER SPENDING



Source: FRED

A falling tide *does not* lift all boats

Source: Wikimedia Commons, author: Calistemon

A falling tide *does not* lift all boats

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
US Bonds	9.0	18.6	7.4	22.1	3.2	19.6	13.2	15.0	22.0	27.1	11.6	8.4	10.3	34.6	16.3	12.1	21.0
Global Equity	-18.6	16.0	-6.7	9.7	-2.9	18.5	3.6	9.7	8.7	-0.8	-13.9	-15.8	-19.2	4.1	4.3	2.4	4.3
60/40 Global Portfolio	-6.6	18.6	0.3	18.8	1.9	19.2	9.4	13.1	17.2	15.2	-4.3	-6.4	-7.8	21.8	11.2	7.8	14.5

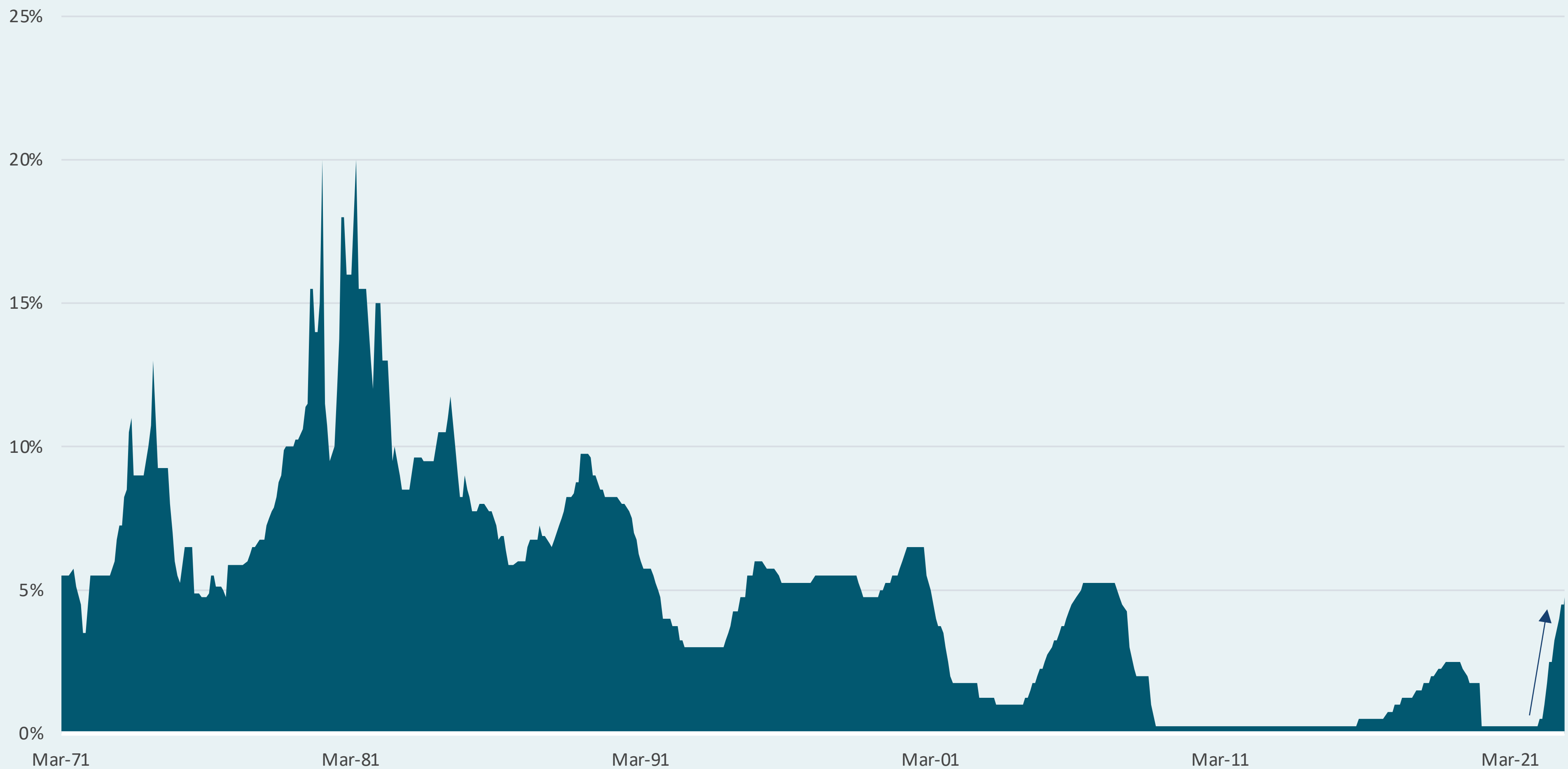
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
US Bonds	12.5	5.2	36.4	12.8	7.8	16.3	24.0	6.0	0.5	7.8	24.7	0.0	27.9	16.9	19.3	-13.0
Global Equity	7.0	-42.3	5.9	6.5	-7.0	4.2	-2.0	2.8	-2.5	2.6	3.5	-9.6	8.7	7.5	-1.5	-17.7
60/40 Global Portfolio	10.2	-25.5	23.5	11.1	-0.8	11.9	12.7	5.3	-0.7	6.3	15.8	-5.2	19.8	13.8	10.5	-15.8

Source: Bloomberg U.S. Aggregate, MSCI ACWI Index - Verus, as of 12/31/22

Are we now in a *lender's market?*

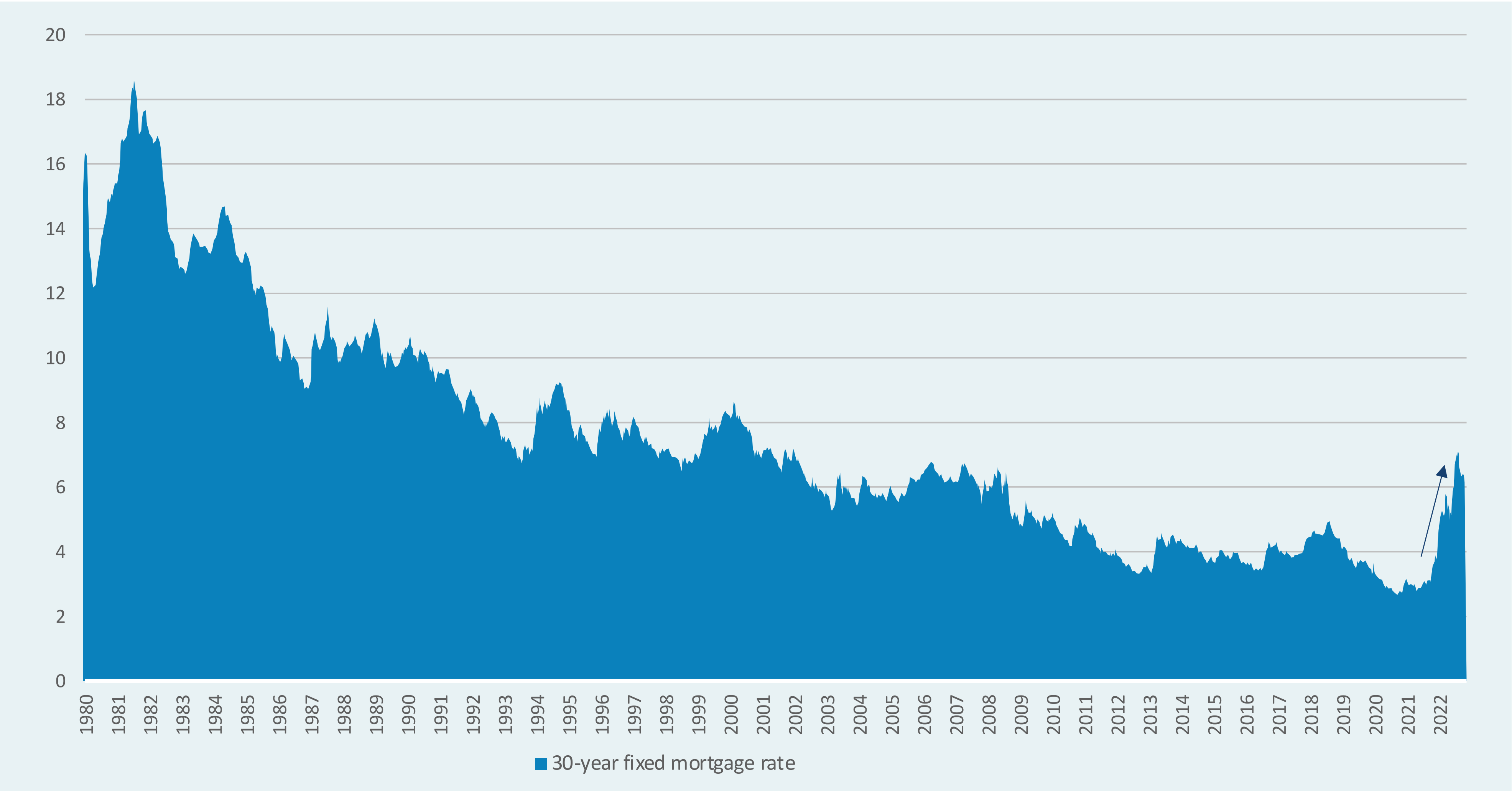
Interest rates: lower, but slower

FED FUNDS RATE (UPPER BOUND)



Source: Federal Reserve, as of 1/31/23

Rising mortgage interest rates

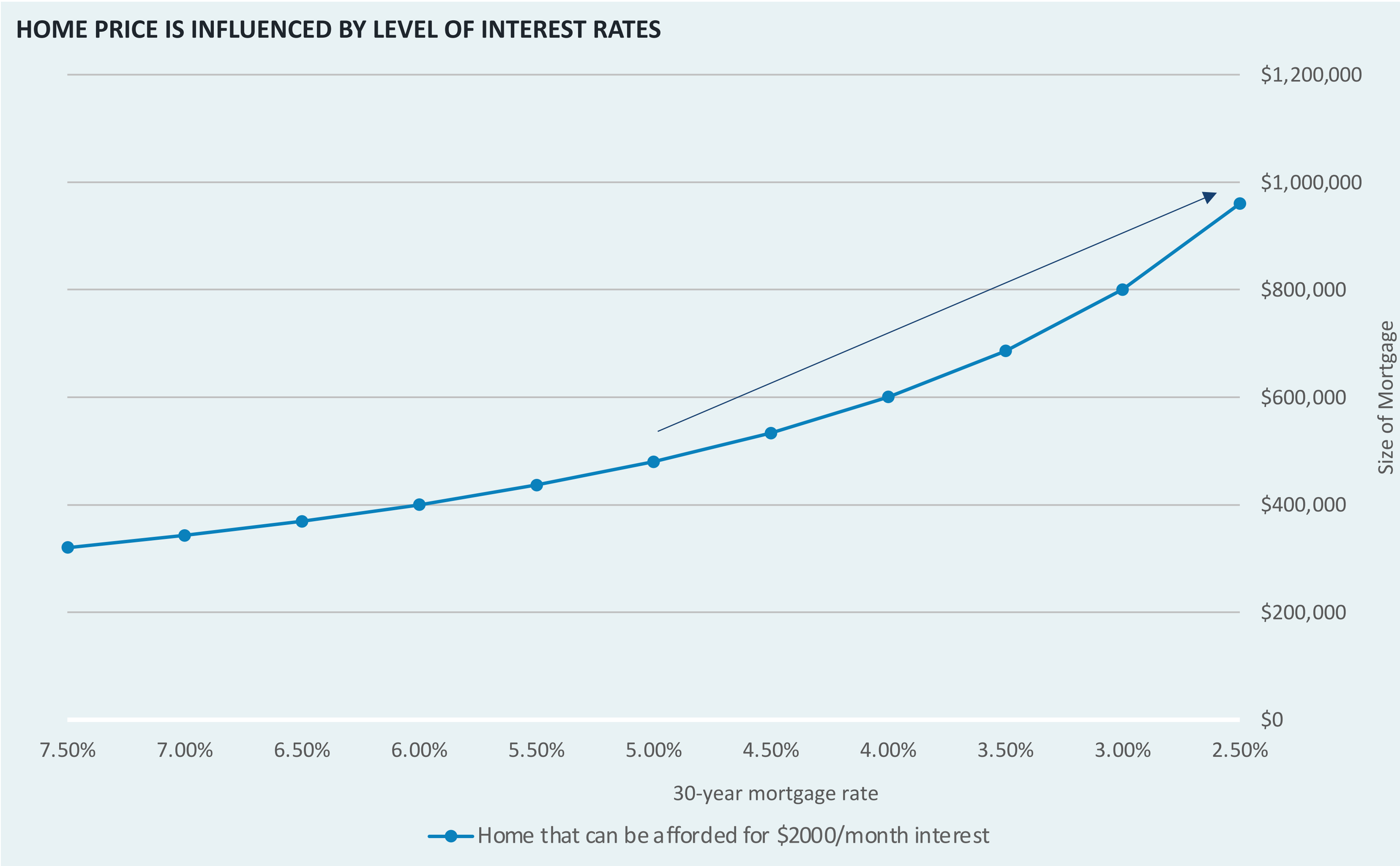


Source: Federal Reserve, as of 1/31/23

…and difficult impacts of higher rates

Source: NAR, as of 11/30/22 - The Monthly Housing Affordability Index measures whether or not a typical family earns enough income to qualify for a mortgage loan on a typical home at the national and regional levels based on the most recent monthly price and income data

I am a genius!

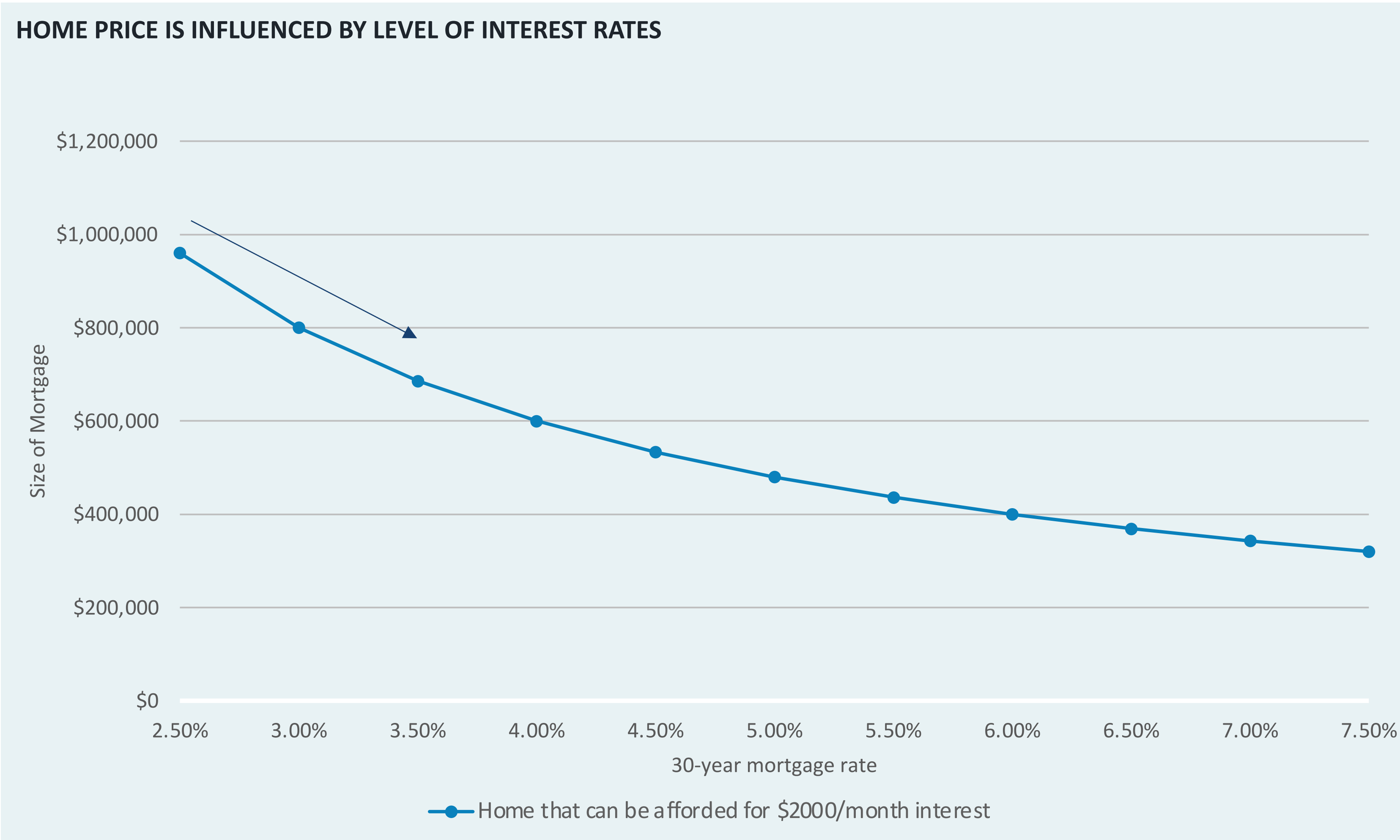


Lower and lower interest rates helped to propel real estate prices higher

Source: Verus – for illustrative purposes only

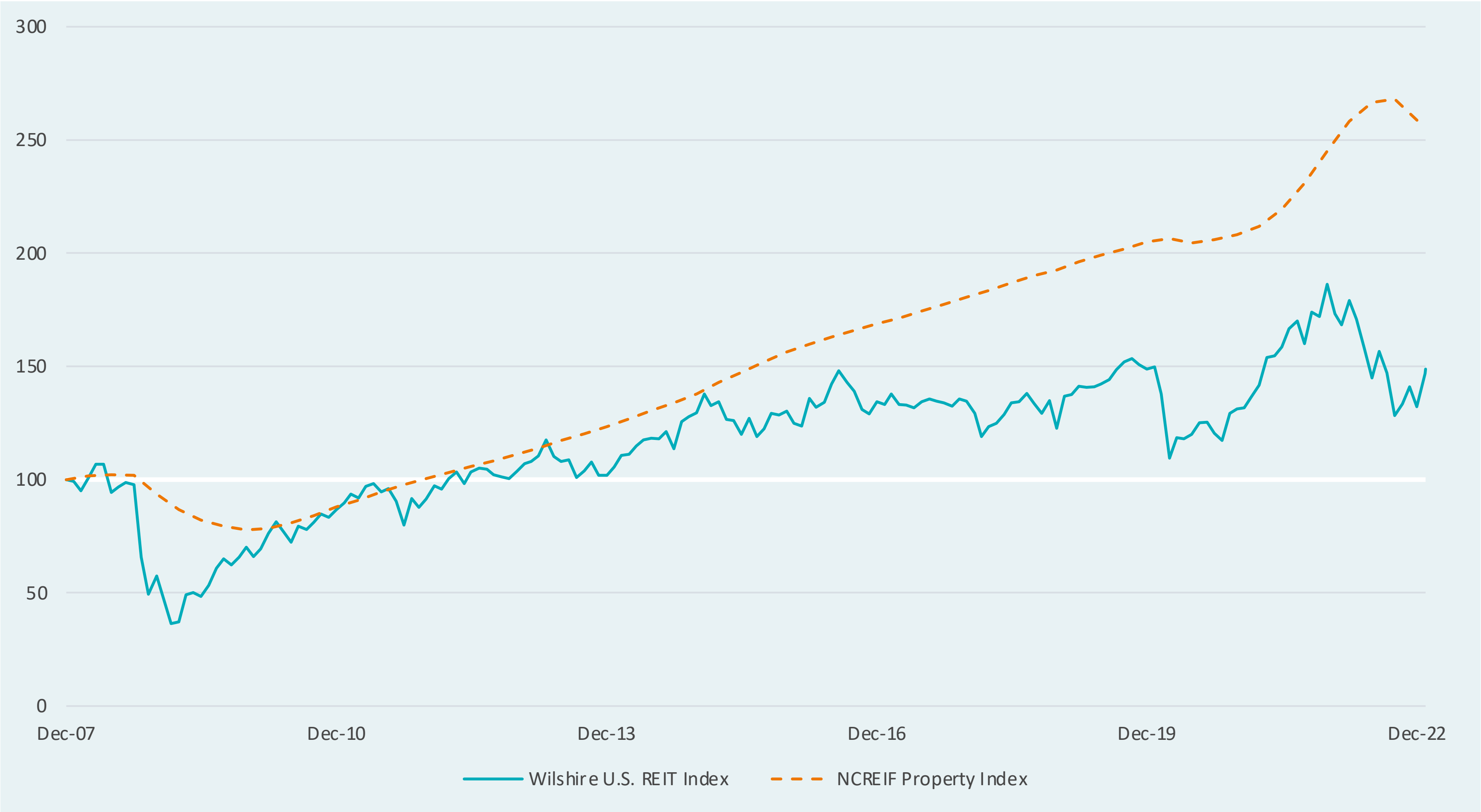
…well, maybe not

Now that effect is working in reverse



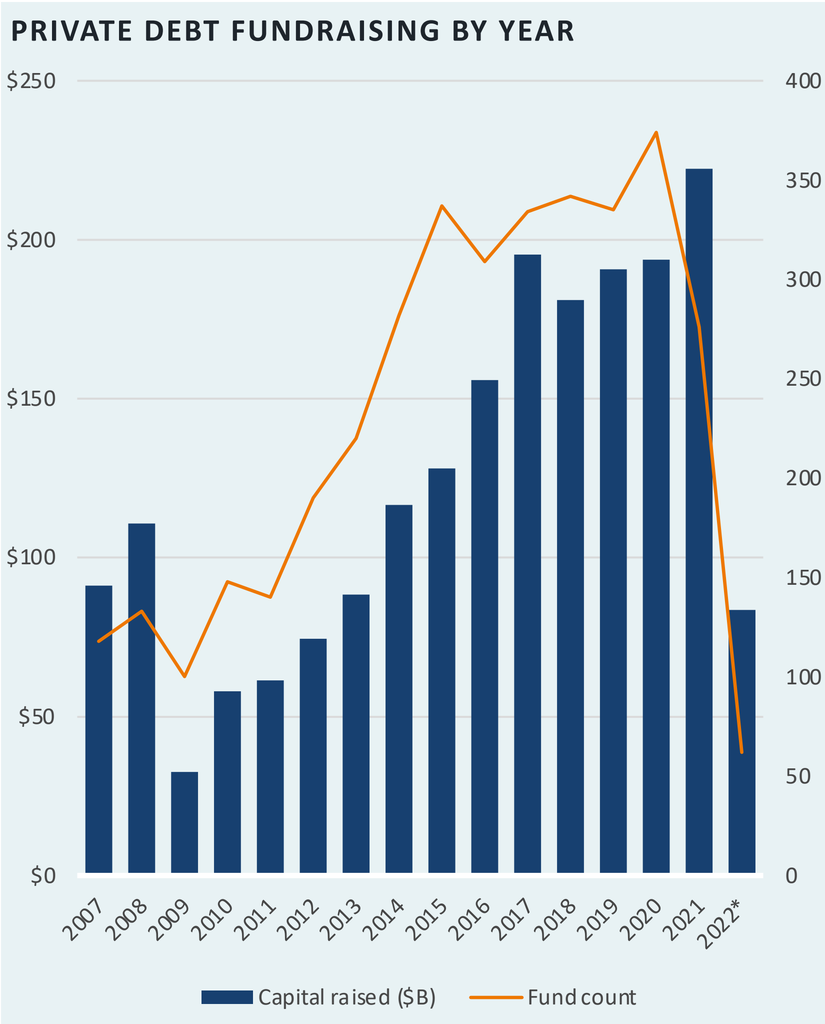
Source: Verus – for illustrative purposes only

More office pain: The slow recognition of reality

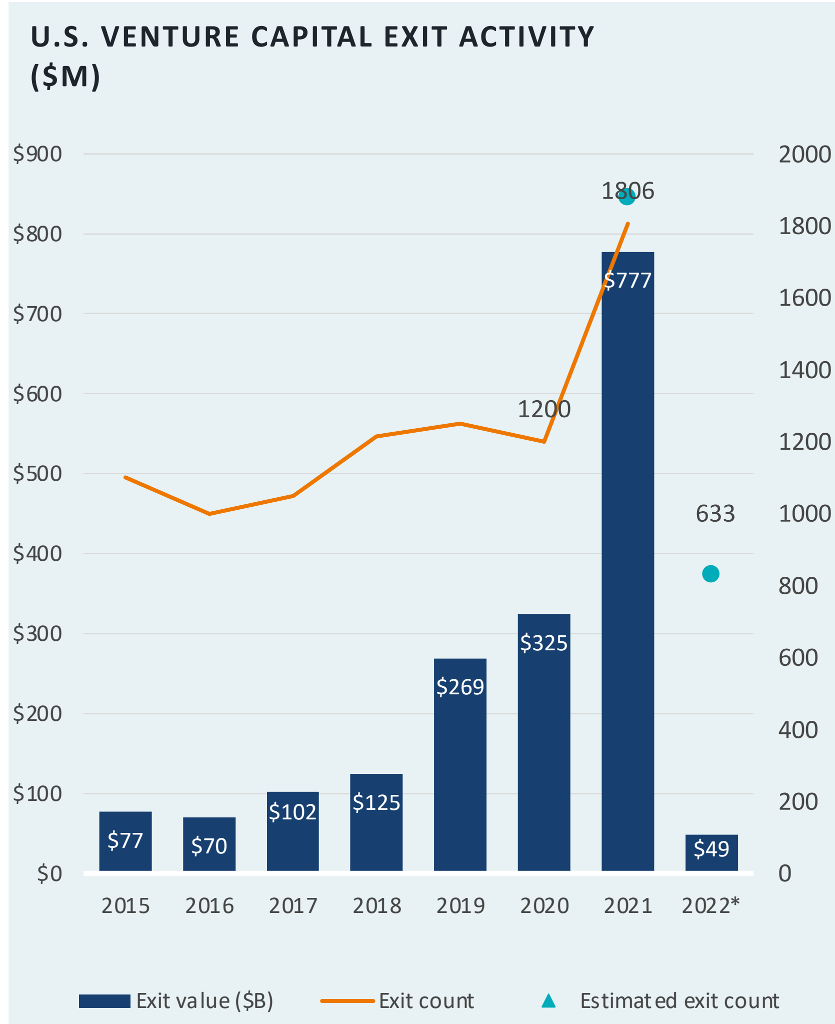


Source: Bloomberg, as of 2/3/23

Difficulties ahead for private markets



Source: Pitchbook Q2 2022. *As 6/30/22

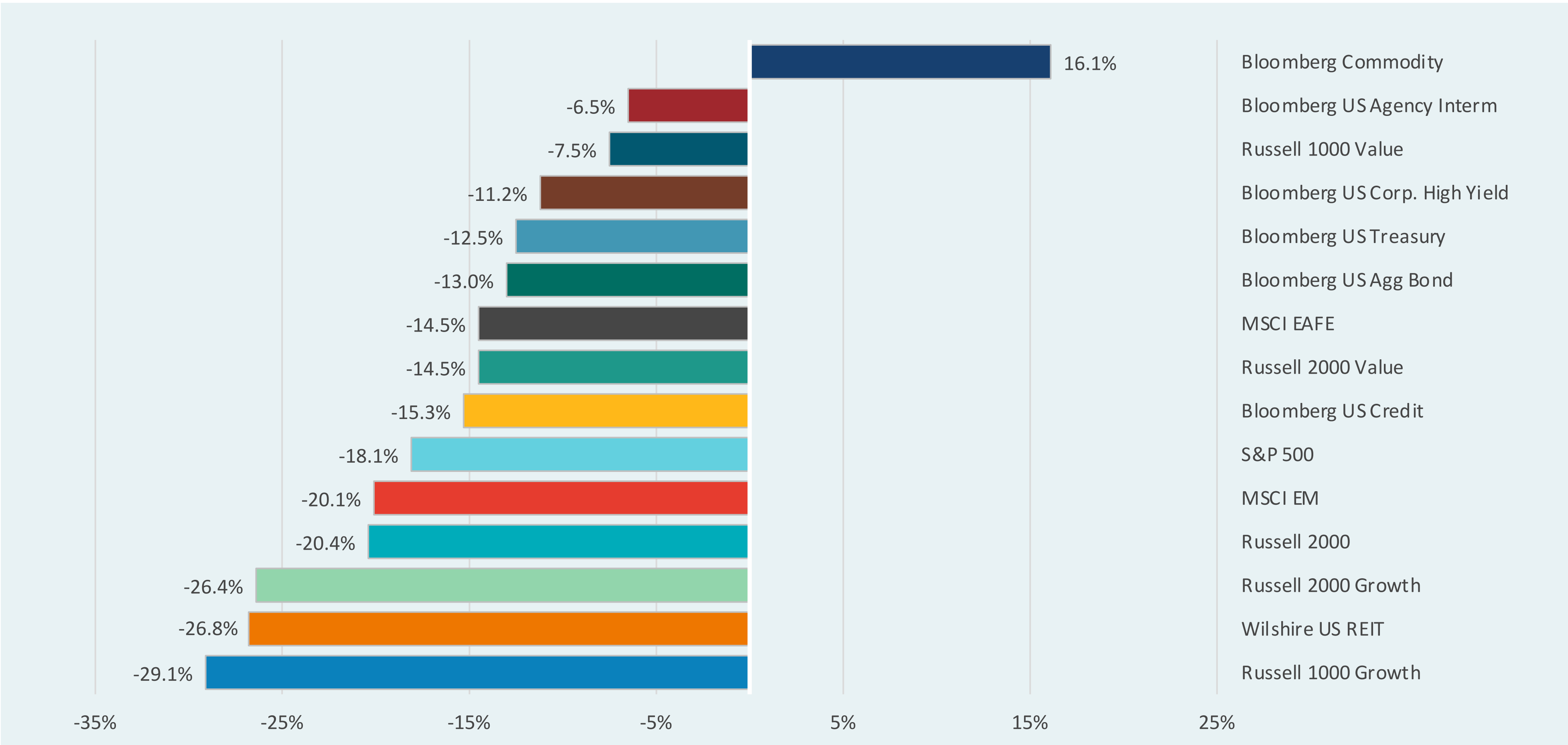


Source: Pitchbook Q2 2022. *As 6/30/22

An upside to the pain of 2022

Paying the price for a better outlook

ONE YEAR ENDING DECEMBER

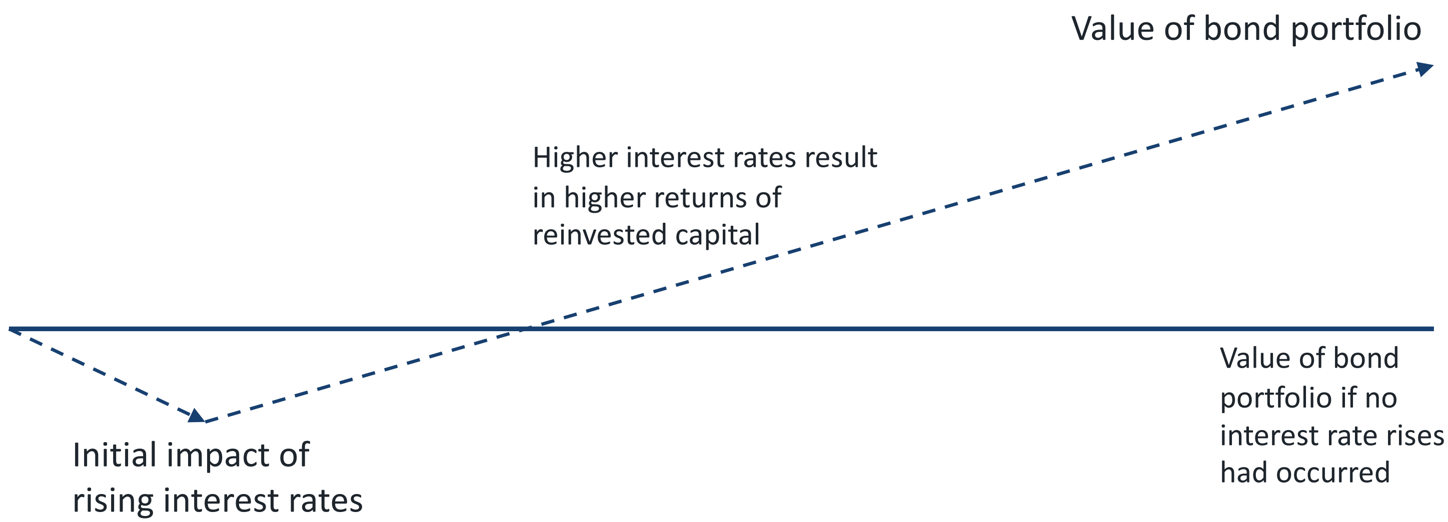


**Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.*

Source: Morningstar, as of 12/31/22

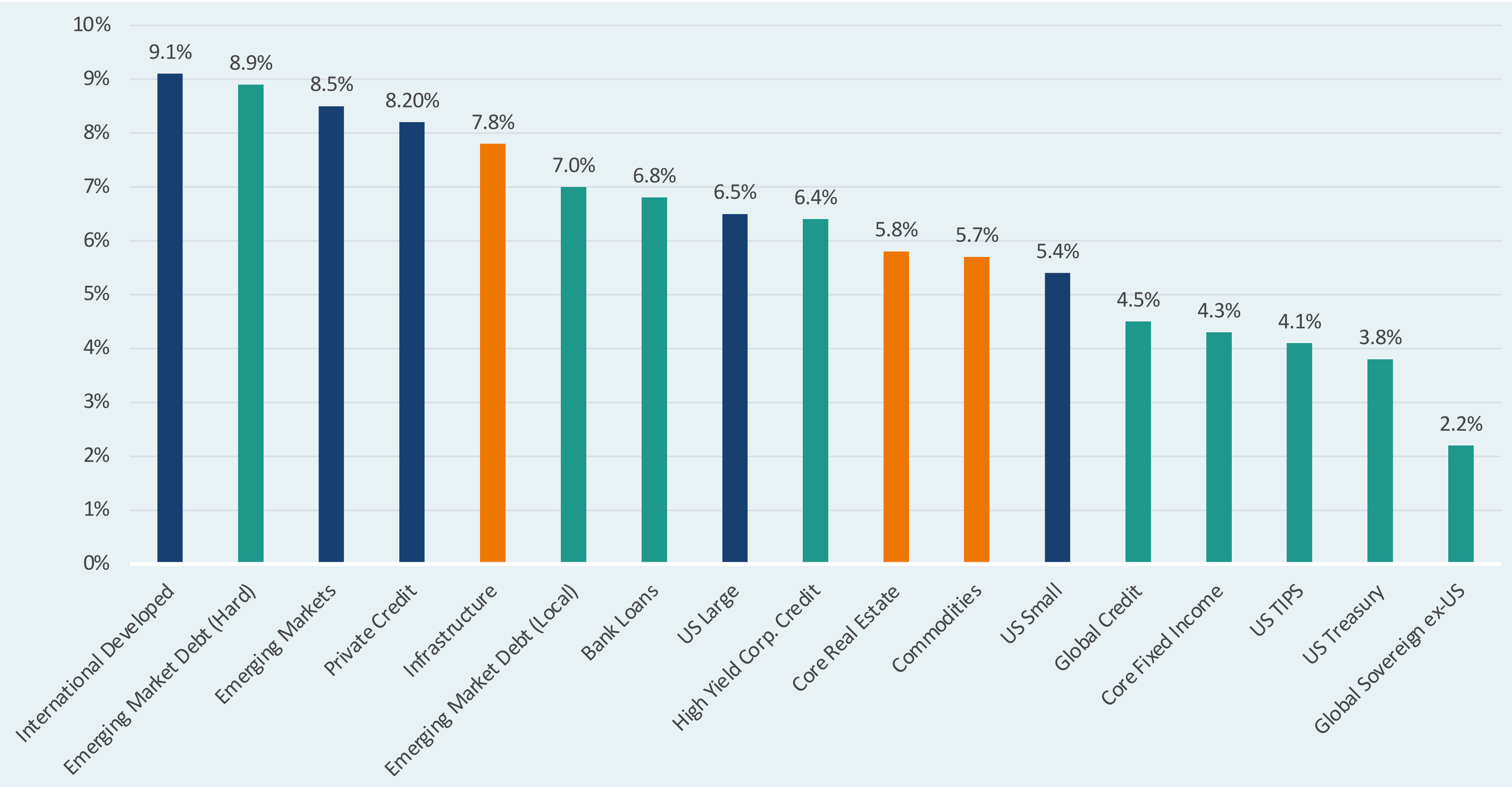
Investors should rejoice in higher yields

Rising interest rates cause short-term performance pain but result in far stronger portfolio performance over the long-term



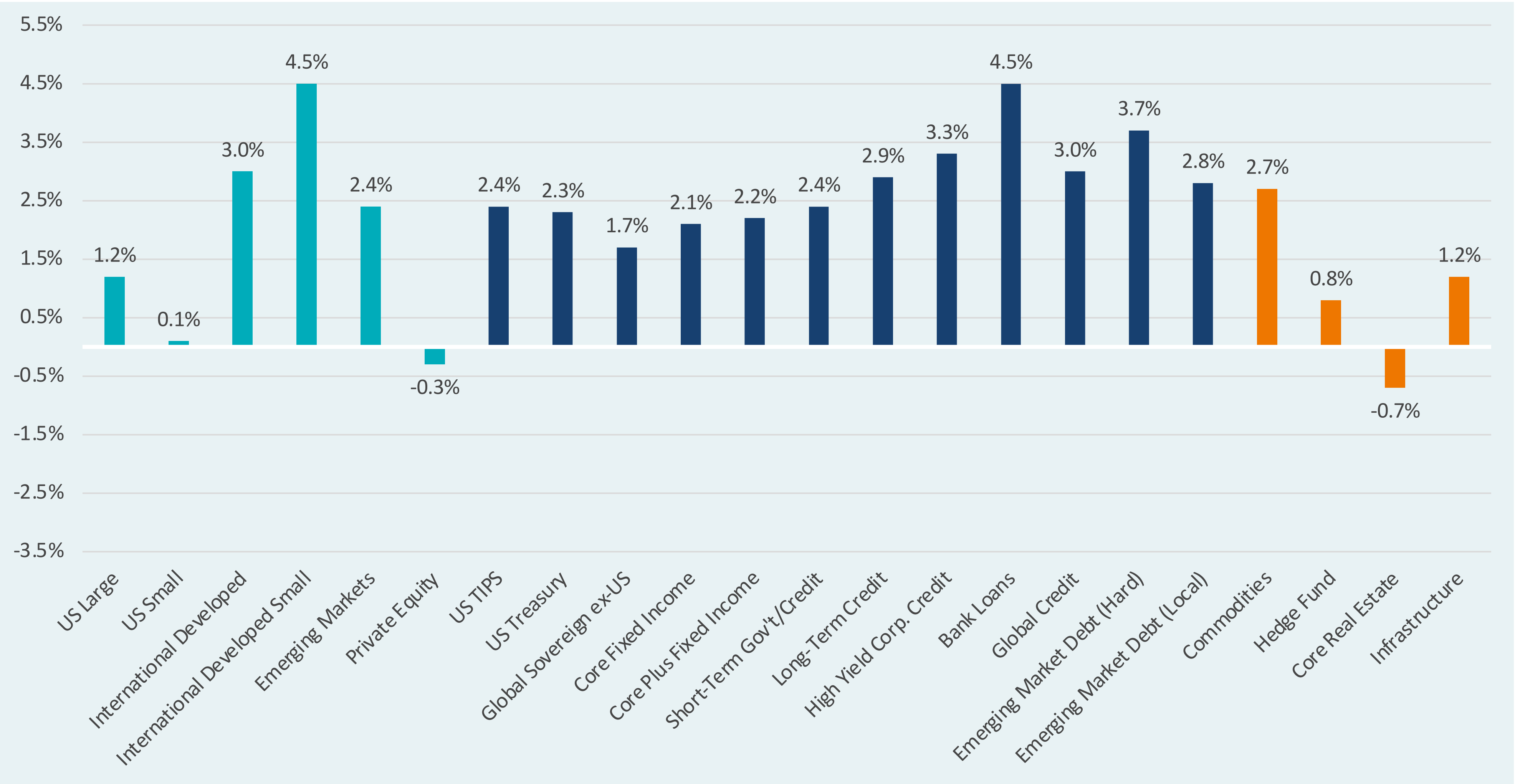
Source: Verus, for illustrative purposes only

10-year expected returns



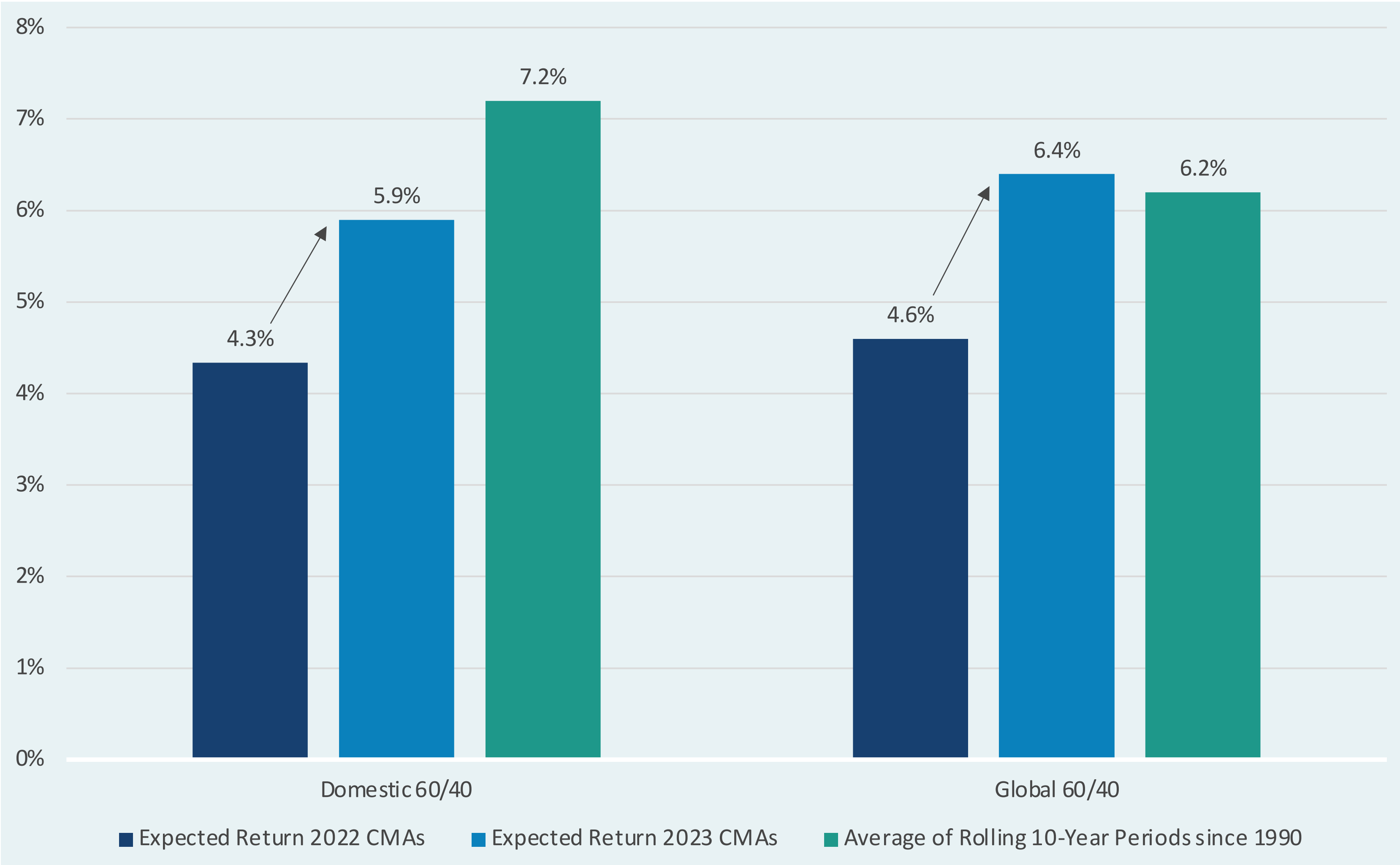
Source: Verus, 2023 Capital Market Assumptions

2023 vs. 2022 return forecast



Source: Verus, 2023 Capital Market Assumptions – change is shown according to 2023 methodology

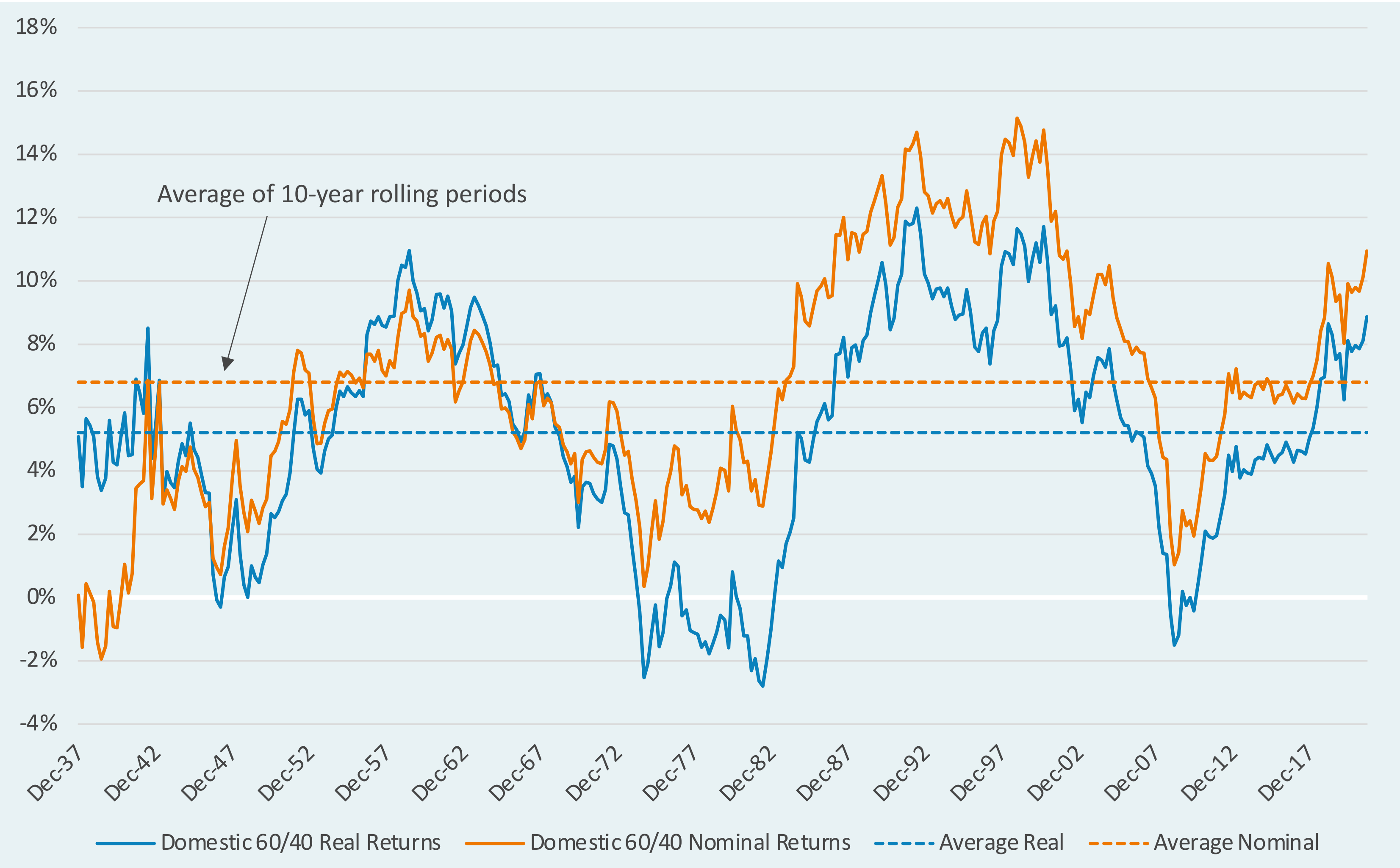
Portfolio expected returns



Rising interest rates and cheaper asset valuations have significantly boosted portfolio expected returns

Source: Verus, as of 9/30/22 - indices used include the S&P 500 Index, MSCI ACWI Index, and Bloomberg U.S. Aggregate Index

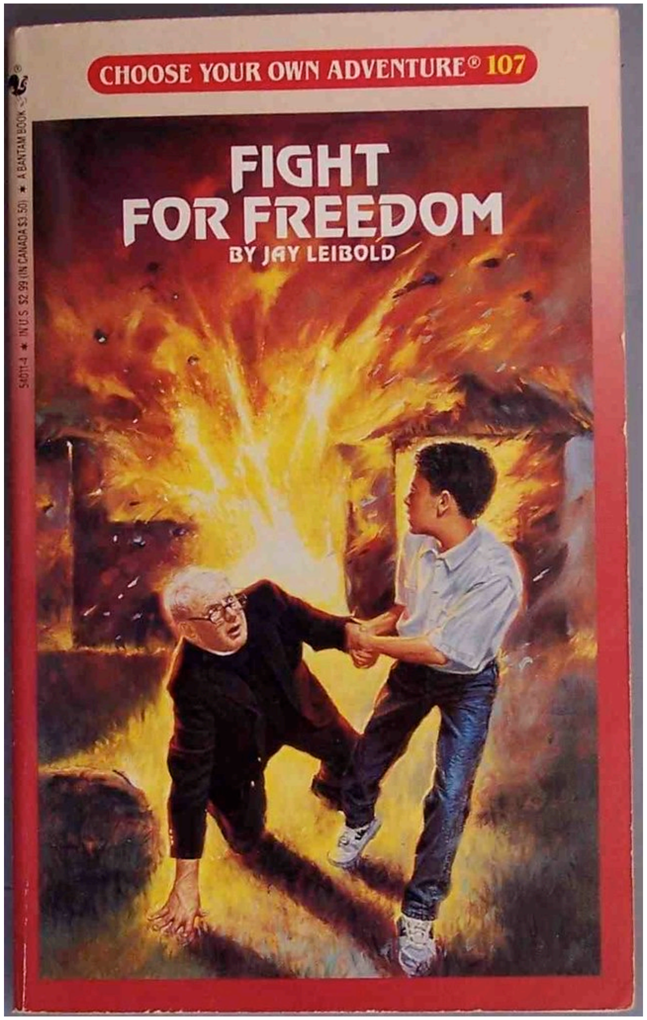
10-year rolling returns



Source: IA SBBI, as of 9/30/21

Simple is sophisticated

The *choose your own adventure* market



Source: Flickr, creative commons

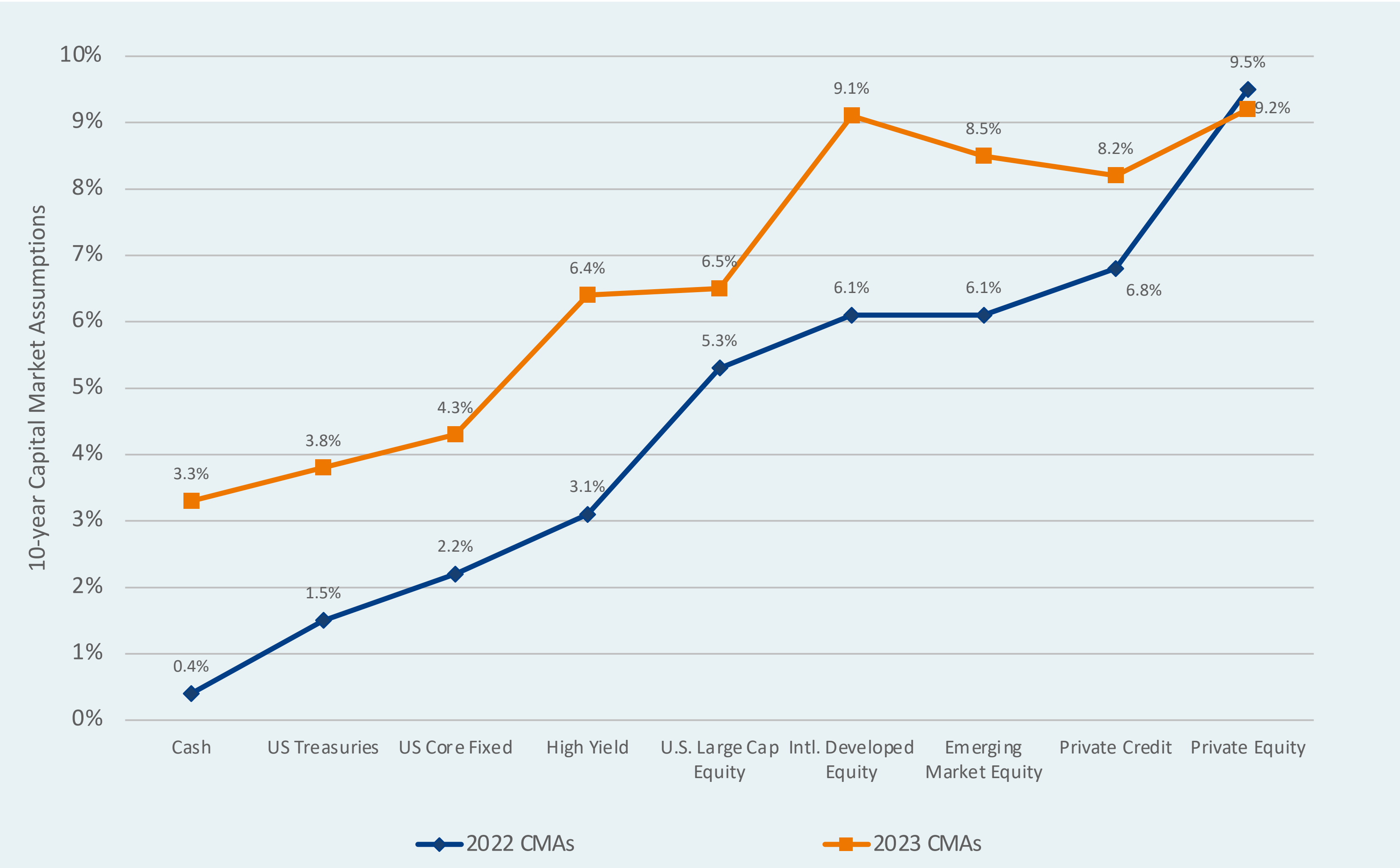
The *choose your own adventure* market

The recent "low expected return environment" pressured investors to take risk

- Accept greater volatility
- Be truly different from peers
- Add portfolio leverage, which can change risk profile
- Accept lower risk, but also weaker performance
- Take on illiquidity risk, which may lead to forced selling
- Tilt into assets with higher expected return, but forecasts may be wrong
- Make portfolio "bets" which might fail to pay off
- Rely on active managers who may fail to produce alpha
- Over-diversify which might reduce return

Source: Bridgewater, Verus

Beggars becoming choosers…



In this new environment, more investors can *choose* how they want to meet their return objectives…

…and more investors will likely choose assets that are simpler, cost-effective, and liquid

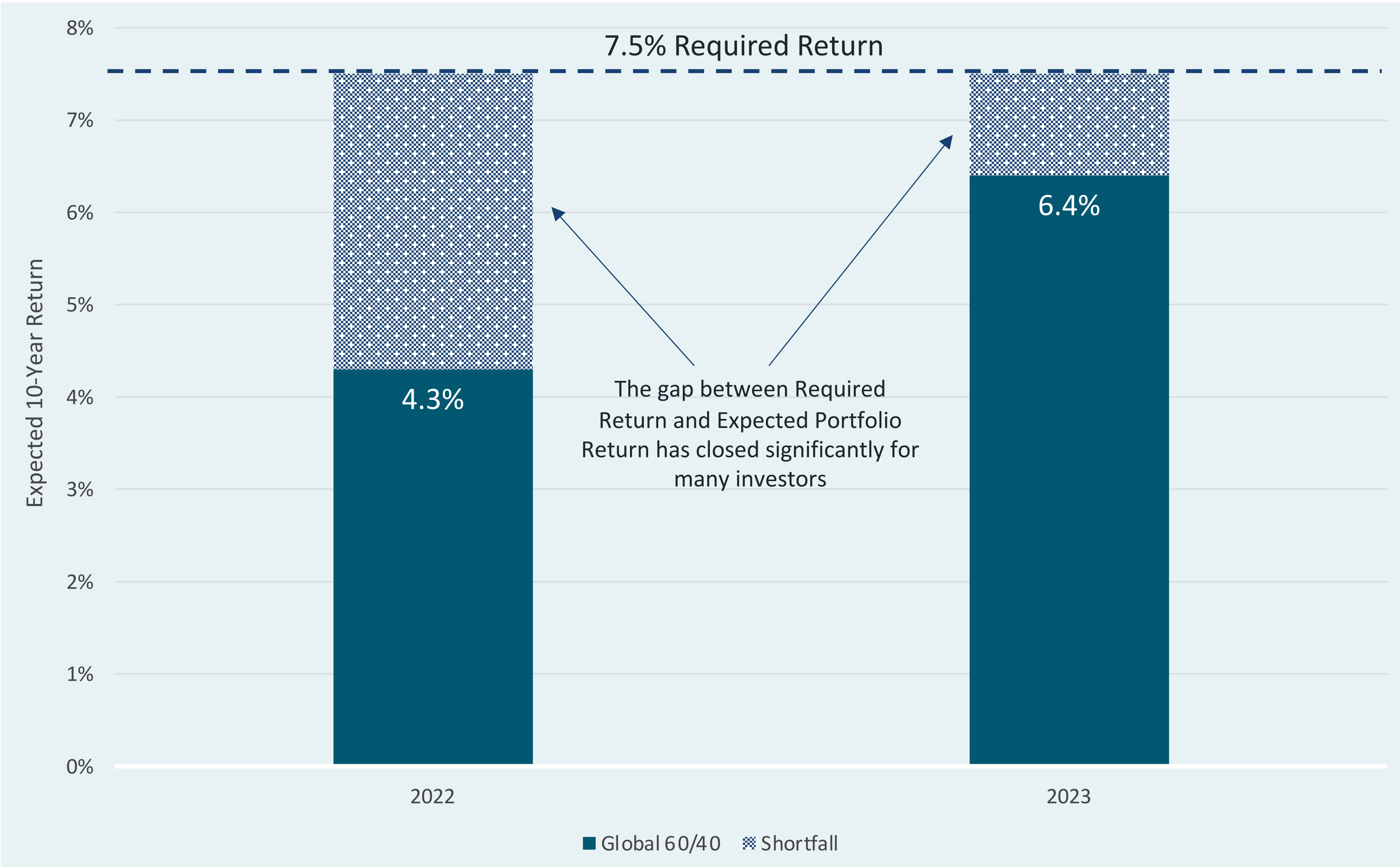
Source: Verus Capital Market Assumptions – data as of 9/30/21 relative to data as of 9/30/22

“Simplicity is the ultimate sophistication”

-Leonardo da Vinci

Wikimedia Commons, Nacio:Vinci, Toscana, 1452 Murió: Amboise, Turena, 1519, author: Alison Restrepo Quiroga

Portfolio expected returns



Rising interest rates and cheaper asset valuations have significantly boosted portfolio expected returns

Source: Verus 2022 & 2023 Capital Market Assumptions, 60% Global Equity 40% Core Fixed Income

Conclusions

Conclusions

—The great withdrawal of liquidity from the financial system will have widespread impacts

—Higher interest rates for longer

—We have likely escaped the *low return environment*

—Simple is *sophisticated*

Notices & disclosures

Past performance is no guarantee of future results. *This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other "forward-looking statements." No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Additional information about Verus Advisory, Inc. is available on the SEC's website at www.adviserinfo.sec.gov.*

Verus – also known as Verus Advisory™.

THE NCPERS

MONITOR

The Latest in Legislative News

March 2023

In This Issue

3 Executive Director's Corner

Photo Illustration © 2023, istock.com

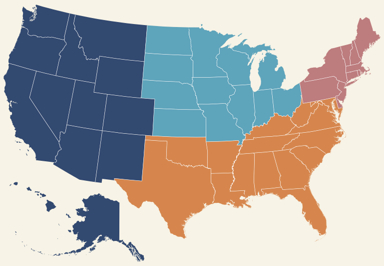
As the largest trade association representing the interests of public pension funds, NCPERS is constantly working to evaluate and optimize its membership benefits to best serve the public pension community.

6 HELPS +

Photo Illustration © 2023, istock.com

HELPS allows eligible retired public safety officers to elect to exclude from gross income up to $3,000 in annual distributions from a governmental retirement plan to pay qualified health insurance or long-term care premiums.

9 Around the Regions



This month, we will highlight Indiana, Pennsylvania, Kentucky, and Arizona.

Governance and Public Pension Returns

Photo Illustration © 2023, istock.com

A [recently released academic paper] by Stanford University's Ashby Monk and Dane Rook argues that institutional investors' identity, or organizational capability, is the key driver of investment returns. They describe three 'enablers'—governance, culture, and technology—as the differentiating factors that can be used to improve the quality of the inputs—capital, information, people, and processes—that drive returns. To test this, they apply this framework to five different traditional "models" (i.e. the Yale model and Canadian model) of institutional investing.

Monk and Rook argue that "to improve long-term performance, investors absolutely need to examine their governance, culture, and technology, as well as ways in which these enablers can be better utilized to improve the quality and combination of their inputs."

How does US pension governance stack up?

Despite the strong investment performance of most US public pension funds, the governance structure of public pensions is often questioned by the media and public. For example, a recent Bloomberg story inaccurately and simplistically portrayed the current system of governance—where boards are comprised of ex-officio, union and retiree members—as ineffective and leading to subpar performance. Comparing US funds' governance structure to those more common with large, aggregated funds in Canada, the author criticized US trustees broadly for lacking an investment or academic background.

Contrary to the Bloomberg article's conclusions, US public retirement systems governed by members from key stakeholder groups (e.g. unions, retirees, government officials, appointees) are as likely, if not more likely, to be effectively managed than are large, aggregated funds in Canada, Holland and other countries where boards are often comprised of academics and "investment professionals" whose proximity to members and stakeholders may be remote.

US public pensions are hardly overseen by 'investing novices,' as the Bloomberg article suggests. Nearly 70 percent of US public pensions' revenue comes from investment earnings, according to the most recent NCPERS Public Retirement Systems Study.

Authors of the 2019 study, *Does Public Pension Board Composition Impact Returns?*, noted that "adequate stakeholder representation – i.e., plan participants, government officials, and general public members with a voting presence on the board – contributes to board efficacy by promoting board legitimacy to various stakeholders."

While it's vital to have the appropriate skill sets to execute fiduciary duties on a board, the growing consensus from researchers is that it's not the only factor in driving returns. Further, investment professionals do not have a crystal ball, as evidenced by the dot com and FTX crashes. Results are not guaranteed.

Despite the strong investment performance of most US public pension funds, the governance structure of public pensions is often questioned by the media and public.

Public funds' median returns measurably outperformed the vast majority of target date funds that are offered under 401(k) plans, which are of course managed by professionals, for the year-to-date through September 30, 2022 amid volatile markets.

Due to better diversification (and impacts of corporate plan de-risking), the public fund median return outperformed the corporate pension fund median returns by one percent over the 10-years ended June 30, 2022, returning 7.4 percent vs. 6.4 percent respectively. On average, state and local government pension plans returned 8.7 percent for the 30-year period ended in December 2021.

And through effective governance, the majority of state and local plans recovered assets within six years of the Great Recession and have strengthened their long-term sustainability, according to new research from the National Institute of Retirement Security.

How does board composition impact returns?

Pension boards have an important role in governance, but how does board composition impact returns? A 2019 study from the Center for Retirement Research at Boston College looked to answer this question. The study cites existing research that demonstrates having both adequate stakeholder representation and appropriate skills sets and expertise to execute fiduciary responsibilities are key to success.

Researchers created a 'Board Effectiveness Index' by scoring plans based on implementation of best practices for board structure, composition, size, and member tenure to analyze the relationship between these factors and a plan's 10-year investment returns.

They found a positive relationship between the score and investment performance, with a 1-point increase in a plan's score correlating with a 14-basis point increase in its 10-year investment return. "Given these results, public pension funds may be best served by taking a holistic view of the many aspects of a board that contribute to its effectiveness, rather than focusing on any single feature," researchers conclude.

Ongoing trustee education is important to ensure board members are equipped with the skills needed to effectively fulfill their fiduciary duties.

No matter the composition of the board, however, ongoing trustee education is important to ensure board members are equipped with the skills needed to effectively fulfill their fiduciary duties. NCPERS offers two programs specifically for trustees—the Trustee Educational Seminar (TEDS) and NCPERS Accredited Fiduciary (NAF) program. Both will be held May 20-21 in New Orleans in conjunction with the 2023 Annual Conference & Exhibition (ACE). ◆

Adapting to the Evolving Needs of the Public Pension Community

Photo illustration © 2023, istock.com

As the largest trade association representing the interests of public pension funds, NCPERS is constantly working to evaluate and optimize its membership benefits to best serve the public pension community. And often, this means continually adapting to the changing needs of the industry.

In the past few years, we've seen both bull and markets. We've adapted to an increasingly digital-first world and seen pensions begin to embrace technologies like mobile apps and online portals. We've seen challenges across industries with recruitment and retention during the 'great resignation.'

NCPERS is constantly working to evaluate and optimize its membership benefits to best serve the public pension community.

And we continue to adapt.

In 2020, NCPERS launched the CEO and CIO roundtables to bring public pension executives together virtually to ask questions and discuss timely topics with peers across the country. This concept expanded in 2022 with the communications roundtable.

To help pensions increase digital access for active and retired plan participants, we partnered with Digital Deployment to offer NCPERS members a 10 percent discount on the PensionX platform.

In 2022, we developed the inaugural Public Pension Compensation Survey to help funds benchmark their compensation and benefits packages against peers. We also launched a monthly roundup of pension industry job listings, RFPs, hiring, and retirement announcements.

And earlier this year, we hosted the inaugural Public Pension Communications Summit to help address the unique communications challenges that public pension plans and industry stakeholders face.

So what's next for NCPERS?

To start, we'll be updating the format of *The Monitor* to be more flexible in order to provide more relevant content about what's happening in the public pension space. You can still expect to find the latest in legislative news and updates from NCPERS, but you'll also begin to see more news about your peers (including a series of [public pension profiles](#)), timely research, and industry happenings.

Overall, NCPERS is ramping up its efforts to highlight our members' innovative work and dedication to serving their active members, retirees, and communities. Put simply, we want you to send us updates about your organization so we can share them with the broader public pension community or provide additional coverage in our publications and other digital channels.

Overall, NCPERS is ramping up its efforts to highlight our members' innovative work and dedication to serving their active members, retirees, and communities.

These updates might include:

- Promotions, retirements, job postings, or RFPs for our career roundups
- Organizational success stories - from communications campaigns to operational efficiencies to DEI initiatives to work anniversaries.
- Suggestions for topics you'd like us to cover on our blog
- Case studies or research
- Any other updates you want to share - we want to hear from you!

Please submit your updates to communications@ncpers.org.

As always, your input is invaluable as we continue to adapt. Please do not hesitate to reach out with any comments or feedback.

HELPS +

By Tony Roda

Photo Illustration © 2023, istock.com

The Healthcare Enhancement for Local Public Safety Act (HELPS) is found at Internal Revenue Code Section 402(l). It was enacted as part of the Pension Protection Act of 2006, and recently amended in the SECURE Act 2.0.

HELPS allows eligible retired public safety officers to elect to exclude from gross income up to $3,000 in annual distributions from a governmental retirement plan to pay qualified health insurance or long-term care premiums. The original HELPS Act required the payment of premiums to be made directly by the retirement plan to the provider of the health care or long-term care insurance.

HELPS allows eligible retired public safety officers to elect to exclude from gross income up to $3,000 in annual distributions from a governmental retirement plan to pay qualified health insurance or long-term care premiums.

To comply with the direct payment requirement, state and local retirement systems had to directly pay often numerous health and long-term care providers and keep track of changes to premium amounts and payment deadlines for thousands and sometimes tens of thousands of retirees. This already challenging task was made even more difficult because providers often were allowed to communicate only with the retiree policyholder and not with the retirement system. Information did not flow seamlessly, and inadvertent errors were made. In addition, due to the complexity, some retirement systems made the decision to not implement HELPS, thereby resulting in retired public safety officers covered by these pension plans being ineligible for the tax benefit.

The SECURE Act 2.0 made direct payment optional and created an alternative to the current method, namely allowing the retirement system to make the distribution to the retired public safety officer. The retiree can now make the premium payment to the insurance provider and remain eligible for the tax exclusion. In cases where the distribution is made to the retiree, the retiree must include with their tax return an attestation that the amount sought to be excluded from the pension distribution does not exceed the amount paid by the employee for qualified health care or long-term care insurance premiums for the taxable year.

Successfully fixing the direct payment requirement in the SECURE Act 2.0 now allows NCPERS and others in the public safety stakeholder community to focus on legislation that would increase the annual exclusion cap under HELPS. The $3,000 cap has not been increased since its inception in 2006 despite significant increases in premiums for health care and long-term care insurance over that 17-year period.

Rep. Abigail Spanberger (D-VA) has introduced H.R. 957, which would increase the annual exclusion cap under HELPS from $3,000 to $6,000. Congresswoman Spanberger was able to secure two Members of the House Ways and Means Committee as original cosponsors of the bill, Reps. Brian Fitzpatrick (R-PA) and Dan Kildee (D-MI). In addition, centrist Republican Don Bacon (NE) is a cosponsor. That is a solid core group of support for the legislation.

The next major step in this effort will be to identify a Senate sponsor for the legislation. It will be important to secure bipartisan sponsors for the bill who also serve on the Senate Finance Committee, which has jurisdiction over the federal tax code.

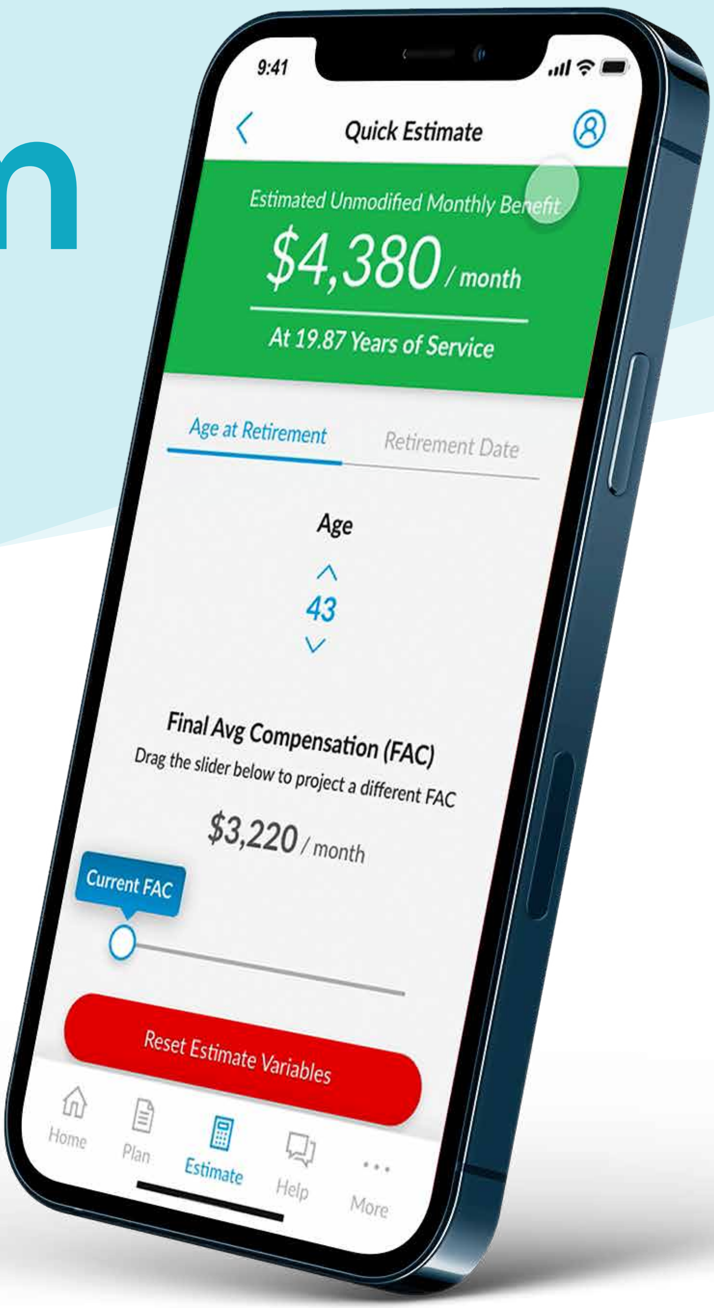
It's important to also point out that numerous retirement-related provisions in the tax code are indexed for inflation, including annual limits for contributions to 401(k), 457(b), and 403(b) accounts. This is done both as a matter of fairness for taxpayers. During the upcoming consideration of legislation to increase the cap under HELPS, we also expect discussions on the issue of whether to index the HELPS annual exclusion for inflation for future years so that Congress does not have to continually revisit the exclusion cap in subsequent years.

While we don't expect retirement legislation to be enacted in the 118th Congress, we will have important work to do over the next two years. We need to refine any new policy proposals, draft legislation, identify bipartisan and bicameral sponsors who serve on the committees of jurisdiction, and introduce the bills. We should look at the 118th Congress as the staging ground for the next round of retirement tax law changes, i.e., the SECURE Act 3.0.

Please be assured that NCPERS will keep its members up to date on any significant developments regarding the HELPS exclusion cap. ◆

Tony Roda is a partner at the Washington, D.C. law and lobbying firm Williams & Jensen, where he specializes in federal legislative and regulatory issues affecting state and local governmental pension plans. He represents NCPERS and statewide, county, and municipal pension plans in California, Colorado, Georgia, Kentucky, Ohio, Tennessee, and Texas. He has an undergraduate degree in government and politics from the University of Maryland, J.D. from Catholic University of America, and LL.M (tax law) from Georgetown University.

NCPERS PensionX Digital Platform



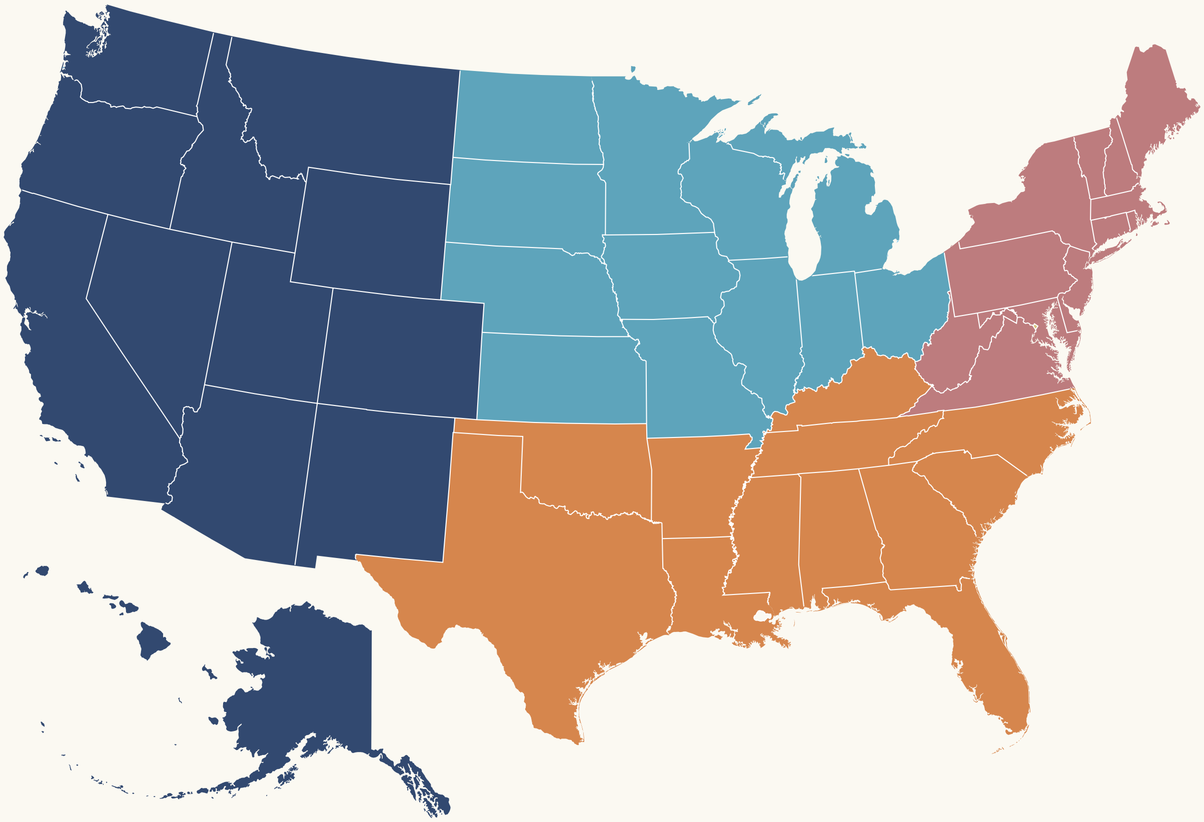
NCPERS has partnered with Digital Deployment to offer its members a **10% DISCOUNT** on PensionX, the premier digital platform that securely enables pensions to engage with active and retired participants via a mobile self-service app and portal.

NCPERS 1941 | pensionX

Learn more about this new NCPERS member benefit at ncpers.org/pensionx

NCPERS Around the Regions

This month, we will highlight Indiana, Pennsylvania, Kentucky, and Arizona.



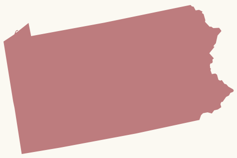
MIDWEST:
Indiana

Throughout the 2023 state legislative sessions, policymakers continue to discuss legislation that would put limitations on how state funds, including pension systems, can invest their dollars. Indiana lawmakers in the state House passed a bill out of committee last month that prevents the Indiana Public Retirement System (INPRS) from considering asset managers that utilize ESG factors in their investment portfolio. The bill goes a step further by prohibiting INPRS from using managers who market ESG investments to other clients. According to an INPRS spokesperson "INPRS does not consider ESG factors, but only financial and economic factors when investing."

In order to understand the impact this legislation could have on state finances, Indiana's Legislative Services Agency Office of Fiscal Management and Analysis prepared a fiscal impact statement. If implemented, INPRS could see an investment loss of $6.7 billion over the next 10 years. This drop in assets could mean state employers seeing a spike in pension contributions to close the gap.

Following this report, Indiana's House of Representatives' Ways and Means Committee passed an amendment that would exempt private market funds from the anti-ESG bill's limitation. With the new amendment, the bill is estimated to cost the state's retirement system $5.5 million over ten years, down from $6.7 billion.

NORTHEAST: Pennsylvania

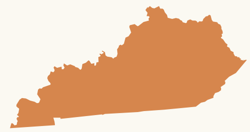


Public pensions help provide income stability for millions of retirees and beneficiaries. But with inflation driving costs up for all Americans, those on fixed incomes are feeling the pinch. To compound the issue, many states have ceased issuing cost-of-living adjustments (COLAs) to retirees. In Pennsylvania, the last COLA was issued over two decades ago.

To help provide relief to retirees across the state, state House Representative Steven R. Malagari is circulating a proposal for his colleagues to co-sponsor that would boost pension benefits and tie COLA to inflationary increases. A similar proposal was raised in the state Senate by Senator John Kane and Senator Katie Muth. The discussion will continue later this month at a joint hearing of the Senate and House Democratic Policy Committees.

Pension spending provides important economic boosts to counties across the country. According to the National Institute on Retirement Security, for every dollar in taxpayer contributions to state and local plans, retirees' spending generated $7.89 in total output in the economy. While an initial analysis by the Independent Fiscal Office noted that instituting a COLA could cost tens of millions of dollars over a decade, other variations of providing economic relief to fixed income beneficiaries would benefit the state's local economies.

SOUTH: Kentucky

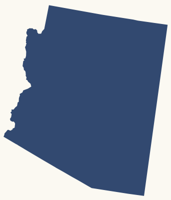


In 2022, the Kentucky General Assembly was one of the first legislatures to pass a law designed to leverage the state's investment portfolio against ESG efforts. The law, SB 205, mandates any financial service firms identified by the state treasurer as boycotting energy companies to stop the practice or lose out on Kentucky's investment portfolio. In January, current state Treasurer Allison Ball published its list of 11 companies viewed as engaging in this practice.

In response to its inclusion on the list, BlackRock issued a statement: "[BlackRock's] only agenda is delivering the best financial results for our clients. On behalf of our clients, we have invested approximately $276 billion in energy companies globally. BlackRock does not boycott energy companies and will continue to be investors across the energy sector."

Currently, BlackRock manages approximately 30 percent of Kentucky's County Employees' Retirement System's (CERS) international equity portfolio. Last month, CERS announced it will not be divesting from BlackRock, citing its fiduciary duty established by state statute prior to the law being passed. CERS trustees approved a letter to the state's treasurer noting that, because SB 205's requirements would force them to breach its fiduciary duties, it is not subject to the law's requirements.

WEST: Arizona



Pensions & Investments recently published its annual survey of the 1,000 largest US retirement plans. Overall, in the year ended September 30, 2022, these funds saw assets fall by 13.9 percent to $12.16 trillion. The Arizona Public Safety Personnel Retirement System, however, reported a 13.13 percent increase in assets to $18.3 billion.

Arizona PSPRS' growth was primarily due to employer contributions, which totaled $2.85 billion during fiscal year 2022. Over the last three years, state, county, municipal and fire district employers have made cumulative additional contributions of $4.86 billion to reduce pension debts.

In a release, PSPRS Administrator Mike Townsend said that "the growth of PSPRS assets continues to be a team effort with our employer agencies, their leadership and policymakers taking the initiative to save Arizona taxpayers money and to protect the retirement benefits promised to our state's first responders, corrections officers and elected officials. The commitment of employers to reducing unfunded liabilities coupled with the innovative work of our investment team has made a huge difference for the system, for our state and for our members." ◆

Photo Illustration © 2023, shutterstock.com

Calendar of Events 2023

May

NCPERS Accredited Fiduciary (NAF) Program

May 20–21
New Orleans, LA

Trustee Educational Seminar (TEDS)

May 20–21
New Orleans, LA

Annual Conference & Exhibition (ACE)

May 21–24
New Orleans, LA

June

Chief Officers Summit

June 19-21
Denver, CO

August

Public Pension Funding Forum

August 20-22
Chicago, IL

October

NCPERS Accredited Fiduciary (NAF) Program

October 21-22
Las Vegas, NV

Financial, Actuarial, Legislative, and Legal Conference (FALL)

October 22-25
Las Vegas, NV

View all upcoming NCPERS conferences at www.ncpers.org/future-conferences.

The Voice for Public Pensions

The Monitor is published by the National Conference on Public Employee Retirement Systems.
Website: www.NCPERS.org • E-mail: info@ncpers.org

PERSist

The Voice for Public Pensions

Spring 2023 | Volume 36 | Number 2

NCPERS Message

Public Pension Funding Ratios Increased in 2022, NCPERS Study Finds

Public pension funds' average funding ratio increased to 77.8 percent in 2022, with nearly 70 percent of pensions' revenue coming from investment returns, according to an annual study conducted by NCPERS.

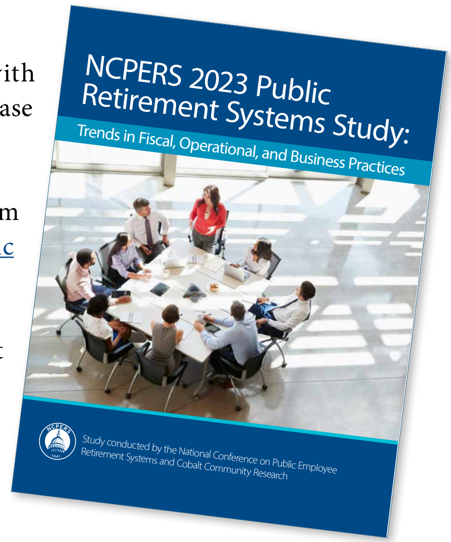
Now in its 12th year, NCPERS 2023 Public Retirement Systems Study: Trends in Fiscal, Operational, and Business Practices provides a benchmark for public retirement systems while tracking funds' fiscal conditions. A record 195 state and local government pension funds responded to the survey, which was conducted in the fall. These funds represent more than 19.6 million active and retired members with combined assets exceeding $3 trillion.

Public pension funds saw, on average, one-year returns of around 11.4 percent, down from 14 percent the year prior. Looking at asset allocations, real estate and private equity saw the largest average returns, at 19.2 and 33.7 percent respectively. There was not a significant shift in asset allocations year over year.

The study's findings highlight public pensions' resiliency in the face of volatile markets, rising interest rates, and disruption in the workforce during the COVID-19 pandemic. Despite the many unprecedented challenges that public pensions have faced in recent years, fund confidence remains high. Surveyed funds were asked, "How satisfied are you with your readiness to address retirement trends and issues over the next two years?" The average rating was 7.8 on a 10-point scale, down only slightly from the year before.

In addition to the report, an interactive dashboard (login required) is available exclusively to NCPERS members. Pension funds can use this tool to filter survey data in a number of ways to compare their performance, assumptions, and expenses to peer groups. Watch a tutorial here to take full advantage of the dashboard's features.

If you need assistance with your login credentials, please contact info@ncpers.org.



Among the key findings from the NCPERS 2023 Public Retirement Systems Study:

- The average investment assumed rate of return for pension funds was 6.86 percent.
- Both administrative and investment expenses were higher than the year before, with the average expense for all respondents increasing to 64 basis points.
- While investment returns are by far the most significant source of pension fund revenue at 68 percent, the average member and employer contributions each rose by one percentage point to 9 percent and 24 percent respectively.
- The aggregated average cost-of-living adjustments (COLAs) offered to members was 2.0 percent, which was slightly above the 1.7 percent COLA offered the year before.
- About 54 percent of the funds that participated in the survey said that environment, social, and governance (ESG) factors are somewhat or very important in their investment decisions.

Last month, NCPERS hosted a webinar to review the key findings. Watch on demand for additional insights from the study's lead researcher, William SaintAmour, Executive Director of Cobalt Community Research. ◆

In This Issue

3 Ready or Not – Revised ASOP No. 4 Is Here

New disclosure requirements are in effect for actuarial valuation reports with measurement dates after February 15, 2023. While intended to add context to results presented in the reports, the new information may create communication challenges for some systems.

5 Navigating a Paradigm Shift

Bryant Vancronkhite discusses the paradigm shift in monetary policy following the pandemic, how he expects companies will be affected, and why active management is likely to present a much stronger value proposition to investors going forward.

7 How to Prepare for Your New Pension Administration Solution

Congratulations! You've decided to replace your pension administration solution and are ready to issue your Request for Proposal. While you navigate the selection process, there's a lot you can do at home so your team is ready to go at kickoff. Here are nine ideas to consider now.

9 Five-Year Market Outlook: How Slow Growth Transitions and Inflation Recalibration Impact Pension Plans

With below-average returns expected over the next five years, getting asset allocation right will be paramount in maintaining funded status. We expect slower economic growth and higher interest rates to result in below-average five-year returns for most asset classes used by pension plans.

13 Balancing Costs of Retiree Healthcare with the Retiree Experience

Plan sponsors struggle to balance current economic pressures with their retirees' needs for more affordable healthcare benefits and participants find it challenging to find new value in their existing retiree healthcare benefits. Opportunities created by recent legislation exist for both plan sponsors and their retirees making benefits more affordable while offering greater value.

15 High Yield: A Compelling Risk-Reward Picture for Long-term Investors

Markets will likely remain on edge in anticipation of a central bank policy pivot, but high yield continues to present compelling total return opportunities for investors willing to ride out the volatility.

17 Turning Points for 2023

William Blair's Olga and Hugo walk into the new year with an eye on potential trend shifts, such as the end of U.S. interest-rate hikes and a weakening U.S. dollar. They discuss China's reopening as a source of growth and consider what it might take to launch the next bull market in global equities.

19 The Cost of Corporate Fraud

Partner Domenico "Nico" Minerva and Associate Michelle V. Cooper discuss a recent study that uses statistical analyses to determine the prevalence in corporate fraud by endeavoring to answer the question, "is the fraud we observe the whole iceberg or just its visible tip?," by estimating the ratio of the "exposed tip to the submerged portion" to determine the "hidden prevalence of fraud."

21 Are Higher Interest Rates a Silver Lining for Public Pension Funds?

While higher interest rates are causing pain in many sectors of the economy, public pension plans may benefit from them because they increase the investment returns they can expect.

24 Global Securities Class Action Landscape: 2023 Outlook & Trends

This article is a brief summary of the Global Class Actions Landscape from 2022 and the predicted trends for 2023. It is based off of the live webinar that was hosted by FRT in February, with Mike Lange, SVP of Worldwide Litigation; ; Emily Fortin, Esq., Director of Legal Operations & Counsel; and Colin Holmes, Esq., Associate Counsel.

26 The Growing Prominence of Continuation Vehicles

Continuation Vehicles, a high growth area within private markets secondaries, are a very attractive investment option for LPs as long as there are appropriate alignment, transparency, and governance mechanisms in place.

Ready or Not – Revised ASOP No. 4 Is Here

By: Piotr Krekora, ASA, EA, FCA, MAAA, PhD, GRS Consulting

Photo Illustration © 2023 shutterstock.com

The Actuarial Standards Board (ASB) provides guidance regarding appropriate actuarial practice for a broad range of actuarial services through a series of Actuarial Standards of Practice (ASOPs), including actuarial services related to pension and retiree group benefit obligations. In December 2021, the ASB adopted revisions to ASOP No. 4 entitled *Measuring Pension Obligations and Determining Pension Plan Costs or Contributions*. The revised standard is effective for any actuarial report with a measurement on or after February 15, 2023 that is issued on or after that date.

Actuarial practice is constantly evolving with changing needs of users of actuarial services and changing environments in which those services are performed, which is particularly evident in the area of retirement practice. This evolution has been reflected through multiple revisions to ASOP No. 4, first adopted in 1990 under the title "Recommendations for Measuring Pension Obligations".

For public plans, the most recent ASOP revisions can be placed in two categories: (1) Low-Default-Risk Obligation Measure (LDROM) calculation and disclosure, and (2) other revisions.

LDROM had already garnered considerable attention both within and outside the pension actuarial community. It can be thought of as the value of the plan's liabilities using an interest rate, or rates, derived from low-default-risk fixed income securities. In terms of the current practice, this would be a liability determined for a plan investing all its assets in such securities. This disclosure needs to be accompanied by commentary to help the intended user understand the significance of LDROM with respect to the funded status of the plan, plan contributions, and the security of participant benefits. The rationale for the LDROM disclosure was included in the ASB's transmittal memorandum to the revised ASOP No. 4:

The ASB believes that the calculation and disclosure of this measure provides appropriate, useful information for the intended user regarding the funded status of a pension plan. The calculation and disclosure of this additional measure is not intended to suggest that this is the "right" liability measure for a pension plan. However, the ASB does believe that this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date.

Other ASOP revisions of significance and interest to public plans are the calculation and disclosure of a reasonable actuarially determined contribution, additional considerations regarding amortization policy, and additional assessments of the implications of the plan's funding policy. These new requirements are generally intended to promote good actuarial practices and as such should not affect many public plans significantly as their reports may already comply with many of the other ASOP No. 4 revisions.

LDROM had already garnered considerable attention both within and outside the pension actuarial community.

While it is difficult to determine if the new requirements were shaped or influenced by comments from parties outside the actuarial profession, many revisions were inspired by a desire within the actuarial community to better address various types of risks affecting retirement systems (although ASOP No. 4 does not directly require risk assessment disclosures). As actuaries begin implementing the new requirements during the upcoming valuation season, many trustees and stakeholders will scrutinize the new information in their reports. Careful communication and commentary will be critical to meeting the goal of helping the intended users better assess long-range health of their retirement systems. ◆

Note: The views expressed in this article are those of the author.

Piotr Krekora, ASA, EA, FCA, MAAA, PhD *is a Senior Consultant in GRS' Fort Lauderdale, Florida office with more than 15 years of actuarial and consulting experience.*

Piotr is a member of the GRS Office of the Chief Actuary. In this capacity, he provides strategic thought leadership to public sector clients as well as ensuring that service is being provided at the highest level by all GRS employees.

Piotr's actuarial expertise covers all aspects of public sector pension and retiree health plan design and operation, including pension and OPEB valuations, asset simulation and cash flow studies, pension and retiree health care studies, cost analyses of proposed plan changes, liability and contribution projections, and designing and implementing cash balance plans as well as other alternative designs.

Navigating a Paradigm Shift

By: Bryant VanCronkhite, CFA, CPA, Allspring Global Investments

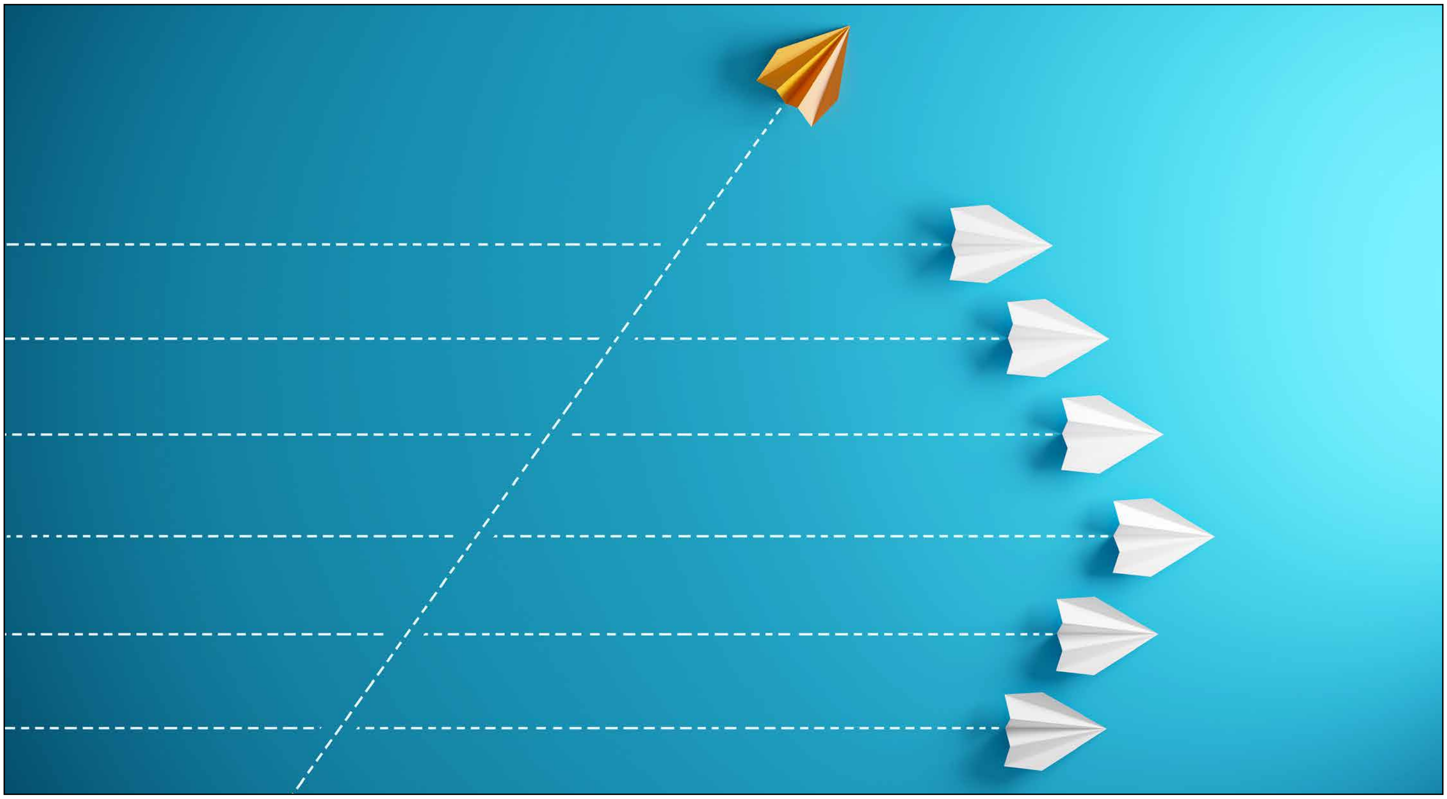


Photo Illustration © 2023 shutterstock.com

What is the biggest risk that equity investors face today?

In my view, the most underappreciated development for equity markets today is the paradigm shift that has taken place in monetary policy following the pandemic. The Federal Reserve has a dual mandate of supporting price stability and full employment. Other central banks have similar competing objectives. The fundamental challenge today is that pursuing both goals will require increasingly different policy prescriptions going forward. Something will have to give, and I think this fact is still dawning on markets.

What changed? In the decades leading up to the pandemic, inflationary pressures created by massive liquidity injections and ultra-low interest rates were offset by deflationary megatrends, such as the offshoring of production to low-cost centers. Today, some of the deflationary trends related to globalization have been reversed, and markets are now coming to terms with structurally higher prices and a growing recognition that central banks may be unwilling or unable to step in and spur growth as they had in the past. Everyone is talking about this now, but I think few have fully comprehended the end game.

In my view, the most underappreciated development for equity markets today is the paradigm shift that has taken place in monetary policy following the pandemic.

So how does this shake out?

There are many zombies masquerading as viable businesses that will soon be exposed as growth inevitably slows in 2023. To see why, consider that the prescription for survival in this environment is the ability to relocate supply chains, secure scarce energy supplies, and invest in further automation and efficiency solutions that can sustain production. These are all costly investments that only companies with financial strength can make. Second, companies will need to raise prices to protect margins and sustain free cash flows, and only companies that hold a strong competitive position will have the ability to do so. The upshot is that, sooner rather than later, you will likely see a growing stratification of markets into winners and losers.

There are many zombies masquerading as viable businesses that will soon be exposed as growth inevitably slows in 2023.

How should equity investors respond?

Active approaches will likely present a much stronger value proposition to investors going forward. Many of the factors that allowed weak companies to keep pace with better-run companies in the years leading up to the pandemic also allowed broad index-tracking strategies to flourish. Everyone won in that environment, which diminished the importance of individual stock selection. Today, that dynamic has flipped. As fundamentals take the leading role in driving return dispersion, I think investors can respond by allocating to investment strategies that actively exploit divergence in fundamentals.

As for our brand of active management, we have long discussed how balance sheet strength foretells the level of flexibility a company has to react to change—to make accretive acquisitions and capital expenditures, invest in research and development, or generate yield by returning cash to shareholders. We use our process to gain confidence in a company's competitive advantage; to ensure it has the willingness and ability to raise prices to offset increased investment needs; and to determine it is making the right investments that will allow success and separation from the pack over the next one, three, or five years. This focus has served us well in prior market cycles, and I think it will do so again in the face of the structural challenges I described. ◆

Disclosures:

Bryant VanCronkhite *is a managing director, co-team leader, and senior portfolio manager for the Special Global Equity team at Allspring Global Investments. Prior to this, Bryant was a senior research analyst on the team, which he joined in 2004 before the acquisition of Strong Capital Management. He began his investment industry career in 2003. He earned a bachelor's degree and a master's degree in professional accountancy from the University of Wisconsin, Whitewater.*

How to Prepare for Your New Pension Administration Solution

By: Laurie Mitchell, Tegrit Software Ventures, Inc.

Photo Illustration © 2023 shutterstock.com

Replacing or reinventing your pension administration solution (PAS) is a significant undertaking for any sized pension plan. It is both a financial burden and a source of stress for staff that typically lasts several years. Being fully prepared before you begin can reduce stress, cost, and delivery time. Here are a few pre-RFP activities that will help your staff and your vendor be successful sooner:

1. Evaluate the condition of your data – is it accurate? Current? Do you have multiple, fugitive data sets that need to be combined? Depending on what your evaluation shows, you may want to hire a data management vendor to cleanse your data before starting the project. Your data vendor will need about six months effort before your PAS vendor can start.

2. Decide which subject matter experts (SMEs) will support what types of functionality (e.g., wages, service, payroll, member statements, etc.). Ensure that your SMEs fully understand their current processes, are aligned with the leadership in terms of how much change to the current processes you are willing to tolerate, and are authorized to provide candid feedback during requirements review. When SMEs are empowered to make decisions, the requirements process moves faster.

Being fully prepared before you begin can reduce stress, cost, and delivery time.

3. If current processes are not documented, write them down. This doesn't need to be extensive; it just needs to be articulated clearly so everyone understands your 'As Is' process. This avoids the need for your vendor to affirm the As Is with your SMEs before starting on the 'To Be' process.

4. Collect, review and update the forms and letters that you send to your members regularly, including your Member Statement. Think about what you like and don't like about these letters before you enter requirements gathering.

5. Consider budgeting for temporary staff who can step in behind your permanent staff and keep the wheels on the current bus while your permanent staff builds the new

bus. This is most helpful during requirements gathering. Knowing their customers are being served gives your staff relief and allows them to focus on the new work without being overwhelmed. Your staff will be grateful that you considered their wellbeing and will be able to focus better on your new solution.

6. Ensure that there is time and space reserved for collaboration. This would be a room/area (physical or virtual) that is set aside for team members to gather as needed to look at a design, discuss a requirement or document an issue.

7. Plan for milestone celebrations. For example, when a major release is deployed, take time to celebrate all the hard work with the project team (your internal staff, your consultants and your vendor). That brief pause before starting the next phase lets the team recognize their collective accomplishments. Celebrating together supports healthy team dynamics and fuels collaborative energy.

8. Change management is critical for success. Help your team adapt to new processes and the new system by scheduling frequent hands-on opportunities to view and play with the new system. Your staff – even those who aren't involved in the new development – will feel more engaged and more enthused about the project when they can touch it regularly. It would be ideal to plan for this time at the start of your project and announce it to your staff so they know their concerns were considered from the beginning.

9. COVID and other viral illnesses will remain a challenge for on-premise activities for you and your vendor. Ensuring that you have the equipment necessary for your team members to conduct project work remotely is ideal and could avoid a project delay while equipment/training is established. ◆

__Laurie Mitchell__ has worked in the pension industry since 2003 when she joined the Michigan Office of Retirement Services. There she served in many roles, including leading portions of their pension replacement project, and served eight years as their Customer Service Director. After retiring, she joined Tegrit where she brings an agency perspective to their RFP responses and project implementations.

Five-Year Market Outlook: How Slow Growth Transitions and Inflation Recalibration Impact Pension Plans

By: Bob Parise, Northern Trust Asset Management

Photo Illustration © 2023 sistock.com

With below-average returns expected over the next five years, getting asset allocation right will be paramount in maintaining funded status. We expect slower economic growth and higher interest rates to result in below-average five-year returns for most asset classes used by pension plans (**Exhibit 1**). Equity returns are challenged by a lower valuation ceiling and profit margin compression because of higher interest rates. Below-average returns would create hurdles for pension funds looking to build cost-efficient, lower-risk portfolios with adequate performance over the next five years.

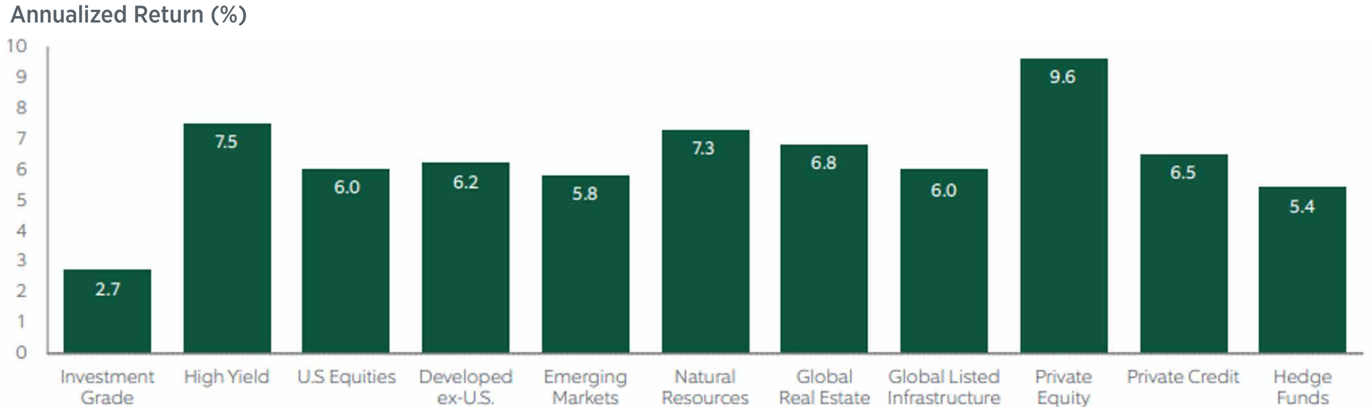
Slow Growth Transitions

The shifts from pandemic to endemic, globalization regionalization and fossil fuels to renewable energy represent economic challenges for a global economy already facing high debt and changing demographics.

Key Considerations for Pension Plans

As slow economic transitions unfold over the next five years, market volatility and uncertainty will likely remain high, due to slower growth expectations. Various economic factors, including weakened economic growth and lingering supply chain issues, are new to investors and add to the potential for negative market surprises given this combination of market concerns is historically

EXHIBIT 1: FIVE-YEAR FORECASTS FOR KEY ASSET CLASSES



Northern Trust Asset Management, Bloomberg. Annualized return data in local currency from 6/30/2017 to 6/30/2022. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index. Past performance is not indicative of future results.

unprecedented, especially given the push towards economic globalization in recent decades. Lower volatility equities have historically demonstrated asymmetric returns, meaning they tend to capture more upside when equities gain than downside when equities fall, as shown in **Exhibit 2**. This has increased the chance of outperformance amid turbulent markets.

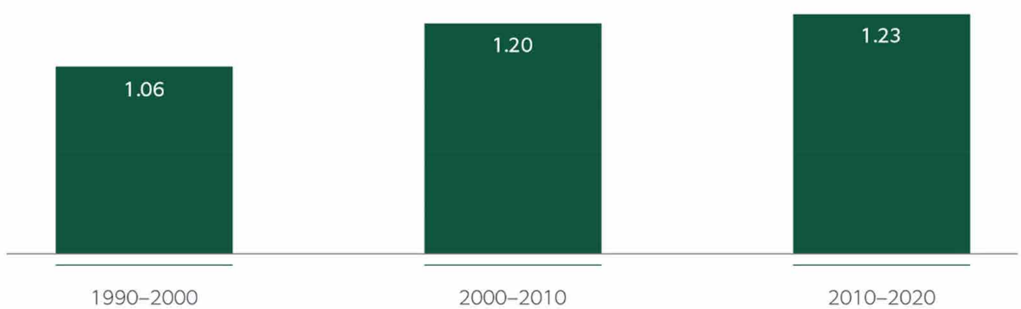
Inflation Recalibration

Post pandemic global supply chain complications and worker shortages left a bigger mark than expected on inflation. Still, many investors and policymakers believed inflation was "transitory" and would eventually revert to normal levels. This all changed with the

EXHIBIT 2: THE ASYMMETRIC RETURN PROFILE OF LOW VOLATILITY STOCKS

Over the past three decades, the ratio of upside capture to downside capture in the Russell 1000 Index has increased, a return profile that makes outperformance more likely during turbulent markets.

Up/Down Capture Ratio of Low Volatility Equities[1]



	1990–2000	2000–2010	2010–2020
Up Market Capture Ratio	82%	66%	84%
Down Market Capture Ratio	78%	55%	68%
Up/Down Capture Ratio	**1.06**	**1.20**	**1.23**

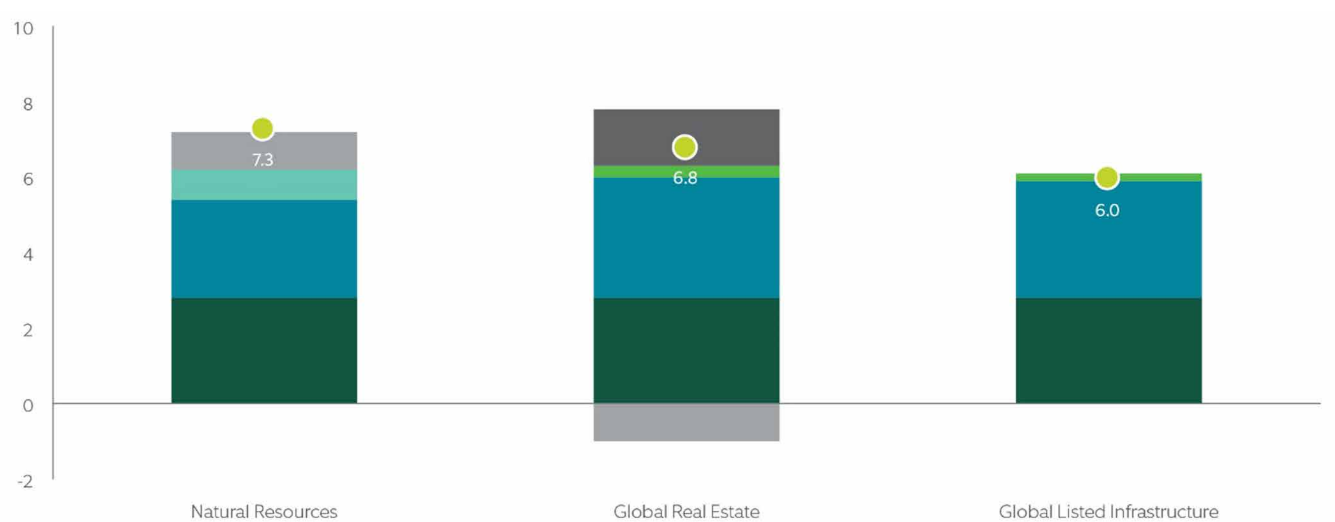
[1]Low Volatility research portfolios are formed by selecting the bottom 30% of securities ranked by trailing 1-year daily volatility. Research portfolios are capitalization weighted and rebalanced quarterly.

Source: Northern Trust Asset Management, FactSet, Russell 1000 Universe, 12/31/1989 through 12/31/2019. For illustrative purposes only. Past performance is no guarantee of future results. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index.

EXHIBIT 3: DIVERSIFICATION ON DISPLAY

Real assets should shine in a more uncertain and higher inflationary risk regime.

Northern Trust Five-Year Annualized Real Assets Return Forecast (%)



Source: Northern Trust Asset Management, Bloomberg.

war in Ukraine, which triggered soaring food and energy prices. The inflation genie escaped the bottle and putting the genie back will take some time. Still, we believe the worst has passed and we expect inflation to moderate gradually.

Key Considerations for Pension Plans

With likely elevated inflation for a while, plans need to reassess the risks inflation creates in their portfolios. Real assets can provide protection against unexpected inflation, while real estate and listed infrastructure offer additional risk exposures for portfolio diversification and higher yields than traditional equities.

__Bob Parise__ is managing director, head of sales and relationship management, and practice lead for public funds and Taft-Hartley plans for the institutional client group at Northern Trust Asset Management. He is a member of the Business Leadership Council. Bob collaborates across sales and client relationship management to establish business strategy and lead the delivery of investment solutions in the equity, fixed income and alternative asset classes. Bob has more than 25 years of industry experience. He holds a bachelor's degree in business with an emphasis in finance from Western Illinois University and an MBA from DePaul University.

Final Thought: Be Creative With Risk

We anticipate some deterioration in the challenging equity environment ahead with developed market corporate profit margins at historically high levels. Plans will need to be nimble and dynamic with their risk budgets in order to hit their short- and long-term return targets. Given slow growth and elevated inflation, plans can look to private markets or low volatility strategies to close the forecasted return gap from their equity allocations over the next five years.

To learn more about how to position your portfolio to achieve your plan's objectives over the next five years, contact Bob Parise. ◆

For more information about disclosures, please view page 7 of *the full paper*.

Pension Industry Careers: Job Listings, Hiring, and Retirement Announcements

Brought to you by NCPERS

Balancing Costs of Retiree Healthcare with the Retiree Experience

By: Trevis Parson, WTW

Plan sponsors and participants are both under increasing financial pressure.

Costs are on the rise. As the nation experiences the effects of inflation on fuel, food and housing, retired Americans on fixed incomes especially feel the pinch.

While these increases may feel modest, larger cost increases on other major budget items leave little room for healthcare expenses and may force seniors to forgo necessary healthcare. For many retirees fortunate enough to have coverage from their former employer, especially those in plans with fixed-dollar benefit caps, the costs have become so great that retirees are waiving former employer coverage altogether.

Photo illustration © 2023 shutterstock.com

In 2023, healthcare costs are projected to increase

4.8% — Up from 3.6% in 2022 for Pre-Medicare retirees

2.7% — Up from 2.1% in 2022 for Medicare-eligible retirees

Sponsors are looking for ways in which they can balance economic pressures with the need to best attract and retain talent, while honoring commitments to healthcare retirees value.

Retiree medical plan sponsors feel the pressure, too. Not only from rising fuel prices driving up input costs, but also from rising interest rates that squeeze investment opportunities and tight labor markets that pressure the workforce balance. Sponsors are looking for ways in which they can balance economic pressures with the need to best attract and retain talent, while honoring commitments to healthcare retirees value.

Unfortunately, many sponsors struggle to find the balance and offer that value as the retiree healthcare landscape continues to respond to economic and legislative change.

49% say that benefits are **too expensive** to maintain,

33% feel the need to **reduce the burden** of benefit administration, and

36% seek to **reduce financial risks**.

63% of sponsors recently surveyed plan to make changes to their retiree healthcare benefits over the next three years, even as 37% have already implemented some degree of changes in the past three years.

Opportunities exist for plan sponsors to improve the value of retiree healthcare benefits.

For Medicare-eligible retirees, Medicare Advantage plans can provide incremental financial value above and beyond traditional Medicare. This has driven Medicare Advantage enrollment to nearly half of all Medicare members. The great majority of these Medicare Advantage enrollees are in individual products — many purchased with the help of a private marketplace. Others enroll through group Medicare Advantage plans sponsored by their former employer. With respect to prescription drug benefits, the Inflation Reduction Act is improving Medicare Part D by eliminating catastrophic cost sharing and implementing a maximum out-of-pocket limit of $2,000 per person per year beginning in 2025.

For Medicare-eligible retirees, Medicare Advantage plans can provide incremental financial value above and beyond traditional Medicare.

In the absence of Medicare, costs for health plans for retirees not yet 65 are much greater to many of those retirees and their employers. Some employers couple their Pre-Medicare retirees with their active employee populations to spread the higher retiree cost and risk over a larger population. However, in a tight labor market and with affordability a key concern, employers need more effective solutions.

Fortunately, recent legislation has provided cost-effective alternatives. Recent legislation established federal premium tax credits to reduce premiums for individual health insurance. These premium tax credits have fueled enrollment growth in individual plans, which is driving increased carrier participation and premium stability in the individual health insurance market. As a result, employers are looking to shift scarce financial resources away from their current group plan for retirees and toward the purchase of health insurance through an individual marketplace.

1 in 5

plan sponsors (22%) have moved or are considering moving away from their Pre-Medicare group plan.

The current economic environment is challenging to both plan sponsors and participants to find new value in retiree healthcare benefits. Today's market offers many new opportunities to both provide retirees more benefit security and provide sponsors the flexibility to more affordably offer retirees the benefits they value.◆

Trevis Parson, FSA, MAAA, FCA *is an expert on exchange-based healthcare offerings and has worked with many employers to redesign their retiree medical plans to reduce benefit and administrative costs while providing retirees enhanced choice and value. He currently serves as Chief Actuary of the Individual Marketplace for Via Benefits by WTW.*

High Yield: A Compelling Risk-Reward Picture for Long-term Investors

By: Chris Sawyer, Adrienne Butler, and Scott Roth, Barings

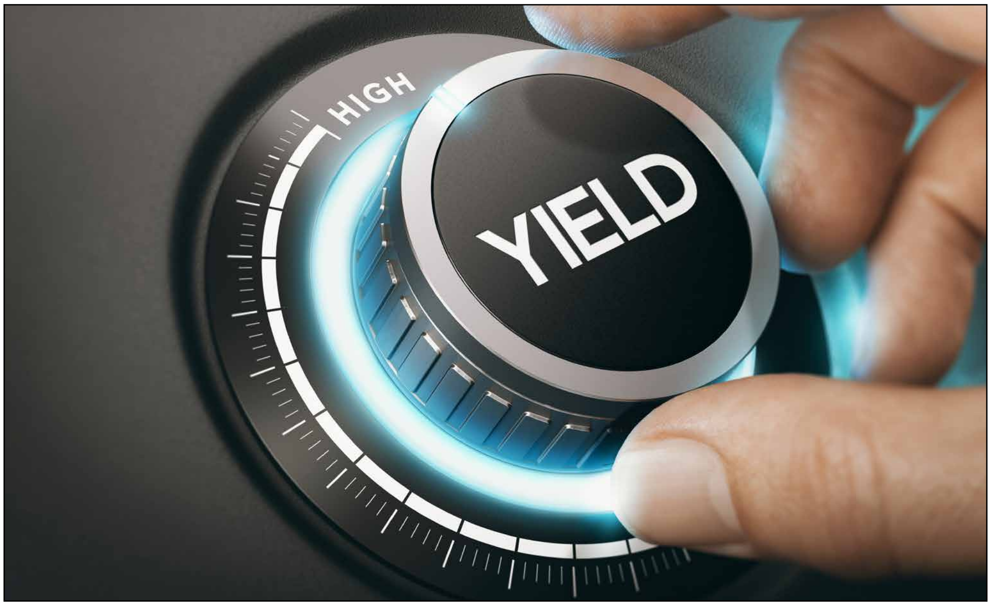


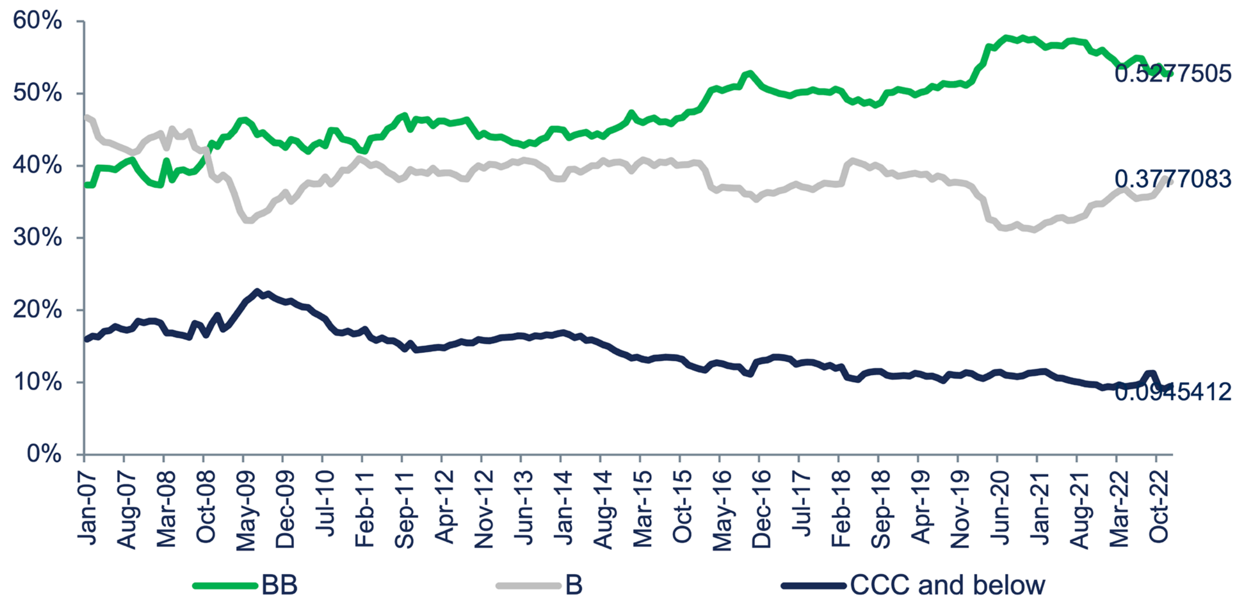
Photo Illustration © 2023 shutterstock.com

The list of factors driving uncertainty across financial markets is long. But for longer-term investors, high yield bonds and loans continue to present compelling total return opportunities.

Earnings in Focus

If 2022 was the year of interest rate volatility, corporate earnings will likely take center stage in 2023. As inflation climbed last year, many companies maintained enough pricing power to pass higher costs through to their customers; earnings, as a result, remained more durable than some market participants were expecting. Looking across the high yield universe today, the fundamental picture seems to be darkening. For one, the lagging effect of 2022's rate hikes has started to stress parts of the economy and is beginning to impact aggregate demand. Compounded by still-elevated labor costs, the ability of companies to pass through higher prices is starting to deteriorate, which will likely lead to some contraction in earnings going forward.

A HIGHER-QUALITY HIGH YIELD MARKET



The technical picture has also remained challenging for high yield, particularly loans, against a backdrop of more challenging liquidity and retail outflows in the U.S. Compounding this, there has been a continued lack of new collateralized loan obligation (CLO) issuance, which has historically accounted for a large portion of loan demand.

On the positive side, most high yield issuers still have the flexibility to continue to service their debt through a period of economic weakness and remain in a stronger financial position today than they would have been before the pandemic. At the same time, the credit quality of the high yield market has improved considerably over the past 15 years—BB issuers comprise 53% of the market, while single-B companies make up 38%.

While the difficult macroeconomic environment is unlikely to fade anytime soon, mild recessions have not necessarily been bad environments for high yield markets in the past.

Attractive Total Return Potential

While the difficult macroeconomic environment is unlikely to fade anytime soon, mild recessions have not necessarily been bad environments for high yield markets in the past. Investors who stayed invested in high yield through periods of volatility, and even economic decline, have historically been rewarded with attractive, long-term returns. This is partly because high yield, unlike equities, does not require strong economic growth to perform well. Rather, what matters more is an issuer's ability to continue to meet the interest payments on its outstanding debt obligations. Slow GDP growth, or even a short period of mildly negative growth, is unlikely to drive significant increase in defaults—particularly across a higher-quality market with solid underlying fundamentals.

In the event of a recession, the potential downside in credit is also likely to be more limited given how challenging 2022 was for most financial markets. While spreads would likely experience some widening from current levels, we do not expect material widening to the extent that total returns would turn negative—particularly given the higher quality of the market and solid fundamental backdrop.

Focusing on the Long Term

In the current environment, investors do not need to take on excessive risk to earn potentially attractive returns. In higher-rated parts of the bond and loan universe, the risk-reward picture remains compelling. However, a credit-intensive approach is crucial—to not only avoiding additional downside, but also identifying issuers that can withstand today's headwinds. ◆

Adrienne Butler *is Co-Head of Barings' U.S. High Yield Investments Group and Head of U.S. CLO Funds. She is also a member of the U.S. High Yield Investment Committee. She is responsible for new CLO marketing and formation as well as existing CLO portfolio management. Adrienne has worked in the industry since 1990 and her experience has encompassed sell-side relationship banking, media and telecom specialty lending, and CLO portfolio management. Prior to joining the firm in 2002, she was part of the acquisition of First Union Institutional Debt Management ("IDM"), where she was a senior analyst in IDM's Loan Research Group. Before IDM, she was a vice president/relationship manager at First Union Corporation and worked in corporate banking at First Union National Bank of South Carolina. She also served as a loan officer at NationsBank. Adrienne holds a B.A. from Furman University and an M.B.A. from University of Notre Dame's Mendoza College of Business.*

Scott Roth *is Co-Head of Barings' U.S. High Yield Investments Group, Chair of the U.S. High Yield Investment Committee and a member of the Global High Yield Allocation Committee. His responsibilities include portfolio management for various high yield bond total return strategies. Scott has worked in the industry since 1993 and his experience has encompassed fund management, underwriting, leveraged loans and high yield. Prior to joining the firm in 2002, he was a vice president at Webster Bank and was a high yield analyst at Times Square Capital Management. He also served as an underwriter at Chubb Insurance Company. Scott holds a B.B.A. from Western Michigan University, an M.B.A. from the Ross School of Business at University of Michigan and is a member of the CFA Institute.*

Chris Sawyer *is Head of Barings' European High Yield Investments Group as well as a member of the firm's European High Yield Investment and Global High Yield Allocation Committees. Chris is responsible for the portfolio management of several loan, high yield bond and multi-credit strategies. Chris has worked in the industry since 2005. Prior to joining the trading team in 2008, he was a member of the portfolio monitoring team where he was responsible for the ongoing credit analysis of individual portfolio assets. Chris holds a B.Sc. in Economics and Business Finance from Brunel University.*

Turning Points for 2023

By: Olga Bitel and Hugo Scott-Gall, William Blair

Photo Illustration © 2023 sistock.com

Hugo: We've walked together through a tumultuous 2022, and now we're ready to peer into 2023. As you consider all the variables, what looks different to you this year in terms of where we might find growth?

Olga: The first trend reversal we need to talk about is the fed funds rate. The U.S. central bank is likely to stop tightening in 2023. The second likely big reversal is the depreciation of the U.S. dollar vis-à-vis other major currencies. Interacting with both of these potential shifts is China's reopening. As a result, we are likely to get not only a boost in production but perhaps also a short-term boost in consumption and growth in and outside of China.

Hugo: What's your model for how to think about investing around a weaker dollar?

Olga: The period that we look to be entering in the 2020s is most reminiscent of the last what I would call "normal" expansion that we experienced, which was 2003 to 2007. A lot of the changes that we're highlighting today are exactly the same macroeconomic setup as we experienced then. That period of economic expansion was extremely fruitful for equities. We saw equities markets returning around 15% on average during that entire time period, and virtually all of that performance was driven by earnings growth. Obviously, the types of companies that lead the charge this decade are likely to be different. But the broad macroeconomic environment may very well end up being similar.

Hugo: It was put to me that the next bull market will begin when the following conditions are met. The first is that the darlings of the previous bull market—big tech, high growth—are derated sufficiently, such that investors no longer view them as outperformers. The second is that there's some kind of credit event caused by this steep slope of Fed tightening. The third is that the dollar breaks.

Olga: We already have at least two of the three conditions, and possibly all three. In terms of a major credit event, these are devilishly difficult to forecast. Obviously, the more the Fed raises

The period that we look to be entering in the 2020s is most reminiscent of the last what I would call "normal" expansion that we experienced, which was 2003 to 2007.

rates from here, the greater the probability of such an event. We've had a series of smaller credit events in 2022, so some of the weaker sovereigns have already defaulted and have asked for IMF help. We've also had the crypto explosion; the value of the bitcoin trade is roughly a third of what it was at the beginning of 2022.

None of these feels like a whale. But I don't know if we need a credit event of the magnitude that people evoke when they talk about the 2008 global financial crisis.

The shakeout in the consumer-facing technology platforms that have been dominant in the past decade is definitely giving way to something. Now, what is that something? Are we on the cusp of another commodity supercycle? Maybe we need a lot more lithium and nickel, if we're all to be driving electric vehicles by the end of the decade. U.S. scientists recently announced a major breakthrough in nuclear fusion. COVID has exposed all sorts of vulnerabilities in the superefficient supply chains; we may see more duplication and production for the domestic markets that are closest to you. What underpins growth in virtually every sector today is semiconductor chips. The example that I've been thinking about a lot recently is 5G buildout. For now, I see no obvious candidates to lead the next bull market, but it almost certainly won't be the winners of the past decade.

> *The shakeout in the consumer-facing technology platforms that have been dominant in the past decade is definitely giving way to something. Now, what is that something?*

This article is excerpted from our blog, which you can [read in full here](). ◆

Olga Bitel, *partner, is a global strategist on William Blair's global equity team.*

Hugo Scott-Gall, *partner, is a portfolio manager and co-director of research on William Blair's global equity team.*

The Cost of Corporate Fraud

By: Domenico Minerva and Michelle Cooper, Labaton Sucharow LLP

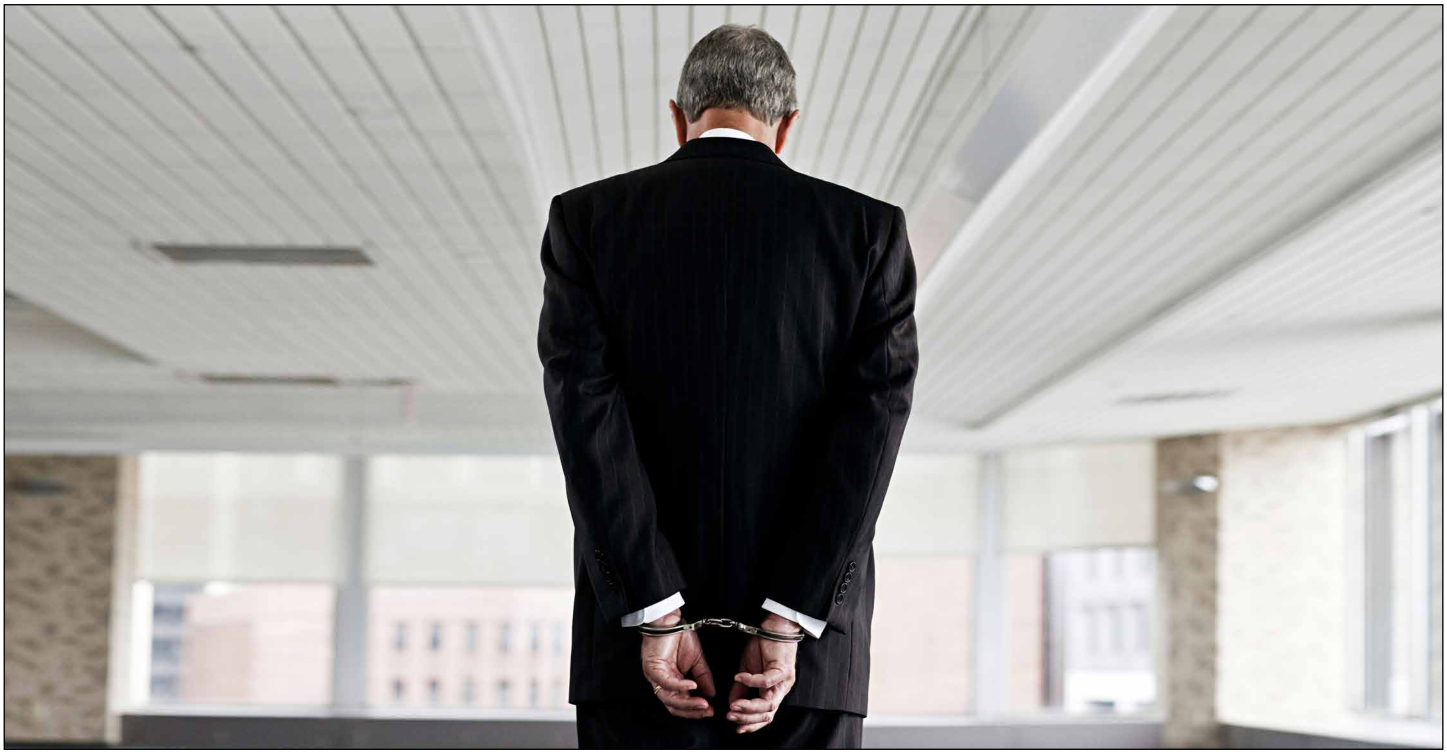


Photo Illustration © 2023 shutterstock.com

Researchers from the University of Toronto, the University of California at Berkeley, and the University of Chicago recently published a study using statistical analyses to determine the prevalence of corporate fraud.[1]

The researchers attempted to answer an important question: "is the fraud we observe the whole iceberg or just its visible tip?" Their study endeavored to answer this question by estimating the ratio of the "exposed tip to the submerged portion" to determine the "hidden prevalence of fraud."

To calculate that ratio, the study uses a few approaches previously employed by other academics. However, it also introduced a novel approach based on a natural experiment made possible by the demise of auditing firm Arthur Andersen (AA) in the wake of the Enron scandal in the early 2000s.

As background, the Enron accounting scandal came to light in 2001. Later that year, The New York Times ran an article with the headline "From Sunbeam to Enron: Andersen's Reputation Suffers," reporting that former AA clients were under enhanced scrutiny for fraud.

The researchers described their methodology, stating, "the simple idea is that after the AA demise, former AA clients were subject to vastly increased scrutiny" from new auditors and other fraud detectors—including "the media, investment intermediaries, short-sellers, and their internal gatekeepers"—with strong incentives to uncover any fraud committed by former AA clients.

The researchers attempted to answer an important question: "is the fraud we observe the whole iceberg or just its visible tip?"

Based on statistical analyses of former AA clients before, during and after this period of enhanced scrutiny, the researchers concluded that "fraud is indeed like an iceberg with significant undetected fraud beneath the surface." Indeed, they determined that:

- ***Two out of three*** corporate frauds go undetected,
- ***10 percent*** of large corporations commit securities fraud each year, and
- The costs borne by equity holders in companies involved in fraud totaled approximately ***$830 billion*** in 2021 alone. ◆

Footnotes:

[1] Alexander Dyck, et al., *How pervasive is corporate fraud?*, Rev. Acct. Stud., Jan 5, 2023.

__Domenico "Nico" Minerva__ is a Partner in the New York office of Labaton Sucharow LLP. A former financial advisor, his work focuses on securities and consumer class actions and shareholder derivative litigation, representing Taft-Hartley and public pension funds across the country. Nico advises leading pension funds and other institutional investors on issues related to corporate fraud in the U.S. securities markets.

__Michelle V. Cooper__ is an Associate in the New York office of Labaton Sucharow LLP. Michelle focuses on litigating securities fraud class actions on behalf of institutional investors.

Are Higher Interest Rates a Silver Lining for Public Pension Funds?

By: Bill Hallmark, ASA, EA, MAAA, FCA, Cheiron

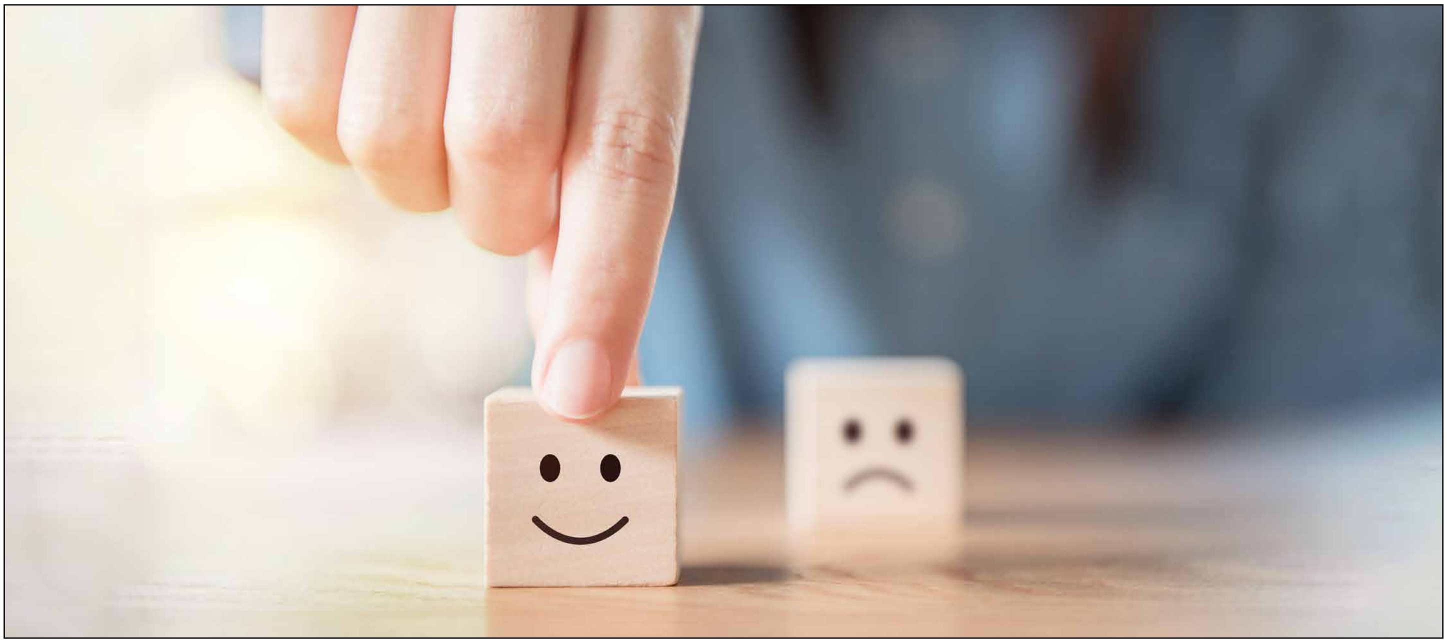


Photo Illustration © 2023 shutterstock.com

The Federal Reserve is aggressively raising interest rates to tame high inflation.

The federal funds rate, set by the Federal Reserve, has risen from near zero in March 2022 to almost 5% in February 2023, and is expected to continue rising and remain above 5% into 2024.

As a result, mortgage and other borrowing rates have increased dramatically, slowing demand, and raising the possibility of a recession. But, there may be a silver lining for public pension plan sponsors. Higher interest rates make public pension plans less expensive because they increase the investment returns plans can expect.

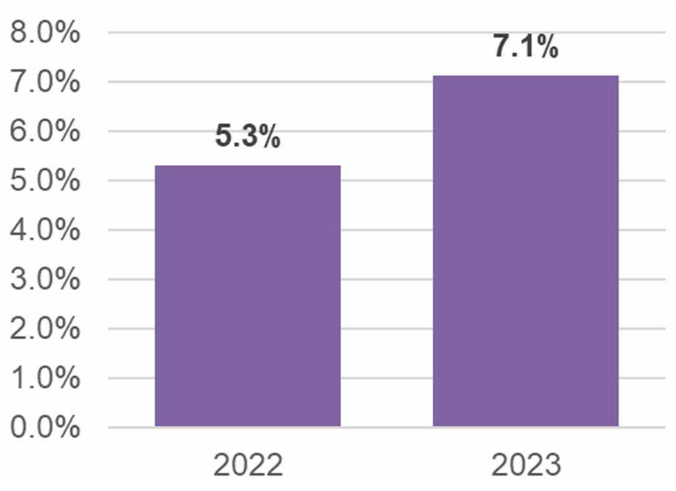
Impact of Higher Interest Rates on Public Pension Plans

Capital market assumptions for 2023 are significantly higher than 2022, reflecting the change in interest rates and their impact on asset valuations. If high interest rates persist, public pension plans will have the opportunity over the next few years to consider increasing margins for conservatism in assumed investment returns, reducing investment return volatility, and increasing their discount rates.

It isn't clear yet whether the higher interest rates will be temporary or represent a longer-term change. Plans are likely to take a cautious approach to any changes, as they did when interest rates dropped during the Great Recession.

10-Year Capital Market Expectations

75% Equity / 25% Bond Portfolio



Author's calculations based on average capital market assumptions for BlackRock, Callan, and JP Morgan

For 2023, there should be considerably less pressure to reduce discount rates than in the last several years, and some plans may even consider increasing their discount rate. Most plans, however, will likely wait to make sure the change in return expectations is not temporary before making any adjustment to their discount rates. If higher interest rates prove to be temporary, plans will have been prudent in waiting and avoiding the need to reverse course when interest rates come back down.

Historical Impact of Declining Interest Rates on Public Pension Plans

The situation today appears to be the reverse of what pension plans experienced over the last 15 years of declining interest rates. In 2007, the yield on the 10-year Treasury was higher than 5% but following the Great Recession it dropped to between 1.5% and 3% and with the onset of the pandemic it dropped to below 1%. While public plan discount rates are not tied directly to these interest rates, the median discount rate for public pension plans dropped during this period to 7% from 8%, increasing the measure of plan liability for a typical public plan by 12% to 15%.

Median Public Plan Discount Rate

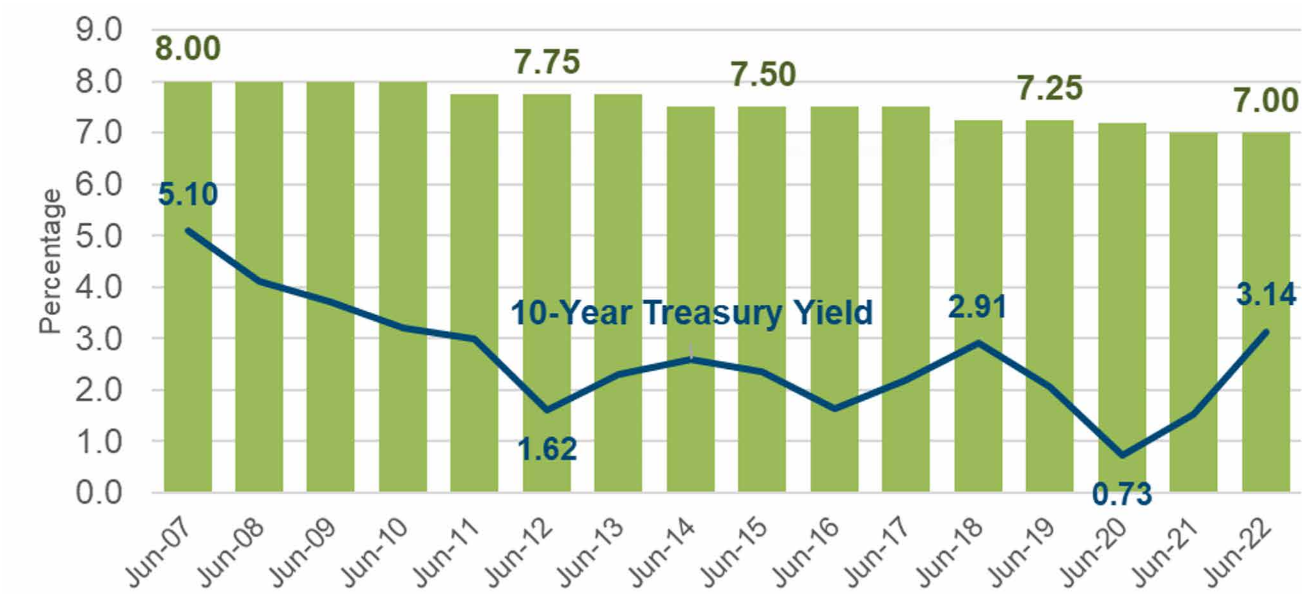
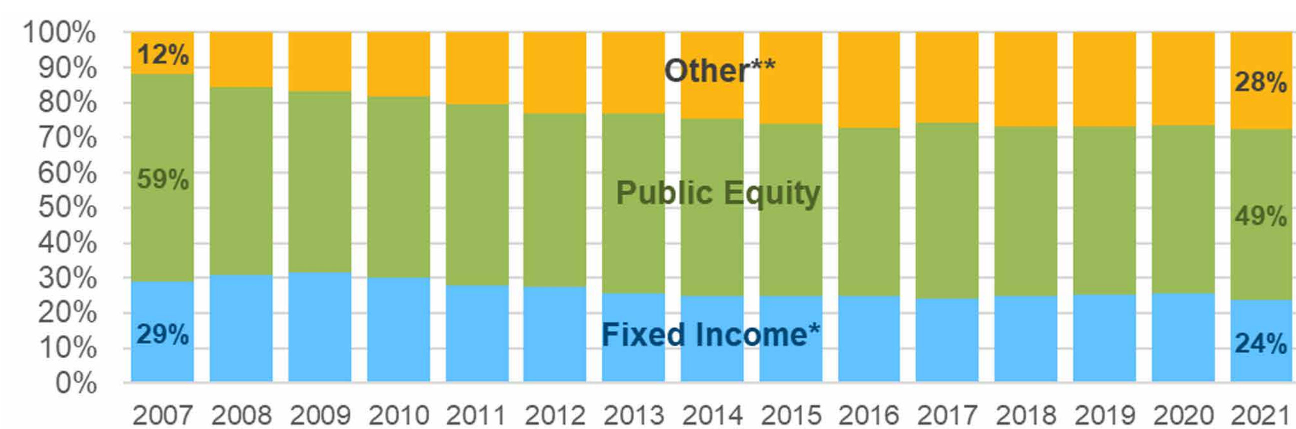


Chart from ***Cheiron Public Plan Data Tool*** *using data from the Federal Reserve and PublicPlansData.org*

Average Public Plan Asset Allocation



* Fixed Income includes cash
** Other includes hedge funds, private equity, real estate, alternatives and commodities

Chart from ***Cheiron Public Plan Data Tool*** *using data from PublicPlansData.org*

At the same time, public plans adjusted their investment strategies to improve the chance of achieving their expected returns in the low interest rate environment, boosting their holdings of hedge funds, private equity, real estate, and alternatives while reducing fixed income and public equity holdings. These changes raised investment return expectations but also increased the volatility of public plan investment returns.

In short, higher interest rates provide some welcome relief to public pension plan sponsors, immediately reducing the pressure to take additional investment risks or further lower the discount rate. If higher rates persist, some of the difficult trends of the last 15 years may start to unwind. ◆

Bill Hallmark *is a consulting actuary at Cheiron Inc. He is a nationally respected retirement consultant with more than three decades of experience advising pension plans. He often speaks about public pension plans at industry conferences. Hallmark has held various positions with professional organizations, including vice president of pensions for the American Academy of Actuaries. He is an Associate of the Society of Actuaries, an Enrolled Actuary under the Employee Retirement Income Security Act (ERISA), a member of the American Academy of Actuaries, and a Fellow of the Conference of Consulting Actuaries.*

Global Securities Class Action Landscape: 2023 Outlook & Trends

By: Mike Lange, Esq., Emily Fortin, Esq., and Colin Holmes, Esq., Financial Recovery Technologies

Photo Illustration © 2023 shutterstock.com

Now that 2022 has closed and 2023 is in full-swing, our in-house legal experts shared their insights into what impacted the global recovery landscape last year and trends expected in 2023 for U.S. Settled Securities and Antitrust, and Non-U.S. Litigation.

U.S. Settled Securities

In 2022, core U.S. securities class action filings were flat year-over-year (201 versus 200), while settlements were up 18% by number (144 vs 122). There were 103 matters disbursed. Among the 10 largest (shown below) were the Wells Fargo Fair Fund and a second FOREX antitrust payout.

Settlement	Disbursement Amount
(FX OR FOREX) FOREIGN EXCHANGE BENCHMARK RATES	$706,065,555
WELLS FARGO SEC FAIR FUND	$500,000,000
FIRST SOLAR, INC. SECURITIES LITIGATION (12CV00555DGC)	$350,000,000
SIGNET JEWELERS LIMITED, SECURITIES LITIGATION (16CV06728)	$240,000,000
SNAP, INC., SECURITIES LITIGATION (17CV03679) (FEDERAL CASE)	$154,687,500
DAVITA INC., SECURITIES LITIGATION	$135,000,000
TABLEAU SOFTWARE, INC., SECURITIES LITIGATION	$95,000,000
METLIFE, INC. SECURITIES LITIGATION	$84,000,000
WILLIS TOWERS WATSON PLC, SECURITIES LITIGATION (FEDERAL CASE)	$75,000,000
SYMANTEC CORPORATION, SECURITIES LITIGATION (18CV02902)	$70,000,000

SEC Fair Funds proved the most challenging matters for institutional investors last year. Those administrations run faster than for securities class actions, with shorter deadlines and stricter requirements including 100% remittance and 100% documentation. The latter requirement can be particularly difficult when claim periods go back further than the time that custodians and nominees must keep records.

While hard to predict, for 2023, case filings are expected to be comparable or slightly higher than last year and settlements to also be comparable to last year, with the top ten accounting for roughly half of the total dollars recovered and the majority in number to be less than $100M.

Antitrust

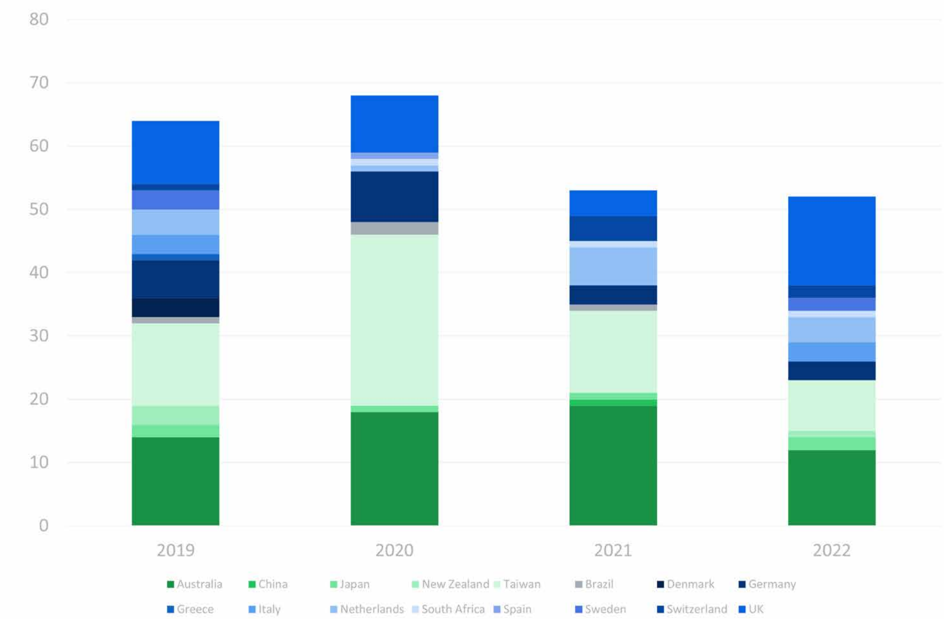
In 2022, U.S. Antitrust settlements (including DOJ recoveries) involving investments continued at a steady pace, ranging in size from $500K to $300M. Most were partial or wrap-up settlements in cases with earlier partial settlements, like LIBOR, Euribor and Euroyen. Last year was another strong one for antitrust disbursements, with more than $700 million paid out, primarily from the $2.3B FOREX settlement.

Already in 2023, we've seen partial settlements including Wheat Futures and European Government Bonds., With $4 billion still in administration, including $1B more of the FOREX settlement, 2023 could be a very big year for antitrust payouts.

Non- U.S. Litigation

Last year there were 52 non-U.S. matters in 11 jurisdictions (counted by case organizers). Broken down by country, filings were down in Brazil and Germany, and up in the Netherlands and the UK.
In 2023, the number of matters are expected to be similar to last year (about 52-58), and it is expected that filings will increase in Australia the Netherlands, and the UK and decrease in Brazil, Germany, and Japan. Across all countries active in the securities litigation space, greater and more stringent demands from courts for claimant identification, authorization, and custodial confirmation documents, are expected to continue. ◆

Case	Type	Settlement	Claims Filing Deadline
In re JPMorgan Precious Metals Futures	ANTITRUST	$60,000,000.00	08-08-2022
In re JPMorgan Treasury Futures Spoofing Litig.	ANTITRUST	$15,700,000.00	06-30-2022
(GOLD Fixing) Barclays Bank PLC, the Bank of Nova Scotia, Société Générale, and the London Gold Market Fixing Limited	ANTITRUST	$50,000,000.00	04-19-2022
(EURIBOR) Credit Agricole	ANTITRUST	$55,000,000.00	12-15-2022
(LIBOR Bondholders) Gelboim et ano. v. Credit Suisse Group, et al.,	ANTITRUST	$1,749,000.00	02-27-2023
(EUROYEN) Laydon v. Mizuho Bank, Ltd. et al	ANTITRUST	$22,500,000.00	04-28-2023
(SIBOR) Fund Liquidation Holdings LLC v. Citibank N.A. et al.	ANTITRUST	$155,458,000.00	01-20-2023
BBSW Rate Manipulation Settlement	ANTITRUST	$185,875,000.00	01-16-2023
The Bank of Nova Scotia Metal Spoofing DOJ Deferred Prosecution Agreement (DPA)	DOJ	$6,622,190.00	08-19-2023
JPMorgan Chase & Co. Metal Spoofing DOJ Deferred Prosecution Agreement (DPA)	DOJ	$311,740,000.00	09-24-2023
Tower Research Capital LLC E-Mini DOJ Deferred Prosecution Agreement (DPA)	DOJ	$32,600,000.00	10-24-2022
Deutsche Bank Metal Spoofing DOJ Deferred Prosecution Agreement (DPA)	DOJ	$1,223,738.00	01-06-2022
United States v. NatWest Markets Plc	DOJ	$6,761,967.00	02-21-2022
United States v. Credit Suisse Securities (Europe) Limited	DOJ	$0.00	02-28-2022
Propex Derivatives Pty Ltd E-Mini DOJ Deferred Prosecution Agreement (DPA)	DOJ	$464,300.00	01-21-2023



In 2022, U.S. Antitrust settlements (including DOJ recoveries) involving investments continued at a steady pace, ranging in size from $500K to $300M.

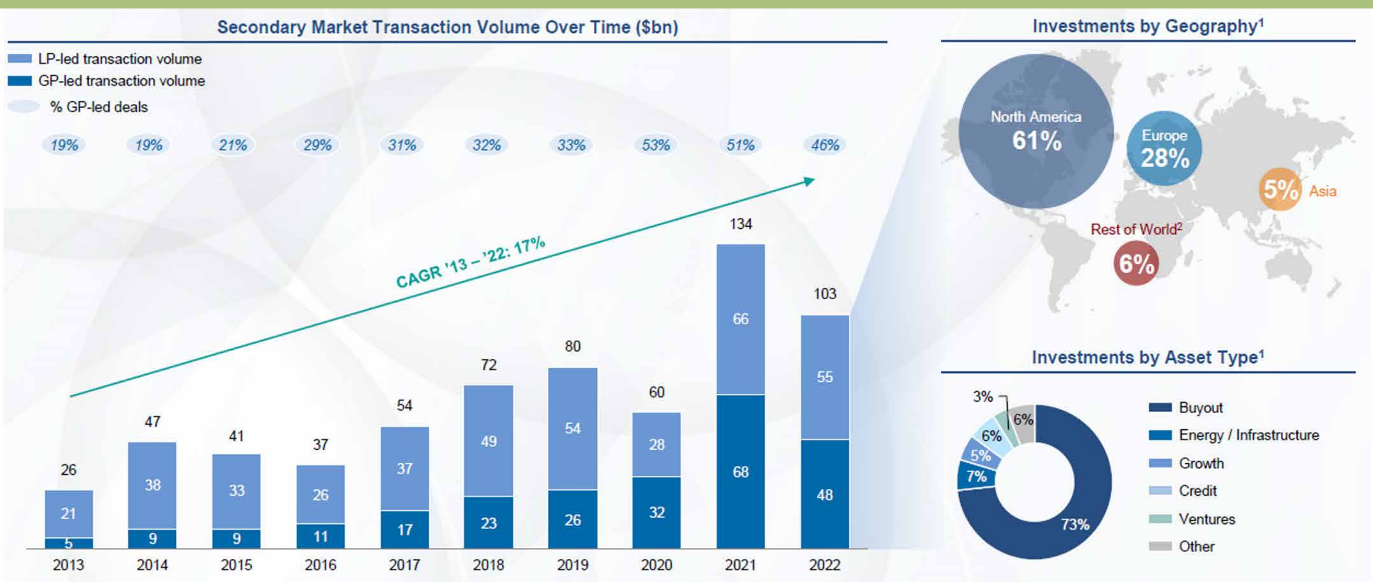
Financial Recovery Technologies, LLC *helps institutional investors navigate the increasingly complex global recovery landscape, with cutting edge technological solutions and thought leadership. This article summarizes some of the topics covered in greater depth during the live webinar hosted in February by Mike Lange, Esq., SVP of Worldwide Litigation; Emily Fortin, Esq., Director of Legal Operations & Counsel; and Colin Holmes, Esq., Associate Counsel. For more information and to access on-demand the full webinar, please visit FRT at: https://pages.frtservices.com/2023ClassActionOutlook*

The Growing Prominence of Continuation Vehicles

By: Mina Pacheco Nazemi, Barings Diversified Alternative Equity Group

In the last 24 months, the market has seen an increase in the number of continuation funds, which allow GPs to roll an asset (or assets) from an existing fund or multiple funds into a new investment vehicle with fresh or re-start capital, rather than selling the asset to an outside buyer. Historically, these vehicles served as a way to give these companies more time to deliver on expected returns. More recently, however, GPs are recapitalizing their higher-performing investments—the so-called "crown jewels" of their portfolios—as a way to maintain exposure while providing additional capital for growth initiatives.

While there are certainly risks involved in these deals, namely around potential conflicts of interest and GP alignment, there can be benefits as well. GPs have the ability to continue managing a high-performing asset, and this comes with the benefit of a larger fee base and the resetting of the deal carry pool, which can re-incentivize the team for continued value creation. For LPs, assuming that the asset has been fairly priced and that the GP's motivations are properly aligned, these vehicles can provide an attractive opportunity to maintain exposure to a successful company at a lower fee/carry basis. In addition, some LPs have the ability to invest secondary capital into what may be perceived as a less risky opportunity (when compared to buying a new unknown asset). Over time, there is the potential for LPs to realize strong risk-adjusted returns, particularly with GPs and management teams that have worked together successfully in the past.



Source: Evercore 2022 Secondary Market Synopsis, January 2023.

Many LPs are currently not set up to participate in continuation vehicles, while others choose not to participate given structural constraints or the need for liquidity. Arguably, continuation vehicle transactions can force traditional fund LPs to be more involved co-investors, requiring them to undertake additional underwriting and monitoring processes. These dynamics ultimately cause most LPs to sell their positions instead of rolling their exposure into attractive continuation vehicle opportunities.

The decision to participate in a continuation vehicle involves a complex set of issues that are critical for an LP to understand. High-quality GPs typically have a strong value creation plan outlined on a particular asset or set of assets and will often commit a considerable amount of time and capital to each deal. A reasonable proxy to measure GP alignment is the amount of carried interest that the GP has created via the platform exit and any subsequent portion they may roll into the new vehicle. Additionally, it is critical for LPs to understand the business motivations and alignment of other LPs/LPAC members who may have to provide approvals to waive conflicts or approve the actions of the GP. There may be questions, for instance, around whether a given asset manager—with both primary and secondary businesses—would be more likely to approve a deal that benefits its secondary arm, even if that deal is potentially less advantageous for its primary fund investors that may not be in a position to participate due to structural and/or timing limitations.

With appropriate alignment, transparency, and governance in place, continuation vehicles are a very attractive investment option for LPs. ◆

__Mina Pacheco Nazemi__ is the Head of the Diversified Alternative Equity team and serves on both the investment committee and valuation committee. She is also responsible for originating, underwriting and monitoring primary fund, direct/co-investments, and secondary fund opportunities for private equity and real assets. Mina has worked in the industry since 1998 with experience as a General Partner and Limited Partner investor in private markets and focused on underwriting direct/co-investment opportunities. Prior to joining the firm in 2017, Mina held several leadership and investment positions including Co-Founder and Partner at Aldea Capital Partners and Partner and Investment Committee Member at GCM Grosvenor Customized Fund Investment Group (formerly Credit Suisse CFIG). She is an alumna of Sponsors for Education Opportunity (SEO) and Robert Toigo Foundation. She also is a board member of the Pan American Development Fund and serves on the investment committee for the City of Hope. Additionally, Mina is a current Finance Fellow for The Aspen Institute. Mina holds a Bachelor of Arts with honors in Economics and Political Science from Stanford University and her Master of Business Administration from Harvard Business School.

Don't Miss NCPERS' Social Media

The Voice for Public Pensions

Calendar of Events 2023

May

NCPERS Accredited Fiduciary (NAF) Program

May 20–21
New Orleans, LA

Trustee Educational Seminar (TEDS)

May 20–21
New Orleans, LA

Annual Conference & Exhibition (ACE)

May 21–24
New Orleans, LA

June

Chief Officers Summit

June 19-21
Denver, CO

August

Public Pension Funding Forum

August 20-22
Chicago, IL

October

NCPERS Accredited Fiduciary (NAF) Program

October 21-22
Las Vegas, NV

Financial, Actuarial, Legislative, and Legal Conference (FALL)

October 22-25
Las Vegas, NV

View all upcoming NCPERS conferences at www.ncpers.org/future-conferences.

The Voice for Public Pensions

PERSist is published by the National Conference on Public Employee Retirement Systems.
Website: www.NCPERS.org • E-mail: lizzy@ncpers.org

MEKETA
INVESTMENT GROUP

Risk Mitigating Strategies (RMS) Framework

WHITEPAPER
MARCH 2023

CONTRIBUTORS
Ryan Lobdell, CFA, CAIA
Jason Josephiac, CFA, CAIA
Brian Dana, CAIA

Important note on historical hypothetical simulated performance information

This document includes historical hypothetical simulated performance ("hypothetical performance") produced by a model created for illustrative purposes only and composed of various indices used to represent categories of investments further described herein. Such hypothetical performance was not obtained by any advisory client and does not represent the actual performance of any client account. Hypothetical performance, involving modelling components and assumptions, has inherent limitations, some of which are described herein. Each client managed or advised by Meketa will have its own guidelines and restrictions which may be different from the guidelines and restrictions assumed in producing the output of the model that produced the hypothetical performance shown. Using different guidelines or strategies than those assumed to generate the hypothetical performance will produce results which differ, perhaps materially from those presented here. No representation is made as to the accuracy of the hypothetical performance or that all assumptions relating to such hypothetical performance has been considered. Assumptions and modeling components were determined based on information available as of the date hereof. Another limitation is that hypothetical performance does not reflect actual trading, and therefore, does not reflect the impact that economic and market factors including concentration, lack of liquidity or market disruptions, may have on investment decisions. Actual events are difficult to predict and are beyond the control of Meketa. Actual events may be different, perhaps materially, from those assumed. The information contained herein does not purport to contain all of the information that may be required to evaluate the investment strategy and you should conduct your own independent analysis of the data referred to herein. The actual performance of any client portfolios advised by Meketa may be materially different from the hypothetical performance shown for a number of reasons including (i) differences in net asset values and expenses ratios, (ii) differences in the portfolio, fees, commissions and dividend accounting, (iii) permitted underlying securities and investment guidelines, (iv) different valuation methodologies and liquidity terms, and (v) changes in trading strategy over time. There is no certainty or representation made that any client following the strategy depicted herein will be or would have been similar to the hypothetical performance provided. The use of the hypothetical performance is provided solely for informational purposes and should not serve as the basis for a determination to invest in any investment product or account.

Introduction

Wall Street jargon runs rampant throughout the investment services world and a single term can have meaningful differences depending on an investor's perspective and inherent biases. As an organization rooted in a long history of consulting, we make our best attempt to reduce and simplify Wall Street jargon. We seek to use terminology that may have a higher probability of resonating with the marketplace to educate investors on complex topics.

The intention of this educational whitepaper is to use language clearer than, for example, "hedge funds", which tends to be a nebulous term. Investing in "hedge funds" is akin to playing "sports". Well, which sports are we referring to? Basketball, Football, Skiing, Field Hockey, Lacrosse, Racing? Sports like Racing have many sub-categories such as NASCAR, Indy, Motocross, Rally, etc. Thus, we will make our best effort to identify the sports that may help investors conceptualize building an effective and efficient all-around athlete to complement the other players of the strategic asset allocation team.

Championship teams tend to have both a talented offense and defense. Many strategic asset allocations have a well-built offensive roster, which tends to move with changes in economic growth risk. Economic growth risk, which may also be referred to as equity risk, shows up in almost all investment strategies from public and private equity to real estate and high yield bonds. Many times, the amount of risk an investor's portfolio may have relative to economic growth risk may be masked by label diversification. Figure 1 is illustrative of the potential masking caused by label diversification in a strategic asset allocation relative to viewing such allocation through a risk lens where the portfolio likely has a high dependence on economic growth.

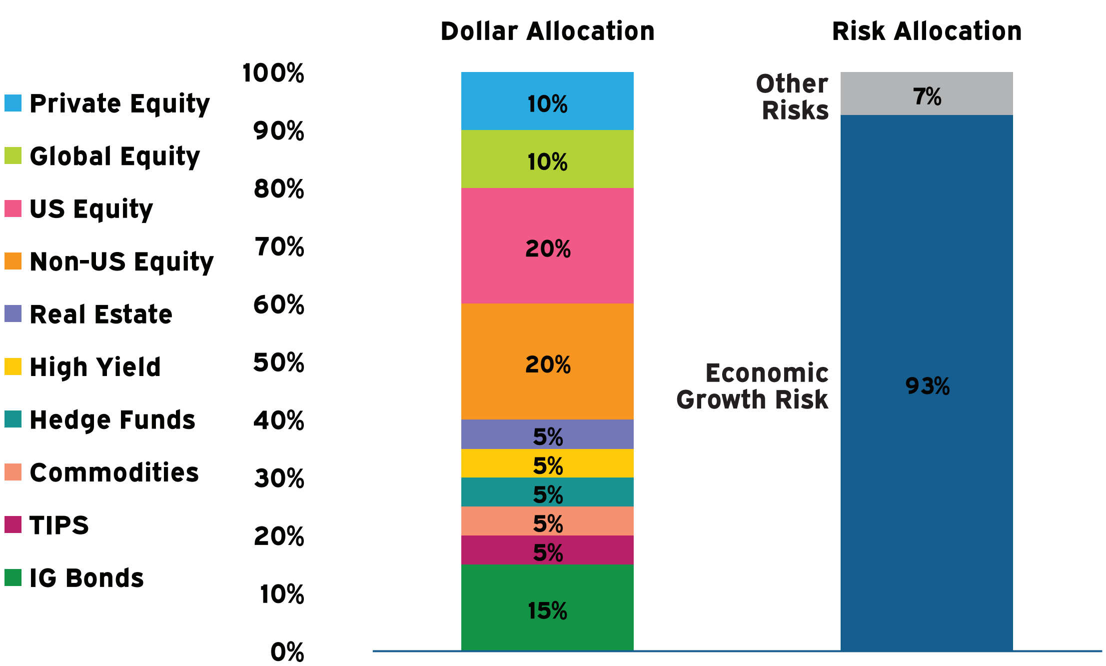


FIGURE 1

Example Portfolio Dollar versus Risk Allocation

Source: Meketa. Hypothetical asset allocation. Allocation associated with Growth Risk include Private Equity, Global Equity, US Equity, Non-US Equity, Real Estate, and High Yield. Utilizes Meketa's 2022 20-year mean variance optimization expected correlations and risks. Risk Contribution for each asset class is calculated as the sum of the asset class correlation with each other asset class multiplied by each respective asset class standard deviation multiplied by the asset class dollar allocations.

The illustrative strategic asset allocation may not be as balanced as hoped due to a lack of diversification. To continue the sports analogy, this may reduce the chances of the portfolio consistently competing at the highest level. That is not to say the portfolio is prevented from being a championship team, but it is overly reliant on offense or on offensive players with a lack of defense. As such, investors may seek defensive tools that could be utilized to raise the probability of constructing a team or portfolio that consistently competes at a championship level.

Like the previously mentioned strategic asset allocation issue where label diversification may mask the underlying risk concentration, hedge fund programs often follow a similar pattern. Some hedge fund programs are playing zone defense, as some do not actually hedge, at least not enough from the perspective of the historical embedded beta[1] and drawdowns exhibited by industry standard benchmarks. By these measures, as shown in Figures 2 and 3, many hedge fund programs may be a low equity beta implementation of risks an investor already has elsewhere in their strategic asset allocation.

[1] Embedded beta refers to consistent drivers of returns due to exposure to traditional risk factors (e.g., equities). For example, long / short equity strategies are often consistently long equities (albeit at different levels), which often results in them producing negative returns at the same time as broad equities (e.g., the S&P 500, MSCI ACWI). Beta = the correlation between the HFRI FWC and Global Equity multiplied by the HFRI FWC standard deviation divided by the Global Equity standard deviation.

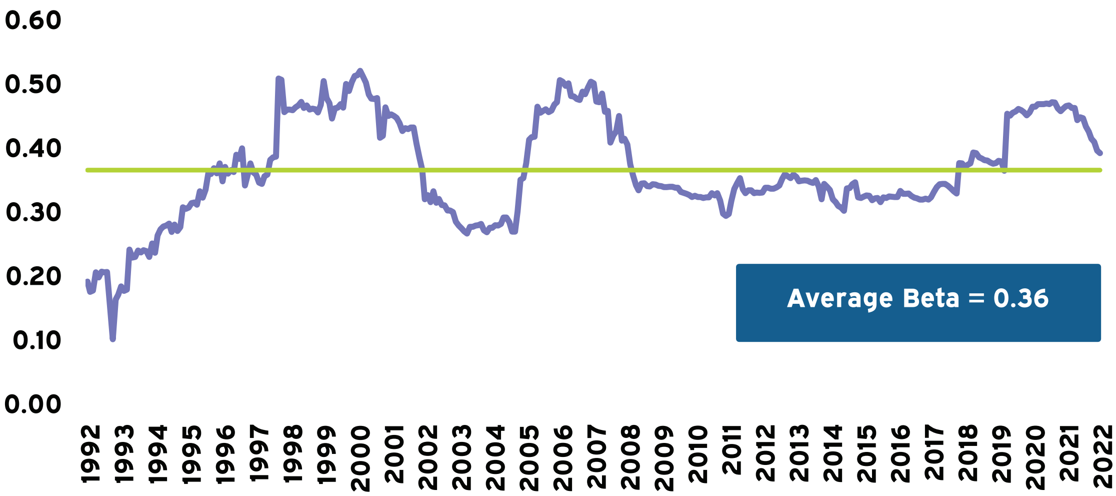


FIGURE 2

Rolling 36-month Beta of HFRI FWC to Global Equity: Jan-90 to Dec-22

Source: MSCI, FactSet, HFRI. Global Equity is modeled as MSCI ACWI.

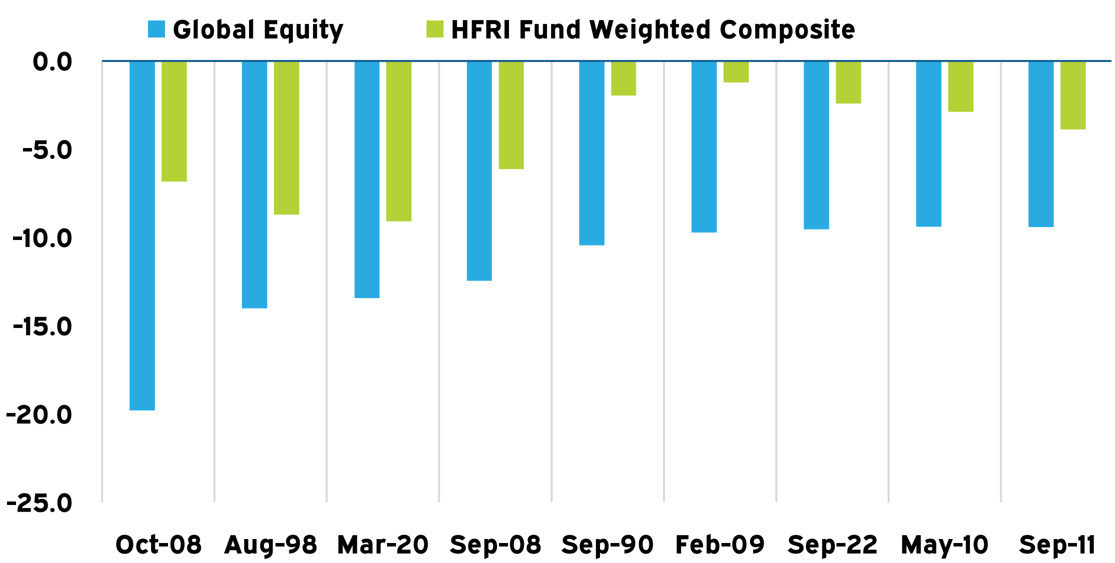


FIGURE 3

Returns During Worst 10 Months of Global Equity: Jan-90 to Dec-22

Source: MSCI, FactSet, HFRI. Global Equity is modeled as MSCI ACWI.

Introduction to Risk Mitigating Strategies (RMS)

Previously, we said the category "hedge funds" is nebulous. The category naming conventions often fall short of setting appropriate expectations for investors. Many investors have recognized this naming pitfall and have begun to use organizational frameworks which better reflect their desired or expected outcome. This often is focused on selecting strategies which may provide defensive properties or frameworks used to complement an investors equity risk exposure. For example, institutional investors have used different naming conventions such as Risk Mitigating Strategies (RMS), Crisis Risk Offset (CRO), Risk Mitigation Class, Crisis Protection Class, and Diversifying Strategies, among others. In addition, some investment managers have launched investment products around similar defensive frameworks.

In this paper we use the name Risk Mitigating Strategies (RMS) as a common investment framework or organizational structure that can be used to consider allocations to investment strategies that are expected to provide exposures which are complementary to equity risk. An RMS framework may seek to provide positive long-term returns while producing negative to modestly positive correlations to traditional sources of risk (interest rates, credit spreads, equities, etc.) on average. More specifically, some risk mitigating strategies seek to produce gains during turbulent markets, such as equity drawdowns, with some having negative, and others positive, conditional correlations during these times.

Risk Mitigating Strategies (RMS) framework

A key tenant of any strategic allocation is the framework used to achieve investor objectives. For RMS it can be helpful to use a functional framework of three groups: first responders, second responders, and diversifiers. These groups can be seen as levers with which to customize an RMS framework to seek a specific outcome. As markets and objectives change over time, this may afford investors additional flexibility to adapt as new tools or opportunities become available.

Further, in creating allocations meant to protect against equity market drawdowns, there are key trade-offs to consider that are aided by a functional framework. What the future holds, or at least how and when it will occur, is unknowable. It is nearly impossible to predict when the next equity drawdown will occur, and which assets or strategies will move in the same or opposite direction as equities at that time. To improve its effectiveness, an RMS framework seeks to identify strategies that provide protection against both high velocity drawdowns (e.g., Q1 2020) and extended drawdowns (e.g., Tech bubble, Global Financial Crisis, 2022). Various strategies can be used within each functional group that often vary by reliability, cost, expected return, and convexity.[2]

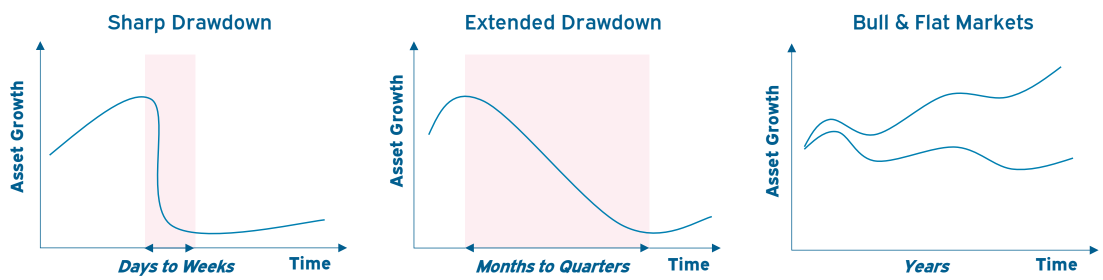
As noted, within an RMS framework it may be helpful to organize investment strategies into three functional groups, shown in Figure 4, each with its own key objectives: first responders, second responders, and diversifiers.

[2] Convexity in this context refers to the benefits the RMS framework exhibits relative to equity markets and relative to their own observed volatility. A positively convex profile tends to produce positive returns at an accelerating rate as equity markets fall.

First responders, as implied by the name, are meant to include strategies which are intended to be the first line of protection in a material equity drawdown and often utilize long duration US Treasuries, long volatility, and tail risk.

Second responders are meant to include strategies that may capitalize on protracted bear markets. This most commonly includes trend following strategies (i.e., CTAs and managed futures). The dynamic nature of trend following strategies often allows them to also produce gains in extended bull markets.

The third group, diversifiers, can house the most wide-ranging strategies by number and type. The main goal of a diversifier is to provide returns that are uncorrelated to the first and second responders, and to the rest of the investor's portfolio. While the first and second responders may be the most important groups for the purposes of protecting against market drawdowns, diversifiers play a key role in helping to bolster returns during bull and flat equity markets when the performance of the other two groups may be lackluster. We further expand on each of the three functional groups in the next section.



First Responders	Second Responders	Diversifiers
Primary Role: First line of protection in an equity drawdown	**Primary Role:** Second line of protection in an equity drawdown	**Primary Role:** Provide uncorrelated returns to stabilize 1st and 2nd responders
Strategy Examples: Long Volatility, Long Duration US Treasuries, Tail Risk Strategies	**Strategy Examples:** Trend Following, CTAs, Managed Futures	**Strategy Examples:** Global Macro, Alternative Risk Premia, Multi-Strategy, Equity Market Neutral, Relative Value, Insurance Linked, etc.

FIGURE 4
First Responders, Second Responders, and Diversifiers

Source: Meketa Investment Group, 2023.

First responders overview

Strategies utilized as first responders are expected to be the first line of defense and produce meaningful gains in the initial stages of an equity drawdown or market shock. There are three main types of hedging strategies that are often considered when constructing a first responder portfolio: correlation hedges, structural hedges, and explicit hedges.

There are key distinctions between each type of hedge and underlying strategy, which primarily come down to cost, coverage (i.e., reliability), capital efficiency, and convexity (i.e., return profile).[3] Many investors have historically relied on long-term US Treasuries as a correlation hedge to serve as a first responder. Given the basis risk[4] of long-term US Treasuries, investors may consider allocating to other strategies more directly linked to negative equity market events (e.g., long volatility or tail risk) in addition to, or even in lieu of, long-term Treasuries. A high-level summary of these first responder strategies is provided in Figure 5 below, followed by more detailed summaries.

[3] Cost refers to the management fees charged for a strategy as well as costs such as paying to be long an option. Coverage refers to the probability of payoff in equity drawdowns. Capital efficiency refers to the amount of dollars that need to be invested to gain a desired exposure. Convexity refers to the difference in returns expected relative to equities during drawdown periods. There may be additional considerations depending on an investor's constraints and desired outcomes.

Correlation Hedge	Structural Hedge	Explicit Hedge
Strategies: Long US Treasuries	**Strategies:** Long Volatility	**Strategies:** Tail risk hedging
Performance Drivers: Investors often seek high quality assets when markets decline	**Performance Drivers:** Volatility increases as equity price changes accelerate	**Performance Drivers:** Continual insurance payment for a guaranteed payoff
Most Effective When... Flight-to-safety	**Most Effective When...** Increasing volatility	**Most Effective When...** Sharp drawdowns
Least Effective When... Rising rates	**Least Effective When...** Stable / low volatility	**Least Effective When...** Stable, bull markets
Implementation Example Buying 20+ year US Treasuries	**Implementation Example** Buying CBOE VIX options	**Implementation Example** Buying equity put options
Strategy Benefits → Well known → Low cost → Historically reliable	**Strategy Benefits:** → High certainty → High event payoffs → Flexible implementation	**Strategy Benefits:** → Guaranteed payoff → Targets specific levels → Highest payoff
Things to consider... → Relies on the behavior of others → Negative real yields → Changing correlations?	**Things to consider...** → Low expected returns → Complexity → Ability to hold	**Things to consider...** → Explicit ongoing cost → Most difficult to hold → Counterparty risk

FIGURE 5
Explicit, Structural, and Correlation Hedges

Source: Meketa Investment Group, 2023.

The trade-offs and performance drivers highlighted previously result in different forward-looking and historical performance expectations across market environments. As illustrated in Figure 6, long volatility strategies produced positive results in all noted drawdowns, driven by rising volatility, while long duration Treasuries and tail risk strategies did not. Long duration Treasuries have struggled in rising rate and inflationary periods, while tail risk strategies may require a certain depth of drawdown to produce a benefit.

[4] Basis risk refers to the risk that occurs from an imperfect hedge. Here, long-term US Treasuries are a correlation hedge relying on the behavior of others. As the future behavior of others is uncertain, this introduces the possibility that it could fail to produce strong positive returns during an equity market drawdown.

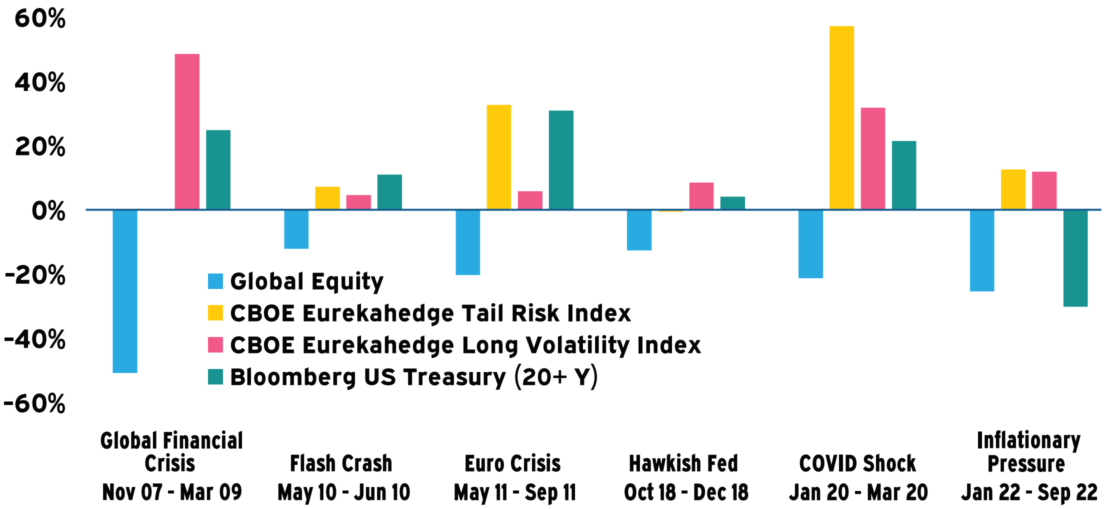


FIGURE 6
Return During Global Equity Drawdowns of at Least 10%

Sources: Meketa, FactSet. For the period January 2005 to December 2022. The CBOE Tail Risk index was incepted in January of 2008 and thus not included in the Nov 07 – Mar 09 comparison. From January 2008 to March of 2009, the CBOE Tail Risk Index produced a return of 12.5% versus an MSCI ACWI return of -48%. A description of the benchmarks can be found in the Appendix. Global Equity is modeled as MSCI ACWI.

Explicit hedges

Tail risk strategies may offer an explicit hedge which may be considered as a first responder. An explicit hedge describes a highly certain payoff when an event of a specific magnitude occurs. This may be viewed similarly to buying car insurance, where someone pays a consistent premium to an insurance company in exchange for a guaranteed payoff should a specific event occur (e.g., car crash). Tail risk strategies typically utilize derivatives, which often allow for substantial payoffs during market crises due to their inherent leverage. The most basic implementation consists of buying equity put options, which involves paying a consistent premium to have the option to sell equities at a pre-specified price in the future.

These strategies may target a specific equity drawdown level and specific amount of the portfolio to protect. For example, a strategy might be implemented to prevent losses of more than 20% in an equity drawdown. This effectively sets a maximum loss level for the portfolio should an event of higher magnitude materialize. The key drawback of tail risk strategies is that (ignoring interim profit harvesting) 100% of the premium spent will be lost if an equity drawdown of that magnitude does not occur. Due to the ongoing cost of holding the option, this type of strategy has a negative long-term expected return. However, tail risk strategies are often the most reliable way to hedge a portfolio and, aside from counterparty risk, are essentially guaranteed to pay off if the event of concern occurs.

Structural hedges

Long volatility strategies may be used as a first responder and offer a structural hedge against an equity drawdown. A structural hedge describes a strategy that profits from changes in a security that are closely related to or based upon movements in markets (e.g., equities). This may be the second most direct form of equity drawdown mitigation, benefiting from structural attributes. Long volatility strategies purchase derivative securities linked to equity, interest rate, credit, currency, and/or commodity volatility. The strategy profits as market volatility rises or is higher than anticipated. Equity market corrections or drawdowns tend to be accompanied by sharp increases in volatility, so strategies that are long (i.e., buy) equity volatility will most likely profit.

Long volatility strategies may have a higher expected return than tail risk strategies, but are still likely to experience negative returns during less volatile periods. During market drawdowns they might generate a return of 50% to 150% of the corresponding equity drawdown (e.g., S&P 500 return of -40% results in an expected long volatility return of 20% to 60%). As shown in Figure 7, long volatility has produced a convexity[5] profile between those of long US Treasuries and tail risk. Long volatility strategies can suffer from basis risk if they have a small or no allocation to equity volatility products (e.g., VIX futures). On the other hand, allowing exposure to volatility outside of equities, may provide positive benefits when other assets experience dislocations.

[5] Convexity in this context refers to a progressively higher (non-linear) increase in positive returns for first responders as more negative MSCI ACWI returns are observed.

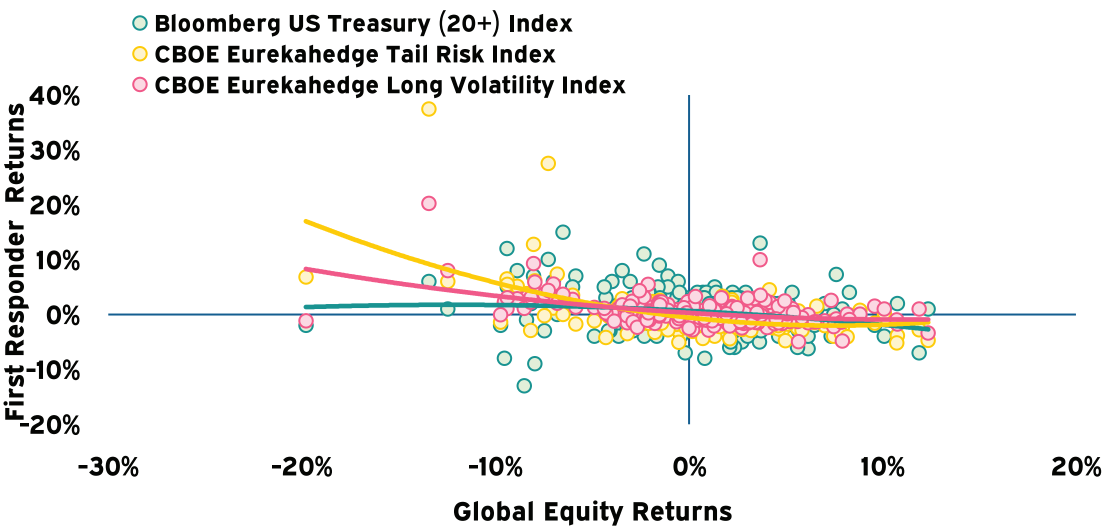


FIGURE 7

First Responder Monthly Returns vs. Global Equity

Sources: Meketa, FactSet. For the period 2008 to December 2022. Global Equity is modeled as MSCI ACWI. The depicted trend lines are second-degree polynomial functions.

Correlation hedges

Long duration US Treasuries may offer a correlation hedge against equity drawdowns. A correlation hedge describes a strategy that has historically had a negative correlation to an asset (e.g., equities) due to the behavior of other market participants. Treasuries may represent a common first responder strategy due in part to their low cost, simplicity, and ease of implementation. As is implied by the name, this strategy makes investments in long-term (20+ year) US Treasury bonds. Treasuries might be the least complex, lowest fee, and most liquid strategy of an RMS framework. Exposure to Treasuries elsewhere in an investor's asset allocation should be accounted for before considering its use as a first responder. This strategy also may offer the highest long-term expected return versus other first responders due to Treasuries' inherent yield, although this gap can change along with the level of interest rates and inflation.

Given the perceived risk-free characteristics of all US government-issued debt, Treasuries have historically behaved as a "safe haven" asset during times of crisis. Historically, equity market declines have generally coincided with declines in interest rates and holding longer duration bonds (versus shorter duration) magnifies their defensive impact. As a correlation hedge, however, their behavior during an equity drawdown may be reliant on the actions of other investors and government institutions. If a rising rate environment accompanies an equity drawdown or period of crisis, Treasuries could face material losses or reduced effectiveness as a hedge to equities.[6]

[6] The correlation between equities and bonds has historically been variable and exhibited some sensitivity to the rate of inflation. Since the year 2000, equity losses have been dampened by bond returns while inflation has been relatively benign; however, a potentially shifting macro environment (e.g., one of higher inflation) may pose a challenge to the hedging properties of bonds during equity drawdowns.

Second responders overview

Strategies utilized as second responders are expected to serve as the second line of defense by producing meaningful gains during extended equity drawdowns or market shocks. These are most often trend following strategies which are commonly implemented by commodity trading advisors (CTAs). These strategies use systematic processes to invest based on the direction (or trend) of equities, interest rates, currencies, and commodities through futures contracts. As the name suggests, trend following strategies seek to capture directional trends or momentum in markets, understood as the tendency of assets that have performed well (or poorly) recently to continue to perform well (or poorly) in the future.

Investors might expect trend following strategies to capture trending behavior in markets, but struggle during market inflection periods, as well as during trendless but volatile environments (i.e., "sideways markets"). These strategies have historically provided a complementary return profile to equities, as evidenced by the SG Trend Index[7] shown in Figures 8, 9, and 10.

[7] The SG Trend Index represents a composite of the 10 largest trend following strategies open to new investment with sufficient liquidity as defined by Société Générale (SG). For complete methodology see link in the appendix.

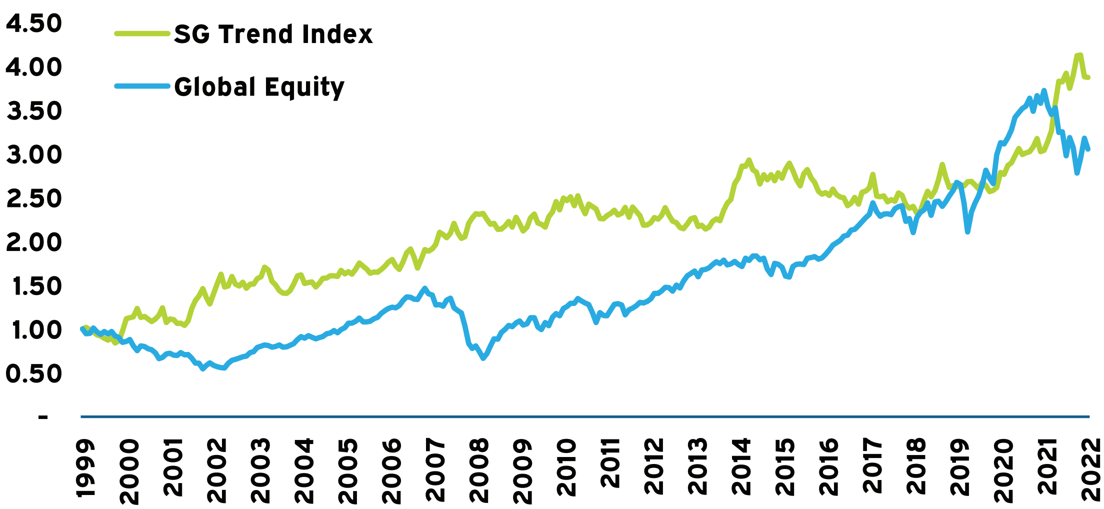


FIGURE 8

Growth of $1 for Global Equities and Trend Following Strategies

Sources: Meketa, FactSet, Societe Generale. For the period from 2000 to December 2022. Global Equity is modeled as MSCI ACWI.

The average time horizon of trend following models provides a trade-off between reactiveness to inflection points and excessive trading. While medium- to long-term trend following strategies can be slower to capture market inflections, the fact that they remain invested longer in trends generally leads to higher risk-adjusted returns. Short-term models, by contrast, will be quicker to react to market inflections, but with a higher risk of entering and exiting trends too soon, which can create excessive trading costs and/or hurt performance.

Over the long term, trend following strategies have no structural bias for long or short positions; they are designed to equally capture both upward and downward price trends regardless of asset type. This means they may generate positive returns during downward trending markets by "shorting" equities and by buying appreciating assets benefiting from flight to quality attributes. This results in a variable correlation profile as shown in Figure 9, which is low, on average, relative to equities and other assets. However, low correlations are not always expected.

For example, if equity markets are trending upward, trend followers will likely be net buyers of equities, leading to higher correlations with equities. Conversely, if equities are trending down, trend followers will likely be net sellers, leading to negative correlations to equities. This risk-taking profile and process of trend followers may produce an attractive profile (i.e., convex shape[8]) with potentially significant gains in large up and down equity markets. As shown in Figure 10, as time frames for evaluation are extended, this profile becomes more pronounced, or convex, aligning well with the objectives of second responders in an RMS framework.

[8] The convex shape is often referred to as a "smile" because the strongest returns for trend followers occur in the largest negative and positive periods for equities, which are often the product of sustained trends within markets.

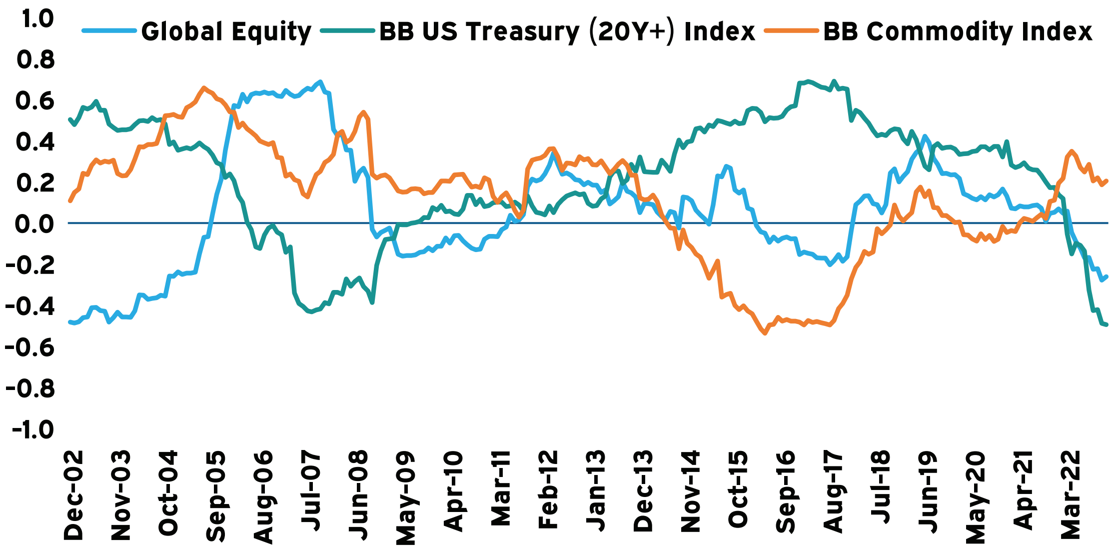


FIGURE 9

Rolling 3-year Correlation to SG Trend Index

Sources: Meketa, FactSet, Societe Generale. For the period from 2000 to December 2022. Global Equity is modeled as MSCI ACWI.

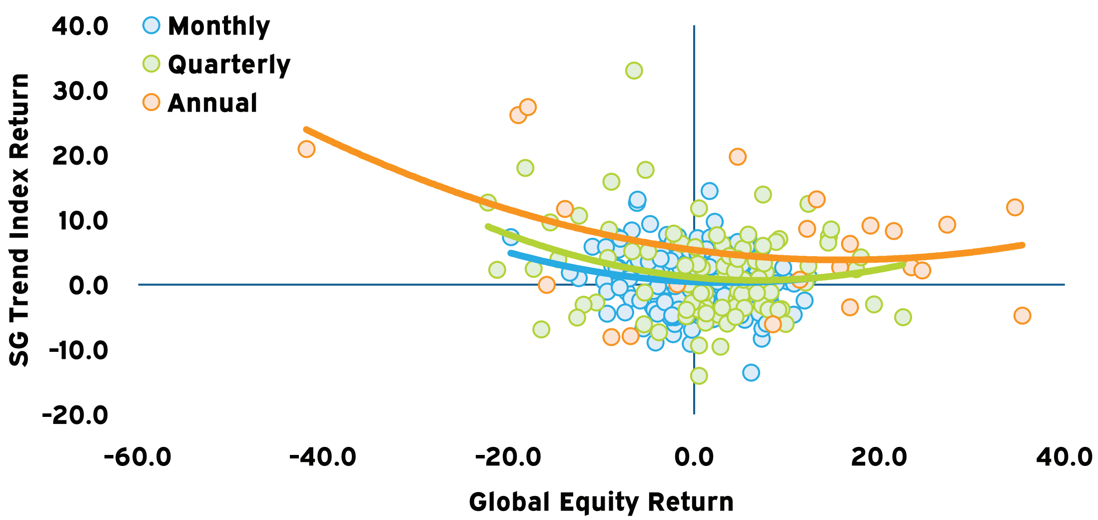


FIGURE 10

Convexity by Time Horizon

Sources: Meketa, FactSet, Societe Generale. For the period from 2000 to December 2022. Global Equity is modeled as MSCI ACWI. The depicted trend lines are second-degree polynomial functions.

Diversifiers overview

The diversifiers group can contain a wide range of investment strategies. These strategies can include some of the traditional hedge fund categories such as Global Macro, Equity Market Neutral, Relative Value, and Event Driven. Other strategies such as insurance-linked securities, alternative risk premia, and multi-strategy platforms, which combine a breadth of strategies, may also be considered. A high-level summary of some of these categories is shown in Figure 11.

Diversifiers

Global Macro	Alternative Risk Premia	Insurance Linked Strategies
Summary Attempts to profit by predicting market moves or finding inefficiencies through systematic and/or discretionary analysis **Common Implementation:** Liquid global futures/ forwards contracts across equities, bonds, currencies, and commodities	**Summary** Harvests non-traditional risk premiums in a market neutral fashion (Value, Carry, Momentum) **Common Implementation:** → Liquid global futures/ forwards contracts across equities, bonds, currencies, and commodities → Single name equities	**Summary** Harvests a risk premium linked to property damage insurance contracts related to natural catastrophes **Common Implementation:** Modestly illiquid reinsurance contracts

Arbitrage Strategies	Equity Market Neutral	Multi-strategy
Summary Attempts to profit from market inefficiencies related to idiosyncratic events or relative value opportunities **Common Implementation:** → Liquid global futures / forwards contracts across equities, bonds, currencies, and commodities → Single name equities	**Summary** Uses a systematic approach to profit from pricing anomalies related to mean reversion or technical analysis **Common Implementation:** → Single name equities	**Summary** A diversified portfolio of multiple investment strategies or portfolio managers **Common Implementation:** → Liquid global futures / forwards contracts across equities, bonds, currencies, and commodities → Single name equities

FIGURE 11
Example Categories

Source: Meketa Investment Group, 2023.

We defer an in-depth discussion of these strategies as their attributes may or may not be a fit for a risk mitigating framework, depending on an investor's objectives and constraints. Importantly, the list of strategies is not meant to be exhaustive. Setting aside labels and categorizations of hedge funds is important when identifying diversifying strategies because some hedge fund categories may be associated with high levels of embedded beta. Diversifiers often, in isolation or in aggregate, seek to meet several of the objectives outlined below:

- Provide higher expected risk-adjusted returns than first and second responders
- Are largely uncorrelated to first and second responders
- Generate uncorrelated returns from alpha and/or exposure to non-traditional risk premia

Evaluating strategies which may fit as diversifiers often includes considering approach, geography, breadth, and implementation. Investment managers may employ systematic or discretionary approaches and seek to generate excess returns through idiosyncratic risk exposures, predicting market moves or exploiting other market inefficiencies. Focusing on a subset of strategies meant to be uncorrelated with major market risks may result in a beta expectation that is lower than industry benchmarks[9] and closer to zero (+/- 0.2) beta to equities objective over the long term.

[9] As noted in Figure 2, the average beta of the HFRI Fund Weighted Composite over 36-month rolling time frames from January of 1990 to December of 2022 has been 0.36.

Using a Risk Mitigating Strategies (RMS) framework in strategic asset allocation

In this section, we utilize a hypothetical composite of indices to provide an example of the performance of an ensemble of risk mitigating strategies. While an RMS framework would be customized to specific investor objectives and constraints, these equal weighted benchmarks provide a good starting point to illustrate some of the performance tendencies of using a risk mitigating strategies framework. The performance below is an equally weighted blend of first responders (CBOE Eurekahedge Tail Risk Index, CBOE Eurekahedge Long Volatility Index, Bloomberg US Treasury 20+ Years), second responders (SG Trend Index), and diversifiers (HFRI Macro, HFRI Relative Value, HFRI Equity Market Neutral, HFRI Event Driven).[10]

[10] This is not an investible portfolio and is meant to be broadly and hypothetically representative example of a collection of risk mitigating strategies. Indices are widely used industry benchmarks. Please see the Appendix for additional detail on the construction and underlying benchmarks.

Taking a holistic approach when using an RMS framework can be helpful as no single group of an RMS functional framework, or a single strategy within a group, is likely to effectively fulfill all objectives. The goals of an RMS framework may be the following:

→ Generate a positive long-term expected return
→ Produce modest to meaningful positive returns during equity drawdowns
→ Be sufficiently liquid to allow for timely rebalancing
→ Be scalable and capital efficient to have impact in a strategic asset allocation
→ Provide modestly negative to modestly positive correlations to traditional risk factors on average

We anticipate that these attributes could prove beneficial to expected investor outcomes by bending the efficient frontier up and to the left as shown in Figure 12. Including risk mitigating strategies with other common assets (e.g., equities and bonds) may help investors achieve an improved risk-return trade-off. While the efficient frontier illustrates a historical benefit to using a hypothetical RMS framework, forward-looking expectations using basic optimization techniques such as mean variance optimization (MVO) may also indicate a benefit. However, even MVO may understate the potential benefits of RMS, as MVO does not consider the non-normal distribution of asset returns we observe in practice. Thus, it is important to evaluate both historical and forward-looking simulations that consider non-normal distributions.

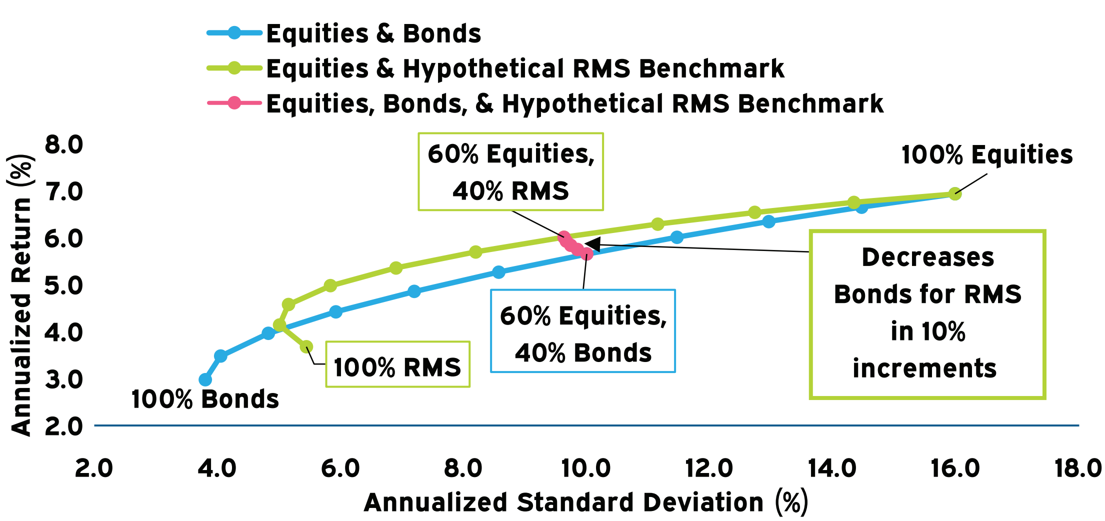


FIGURE 12
Historical Hypothetical Portfolio Return & Risk: 2005 through December 2022

Sources: Meketa, Factset, Societe Generale. Bonds refer to the Bloomberg US Aggregate index, and Equities refers to the MSCI ACWI. Composition of RMS, as the RMS Benchmark, can be found in the Appendix. In an effort to use readily available benchmark data, we have focused on the period of January 2005 to December of 2022 as a common period across most of the indices used. Analysis of other less readily available datasets results in similar takeaways and forward-looking expectations across the three types of hedges mentioned. Hypothetical portfolios change in 10% increments and assume annual rebalancing.

Many investor portfolios with long-term horizons, hence heavily invested in growth assets, might benefit from establishing an RMS framework. The ideal size of an allocation depends on several factors and will be dependent on the objectives, constraints and needs of the investor.

One factor to consider is the expected return of implementing an RMS framework and its conditional performance during drawdowns. As with most investments, these two factors trade off with each other, meaning allocations with higher expected returns may tend to have lower probabilities of positive performance during turbulent times.

Moreover, the characteristics of an RMS framework influences the structure of the rest of a strategic asset allocation. Notably, RMS allocations with high expected conditional performance during drawdowns may allow investors to increase equity or growth risk exposures, thereby implementing a "barbell" approach to risk allocations. This is primarily driven by the offsetting or positive returns expected during material equity drawdowns, as shown in Figure 14. This can be compared with Figure 13 which details the trailing 1-, 5-, 10-, and 15-years annualized performance for the period ending December 31, 2022. This is the most recent period end, and any analysis may be subject to endpoint bias.[11]

[11] Statistically, endpoint bias refers to the inclusion or exclusion of data that significantly influence results. Practically speaking, endpoint bias refers to investors' tendency to place undue significance on results for measurement periods ending in the present. If the recent past witnessed unusually high or low returns, then long term results can change considerably.

Risk mitigating strategies may have the potential to produce higher returns than bonds and a broad representation of "hedge funds" in equity drawdowns. While bonds have historically served as a ballast for investor portfolios, using an RMS framework may partially or fully allow investors to hold more equity exposure. The ability to rebalance from appreciated assets into depreciated assets may allow investors to compound returns at a higher rate over time.

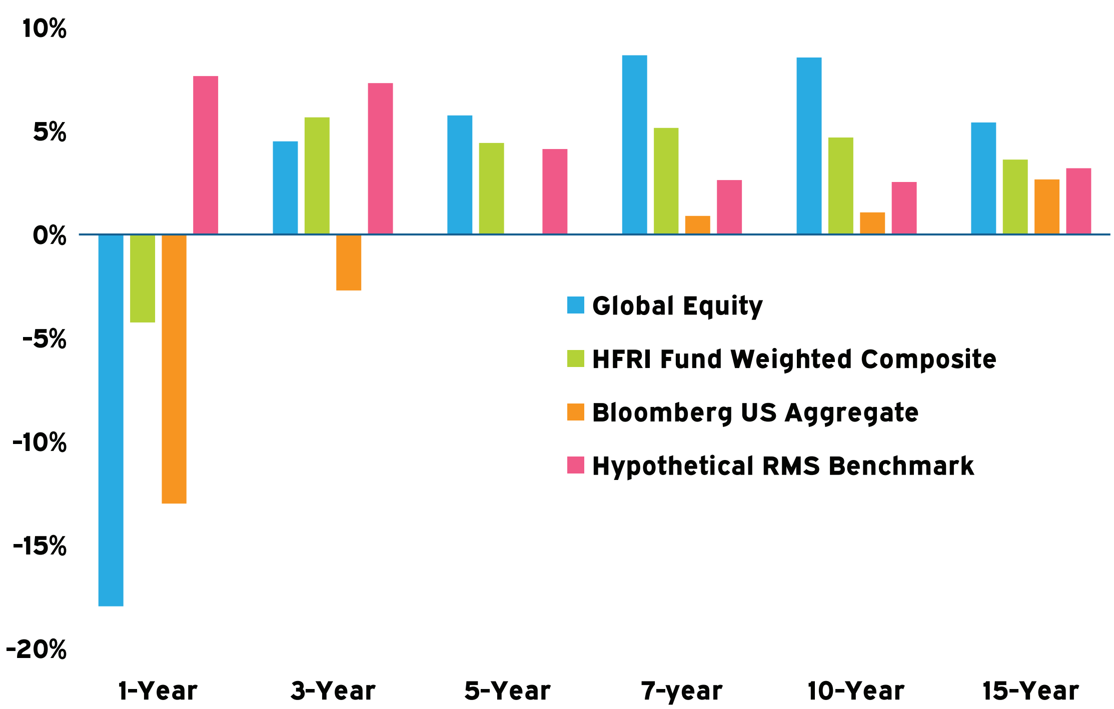


FIGURE 13

Trailing Annualized Returns as of December 31, 2022

Sources: Meketa, FactSet. For the period from 2005 to December 2022. Global Equities is modeled as the MSCI ACWI. Composition of RMS, as the RMS Benchmark, can be found in the Appendix.

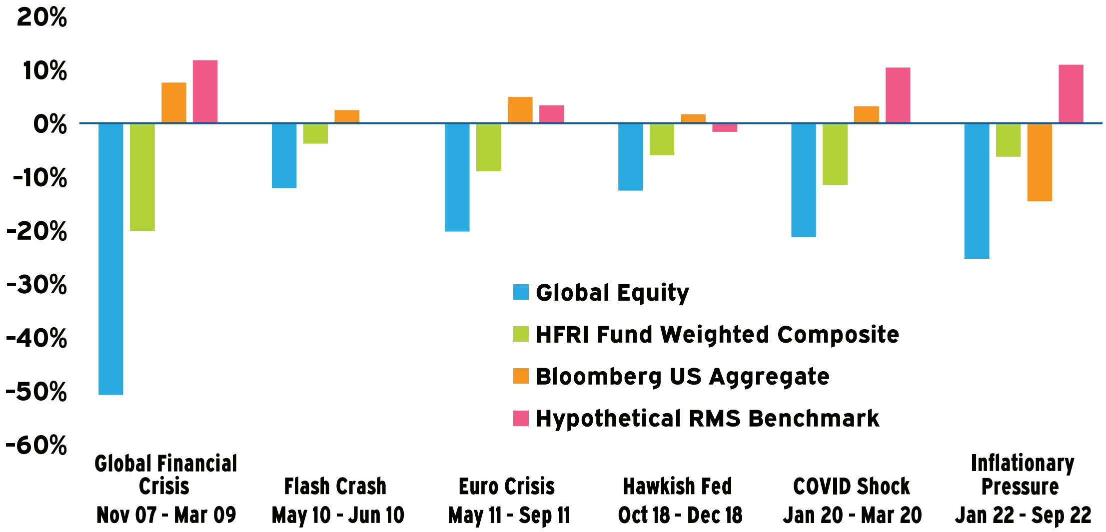


FIGURE 14

Return During Global Equity Drawdowns of at Least 10%

Sources: Meketa, FactSet. For the period from 2005 to December 2022. Global Equities is modeled as the MSCI ACWI. Composition of RMS, as the RMS Benchmark, can be found in the Appendix.

Conversely, risk mitigating strategies with higher expected returns, but lower defensive capabilities may warrant a larger size in the portfolio but may not allow for adding growth asset risk in the rest of the portfolio. For example, an RMS framework allocation with a higher weighting to first responders may have lower expected returns but higher conditional positive expected returns during drawdowns. This structure could support a lower allocation to an RMS framework, because with higher convexity, a smaller allocation is likely needed to provide the desired defensive capabilities. On the other hand, approaches with higher allocations to diversifiers may have higher expected returns but lower conditional expected performance during market crises.

In addition, related to the concept of convexity, the expected returns of risk mitigating strategies tend to increase with greater equity-related stress (e.g., equity declines of 10-20% or more), yet their effectiveness may be less certain during smaller equity "corrections" (e.g., equity declines of 10% or less).

This can be observed in the historical scatter plot shown in Figure 15 which compares the returns of risk mitigating strategies to equities. Many of the best months for the example hypothetical RMS portfolio occurred in the worst periods experienced by equities, while many of the worst months tend to occur during periods of flat or muted equity returns.

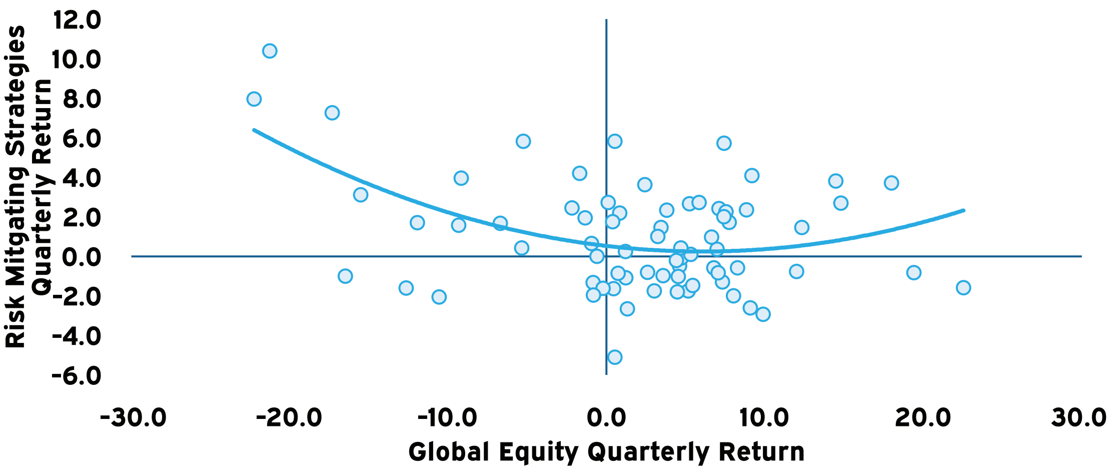


FIGURE 15

Hypothetical RMS Benchmark versus Global Equity

Sources: Meketa, FactSet, Societe Generale. For the period from 2005 to December 2022. Global Equity is modeled as MSCI ACWI. Composition of RMS, as the RMS Benchmark, can be found in the Appendix. The depicted trend lines are second-degree polynomial functions.

Further refinement of an RMS framework may consider the type of event that an investor seeks to protect against. For example, a higher allocation to first responder strategies may be more protective during quick and deep drawdowns but less effective during longer, extended drawdowns. A higher allocation to second responder strategies may be more protective during longer, extended drawdowns, but at the expense of being more exposed to the potential of negative returns during quick market reversals. A higher allocation to diversifiers may be more attractive during shallow, mean-reverting markets but may be exposed to downside risks during high velocity market drawdowns.

Given the dynamism of an RMS framework, it is important to emphasize there are multiple ways to implement an allocation across investors' strategic asset allocations, and there are many factors and perspectives to weigh when doing so.

Options, as noted in Figure 16, could include using an RMS framework to complement active investing across equities and/or fixed income, multi-asset exposures, or targeting the potential complementary nature of an RMS approach with a Liability Driven Investing[12] (LDI) portfolio. Again, the allocations across first responder, second responder, and diversifier strategies are built to meet the specific needs of each investor and address the risks most important to the investor. In addition, while there is a spectrum of manager selection risk across the groups, there may be opportunities to add value through portfolio construction, manager selection, vehicle structure, capital efficiency, and negotiation of terms.

[12] LDI refers to an investment strategy that involves more explicitly matching assets with projected liabilities, often by matching the duration of liabilities with that of yield generating assets (e.g., bonds).

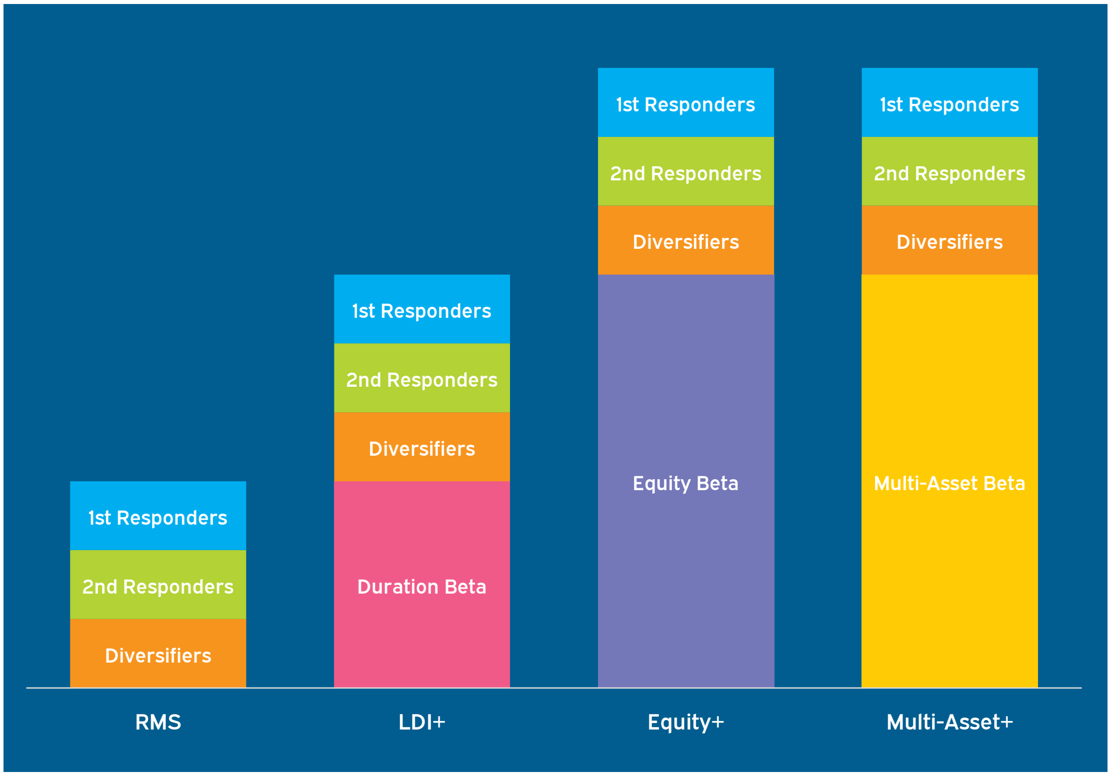


FIGURE 16
Potential Ways to Incorporate Risk Mitigating Strategies

Source: Meketa Investment Group, 2023.

Summary and conclusions

Investors have a daunting task in that they typically need to achieve high expected returns to support their objectives (e.g., assumed rates of return, spending rates, benefit payments, etc.) while at the same time controlling for different risks. Recent and historical events in both equity and bond markets have demonstrated that during times of stress most assets tend to move in unison. This reduces, and sometimes even eliminates some of the diversification benefits and risk reducing characteristics of traditional strategic asset allocations, thus leaving portfolios exposed to potentially very large losses.

An RMS framework provides building blocks to design a defensively oriented portion of an investor's strategic asset allocation that seeks diversification of risks, rather than diversification of labels, especially during times of severe equity downturns. In a broader sense, utilizing an RMS framework is a hedge against uncertainty, which could manifest itself across geopolitical risk, economic risk, and financial market risk. This framework may be constructed to complement growth-oriented assets such as equities, which will remain the main driver of expected returns in many portfolios. As such, RMS may serve as a long-term strategic allocation rather than a tactical hedging strategy.

An RMS framework may allow investors to consider allocating across three functional groups: first responders, second responders, and diversifiers. Structuring each group to achieve functional outcomes rather than investing in a more non-descript category such as "hedge funds" may produce more effective and balanced solutions. In addition, this may allow for increased flexibility to adapt as markets evolve. As each functional group has its merits and limitations, a balanced approach would likely improve the probability of investors achieving their desired outcomes. An RMS framework seeks to organize investor allocations in a way that might increase the likelihood of achieving their objectives. In general, these objectives include low correlations to equities, positive expected returns, and most importantly, positive expected performance during times of market crisis or material equity drawdowns. Strategic asset allocations often rely heavily on strategies that are focused on producing offense through exposure to economic growth (e.g., public equity, private equity, public credit, private credit, real assets, etc.) and incorporating an RMS framework may be a way to add strategies which seek to provide complementary defensive attributes.

Appendix: Hypothetical RMS benchmark composition

The hypothetical risk mitigating strategies (RMS) benchmark is equally weighted, rebalanced at the beginning of each calendar year. The hypothetical benchmark deducts a 0.50% fee annualized on a monthly basis. The following benchmarks are used:

First responders (1/3rd weight)

First responders are an equally weighted composite, rebalanced at the beginning of each calendar year, across the following across the following three benchmarks:

- → CBOE Eurekahedge Tail Risk Index
  - From 2005 to 2007 the Index is proxied as the CBOE Eurekahedge Long Volatility Index as inception of the CBOE Eurekahedge Tail Risk Index begins in January of 2008.
- → CBOE Eurekahedge Long Volatility Index
- → Bloomberg US Treasury 20+ Years

Second responders (1/3rd weight)

Second responders are proxied by the SG Trend Index

Diversifiers (1/3rd weight)

- → 25% HFRI Relative Value
- → 25% HFRI Equity Market Neutral
- → 25% HFRI Macro
- → 25% HFRI Event Driven

Additional details:

Benchmarks and financial indices are shown for illustrative purposes only and are provided for the purpose of representing a categories of investment types as a point of reference only. Such benchmarks and financial indices are unmanaged, assume reinvestment of income, do not reflect the impact of any trading commissions and costs, management and incentive fees, and have limitations when used for comparison or other purposes because they, among other reasons, may have a different trading strategy, volatility, credit, or other material characteristics (such as limitations on the number and types of securities or instruments). No representation is made that any benchmark or index is an appropriate measure of comparison.

- → CBOE Eurekahedge Tail Risk Index is an equally weighted index of 13 funds. It is designed to be representative of hedge fund managers that seek capital appreciation during periods of extreme equity market stress.
- → CBOE Eurekahedge Long Volatility Index is an equally weighted index of 14 funds. It is designed to be representative of hedge fund managers that take net long views on implied volatility with a goal of positive absolute returns.
- → Bloomberg US Treasury 20+ Years Index measures the performance of US dollar-denominated, fixed-rate debt issues by the US Treasury with maturities of greater than 20-years. The index does not include STRIPS and is a sub-set of Bloomberg US Treasury Index.
- → SG Trend Index is an equal-weighted index of 10 of the largest (by assets under management) trend following managers that meet the criteria specified by Société Generale.
- → HFRI Relative Value (Total) Index represents a collection of investment managers who implement investment strategies which seek to profit from valuation discrepancies between multiple securities. Managers may employ fundamental and quantitative techniques and invest broadly across equity, fixed income, derivative, or other security types.

- HFRI EH: Equity Market Neutral Index represents a collection of investment managers who implement investment strategies which utilize quantitative techniques to predict and profit from future price movement and relationships between securities. This can include both Factor-based and Statistical Arbitrage/Trading strategies. Strategies typically maintain net equity market exposure no greater than 10% long or short.
- HFRI Macro (Total) Index represents a collection of investment managers who implement investment strategies which seek to profit from using quantitative or qualitative models that seek profit from predicting the movement of equity, fixed income, hard currency, and commodity markets. Managers may employ both discretionary and systematic analysis, combinations of top down and bottom-up theses, quantitative and fundamental approaches, and long and short-term holding periods.
- HFRI Event Driven (Total) Index represents a collection of investment managers who implement investment strategies which seek to profit by maintaining positions in companies currently or prospectively involved in corporate transactions such as mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance, or other capital structure adjustments.

Notes on potential biases of benchmarks that aggregate manager returns:

- For HFRI Indices; if a fund in an index liquidates or closes, that fund's performance will be included in the HFRI up to the fund's last reported performance update. Additional index methodology details can be found at https://www.hfr.com/hfri-index-methodology.
- For CBOE Indices; the returns of dead funds have been included in the indices to better capture the performance of each underlying strategy as well as to mitigate survivorship bias. Historical returns for funds that liquidate are maintained and reflected in the index values up to and including their last reporting month. Since the rationale behind the suite of indices is relative benchmarking (rather than making them investible), funds that are closed for further capital inflows are also included in an index. For new funds that are added in, their performance numbers will only be included on a prospective basis and subject to a key index rule that returns prior to 3 months shall be locked in. This is to avoid for a backfilling bias as well as to ensure that index values prior to the most recent 3 months do not undergo changes over time. Additional index methodology details can be found at http://www.eurekahedge.com/Indices/CBOE-Eurekahedge-Volatility-Indexes-Methodology
- For SG Trend Index; the 10 managers are selected each year with equal allocation on January 1st. The index is reconstituted annually but not rebalanced during the year or backfilled. The 10 managers are meant to be representative of the largest trend following CTAs in the managed futures space, exhibiting a significant correlation to trend following peers and the SG Trend Indicator. Strategies are also required to be open to new investment and to report returns on a daily basis, net of fees. Historically, strategies have come in and out of the index as they have met or failed to meet the criteria of Societe Generale. However, many of the managers or strategies which have been removed or added to the index have live track records that extend beyond exclusion to present or before inclusion in the index. Additional index methodology details can be found at https://wholesale.banking.societegenerale.com/fileadmin/indices_feeds/SG_Trend_Index_Methodology.pdf.

Important information

Analysis in this paper is based on hypothetical modeling. Model, simulated, or pro-forma performance results (referenced as the RMS Benchmark) are unaudited and do not reflect actual results. Model performance results are for illustrative purposes only and are not necessarily indicative of performance that would have been achieved if an investment utilized the RMS framework during the relevant periods, nor are these historical simulations necessarily indicative of future performance of the example RMS framework. Inherent limitations of such hypothetical returns are as follows without limitation: 1) model results are generally prepared with the benefit of hindsight; 2) model results do not represent the impact that material economic and market factors might have on an investment adviser's decision-making process if the adviser were actually managing client assets; 3) there are numerous factors related to the markets in general, many of which cannot be fully accounted for in the preparation of hypothetical performance results and all of which may adversely affect actual investment results. Investing involves the risk of loss, including the potential loss of principal, and there can be no assurance the adviser will be able to achieve profitable or results comparable to those expressed herein.

This material is provided by Meketa Investment Group, Inc. ("Meketa") for informational purposes only and may contain information that is not suitable for all clients. No portion of this commentary is to be construed as a solicitation or recommendations to buy or sell a security, or the provision of personalized investment advice, tax or legal advice. Past performance may not be indicative of future results and may have been impacted by market events and economic conditions that will not prevail in the future. There can be no assurance that any particular investment or strategy will prove profitable, and the views, opinions and projects expressed herein may not come to pass. Any direct or indirect reference to a market index is included for illustrative purposes only, as an index is not a security in which an investment can be made. Indices are benchmarks that serve as market or sector indicators and do not account for the deduction of management fees, transaction costs and other expenses associated with investable products. Meketa does not make any representation as to the accuracy, timeliness, suitability, completeness or relevance of any information prepared by any unaffiliated third party and takes no responsibility, therefore. Any data provided regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of futures results. Investing involves risk, including the potential loss of principal and clients should be guided accordingly.

Disclaimers

This document is for general information and educational purposes only, and must not be considered investment advice or a recommendation that the reader is to engage in, or refrain from taking, a particular investment-related course of action. Any such advice or recommendation must be tailored to your situation and objectives. You should consult all available information, investment, legal, tax and accounting professionals, before making or executing any investment strategy. You must exercise your own independent judgment when making any investment decision.

All information contained in this document is provided "as is," without any representations or warranties of any kind. We disclaim all express and implied warranties including those with respect to accuracy, completeness, timeliness, or fitness for a particular purpose. We assume no responsibility for any losses, whether direct, indirect, special or consequential, which arise out of the use of this presentation.

All investments involve risk. There can be no guarantee that the strategies, tactics, and methods discussed in this document will be successful.

Data contained in this document may be obtained from a variety of sources and may be subject to change. We disclaim any and all liability for such data, including without limitation, any express or implied representations or warranties for information or errors contained in, or omissions from, the information. We shall not be liable for any loss or liability suffered by you resulting from the provision to you of such data or your use or reliance in any way thereon.

Nothing in this document should be interpreted to state or imply that past results are an indication of future performance. Investing involves substantial risk. It is highly unlikely that the past will repeat itself. Selecting an advisor, fund, or strategy based solely on past returns is a poor investment strategy. Past performance does not guarantee future results.

Assessing—and Tracking—the Macro Fallout of Banking Stress

Banking stresses have been at the forefront of market-related news over most of the last month. After the 2008-2009 experience, this has ignited concerns about the broader health of the banking system and the potential knock-on effects of a credit crunch to the broader economy. Trying to head that off after the failure of Silicon Valley Bank (SVB) and Signature Bank, the FDIC, Treasury and Federal Reserve jointly decided that the failures posed a systemic risk to the U.S. economy. That decision allowed them to insure all deposits at the banks, including those over the FDIC's $250k cap. Part of the rationale for this was to prevent an acceleration of deposit withdrawals from midsize banks. Though it took a little longer than usual, the FDIC eventually was able to turn to their usual playbook for a failed bank: selling it to another bank, though in this case not to a large bank, but a smaller one. First Citizens Bank has agreed to buy SVB, according to a statement by the FDIC.

"It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts."

– Sir Arthur Conan Doyle, Sherlock Holmes

Looking ahead, Secretary of the Treasury Janet Yellen has implied in her comments that, at least for the foreseeable future, any deposits over $250k are effectively guaranteed. Yellen can't quite come out and say that there is a blanket guarantee on deposits over $250k—that authority belongs to Congress. But the Treasury/Fed/FDIC triumvirate could designate any other bank failures as similarly posing a systemic risk to the financial system, and we think it exceedingly likely that they would do so.

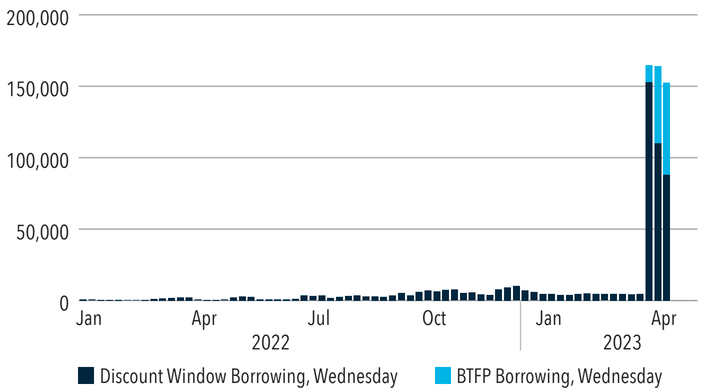
Our baseline going forward is that the banking stress proves a real, though contained, drag on the overall economy. We believe that the SVB situation is unique enough—and actions taken have been strong enough—that the banking failures will not metastasize. The implicit guarantee, combined with substantial liquidity provising, looks to be enough to arrest very severe deposit flight from small- and mid-sized banks to the largest ones. Even if our baseline is accurate, there is still likely to be an effect on growth from the fallout over the rest of this year and into next year, albeit a manageable one. That comes as banks will likely impose somewhat higher lending standards and reduce capital availability in response to the turmoil, especially for banks that see deposit outflows. All in, our best estimate of the growth drag is somewhat less than ½ percentage point, and probably closer to ¼ percentage point. Or, if we think about it in terms of the amount of Fed tightening that would generate a similar growth drag, it is roughly equivalent to one or two 25bp Fed Funds rate increases. However, we recognize there is a great deal of uncertainty around whether the banking system will stabilize and the size of the growth drag. In consequence, we have added a scenario where the stress proves larger and more durable, though our base case remains the more limited drag described above. The banking stress scenario envisions the stresses mostly hitting U.S.-based small and regional banks, though again recognize that there is also plenty of risk and uncertainty on that too.

Given the uncertainty, we will be watching incoming data to try to assess the current state of the banking system and fallout going forward. For this purpose, we are focused more on tracking how the stresses filter through the financial system and the broader economy than what they mean for any individual bank. This will involve looking at data from a variety of sources and at a variety of frequencies.

The highest frequency and most timely data to watch will be from the Federal Reserve on the banking system. That starts with information the Fed provides on the non-standard lending they are injecting into the banking system with the weekly H.4.1 report—an exceptionally timely report, as the release on Thursday gives data for the day before.

Figure 1 shows the combined lending to banks through the discount window and the Bank Term Funding Program (BTFP), one of the liquidity measures put into place earlier this month. From quite low and normal levels of lending, there was a jump of about $150bn in early March as banks that were hit by deposit withdrawals drew on these facilities to provide a liquidity buffer.

FIGURE 1:
BANK FUNDING NEEDS JUMPED, THEN STABILIZED



As of 27 March 2023. Sources: Federal Reserve and Bloomberg. For illustrative purposes only.

After that sharp increase, though, aggregate funding stress looks to have declined somewhat, on net, over the past two weeks. Discount window borrowing has dropped over the past two weeks, though most of that decline has been offset by an increase in borrowing through the BTFP. Most, but not all, as the total amount borrowed has declined by a modest amount: a bit over $10bn from the peak.

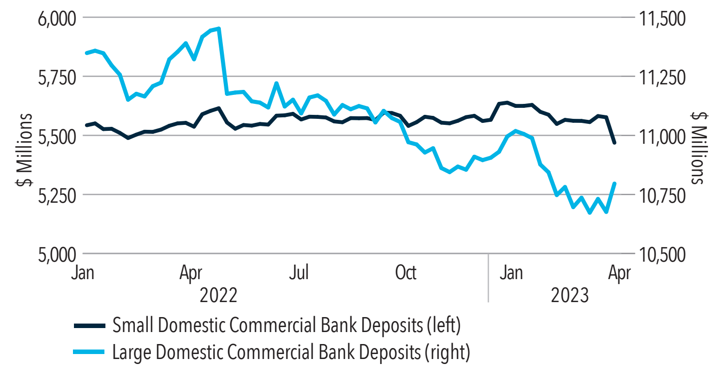
On Fridays the Fed releases another useful report for tracking stresses: the H.8 report on assets and liabilities of commercial banks, which we will also be monitoring closely along several axes. The H.8 has information on the aggregate amount of deposits at large and small commercial banks, so it will provide insight on whether we are seeing a big increase in deposit flight from small banks.

Unfortunately, though this will be useful, it's also very imperfect. First, it is more lagged than the H4 data shown above. The release of H8 data on Friday, 24 March is for 15 March, the prior Wednesday. That means the most recent report is just starting to pick up some of the reactions to SVB; in contrast the H.4.1 data is through Wednesday, 22 March. Second, the large/small cutoff is the largest 25 banks versus all remaining banks. That is far from perfect, as SVB was in the top 25, so a similar bank would be in the large bank grouping. That means it would miss deposit flows from, say, mid-sized and larger regional banks to the very largest banks.

With those caveats, Figure 2 shows a snapshot of the data through 15 March. The week after SVB's failure saw substantial flows from the small banks to the large ones as deposits dropped by a bit over $100bn at the smaller banks, while larger banks saw a corresponding rise of a bit over $100bn. That's certainly a substantial flow but it's also important to put it in context. Figure 3 shows how the same data breaks down between the two.

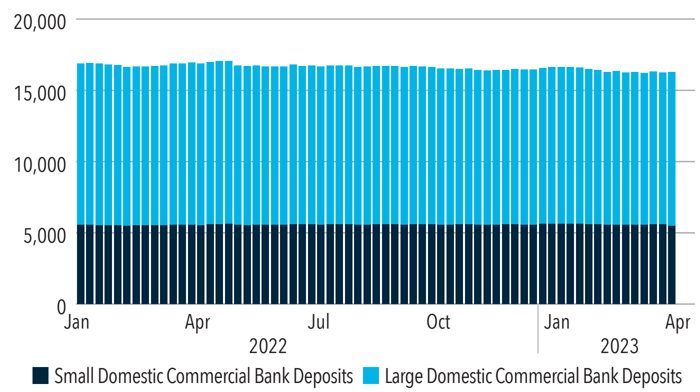
Though you can still see the deposit outflow on this graph, you have to look quite closely to do so. So, the flow so far isn't yet a major threat to the viability of small banks, but if it was to continue for several more weeks in a row, it would start to be, which is one thing we'll be watching for in these releases. The H.8 data also has data on loans and leases provided by the banking system, which is also data to watch closely over the coming weeks to see if banks appear to be pulling back on the amount of lending they're doing. Within this, commercial and industrial loans will deserve particularly close scrutiny.

FIGURE 2:
FOLLOWING STRESS, A BIT OVER $100BN ROTATED FROM SMALL TO LARGE BANKS



As of 24 March 2023. Sources: Federal Reserve and Bloomberg. For illustrative purposes only.

FIGURE 3:
SO FAR THE DEPOSIT SHIFT, THOUGH REAL, ISN'T MASSIVE



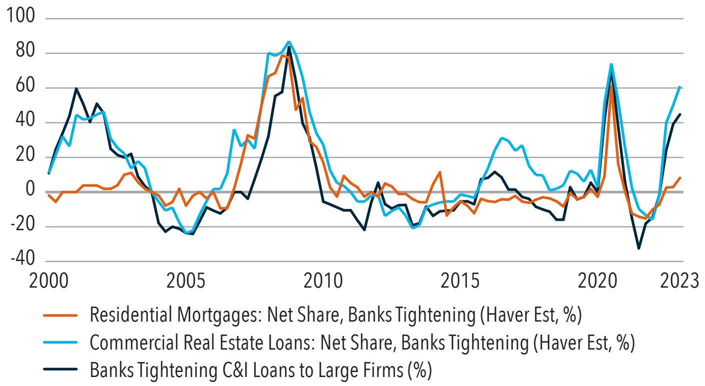
As of 24 March 2023. Sources: Federal Reserve and Bloomberg. For illustrative purposes only.

At a lower frequency, one upcoming data point that is likely to be very important is the Fed's Senior Loan Officers Survey. This survey can sometimes fly under the radar, but shouldn't this time, given that it is pretty much perfectly positioned to address questions about whether banks are pulling back on credit extension, as it is a survey of what loan officers at a variety of banks are doing with their loan standards—tighter or looser than they were in previous quarter. The primary issue is that the data isn't all that timely, as it is released on a quarterly basis. The survey is generally released the Monday after the first FOMC meeting of a quarter, so for Q2 that would be 8 May, which feels like an eternity in current market conditions, but still important to keep in mind. Note that the Fed will have the survey results at the

3 May meeting, even though the market does not. There has already been some tightening over the past year, but the index hasn't reached the levels it did during 2008-09, though what really stood out during that episode, and led to the very large impacts on growth, was that tightening was sustained over several years.

Along with tracking the banking system, the usual economic data remains important to watch to see if the Fed's rate hikes have slowed growth and inflation. The early 2023 data has been relatively robust on both the growth and inflation side; too robust, in fact. As a result, we have removed a scenario that foresaw inflation moderating more quickly and replaced it with one where inflation remains high and growth holds in, though we only assign it a 10% probability as we suspect that if inflation were to remain that robust, the Fed would keep raising rates until the economy tips into recession, a scenario to which we continue to assign substantial probability.

FIGURE 4:
FED'S SENIOR LOAN OFFICERS SURVEY A KEY METRIC FOR ASSESSING SIZE OF CREDIT CRUNCH



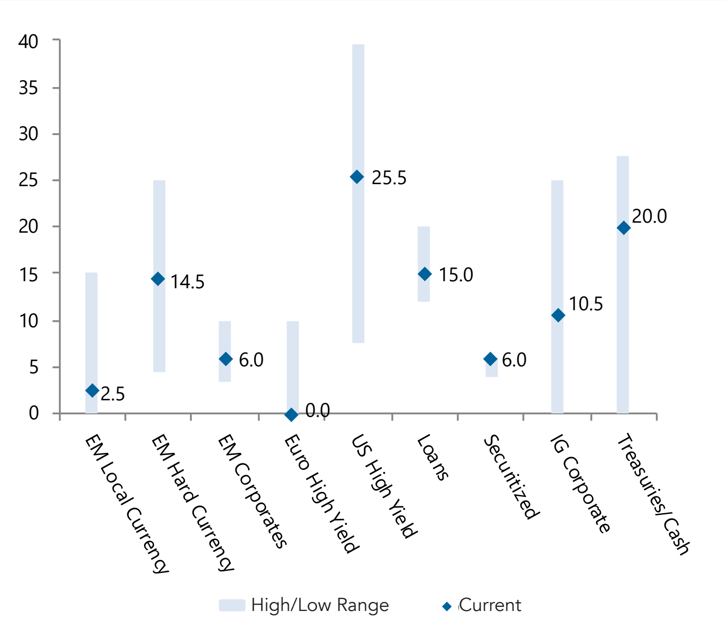
As of 29 March 2023. Sources: Federal Reserve and Haver Analytics. For illustrative purposes only.

Scenario	Assumptions
"Softish" Landing (50%)	• Tighter financial conditions, induced by higher Fed policy rates, and fading rebound from COVID continue meaningfully slowing growth. • Slower growth spreads out beyond interest rate sensitive sectors that are already lagging, such as housing, to the consumer and investment sectors. • Russia-Ukraine War, and resulting sanctions, both continue. • U.S. growth remains positive, though anemic. Eurozone growth close to zero. • China growth accelerates. driven by reopening. The continuing housing slump and weak global growth prevent a more dynamic rebound, but the drag from housing wanes as policy has turned more supportive. • Growth in other EMs also recovering as impact of China offsets drag from DMs, while monetary conditions starting to ease in H2. Commodity exporters still benefit from strong terms of trade. • U.S. core PCE remains elevated, dragged up by services inflation, though with some relief from good prices. By Q2, enough labor market space has been opened up that inflation starts to moderate further, though run-rate is still above target. • Fed increases rates by 25bp in May. Then, with growth meaningfully slower and rates above neutral, they pause to assess. Balance sheet runoff at sustained \$95bn/month pace. • ECB pace remains at 50bp for the next meeting before dropping down to 25bp. • Rate hikes peter out in EMs. China remains a key exception with continued accommodative monetary policy. • Oil prices little changed: ~\$85/barrel WTI, Brent ~\$90.
Central Bank-Led Global Recession (30%)	• Combination of tighter fiscal and monetary policies tips global economies into recession. • Growth fades further through the spring for the U.S.. Interest rate sensitive sectors—housing, business investment, and durables—lead the downshift, but typical recessionary dynamics take hold in the labor market and weakness spreads. • With contracting activity and sluggish consumer demand, inflation moderates rapidly. • European growth even slower than U.S. growth. The recession spills over into other DM and EM economies, though they perform relatively better than the U.S./EZ. • China recovery stalls, as global growth headwind and initially tighter financial conditions offset otherwise positive dynamics. • Broadly, sanctions against Russia remain in place. • Fed continues to hike rates, topping around 6%. It then pauses as payrolls turn negative. As recession dynamics take hold, they reverse course and start to cut the funds rate. By Q1 2024, rates are back to around 2½% with potential for further cuts. Balance sheet shrinkage stops, but purchases do not restart. • ECB continues to lift rates by 50bp for next several meetings, but then pauses as the combination of rate increases and the drag from high energy prices induce a recessionary contraction. They then likewise begin reversing hikes. • EM economies shifting policy stance with more decisive cuts than in base case scenario. • Oil: WTI at ~\$55/barrel; Brent ~\$60/barrel.
Stubbornly Sticky Inflation (10%)	• Growth and labor markets remain relatively solid through 2023, despite Fed hikes. • Inflation fails to moderate, stubbornly remaining around 5%. As a result, the Fed continues to push rates higher, and they sit above 6% by early 2024. • Market participants and the Fed broadly conclude that neutral real rates have moved substantially higher. • Dollar is broadly quite strong. • European inflation also remains stubbornly high and induces a similar ECB response, as rates continue to push substantially higher. • EM benefits from stronger global growth. Global trade holds up better and commodity prices remain buoyant. • China's reopening-driven rebound extends in 2023. • Oil prices: ~\$90/barrel WTI, Brent ~\$95.
Spiraling Banking Problems (10%)	• Banking problems continue to fester. • Substantial losses from higher interest rates show up at other banks. Several others fail; depositors backstopped by systemic risk invocations. Smaller banks are forced to meaningfully increase deposit rates while large banks keep them close to zero. • Credit availability drops substantially as banks pull back on lending. • Growth deceleration sharpest in late spring and early summer—sooner than in the global recession scenario. • Slower growth opens up some labor market space; inflation cools fairly rapidly. • That combination allows the Fed to start cutting rates in late 2023/early 2024. • Just as banking issues didn't remain contained to SVB, they don't remain contained to the U.S. and other DM banks come under substantial stress. • Similar inflation dynamics also allow rate cuts. • EM growth slows, driven by weaker U.S. demand and tighter financial conditions, but the U.S.-centric nature of the shock helps to prevent a deeper slowdown across EM. • EMs see more room for rate cuts in H2 2023. • Oil prices: ~\$65/barrel WTI, Brent ~\$70.

	"Softish" Landing (50%)	Global Recession (30%)	Stubbornly Sticky Inflation (10%)	Spiraling Banking Problems (10%)
U.S. Real 4Q GDP (%)	0.50	-1.50	1.50	-0.75
Fed Funds (%)	5.13	2.63	6.13	4.13
U.S. Core PCE (%)	3.50	2.75	5.00	3.00
2yr Treasury (%)	5.00	1.75	6.15	3.50
10yr Treasury (%)	3.50	1.75	6.00	2.50
10yr Bund (%)	2.50	0.25	4.75	1.00
China 4Q GDP (%)	5.50	3.50	6.00	4.75
EM 4Q GDP (%)	4.25	2.00	4.75	3.25

[1]Forecast Period: Next 12 months. Source: Stone Harbor.

MULTI-ASSET CREDIT TARGET ALLOCATIONS (%) SINCE INCEPTION & RECENT ALLOCATION CHANGES[2]



[2]Since Inception: September 2013. Stone Harbor Multi-Asset Credit Representative Target Allocation as of 28 February 2023. Actual allocations within any account may be significantly different from the target allocations shown here. For illustrative purposes only.

LATEST ALLOCATION CHANGES

	Month	Change (%)
EM Local Currency	May-Jun 2022	-2.5
EM Hard Currency	May-Jun 2022	+2.5
EM Corporates	Feb-Mar 2022	+0.5
Euro High Yield	Jan-Feb 2023	-5.0
U.S. High Yield	Jan-Feb 2023	-5.0
Loans	Jan-Feb 2021	+1.5
Securitized	Mar-April 2019	+1.0
IG Corporate	Oct-Nov 2022	+0.5
Treasuries/Cash	Jan-Feb 2023	+10.0

DECEMBER CREDIT MARKET TOTAL RETURNS & ATTRIBUTION

	U.S. High Yield	EM Hard	Loans	EM Local	EM Corp	Euro High Yield	IG Corporate
Total Return	-1.28	-2.21	0.59	-3.16	-1.60	0.07	-2.41
Duration (Returns from Interest Rates %)	-1.77	-2.43	0.38	-1.90	-1.70	-1.26	-2.20
Credit Beta (Returns from Spreads %)	0.49	0.22	0.21	-1.26	0.10	1.33	-0.21

Month Ended 28 February 2023. Performance reflects representative asset class benchmarks. HY: ICE BofAML U.S. High Yield Constrained Index; EMD: J.P. Morgan EMBI Global Diversified; EMDLC: J.P. Morgan GBI-EM Global Diversified; EMDCR: J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified; EUR HY: ICE BofAML European Currency High Yield 2% Constrained Ex Financial; IG Corp: Bloomberg Global Agg Corporate Index; Loans: Morningstar LSTA U.S. Leveraged Loan Index. **Past performance is not a guarantee of future results.** Returns are shown gross of fees. For illustrative purposes only.

STONE HARBOR INVESTMENT PARTNERS

Stone Harbor is a global credit specialist with expertise in emerging and developed markets debt, with three decades of informed experience allocating risk in complex areas of the fixed income markets. We manage credit portfolios for clients globally.

- Institutional fixed income investment firm focused on credit risk strategies and asset allocation
- Over 30-year performance history
- Offices in New York, London, and Singapore
- Effective January 1, 2022, Stone Harbor Investment Partners is an affiliate of Virtus Investment Partners

Indices referred to herein are broad-based securities market indices. Broad-based securities indices are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly in an index.

Index Definitions

The **J.P. Morgan CEMBI Broad Diversified (CEMBI Broad Diversified)** tracks total returns of U.S. dollar-denominated debt instruments issued by corporate entities in emerging market countries and consists of an investable universe of corporate bonds. The minimum amount outstanding required is $350 mm for the CEMBI Broad Diversified. The CEMBI Broad Diversified limits the weights of those index countries with larger corporate debt stocks by only including a specified portion of these countries' eligible current face amounts of debt outstanding.

The **J.P. Morgan EMBI Global Diversified (EMBI Global Diversified)** limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts outstanding. The countries covered in the EMBI Global Diversified are identical to those covered by the EMBI Global.

The **J.P. Morgan GBI-EM Global Diversified (GBI EM Global Diversified)** consists of regularly traded, liquid fixed-rate, domestic currency government bonds to which international investors can gain exposure. The weightings among the countries are more evenly distributed within this index.

The **ICE BofAML European Currency Non-Financial High Yield 2% Constrained Index** contains all non-Financial securities in the ICE BofAML European Currency High Yield Index but caps issuer exposure at 2%. Index constituents are capitalization-weighted, based on their current amount outstanding, provided the total allocation to an individual issuer does not exceed 2%. Issuers that exceed the limit are reduced to 2% and the face value of each of their bonds is adjusted on a pro-rata basis. Similarly, the face values of bonds of all other issuers that fall below the 2% cap are increased on a pro-rata basis.

The **ICE BofAML U.S. High Yield Constrained Index (HUC0)** contains all securities in ICE BofAML U.S. High Yield Index but caps issuer exposure at 2%. Index constituents are capitalization-weighted, based on their current amount outstanding, provided the total allocation to an individual issuer does not exceed 2%. Issuers that exceed the limit are reduced to 2% and the face value of each of their bonds is adjusted on a pro-rata basis. Similarly, the face values of bonds of all other issuers that fall below the 2% cap are increased on a pro-rata basis. In the event there are fewer than 50 issues in the Index, each is equally weighted and the face values of their respective bonds are increased or decreased on a pro-rata basis.

The **Morningstar LSTA U.S. Leveraged Loan Index** is a daily total return index that uses LSTA/LPC Mark-to-Market Pricing to calculate market value change. On a real-time basis, the index tracks the current outstanding balance and spread over LIBOR for fully funded term loans. The facilities included in the Index represent a broad cross section of leveraged loans syndicated in the United States, including dollar-denominated loans to overseas issuers.

The **Bloomberg U.S. Aggregate Index** is a broad base, market capitalization-weighted bond market index representing intermediate term investment grade bonds traded in the United States.

The **Bloomberg Global Aggregate Bond Index** provides a broad-based measure of the global investment grade fixed-rate debt markets. It is comprised of the U.S. Aggregate, PanEuropean Aggregate, and the Asian-Pacific Aggregate Indexes. It also includes a wide range of standard and customized subindices by liquidity constraint, sector, quality, and maturity.

Important Disclosures

This material is solely for informational purposes and should not be viewed as a current or past recommendation or an offer to sell or the solicitation to buy securities or to adopt any investment strategy. The opinions expressed herein represent the current, good faith views of the author(s) at the time of publication and are provided for limited purposes, are not definitive investment advice, and should not be relied on as such. The information presented in this material has been developed internally and/or obtained from sources believed to be reliable; however, Stone Harbor Investment Partners ("Stone Harbor") does not guarantee the accuracy, adequacy, or completeness of such information. This material includes statements that constitute "forward-looking statements". Forward-looking statements include, among other things, projections, estimates, and information about possible or future results related to market, geopolitical, regulatory, or other developments. Any forward-looking statements speak only as of the date they are made, and Stone Harbor assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks, and uncertainties, and are based on current market trends, all of which change over time. The views expressed herein are not guarantees of future performance or economic results and involve certain risks, uncertainties, and assumptions that could cause actual outcomes and results to differ materially from the views expressed herein. The views contained in this material are subject to change continually and without notice of any kind and may no longer be true after the date indicated.

Risk Disclosures

All investments involve risk, including possible loss of principal. There may be additional risks associated with international investments involving foreign economic, political, monetary, and/or legal factors. These risks may be heightened in emerging markets. Past performance is not a guarantee of future results. This material is for Institutional Use Only.

Main Office - New York
31 W. 52 Street
16th Floor
New York, NY 10019
+ 1 212 548 1200

London Office
48 Dover Street
5th Floor
London W1S 4FF
+ 44 20 3205 4100

Singapore Office
3 Killiney Road
Winsland House 1
Singapore 239519
+ 65 6671 9711

shipemd.com

BlackRock Alternatives

2023 Private Markets Outlook

A new era for investors

BlackRock

FOR PROFESSIONAL, INSTITUTIONAL, WHOLESALE, PERMITTED AND QUALIFIED INVESTORS AND CLIENTS ONLY – NOT FOR PUBLIC DISTRIBUTION (PLEASE READ IMPORTANT DISCLOSURES)

ALTH1222U/M-2623146-1/29

Edwin Conway

Global Head,
BlackRock Alternatives

In turbulence, optimism

Investors had little reason to love 2022.

It was a year that brought market upheavals, geopolitical instability and economic conditions that few could have foreseen.

Although 2023 is expected to bring with it some turbulence, at BlackRock Alternatives the outlook for the new year is one of cautious optimism.

Near-term uncertainty presents an opportunity for investors to achieve their long-term objectives, by continuing to invest in durable global trends such as the transition to a low-carbon economy, ever-expanding technology adoption and emerging demographic shifts.

More and more companies are turning to the private markets for their capital and financing needs, enlarging the field of potential investments. And history tells us that even through periods of turmoil private assets can perform well on an absolute and relative basis.

While we acknowledge the challenges that may come, we're nevertheless optimistic that a worldwide network of relationships, rigorous selection process and sophisticated risk analytics can deliver the best in private markets for clients, no matter the market cycle.

Contents

First words **2-6**

Welcome **2**

Key takeaways **3**

Introduction **4**

Asset class views **7-22**

Infrastructure **7**

Private credit **11**

Private equity **15**

Real estate **19**

Key takeaways

- A new era of higher inflation, rates and volatility has roiled public markets, creating opportunities for upcoming vintages across private markets.
- The role of private assets in a portfolio is becoming more important than ever, as many are uniquely poised to take advantage of significant global trends.
- Private credit continues to expand as public financing retreats and more companies seek capital.
- Infrastructure should benefit from continued investment in sustainable energy and energy security. It can also play a role as a non-correlated inflation hedge.
- In private equity, we see lower valuations, increased buyout, carveout and M&A activity, and more quality portfolios for sale in the secondary markets.
- Real estate values are resetting in response to changing tenant demand and higher financing costs, which is leading to disparate returns among regions, sectors and property types.

Authors

Lynn Baranski
CIO and Co-Head, BlackRock Alternatives Private Equity Partners

James Keenan
CIO and Global Head, BlackRock Alternatives Credit

Mark Everitt
Head of BlackRock Alternatives Investment Research and Strategy

Anne Valentine Andrews
Global Head, BlackRock Alternatives Infrastructure and Real Estate

Introduction

Geopolitical conflicts. Energy crisis. Soaring food prices. Turbulent markets. New opportunities?

The past year was one of constant turmoil for investors, with few safe havens. It also presented tailwinds for private markets investors.

The decades-long “Great Moderation” of low inflation, low rates and globalization has given way to a new era of high inflation, rising rates and supply-driven economies.

The environment is complex and uncertain. Many developed nations are bracing for the possibility of recession. And climate change is both an imminent threat and an ongoing systemic challenge, as it shifts from the abstract to global temperature records and extreme weather changes.

But we see short-term uncertainty as an opportunity to continue investing in long-term megatrends, such as the net-zero transition – investors will play a pivotal role in redirecting capital flows to finance the transition to a low-carbon economy. We also see accelerated global technology adoption, growth in healthcare, and demographic shifts driven by changing lifestyles and preferences.

Availability and flexibility mean companies are turning to private markets for capital, creating opportunities to acquire high-quality assets at attractive multiples.

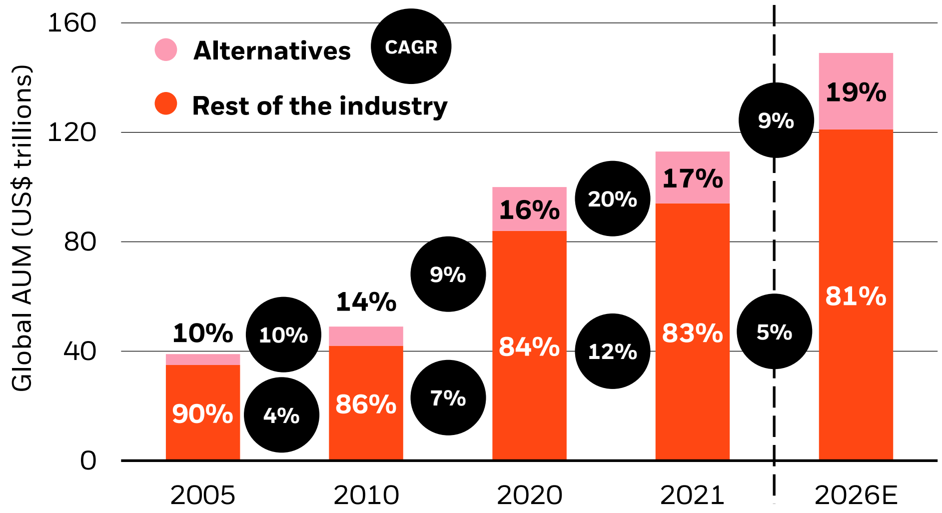
While the denominator effect has led private markets allocations to rise relative to public holdings, we encourage clients to view their portfolios through a forward-looking lens. We believe upcoming fund vintages are well-positioned to take advantage of new market dynamics.

In **private equity**, we see the opportunity to invest in persistent cashflows at attractive multiples. Resilient industries like healthcare and inflation-fighting technology offer different ways to play multiple cycles.

In **infrastructure**, the energy crisis, combined with the transition to a low-carbon economy, highlight the need for investment in affordable, viable and clean technologies.

Greater prominence

Alternatives are becoming a bigger part of the investing landscape



Source: BCG Global Asset Management, May 2022 (BCG analysis of data from Strategic Insight; P&I; ICI; Preqin; HFR; INREV). The figures relate to past performance. There is no guarantee that any forecasts made will come to pass. CAGR represents compound annual growth rate.

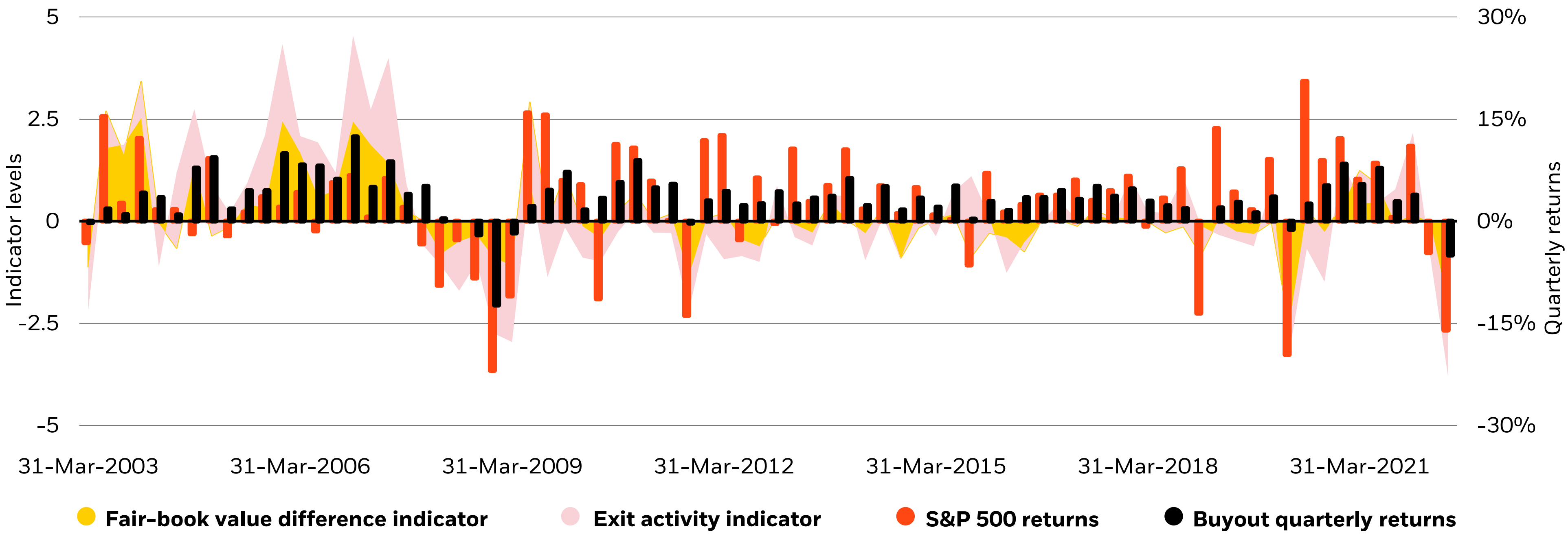
Past performance is not indicative of current or future results.

Portfolio view

If the correlation between stocks and bonds has fundamentally changed, portfolio construction processes should also evolve. During the Great Moderation, the narrative for private markets focused on yield premiums in a low-rate world. But we believe the focus should now include both the active and additive nature of private markets, based on the strength of asset selection, resilience through economic cycles, and protections in the form of investment structuring.

Positive signals

PE exits at below prior valuations are a potentially strong indicator of above-average future returns



Source: Preqin, June 2022. Exit activity indicator based on buyout distributions as a % of NAV from cashflow data Q1 2000 to Q2 2022, for funds primarily focused on North American region.
The figures relate to past performance. Past performance is not indicative of current or future results.

The structure of these investments will be integral to mitigating the risks related to technology innovation, windfall taxes, price volatility and regional policies.

In **real estate**, the demands of shifting demographics, deglobalization, and energy-efficient buildings have not gone away, even as investment has slowed. We expect further asset repricing in 2023, but we believe that investors who can identify the regional and thematic sweet spots will find a compelling opportunity set.

Spreads in **private credit**, coupled with rising interest rates, have increased potential returns. But there are questions about the ability of corporates to afford the higher costs. We believe the value of underwriting standards and structures have never been higher in managing the risk of investments through language stipulating the asset revenue/spread adjustments, seniority of investment risk, and covenants allowing earlier intervention and restructuring.

We see support of private equity sponsors and the flexibility of private debt providers as key to ensuring that companies' capital structures are optimized for the right ratio of equity to debt. Where this is not the case, an opportunity for special-situations and distressed may return.

Our private markets deal-flow pipeline has been consistent, with the third quarter at a similar level to the same period in 2021, partly a result of wider usage of private credit as well as accelerated investment in infrastructure.

We believe private assets offer potentially greater risk-reward. Considering that the investment period of a new fund vintage can extend from one to three years, the prospect of lower entry valuations is an attractive quality right now.

The focused nature of private market portfolios, which have relatively few investments, contribute to a wider return dispersion and place a premium on manager selection.

Private assets can be used for a number of purposes in a portfolio, and in a complementary manner alongside public holdings.

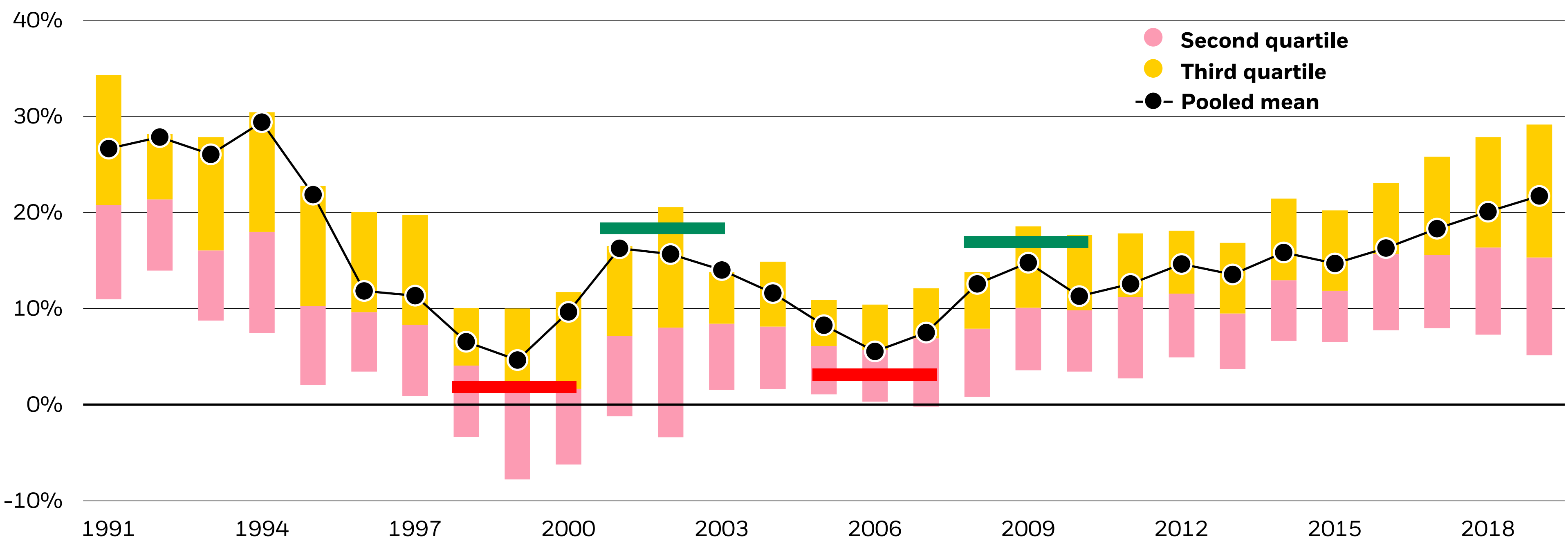
The sheer breadth of private market investments – from defensive to opportunistic credit, early- to late-stage private equity – allow for defensive income-seeking or long-term growth, with a diverse number of fundamental drivers of return.

We're also starting to see higher-quality secondary market opportunities, as some investors are forced to sell portfolios. Given the long lead time between deciding to sell a private equity asset and the sale, we expect more of these opportunities in 2023.

In the following pages, our investment teams further outline their views of the market, the key themes for the year ahead, and how private assets can support a portfolio that is both resilient and opportunistic in the new market regime.

Vintage years

Private equity vintages that invest during downturns tend to outperform



Source: eFront Insight Research Benchmark, 1991 – Q2 2022. The Quartiles Analysis represents the Insight Research Benchmark pooled mean and quartiles for the selected sample. The breakpoints between quartile sections represent the IRR for the fund(s) in the sample at the 25th and 75th percentiles.

The figures relate to past performance. Past performance is not indicative of current or future results.

Infrastructure

Accelerating transitions

Abrupt changes to the global economy are widening the scope for infrastructure investment strategies in 2023 and beyond. From roads to airports and energy infrastructure, these assets are essential to industry and households alike, and can benefit from macro trends such as the energy crunch and digitization.

Infrastructure has the potential to diversify returns and provide stable cashflows. Assets like power plants and toll roads are often funded through long-term contracts, helping to insulate them from economic cycles, and have CPI-linked costs and prices – making them a hedge against the effects of inflation. And infrastructure debt providers are responding to rising rates by shifting from fixed-rate to floating-rate loans.

The transition to a low-carbon economy continues to drive an enormous buildout in renewables, while energy-supply disruptions in Europe are creating opportunities to add resilience to the power network.

Globally, digital and telecom infrastructure continues to ride a long boom, bolstered by ongoing trends to work and shop at home. And investments in airports, ports and toll roads are slowly recovering after the impact of the pandemic and staggered border re-openings.

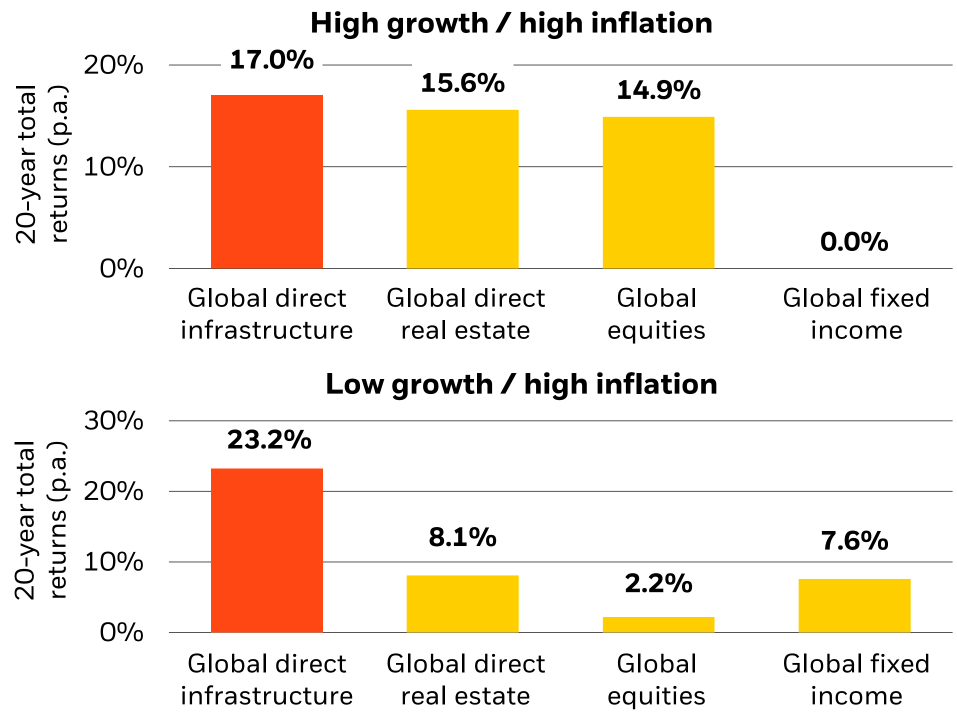
But infrastructure isn't without risks. Regulators in Europe have shown a willingness to impose price caps on energy, which can inhibit returns. At the same time, a possible recession, coupled with higher labor, materials and financing costs, have the potential to stall projects around the globe.

Portfolio view

Infrastructure sits at the heart of the transition to a low-carbon economy and the urgent near-term need for energy resilience. Investors are additionally drawn into infrastructure for its steady, inflation-mitigating return characteristics.

Ahead of inflation

Infrastructure has historically fared well during inflationary environments



Source: Bloomberg, Barclays (Global Fixed Income), MSCI (Global Equities), GREFI (Global Direct Real Estate), EDHEC (Infrastructure: All equity); as of 30 June 2022 (data since 2000). You cannot invest directly in an unmanaged index. High growth periods are when U.S. GDP > 2.5% and high inflation periods are when US CPI > 2.5%.

The figures relate to past performance. Past performance is not indicative of current or future results.

A new global landscape is accelerating key trends in infrastructure, driving investments to develop renewable capacity, decarbonize traditional sectors and add resilience to energy supply chains.

Global and local drivers

In the **United States**, recent policy shifts are markedly improving infrastructure fundamentals.

The *Inflation Reduction Act* and other new legislation are expected to boost investment for new technologies such as hydrogen and carbon capture, add debt capital for transport sectors, promote public-private partnerships and speed approvals for large-scale infrastructure projects such as transmission-grid upgrades.

In **Europe**, there is intensifying demand for greener and more resilient infrastructure. The entire region is pushing urgently to decarbonize power production, electrify motor vehicles and establish greater energy independence by transitioning away from imported fossil fuels and into renewable generation and power storage.

From an infrastructure standpoint, Europe is at an inflection point when it comes to reliance on digital communications for commerce and work. But it's also at the heart of a possible global slowdown in 2023, which could test many of these trends, or be an opportunity to incubate new technologies and business models.

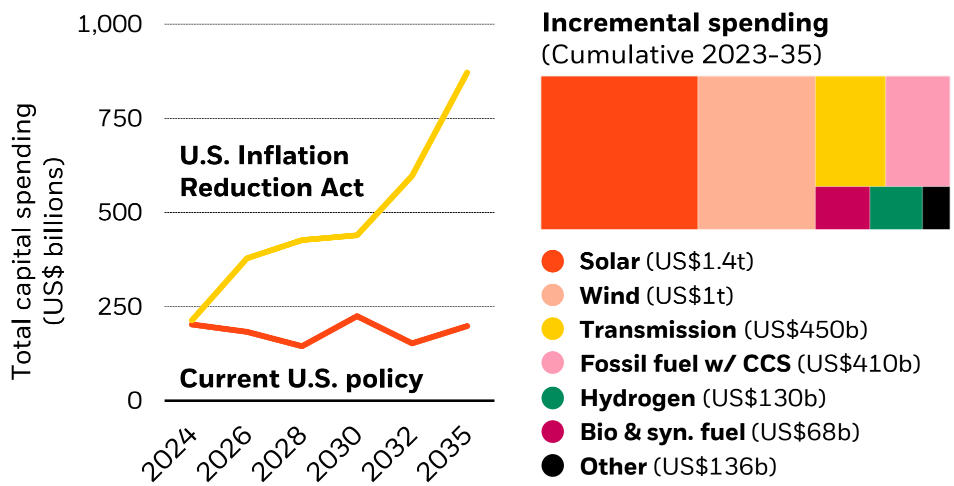
In the **Asia-Pacific** region, the outlook remains relatively firm given stronger growth and lagging infrastructure supply. The renewables rollout is still accelerating, led by the more mature markets in Australia, Japan, South Korea and Taiwan.

Energy exporters in Southeast Asia and Australia are being bolstered by high energy prices, providing an opportunity to add greener capacity ahead. The transport sector is showing a staggered rebound, reflecting the uneven pace of border reopenings across the region.

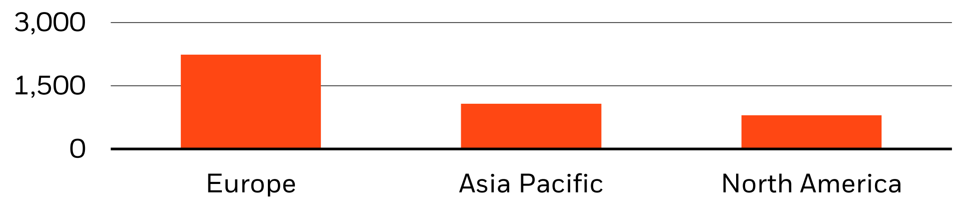
While common themes apply across the globe, there is a clear need for regional infrastructure approaches that reflect local policy changes, economic needs and community concerns.

Unlocked by policy

Estimated investment in U.S. energy supply infrastructure



Number of climate-related energy policies by region



Source: (above) REPEAT Project as of August 2022. The chart shows projections of capital investment based on analysis of the Bill's potential impacts by repeatproject.org. It does not include impacts on clean energy components, batteries, electric vehicles or criteria l minerals. The analysis should be considered approximate and may be updated or refined by subsequent analysis. (below) IEA and BlackRock Data Strategy & Solutions, as of October 28, 2022. *Energy policies included with status of "planned", "in force" or announced". CCS refers to Carbon Capture & Storage. There is no guarantee that any forecasts made will come to pass. Reliance upon information in this material is at the sole discretion of the reader.

The implications of a global transition

The global transition to low-carbon economies is accelerating as a growing number of countries create incentives for investments to decarbonize sectors including energy and transportation.

The scale of this change – US$125 trillion of new investments by 2050, according to the IEA – represents a major opportunity for infrastructure investors around the world.

Renewable power is high on the list, with wind and solar likely to be the key contributors. But segments such as batteries, hydrogen and carbon capture are becoming more technologically feasible and commercially viable. Nuclear remains on watch for cost and technological reasons.

We believe this is a timely window to electrify the transport sector, with the shift toward electric vehicles and the wider rollout of charging infrastructure.

Investments in sustainable energy benefit from powerful tailwinds, but many technologies must first ramp up in scale to be effective. While we see significant opportunities, we are taking a diversified approach across many sustainable technologies.

Select renewables and regions	Usage from 2020 to 2050 (equivalent production capacity)		
	North America	Europe	Asia-Pacific
Solar power (■ = 50,000 3MW solar panels)	**To add** 376,900, 3MW solar panels	**To add** 91,400, 3MW solar panels	**To add** 1.06 million, 3MW solar panels
Wind power (■ = 25,000 6MW wind turbines)	**To add** 136,600, 6MW wind turbines	**To add** 119,300, 6MW wind turbines	**To add** 361,300, 6MW wind turbines
Natural gas (■ = 1,000 combined cycle plants)	**To cut** 3,000 combined cycle gas plants	**To cut** 1,500 combined cycle gas plants	**To add** 1,300 combined cycle gas plants
Electric vehicles (■ = 5% of cars on the road being electric)	**To grow** EV usage from 2% in 2020 to ~70% in 2050 (target)	**To grow** EV usage from <4% in 2020 to 80% in 2050 (target)	**To grow** EV usage from ~4% in 2020 to >50% in 2050 (target)

Source: U.S. Energy Information Administration, International Energy Agency, Reuters, European Environment Agency, BlackRock Alternatives (November 2022). There is no guarantee that any forecasts made will come to pass.

ALTH1222U/M-2623146-10/29

Private credit

Calm amid the storm

Rising rates, inflationary pressures and economic uncertainty offer a few unique advantages for private credit investors.

The increase in interest rates in many countries has caused turmoil in the capital markets. But it could be a boon in private credit because of the flexibility of capital to react to changing market conditions.

And while there's the risk of higher default rates, that can be mitigated through disciplined investment selection and deal structuring, which is easier in private arrangements and can provide opportunities for rescue financing.

We see non-cyclical businesses such as segments of healthcare, along with software, technology, consumer staples and business services as better insulated from inflationary pressures.

These firms can usually pass a greater portion of cost increases to customers, helping to maintain profitability through the cycle. They are also attractive investments because they often come with lower loan-to-value (LTV) ratios.

In opportunistic credit, investors are increasingly able to extract more equity participation from companies who prefer credit to raising dilutive down rounds of equity capital.

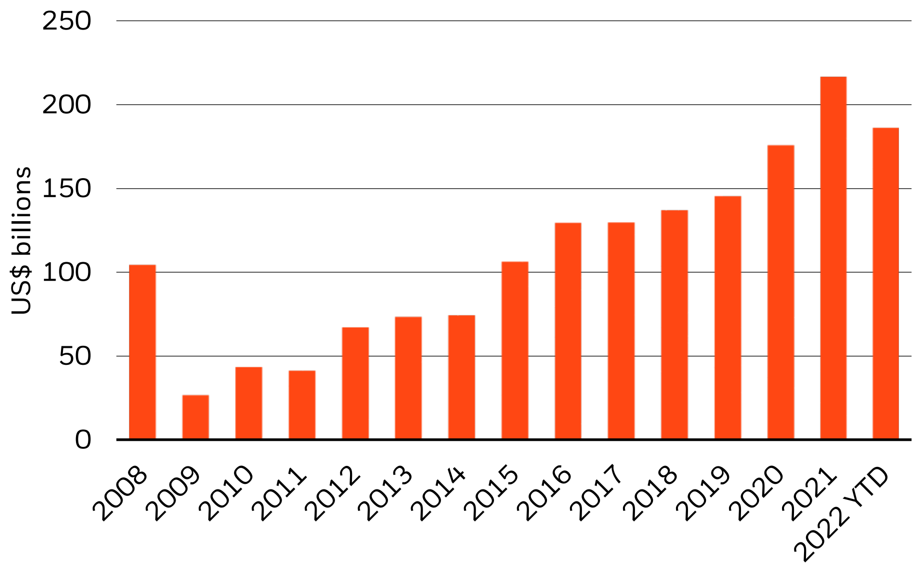
With the added benefit of higher rates, wider spreads and larger call protections, the risk-return profile of private credit as an asset class may well be more attractive than it has ever been.

Portfolio view

Amid a significant repricing in traded markets, investors are assessing the value of taking illiquidity risk. Private credit offers greater certainty of higher levels of contractual cashflows (as we show on page 14), as well as other features that can help hedge the effects of economic turbulence on other asset classes.

Growing interest

Annual private credit fundraising continues to increase



Source: Preqin, October 2022.
The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.

Private credit has expanded as banks have withdrawn from lending, largely as a result of regulatory changes. While the past year's turmoil has shaken markets, companies continue to require financing – and they are increasingly turning to private lenders. But should conditions further deteriorate, we expect dispersion between industries. Some business models may not financially work at a higher cost of capital, for example.

Regional views

Rule changes in the **United States** have left banks with a lower appetite for smaller, less-liquid credit issuance.

Acquisitions of distressed or underperforming companies by stronger peers should create opportunities for lenders to invest in well-covered (collateralized) assets with an element of complexity that will likely require unique financing solutions. At the same time, public capital markets remain closed to many growth-oriented companies, leading them to seek private solutions.

A reduction in **Europe** of approximately US$2 trillion in bank lending[1] since the financial crisis, largely due to regulatory changes, has led companies to increasingly rely on non-bank lenders.

We expect the European Central Bank's gradual rate increases to inflict less distress on borrowers when compared with the U.S. Federal Reserve's aggressive hikes. In the U.K., however, the prospect of more rapid rate increases relative to Continental Europe could be an opportunity for more situation-driven strategies.

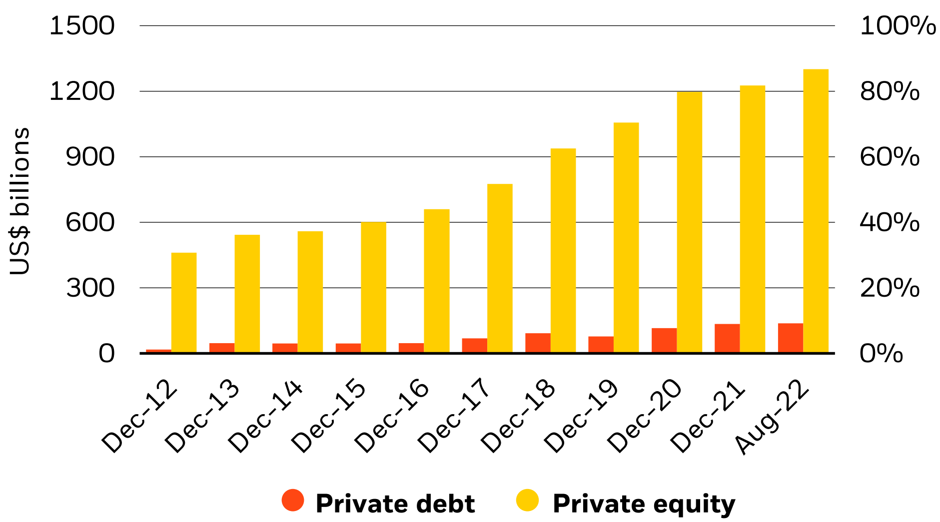
Since mid-2021, volatility and illiquidity in **Asia**'s public debt markets have led to a slew of credit events related to redemptions, particularly in Chinese high-yield.

Investor confidence in public debt markets is low, leading to a meaningful decrease in high-yield and leveraged-loan issuance, with a corresponding increase in private credit deal flow. And public debt markets in economies such as India do not exist, creating more private credit opportunities, including large-cap companies that are high on the credit-quality curve.

The amount of dry powder in both private equity and private credit – more than US$1 trillion – suggests that many companies should continue to have access to funding through a downturn. Those that struggle, however, may prove attractive investments for opportunistic or distressed strategies, which have about US$136 billion ready to invest, according to Preqin.

Staying dry[2]

There's considerable dry powder in both private credit and private equity



Sources: 1 Bank for International Settlements, November 2022. 2 Preqin, August 2022.
The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.

Making illiquidity pay

Even in a rising interest-rate environment, the illiquidity premium offered by private credit is an important way to find additional yield, while taking on comparable risk.

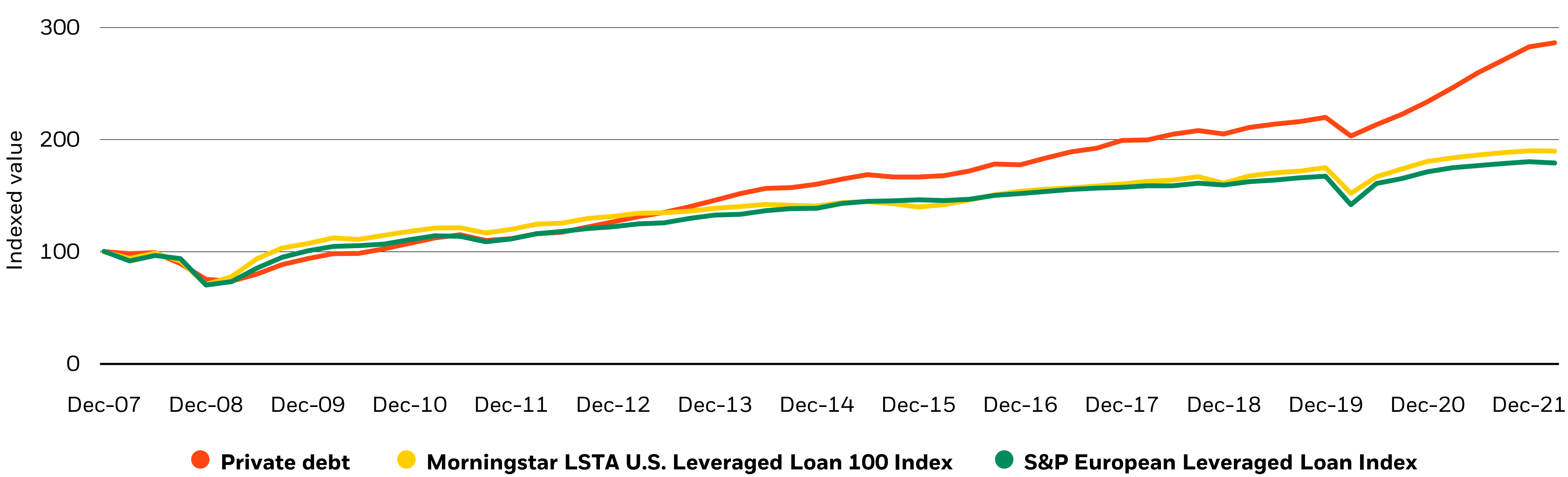
The premiums offered by private credit may widen or narrow over time based on macroeconomic conditions and trends in the capital markets.

But on a like-for-like basis, private senior and unitranche loans may potentially deliver a premium estimated to be 150bps and 300bps, compared to publicly traded (leveraged) loans.

That premium can be significantly wider for opportunistic, distressed and subordinated debt.

While there isn't a general default rate for private credit, we have seen lower defaults, lower loss rates and higher recovery rates than are reflected in the indices for both high-yield bonds and bank loans.

Private credit has delivered outsized returns over leveraged loans through a range of market conditions.



Source: Private debt: Preqin, data to March 31, 2022. LSTA Index: Aladdin, data to March 31, 2022 . ELLI index: Morningstar, data to March 31, 2022.

The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.

Private equity

Seizing the moment

Volatility creates opportunity – and few can execute better on that opportunity than private equity investors.

There are opportunities across PE, through direct selection, co-investments, secondaries, and traditional primary fund commitments.

And as the transition to a low-carbon economy comes further into focus in the private markets, the opportunity set is expanding.

Given the current backdrop, the next 12 to 18 months will be about patient capital and selectivity, as buyers capitalize on changing market dynamics.

We are seeing more acquisitions by our portfolio companies to take advantage of lower average purchase-price multiples to drive top-line growth and economies of scale.

For new investments, we anticipate more take-private and corporate carveout deals as companies refocus on core businesses in fragmented industries.

The new environment has led PE buyers to adjust how they calculate risk and structure transactions. More general partners are building buffers into the capital stack, as negotiating leverage increasingly shifts away from companies toward investors.

While the increased cost of debt could slow deal activity in the short term, the demand for strategic capital to help GPs execute on transactions will grow. This dynamic opens the way for a proactive and opportunistic direct co-investment strategy for managers with ready capital and experienced teams.

PE multiples remain below public equity and offer attractive entry points. And companies raising capital are offering investors concessions for downside protection in the form of liquidation preference or senior securities.

Entry and exit prices in 2023 will be a function of the persistence of cashflows. And companies with resilient, recurring cashflows will be among the most attractive.

Where to look now

Sectors and themes in focus

Recession-resilient industries and companies

Business critical

- Enterprise software with must-have products that help businesses reduce costs

Defensive plays

- Essential healthcare equipment & services (i.e. cataract surgery)
- Stay-at-home entertainment
- Consumer staples

Strong tailwinds

- Space spending
- Defense companies with Department of Defense contracts
- Cybersecurity

Climate technology in venture capital and growth equity strategies has been a bright spot amid a broader reset in risk appetite. A favorable policy backdrop has accelerated investment into this space by countries, companies, and investors, creating attractive return opportunities.

Spotlight on secondaries

The secondary market continues to show strong momentum as both LPs and GPs seek out liquidity options.

The need for liquidity was evident in 2022 (a record first half for secondary volumes) and we expect it to continue.

On the LP side, with the broad decline in public equities and fixed income, many investors are finding themselves overallocated to illiquid asset classes. This denominator effect is exacerbated by a slowing exit environment, driving LPs to pressure their GPs for realization events.

As traditional exit paths weaken, GPs are turning to the secondary market for support. With less than one year of dry powder available today, further dislocations are expected to further improve what is an already attractive buying opportunity.

Our approach to the secondary market in 2023 is focused on maintaining a wide sourcing funnel across both traditional and non-traditional transactions. Having a flexible strategy that can pivot to find value across all transaction types remains important as opportunities present themselves throughout 2023.

A well-constructed secondary strategy will offer the ability to deploy capital rapidly and efficiently, while also providing risk mitigation through diversification across regions, sectors and GPs.

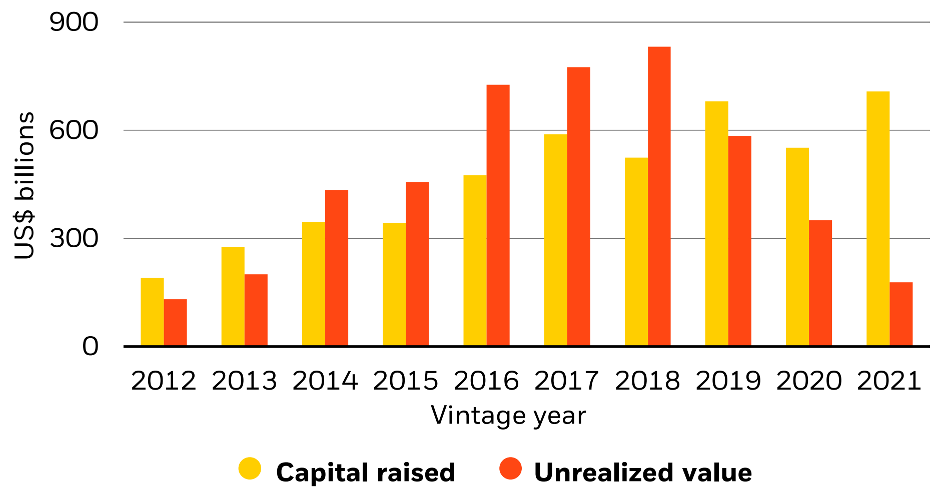
Portfolio view

Beyond the potential benefits of diversification and decreased volatility, private equity has consistently demonstrated superior risk-adjusted performance relative to other strategies, as we show on pages 6 and 18. It's also an opportune moment in the secondary market, as both LPs and GPs seek out liquidity options.

Secondary opportunity

Nearly US$5 trillion has been raised by PE funds in the past decade

PE fundraising and unrealized value by vintage year[1]



US$132 billion

2021 secondary deal volume[2]

US$94 billion

Dedicated secondaries dry powder (Q2 2022)[3]

<1 year

Worth of dry powder available[4]

Source: BlackRock. All dollar figures in USD. 1 Preqin Historical Fundraising and Assets Under Management search tools as derived on 30 June 2022. 2 Jefferies Global Secondary Market Review, July 2022 3 Includes all alternative asset classes except hedge fund side pockets. 4 Bain Global Private Equity Report 2022, March 2022. The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.

Private equity

Doing better in tough times

History has shown that private equity delivers stronger returns than public stocks, in terms of absolute and relative performance.

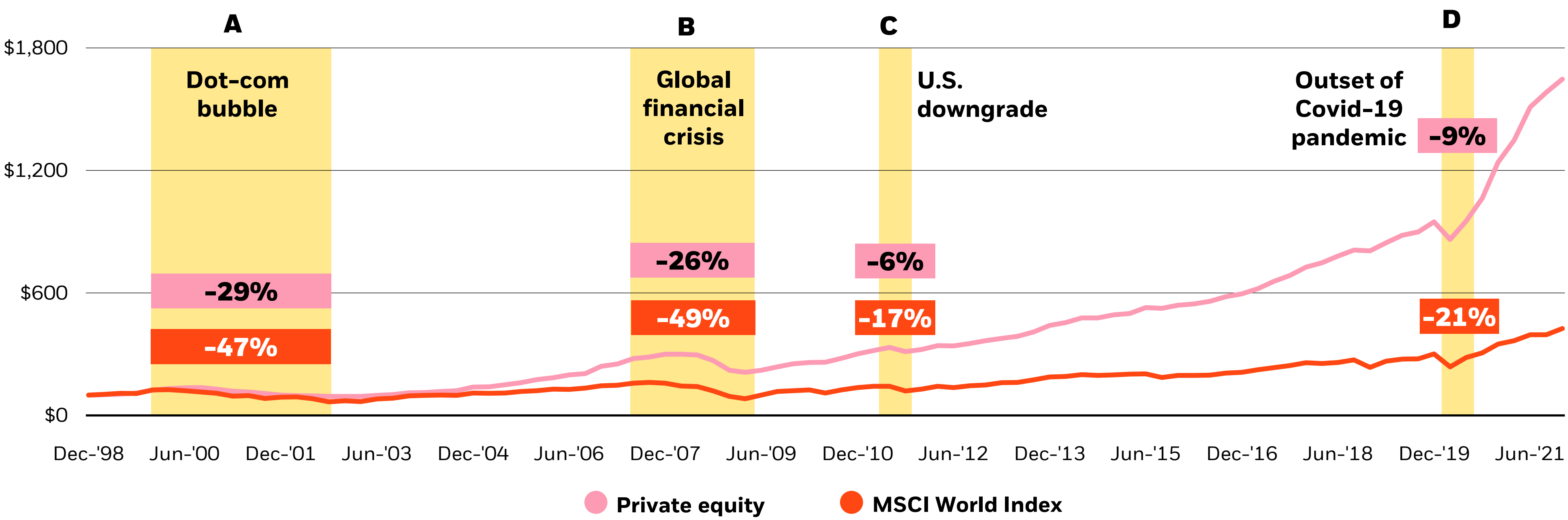
The best vintages typically follow recessions, and PE outperforms by a greater alpha during periods of distress (see also chart on page 6).

Direct allocations, which allow for focused deal selection and portfolio building, are well situated to benefit from times like these.

We also underscore the key tenets of our investment philosophy – discernment, price discipline, and deep sector expertise – when looking at both direct investments and fund managers across the primary and secondary markets.

When investing in primary funds, we focus on management teams who have successfully managed through market cycles, who have sector-focused teams, and who can identify attractive opportunities during market dislocations.

Private equity and public index returns during tumultuous markets



Source: Private equity: Burgiss, and MSCI World total return index for public equities. Private Equity data sourced from Burgiss covers vintages 1999-2019 as of 31 December 2021. Private equity strategies include: Buyout, VC (Late), VC (Generalist), and Expansion Capital. All dollar figures are USD. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Time periods defined as follows A) Apr-00 to Sep-02 B) Oct-07 to Mar-09 C) Jul-11 to Sep-11 D) Dec-19 to Mar-20.

The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.

Real estate

Changing foundations

Real estate is in a state of adjustment, as the drivers of tenant demand shift markedly and investors adjust their portfolio allocations.

Occupancy levels across sectors are still high – something that could change as we get deeper into the economic cycle. And valid questions persist about how profoundly the rise in interest rates will disrupt property prices, especially if occupancy rates drop.

Logistics remains a bright spot, supported by a broad increase in demand spurred initially by online shoppers and reinforced by a need for larger inventory holdings and more resilient supply chains.

Work-from-home arrangements are changing office-demand patterns to varying degrees in different regions, driving landlords to invest in convenience, amenities and sustainability to encourage a broader return to the office.

Retail sectors remain challenged by the shift out of brick-and-mortar shopping and slowing consumer spending. We remain constructive on necessity-based retail.

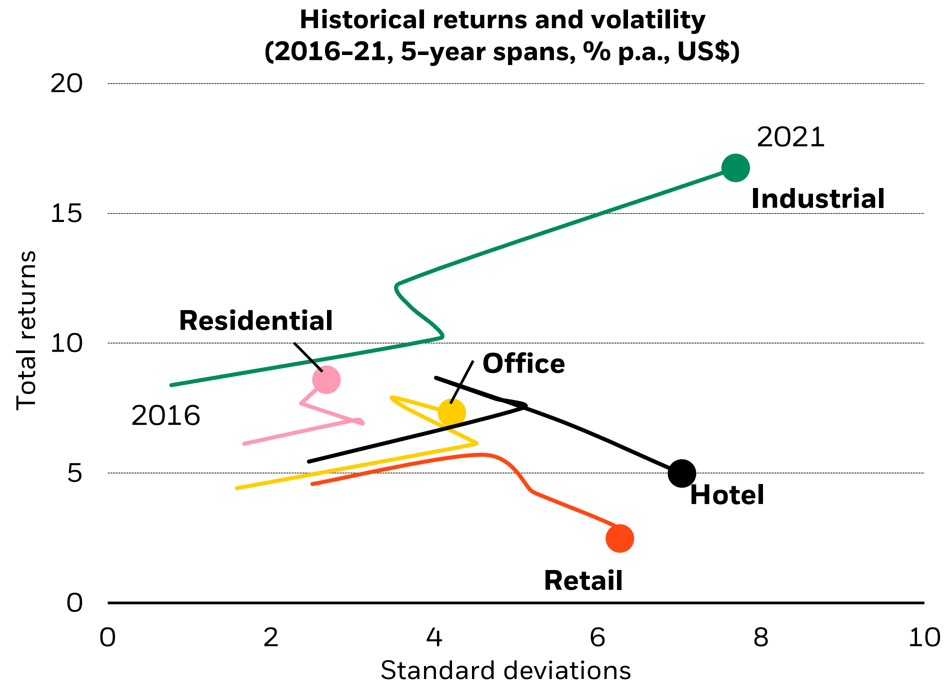
Living sectors are coming to the fore. Multifamily investments provide resilient income streams, particularly in areas of population growth. There are also demographic trends bolstering demand in niche real estate segments, such as student housing, childcare and senior living.

Portfolio view

In real estate, there is a widening gap between sectoral winners and losers. As inflation rises, indexed rental leases can offer an important hedge. Higher rates are inducing distress for unhedged owners and discounts for ready buyers.

Sector divergence

Real estate sectors offered investors disparate returns and volatility



Source: MSCI IPD, BlackRock Alternatives (November 2022).
The figures relate to past performance. Past performance is not a reliable indicator of current or future results.

There is a fundamental shift in real estate demand drivers unfolding right now, affected by where and how we work, shop and play. Logistics and living sectors remain key points of focus for investors.

Global variations

Global real estate trends are playing out in each region, with subtle variations around the world.

In the **United States**, 2023 will look different than 2022 as investors grapple with higher costs of capital and the impact on asset prices. Demand is largely stable, but an economic slowdown could filter through to real estate fundamentals, especially in markets with supply pressures.

Low-levered buyers have the advantage of less competition in most markets, and will likely focus on cashflow resilience and asset quality. While sector selection has been key in recent years, we expect more specific asset selection to be a driver of returns in 2023.

In **Europe**, the real estate market is working through a price-discovery phase, as wide bid/ask spreads and rising financing costs limit liquidity.

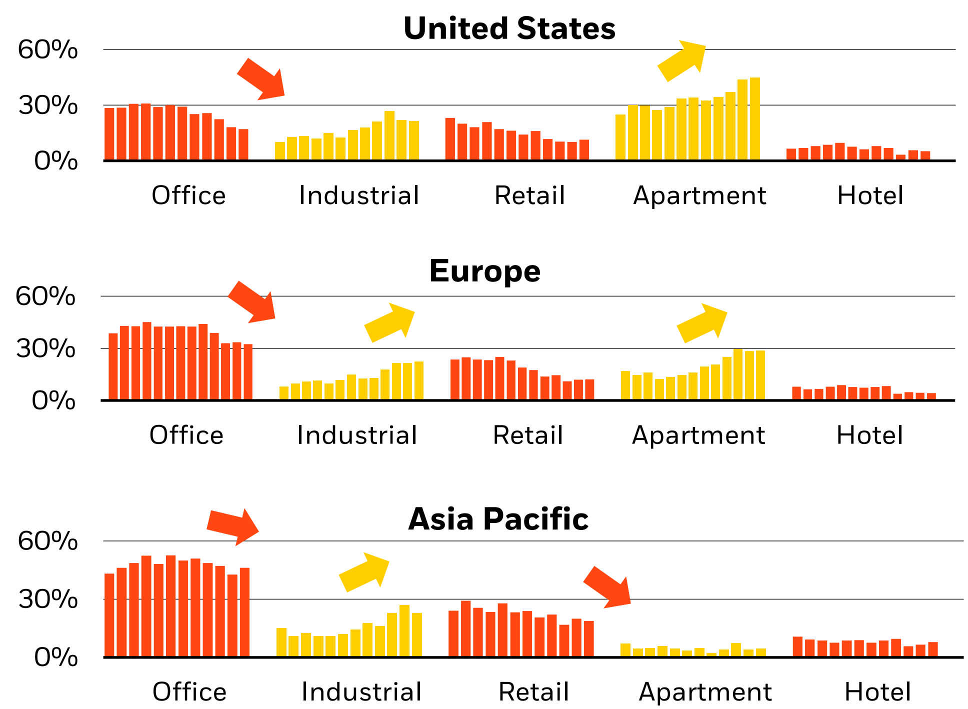
On the whole, values are moving down, led by relatively faster adjustments in the U.K. Unlike previous cycles, occupier demand remains strong for the best assets and locations. This offers some protection against valuation declines, and positions the most prime assets to perform well in the upcycle. Tenants will be more selective post-pandemic, making market and asset selection more critical than ever.

In the **Asia-Pacific** region, the downdraft of the global economy is reducing confidence as well as tenant demand. The work-from-home trend seems to be passing more quickly in Asia, as office workers' return is driven by local business culture and smaller home sizes.

The logistics boom is still unfolding with surging demand, though asset prices are softening slightly on the back of higher funding costs. Asset managers are actively implementing CPI-linked leasing contracts to hedge against inflation across sectors.

A change in focus

Activity across real estate fluctuates (Transaction share 2011-22 YTD)



Source: Real Capital Analytics, BlackRock Alternatives (November 2022)
The figures shown relate to past performance. Past performance is not a reliable indicator of current or future results.

The drivers of real estate returns are changing in 2023 as occupancy trends respond to the mixed demand outlook and rental incomes rise with inflation, while yield spreads tighten with higher funding costs.

The real estate market landscape

The global real estate opportunity set for 2023 and beyond varies considerably across regions and sectors, reflecting local demand and supply drivers.

The logistics sector continues to stand out in terms of fundamental demand growth, as online distributors move their inventory strategies from just-in-time to just-in-case in order to ensure that they avert costly supply-chain disruptions.

The shift away from the office is a much more powerful trend in the U.S. than other regions, especially Asia. But across the globe, we expect a major churn in office tenants, with a focus on prime properties that can offer more amenities to entice white-collar workers back.

The need for multifamily housing in the U.S. and Europe is already high, and may be pushed even higher as rising interest rates and persistently elevated home prices force more would-be homebuyers to rent.

United States
Europe
Asia Pacific

Relative returns expectations	**Relative volatility expectations**		
	Lower		Higher
Higher	Los Angeles apt.	West Coast apt. Major market ind.	
	U.K. student housing Nordic logistics	France/U.K. logistics	London office
		Australia ind. Singapore office	
	South & Southeast apt.	East Coast apt.	South ind.
	Japan office	Japan logistics Australian office	U.K. retail Germany logistics
Lower	Grocery-anchored retail	Northwest apt.	San Francisco office U.S. malls
	German retail		Hong Kong office

Source: BlackRock Alternatives (November 2022). There is no guarantee that any forecasts made will come to pass. Reliance upon information in this material is at the sole discretion of the reader.

Disclaimer

FOR PROFESSIONAL, INSTITUTIONAL, WHOLESALE AND QUALIFIED INVESTORS/PROFESSIONAL, QUALIFIED AND PERMITTED CLIENT USE ONLY

RISKS

Capital at risk. The value of investments and the income from them can fall as well as rise and are not guaranteed. Investors may not get back the amount originally invested.

Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy.

Changes in the rates of exchange between currencies may cause the value of investments to diminish or increase. Fluctuation may be particularly marked in the case of a higher volatility fund and the value of an investment may fall suddenly and substantially. Levels and basis of taxation may change from time to time.

IMPORTANT INFORMATION

This material is provided for educational purposes only and is not intended to be relied upon as a forecast, research or investment advice, and is not a recommendation, offer or solicitation to buy or sell any securities or to adopt any investment strategy. The opinions expressed are subject to change. References to specific securities, asset classes and financial markets are for illustrative purposes only and are not intended to be and should not be interpreted as recommendations. Reliance upon information in this material is at the sole risk and discretion of the reader. The material was prepared without regard to specific objectives, financial situation or needs of any investor.

This material may contain “forward-looking” information that is not purely historical in nature. Such information may include, among other things, projections, forecasts, and estimates of yields or returns. No representation is made that any performance presented will be achieved by any BlackRock Funds, or that every assumption made in achieving, calculating or presenting either the forward-looking information or any historical performance information herein has been considered or stated in preparing this material. Any changes to assumptions that may have been made in preparing this material could have a material impact on the investment returns that are presented herein. Past performance is not a reliable indicator of current or future results and should not be the sole factor of consideration when selecting a product or strategy.

Diversification does not guarantee investment returns and does not eliminate the risk of loss.

The information and opinions contained in this material are derived from proprietary and non-proprietary sources deemed by BlackRock to be reliable, are not necessarily all-inclusive and are not guaranteed as to accuracy.

In the U.S., this material is for Institutional use only – not for public distribution.

In Canada, this material is intended for permitted clients as defined under Canadian securities law, is for educational purposes only, does not constitute investment advice and should not be construed as a solicitation or offering of units of any fund or other security in any jurisdiction.

For investors in the Caribbean, any funds mentioned or inferred in this material have not been registered under the provisions of the Investment Funds Act of 2003 of the Bahamas, nor have they been registered with the securities regulators of Bermuda, Dominica, the Cayman Islands, the British Virgin Islands, Grenada, Trinidad & Tobago or any jurisdiction in the Organisation of Eastern Caribbean States, and thus, may not be publicly offered in any such jurisdiction. The shares of any fund mentioned herein may only be marketed in Bermuda by or on behalf of the fund or fund manager only in compliance with the provision of the Investment Business Act 2003 of Bermuda and the Companies Act of 1981. Engaging in marketing, offering or selling any fund from within the Cayman Islands to persons or entities in the Cayman Islands may be deemed carrying on business in the Cayman Islands. As a non-Cayman Islands person, BlackRock may not carry on or engage in any trade or business unless it properly registers and obtains a license for such activities in accordance with the applicable Cayman Islands law.

In Latin America, for institutional investors and financial intermediaries only (not for public distribution). This material is for educational purposes only and does not constitute investment advice or an offer or solicitation to sell or a solicitation of an offer to buy any shares of any fund or security and it is your responsibility to inform yourself of, and to observe, all applicable laws and regulations of your relevant jurisdiction. If any funds are mentioned or inferred in this material, such funds may not been registered with the securities regulators of Argentina, Chile, Colombia, Mexico, Panama, Peru, Uruguay or any other securities regulator in any Latin American country and thus, may not be publicly offered in any such countries. The securities regulators of any country within Latin America have not confirmed the accuracy of any information contained herein. No information discussed herein can be provided to the general public in Latin America. The contents of this material are strictly confidential and must not be passed to any third party.

IN MEXICO, for institutional and qualified investors use only. Investing involves risk, including possible loss of principal. This material is provided for educational and informational purposes only and does now constitute an offer or solicitation of an offer to buy an shares of any fund or security.

This information does not consider the investment objectives, risk tolerance or the financial circumstances of any specific investor. This information does not replace the obligation of financial advisor to apply his/her best judgment in making investment decisions or investment recommendations. It is your responsibility to inform yourself of, and to observe, all applicable laws and regulations of Mexico. If any funds, securities or investment strategies are mentioned or inferred in this material, such funds, securities or strategies have not been registered with the Mexican National Banking and Securities Commission (Comisión Nacional Bancaria y de Valores, the "CNBV") and thus, may not be publicly offered in Mexico. The CNBV has not confirmed the accuracy of any information contained herein. The provision of investment management and investment advisory services ("Investment Services") is a regulated activity in Mexico, subject to strict rules, and performed under the supervision of the CNBV. The materials that may be shared in this forum are for information purposes only, do not constitute investment advice, and are being shared in the understanding that the addressee is an Institutional or Qualified investor as defined under Mexican Law. BlackRock México Operadora, S.A. de C.V., Sociedad Operadora de Fondos de Inversión ("BlackRock México Operadora") is a Mexican subsidiary of BlackRock, Inc., authorized by the CNBV as a Mutual Fund Manager (Operadora de Fondos), and as such, authorized to manage Mexican mutual funds, ETFs and provide Investment Advisory Services.

For more information on the Investment Services offered by BlackRock Mexico, please review our Investment Services Guide available in **www.blackrock.com/mx**. This material represents an assessment at a specific time and its information should not be relied upon by the you as research or investment advice regarding the funds, any security or investment strategy in particular. Reliance upon information in this material is at your sole discretion. BlackRock México is not authorized to receive deposits, carry out intermediation activities, or act as a broker dealer, or bank in Mexico.

For more information on BlackRock México, please visit: **www.BlackRock.com/mx**. BlackRock receives revenue in the form of advisory fees for our advisory services and management fees for our mutual funds, exchange traded funds and collective investment trusts. Any modification, change, distribution or inadequate use of information of this document is not responsibility of BlackRock or any of its affiliates. Pursuant to the Mexican Data Privacy Law (Ley Federal de Protección de Datos Personales en Posesión de Particulares), to register your personal data you must confirm that you have read and understood the Privacy Notice of BlackRock México Operadora.

For the full disclosure, please visit www.BlackRock.com/mx and accept that your personal information will be managed according with the terms and conditions set forth therein.

For investors in Central America, these securities have not been registered before the Securities Superintendence of the Republic of Panama, nor did the offer, sale or their trading procedures. The registration exemption has made according to numeral 3 of Article 129 of the Consolidated Text containing of the Decree-Law No. 1 of July 8, 1999 (institutional investors). Consequently, the tax treatment set forth in Articles 334 to 336 of the Unified Text containing Decree-Law No. 1 of July 8, 1999, does not apply to them.

These securities are not under the supervision of the Securities Superintendence of the Republic of Panama. The information contained herein does not describe any product that is supervised or regulated by the National Banking and Insurance Commission (CNBS) in Honduras. Therefore any investment described herein is done at the investor's own risk.

This is an individual and private offer which is made in Costa Rica upon reliance on an exemption from registration before the General Superintendence of Securities ("SUGEVAL"), pursuant to articles 7 and 8 of the Regulations on the Public Offering of Securities ("Reglamento sobre Oferta Pública de Valores"). This information is confidential, and is not to be reproduced or distributed to third parties as this is NOT a public offering of securities in Costa Rica. The product being offered is not intended for the Costa Rican public or market and neither is registered or will be registered before the SUGEVAL, nor can be traded in the secondary market.

If any recipient of this documentation receives this document in El Salvador, such recipient acknowledges that the same has been delivered upon his request and instructions, and on a private placement basis.

In Argentina, only for use with Qualified Investors under the definition as set by the Comisión Nacional de Valores (CNV).

In Chile, the sale of each fund not registered with the CMF began on the date as indicated for such fund as described herein and the sale of such securities is subject to General Rule No. 336 issued by the SVS (now the CMF). The subject matter of this sale may include securities not registered with the CMF; therefore, such securities are not subject to the supervision of the CMF. Since the securities are not registered in Chile, there is no obligation of the issuer to make publicly available information about the securities in Chile. The securities shall not be subject to public offering in Chile unless registered with the relevant registry of the CMF.

In Peru, this private offer does not constitute a public offer, and is not registered with the Securities Market Public Registry of the Peruvian Securities Market Commission, for use only with institutional investors as such term is defined by the Superintendencia de Banca, Seguros y AFP.

In Uruguay, the Securities are not and will not be registered with the Central Bank of Uruguay. The Securities are not and will not be offered publicly in or from Uruguay and are not and will not be traded on any Uruguayan stock exchange. This offer has not been and will not be announced to the public and offering materials will not be made available to the general public except in circumstances which do not constitute a public offering of securities in Uruguay, in compliance with the requirements of the Uruguayan Securities Market Law (Law Nº 18.627 and Decree 322/011).

In the EEA and UK, this material is for distribution to Professional Clients (as defined by the Financial Conduct Authority or MiFID Rules) only and should not be relied upon by any other persons.

In the UK and Non-European Economic Area (EEA) countries, this is Issued by BlackRock Investment Management (UK) Limited, authorised and regulated by the Financial Conduct Authority. Registered office: 12 Throgmorton Avenue, London, EC2N 2DL. Tel: + 44 (0)20 7743 3000. Registered in England and Wales No. 02020394. For your protection telephone calls are usually recorded. Please refer to the Financial Conduct Authority website for a list of authorised activities conducted by BlackRock.

In the European Economic Area (EEA), this is Issued by BlackRock (Netherlands) B.V. is authorised and regulated by the Netherlands Authority for the Financial Markets. Registered office Amstelplein 1, 1096 HA, Amsterdam, Tel: 020 – 549 5200, Tel: 31-20-549-5200. Trade Register No. 17068311 For your protection telephone calls are usually recorded. For information on investor rights and how to raise complaints please go to https://www.blackrock.com/corporate/compliance/investor-right available in Italian.

For Qualified Investors in Switzerland:

For Qualified Investors only. This document is marketing material.

This document shall be exclusively made available to, and directed at, qualified investors as defined in Article 10 (3) of the CISA of 23 June 2006, as amended, at the exclusion of qualified investors with an opting-out pursuant to Art. 5 (1) of the Swiss Federal Act on Financial Services ("FinSA").

For information on art. 8 / 9 Financial Services Act (FinSA) and on your client segmentation under art. 4 FinSA, please see the following website: **www.blackrock.com/finsa**.

In Saudi Arabia, Bahrain, Dubai (DIFC), Kuwait, Oman, Qatar and UAE, the information contained in this document, does not constitute and should not be construed as an offer of, invitation or proposal to make an offer for, recommendation to apply for or an opinion or guidance on a financial product, service and/or strategy. Whilst great care has been taken to ensure that the information contained in this document is accurate, no responsibility can be accepted for any errors, mistakes or omissions or for any action taken in reliance thereon. You may only reproduce, circulate and use this document (or any part of it) with the consent of BlackRock.

The information contained in this document is for information purposes only. It is not intended for and should not be distributed to, or relied upon by, members of the public.

The information contained in this document, may contain statements that are not purely historical in nature but are “forward-looking statements”. These include, amongst other things, projections, forecasts or estimates of income. These forward-looking statements are based upon certain assumptions, some of which are described in other relevant documents or materials. If you do not understand the contents of this document, you should consult an authorised financial adviser.

Saudi Arabia: The information contained in this document is intended strictly for sophisticated institutions.

Bahrain: The information contained in this document is intended strictly for sophisticated institutions.

Dubai (DIFC): Blackrock Advisors (UK) Limited -Dubai Branch is a DIFC Foreign Recognised Company registered with the DIFC Registrar of Companies (DIFC Registered Number 546), with its office at Unit L15 - 01A, ICD Brookfield Place, Dubai International Financial Centre, PO Box 506661, Dubai, UAE, and is regulated by the DFSA to engage in the regulated activities of ‘Advising on Financial Products’ and ‘Arranging Deals in Investments’ in or from the DIFC, both of which are limited to units in a collective investment fund (DFSA Reference Number F000738).

The information contained in this document is intended strictly for Professional Clients as defined under the Dubai Financial Services Authority (“DFSA”) Conduct of Business (COB) Rules.

Kuwait: The information contained in this document is intended strictly for sophisticated institutions that are 'Professional Clients' as defined under the Kuwait Capital Markets Law and its Executive Bylaws.

Oman: The information contained in this document is intended strictly for sophisticated institutions.

Qatar: The information contained in this document is intended strictly for sophisticated institutions.

UAE: The information contained in this document is intended strictly for non-natural Qualified Investors as defined in the UAE Securities and Commodities Authority's Board Decision No. 3/R.M of 2017 concerning Promoting and Introducing Regulations.

For investors in Israel: BlackRock Investment Management (UK) Limited is not licenced under Israel's Regulation of Investment Advice, Investment Marketing and Portfolio Management Law, 5755-1995 (the "Advice Law"), nor does it carry insurance thereunder.

In South Africa, please be advised that BlackRock Investment Management (UK) Limited is an authorised Financial Services provider with the South African Financial Services Conduct Authority, FSP No. 43288.

Any research in this document has been procured and may have been acted on by BlackRock for its own purpose. The results of such research are being made available only incidentally. The views expressed do not constitute investment or any other advice and are subject to change. They do not necessarily reflect the views of any company in the BlackRock Group or any part thereof and no assurances are made as to their accuracy.

This document is for information purposes only and does not constitute an offer or invitation to anyone to invest in any BlackRock funds and has not been prepared in connection with any such offer.

In Singapore, this document is provided by BlackRock (Singapore) Limited (company registration number:200010143N) for use only with institutional investors as defined in Section 4A of the Securities and Futures Act, Chapter 289 of Singapore. This advertisement or publication has not been reviewed by the Monetary Authority of Singapore.

In Hong Kong, this material is issued by BlackRock Asset Management North Asia Limited and has not been reviewed by the Securities and Futures Commission of Hong Kong. This material is for distribution to "Professional Investors" (as defined in the Securities and Futures Ordinance (Cap.571 of the laws of Hong Kong) and any rules made under that ordinance.) and should not be relied upon by any other persons or redistributed to retail clients in Hong Kong.

In South Korea, this information is issued by BlackRock Investment (Korea) Limited. This material is for distribution to the Qualified Professional Investors (as defined in the Financial Investment Services and Capital Market Act and its sub-regulations) and for information or educational purposes only and does not constitute investment advice or an offer or solicitation to purchase or sells in any securities or any investment strategies.

In Taiwan, independently operated by BlackRock Investment Management (Taiwan) Limited. Address: 28F., No. 100, Songren Rd., Xinyi Dist., Taipei City 110, Taiwan. Tel: (02)23261600.

In Australia and New Zealand, [MM3] issued by BlackRock Investment Management (Australia) Limited ABN 13 006 165 975, AFSL 230 523 (BIMAL) for the exclusive use of the recipient, who warrants by receipt of this material that they are a wholesale client as defined under the Australian Corporations Act 2001 (Cth) and the New Zealand Financial Advisers Act 2008 respectively.

This material provides general information only and does not take into account your individual objectives, financial situation, needs or circumstances. Before making any investment decision, you should therefore assess whether the material is appropriate for you and obtain financial advice tailored to you having regard to your individual objectives, financial situation, needs and circumstances. Refer to BIMAL's Financial Services Guide on its website for more information. This material is not a financial product recommendation or an offer or solicitation with respect to the purchase or sale of any financial product in any jurisdiction.

This material is not intended for distribution to, or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to local law or regulation. BIMAL is a part of the global BlackRock Group which comprises of financial product issuers and investment managers around the world. BIMAL is the issuer of financial products and acts as an investment manager in Australia. BIMAL does not offer financial products to persons in New Zealand who are retail investors (as that term is defined in the Financial Markets Conduct Act 2013 (FMCA)). This material does not constitute or relate to such an offer. To the extent that this material does constitute or relate to such an offer of financial products, the offer is only made to, and capable of acceptance by, persons in New Zealand who are wholesale investors (as that term is defined in the FMCA).

BIMAL, its officers, employees and agents believe that the information in this material and the sources on which it is based (which may be sourced from third parties) are correct as at the date of publication. While every care has been taken in the preparation of this material, no warranty of accuracy or reliability is given and no responsibility for the information is accepted by BIMAL, its officers, employees or agents. Except where contrary to law, BIMAL excludes all liability for this information.

In China, this material may not be distributed to individuals resident in the People's Republic of China ("PRC", for such purposes, not applicable to Hong Kong, Macau and Taiwan) or entities registered in the PRC unless such parties have received all the required PRC government approvals to participate in any investment or receive any investment advisory or investment management services.

For Southeast Asia: This document is issued by BlackRock and is intended for the exclusive use of any recipient who warrants, by receipt of this material, that such recipient is an institutional investors or professional/sophisticated/qualified/ accredited/expert investor as such term may apply under the relevant legislations in Southeast Asia (for such purposes, includes only Malaysia, the Philippines, Thailand, Indonesia and Brunei). BlackRock does not hold any regulatory licenses or registrations in Southeast Asia countries listed above, and is therefore not licensed to conduct any regulated business activity under the relevant laws and regulations as they apply to any entity intending to carry on business in Southeast Asia, nor does BlackRock purport to carry on, any regulated activity in any country in Southeast Asia. BlackRock funds, and/or services shall not be offered or sold to any person in any jurisdiction in which such an offer, solicitation, purchase, or sale would be deemed unlawful under the securities laws or any other relevant laws of such jurisdiction(s).

This material is provided to the recipient on a strictly confidential basis and is intended for informational or educational purposes only. Nothing in this document, directly or indirectly, represents to you that BlackRock will provide, or is providing BlackRock products or services to the recipient, or is making available, inviting, or offering for subscription or purchase, or invitation to subscribe for or purchase, or sale, of any BlackRock fund, or interests therein. This material neither constitutes an offer to enter into an investment agreement with the recipient of this document, nor is it an invitation to respond to it by making an offer to enter into an investment agreement.

The distribution of the information contained herein may be restricted by law and any person who accesses it is required to comply with any such restrictions. By reading this information you confirm that you are aware of the laws in your own jurisdiction regarding the provision and sale of funds and related financial services or products, and you warrant and represent that you will not pass on or utilize the information contained herein in a manner that could constitute a breach of such laws by BlackRock, its affiliates or any other person.

In Japan, this is issued by BlackRock Japan. Co., Ltd. (Financial Instruments Business Operator: The Kanto Regional Financial Bureau. License No375, Association Memberships: Japan Investment Advisers Association, The Investment Trusts Association, Japan, Japan Securities Dealers Association, Type II Financial Instruments Firms Association.) for Professional Investors only (Professional Investor is defined in Financial Instruments and Exchange Act).

For Other Countries in APAC: This material is provided for your informational purposes only and must not be distributed to any other persons or redistributed. This material is issued for Institutional Investors only (or professional/sophisticated/qualified investors as such term may apply in local jurisdictions) and does not constitute investment advice or an offer or solicitation to purchase or sell in any securities, BlackRock funds or any investment strategy nor shall any securities be offered or sold to any person in any jurisdiction in which an offer, solicitation, purchase or sale would be unlawful under the securities laws of such jurisdiction.

The information provided here is neither tax nor legal advice. Investors should speak to their tax professional for specific information regarding their tax situation. Investment involves including possible loss of principal. International investing involves risks, including risks related to foreign currency, limited liquidity, less government regulation, and the possibility of substantial volatility due to adverse political, economic or other developments. These risks are often heightened for investments in emerging/developing markets or smaller capital markets.

FOR PROFESSIONAL, INSTITUTIONAL, WHOLESALE AND QUALIFIED INVESTORS/PROFESSIONAL, QUALIFIED AND PERMITTED CLIENT USE ONLY