San Joaquin County Employees Retirement Association

A G E N D A

BOARD MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, MARCH 11, 2022
AT 9:00 AM

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

In order to accommodate appropriate COVID-19 protocols and social distancing, no more than ten (10) members of the public will be allowed in the Board Room during the Board Meeting. In accordance with current State mandates, appropriate face coverings are strongly recommended for all attendees.

The public may also attend the Board meeting live via Zoom by (1) clicking here https://us02web.zoom.us/j/82720311600 and following the prompts to enter your name and email, or (2) calling (669) 219-2599 or (669) 900-9128 and entering Meeting ID 82720311600#.

Persons who require disability-related accommodations should contact SJCERA at (209) 468 -9950 or KendraF@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 the CEO Performance Review Committee Meeting of February 7, 2022 4

3.02 Minutes for the Board Meeting of February 11, 2022 5

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.

02 Summary of Pending Trustee and Executive Staff Travel 223

03 Summary of Completed Trustee and Executive Staff Travel 224

11.03 CEO Report 225

01 Comparison Chart of Discount Rate Assumptions 229

11.04 Board to receive and file reports, and approve new travel requests as necessary

12.0 CORRESPONDENCE

12.01 Letters Received

12.02 Letters Sent

12.03 Market Commentary/Newsletters/Articles

01 NCPERS 230
Monitor
February 2022

02 Pensions&Investments 239
Private credit soars 77% as asset class continues to heat up
February 14, 2022

03 Fund Fire 244
Traditional Fund Managers Dip Toes in Crypto Space
February 14, 2022

04 Meketa 247
Russian Invasion of Ukraine
February 25, 2022

05 Meketa 250
Market Update: Russian Invasion of Ukraine
March 3, 2022

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) (1)

14.02 Conference with Legal Counsel - Pending Litigation
California Government Code Section 54956.9(d)(1)
1 Case

15.0 CALENDAR

15.01 Audit Committee Meeting March 11, 2022, immediately following the conclusion of 9:00 AM Board of Retirement meeting

15.02 Board Meeting April 8, 2022 at 9:00 AM

16.0 ADJOURNMENT

M I N U T E S

CEO PERFORMANCE REVIEW COMMITTEE MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
MONDAY, FEBRUARY 7, 2022
AT 2:00 PM

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

1.0 ROLL CALL

1.01 **MEMBERS PRESENT:** Emily Nicholas, Michael Restuccia, JC Weydert, and Chanda Bassett presiding
MEMBERS ABSENT: None
STAFF PRESENT: Management Analyst III Greg Frank, Department Information Systems Analyst II Lolo Garza, and Administrative Secretary Kendra Fenner (via Zoom)
OTHERS PRESENT: Deputy County Counsel Jason Morrish

2.0 PUBLIC COMMENT

2.01 There was no public comment.

3.0 COMMENTS

3.01 There were no comments from the Committee Members.

4.0 CLOSED SESSION

THE COMMITTEE CHAIR CONVENED A CLOSED SESSION AT 2:01 P.M. THE CHAIR ADJOURNED THE CLOSED SESSION AND RECONVENED THE OPEN SESSION AT 3:08 P.M.

4.01 **PUBLIC EMPLOYEE PERFORMANCE EVALUATION**
CALIFORNIA GOVERNMENT CODE SECTION 54957
TITLE: RETIREMENT ADMINISTRATOR/CHIEF EXECUTIVE OFFICER

5.0 REPORT OUT OF CLOSED SESSION

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

6.0 ADJOURNMENT

6.01 There being no further business, the meeting was adjourned at 3:09 P.M.

Respectfully Submitted:

____
Chanda Bassett, Committee Chairperson

M I N U T E S

BOARD MEETING
SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION
BOARD OF RETIREMENT
FRIDAY, FEBRUARY 11, 2022
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**: Phonxay Keokham, Emily Nicholas, Jennifer Goodman, Michael Duffy, Robert Rickman (out at 10:57 AM), Chanda Bassett, JC Weydert, Steve Moore, Raymond McCray, and Michael Restuccia presiding

MEMBERS ABSENT: None

STAFF PRESENT: Chief Executive Officer Johanna Shick, Assistant Chief Executive Officers Kathy Herman and Brian Mckelvey, Retirement Investment Officer Paris Ba (via Zoom), Management Analyst III Greg Frank, Department Information Systems Analyst II Lolo Garza, Information Systems Manager Adnan Khan, and Administrative Secretary Kendra Fenner

OTHERS PRESENT: Deputy County Counsel Jason Morrish, David Sancewich of Meketa Investment Group

2.0 PLEDGE OF ALLEGIANCE

2.01 Led by Michael Duffy

3.0 MEETING MINUTES

3.01 Minutes for the Board Meeting of January 21, 2022

3.02 **The Board voted unanimously (9-0) to approve the Minutes of the Board Meeting of January 21, 2022. (Motion: Rickman; Second: Bassett)**

4.0 PUBLIC COMMENT

4.01 Brenda Kiely of the County Administrator's Office (CAO) stated CAO Jay Wilverding would recommend not lowering the discount rate and the County would like to be provided further information from Consulting Actuary.

5.0 CONSENT ITEMS

5.01 Service Retirement (16)

5.02 General (2)

01 Retiree Cost-of-Living Adjustment (COLA) as of April 1, 2022

02 Spousal Notification Resolution Pursuant to Government Code Section 31760.3

5.03 After discussion, the Board approved the Consent Items in two separate motions as follows:

01 **The Board voted unanimously (9-0) to approve Consent Items 5.01 and 5.02 -01. (Motion: Duffy; Second: McCray)**

02 **The Board voted unanimously (9-0) to approve Consent Item 5.02-02. (Motion: Bassett; Second: Goodman)**

6.0 CONSULTANT REPORTS PRESENTED BY DAVID SANCEWICH OF MEKETA INVESTMENT GROUP

6.01 Monthly Investment Performance Updates

01 Manager Performance Flash Report - December 2021

02 Capital Markets Outlook and Risk Metrics - January 2022

6.02 2022 Capital Markets Expectations

6.03 Board accepted and filed reports.

7.0 DISCOUNT RATE REVIEW

7.01 Presentation by Graham Schmidt, Consulting Actuary

01 Cheiron presentation link below
https://presentation.cheiron.us/presentation/view/SJCERA022021?token=MN01

8.0 STAFF REPORTS

8.01 Legislative Summary Report - None; No changes since 11/2021

8.02 Trustee and Executive Staff Travel

01 Conferences and Events Schedule for 2022

02 Summary of Pending Trustee and Executive Staff Travel

03 Summary of Completed Trustee and Executive Staff Travel - None

8.03 CEO Report

In addition to the written report, CEO Shick made the following comments: (1) the Request for Proposal for the new Pension Administration System posted yesterday; (2) a new travel form for trustees in being developed and will be distributed shortly; and (3) the Declining Payroll Report in the materials indicated fluctuations, but nothing outside of normal trends. Assistant CEO McKelvey also commented that, after IRS 1099 forms were issued, 80 corrected forms would be issued in February in relation to the *Alameda* decision.

01 Declining Employer Payroll Report

8.04 Report from Committee(s)

01 Committee Chair and staff will provide a brief summary of the outcome of the:

a CEO Performance Review Committee - February 7, 2022

02 Trustee Bassett stated there was nothing to report at this time.

9.0 CORRESPONDENCE

9.01 Letters Received

9.02 Letters Sent

9.03 Market Commentary/Newsletters/Articles

01 Bridgewater The Evolution of Institutional Investors' Exposure to Cryptocurrencies and Blockchain Technologies January 2022

02 Milliman Public Pension Funding Index Q4 investment performance January 2022

03 Pensions & Investments Fresno County Employees ups private equity pacing to $125 million per year January 2022

04 Reuters U.S. public pension funds seen turning to more aggressive investment January 2022

05 Investment Executive Canadian DB pensions returned 8.9% in 2021 January 2022

06 NCPERS Public Retirement Systems Study February 2022

10.0 COMMENTS

10.01 Trustee Moore asked for additional education on the Retiree COLA.

10.02 Trustee Nicholas stated after listening to the Consulting Actuary's presentation, it appears that lowering the discount rate would be prudent.

11.0 CLOSED SESSION

BEFORE THE CHAIR CONVENED CLOSED SESSION AT 10:45 A.M., COUNSEL STATED THAT THERE WERE NO DISABILITY APPLICATION MATTERS TO CONSIDER, SO THERE WOULD BE NO DISCUSSION ON ITEM 11.01. COUNSEL ALSO STATED THAT IDENTIFICATION OF THE PENDING LITIGATION MATTER LISTED ON THE AGENDA WOULD JEOPARDIZE SJCERA'S ABILITY TO EFFECTUATE SERVICE OR CONCLUDE EXISTING SETTLEMENT NEGOTIATIONS TO ITS ADVANTAGE, AND THAT THE MATTER WOULD BE DISCLOSED UPON INQUIRY WHEN APPROPRIATE. THE CHAIR ADJOURNED THE CLOSED SESSION AND RECONVENED THE OPEN SESSION AT 11:47 A.M.

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

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

11.03 Conference with Legal Counsel - Pending Litigation
California Government Code Section 54956.9(d)(1)
1 Case

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

12.0 CALENDAR

12.01 Board Meeting March 11, 2022 at 9:00 AM

13.0 ADJOURNMENT

13.01 There being no further business the meeting was adjourned at 11:48 AM. The Board took a break from 10:34 AM until 10:45 AM.

Respectfully Submitted:

____
Michael Restuccia, Chair

Attest:

____
Raymond McCray, Secretary

PUBLIC

San Joaquin County Employees Retirement Association

March 2022

5.01 Service Retirement — Consent

01 ARLENE T ABRESCY — Deferred Member, N/A

Member Type: General
Years of Service: 12y 03m 01d
Retirement Date: 11/2/2021
Comments: Outgoing reciprocity and concurrent retirement with CalPERS

02 TAMI S BROWN — Court Reporter, Court - Court Reporters

Member Type: General
Years of Service: 32y 05m 09d
Retirement Date: 1/29/2022

03 LILLIANNA CARMONA — Senior Office Assistant, Hosp Volunteer Services

Member Type: General
Years of Service: 29y 09m 20d
Retirement Date: 1/13/2022

04 VINCENT G GARZA — Housekeeping Service Worker, Hosp Environmental Services

Member Type: General
Years of Service: 26y 09m 07d
Retirement Date: 12/29/2021

05 KATHARINE A HIRSCH — Senior Office Assistant, Juv Probation-YOBG

Member Type: General
Years of Service: 22y 03m 11d
Retirement Date: 1/30/2022

06 JESSE C LOPEZ — Mental Health Outreach Worker, Mental Health Services

Member Type: General
Years of Service: 13y 11m 19d
Retirement Date: 12/1/2021

07 ANGELINA J MANZO — Substance Abuse Counselor II, Substance Abuse Services

Member Type: General
Years of Service: 26y 04m 17d
Retirement Date: 1/19/2022

08 WILLIAM B MITCHELL — Sergeant, Sheriff - Patrol

Member Type: Safety
Years of Service: 31y 10m 26d
Retirement Date: 1/3/2022

09 CHRISTINA M MORENO — SrRecordableDocumentsExaminer, Recorder - County Clerk

Member Type: General
Years of Service: 19y 04m 01d
Retirement Date: 1/30/2022

10 **WILLIAM J MURRAY** — Deferred Member, N/A

Member Type: General
Years of Service: 09y 06m 09d
Retirement Date: 1/28/2022
Comments: Outgoing reciprocity and concurrent retirement with CalPERS

11 **CLAIRE A OSBORN** — Deferred Member, N/A

Member Type: General
Years of Service: 18y 03m 05d
Retirement Date: 1/20/2022
Comments: Deferred member since April 2017

12 **RATTANA POK** — Court Interpreter, Court - Interpreters

Member Type: General
Years of Service: 13y 01m 29d
Retirement Date: 1/5/2022

13 **KIMBERLEE M SAHAGUN** — Communications Dispatcher II, Sheriff - Communications

Member Type: General
Years of Service: 28y 11m 01d
Retirement Date: 1/17/2022

14 **JENNELL A SPILLER** — Substance Abuse Counselor II, Substance Abuse Services

Member Type: General
Years of Service: 08y 06m 23d
Retirement Date: 1/24/2022

15 **SYLVIA M TURNER** — Outpatient Clinic Assistant, Correctional Health Services

Member Type: General
Years of Service: 21y 05m 16d
Retirement Date: 1/14/2022

16 **ROBERT C VASQUEZ** — HSA Program Supervisor II, HSA - Admin Support

Member Type: General
Years of Service: 34y 09m 10d
Retirement Date: 1/29/2022

17 **REMEDIOS A WALLACE** — Senior Psychiatric Technician, Mental Health-Adult Outpatient

Member Type: General
Years of Service: 34y 10m 16d
Retirement Date: 11/1/2021

18 **JERRY C WINTERS** — Dept Info Systems Analyst III, Employment - Economic Developm

Member Type: General
Years of Service: 26y 01m 25d
Retirement Date: 1/17/2022

Board of Retirement Meeting
San Joaquin County Employees' Retirement Association

Agenda Item 5.02-01

March 11, 2022

SUBJECT: RETIREMENT ADMINISTRATOR/CHIEF EXECUTIVE OFFICER SALARY

SUBMITTED FOR: _X_ CONSENT ___ ACTION ___ INFORMATION

RECOMMENDATION

It is recommended that the Board approve incentive compensation for Johanna Shick, SJCERA's Retirement Administrator/Chief Executive Officer, in the amount of 7% $15,360.65.

PURPOSE

Merit and/or equity compensation increases are included as an option in Ms. Shick's employment agreement, to be determined in the Board's sole authority. Such compensation is based upon annual evaluations performed by the Board, in acknowledgment of specified performance targets and personal and developmental goals. The recommended incentive compensation is a recognition of Ms. Shick's meritorious performance in these regards in the calendar year 2021.

DISCUSSION

The Board Administrative Policy for Chief Executive Officer Performance Review includes a process and timeline for a calendar year review of the CEO's employment performance. Pursuant to the policy, the CEO Performance Review Committee conducted the required review and presented the results to the Board at its February 11, 2022, regular meeting. The CEO Performance Review policy allows the Board to authorize incentive compensation if it determines that Board-approved goals for the previous calendar year have been achieved. The compensation may not exceed 10 percent of the CEO's annual base salary, increase the CEO's base pay, or be included as part of the CEO's retirement eligible compensation. The recommended incentive compensation amount of 7% ($15,360.65) meets these requirements. The recommendation will not otherwise affect Ms. Shick's existing employment agreement, base salary or benefits.

Jason R. Morrish
Deputy County Counsel

Fiduciary Governance Training for the San Joaquin County Employees' Retirement Association Board of Retirement

Prepared by:
Ashley K. Dunning | Partner, Co-Chair Public Pensions & Investments Group
March 11, 2022

NOSSAMAN LLP

Proper Governance Model Reflects Board Members' Roles vis-à-vis SJCERA

Board Members' Roles:

- Trustee/Fiduciary
- Public Official
- Assigned authority over administration and investment of funds of public retirement system; responsible for oversight and monitoring
- Decision-maker with quasi-judicial authority as to other matters within retirement system jurisdiction (e.g., disability retirement applications)
- Policy-maker with some quasi-legislative and other authority over governance of the retirement system within statutory bounds (e.g., actuarial determinations for funding of SJCERA)

Board Governance with Respect to Fiduciary Role

- Trustees are to understand and comply with fiduciary responsibilities
- Board must carry out responsibilities consistent with the trustees' fiduciary responsibilities:
  - Act in good faith as a prudent expert (duty of care)
  - Act in the overall best interest of members and beneficiaries (duty of loyalty)

Expectations of Trustees and Vulnerabilities Common to Public Pension Plan Design

- Appointed, elected and ex officio members assume positions on Board as provided by plan design
- Trustees' loyalty is to the overall best interest of the retirement plans' members and beneficiaries – not to appointing authority, ex officio position, or to contingent of membership that elected the Board member:
  - Under general trust law, a Board member does not sit on the Board as representative of the group that elected or appointed him or her

How Does the Board Govern SJCERA in a Fiduciarially Compliant Manner?

- **Oversight and Monitoring of SJCERA**
  - Through selection, monitoring and compensation of Chief Executive Officer (“CEO”)
  - Through use of committees to maximize productivity and provide oversight. Committees may include, and are not limited to:
    - Investment (often, but not always, a committee of the whole)
    - Administrative, Governance
    - Finance, Risk Management, Audit
    - Education
  - Though policy development and monitoring

Board Oversight: Staff

- **Selection of Staff:**
  - Define roles and responsibilities.
  - Identify credentials
- **Monitoring:**
  - Direct report to Board by CEO, legal counsel and other advisors, as appropriate.
  - CEO accountable to Board, and any committees, regarding executive staff and consultants and reports to Board regarding any significant matters.
  - Annual performance evaluation.

Board Oversight: Investments

- **Full Board oversees SJCERA's investments**
  - Develops and amends *Investment Policy Statement*
  - Monitors investments and investment advisors as set forth in the Board's *Investment Roles and Responsibilities Policy*
  - Outline's SJCERA's goals, objectives and guidelines for managing SJCERA's investment program as set forth in the *Board's Strategic Asset Allocation Policy*

Board Oversight: Committees

- Administrative Committee
  - Assists in “overseeing administrative and governance functions.”
  - Reviews proposed budget
  - Provides input on the “development or revision of SJCERA’s bylaws, Board policies, and Committee Chairs (if any), or any other issue determined by the Committee Chair in consultation with the CEO and Board Chair as appropriate.
- Audit Committee
  - Assists in “overseeing the audit function within SJCERA”
  - Committee charter details the role and responsibilities of this Committee, and confirms that it is “an advisory committee to the Board,” in that “[a]ll Committee actions must be ratified or approved by the Board.
- CEO Performance Review Committee
  - Documents the Board’s collective assessment of the CEO’s performance
  - Develops a recommendation for the full Board regarding CEO’s compensation

Board Oversight: Administration and Governance Policies

- Over two dozen Board Administration Policies provided on SJCERA's website that cover Board policies on topics ranging from benefit determinations to document retention, as well as funding policies and asset allocation policies
- Another six Board Governance Policies provided on the website on topics ranging from communications, conflicts of interest, travel and education.
- Committee Charters for three standing committees.

Board Oversight: Delegation

- “A trustee has a duty personally to perform the responsibilities of the trusteeship except as a prudent person might delegate those responsibilities to others. In deciding whether, to whom and in what manner to delegate fiduciary authority in the administration of a trust, and thereafter in supervising agents, the trustee is under a duty to the beneficiaries to exercise fiduciary discretion and to act as a prudent person would in act in similar circumstances.”

Rest. 3d Trusts, supra (Prudent Investor Rule, § 171, adopted in 1992).

Fiduciary Duty of Care Requires *Prudent* Delegation

- ***Prudence*** is the key to delegation as to all aspects of the topic:
  - Whether to delegate;
  - How to delegate;
  - To whom a task is delegated; and
  - How to supervise.

Fiduciary Duties of Care and Loyalty Require Balancing of Sometimes Competing Interests

- **For Discussion (next slides)**:
  - These potentially competing interests warrant fiduciary analyses:
    - Legal and business terms in investment contracts
    - Implementation of retirement plan in the context of error corrections, administrative changes in practice, and risk mitigation
    - Determination of appropriate discount rate in the context of reasonable investment expectations and as overall best interest of members and beneficiaries

Hypothetical No. 1: Balancing legal and business terms in investment contracts

- Consider this scenario:
  - Board's investment consultant brings three potential new private equity managers to the Board for consideration: X, Y and Z. The Board considers written and oral presentations by the three private equity managers, all of which have stellar track records, as well as recommendation of its investment consultant. The Board votes to engage private equity manager X ("PEMX") based on its investment approach that matches Board's asset allocation and risk-reward expectations within its Aggressive Growth allocation, and because of its slightly lower fees than the other candidates. Board approves a $10 million investment with PEMX, subject to completing all due diligence and successful contract negotiations.
  - Investment consultant and SJCERA's investment officer complete due diligence and are satisfied with results. Investment counsel negotiates contract documentation, including a side letter. Counsel for PEMX refuses to agree to one of SJCERA's "must have" contract terms relating to SJCERA's burden of proof needed to pursue the general partner in litigation.
- How should this topic be resolved and what fiduciary considerations of prudence and loyalty should be addressed?

Hypothetical No. 2: Implementation of retirement plan in the context of error corrections, administrative changes in practice, and risk mitigation

- Consider this scenario:
  - SJCERA engaged in pension administration system update, which identifies a number of administrative practices that SJCERA's pension administration system consult recommends be changed.
  - Some of the recommended changes result from practices that the consultant states are inconsistent with the manner in which any other CERL system it has advised administer their systems.
  - Others of the recommended changes are for operational efficiencies.
  - SJCERA's CEO and counsel consider for the recommendations and conclude that all of the changes are warranted, but also that SJCERA's prior practices were not erroneous, as a matter of law.
  - None of the prior practices had previously been expressly adopted by the SJCERA Board.
- How should these topics be resolved, and what fiduciary considerations of prudence and loyalty should be addressed?

Hypothetical No. 3: Determination of appropriate discount rate in the context of reasonable investment expectations and in overall best interest of members and beneficiaries

- Consider this scenario:
  - SJCERA's asset allocation is designed to attain its target return of 7.0% over the long term. SJCERA's total plan return, net of fees, for 2021 was over 17%. SJCERA's total plan return, net of fees, over 5 years was 8.0%, 10 years was 7.2%, and 20 years was 6.2%.
  - SJCERA's investment consultant's asset-liability study anticipates that the fund will return 6.25% over the next 5 years, with a real rate of return of 4.15% and anticipated inflation at 2.10%
  - SJCERA's actuary observes that future expectations of investment returns may continue to decline necessitating further reductions in the discount rate.
  - Both SJCERA's participating employers the employee unions with members in SJCERA urge the Board to retain its discount rate at 7.0%.
- How should these topics be resolved, and what fiduciary considerations of prudence and loyalty should be addressed?

Thank You

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MEKETA

INVESTMENT GROUP

San Joaquin County Employees' Retirement Association (SJCERA)

Q4 2021

Quarterly Report

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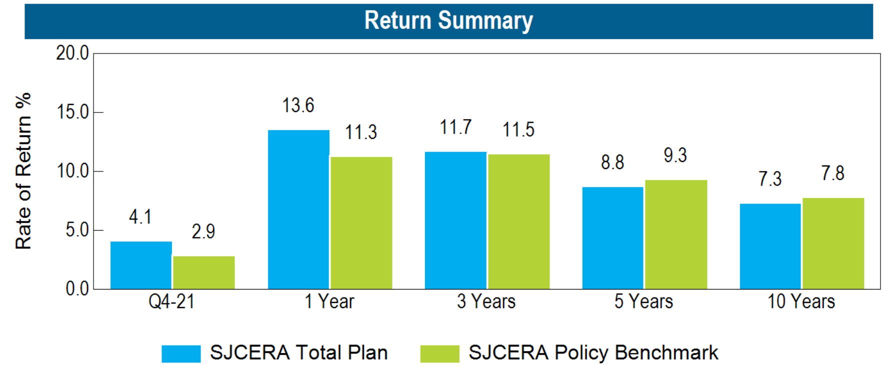
Introduction



Summary of Cash Flows	Fourth Quarter	One Year
Beginning Market Value	$3,839,975,299	$3,500,512,188
Net Cash Flow	$61,633,117	$77,277,781
Net Investment Change	$160,813,756	$484,632,203
Ending Market Value	$4,062,422,172	$4,062,422,172

Introduction

The SJCERA Total Portfolio had an aggregate value of $4.1 billion as of December 31, 2021. During the latest quarter, the Total Portfolio increased in value by $222.4 million, and over the one-year period, the Total Portfolio increased by $561.9 million. The increases over the quarter and one-year periods were primarily driven by positive investment returns. The IMF is forecasting U.S. growth in 2022 of 5.2% with a quarter-over-quarter (annualized) increase of 4.8% in the fourth quarter of 2021 (6.9% growth in 4Q vs. 2.1% in 3Q). The IMF also forecasts EU and Chinese GDP to increase by 4.3% and 5.6%, respectively, in 2022.

Returns for US stocks, as measured by the Russell 1000, and US Treasuries, as measured by the Barclays Long US Government bond index, for the fourth quarter of 2021 were 9.8% and 3.1%, respectively. Commodities were down (1.6%)for the quarter, as measured by the Bloomberg Commodity Index and global equity returns, as measured by the MSCI ACWI IMI, were up 6.1% for the quarter ended December 31, 2021.

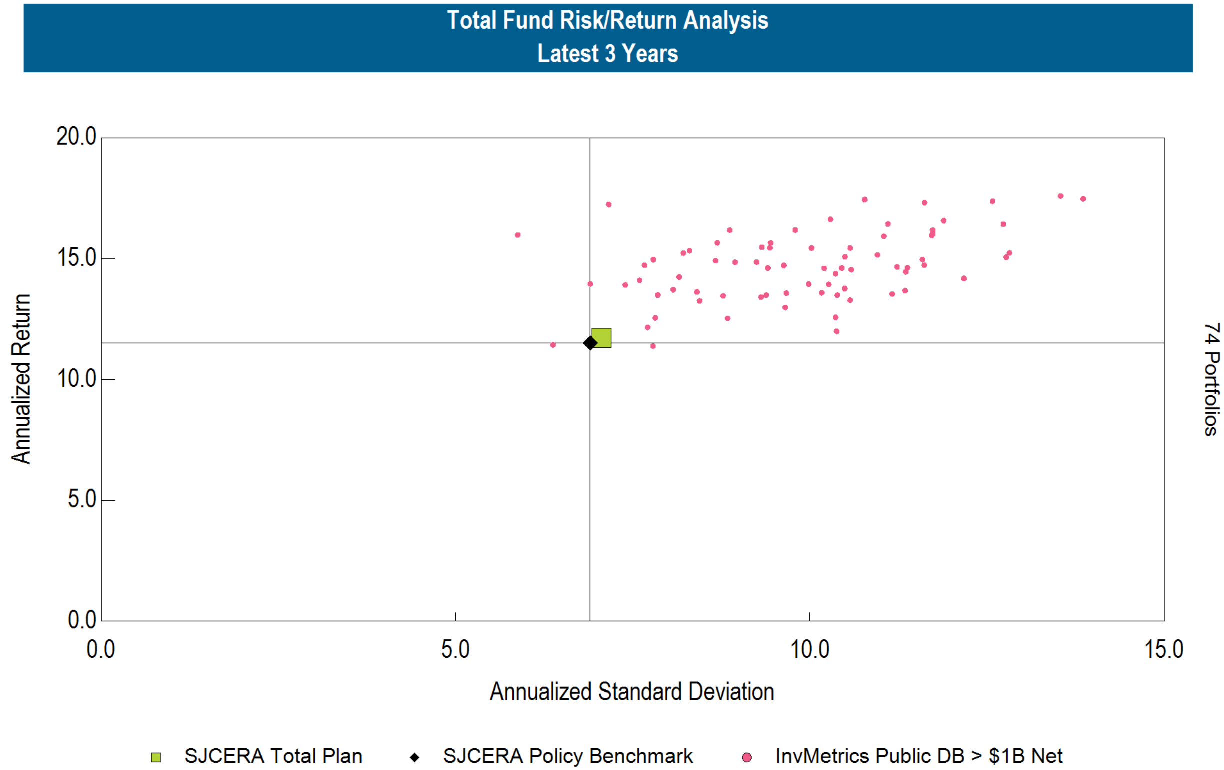
Recent Investment Performance

The Total Portfolio outperformed the policy benchmark for the quarter, 1- and 3-year periods by 1.2%, 2.3% and 0.2%, respectively and the Median Public Fund for the quarter by 0.1%. Over the 5-, 10-, 15-, 20-, and 25-year periods, the portfolio trailed its benchmark by (0.5%), (1.0%), (0.5%) and (0.2%), respectively, and trailed the Median Public Fund by for the 1-, 3-, 5-, 10-, 15, 20-, and 25-year periods by (1.3%), (3.0%), (2.1%), (2.4%), (2.3%), (2.4%), and (0.9%), respectively. However, the portfolio earned higher risk adjusted returns, as measured by the Sharpe Ratio, than the Median Public Fund over the 3-, 5- and 10-year time periods but trailed over the 1-year period.

	QTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	25 Yrs
SJCERA Total Plan - Net	**4.1**	**13.6**	**11.7**	**8.8**	**7.3**	**4.6**	**6.0**	**6.6**
SJCERA Total Plan - Gross	**4.3**	**14.2**	**12.4**	**9.5**	**8.2**	**5.3**	**6.6**	**7.1**
SJCERA Policy Benchmark	*2.9*	*11.3*	*11.5*	*9.3*	*7.8*	*5.6*	*6.5*	*6.8*
Over/Under (vs. Net)	1.2	2.3	0.2	-0.5	-0.5	-1.0	-0.5	-0.2
InvMetrics Public DB > $1B Net Median	*4.0*	*14.9*	*14.7*	*10.9*	*9.7*	*6.9*	*7.4*	*7.5*

Investment Metrics Total Fund Public Universe >$1 Billion, net of fees.
Policy Benchmark composition is listed in the Appendix.

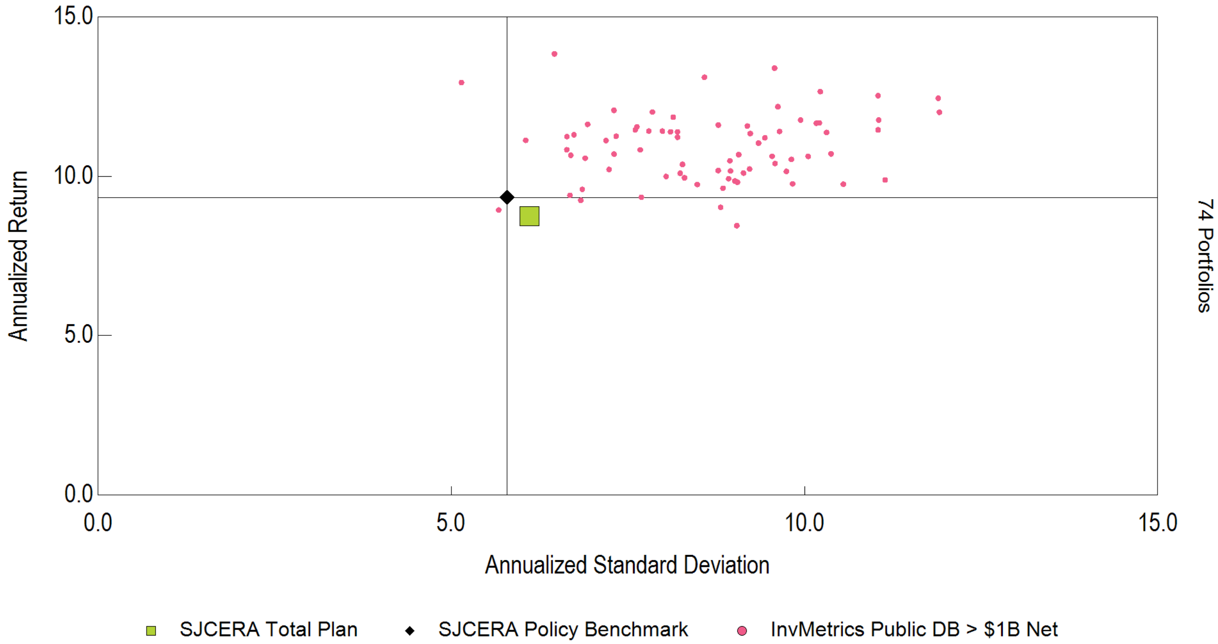
Risk-Adjusted Return vs Peers	1 Yr	3 Yrs	5 Yrs	10 Yrs
SJCERA Total Plan - Net	**13.6**	**11.7**	**8.8**	**7.3**
Risk Adjusted Median	14.0	10.3	7.2	6.6
Excess Return	-0.4	1.4	1.6	0.7



	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
SJCERA Total Plan	11.73%	7.06%	1.54
SJCERA Policy Benchmark	11.50%	6.90%	1.54
InvMetrics Public DB > $1B Net Median	14.69%	10.09%	1.35

Returns are net of fees.
Computed as annualized return less the risk free rate, divided by the annualized standard deviation.
Investment Metrics Total Fund Public Universe >$1 Billion, net of fees.

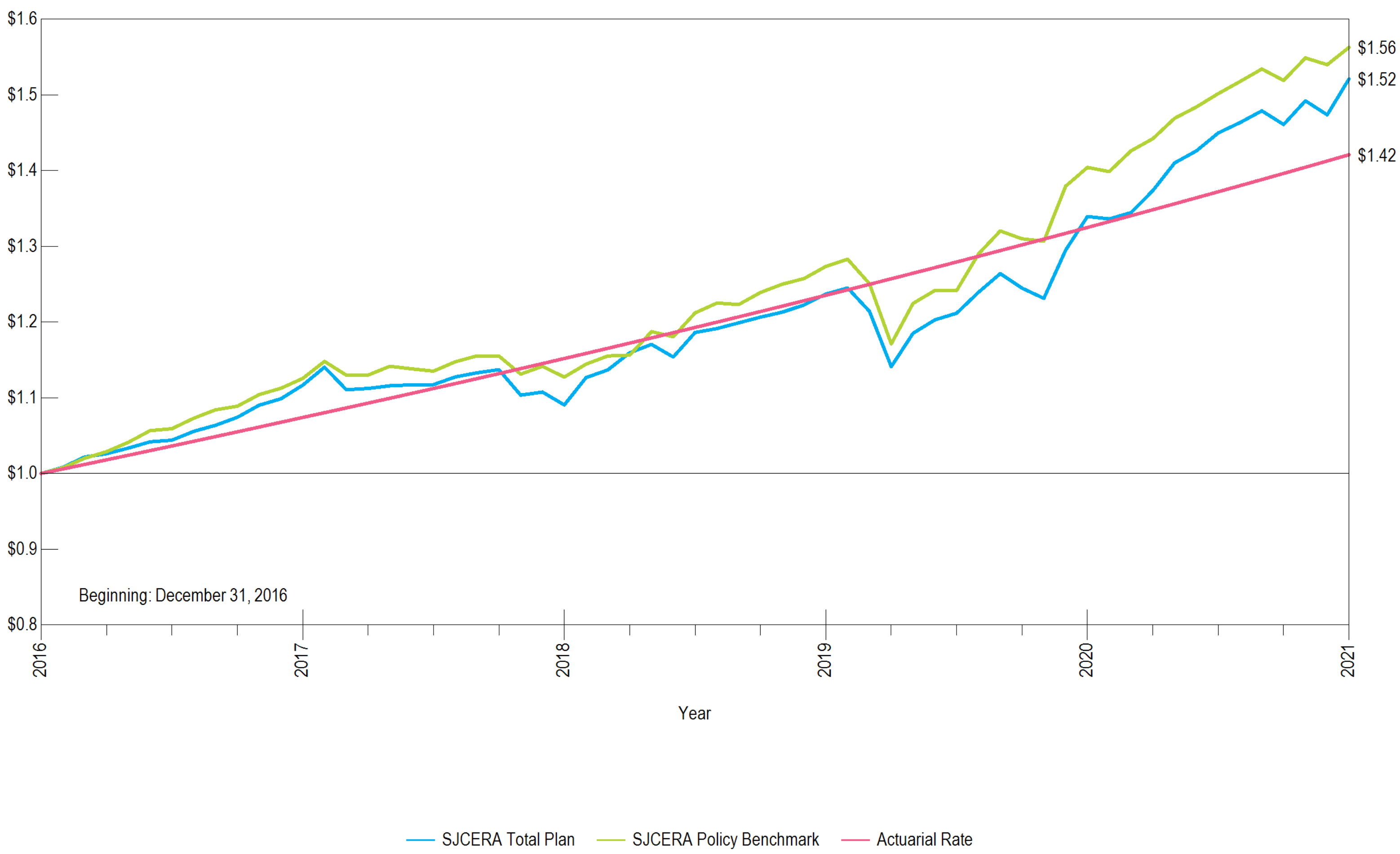
Total Fund Risk/Return Analysis
Latest 5 Years



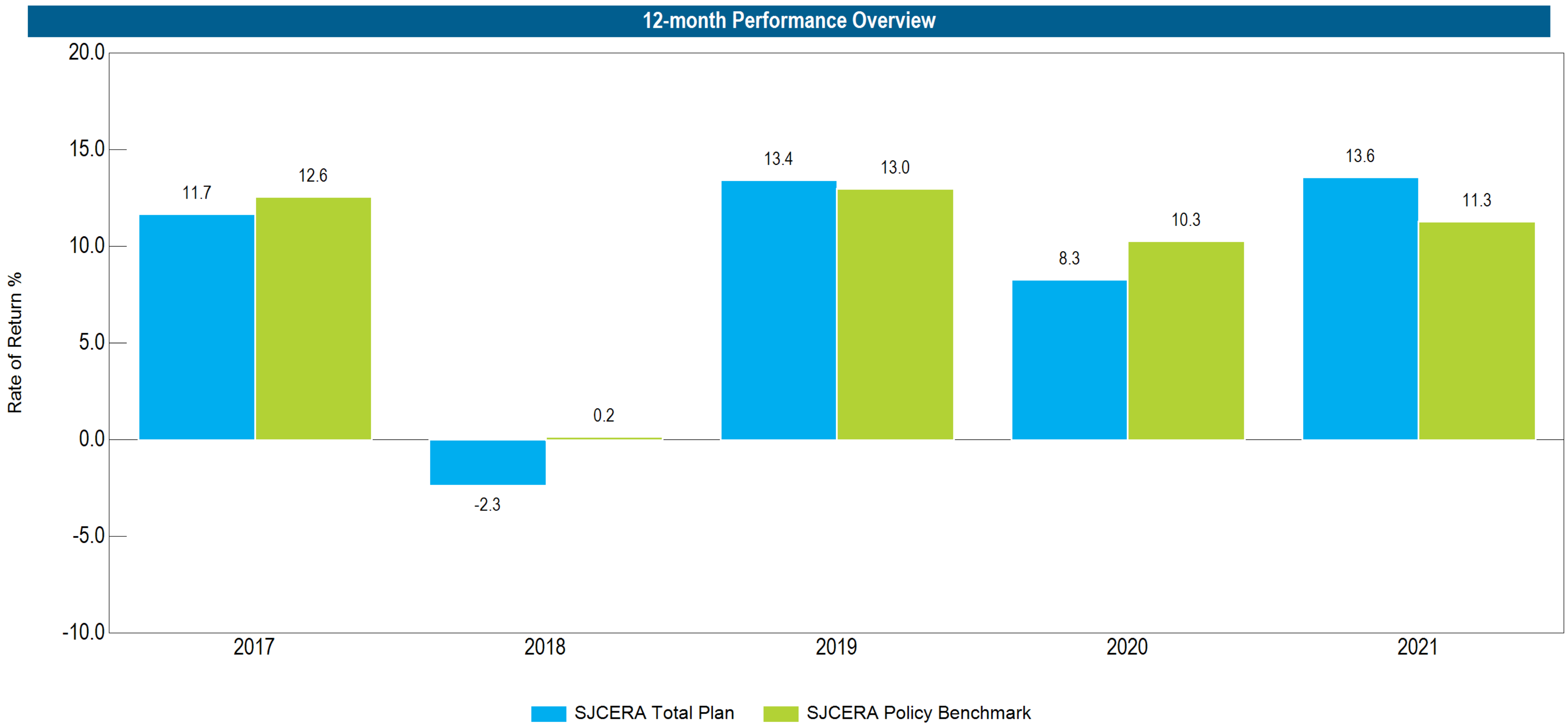
	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio
SJCERA Total Plan	8.75%	6.10%	1.26
SJCERA Policy Benchmark	9.34%	5.79%	1.43
InvMetrics Public DB > $1B Net Median	10.94%	8.80%	1.10

Returns are net of fees.
Computed as annualized return less the risk free rate, divided by the annualized standard deviation.
Investment Metrics Total Fund Public Universe >$1 Billion, net of fees.

Growth of a Dollar - Latest 5 Years



7.0% Actuarial Rate from 1/1/2020 to present. 7.25% Actuarial Rate from 1/1/2018 to 12/31/2019. 7.4% Actuarial Rate from 8/1/2016-12/31/2017. 7.5% Actuarial Rate from 1/1/2012-7/31/2016; previously 8.0%

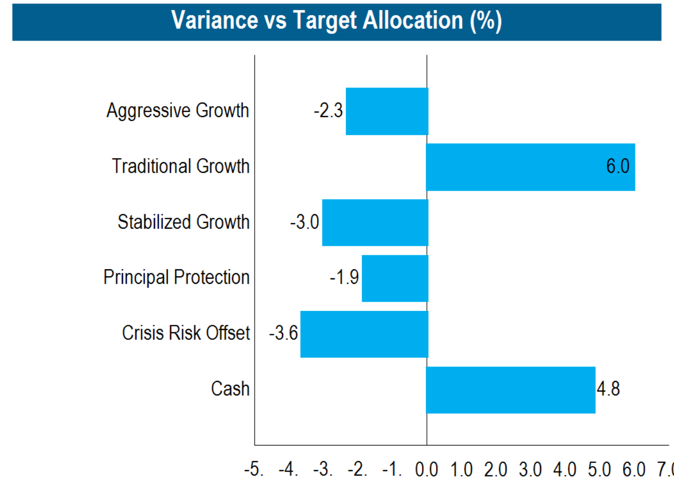


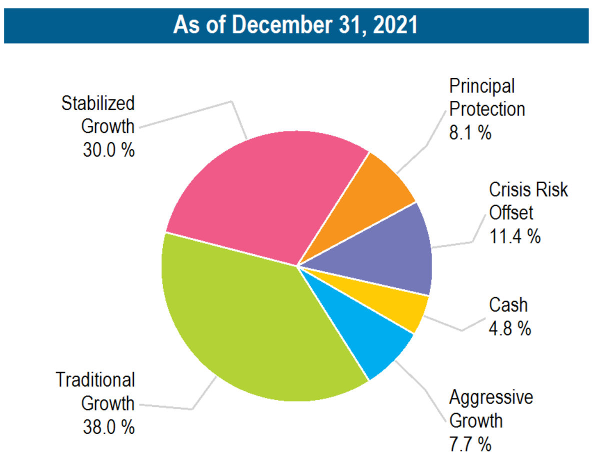
12-month absolute results have been positive over four of the last five calendar year periods, net of fees. The SJCERA Total Portfolio outperformed the policy target benchmark during two of these five periods, net of fees.

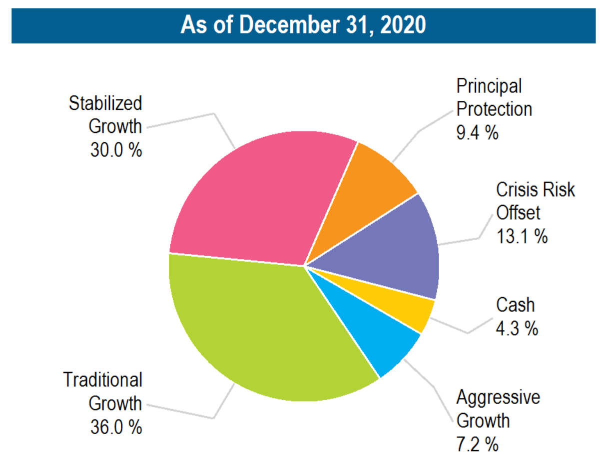
Asset Allocation | As of December 31, 2021

Asset Allocation vs. Target	Current	Current	Policy	Difference*
Broad Growth	**$3,073,260,491**	**75.7%**	**75.0%**	**0.7%**
Aggressive Growth	$311,786,826	7.7%	10.0%	-2.3%
Traditional Growth	$1,542,824,270	38.0%	32.0%	6.0%
Stabilized Growth	$1,218,649,395	30.0%	33.0%	-3.0%
Diversified Growth	**$792,761,997**	**19.5%**	**25.0%**	**-5.5%**
Principal Protection	$330,858,456	8.1%	10.0%	-1.9%
Crisis Risk Offset	$461,903,542	11.4%	15.0%	-3.6%
Cash	**$196,399,684**	**4.8%**	**0.0%**	**4.8%**
Cash	$196,399,684	4.8%	0.0%	4.8%
Total	**$4,062,422,172**	**100.0%**	**100.0%**	

*Difference between Policy and Current Allocation







Market values may not add up due to rounding.
Cash asset allocation includes Parametric Overlay.

Asset Class Performance Net-of-Fees | As of December 31, 2021

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
SJCERA Total Plan	**4,062,422,172**	**100.0**	**4.1**	**13.6**	**11.7**	**8.8**	**7.3**
SJCERA Policy Benchmark			*2.9*	*11.3*	*11.5*	*9.3*	*7.8*
Broad Growth	**3,073,260,491**	**75.7**	**5.4**	**17.7**	**14.3**	**10.8**	**8.9**
Aggressive Growth Lag	**311,786,826**	**7.7**	**8.2**	**39.4**	**16.7**	**15.3**	**12.4**
Aggressive Growth Blend			*3.2*	*22.8*	*13.1*	*11.4*	*10.2*
Traditional Growth	**1,542,824,270**	**38.0**	**6.8**	**20.6**	**17.9**	**12.6**	**11.2**
MSCI ACWI IMI Net			*6.1*	*18.2*	*21.1*	*15.1*	*12.5*
Stabilized Growth	**1,218,649,395**	**30.0**	**3.0**	**9.3**	**9.8**	**7.5**	**4.8**
SJCERA Stabilized Growth Benchmark			*0.6*	*2.1*	*2.2*	*1.9*	*2.0*
Diversifying Strategies	**792,761,997**	**19.5**	**-0.6**	**0.7**	**3.5**	**2.7**	**3.9**
Principal Protection	**330,858,456**	**8.1**	**-0.2**	**0.1**	**3.6**	**3.3**	**4.2**
Bloomberg US Aggregate TR			*0.0*	*-1.5*	*4.8*	*3.6*	*2.9*
Crisis Risk Offset Asset Class	**461,903,542**	**11.4**	**-0.9**	**1.1**	**3.3**	**2.3**	**4.2**
CRO Benchmark			*2.1*	*3.5*	*7.3*	*5.1*	*4.5*
Cash and Misc Asset Class	**140,418,193**	**3.5**	**0.0**	**0.1**	**0.7**	**0.8**	**0.5**
ICE BofA 91 Days T-Bills TR			*0.0*	*0.0*	*1.0*	*1.1*	*0.6*

Market values may not add up due to rounding.
Policy Benchmark composition is listed in the Appendix.
10% ICE BofAML 3 month US T-Bill + 4%, 17% 50% BB High Yield/50% S&P Leverage Loans.
(1/3) BB Long Duration Treasuries, (1/3) BTOP50 Index, (1/3) 5% Annual.

Asset Class Performance Net-of-Fees | As of December 31, 2021

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Aggressive Growth Lag	**311,786,826**	**100.0**	**8.2**	**39.4**	**16.7**	**15.3**	**12.4**
Aggressive Growth Blend			*3.2*	*22.8*	*13.1*	*11.4*	*10.2*
Blackrock Global Energy and Power Lag	22,706,488	7.3	3.4	8.0	--	--	--
MSCI ACWI +2% Blend			*-0.5*	*30.5*	--	--	--
Morgan Creek III Lag	6,571,365	2.1	-13.5	-4.0	-10.4	-0.3	--
MSCI ACWI +2% Blend			*-0.5*	*30.5*	*15.4*	*12.8*	--
Morgan Creek V Lag	9,473,506	3.0	8.5	26.8	15.1	13.6	--
MSCI ACWI +2% Blend			*-0.5*	*30.5*	*15.4*	*12.8*	--
Morgan Creek VI Lag	26,828,214	8.6	8.6	45.1	23.6	20.4	--
MSCI ACWI +2% Blend			*-0.5*	*30.5*	*15.4*	*12.8*	--
Ocean Avenue II Lag	38,704,604	12.4	10.6	84.6	33.2	31.8	--
MSCI ACWI +2% Blend			*-0.5*	*30.5*	*15.4*	*12.8*	--
Ocean Avenue III Lag	51,341,899	16.5	16.4	56.0	28.5	29.6	--
MSCI ACWI +2% Blend			*-0.5*	*30.5*	*15.4*	*12.8*	--
Ocean Avenue IV Lag	36,893,083	11.8	3.6	42.1	--	--	--
MSCI ACWI +2% Lag			*-0.5*	*30.5*	--	--	--
Non-Core Real Assets Lag	114,578,388	36.7	8.6	29.6	10.0	8.6	9.4
NCREIF ODCE +1% lag (blend)			*6.7*	*14.8*	*7.2*	*7.6*	*9.9*
Stellex Capital Partners II Lag	4,689,279	1.5	-4.4	--	--	--	--
MSCI ACWI +2% Lag			*-0.5*	--	--	--	--

Market values may not add up due to rounding.
Lagged 1 quarter.
Trailing Non-Core real estate performance includes returns provided by prior real estate consultant from inception through Q419.

Aggressive Growth

During the latest three-month period ending December 31, 2021, six of SJCERA's eight aggressive growth portfolios outperformed their MSCI ACWI +2% Blended benchmark. Non-core real assets also outperformed. Please note that returns data for this asset class are lagged one quarter and the benchmark returned 22.8% for the trailing 1-year period.

BlackRock Global Energy and Power, a recently added fund with a focus on infrastructure, outperformed its target benchmark over the quarter by 3.9% but underperformed for the 1-year period by (21.5%), respectively.

Morgan Creek III produced a negative quarterly return of (13.5%), underperforming its benchmark by (13.0%). The manager also lagged the benchmark over the 1-, 3- and 5-year periods by (34.5%), (25.8%) and (13.1%), respectively.

Morgan Creek V outperformed its benchmark over the trailing quarter and 5-year periods by 9.0% and 0.8%, respectively, but underperformed for the trailing 1- and 3-year periods by (3.7%) and (0.3%), respectively.

Morgan Creek VI outperformed for the quarter, 1-, 3- and 5-year periods by 9.1%, 14.6%, 8.2% and 8.6%, respectively.

Ocean Avenue II, a Private Equity Buyout fund-of-funds manager, outperformed its benchmark for the quarter, 1-, 3- and 5-year periods by 11.1%, 54.1%, 17.8% and 19.0%, respectively.

Ocean Avenue III, a Private Equity Buyout fund-of-funds manager, led its benchmark for the quarter, 1-, 3- and 5-year periods by 16.9%, 25.5%, 13.1% and 16.8%, respectively.

Ocean Avenue IV outperformed its benchmark for the quarter and 1-year time periods by 4.1% and 11.6%, respectively.

Non-Core Private Real Assets underperformed its NCREIF ODCE +1% benchmark over the 10-year period by (0.5%). The sub-asset class outperformed its benchmark over the quarter, 1-, 3- and 5-year time periods by 1.9%, 14.8%, 2.8% and 1.0%, respectively.

Stellex II, the newest manager in the asset class, underperformed its benchmark during the quarter by (3.9%).

Asset Class Performance Net-of-Fees | As of December 31, 2021

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Traditional Growth	**1,542,824,270**	**100.0**	**6.8**	**20.6**	**17.9**	**12.6**	**11.2**
MSCI ACWI IMI Net			*6.1*	*18.2*	*21.1*	*15.1*	*12.5*
SJCERA Transition	3,262	0.0					
Northern Trust MSCI World	1,343,292,580	87.1	7.3	21.4	--	--	--
MSCI World IMI Net USD			*7.1*	*21.0*	--	--	--
PIMCO RAE Emerging Markets	79,063,012	5.1	0.4	16.5	10.5	8.8	5.8
MSCI Emerging Markets Gross			*-1.2*	*-2.2*	*11.3*	*10.3*	*5.9*
GQG Active Emerging Markets	65,051,537	4.2	-0.2	-1.5	--	--	--
MSCI Emerging Markets			*-1.3*	*-2.5*	--	--	--
Invesco REIT	55,413,880	3.6	15.6	42.0	17.9	11.2	11.1
FTSE NAREIT Equity REIT			*16.3*	*43.2*	*18.4*	*10.8*	*11.4*

Market values may not add up due to rounding.

Traditional Growth

During the latest three-month period ending December 31, 2021, the traditional growth asset class outperformed its MSCI ACWI IMI benchmark by 0.7% with three of the four managers outperforming their benchmarks.

Northern Trust MSCI World, the Plan's new Passive Global Equity manager, outperformed its benchmark over the past quarter and 1-year periods by 0.2% and 0.4%, respectively.

PIMCO RAE Fundamental - Emerging, one of SJCERA's Active Emerging Markets Equity manager, outperformed its MSCI Emerging Markets Index benchmark over the quarter and 1-year time periods by 1.6% and 18.7%, respectively, and underperformed its benchmark over the 3-, 5- and 10-year periods by (0.8%), (1.5%) and (0.1%), respectively.

GQG, the Plan's new Active Emerging Markets Equity manager was opened during the third quarter of 2020 and outperformed its MSCI Emerging Markets benchmark by 1.1% and 1.0% for the quarter and 1-year periods, respectively.

Invesco, the Plan's Core US REIT manager, underperformed the FTSE NAREIT Equity REIT Index for the quarter, 1-, 3- and 10-year periods by (0.7%), (1.2%), (0.5%) and (0.3%), respectively. The fund outperformed its benchmark over the 5-year period by 0.4%.

Asset Class Performance Net-of-Fees | As of December 31, 2021

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Stabilized Growth	**1,218,649,395**	**100.0**	**3.0**	**9.3**	**9.8**	**7.5**	**4.8**
SJCERA Stabilized Growth Benchmark			*0.6*	*2.1*	*2.2*	*1.9*	*2.0*
Risk Parity Asset Class	**449,917,115**	**36.9**	**3.4**	**9.9**	**13.6**	**9.1**	**3.8**
ICE BofAML 3mo US TBill+4%			*1.0*	*4.1*	*5.0*	*5.2*	*4.7*
Bridgewater All Weather	222,437,674	18.3	4.3	11.7	12.6	8.7	--
Bridgewater All Weather (blend)			*1.0*	*4.1*	*5.0*	*5.2*	--
PanAgora Diversified Risk Multi Asset	227,479,441	18.7	2.6	8.3	14.5	9.6	--
ICE BofAML 3mo US TBill+4%			*1.0*	*4.1*	*5.0*	*5.2*	--
Liquid Credit	**237,288,542**	**19.5**	**0.0**	**2.4**	**5.1**	**3.8**	**3.8**
50% BB US HY/50% S&P LSTA Lev Loan			*0.7*	*5.2*	*7.2*	*5.3*	*5.8*
Neuberger Berman	106,585,329	8.7	0.0	2.3	--	--	--
33% ICEBofAMLUSHY /33%JPMEMBI Global Div /33% S&P LSTALevLoan			*0.3*	*2.9*	--	--	--
Stone Harbor Absolute Return	130,703,213	10.7	0.0	2.4	4.4	3.3	3.5
ICE BofA-ML LIBOR			*0.0*	*0.2*	*1.3*	*1.4*	*0.9*
Private Credit Lag	**341,870,687**	**28.1**	**1.6**	**8.0**	**3.6**	**2.9**	**4.7**
Custom Credit Benchmark			*1.0*	*9.8*	*5.5*	*5.6*	*6.2*
Blackrock Direct Lending Lag	51,001,686	4.2	2.4	8.8	--	--	--
CPI + 6% BLK Blend			*2.4*	*11.7*	--	--	--
Crestline Opportunity II Lag	18,787,084	1.5	0.4	14.1	1.1	3.8	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	*8.9*	--
Davidson Kempner Long-Term Distressed Opportunities Fund V, L.P. Lag	34,480,593	2.8	1.6	25.5	--	--	--
Credit Blend CPI +6%			*2.4*	*11.7*	--	--	--

Market values may not add up due to rounding.
10% ICE BofAML 3 month US T-Bill + 4%, 17% 50% BB High Yield/50% S&P Leverage Loans.

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
HPS European Asset Value II, LP Lag	20,406,329	1.7	1.8	8.2	--	--	--
Credit Blend CPI +6%			*2.4*	*11.7*	--	--	--
Medley Opportunity II Lag	9,904,617	0.8	-3.2	8.3	-9.3	-7.6	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	*8.9*	--
Mesa West III Lag	31,041	0.0	-14.9	-21.5	-6.6	-0.4	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	*8.9*	--
Mesa West IV Lag	29,459,557	2.4	2.6	7.9	7.7	--	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	--	--
Oaktree Middle-Market Direct Lending Lag	32,102,053	2.6	3.5	15.7	15.0	--	--
CPI + 6% Oaktree Blend			*2.4*	*11.7*	*9.5*	--	--
Raven Opportunity II Lag	10,414,168	0.9	11.6	7.6	-2.5	-2.5	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	*8.9*	--
Raven Opportunity III Lag	50,211,888	4.1	4.3	11.1	7.6	5.1	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	*8.9*	--
White Oak Summit Peer Lag	36,744,876	3.0	-4.4	-0.5	3.4	5.6	--
Credit Blend CPI +6%			*2.4*	*11.7*	*9.0*	*8.9*	--
White Oak Yield Spectrum Master V Lag	48,326,795	4.0	0.4	1.7	--	--	--
Credit Blend CPI +6%			*2.4*	*11.7*	--	--	--
Private Core Real Assets Lag	189,573,050	15.6	8.9	20.8	11.6	11.8	13.4
NCREIF ODCE +1% lag (blend)			*6.7*	*14.8*	*7.2*	*7.6*	*9.9*

Market values may not add up due to rounding.
NCREIF ODCE Net + 1% 10/1/2012-present. NCREIF Property Index previously.

Stabilized Growth

During the latest three-month period ending December 31, 2021, eight of SJCERA's sixteen Stabilized Growth managers matched or outperformed their benchmarks while the other eight underperformed. Several managers in this asset class are in the process of investing capital and may underperform as assets are invested (typically known as the J-curve effect). Also, private core real assets outperformed its benchmark for the quarter.

Bridgewater All Weather, one of the Plan's Risk Parity managers, outperformed its benchmark over the quarter, 1-, 3- and 5-year periods by 3.3%, 7.6%, 7.6% and 3.5%, respectively.

PanAgora DRMA, one of the Plan's Risk Parity managers, outperformed its T-Bill +4% benchmark over the quarter, 1-, 3- and 5-year periods by 1.6%, 4.2%, 9.5% and 4.4%, respectively.

Neuberger Berman, one of the Plan's Liquid Credit managers, underperformed its benchmark for the quarter and 1-year periods by (0.3%) and (0.6%), respectively.

Stone Harbor, the Plan's Absolute Return Fixed Income manager, matched its ICE BofAML LIBOR index over the quarter and outperformed it for the 1-, 3-, 5- and 10-year periods by 2.2%, 3.1%, 1.9% and 2.6%, respectively.

BlackRock Direct Lending, one of the Plan's newer Private Credit manager, matched its CPI +6% benchmark for the quarter and underperformed over the 1-year period (2.9%).

Crestline Opportunity II, the Plan's Credit, Niche Alternatives and Hedge Fund Secondaries manager, trailed its benchmark over the quarter, 3- and 5-year periods by (2.0%), (7.9%) and (6.1%), respectively. It outperformed is Credit Blend CPI +6% benchmark for the 1-year period by 2.4%.

Davidson Kempner, the Plan's newest Private Credit manager, was opened during the fourth quarter of 2020 and underperformed its CPI +6% annual benchmark by (0.8%) for the quarter. It outperformed its benchmark for the trailing 1-year period by 13.8%.

HPS EU, one of the Plan's newer Direct Lending manager, was opened during the third quarter of 2020 and underperformed its CPI +6% benchmark for the quarter and 1-year periods by (0.6%) and (3.5%), respectively.

Stabilized Growth (Continued)

Medley Opportunity II, one of the Plan's Direct Lending managers, underperformed its CPI +6% annual return target over the quarter, 1-, 3- and 5-year time periods by (5.6%), (3.4%), (18.3%) and (16.5%), respectively.

Mesa West RE Income III, one of the Plan's Commercial Mortgage managers, underperformed its CPI +6% annual benchmark by (17.3%), (33.2%), (15.6%) and (9.3%) over the quarter, 1-, 3- and 5-year periods, respectively.

Mesa West RE Income IV, one of the Plan's Commercial Mortgage managers, produced a quarterly return of 2.6%, outperforming its CPI +6% annual benchmark by 0.2%. Over the 1- and 3-year periods, the fund underperformed its benchmark by (3.8%) and (1.3%), respectively.

Oaktree, a Middle-Market Direct Lending manager, outperformed its MSCI ACWI +2% Blended benchmark for the quarter, 1- and 3-year trailing time periods by 1.1%, 4.0% and 5.5%, respectively.

Raven Capital II, one of the Plan's Direct Lending managers, produced a quarterly return of 11.6%, outperforming its benchmark by 9.2%. It trailed its target over the 1-, 3- and 5-year periods by (4.1%), (11.5%) and (11.4%), respectively.

Raven Capital III outperformed its CPI +6% annual target for the quarter by 1.9% but underperformed over 1-, 3- and 5-year trailing periods by (0.6%), (1.4%) and (3.8%), respectively.

White Oak Summit Peer, one of the Plan's Direct Lending managers, underperformed its CPI +6% index over the quarter, 1-, 3- and 5-year periods by (6.8%), (12.2%), (5.6%) and (3.3%), respectively.

White Oak Yield Spectrum Master V trailed its CPI +6% benchmark over both the quarter and 1-year periods by (2.0%) and (10.0%), respectively.

Private Core Private Real Estate, investing in Core Real Assets, outperformed its NCREIF ODCE +1% benchmark over the trailing quarter, 1-, 3-, 5- and 10-year time periods by 2.2%, 6.0%, 4.4%, 4.2% and 3.5%, respectively.

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Principal Protection	**330,858,456**	**100.0**	**-0.2**	**0.1**	**3.6**	**3.3**	**4.2**
Bloomberg US Aggregate TR			*0.0*	*-1.5*	*4.8*	*3.6*	*2.9*
Dodge & Cox Fixed Income	216,782,099	65.5	-0.3	-0.8	6.0	4.6	4.5
Bloomberg US Aggregate TR			*0.0*	*-1.5*	*4.8*	*3.6*	*2.9*
DoubleLine	114,076,357	34.5	0.1	2.0	4.1	3.8	--
Bloomberg US Aggregate TR			*0.0*	*-1.5*	*4.8*	*3.6*	--

Market values may not add up due to rounding.

Principal Protection

During the latest three-month period ending December 31, 2021, one of SJCERA's Principal Protection managers underperformed the Bloomberg US Aggregate Index benchmark while the other outperformed it.

Dodge & Cox, the Plan's Core Fixed Income manager, earned a negative quarterly return of (0.3%). It trailed its benchmark by (0.3%) for this period but outperformed over the 1-, 3-, 5- and 10-year periods by 0.7%, 1.2%, 1.0% and 1.6%, respectively.

DoubleLine, the Plan's Mortgage-Backed Securities manager, provided a quarterly return of 0.1%, outperforming its benchmark by 0.1%. The manager also outperformed its benchmark over the 1- and 5-year time periods by 3.5% and 0.2%, respectively, but underperformed its benchmark over the 3-year period by (0.7%).

Asset Class Performance Net-of-Fees | As of December 31, 2021

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Crisis Risk Offset Asset Class	**461,903,542**	**100.0**	**-0.9**	**1.1**	**3.3**	**2.3**	**4.2**
CRO Benchmark			*2.1*	*3.5*	*7.3*	*5.1*	*4.5*
Long Duration	**155,475,526**	**33.7**	**2.3**	**-4.7**	**8.0**	**6.0**	**--**
Bloomberg US Treasury Long TR			*3.1*	*-4.6*	*8.8*	*6.5*	*--*
Dodge & Cox Long Duration	155,475,526	33.7	2.3	-4.7	8.0	6.0	--
Bloomberg US Treasury Long TR			*3.1*	*-4.6*	*8.8*	*6.5*	*--*
Systematic Trend Following	**183,317,395**	**39.7**	**-3.1**	**7.3**	**5.6**	**1.3**	**5.0**
BTOP 50 (blend)			*1.8*	*10.2*	*7.3*	*3.2*	*3.5*
Graham Tactical Trend	88,930,888	19.3	-1.3	2.7	7.3	2.2	--
SG Trend			*-1.3*	*9.1*	*8.2*	*3.8*	*--*
Mount Lucas	94,386,507	20.4	-4.8	12.0	3.9	0.2	4.2
BTOP 50 (blend)			*1.8*	*10.2*	*7.3*	*3.2*	*3.5*
Alternative Risk Premium	**123,110,621**	**26.7**	**-1.4**	**0.0**	**-5.0**	**-1.6**	**1.1**
5% Annual (blend)			*1.2*	*5.0*	*5.0*	*5.0*	*7.5*
AQR Style Premia	30,222,118	6.5	3.0	24.0	-6.3	-4.7	--
5% Annual			*1.2*	*5.0*	*5.0*	*5.0*	*--*
Lombard Odier	59,423,753	12.9	-0.9	-3.3	--	--	--
5% Annual			*1.2*	*5.0*	*--*	*--*	*--*
P/E Diversified Global Macro	33,464,750	7.2	-5.9	-10.3	-10.4	-5.5	--
5% Annual			*1.2*	*5.0*	*5.0*	*5.0*	*--*

Market values may not add up due to rounding.
(1/3) BB Long Duration Treasuries, (1/3) BTOP50 Index, (1/3) 5% Annual.

Crisis Risk Offset

During the latest three-month period ending December 31, 2021, two of SJCERA's six Crisis Risk Offset managers matched or outperformed their respective benchmarks.

Dodge & Cox Long Duration produced a quarterly return of 2.3%, underperforming the Bloomberg US Long Duration Treasuries by (0.8%). The manager also underperformed its benchmark over the 1-, 3- and 5-year time periods by (0.1%), (0.8%) and (0.5%), respectively.

Graham, one of the Plan's Systematic Trend Following managers, had a negative quarterly return of (2.3%), matching the SG Trend Index. The fund underperformed its benchmark over the trailing 1-, 3- and 5-year periods by (6.4%), (0.9%) and (1.6%), respectively.

Mount Lucas, one of the Plan's Systematic Trend Following managers, underperformed the Barclays BTOP 50 Index for the quarter, 3- and 5-year periods by (6.6%), (3.4%) and (3.0%), respectively. The fund led its benchmark over the 1- and 10-year periods by 1.8% and 0.7%, respectively.

AQR, one of the Plan's Alternative Risk Premium managers, posted positive returns and outperformed its 5% Annual target for the quarter and 1-year periods by 1.8% and 19.0%, respectively. It posted negative returns for the trailing 3- and 5-year periods and underperformed its benchmark for these periods by (11.3%) and (9.7%), respectively.

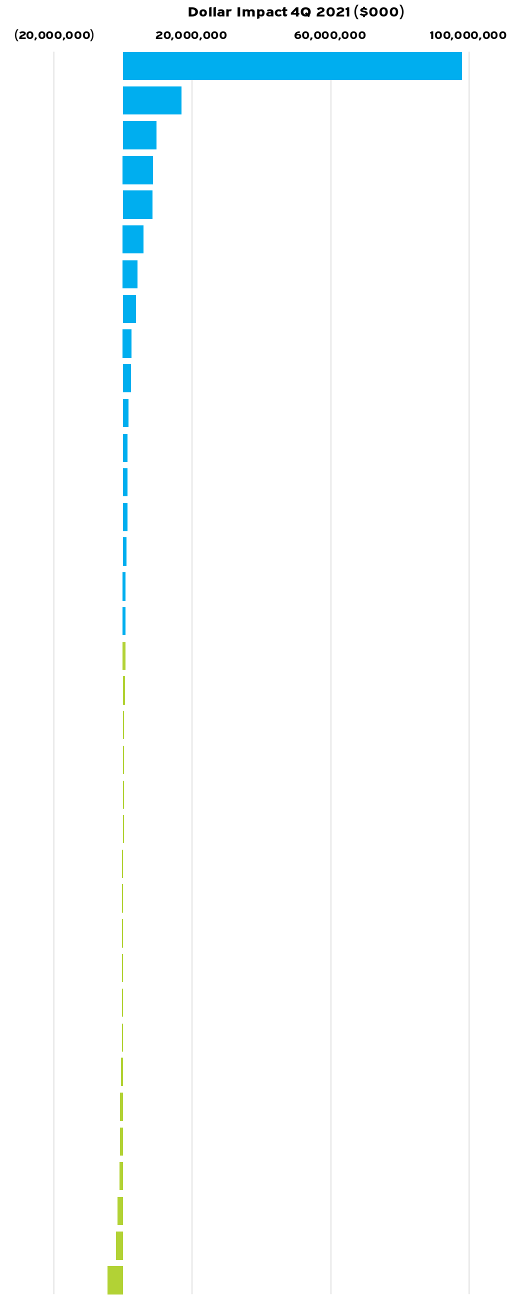
Lombard Odier, an Alternative Risk Premium manager, earned a negative quarterly return of (0.9%), underperforming its 5% Annual target by (2.1%). The manager also underperformed its benchmark for the 1-year period by (8.3%).

P/E Diversified, one of the Plan's Alternative Risk Premium managers, underperformed its 5% Annual target for the quarter, 1-, 3- and 5-year periods by (7.1%), (15.3%), (15.4%) and (10.5%), respectively.

Portfolio Review

San Joaquin County Employees' Retirement Association: Manager Value-Added (Dollar-Impact)
As of December 31, 2021

Manager/Mandate	Manager Return	Benchmark Return	Dollar Impact	Benchmark Added Value	Manager BNAV
12/31/2021			3,703,114,044		3,703,114,044
SJCERA Total Policy Benchmark	**2.5%**	**2.7%**			
NT MSCI World MSCI World IMI	7.3%	7.1%	97,818,566		1,343,292,580
Private Core Real Estate Private Real Estate Benchmark	8.9%	6.7%	16,824,608		189,573,050
Bridgewater All Weather T-bill + 4%	4.3%	1.0%	9,584,839		222,437,674
Invesco REIT FTSE NAREIT Index	15.6%	16.3%	8,646,782		55,413,880
Ocean Avenue III MSCI ACWI +2% Blend	16.4%	-0.5%	8,429,826		51,341,899
PanAgora Diversified Risk Multi Asset T-bill + 4%	2.6%	1.0%	5,857,596		227,479,441
Ocean Avenue II MSCI ACWI +2% Blend	10.6%	-0.5%	4,091,464		38,704,604
Dodge & Cox Long Duration BB US Long Duration Treasuries	2.3%	0.0%	3,563,499		155,475,526
Morgan Creek VI MSCI ACWI +2% Blend	8.6%	-0.5%	2,307,763		26,828,214
Raven III CPI + 6% Annual	4.3%	2.4%	2,169,154		50,211,888
Ocean Avenue IV MSCI ACWI +2% Blend	3.6%	-0.5%	1,321,510		36,893,083
BlackRock Direct Lending CPI + 6% Annual	2.4%	2.4%	1,242,401		51,001,686
Raven II CPI + 6% Annual	11.6%	2.4%	1,207,939		10,414,168
Oaktree MSCI ACWI +2% Blend	3.5%	-0.5%	1,110,731		32,102,053
AQR 5% Annual	3.0%	1.2%	918,450		30,222,118
BlackRock Global Energy & Power MSCI ACWI +2% Blend	3.4%	-0.5%	776,108		22,706,488
Mesa West IV CPI + 6% Annual	2.6%	-0.5%	762,708		29,459,557
Davidson Kempner CPI + 6% Annual	1.6%	2.4%	567,895		34,480,593
HPS European CPI + 6% Annual	1.8%	2.4%	372,620		20,406,329
PIMCO RAE Emerging Markets MSCI Emerging Markets	0.4%	-1.2%	297,277		79,063,012
DoubleLine BB Aggregate	0.1%	0.0%	159,707		114,076,357
Crestline Opportunity II CPI + 6% Annual	0.4%	2.4%	73,833		18,787,084
Morgan Creek V MSCI ACWI +2% Blend	0.0%	-0.5%	947		9,473,506
Mesa West III CPI + 6% Annual	-14.9%	2.4%	(4,625)		31,041
Neuberger Berman Global Credit Hybrid	0.0%	0.3%	(11,724)		106,585,329
Stone Harbor Absolute Return 3-Month Libor TR USD	0.0%	0.0%	(18,298)		130,703,213
GQG Emerging Markets MSCI Emerging Markets	-0.2%	-1.3%	(149,619)		65,051,537
Stellex II MSCI ACWI +2% Blend	-4.4%	-0.5%	(207,313)		4,689,279
Medley Opportunity II CPI + 6% Annual	-3.2%	2.4%	(314,967)		9,904,617
Lombard Odier 5% Annual	-0.9%	1.2%	(563,931)		59,423,753
Dodge & Cox Fixed Income BB Aggregate	-0.3%	0.0%	(693,703)		216,782,099
Morgan Creek III MSCI ACWI +2% Blend	-13.5%	-0.5%	(886,609)		6,571,365
Graham Tactical Trend SG Trend Index	-1.3%	-1.3%	(1,148,987)		88,930,888
White Oak Summit Peer CPI + 6% Annual	-4.4%	2.4%	(1,630,370)		36,744,876
P/E Diversified Global Macro 5% Annual	-5.9%	1.2%	(1,967,393)		33,464,750
Mount Lucas BTOP 50	-4.8%	1.8%	(4,558,868)		94,386,507
Total Portlolio MV as of 12/31/21			**4,062,422,172**		



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As of December 31, 2021

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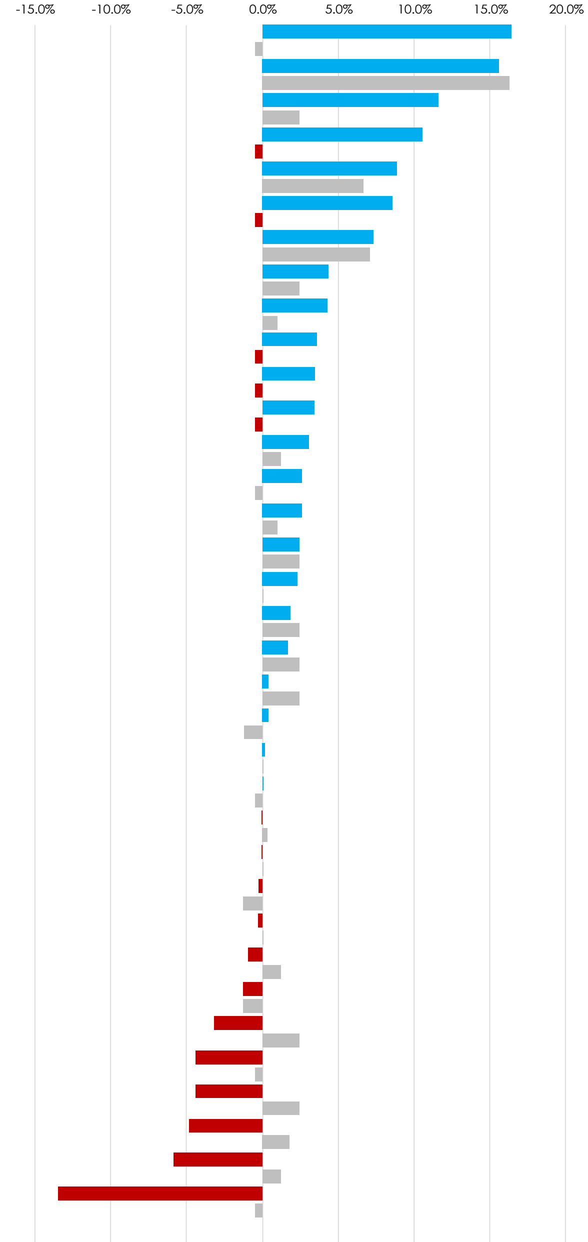
Manager Return 4Q 2021



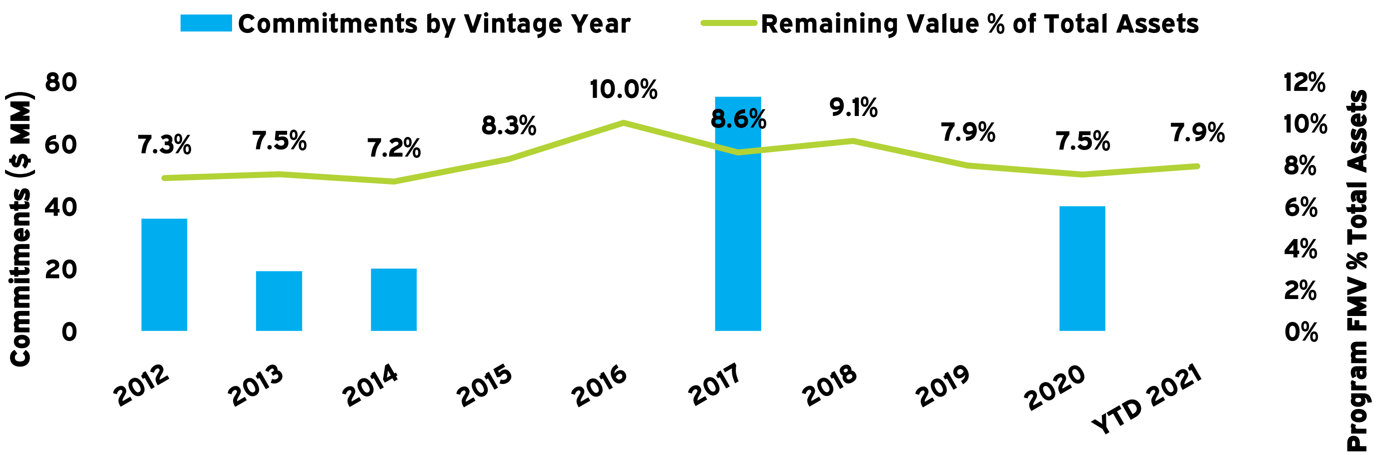
Real Estate Program

December 31, 2021

Table of Contents | As of September 30, 2021

Introduction

The Retirement Association's target allocation towards real estate assets is 10-12%. As of September 30, 2021, the Retirement Association had invested with eighteen real estate managers (three private open-end and fifteen private closed-end). The aggregate reported value of the Retirement Association's real estate investments was $304.2 million at quarter-end.



Program Status

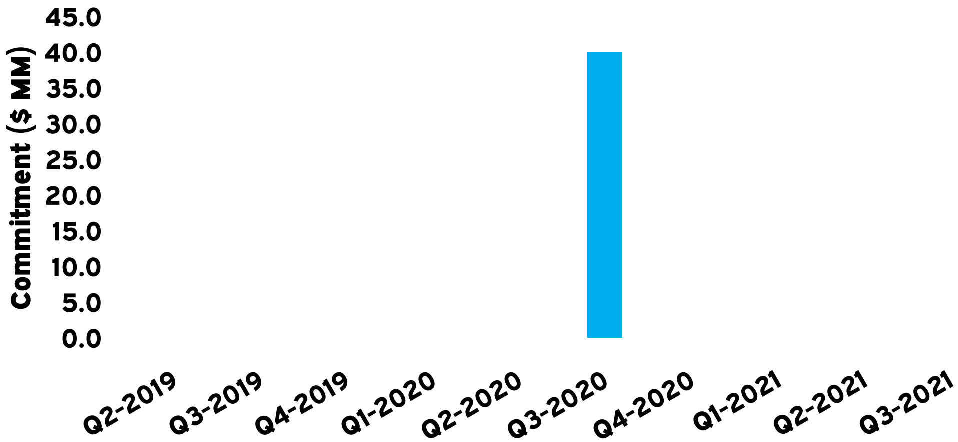
No. of Investments	18
Committed ($ MM)	501.6
Contributed ($ MM)	434.7
Distributed ($ MM)	332.0
Remaining Value ($ MM)	304.2

Performance Since Inception

	Program
DPI	0.76x
TVPI	1.46x
IRR	7.0%

Commitments

Recent Quarterly Commitments



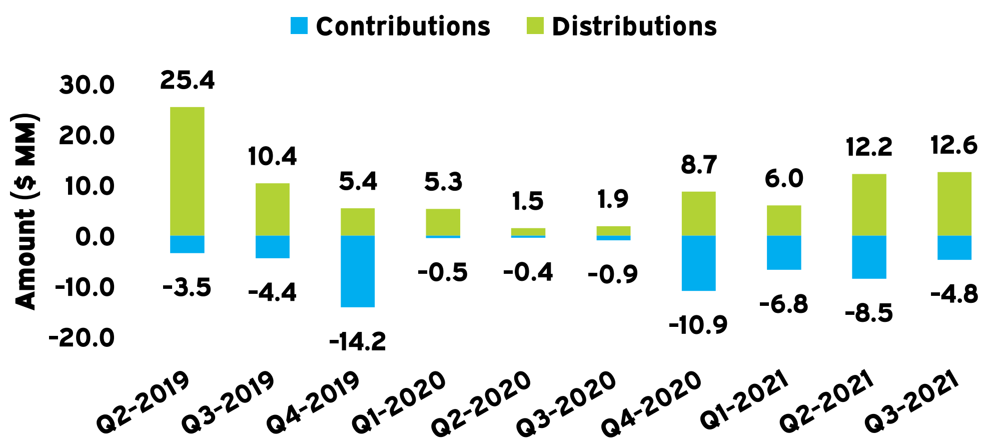
Commitments This Quarter

Fund	Strategy	Region	Amount (MM)

None to report.

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount ($MM)
Stockbridge RE III	2017	Value-Added	North America	3.08
Berkeley V	2020	Value-Added	North America	1.08
Prologis Logistics	1970	Core	North America	0.60

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount ($MM)
Stockbridge RE III	2017	Value-Added	North America	10.13
AG Core Plus IV	2014	Value-Added	North America	1.30
Prologis Logistics	1970	Core	North America	0.60

Significant Events

- During the third quarter, Stockbridge Value Fund III made distributions totaling $82.0 million, primarily funded from operating cash flows, as well as the sale of Port America, which closed on September 1, 2021 for a gross sales price of $123.0 million. Stockbridge Fund III also called $24.3 million from investors in the third quarter to pay down the outstanding balance on the Partnership's credit facility. Additionally, the Fund achieved an outsized appreciation return of 19.2%, resulting in a 17.0% net change in value percentage for the Retirement Association's investment.
- In the third quarter of 2021, Berkeley Partners Value Industrial Fund V made two new acquisitions: 1323 East 34th Avenue, a vacant building that represents the Firm's re-entry into the Seattle market, and 1 Puzzle Lane, a class A warehouse building in Newton, New Hampshire. Additionally, prior to quarter-end on September 27th, Berkeley V closed on the disposition of one of the buildings acquired in the Campus at Longmont portfolio for $11.1 million.
- In August 2021, AG Core Plus Realty Fund IV closed on the sale of Silverstream Apartment, a 300-unit multifamily property located in greater Houston, Texas, after increasing occupancy from 80%-95% during the hold period.
- During the third quarter, Prologis Targeted US Logistics Fund's net asset value per unit increased to $2,572.79, representing an increase of 12.4% from prior quarter. The valuation increase was largely driven by unrealized gains on the portfolio's real estate investments resulting from the strong customer demand, tight vacancy rates, and rapid rent growth in the market.
- During the third quarter, real estate valuation adjustments for RREEF America REIT II's portfolio resulted in an increase of approximately $632 million from prior market values as a result of the Fund's strategic overweight to the industrial sector, which was written up by around $440 million.

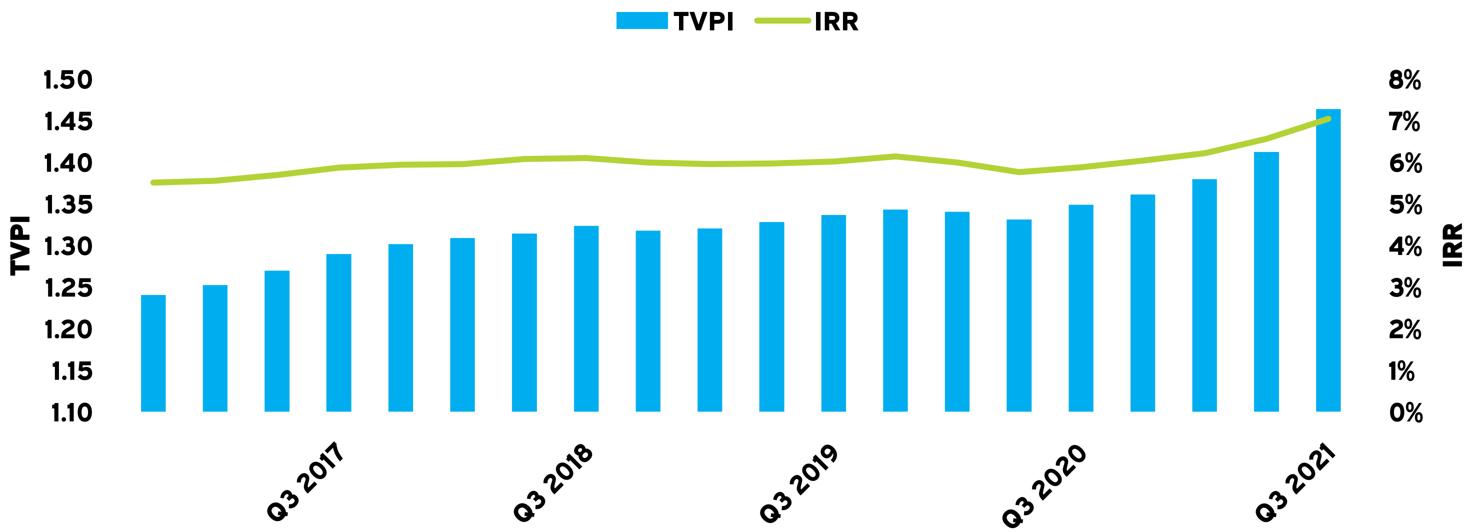
By Strategy

Group	Number	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	Exposure ($ MM)	DPI (X)	TVPI (X)	IRR (%)
Core	3	120.5	124.1	0.0	27.8	189.6	189.6	0.22	1.75	7.5
Opportunistic	9	204.1	180.4	25.1	198.5	40.9	66.1	1.10	1.33	5.5
Value-Added	6	177.0	130.2	48.5	105.7	73.6	122.1	0.81	1.38	9.9
Total	**18**	**501.6**	**434.7**	**73.6**	**332.0**	**304.2**	**377.8**	**0.76**	**1.46**	**7.0**

By Vintage

Group	Number	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	Exposure ($ MM)	DPI (X)	TVPI (X)	IRR (%)
Open-end	3	120.5	124.1	0.0	27.8	189.6	189.6	0.22	1.75	7.5
2005	2	45.0	44.5	0.5	37.6	2.1	2.6	0.85	0.89	-1.4
2007	4	96.0	84.0	12.0	114.9	6.3	18.3	1.37	1.44	7.3
2011	2	50.0	38.3	11.7	47.2	4.1	15.8	1.23	1.34	9.6
2012	2	36.0	33.9	2.9	48.8	0.0	2.9	1.44	1.44	12.4
2013	1	19.1	18.3	0.8	21.5	9.3	10.1	1.18	1.69	13.2
2014	1	20.0	19.0	1.8	7.9	18.1	19.8	0.41	1.36	8.8
2017	2	75.0	61.5	15.0	26.3	60.3	75.3	0.43	1.41	18.3
2020	1	40.0	11.3	28.9	0.1	14.5	43.4	0.01	1.29	NM
Total	**18**	**501.6**	**434.7**	**73.6**	**332.0**	**304.2**	**377.8**	**0.76**	**1.46**	**7.0**

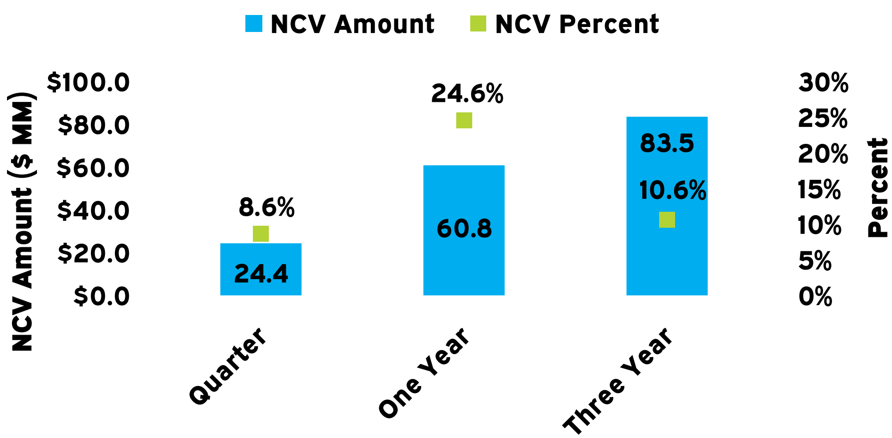
Since Inception Performance Over Time



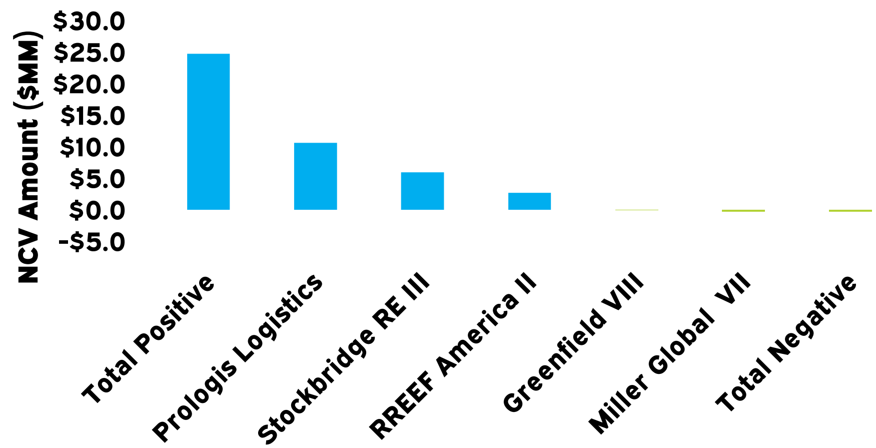
Horizon IRRs

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	24.0	10.6	10.0	11.0	7.0
Public Market Equivalent	40.6	8.9	6.1	10.5	8.7

Periodic NCV



1 Quarter Drivers Of NCV



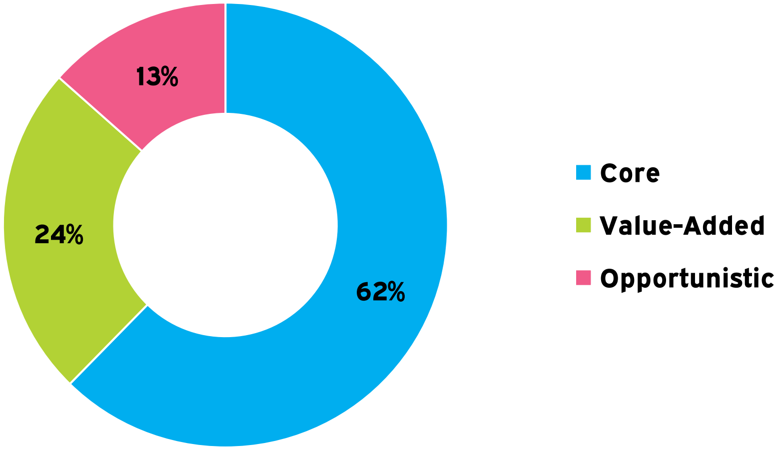
Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
Principal US	Open-end	Core	25.0	25.0	0.0	0.0	38.3	1.53	NA	7.6	NA
Prologis Logistics	Open-end	Core	50.5	54.1	0.0	19.5	96.1	2.14	NA	7.6	NA
RREEF America II	Open-end	Core	45.0	45.0	0.0	8.3	55.2	1.41	NA	7.2	NA
Miller GLobal Fund V	2005	Opportunistic	15.0	14.5	0.5	17.6	0.0	1.21	1.20	3.4	4.5
Walton Street V	2005	Opportunistic	30.0	30.0	0.0	20.1	2.1	0.74	1.20	-3.3	4.5
Greenfield V	2007	Opportunistic	30.0	29.6	0.4	40.4	0.2	1.37	1.21	8.3	6.7
Miller Global VI	2007	Opportunistic	30.0	21.1	8.9	32.4	0.9	1.58	1.21	7.7	6.7
Walton Street VI	2007	Opportunistic	15.0	13.3	1.7	15.2	5.2	1.53	1.21	7.9	6.7
Colony Realty III	2007	Value-Added	21.0	20.0	1.0	26.9	0.0	1.35	1.21	5.3	6.7
Greenfield VI	2011	Opportunistic	20.0	19.2	0.8	26.2	0.1	1.37	1.60	9.6	18.3
Almanac Realty VI	2011	Value-Added	30.0	19.1	10.9	21.0	4.0	1.31	1.60	9.5	18.3
Miller Global VII	2012	Opportunistic	15.0	12.1	2.9	15.9	0.0	1.32	1.55	14.2	14.0
Colony Realty IV	2012	Value-Added	21.0	21.7	0.0	32.9	0.0	1.51	1.55	11.9	14.0
Greenfield VII	2013	Opportunistic	19.1	18.3	0.8	21.5	9.3	1.69	1.54	13.2	15.6
AG Core Plus IV	2014	Value-Added	20.0	19.0	1.8	7.9	18.1	1.36	1.57	8.8	14.1
Greenfield VIII	2017	Opportunistic	30.0	22.4	9.1	9.3	23.2	1.45	1.22	19.4	10.3
Stockbridge RE III	2017	Value-Added	45.0	39.1	5.9	16.9	37.1	1.38	1.22	17.6	10.3

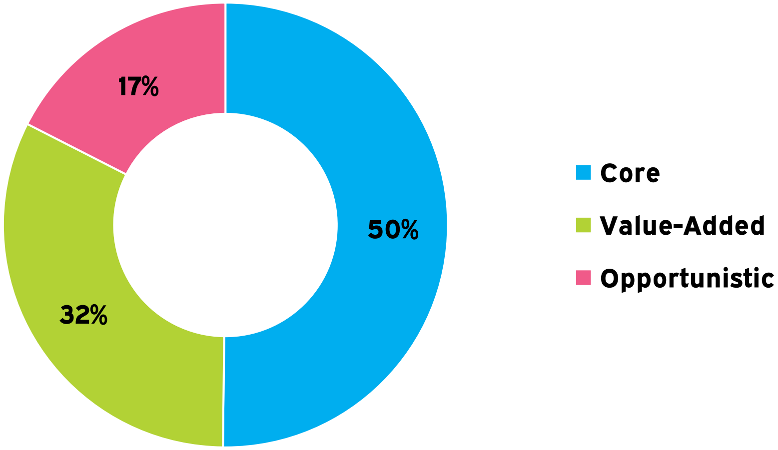
By Investment	Vintage	Strategy	Committed ($ MM)	Contributed ($ MM)	Unfunded ($ MM)	Distributed ($ MM)	Remaining Value ($ MM)	TVPI (X)	Peer TVPI (X)	IRR (%)	Peer IRR (%)
Berkeley V	2020	Value-Added	40.0	11.3	28.9	0.1	14.5	1.29	1.04	NM	NM
Total			**501.6**	**434.7**	**73.6**	**332.0**	**304.2**	**1.46**	**NA**	**7.0**	**NA**

By Strategy

Percent of FMV

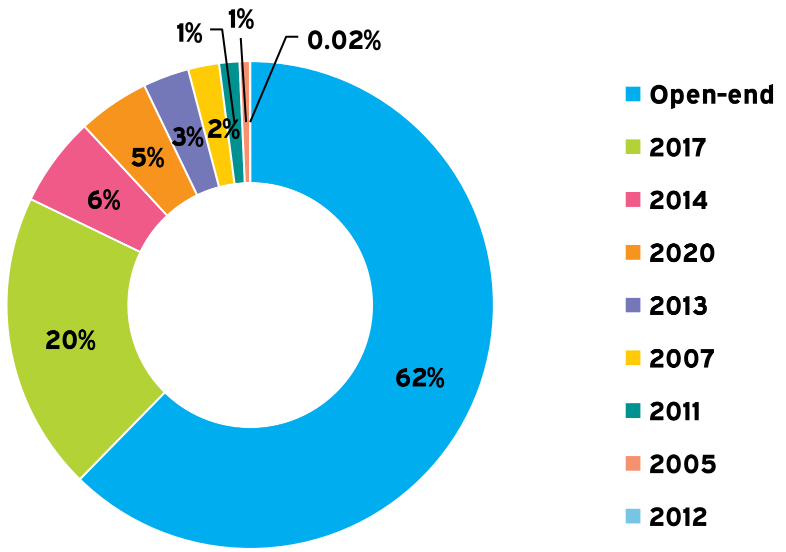


Percent of Exposure



By Vintage

Percent of FMV



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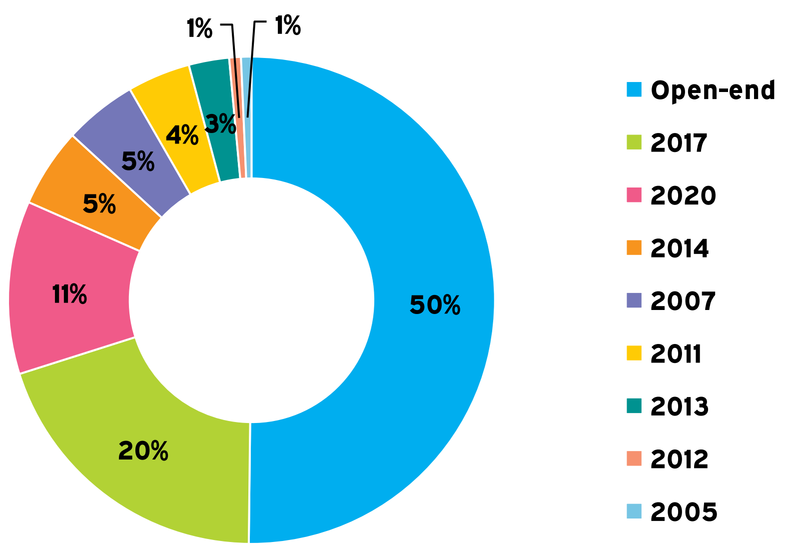
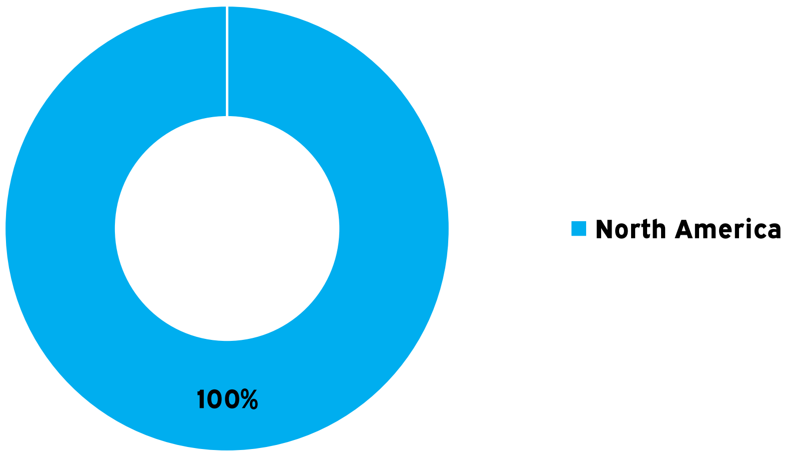
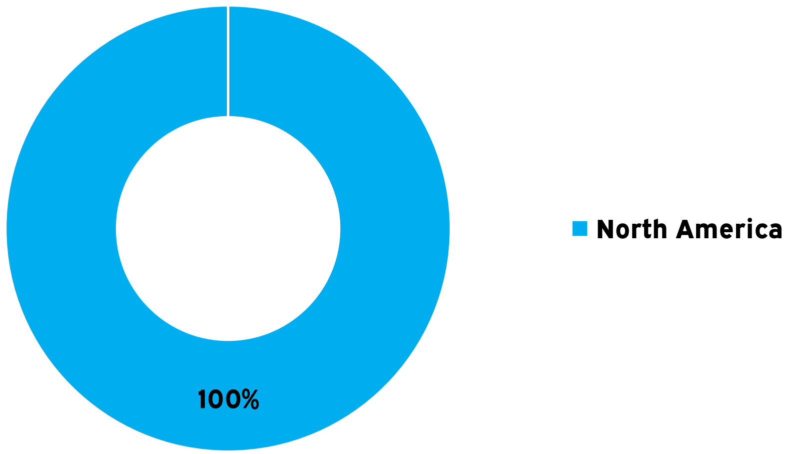


By Geographic Focus

Percent of FMV



Percent of Exposure



Below are details on specific terminology and calculation methodologies used throughout this report:

Committed	The original commitment amount made to a given fund. Some funds may be denominated in non-USD currencies, and such commitment amounts represent the sum of fund contributions translated to USD at their daily conversion rates plus the unfunded balance translated at the rate as of the date of this report.
Contributed	The amount of capital called by a fund manager against the commitment amount. Contributions may be used for new or follow-on investments, fees, and expenses, as outlined in each fund's limited partnership agreement. Some capital distributions from funds may reduce contributed capital balances. Some funds may be denominated in non-USD currencies, and such aggregate contributions represent the sum of each fund contribution translated to USD at its daily conversion rate.
Distributed	The amount of capital returned from a fund manager for returns of invested capital, profits, interest, and other investment related income. Some distributions may be subject to re-investment, as outlined in each fund's limited partnership agreement. Some funds may be denominated in non-USD currencies, and such aggregate distributions represent the sum of each fund distribution translated to USD at its daily conversion rate.
DPI	Acronym for "Distributed-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculation equals Distributed divided by Contributed. DPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.
Exposure	Represents the sum of the investor's Unfunded and Remaining Value.
IRR	Acronym for "Internal Rate of Return", which is a performance measurement for Private Market investments. IRRs are calculated by Meketa based on daily cash flows and Remaining Values as of the date of this report. IRRs for funds and groupings of funds are net of all fund fees and expenses as reported by fund managers to Meketa.
NCV	Acronym for "Net Change in Value", which is a performance measurement for Private Market investments. The performance calculation equals the appreciation or depreciation over a time period neutralized for the impact of cash flows that occurred during the time period.
NM	Acronym for "Not Meaningful", which indicates that a performance calculation is based on data over too short a timeframe to yet be meaningful or not yet possible due to inadequate data. Meketa begins reporting IRR calculations for investments once they have reached more than two years since first capital call. NM is also used within this report in uncommon cases where the manager has reported a negative Remaining Value for an investment.

Peer Universe	The performance for a set of comparable private market funds. The peer returns used in this report are provided by Preqin, based on data as of September 30, 2021. Fund-level peer performance represents the median return for a set of funds of the same vintage and the program's set of corresponding strategies across all regions globally. Data sets that include less than five funds display performance as "NM". Meketa utilizes the following Preqin strategies for peer universes: Infrastructure: Infrastructure Natural Resources: Natural Resources Private Debt: Private Debt Private Equity (including Private Debt): Private Equity, Private Debt Private Equity (excluding Private Debt): Private Equity Real Assets (excluding Real Estate): Infrastructure, Natural Resources Real Assets (including Real Estate): Infrastructure, Natural Resources, Real Estate Real Estate: Real Estate
Public Market Equivalent ("PME")	A calculation methodology that seeks to compare the performance of a portfolio of private market investments with public market indices. The figures presented in this report are based on the PME+ framework, which represents a net IRR value based on the actual timing and size of the private market program's daily cash flows and the daily appreciation or depreciation of an equivalent public market index. Meketa utilizes the following indices for private market program PME+ calculations: Infrastructure: Dow Jones Brookfield Global Infrastructure Index Natural Resources: S&P Global Natural Resources Index Private Debt: Barclays Capital U.S. Corporate High Yield Bond Index Private Equity: MSCI ACWI Investable Market Index Real Assets (excluding Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index and S&P Global Natural Resources Index Real Assets (including Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index, S&P Global Natural Resources Index, and Dow Jones U.S. Select Real Estate Securities Index Real Estate: Dow Jones U.S. Select Real Estate Securities Index

Remaining Value	The investor's value as reported by a fund manager on the investor's capital account statement. All investor values in this report are as of the date of this report, unless otherwise noted. Some funds may be denominated in non-USD currencies, and such remaining values represent the fund's local currency value translated to USD at the rate as of the date of this report.
TVPI	Acronym for "Total Value-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculations represents Distributed plus Remaining Value, then divided by Contributed. TVPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.
Unfunded	The remaining balance of capital that a fund manager has yet to call against a commitment amount. Meketa updates unfunded balances for funds to reflect all information provided by fund managers provided in their cash flow notices. Some funds may be denominated in non-USD currencies, and such unfunded balances represent the fund's local currency unfunded balance translated to USD at the rate as of the date of this report.

Disclaimer | As of September 30, 2021

The material contained in this report is confidential and may not be reproduced, disclosed, or distributed, in whole or in part, to any person or entity other than the intended recipient. The data are provided for informational purposes only, may not be complete, and cannot be relied upon for any purpose other than for discussion.

Meketa Investment Group has prepared this report on the basis of sources believed to be reliable. The data are based on matters as they are known as of the date of preparation of the report, and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available.

If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions ("Forward Statements"). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the client will receive a return of the amount invested.

In some cases Meketa Investment Group assists the client in handling capital calls or asset transfers among investment managers. In these cases we do not make any representations as to the managers' use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the client.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

The values of companies and partnerships are audited at year-end, and are not audited at other quarter-end periods. While financial information may be audited, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.

Capital Markets Outlook & Risk Metrics

As of December 31, 2021

Capital Markets Outlook

Markets

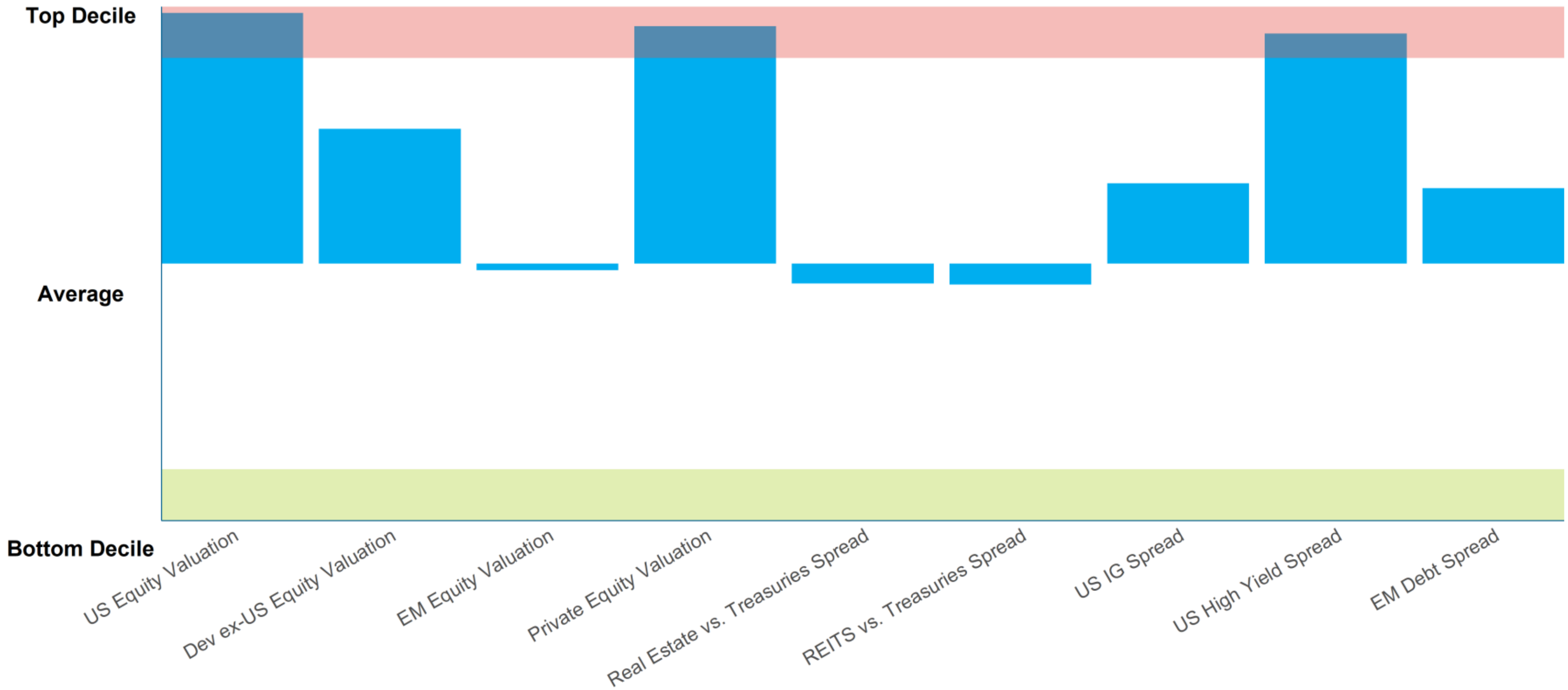
- Global markets generally posted positive returns in December, shaking-off Omicron variant and inflation concerns. In the US, the Fed indicated that tightening of policy may be brought forward with a more rapid reduction in asset purchases in 2022.
- China's equity market bucked the trend, posting negative returns due primarily to concerns about an economic slowdown linked to the real estate sector.
- In the US, large cap stocks outperformed midcap and small cap stocks, and value stocks beat growth stocks. While large cap value and growth stocks performed similarly in 2021, smaller cap value substantially outperformed small growth stocks for the year.
- Non-US developed markets rallied in December, with the EAFE modestly outperforming the S&P 500.
- In spite of negative returns in China, the broad emerging markets index posted gains. EM value stocks outperformed growth stocks in December and for the calendar year.
- The investment grade bond market produced negative returns in December, as inflation continued to weigh on nominal bond returns. However, TIPS and high yield bonds delivered positive returns.
- REITs and infrastructure stocks delivered very strong returns in December.
- After a difficult November, commodities returned to positive territory, offering support for natural resource stocks which posted strong returns.

Capital Markets Outlook

Markets

- US headline inflation climbed to a near 40-year high in November, as consumer prices rose 6.8% year-on-year, largely driven by higher energy costs, which rose 33%. Still, core inflation (ex-food and energy) rose 4.9% year-on-year.
- In China, Evergrande officially defaulted on $300 billion in debt and its shares were suspended from trading in Hong Kong. Policy makers cut borrowing costs and urged local governments and state-owned companies to finish real estate projects started by Evergrande. Concerns regarding other real estate developers continue to mount as the government steps in to support growth.
- While COVID continues to spread in developed and emerging markets, the Omicron variant has thus far proved to be less severe than the Delta variant, giving investors hope that recent travel bans and lockdowns might soon be rolled back.

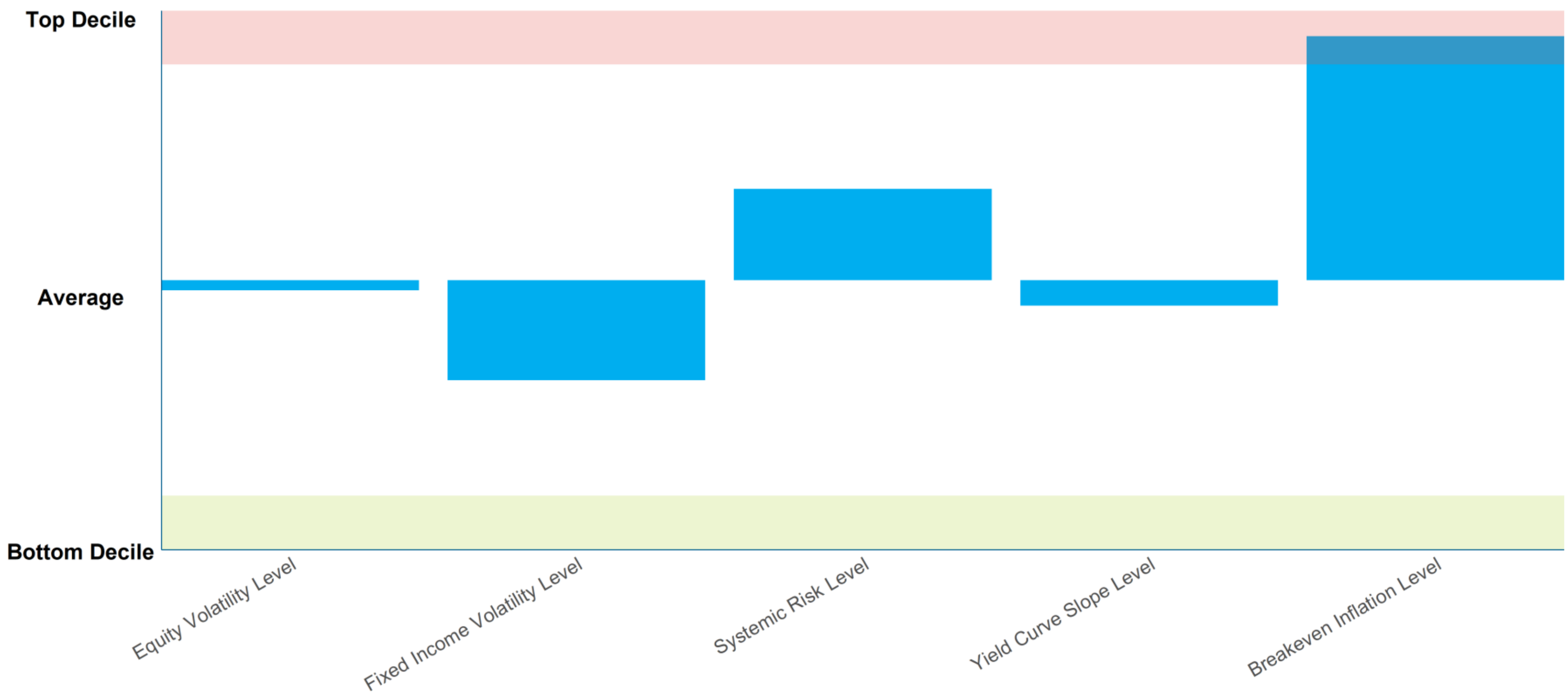
Risk Overview/Dashboard (1)
(As of December 31, 2021)[1]



- Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

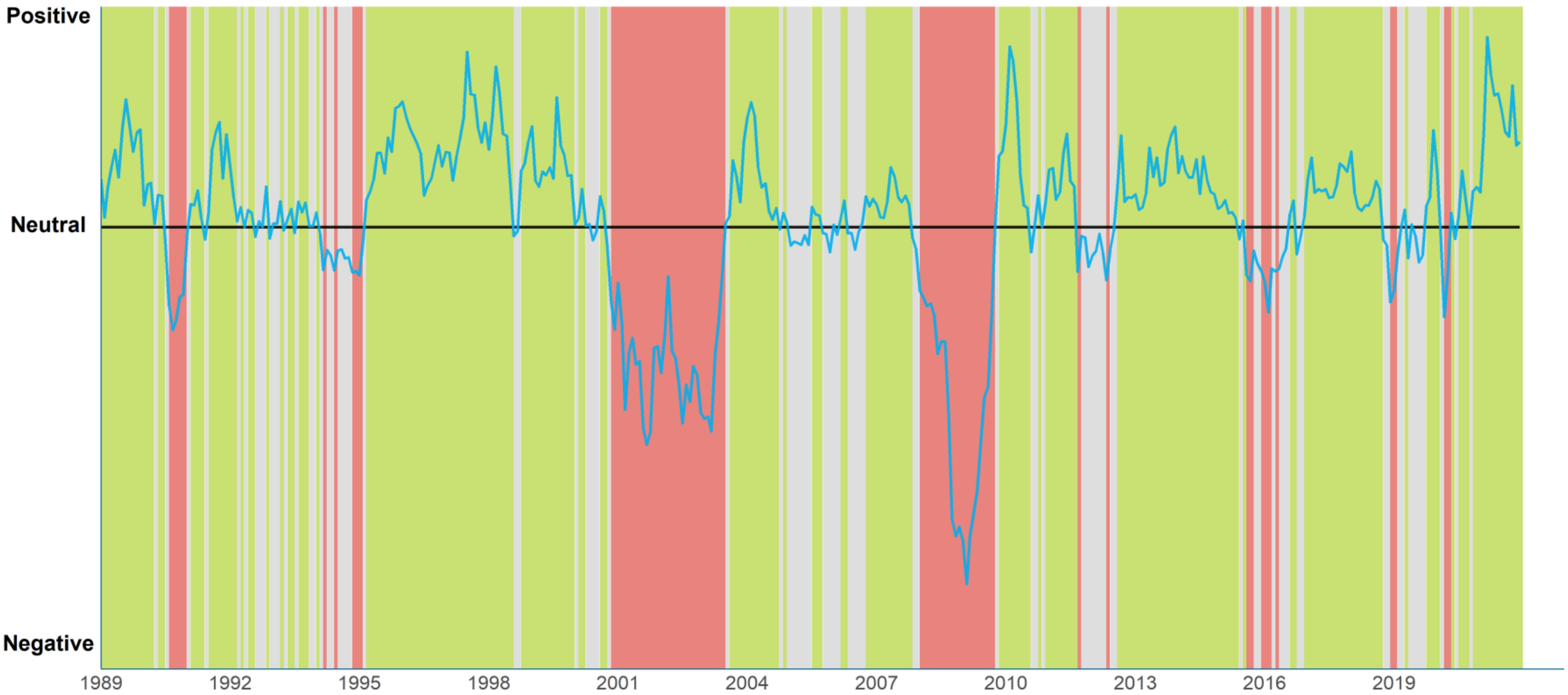
[1] With the exception of Private Equity Valuation, that is YTD as of December 31, 2020.

Risk Overview/Dashboard (2)
(As of December 31, 2021)

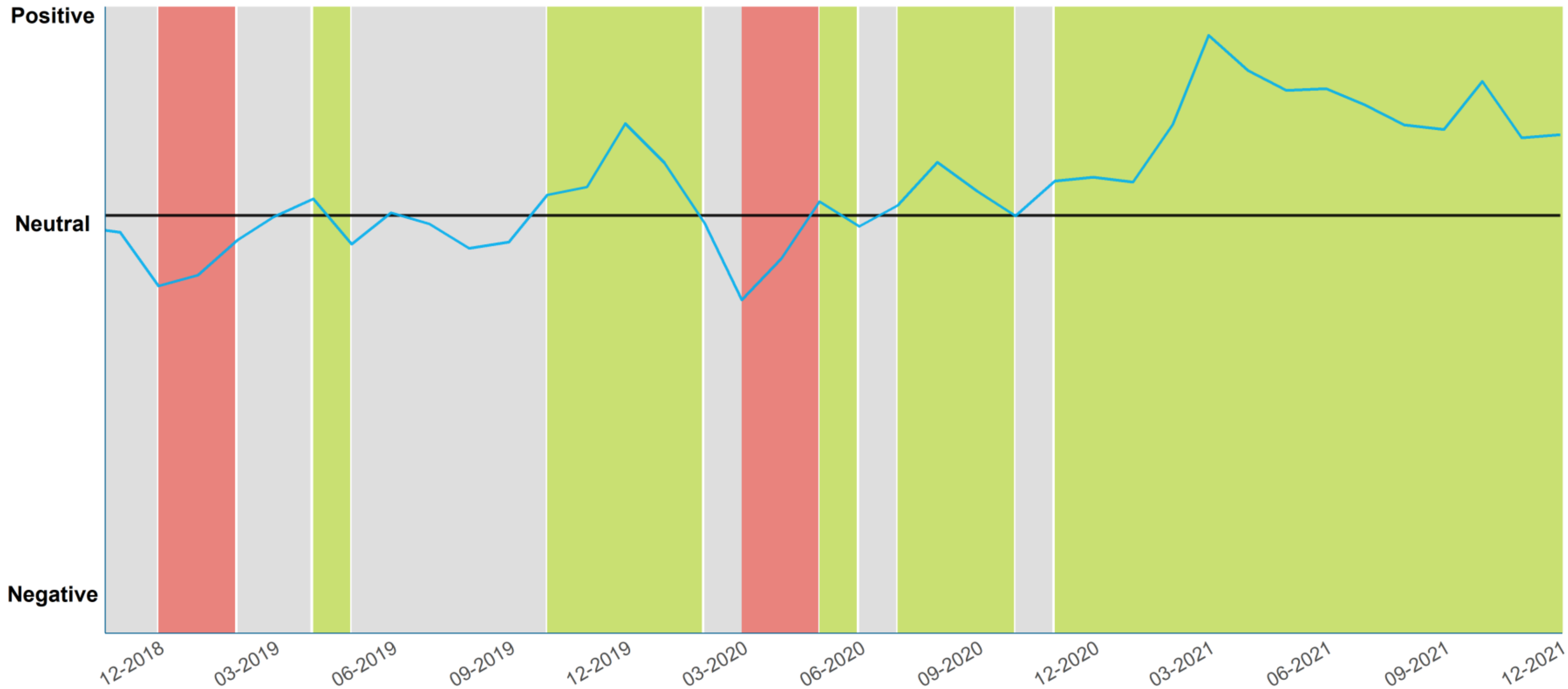


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

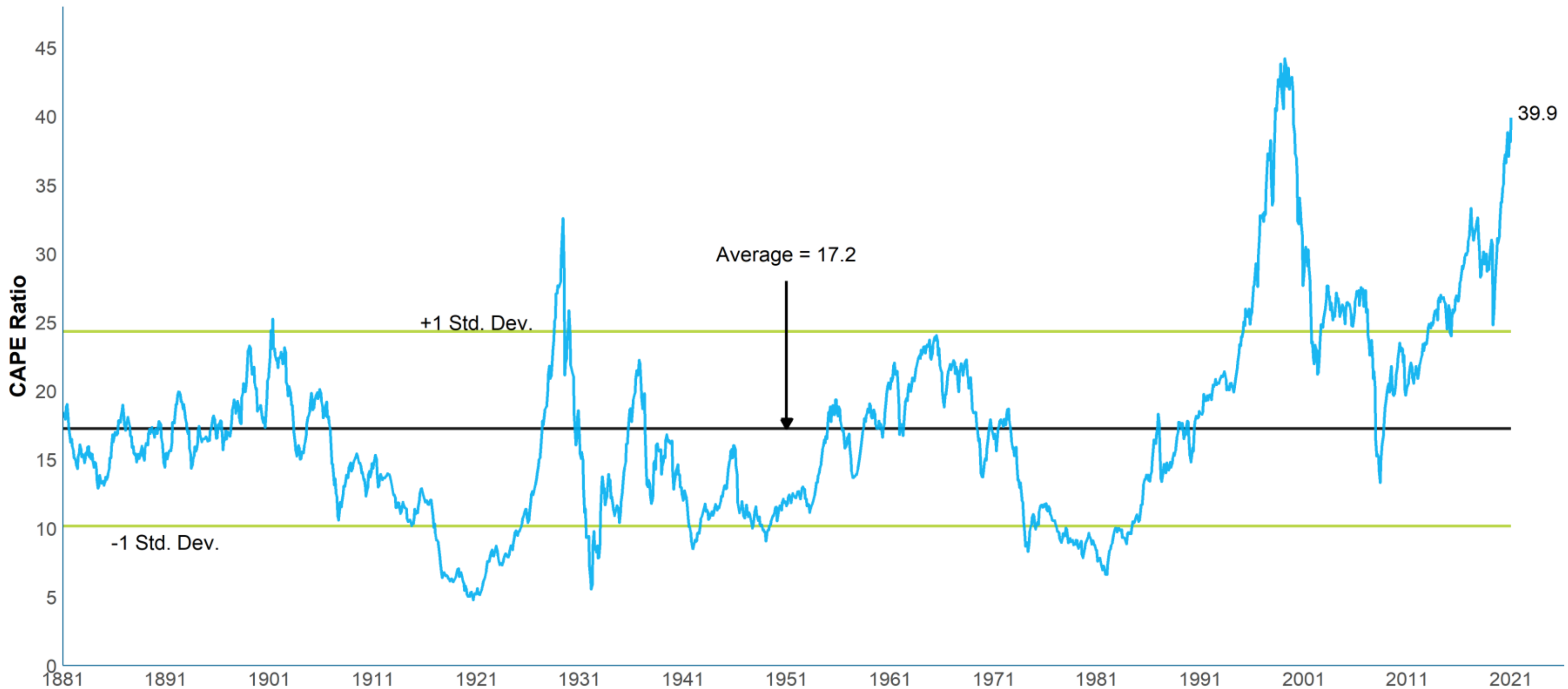
Market Sentiment Indicator (All History)
(As of December 31, 2021)



Market Sentiment Indicator (Last Three Years)
(As of December 31, 2021)



US Equity Cyclically Adjusted P/E[1]
(As of December 31, 2021)



- This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

Small Cap P/E vs. Large Cap P/E[1]
(As of December 31, 2021)

- This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

[1] Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]
(As of December 31, 2021)

- This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

[1] Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

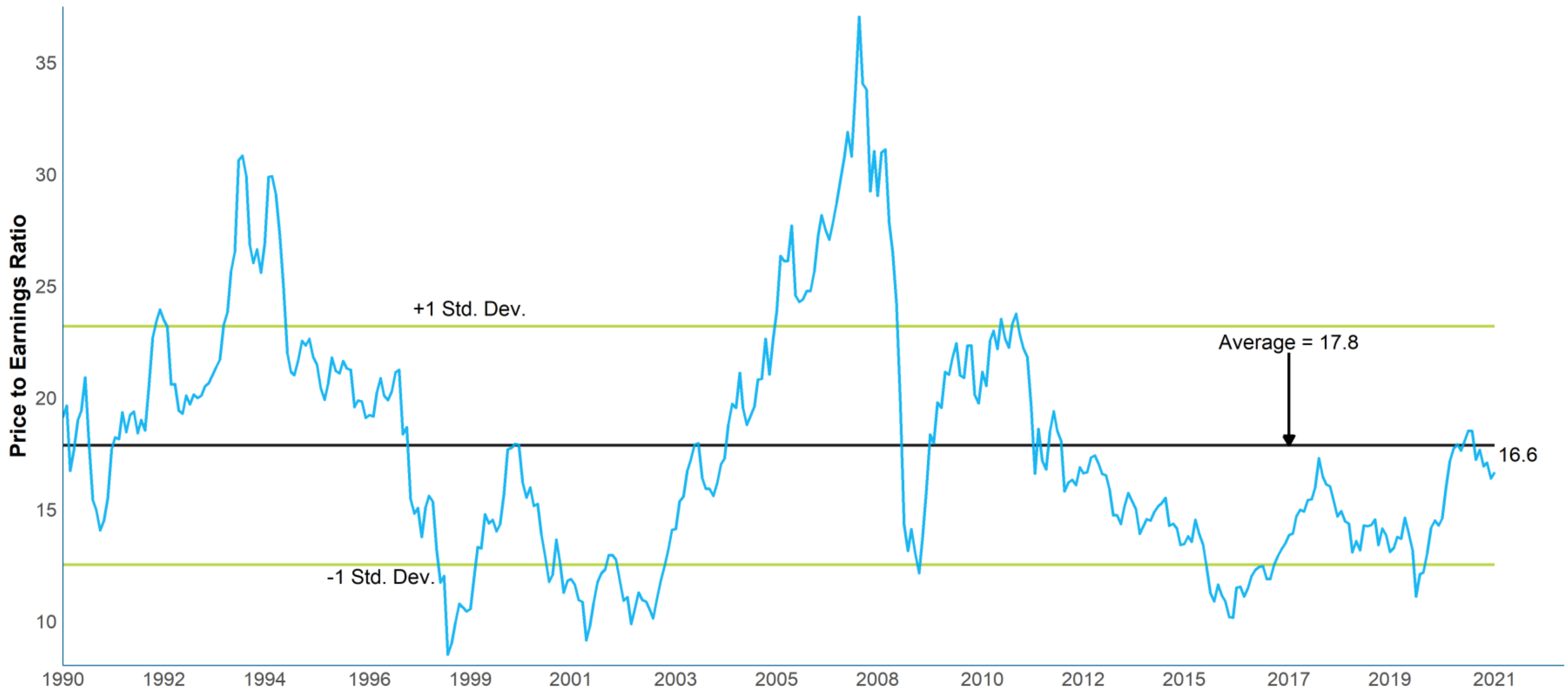
Developed International Equity Cyclically Adjusted P/E[1]

(As of December 31, 2021)

- This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Developed International Equity (MSCI EAFE Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

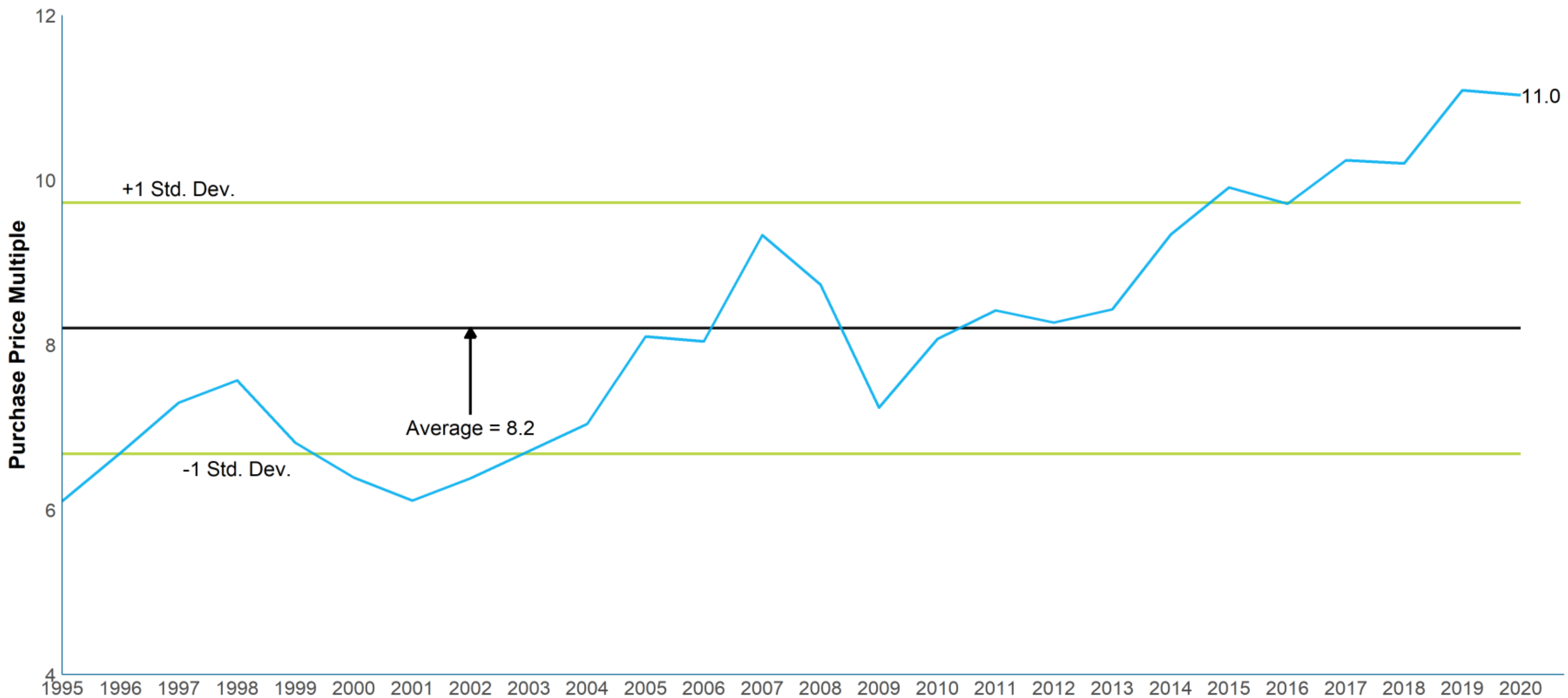
Emerging Market Equity Cyclically Adjusted P/E[1]
(As of December 31, 2021)



- This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

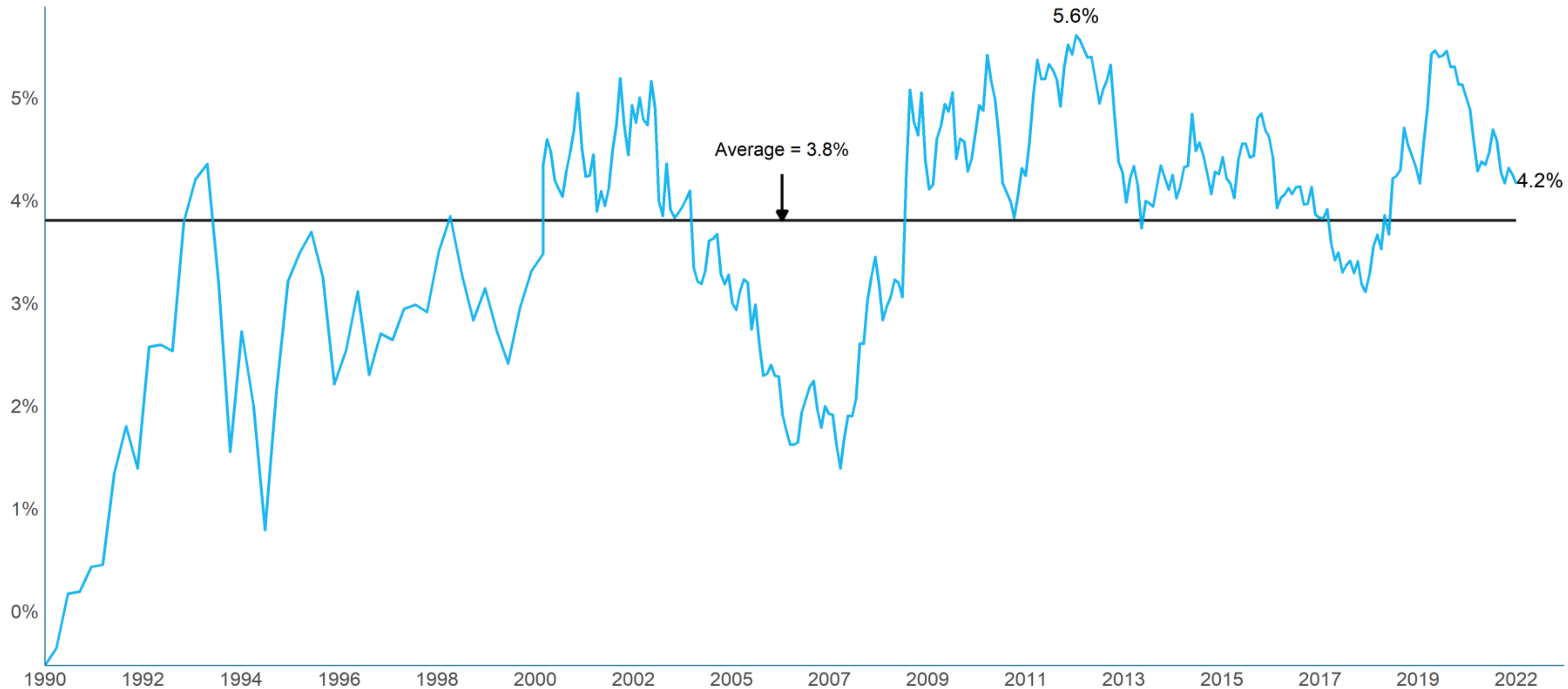
Private Equity Multiples[1]
(As of February 28, 2021)[2]



- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.
[2] Annual Data, as of December 31, 2020

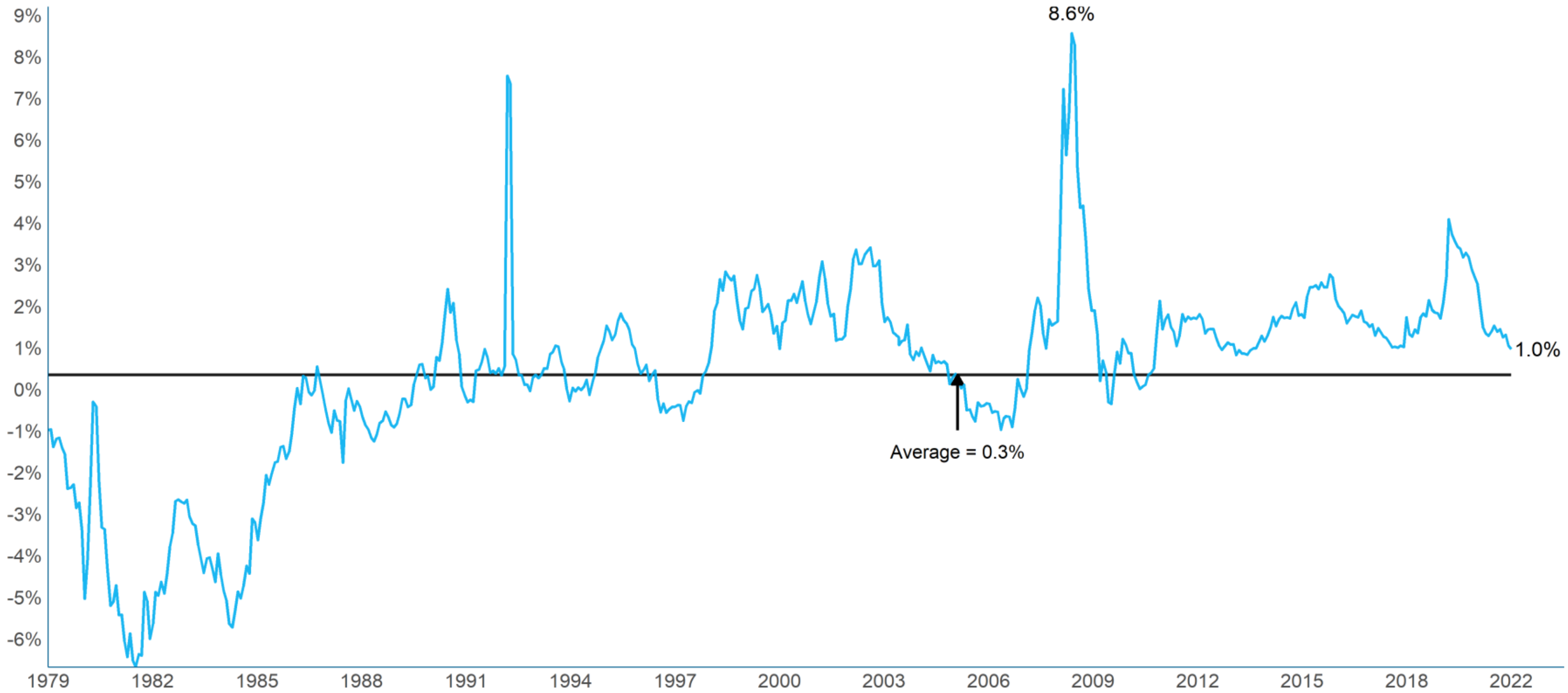
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of December 31, 2021)



- This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

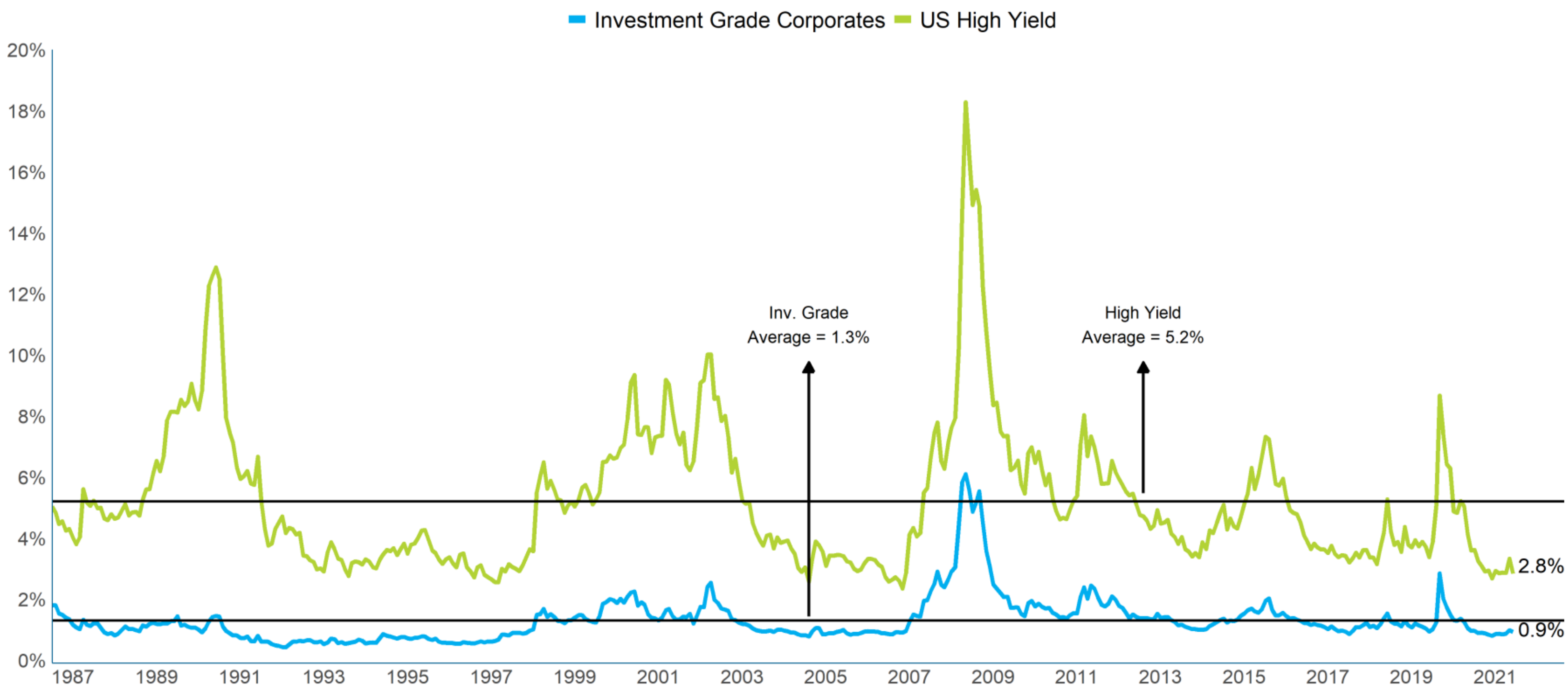
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]
(As of December 31, 2021)



- This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

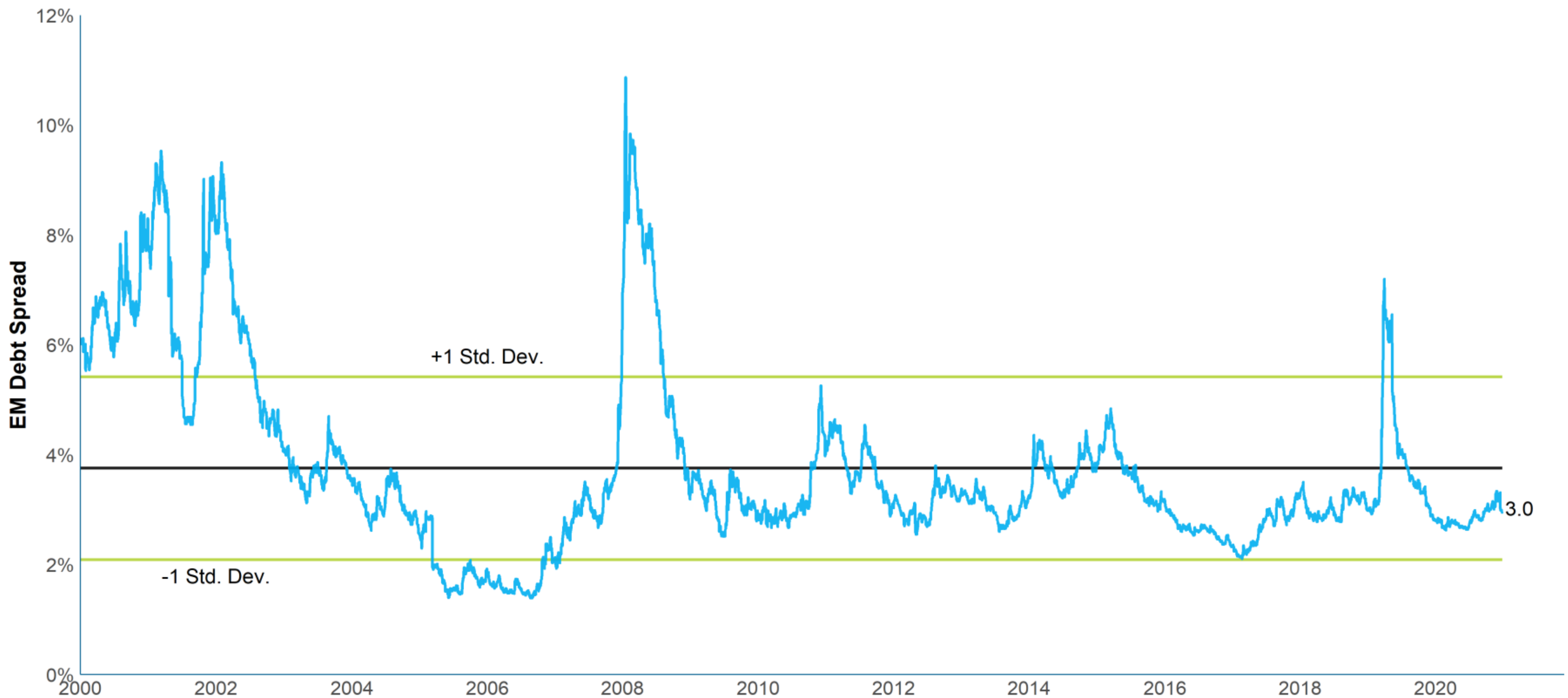
Credit Spreads[1]
(As of December 31, 2021)



- This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] Credit Spreads – Source: Bloomberg. High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

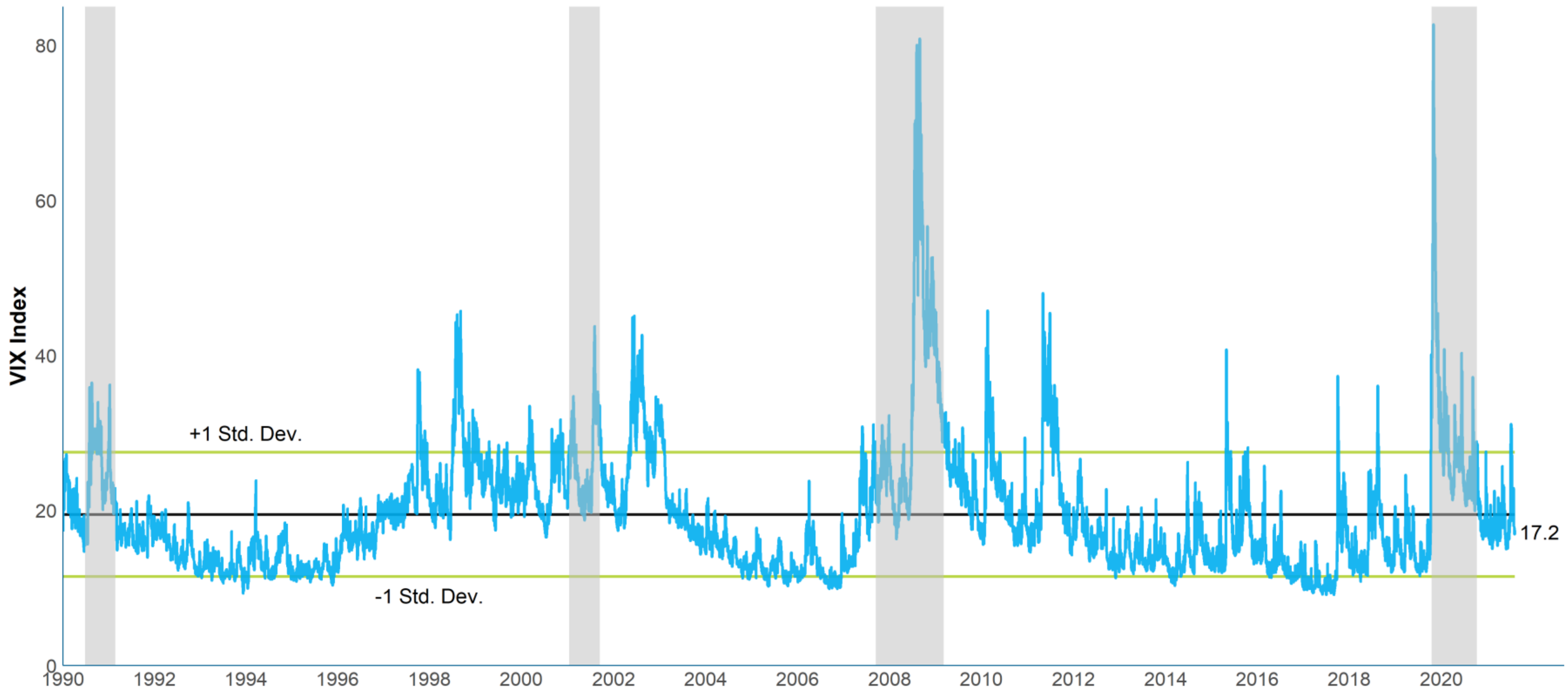
Emerging Market Debt Spreads[1]
(As of December 31, 2021)



- This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

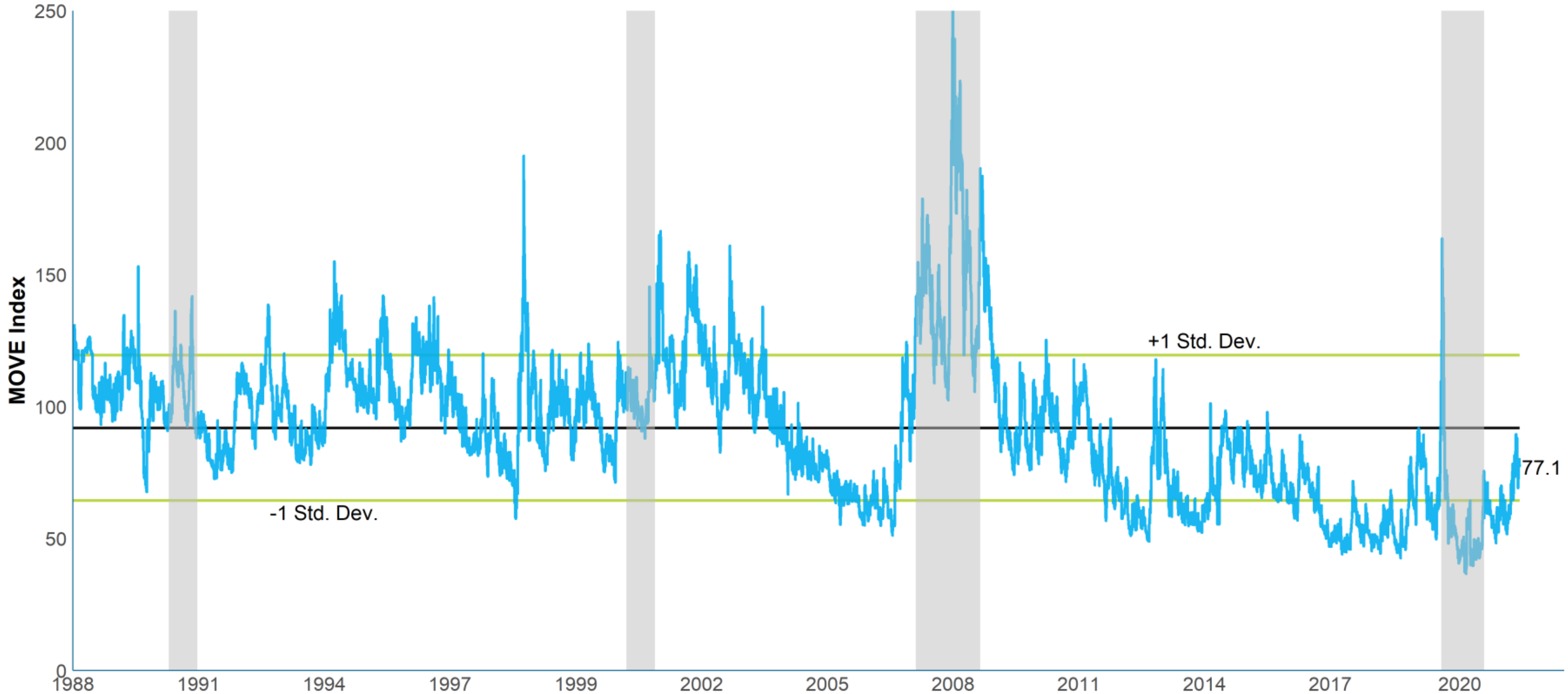
Equity Volatility[1]
(As of December 31, 2021)



- This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

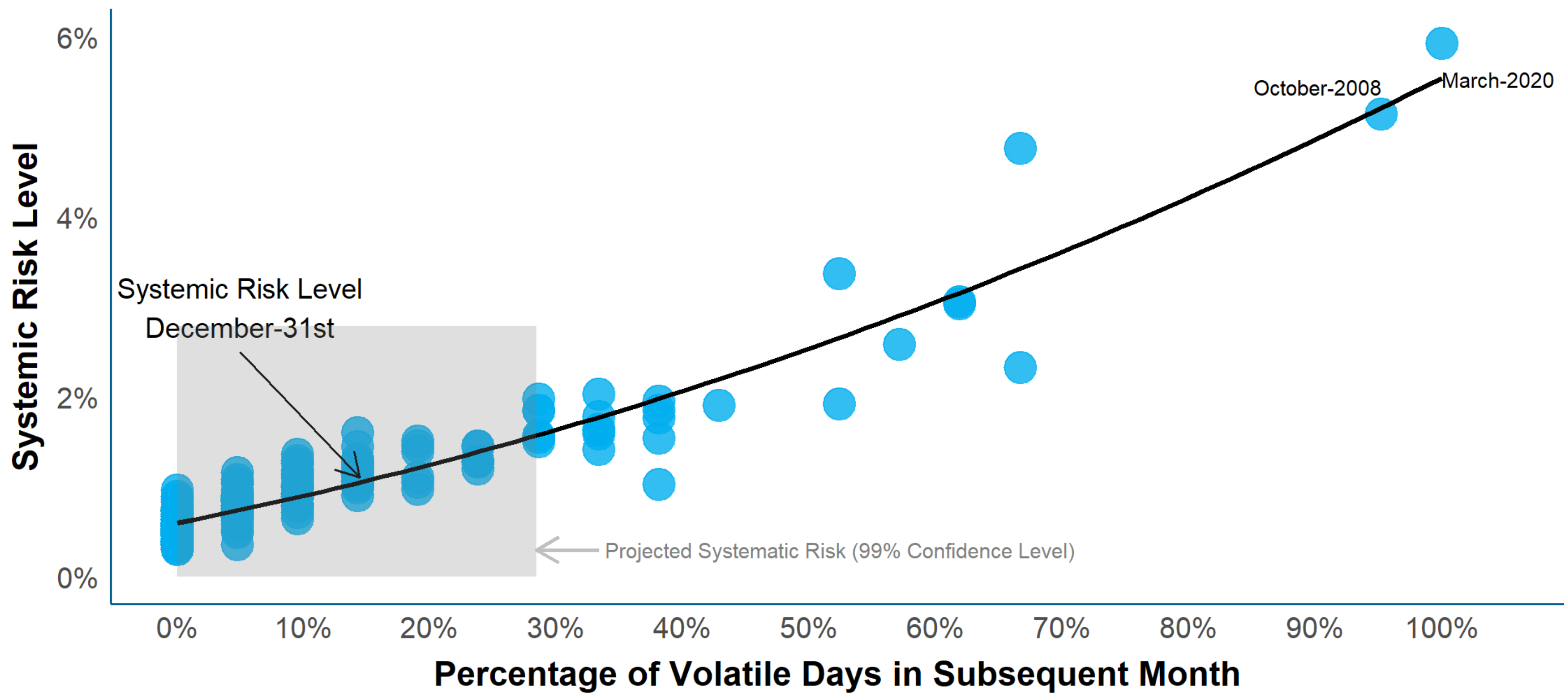
Fixed Income Volatility[1]
(As of December 31, 2021)



- This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

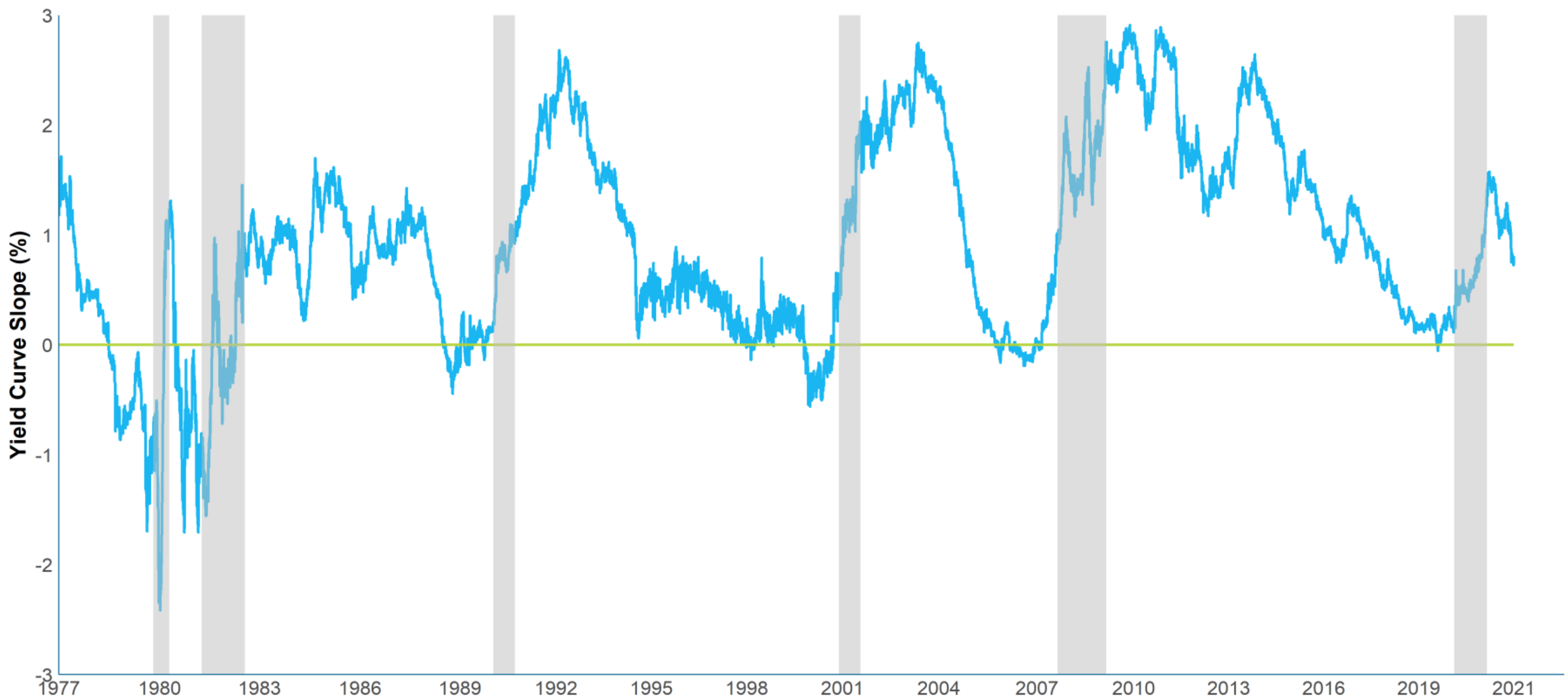
Systemic Risk and Volatile Market Days[1]
(As of December 31, 2021)



- Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

[1] Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

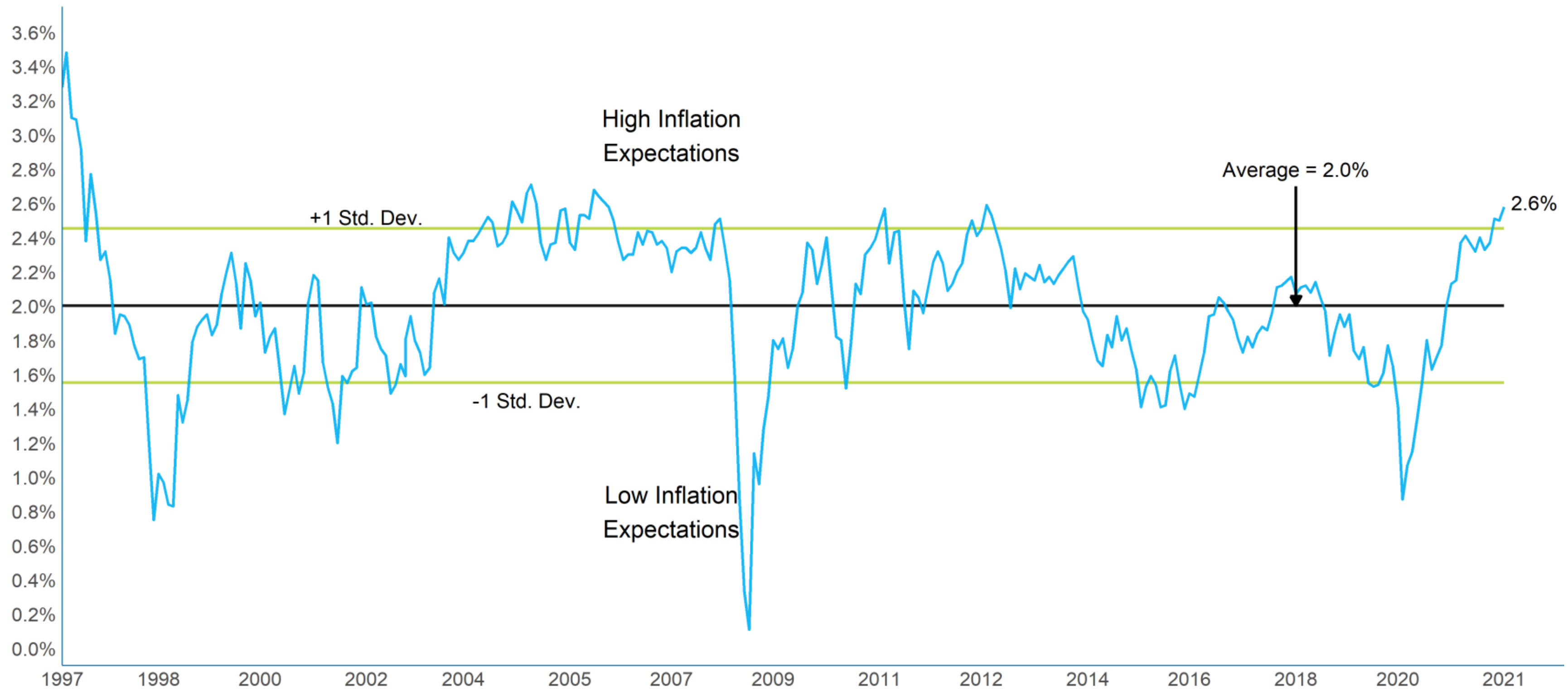
Yield Curve Slope (Ten Minus Two)[1]
(As of December 31, 2021)



- This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

[1] Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

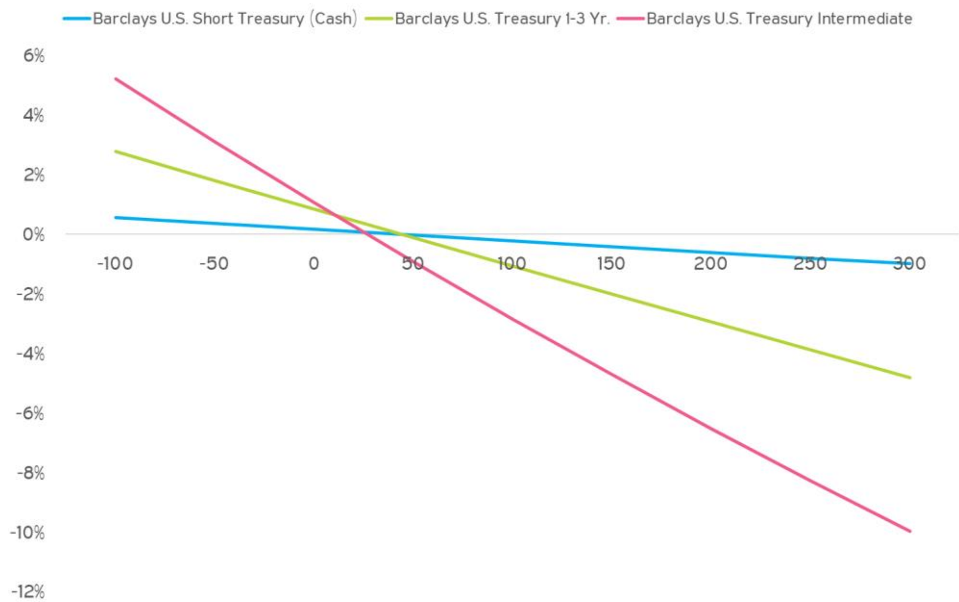
Ten-Year Breakeven Inflation[1]
(As of December 31, 2021)



- This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

[1] Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

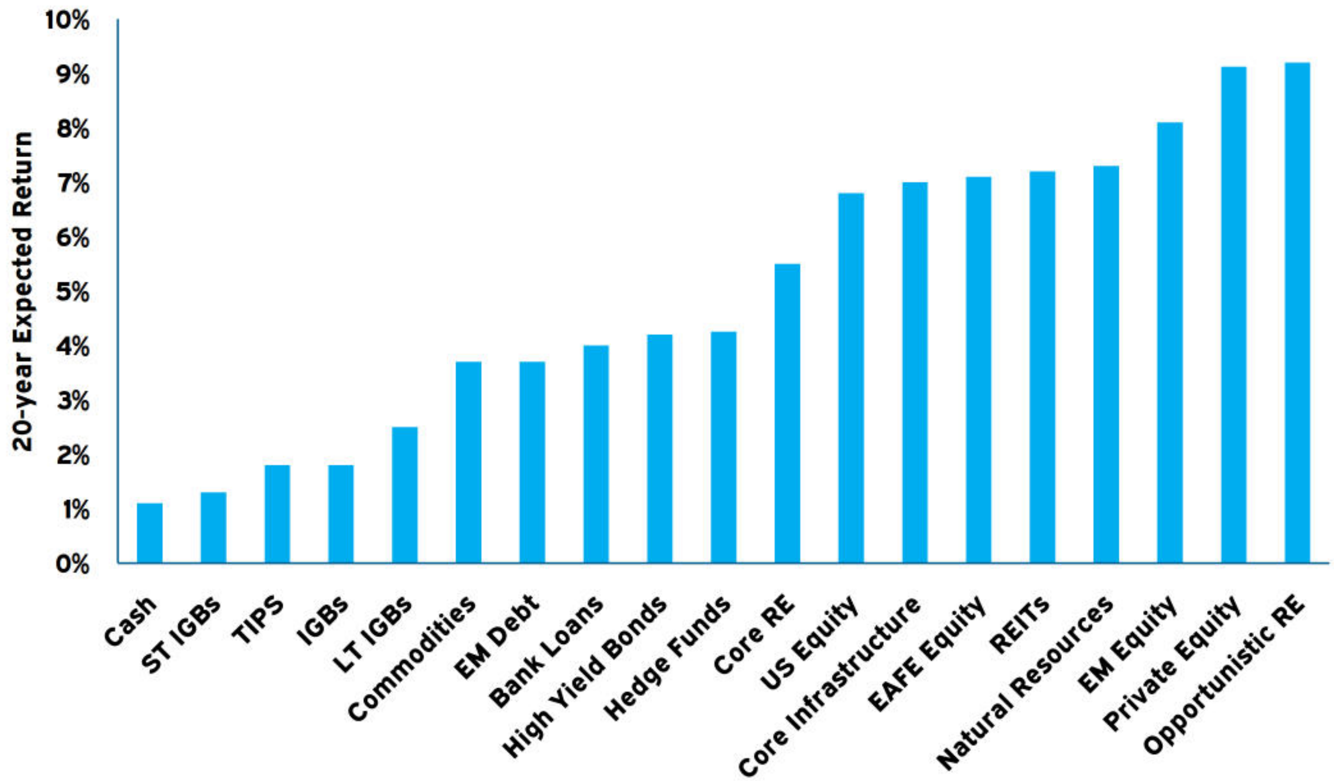
Total Return Given Changes in Interest Rates (bps)[1]
(As of December 31, 2021)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.5%	0.3%	0.1%	0.0%	-0.2%	-0.4%	-0.6%	-0.8%	-1.0%	0.39	0.15%
Barclays US Treasury 1-3 Yr.	2.8%	1.8%	0.8%	-0.1%	-1.1%	-2.0%	-3.0%	-3.9%	-4.8%	1.92	0.83%
Barclays US Treasury Intermediate	5.2%	3.1%	1.1%	-0.9%	-2.9%	-4.7%	-6.5%	-8.3%	-10.0%	4.03	1.05%
Barclays US Treasury Long	22.6%	11.7%	1.9%	-6.9%	-14.6%	-21.2%	-26.8%	-31.3%	-34.8%	18.61	1.89%

[1] Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

Long-Term Outlook – 20-Year Annualized Expected Returns[1]



- This chart details Meketa's long-term forward-looking expectations for total returns across asset classes.

[1] Source: Meketa Investment Group's 2021 Annual Asset Study.

Appendix

Data Sources and Explanations[1]

- US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.
- Developed International Equity (MSCI EAFE) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

[1] All Data as of October 31, 2021 unless otherwise noted.

Appendix

Data Sources and Explanations[1]

- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.
- Credit Spreads – Source: Bloomberg High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index.
  - Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.
- EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.
- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
- Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.
- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.

[1] All Data as of October 31, 2021 unless otherwise noted.

Appendix

Data Sources and Explanations[1]

- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

[1] All Data as of October 31, 2021 unless otherwise noted.

Meketa Market Sentiment Indicator

Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa's Risk Metrics.

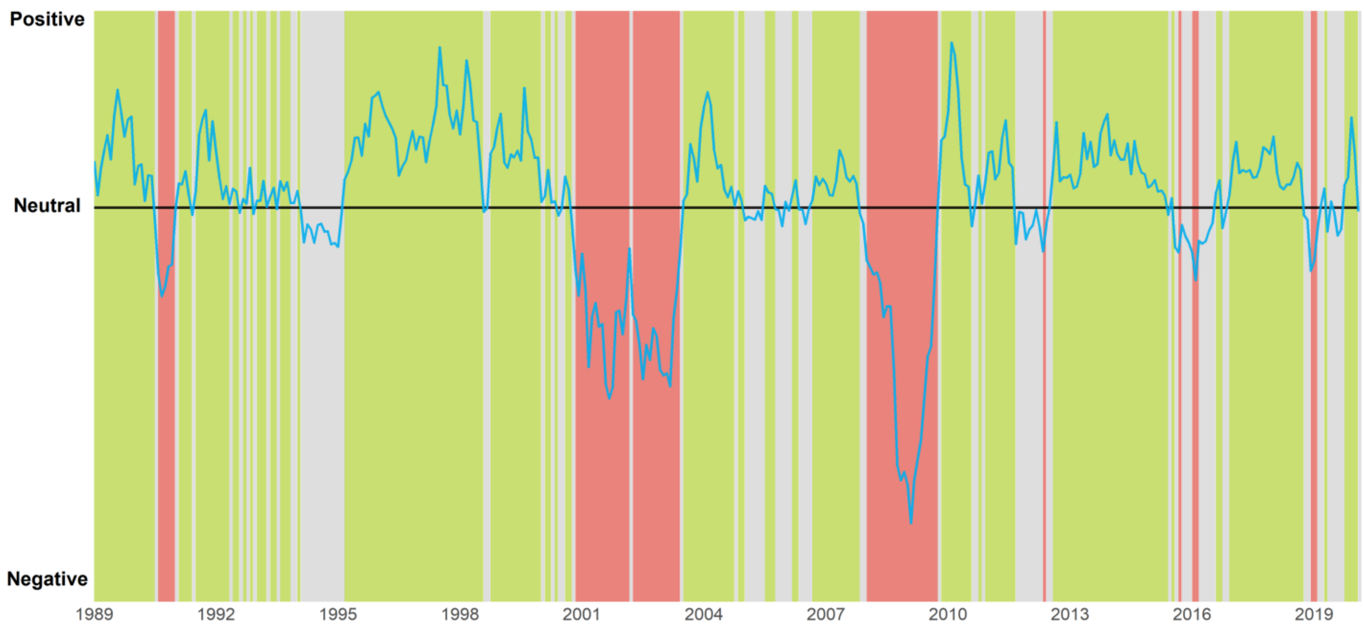
- Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market correction take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation-based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

What is the Meketa Market Sentiment Indicator (MIG-MSI)?

- The MIG-MSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

- Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.
- Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

- The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:
  - Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months).
  - Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
  - Both measures are converted to Z-scores and then combined to get an "apples to apples" comparison without the need of re-scaling.
- The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure[1]. The color reading on the graph is determined as follows:
  - If both stock return momentum and bond spread momentum are positive = GREEN (positive).
  - If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive).
  - If both stock return momentum and bond spread momentum are negative = RED (negative).

[1] Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.
"Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010. *http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf*

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

- There is strong evidence that time series momentum is significant and persistent. Across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

Disclaimer Information

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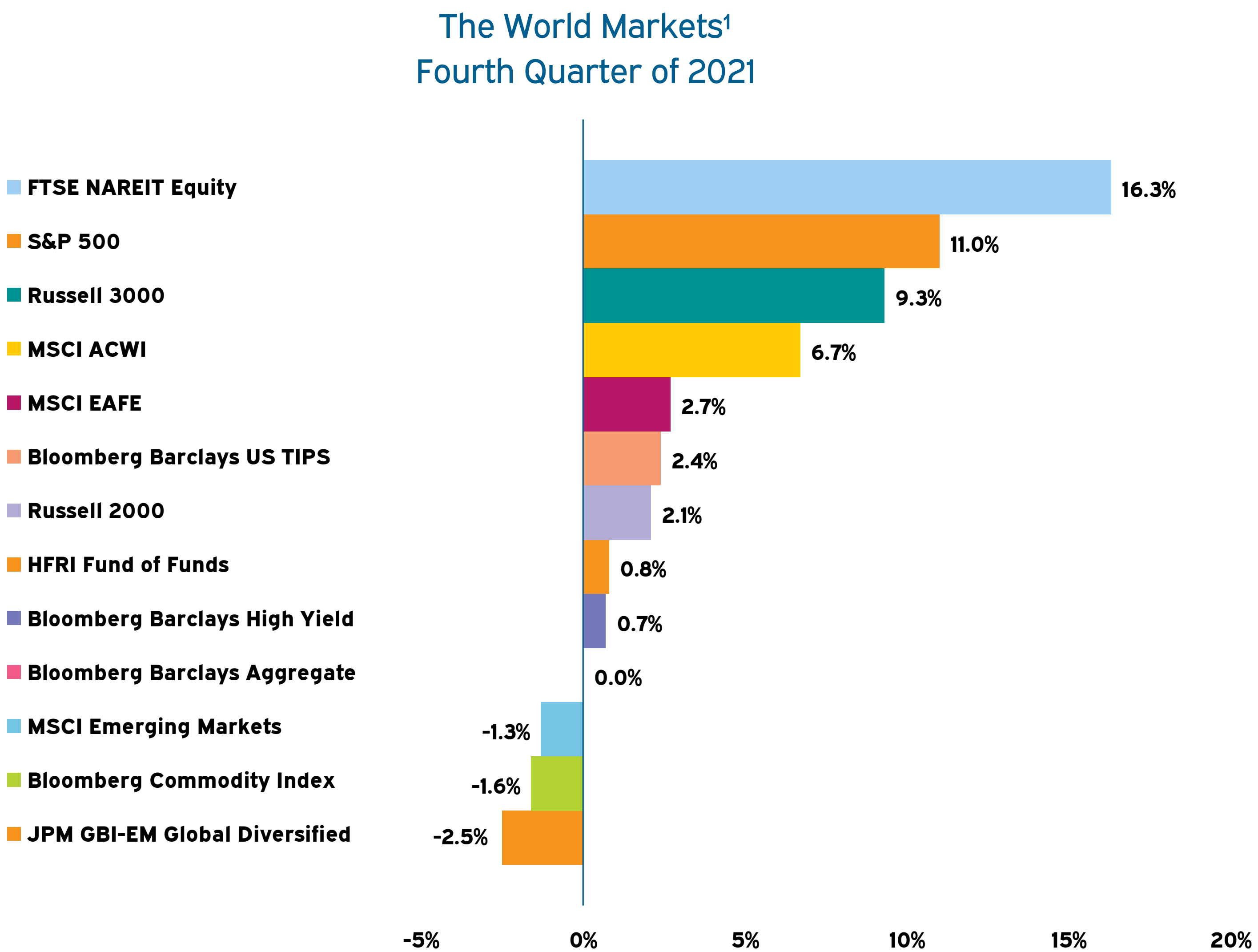
The World Markets
Fourth Quarter of 2021



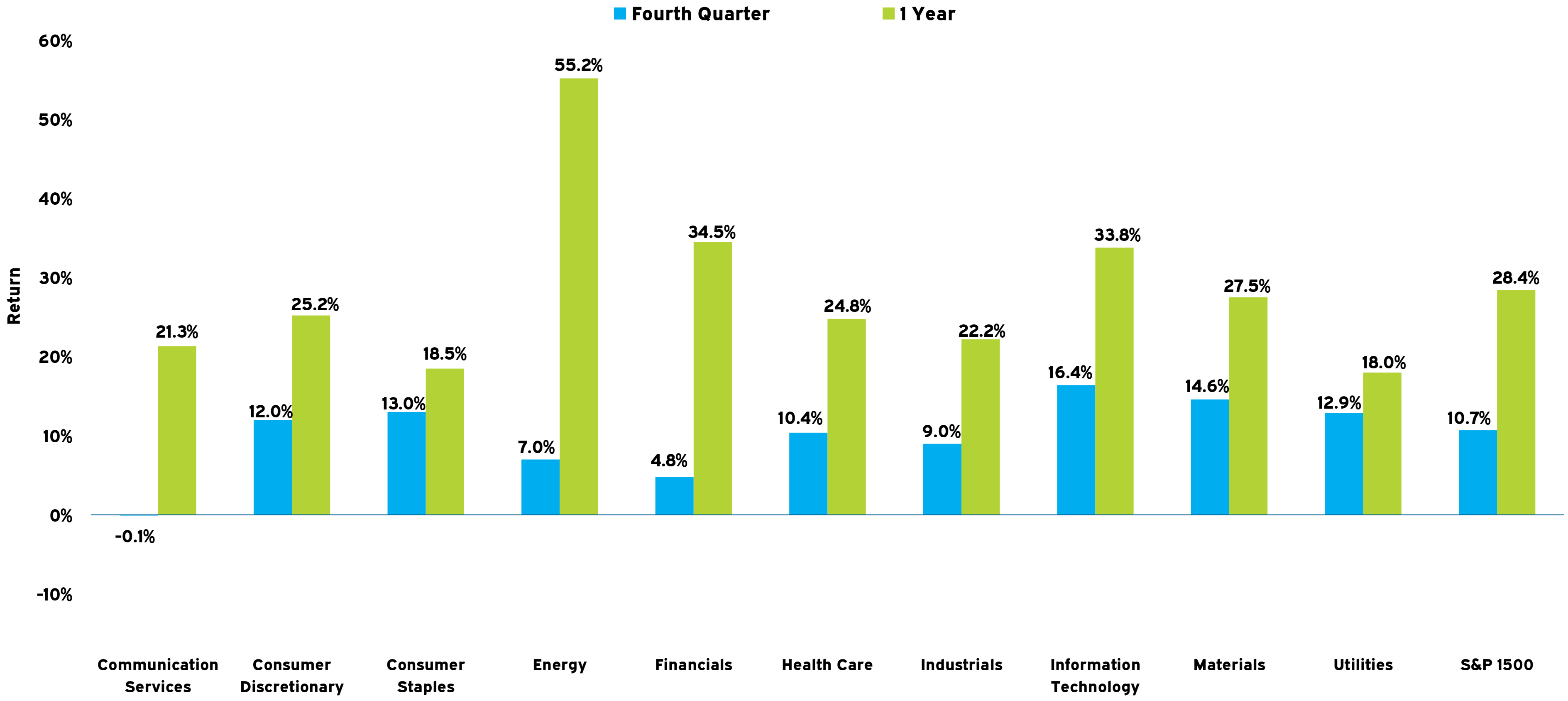
[1] Source: InvestorForce.

Index Returns[1]

	4Q21 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
Domestic Equity					
S&P 500	11.0	28.7	26.1	18.5	16.6
Russell 3000	9.3	25.7	25.8	18.0	16.3
Russell 1000	9.8	26.5	26.2	18.4	16.5
Russell 1000 Growth	11.6	27.6	34.1	25.3	19.8
Russell 1000 Value	7.8	25.2	17.6	11.2	13.0
Russell MidCap	6.4	22.6	23.3	15.1	14.9
Russell MidCap Growth	2.8	12.7	27.5	19.8	16.6
Russell MidCap Value	8.5	28.3	19.6	11.2	13.4
Russell 2000	2.1	14.8	20.0	12.0	13.2
Russell 2000 Growth	0.0	2.8	21.2	14.5	14.1
Russell 2000 Value	4.4	28.3	18.0	9.1	12.0
Foreign Equity					
MSCI ACWI	6.7	18.5	20.4	14.4	11.9
MSCI ACWI (ex. US)	1.8	7.8	13.2	9.6	7.3
MSCI EAFE	2.7	11.3	13.5	9.5	8.0
MSCI EAFE (Local Currency)	3.9	18.7	13.4	8.4	10.1
MSCI EAFE Small Cap	0.1	10.1	15.6	11.0	10.8
MSCI Emerging Markets	-1.3	-2.5	10.9	9.9	5.5
MSCI Emerging Markets (Local Currency)	-0.9	-0.2	12.0	10.5	8.0
Fixed Income					
Bloomberg Barclays Universal	0.0	-1.1	5.2	3.8	3.3
Bloomberg Barclays Aggregate	0.0	-1.5	4.8	3.6	2.9
Bloomberg Barclays US TIPS	2.4	6.0	8.4	5.3	3.1
Bloomberg Barclays High Yield	0.7	5.3	8.8	6.3	6.8
JPM GBI-EM Global Diversified	-2.5	-8.7	2.1	2.8	0.7
Other					
FTSE NAREIT Equity	16.3	43.2	18.4	10.8	11.4
Bloomberg Commodity Index	-1.6	27.1	9.9	3.7	-2.9
HFRI Fund of Funds	0.8	6.5	8.6	5.8	4.6

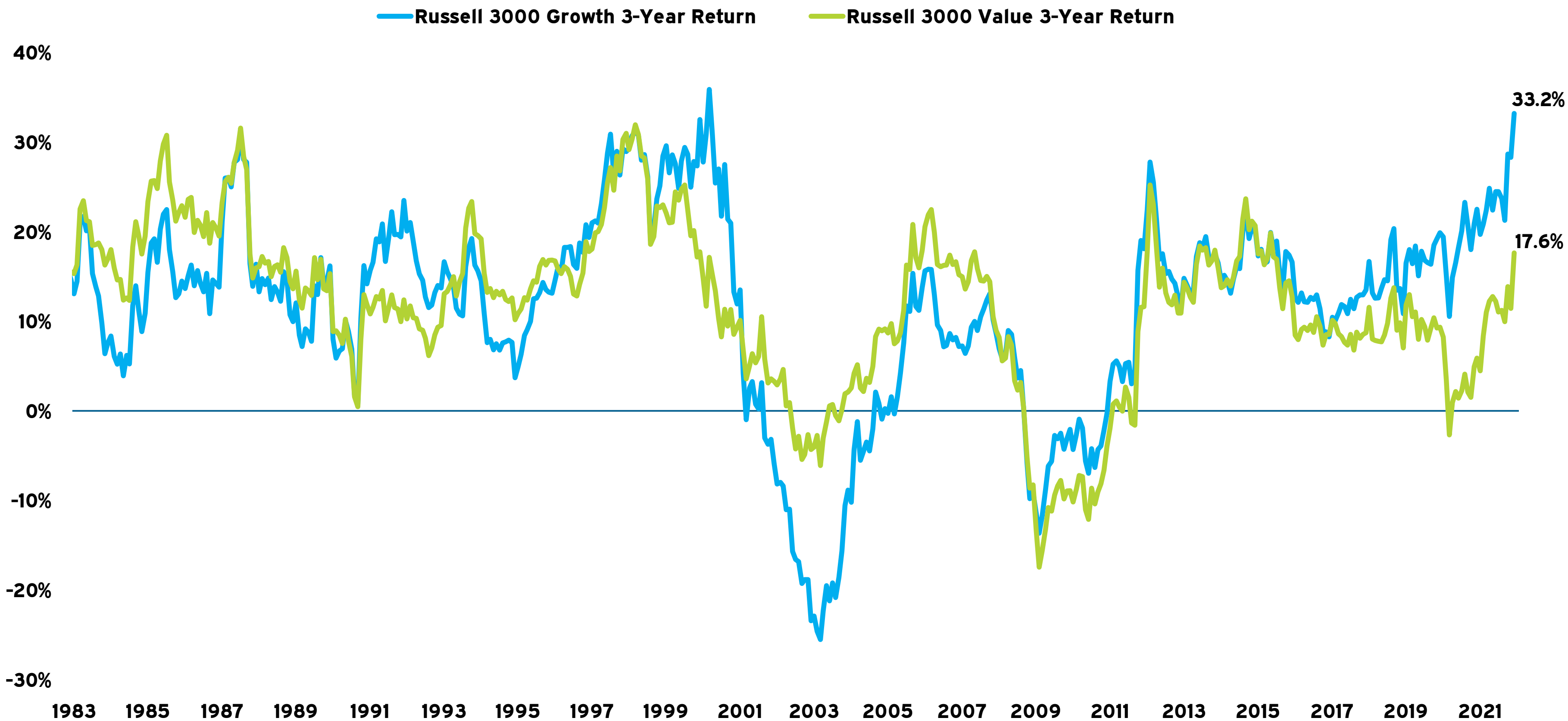
[1] Source: InvestorForce.

S&P Sector Returns[1]



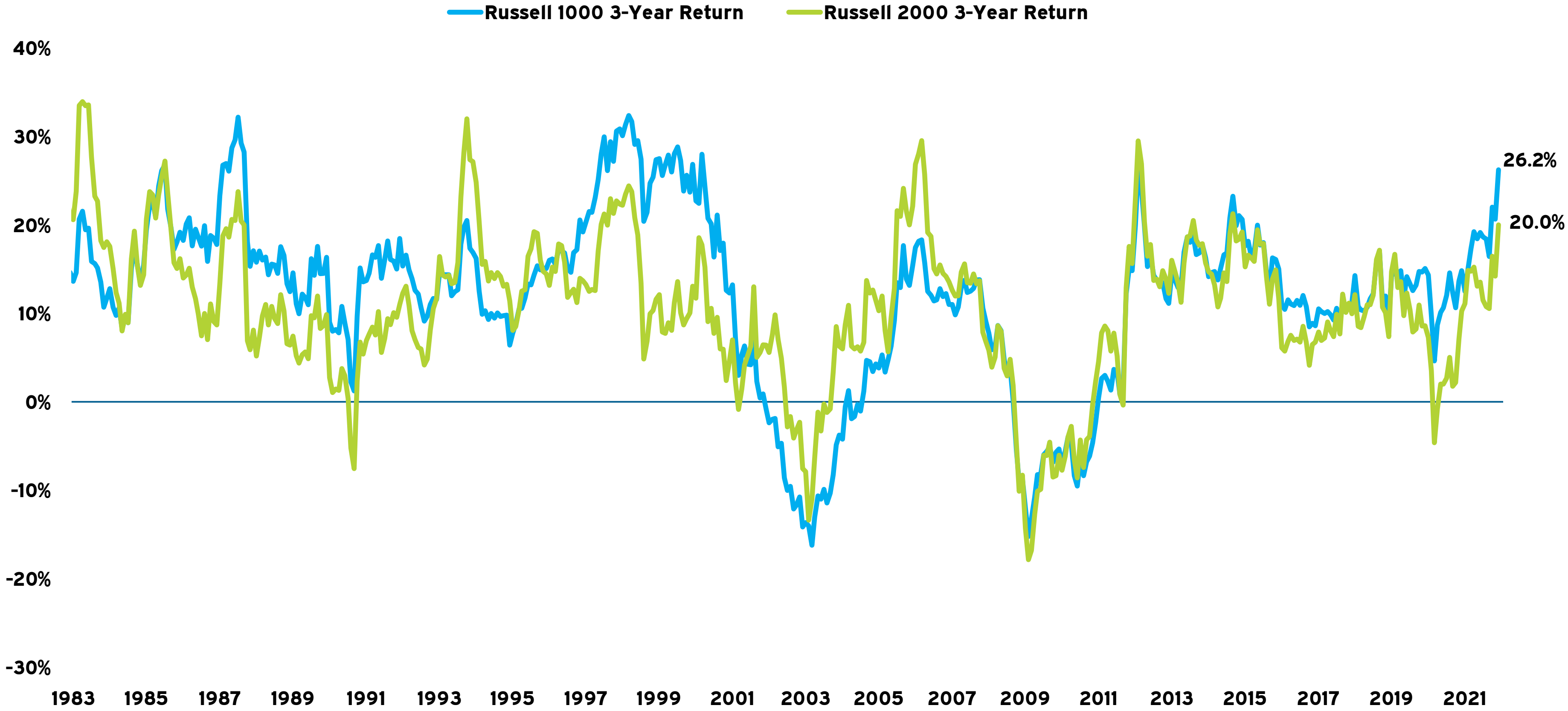
1 Source: InvestorForce. Represents S&P 1500 (All Cap) data.

Growth and Value Rolling Three Year Returns[1]



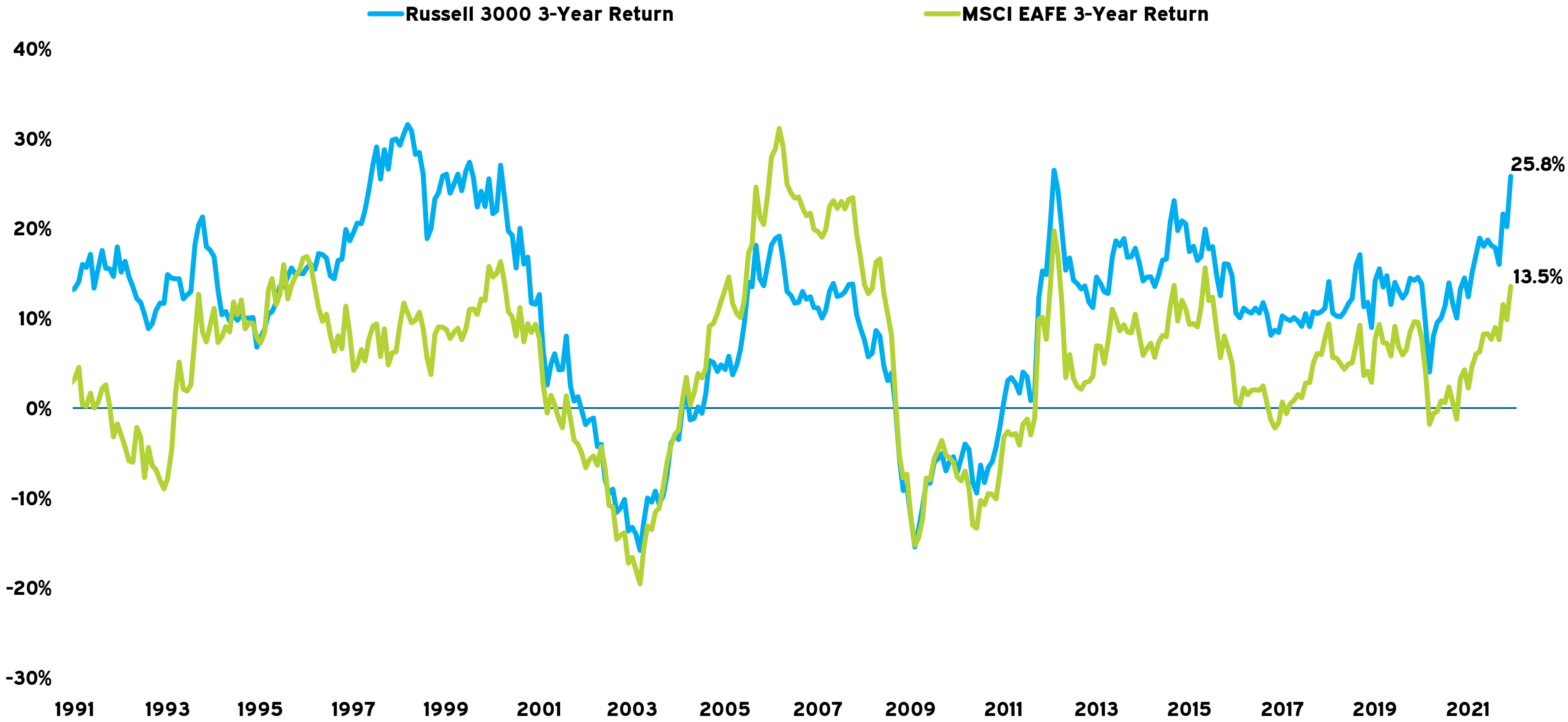
1 Source: InvestorForce.

Large Cap (Russell 1000) and Small Cap (Russell 2000) Rolling Three Year Returns[1]



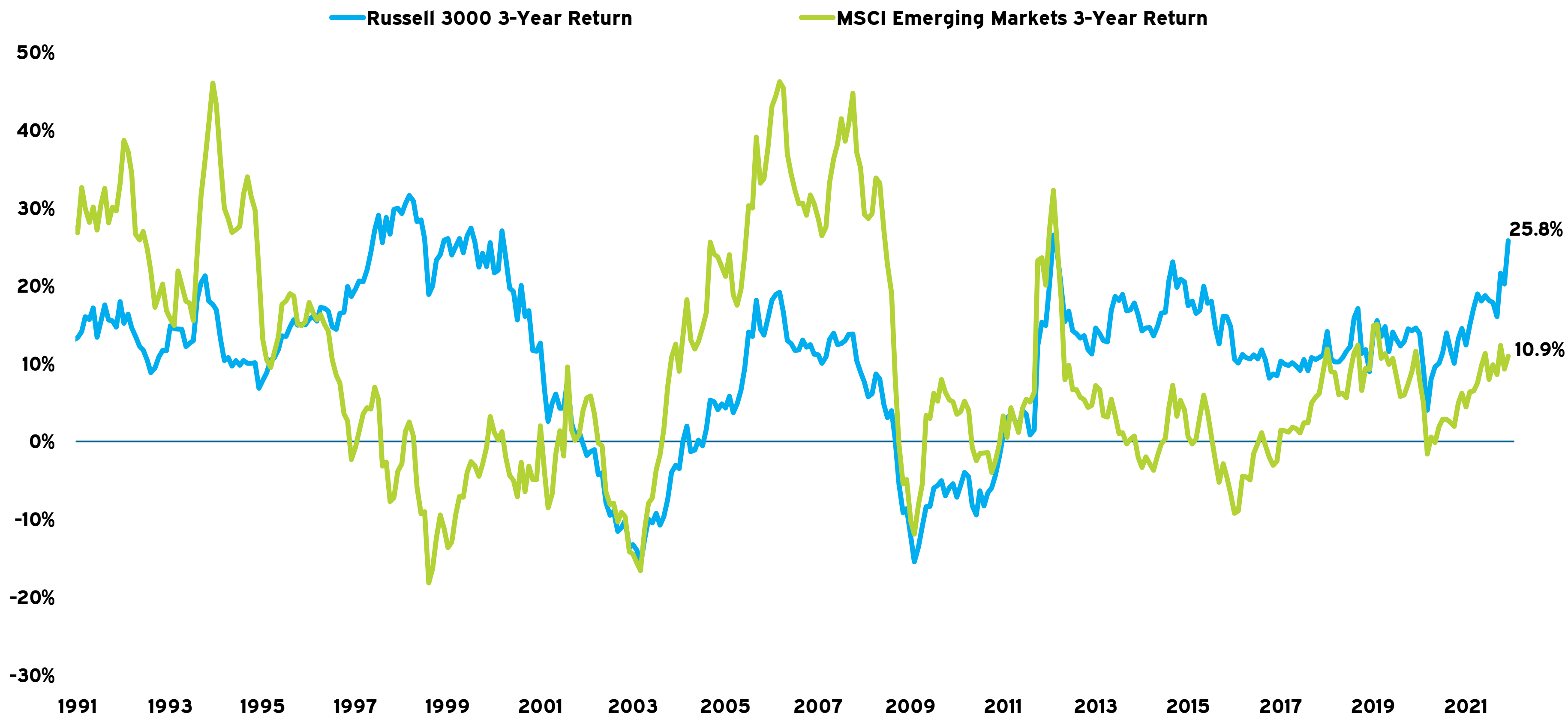
[1] Source: InvestorForce.

US and Developed Market Foreign Equity Rolling Three-Year Returns[1]



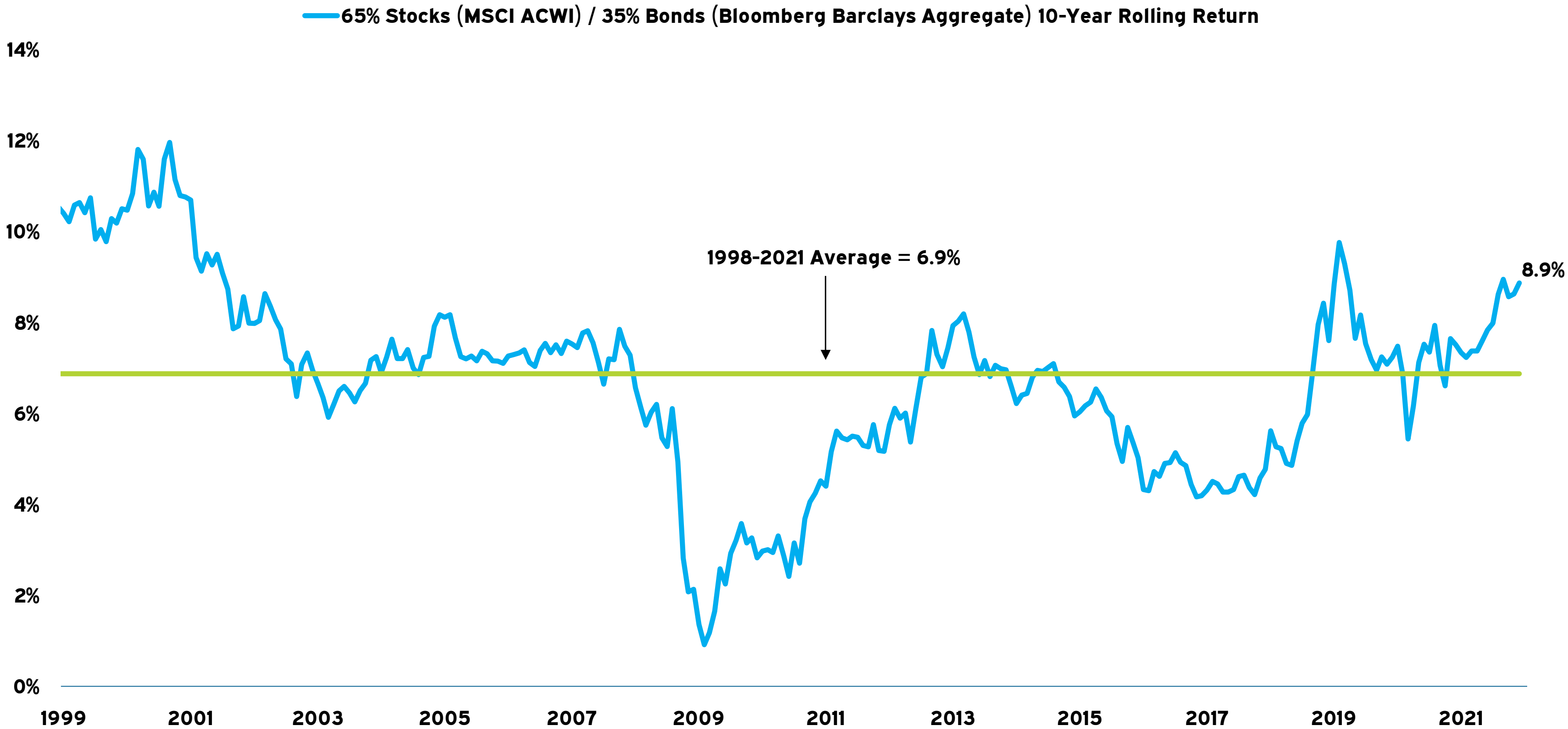
1 Source: InvestorForce.

US and Emerging Market Equity Rolling Three-Year Returns[1]



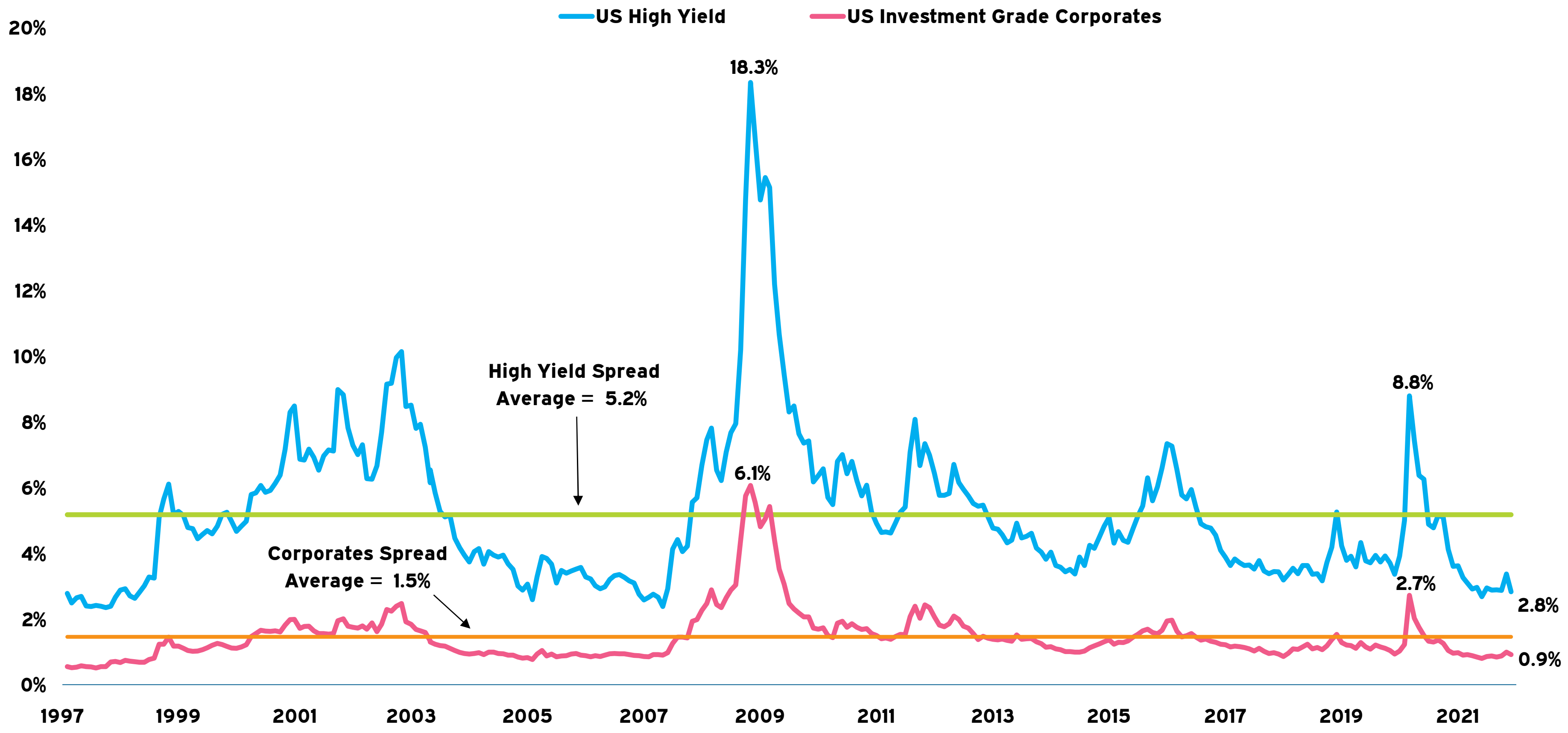
1 Source: InvestorForce.

Rolling Ten-Year Returns: 65% Stocks and 35% Bonds[1]



1 Source: InvestorForce.

Credit Spreads vs. US Treasury Bonds[1,2]



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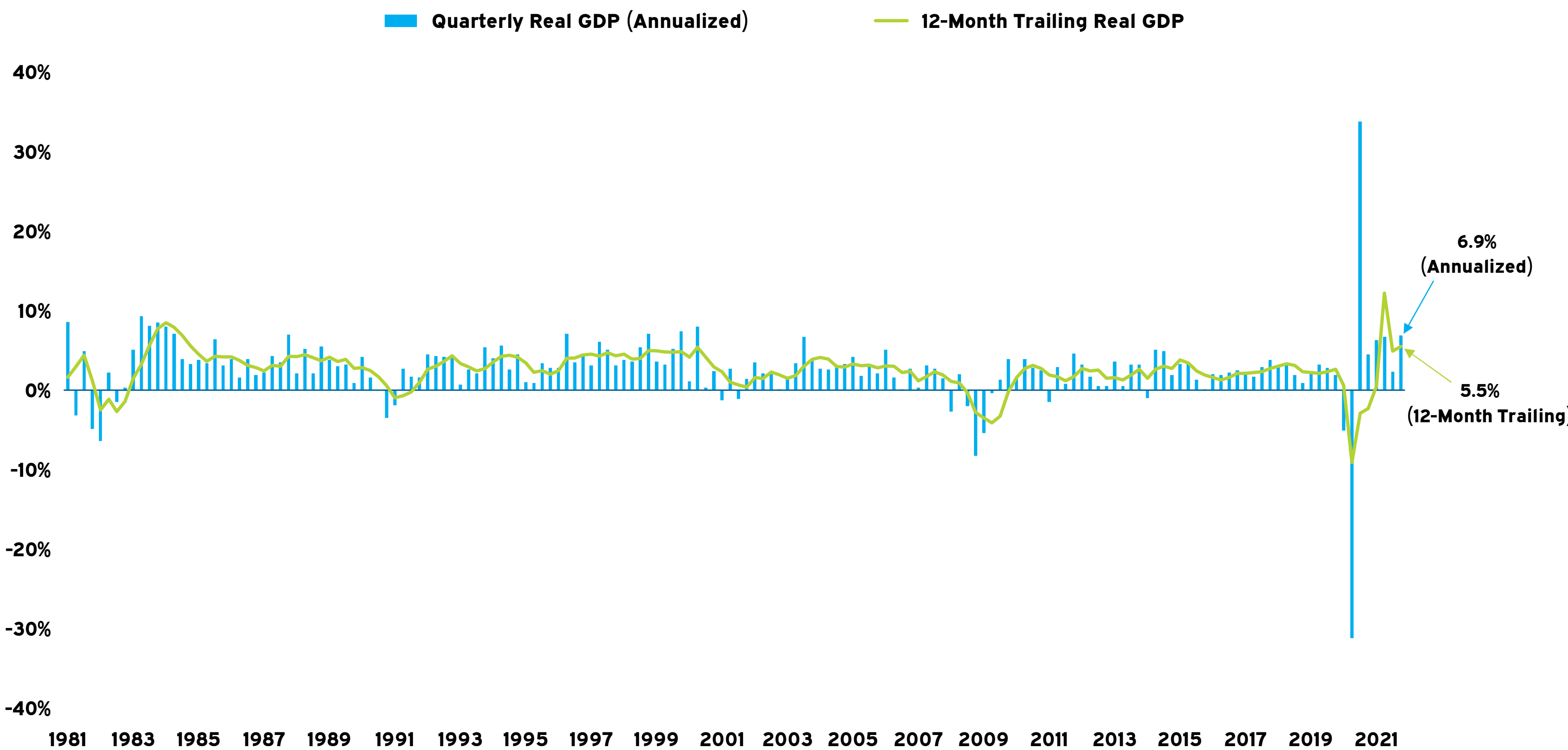
[1] Source: Barclays Live. Data represents the OAS.

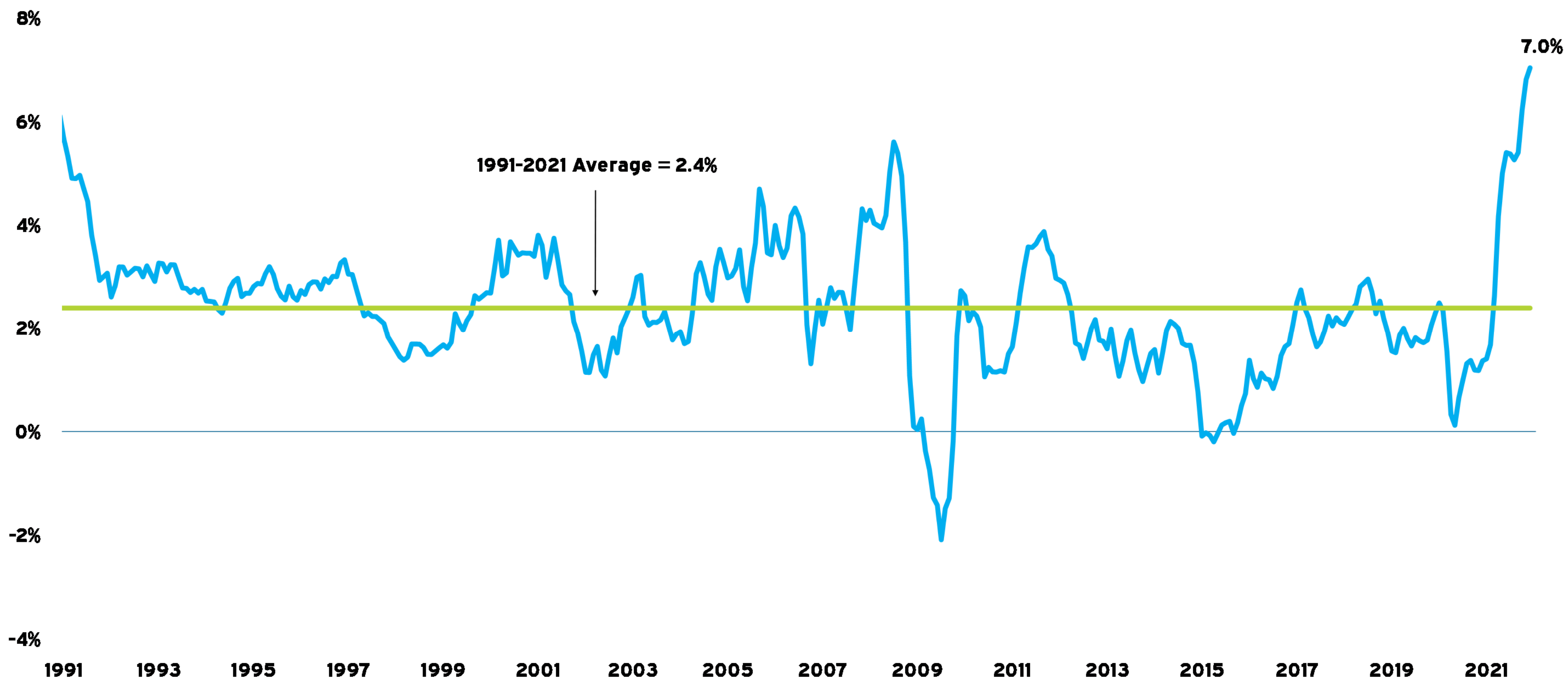
[2] The median high yield spread was 4.7% from 1997-2021.

US Real Gross Domestic Product (GDP) Growth[1]



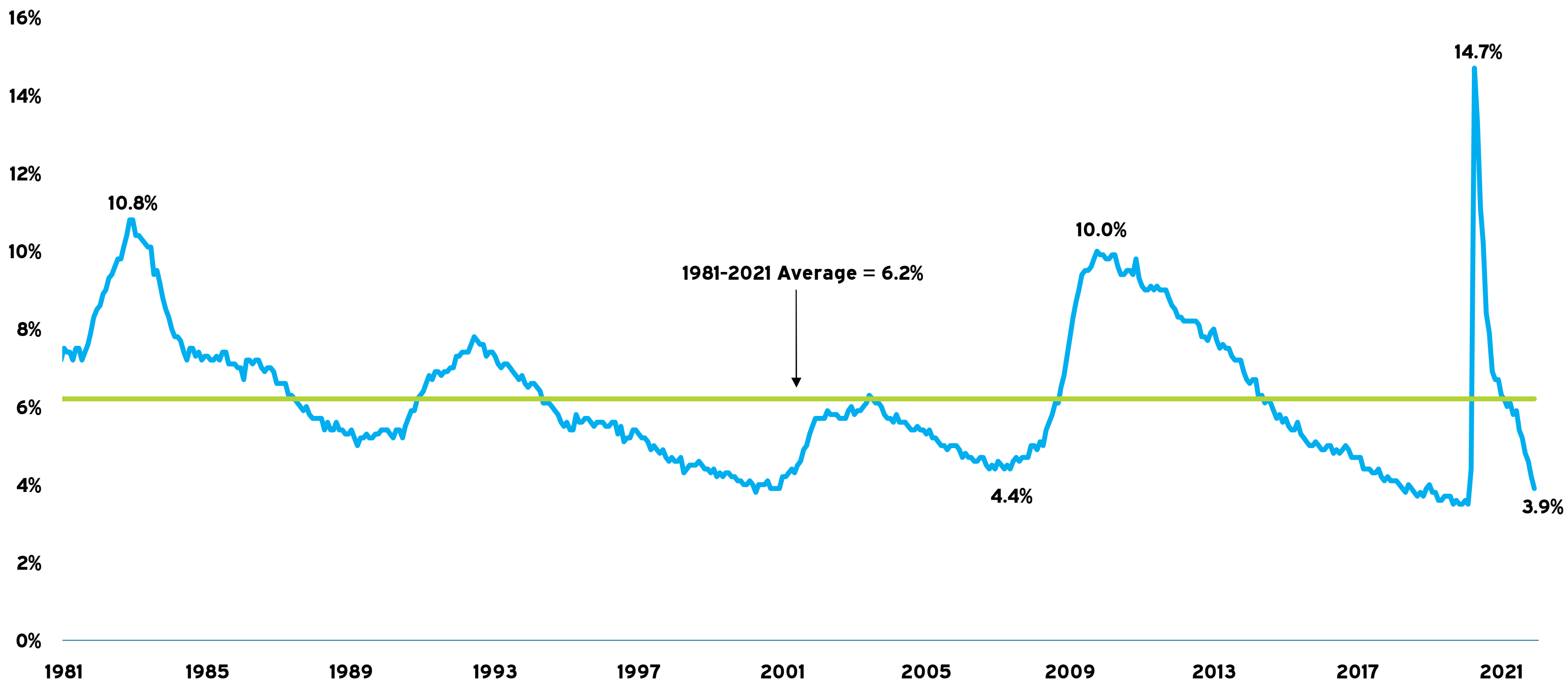
1 Source: Bureau of Economic Analysis. Data is as of Q4 2021 and represents the first estimate.

US Inflation (CPI)
Trailing Twelve Months[1]



1 Source: Bureau of Labor Statistics. Data is non-seasonally adjusted CPI, which may be volatile in the short-term. Data is as of December 31, 2021.

US Unemployment[1]



1 Source: Bureau of Labor Statistics. Data is as of December 31, 2021.

Disclaimer, Glossary, and Notes

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.

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays $5 a year interest on each $100 par value. To figure its current yield, divide $5 by $95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay $100 for the bond that can be bought now for $95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\%\ (\text{discount})}{5\ (\text{yrs. to maturity})} = \begin{matrix}1\%\ \text{pro rata, plus}\\ 5.26\%\ (\text{current yield})\end{matrix} = 6.26\%\ (\text{yield to maturity})$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.

MEKETA
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MEMORANDUM

TO: SJCERA Board of Retirement
FROM: Meketa Investment Group
DATE: March 11, 2022
RE: SJCERA Manager Certification Update: 4Q 2021 Overview and Responses

Summary of Responses

Meketa reviewed the SJCERA Quarterly Manager Certification Updates for the quarter ending December 31, 2021, from all funded managers. *In Meketa's opinion, the manager information reported for the quarter presents no significant concerns to the SJCERA portfolio.* Meketa's opinion is based on the written responses and on Meketa's conversations with managers that reported senior investment personnel or management departures.

The managers' responses indicate that[1]:

- All funded managers reported:
  - Registered Investment Advisor in Good Standing, or are exempt,
  - Compliance with Plan Investment Policy,
  - Compliance with SJCERA's Manager Guidelines, or N/A,
  - Reconciliation against the custodian, or N/A,
  - Compliance with own internal risk management policies and procedures, and
  - Delivered current ADV, SSAE-16 or equivalent Annual Financial Audits, as available.
- Six managers reported litigation or regulatory investigation information:
  Almanac, Angelo Gordon, BlackRock, HPS, Medley, and PIMCO.
- Twelve managers reported investment team changes:

  Angelo Gordon, AQR, BlackRock, Crestline, Davidson Kempner, Dodge & Cox, DoubleLine, HPS, Invesco, Medley, Prologis, and Stellex.
- Seven managers reported material management changes:

  AQR, Dodge & Cox, Graham, Mesa West, Northern Trust, PanAgora, and PIMCO.
- Three managers reported material business changes:

  AQR, Medley, and Stone Harbor.
- Bridgewater and Graham chose not to provide responses to the SJCERA compliance questionnaire and directed Meketa to a standard quarterly business or compliance updates.

[1] Managers' responses to footnoted ("*") questions begin on page 6.

SJCERA Overview of Investment Mgr. Compliance Report

Manager	Sub-Segment	Q1 RIA in Good Standing	Q2 Complied with Plan IPS	Q3 Complied w/ Mgr. Guidelines	Q4 Reconciled With Custodian	Q5 Litigation	Q6 Investment Personnel Changes	Q7 Mgmt. Changes	Q8 Material Business Changes	Q9 Complied Internal Risk Mgmt.	Q10 Sent Fncl Stmnts
Aggressive Growth											
BlackRock	Global Infrastructure	Yes	Yes	Yes	Yes	Yes*	Yes*	No	No	Yes	Yes
Ocean Avenue	PE Buyout FOF	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Morgan Creek	Multi-Strat FOF	Yes	Yes	Yes	N/A*	No	No	No	No	Yes	Yes
Stellex Capital II	PE – Special Situations	Yes	Yes	Yes	Yes	No	Yes*	No	No	Yes	Yes
AG Core Plus	Pvt. Non-core RE	Yes	Yes	Yes	N/A*	Yes*	Yes*	No*	No	Yes	Yes
Almanac Realty	Pvt. Non-core RE	Yes	Yes	Yes	N/A*	Yes*	No	No	No	Yes	Yes
Greenfield	Pvt. Non-core RE	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Miller Global[3]	Pvt. Non-core RE	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Stockbridge	Pvt. Non-core RE	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Walton Street	Pvt. Non-core RE	Yes	Yes	Yes	N/A*	No	No	No	No	Yes	Yes
Traditional Growth											
Northern Trust	All Cap Global	Yes	Yes	Yes	Yes	No*	No	Yes*	No	Yes	Yes
GQG	Emerging Mkts.	Yes	Yes	Yes	Yes	No	No	No	No*	Yes	Yes
PIMCO	Emerging Mkts.	Yes	Yes	Yes	Yes	Yes*	No	Yes*	No	Yes	Yes
Invesco	REITS	Yes	Yes	Yes	Yes	No*	Yes*	No	No	Yes	Yes
Stabilized Growth											
Bridgewater[1]	Risk Parity	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PanAgora	Risk Parity	Yes	Yes	Yes	Yes	No	No	Yes*	No	Yes	Yes
Neuberger Berman	Opp. Credit	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Stone Harbor	Abs. Return	Yes	Yes	Yes	Yes	No	No	No	Yes*	Yes	Yes
Stone Harbor	Bank Loans	Yes	Yes	Yes	Yes	No	No	No	Yes*	Yes	Yes
BlackRock	Direct Lending	Yes	Yes	Yes	Yes	Yes*	Yes*	No	No	Yes	Yes
Crestline	Opportunistic	Yes	Yes	Yes	N/A*	No	Yes*	No	No	Yes	Yes
Davidson Kempner[2]	Opportunistic	Yes	Yes	Yes	Yes	No	Yes*	No	No	Yes	Yes
Medley[3]	Direct Lending	Yes	Yes	Yes	Yes	Yes*	Yes*	No	Yes*	No	No
Mesa West	Comm. Mortgage	Yes	Yes	Yes	Yes	No	No	Yes*	No	Yes	Yes
Oaktree	Leveraged Direct	Yes	Yes	Yes	N/A*	No*	No	No	No	Yes	Yes
HPS	Direct Lending	Yes	Yes	Yes	Yes	Yes*	Yes*	No	No	Yes	Yes
Raven Capital	Direct Lending	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
White Oak	Direct Lending	Yes	Yes	Yes	Yes	No*	No	No	No	Yes	Yes
Berkeley Partners	Value Add RE	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Principal	Pvt. Core RE	Yes	Yes	Yes	N/A*	No*	No	No*	No	Yes	Yes
Prologis Targeted U.S.	Pvt. Core RE	No*	Yes	Yes	Yes	No*	Yes*	No	No	Yes	Yes
RREEF / DWS	Pvt. Core RE	Yes	Yes	Yes	N/A*	No	Yes	No	No	Yes	Yes

SJCERA Overview of Investment Mgr. Compliance Report (continued)

Manager	Sub-Segment	Q1 RIA in Good Standing	Q2 Complied with Plan IPS	Q3 Complied w/ Mgr. Guidelines	Q4 Reconciled With Custodian	Q5 Litigation	Q6 Investment Personnel Changes	Q7 Mgmt. Changes	Q8 Material Business Changes	Q9 Complied Internal Risk Mgmt.	Q10 Sent Fncl Stmnts
Principal Protection											
Dodge & Cox	Core Fixed Income	Yes	Yes	Yes	Yes	No	Yes*	Yes*	No	Yes	Yes
DoubleLine	MBS	Yes	Yes	N/A*	Yes	No	Yes*	No	No	N/A*	Yes
Crisis Risk Offset℠											
Dodge & Cox	Long Duration	Yes	Yes	Yes	Yes	No	Yes*	Yes*	No	Yes	Yes
Mount Lucas	Syst. Trend Following	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Graham[1]	Syst. Trend Following	Yes	Yes	Yes	Yes	No	No	Yes*	No	Yes	Yes
AQR	Alt. Risk Premia	Yes	Yes	Yes	Yes	No	Yes*	Yes*	Yes*	Yes	Yes
PE Investments	Alt. Risk Premia	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Lombard Odier	Alt. Risk Premia	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Overlay											
Parametric	PIOS Overlay Prgm	Yes	Yes	Yes	Yes	No*	No	No	No	Yes	Yes
Consultant											
Meketa	Consultant	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes

* Detailed written response provided below.
1) Bridgewater and Graham chose not to provide responses to the SJCERA compliance questionnaire and instead directed Meketa to a standard quarterly business update.
2) Manager declined to provide *written* responses.
3) Medley and Miller did not complete the questionnaire for Q4, therefore we utilized Q3 responses as a proxy. Extenuating circumstances prevented Miller from providing responses.

Manager	Sub-Segment	Inception Date	Status	Benchmark	Ann. Excess (bps) 3 Yrs	Ann. Excess (bps) 5 Yrs	Peer Ranking 3 Yrs	Peer Ranking 5 Yrs
Performance Information through December 31, 2021								
Aggressive Growth								
BlackRock	Global Infrastructure	7/2019	Good Standing	MSCI ACWI +2%	n/a	n/a	n/a	n/a
Ocean Avenue II[1]	PE Buyout FOF	5/2013	Good Standing	MSCI ACWI +2%	1,784	1,901	n/a	n/a
Ocean Avenue III[1]	PE Buyout FOF	4/2016	Good Standing	MSCI ACWI +2%	1,315	1,688	n/a	n/a
Ocean Avenue IV	PE Buyout FOF	12/2019	Good Standing	MSCI ACWI +2%	n/a	n/a	n/a	n/a
Morgan Creek III[1]	Multi-Strat FOF	2/2015	Good Standing	MSCI ACWI +2%	-2,574	-1,310	n/a	n/a
Morgan Creek V[1]	Multi-Strat FOF	6/2013	Good Standing	MSCI ACWI +2%	-31	87	n/a	n/a
Morgan Creek VI[1]	Multi-Strat FOF	2/2015	Good Standing	MSCI ACWI +2%	820	759	n/a	n/a
Stellex Capital II	PE – Special Situations	7/2021	Good Standing	MSCI ACWI +2%	n/a	n/a	n/a	n/a
AG Core Plus IV[3]	Pvt. Non-core RE	2014	Good Standing	Private RE Benchmark	210	230	n/a	n/a
Almanac Realty VI[3]	Pvt. Non-core RE	2011	Good Standing	Private RE Benchmark	-1,750	-1,250	n/a	n/a
Greenfield V[3]	Pvt. Non-core RE	2007	Good Standing	Private RE Benchmark	-2,420	-1,110	n/a	n/a
Greenfield VI[3]	Pvt. Non-core RE	2011	Good Standing	Private RE Benchmark	-4,900	-3,720	n/a	n/a
Greenfield VII[3]	Pvt. Non-core RE	2013	Good Standing	Private RE Benchmark	730	660	n/a	n/a
Grandview[3]	Pvt. Non-core RE	2018	Good Standing	Private RE Benchmark	1,510	n/a	n/a	n/a
Miller Global VI[3]	Pvt. Non-core RE	2007	Good Standing	Private RE Benchmark	-1,420	-750	n/a	n/a
Miller Global VII[3]	Pvt. Non-core RE	2012	Good Standing	Private RE Benchmark	-5,960	-4,310	n/a	n/a
Stockbridge III[3]	Pvt. Non-core RE	2017	Good Standing	Private RE Benchmark	940	n/a	n/a	n/a
Walton Street V[3]	Pvt. Non-core RE	2005	Good Standing	Private RE Benchmark	-1,880	-1,640	n/a	n/a
Walton Street VI[3]	Pvt. Non-core RE	2007	Good Standing	Private RE Benchmark	-880	-550	n/a	n/a
Traditional Growth								
Northern Trust	All Cap Global	10/2020	Good Standing	MSCI ACWI IMI	n/a	n/a	n/a	n/a
GQG	Emerging Mkts.	8/2020	Good Standing	MSCI Emerging Markets	n/a	n/a	n/a	n/a
PIMCO	Emerging Mkts.	4/2007	Good Standing	MSCI Emerging Markets	-85	-148	79	87
Invesco	REITS	8/2004	Good Standing	FTSE EPRA/NAREIT ex-US Equity	-56	47	89	82
Stabilized Growth								
Bridgewater[2]	Risk Parity	3/2012	Good Standing	Bridgewater All Weather Blend	756	348	n/a	n/a
PanAgora	Risk Parity	4/2016	Good Standing	T-Bill +4%	950	438	n/a	n/a
Neuberger Berman[1]	Opp. Credit	2/2019	Good Standing	33% HY Const./33% S&P LSTA LL/ 33% JPMEMBI Glbl Div.	n/a	n/a	n/a	n/a
Stone Harbor[1]	Abs. Return	4/2008	Good Standing	3-Month Libor	315	191	n/a	n/a
BlackRock	Direct Lending	05/2020	Good Standing	Custom Credit Benchmark	n/a	n/a	n/a	n/a
Crestline[1]	Opportunistic	11/2013	Good Standing	CPI +6%	-784	-511	n/a	n/a

1 Data is lagged 1 quarter.

2 Bridgewater and Graham chose not to provide responses to the SJCERA compliance questionnaire and instead directed Meketa to a standard quarterly business update.

3 Annual Excess returns for Private Non-Core Real Estate are as of 12/31/2021, lagged 1 quarter.

Manager	Sub-Segment	Inception Date	Status	Benchmark	Ann. Excess (bps) 3 Yrs	Ann. Excess (bps) 5 Yrs	Peer Ranking 3 Yrs	Peer Ranking 5 Yrs
Performance Information through December 31, 2021								
Stabilized Growth (continued)								
Davidson Kempner[1]	Opportunistic	10/2020	Good Standing	CPI +6%	n/a	n/a	n/a	n/a
Medley[1]	Direct Lending	7/2012	Good Standing	CPI +6%	-1,830	-1,652	n/a	n/a
Mesa West III[1]	Comm. Mortgage	9/2013	Good Standing	CPI +6%	-1,556	-931	n/a	n/a
Mesa West IV[1]	Comm. Mortgage	3/2017	Good Standing	CPI +6%	-131	n/a	n/a	n/a
Oaktree[1]	Leveraged Direct	3/2018	Good Standing	MSCI ACWI +2%	548	n/a	n/a	n/a
HPS	Direct Lending	8/2020	Good Standing	CPI +6%	n/a	n/a	n/a	n/a
Raven Capital II[1]	Direct Lending	8/2014	Good Standing	CPI +6%	-1,150	-1,140	n/a	n/a
Raven Capital III[1]	Direct Lending	8/2015	Good Standing	CPI +6%	-136	-386	n/a	n/a
White Oak[1]	Direct Lending	3/2016	Good Standing	CPI +6%	-556	-335	n/a	n/a
White Oak[1]	Direct Lending	3/2020	Good Standing	CPI +6%	n/a	n/a	n/a	n/a
Principal[3]	Pvt. Core RE	10/2015	Good Standing	Private RE Benchmark	-80	-30	n/a	n/a
Prologis Targeted US[3]	Pvt. Core RE	9/2007	Good Standing	Private RE Benchmark	1,040	1,080	n/a	n/a
DWS / RREEF[3]	Pvt. Core RE	4/2016	Good Standing	Private RE Benchmark	-130	-30	n/a	n/a
Principal Protection								
Dodge & Cox	Core Fixed Income	10/1990	Good Standing	BB Aggregate Bond	122	102	20	14
DoubleLine	MBS	2/2012	Good Standing	BB Aggregate Bond	-73	20	50	6
Crisis Risk Offset[1]								
Dodge & Cox	Long Duration	2/2016	Good Standing	BB US Long Duration Treasury	-78	-53	n/a	n/a
Mount Lucas	Sys. Trend Following	1/2005	Good Standing	BTOP50 Index	-328	-301	n/a	n/a
Graham[2]	Sys. Trend Following	4/2016	Good Standing	SG Trend	-94	-156	n/a	n/a
AQR	Alt. Risk Premia	5/2016	Good Standing	5% Annual	-1,130	-967	n/a	n/a
P/E Investments	Alt. Risk Premia	7/2016	Good Standing	5% Annual	-1,536	-1,051	n/a	n/a
Lombard Odier	Alt. Risk Premia	1/2019	Good Standing	5% Annual	n/a	n/a	n/a	n/a
Other								
Northern Trust	Govt. Short Term	1/1995	Good Standing	US T-Bills	-20	-29	n/a	n/a
Parametric	Long Duration	1/2020	Good Standing	n/a	n/a	n/a	n/a	n/a

[1] Data is lagged 1 quarter.

[2] Bridgewater and Graham chose not to provide responses to the SJCERA compliance questionnaire and instead directed Meketa to a standard quarterly business update.

Manager Responses to Highlighted Questions

This section includes the verbatim text of the manager's response to any highlighted questions to provide more detail to the table above.

Almanac Custodian Reconciliation

No. The Fund relies on the audit exception to the Custody Rule by providing audited financials within 120 days.

Almanac Litigation

From time to time, Neuberger Berman and its employees are the subject of, or parties to examinations, inquiries and investigations conducted by US federal and state regulatory and other law enforcement authorities, non-US regulatory and other law enforcement authorities and self-regulatory organizations, including, but not limited to, the Securities and Exchange Commission ("SEC"), Financial Industry Regulatory Authority ("FINRA"), the National Futures Association ("NFA"), and the Municipal Securities Rulemaking Board (the "MSRB"). Neuberger Berman routinely cooperates freely with such examinations, inquiries and investigations. Neuberger Berman is also involved, from time to time, in civil legal proceedings and arbitration proceedings concerning matters arising in connection with the conduct of its business. Neuberger Berman believes that none of these matters either individually or taken together, will have a material adverse impact on the firm's business. All material proceedings in which there has been a final determination against any of Neuberger Berman's US registered investment advisers or its broker-dealer are disclosed in such affiliate's Form ADV Part 1 (if a registered investment adviser), Form BD (if a registered broker-dealer) or NFA Basic (if a CFTC registrant), each of which is publicly available through the SEC at http://www.adviserinfo.sec.gov, FINRA at http://www.finra.org, or the NFA at www.nfa.futures.org, respectively.

With regard to current litigation related specifically to Almanac Realty Investors, on September 14, 2020, an action was filed in Wisconsin state court (the "Wisconsin Action") related to Vanta Commercial Properties, LLC, formerly T. Wall Properties L.L.C. ("Vanta"), a former portfolio investment (exited in November 2017) of Almanac Realty Securities V, L.P. ("ARS V"), a private fund managed by NBAA, the successor in interest to Almanac Realty Investors, LLC ("ARI"). The plaintiffs in that action (the "Wisconsin Plaintiffs") allege nine "Counts"—all of which arise out of or relate to operating agreement of Vanta – and name ARS V, ARI and other entities and individuals associated with Almanac as defendants. The principal allegations are that the defendants engaged in a "Scheme," involving Vanta's officers and directors, to liquidate Vanta's real estate holdings without the approval of the board of directors required under the operating agreement. Defendants believe the lawsuit is without merit and are vigorously defending the action, including by bringing suit in Delaware Court of Chancery (the "Delaware Action") to enjoin the Wisconsin Plaintiffs from pursuing the Wisconsin Action. The Wisconsin Plaintiffs agreed to a voluntary stay of the Wisconsin Action pending the resolution of the Delaware Action, which the Wisconsin court entered on December 2, 2020.

ARS V (among others) filed the Delaware Action on October 30, 2020, seeking to enjoin the Wisconsin Plaintiffs from pursuing the Wisconsin Action in its entirety in view of an exclusive and mandatory forum-selection provision contained in the Vanta operating agreement. On April 22, 2021 via letter opinion, the Court of Chancery granted the motion of ARS V (and the other Delaware plaintiffs) to permanently enjoin the Wisconsin Plaintiffs from pursuing eight of the nine Counts in the Wisconsin Action; the Court

Manager Responses to Highlighted Questions (continued)

later denied the motion as to the one remaining Count via letter opinion on May 19, 2021, and entered a final order as to both letter opinions on May 26, 2021 (the "Final Order"). Following the issuance of the Final Order, the defendants in the Delaware Action (i.e., Wisconsin Plaintiffs) appealed the Final Order to the Delaware Supreme Court. On December 15, 2021, the Delaware Supreme Court affirmed the Final Order in a summary order.

On December 30, 2021, the Wisconsin Plaintiffs filed a motion seeking to lift the stay of the Wisconsin Action and to file an amended complaint that purports to assert the one non-enjoined Count following affirmance of the Final Order in the Delaware Action. On January 5, 2022, the Wisconsin Court set a hearing on Plaintiff's motion for February 18, 2022; Plaintiff's motion remains pending. On January 12, 2022, the Wisconsin Court set a scheduling conference for February 4, 2022.

Angelo Gordon Custodian Reconciliation

N/A – this Fund does not have a custodian.

Angelo Gordon Litigation

Please see attached summary of current litigation. We do not believe the attached lawsuits present material liability for the Firm of any of its funds or accounts.

Summary of Angelo, Gordon Related Litigation

As of January 18, 2022

As of the date above, Angelo, Gordon & Co., L.P. (the "firm") is a named party in the following pending proceedings:

In 2012, the firm and a firm affiliate were named as defendants in a New York lawsuit regarding the 2004 acquisition of Culligan Soft Water Company ("Culligan") by the private equity firm Clayton Dubilier & Rice LLC ("CDR"). The firm and its affiliate were named as defendants in connection with their 2010 purchase of portions of Culligan's debt. This is a derivative action by Culligan's minority shareholders to recover the funds which they allege CDR removed from the Company through the issuance of illegal dividends and payments in management and consulting fees, director fees and other compensation to itself and its affiliates which were paid for in part by the refinancing of Culligan's debt.

In 2019, a former employee of AG filed suit against the firm in Illinois state court alleging negligent supervision and breach of contract. In 2020, the court dismissed the case for want of prosecution; however, the court subsequently reinstated the case.

As of the date above, funds or entities managed by the firm are named parties the following pending litigation:

In 2017, certain of the firm's affiliated funds, along with other noteholders and deal parties, filed a motion to intervene in a Delaware matter in which plaintiff and the purported owner of the trusts entered into a consent judgment that would subject the trusts to various fines, penalties and oversight and permit the purported owners to obtain more control over the assets and cashflow of the trusts.

In 2020, an AG entity filed a suit against the defendants seeking the return of deposits in connection with the defendants' default on several purchase and sale agreements.

Manager Responses to Highlighted Questions (continued)

In 2020, certain AG entities were named as defendants in a Massachusetts personal injury lawsuit relating to an incident at a real estate portfolio property in Newton, Massachusetts.

In 2011, certain of the firm's affiliated funds, along with other third-party holders, were named in litigation relating to the return of interest payments on bonds.

In 2021, an AG entity was named as a defendant in a New York lawsuit seeking reimbursement of certain due diligence costs and management fees.

In 2021, an AG entity was named as defendant in an interpleader action brought by the Trustee of a CDO. Trustee initiated the interpleader action for the purpose of adjudicating the rights of the interpleader defendants, which include certain of the firm's funds.

In 2022, certain AG entities were named as defendants in a California personal injury lawsuit relating to an incident at a real estate portfolio property in Chula Vista, California.

The above lawsuits do not present material liability for the firm or any of its funds or accounts.

Angelo Gordon Investment Personnel Change

In October 2021 a managing director on the US real estate team left the firm to pursue other opportunities.

In October 2021 an analyst joined the US Real Estate team in the LA office.

Angelo Gordon Management Level Changes

No.

Effective December 31, 2021 Kirk Wickman retired from Angelo Gordon. His retirement completes the firm leadership transition which was announced in September 2020 and took effect January 1, 2021. Kirk has no plans to join another firm. He will remain a substantial investor in Angelo Gordon and will continue to sit on the Partnership Advisory Board.

AQR Investment Personnel Changes

Within our Macro and Multi-Strategy investment team, which supports the strategy, there have been no senior-level (Managing Director and above) investment professional additions and two departures over the past quarter ending December 31, 2021.

*Please note that our Q4 2021 headcount is reported using our historical MMS and FI categorizations. As announced in late 2021, we are in the process of closing our long-only fixed income business and as such, continue to retain some of the FI team to ensure an orderly wind down of our long-only fixed income and credit portfolios. Following the closure of this business, starting Q1 2022 we will update our team methodology to more accurately reflect our research organization and the underlying teams. The Macro and Multi-Strategy (MMS) investment team will be re-named the Macro Strategies Group, managing our managed futures, risk parity, multi-strategy and macro products. It is important to note that there are no changes to how the investment teams are operating.

Manager Responses to Highlighted Questions (continued)

AQR Management Level Changes

We recently announced leadership changes that we believe will result in greater efficiency and focus, and also recognize a deep bench of senior leaders and outstanding talent at the firm. We believe these changes will make us a more effective leadership team and AQR will be better positioned going into 2022.

- Principals Yao Hua Ooi and Jordan Brooks named as co-heads of the Macro Strategies Group (previously the Macro and Multi-Strategy investment team); managing our managed futures, risk parity, multi-strategy and macro products.
- Amir Becher named Chief Risk Officer, overseeing market, model and liquidity risk.
- Jeff Bolduc named Head of Portfolio Implementation.
- Ian Roche named Head of Quant Research Development (QRD), moving the dedicated research engineering team formally into our research organization. Steve Mock is now sole Chief Technology Officer.

The following six Principals have departed effective December 31, 2021:

- Scott Richardson, Principal, Portfolio Management and Research
- Ari Levine, Principal, Portfolio Management and Research
- Michael Katz, Principal, Portfolio Implementation
- Michael Patchen, Principal, Chief Risk Officer
- Chris Palazzolo, Principal, Business Development
- Ronen Israel, Principal, Portfolio Management and Research

AQR Material Business Changes

Please refer to the response above.

Berkeley Investment Personnel Changes

Bahaar Sidhu has been promoted from Chief Financial Officer to a dual role of Chief Financial Officer and Chief Operating Officer. She joined Berkeley Partners in 2017 and is responsible for oversight of fund management, financial planning & analysis, reporting, compliance, property management, treasury, human capital, technology, corporate functions and firm strategy.

BlackRock Litigation

Yes. As a global investment manager, BlackRock, Inc., and its various subsidiaries including BlackRock Financial Management, Inc. ("BFM") may be subject to regulatory oversight in numerous jurisdictions including examinations and various requests for information. BFM's regulators routinely provide it with comment letters at the conclusion of these examinations in which they request that BFM correct or modify certain of its practices. In all such instances, BFM has addressed, or is working to address, these requests to ensure that it continues to operate in compliance with applicable laws, statutes and regulations.

Manager Responses to Highlighted Questions (continued)

BFM also receives subpoenas or requests for information in connection with regulatory inquiries and/or investigations by its various regulators, some of which are ongoing. None of these matters has had or is expected to have any adverse impact on BFM's ability to manage its clients' assets. Please refer to BlackRock's Form ADV and SEC disclosures for additional information on regulatory matters concerning BFM or BlackRock as a whole.

BlackRock, Inc. and its various subsidiaries, including BFM, also have been subject to certain business litigation that has arisen in the normal course of their business. Our litigation has included a variety of claims, some of which are investment-related. None of BlackRock's prior litigation has had, and none of its pending litigation currently is expected to have, an adverse impact on BlackRock's ability to manage client accounts.

BlackRock Investment Personnel Changes

Howard Levkowitz, former managing partner of Tennebaum Capital Partners and a managing director of the U.S. Private Capital Team has retired. Raj Vig, Phil Tseng (Co-Heads of USPC) and Lee Landrum (leads USPC client business) and the board of directors of TCPC remain in leadership positions. Please find attached client notice for more information.

Crestline Custodian Reconciliation

The investment is not held at a custodian. SJCERA's investment is administered and reconciled by the Fund's independent administrator: SEI Global Services, Inc.

Crestline Investment Personnel Changes

- Will Smith was hired on 10/20/2021 as an Associate for the Investment team and is responsible for underwriting and asset management.
- Alex Rein was hired on 11/15/2021 as an Analyst for the investment team and is responsible for underwriting and asset management.
- Zach Hood was hired on 11/15/2021 as an Analyst for the investment team and is responsible for underwriting and asset management.
- Chad Filmore was hired on 12/1/2021 as an Analyst for the Investment team and is responsible for valuation and asset management.
- Abby Kizer, Associate responsible for underwriting and asset management departed the investment team on 12/1/2021. Her responsibilities were assumed by Chad Filmore, Analyst.

Davidson Kempner Investment Personnel Changes

DKP had one MD retire at end of year, through early retirement program. Aillen Watson, trader on distressed team. Partner promotion year and one promotion occurred, an MD from Convertible Arbitrage, Zachary Gozali, promoted to Partner. Also had 9 associate promotions to Principal.

Manager Responses to Highlighted Questions (continued)

Dodge & Cox Investment Personnel Changes

Turnover

Dodge & Cox has experienced an extremely low level of personnel turnover throughout our history. There were three additions to the investment team this quarter, and no departures. Please see the following for retirements from our investment team:

- C. Bryan Cameron, Former Director of Research retired in 4Q 2021 with 38 years of experience
- Lynn A. Poole, Client Portfolio Manager retired in 4Q 2021 with 34 years of experience
- Daniel F. Chapey, Equity Trader retired in 4Q 2021 with 17 years of experience

Please see Exhibit A – Experienced, Integrated, and Stable Investment Team and Exhibit B – Employee Update – Investment Professionals for more information.

Dodge & Cox Management Level Changes

On December 31, 2021, Bryan Cameron, former Director of Research, retired after 38 years at the firm. Bryan's numerous contributions to Dodge & Cox include helping us globalize our research coverage, strengthen our value-oriented investment approach, train and mentor our investment team, and make strategic firm-related decisions. Steven Voorhis, Vice President and former Associate Director of Research, assumed the role of Director of Research on April 1, 2021. Please see Exhibit C – Announcement for additional details and upcoming leadership changes.

DoubleLine Compliance with Manager Guidelines

DoubleLine does not have its own guidelines for the account, but DoubleLine does impose broader portfolio compliance restrictions on all of its accounts based on situations such as information wall restricted lists or conflicts of interest that can arise or apply.

DoubleLine Investment Personnel Changes

During the fourth quarter of 2021, DoubleLine hired a Commercial MBS analyst and experienced the departure of a Commercial MBS analyst.

DoubleLine Compliance with Internal Risk Procedures

DoubleLine does not maintain internal 'risk management' policies and procedures. DoubleLine does maintain a number of policies and procedures as it relates to its' business as an investment company and a registered investment advisor. To that extent, DoubleLine monitors adherence to these policies and procedures at various intervals throughout the year on an as needed basis. Any exceptions to these policies and procedures are addressed, remediated and mitigated as soon as practicable. To that extent DoubleLine does not believe there are any exceptions to note as an ongoing concern.

DWS / RREEF Custodian Reconciliation

N/A. The Fund does not provide custodial services. Shares of the fund are uncertificated.

Manager Responses to Highlighted Questions (continued)

GQG Material Business Changes

During the most recent quarter there have been no changes to GQG's business, however, with respect to the firm's ownership, in October of 2021, all ownership interests of GQG Partners LLC were transferred to GQG Partners Inc., a Delaware corporation that was listed on the Australian Securities Exchange (ASX) on October 28, 2021. Approximately 20.1% of interests in GQG Partners Inc. were publicly offered in Australia in the form of CHESS Depositary Interests over shares of common stock, with Rajiv Jain maintaining a majority stake.

Graham Management Level Changes

GCM experienced changes to key personnel during the Reference Period.

James Medeiros, who previously headed the Investor Relations department for 12 years and had been Graham's CEO since 2019, left Graham at the end of 2021 to pursue other opportunities. Brian Douglas, who had been Graham's COO since 2019 and with the firm for more than 17 years in a variety of leadership roles, became Graham's new CEO effective October 8, 2021.

HPS Litigation

Yes, however, to our knowledge, there is not any litigation or governmental regulatory proceedings involving the Firm that HPS believes will have a material adverse effect upon the Firm.

HPS Investment Personnel Changes

There have been no hires on the dedicated European Asset Value team during the fourth quarter of 2021 at the level of Vice President and above. There has been one departure of a Vice President from the dedicated European Asset Value team during the fourth quarter of 2021.

Invesco Litigation

From time to time, Invesco Advisers, Inc., which has and maintains robust compliance programs and practices designed to comply with Rule 206(4)-7 under the Investment Advisers Act of 1940 and Rule 38a-1 under the Investment Company Act of 1940, may receive formal or informal requests from governmental or regulatory bodies about its activities. No requests currently pending are expected to result in any matter that could have a material adverse impact on its business or operations.

Invesco Investment Personnel Changes

In November 2021, Joe Rodriguez, co-CIO of the Listed Real Assets business, expressed his intent to retire from the firm effective, August 1, 2022, after 38 years in the industry, including 31 years with Invesco. Senior Portfolio Manager and co-CIO, Darin Turner will be named CIO of the Listed Real Assets business effective August 1, 2022 Joe will remain as co-CIO and he will focus on ensuring a smooth transition of full leadership responsibilities to Darin before departing the firm.

On January 6, 2022, Chip Mckinley joined the investment team as a senior portfolio manager.

Manager Responses to Highlighted Questions (continued)

Medley Litigation

The SEC regulatory matter disclosed in the certification for Q1 2021 remains open and the SEC's investigative work continues. MDLY and Medley LLC have responded to additional information requests from the SEC.

Medley Investment Personnel Changes

Yes. During Q3 one managing director and one associate from the investment team departed from Medley. The managing director focused on underwriting new investment opportunities and the associate focused on the management of existing investments. Their responsibilities have been transferred to other employees.

Medley Material Business Changes

Yes. As previously discussed with Meketa/SJCERA on the phone during the first quarter and in our last quarter's response, we would reference the Medley LLC Chapter 11 bankruptcy filing. The bankruptcy plan and wind-down was approved by the court and became effective on October 18, 2021.

Mesa West Management Level Changes

In October 2021, Danielle Duenas, Originations – Vice President, departed the firm and her role responsibilities are being handled by the in-place Originations team. In November 2021, David Myers, Asset Management – Vice President, departed the firm and his role responsibilities are being handled the in-place Asset Management team. The Asset Management team also hired a new Analyst to support the Asset Management team. Typical turnover has occurred at the analyst and administrative levels.

Morgan Creek Custodian Reconciliation

N/A

Northern Trust Litigation

As one of the world's largest asset managers, NTI is occasionally named as a defendant in asset management-related litigation. NTI is not currently party to any litigation that has had (or will have) a material effect on its ability to perform services for its clients. At this time, there are no significant pending cases.

Furthermore, NTI occasionally receives requests for information from government and regulatory agencies. NTI frequently does not know if such requests are related to a formal government or regulatory investigations or, assuming an investigation is underway, whether NTI is a target of such investigation or simply thought to be in possession of information pertinent to such investigation. NTI is not currently involved in any government or regulatory investigation or proceeding that would have a material impact on its ability to provide advisory services to its clients.

Northern Trust Management Level Changes

Yes. There was one departure from the Global Index Equity Team. Joe Park (Portfolio Manager) left the team due to an internal transfer during the 4th quarter.

Additionally, Mark Underhill (Portfolio Manager) passed away in December 2021.

Manager Responses to Highlighted Questions (continued)

All Northern Trust Asset Management's passive mandates are managed using an integrated team-based approach whereby investment decisions are made in a systematic manner and are not dependent on a specific individual. Each portfolio manager has the combined role of portfolio management and research, and serves as either the dedicated lead or back-up portfolio manager for an account. Each portfolio manager's primary responsibility is to ensure that the portfolio is managed strictly in accordance with the objectives and guidelines for the portfolio.

Our index portfolio managers do not have an assigned number of accounts or clients. Assignments are periodically rotated to ensure that all members of the team are familiar with each portfolio and that the portfolio is managed strictly in accordance with its objectives and guidelines.

Oaktree Custodian Reconciliation

Not applicable.

Oaktree Litigation

As a leading global investment manager, Oaktree and its affiliates, investment professionals, and portfolio companies are routinely involved in litigation in the ordinary course of their business and investing activities. In some cases, Oaktree or its officers are simply named as additional defendants in litigation arising out of the business activities of portfolio companies, such as landlord/tenant disputes and personal injury claims brought against entities owned by Oaktree's real estate funds. Other claims involve Oaktree and its professionals more directly, such as bankruptcy or restructuring disputes arising out of the investment activities of Oaktree's distressed debt and control investing funds. In addition, Oaktree is subject to the authority of a number of U.S. and non-U.S. regulators, including the U.S. Securities and Exchange Commission ("SEC") and the Financial Industry Regulatory Authority ("FINRA"), and those authorities regularly conduct examinations of Oaktree and make other inquiries. No litigation or regulatory action to date has had a material adverse financial impact upon Oaktree or any of the funds it manages and Oaktree is not aware of any pending litigation or regulatory enforcement action that might reasonably be expected to have such an effect.

PanAgora Management Level Changes

-As previously communicated, Mike Turpin, PanAgora's Chief Operating Officer (COO), announced plans to retire after nearly 35 years with the firm. Jason Ketchen, Managing Director, General Counsel, assumed Mike's responsibilities, and worked together in transition until Mike's departure at the end of 2021. As COO, Jason continues to oversee the Compliance and Legal teams in addition to Operations, Information Technology, and Administration groups.

Mike Anderson, Co-Head of Distribution, also announced his plans to retire at the end of October 2021 after 15 years with the organization. Jesse Huang, Co-Head of Distribution, now oversees our global distribution team in a singular capacity.

Parametric Litigation

Parametric is part of Morgan Stanley Investment Management, the asset management division of Morgan Stanley. The distinct investment brands of Eaton Vance Management, Parametric, Atlanta

Manager Responses to Highlighted Questions (continued)

Capital and Calvert, have from time to time, been plaintiffs or defendants in various lawsuits and arbitrations that are incidental to their businesses and are or were handled in the ordinary course of business. From time to time, Parametric and its affiliates are subject to periodic audits, regulatory and governmental examinations, information-gathering requests, investigations, and proceedings both formal and informal which have the potential to result in findings, conclusions, recommendations or various forms of sanction. Parametric believes that these actions have not and will not have a material adverse effect on its consolidated financial condition, liquidity, results of operations or the ability to manage client assets.

PIMCO Litigation

During the period, PIMCO has not been the subject of any lawsuit or regulatory proceeding that could reasonably be expected to have had a material adverse effect on PIMCO's ability to provide investment management services.

Notwithstanding the foregoing, PIMCO notes the following litigation matters:

- On April 18, 2018, PIMCO and PIMCO Investments LLC were named in a complaint filed in the US Virgin Islands. In addition to PIMCO and PI, the complaint names certain BlackRock entities as defendants (together, the "Defendants"). The complaint alleges, among other things, that the Defendants engaged in a coordinated effort designed to damage the business operations of Ocwen, the mortgage servicing company, which had certain business relationships with Altisource Asset Management Corporation, both companies in which the plaintiffs hold equity interests. On August 8, 2018, the plaintiffs filed an amended complaint. The substance of the allegations in the amended complaint are the same as the original complaint. PIMCO believes the claims are without merit and intends to vigorously defend the matter.
- On September 24, 2019, a lawsuit was filed against PIMCO, PIMCO Investments LLC and two PIMCO employees in Orange County Superior Court by a current PIMCO employee. The lawsuit alleges, among other things, discrimination and unequal pay based on gender, race, and disability status. The complaint also alleges fraud in connection with a flexible work request and other employment opportunities. The allegations in the complaint are not accurate and PIMCO will demonstrate that she was treated and compensated fairly.
- On December 17, 2019, PIMCO was named as a defendant in a lawsuit filed in Louisiana state court. The lawsuit was filed by creditors to a Midwest-based agriculture company, the majority equity holders of which are two PIMCO-managed private funds. We believe that the claims asserted are without merit and expect the case to be defended vigorously.
- On August 3, 2020, three PIMCO employees, who served as directors of a Florida-headquartered company, were named in a complaint filed in Florida state court by the company's prior controlling equity owner. The complaint was amended on August 31, 2020 to also name PIMCO as a defendant. The complaint alleges claims for tortious interference of contract, aiding and abetting breach of fiduciary duty, and defamation, related to a

Manager Responses to Highlighted Questions (continued)

Stockholders Agreement, to which the Plaintiff and a subsidiary of a PIMCO-managed private fund are parties. PIMCO is not a party to the Stockholders Agreement and believes the claims are without merit and intends to defend the case vigorously.

- On November 18, 2020, a lawsuit was filed against PIMCO and several PIMCO employees in Orange County Superior Court by two current PIMCO employees. The lawsuit alleges, among other things, discrimination and unequal pay based on gender and disability status, and retaliation. On February 18, 2021, an amended complaint was filed, adding three additional plaintiffs, including one current employee and two former employees. The allegations in the complaint are not accurate and PIMCO will demonstrate that the employees were treated and compensated fairly.
- On September 22, 2021, PIMCO was named as a defendant in an amended complaint filed in the Southern District of New York. Wells Fargo, as trustee, filed the action related to the sale of defaulted securities by a CDO. Certain PIMCO-managed funds own the CDO's senior notes and, as such, PIMCO – in its capacity as investment manager – has been named as a defendant in the interpleader action to represent the interests of the senior noteholders. The complaint contains no allegations of wrongdoing by PIMCO or any PIMCO-managed investment vehicle.

With respect to regulatory matters, as a registered investment adviser, PIMCO is in frequent contact with its regulators. Please note however, that as a general practice, PIMCO does not comment on pending regulatory matters.

PIMCO Management Level Changes

Gained - PIMCO Investment Professionals

Date	Name	Title	Department	Office
Dec-21	Mathieu Clavel	Managing Director	Portfolio Management	London
Nov-21	Ayman Hindy	Managing Director	Portfolio Management	Newport Beach
Nov-21	Cecile Ferrie-Davies	Executive Vice President	Portfolio Management	London

Lost - PIMCO Investment Professionals

Date	Name	Title	Department	Years at PIMCO	Reason	Office
Jan-22	Anmol Sinha	Executive Vice President	Product Strategy Group	7	Other*	Newport Beach
Dec-21	Christian Wild	Executive Vice President	Analysts	21	Other*	Munich
Dec-21	Mohsen Fahmi	Managing Director	Portfolio Management	7	Other*	Tokyo
Nov-21	Anton Dombrovsky	Executive Vice President	Product Strategy Group	18	Other*	Munich

**PIMCO deems any reason for departure outside of a transfer to a PIMCO affiliate as confidential information.*

Manager Responses to Highlighted Questions (continued)

Principal Custodian Reconciliation

Not applicable. The Principal US Property Account is a commingled account. Attached is the December 31st monthly statement. We do not receive reports from their custodian to reconcile.

Principal Litigation

Given the size and scope of our operations we are occasionally involved in litigation, both as a defendant and as a plaintiff. However, management does not believe that any pending litigation will have a material adverse effect on our business, financial position or net income. Please see our public filings for details. Also, regulatory bodies, such as the SEC, the Financial Industry Regulatory Authority, the Department of Labor and other regulatory bodies regularly make routine inquiries and conduct examinations or investigations concerning our compliance with, among other things, securities laws, ERISA and laws governing the activities of investment advisors. While the outcome of any regulatory matter cannot be predicted, management does not believe that any regulatory matter will have a material adverse effect on our business, financial position or our ability to fully perform our duties to clients.

Principal Management Level Changes

Principal Real Estate Investors has experienced limited turnover of its senior management and staff.

Prologis Registered Investment Advisor Status

No. Investment advisors are required to register with the SEC as a Registered Investment Advisor ("RIA") if they are in the business of providing advice or issuing reports or analyses regarding securities. The SEC has stated that direct interests in real estate are not securities. Prologis' vehicles invest in real estate directly. For example, USLF does not invest in the stock of other real estate companies or in other public or private funds that own real estate – USLF invests in real estate directly. Because USLF invests in real estate directly and because the SEC has stated that direct real estate investments are not securities, we have with the advice of external legal counsel determined that Prologis is not required to register as an RIA.

The ultimate parent company of Prologis is Prologis, Inc. which is a publicly traded company on the NYSE. As a publicly traded company, Prologis is subject to SEC reporting and the corporate governance and legal requirements applicable to other US public companies. In addition, the general partner of USLF is Prologis, L.P., which is the operating subsidiary through which Prologis Inc. carries out the vast majority of its operations. Prologis, L.P. is large and well-capitalized.

Prologis Custodian Reconciliation

Not applicable.

Prologis Litigation

Prologis, Inc. is a publicly traded company with global operations. In the normal course of business, from time to time, Prologis may be involved in legal actions and environmental matters relating to the ownership and operations of its properties. Management does not expect that the liabilities, if any, that

Manager Responses to Highlighted Questions (continued)

may ultimately result from such legal actions would have a material adverse effect on the financial position, results of operations or cash flows of Prologis. Except as has been previously disclosed in public filings, as of December 31, 2021, there were no material pending legal proceedings to which Prologis is a party or of which any of its properties is the subject, the determination of which Prologis anticipates would have a material adverse effect upon its financial condition and results of operations.

Prologis Investment Personnel Changes

There have been no significant personnel departures in the Prologis Fund management team during Q4 2021. As announced in September, Karsten Kallevig , previously of Norges Bank Investment Management (NBIM), assumed the role of managing director, Global Strategic Capital. Kallevig reports to Prologis chairman and CEO Hamid Moghadam. Previously, the Strategic Capital team reported to Gary Anderson, the company's chief operating officer. As Anderson's areas of responsibility demand more time, such as the company's fast growing Essentials business (which provides customers with access to products and services by taking advantage of Prologis' scale), Prologis created this role to focus exclusively on growing and strengthening the Strategic Capital business.

Stellex Investment Personnel Changes

Carl Barcoma, Principal, departed from the firm on 12/31/2021. There was no impact to the portfolio.

Stone Harbor Material Business Changes

The previously announced acquisition of Stone Harbor by Virtus Investment Partners, Inc. (NASDAQ: VRTS), a publicly traded multi-boutique investment management company, closed on January 1, 2022. Please see the attached letter and press release for details.

Walton Street Custodian Reconciliation

SJCERA is invested in commingled funds and not a separate account. As the Funds are invested solely in real estate and real estate related investments, reconciliation to a custodian is not applicable.

White Oak Litigation

There is no present or pending regulatory action or litigation brought by or against the firm or any of its principals or investment professionals, other than routine regulatory examinations and legal proceedings in connection with the normal course of originating and managing a portfolio of direct loans.

Regarding the client arbitration demand that claimed, among other things, that White Oak violated its Most Favored Nation (MFN) covenant, the arbitrator issued her final award on August 4, 2021 that found, among other things, that White Oak had complied with its MFN covenant. On October 8, 2021, the investor filed a petition to enforce their interpretation of the arbitrator's final decision. On October 20, 2021, White Oak filed an opposition to the petition filed by the client to confirm the final award and moved to vacate the arbitration award in part. White Oak's litigation counsel and the law firm that represented White Oak in the arbitration proceeding believe that White Oak has a strong argument in support of vacating the final award in part and in opposing the client's petition to enforce the final award.

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SJCERA Quarterly Manager Review Schedule

Manager	Strategic Class	Sub-Segment	Under Review	Last Rvw	Next Rvw	Most Recent Visit to Meketa/SJCERA	Mgr. Meeting with SJCERA	Mgr. Location
Angelo Gordon	Aggressive Growth	Value Added Real Estate						New York, NY
Almanac Reality VI	Aggressive Growth	Value Added Real Estate						New York, NY
AQR	Diversifying Strategies	Alternative Risk Premia	Apr-19	Jul-19		4/21/2020		Stamford, CT
BlackRock	Stabilized Growth, PC	Direct Lending				3/18/2019*		San Francisco, CA
BlackRock	Aggressive Growth	Infrastructure				3/18/2019*	8/22/2019	New York, NY
Berkeley Partners	Aggressive Growth	Private Real Estate				10/16/2020	8/14/2020	San Francisco, CA
Bridgewater (AW)	Stabilized Growth, RP	Risk Parity				7/29/2020	10/6/2017	Westport, CT
Crestline	Stabilized Growth, PC	Opportunistic				7/22/2020	6/7/2019	Fort Worth, TX
Davidson Kempner	Stabilized Growth, PC	Opportunistic		Oct-21		8/11/2020		New York, NY
Dodge & Cox	Diversifying Strategies, PP	Core Fixed Income		Oct-21		6/3/2020		San Francisco, CA
Dodge & Cox	Diversifying Strategies, CRO	Long Duration				6/3/2020		San Francisco, CA
DoubleLine	Diversifying Strategies, PP	MBS		Mar-21		11/29/2018*		Los Angeles, CA
GQG	Traditional Growth	Emerging Markets				10/16/2020		San Francisco, CA
Graham	Diversifying Strategies, CRO	Systematic Trend Following				7/23/2020		Rowayton, CT
Greenfield/Grandview V, VI, VII	Aggressive Growth	Opportunistic Real Estate		Oct-21				Greenwich, CT
HPS EU	Stabilized Growth, PC	Direct Lending		Mar-20		8/3/2017*		New York, NY
Invesco	Traditional Growth	REITs, Core US		Oct-21		5/6/2020*		Atlanta, GA
Lombard	Diversifying Strategies	Alternative Risk Premia				10/19/2020		New York, NY
Medley	Stabilized Growth, PC	Direct Lending		Jul-21	Mar-22	3/12/2015		San Francisco/New York
Mesa West III & IV	Stabilized Growth, PC	Comm. Mortgage		Oct-21		8/22/2019	8/22/2019	Los Angeles, CA
Miller Global VI, VII	Aggressive Growth	Opportunistic Real Estate						Denver, CO
Morgan Creek III, V, & VI	Aggressive Growth	Multi-Strat FOF		Oct-21		8/22/2019	8/22/2019	Chapel Hill, NC
Mount Lucas	Diversifying Strategies, CRO	Systematic Trend Following		May-18		3/17/2020	2/12/2021	Newton, PA
Northern Trust	Traditional Growth	MSCI World IMI						Chicago, IL
Northern Trust	Cash	Collective Govt. Short Term						Chicago, IL
Neuberger Berman	Stabilized Growth, LC	Global Credit		Oct-21		10/20/2020		Chicago, IL
Oaktree	Stabilized Growth, PC	Leveraged Direct Lending				11/6/2020		New York, NY
Ocean Avenue	Aggressive Growth	PE Buyout FOF		Oct-21				Santa Monica, CA
P/E Diversified	Diversifying Strategies	Alternative Risk Premia		Oct-21		2/17/2020		Boston, MA
PanAgora	Stabilized Growth, RP	Risk Parity		Mar-18		4/7/2020*		Boston, MA
Parametric	Cash	Cash Overlay				10/27/2020*		Minneapolis, MN
PIMCO (RAE)	Traditional Growth	Emerging Markets				7/23/2020*	8/22/2019	Newport Beach, CA
Principal US	Stabilized Growth, RE	Core Real Estate						Des Moines, IA
Prologis	Stabilized Growth, RE	Core Real Estate						San Francisco, CA
Raven II & III	Stabilized Growth, PC	Direct Lending		Apr-18			2/23/2018	New York, NY
RREEF America II	Stabilized Growth, RE	Core Real Estate						Kansas City, MO
Stellex Capital	Aggressive Growth	Private Equity		Oct-21			5/8/2020	New York, NY
Stockbridge RE III	Aggressive Growth	Value Added Real Estate						San Francisco, CA
Stone Harbor	Stabilized Growth, LC	Absolute Return		Oct-21		9/29/2020*	2/3/2021	New York, NY
Walton Street	Aggressive Growth	Opportunistic Real Estate						Chicago, IL
White Oak Summit Peer	Stabilized Growth, PC	Direct Lending				7/24/2020		San Francisco, CA
White Oak Yield Spectrum	Stabilized Growth, PC	Direct Lending		Feb-19		7/24/2020	6/7/2019	San Francisco, CA

**General Meketa Review*   LC = Liquid Credit; PC = Private Credit; PP = Principal Protection; CRO = Crisis Risk Offset; RP = Risk Parity;

Managers Approved - Waiting to be funded

Terminated Managers

Terminated Managers			Date Terminated	
KBI	Global Equity	Global Equity -Terminated	2016	Dublin, Ireland
Bridgewater	Risk Parity	Real Assets - Terminated	2016	Westport, CT
Parametric	Risk Parity	Risk Parity - Terminated	2016	Minneapolis, MN
Legato	Global Equity	Small Cap Growth -Terminated	2017	San Francisco, CA
Marinus	Credit	Credit HF - Terminated	2018	Westport, CT
Bridgewater	Crisis Risk Offset	Pure Alpha - Terminated	2019	Westport, CT
Stone Harbor	Credit	Bank Loans - Temrinated	2019	New York, NY
Prima	Principal Protection	Commercial MBS - Terminated	2020	Scarsdale, NY
BlackRock x4	Global Equity	US Equity x2; Non-US Developed; Non-US REIT -Terminated	2020	San Francisco, CA
Capital Prospects	Global Equity	Global Equity -Terminated	2020	Stamford, CT
PIMCO (RAFI)	Global Equity	Global Equity -Terminated	2020	Newport Beach, CA

San Joaquin County Employees' Retirement Association (SJCERA)

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

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
TOTAL PLAN[1]			$ 3,972,061,429	100.0%	100.0%	-2.3	-0.4	-2.3	11.3	9.7	8.1	7.9	Apr-90
Policy Benchmark[4]						*-1.6*	*-0.7*	*-1.6*	*9.9*	*10.3*	*8.8*	*7.8*	
Difference:						-0.7	0.3	-0.7	1.4	-0.6	-0.7	0.1	
75/25 Portfolio[5]						*-4.2*	*-3.2*	*-4.2*	*8.6*	*13.4*	*10.8*	*7.6*	
Difference:			.			1.9	2.8	1.9	2.7	-3.7	-2.7	0.3	
Broad Growth			$ 2,978,336,246	75.0%	75.0%	-3.0	-0.5	-3.0	14.4	11.4	9.8	8.6	Jan-95
Aggressive Growth Lag[2]			$ 312,364,410	7.9%	10.0%	8.2	8.2	25.3	39.4	16.7	15.3	-3.2	Feb-05
MSCI ACWI +2%Lag						*1.3*	*3.2*	*13.4*	*22.8*	*13.1*	*11.4*	*0.0*	
Difference:						6.9	5.0	11.9	16.6	3.6	3.9	-3.2	
BlackRock Global Energy&Power Lag[3]	*$50,000*	*Global Infrastructure*	$ 22,459,441	0.6%		3.4	3.4	6.7	8.0	--	--	9.9	Jul-19
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*--*	*--*	*19.2*	
Difference:						7.3	3.9	-6.4	-22.5	--	--	-9.3	
Ocean Avenue II Lag[3]	*$40,000*	*PE Buyout FOF*	$ 38,704,604	1.0%		10.6	10.6	47.7	84.6	33.2	31.8	17.4	May-13
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*15.4*	*12.8*	*11.2*	
Difference:						14.5	11.1	34.6	54.1	17.8	19.0	6.2	
Ocean Avenue III Lag[3]	*$50,000*	*PE Buyout FOF*	$ 48,841,899	1.2%		16.4	16.4	39.6	56.0	28.5	29.6	25.3	Apr-16
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*15.4*	*12.8*	*12.4*	
Difference:						20.3	16.9	26.5	25.5	13.1	16.9	12.9	
Ocean Avenue IV Lag[3]	*$50,000*	*PE Buyout*	$ 40,893,083	1.0%		3.6	3.6	17.5	42.1	--	--	33.0	Dec-19
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*--*	*--*	*21.9*	
Difference:						7.5	4.1	4.4	11.6	--	--	11.1	
Morgan Creek III Lag[3]	*$10,000*	*Multi-Strat FOF*	$ 6,571,365	0.2%		-13.5	-13.5	-11.3	-4.0	-10.4	-0.3	-3.2	Feb-15
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*15.4*	*12.8*	*11.8*	
Difference:						-9.6	-13.0	-24.4	-34.5	-25.8	-13.1	-15.0	
Morgan Creek V Lag[3]	*$12,000*	*Multi-Strat FOF*	$ 8,753,506	0.2%		8.5	8.5	12.2	26.8	15.1	13.6	14.2	Jun-13
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*15.4*	*12.8*	*11.2*	
Difference:						12.4	9.0	-0.9	-3.7	-0.3	0.8	3.0	
Morgan Creek VI Lag[3]	*$20,000*	*Multi-Strat FOF*	$ 25,628,214	0.6%		8.6	8.6	23.2	45.1	23.6	20.4	11.2	Feb-15
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*13.1*	*30.5*	*15.4*	*12.8*	*11.8*	
Difference:						12.5	9.1	10.1	14.6	8.2	7.6	-0.6	
Stellex Capital Partners II Lag[3]	*$50,000*	*Multi-Strat FOF*	$ 8,446,931	0.2%		-4.4	-4.4	--	--	--	--	-15.3	Jul-21
MSCI ACWI +2% Lag						*-3.9*	*-0.5*	*--*	*--*	*--*	*--*	*2.8*	
Difference:						-0.5	-3.9	--	--	--	--	-18.1	
Opportunistic Private Real Estate													
Greenfield V[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 227,258	0.0%		0.2	0.2	-0.7	-2.7	-17.0	-3.5	-3.1	Jul-08
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*8.9*	
Difference:						-6.3	-6.5	-15.5	-17.5	-24.2	-11.1	-12.0	
Greenfield VI[3]	*$20,000*	*Opportunistic Pvt. RE*	$ 171,705	0.0%		9.5	9.5	-32.5	-49.3	-41.8	-29.6	-12.8	Apr-12
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*13.2*	
Difference:						3.0	2.8	-47.3	-64.1	-49.0	-37.2	-26.0	
Greenfield VII[3]	*$19,100*	*Opportunistic Pvt. RE*	$ 9,301,411	0.2%		1.0	1.0	13.7	26.4	14.5	14.2	13.2	Oct-14
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*12.4*	
Difference:						-5.5	-5.7	-1.1	11.6	7.3	6.6	0.8	
Grandview[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 20,316,979	0.5%		-0.2	-0.2	19.4	24.8	22.3	--	10.4	Apr-18
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*--*	*10.8*	
Difference:						-6.7	-6.9	4.6	10.0	15.1	--	-0.4	
Miller Global Fund VI[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 481,237	0.0%		66.0	66.0	142.3	165.0	-7.0	0.1	0.1	May-08
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*8.9*	
Difference:						59.5	59.3	127.5	150.2	-14.2	-7.5	-8.8	
Miller Global Fund VII[3]	*$15,000*	*Opportunistic Pvt. RE*	$ 273,467	0.0%		-85.1	-85.1	-87.9	-85.9	-52.4	-35.5	-6.1	Dec-12
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*12.7*	
Difference:						-91.6	-91.8	-102.7	-100.7	-59.6	-43.1	-18.8	

[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 12/31/21, and lagged 1 quarter.

[3] Manager returns are as of 12/31/21, and lagged 1 quarter. Since Inception date reflects one quarter lag.

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

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

San Joaquin County Employees' Retirement Association (SJCERA)

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

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Opportunistic Private Real Estate (continued)													
Walton Street V[3]	*$30,000*	*Opportunistic Pvt. RE*	$ 2,071,307	0.1%		0.5	0.5	0.9	1.8	-11.6	-8.8	-0.3	Nov-06
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*9.9*	
Difference:						-6.0	-6.2	-13.9	-13.0	-18.8	-16.4	-10.2	
Walton Street VI[3]	*$15,000*	*Opportunistic Pvt. RE*	$ 4,919,114	0.1%		3.2	3.2	10.0	9.2	-1.6	2.1	7.2	Jul-09
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*11.7*	
Difference:						-3.3	-3.5	-4.8	-5.6	-8.8	-5.5	-4.5	
Value-Added Private Real Estate													
AG Core Plus IV[3]	*$20,000*	*Value-Added Pvt. RE*	$ 19,298,414	0.5%		4.3	3.4	11.1	15.4	9.3	9.9	5.8	Sep-15
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*11.8*	
Difference:						-2.2	-3.3	-3.7	0.6	2.1	2.3	-6.0	
Almanac Realty VI[3]	*$30,000*	*Value-Added Pvt. RE*	$ 3,609,976	0.1%		2.1	2.1	12.2	4.9	-10.3	-4.9	22.1	Feb-13
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*13.2*	
Difference:						-4.4	-4.6	-2.6	-9.9	-17.5	-12.5	8.9	
Berkeley Partners Fund V, LP	*$40,000*	*Value-Added Pvt. RE*	$ 9,285,074	0.2%		19.1	19.1	33.1	41.9	--	--	41.9	Aug-20
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*--*	*--*	*18.1*	
Difference:						12.6	12.4	18.3	--	--	--	23.8	
Stockbridge RE III[3]	*$45,000*	*Value-Added Pvt. RE*	$ 35,179,678	0.9%		17.0	17.0	40.6	46.8	16.6	--	12.6	Jul-18
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*--*	*10.6*	
Difference:						10.5	10.3	25.8	32.0	9.4	--	2.0	
Traditional Growth[2]			**$ 1,467,752,272**	**37.0%**	**32.0%**	**-4.9**	**-3.3**	**-4.9**	**15.3**	**12.8**	**10.9**	**9.5**	**Jan-95**
MSCI ACWI IMI Net						*-5.2*	*-4.1*	*-5.2*	*12.3*	*16.0*	*13.2*	*8.2*	
Difference:						0.3	0.8	0.3	3.0	-3.2	-2.3	1.3	
Global Equity			$ 1,416,734,234	35.7%									
Northern Trust MSCI World IMI		*All Cap Global*	$ 1,272,339,417	32.0%		-5.3	-3.8	-5.3	15.8	--	--	19.2	Sep-20
MSCI World IMI Net						*-5.6*	*-4.1*	*-5.6*	*15.0*	*--*	*--*	*18.5*	
Difference:						0.3	0.3	0.3	0.8	--	--	0.7	
SJCERA Transition		*All Cap Global*	$ 3,215	0.0%		NM	NM	NM	NM	--	--	NM	Jul-20
Emerging Markets			$ 144,391,602										
GQG Active Emerging Markets		*Emerging Markets*	$ 63,982,388	1.6%		-1.6	-3.5	-1.6	-4.7	--	--	9.7	Aug-20
MSCI Emerging Markets Index Net						*-1.9*	*-4.1*	*-1.9*	*-7.2*	*--*	*--*	*9.8*	
Difference:						0.3	0.6	0.3	2.5	--	--	-0.1	
PIMCO RAE Fundamental Emerging Markets		*Emerging Markets*	$ 80,409,214	2.0%		1.7	2.4	1.7	17.0	8.2	7.5	5.6	Apr-07
MSCI Emerging Markets Index						*-1.9*	*-4.1*	*-1.9*	*-6.9*	*7.6*	*8.7*	*4.6*	
Difference:						3.6	6.5	3.6	23.9	0.6	-1.2	1.0	
REITS			$ 51,018,038	1.3%									
Invesco All Equity REIT		*Core US REIT*	$ 51,018,038	1.3%		-7.9	0.2	-7.9	31.7	10.8	9.4	9.5	Aug-04
FTSE NAREIT Equity Index						*-6.8*	*0.7*	*-6.8*	*33.3*	*11.4*	*9.2*	*9.4*	
Difference:						-1.1	-0.5	-1.1	-1.6	-0.6	0.2	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 12/31/21, 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] January 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Stabilized Growth			$ 1,198,219,564	30.2%	33.0%	-1.5	0.9	-1.5	7.8	8.4	7.1	4.1	Jan-05
Risk Parity			$ 434,208,133	10.9%		-3.5	-1.6	-3.5	6.4	10.3	8.1	5.1	
T-Bill +4%						*0.3*	*1.0*	*0.3*	*4.0*	*5.0*	*5.2*	*4.5*	
Difference:						-3.8	-2.6	-3.8	2.4	5.3	2.9	0.6	
Bridgewater All Weather		*Risk Parity*	$ 215,948,635	5.4%		-2.9	-0.1	-2.9	8.7	9.9	7.8	5.7	Mar-12
T-Bill +4%						*0.3*	*1.0*	*0.3*	*4.0*	*5.0*	*5.2*	*5.4*	
Difference:						-3.2	-1.1	-3.2	4.7	4.9	2.6	0.3	
PanAgora Diversified Risk Multi-Asset		*Risk Parity*	$ 218,259,498	5.5%		-4.1	-2.9	-4.1	4.2	10.7	8.5	8.1	Apr-16
T-Bill +4%						*0.3*	*1.0*	*0.3*	*4.0*	*5.0*	*5.2*	*5.1*	
Difference:						-4.4	-3.9	-4.4	0.2	5.7	3.3	3.0	
Liquid Credit			$ 234,457,244	5.9%		-1.2	-1.2	-1.2	1.1	3.8	3.4	2.2	Oct-06
50% BB High Yield, 50% S&P/LSTA Leveraged Loans						*-1.2*	*-0.5*	*-1.2*	*3.2*	*5.6*	*4.8*	*5.8*	
Difference:						0.0	-0.7	0.0	-2.1	-1.8	-1.4	-3.6	
Neuberger Berman		*Global Credit*	$ 104,698,512	2.6%		-1.8	-1.6	-1.8	0.5	--	--	4.5	Feb-19
33% ICE BofA HY Constrained, 33% S&P/LSTA LL, 33% JPM EMBI Glbl Div.						*-1.7*	*-1.4*	*-1.7*	*0.9*	*--*	*--*	*4.7*	
Difference:						-0.1	-0.2	-0.1	-0.4	--	--	-0.2	
Stone Harbor Absolute Return		*Absolute Return*	$ 129,758,732	3.3%		-0.7	-0.9	-0.7	1.5	3.3	3.0	2.9	Oct-06
3-Month Libor Total Return						*0.0*	*0.0*	*0.0*	*0.1*	*1.2*	*1.4*	*1.4*	
Difference:						-0.7	-0.9	-0.7	1.4	2.1	1.6	1.5	
Private Credit Lag[2]			$ 340,429,167	8.6%		1.6	1.6	6.2	8.0	3.6	2.9	3.5	
50% BB High Yield, 50% S&P/LSTA Leveraged Loans						*0.3*	*1.0*	*4.5*	*9.8*	*5.5*	*5.6*	*6.0*	
Difference:						1.3	0.6	1.7	-1.8	-1.9	-2.7	-2.5	
BlackRock Direct Lending Lag[3]	*$100,000*	*Direct Lending*	$ 51,001,686	1.3%		2.4	2.4	6.1	8.8	--	--	9.6	May-20
CPI +6% Annual Blend[5]						*0.8*	*2.4*	*10.0*	*11.7*	*--*	*--*	*16.5*	
Difference:						1.6	0.0	-3.9	-2.9	--	--	-6.9	
Mesa West RE Income III Lag[3]	*$45,000*	*Comm. Mortgage*	$ 31,041	0.0%		-14.9	-14.9	-11.9	-21.5	-6.6	-0.4	1.2	Sep-13
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*8.9*	*11.2*	
Difference:						-15.7	-17.3	-21.9	-33.2	-15.6	-9.3	-10.0	
Mesa West RE Income IV Lag[3]	*$75,000*	*Comm. Mortgage*	$ 29,459,557	0.7%		2.6	2.6	6.7	7.9	7.7	--	7.6	Mar-17
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*--*	*9.0*	
Difference:						1.8	0.2	-3.3	-3.8	-1.3	--	-1.4	
Crestline Opportunity II Lag[3]	*$45,000*	*Opportunistic*	$ 18,787,084	0.5%		0.4	0.4	13.4	14.1	1.1	3.8	5.2	Nov-13
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*8.9*	*9.0*	
Difference:						-0.4	-2.0	3.4	2.4	-7.9	-5.1	-3.8	
Davidson Kempner Distr Opp V Lag[3]	*$50,000*	*Opportunistic*	$ 34,480,593	0.0%		1.6	1.6	15.9	25.5	--	--	39.8	Oct-20
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*--*	*--*	*11.4*	
Difference:						0.8	-0.8	5.9	13.8	--	--	28.4	
Oaktree Lag	*$50,000*	*Leveraged Direct*	$ 32,102,053	0.8%		3.5	3.5	11.5	15.7	15.0	--	10.8	Mar-18
CPI +6% Annual Blend[6]						*0.8*	*2.4*	*10.0*	*11.7*	*9.5*	*--*	*9.2*	
Difference:						2.7	1.1	1.5	4.0	5.5	--	1.6	
HPS EU Asset Value II Lag[3]	*$50,000*	*Direct Lending*	$ 20,406,329	0.5%		1.8	1.8	5.1	8.2	--	--	0.6	Aug-20
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*--*	*--*	*11.2*	
Difference:						1.0	-0.6	-4.9	-3.5	--	--	-10.6	
Raven Opportunity II Lag[3]	*$45,000*	*Direct Lending*	$ 10,414,168	0.3%		11.6	11.6	8.0	7.6	-2.5	-2.5	-3.1	Aug-14
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*8.9*	*8.9*	
Difference:						10.8	9.2	-2.0	-4.1	-11.5	-11.4	-12.0	
Raven Opportunity III Lag[3]	*$50,000*	*Direct Lending*	$ 50,211,888	1.3%		4.3	4.3	8.0	11.1	7.6	5.1	3.2	Nov-15
CPI +6% Annual Blend[4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*8.9*	*8.9*	
Difference:						3.5	1.9	-2.0	-0.6	-1.4	-3.9	-5.7	

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[2] Total class returns are as of 12/31/21, and lagged 1 quarter.

[3] Manager returns are as of 12/31/21, and lagged 1 quarter. Since Inception date reflects one quarter lag.

[4] 9% Annual until 7/1/2018 then CPI +6% Annual 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] January 2022

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Private Credit Lag (continued)													
Medley Opportunity II Lag[3]	*$50,000*	*Direct Lending*	$ 9,904,617	0.2%		-3.2	-3.2	4.0	8.3	-9.3	-7.6	-1.3	Jul-12
CPI +6% Annual Blend [4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*8.9*	*9.0*	
Difference:						-4.0	-5.6	-6.0	-3.4	-18.3	-16.5	-10.3	
White Oak Summit Peer Fund Lag[3]	*$50,000*	*Direct Lending*	$ 35,303,356	0.9%		-4.4	-4.4	-2.2	-0.5	3.4	5.6	5.7	Mar-16
CPI +6% Annual Blend [4]						*0.8*	*2.4*	*10.0*	*11.7*	*9.0*	*8.9*	*8.9*	
Difference:						-5.2	-6.8	-12.2	-12.2	-5.6	-3.3	-3.2	
White Oak Yield Spectrum Master V Lag[3]	*$50,000*	*Direct Lending*	$ 48,326,795	1.2%		0.4	0.4	1.7	1.7	--	--	-0.1	Mar-20
CPI +6% Annual Blend [4]						*0.8*	*2.4*	*10.0*	*11.7*	--	--	*9.8*	
Difference:						-0.4	-2.0	-8.3	-10.0	--	--	-9.9	
Principal US[3]	*$25,000*	*Core Pvt. RE*	$ 35,153,936	0.9%		5.0	5.0	11.4	13.3	6.4	7.3	7.8	Jan-16
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*11.2*	
Difference:						-1.5	-1.7	-3.4	-1.5	-0.8	-0.3	-3.4	
Prologis Logistics[3]	*$35,000*	*Core Pvt. RE*	$ 82,714,166	2.1%		12.4	12.4	22.5	29.7	17.6	18.4	7.8	Dec-07
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*9.2*	
Difference:						5.9	5.7	7.7	14.9	10.4	10.8	-1.4	
RREEF America II[3]	*$45,000*	*Core Pvt. RE*	$ 51,087,248	1.3%		5.9	5.9	11.9	12.8	5.9	7.3	7.8	Jul-16
NCREIF ODCE + 1% Lag Blend						*6.5*	*6.7*	*14.8*	*14.8*	*7.2*	*7.6*	*10.9*	
Difference:						-0.6	-0.8	-2.9	-2.0	-1.3	-0.3	-3.1	
Diversifying Strategies			$ 801,430,550	20.2%	25.0%	1.1	0.8	1.1	1.8	3.9	3.1	6.3	Oct-90
Principal Protection			$ 325,402,559	8.2%	10.0%	-1.6	-1.6	-1.6	-1.6	2.8	2.9	6.2	Oct-90
BB Aggregate Bond Index						*-2.2*	*-2.1*	*-2.2*	*-3.0*	*3.7*	*3.1*	*5.8*	
Difference:						0.6	0.5	0.6	1.4	-0.9	-0.2	0.4	
Dodge & Cox		*Core Fixed Income*	$ 212,323,645	5.3%		-2.1	-2.1	-2.1	-2.3	4.8	4.1	7.0	Oct-90
BB Aggregate Bond Index						*-2.2*	*-2.1*	*-2.2*	*-3.0*	*3.7*	*3.1*	*5.8*	
Difference:						0.1	0.0	0.1	0.7	1.1	1.0	1.2	
DoubleLine Capital		*MBS*	$ 113,078,914	2.8%		-0.9	-0.8	-0.9	0.1	3.6	3.5	4.7	Feb-12
BB Aggregate Bond Index						*-2.2*	*-2.1*	*-2.2*	*-3.0*	*3.7*	*3.1*	*2.6*	
Difference:						1.3	1.3	1.3	3.1	-0.1	0.4	2.1	

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[4] 9% Annual until 7/1/2018 then CPI +6% Annual thereafter.

San Joaquin County Employees' Retirement Association (SJCERA)

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

	Commitment ($000)	Sub-Segment	Market Value	Physical % of Total	Policy Target %	1-Mo	3-Mos	YTD	1-Yr	3-Yrs	5-Yrs	SI Return	SI Date
Crisis Risk Offset			**$ 476,027,991**	**12.0%**	**15.0%**	**3.1**	**2.5**	**3.1**	**4.3**	**4.4**	**3.2**	**6.5**	**Jan-05**
CRO Custom Benchmark [2]						*-0.7*	*-0.5*	*-0.7*	*4.2*	*7.1*	*5.0*	*5.4*	
Difference:						3.8	3.0	3.8	0.1	-2.7	-1.8	1.1	
Long Duration			$ 149,694,937	3.8%		-3.7	-2.8	-3.7	-5.3	6.5	5.1	3.2	
BB US Long Duration Treasuries						*-4.1*	*-3.0*	*-4.1*	*-5.2*	*7.1*	*5.6*	*4.1*	
Difference:						0.4	0.2	0.4	-0.1	-0.6	-0.5	-0.9	
Dodge & Cox Long Duration		*Long Duration*	$ 149,694,937	3.8%		-3.7	-2.8	-3.7	-5.3	6.5	5.1	3.2	Feb-16
BB US Long Duration Treasuries						*-4.1*	*-3.0*	*-4.1*	*-5.2*	*7.1*	*5.6*	*4.1*	
Difference:						0.4	0.2	0.4	-0.1	-0.6	-0.5	-0.9	
Systematic Trend Following			$ 196,042,245	4.9%		6.9	2.1	6.9	12.5	9.5	3.3	8.4	
BTOP50 Index						*1.7*	*0.1*	*1.7*	*13.0*	*8.4*	*3.8*	*4.7*	
Difference:						5.2	2.0	5.2	-0.5	1.1	-0.5	3.7	
Mt. Lucas Managed Futures - Cash		*Systematic Trend Following*	$ 101,592,638	2.6%		7.6	0.9	7.6	14.8	8.1	2.6	7.9	Jan-05
BTOP50 Index						*1.7*	*0.1*	*1.7*	*13.0*	*8.4*	*3.8*	*4.7*	
Difference:						5.9	0.8	5.9	1.8	-0.3	-1.2	3.2	
Graham Tactical Trend		*Systematic Trend Following*	$ 94,449,607	2.4%		6.2	3.4	6.2	10.2	10.7	3.8	1.5	Apr-16
SG Trend Index						*3.4*	*-1.0*	*3.4*	*13.6*	*10.6*	*4.7*	*2.1*	
Difference:						2.8	4.4	2.8	-3.4	0.1	-0.9	-0.6	
Alternative Risk Premia			$ 130,290,809	3.3%		5.8	10.2	5.8	4.9	-3.7	-0.1	7.2	
5% Annual						*0.4*	*1.2*	*0.4*	*5.0*	*5.0*	*5.0*	*6.3*	
Difference:						5.4	9.0	5.4	-0.1	-8.7	-5.1	0.9	
AQR Style Premia		*Alternative Risk Premia*	$ 34,934,629	0.9%		15.6	31.1	15.6	34.4	-2.1	-2.0	-1.4	May-16
5% Annual						*0.4*	*1.2*	*0.4*	*5.0*	*5.0*	*5.0*	*5.0*	
Difference:						15.2	29.9	15.2	29.4	-7.1	-7.0	-6.4	
PE Diversified Global Macro		*Alternative Risk Premia*	$ 38,097,272	1.0%		13.8	11.6	13.8	1.2	-6.8	-2.2	-1.4	Jun-16
5% Annual						*0.4*	*1.2*	*0.4*	*5.0*	*5.0*	*5.0*	*5.0*	
Difference:						13.4	10.4	13.4	-3.8	-11.8	-7.2	-6.4	
Lombard Odier		*Alternative Risk Premia*	$ 57,258,908	1.4%		-3.6	-0.4	-3.6	-5.5	--	--	-4.5	Jan-19
5% Annual						*0.4*	*1.2*	*0.4*	*5.0*	*--*	*--*	*5.0*	
Difference:						-4.0	-1.6	-4.0	-10.5	--	--	-9.5	
Cash[3]			**$ 143,418,490**	**3.6%**	**0.0%**	**0.0**	**0.0**	**0.0**	**0.0**	**0.7**	**0.8**	**2.3**	**Sep-94**
US T-Bills						*0.0*	*0.0*	*0.0*	*0.0*	*0.9*	*1.1*	*2.3*	
Difference:						0.0	0.0	0.0	0.0	-0.2	-0.3	0.0	
Northern Trust STIF		*Collective Govt. Short Term*	$ 155,531,984	3.9%		0.0	0.0	0.0	0.0	0.7	0.9	2.6	Jan-95
US T-Bills						0.0	0.0	0.0	0.0	0.9	1.1	*2.3*	
Difference:						0.0	0.0	0.0	0.0	-0.2	-0.2	0.3	
Parametric Overlay[4]		*Cash Overlay*	**$ 48,876,143**	**1.2%**		**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.

Capital Markets Outlook & Risk Metrics

As of February 28, 2022

Capital Markets Outlook

Markets

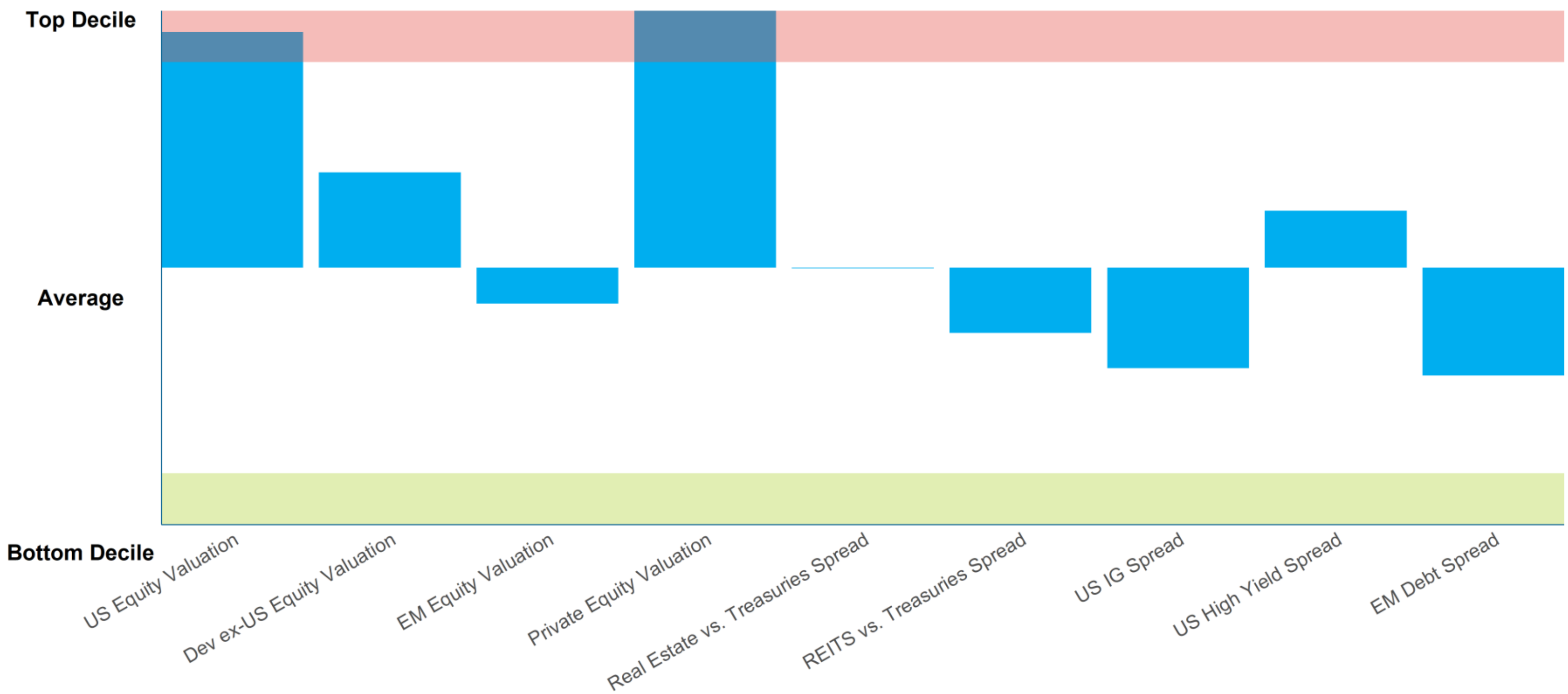
- February proved challenging for global equity and bond markets due largely to sustained inflationary pressures and Russia's invasion of Ukraine. By the end of February, US inflation hit a 40-year high at 7.6%, and the VIX rose above 30%, well above its five-year average of less than 13%.
- In the US, the Federal Reserve signaled a strong response to domestic inflation via future higher interest rates and the official exit of quantitative easing starting in March.
- US large cap indices lagged midcap and small cap equities, and value stocks outperformed growth stocks across market capitalizations.
- Outside the US, developed markets outperformed emerging markets, and in both regions value stocks outperformed growth stocks.
- The mainland China A shares market outperformed the Hong Kong listed H-shares and the MSCI China index, reflecting official support for Chinese listed companies.
- Persistent inflation pressures and expectations of higher interest rates weighed on most bond indices, with shorter duration bond returns beating long duration bonds.
- TIPS reversed January losses and posted positive returns in February.
- Building on strong positive returns in January, commodities and natural resource equities benefited from higher energy costs and delivered positive returns for the month.

Capital Markets Outlook

Markets

- Chinese authorities have taken additional steps to support the real estate market. As a result, China recently broke lending records for social financing and new loans issued.
- Global financial sanctions on Russian foreign exchange reserves, banks, and assets may remain in force for an extended period of time, raising risks for economic spillovers for the global financial system and energy markets. However, the full scope and nature of sanctions on Russia is unclear and may escalate in the future.
- While the future of COVID and possible variants remains unclear, the CDC released new guidance in the US ending mask mandates, and individual states and cities are easing vaccine mandates, potentially signaling an end to pandemic lockdown policies.

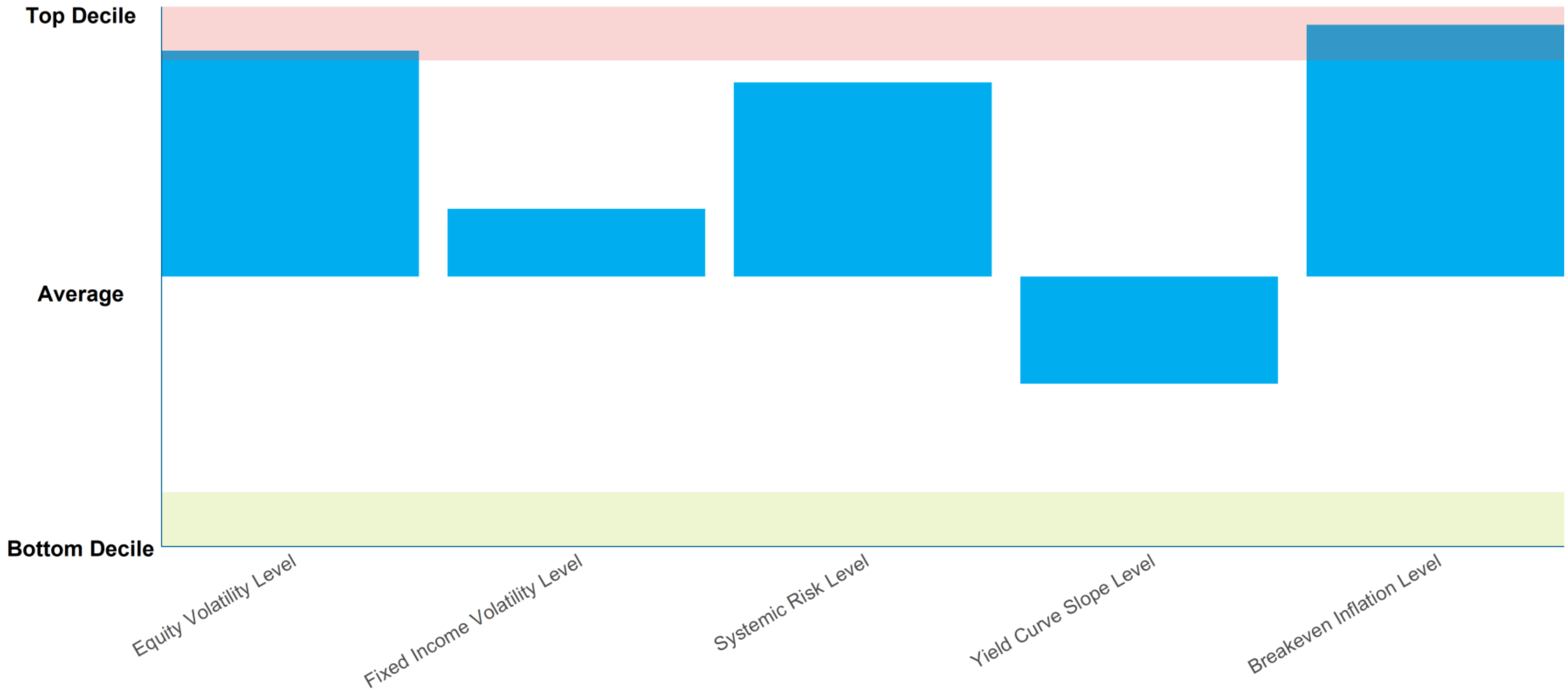
Risk Overview/Dashboard (1)
(As of February 28, 2022)[1]



- Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

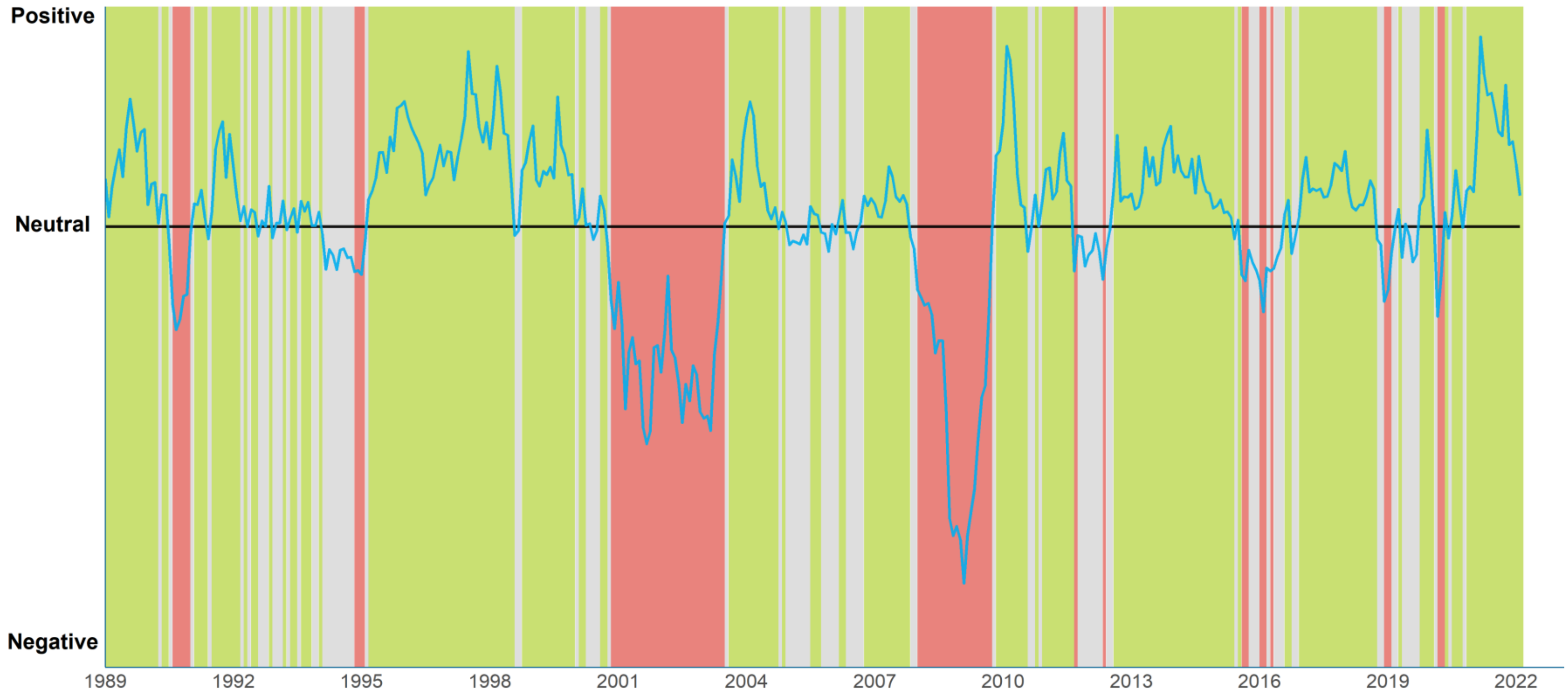
[1] With the exception of Private Equity Valuation, that is YTD as of December 31, 2020.

Risk Overview/Dashboard (2)
(As of February 28, 2022)

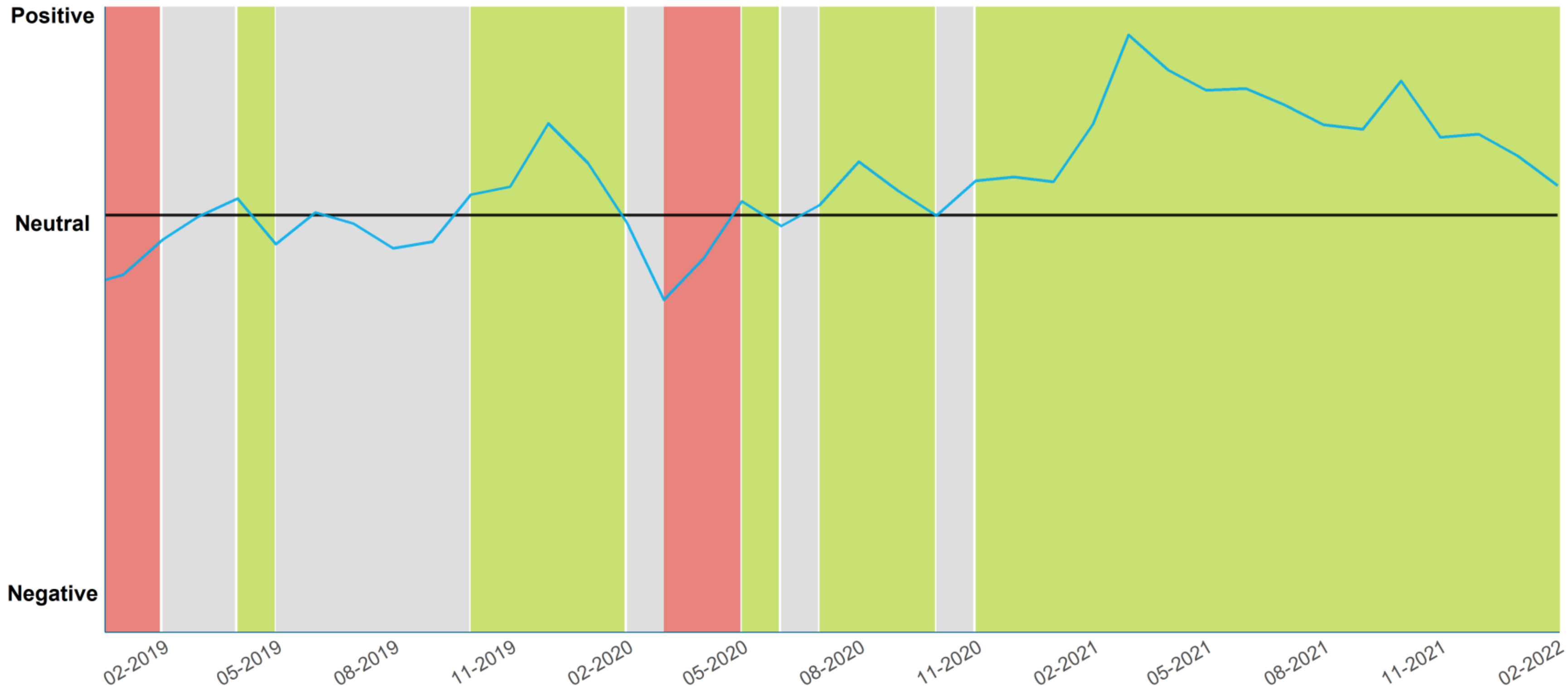


- Dashboard (2) shows how the current level of each indicator compares to its respective history.

Market Sentiment Indicator (All History)
(As of February 28, 2022)

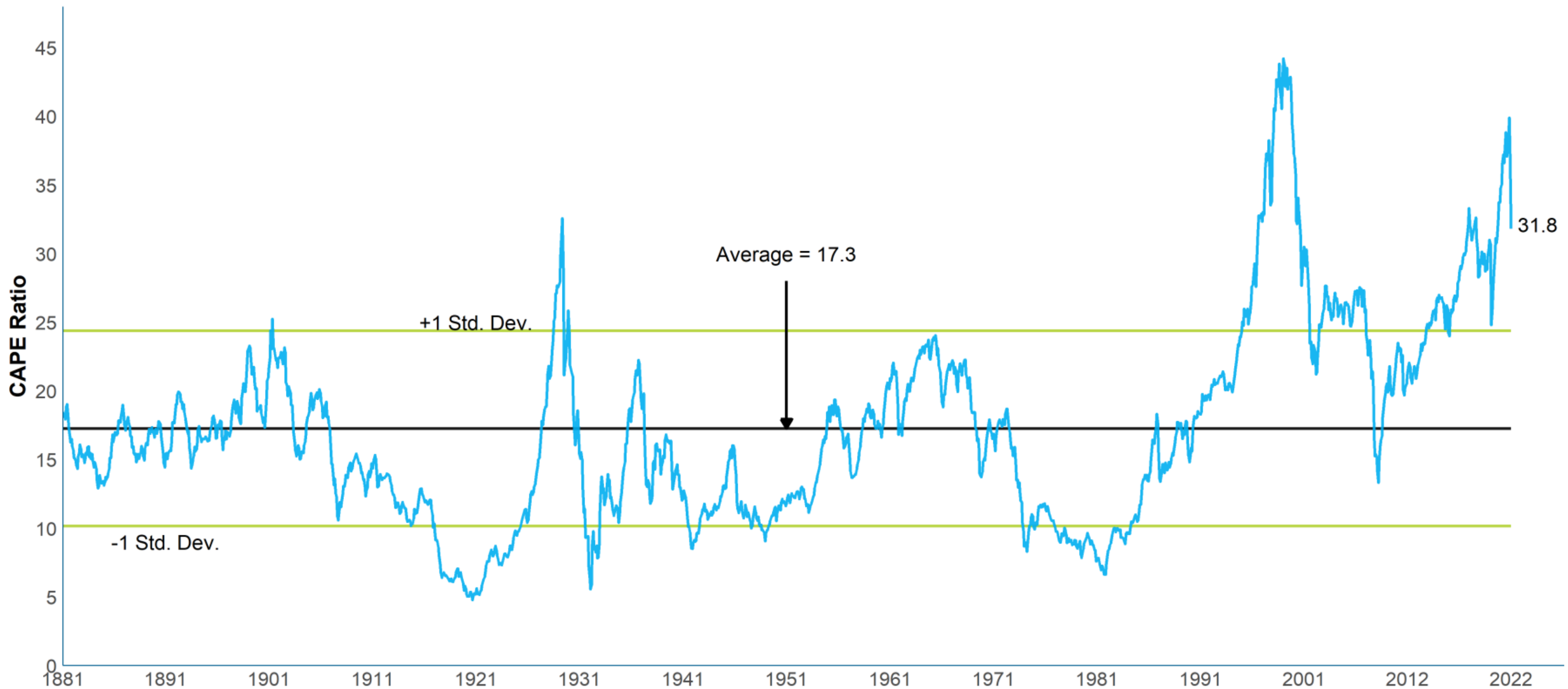


Market Sentiment Indicator (Last Three Years)
(As of February 28, 2022)



US Equity Cyclically Adjusted P/E[1]

(As of February 28, 2022)



- This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

Small Cap P/E vs. Large Cap P/E[1]
(As of February 28, 2022)

- This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

[1] Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E[1]
(As of February 28, 2022)

- This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

[1] Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

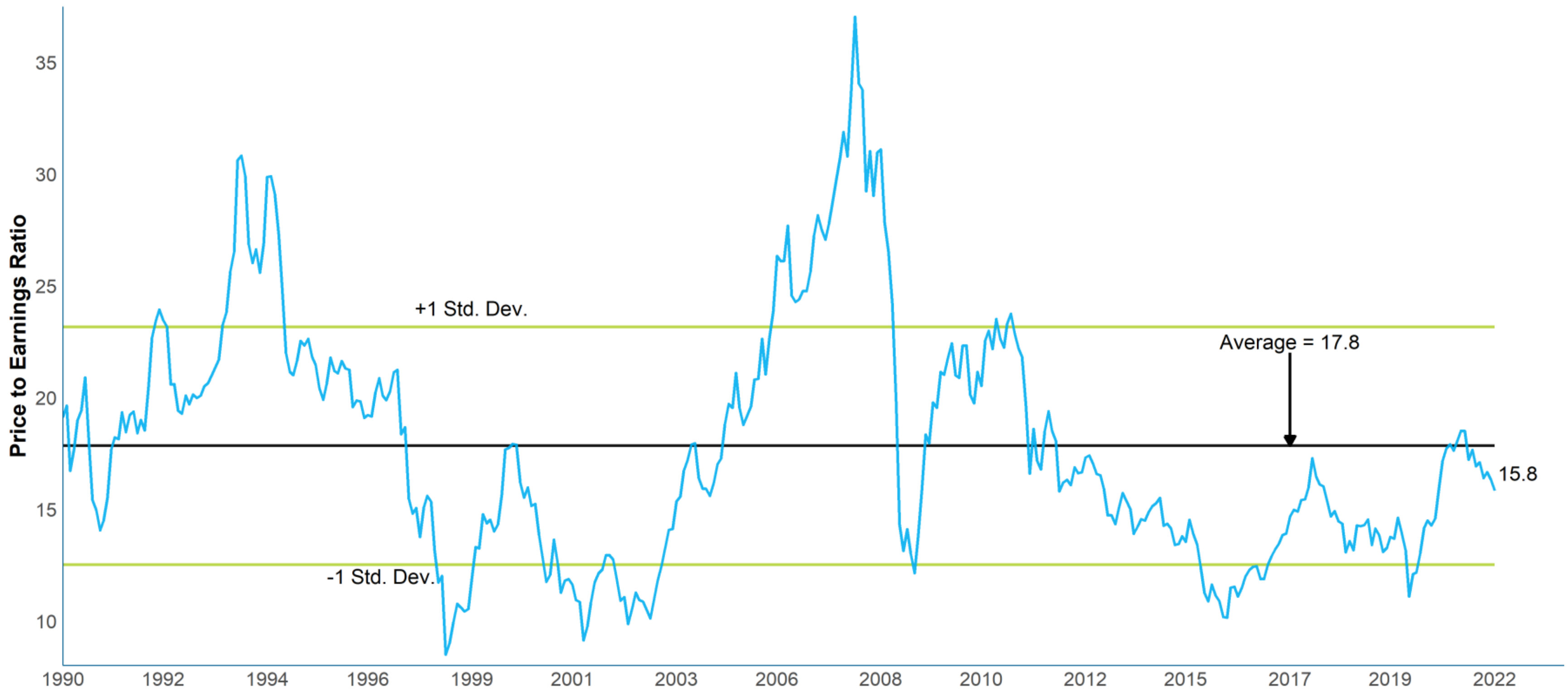
Developed International Equity Cyclically Adjusted P/E[1]

(As of February 28, 2022)

- This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Developed International Equity (MSCI EAFE Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

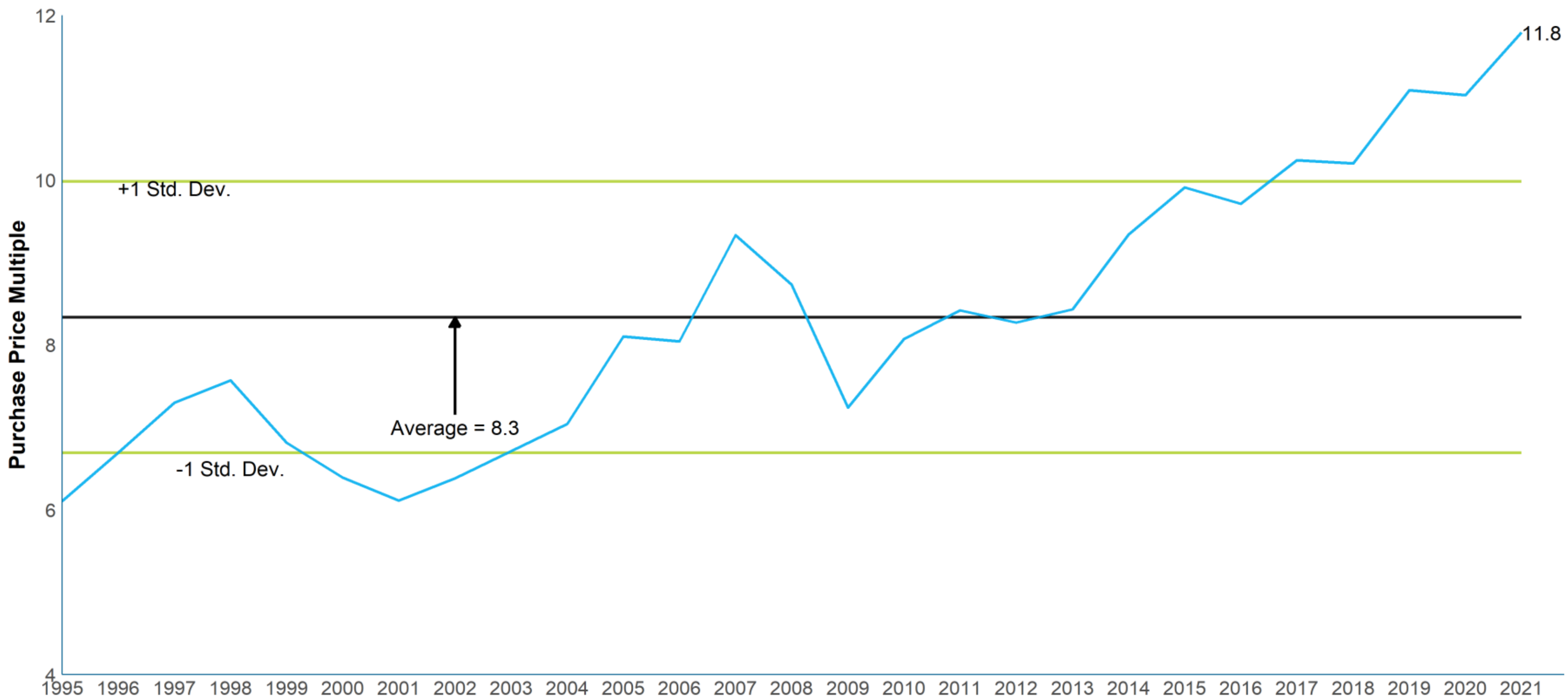
Emerging Market Equity Cyclically Adjusted P/E[1]
(As of February 28, 2022)



- This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.

Private Equity Multiples[1]
(As of February 28, 2022)[2]

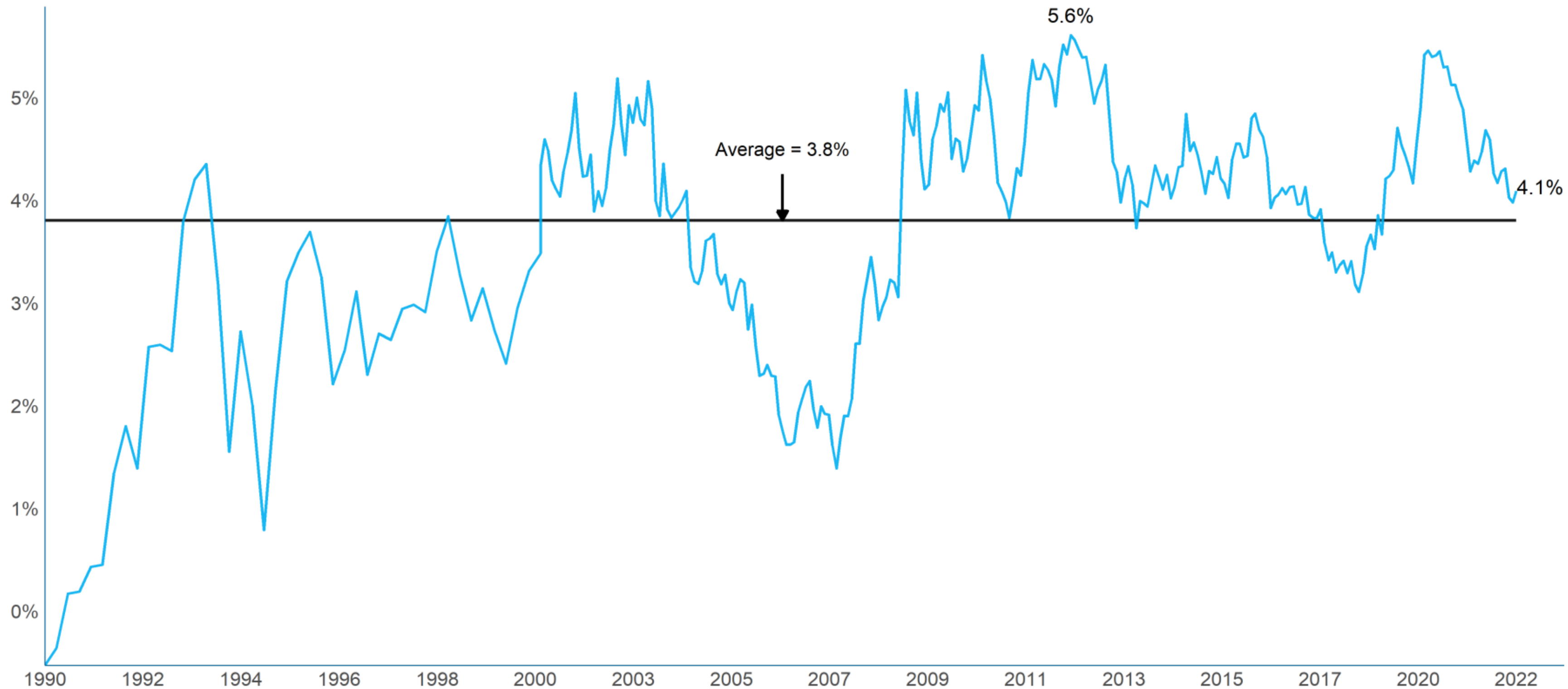


- This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

[1] Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

[2] Annual Data, as of December 31, 2021

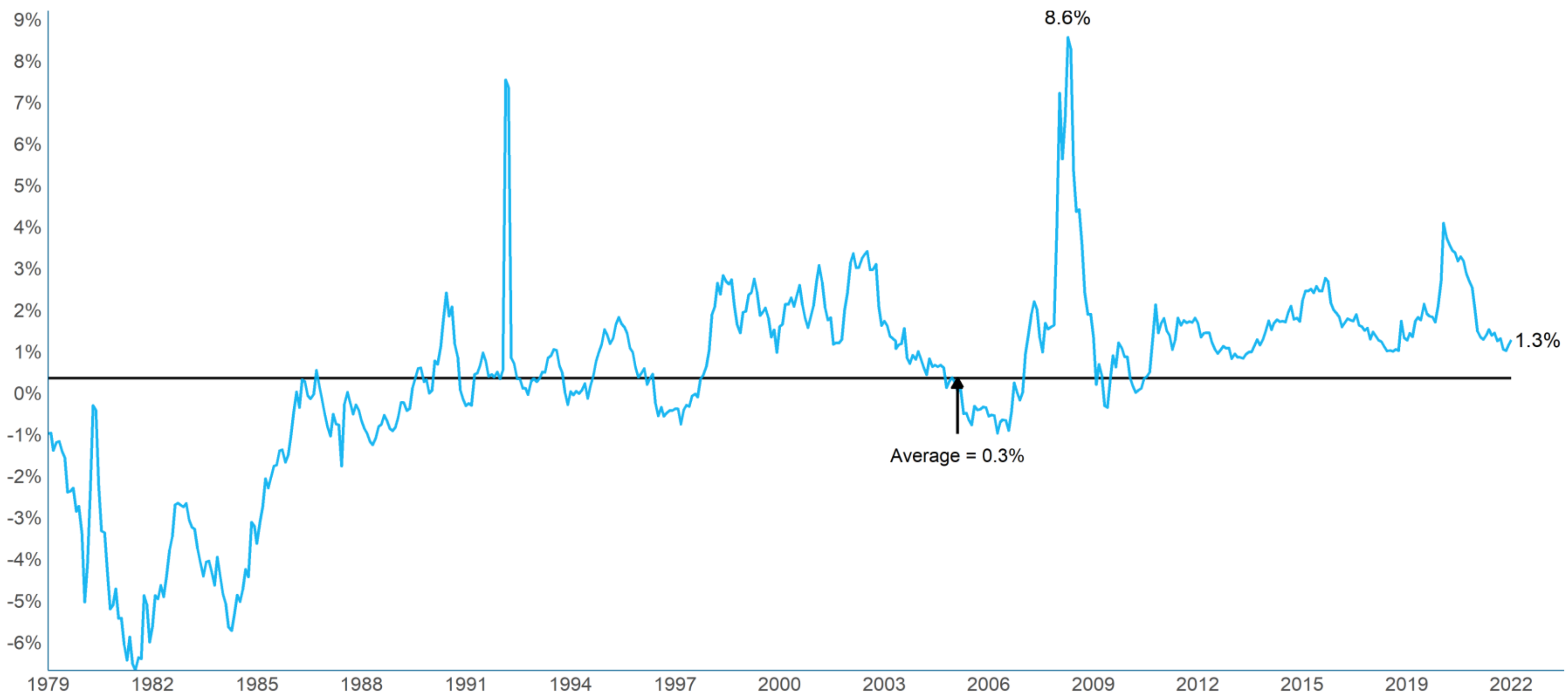
Core Real Estate Spread vs. Ten-Year Treasury[1]
(As of February 28, 2022)



- This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

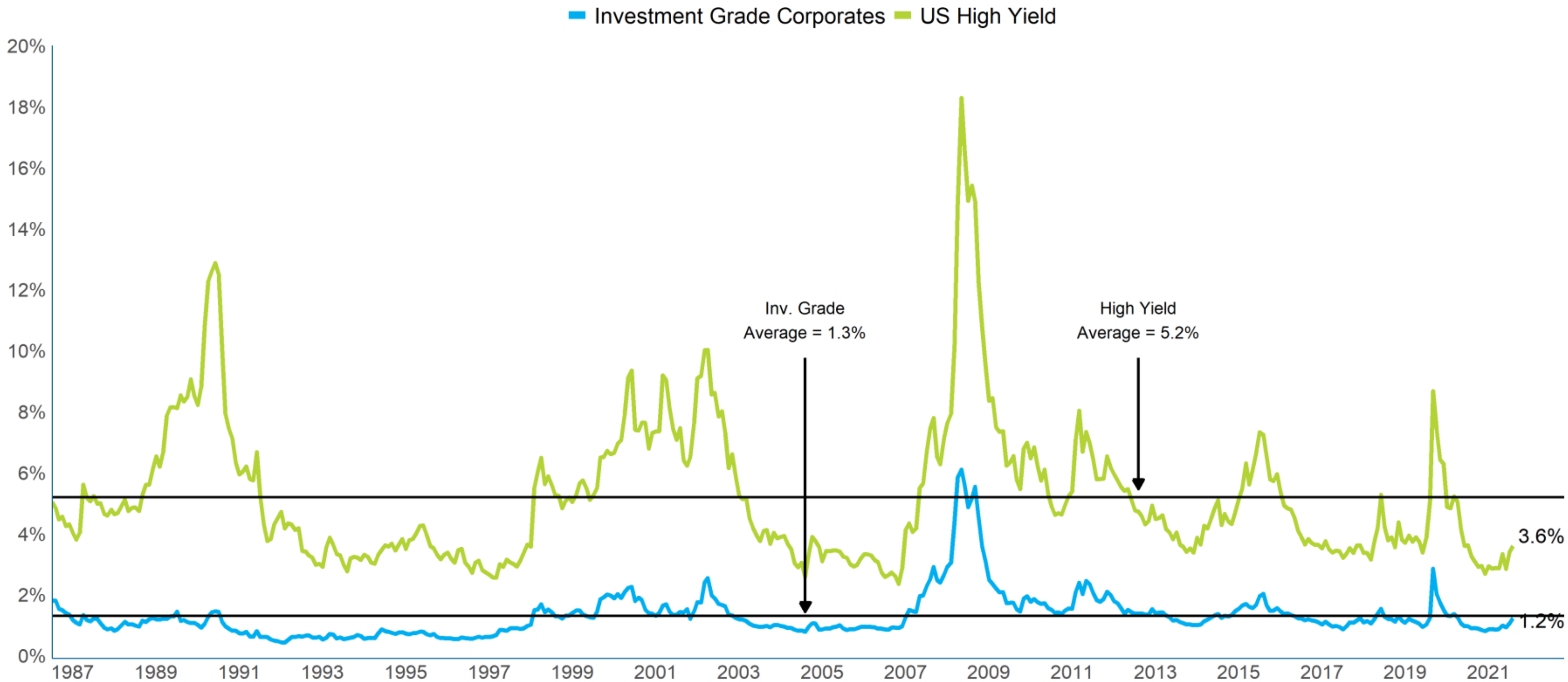
REITs Dividend Yield Spread vs. Ten-Year Treasury[1]
(As of February 28, 2022)



- This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

[1] REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

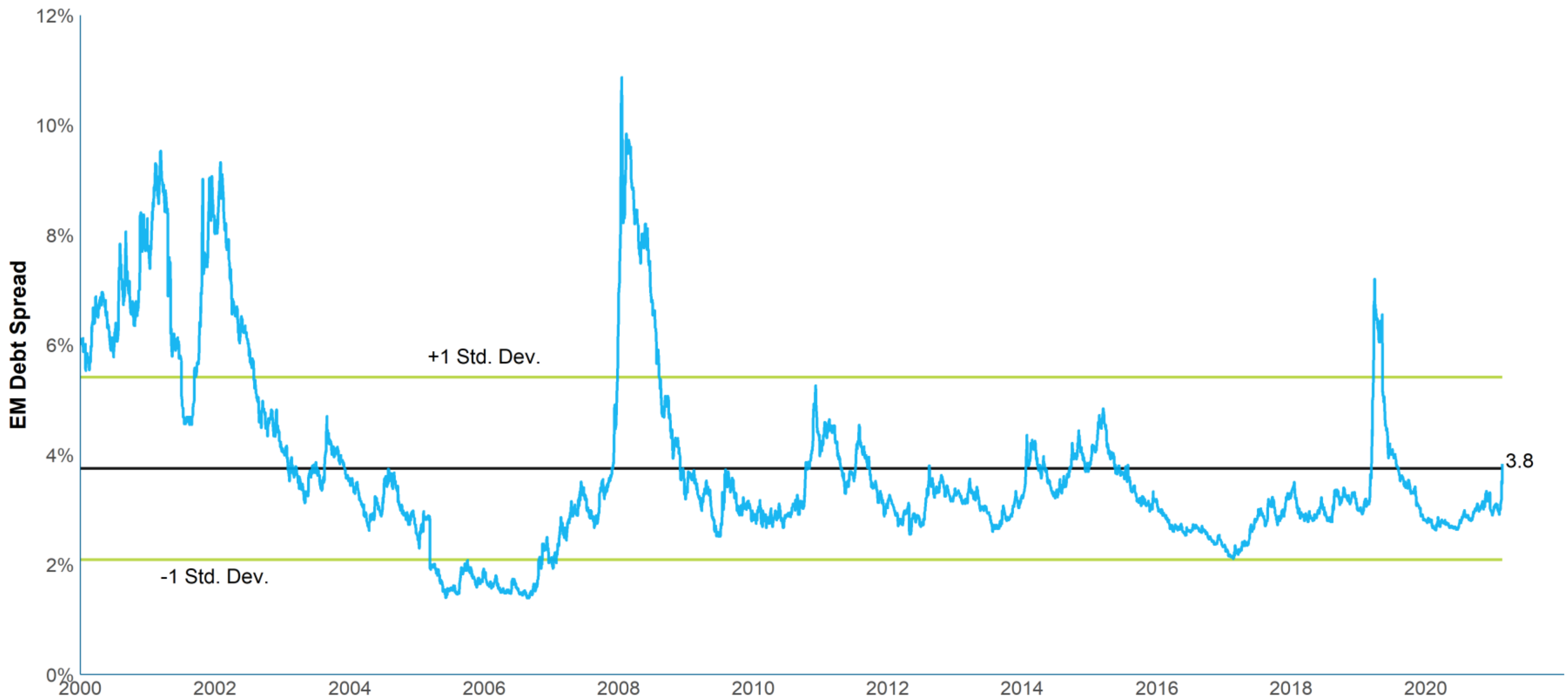
Credit Spreads[1]
(As of February 28, 2022)



- This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] Credit Spreads – Source: Bloomberg. High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

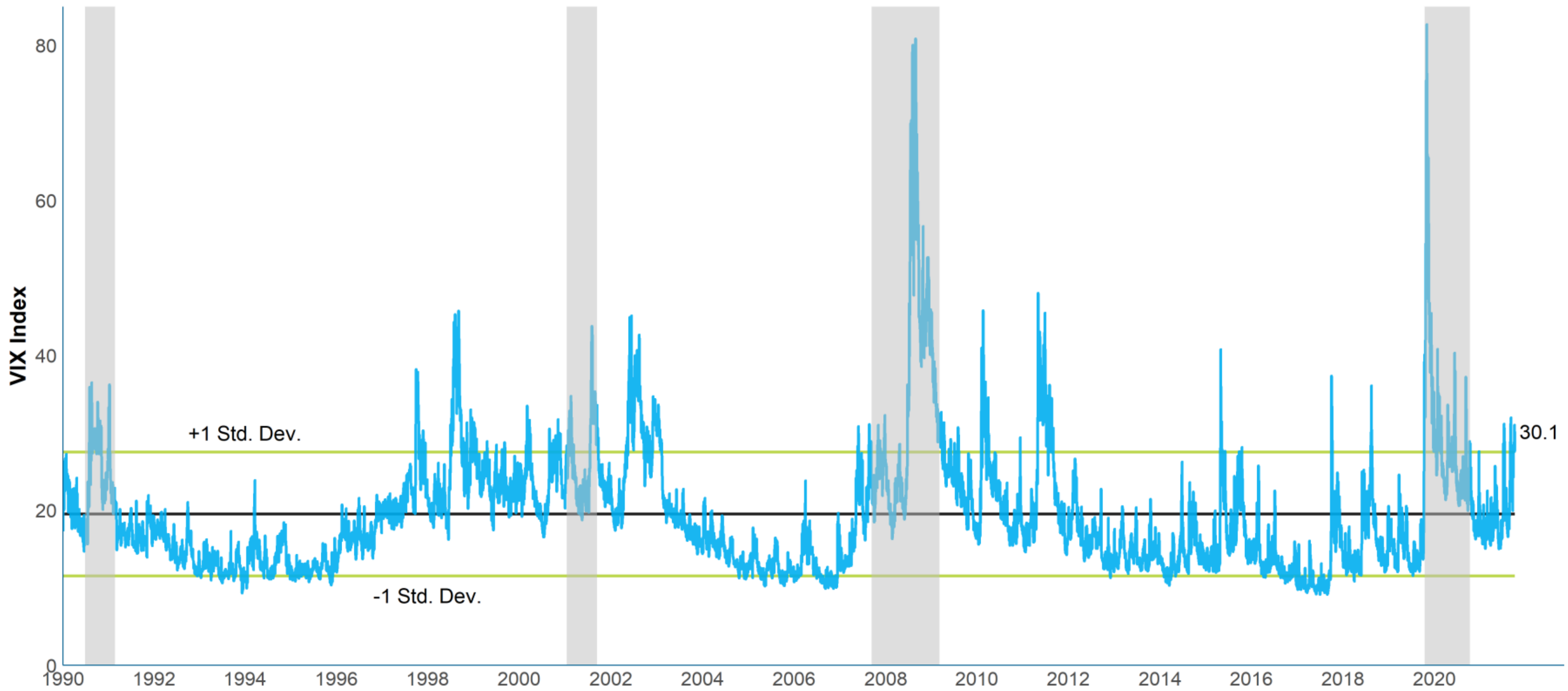
Emerging Market Debt Spreads[1]
(As of February 28, 2022)



- This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

[1] EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

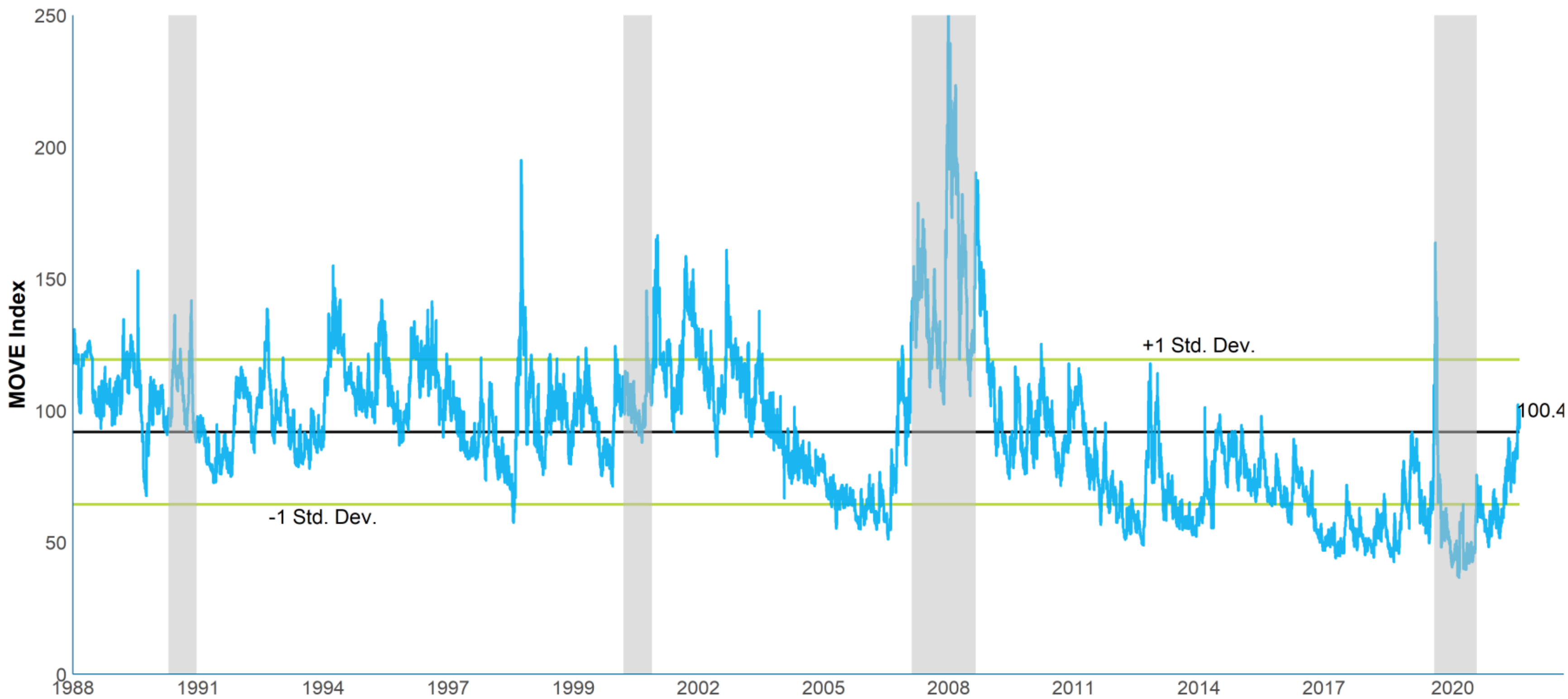
Equity Volatility[1]
(As of February 28, 2022)



- This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

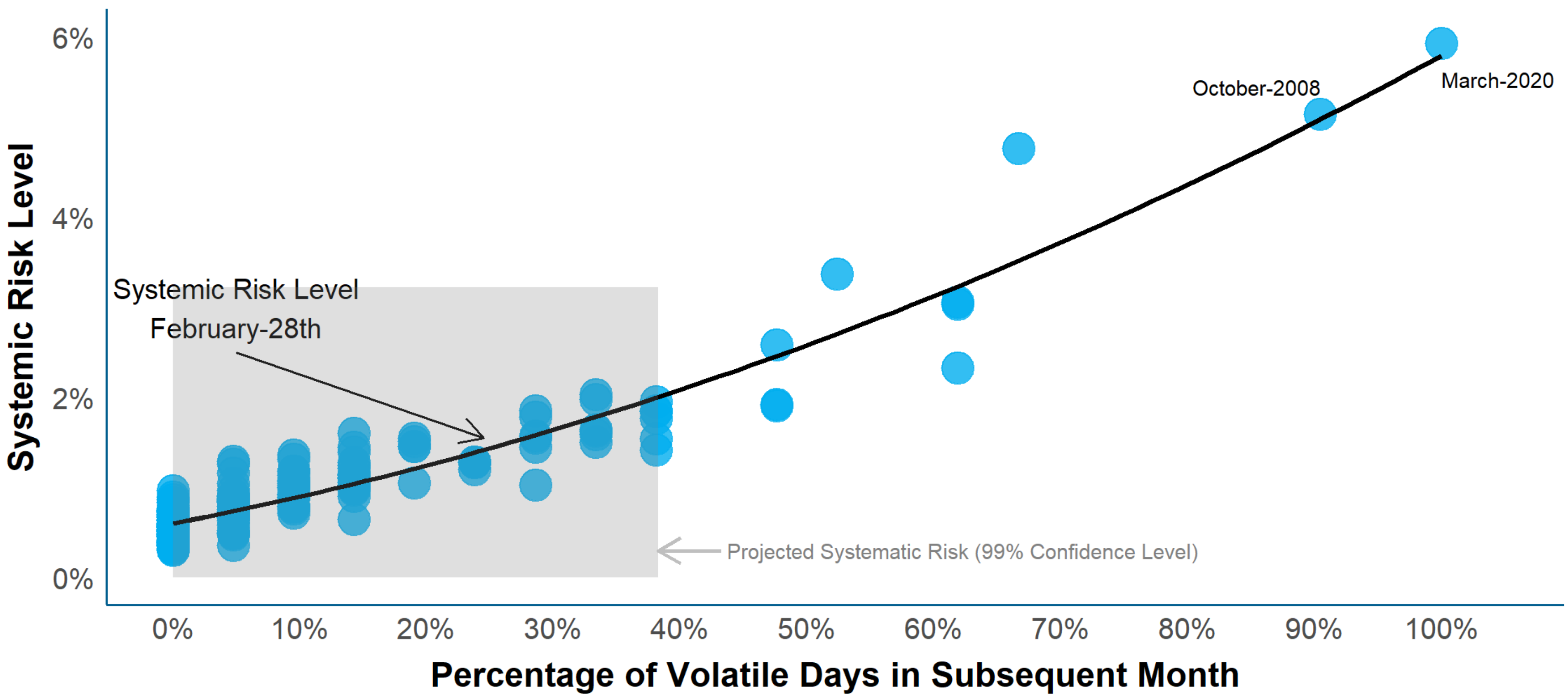
Fixed Income Volatility[1]
(As of February 28, 2022)



- This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

[1] Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

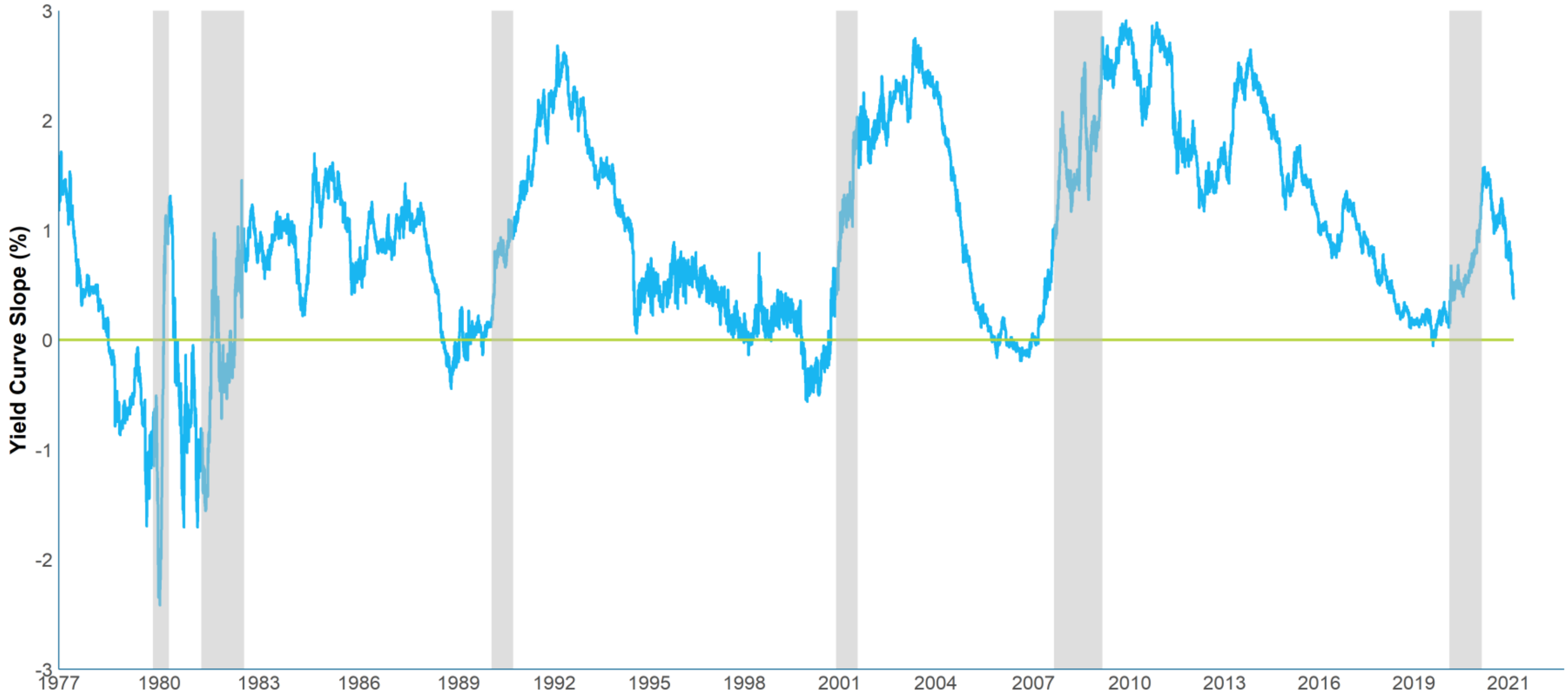
Systemic Risk and Volatile Market Days[1]
(As of February 28, 2022)



- Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

[1] Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

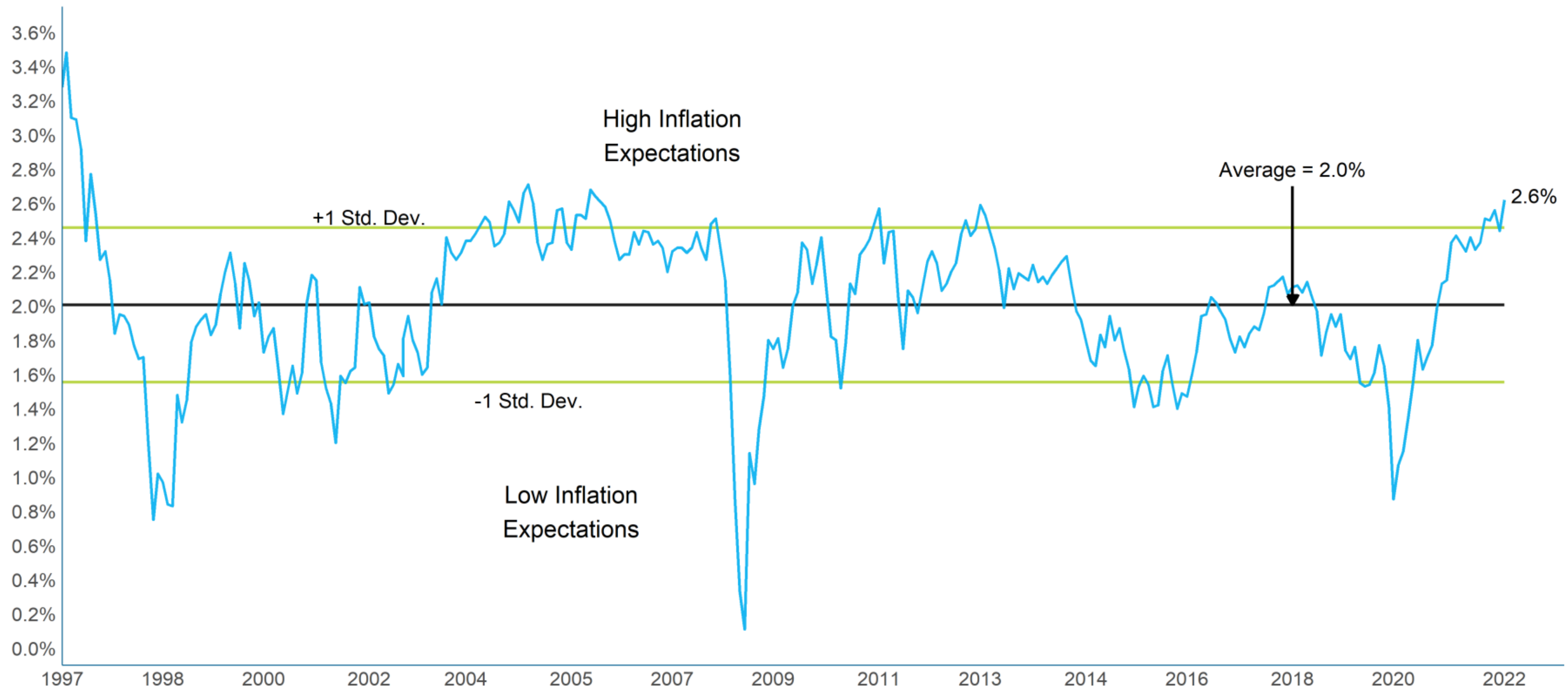
Yield Curve Slope (Ten Minus Two)[1]
(As of February 28, 2022)



- This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

[1] Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

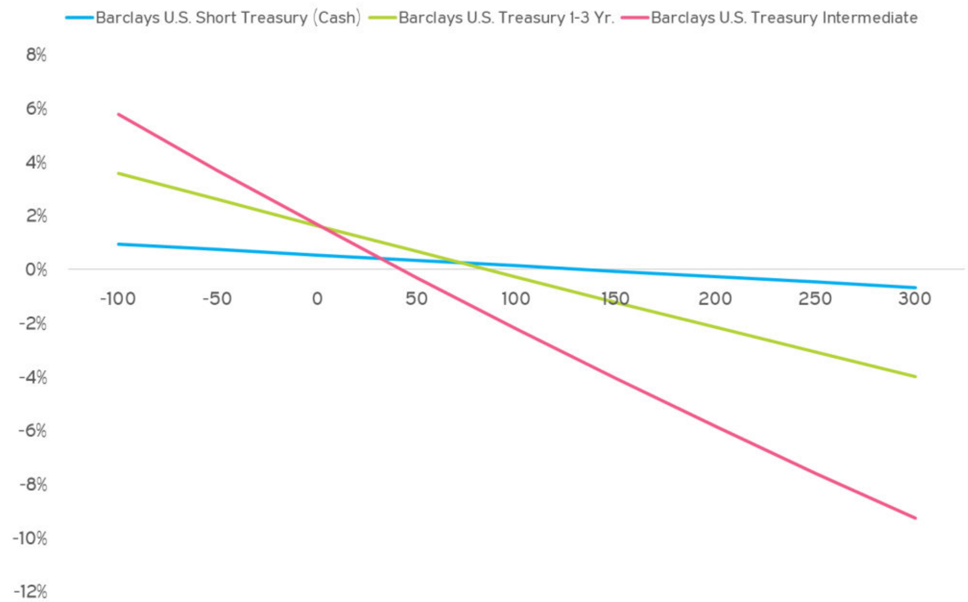
Ten-Year Breakeven Inflation[1]
(As of February 28, 2022)



- This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

[1] Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

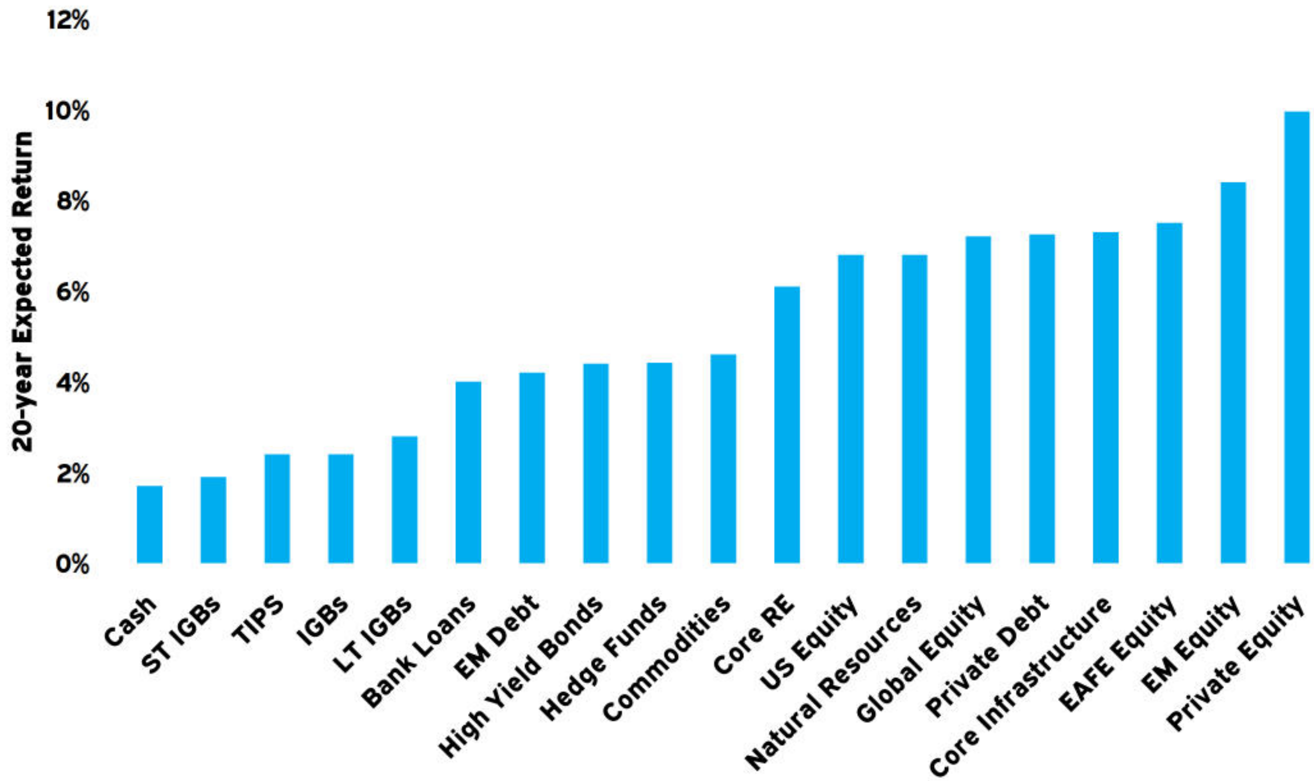
Total Return Given Changes in Interest Rates (bps)[1]
(As of February 28, 2022)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	0.9%	0.7%	0.5%	0.3%	0.1%	-0.1%	-0.3%	-0.5%	-0.7%	0.41	0.52%
Barclays US Treasury 1-3 Yr.	3.6%	2.6%	1.6%	0.6%	-0.3%	-1.2%	-2.2%	-3.1%	-4.0%	1.93	1.61%
Barclays US Treasury Intermediate	5.7%	3.7%	1.6%	-0.3%	-2.2%	-4.1%	-5.9%	-7.6%	-9.3%	3.99	1.64%
Barclays US Treasury Long	22.6%	11.9%	2.2%	-6.4%	-14.0%	-20.5%	-26.1%	-30.6%	-34.0%	18.29	2.23%

[1] Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

Long-Term Outlook – 20-Year Annualized Expected Returns[1]



- This chart details Meketa's long-term forward-looking expectations for total returns across asset classes.

[1] Source: Meketa Investment Group's 2022 Annual Asset Study.

Appendix

Data Sources and Explanations[1]

- US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.
- Developed International Equity (MSCI EAFE) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years.
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

[1] All Data as of February 28, 2022, unless otherwise noted.

Appendix

Data Sources and Explanations[1]

- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.
- Credit Spreads – Source: Bloomberg High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index.
  - Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year Treasury Yield.
- EM Debt Spreads – Source: Bloomberg, and Meketa Investment Group. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.
- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
- Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.
- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.

[1] All Data as of February 28, 2022, unless otherwise noted.

Appendix

Data Sources and Explanations[1]

- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

[1] All Data as of February 28, 2022, unless otherwise noted.

Meketa Market Sentiment Indicator

Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa's Risk Metrics.

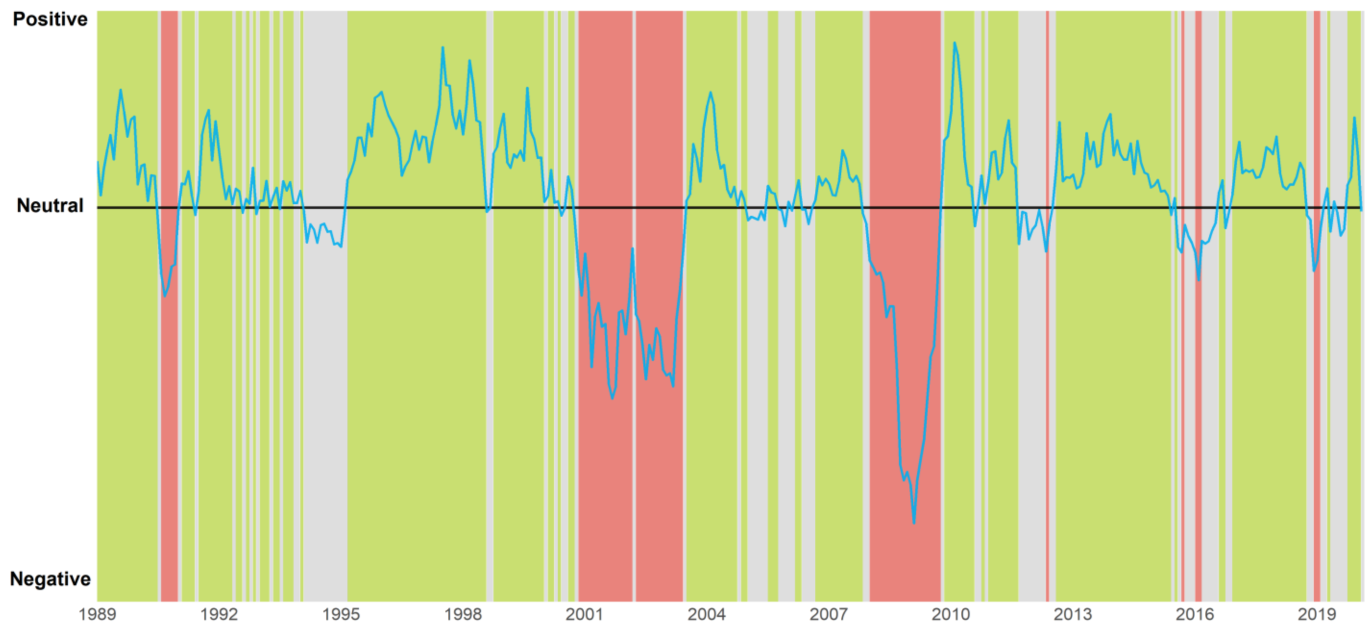
- Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market correction take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation-based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

What is the Meketa Market Sentiment Indicator (MIG-MSI)?

- The MIG-MSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

- Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.
- Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

- The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:
  - Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months).
  - Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
  - Both measures are converted to Z-scores and then combined to get an “apples to apples” comparison without the need of re-scaling.
- The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure[1]. The color reading on the graph is determined as follows:
  - If both stock return momentum and bond spread momentum are positive = GREEN (positive).
  - If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive).
  - If both stock return momentum and bond spread momentum are negative = RED (negative).

[1] Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.
“Time Series Momentum” Moskowitz, Ooi, Pedersen, August 2010. *http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf*

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

- There is strong evidence that time series momentum is significant and persistent. Across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

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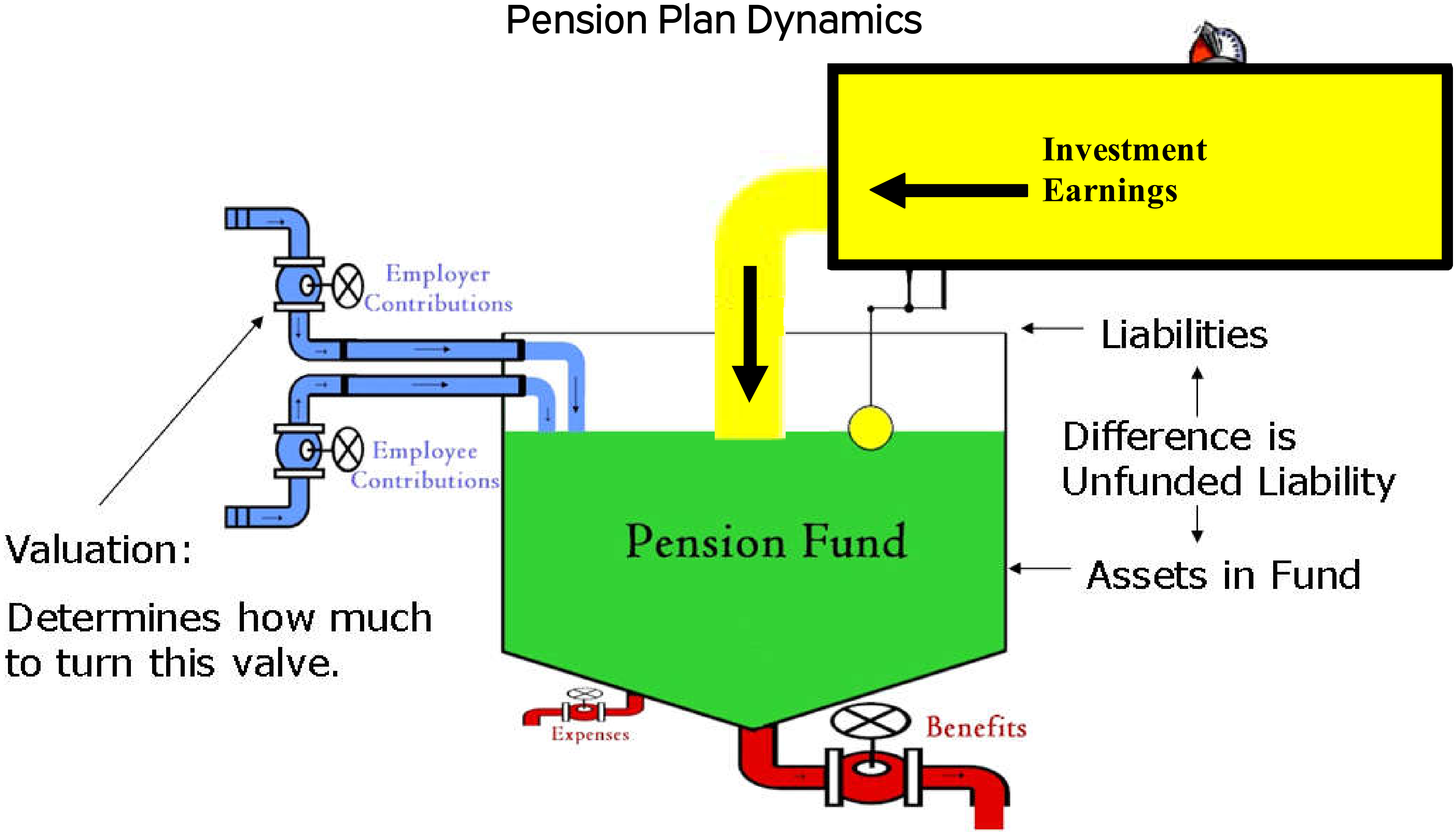
MEKETA
INVESTMENT GROUP

Actuarial Concepts
SJCERA Educational Session

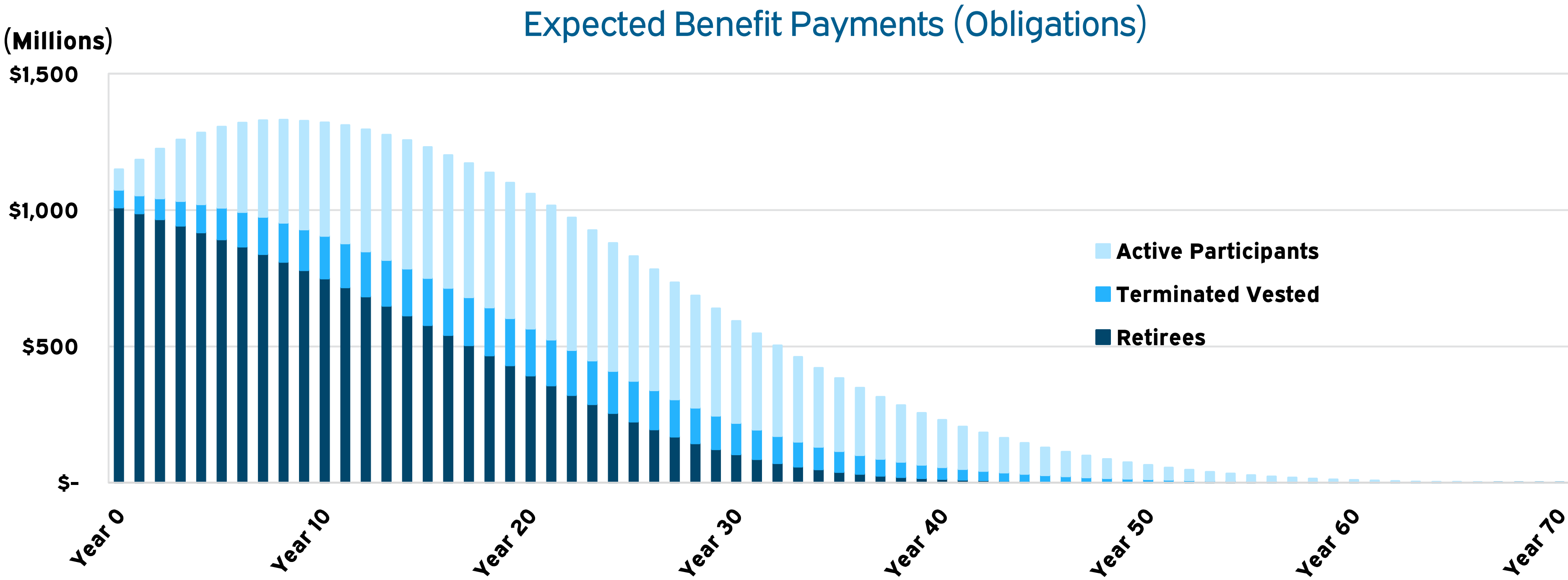
March 11, 2022

Pension Plan Dynamics



Source: Cheiron.

Example: Expected Benefit Payments and Plan Liability



- Benefit payments are determined by the provisions of the plan, generally based on how long participants work and salary earned.
- *Expected* benefit payments are determined by the plan's actuary using many assumptions, such as future mortality and salary increases.
- The liability is calculated by discounting the expected benefit payments using the assumed long-term actuarial rate.

- The funded status is an assessment of whether the assets are large enough to satisfy the obligations earned to-date, **assuming all actuarial assumptions are met.**

$$\frac{\text{Assets}}{\text{Liabilities}} = \text{Funded Status (Ratio)}$$

- If the funded status is less than 100%, the actuary will recommend the plan sponsor contribute assets to the plan to:
  1. close the funding gap; and
  2. fund the benefits expected to be earned by participants in the upcoming year
- If the funded status is more than 100%, the actuary could recommend a smaller contribution or no contribution at all.

Funded Status

- The actuarial value of assets (AVA) and actuarial accrued liability (AAL) change from one year to the next in a formulaic fashion.
  - Note: actuarial losses/gains are important considerations that are generally related to experience vs. assumptions.

Example: Change in AVA and AAL	
AVA at Beginning of Year	**AAL at Beginning of Year**
+ Contributions	+ Service cost (benefits accrued during year)
+ Actual return (accounting for any smoothing)	+ Interest cost
- Benefits paid	+/- Actuarial losses/gains during the year
- Expenses	- Benefits paid
= AVA at End of Year	**= AAL at End of year**

Moody's Measure

- For underfunded plans, one metric to monitor is Moody's "Tread Water" Measure.
- This metric is the bare minimum for a system to maintain solvency.

Moody's "Tread Water" Measure:
Service Costs + Interest Costs on UAAL ≈ Minimum Contribution Threshold

(i.e., contributions cover accrual of new benefits + interest costs, meaning UAAL is not increasing)

$$\frac{\text{Actual Contributions}}{\text{Service Costs + Interest Costs on UAAL}} > 1.0$$

- If the ratio of a plan's employer contributions to its Tread Water Measure > 1.0, then the plan exhibits a sustainable ability to continue financing its long-term obligations, otherwise, it is not even "treading water."

Actuarial Concepts SJCERA Educational Session

Key Terms

- PBO (projected benefit obligation)
  - Actuarial present value (at an assumed discount rate) of all future pension benefits earned to date.
  - Includes:
    - Remaining benefits for currently retired employees;
    - Retirement benefits earned to date for active employees;
    - Impact of future salary increases and service on the benefits for active employees.
- AAL (actuarial accrued liability)
  - For most public plans, this is the same as the PBO.
- AVA (actuarial value of assets)
  - The asset value for valuation purposes. Can be based on market value + any "smoothing" methods.
- UAAL (unfunded actuarial accrued liability)
  - AAL − AVA = UAAL
- Funded Status (Ratio)
  - AVA/AAL = Funded Status (Ratio)
- Discount Rate
  - The interest rate used to compute the present value of benefits and current service costs. The actuarial recommendation is for this rate to stay at or below the portfolio's expected long-term rate of return.
- Expected Return
  - The expected return of the investment portfolio. This may or may not equal the discount rate.

Actuarial Concepts SJCERA Educational Session

Key Terms

- Normal Cost or Current Service Cost
  - Present value of benefits expected to be earned during the upcoming period.
- Interest Cost
  - Increase in the liability due to the passage of time.
- ADC or ARC (actuarial determined contribution or actuarial required contribution)
  - The amount needed to fund benefits over time.
  - Typically, this is the amount necessary to fund the normal cost and amortize the unfunded liability per the amortization schedule (if applicable).
- Valuation Report
  - Utilizing current assumptions, an annual report that describes the financial position of a plan.
- Experience Study
  - A study performed every few years to ensure the assumptions are in-line with the plan's demographic and economic experience.
- Actuarial gains/losses
  - Changes in the AAL due to alterations in assumptions/methods (e.g., discount rate) or experience (e.g., salary growth).

Important Assumptions - SJCERA

Discount Rate (current = 7.0%, considering reduction to 6.75%)

- The rate at which expected benefit payments are discounted.
- A decrease in the rate of return assumption increases the present value of liabilities.

Inflation (current = 2.75%)

- General increase in prices and fall in the purchasing power.
- Future retirement benefit increases are influenced by inflation, leading to a larger liability.

System Payroll Growth (recent change = 3.0%)

- Estimate of year-to-year payroll increases.
- Payroll estimates are important from two perspectives: higher salaries lead to larger expected contributions and larger participant benefits.

The purpose of an asset-liability study…

- Complete a comprehensive analysis of the unique characteristics of the cash flows (i.e., net benefit payments, expenses, contributions, etc.);
- Identify material risks to the amounts of the cash flows, and;
- Align an asset allocation to match the plan sponsor’s risk tolerance.

Asset-Liability Process

- Funded ratios and valuation reports are *point-in-time* viewpoints of a system.
  - Any forward-looking projections assume all assumptions are perfectly met.
- Asset-Liability models seek to incorporate more probabilistic elements into the analysis, in particular, how volatility in the investment portfolio impacts the system.
  - Process examines potential ranges/probabilities for various actuarial metrics, such as the funded ratio, over long periods of time (e.g., 30 years).
  - Additionally, certain elements of the system (e.g., contribution rate) can vary over time depending on how the investment portfolio performs.

Project Goal:

To review and possibly modify a plan's Strategic Allocation Policy, reflecting the decision maker's unique definition, tolerance for, and beliefs about investment risk.

Asset-Liability Modeling Process

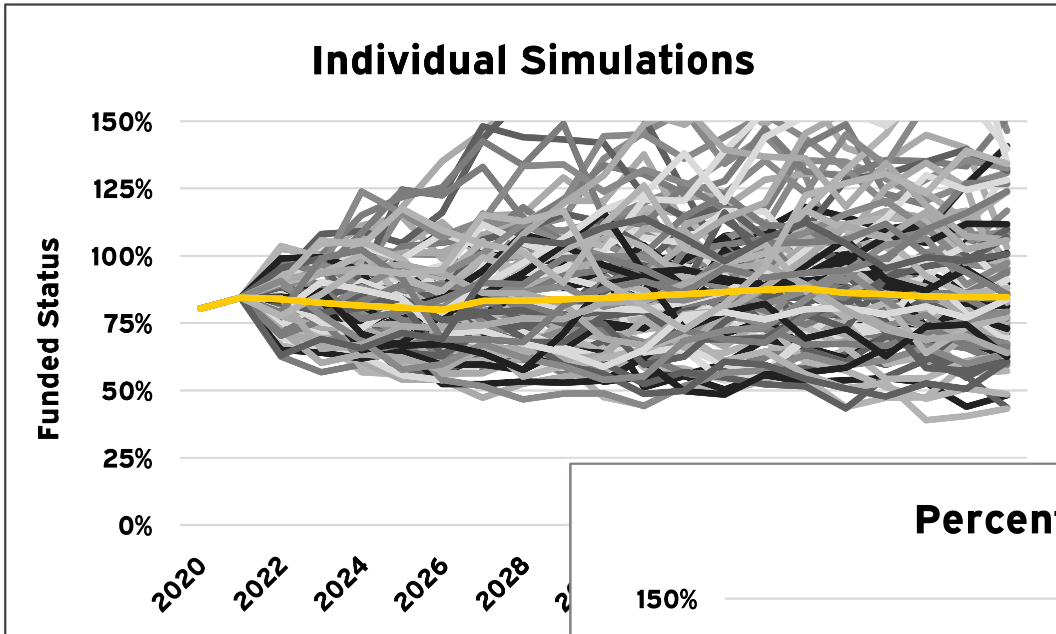
1. Collaboration
2. Optimize the asset allocation
3. Forecast the alternative asset allocations in an asset-liability model (ALM) lens
4. Benchmark to peers (if necessary)
5. Finalize the go-forward asset allocation
6. Monitor the strategic plan

Asset-Liability Process: Stakeholder Viewpoints

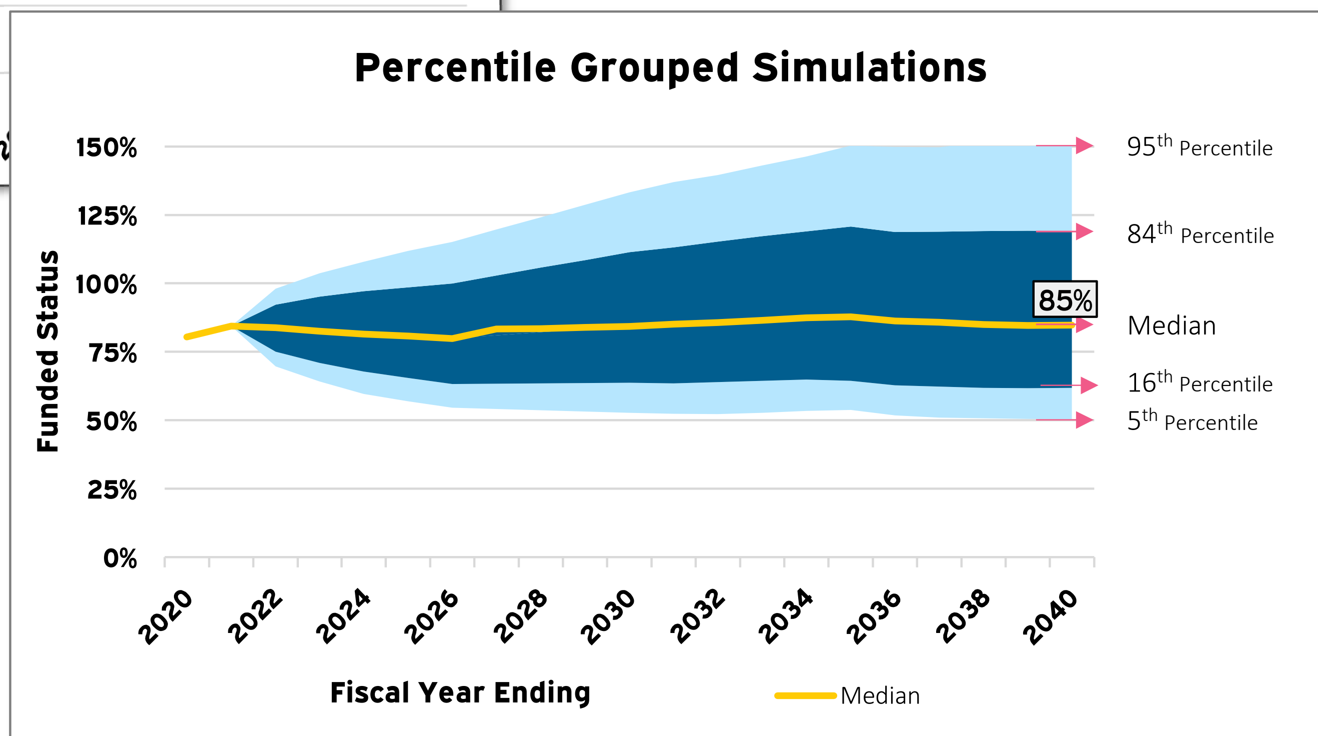
Stakeholders Perspectives on Risks/Implementations are Paramount

- Example Survey Questions
  - Objective - Rank the following priorities:
    - Maintain progress along the “funding path”.
    - Minimizing total portfolio declines of -10% or more in a fiscal year.
    - Achieving 100% funded in X years.
    - Minimizing contribution uncertainty.
  - Subjective - Agree or Disagree?
    - During a market crisis, the plan sponsor will be able to increase its contribution rate.
    - Alternative asset classes can help stabilize the total portfolio.
    - The cash-flow position is a key consideration when constructing an investment portfolio.
    - Producing a return pattern that is different than peers is a risk (given the same long-term return).
    - Different strategies and/or asset classes are interchangeable if they perform similar portfolio functions.
- Answers to such questions help frame the optimization parameters and guide the ultimate decision-making process.

EXAMPLE: Public Pension Asset-Liability Output



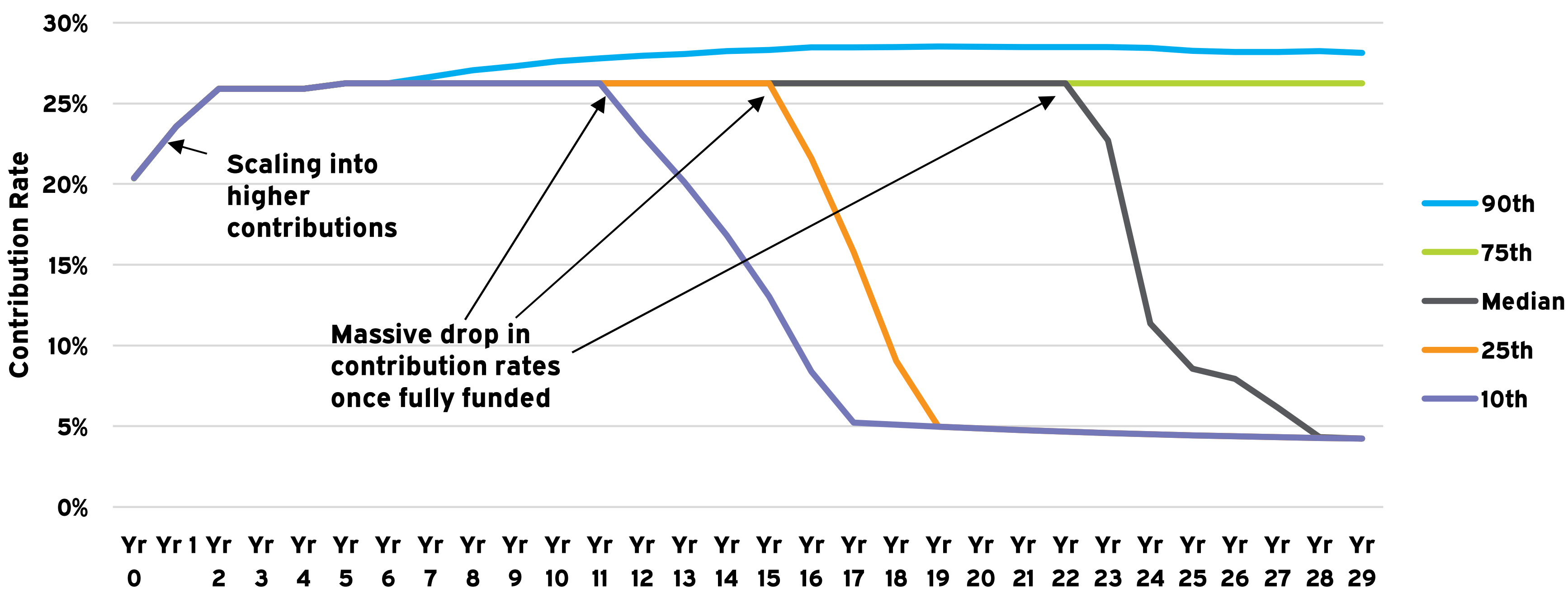
- The chart to the left displays a simulation of funded status outcomes based on the current investment policy, funded status, projected pension benefit payments and funding policy.
- The chart below summarizes those results into corridors of percentiles.
- Example: There is a 50% probability the funded status in 2040 is expected to be greater than 85%.



Analysis based on limited data from TCERA's website.

- The contribution policy is a primary area of focus during an asset-liability study.
- In addition to ranges for funded ratio, decision makers can also examine the probabilistic projections for contributions levels on a year-by-year basis and in aggregate.
  - While contribution policies fall outside of the OIC's purview, it is another mechanism to examine long-term plan solvency and risk.

Example: Employer Contribution Rate for Fiscal Year



Conclusion

- A defined benefit plan can ultimately be treated as a balance sheet:
  - Left side = assets
  - Right side = liabilities (benefits)
- Actuarial methods determine how the left and ride side of this balance sheet are determined and calculated.
  - These methods are complex, but they can be treated in a more simplified manner to improve decision-making.
- Asset-Liability Studies seek to examine this balance sheet over a long-term period in a probabilistic manner that examines a wide range of scenarios and metrics.

Next Steps

- The presentation in April will focus on two areas:
  - Preliminary Capital Market Assumptions for the optimization process.
  - Further examination of actuarial data, focusing on comparisons to peer systems.

Meeting Date	Activity
April 2022	Strategic Analysis of current portfolio • Proposal of initial expected returns and volatilities for modeling purposes. Initial Examination of Key SJCERA Risks • Analysis of key system metrics, measures, and sensitivities.
May 2022	Risk Definitions and voting • Dialogue with trustees and staff on what risk definitions are important for SJCERA moving forward.
June/July 2022	Final Model/Portfolio Selection and Implementation

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MEKETA
INVESTMENT GROUP

San Joaquin County Employee's Retirement Association (SJCERA)

March 11, 2022

Inflation: Current Environment

US Inflation Indicators – Basic Definitions

Consumer Price Index (CPI)

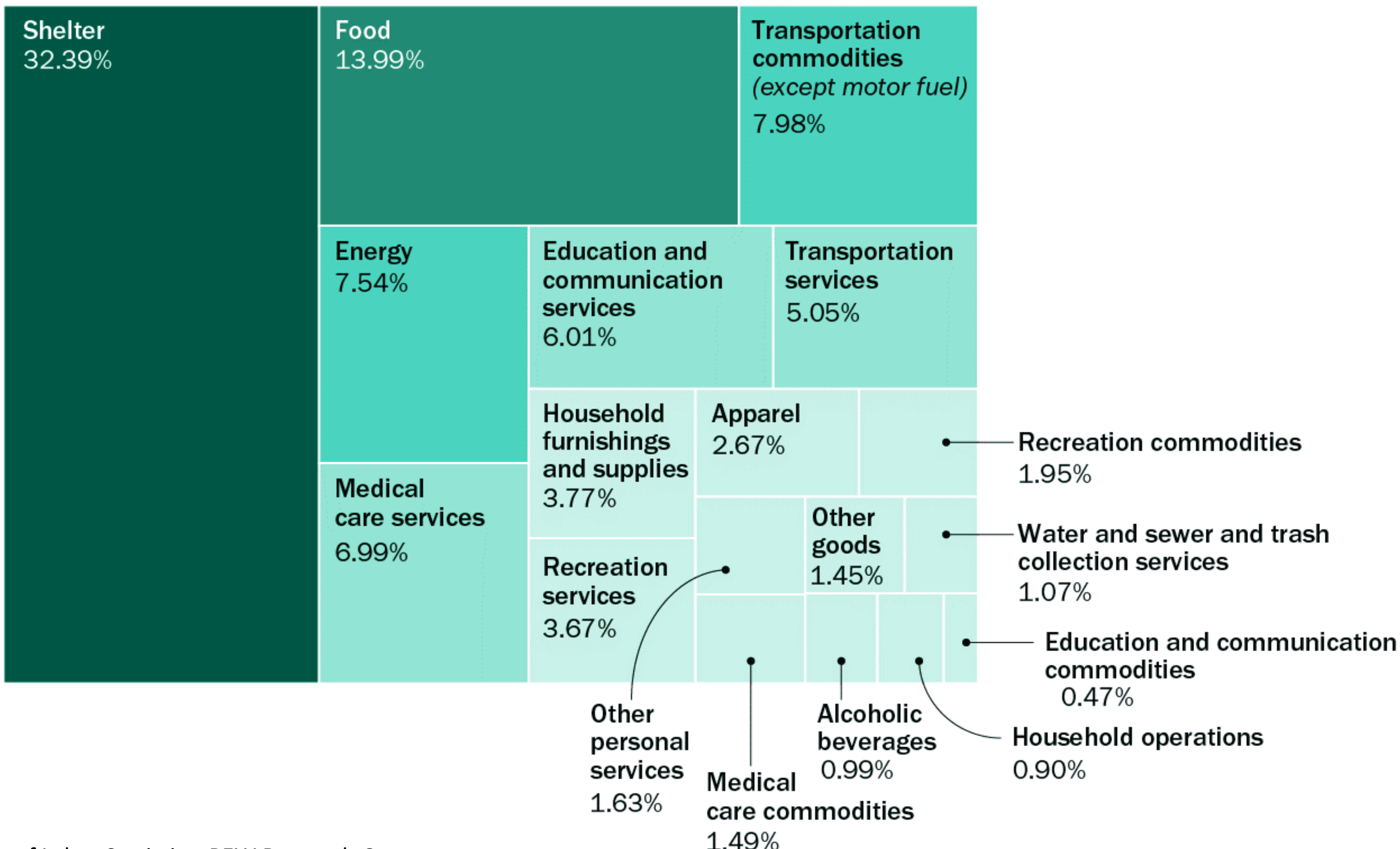
- Often called headline inflation; measures urban consumer prices produced by the Bureau of Labor Statistics.
- Intended to reflect individual out of pocket expenses, CPI is built using average prices.
- TIPS inflation protection references CPI.
  - Includes food, energy, rents, consumer durables and transportation costs.
- Measured monthly, the market tends to focus on year-on-year price changes.
- CPI ex-food and energy is often used to show underlying price inflation.

Personal Consumption Expenditures (PCE)

- Personal Consumption Expenditures is an estimate of all household costs produced by the Bureau of Economic Analysis.
- PCE is based on a survey of businesses.
- PCE is based on a superlative model reflecting substitution effects intended to capture household expenditures.
- The Federal Reserve FOMC Committee tends to focus on PCE as a reference for inflation pressures.
- In general, the PCE inflation index tends to be less volatile than CPI.
- Core PCE excludes food and energy costs.

What goes into the Consumer Price Index?

Relative importance of different expenditure categories, November 2021



Source: U.S. Bureau of Labor Statistics; PEW Research Center

US Inflation Indicators – Basic Definitions

Headline

- There are eight major components:
  - Food and Beverages
  - Housing
  - Transportation
  - Medical Care
  - Recreation
  - Education and Communications
  - Other Goods and Services

Core

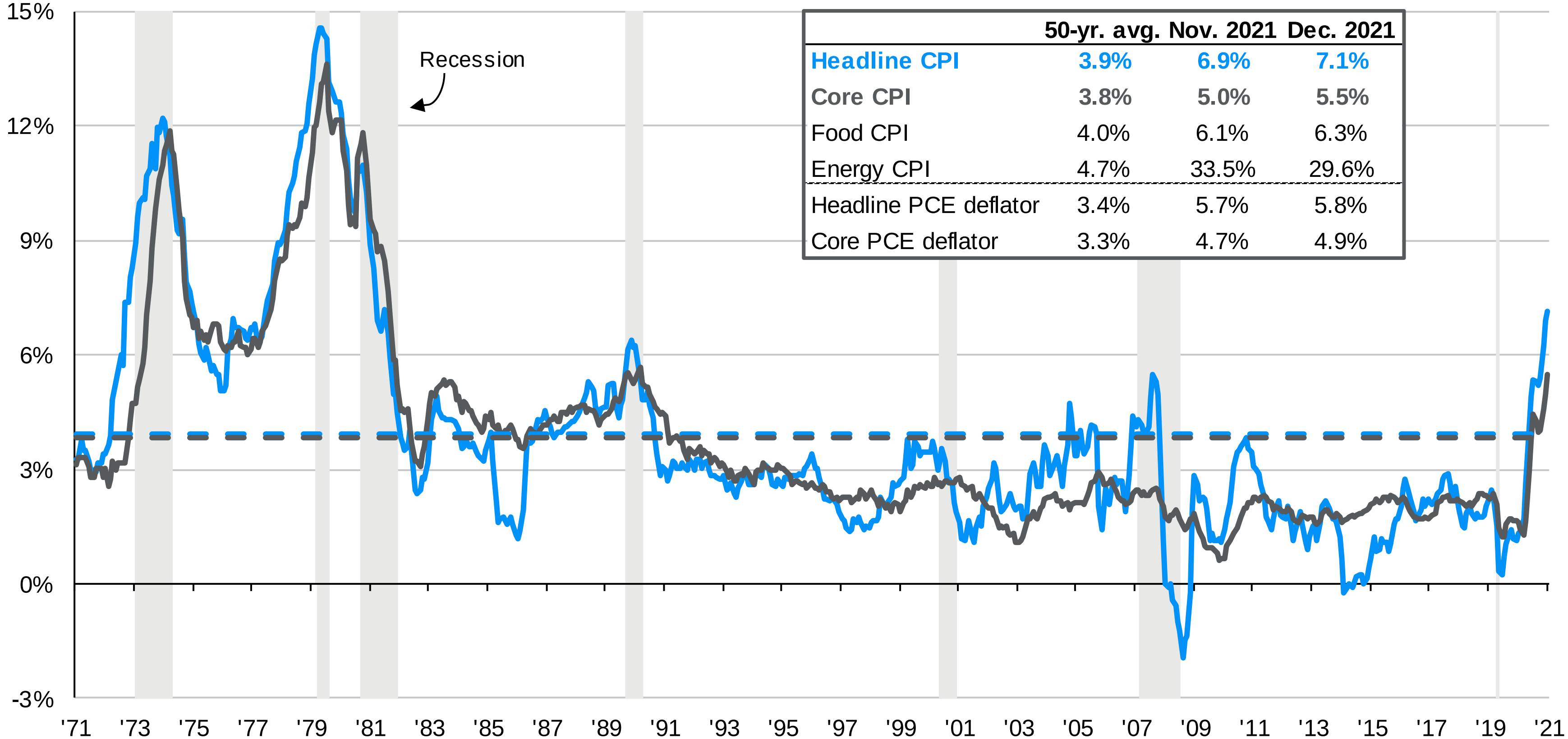
- Subset of Headline, strips out:
  - Food
  - Energy
- These components tend to be highly volatile
- Represents approximately 20% of household consumption in a developed economy

History of US Inflation

- US has experienced periods of high inflation.
  - Most of these periods occurred during materially different monetary regimes than current day.
- Since the early 1990s, US inflation has become less volatile, and some explanations include:
  - Advent of inflation targeting monetary policy in the US and other developed markets.
  - Financial market technology and efficiencies.
  - Business technology improvements on supply management.
  - Demographic and labor trends lowering input costs.

CPI and core CPI

% change vs. prior year, seasonally adjusted

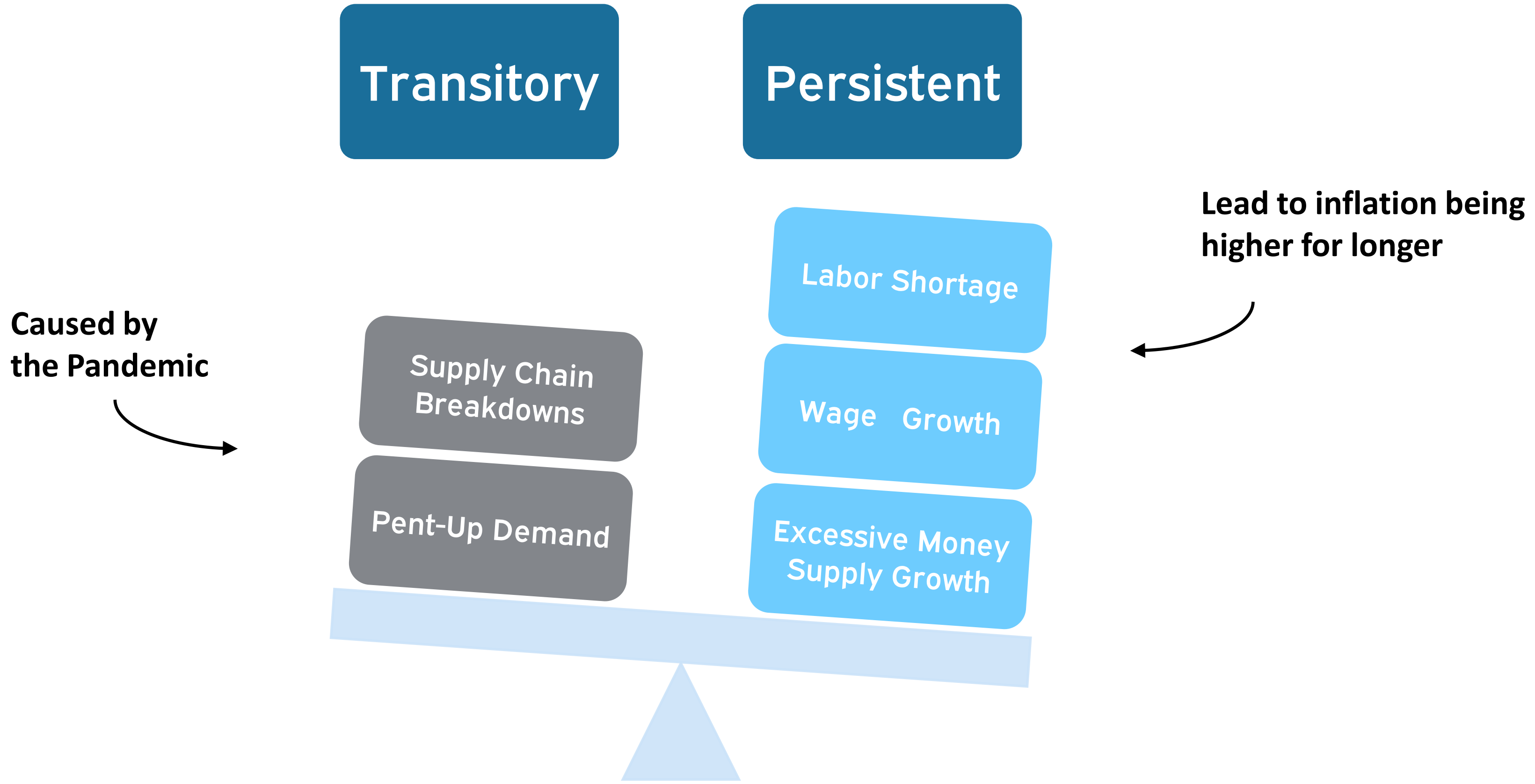


	50-yr. avg.	Nov. 2021	Dec. 2021
Headline CPI	**3.9%**	**6.9%**	**7.1%**
Core CPI	**3.8%**	**5.0%**	**5.5%**
Food CPI	4.0%	6.1%	6.3%
Energy CPI	4.7%	33.5%	29.6%
Headline PCE deflator	3.4%	5.7%	5.8%
Core PCE deflator	3.3%	4.7%	4.9%

Source: BLS, FactSet, J.P. Morgan Asset Management.
CPI used is CPI-U and values shown are % change vs. one year ago. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.
Guide to the Markets – U.S. Data are as of December 31, 2021.

Inflation Expectations

- What does "Transitory" really mean?



Bottlenecks & Pent-Up Demand – Likely Transitory

Largest % Increases in CPI Components
Dec. 2020 – Dec. 2021

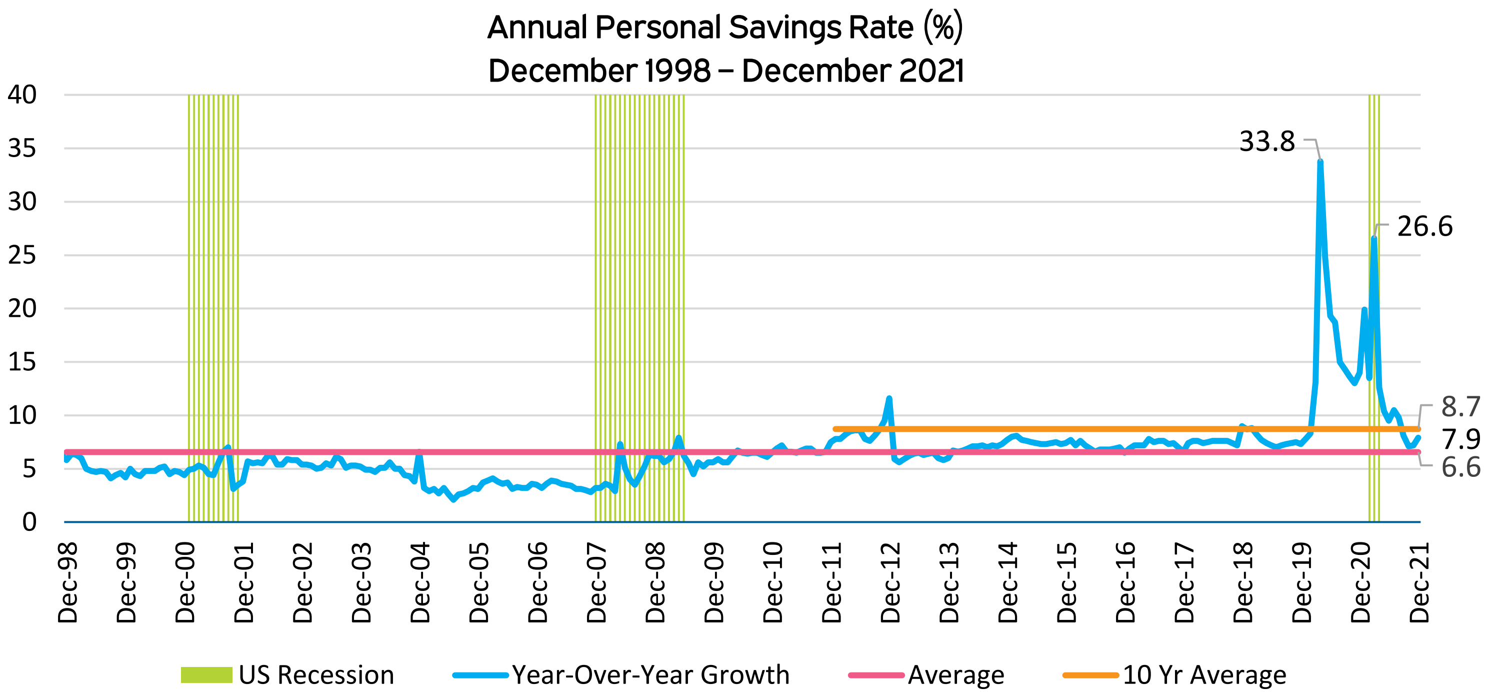
50.8%	Gasoline, unleaded regular
44.5	Gasoline, unleaded midgrade
41.9	Gasoline, unleaded premium
41.0	Fuel oil
37.3	Used cars and trucks
36.0	Car and truck rentals
33.8	Propane, kerosene and firewood
27.6	Other lodging away from home, including hotels and motels
24.1	Utility (piped) gas service
22.1	Uncooked beef roasts
21.4	Uncooked beef steaks
18.6	Bacon and related products
17.3	Living room, kitchen and dining room furniture
13.0	Uncooked ground beef
12.9	Window coverings

- Inflation fell significantly in the spring of 2020 in response to global lockdowns.
- In 2021, vaccination efforts supported a reopening of the US economy and some components of CPI rose dramatically.
- Some of these items included materials related to housing construction, used cars, and transportation services related to the delivery of goods.
- Some prices have returned to pre-lockdown levels (e.g., lumber) while others have not.

Source: Bureau of Labor Statistics; PEW Research Center

Personal Savings Rate – Likely Transitory

- Personal savings rate skyrocketed as the world locked down due to the pandemic.
  - Hitting 33.8%, a historic high, in April 2020.
- The personal savings rate has retreated to pre-pandemic levels, as enhanced employment benefits and child tax credits end.

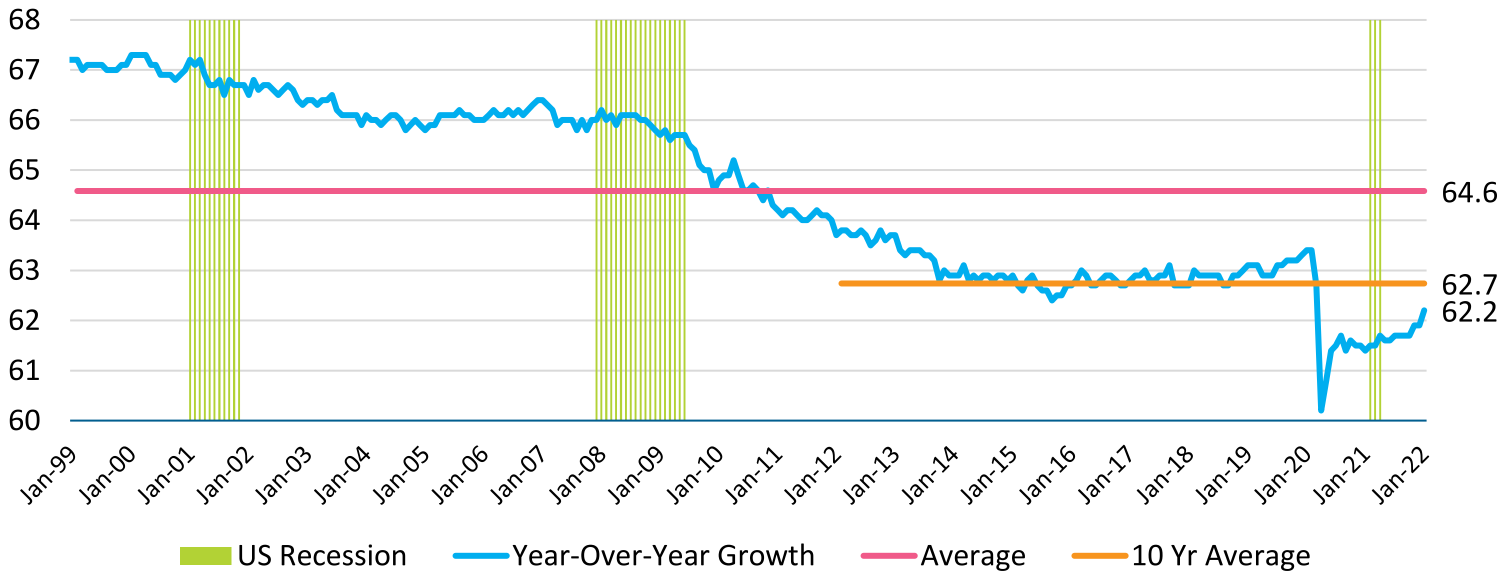


Source: Bureau of Economic Analysis. Monthly, Seasonally Adjusted.

Labor Shortage – Transitory or Persistent?

- Labor force participation remans below the longer-term and 10-year averages.
  - Demand for employees continues to outpace supply.
    - Weighing down potential economic growth.
    - Wages are bid up and those cost increases are likely passed onto consumers.
    - Feeding inflation pressures.

Labor Force Participation Rate (%)
January 1999 – January 2022

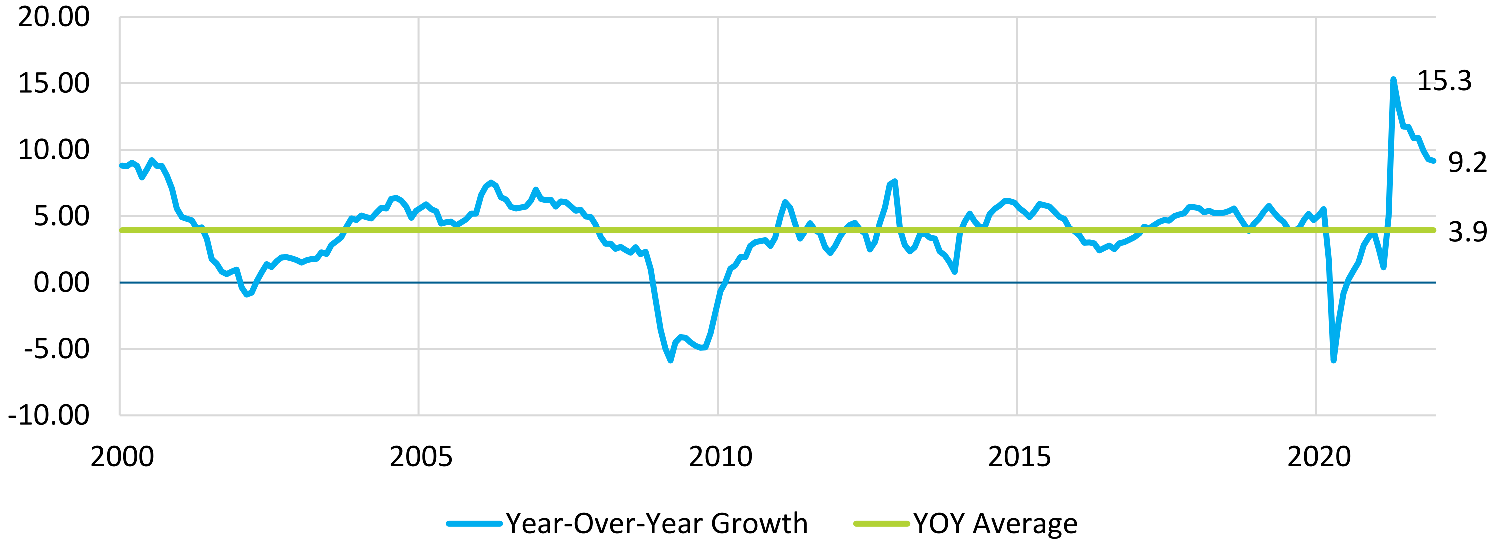


Source: FRED. Monthly, Seasonally Adjusted.

Wage Growth – How sticky is it?

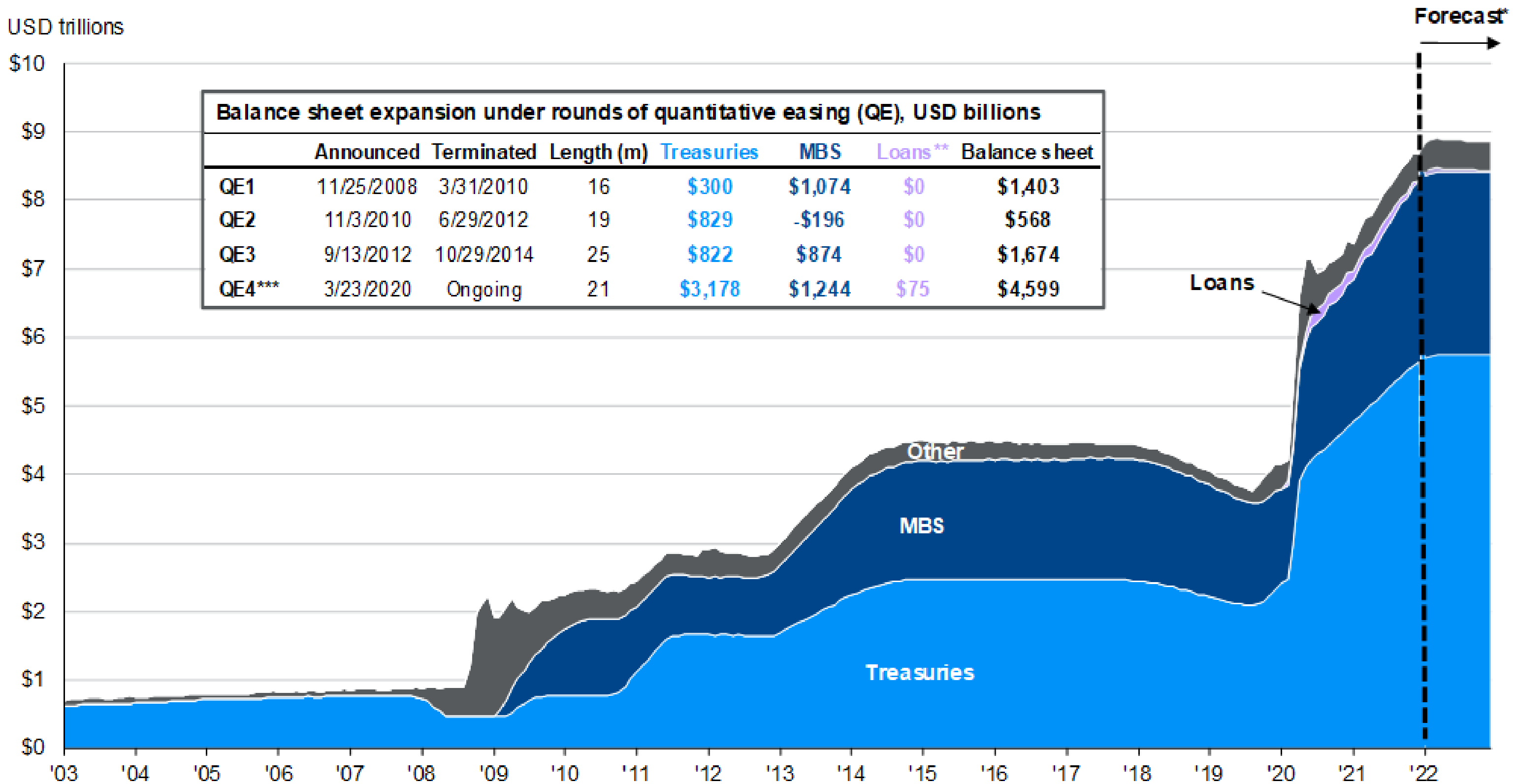
- A sharp and sizeable rise in wages is contributing to worries over inflation.
- Wage growth reaches record high (15.3%) in April of 2021.
  - Change primarily driven by composition and base effects.
- What could cause wage growth to remain elevated?
  - "Help Wanted" … millions of workers staying on the sidelines.

US Wages and Salary Growth (%)
January 2000 – December 2021



Source: TRADINGECONOMICS.COM | U.S. BUREAU OF ECONOMIC ANALYSIS.

Money Supply Growth – Transitory or Permanent?



Balance sheet expansion under rounds of quantitative easing (QE), USD billions

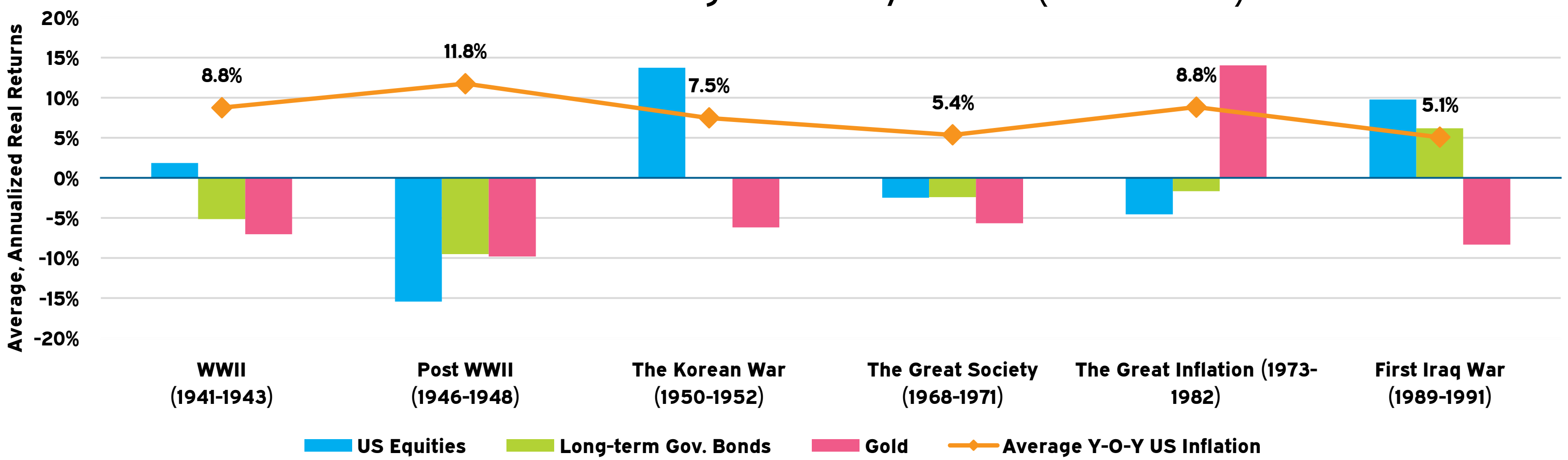
	Announced	Terminated	Length (m)	Treasuries	MBS	Loans**	Balance sheet
QE1	11/25/2008	3/31/2010	16	$300	$1,074	$0	$1,403
QE2	11/3/2010	6/29/2012	19	$829	-$196	$0	$568
QE3	9/13/2012	10/29/2014	25	$822	$874	$0	$1,674
QE4***	3/23/2020	Ongoing	21	$3,178	$1,244	$75	$4,599

Source: FactSet, Federal Reserve, J.P. Morgan Investment Bank, J.P. Morgan Asset Management.
Currently, the balance sheet contains $5.7tn in Treasuries and $2.6tn in MBS. *The end balance sheet forecast assumes the Federal Reserve reduces the pace of purchases of Treasuries and MBS by $30bn per month, beginning January through mid-March, as suggested in the December 2021 FOMC meeting. **Loans include liquidity and credit extended through corporate credit facilities established in March 2020. Other includes primary, secondary and seasonal loans, repurchase agreements, foreign currency reserves and maiden lane securities. ***QE4 is ongoing and the expansion figures are as of the most recent Wednesday close as reported by the Federal Reserve. Forecasts are not a reliable indicator of future performance. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated.
Guide to the Markets – U.S. Data are as of December 31, 2021.

Asset Class Performance in Inflationary Periods 1920 - 2020

- US equities, US government bonds, and gold have very long performance histories.
- Past performance may not predict future performance but examining historical behavior can be informative.
- Equity performance during inflationary periods may be lower due to rising costs of goods and services as well as higher borrowing costs.
- Interest rates tend to rise with inflation that erode bond prices and increase yields.
- Gold performed well in the 1970s but did not perform well in all inflationary periods.

Asset Performance During Inflationary Periods (1920 – 2020)



Source: FRED Periods of extended elevated inflation above 2%.

SJCERA Portfolio Considerations & Conclusion

SJCERA Portfolio

	Role Groups	Key Inflation-oriented Takeaways
Growth	Aggressive Growth	Short-term: • High inflation (particularly unexpected inflation) expected to negatively impact prices. • Private market pricing will obscure true impacts. Long-term: • Highest real rates of return.
	Traditional Growth	Short-term: • High inflation (particularly unexpected inflation) expected to negatively impact prices. • Longer duration assets (e.g., growth stocks) likely to experience greater impact. Long-term: • High real rates of return.
	Stabilized Growth	Short-term: • High inflation (particularly unexpected inflation) expected to negatively impact prices. • Floating rate credit instruments may weather the environment better. • For private markets components, smooth pricing mechanism will obscure true impacts. Long-term: • Moderate real rates of return.
Diversifying	Principal Protection	• Currently negative expected real rate of return. • Normalization in interest rates may improve inflation protection (cash has historically had high correlation to CPI prior to 2008/2009 GFC).
	Crisis Risk Offset	• Long Duration expected to experience material negative short-term impacts. • Trend Following has historically (and intuitively) offered inflation protection during sustained periods: ability to go long commodities, short equities, short bonds, & long relevant currencies. • ARP should be expected to experience moderate short-term impacts as risk premiums rise. • Adding Long Volatility/Tail Risk expected to improve short-term inflation-induced equity drawdown protection.

Conclusion

- Inflation is an extremely complex topic; economic theories continue to evolve.
  - Is the Phillips Curve dead?
  - Do we care about unexpected or expected inflation? Short-term vs. sustained inflation?
  - Can monetary policy guide both cost-push and demand-pull inflation?
  - How volatile is the required real interest rate?
  - Inflation is impacted by and also directly impacts economic growth, monetary policy, interest rates, etc.

- Contrary to popular belief, sustained inflation is a relatively new phenomenon.
  - Between 1600-1900, the average rate of inflation in the United Kingdom was 0%.*
  - For most of the 19th century, the average rate of inflation in the USA was also 0%.*

- For institutional investors such as SJCERA, protecting (or hedging) short-term inflation is typically not a useful exercise as it often lowers long-term real returns.

- Generating a long-term real rate of return is the ultimate goal. This often comes at the expense of short-term inflation protection.
  - 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.

*Source: *Expected Returns: An Investor's Guide to Harvesting Market Rewards, Antti Illmanen*

Conclusion (continued)

- Meketa does not believe SJCERA needs to alter the portfolio to address the current inflationary environment.

- While changes in the inflationary environment 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 inflationary impacts over longer periods of time.

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2022 LEGISLATION

Last Updated: 2/28/2022

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
Legislation Impacting SJCERA:					
AB 1824	Cooper	This bill represents the annual omnibus bill to propose technical "housekeeping" amendments to the CERL and PERL.	02/18/22	Assembly PE & R Comm.	SACRS
AB 1944	Lee/Garcia	This bill would specify that if a member of a legislative body elects to teleconference from a location that is not public, the address does not need to be identified in the notice and agenda or be accessible to the public when the legislative body has elected to allow members to participate via teleconferencing. This bill would require all open and public meetings of a legislative body that elects to use teleconferencing to provide a video stream accessible to members of the public and an option for members of the public to address the body remotely during the public comment period through an audio-visual or call-in option.	02/18/22	Assembly L. GOV. Comm.	
AB 1971	Cooper	This bill would: 1) delete the requirement that Board of Retirement regulations be approved by the Board of Supervisors, 2) allow members to designate a corporation, trust, or estate to receive their last check upon death, 3) note a potential federal pre-emption issue regarding purchasing prior military service, 4) include all leaves for service purchase that are covered under FMLA that are not due to member illness, 5) prevent windfalls for members who retire for disability from multiple systems, 6) provide Boards with authority to prevent furloughs from impacting member benefits, and other CERL amendments.	02/18/22	Assembly PE & R Comm.	SACRS
AB 2449	Rubio	Existing law, until January 1, 2024, authorizes a local agency to use teleconferencing without complying with specified teleconferencing requirements when a declared state of emergency is in effect. This bill would authorize a local agency to use teleconferencing without complying with those specified teleconferencing requirements if at least a quorum of the members of the legislative body participates in person from a singular location clearly identified on the agenda that is open to the public and situated within the local agency's jurisdiction.	02/18/22	From Printer	

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
AB 2647	Levine	This bill would require a local agency to make agendas and other writings distributed to the members of the governing board available for public inspection at a public office or location that the agency designates or post the writings on the local agency's internet website in a position and manner that makes it clear that the writing relates to an agenda item for an upcoming meeting.	02/19/22	From Printer	
SB 1100	Cortese	This bill would authorize the members of the legislative body conducting a meeting to remove an individual for willfully interrupting the meeting. The bill would require removal to be preceded by a warning, either by the presiding member of the legislative body or a law enforcement officer, that the individual is disrupting the proceedings and a request that the individual curtail their disruptive behavior or be subject to removal.	02/23/22	Senate GOV & F. and Jud Comm.	
Other Bills of Interest:					
AB 1722	Cooper	PERL, until January 1, 2023, provides state safety members who retire for industrial disability a retirement benefit equal to the greatest amount resulting from three possible calculations. This bill would delete the January 1, 2023 termination date which would make them operative in perpetuity.	02/03/22	Assembly PE & R Comm.	
AB 1795	Fong	This bill would require state bodies to provide all persons the ability to participate both in-person and remotely in any meeting and to address the body remotely.	2/18/22	Assembly G.O. Comm.	
SB 850	Laird	This bill, for purpose of the additional percentage of the special death benefit in the PERL, would require that payment be made to the guardian of the member's child or children, if the member does not have a surviving spouse.	02/07/22	Senate Joint Rule 55 Suspended	
SB 1114	Newman	This bill would make nonsubstantive changes to the PERL (spot bill).	02/23/22	Senate RLS Comm.	
SB 1173	Gonzalez/ Wiener	This bill would prohibit the boards of PERS & STRS from making new investments of funds in fossil fuel companies and require liquidation in fossil fuel before July 1, 2027.	02/18/22	From Printer	
SB 1420	Dahle	This bill would require a PERS agency that increases the compensation of a member who was previously employed by a different agency to bear all the actuarial liability for the action, if it results in an increase beyond what would have been reasonably expected for the member.	02/22/22	From Printer	

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
Federal Legislation:					
HR 2954	Neal	Called the "Securing a Strong Retirement Act of 2021", this bill would among other things increase RMD age to 75 from 72 over the next decade.	05/05/21	Ways and Means Committee	
HR 3684	DeFazio	Called the "Infrastructure Investment and Jobs Act", better known as the $1 trillion infrastructure bill, includes a crypto tax-reporting provision requiring digital asset brokers to report their users' annual transactions to the IRS effective year-end 2022.	11/15/21	Became Public Law No. 117-58	
HR 4728	Takano	To amend the Fair Labor Standards Act to reduce the standard workweek from 40 hours per week to 32 hours per week.	07/27/21	House Comm. on Education and Labor	

2022 TENTATIVE State Legislative Calendar

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

2022 CONFERENCES AND EVENTS SCHEDULE 2022

EVENT DATES 2022 BEGIN	END	EVENT TITLE	EVENT SPONSOR	LOCATION	REG. FEE	WEBLINK FOR MORE INFO	EST. BOARD EDUCATION HOURS
Feb 11	Feb 11	Administrators' Round Table	CALAPRS	Webinar	$50	calaprs.org	5 hrs*
Feb 18	Feb 18	Attorneys Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Mar 5	Mar 8	General Assembly 2022	CALAPRS	San Diego, CA	$150	calaprs.org	10.5*
Mar 15	Mar 15	Investments Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Mar 30	Apr 1	Advanced Principles of Pension Governance for Trustees	CALAPRS	Los Angeles, CA	$500	calaprs.org	9 hrs*
Apr 18	Apr 20	Pension Bridge Annual Conference	Pension Bridge	San Francisco, CA	N/A	Pension Bridge	14.4 hrs*
Apr 29	Apr 29	Trustees Round Table	CALAPRS	Webinar	$50	calaprs.org	5 hrs*
May 10	May 13	SACRS Spring Conference	SACRS	Rancho Mirage, CA	$120	sacrs.org	11 hrs*
May 27	May 27	Attorneys Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Aug 29	Sep 1	Principles of Pension Governance for Trustees	CALAPRS	TBD	$500	calaprs.org	9 hrs*
Sep 8	Sep 8	Investments Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Sep 16	Sep 16	Attorneys Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Oct 28	Oct 28	Trustees Round Table	CALAPRS	Webinar	$50	calaprs.org	4 hrs*
Nov 8	Nov 11	SACRS Fall Conference	SACRS	Long Beach, CA	$120	sacrs.org	11 hrs*

** Estimates based on prior agendas*

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION SUMMARY OF PENDING TRUSTEE AND EXECUTIVE STAFF TRAVEL					
2022 Event Dates	**Sponsor / Event Description**	**Location**	**Traveler(s)**	**Estimated Cost**	**BOR Approval Date**
Mar 5 - 8	CALAPRS General Assembly	San Diego, CA	McKelvey, Shick	$4,000	N/A
Apr 18 - 20	Pension Bridge Annual Conference	San Francisco, CA	McCray	$1,750	1/21/22
May 10 - 13	SACRS Spring Conference	Rancho Mirage, CA	Weydert	$1,750	N/A

SAN JOAQUIN COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

SUMMARY OF COMPLETED TRUSTEE AND EXECUTIVE STAFF TRAVEL

Event Dates 2022	Sponsor / Event Description	Location	Traveler(s)	Estimated Cost	Actual Cost	Event Report Filed
Feb 11	CALAPRS Administrators' Roundtable	Webinar	McKelvey, Shick	$100	$100	N/A
Feb 18	CALAPRS Attorneys' Roundtable	Webinar	Morrish	$50	$50	N/A

San Joaquin County Employees' Retirement Association

March 4, 2022

TO: Board of Retirement

FROM: Johanna Shick
Chief Executive Officer

SUBJECT: Chief Executive Officer Report

Strengthen the long-term financial health of the Retirement Plan

Review and confirm or refresh asset allocation

- *Deliver target investment return*
  - Investment performance
    Although the investment markets have been volatile recently, SJCERA's diversified portfolio is designed to perform in a variety of market conditions. It is in these types of challenging market periods that our allocations to Principal Protection and Crisis Risk Offset are intended to provide downside protection by helping to offset losses in the equity markets. Additionally, it is important to remember SJCERA invests for the long-term, rather than days, weeks or months. As such, we should not get overly excited or concerned about market fluctuations over a few months. While returns may fluctuate in the short-term, our investment strategy is designed to generate positive returns over decades. The SJCERA investment portfolio is broadly diversified in order to mitigate the effects of periods of market volatility and uncertainty such as the one we are currently experiencing.

  - Meketa's Due Diligence and Background Check Process
    The asset allocation has the greatest effect on whether SJCERA achieves its target investment return. Selecting good managers that perform as promised also plays a part. After reviewing an *Institutional Investor* article regarding the risk insufficient background checks can pose to Limited Partner (LP) investors with private managers, SJCERA Investment Officer Paris Ba reached out to Investment Consultant, David Sancewich to review Meketa's due diligence process. In summary, Meketa contracts with a third-party background check provider, Forward Risk, to conduct background and credit checks on key individuals at the General Partner (GP) level. In addition, Meketa conducts five to 15 reference checks (separate from the third-party background check) for each of the same managers.

Modernize the operations infrastructure

Implement Pension Administration System (PAS)

- *Contract with Pension Administration System (PAS) vendor*
  Three very experienced pension administration system companies have indicated an intent to bid on SJCERA's Pension Administration System contract. The Linea project team, along with ACEOs Brian McKelvey and Kathy Herman, Information Systems Manager Adnan Khan, Retirement Services Associate Ron Banez and I met with each of the prospective bidders on February 24 to discuss SJCERA's vision of the new system and provide opportunities for vendors to ask questions. Interested vendors must submit their proposals by March 24.

- *Contract with Data Conversion vendor*
  Two data conversion companies submitted questions by the February 17 deadline and SJCERA staff has provided responses. Data conversion vendors must submit their proposals by March 14.

Enhance the member experience

● *Complete improvements to website architecture and functionality*
Communications Officer Kendra Fenner and IT Systems Specialist II Jordan Regevig presented design mock-ups to internal stakeholders for feedback. ACEO Brian McKelvey, Accounting Technician II Marissa Smith, Retirement Technician Bethany Vavzincak, and I provided feedback. Next steps include internal stakeholder input on the site map, which shows how content on the website will be organized. As we progress, we will also reach out to external stakeholders (including employers and members) to get their input. Our goal is to have an intuitive, easy to use, helpful, website that reinforces confidence in SJCERA.

Improve technology for business operations

● *Adopt industry standard business processes wherever possible*
In our meetings with prospective PAS vendors, ACEOs Brian McKelvey and Kathy Herman, and I underscored the adoption of industry standard, streamlined, automated business practices as a high priority for SJCERA. This may require changes to some SJCERA processes or require Board action, but will streamline our day-to-day business, and help ensure implementation and future upgrades of the PAS will be as time and cost-efficient as possible.

Improve the employer experience

While work on this strategic goal is scheduled for a future year, it should be noted that one of the requirements we reviewed with prospective PAS vendors is a stakeholder portal. The portal will allow employers and SJCERA to easily and efficiently exchange files and any necessary instructions, with the goal of streamlining processes, improving communication and ensuring data accuracy and completeness.

Align resources and organizational capabilities

Develop and implement a workforce planning process

● *Implement strategies designed to support staff and maintain morale during PAS project*

- Random Acts of Kindness Week. Staff both gave and received during Random Acts of Kindness Week. Our “Change for Change” campaign asked staff to bring in extra coins (or dollars) under seat cushions, in coat pockets, or desk drawers, to contribute to a local charity of staff’s choosing. Additionally, staff received various acts of kindness in the form of special food treats, lottery tickets, and exchanged emails affirming positive attributes and habits we admire and enjoy about each other. ACEO Brian McKelvey and I both sent a personalized email to each staff member recognizing their unique talents and contributions to SJCERA.

Enhance education and development across all levels of the organization

● *Offer training and development opportunities intended to strengthen SJCERA’s on-boarding and* succession planning
ACEO Brian McKelvey has outlined an initial list of training and development opportunities to formalize staff on-boarding. The outline will be fully developed over the next month and training content will be identified or created as needed.

Implement practices to support Board continuity and evolution

While the primary effort on this strategic goal is scheduled for a future year, trustee education (with periodic refreshers on important topics) helps to support this goal. Staff and consultants provided the first of two trustee orientation sessions to Robert Rickman on February 28, and Fiduciary Counsel Ashley Dunning is providing a refresher training to the full Board with guidelines on providing sufficient oversight to fulfill fiduciary duties.

Create a foundation of performance metrics and measurements
While work on this strategic goal is scheduled for a future year, it should be noted that case management tracking and performance measure reporting were among the requirements we reviewed with prospective PAS vendors in our meetings on February 24.

Maintain a High-Performing Workforce
Employees of the Month. Congratulations to Ron Banez, Melinda DeOliveira, Marissa Smith, Carmen Murillo, Adnan Khan, and Marta Gonzalez for being named employees of the month. These employees were recognized because of their hard work and contributions on the Pension Administration System (PAS) RFP. Their countless hours of detailed review for accuracy and compliance with SJCERA's implementation of the County Employees Retirement Law (CERL), resulted in an RFP that ACEO Brian McKelvey, who has seen scores of similar RFPs during his career, described as the best he's seen! Great job team!

Recruit and Retain Talented Staff. Congratulations to Kendra Fenner on her promotion to Communications Officer. Kendra studied Communications at University of the Pacific and, during her time here as Administrative Secretary, has demonstrated strong skills in this area. I am also pleased to announce Elaina Petersen will be joining SJCERA on March 14 as our new Administrative Secretary (filling the vacancy created by Kendra's promotion). Elaina comes to SJCERA with many years of County administrative experience, and a reputation for being a self-starter and the "go-to" person on anything related to her job. When reaching out to references and people who know her "You won't be disappointed" was a common refrain. We are very excited to have Elaina join the SJCERA team.

Maintain Business Operations
Corrected 1099-R forms mailed
A total of 7,309 IRS forms *1099-R* were mailed to payees for the tax year 2021. Due to the Alameda case, SJCERA adjusted 135 retiree pensions in 2021. Of the 135 retirees affected by the Alameda adjustments, 84 required Corrected *1099-R* forms, all of which have been mailed to members.

Conflict of Interest: Form 700. Trustees and specified staff members must submit their original, signed Form 700 to Greg Frank by the March 23 deadline.

Manage Emerging Organizational Needs
Allum et al v. SJCERA
As authorized by the Board of Retirement, I signed the settlement agreement waiving SJCERA's collection of allowed costs from the plaintiffs. The plaintiff previously submitted a declaration of assets indicating insufficient assets. In the settlement agreement, the plaintiff agreed to abandon the cost appeal, and release and forever discharge the County and SJCERA from any and all claims/demands asserted in the litigation.

Board Elections. Management Analyst III, Greg Frank is working with the Registrar of Voters to prepare for elections for the Safety and Alternate 7th seats. Those interested in running may obtain and file a "Declaration of Candidacy" and a "Candidate Statement of Qualifications" with the Registrar of Voters from April 18 to May 6.

Member Contributions. Staff is working with the County to restart contributions for nine Tier 1 members who hit the 401(a) earnings limit in 2021. Contributions for this small group were not restarted in January 2022 . Currently this is a manual process which is completely reliant upon the employer to monitor. We are excited that the implementation of the new PAS will provide another opportunity to improve this process with automated validations and controls.

Conclusion
SJCERA's success is the direct result of commitment and dedication from our staff. While these times may be uncertain, one thing remains constant, our commitment to staff and our members; we are committed to providing training and opportunity for staff and the best service possible to our members. Our staff's unwavering dedication never ceases to impress me and I couldn't be prouder to work with such a great group of individuals.

Cheiron's 2021 Survey of Public Retirement Systems in California					
System Name	**MVA Funded Ratio**	**Unfunded Actuarial Liability (in thousands)**	**UAL as a % of Payroll**	**Discount Rate**	**Valuation Date**
SJCERA - San Joaquin County	**68.1%**	**1,661,000**	**334%**	**7.00%**	**1/1/2021**
KCERA - Kern County	73.1%	1,929,100	310%	7.25%	6/30/2021
MCERA - Merced County	78.0%	328,000	225%	6.75%	6/30/2021
ACERA - Alameda County	80.0%	2,094,800	181%	7.00%	12/31/2020
OCERS - Orange County	80.7%	4,410,600	225%	7.00%	12/31/2020
MCERA - Mendocino County	84.9%	123,500	153%	6.75%	6/30/2021
StanCERA - Stanislaus County	86.6%	422,400	138%	6.75%	6/30/2021
SDCERA - San Diego County	87.0%	2,375,200	162%	7.00%	6/30/2021
LACERA - Los Angeles County	89.1%	8,886,000	98%	7.00%	6/30/2021
SBCERS - Santa Barbara County	89.5%	470,100	118%	7.00%	6/30/2021
SBCERA - San Bernardino County	91.2%	1,319,900	81%	7.25%	6/30/2021
SCERA - Sonoma County	94.2%	190,700	48%	7.00%	12/31/2020
SCERS - Sacramento County	94.4%	745,600	69%	6.75%	6/30/2021
FCERA - Fresno County	94.5%	366,700	76%	6.50%	6/30/2021
TCERA - Tulare County	95.4%	90,200	31%	7.00%	6/30/2021
Contra Costa County ERA	95.7%	451,400	46%	7.00%	12/31/2020
SamCERA - San Mateo County	96.1%	245,000	40%	6.25%	6/30/2021
ICERS - Imperial County	98.4%	18,800	14%	7.00%	6/30/2021
MCERA - Marin County	105.6%	(178,600)	-63%	6.75%	6/30/2021
VCERA - Ventura County	107.4%	(526,700)	-64%	7.00%	6/30/2021

THE NCPERS
MONITOR
The Latest in Legislative News — February 2022

In This Issue

Pensions Deliver Benefits More Efficiently than 401(k)s, NIRS Study Finds

Defined benefit pensions continue to offer significant economic efficiencies that individual defined contribution accounts can't replicate, a new analysis by the National Institute on Retirement Security has found.

A typical pension has a 49% cost advantage as compared to a typical 401(k) plan or similar account because of features such as longevity risk pooling, higher investment returns, and optimally balanced investment portfolios, NIRS reported.

"DB plans should remain a centerpiece of retirement income policy and practice, given the persistent advantages in economic efficiency," NIRS concluded.

The report, titled *A Better Bang for the Buck 3.0: Post-Retirement Experience Drives the Pension Cost Advantag*e, is based on a comparison of defined benefit and defined contribution plans, and follows previous analyses conducted in 2008 and 2014. NIRS constructed a model that looks at the cost of achieving a target retirement benefit in a typical public sector pension plan. It then compares the cost of providing the same benefit via an "ideal" defined contribution based on generous assumptions and a typical individually directed plan.

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2022 Midterm Elections

By Tony Roda

Photo Illustration © 2021, iStock.com

In our modern political history midterm Congressional elections have not been kind to the parties of first-term presidents, and the seat swings in the House have been enormous in some years. In the six most recent midterm elections held in the first term of a president, the party of the president lost House seats in five of those elections – in 1982 Ronald Reagan's GOP lost 27 seats, in 1990 George H.W. Bush's party lost 9 seats, in 1994 Bill Clinton's Democratic party lost 52 seats, Barack Obama's party lost 63 seats, and Donald Trump's GOP lost 40 seats. The only exception was in 2002 when George W. Bush's Republican Party picked up 6 seats, but recall that this was the first election after 9/11 and reflected the unique politics of that time.

Both parties are keenly aware of the pendulum swings and are gearing up for a major battle this fall. Also, the redistricting process is currently playing out in the states and in the courts. Thirteen states will either win or lose seats. In the plus column, Colorado, Florida, Montana, North Carolina, and Oregon will each gain one seat, while Texas will add two seats. Losing one seat each are California, Illinois, Michigan, New York, Ohio, Pennsylvania, and West Virginia. While this is interesting from an overall national demographic perspective, in each state control of the governorship and state legislatures as well as whether there is an independent redistricting commission will tell the final story of which party comes out ahead. The same is true for states where there are no changes in total House seats but still must redistrict.

As of this writing, the redistricting process is not completed in all states and the courts may well challenge lines that have been drawn, such as the Ohio Supreme Court recently did. According to David Wasserman, Senior Editor of the Cook Political Report, Republicans will emerge from the redistricting process with a slight advantage, but the biggest winner will be lack of competition. From what we know so far, the most competitive seats – those that voted for either Biden or Trump by less than five points – will decrease from 34 to 19 seats. In contrast, Republican leaning seats (those that voted for Donald Trump by at least five points in 2020) will increase from 106 to 117, and Democratic-leaning seats will increase from 138 to 144.

Turning to the Senate, which is currently deadlocked at 50-50, with two Independent Senators caucusing with the Democrats, the midterms present very high stakes. The 50-50 split in the Senate plus a Democratic presidential administration, with Vice President Kamala Harris as the tiebreaking vote, allows Senate Democrats to exercise the powers of the majority, namely to chair committees and set the agenda for the Senate floor.

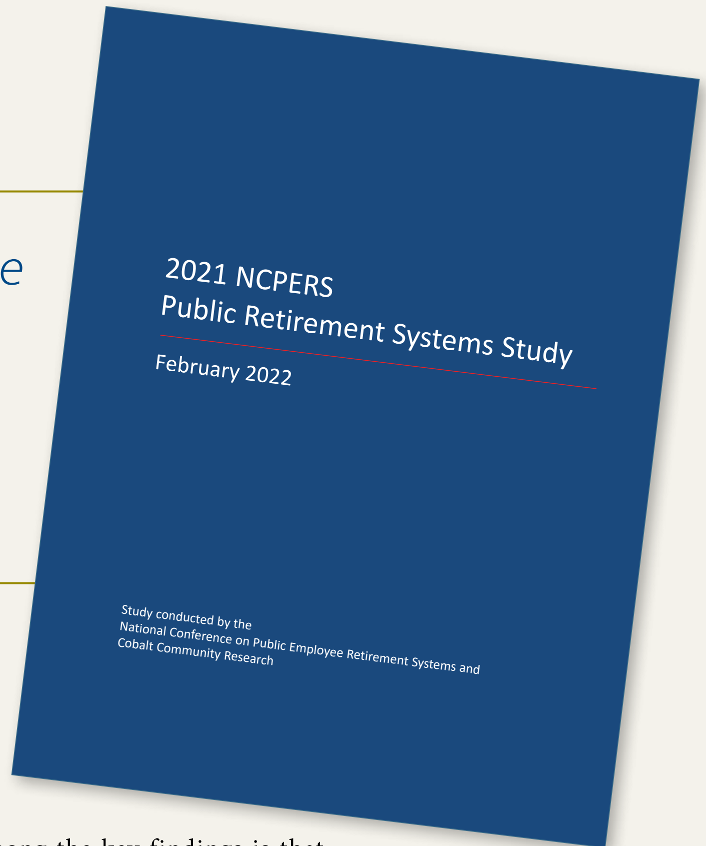
There are 34 Senate seats up for election in 2022. One-third of Senate seats are "in-cycle" during each election. Of the 34 seats, Democrats are defending 14 and Republicans are defending 20. Eight seats are viewed as battleground or competitive, but a quick snapshot today, in my opinion, shows only three serious races: Georgia (Raphael Warnock), Wisconsin (Ron Johnson), and Pennsylvania (open, with

CONTINUED ON PAGE 5

NCPERS Executive Directors Corner

NCPERS Annual Census of Pension Systems Is a Valuable Benchmarking Tool

Our 11th annual study is a cornerstone of the NCPERS member value proposition. Once again it is rich with details on the fiscal and operational integrity of public pensions.



The 2021 NCPERS Public Retirement Systems Study has arrived, providing members with a dynamic tool for benchmarking and comparing practices of public pension systems.

Our 11th annual study is a cornerstone of the NCPERS member value proposition. Once again it is rich with details on the fiscal and operational integrity of public pensions, and includes a dashboard that members can use to refine data and customize peer groups. We hope you will join us on February 15, 2022 at 1 pm Eastern Standard Time for our annual webinar to go over the findings and the dashboard's capabilities.

The study, conducted between September and December 2021, draws on data from the latest fiscal year for 156 public pension plans with aggregate assets of $2.6 trillion. Because fiscal year-end dates vary, most participants submitted data for either calendar year 2020 or the 12 months ended June 30, 2021.

Among the key findings is that public pension funds continued to tightly manage expenses and reduce their assumed rates of return. The study found that the expense for administering funds and paying investment managers fell to 54 basis points in the 2021 study, down from 60 basis points in 2020. This demonstrates how well pension plans stack up against hybrid mutual funds, which had an annual expense rate of 59 basis points, according to the 2021 Investment Company Fact Book. One hundred basis points equals one percentage point.

Pension funds reduced their assumed annual rates of return to an average of 7.07% in 2021, down from 7.26% a year earlier. The members-only dashboard enables users to slice and dice investment return data, including differentiating between pension systems whose members participate in Social Security and those that don't.

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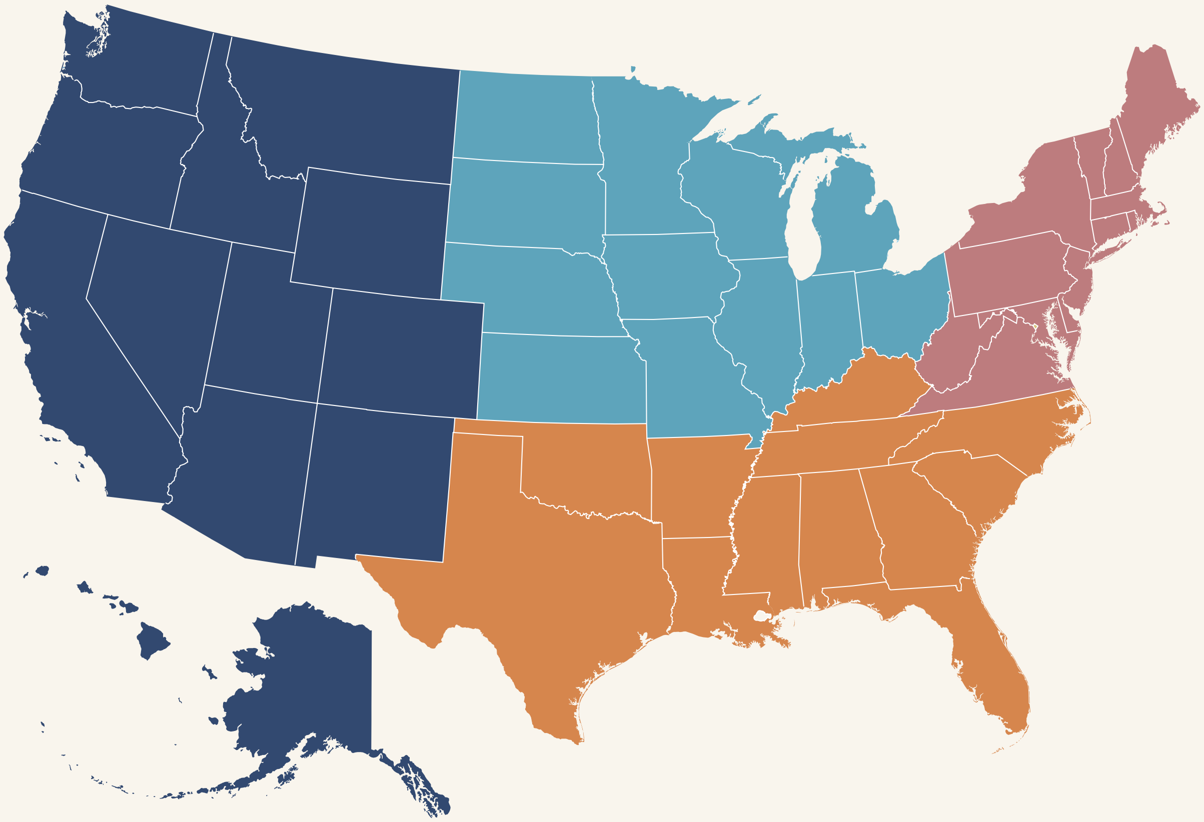
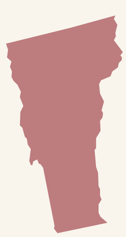
NCPERS Around the Regions

This month, we will highlight Vermont, Indiana, Kentucky and New Mexico.



NORTHEAST: Vermont



Vermont's Pension Benefits, Design, and Funding Task Force issued its final report on January 10, endorsing a package of recommendations and setting the stage for legislative action.

The report culminated 18 meetings and public hearings that were conducted between July 2021 and January 2022 to collect stakeholder feedback about addressing unfunded liabilities. The funded ratios of the separate pension plans for state employees and teachers had declined at the end of fiscal year 2021 to 67.6% and 52.9%, respectively, versus 94.1% and 80.9% at the end of fiscal year 2008.

The task force recommended committing $200 million for one-time appropriations to reduce unfunded liabilities—$75 million for the state employees' plan and $125 million for the teachers' plan. They also proposed earmarking 50% of revenue surpluses in the state's general fund to be evenly split between the two pension plans.

The next steps are for the reform plan to be crafted into a bill, which would initially be considered by the Senate Government Operations committee.

The legislature formed the task force in April after a public pension overhaul bill attracted a strong backlash from teachers and employees, including public demonstrations in opposition. The new proposal was crafted by a task force consisting of lawmakers and representatives from the Vermont chapter of the National Education Association, the Vermont State Employees Association, and the Vermont Troopers Association.

The deal before lawmakers now keeps the retirement age for teachers as is, and it preserves a cost-of-living adjustment. Steve Howard, the executive director of the VSEA, told the news website VTDigger that the deal eliminates changes to the pension that

CONTINUED ON PAGE 7

NIRS STUDY CONTINUED FROM PAGE 1

NIRS broke down the elements of the 49% cost advantage of a typical defined benefit plan versus a typical defined contribution plan, which puts the burden on an individual worker to manage their portfolio.

- Longevity risk pooling accounts for 7% of the cost savings. NIRS noted that pooling risk enables pension funds to fund benefits based on average life expectancy, while paying each worker monthly income no matter how long they live. Workers with defined contribution plans, on the other hand, have to self-insure against the possibility of living longer and outlasting their financial resources by making excess contributions.

- A more diversified portfolio makes up 12% of the cost savings. Pensions are "ageless" and therefore "can perpetually maintain an optimally balanced investment portfolio rather than the typical individual strategy of downshifting over time to a lower risk/return asset allocation," the report said. The upshot is that over a lifetime, pensions earn higher investment returns as compared to defined contribution accounts.

- Superior investment returns from lower fees and professional asset management accounts for 30% of the cost savings. Pensions realize higher net investment returns due to professional management and lower fees from economies of scale, the report said.

Pensions maintained their advantage even when compared to an "ideal" defined contribution account. A defined benefit pension plan costs 27% than such a plan, which would be generously modeled to include the same fees and investor skill as a pension plan.

Stated another way, the report found that a defined contribution plan would require contributions equal to 16.5% of payroll to achieve a target retirement benefit that will replace 54% of final salary. An individually directed defined contribution almost twice as much—32.3% of payroll. And even an "ideal" plan would need 22.6% of payroll to provide the targeted benefits.

NIRS said that four-fifths of the difference in costs between pensions and defined contribution accounts occurs during the post-retirement period. "Retirees typically move from an environment that benefits from a long investment horizon and fiduciary protections to one where individuals manage their spend-down on a short-term basis without the benefits associated with longevity risk pooling," the report said.

The report also tackles two new topics: The impact of the current low interest rate environment on portfolios, and how saving mid-career rather than early in a career reduces total retirement savings. ◆

2022 MIDTERM ELECTIONS CONTINUED FROM PAGE 2

Pat Toomey retiring). This number is certain to grow, however, and will be highly dependent on who wins the various party primaries and the mood of the country in the fall. Interestingly, and on a slightly positive note for Senate Democrats, of the 14 seats they are defending, all of them were carried by President Biden, while Republicans are defending two seats that President Trump lost – Wisconsin and Pennsylvania.

It's impossible to predict the outcome of elections that will be held nine months from now; in most years it's impossible for professional prognosticators to predict an election that will occur the next day. However, with fewer competitive seats in the House over the next decade, the political center of that body will be starved of influence. As a result, reaching consensus in the House on major policy issues will become even more difficult to achieve.

The Senate, meanwhile, which cannot move legislation unless 60 votes are attained, will continue to be the chamber where major initiatives are hammered out. We've seen an example of this in the current Congress, with the Senate's bipartisan infrastructure bill ultimately being approved by the House without any changes.

Be assured that NCPERS will be closely monitoring the upcoming midterm elections and will provide its members with updates when significant matters arise. ◆

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.

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It's worth noting that pension systems were trimming their assumptions at a time when markets were starting to go gangbusters. Funds reported one-year returns averaging 14%, five-year returns of 8.7% annually, 10-year returns of 8.4% annually, and 20-year returns of 6.7% annually. This willingness to reduce expectations amid robust market performance is clear evidence that trustees take their fiduciary responsibilities seriously. Many are pursuing cost savings and adopting more conservative assumptions despite the fact that some market segments are exceeding performance expectations.

This year's study participants were roughly evenly split between statewide pension systems—47%—and local pension systems—53%. NCPERS conducted the 11th annual study from September through December 2021 in partnership with Cobalt Community Research. In other key findings:

- Pension systems said earnings on investments accounted for 68% of overall pension revenues in their most recent fiscal year. Employer contributions made up 23% of revenues, and employee contributions totaled 8%.
- The Covid-19 pandemic accelerated efforts by public pension systems to expand their communications capabilities. In all, 78% offered live web conferences to members during 2021, up from 54% a year earlier.
- Pension funds that participated in the survey in 2020 and 2021 reported that their funded levels rose to 72.3%, from 71.7%. Overall, pension funds reported a funded level of 74.7% for 2021. While funded levels are not as important to pensions' sustainability as steady contributions are, the trend is positive.
- The inflation assumption for the funds' most recent fiscal year remained steady at 2.7%. These assumptions were in place in the midst of an acceleration in the rate of inflation, which reached 7% at the end of 2021, from 1.4% a year earlier, as reported by the Bureau of Labor Statistics.
- Among pension systems that offered a cost-of-living adjustment (COLA) to members, the average in the most recent fiscal year was 1.7%, the same as a year earlier. Many responding funds did not offer a COLA in the most recent fiscal year.
- A growing proportion of respondents—54%—excluded overtime pay from the benefit calculation in their most recent fiscal year, versus 51% a year earlier. ◆

AROUND THE REGIONS CONTINUED FROM PAGE 4

would require the union's members to work longer for a less secure retirement. Another key win, according to Howard, is the panel promised to look into creating a new pension benefit group for staff at the Department of Corrections, which is facing unprecedented levels of turnover. Vermont State Treasurer Beth Pearce would have to find a cost-neutral way to pay for it by April 15.

MIDWEST: Indiana

Hancock County in the greater Indianapolis metropolitan area has agreed to use its food and beverage tax to fund a pension shortfall for the Buck Creek Township Fire Department.

Leveraging $83,000 in county funds will forestall plans to cut firefighters' pay this year, the *Daily Reporter* of Greenfield, Ind., said. The township has covered the firefighters' portion of the contribution to the pension plan in the past, but determined late last year to needed to shift the cost to firefighters.

The pension shortfall stemmed from township leaders' efforts to improve the township's accounting. Bill Bolander, president of the Hancock County Council, said he felt the circumstances justified the county's involvement, according to the *Daily Reporter*. "They've got a new regime to look after things, and coming in behind somebody is hard," he said.

Brandon Wilch, a Buck Creek Township paramedic and firefighter who represents the department's professional firefighters in their union, said he and his fellow firefighters are grateful for the response to the problem by the county commissioners and county council.

"The funding granted by the council gives Buck Creek Township the opportunity through the year to re-evaluate the budget to ensure we aren't in this position again," Wilch told the *Daily Reporter* in an email. "This funding provides continued stability for the firefighters and their families for 2022."

SOUTH: Kentucky

Pension funding was a cornerstone of the $100 billion, two-year budget that the Kentucky House of Representatives approved on January 20, sending it to the Senate for further consideration.

The budget vote culminated two weeks of verbal sparring after Republican-majority House lawmakers unveiled their budget plan on January 7, breaking protocol by jumping ahead of Democratic Governor Andy Beshear's January 13 budget address. The Kentucky Democratic Party denounced the House's preemptive strike as "unprecedented" and "petty."

The lawmakers said their plan would fully fund the pension systems, provide pay increases for Kentucky State troopers and government employees, and invest in infrastructure and education. Laying out his own budget, Beshear emphasized plans to pay down pension liabilities.

CONTINUED ON PAGE 8

AROUND THE REGIONS CONTINUED FROM PAGE 7

The two proposals spend the same amount of general fund dollars on the Kentucky Teachers' Retirement System, approximately $860 million in each of the next two years. Both also pay the full amount to Kentucky Retirement System.

Beshear's budget allots $750 million over the next two years to reduce the state's nearly $27 billion public pension debt. The Republicans' bill allocates $415 million in the current fiscal year – $215 million for the Kentucky State Police Retirement Fund and $200 million for the Kentucky Employee Retirement System Nonhazardous pension fund.

WEST: New Mexico

Funds to recruit teachers, provide raises for public education employees, and hire police are part of the $8.4 billion-plus budget proposals currently under consideration in the Land of Enchantment.

The state has enjoyed a surge in income, resulting in a budget increase of $1 billion, or 14%, versus fiscal 2021. The surge primarily results from the oil and natural gas industry and surging petroleum production in the Permian Basin, which overlaps southwest New Mexico and western Texas.

The lead budget-writing committee for the Democrat-led Legislature outlined its spending priorities ahead of a 30-day legislative session that began Jan. 18. "New Mexico has an opportunity for generational change with the amount of money that we have," Democratic Sen. George Muñoz told the *Las Cruces Sun News*.

The Legislature's plan is aligned in major respects with Democratic Governor Michelle Lujan Grisham's budget proposal. Both plans include a 7% pay increase for public education workers, plus additional taxpayer support for pensions and medical care.

Public employees at most state government agencies would receive similar pay raises in two stages, starting in April, under the Legislature's plan.

General fund spending under the legislative proposal would increase to $8.46 billion, while the governor's budget calls for nearly $8.45 billion. That's up from $7.46 billion for the current fiscal year that ends in June 2022.

The state's surge in income is linked primarily to the oil and natural gas industry and surging petroleum production in the Permian Basin that overlaps southwest New Mexico and western Texas.

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Calendar of Events 2022

May

Trustee Educational Seminar (TEDS)
May 21 – 22
Washington, DC

Program for Advanced Trustee Studies (PATS)
May 21 – 22
Washington, DC

NCPERS Accredited Fiduciary (NAF) Program
May 21 – 22
Washington, DC

Annual Conference & Exhibition (ACE)
May 22 – 25
Washington, DC

June

Chief Officers Summit
June 27 – 29, 2022
San Francisco, CA

August

Public Pension Funding Forum
August 21 – 23
Los Angeles, CA

October

Public Safety Conference
October 25 – 28
Nashville, TN

2021-2022 Officers

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First Vice President

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Second Vice President

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Secretary

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Daniel Fortuna
Immediate Past President

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Stacy Birdwell
John Neal

County Employees Classification
Teresa Valenzuela

Local Employees Classification
Sherry Mose
Thomas Ross
Ralph Sicuro

Police Classification
Kenneth Hauser
James Sklenar

Fire Classification
Dan Givens
Emmit Kane

Educational Classification
David Kazansky

Protective Classification
Peter Carozza, Jr.
Ronald Saathoff

Canadian Classification
Frank Ramagnano

The Voice for Public Pensions

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Pensions&Investments

February 14, 2022 12:00 AM | UPDATED 11 HOURS AGO

Private credit soars 77% as asset class continues to heat up

ARLEEN JACOBIUS

Gregg Disdale said private credit often is less volatile than fixed income and can pay regular income.

Private credit has been on a tear with the largest 200 U.S. pension plans, and that's showing few signs of stopping anytime soon.

Private credit has been on a tear with the largest U.S. pension plans, and that trend is showing little signs of stopping anytime soon.

Private credit portfolios of defined benefit plans among the largest 200 U.S. plan sponsors surveyed by Pensions & Investments increased 77.3% to $89 billion in the 12 months ended Sept. 30.

While that increase slowed from the nearly doubling, 93.1% increase in the year-earlier period, it also reflects a 453% increase from 2018, when P&I first included private credit in its annual survey.

RELATED ARTICLE

P&I 1,000 Largest Retirement Plans 2022

Asset owners are continuing to add or bulk up exposure to private credit in their portfolios. After the Sept. 30 end of P&I's survey period, the two largest pension funds in the U.S. — the $496.8 billion California Public Employees' Retirement System, Sacramento, and the $313.9 billion California State Teachers' Retirement System, West

Sacramento — added private credit allocations.

On Nov. 15, CalPERS created a new 5% private debt target allocation, while also boosting private equity by 5 percentage points to 13%, increasing real assets by 2 percentage points to 15% and adding 5% leverage to its asset allocation.

“The return premium associated with these private asset classes makes them important building blocks for constructing portfolios capable of meeting CalPERS’ return objectives,” according to a November staff report.

CalPERS officials plan to bring its private debt management in-house, noted Theresa Taylor, currently CalPERS board president but who was investment committee chairwoman at its November meeting.

CalPERS and private credit

Even without a private debt allocation, CalPERS tops P&I’s list of the largest investors in private credit with assets up to $10.8 billion from only $604 million a year earlier.

Before adopting the separate private debt target allocation, CalPERS had been investing in private debt strategies as part of its private equity allocation. Since 2020, CalPERS also has been boosting its private credit exposure by increasing assets invested in opportunistic strategies, a bucket limited to 5% of plan assets that is not part of its overall asset allocation, and skewed those strategies toward credit investments. As of Sept. 30, CalPERS had $3.2 billion invested in opportunistic strategies, up from $500 million a year earlier, CalPERS investment reports show.

CalPERS’ neighbor across the Sacramento River, CalSTRS, revised its fixed-income policy in September, adding an overall 5% target allocation to private credit as part of its 13% fixed-income allocation. A staff memo for CalSTRS’ Sept. 1 meeting noted that private credit has gained “a foothold in many institutional investors’ portfolios” because it generates cash flow with a higher risk-adjusted return than public debt. Private credit also reduces the correlation of fixed income to public equity and public debt, the memo said. CalSTRS did not report any private credit investments on its survey.

The private credit portfolio of the $72.7 billion Los Angeles County Employees Retirement Association, Pasadena, Calif., which plan officials refer to as illiquid credit, had a significant increase during the survey period with assets up 116.3% to $1.8 billion as of Sept. 30.

In May, the LACERA board approved a new asset allocation that increased its allocation to illiquid assets to 32% from 19%, including a 4-percentage-point boost to its illiquid credit target to 7%. This illiquid credit increase is being funded by a 5-percentage-point reduction in liquid credit to 4%.

LACERA's strategy is to maintain a slight overallocation to liquid credit and, over time, use the capital to fund its illiquid credit commitments, said CIO Jonathan Grabel in an interview.

37.6% increase at Florida

Officials at the Florida State Board of Administration, Tallahassee, which oversaw a $199 billion defined benefit plan as of Sept. 30, attributed the 37.6% increase to $5 billion in private credit partly to valuation increases of the relatively small portfolio.

"Obviously, the percentage growth is high due to a relatively small base," said Dennis MacKee, FSBA spokesman, in an email. "Part of the increase was due to appreciation, but most was due to aggressively committing and deploying capital during the pandemic when spreads were wide."

Even before the pandemic, asset owners have been shifting more of their asset allocation toward private credit because of the low yields of more traditional fixed income, said

Faraz Shooshani, San Francisco-based managing director, senior private markets consultant at Verus Advisory Inc. It can take five years for an asset owner's portfolio to experience the full impact of an asset allocation decision, he said. Verus has seen early evidence that private credit is delivering the income, yield and returns that investors expect, but they have to be sure to get the portfolio structure and management selection right.

These days, Mr. Shooshani said that investors are being cautious because the markets have been fairly hot. There is concern that private credit portfolios could be impacted by the denominator effect which is when a decline in public markets lead to an increase in the percentage of alternative investments in investors' portfolios.

Illiquidity premium

Gregg Disdale, London-based head of alternative credit at Willis Towers Watson PLC, said that private credit continues to be popular among asset owners in the U.S. and elsewhere. In many parts of the private credit market, there is still an illiquidity premium, he said. Also making the asset class attractive to some investors is that private credit often pays regular income and is less volatile than fixed income, he said.

The possibility of interest rate increases is making investors more interested in private credit, which tends to have a floating rate, Mr. Disdale said.

That is not to say there are no risks, Mr. Disdale said. While defaults have been "exceptionally low," should interest rise it may put pressure on borrowers, potentially resulting in an increase in loan defaults, he said.

"But unless there is a meaningful pickup in defaults" it should be a good environment for private debt, Mr. Disdale said.

Law firm Proskauer Rose LLP, New York, on Jan. 27 released the findings of its most recent Private Credit Default index, showing a 1.04% overall default rate for the fourth quarter, representing a drop in defaults from 1.5% in the third quarter and 2.4% in the first quarter of 2021. Defaults have generally been going down since a peak of 8.1% in the second quarter of 2020, Proskauer data shows.

Private credit strategies such as direct lending have been "exceptionally popular" with spreads between private and U.S. Treasury bonds narrower now than in 2010, Mr. Disdale said. What's more, the opportunity set is growing. Borrowers are looking to use private credit over more traditional loans due to the flexibility of private loans and because private lenders are willing to lend a higher amount, he said.

At the same time, private credit investment pace has rebounded "very strongly" from the fourth quarter 2020 through 2021, Mr. Disdale said. Investment activity is expected to continue in 2022, he said.

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FUNDfire

Traditional Fund Managers Dip Toes in Crypto Space

Managers such as Neuberger Berman, Nuveen, Harbor Capital Advisors, Fidelity and Abrdn are examining the cryptocurrency space as the entrance of mainstream custodians raises industry comfort levels.

By Dervedia Thomas | February 14, 2022

Traditional asset managers are exploring digital assets such as cryptocurrencies after record returns from these assets last year.

Managers including **Neuberger Berman**, **Nuveen**, **Harbor Capital Advisors**, **Fidelity Investments** and **Abrdn**, formerly known as Aberdeen Standard Investments, have taken steps to research the cryptocurrency space and answer client questions about the performance of the asset class.

“It's very difficult to close your eyes to Bitcoin going all the way up to 60,000,” said **Nathan Shetty**, head of Nuveen’s multi-asset unit.

Interest is also growing in part because custodians like Fidelity and some banks started offering services for crypto assets, said **Julie Dixon**, CEO of **Waystone Compliance Solutions**.

“One of the things that held back a lot of people from getting involved in that marketplace was the lack of qualified custodians,” she said.

Fidelity Digital Assets, which offers custody and trade execution for digital assets for institutional investors, began operating in 2018. The firm also began offering digital funds to accredited investors last year through its Fidelity Digital Funds business, a spokesperson said.

Neuberger Berman is now allowing up to 5% exposure to crypto futures in one of its mutual funds. The firm added this exposure to the $188.9 million Neuberger Berman Commodity Strategy Fund last year because its portfolio managers think the instruments could serve as an inflation hedge, a spokesperson for the firm said. The portfolio managers also believe cryptocurrencies have a low correlation to traditional asset classes, including physical commodities, which can improve diversification, the spokesperson added.

Abrdn has offered exposure to crypto through venture capital funds, and its hedge fund managers have been adding crypto to their strategies, said **Duncan Moir**, a senior investment manager for the firm’s alternative investment division.

Abrdn is also looking at rolling out dedicated portfolios of multiple cryptocurrencies, and other managers may follow suit, he said.

“Investors today can go out and buy their exposure to whatever to cryptocurrency quite easily, so I think what's lacking in the market clearly is an institutional provider,” Moir said. “I suspect that when those [portfolios] do come, they won't be the very vanilla, single-currency exposures that investors can already get access to."

Instead, portfolios may follow a particular theme, he added.

Nuveen has noticed institutional investor interest in passive exposures to a single cryptocurrency, like Bitcoin, so the firm is trying to figure out the operational requirements for this approach, said Shetty. The manager is also trying to decipher the operational requirements to launch passive multi-currency exposures, active crypto strategies, and strategies that combine both actively and passively managed digital assets in a thematic portfolio, he added.

"There's this spectrum that exists on how asset managers may enter this space, … and it's really important to differentiate or understand that spectrum," Shetty said.

While Nuveen does not have any crypto-related investment strategies in the works, understanding how these assets fit into portfolios is important, he said.

"A lot of our research is… understanding the differences with traditional assets," he said. "How are they going to fit with broader and more traditional assets? And what's the likely approach?"

In researching the operational requirements, Nuveen has discovered that digital assets have different operational processes for legal, compliance, custody, trading, liquidity, exchanges to source digital assets, transparency, reporting and valuation, he said.

"There's a lot of complexity that we're uncovering in our research," he added.

Harbor Capital, a $62.1 billion investment manager, is talking with external crypto managers to determine how it can launch investment products, said **James Erceg**, the firm's head of product.

The **Securities and Exchange Commission** has rejected ETFs that invest directly in Bitcoin, but providers are still submitting bids to launch products. Another ETF providing exposure to Bitcoin via futures contracts came to market last fall. Fidelity launched an ETF in Canada that invests in Bitcoin directly. In the U.S the Boston-based manager wants to launch two ETFs that will invest in companies in the cryptocurrency and so-called metaverse industries.

Harbor is looking at ETFs, as well as private funds. The SEC has proposed rules that would require more frequent disclosures for hedge and private equity funds, making private investments more attractive to Harbor.

"Where we're going to be focusing our energies is not [on whether we will] offer something, it's 'what is the suite of investment vehicles?'" Erceg said.

The right strategies and vehicles may not have been invented yet, he added.

"This is like the internet in the late '90s," Erceg said. "For those of us old enough to remember that… 2008 [and] 2009 was a very different internet experience than 1998, where you couldn't even transact [on the internet]. Some of the big opportunities for crypto for investors are still to emerge."

Nuveen is getting questions on cryptocurrencies from institutional investors of all sizes, and the conversation has shifted to a broad focus on the various digital assets, said **James Colon**, a portfolio manager in the firm's multi-asset unit.

"Investors now aren't just saying, 'how do I gain access to Bitcoin? But how should I be thinking about allocating to other digital assets, whether it's tapping into the smart contract innovations that are occurring, the different types of protocols that are getting constructed, … [and] blockchain?'" he said. "They're really trying to wrap their head around, … how do I build a portfolio of digital assets… and how does that portfolio of digital assets fit into my traditional portfolio of stocks and bonds?"

Contact the reporter on this story at ***dthomas@fundfire.com*** *or 212-542-1237.*

MEKETA
INVESTMENT GROUP

MEMORANDUM

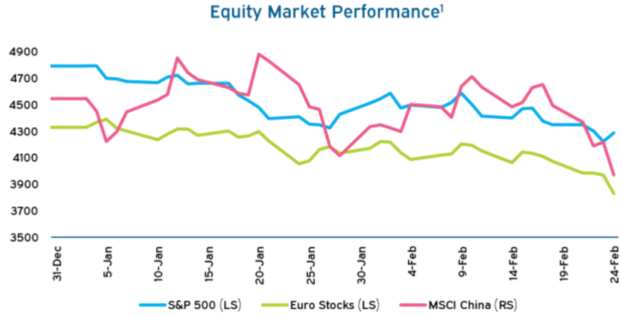
TO: Meketa Clients
FROM: Meketa Investment Group
DATE: February 25, 2022
RE: Market Update: Russian Invasion of Ukraine

Despite being well telegraphed by intelligence officials and related resources over the last few weeks, the announcement of Russia's invasion of Ukraine prompted a meaningful response across global financial markets.

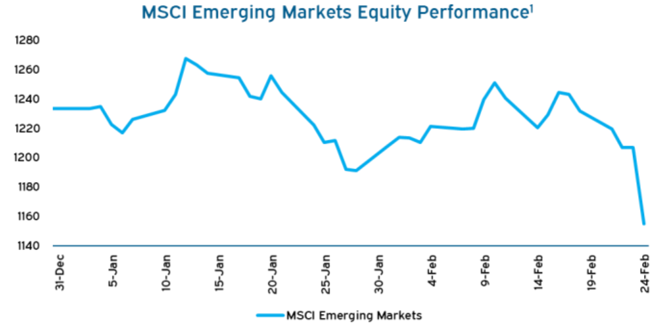
Global equities and credit spreads sold off to year-to-date lows and highs, respectively, while commodity prices were mixed but generally rose due to spikes in energy markets hitting multi-year highs. Risk mitigating strategies, including hedge funds targeting volatility and defensive fixed income mandates, saw flight-to-quality demand drive positive performance, and the US dollar appreciated against most major currencies, due to the country's standing as a perceived safe-haven currency. Reportedly, markets have continued to function properly on elevated volumes, with buyers and sellers finding decent two-way flows and reasonable bid/ask spreads.

In the US, equity futures were lower by roughly 5% in overnight trading on Wednesday but ended Thursday higher by 1.5%. Across Europe, equity markets also declined by similar amounts early in respective sessions and managed a decent recovery (but not full) into the session close. In emerging market equities, including Chinese equities, it was a similar story of an aggressive price response followed by a modest recovery.

Equity Market Performance[1]

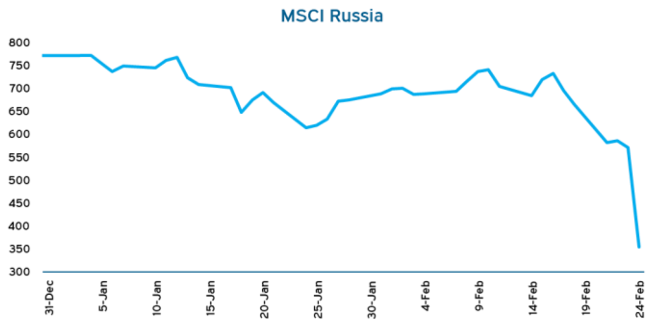


MSCI Emerging Markets Equity Performance[1]



[1] Data provided by Bloomberg for all referenced charts as of February 24, 2022.

Russian markets, however, failed to experience the same late day buying interest on Thursday, as the imposed sanctions are expected to meaningfully impact the Russian economy. Ultimately, Russian equities ended lower by over 30% and are now down by over 40% year-to-date, and 10-year Russian sovereign debt yields have spiked to over 12%, or a roughly 10% spread to the US Treasury equivalent as of February 24, 2022.



Sanctions are expected to meaningfully impact the Russian economy

The US and its allies are in the process of aggressively applying multilateral sanctions on the Russian government, and market participants suggest the measures could meaningfully impact the Russian economy going forward. At this point, sanctions targeting a wide range of Russian leaders, their families, companies, and banking transactions are expected to be similar to prior sanctions. It is noteworthy to highlight, however, that sanctions related to the SWIFT payment system and focused sanctions for the purpose of disrupting oil and gas markets, more broadly, have thus far been avoided in an effort to mitigate the impact on consumers and already elevated global inflation risks. Further clarity on the terms of the sanctions is expected over the coming days.

What are we focused on over the near-term?

First, and most saliently, developments directly related to the Russian invasion of Ukraine are of immediate concern. In this context, we anticipate that overall volatility is likely to remain elevated, and particularly so as market participants continue to process Russia's overarching intentions both with Ukraine and across the broader eastern European region.

We consider that the relatively benign response in asset prices seen thus far is modestly supportive of the notion that the probability of further advancement by Russia into other European countries is low for now, but that could change over time. President Putin's broader ambitions for the expansion of Russian interests – and his ability to execute on those ambitions – remain uncertain at this point, so the full impact of his actions have likely yet to be priced in.

Second, monetary policy expectations across the major central banks will continue to drive price action over the near-term. A number of central banks are currently in the process of tightening policy rates, and others are anticipated to begin tightening policy rates soon, including the US. With the recent sanctions less focused on targeting Russian energy markets and related payment systems, oil and energy prices have thus far avoided spiking to levels that could prompt a more aggressive policy response to mitigate inflation related risks. Still, we acknowledge that this could change abruptly and significantly tighten financial conditions even further.

Lastly, with uncertainty related to the above points, we remain focused on the continued risks to economic growth and of building stagflationary pressures. Should the situation in Ukraine push energy prices and the broader commodity complex to materially higher levels, the disruption in markets, higher policy rates, and the subsequent tightening of financial conditions could drive recession back to the forefront of our concerns. For additional thoughts on this, please see our recently published piece detailing this risk.

We will continue to monitor the situation as it evolves and communicate key developments. For now, we do not recommend any immediate changes to your portfolio because of recent events. If that position changes, we will reach out to you promptly. In the meantime, do not hesitate to contact your consultant with any questions.

MEKETA

INVESTMENT GROUP

MEMORANDUM

TO: Meketa Clients

FROM: Meketa Investment Group

DATE: March 3, 2022

RE: Market Update: Russian Invasion of Ukraine

Given the rapidly evolving situation between Russia and Ukraine and its impact on capital markets, we wanted to follow-up on our memo from last week with an update. In this piece we will discuss the increase in coordinated sanctions against Russia and their response, the current state of the capital markets within Russia and elsewhere, the call for divestment from Russian investments, and potential risks going forward. We recognize that this is a rapidly evolving situation with many potential outcomes, and we will continue to monitor the situation as it unfolds.

Escalating sanctions

In our memo from last week, we noted that the sanctions that had been enacted were similar to past sanctions: in this case, targeting key Russian officials and their families, companies, and banking transactions. Since then, the scope of sanctions and the countries participating has grown dramatically, and Russia has responded with its own set of sanctions and efforts to protect their economy. Given Russia's apparent intent to continue its aggressive path, sanctions against the country will likely continue to evolve.

Foreign exchange reserves locked down, and banks being excluded from SWIFT[1]

Few anticipated the sweeping scope of the joint sanction announcement by the Council of Europe states, the United Kingdom, Canada, and the US at the end of February. And while a number of restrictions were announced, the two most likely to upset the functioning of Russian financial markets directly are the seizing of Russia's foreign exchange reserves by several central banks and the exclusion of select Russian banks from the SWIFT network. However, at this time, major oil and energy banks are not under sanction, which allows EU countries to continue to trade respective energy commodities with Russia.

First, with the restriction on Russia's foreign reserves invoked, the Russian central bank has faced significant challenges supporting the currency as investors shed exposure and Russian citizens look to exchange rubles for more stable foreign currencies.

[1] The SWIFT messaging system is a global electronic platform that provides for safe and secure transmission of transactions for its members. Most notably, this includes payment messaging and instructions.

Based on recent estimates Russia's foreign exchange reserves are meaningful at roughly $630 billion. The composition of those reserves is proving problematic as over half of the assets are dominated in major foreign currencies that have largely been seized through the sanction. Faced with this reality, the Russian central bank has been unable to support the currency over the last week as the ruble depreciated by over 25% against the dollar during that period to trade at an all-time low of roughly 1 penny per dollar.

The other major sanction, namely a handful of banks being excluded from SWIFT, is likely the most material sanction that will heavily impact Russia's financial markets and the functioning of the Russian economy. For Russia, the exclusion of some of their largest domestic banks from the platform will greatly curtail the government's ability to execute transactions such as trades related to energy and agricultural commerce. The repercussions of this could be notable spikes in related commodity prices as Russia is effectively removed from markets. Not waiting for the sanction to be finalized,[2] anecdotal reports suggest some clearing houses and currency desks are actively stepping back from ruble-denominated transitions. Overall, as this continues to develop and potentially expands to include additional banking entities, volatility in assets with notable Russian exposure is likely to continue.

Russia's response

Given the above sanctions, particularly the restricted access to central bank reserves, Russia has tried to support its financial markets and currency through other means.

This includes the Central Bank of Russia (CBR) hiking policy rates from 9.5% to 20% in an effort to defend the value of the ruble. Restrictions were also placed on capital outflows from the country, the servicing of foreign loans, and the paying of corporate debt. Russian export companies have further been ordered to sell 80% of their foreign exchange reserves to repatriate capital to the banking system.

The CBR has also taken the aggressive step of closing the Moscow stock exchange (MICEX) with no short-term prospect of reopening. That said, some equity-related assets are trading, including Russian-focused ETFs, which are largely composed of American Depository Receipts (ADRs) and Global Depository Receipts (GDRs). While ultimate values for underlying holdings may be limited, some of these vehicles are down well over 50% year-to-date.

Russia's Sovereign Wealth Fund has also been used to support domestic markets, including being ordered to purchase $8.9 billion of locally-listed shares.

Further, to prevent an asset fire-sale, foreign investors have been forbidden from selling their Russian assets. As such, major energy companies like Shell, BP, and TotalEnergies, as well as financial institutions such as France's Society General or manufacturers such as Germany's BASF, could suffer from significant stranded assets and balance sheet write-downs.

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[2] While the details of the SWIFT-related sanctions are yet to be disclosed, it is believed that energy and grain related transactions will be allowed. This would permit Russia to continue to provide the EU with approximately 30% to 40% of its natural gas requirements and may provide Russia with some cashflow through the sale of oil and gas.

Lastly, on March 1, the CBR also confirmed a ban on coupon payments, suggesting Russia may soon default on local currency debt. Hard currency debt is still lightly trading at this time, although with steep markdowns, with questions remaining about the future of coupon payments.

Financial markets

As the table below highlights, global financial markets have seen significant volatility and sharp repricing since the onset of Russian military actions on February 23.

Broadly, risk assets have declined as market participants account for the evolving sanctions and the potential impact on specific sectors and industries as well as the potential impact to global economic fundamentals. Perceived safe-haven assets, however, have generally benefited from the flight-to-quality flows with global sovereign debt yields declining across most major economies.

Market Returns

Market	Change from 2/23/22 – 3/2/22 (%)
S&P 500	3.8
10-year US Treasury Yield	2.0 to 1.9 (yield change)
VIX	-0.9 (31.0 to 30.7)
MSCI EAFE	-3.3
MSCI Emerging Markets	-3.2
iShares MSCI Russia ETF	-63.5
10-year Russian Bond Yield*	9.8 to 12.2 (yield change)
USD/Ruble	27.6
Russian CDS	944.4
WTI Crude Oil	20.1
Gold	0.7

*Trading for 10-year Russian Bonds has been suspended. Change in yield is from 2/18/22 – 2/28/22.

However, as the table also details, Russian markets are feeling the impact most acutely at the moment. The Russian ruble (as previously highlighted) has weakened against the dollar to an all-time low, Russian bond yields spiked for some longer-dated maturities as S&P and Moody's downgraded the country to below investment grade, and the Russian central bank has raised its key policy rate by over 1,000 basis points to 20% in an effort to stem bank-run pressures. As we also noted previously, Russian equity markets remain closed. In fixed income and credit markets, volumes and liquidity are reportedly weak to non-existent, making price discovery exceedingly challenging, if not impossible.

Financial sanctions may become economic risks

Market participants generally agree that the announced sanctions (thus far) are notably impacting the functioning of Russian financial markets and the broader Russian economy and will likely continue to do so for as long as they are in place.

While the US and its allies are using these pressures to try to deter Russia from further aggressions, they could come at the cost of commodity prices potentially remaining elevated and/or spiking higher. This could drive global inflation pressures even further beyond the multi-decade highs currently being experienced.

In response to the additional inflation pressures, global central banks could raise policy rates even more aggressively than anticipated, and potentially adversely impact global economic growth and thereby exacerbate stagflationary risks.

In the US, recent commentary from Federal Open Market Committee (FOMC) members (including Chair Powell himself) imply that the Committee's strategy is to err on the side of potentially slowing the pace of reducing accommodation and hopefully support financial markets through this time of disruption.

Increased discussions of divestment from Russian assets

Given the recent events, many institutional investors are reviewing their direct and indirect exposures to Russian assets with some being directed to divest from these investments. Several prominent pension funds in the US and Europe have announced they will pursue this path of divestment. At the investment manager level, we are seeing that many are taking a wait and see approach given the market conditions and thin trading volumes. Given that Russian markets are not trading, many equity managers and fixed income managers with hard currency Russian bond exposure are resorting to estimating the value of their holdings with a range of write-downs from 40% to 75%. Further, major index providers are reviewing the inclusion of Russian securities in their indices, with MSCI and Russell recently deciding they will be removing locally-listed Russian equities from their respective index families in the near future.

Logistically though, exiting these holdings in the current market environment is virtually impossible. The Russian stock exchange remains closed and selling other assets might require accepting a huge discount if buyers can even be located or their sale is allowed. Once equity markets reopen and reprice the recent events, losses could escalate.

Conclusion

The current situation is rapidly developing. At least for now, US markets are largely functioning without support being needed from the Fed. Russian markets are a dramatically different story though with significant declines and some markets not even operating. Fortunately, many institutional investors have very small direct investments in these markets, but the second order effects are still evolving. Key risks include an escalation of the conflict as well as prolonged above-trend inflation due to sanctions with an increased risk for stagflation if growth slows. We recognize that this is a very rapidly changing situation and that the range of potential outcomes is broad. We will continue to diligently monitor it and provide updates as needed. Please do not hesitate to reach out to your client team with any questions you may have.

Disclaimer