



San Joaquin County Employees Retirement Association

A G E N D A

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

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

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/84668014723> and following the prompts to enter your name and email, or (2) calling (669) 219-2599 or (669) 900-9128 and entering Meeting ID [84668014723](https://us02web.zoom.us/j/84668014723).

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

1.0 ROLL CALL

2.0 PLEDGE OF ALLEGIANCE

3.0 MEETING MINUTES

- | | |
|--|---|
| 3.01 Minutes for the Board Meeting of March 11, 2022 | 4 |
| 3.02 Minutes for the Audit Committee Meeting of March 11, 2022 | 8 |
| 3.03 Board to consider and take possible action on minutes | |

4.0 PUBLIC COMMENT

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

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

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

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

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

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

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

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

5.0 CONSENT ITEMS

5.01 Service Retirement (19) 10

5.02 Board to consider and take possible action on consent calendar items

6.0 CONSULTANT REPORTS PRESENTED BY DAVID SANCEWICH OF MEKETA INVESTMENT GROUP

6.01 Monthly Investment Performance Updates

01 Manager Performance Flash Report - February 2022 13

02 Economic and Market Update - February 2022 18

6.02 Board to receive and file reports

7.0 ASSET LIABILITY STUDY: STRATEGIC ASSET ALLOCATION

7.01 Presentation by David Sancewich of Meketa Investment Group 39

7.02 Board to discuss and give direction to staff and consultant

8.0 SACRS BOARD OF DIRECTOR ELECTIONS 77

8.01 SACRS Board of Director Elections - 2022 - 2023 - Final Ballot 78

8.02 Board to consider and take possible action on candidates for SACRS 2022-2023 Board of Directors.

9.0 STAFF REPORTS

9.01 Pending Member Accounts Receivable - First Quarter 2022 99

9.02 Disability Quarterly Report - Statistics 100

9.03 Legislative Summary Report 101

9.04 Trustee and Executive Staff Travel

01 Conferences and Events Schedule for 2022 104

02 Summary of Pending Trustee and Executive Staff Travel 105

03 Summary of Completed Trustee and Executive Staff Travel 106

9.05 CEO Report 107

01 Alameda Decision - Final Report 111

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

10.0 CORRESPONDENCE

10.01 Letters Received

10.02 Letters Sent

10.03 Market Commentary/Newsletters/Articles

01	JP Morgan The Maltese Falcoin February 3, 2022	115
02	NCPERS Monitor March 2022	145
03	White House Fact Sheet President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets March 9, 2022	154
04	The Sacramento Bee How higher interest rates could lift CalPERS and CalSTRS pension plans March 18, 2022	157

11.0 COMMENTS

11.01 Comments from the Board of Retirement

12.0 CLOSED SESSION

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

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

12.03 Conference with Legal Counsel - Anticipated Litigation California Government Code Section 54956.9(d)(4) Initiation of Litigation - 1 Case

13.0 REPORT OF CLOSED SESSIONS

13.01 On January 21, 2022, the Board voted 6-1 (Trustee Keokham motion, Trustee Goodman second, Trustee Rickman opposed; Trustees Restuccia and Duffy absent) to authorize the CEO to sign the necessary documents and further approve Resolution 2022-04-01 titled "Lightspeed Venture Partners Select V" and commit to invest \$40 million in the fund.

14.0 CALENDAR

14.01 CEO Performance Review Committee April 21, 2022 at 1:00 PM

14.02 Board Meeting May 6, 2022 at 9:00 AM

14.03 Audit Committee Meeting May 17, 2022 at 1:00 PM

15.0 ADJOURNMENT



San Joaquin County Employees Retirement Association

MINUTES

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

1.0 ROLL CALL

1.01 MEMBERS PRESENT: Phonxay Keokham, Emily Nicholas, Jennifer Goodman, Michael Duffy, Robert Rickman, 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 Officer Brian McKelvey, Retirement Investment Officer Paris Ba (via Zoom), Management Analyst III Greg Frank, Department Information Systems Analyst II Lolo Garza, Information Systems Specialist II Jordan Regevig, and Administrative Secretary Kendra Fenner

OTHERS PRESENT: Deputy County Counsel Jason Morrish, and David Sancewich, Jonathan Camp and Alison Adams of Meketa Investment Group

2.0 PLEDGE OF ALLEGIANCE

2.01 Led by Jennifer Goodman

3.0 MEETING MINUTES

3.01 Minutes for the CEO Performance Review Committee Meeting of February 7, 2022

3.02 Minutes for the Board Meeting of February 11, 2022

3.03 The Board voted unanimously (9-0) to approve the Minutes of the CEO Performance Review Committee Meeting of February 7, 2022 and the Board Meeting of February 11, 2022. (Motion: Keokham; Second: McCray)

4.0 PUBLIC COMMENT

4.01 There was no public comment.

5.0 CONSENT ITEMS

5.01 Service Retirement (18)

5.02 General (1)

01 Retirement Administrator/Chief Executive Officer Compensation

5.03 The Board voted unanimously (9-0) to approve the Consent Calendar Items. (Motion: Goodman; Second: Weydert)

6.0 RESOLUTION IN APPRECIATION OF TRUSTEE KATHERINE MILLER

6.01 The Board voted unanimously (9-0) to approve the Resolution of Appreciation of Trustee Miller. (Motion: Rickman; Second: Weydert)

7.0 GOVERNANCE EDUCATION

7.01 Presentation by Ashley Dunning of Nossaman LLP

8.0 CONSULTANT REPORTS PRESENTED BY DAVID SANCEWICH OF MEKETA INVESTMENT GROUP

8.01 Quarterly Reports from Investment Consultant for period ended December 31, 2021

01 Quarterly Investment Performance Analysis

02 Manager Certification Report

03 Manager Review Schedule

8.02 Monthly Investment Performance Updates

01 Manager Performance Flash Report - January 2022

02 Capital Markets Outlook and Risk Metrics - February 2022

8.03 Board received and filed reports.

9.0 ACTUARIAL CONCEPTS EDUCATION SESSION

9.01 Presentation by Jonathan Camp of Meketa Investment Group

9.02 The Board did not take action or give direction on this item.

10.0 INFLATION EDUCATION SESSION

10.01 Presentation by Alison Adams of Meketa Investment Group

10.02 The Board did not take action or give direction on this item.

11.0 STAFF REPORTS

11.01 Legislative Summary Report

11.02 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

11.03 CEO Report

In addition to the written report, CEO Shick made the following comments: (1) welcomed new hire Elaina Petersen as the Administrative Secretary and congratulated Kendra Fenner on her promotion to Communications Officer, (2) inquired if trustees would still prefer to maintain social distancing in the Board room, and (3) noted systems have different valuation dates in Cheiron's Discount Rate Assumption chart, so it's not a comparison of equals.

01 Comparison Chart of Discount Rate Assumptions

11.04 Board received and filed reports.

12.0 CORRESPONDENCE

12.01 Letters Received

12.02 Letters Sent

12.03 Market Commentary/Newsletters/Articles

01 NCPERS
Monitor
February 2022

- 02 Pensions&Investments
Private credit soars 77% as asset class continues to heat up
February 14, 2022
- 03 Fund Fire
Traditional Fund Managers Dip Toes in Crypto Space
February 14, 2022
- 04 Meketa
Russian Invasion of Ukraine
February 25, 2022
- 05 Meketa
Market Update: Russian Invasion of Ukraine
March 3, 2022

13.0 COMMENTS

- 13.01** Trustee Keokham asked to have Cheiron's Discount Rate chart converted to Excel.
- 13.02** Trustees individually commended outgoing Trustee Kathy Miller for her contributions to the SJCERA Board of Retirement and her service to the residents of Stockton and San Joaquin County more broadly. Ms. Miller thanked the Board and indicated it had been her honor to serve and help ensure the pension promise if fulfilled.
- 13.03** The Board directed staff to return to the standard Board Room set up now that social distancing requirements have been lifted.

14.0 CLOSED SESSION

BEFORE THE CHAIR CONVENED CLOSED SESSION AT 12:28 P.M., COUNSEL STATED THAT THERE WOULD BE NO DISCUSSION ON ITEM 14.02.

THE CHAIR CONVENED CLOSED SESSION AT 12:28 P.M. AND ADJOURNED THE CLOSED SESSION AND RECONVENED THE OPEN SESSION AT 12:31 P.M.

- 14.01** Personnel Matters
California Government Code Section 54957
Employee Disability Retirement Application(s) (1)

01 Consent Items

- a Thomas Kendrick
Correctional Officer
Service Connected Disability

The Board voted unanimously (9-0) to grant the application for a service-connected disability retirement. (Motion: Duffy; Second: Keokham)

- 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

16.01 There being no further business the meeting was adjourned at 12:32 PM. The Board took breaks from 10:59 AM until 11:11 AM and 11:43 AM until 11:50 AM.

Respectfully Submitted:

Michael Restuccia, Chair

Attest:

Raymond McCray, Secretary



San Joaquin County Employees Retirement Association

MINUTES

AUDIT COMMITTEE MEETING SAN JOAQUIN COUNTY EMPLOYEES RETIREMENT ASSOCIATION BOARD OF RETIREMENT FRIDAY, MARCH 11, 2022 AT 12:36 PM

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

1.0 ROLL CALL

- 1.01 MEMBERS PRESENT:** Raymond McCray, Michael Restuccia, Phonxay Keokham and Michael Duffy presiding
STAFF PRESENT: Chief Executive Officer Johanna Shick, Assistant Chief Executive Officer Brian McKelvey, Financial Officer Carmen Murillo, Retirement Investment Accountant Eve Cavender, Information Systems Specialist II Jordan Regevig, Information Systems Analyst II Lolo Garza, Management Analyst III Greg Frank, and Administrative Assistant I, Kendra Fenner
OTHERS PRESENT: Deputy County Counsel Jason Morrish, and Lindsey Zimmerman and Paul Sahota of Brown Armstrong Accountancy Corporation

2.0 COMMENTS

- 2.01** There was no public comment

3.0 2021 AUDIT ENTRANCE CONFERENCE

- 3.01** Scope of Services Presentation by Lindsey Zimmerman, CPA and Paul Sahota, CPA of Brown Armstrong Accountancy Corporation
- 01 Ms. Zimmerman and Mr. Sahota reviewed the Scope of Services presentation, which summarized the audit plan, significant areas the audit will focus on, expected timeline/due dates and the reports that will be issued. The draft audit report will be provided to the Committee for discussion on May 13. The final audit report will be provided to the full Board on June 3.
- 3.02** Audit Engagement Letter dated January 21, 2022 from Brown Armstrong Accountancy Corporation for audit objectives and procedures

4.0 COMMENTS

- 4.01** Comments from the Committee Members
- 4.02** Trustee McCray asked how many public sector clients Brown Armstrong currently services.
- 4.03** Trustee Keokham noted that Mr. Sahota works out of the Brown Armstrong's Fresno area office and inquired about Brown Armstrong's Stockton Office

5.0 NEXT MEETING OF THE AUDIT COMMITTEE

- 5.01** TBD

6.0 ADJOURNMENT

6.01 There being no further business, the meeting was adjourned at 12:51 p.m.

Respectfully Submitted:

Michael Duffy, Audit Committee Chair



San Joaquin County Employees Retirement Association

PUBLIC

April 2022

5.01 Service Retirement

Consent

01 CHIEN P CHOU

Deferred Member
N/A

Member Type: Safety
Years of Service: 02y 02m 23d
Retirement Date: 1/31/2022
Comments: Deferred from SJCERA since March 2008. Outgoing reciprocity and concurrent retirement with SFERS.

02 KATHY J COPELAND

HSA Staff Analyst II
HSA - Admin Support

Member Type: General
Years of Service: 15y 05m 24d
Retirement Date: 2/27/2022

03 MELANIE A CRUTCHFIELD

Paralegal II
District Attorney

Member Type: General
Years of Service: 19y 10m 14d
Retirement Date: 2/14/2022

04 PATRICIA A FAINTER

Senior Office Assistant
Hosp Medical Records

Member Type: General
Years of Service: 38y 01m 07d
Retirement Date: 2/26/2022

05 MARIA E GUZMAN

Senior Office Assistant
Mental Health - Clerical

Member Type: General
Years of Service: 22y 09m 22d
Retirement Date: 2/11/2022

06 WILLA K HARRIS

Asst Human Resources Director
Human Resources

Member Type: General
Years of Service: 33y 08m 28d
Retirement Date: 2/26/2022

07 EVA M HEARD

Senior Office Assistant
HSA - Clerical Support

Member Type: General
Years of Service: 08y 00m 18d
Retirement Date: 2/1/2022
Comments: Tier 2 - eligible for retirement with 5 years of County service

08 FAYE R JACOBS

Staff Nurse IV - Ambulatory
San Joaquin Health Centers

Member Type: General
Years of Service: 27y 02m 03d
Retirement Date: 2/4/2022

09 DUNCAN L JONES

Deferred Member
N/A

Member Type: General
Years of Service: 05y 00m 10d
Retirement Date: 2/1/2022
Comments: Deferred from SJCERA since 2017.



San Joaquin County Employees Retirement Association

PUBLIC

April 2022

-
- | | |
|---|---|
| 10 GIRLINDA M KELLY | Appraiser IV
Assessor |
| <div>Member Type: General
Years of Service: 25y 10m 28d
Retirement Date: 2/26/2022</div> | |
| <hr/> | |
| 11 LUCIANO LOPEZ | Mental Health Specialist II
Mental HealthPHF-Inpatient Fac |
| <div>Member Type: General
Years of Service: 08y 01m 19d
Retirement Date: 2/1/2022
Comments: Eligible for retirement due to redeposit of prior county service.</div> | |
| 12 SUSAN A MULLER | Social Worker II
HSA - Services Staff |
| <div>Member Type: General
Years of Service: 08y 01m 09d
Retirement Date: 2/2/2022</div> | |
| 13 LAURITA A PADILLA | Accounting Technician I
Sheriff-AS-Management Services |
| <div>Member Type: General
Years of Service: 29y 10m 28d
Retirement Date: 2/26/2022</div> | |
| 14 LAURA D PATE | Social Service Practitioner
HSA |
| <div>Member Type: General
Years of Service: 05y 00m 13d
Retirement Date: 2/1/2022
Comments: Outgoing reciprocity and concurrent retirement with SCERS</div> | |
| 15 ANTHONY R ROCHA | Management Services Admin
HSA - Admin Support |
| <div>Member Type: General
Years of Service: 21y 02m 23d
Retirement Date: 2/26/2022</div> | |
| 16 CHRISTOPHER C STIEHR | Sergeant
Sheriff-Custody-Regular Staff |
| <div>Member Type: Safety
Years of Service: 19y 11m 10d
Retirement Date: 2/26/2022</div> | |
| 17 DAVID A VALDEZ | Crafts Worker III
Hosp Plant Maintenance |
| <div>Member Type: General
Years of Service: 20y 03m 13d
Retirement Date: 2/11/2022</div> | |
| 18 JOSE L VARGAS | Mental Health Specialist II
Mental HealthPHF-Inpatient Fac |
| <div>Member Type: General
Years of Service: 22y 03m 09d
Retirement Date: 2/1/2022</div> | |



San Joaquin County Employees Retirement Association

PUBLIC

April 2022

19 **MARCUS C WILLIAMS**

Member Type: General
Years of Service: 26y 07m 12d
Retirement Date: 2/21/2022

Management Analyst II
Community Infra-Engineer Svs

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)¹

February 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 PLAN¹		\$ 3,921,501,767	100.0%	100.0%	-1.3	-0.5	-3.6	9.1	8.9	7.5	7.8	Apr-90
<i>Policy Benchmark⁴</i>					-1.2	-1.3	-2.7	6.6	9.6	8.3	7.7	
Difference:					-0.1	0.8	-0.9	2.5	-0.7	-0.8	0.1	
<i>75/25 Portfolio⁵</i>					-2.2	-3.5	-6.3	4.8	12.0	9.9	7.5	
Difference:					0.9	3.0	2.7	4.3	-3.1	-2.4	0.3	
Broad Growth		\$ 2,907,853,579	74.2%	75.0%	-1.6	-0.8	-4.6	11.3	10.3	9.1	8.5	Jan-95
Aggressive Growth Lag²		\$ 311,211,673	7.9%	10.0%	8.2	8.2	25.3	39.4	16.7	15.3	-3.2	Feb-05
<i>MSCI ACWI +2%Lag</i>					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 Lag³	<i>\$50,000 Global Infrastructure</i>	\$ 22,459,441	0.6%		3.4	3.4	6.7	8.0	--	--	9.9	Jul-19
<i>MSCI ACWI +2% Lag</i>					-3.9	-0.5	13.1	30.5	--	--	19.2	
Difference:					7.3	3.9	-6.4	-22.5	--	--	-9.3	
Ocean Avenue II Lag³	<i>\$40,000 PE Buyout FOF</i>	\$ 37,904,604	1.0%		10.6	10.6	47.7	84.6	33.2	31.8	17.4	May-13
<i>MSCI ACWI +2% Lag</i>					-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 Lag³	<i>\$50,000 PE Buyout FOF</i>	\$ 48,841,899	1.2%		16.4	16.4	39.6	56.0	28.5	29.6	25.3	Apr-16
<i>MSCI ACWI +2% Lag</i>					-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 Lag³	<i>\$50,000 PE Buyout</i>	\$ 40,893,083	1.0%		3.6	3.6	17.5	42.1	--	--	33.0	Dec-19
<i>MSCI ACWI +2% Lag</i>					-3.9	-0.5	13.1	30.5	--	--	21.9	
Difference:					7.5	4.1	4.4	11.6	--	--	11.1	
Morgan Creek III Lag³	<i>\$10,000 Multi-Strat FOF</i>	\$ 6,571,365	0.2%		-13.5	-13.5	-11.3	-4.0	-10.4	-0.3	-3.2	Feb-15
<i>MSCI ACWI +2% Lag</i>					-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 Lag³	<i>\$12,000 Multi-Strat FOF</i>	\$ 8,753,506	0.2%		8.5	8.5	12.2	26.8	15.1	13.6	14.2	Jun-13
<i>MSCI ACWI +2% Lag</i>					-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 Lag³	<i>\$20,000 Multi-Strat FOF</i>	\$ 25,628,214	0.7%		8.6	8.6	23.2	45.1	23.6	20.4	11.2	Feb-15
<i>MSCI ACWI +2% Lag</i>					-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 Lag³	<i>\$50,000 Special Situations PE</i>	\$ 8,446,931	0.2%		-4.4	-4.4	-4.4	--	--	--	-15.3	Jul-21
<i>MSCI ACWI +2% Lag</i>					-3.9	-0.5	13.1	--	--	--	2.8	
Difference:					-0.5	-3.9	-17.5	--	--	--	-18.1	
Opportunistic Private Real Estate												
Greenfield V³	<i>\$30,000 Opportunistic Pvt. RE</i>	\$ 227,258	0.0%		0.2	0.2	-0.7	-2.7	-17.0	-3.5	-3.1	Jul-08
<i>NCREIF ODCE + 1% Lag Blend</i>					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 VI³	<i>\$20,000 Opportunistic Pvt. RE</i>	\$ 171,705	0.0%		9.5	9.5	-32.5	-49.3	-41.8	-29.6	-12.8	Apr-12
<i>NCREIF ODCE + 1% Lag Blend</i>					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 VII³	<i>\$19,100 Opportunistic Pvt. RE</i>	\$ 9,301,411	0.2%		1.0	1.0	13.7	26.4	14.5	14.2	13.2	Oct-14
<i>NCREIF ODCE + 1% Lag Blend</i>					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	
Grandview³	<i>\$30,000 Opportunistic Pvt. RE</i>	\$ 20,316,979	0.5%		-0.2	-0.2	19.4	24.8	22.3	--	10.4	Apr-18
<i>NCREIF ODCE + 1% Lag Blend</i>					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 VI³	<i>\$30,000 Opportunistic Pvt. RE</i>	\$ 481,237	0.0%		66.0	66.0	142.3	165.0	-7.0	0.1	0.1	May-08
<i>NCREIF ODCE + 1% Lag Blend</i>					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 VII³	<i>\$15,000 Opportunistic Pvt. RE</i>	\$ 273,467	0.0%		-85.1	-85.1	-87.9	-85.9	-52.4	-35.5	-6.1	Dec-12
<i>NCREIF ODCE + 1% Lag Blend</i>					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	

¹Returns 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.

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

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

⁴4/1/20 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.

⁵4/1/20 to present **75%** MSCI ACWI, **25%** BB Global Aggregate. Prior to 4/1/20 60% MSCI ACWI, 40% BB Global Aggregate.

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)¹

February 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 V³	\$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 VI³	\$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 IV³	\$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 VI³	\$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	27.1	--	--	23.8		
Stockbridge RE III³	\$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 Growth²			\$	1,425,644,370	36.4%	32.0%	-2.9	-3.6	-7.6	8.7	10.9	9.8	9.3	Jan-95
MSCI ACWI IMI Net						-2.3	-3.7	-7.4	6.9	14.1	12.1	8.1		
Difference:						-0.6	0.1	-0.2	1.8	-3.2	-2.3	1.2		
Global Equity														
Northern Trust MSCI World IMI		All Cap Global	\$	1,376,878,659	35.1%									
MSCI World IMI Net						-2.4	-3.8	-7.6	9.8	--	--	16.1	Sep-20	
Difference:						-2.2	-3.8	-7.6	9.3	--	--	15.7		
						-0.2	0.0	0.0	0.5	--	--	0.4		
SJCERA Transition		All Cap Global	\$	3,222	0.0%	NM	NM	NM	NM	--	--	NM	Jul-20	
Emerging Markets														
GQG Active Emerging Markets		Emerging Markets	\$	59,403,408	1.5%	-7.2	-6.9	-8.7	-12.0	--	--	4.2	Aug-20	
MSCI Emerging Markets Index Net						-3.0	-3.0	-4.8	-10.7	--	--	7.2		
Difference:						-4.2	-3.9	-3.9	-1.3	--	--	-3.0		
PIMCO RAE Fundamental Emerging Markets		Emerging Markets	\$	76,054,541	1.9%	-5.4	1.6	-3.8	3.8	6.5	5.7	5.1	Apr-07	
MSCI Emerging Markets Index						-3.0	-3.0	-4.8	-10.4	6.4	7.4	4.3		
Difference:						-2.4	4.6	1.0	14.2	0.1	-1.7	0.8		
REITS														
Invesco All Equity REIT		Core US REIT	\$	48,765,711	1.2%	-4.4	-3.2	-12.0	21.1	8.8	7.5	9.2	Aug-04	
FTSE NAREIT Equity Index						-3.1	-1.8	-9.8	24.1	10.0	7.8	9.1		
Difference:						-1.3	-1.4	-2.2	-3.0	-1.2	-0.3	0.1		

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

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

³ Manager returns are as of 12/31/21, 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

February 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		\$ 1,170,997,536	29.9%	33.0%	-0.5	0.6	-2.0	8.3	8.1	6.7	4.1	Jan-05
Risk Parity		\$ 433,691,351	11.1%		-0.1	-1.8	-3.6	9.1	9.9	7.6	5.1	
T-Bill +4%					0.3	1.0	0.7	4.0	4.9	5.2	4.5	
Difference:					-0.4	-2.8	-4.3	5.1	5.0	2.4	0.6	
Bridgewater All Weather		\$ 216,639,681	5.5%		0.3	-0.3	-2.6	12.0	9.5	7.4	5.7	Mar-12
T-Bill +4%					0.3	1.0	0.7	4.0	4.9	5.2	5.4	
Difference:					0.0	-1.3	-3.3	8.0	4.6	2.2	0.3	
PanAgora Diversified Risk Multi-Asset		\$ 217,051,670	5.5%		-0.6	-3.3	-4.6	6.3	10.2	7.8	7.9	Apr-16
T-Bill +4%					0.3	1.0	0.7	4.0	4.9	5.2	5.0	
Difference:					-0.9	-4.3	-5.3	2.3	5.3	2.6	2.9	
Liquid Credit		\$ 229,480,554	5.9%		-2.1	-2.2	-3.3	-1.4	2.7	2.9	2.0	Oct-06
50% BB High Yield, 50% S&P/LSTA Leveraged Loans					-0.8	-0.7	-1.9	1.9	4.7	4.5	5.7	
Difference:					-1.3	-1.5	-1.4	-3.3	-2.0	-1.6	-3.7	
Neuberger Berman		\$ 101,959,541	2.6%		-2.6	-3.1	-4.3	-2.0	3.3	--	3.5	Feb-19
33% ICE BofA HY Constrained, 33% S&P/LSTA LL, 33% JPM EMBI Gbl Div.					-2.6	-3.1	-4.3	-1.2	3.3	--	3.7	
Difference:					0.0	0.0	0.0	-0.8	0.0	--	-0.2	
Stone Harbor Absolute Return		\$ 127,521,013	3.3%		-1.7	-1.5	-2.4	-0.9	2.4	2.6	2.7	Oct-06
3-Month Libor Total Return					0.0	0.0	0.0	0.1	1.1	1.4	1.4	
Difference:					-1.7	-1.5	-2.4	-1.0	1.3	1.2	1.3	
Private Credit Lag²		\$ 318,700,611	8.1%		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 Lag³		\$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 Lag³		\$45,000	Comm. Mortgage	\$ -	0.0%	-14.9	-14.9	-11.9	-21.5	-6.6	-0.4	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 Lag³		\$75,000	Comm. Mortgage	\$ 25,292,890	0.6%	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 Lag³		\$45,000	Opportunistic	\$ 18,787,084	0.5%	0.4	0.4	13.4	14.1	1.1	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 Lag³		\$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	\$ 30,757,053	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 Lag³		\$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 Lag³		\$45,000	Direct Lending	\$ 1,880,835	0.0%	11.6	11.6	8.0	7.6	-2.5	-2.5	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 Lag³		\$50,000	Direct Lending	\$ 50,211,888	1.3%	4.3	4.3	8.0	11.1	7.6	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	

¹Returns 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.

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

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

⁴9% Annual until 7/1/2018 then CPI +6% Annual thereafter.

⁵50% Bloomberg High Yield/50% S&P Leveraged Loan until 12/31/20 then CPI +6% Annual thereafter. Benchmark lagged one quarter.

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

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)¹

February 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	\$ 7,839,293	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	\$ 35,177,625	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	\$ 42,865,335	1.1%		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			\$ 803,726,383	20.5%	25.0%	0.3	1.7	1.4	3.1	4.0	2.9	6.3	Oct-90
Principal Protection			\$ 320,578,662	8.2%	10.0%	-1.5	-3.0	-3.1	-2.0	2.2	2.5	6.1	Oct-90
BB Aggregate Bond Index						-1.1	-3.5	-3.2	-2.6	3.3	2.7	5.8	
Difference:						-0.4	0.5	0.1	0.6	-1.1	-0.2	0.3	
Dodge & Cox		Core Fixed Income	\$ 209,557,909	5.3%		-1.3	-3.1	-3.3	-2.3	4.2	3.6	6.9	Oct-90
BB Aggregate Bond Index						-1.1	-3.5	-3.2	-2.6	3.3	2.7	5.8	
Difference:						-0.2	0.4	-0.1	0.3	0.9	0.9	1.1	
DoubleLine Capital		MBS	\$ 111,020,753	2.8%		-1.8	-2.9	-2.7	-1.3	2.9	3.0	4.5	Feb-12
BB Aggregate Bond Index						-1.1	-3.5	-3.2	-2.6	3.3	2.7	2.4	
Difference:						-0.7	0.6	0.5	1.3	-0.4	0.3	2.1	

¹Returns 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.

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

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

⁴9% Annual until 7/1/2018 then CPI +6% Annual thereafter.

San Joaquin County Employees' Retirement Association (SJCERA)

Preliminary Monthly Flash Report (Net)¹

February 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 <i>CRO Custom Benchmark</i> ² Difference:		\$ 483,147,721	12.3%	15.0%	1.5 0.0 1.5	5.1 -0.7 5.8	4.6 -0.7 5.3	6.8 5.1 1.7	5.1 7.1 -2.0	3.2 4.8 -1.6	6.5 5.3 1.2	Jan-05
Long Duration <i>BB US Long Duration Treasuries</i> Difference:		\$ 147,437,725	3.8%		-1.5 -1.5 0.0	-6.6 -6.9 0.3	-5.2 -5.5 0.3	-1.4 -1.0 -0.4	6.4 7.0 -0.6	4.5 4.9 -0.4	2.9 3.8 -0.9	
Dodge & Cox Long Duration <i>BB US Long Duration Treasuries</i> Difference:	Long Duration	\$ 147,437,725	3.8%		-1.5 -1.5 0.0	-6.6 -6.9 0.3	-5.2 -5.5 0.3	-1.4 -1.0 -0.4	6.4 7.0 -0.6	4.5 4.9 -0.4	2.9 3.8 -0.9	Feb-16
Systematic Trend Following <i>BTOP50 Index</i> Difference:		\$ 205,969,708	5.3%		5.1 1.2 3.9	13.8 3.7 10.1	12.4 2.8 9.6	12.6 11.1 1.5	11.7 8.7 3.0	3.9 3.9 0.0	8.7 4.7 4.0	
Mt. Lucas Managed Futures - Cash <i>BTOP50 Index</i> Difference:	Systematic Trend Following	\$ 106,042,145	2.7%		4.4 1.2 3.2	13.4 3.7 9.7	12.3 2.8 9.5	13.0 11.1 1.9	10.3 8.7 1.6	3.7 3.9 -0.2	8.2 4.7 3.5	Jan-05
Graham Tactical Trend <i>SG Trend Index</i> Difference:	Systematic Trend Following	\$ 99,927,563	2.5%		5.8 3.7 2.1	14.2 7.8 6.4	12.4 7.3 5.1	12.3 13.8 -1.5	12.9 11.7 1.2	4.0 4.9 -0.9	2.5 2.8 -0.3	Apr-16
Alternative Risk Premia <i>5% Annual</i> Difference:		\$ 129,740,288	3.3%		-0.4 0.4 -0.8	7.5 1.2 6.3	5.4 0.8 4.6	8.0 5.0 3.0	-4.0 5.0 -9.0	-0.5 5.0 -5.5	7.1 6.3 0.8	
AQR Style Premia <i>5% Annual</i> Difference:	Alternative Risk Premia	\$ 35,432,319	0.9%		1.4 0.4 1.0	31.5 1.2 30.3	17.2 0.8 16.4	33.5 5.0 28.5	-1.6 5.0 -6.6	-2.3 5.0 -7.3	-1.1 5.0 -6.1	May-16
PE Diversified Global Macro <i>5% Annual</i> Difference:	Alternative Risk Premia	\$ 38,092,663	1.0%		0.0 0.4 -0.4	7.0 1.2 5.8	13.8 0.8 13.0	5.4 5.0 0.4	-6.5 5.0 -11.5	-2.5 5.0 -7.5	-1.4 5.0 -6.4	Jun-16
Lombard Odier <i>5% Annual</i> Difference:	Alternative Risk Premia	\$ 56,215,306	1.4%		-1.8 0.4 -2.2	-3.3 1.2 -4.5	-5.4 0.8 -6.2	-2.1 5.0 -7.1	-6.6 5.0 -11.6	-- -- --	-5.0 5.0 -10.0	Jan-19
Cash ³ <i>US T-Bills</i> Difference:		\$ 168,378,019	4.3%	0.0%	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.7 0.9 -0.2	0.8 1.1 -0.3	2.3 2.3 0.0	Sep-94
Northern Trust STIF <i>US T-Bills</i> Difference:	Collective Govt. Short Term	\$ 162,033,401	4.1%		0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.0 0.0	0.7 0.9 -0.2	0.8 1.1 -0.3	2.6 2.3 0.3	Jan-95
Parametric Overlay ⁴	Cash Overlay	\$ 41,543,786	1.1%		0.0	0.0	0.0	0.0	--	--	0.0	Jan-20

¹Returns 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.

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

³Includes lagged cash.

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

Economic and Market Update

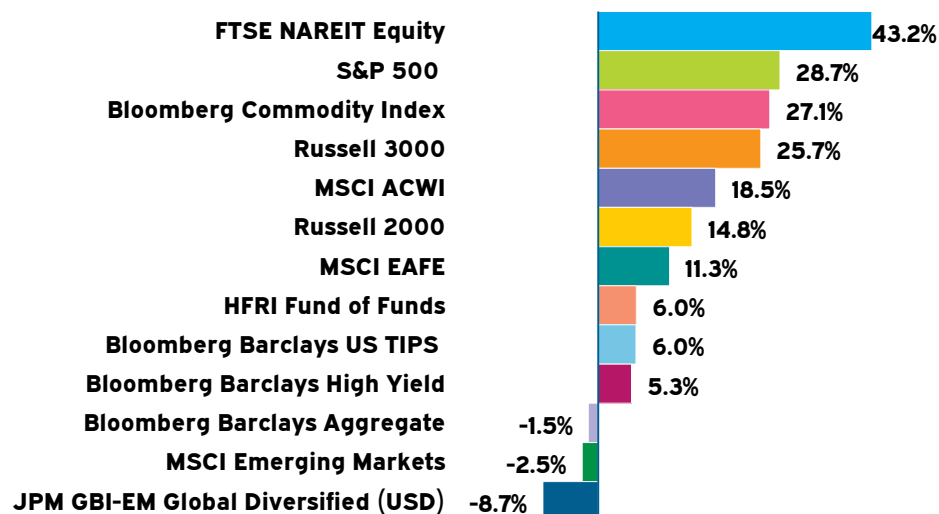
February 2022 Report

February Commentary

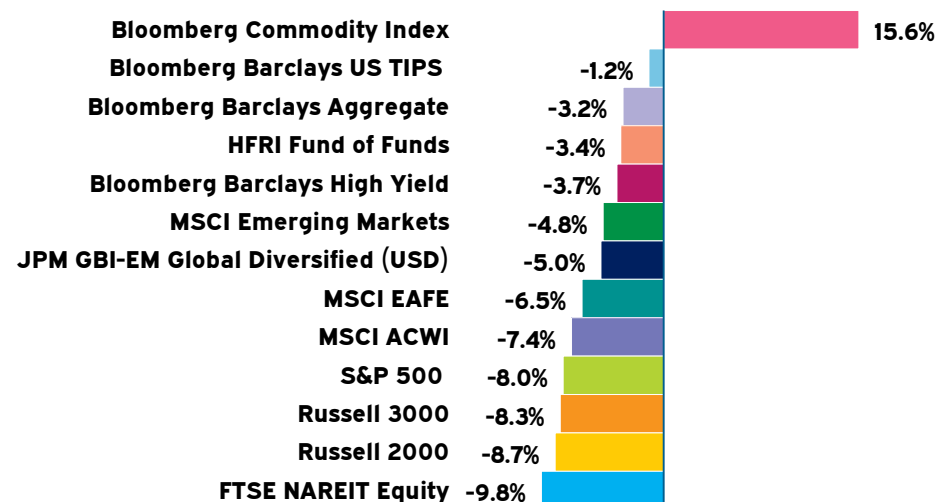
- Russia's invasion of Ukraine created significant uncertainty and further increased volatility.
 - Except for inflation sensitive assets like TIPS and commodities, most asset classes declined in February.
 - Volatility in equities, as represented by the VIX, further increased.
 - Equity markets again led declines with emerging markets falling the most.
 - Russian assets and currency experienced major declines.
 - Rates rose across the US yield curve, with flattening continuing.
 - Value-oriented equities again outpaced growth in the US given higher rates.
 - The dollar strengthened against a broad basket of peers with safe-haven flows after month-end pushing it even higher.
 - Inflation expectations rose with the spike in some key commodities.
- The conflict in eastern Europe will have considerable economic and financial consequences for the global economy including the pacing of policy rate tightening, the risk of policy mistakes, and supply shocks pushing inflation even higher around the world.

Index Returns¹

2021



YTD



- Outside of emerging markets and the broad US investment grade bond market (Barclays Aggregate), most asset classes appreciated in 2021.
- In comparison, 2022 is off to a weak start with all major asset classes except commodities declining given expectations for policy tightening, slower growth, inflation, and economic uncertainty related to Russia's invasion of Ukraine.

¹ Data Source: Bloomberg and FactSet. Data is as of February 28, 2022.

Domestic Equity Returns¹

Domestic Equity	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-3.0	-8.0	16.4	18.2	15.2	14.5
Russell 3000	-2.5	-8.3	12.3	17.6	14.7	14.2
Russell 1000	-2.7	-8.2	13.7	18.1	15.1	14.5
Russell 1000 Growth	-4.3	-12.5	12.6	23.2	20.2	16.9
Russell 1000 Value	-1.2	-3.5	15.0	12.2	9.5	11.7
Russell MidCap	-0.7	-8.0	7.1	14.3	12.0	12.8
Russell MidCap Growth	-1.2	-14.0	-4.3	14.7	14.9	13.5
Russell MidCap Value	-0.5	-4.7	13.8	12.7	9.2	11.9
Russell 2000	1.1	-8.7	-6.0	10.5	9.5	11.0
Russell 2000 Growth	0.4	-13.0	-17.4	9.2	10.5	11.2
Russell 2000 Value	1.7	-4.3	6.6	10.9	8.0	10.5

US Equities: Russell 3000 Index -2.5%, and value indices again outperformed growth in February.

- US large cap and mid cap stock indices declined during February amid persistent inflation and geopolitical turbulence. US small cap stock indices edged up.
- Value stocks continued to outpace growth stocks partly driven by strong returns in the energy sector and weakness in the technology sector.
- Small company stocks (Russell 2000) outperformed large cap company stocks (Russell 1000). The declines of several large technology and communication services stocks (e.g., Meta and Apple) contributed to this dynamic.

¹ Source: Bloomberg. Data is as of February 28, 2022.

Foreign Equity Returns¹

Foreign Equity	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI	-2.6	-7.4	7.8	13.4	11.4	9.8
MSCI ACWI ex. US	-2.0	-5.6	-0.4	7.7	7.3	5.4
MSCI EAFE	-1.8	-6.5	2.8	7.8	7.2	6.1
MSCI EAFE (Local Currency)	-2.2	-5.7	9.5	8.0	6.6	8.4
MSCI EAFE Small Cap	-1.3	-8.5	-1.5	8.6	7.9	8.3
MSCI Emerging Markets	-3.0	-4.8	-10.7	6.0	7.0	3.4
MSCI Emerging Markets (Local Currency)	-2.4	-4.1	-8.8	7.5	8.4	6.4

International Developed Market Equities: MSCI EAFE -1.8% and MSCI ACWI ex. US -2.0% for February.

- Returns in international markets were negative for the month as well, with the bulk of the declines seen in the last week of February, in the wake of Russia's military actions. Developed markets beat emerging markets given direct exposure to Russia in the emerging market index.
- Value also outperformed growth in international equity markets. A strong US dollar weighed on non-US developed and emerging markets equities.

Emerging Markets: MSCI EM -3.0% in February.

- The index was flat for the month before the announcement of the Russian invasion of Ukraine. Russian stocks and the ruble plunged with sanctions and trading halts.
- Major index providers announced the removal of Russia from their indices, essentially marking pre-invasion index exposure down to zero.

¹ Source: Bloomberg. Data is as of February 28, 2022.

Fixed Income Returns¹

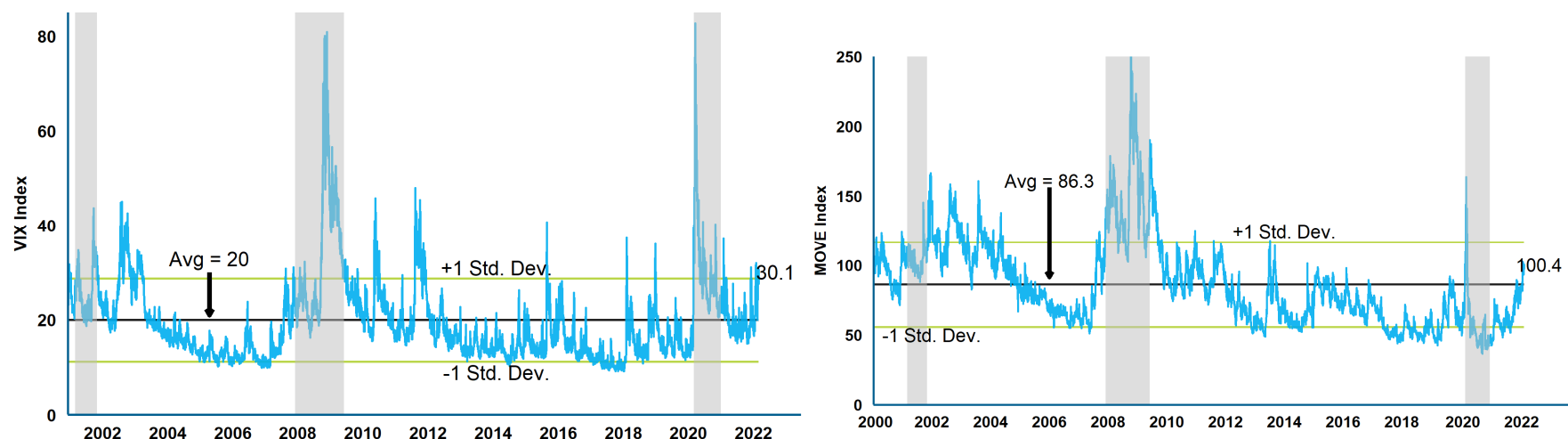
Fixed Income	February (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-1.4	-3.5	-2.7	3.4	2.9	2.8	2.7	6.6
Bloomberg Aggregate	-1.1	-3.2	-2.6	3.3	2.7	2.5	2.3	6.8
Bloomberg US TIPS	0.9	-1.2	6.1	7.5	4.8	2.7	1.9	7.7
Bloomberg High Yield	-1.0	-3.7	0.6	5.3	4.9	5.9	5.6	4.6
JPM GBI-EM Global Diversified (USD)	-5.0	-5.0	-10.0	-1.1	1.0	-0.8%	6.1	5.1

Fixed Income: Barclays Universal -1.4% in February.

- Continued concerns about policy tightening and inflation led to the broad US bond market (Barclays Aggregate) declining again in February. The nominal 10-year Treasury yield rose slightly above the 2% yield level at mid-month before finishing the month at 1.8% due to safe-haven flows.
- TIPS were the only positive area in fixed income, benefiting from growing inflation fears.
- In February US credit spreads widened slightly as risk assets fell. They remain at low levels though given relatively strong corporate health and high investor demand in the low-rate environment.
- Emerging market debt declined driven by the Russian invasion of Ukraine.

¹ Source: Bloomberg. JPM GBI-EM is from InvestorForce, data is as of February 28, 2022.

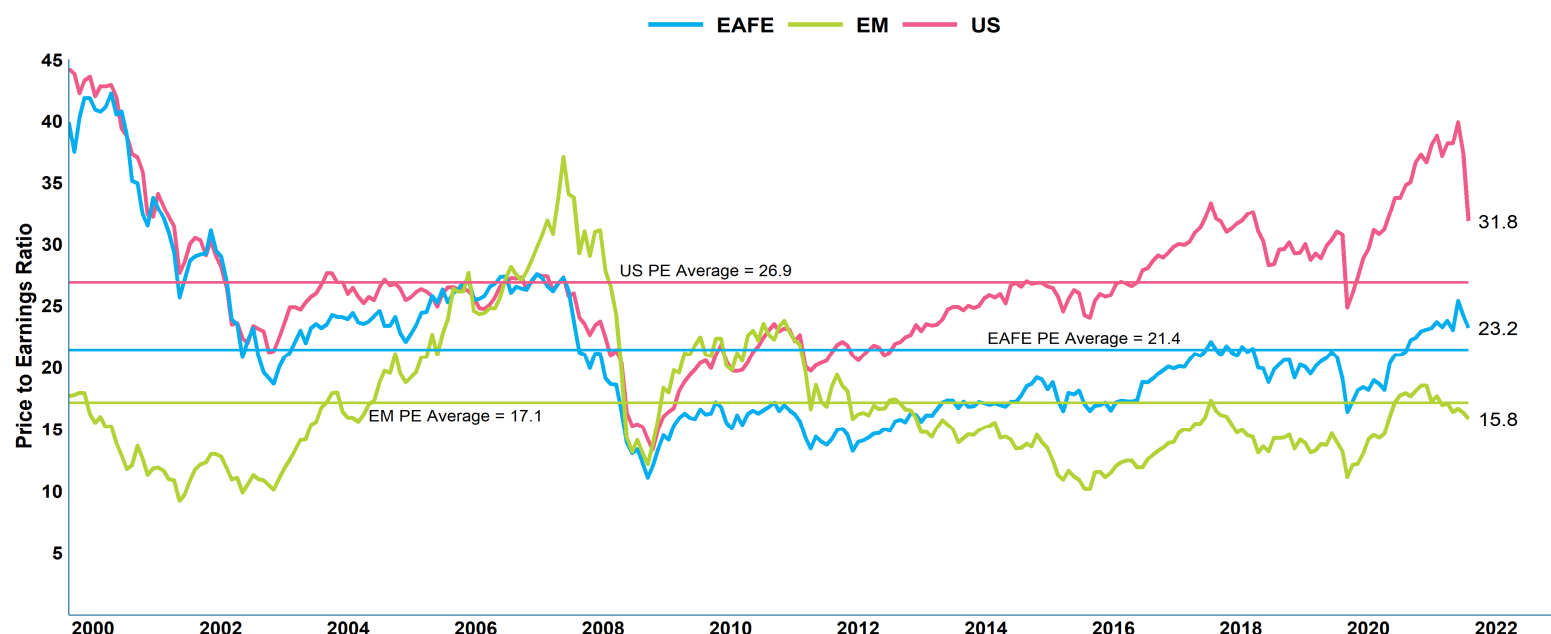
Equity and Fixed Income Volatility¹



- Volatility in equity (VIX) and fixed income (MOVE) increased at the start of the year, driven largely by expectations that the Federal Reserve would tighten monetary policy faster than previously expected.
- In February, Russia's invasion of Ukraine further increased market volatility.

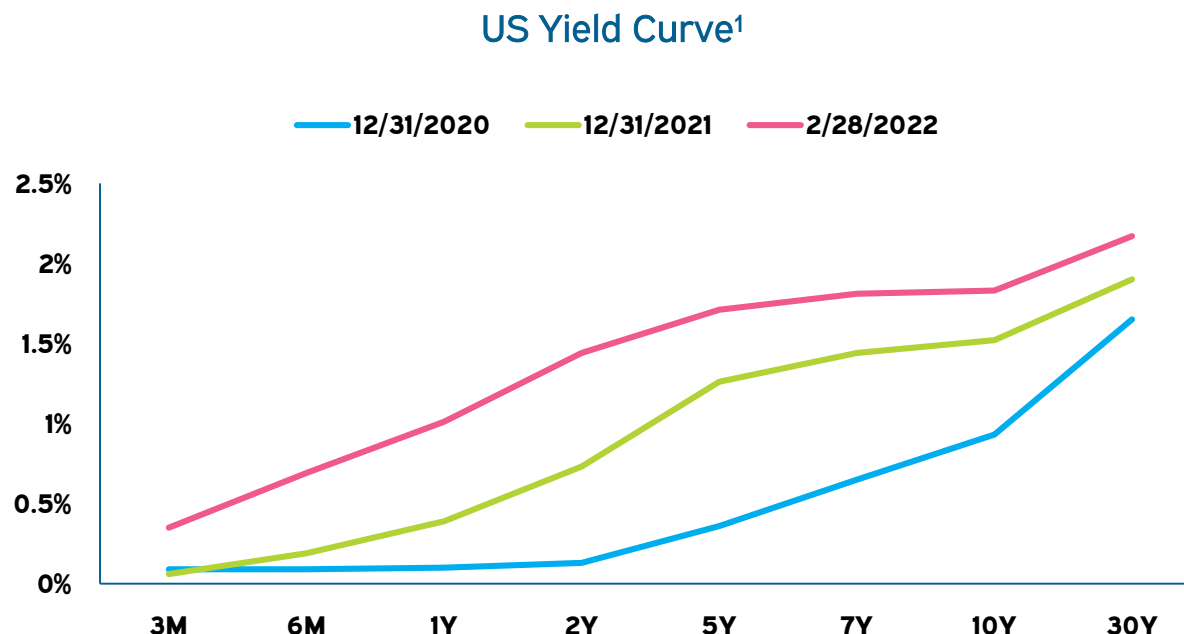
¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of February 2022. The average line indicated is the average of the VIX and MOVE values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

Equity Cyclically Adjusted P/E Ratios¹



- In February valuations in the US equity market declined further given the 3% fall in the market, but they remain well above long-term averages (near +2 standard deviations).
- International developed market valuations remain below the US with emerging markets under its long-term average.

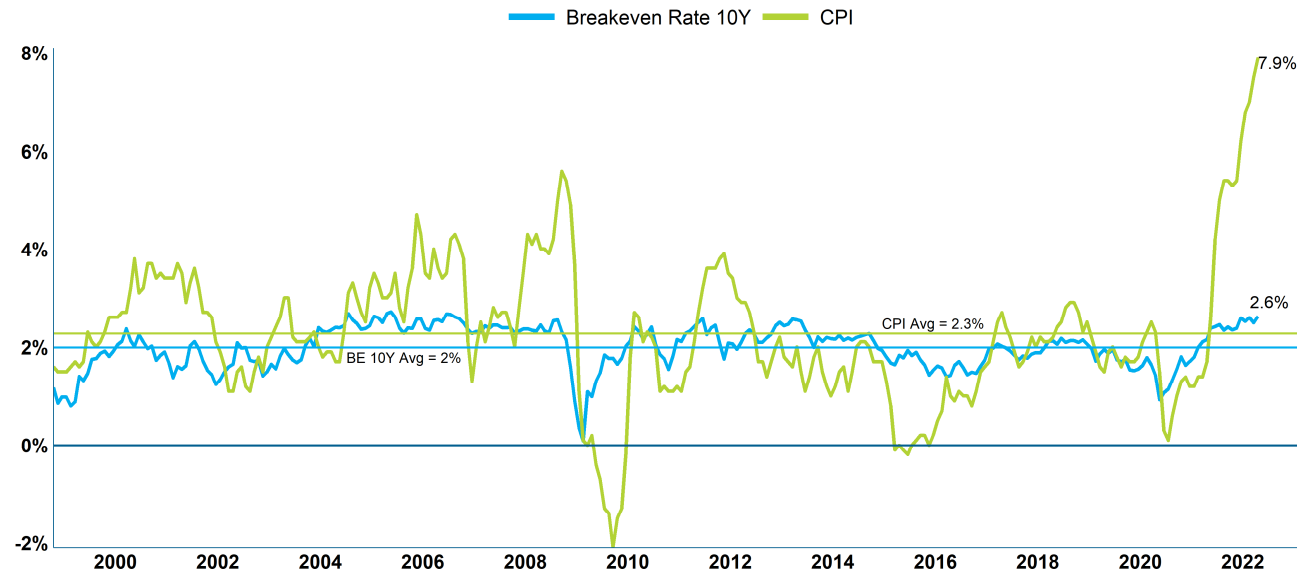
¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of February 28, 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to month-end respectively.



- The trends of higher rates across maturities and curve flattening continued in February. The spread between a two-year and ten-year Treasury declined by 0.24% for the month, ending at 0.36%.
- Expectations for tighter monetary policy by the Federal Reserve responding to persistently high inflation and improvements in the labor market continue to influence rates.
- The conflict between Russia and Ukraine has increased concerns over inflation and could influence rates moving forward.

¹ Source: Bloomberg. Data is as of February 28, 2022.

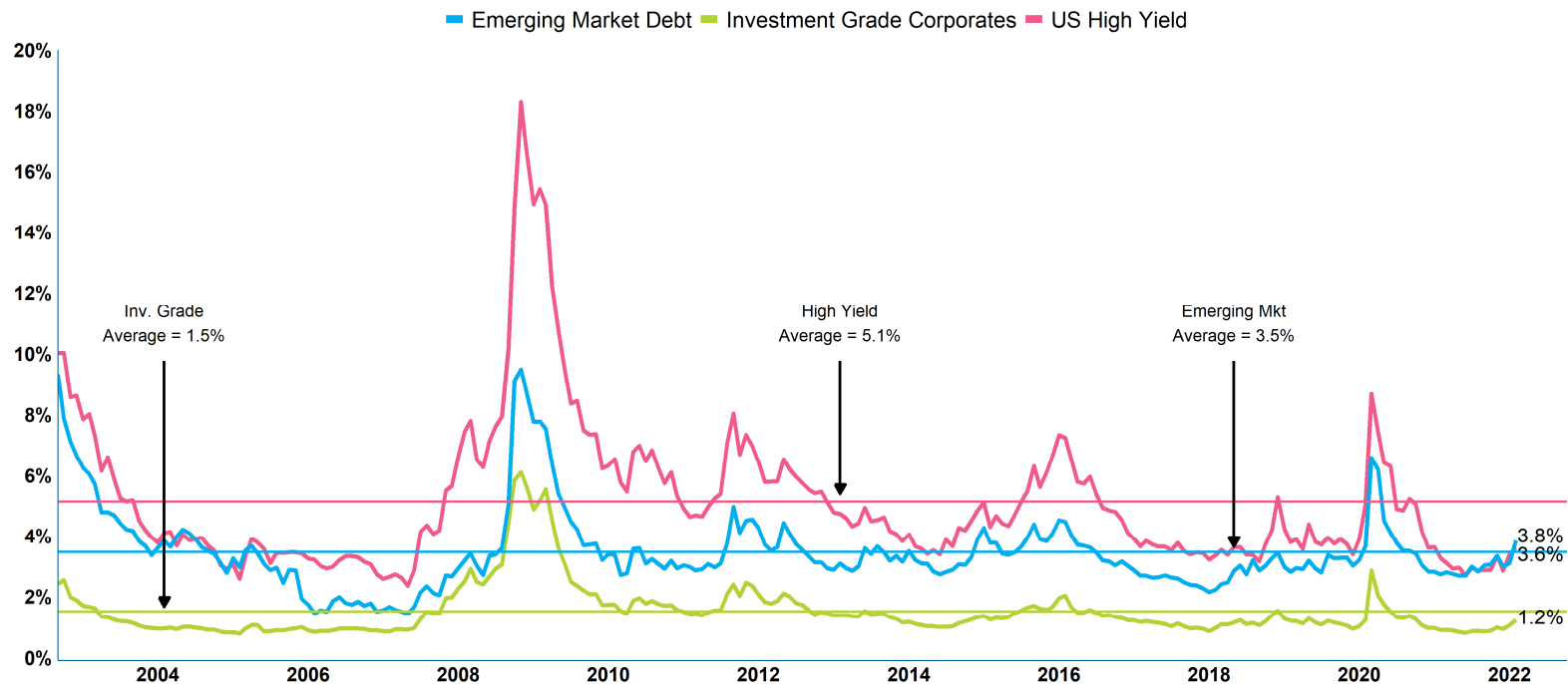
Ten-Year Breakeven Inflation and CPI¹



- Inflation expectations (breakevens) increased in February, remaining well above long-term averages. After month-end, breakevens experienced a significant increase driven by the decline in real rates due to falling growth expectations.
- Trailing twelve-month CPI continued to rise in February, reaching 7.9%, a level not reached since the early 1980s and far above the long-term average of 2.3%.
- Rising prices for energy and food, and for new and used cars, remain key drivers of higher inflation.

¹ Source: Bloomberg. Data is as of February 28, 2022. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively.

Credit Spreads vs. US Treasury Bonds¹



- Credit spreads (the spread above a comparable maturity Treasury) increased in February particularly for riskier bonds given the risk-off environment.
- The search for yield in a low-rate environment and still strong corporate fundamentals with low default risk have been key drivers in the decline in credit spreads to below long-term averages here in the US. Despite the recent increase in spreads, high yield spreads remain well below the long-term average.

¹ Sources: Barclays Live and Bloomberg. Data is as of February 28, 2022. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the present month-end respectively.

Global Economic Outlook

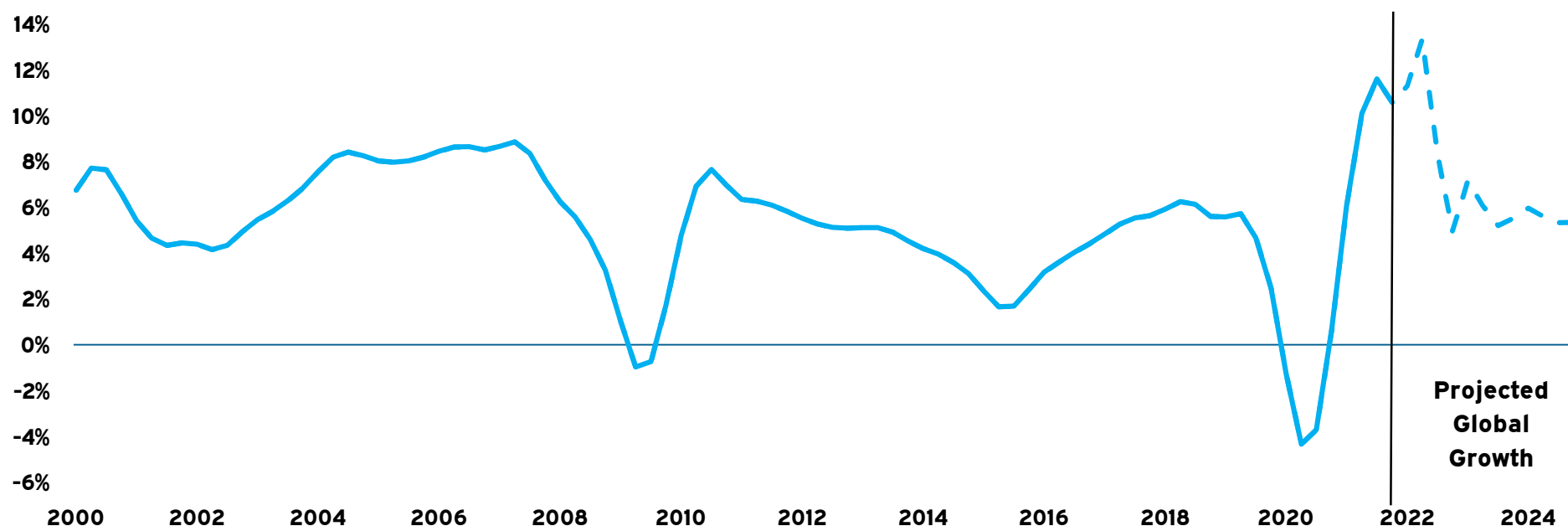
The IMF is forecasting strong growth again this year but continues to downgrade expectations given the lingering pandemic and persistent inflation. The war in Ukraine will likely further depress growth projections going forward.

- The IMF forecasts final global GDP to come in at 5.9% in 2021 and 4.4% in 2022 (0.5% below the prior estimate), still well above the past ten-year average of 3.1%.
- In advanced economies, GDP is projected to increase 3.9% in 2022 and 2.6% in 2023. These levels are still above potential as economies re-open and vaccination progress is made. The US forecast experienced a significant reduction in 2022 (4.0% versus 5.2%) given policy reduction earlier than previously expected, high inflation, and struggles in passing fiscal programs. The euro area economy is expected to grow 3.9% in 2022 and 2.5% in 2023, while the Japanese economy is expected to grow 3.3% in 2022 and 1.8% in 2023.
- Growth projections for emerging markets are higher than developed markets at 4.8% in 2022 and 4.7% in 2023. China's growth was notably downgraded 0.8% to 4.8% in 2022 given tight COVID-19 restrictions and continued problems in the property sector.
- Globally, inflation is projected to be above long-term averages in 2022 but decline from current levels.

	Real GDP (%) ¹			Inflation (%) ¹		
	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average
World	4.4	3.8	3.1	3.8	3.3	3.4
Advanced Economies	3.9	2.6	1.6	2.3	1.9	1.4
US	4.0	2.6	2.0	3.5	2.7	1.8
Euro Area	3.9	2.5	1.0	1.7	1.4	1.2
Japan	3.3	1.8	0.5	0.5	0.7	0.5
Emerging Economies	4.8	4.7	4.3	4.9	4.3	5.0
China	4.8	5.2	7.0	1.8	1.9	2.1

¹ Source: IMF World Economic Outlook. Real GDP forecasts from January WEO Update. Inflation as of the October 2021 Update. "Actual 10 Year Average" represents data from 2012 to 2021.

Global Nominal Gross Domestic Product (GDP) Growth¹

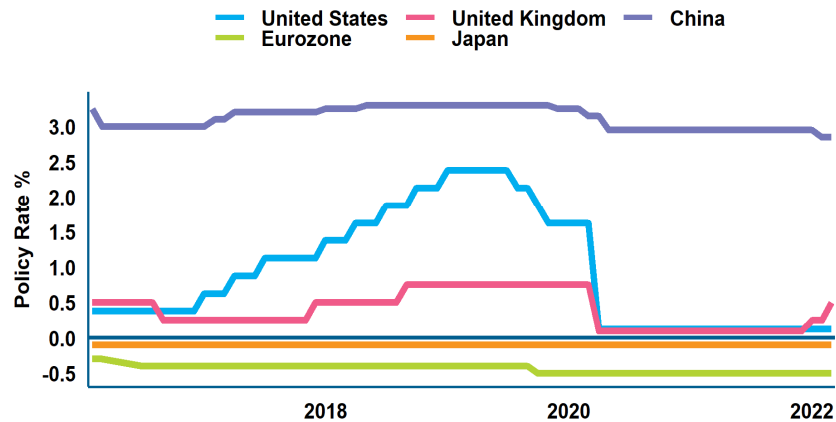


- Global economies are expected to slow in 2022 compared to 2021 but are forecasted to have another year of largely above-trend growth as economies continue to emerge from the pandemic.
- Looking forward, the track of the conflict between Russia and Ukraine, continued supply chain issues, on-going inflationary pressures, tighter monetary policy, and lingering pandemic problems all remain key.

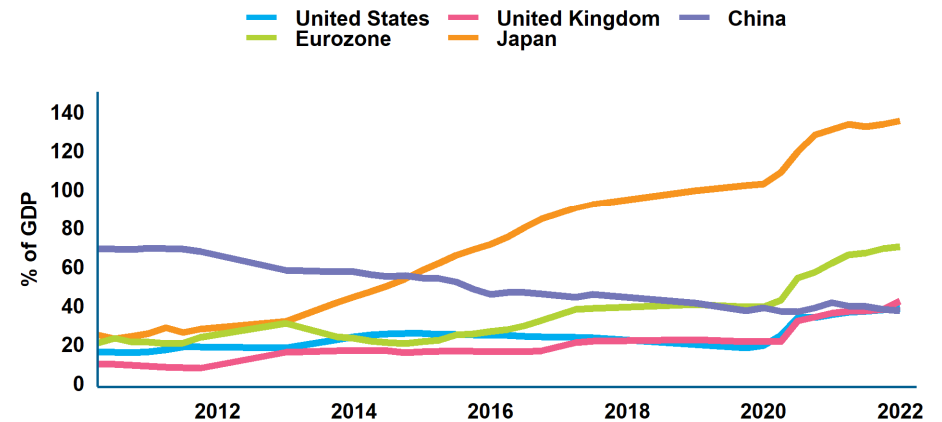
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, nominal, % change YoY). Updated February 2022.

Central Bank Response¹

Policy Rates

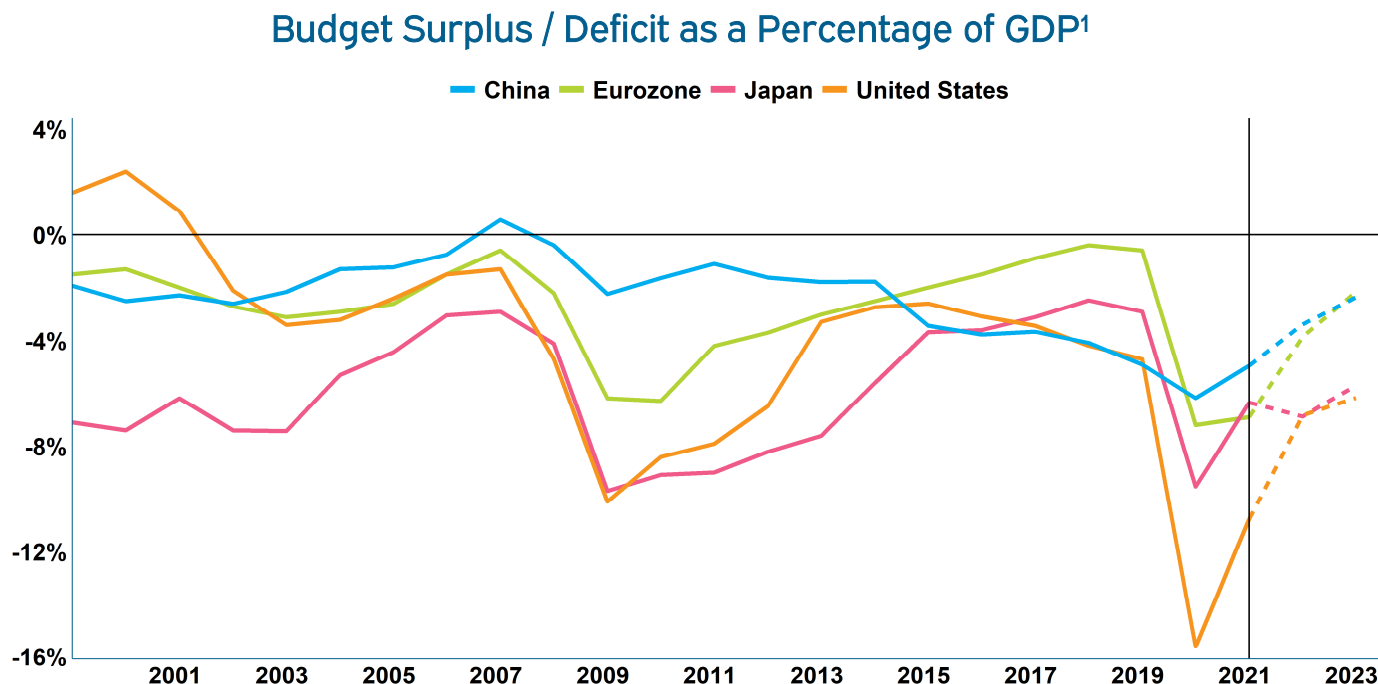


Balance Sheet as % of GDP



- After global central banks took extraordinary action to support the economy during the pandemic including policy rate cuts and emergency stimulus through quantitative easing (QE), many are considering reducing support in the face of high inflation.
- The pace of withdrawing support will likely vary across central banks with the US expected to take a more aggressive approach. The risk remains for a policy error, particularly overtightening, as the war in Ukraine could suppress global growth.
- The one notable exception is China, where the central bank recently lowered rates and reserve requirements in response to slowing growth.

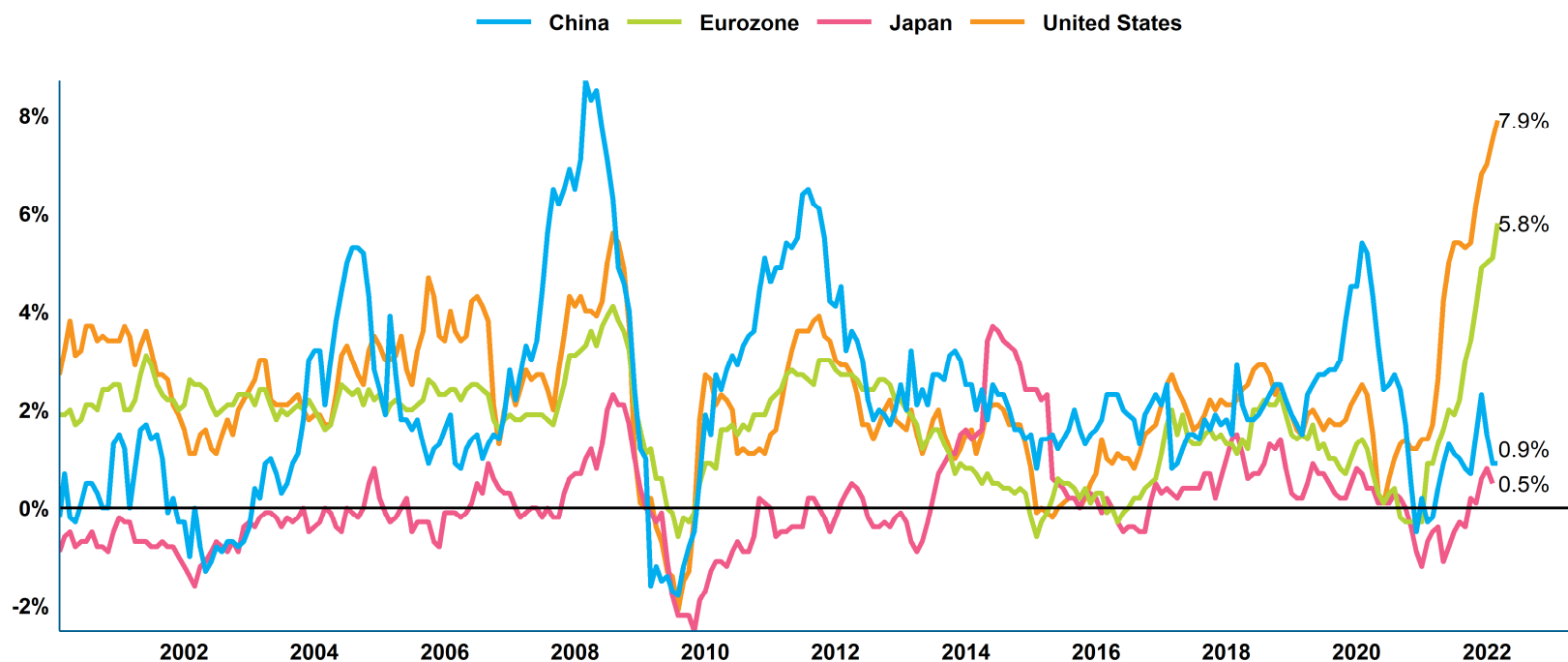
¹ Source: Bloomberg. Policy rate data is as of February 28, 2022. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2021.



- Budget deficits as a percentage of GDP drastically increased for major world economies, particularly the US, due to massive fiscal support and the severe economic contraction's effect on tax revenue in 2020 and 2021.
- As fiscal stimulus programs end, and economic recoveries continue, deficits should improve in the coming years.

¹ Source: Bloomberg. Data is as of February 28, 2022. Projections via IMF Forecasts from October 2021 Report. Dotted lines represent 2022 and 2023 forecasts.

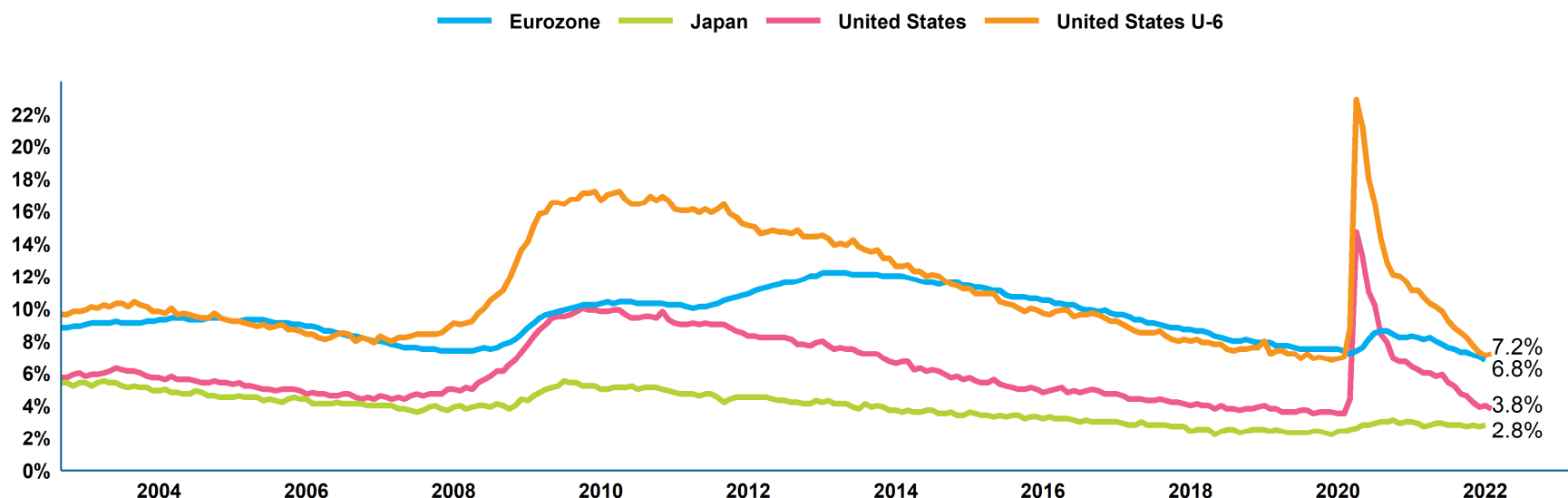
Inflation (CPI Trailing Twelve Months)¹



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone.
- Supply concerns related to the conflict between Russia and Ukraine have driven up the prices of key commodities like oil, wheat, and nickel, increasing inflationary concerns.

¹ Source: Bloomberg. Data is as of February, 2022, except for Japan, where the most recent data available is as of January 31, 2022.

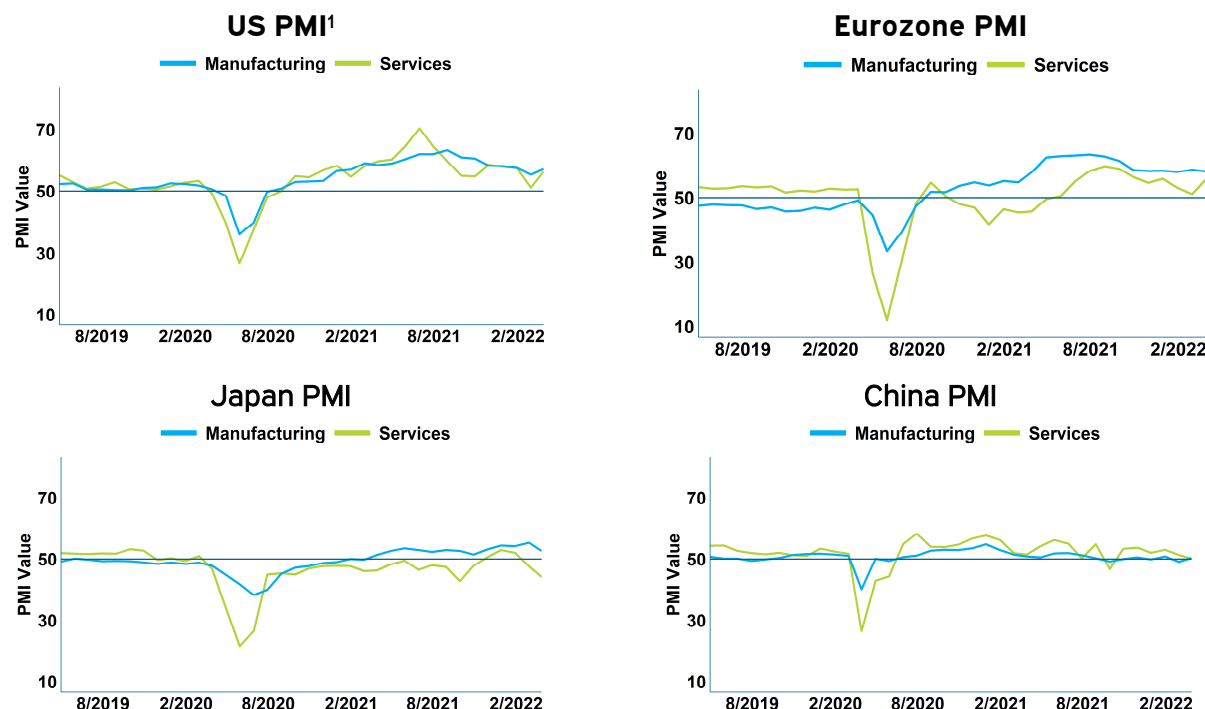
Unemployment¹



- As economies have largely reopened due to vaccines for the virus, improvements have been seen in the labor market.
- US unemployment, which experienced the steepest rise from the pandemic, declined to under 4% as the economy reopens. The broader measure (U-6) that includes discouraged and underemployed workers has declined but is much higher at 7.2%.

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

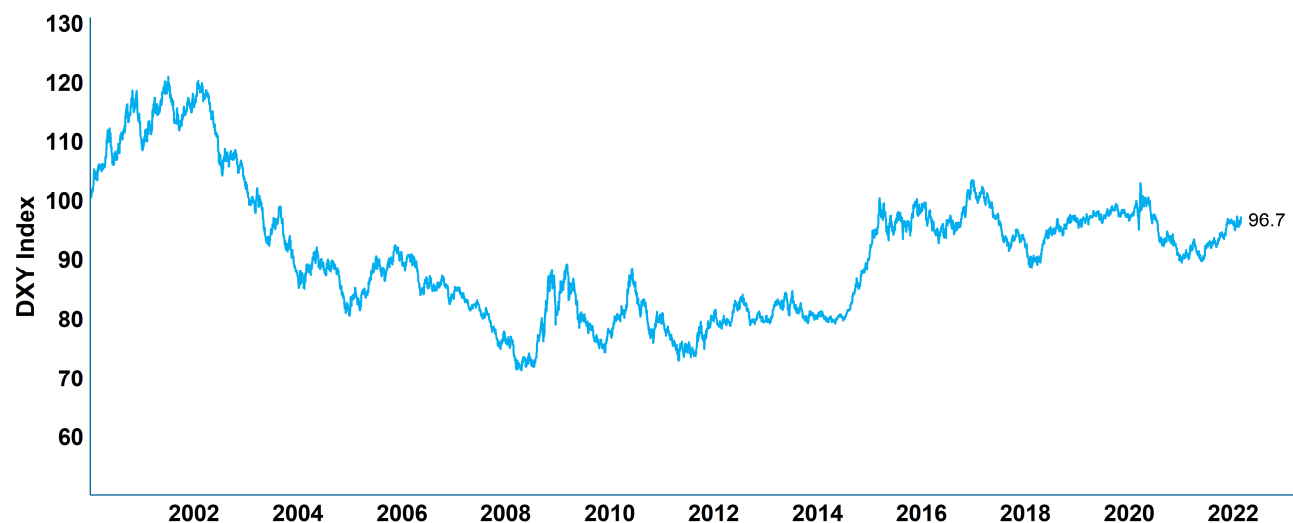
Global PMIs



- After improvements from the lows of the pandemic, Purchasing Managers Indices (PMI), based on surveys of private sector companies, have largely experienced pressures recently.
- PMIs in the services sector have seen some improvements in the US and Europe lately as the effects of the omicron variant wane, while Japan remains in contraction due to a rise in COVID-19 cases.
- Manufacturing PMIs all are in expansion territory across countries as pandemic-related production issues ease.

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

US Dollar versus Broad Currencies¹



- In February, the US dollar continued its 2021 trend of strengthening against a broad basket of peers with further increases after month-end as investors looked for safe-haven assets.
- A few commodity-sensitive currencies like the Brazilian real and South African rand have recently outpaced the dollar, given persistently high commodity prices.

¹ Source: Bloomberg Data as of February 28, 2022.

Summary

Key Trends in 2022:

- The war in eastern Europe has created significant uncertainty going forward with a wide range of potential outcomes. Volatility will likely remain high.
- Expect growth to slow globally in 2022 but remain above trend. The track of the pandemic and war will be key.
- Inflationary pressures could linger, particularly if the Russian invasion of Ukraine intensifies or expands.
- The end of many fiscal programs will put the burden of continued growth on consumers. Higher energy and food prices will depress their ability to spend in other areas.
- Monetary policy will likely tighten globally but will remain relatively low. The risk of policy error remains.
- Valuations remain high in the US, but low rates and strong margins should be supportive.
- Outside the US, valuations remain lower in both emerging and developed markets, but risks remain.

THIS MATERIAL IS PROVIDED BY MEKETA INVESTMENT GROUP, INC. ("MEKETA") FOR INFORMATIONAL PURPOSES ONLY AND MAY CONTAIN INFORMATION THAT IS NOT SUITABLE FOR ALL CLIENTS. NO PORTION OF THIS COMMENTARY IS TO BE CONSTRUED AS A SOLICITATION OR RECOMMENDATIONS TO BUY OR SELL A SECURITY, OR THE PROVISION OF PERSONALIZED INVESTMENT ADVICE, TAX OR LEGAL ADVICE. PAST PERFORMANCE MAY NOT BE INDICATIVE OF FUTURE RESULTS AND MAY HAVE BEEN IMPACTED BY MARKET EVENTS AND ECONOMIC CONDITIONS THAT WILL NOT PREVAIL IN THE FUTURE. THERE CAN BE NO ASSURANCE THAT ANY PARTICULAR INVESTMENT OR STRATEGY WILL PROVE PROFITABLE AND THE VIEWS, OPINIONS, AND PROJECTS EXPRESSED HEREIN MAY NOT COME TO PASS. ANY DIRECT OR INDIRECT REFERENCE TO A MARKET INDEX IS INCLUDED FOR ILLUSTRATIVE PURPOSES ONLY, AS AN INDEX IS NOT A SECURITY IN WHICH AN INVESTMENT CAN BE MADE. INDICES ARE BENCHMARKS THAT SERVE AS MARKET OR SECTOR INDICATORS AND DO NOT ACCOUNT FOR THE DEDUCTION OF MANAGEMENT FEES, TRANSACTION COSTS AND OTHER EXPENSES ASSOCIATED WITH INVESTABLE PRODUCTS. MEKETA DOES NOT MAKE ANY REPRESENTATION AS TO THE ACCURACY, TIMELINESS, SUITABILITY, COMPLETENESS OR RELEVANCE OF ANY INFORMATION PREPARED BY ANY UNAFFILIATED THIRD PARTY AND TAKES NO RESPONSIBILITY, THEREFORE. ANY DATA PROVIDED REGARDING THE LIKELIHOOD OF VARIOUS INVESTMENT OUTCOMES ARE HYPOTHETICAL IN NATURE, DO NOT REFLECT ACTUAL INVESTMENT RESULTS, AND ARE NOT GUARANTEES OF FUTURES RESULTS. INVESTING INVOLVES RISK, INCLUDING THE POTENTIAL LOSS OF PRINCIPAL AND CLIENTS SHOULD BE GUIDED ACCORDINGLY.

San Joaquin County Employees' Retirement Association

April 2022

Strategic Asset Allocation



San Joaquin County Employees' Retirement Association

Table of Contents

1. Overview
2. Current Strategic Policy
3. Asset Liability Study – Deterministic
4. Asset Liability Study - Stochastic
5. Risk Assessment – Survey Results

Overview



San Joaquin County Employees' Retirement Association

Overview

Project Goal:

To review and possibly modify SJCERA's Strategic Allocation Policy, reflecting the Board's unique definition, tolerance for, and beliefs about investment risk.



San Joaquin County Employees' Retirement Association

Overview – Considerations

Strategic Allocation: The foundation for long-term portfolio structure

Key aspect:

Define risk & determine Board's tolerance for that risk

Tolerance for risk:

Heavily influences policy selection

Plan Assets

Heavily influence overall plan risk

90%

% of portfolio volatility explained by asset allocation policy

SJCERA completed its last Asset Allocation Study in 2019



3 key high-level steps to the A/L process:

1.

Develop an understanding of how the financial condition of SJCERA might vary based on outcomes of the SJCERA's investment portfolio.

2.

Set a consensus definition and view of the risk(s) SJCERA should bear.

3.

Once a view/tolerance for risk has been established, **select an appropriate long-term investment strategy** (i.e., a policy portfolio / strategic allocation).



Priorities for the 2022 A/L Project

- Clarify sensitivities to various types of plan risks
- Examine the current policy in light of post-COVID markets
- Optimize the investment portfolio



San Joaquin County Employees' Retirement Association

Agenda

- Today, we'd like to begin the Asset Allocation dialogue by considering:
 - Actuarial funded status projections assuming all Plan assumptions are met.
 - Projections using Meketa's 2022 Capital Market Expectations, which suggest a **higher likelihood of a long-term return less than the current Plan assumption.**
 - The current risk profile of the Association's assets.
 - Summarize the results of the risk tolerance survey.

- Goal – To set the foundation for determining the asset risk tolerance of the Board.

- Subsequent Meeting – Meketa will react to the survey and feedback from the Board to present several asset allocation options.

Current Strategic Policy



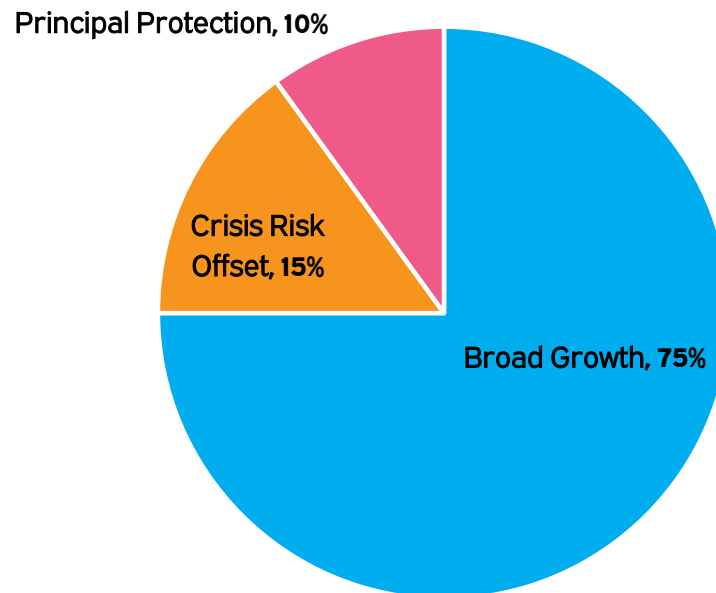
San Joaquin County Employees' Retirement Association

Current Strategic Policy - Strategic Framework

Strategic Allocation Framework

- As part of the 2019 Asset Allocation Study, SJCERA adopted a new enhanced allocation framework.
- The framework represented a further shift from an asset class paradigm to one focused on portfolio functions/objectives and underlying risk factors.

SJCERA's Long-Term Allocation Policy

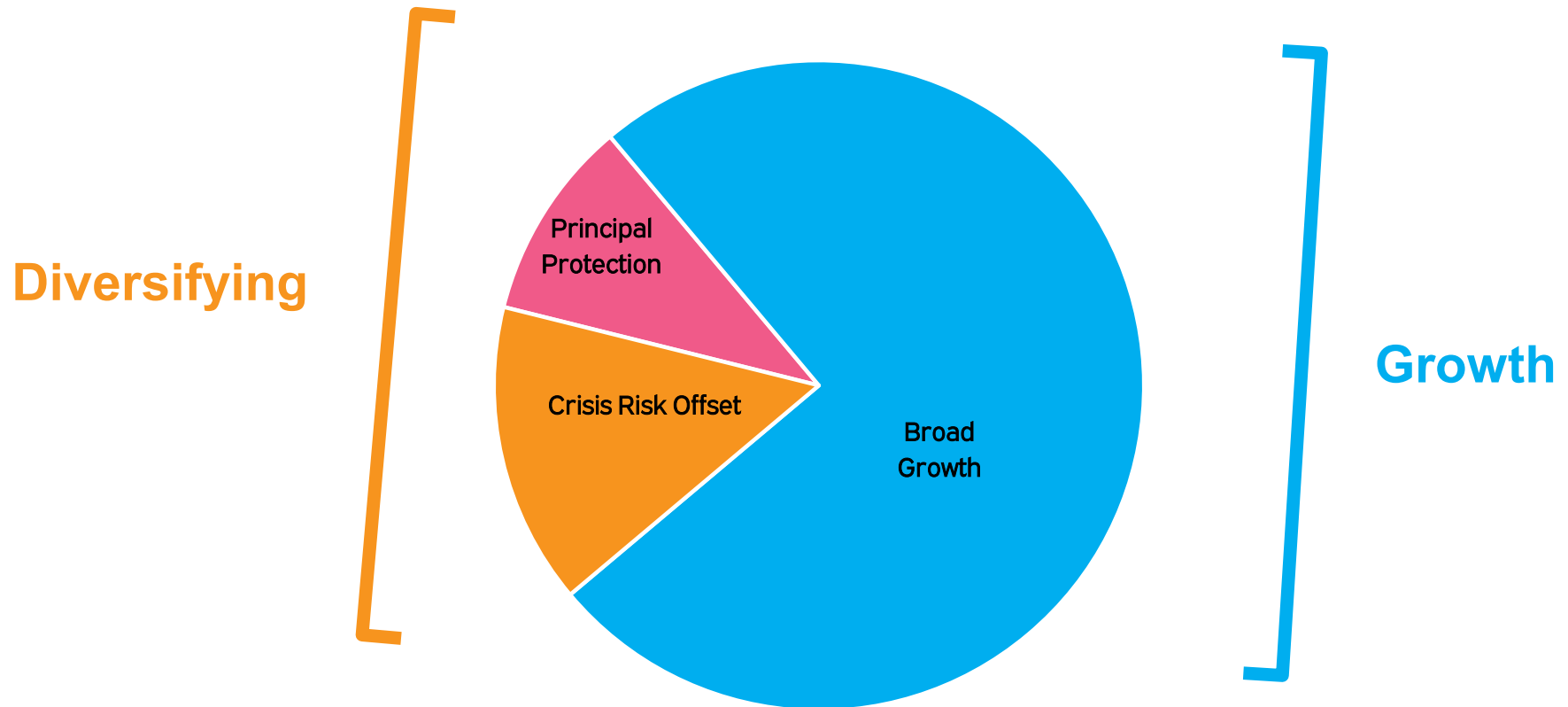




San Joaquin County Employees' Retirement Association

Current Strategic Policy - Strategic Framework

Functional/Risk-based Framework



Each major portfolio class/component can be classified based on its primary role:
Growth or *Diversifying*.



San Joaquin County Employees' Retirement Association

Current Strategic Policy - Current Policy Statistics

2022 SJCERA Policy Allocation 10 vs. 20 years

Simulation Stats	10 (YRS)	20 (YRS)	Difference
Median Compound Return	5.6%	6.6%	-1.0
Average Standard Deviation	10.8%	10.7%	-0.1
Sharpe Ratio	0.4	0.5	+0.1
Percent of Compound Returns < 7.00%	38.4%	42.1%	+9.3

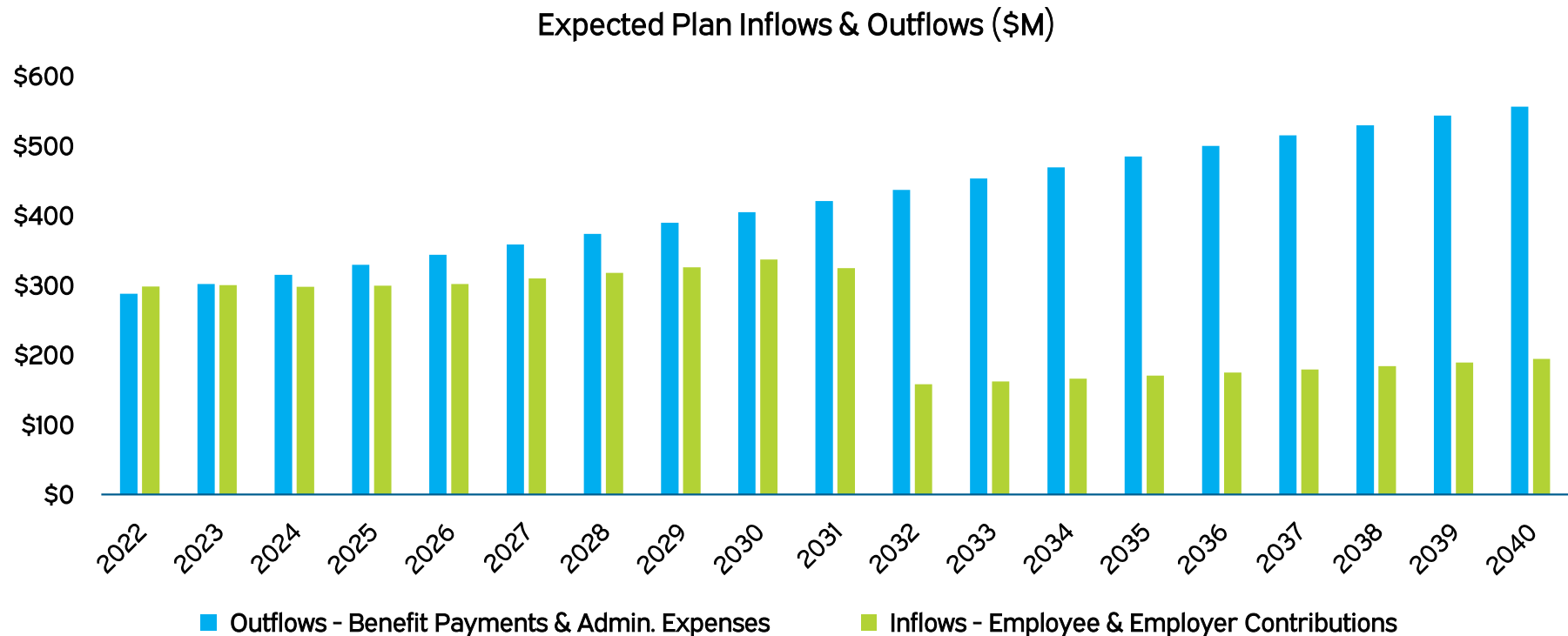
→ Over the next 10-years the expected return is 5.6% but looking longer term asset classes are expected to revert closer to their historical mean of 6.6%.

Asset Liability Study - Deterministic



San Joaquin County Employees' Retirement Association

Asset-Liability Study – Deterministic

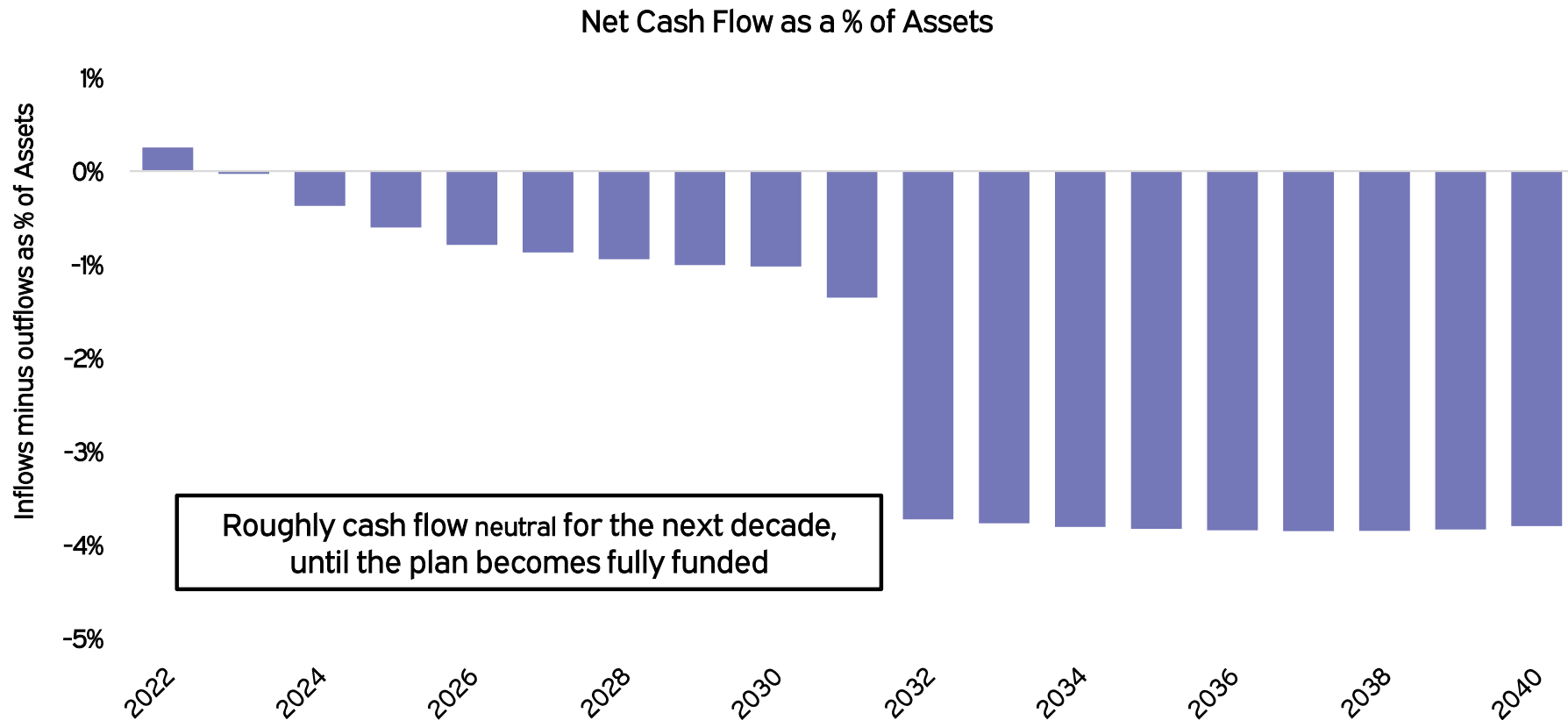


- A deterministic asset-liability study is one in which all assumptions are assumed to be met every single year of the projection.
- The following expected benefit payments and contributions are what the actuary forecasts using census data as of January 1, 2021.



San Joaquin County Employees' Retirement Association

Asset-Liability Study – Deterministic

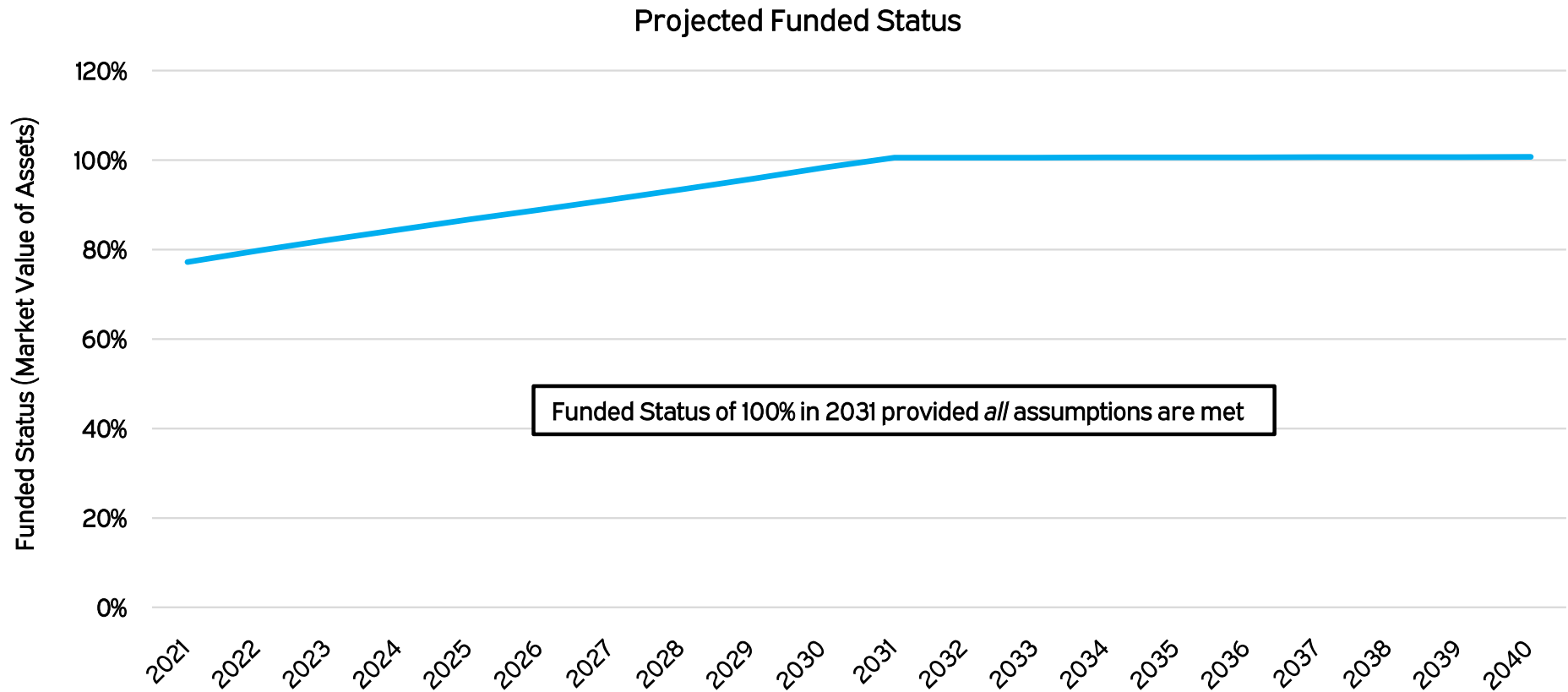


- A negative cash flow is typical for a mature pension plan.
- Plan asset increases/decreases will make the net outflow smaller/larger.



San Joaquin County Employees' Retirement Association

Asset-Liability Study – Deterministic



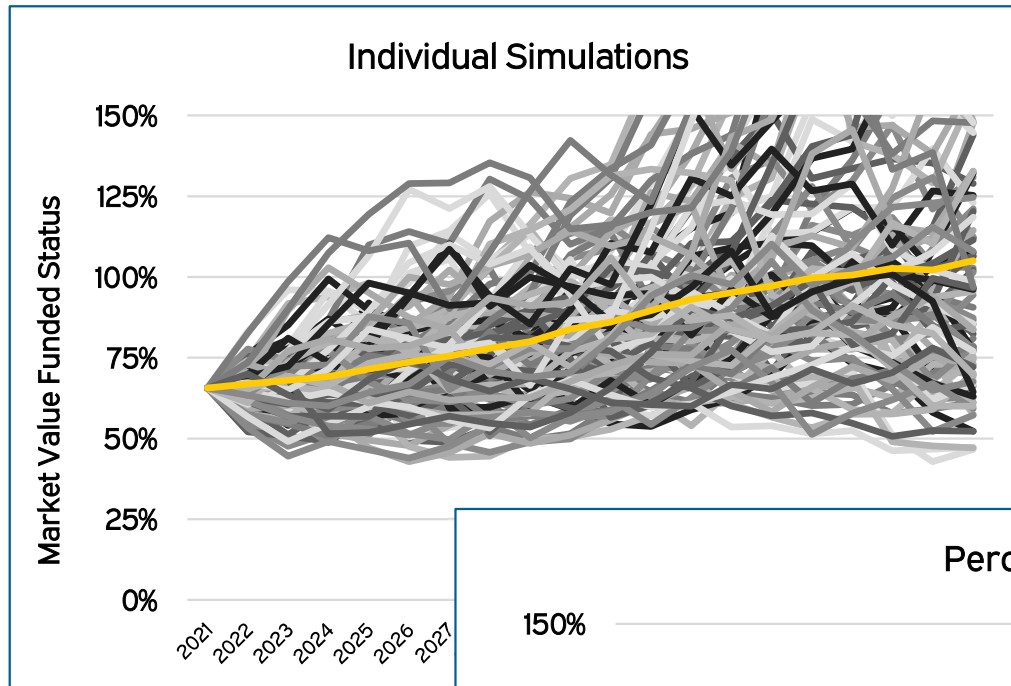
The 2022 Meketa Capital Market Expectations suggest there is a 38% probability the Plan exceeds the 7.00% long-term rate of return assumption over the next decade.

Asset-Liability Study - Stochastic

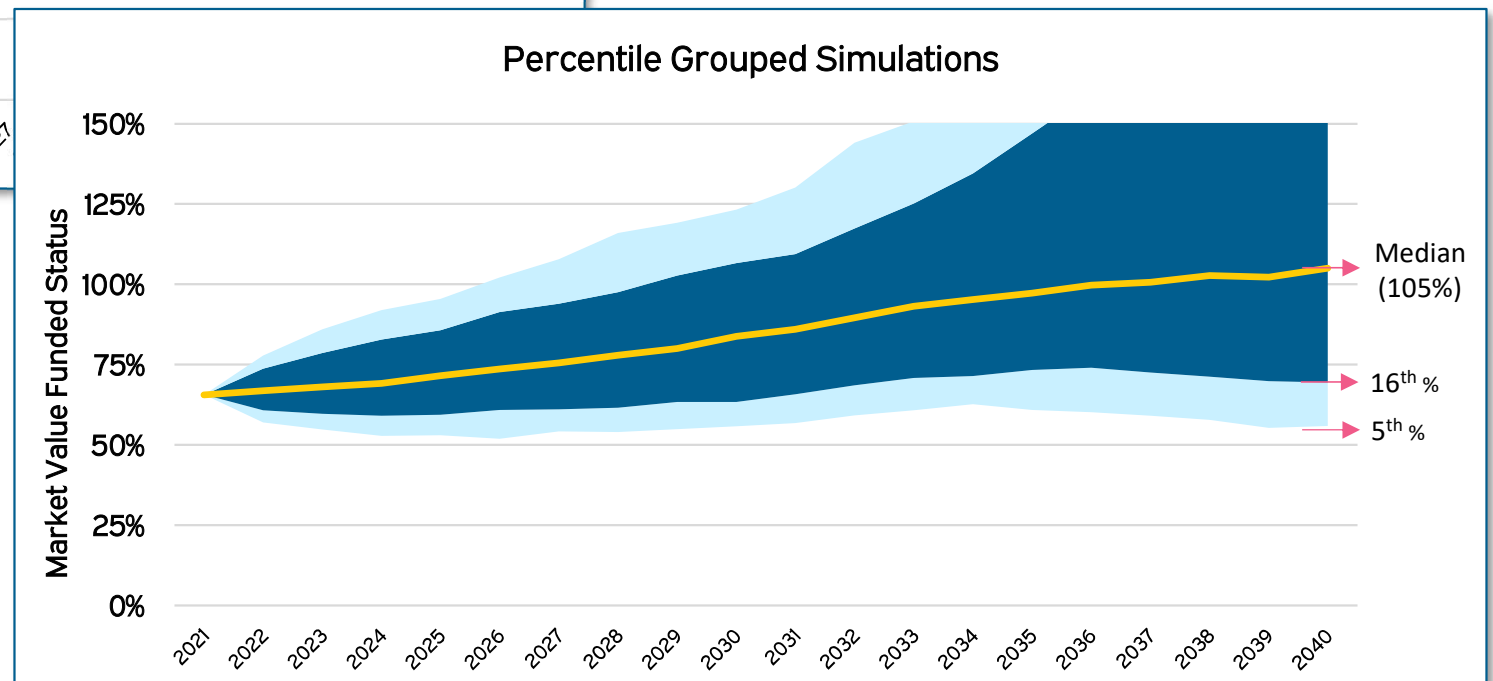


San Joaquin County Employees' Retirement Association

Asset-Liability Study – Simulations → Percentiles – Funded Status



- The chart to the left displays a stochastic simulation of the funded status outcomes based on the current investment policy, projected benefit payments, funded status and funding policy.
- The chart below summarizes those results into corridors of percentiles.
- Example: There is a 50% probability the funded status greater than 105% in 2040.



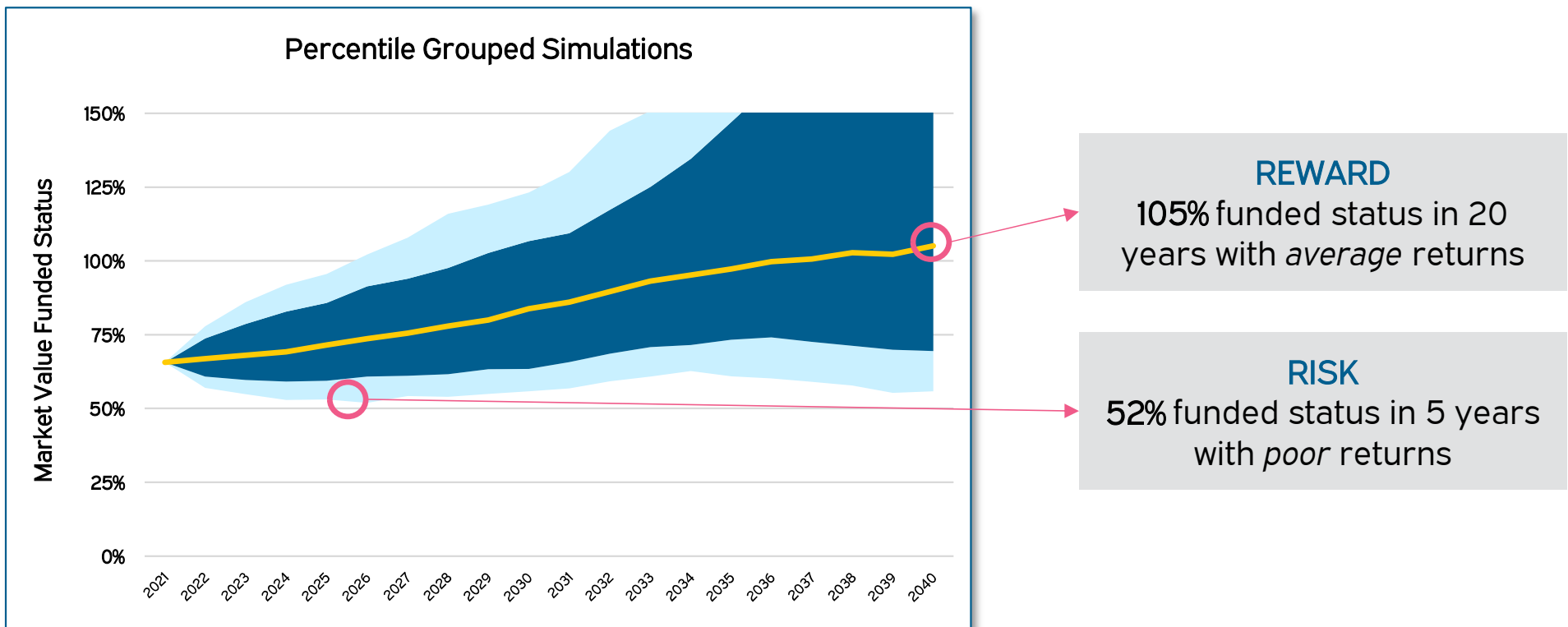


San Joaquin County Employees' Retirement Association

Asset-Liability Study – Percentiles → Analysis

→ This study uses a “Risk/Reward” framework to make relative comparisons between asset allocations.

- **Reward** – An outcome where all the underlying assumptions prove to be accurate over the long-term (50th percentile over a 20-year time horizon).
- **Risk** – An outcome with a low probability (5th percentile) but a more detrimental impact on the Plan, especially when that outcome occurs in the short-term (5-year time horizon).



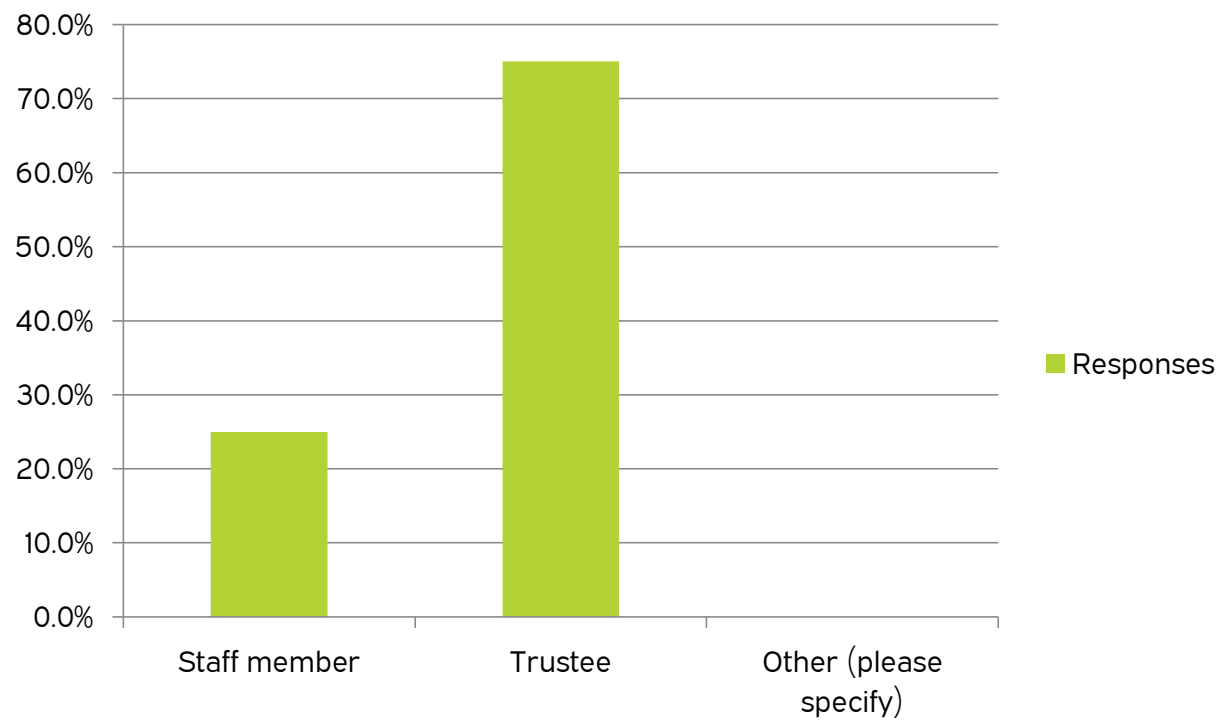
Risk Assessment - Survey Results



San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ Are responding to this survey as staff or trustee?

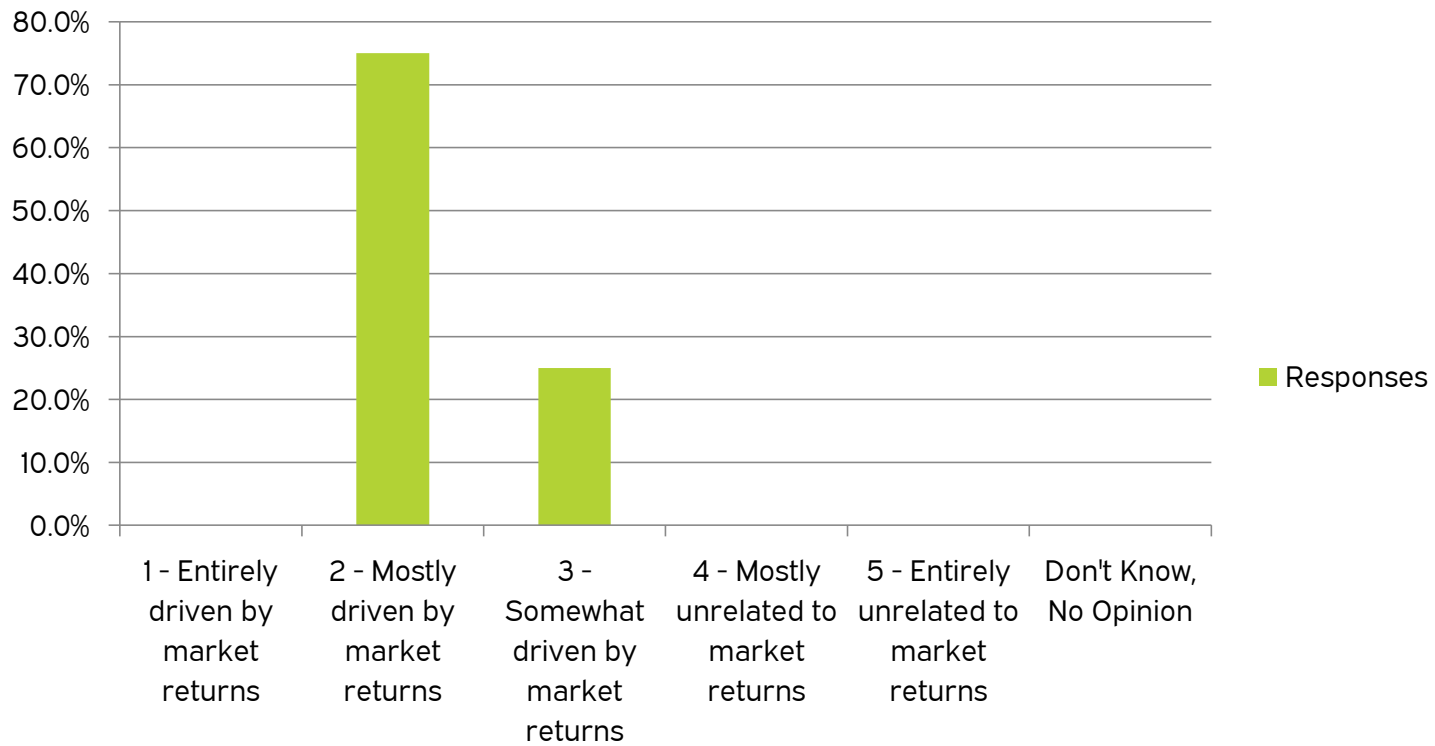




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ To what degree do you believe the portfolio returns are driven by the overall market?

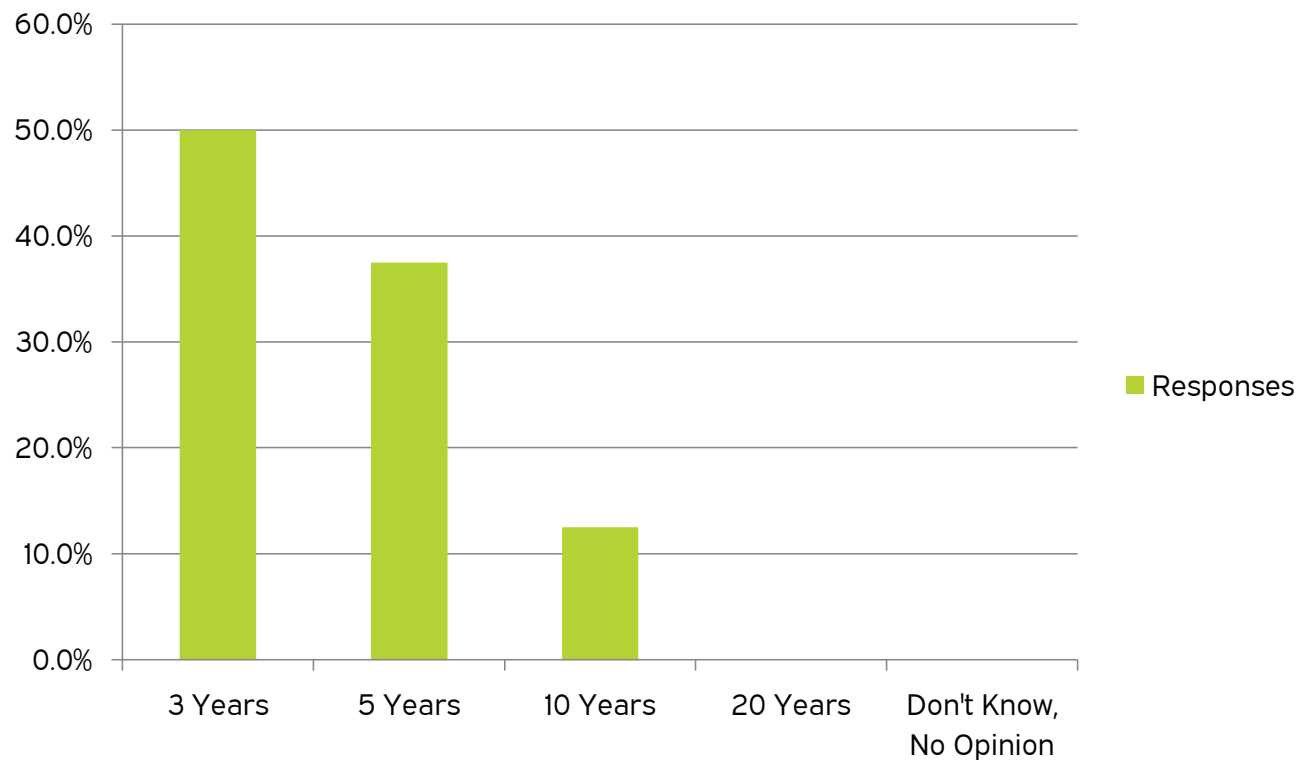




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ What is the minimum relevant time frame for evaluating the portfolio's performance relative to the actuarial rate of return (7.0%)?

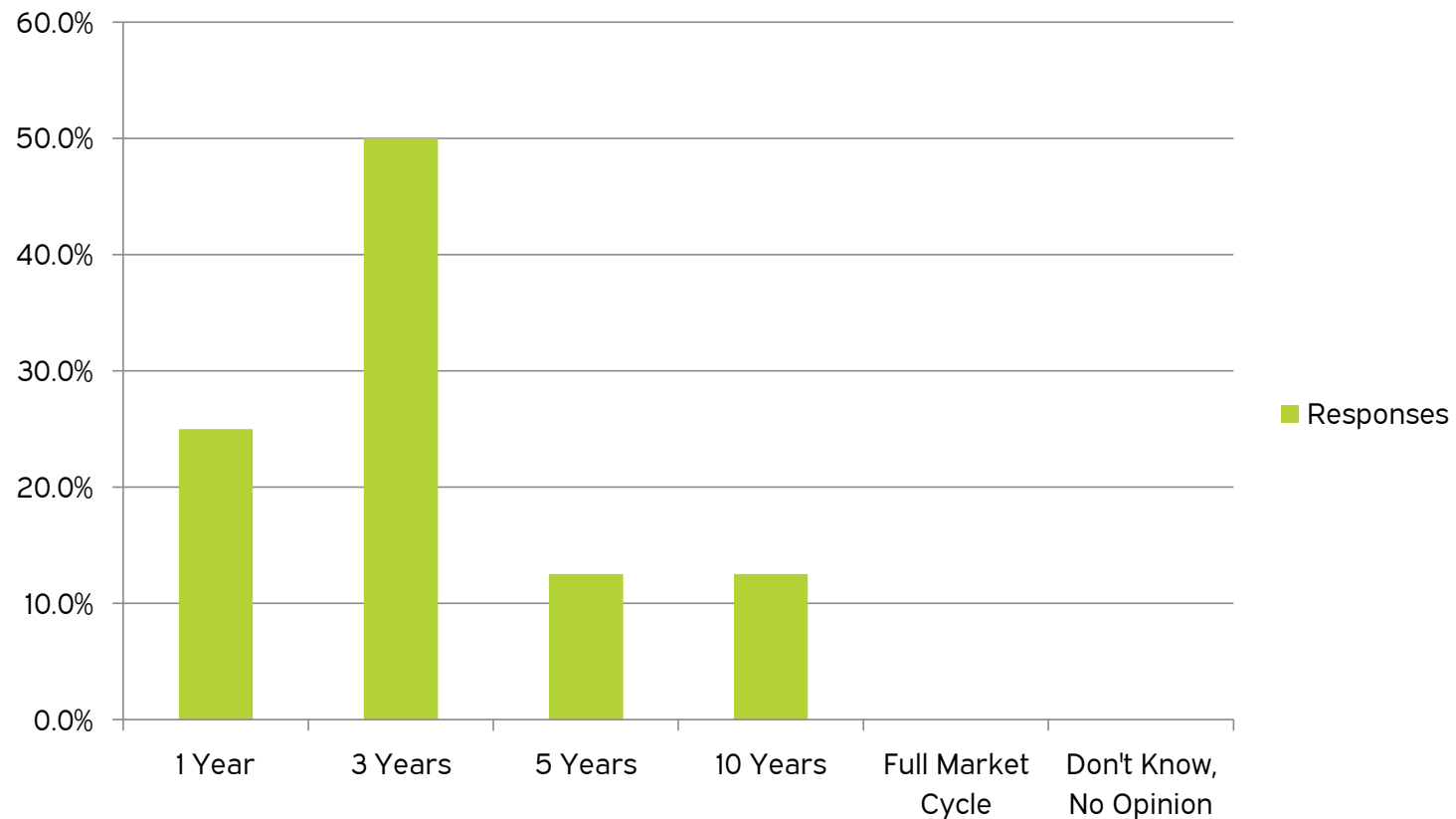




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ What is the minimum relevant/meaningful time frame when assessing SJCERA's performance relative to the benchmark?

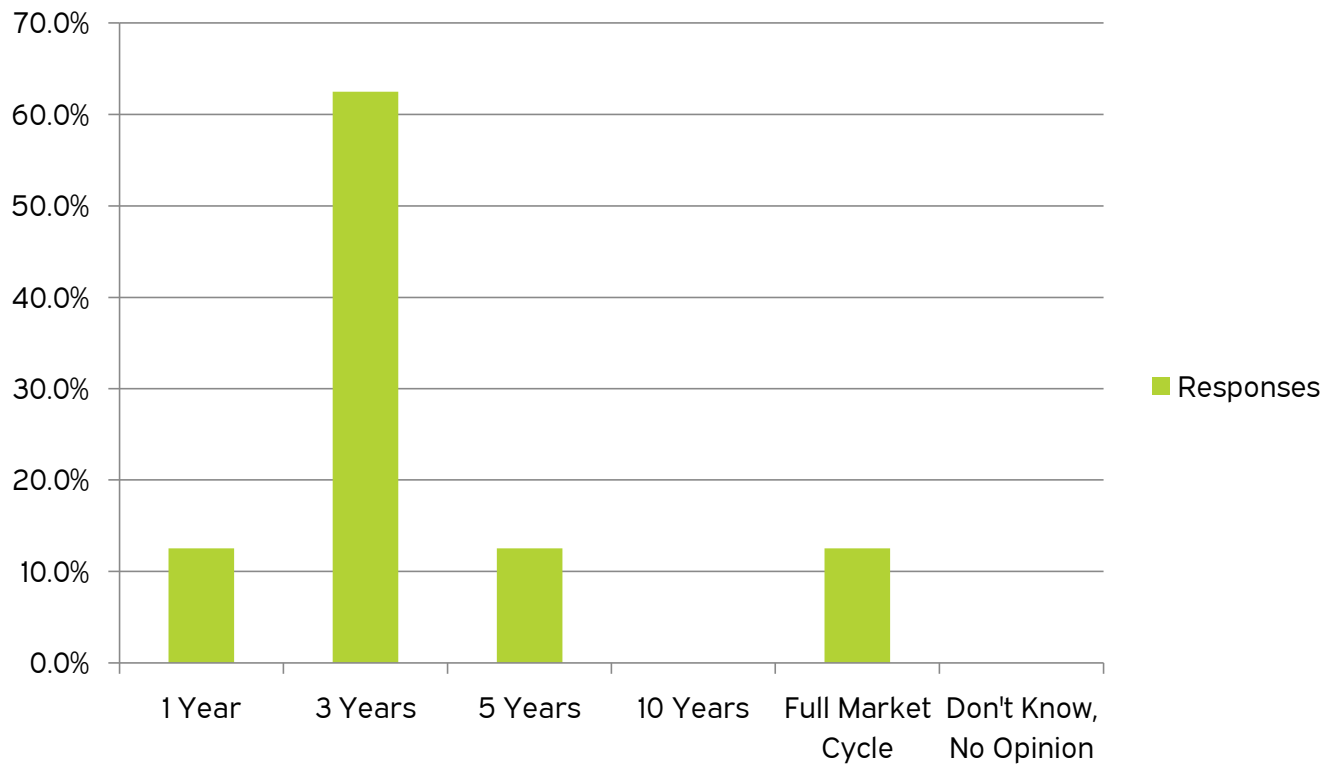




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ What is the minimum relevant/meaningful time frame when assessing SJCERA's performance relative to the peer set?

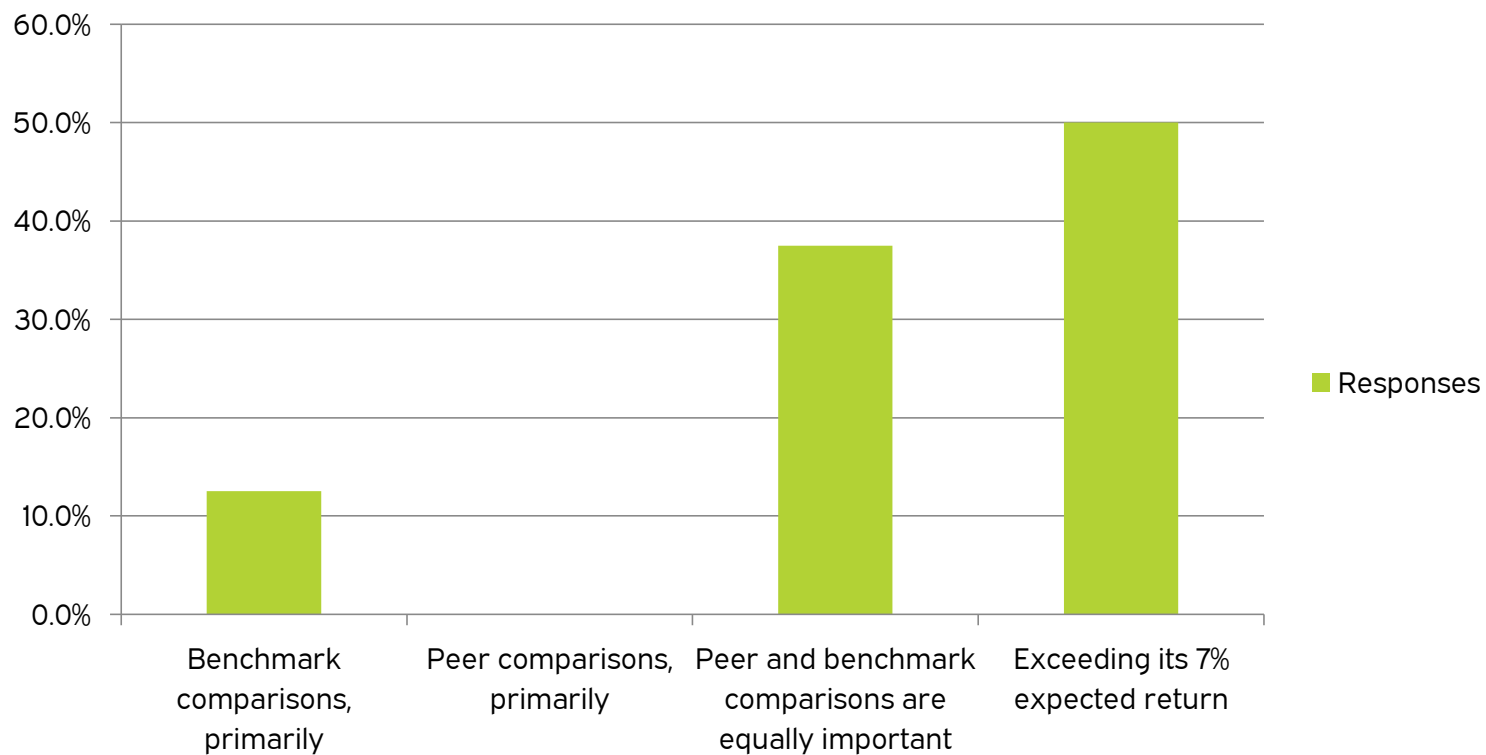




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ Generally, which do you believe is more important for assessing the portfolio?

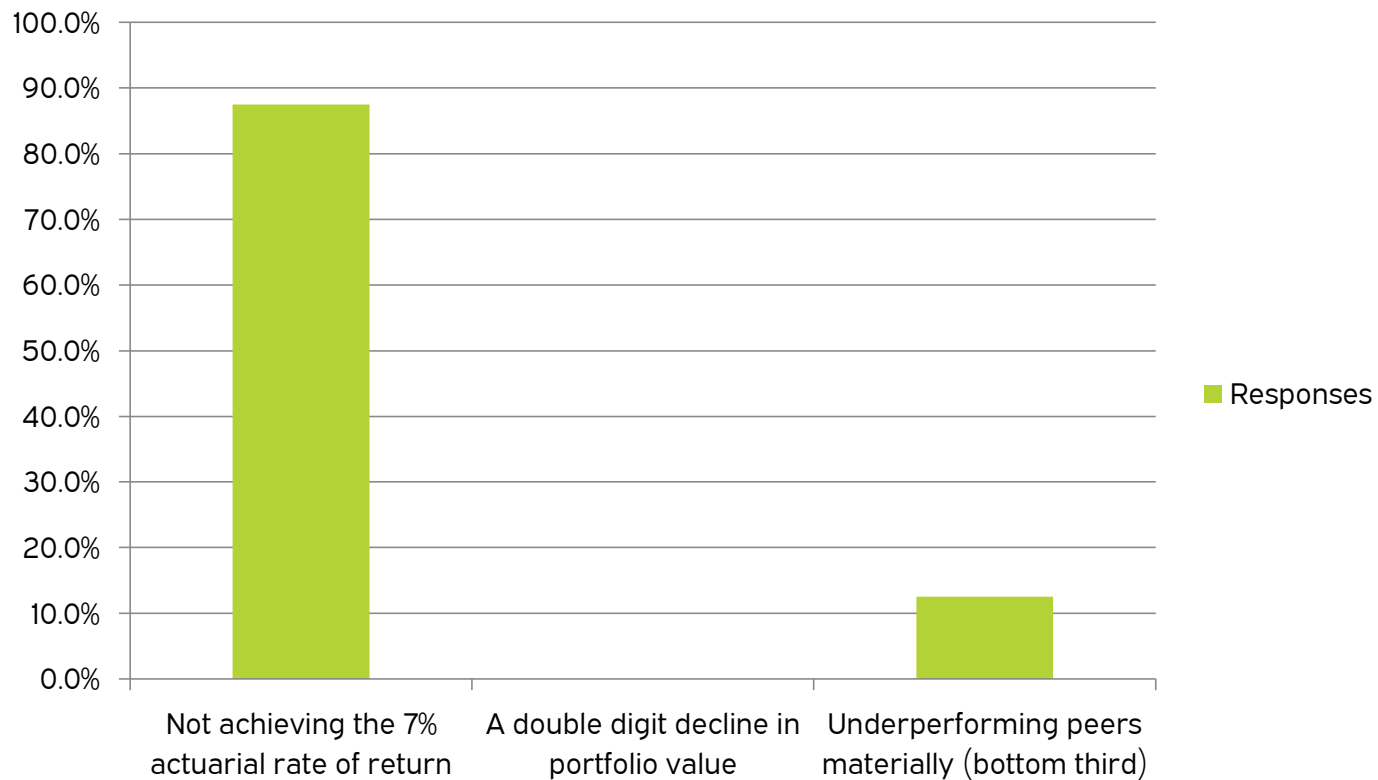




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ Which of the following outcomes are you most concerned about over the next 3 years?

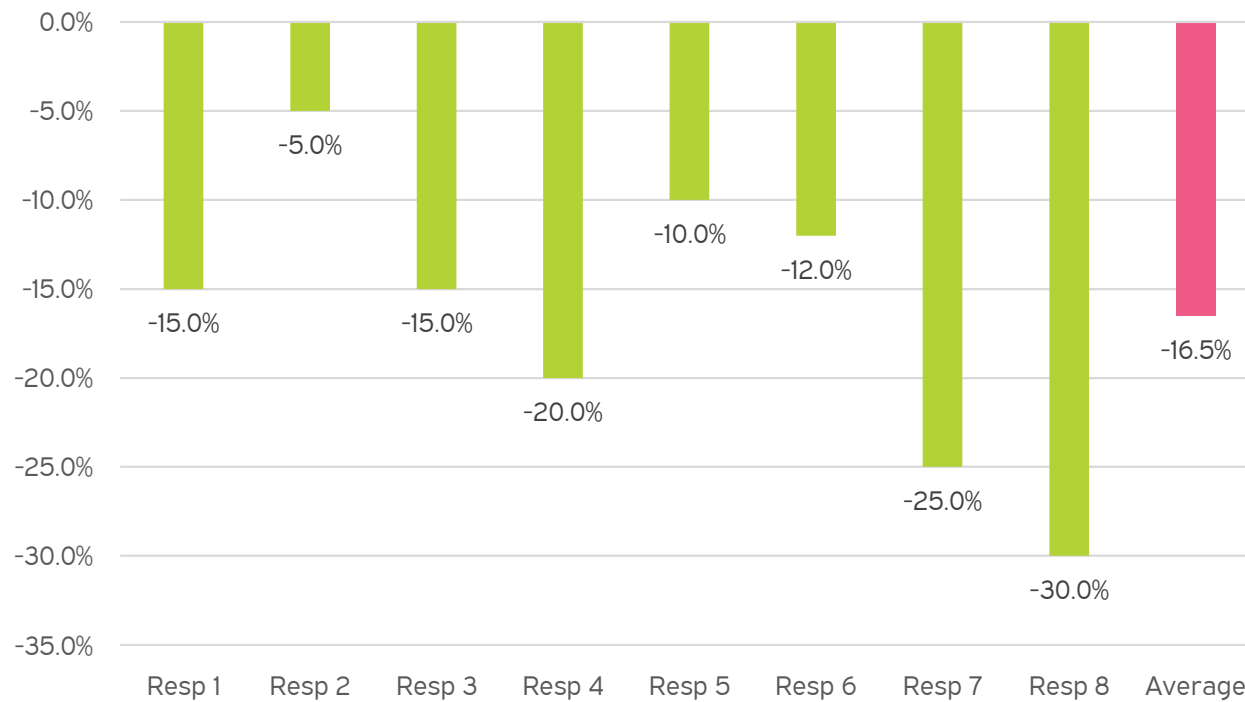




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ Based on the current portfolio, I believe the portfolio's maximum potential drawdown (decline in market value from peak to trough) should be no worse than -x.x%.

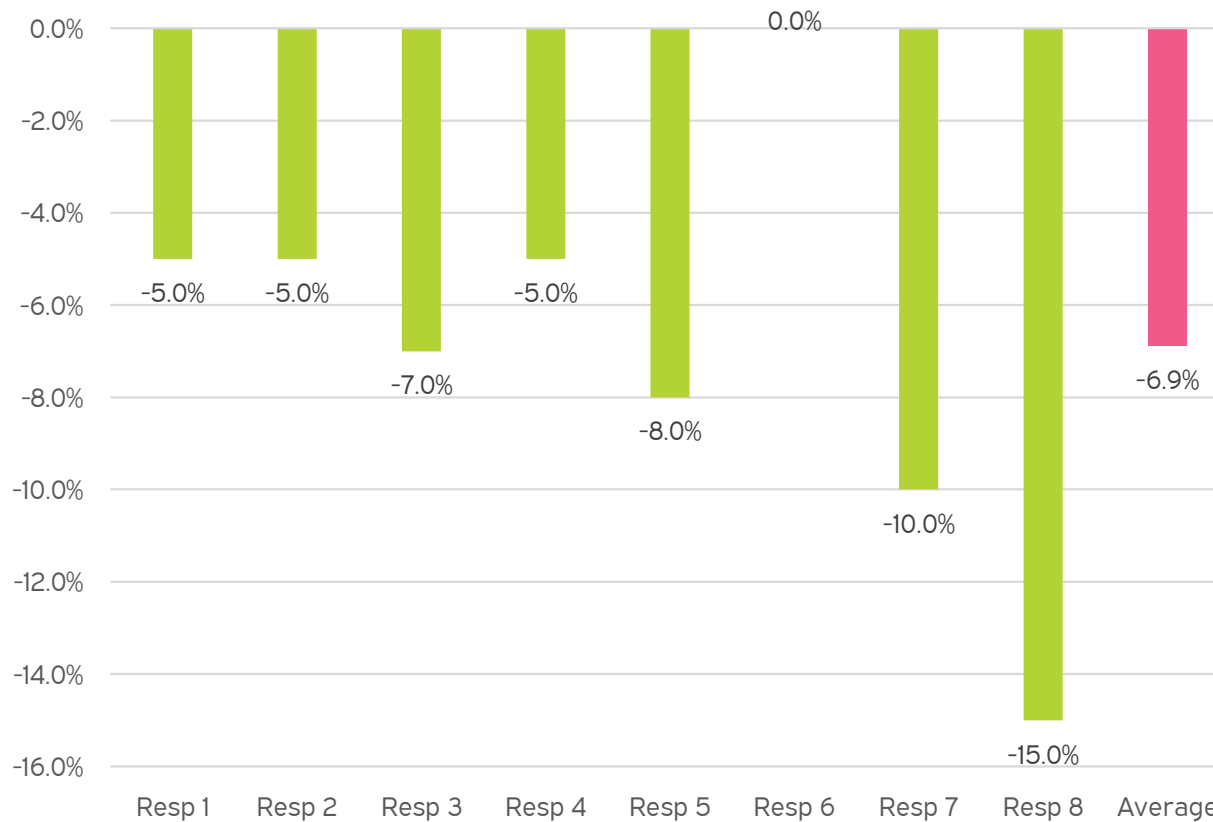




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ I would consider x.x% to be a bad but not necessarily catastrophic year.

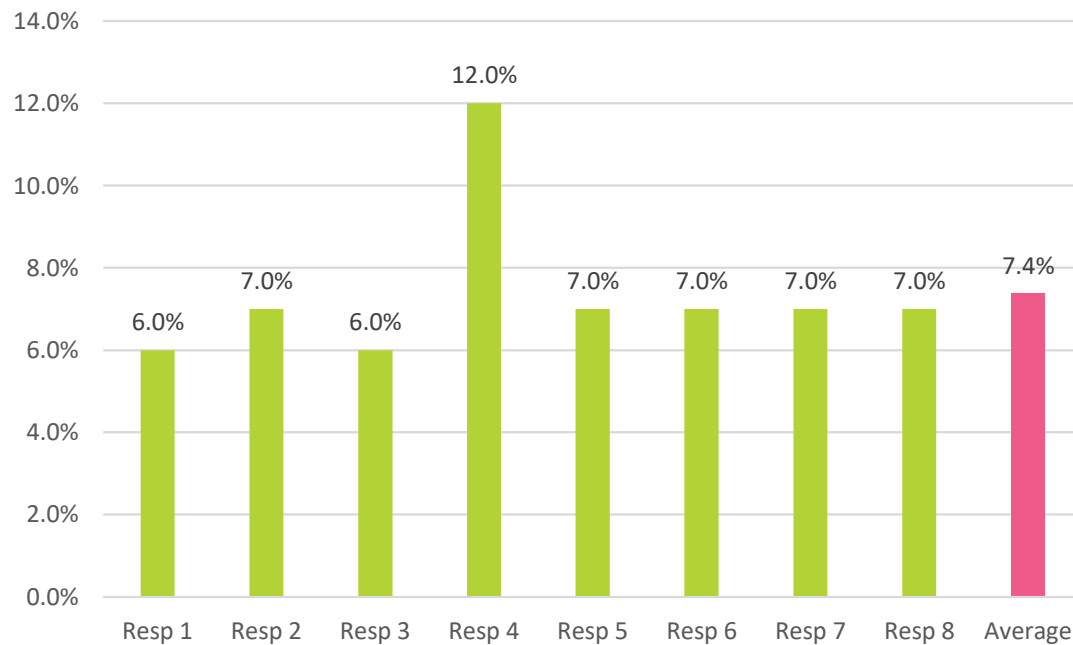




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ I would consider a return of x.x% to be a good, but not great, year. (Assume that the portfolio is performing in line with the benchmark and peer median.)

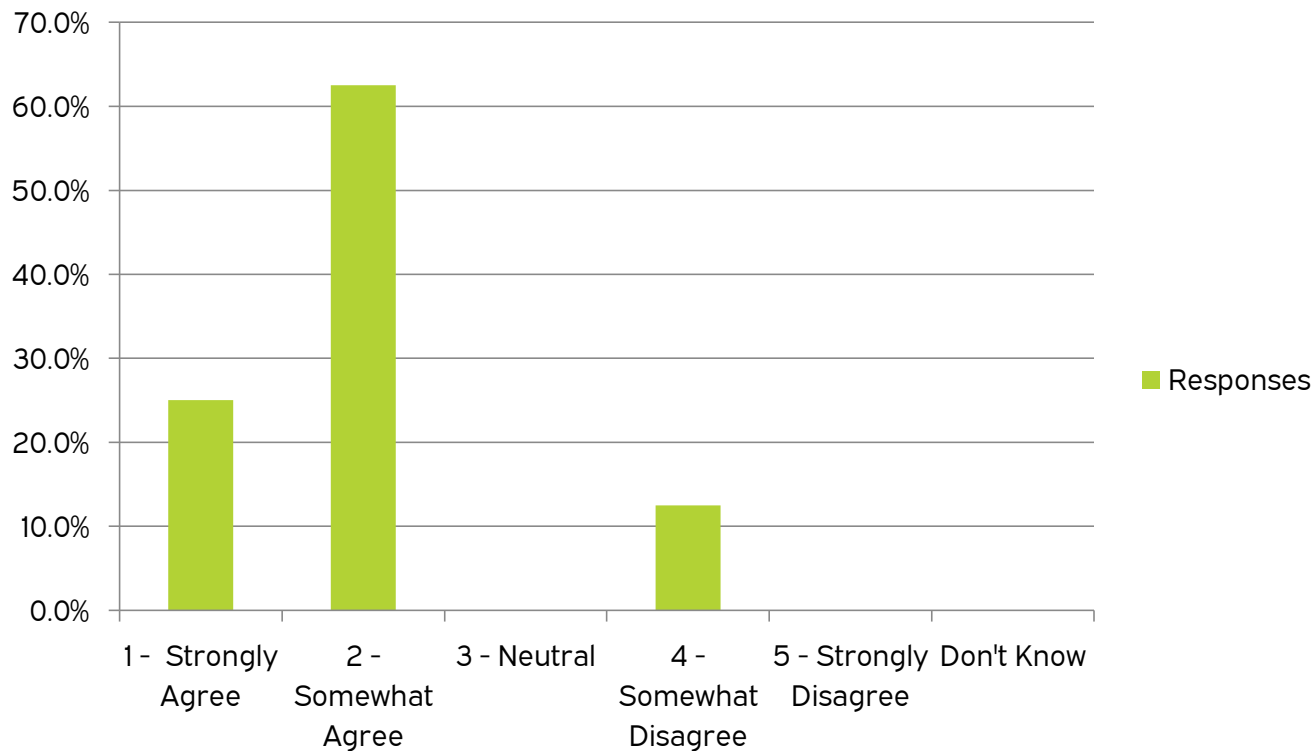




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ If the average pension is down 15% in a given year, and SJCERA's portfolio is only down 12%, meaning we've outperformed our peers by 3%, I would consider the portfolio's performance to be a success, despite the decline in value.

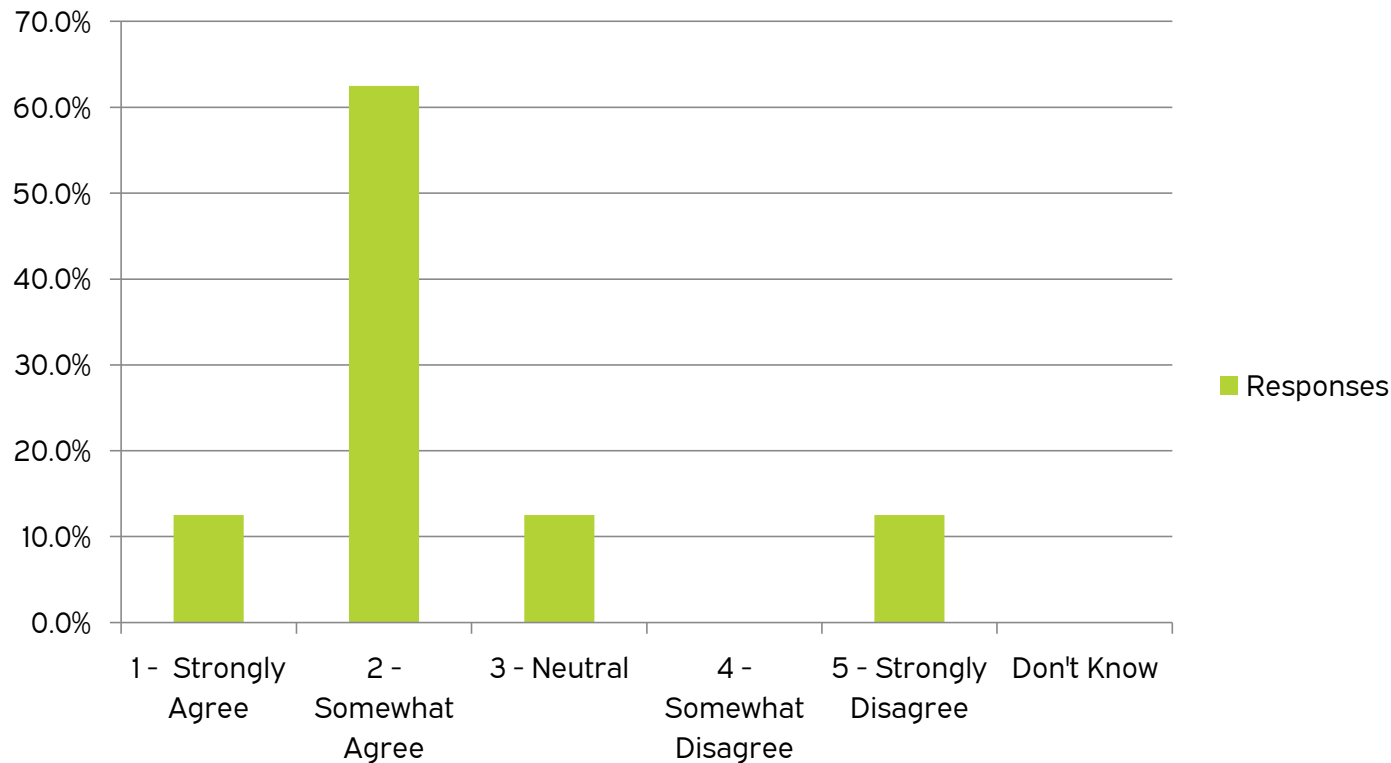




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ If the average pension is up 10% in a given year, and SJCERA's is only up 7%, meaning we've underperformed our peers by 3%, I would consider the portfolio's performance to be a success, despite the relative underperformance.

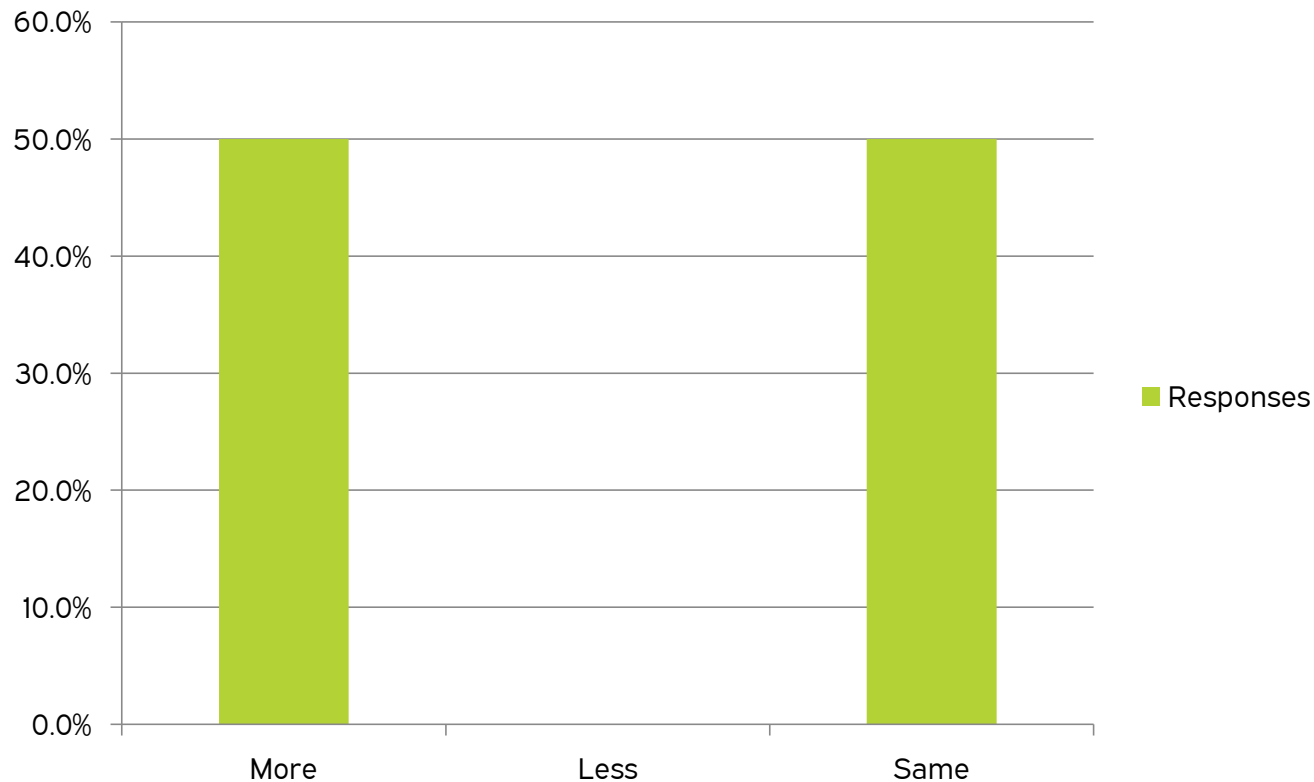




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ Should we be taking more, less, or the same amount of risk in the portfolio for the next 2-3 years?

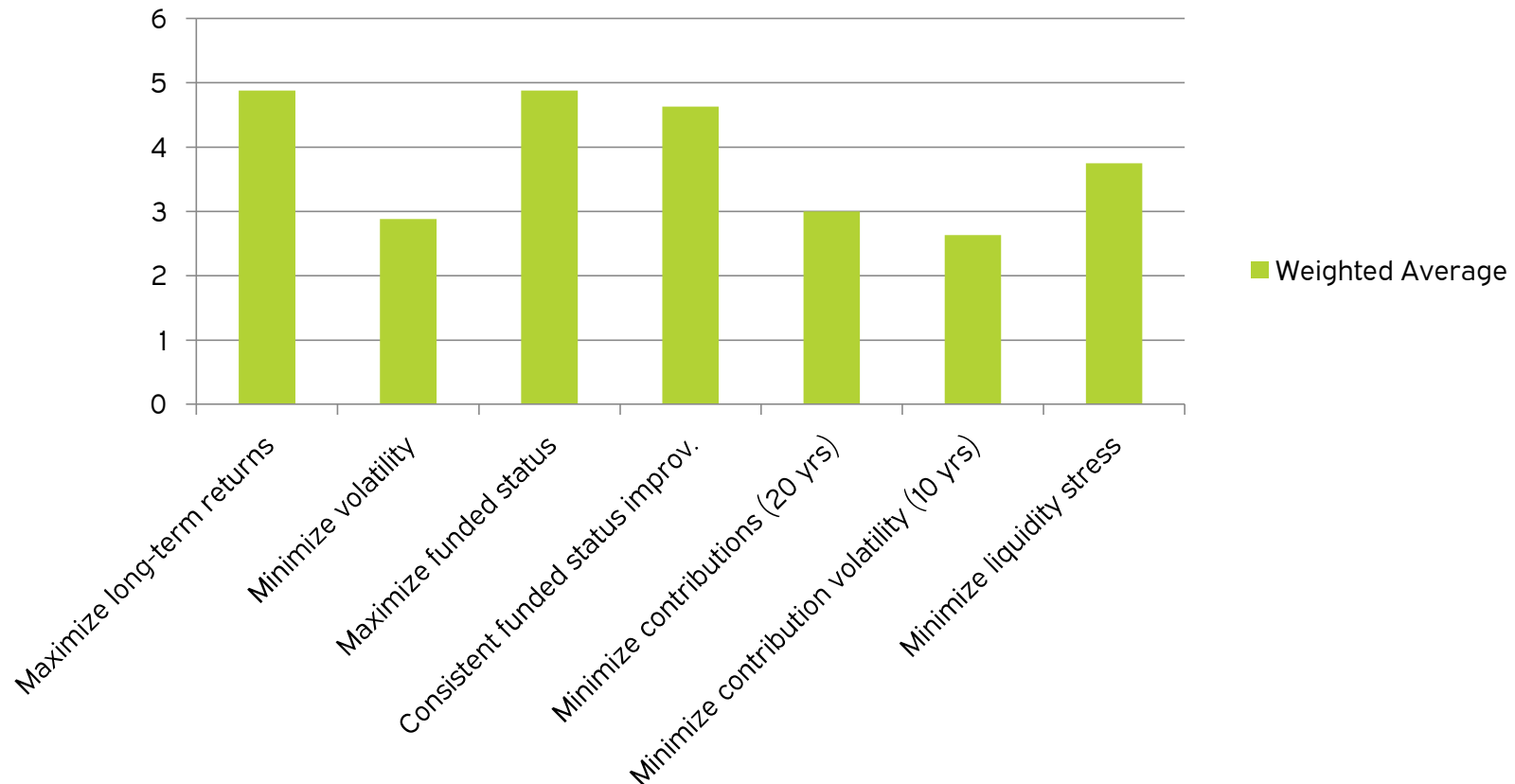




San Joaquin County Employees' Retirement Association

Risk Tolerance Survey Results

→ Please rank each asset allocation goals below based on the goals that are most important to you with 5 being most important and 1 being least important.





San Joaquin County Employees' Retirement Association

Agenda Review

→ Recap:

- Funded status expected to be 100% in 2031 assuming all Plan assumptions are met.
- Meketa's 2022 Capital Market Expectations suggest a 38% probability of asset returns exceeding the Plan's current long-term rate of return assumption of 7.00% for the next 10 years.
- Using the Current Policy allocation, Meketa expects the funded status to be:
 - 105% in 20 years assuming average asset returns.
 - 52% in 5 years assuming poor asset returns.
- There are several take-aways based on the survey results.
 - Meeting and/or exceeding the 7% return expectation remains important with the ability to assume the same or more risk than the current portfolio.
 - Improving Funded status remains crucial.

→ Subsequent Meeting – Meketa will react to the survey and feedback from the Board to present several asset allocation options.

Appendix



San Joaquin County Employees' Retirement Association

Appendix – Assumptions and Methods

- Capital Market Assumptions: Meketa 2022 Capital Market Expectations – 10 & 20-year assumptions
- Assets: Market value of assets as of December 31, 2021 as detailed in Meketa's quarterly performance report.
- Asset Rebalancing: Annual
- Liabilities and normal cost: The liabilities, normal cost, expected benefit payments and projected payroll used in this study are based on cash flows received from Cheiron on 3/1/2022. All liability projections assume a 7.0% long-term rate of return regardless of the asset allocation being tested.
- Funding policy: Detailed in the January 1, 2021 actuarial valuation report provided by Cheiron.
- Plan Provisions and Assumptions: Additional details regarding provisions and assumptions are documented in the January 1, 2021 actuarial valuation report provided by Cheiron.



San Joaquin County Employees' Retirement Association

Important Notice

The information contained herein is confidential and intended for the sole use of San Joaquin County. All information is subject to market fluctuations and economic events, which will impact future recommendations and investment decisions. These contents are proprietary Information of Meketa Investment Group ("MIG") and may not be reproduced or disseminated in whole or part without prior written consent. This report has been prepared solely for informational purposes and no part is to be construed as a recommendation or an offer to buy or sell or a solicitation of an offer to buy or sell any security or to participate in any investment strategy.

All information including, but not limited to, MIG's investment views, returns or performance, risk analysis, sample trade plans, idea filtration process, benchmarks, investment process, investment strategies, risk management, market opportunity, representative strategies, portfolio construction, capitalizations, expectations, targets, parameters, guidelines, and positions may involve our views, estimates, assumptions, facts and information from other sources that are believed to be accurate and reliable and are as of the date this information is presented—any of which may change without notice. We have no obligation (express or implied) to update any or all of the Information or to advise you of any changes; nor do we make any express or implied warranties or representations as to the completeness or accuracy or accept responsibility for errors. This information is for illustrative purposes only and does not constitute an exhaustive explanation of the investment process, investment allocation strategies or risk management.

All performance and risk targets contained herein are subject to revision by MIG and are provided solely as a guide to current expectations. There can be no assurance that any investment or other product described herein will achieve any targets or that there will be any return on capital. Past performance is not indicative of future results. MIG does not provide tax advice. Accordingly, any discussion of U.S. tax matters contained herein is not intended or written to be used, and cannot be used, in connection with the promotion, marketing or recommendation by anyone unaffiliated with MIG of any of the matters addressed herein or for the purpose of avoiding U.S. tax-related penalties.

Certain information contained in this document constitutes "forward-looking statements," which can be identified by the use of forward-looking terminology such as "may", "will", "should", "expect", "anticipate", "target", "project", "estimate", "intend", "continue" or "believe" or the negatives thereof or other variations thereon or comparable terminology. Due to various risks and uncertainties, actual events or results or the actual performance of the Funds and investments may differ materially from those reflected or contemplated in such forward-looking statements."



Board of Retirement Meeting

San Joaquin County Employees' Retirement Association

Agenda Item 8.0

April 08, 2022

SUBJECT: SACRS Board of Director Elections 2022-2023 Nominating Committee's Recommended Ballot

SUBMITTED FOR: ☐ CONSENT ☒ ACTION ☐ INFORMATION

RECOMMENDATION

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

PURPOSE

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

DISCUSSION

The SACRS Nominating Committee Recommended Nominees/Candidates for the SACRS Board of Director 2022-2023 Elections are:

President	Vivian Gray, Los Angeles CERA
Vice President	David MacDonald, Contra Costa CERA
Treasurer	Jordan Kaufman, Kern CERA
Secretary	Adele Tagaloa, Orange CERS
Regular Member	Vere Williams, San Bernardino CERA
Regular Member	David Gilmore, San Diego CERA

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

The delegate will vote at the SACRS Business Meeting to be held on Friday, May 13, 2022, at the SACRS Spring Conference. The SACRS officers elected at that Business Meeting will hold office for one year and until a successor is elected.

JOHANNA SHICK
Chief Executive Officer



March 15, 2022

To: SACRS Trustees & SACRS Administrators/CEO's
From: Dan McAllister, SACRS Immediate Past President, Nominating Committee Chair
SACRS Nominating Committee
Re: SACRS Board of Director Elections 2022-2023 Elections – Final Ballot

SACRS BOD 2022-2023 election process began January 2022. Please provide the final ballot and voting instructions to your Board of Trustees and Voting Delegates.

DEADLINE	DESCRIPTION
March 1, 2022	Any regular member may submit nominations for the election of a Director to the Nominating Committee, provided the Nominating Committee receives those nominations no later than noon on March 1 of each calendar year regardless of whether March 1 is a Business Day. Each candidate may run for only one office. Write-in candidates for the final ballot, and nominations from the floor on the day of the election, shall not be accepted.
March 25, 2022	The Nominating Committee will report a final ballot to each regular member County Retirement System prior to March 25
May 13, 2022	Nomination Committee to conduct elections during the SACRS Business Meeting at the Spring Conference, May 10-13, 2022
May 13, 2022	Board of Directors take office for 1 year (until Spring 2023 Elections)

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

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

A. Immediate Past President. *The immediate Past President, while he or she is a regular member of SACRS, shall also be a member of the Board. In the event the immediate Past President is unable to serve on the Board, the most recent Past President who qualifies shall serve as a member of the Board.*

B. Two (2) Regular Members. *Two (2) regular members shall also be members of the Board with full voting rights.*

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

The Nominating Committee will report its suggested slate, along with a list of the names of all members who had been nominated, to each regular member County Retirement System prior to March 25. The Administrator of each regular member County Retirement System shall be responsible for communicating the Nominating Committee's suggested slate to each trustee and placing the election of SACRS Directors on his or her board agenda. The Administrator shall acknowledge the completion of these responsibilities with the Nominating Committee.



Director elections shall take place during the first regular meeting of each calendar year. The election shall be conducted by an open roll call vote, and shall conform to Article V, Sections 6 and 7 of these Bylaws.

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

The elections will be held at the SACRS Spring Conference on Friday, May 13, 2022 during the scheduled business meeting at the Omni Rancho Las Palmas Hotel and Resort in Rancho Mirage, CA.

SACRS Nominating Committee Recommended Slate:

- President – Vivian Gray, Los Angeles CERA
- Vice President – David MacDonald, Contra Costa CERA
- Treasurer – Jordan Kaufman, Kern CERA
- Secretary – Adele Tagaloa, Orange CERS
- Regular Member – Vere Williams, San Bernardino CERA
- Regular Member – David Gilmore, San Diego CERA

No other letters of intent or submissions were received.

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

If you have any questions, please contact me at Dan McAllister, Dan.McAllister@sdcounty.ca.gov or (619) 531-5231.

Thank you for your prompt attention to this timely matter.

Sincerely,

Dan McAllister

Dan McAllister, San Diego CERA Trustee
SACRS Nominating Committee Chair

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

Attached: Candidate submissions

SACRS Submission for President

February 23, 2022

VIA EMAIL

SACRS Nominating Committee
Mr. Dan McAllister, Chair

Dear Mr. McAllister and Members of the Nominating Committee:

I would like to express my desire to be considered for SACRS' President for 2022/2023.

I have been humbly honored to serve as SACRS President for two years. 2020 was a very difficult year for everyone. SACRS was no exception. 2021 was difficult also as we had to get back on our feet, stand tall and continue with our mission in spite of a "new normal" we faced.

My focus in 2021 for SACRS expanded two original concepts of "Relevance and Sustainability" to "Recovery, Relevance and Sustainability". Within these three concepts, SACRS was able to begin 'recovery' from the pandemic while adhering to health restrictions; remain 'relevant' to the pension community through innovative approaches to education and 'sustainable' by building on technological advances to return to live conference for our members yet also continue to provide quality education through alternative mediums.

Most notably SACRS accomplishments for 2020 and 2021 include, but are not limited to the following:

- Continued communications with 37 Act systems and administrators through SACRS' website and SACRS Magazine
- Presentation of SACRS 2020 conferences in a virtual format without sacrificing quality of speakers, presentations or interactions among trustees, affiliates and staff and "in-person" return in 2021 and Spring 2022.
- Presenting the SACRS Berkeley Education Program in a virtual format with on-demand replays of the classes presented
- Maintaining an active role in the legislative process as it affected county retirement systems

In spite of the pandemic and post pandemic challenges, I am very proud of the work SACRS' Board has accomplished under my leadership. We continue to be productive while recovering and remaining relevant and sustainable for the SACRS membership.

I would be honored to serve another term as President of SACRS. Thank you in advance for your consideration of my candidacy for re-election.

Sincerely,

Vivian Gray



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

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

Name of Candidate	Name: Vivian H. Gray
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: 300 N. Lake Ave., Ste. 820, Pasadena CA 91101 Email Address: viviangray@aol.com, vgray@lacera.com Phone: 213.440.0142
Name of Retirement System Candidate Currently Serves On	System Name: Los Angeles County Employees Retirement Assoc. (LACERA)
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	<input type="radio"/> Chair <input type="radio"/> Alternate <input checked="" type="radio"/> General Elected <input type="radio"/> Retiree <input type="radio"/> Other _____
Applying for SACRS Board of Directors Position (select only one)	<input checked="" type="radio"/> President <input type="radio"/> Vice President <input type="radio"/> Treasurer <input type="radio"/> Secretary <input type="radio"/> Regular Member
Brief Bio	2021 President, SACRS 2019 Vice Chair, SACRS President 2017 Chair, SACRS Bylaws Committee Elected general member trustee since 2012 38 years of service to Los Angeles County 10 years in Law Enforcement 28 years as an attorney for Los Angeles County 6 years in private law practice Education/Pension Trustee Certificates - Bachelors of Arts: UCLA - JD: UWLA - New York Law School -Public Pension Trustee Fiduciary Program - Stanford Law School (CALAPRS) -Principles of Pension Management - Harvard Law School Program - Trustee Work Life - UC Berkeley (SACRS) - Modern Investment Theory & Practice for Retirement Systems - IFEBP -Trustee Master's Program - NCPERS Public Pension Funding Forum - National Assoc. of Corporate Directors (NACD) Board Leadership Fellow

SACRS Submission for Vice President

David J MacDonald, MD

255 Ramsgate Way
Vallejo, CA 94591
dmacdcccera@gmail.com
510-409-4458 (mobile)

February 11, 2022

SACRS Nominating Committee
Mr. Dan McAllister, Chair

Dear Mr. McAllister,

I would like to express my interest in running as Vice President for the SACRS' Board of Directors for the 2021/2022 year.

I was first elected to the SACRS board in 2020. I am also an elected trustee of the CCCERA Retirement Board (since 2016) and currently serve as CCCERA Board Vice Chair. I appreciate the level of responsibility entrusted to me in looking after our members' retirement plans. I understand the incredible value of a defined benefit plan for my coworkers and our retirees.

I have a long history of dedicated service to my coworkers and union members and I carry this spirit into my role as an elected trustee. My work with SACRS has meant for further education and inspiration from the SACRS organization via its conferences and programs. SACRS has enhanced my abilities to serve as an effective CCCERA trustee.

I desire to continue my service on the SACRS board. Doing so allows me to further promote, protect and build upon pension programs under CERL for county public employees statewide.

Thank you for your time and consideration.

Sincerely and Respectfully,

David J MacDonald, MD

David J MacDonald, MD



SACRS Nomination Submission Form SACRS Board of Directors Elections 2021-2022

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

Name of Candidate	Name: David J. MacDonald, MD
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: 255 Ramsgate Way, Vallejo, CA 94591 Email Address: dmacdcccera@gmail.com Phone: 510-409-4458
Name of Retirement System Candidate Currently Serves On	System Name: CCCERA
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	<input type="radio"/> Chair <input type="radio"/> Alternate <input checked="" type="radio"/> General Elected X <input type="radio"/> Retiree <input type="radio"/> Other _____
Applying for SACRS Board of Directors Position (select only one)	<input type="radio"/> President <input checked="" type="radio"/> Vice President X <input type="radio"/> Treasurer <input type="radio"/> Secretary <input type="radio"/> Regular Member
Brief Bio	* SACRS Board of Directors, Member – 2020-2021 & 2021-2022 * Vice Chair, CCCERA Board of Retirement * Elected general member trustee of CCCERA since 2016 * President, Physicians' and Dentists' of Contra Costa (PDOCC), since 2010 (Union for health care providers working at Contra Costa County). * 28 years serving on the PDOCC Executive Board, including many years as Vice President and President. * 31 years of service to Contra Costa County as a physician working in the Department of Health Services. * Education/Pension Trustee Certificates: - Bachelors of Science, Biology – UC Irvine - Doctor of Medicine – UC Irvine - UC Berkeley (SACRS) – Modern Investment Theory & Practice for Retirement Systems - Wharton Business School – Portfolio Concepts & Management - IFEBP – CAPPP program - CALAPRS Trustee Education – Principles of Pension Governance

SACRS Submission for Treasurer



Jordan Kaufman
Treasurer and Tax Collector
Chase Nunneley
Assistant Treasurer and Tax Collector

February 9, 2022

Dan McAllister, Nominating Committee Chairman
State Association of County Retirement Systems

Re: Letter of interest for SACRS position of Treasurer of the Board of Directors

Dear Mr. McAllister and members of the Nominating Committee,

Thank you for the opportunity to express my interest in the position of Treasurer of the SACRS Board of Directors. I believe that I have the knowledge, experience and motivation to add value to the Board. I am in my second term as the elected Kern County Treasurer-Tax Collector, and I am a 17 year member of the Kern County Employees Retirement Association (KCERA) as a general elected, alternate, and statutory trustee. I have a deep background in public fund investment and retirement plan administration and I am or have been the Treasurer of many organizations and associations.

As the elected Treasurer-Tax Collector, I manage the County's \$4.5 billion treasury pool, provide banking services to over 200 different county agencies and districts, and collect over \$1.3 billion in local property taxes. I am also the Plan Administrator for the County's 457(b) deferred compensation plan with over \$720 million in participant assets.

I am or have been the Treasurer of the following entities: County of Kern; California Association of County Treasurer's and Tax Collectors (CACTTC); United Way of Kern County; Boy Scouts of America Southern Sierra Council; California Statewide Communities Development Authority (CSCDA); and Kern County Management Council.

I have dedicated my career to public service and I am proud to serve the residents of Kern County and the employees of the County of Kern. I am interested in becoming more involved in pension and investment management on a larger scale and I feel that my knowledge and expertise outlined above would make me a good candidate for the Treasurer of the Board. I feel I could bring value to the board while at the same time expanding my knowledge base in pension management and administration.

Attached is my resume for your information. Thank you in advance for your consideration and feel free to call me if you have any questions at 661-204-1510.

Sincerely,

Jordan Kaufman
Kern County Treasurer-Tax Collector
Deferred Compensation Plan Administrator

Attachment

M:\Administration\SACRS\SACRS Board Letter of Interest.doc



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

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

Name of Candidate	Name: Jordan Kaufman
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: 1115 Truxtun Avenue, 2nd floor Bakersfield, CA 93301 Email Address: jkaufman@kerncounty.com Phone: (661) 868-3454
Name of Retirement System Candidate Currently Serves On	System Name: Kern County Employees' Retirement Association
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	<input type="radio"/> Chair <input type="radio"/> Alternate <input type="radio"/> General Elected <input type="radio"/> Retiree <input checked="" type="radio"/> Other <u>Statutory</u>
Applying for SACRS Board of Directors Position (select only one)	<input type="radio"/> President <input type="radio"/> Vice President <input checked="" type="radio"/> Treasurer <input type="radio"/> Secretary <input type="radio"/> Regular Member
Brief Bio	<p>I am in my second term as the elected Kern County Treasurer-Tax Collector with fiduciary responsibility over the \$4.5 billion Treasury Investment Pool and the responsibility of annually collecting over \$1.3 billion in local property taxes. I am also the Plan Administrator for the \$720 million deferred compensation plan for County employees. Prior to being elected, I became the assistant Treasurer-Tax Collector in 2006. Prior to 2006, I spent over a decade in the County Administrative Office where I performed budget and policy analysis and was involved in the issuance of various types of municipal bonds for the County. I am the Treasurer and past Chairman of the United Way of Kern County, Trustee and past Chairman of the Kern County Employees Retirement Association (KCERA), Commissioner on the California Statewide Communities Development Authority (CSCDA), Treasurer of the Boy Scouts of America Southern Sierra Council, and an Adjunct Professor at the California State University Bakersfield. I have a Bachelor of Science degree in Industrial Technology from Cal Poly San Luis Obispo. I live in Bakersfield with my beautiful wife Kristen and we have four children.</p>

SACRS Submission for Secretary

**Serving the Active and
Retired Members of:**

CITY OF SAN JUAN
CAPISTRANO

COUNTY OF ORANGE

ORANGE COUNTY
CEMETERY DISTRICT

ORANGE COUNTY CHILDREN &
FAMILIES COMMISSION

ORANGE COUNTY
DEPARTMENT OF EDUCATION
(CLOSED TO NEW MEMBERS)

ORANGE COUNTY
EMPLOYEES RETIREMENT
SYSTEM

ORANGE COUNTY FIRE
AUTHORITY

ORANGE COUNTY IN-HOME
SUPPORTIVE SERVICES PUBLIC
AUTHORITY

ORANGE COUNTY LOCAL
AGENCY FORMATION
COMMISSION

ORANGE COUNTY PUBLIC LAW
LIBRARY

ORANGE COUNTY
SANITATION DISTRICT

ORANGE COUNTY
TRANSPORTATION
AUTHORITY

SUPERIOR COURT OF
CALIFORNIA, COUNTY
OF ORANGE

TRANSPORTATION
CORRIDOR AGENCIES

UCI MEDICAL CENTER AND
CAMPUS (CLOSED TO NEW
MEMBERS)

February 23, 2022

By Mail and Electronic Mail [dan.mcallister@sdcounty.ca.gov]

Mr. Dan McAllister
SACRS Nominating Committee Chair
SACRS
840 Richards Blvd.
Sacramento, CA 95811

Re: NOMINATION FOR SACRS BOARD OF DIRECTORS ELECTION 2022-2023

Dear Mr. McAllister:

This letter supersedes the letter I sent to you earlier today.

As a regular member of SACRS, the Orange County Employees Retirement System (OCERS) is entitled, under the SACRS Bylaws, Article VIII, Section 2, to submit nominations for the election of directors for the SACRS Board of Directors.

On February 22, 2022, the OCERS Board of Retirement met and took action to nominate OCERS trustee, Adele Tagalao, for the position of SECRETARY of the SACRS Board of Directors, and directed me to submit this nomination to the SACRS Nominating Committee.

Accordingly, please accept this letter as **OCERS' nomination of OCERS Trustee, Adele Tagalao, for election to the position of SECRETARY of the SACRS Board of Directors at the 2022-2023 SACRS Board of Directors Election to take place on May 13, 2022.**

Please do not hesitate to contact me at (714) 558-6222 if you have any questions or require additional information.

Thank you.

Best regards,



Steve Delaney - Chief Executive Officer
cc: Sulema H. Peterson, SACRS Administrator

Adele Tagaloa

2223 East Wellington Ave, Suite 100, Santa Ana, CA 92804 | 714-349-9716 | atagaloa@ocers.org

February 24, 2022

Mr. Dan McAllister
SACRS Immediate Past President, Nominating Committee Chair
State Association of County Retirement Systems (SACRS)
840 Richards Blvd
Sacramento, CA 95811

Dear Mr. Dan McAllister:

Please accept this letter of my intent to run for SACRS Board of Directors for the office of Secretary.

My 15 years of leadership experience in the private and public sector makes me an exceptional candidate for SACRS Secretary. My experience serving (1) as an Executive Board member of my employee labor organization; (2) my employment by the Registrar of Voters to ensure accurate and transparent elections for 1.8 million registered Orange County voters; and most importantly (3) my service as a Trustee on the Orange County Employees Retirement System has made me uniquely qualified to serve on the SACRS Board of Directors.

My passion for democracy, organized labor, and accessibility education has been the cornerstone of my career and life. Since I have been elected to the OCERS Board of Retirement, my personal trustee education has been one of my main priorities. Although the last two years has proven to be a challenge for in-person education, I prioritized expanding my knowledge on pensions and legislation.

While attending SACRS Fall Conference in 2021, the level of professionalism and outstanding leadership solidified my desire to be more than a future attendee. In SACRS, I have found an organization that like me, understands the challenge and importance of pensions, education and duty for trustees in the CERL 37 Act Systems. I have shared too many people about the fantastic speakers and the subjects that reach beyond pensions at SACRS.

Using my leadership experience, it is my goal to continue to share all the benefits of SACRS to members, support leadership and to continue to make SACRS the premier pension organization in a changing world.

It would be an honor to serve on the SACRS Board of Directors as Secretary and truly appreciate your consideration.

Sincerely,



Adele Tagaloa
Trustee, General Member-Elected
Orange County Employees Retirement System (OCERS)



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

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

Name of Candidate	Adele Tagalao
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: 2223 East Wellington Ave, Suite 100 Santa Ana, CA 92701 Email Address: atagalao@ocers.org adele.tagalao@gmail.com Phone: (714) 349-9716
Name of Retirement System Candidate Currently Serves On	System Name: Orange County Employees Retirement System (OCERS)
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	<input type="radio"/> Chair <input type="radio"/> Alternate <input checked="" type="radio"/> General Elected <input type="radio"/> Retiree <input type="radio"/> Other _____
Applying for SACRS Board of Directors Position (select only one)	<input type="radio"/> President <input type="radio"/> Vice President <input type="radio"/> Treasurer <input checked="" type="radio"/> Secretary <input type="radio"/> Regular Member
Brief Bio	<ul style="list-style-type: none"> ◆ Member, SACRS Program and Bylaws Committee ◆ Elected General Member Trustee, OCERS, 2020 to present 12 1/2 years of service to the County of Orange Proudly serving 1.8 million registered voters at the Registrar of Voters office ◆ Chair, OCERS Disability Committee 2020 to present ◆ Vice- Chair, OCERS Investment Committee 2022 to present ◆ Member, OCERS Governance Committee member 2022 to present ◆ Union Steward, Orange County Employees Association (OCEA) 2012 to present ◆ Board of Directors, OCEA 2018 to present ◆ Executive Board of Directors - Secretary, OCEA 2020 to present ◆ Political Action Committee and Scholarship Committee member, OCEA <p>Public Pension Trustee Certificates: Public Pension Investment Management Program - UC Berkeley CALAPRS Principles of Pension Governance and Principles for Trustees Completed 190 hours of education, 2020 - present</p>

SACRS Submission for General Board Member

February 28, 2022

VIA Email

Dan McAllister,
SACRS Immediate Past President/ Nominating Committee Chair
SACRS Nominating Committee

Dear Mr. Immediate Past President/Nominating Committee Chair McAllister,

Please accept this letter as my letter of intent to be a candidate to be re-elected to the position of Regular Member in SACRS Board of Directors Elections 2022-2023.

If re-elected as a Regular Member, I will continue working to ensure that SACRS remain the preeminent educational organization for the CERL 37 Act Systems by maintaining the high caliber of our conferences (both as formal seminars and superb networking opportunities.) I will continue encouraging greater participation from the Trustees and Staff of the 37 Act Systems. I strongly believe in getting involved as demonstrated by my contribution at SACRS' Board meetings and having volunteered to lead a CALAPRS Trustee Roundtable after attending only a few sessions. Over the years, I have served on the governing Boards of the Teamsters Local 1932, the Working Assembly of Governmental Employees and other organizations. Currently, I serve as a Regular Member on SACRS' Board along with being a member of SACRS' Audit and Education committees.

I have been a Trustee with the San Bernardino County Employees' Retirement Association (SBcera) from January 2015 and attended my first SACRS conference that year. I found the sessions to be very informative and educational with the presenters being experts and/or thought leaders in their field. Since then, I have attended several conferences sponsored by other organizations that are single topic focused and I have also completed certification programs at Wharton, Pepperdine, UCLA and Berkeley. In comparison, SACRS conferences provide a comprehensive insight into the "*nuts and bolts*" of the functioning of Retirement Systems with an emphasis on current applications of the topics. SACRS provides attendees an opportunity to understand different perspectives thereby encouraging clearer lines of communication and to also hear about what works and what may be problematic. The networking and information sharing opportunities with colleagues at SACRS is immensely valuable. These practical qualities and timely information helped to draw me into the SACRS' orbit.

SACRS recent expansion of the Board to include additional members was a very good strategic move that has helped to enhance the experience pool and expand the knowledge base. I believe the current SACRS Board is a team exhibiting a very good blend of geography, experience and perspective. Consequently, I would very much like to continue contributing (based on my education and experience) to SACRS - a superlative organization: "*Providing insight. Fostering oversight.*"

I thank you in advance for your kind consideration and support. It would be a high honor for me to be re-elected to continue serving as a Regular Member on the SACRS Board for the 2022-2023 term.

Please find attached the completed SACRS nomination form.

Respectfully,

Vere Williams

Vere Williams, MBA

SBcera Board of Directors – General Elected Member

cc: Sulema Peterson, SACRS



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

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

Name of Candidate	Name: <u>Vere Williams</u>
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: <u>8379 Icicle Drive, Pinon Hills, CA 92372</u> Email Address: <u>verevlw@aol.com</u> Phone: <u>(760) 486-6311</u>
Name of Retirement System Candidate Currently Serves On	System Name: <u>San Bernardino County Employees' Retirement Association</u>
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	<input type="radio"/> <u>General Elected</u>
Applying for SACRS Board of Directors Position (select only one)	<input type="radio"/> <u>Regular Member</u>
Brief Bio	<p>I was elected to SBcera's Board in January 2015 and has served on the Administrative, Audit and Investment Committees. Currently, I serve as a Regular Member of the SACRS Board. My community involvement includes serving on the governing Boards of the Teamsters Local 1932, California State Conference of the NAACP, Working Assembly of Governmental Employees (WAGE) and other organizations. I am a past president of the San Bernardino County Association of African-American Employees and currently serves as treasurer for the Hispanic Employees Alliance. I have earned an MBA in Information Management/Accounting and has completed certification courses on Retirement System Management courses at Berkeley, UCLA, Pepperdine and Wharton. I have been an enrolled Agent with the IRS for over 20 years along with more than 25 years working in the finance department at Arrowhead Regional Medical Center. I have been trained in conflict resolution and have completed various workshops and seminars on organization dynamics and interplay. I am currently a member of the SACRS Audit and Education Committees.</p> <p>A guiding quote – "I always wondered why somebody didn't do something about that, then I realized I was somebody." – Lily Tomlin</p>

SACRS Submission for General Board Member

February 25, 2022

Mr. Dan McAllister
Chair
Nominating Committee
State Association of County Retirement Systems

Dear Mr. McAllister,

This letter is to serve as an introduction and to submit my application for the State Association of County Retirement Systems Board of Directors.

I have been working with retirement education since first joining the county of San Diego almost 25 years ago. One of my first educational presentations regarding retirement occurred while I was in the academy with the explanation of deferred compensation and the importance of planning ahead.

Over the past many years, I have been approached and encouraged by my fellow county employees to get involved and help improve communications about retirement. I worked from the retirement committee at the Deputy Sheriff's Association (DSA), then to the retirement chair at the DSA. I have been involved for over 15 years with the County of San Diego Deferred Compensation Advisory Committee. After serving many roles with the DSA and the county of San Diego, I was encouraged to step forward and run for the Board of Trustees at the San Diego County Employee Retirement Association (SDCERA). In 2019 I was elected to the SDCERA Board of Trustees and currently serve as the Secretary.

The support from SACRS has been invaluable for my education as a trustee. The many hours of training that we obtain from SACRS has improved the quality of stewardship for our retirement systems. Additionally, the SACRS support in Sacramento in the form of review and feedback to our legislative branch of government is vital.

My goal is to not only join the SACRS Board of Directors but to contribute to this process of developing and supporting the member county retirement systems. I respectfully request and thank you in advance for the consideration of the Nominating Committee in supporting my candidacy for election to the SACRS Board of Directors.

Respectfully,

David Gilmore
SDCERA Trustee



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

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

Name of Candidate	Name: David Gilmore
Candidate Contact Information (Please include – Phone Number, Email Address and Mailing Address)	Mailing Address: 2275 Rio Bonito Way, San Diego, CA 92108-1685 Email Address: DGilmore@SDCERA.ORG Phone: 619-770-7854
Name of Retirement System Candidate Currently Serves On	System Name: San Diego County Employees Retirement Association
List Your Current Position on Retirement Board (Chair, Alternate, Retiree, General Elected, Etc)	<input type="radio"/> Chair <input type="radio"/> Alternate <input checked="" type="radio"/> General Elected <input type="radio"/> Retiree <input type="radio"/> Other _____
Applying for SACRS Board of Directors Position (select only one)	<input type="radio"/> President <input type="radio"/> Vice President <input type="radio"/> Treasurer <input type="radio"/> Secretary <input checked="" type="radio"/> Regular Member
Brief Bio	<p>David Gilmore was elected to the SDCERA Board of Directors in 2019 and serves as the Board Secretary. He is on the Audit Committee for this fund of over \$17 billion. He served for over twenty years in various roles with the Deputy Sheriff's Association including being elected to the Board of Directors where he was the Secretary Treasurer. Prior to joining the Sheriff's Department in 1997, he was an internal auditor and systems analyst in the mortgage banking industry. He holds a bachelors degree in business administration-accounting and a masters degree in public administration. He is a Lieutenant with the Sheriff's Department and has held various management positions for the past 11 years including the Sheriff's Standards and Compliance Manager reporting to the Office of the Sheriff. He is also a founding member of the County of San Diego Deferred Compensation Investment Advisory Committee.</p>



Board of Retirement Meeting

San Joaquin County Employees' Retirement Association

Agenda Item 9.01

April 8, 2022

SUBJECT: Pending Member Accounts Receivable – 1st Quarter

SUBMITTED FOR: ☐ CONSENT ☐ ACTION ☒ INFORMATION

RECOMMENDATION

This report is submitted for the Board's information.

PURPOSE

To report the quarterly summary of pending accounts receivables for SJCERA retired or deferred members as of March 30, 2022.

DISCUSSION

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

QUARTERLY SUMMARY REPORT OF PENDING ACCOUNTS RECEIVABLE - SJCERA MEMBERS

1st Quarter - January through March 2022

	Action Date	Total Receivable	Payments Began	Current Balance	Current Payment	Payment Description	Payment End Date	First Reported To Board
1	07/15/09	\$11,475.48	05/01/11	\$7,121.93	\$163.00	Fixed Dollar Amount	10/01/25	Jul-11
2	09/01/12	\$13,580.90	02/01/14	\$5,930.34	\$297.00	Fixed Dollar Amount	11/01/24	Apr-14
3	05/19/02	\$35,537.23	11/01/15	\$16,681.31	\$284.59	Fixed Dollar Amount	12/01/27	Jan-16
4	06/15/21	\$715.95	07/01/21	\$0.00	\$357.98	Fixed Dollar Amount	03/01/22	Jul-21
5	03/11/21	\$12,035.49	06/01/21	\$8,685.49	\$335.00	Fixed Dollar Amount	05/01/24	Apr-21
6	04/12/21	\$180.95	06/01/21	\$30.15	\$30.15	Fixed Dollar Amount	TBD	May-21
7	10/01/21	\$2,040.00	10/01/21	\$679.98	\$226.67	Fixed Dollar Amount	06/01/22	Jan-22
Total Accounts Receivable as of 3/31/2022				\$39,129.20				

No new receivables in the first quarter of 2022 and item four has been completely been repaid as of March 2022.

A blue ink signature of Brian McKelvey, written in a cursive style.

BRIAN MCKELVEY
Asst. Chief Executive Officer

Pending Disability Application Statistics

1st Quarter 2022

Open Cases

There were no new disability cases during Q1 2022.

Time Elapsed From Application Date	
01 - 03 Months	0
04 - 06 Months	5
07 - 09 Months	3
10 - 12 Months	3
13 - 15 Months	2
16 - 18 Months	0
19 - 21 Months	0
22 - 24 Months	0
Over 24 Months	0
Total	13

Break Down By Application Type	
Service-Connected	11
Nonservice Connected	1
Service & Nonservice Connected	1
Total	13

Breakdown By Department						
	Service	Nonservice	Service & Nonservice	Total	SJCERA Members	Ratio
Child Support	1	0	0	1	154	0.65%
Courts	0	1	0	1	291	0.34%
Hospital	1	0	1	2	1,118	0.18%
Health Services Agency	1	0	0	1	1,014	0.10%
Probation	1	0	0	1	211	0.47%
Public Works	2	0	0	2	165	1.21%
Sheriff	5	0	0	5	759	0.66%
Totals	11	1	1	13	3,712	0.35%
Total SJCERA Active Members For All Departments As of 3/31/2022					6,290	0.21%
Total Number of Department Groups					7	

2022 Total Cases Resolved = 2

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

Goal #2 - 80% of applications requiring a hearing will go to the Board within 18 months

Goal #1 0% Completed within 9 months
Goal #2 0% Completed with Hearing within 18 months

Of the two cases resolved in 2022, one was completed without a hearing and one was withdrawn. Both closed cases were completed outside of the 9-month Goal # 1 period. Two open cases requiring a hearing are both on track to be completed within the 18-month goal defined in Goal #2 as both hearings are scheduled during Q2 2022. Staff and our disability attorney are meeting weekly and taking action to ensure all cases are moving through the process as timely as possible.

Calendar Year Comparison 1/1 to 12/31

	2017	2018	2019	2020	2021	Q1 2022
New	37	41	13	7	16	0
Granted	27	21	19	10	8	1
Denied	6	3	2	4	3	0
Dismissed	11	4	6	2	0	0
Withdrawn	5	0	4	0	0	1
Total Closed	49	28	31	16	11	2



2022 LEGISLATION

Last Updated: 4/1/2022

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
Legislation Impacting SJCERA:					
AB 498	Quirk-Silva	This bill would delete the term "grade" and replace it with the term "group" for purposes of the definition of compensation earnable. Define the phrase "group or class of positions" to mean a number of employees considered together because they share similarities in job duties, work location, collective bargaining unit, or other logical work-related grouping, and would specify that a single employee is not a group or class.	09/10/21	Senate Rules Comm.	
AB 1824	Cooper	This bill represents the annual omnibus bill to propose technical "housekeeping" amendments to the CERL and PERL. This bill would 1) allow members to designate a corporation, trust, or estate to receive their last check upon death, 2) prohibit retirement date from being earlier than date of application filed with Board or more than 60 days after the date of filing the application, 3) require any computation for absence related to death benefit calculation be based on the compensation held by member at beginning of absence, and 4) make other non-substantive changes to the CERL.	03/31/22	Assembly APPR Comm. Read second time, ordered to consent calendar	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 LOCAL 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 a member to purchase service credit for an uncompensated leave of absence due to the serious illness of a family member, 3) authorize the board to grant members subject to a temporary mandatory furlough the same service credit and FAC calculation as they would have received if there had been no furlough; 4) authorize a member retired for service to serve on a part-time governmental board or commission without reinstatement to membership, provided hours do not exceed 20 per week and compensation does not exceed \$60,000 annually, 5) authorize a member retired for service who is subsequently granted a disability retirement to change the type of optional or unmodified allowance that they elected at the time the service retirement was granted, 6) a member retired for service who subsequently files an application for disability retirement and, if eligible for disability would require adjustments to be made in the retirement allowance retroactive to the disability retirement, 7) require reclassifying a disability retiree's benefit to a service retirement in the same amount if they are subsequently determined not to be incapacitated and the employer will not reinstate them 8) clarifies the CERL provisions preventing windfalls for members who retire for disability from multiple systems.	02/18/22	Assembly PE & R Comm.	SACRS

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
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.	03/03/22	Assembly LOCAL GOV. Comm.	
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.	03/10/22	Assembly LOCAL GOV. Comm.	
SB 1100	Cortese	This bill would authorize the presiding member of the legislative body conducting a meeting to remove an individual for willfully interrupting the meeting. The bill would require removal to be preceded by a warning by the presiding member, that the individual is disrupting the proceedings, a request that the individual curtail their disruptive behavior or be subject to removal, and a reasonable opportunity to cease the disruptive behavior. The bill defines "willfully interrupting" to mean intentionally engaging in behavior that substantially impairs or renders infeasible the orderly conduct of the meeting.	03/31/22	Senate Hearing set for April 19	
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.	03/16/22	Assembly APPR 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 for service-connected deaths provided under PERL, would require that payment be made to the person having custody of the member's child or children, if the member does not have a surviving spouse or if the surviving spouse dies before each child marries or reaches age 22. Provisions of this bill would be retroactive to January 1, 2013.	03/25/22	Senate Hearing set for April 4	
SB 1114	Newman	This bill would make nonsubstantive changes to the PERL (spot bill).	02/23/22	Senate RLS Comm.	
SB 1168	Cortese	This bill would require PERS to determine the average benefit paid upon the death of a member and would require the board, beginning on July 1, 2023, to increase the \$500 beneficiary payment annually in a specified amount, not to exceed the CPI increase, until the beneficiary payment reaches the average benefit paid.	03/02/22	Senate L., P.E. & R. Comm.	

BILL NO.	AUTHOR	DESCRIPTION	LAST ACTION DATE	LOC	SPONSOR
SB 1173	Gonzalez/ Wiener	This bill would prohibit the boards of PERS & STRS from making new investments or reinvestments of funds in fossil fuel companies and require liquidation of fossil fuel investments by July 1, 2027.	03/29/22	Senate L., P.E. & R. & JUD. Comm. Set for hearing April 4	
SB 1328	McGuire, Cortese	This bill would prohibit PERS and STRS boards from investing in Russia or Belarus, including their governments, financial institutions, a company with business operations in, or a company that supplies military equipment to Russia or Belarus.	03/23/22	Senate Hearing set for March 29	
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.	03/09/22	Senate L., P.E. & R. Comm.	
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.	03/30/22	Received in Senate Finance Comm.	
HR 3684	DeFazio	Called the "Infrastructure Investment and Jobs Act", better known as the \$1 trillion infrastructure bill, includes a crypto tax-reporting provision requiring digital asset brokers to report their users' annual transactions to the IRS effective year-end 2022.	11/15/21	Became Public Law No. 117-58	
HR 4728	Takano	To amend the Fair Labor Standards Act to reduce the standard workweek from 40 hours per week to 32 hours per week.	07/27/21	House Comm. on Education and Labor	
2022 TENTATIVE State Legislative Calendar					
Feb 18	Last day for new bills to be introduced				
Apr 7	Spring Recess begins upon adjournment				
May 27	Last day for bills to be passed out of the house of origin				
Jun 15	Budget Bill must be passed by midnight				
Jul 1 - Aug 1	Summer Recess upon adjournment provided budget bill passed				
Aug 25	Last day to amend bills on the floor				
Aug 31	Last day for each house to pass bills; Final Study Recess begins upon adjournment				
Sept 30	Last day for Governor to sign or veto bills.				

2022 CONFERENCES AND EVENTS SCHEDULE 2022

EVENT DATES 2022		EVENT TITLE	EVENT SPONSOR	LOCATION	REG. FEE	WEBLINK FOR MORE INFO	EST. BOARD EDUCATION HOURS
BEGIN	END						
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 21	May 22	Trustee Education Seminar	NCPERS	Washington, DC	\$685	ncpers.org	12 hrs*
May 21	May 22	Accredited Fiduciary Prog. Mod 1 & 2	NCPERS	Washington, DC	\$855	ncpers.org	14 hrs*
May 21	May 22	Accredited Fiduciary Prog. Mod 3 & 4	NCPERS	Washington, DC	\$855	ncpers.org	14 hrs*
May 22	May 25	2022 Annual Conference & Exhibition	NCPERS	Washington, DC	\$900	ncpers.org	16.5 hrs*
May 27	May 27	Attorneys Round Table	CALAPRS	Webinar	\$50	calaprs.org	4 hrs*
Jun 24	Jun 24	Administrators' Round Table	CALAPRS	Webinar	\$50	calaprs.org	5 hrs*
Jul 17	Jul 20	Public Pension Investment Management Program	SACRS	Berkeley, CA	\$500	sacrs.org	24 hrs
Aug 21	Aug 23	Public Pension Funding Forum	NCPERS	Los Angeles, CA	\$720	ncpers.org	4.75 hrs *
Aug 29	Sep 1	Principles of Pension Governance for Trustees	CALAPRS	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
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
Mar 5 - 8	CALAPRS General Assembly	San Diego, CA	McKelvey, Shick	\$4,000	TBD	N/A



San Joaquin County Employees' Retirement Association

April 1, 2022

TO: Board of Retirement

FROM: Johanna Shick 
Chief Executive Officer

SUBJECT: Chief Executive Officer Report

Strengthen the long-term financial health of the Retirement Plan

Evaluate the appropriateness of actuarial assumptions

- *Conduct Actuarial Experience Study to assess the appropriateness of, and impact of COVID-19 on key actuarial assumptions.*

One of the first steps of the Actuarial Experience Study is to assess the Board's risk tolerance. The results of the Board's risk assessment survey responses will be presented and discussed at the April 8 Board meeting. Meketa will use this information as a guide when designing model portfolios for the Board to consider.

Review and confirm or refresh asset allocation

- *Deliver target investment return*

Prologis Side Letter election completed. After consulting with Sean Byrne and Niccolo Barber at Rimon Law, Investment Officer Paris Ba recommended, and I approved, adding a new provision that is favorable to SJCERA without additional tradeoff. The rest of the election options were not applicable to SJCERA, as they are specific to investors from certain jurisdictions.

Optimize Investment Manager Line-Up

- *Conduct Review of current managers and mandates to better align with our Strategic Asset Allocation policy*

White Oak Arbitration Update. As part of our ongoing monitoring of managers, staff previously reported that White Oak Global Advisors was involved in an arbitration proceeding with an institutional investor regarding the Most Favored Nation (MFN) provision in the Investment Management Agreement (IMA). In an opinion issued on March 17, 2022, the Court confirmed the Arbitrator's order that White Oak had not violated the MFN provision. The Court also confirmed that White Oak must distribute the investor's assets in accordance with the IMA, which it has already distributed. While the Court found in White Oak's favor on the MFN issue, it also found White Oak to have violated ERISA. Lastly, the Court confirmed that White Oak is entitled to retain the management fees it earned, but it must return an initial fee it collected at the inception of the investor's investment, plus interest, and must pay a portion of the investor's attorneys' fees and costs from the arbitration proceeding. White Oak intends to appeal the Court's decision, including the award of attorneys' fees and costs and the award of the initial fee.

Modernize the operations infrastructure

Implement Pension Administration System (PAS)

- *Contract with Pension Administration System (PAS) vendor*

Responses to the PAS Vendor RFP were received on March 24. Linea and SJCERA staff are reviewing them. PAS demonstrations and vendor interviews are scheduled for the week of April 19.

- *Contract with Data Conversion vendor*

Responses to the Data Conversion Vendor RFP were received on March 14. and have been reviewed by SJCERA. The Data Conversion vendors have been shortlisted and vendor interviews are scheduled for April 4.

- *Maintain functionality of legacy PAS until new PAS is implemented and stabilized*

Information Systems Manager Adnan Khan, IT Systems Analyst II Lolo Garza, and IT Systems Specialist II Jordan Regevig continue to work cooperatively with our IT vendors in order to maintain CORE-37 and OptixWS member data, system functionality, and security.

SJCERA Member Benefits, Finance, and IT unit leaders are now working to identify and prioritize process improvement areas where manual work can be reduced or eliminated through automation. The selected automation projects will be those that can be implemented relatively quickly, with little expense, and will provide enhanced workflow monitoring and management across the organization. The first pilot project will be to automate member document scanning into workflow queues to include notification to staff. With other IT initiatives and the PAS Project starting, we expect this pilot project will be completed this summer.

Enhance the member experience

- *Complete improvements to website architecture and functionality*

The remaining work on website design is wrapping up in April. Communications Officer Kendra Fenner and IT Systems Specialist II Jordan Regevig will be reaching out to external stakeholders (including employers and members) to get their input, with final implementation expected this summer.

Improve technology for business operations

- *Adopt industry standard business processes wherever possible*

The PAS vendor proposals show that vendors support SJCERA's desire to move forward with streamlined, industry standard, and automated business functionality. As the PAS implementation project kicks off, we will update the Board on the business areas we streamline, standardize, and automate.

- *Implement recommended items resulting from 2021 cyber-security and disaster recovery plan assessments*

Adnan Khan developed and (at the March All Staff meeting) delivered a Phishing Awareness presentation as part of maturing our cyber-security program. In addition to the SJCERA presentation, all County employees (including SJCERA employees) are required to complete the "Inside Man" Security Awareness series by April 4, 2022.

- *Begin Windows Server infrastructure implementation*

Adnan Khan and Lolo Garza have been researching and meeting with hardware and virtualization platform vendors over the past two months. They identified, evaluated, and presented their recommendation to ACEO Brian McKelvey at the end of March. Procurement of the necessary hardware and licensing will begin mid-April with the expectation the Windows Server infrastructure hardware will be installed and configured by July 2022.

- *Begin Enterprise-Wide Risk Management (EWRM) methodologies implementation*

Brian McKelvey and Management Analyst III Greg Frank are in the process of identifying and categorizing risks throughout the organization. Once the lists of risks have been finalized and approved, the next steps will include creating a heat map (probability/severity) and a risk assessment document.

Align resources and organizational capabilitiesEnhance education and development across all levels of the organization

- *Offer training and development opportunities intended to strengthen SJCERA's on-boarding and succession planning*

An initial list of training and development opportunities across the organization was expanded during the Leadership Quarterly Meeting to include County training resources. Over the next quarter, training plans will be developed by each unit leader for each role and will be reviewed and approved during the next Leadership Quarterly Meeting.

Deliver Excellent Service and Support to StakeholdersProvide Excellent Customer Service.

A few quotes from our members:

- "Kathleen responded promptly and was incredibly helpful. Very professional and friendly."
- "Melinda's response is always amazing and she always provides accurate information the first time to any questions."
- "Vickie has been very helpful and clear in her information. Her follow up has been great and I look forward to working with her as I start the retirement process."

Maintain a High-Performing Workforce

Employees of the Month. Congratulations to Retirement Services Associate Andrea Bonilla for being named employee of the month. Andrea has assumed responsibility for disability retirements and *Alameda* processing. Andrea's attention to detail and review for accuracy assures us these two processes are in the right hands. Congratulations, Andrea on being SJCERA's employee of the month!

Maintain Business Operations

2021 1099-R File Submitted to the IRS. SJCERA's Finance Officer Carmen Murillo and Investment Accountant Eve Calendar finalized our 2021 1099-R filing requirements on March 29 by submitting our electronic file to the IRS in advance of the March 31, 2022 deadline.

2022 March Retirement Season SJCERA has received 50 retirement applications for March 2022 which, although a fewer than last year, is still approximately 2.5 times our average number of retirement applications received in a month. The Member Benefits team is working quickly, but accurately, to get all retirement applications setup for May 1 payment by the retirement payroll cutoff date of April 15.

2022 COLA SJCERA will be applying the 2022 Cost of Living Adjustment of 3 percent to all eligible payees in April for the May 1 payment. The 3 percent COLA rate was approved by the Board of Retirement on February 11, 2022.

Board Elections. Management Analyst III Greg Frank is working with the Registrar of Voters to prepare for the election of the Safety seat(s), Seventh and Alternate Seventh. 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.

Manage Emerging Organizational Needs

Conclusion of *Alameda* Decision Implementation. Staff has concluded their work implementing the *Alameda* decision. On April 15, the remaining active members who are entitled to a return of contributions and interest will receive it in their paycheck. All other benefit and contribution adjustments have been implemented. A final report summarizing how SJCERA implemented the Court's decision is attached for your reference. A hearty thank-you and congratulations to all involved. Impressive work! Well done!

Conclusion

Spring in the San Joaquin Valley is an amazingly beautiful time of year—the vibrant colors, beautiful blossoms, and symphony of bird songs are awe-inspiring, despite any allergy symptoms we might feel!

Spring is also a time of growth, renewal and transformation both in nature and at SJCERA. As our trusted colleagues (Kathy Miller, Kathy Herman, Mary Chris Johnson, and Marta Gonzalez) move on to pursue new beginnings in their lives, SJCERA is also growing and transforming. We're planting seeds for our future by onboarding new trustees and staff, moving forward on our pension administration system and data conversion projects, and assessing our approach to investing by conducting an asset-liability study. These new beginnings and the endless possibilities they represent bring hope for an even brighter future for SJCERA. I look forward to working with staff, consultants and vendors, and the Board as we create that envisioned future together.



Outgoing Trustee Kathy Miller Recognized



ACEO Kathy Herman, Retirement Tech. Mary
Chris Johnson, Benefits Supervisor Marta
Gonzalez Retire



San Joaquin County Employees' Retirement Association

California Supreme Court Decision & Implementation *Alameda County Deputy Sheriff's Assoc. et al., v. Alameda County Employees' Retirement Assn., et al. (2020) 9 Cal.5th 1032* (the "*Alameda Decision*").

On July 30, 2020, the California Supreme Court determined that pay for hours "in excess of normal working hours" cannot be included in calculating retirement benefits as of January 1, 2013. The Court also clarified that Boards of Retirement do not have authority to include items that are considered "in-kind" benefits under law. To comply with the Court's decision, (commonly known as the *Alameda Decision*) SJCERA staff and the Board of Retirement immediately began to coordinate and implement the Court's ruling. The following is a brief summary of those tasks.

Process

8/14/2020	Ashley K Dunning, Attorney at Law, Fiduciary Counsel provided information and education to the Board of Retirement regarding the " <i>Alameda Decision</i> ".
8/01/20 – 10/15/20	Created project plan, identified resources and affected members
10/15/20	The Board of Retirement approved the Administrative recommendation for the implementation of the Alameda review and repayment plan and voted to exclude three pay types from retirement benefit calculations: 1) Stand-By Pay 2) Correctional Briefing Pay 3) Employer Contributions to Deferred Compensation on the Member's Behalf.
10/15/20 – 10/30/20	Coordinated with County and Superior Court payroll staff, effective with the October 30, 2020 pay check, to stop collecting contributions on identified earnings codes.
10/15/20	Immediately began to calculate new retirement benefits without the excluded earnings codes.
10/20/20- 01/08/21	Notified 1,350 active and deferred members and 135 retired members potentially affected by the Alameda Decision.
10/28/20	The Board of Retirement established an Ad Hoc Advisory Committee who, along with key personnel and legal counsel, conducted an in-depth review of all (more than 600) current earnings codes.
01/08/21	Upon the recommendation of the Ad Hoc Advisory Committee, the Board of Retirement updated its determination of Compensation Earnable for members of Tier 1 and Pensionable Compensation for members of Tier 2 to exclude nine additional earnings codes, effective January 18, 2021.
11/01/20 - 05/01/21	Researched and calculated retirement benefit adjustments for 135 retirees.
03/01/21 - 05/01/21	Adjusted retirement benefits prospectively.
04/01/21- 12/01/21	Completed retroactive retiree benefit adjustments including collecting overpaid benefits. (One retiree requested a 3-year payment schedule; all others were completed by December 1, 2021.)
06/01/21 – 04/15/22	Calculated and processed contribution and interest adjustments for active and deferred members.

Retired Members

SJCERA staff individually reviewed the records of hundreds of retirees to determine that 135 members would require a benefit recalculation and adjustment. All prospective retiree benefit adjustments were

completed by May 1, 2021. The repayment of overpaid contributions and/or collection of overpaid benefits, with the exception of one, was completed by December 1, 2021. One retiree requested an extended three-year payment schedule.

For members who had not yet received a payment following the July 30, 2020, Supreme Court decision, the benefit was calculated excluding affected earnings codes; thus, no subsequent adjustment to their benefit was required. Calculation and repayment of any overpaid contributions was postponed until later.

For members already receiving payments, the benefit amount was adjusted if any of the excluded earnings codes were used in the final average compensation calculation.

If the total overpaid contributions on the excluded pay type(s) exceeded the total amount of overpaid benefits, SJCERA paid the retiree the difference plus interest at the current assumed rate of return of 7 percent.

If the total overpaid benefits exceeded the overpaid contributions on the excluded pay type(s), SJCERA collected the amount of overpaid benefits from the benefits paid from September 1, 2020 (the August benefit) to the time of collection by adjusting retirees' benefit payments.

Benefits are calculated based on the highest final average compensation (FAC) period. If removing the excluded pay type(s) caused a different period to be the highest, SJCERA recalculated members' benefits based on the new highest FAC period.

Active and Deferred Members

The actuaries at Cherion calculated the contributions and interest owed for most of the active and deferred members, which allowed SJCERA and the County payroll department to start processing repayments on October 1, 2021.

For current active or deferred members who had paid SJCERA contributions on Employer Contributions to Deferred Compensation on the Member's Behalf at any time throughout their career, those contributions were returned plus interest at the current assumed rate of return of 7 percent.

For current active or deferred members who had paid contributions on Standby pay or Correctional Briefing pay at any time between January 1, 2013 and October 30, 2020, those contributions were returned plus interest at the current assumed rate of return of 7 percent.

For current active members on January 18, 2021 who had paid contributions on Overtime with Benefits (OBR) between January 18, 2021 and March 31, 2021, those contributions were returned.

Several special circumstances required additional research and calculations by the SJCERA Team for approximately 300 members. Examples of special circumstances:

- Pay period salary and contribution detail prior to August 10, 2003 is not available in a format that could be extracted for historic calculations
- Members who had reached either the PEPRA or IRC 401(a)17 salary limit in any year, required additional research and complex, manual calculations
- Returned checks and checks for Deferred members without a good address on file

- Completed service purchase contract salary and contribution details are not available in a format that could be extracted for calculations
- Members changing membership status (for example from active to deferred or retired) during implementation
- Multiple salary and contributions adjustments prior to the Alameda Decision
- Domestic Relation Orders

Conclusion:

On July 30, 2020 the Supreme Court ruling effectively changed public pensions in California. Rarely has a court ruling or new law been implemented retroactively, requiring retirement systems to decrease retirees' benefits or return active and deferred members' contributions. Of the 287 members who had received the excluded earn codes during employment, 135 of them had retirement benefits that had been calculated using the excluded earn codes and required adjustments. The decreases to retirement benefits ranged from (\$2,815.34) to (\$1.71) per month. Fifty-six retirees' benefits were decreased by more than \$100 per month, twenty by more than \$500.00 per month.

Of the 1,350 active and deferred members initially notified 1,234 received an adjustment of contributions and interest. Upon further review of records, 116 did not require adjustments. Approximately 750 of the active and/or deferred member adjustments were under \$500. In total, as a result of the Alameda decision, SJCERA paid out \$1,291,641.98 in contributions and interest, and collected \$116,772.92 in overpaid benefits, with a total net adjustment of \$1,174,869.06 to the fund. The chart below gives a breakdown of these transactions.

Alameda Decision Implementation	Total distributed/collected
4/11/21 OBR (Overtime with benefits) Removed OT portion Prospectively, Correction for 3 pay periods only.	323.79
5/3/21 Retiree Overpayments	\$ (116,772.92)
6/1/21 Retiree Returned Contribution & Interest	\$ 43,208.84
10/1/21 County Active Batch 1	\$447,691.41
10/1/21 Mountain House Active Batch 1	\$3,830.58
10/1/21 Courts Active Batch 1	\$5,804.23
11/12/21 County Active Batch 2	\$145,965.42
12/1/21 New Retired	\$55,760.83
12/6/21 Deferred Batch 1	\$73,726.93
12/10/21 County Active and Active over \$5000 Batch 3	\$259,806.34
12/15/21 Deferred Batch 2	\$27,864.98
1/3/22 New retired	\$40,280.10
2/4/22 County Active Batch 4	\$67,482.20
2/18/22 County Active & Active DRO Batch 5	\$5,140.86
3/1/22 Incomplete DRO - Active Joinder - hold	\$17,522.83
3/15/22 Deferred Batch 3 - Complex cases	\$4,208.71
4/15/22 County Active Batch 6 - Complex cases	\$93,023.93
Net Contribution and Interest Change	\$1,174,869.06

A project of this size required careful planning for optimal implementation. Multiple staff members worked on various parts of the project more than 21 months. The Board of Retirement's leadership provided clear direction and SJCERA's small but mighty team made it happen. The implementation of the Alameda decision was complex. Thousands of records were reviewed and hundreds of complicated calculations were necessary to ensure accurate adjustments were processed for all affected members.

Congratulations to every member of the staff who was involved in one or more of the many steps required to complete this project. The final payout is scheduled for the April 15, 2022 active member paycheck.

A handwritten signature in cursive script that reads "Kathy Herman".

Kathy Herman
Assistant Chief Executive Officer



The Maltese Falcoin: on cryptocurrencies and blockchains

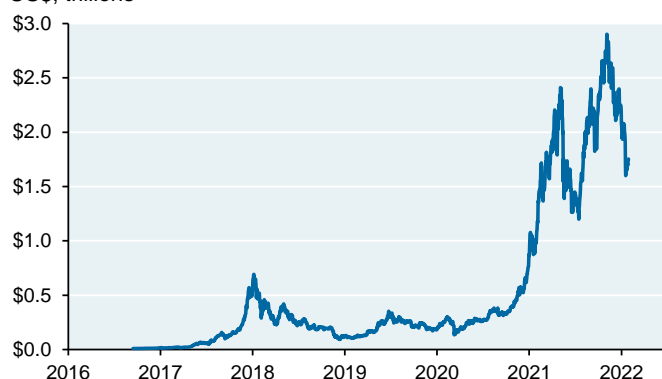
First let me try and anticipate some of your questions.

- **Yes, I am turning 60 this May.** This obviously renders me too old to comment on this topic
- **Yes, I understand creative destruction.** Hundreds of companies have been removed from the S&P 500 since 1980 due to distress, mostly inflicted by more innovative competitors. We maintain a lot of creative destruction trackers; see Appendix B
- **Yes, I follow the changes taking place that break down barriers.** We track the plummeting cost of information storage, improvements in CPU processing speeds, increases in 5G download speeds and gains in artificial intelligence and machine learning. These factors have lowered barriers of entry for new companies to challenge incumbents in a variety of sectors, particularly financial services. See Appendix C
- **Yes, I showed this piece to crypto and blockchain professionals.** Their rebuttals appear in Section 8
- **Yes, I know this is 28 pages** but it's a quick read since there are a lot of charts
- **No, I did not anticipate the increase in crypto values from \$25 billion to \$250 billion to \$2.5 trillion (and now \$1.5 trillion),** and I recognize that I am late to this
- **No, I am not going to extensively cover the technical jargon involved.** If you would like to read up on mempools, cryptographic hash puzzles and Merkle roots, there are two advanced primers in Appendix A
- **No, I am not going to address issues other than the investment rationale for crypto and blockchain use cases.** Others have written on mining energy intensity, on whether crypto is "good or "bad" for society, on illicit crypto transactions and on crypto's impact on Central Banks trying to retain control over broad money, inflation and employment. Such topics are beyond the scope of this piece
- **No, I don't speak for anyone at JP Morgan other than myself.** If you disagree with the opinions and data expressed here, don't hold anyone else accountable for them

OK, let's begin.

Cryptocurrency market cap

US\$, trillions



Source: TradingView, JPMAM. February 2, 2022.

Table of contents

1. Venture capital flows into crypto/blockchain
2. Investor crypto adoption trends
3. Bitcoin and the store of value
4. Crypto and cross border remittances
5. Decentralized finance
6. Non-fungible tokens and the art world
7. Financial services and the blockchain
8. Rebuttals to this paper
9. Conclusions: the Maltese Falcoin
10. Appendices



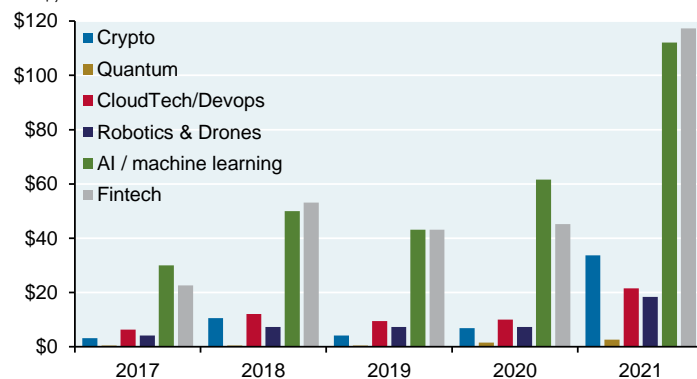
[1] One thing's for sure: there's a ton of money pouring into crypto and blockchain investments

If you believe that mobilization of capital is a can't-miss way of assessing the future, you can stop reading here and conclude that crypto-related investments are bound to succeed. As shown below, venture capitalists have been plowing money into crypto at an accelerating pace, rivaling other innovation categories. The year 2021 was a particularly strong year for capital raising; average pre-IPO valuations for crypto and blockchain investments are now much higher than for VC investments overall. I'm often told that some of the most successful, brilliant minds in Silicon Valley are working on crypto and blockchain solutions, and many of them have impressive track records of delivering returns to institutional and individual investors. Even so, I'm more interested in what *happens* to the capital and its long-run returns than on its mobilization.

A breakdown of VC investments in crypto shows ~40% in trading, investing and lending businesses; ~20% in Web 3.0 applications and NFTs; ~10% in custody; and the remainder in a variety of businesses focused on compliance, mining and data security.

Venture capital investments by sector

US\$, billions

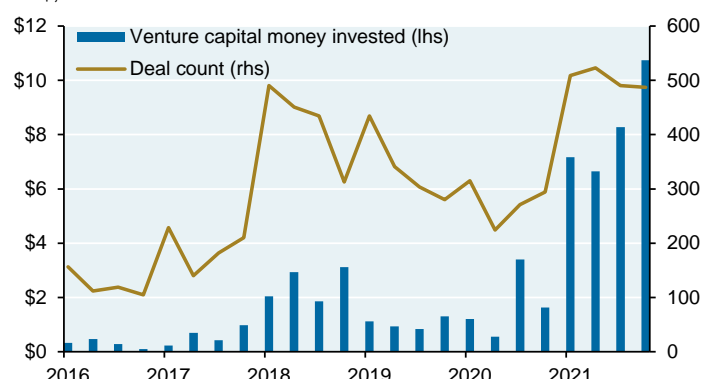


Source: Pitchbook, Galaxy Digital Research. January 2022.

Venture capital investments in crypto and blockchain

US\$, billions

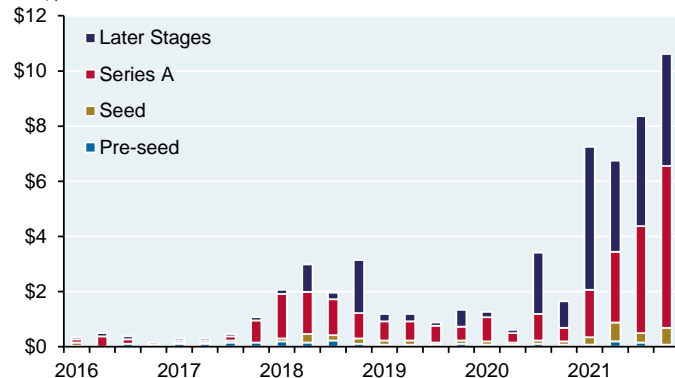
Number of deals



Source: Pitchbook, Galaxy Digital Research. January 2022.

VC money invested in crypto & blockchain by stage

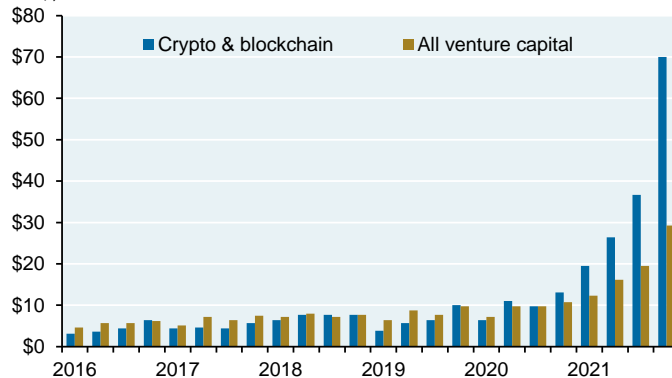
US\$, billions



Source: Pitchbook, Galaxy Digital Research. January 2022.

Crypto/blockchain vs all VC pre-money valuation

US\$, millions



Source: Pitchbook, Galaxy Digital Research. January 2022.



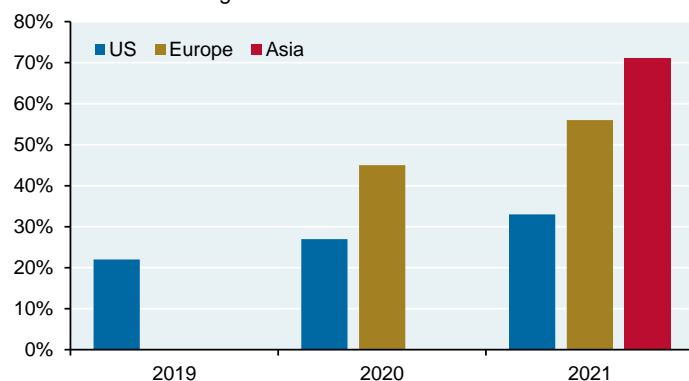
[2] Crypto adoption trends and attitudes

As shown below, crypto adoption is rising across investor types and regions. While institutional ownership has been low to-date, it is now growing. Bridgewater estimated that ~1 million Bitcoin (around 5% of total issued supply) are now held by institutional investors via custodial intermediaries¹. The last chart shows purchase intent in the future, which continues to rise. Note: missing bars are not zero, they represent data that was not published as part of the Fidelity study.

Some crypto adoption anecdotes: Square and Tesla combined invested nearly \$2 billion USD in Bitcoin, and Square and PayPal retail customers reportedly buy an amount equivalent to a majority of the new supply of Bitcoin entering the market each day².

Crypto adoption by region

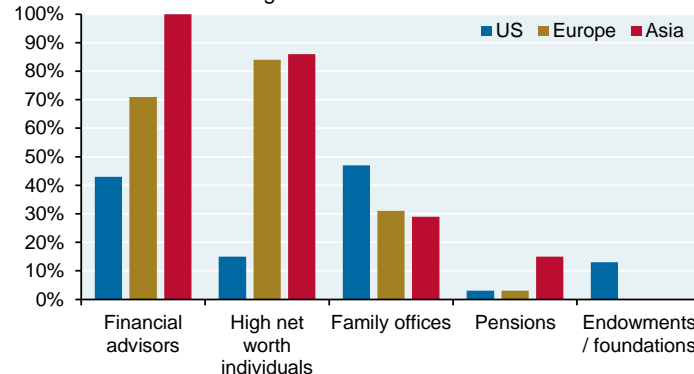
% of investors with digital asset allocations



Source: Fidelity Institutional Digital Assets Survey. September 2021.

Crypto adoption by investor type

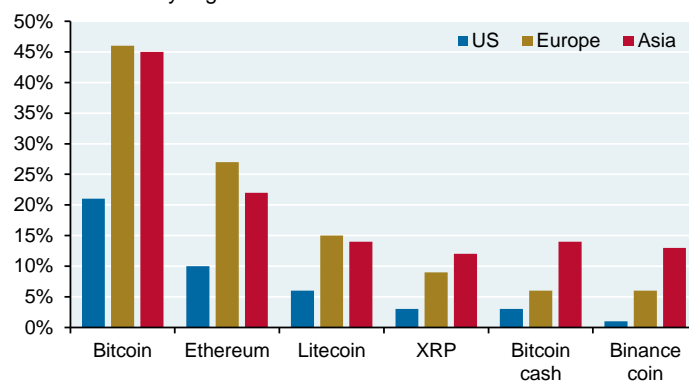
% of investors that own digital assets



Source: Fidelity Institutional Digital Assets Survey. September 2021.

Crypto ownership by digital asset

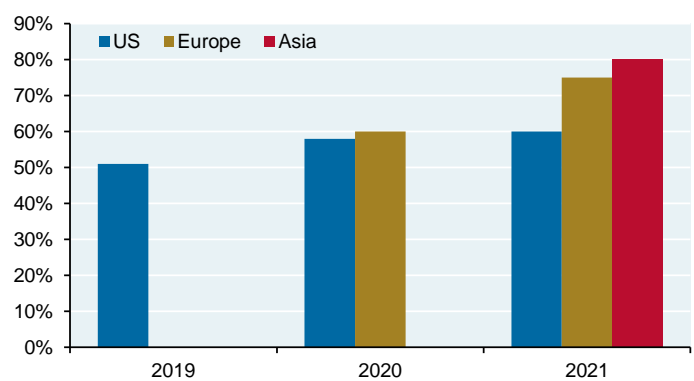
% of investors by region



Source: Fidelity Institutional Digital Assets Survey. September 2021.

Future purchase intent of digital assets

% of investors



Source: Fidelity Institutional Digital Assets Survey. September 2021.

¹ "Evolution of Institutional Investors' Exposure to Cryptocurrencies and Blockchain Technologies", Bridgewater Daily Observations, January 14, 2022

² "Feeling the heat from employees, Wall Street banks get closer to adopting bitcoin", CNBC, Feb 12, 2021 and "Square and PayPal may be the new whales in the crypto market as clients flock to bitcoin", CNBC, Nov 24, 2020

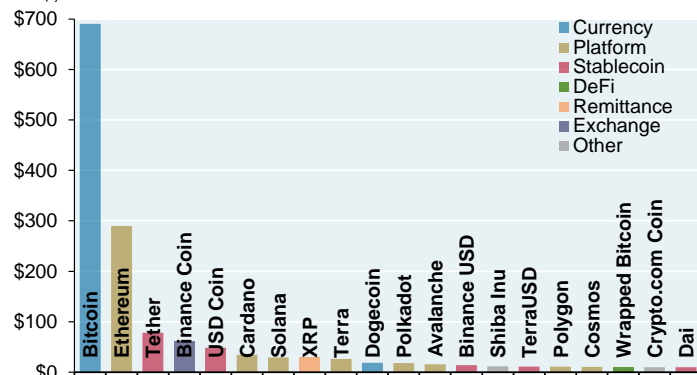


[3] Bitcoin and the “store of value” thesis

Let’s start with the most widely cited use case for digital currency: as a store of value, and let’s use Bitcoin as a proxy for it given its dominant market cap among all cryptocurrencies.

Top 20 cryptocurrencies market cap by segment

US\$, billions



Source: CoinMarketCap, CoinMetrics, JPMAM. January 25, 2022.

Currency: digital medium of exchange or store of value

Platform: blockchain ecosystem for DeFi applications

Stablecoin: cryptocurrency with fixed value

DeFi: allows peer to peer lending and exchanges without a centralized institution

Remittance: cryptoassets for cross border transfers

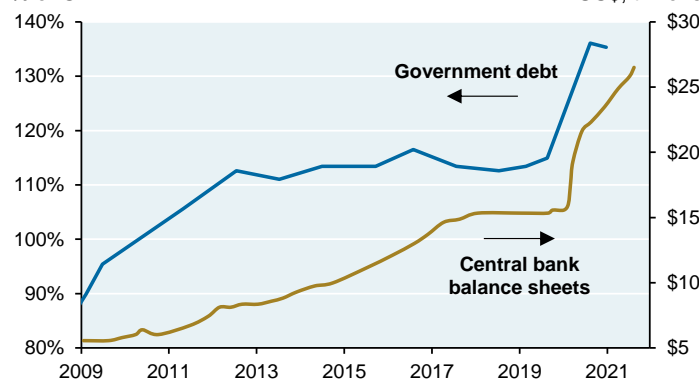
Exchange: cryptoassets facilitating cheaper transactions

I understand why people are interested in cryptocurrencies with a fixed supply as a store of value. The developed world has drowned itself in debt and fiat money, and at a pace that dwarfs anything seen in the wake of the financial crisis in 2008. These are the kind of economic degradations that accompanied the end of prior world reserve currencies during the last millennia, and which accompanied the end of reserve currency status during ancient times as well. Central Banks and Treasuries have created a massive confidence void, and it would have been strange if some alternative to fiat money *didn't* appear on the scene.

Dev world government debt & central bank balance sheets

% of GDP

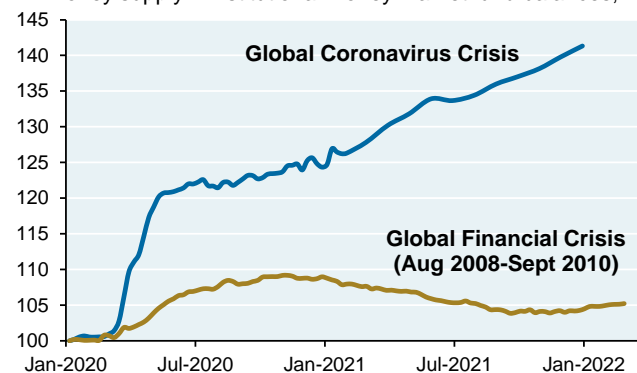
US\$, trillions



Source: JP Morgan Economic Research. November 2021.

Faster growth in the US money supply this time around

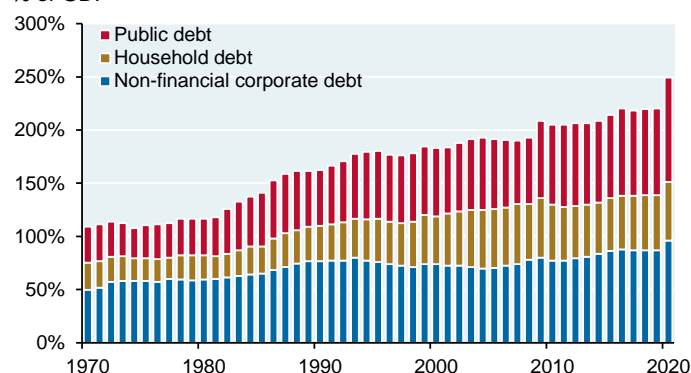
M2 money supply + institutional money market fund balances, index



Source: St Louis Fed, ICI, J.P. Morgan Asset Management. Dec 2021.

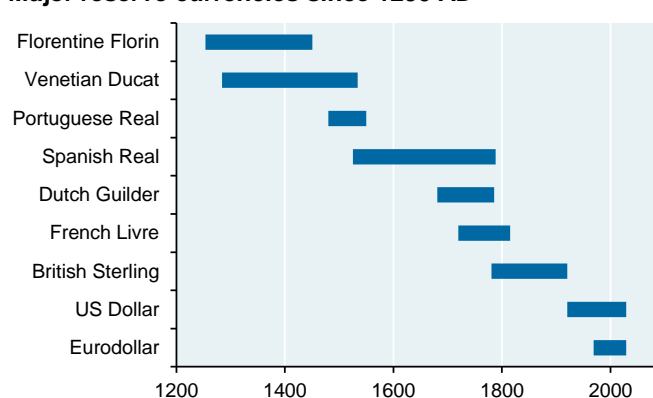
Global debt

% of GDP



Source: IMF. 2020.

Major reserve currencies since 1250 AD



Source: BTCM Research. 2020.

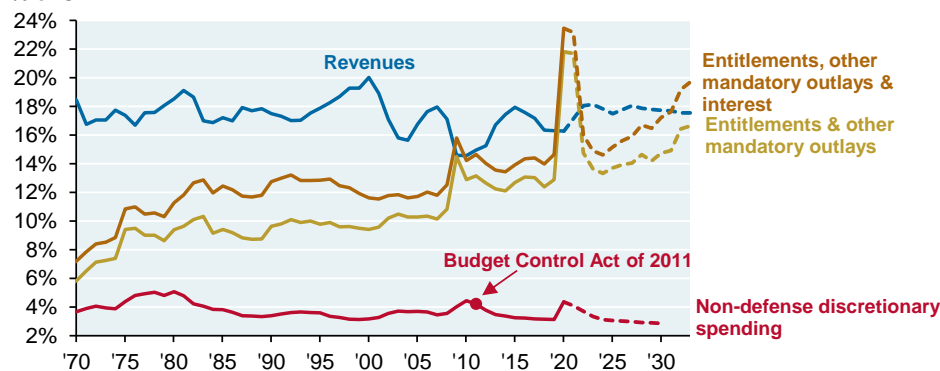


A fiat currency reckoning may be drawing closer: by the year 2030, US Federal tax revenues will be exceeded by mandatory outlays on entitlements and interest. In other words, there will be no money left for non-defense discretionary spending which drives growth and productivity over the long run, other than through deficit spending. Irrespective of your opinion on Bitcoin, this is a bad sign and may create hard-to-anticipate upheavals in the economy and financial assets when its consequences are clearer.

As for the universe of potential Bitcoin buyers, think about it this way; what countries have *not* defaulted on their debts at some point, imposed exchange controls or confiscated assets? The non-defaulter list is a short one³: just the countries in the table, and many have very high levels of Federal debt.

Crossover point is coming in the next decade

% of GDP



Source: CBO, Budget and Econ Outlook, JPMAM. July 2021.

Country	National debt to GDP
Singapore	150%
United States	128%
Canada	114%
Belgium	113%
Finland	83%
Netherlands	76%
Australia	66%
Malaysia	62%
Norway	61%
South Korea	49%
Denmark	48%
Hong Kong	46%
Thailand	45%
New Zealand	43%
Taiwan	37%

Source: Central government sources. 2020.

So, what about Bitcoin as a store of value complement to gold?

Some are skeptical about the ability of digital currencies to emerge as a viable store of value in just a few years since it took thousands of years for gold to do so, and only after gold had been used for its intrinsic value for centuries before that. **I don't agree; such logic is too rooted in the past and does not account for rapid behavioral changes common in the post-war era.** I accept the notion that a digital store of value could exist; the proof statements I need are the following: (a) more and more people use it as such; (b) its volatility settles into a range consistent with store of value investing; and (c) it goes up or remains stable when systemic risks and/or inflation are rising. On (a), Bitcoin is beginning to capture a larger subset of store-of-value investments when compared to the value of gold; that's consistent with the crypto adoption trends cited on page 3.

Bitcoin vs gold market capitalization

US\$, trillions



Source: TradingView, World Gold Council. February 2, 2022.

Bitcoin price

US\$, thousands



Source: Bloomberg, JPMAM. February 2, 2022.

³ "This time is different: eight centuries of financial folly", Carmen Reinhart and Ken Rogoff, 2009

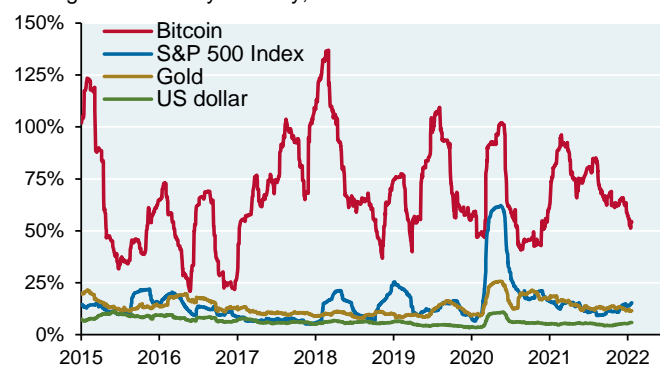


The problem is that (b) and (c) do not support the Bitcoin “store of value” thesis, as illustrated below. Bitcoin’s volatility continues to be ridiculously high, and its volatility often rises when equity market volatility is rising too. This volatility could be the byproduct of Bitcoin concentration: 2% of Bitcoin holders own 72% of its value⁴. For all the libertarian anti-elitists out there, that’s even worse than the concentration of US household wealth: it takes 10% of US households to get to 70% wealth⁵, rather than just 2%.

In any case, I don’t have a valuation model to apply to Bitcoin or other cryptocurrencies, and I’m unconvinced by ones I have seen so far. Metcalfe’s Law, for example, states that the value of a network increases with the square of the number of users or nodes. This has proven to be a useful tool in assessing valuation differences *across* crypto-currencies at a point in time, but less useful in assessing or predicting absolute price *levels* (i.e., is Bitcoin cheap or expensive at \$50k)? For investors other than crypto hedge funds, crypto price levels are usually more important than relative crypto prices. Goldman Sachs has done interesting work on Metcalfe’s law and relative crypto valuations, shown below in the fourth chart⁶.

Bitcoin volatility vs S&P 500, gold and US dollar

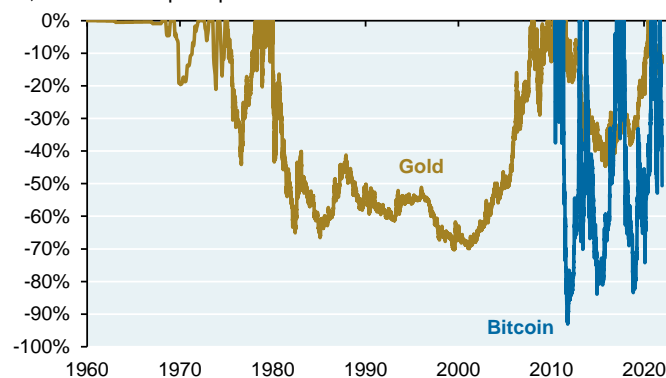
Rolling 3-month daily volatility, annualized



Source: Bloomberg, JPMAM. January 25, 2022.

Gold vs Bitcoin drawdowns

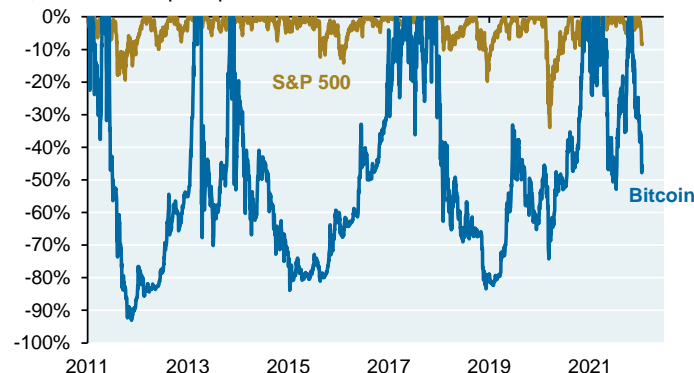
%, decline from prior peak



Source: Bloomberg, JPMAM. January 24, 2022.

S&P 500 vs Bitcoin drawdowns

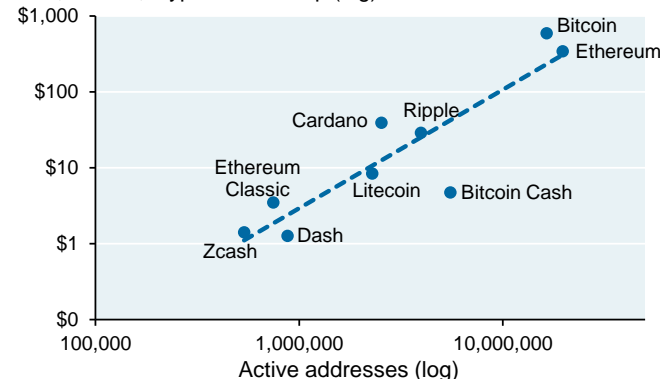
%, decline from prior peak



Source: Bloomberg, JPMAM. January 25, 2022.

Metcalfe's Law: Valuation vs network size

US\$, billions, crypto market cap (log)



Source: GS. July 2021. Excludes addresses w/ small balances as % of supply.

⁴ Glassnode Insights, February 8, 2021

⁵ "Distributional National Accounts", Federal Reserve, Q3 2021

⁶ "Cryptocurrency Valuation and Network Size", Zach Pandl and Isabella Rosenberg, Goldman Sachs Economics Research, July 19, 2021



Another partial driver of crypto volatility: the existence of “pump and dump” schemes, as identified in a 2021 paper from the University of Technology in Sydney and the Stockholm School of Economics⁷.

Main findings appear below. Such schemes and other activities that would be prohibited in regular securities markets are by definition not illegal on decentralized blockchains.

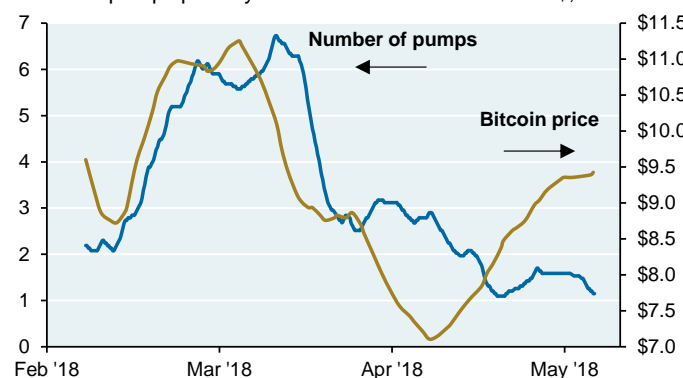
- The authors identified 355 cases of pump and dump schemes within a six month period in 2018, generating trading volumes that were 10x-15x higher than normal
- The pump and dump schemes generated an average peak return of 65% (i.e., returns to the first seller after the distorted buying is completed)
- These schemes involved 23 million people across 2 exchanges and 197 different cryptocurrencies
- The frequency of pump and dump schemes in crypto dwarf the occurrence of such events in equity markets; a prior study found just 142 events across 11 years in equities

The charts below illustrate the connection between pump and dump schemes and Bitcoin’s price at the time, and the average cumulative return experienced during a typical scheme over a 45 minute period.

Bitcoin pumps vs price

Number of pumps per day

US\$, thousands

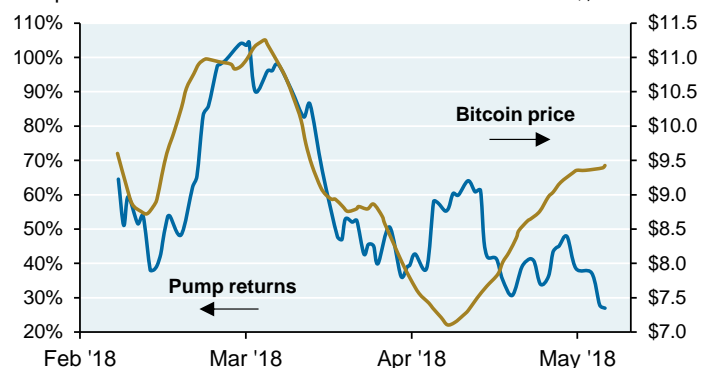


Source: Dhawan and Putnins (UTS). November 2021.

Pump returns vs bitcoin price

Pump returns

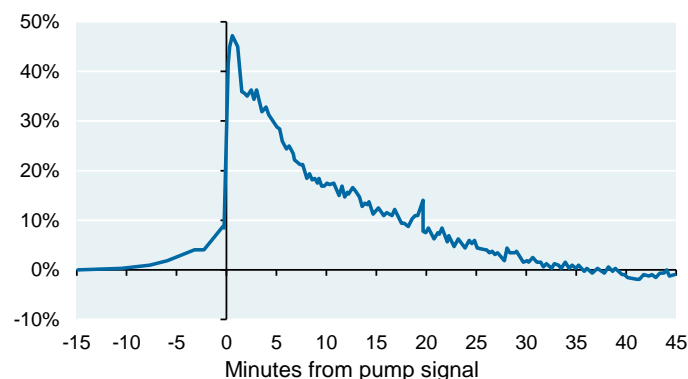
US\$, thousands



Source: Dhawan and Putnins (UTS). November 2021.

Cumulative return by time, synchronized by pump signal

Percent



Source: Dhawan and Putnins (UTS). November 2021.

⁷ “A new wolf in town? Pump-and-dump manipulation in cryptocurrency markets”, Anirudh Dhawan (Sydney) and Talis Putnins (Stockholm), November 2021



In addition to pump and dump schemes, there are other issues that can also affect crypto price volatility⁸:

Miners attacking exchanges. Smaller blockchains can be attacked by their own miners in what is known as reorganization attacks or “51 percent attacks” and if they are not paid, they can roll back prior transactions (2021 Verge example in which 200 days of transactions were invalidated). Ethereum Classic and Bitcoin Gold have been attacked as well

Front-running by miners (“miner-extracted value”, or MEV) in which value is essentially confiscated from other blockchain participants. Most MEV has reportedly occurred on the Ethereum network, and is considered by researchers to be endemic to blockchains

Cartel risks. Proof-of-Stake protocols, which is what Ethereum will be switching to (more on that later), can be subject to “validator cartels” in which consolidation of power allows validators to decide what transactions will be confirmed or not

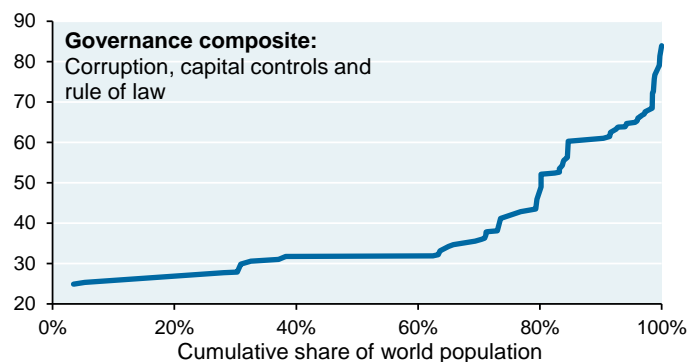
Frequent inflation bugs which mint new coins before they’re supposed to (Bitcoin, Bitcoin Private, Stellar)

Regulatory risks affecting prices. Uniswap, Synthetix and Compound are effectively pseudo-equities since they provide token holders with claims on future cash flows generated on DeFi protocols. These are not registered as securities even though they sure act like them. Stay tuned...

News stories on hacking/theft. Bitcoin cannot be destroyed and will survive as long as the network does. But that doesn’t mean that *your* Bitcoin cannot be stolen. The techniques used include “cryptocurrency account takeovers”, SIM swapping, an SMS relay service, malware that stores keystrokes, etc. Just last night, a blockchain bridge between Ethereum and Solana was hacked with \$326 million in Ethereum stolen according to Bloomberg and CNBC reports

However, these might be considered “first world problems” by citizens in emerging countries with poor governance. As shown below, the world governance curve is a steep one: very large shares of the world’s population live in countries rife with corruption, capital controls and/or compromised rule of law, and where cryptocurrency might be appealing either as a store of value or as a medium of exchange (a topic we address next) given conditions they’re faced with.

Most of the world's population lives in countries with poor governance, Governance composite score (100 = strongest)



Source: World Economic Forum, Cato, Fraser Institute, JPMAM. 2020.

⁸ “DeFi Protocol Risks: the Paradox of DeFi”, Linda Jeng, Georgetown University Law Center, August 6, 2021



What about Bitcoin as a medium of exchange?

Bitcoin is currently not a medium of exchange other than in a few niche cases. The declining number of Bitcoin transactions per day and the spikes in execution costs bear no resemblance to any functioning fiat currency. As a result, a Bitcoin valuation thesis based on it being used as a medium of exchange makes little sense, at least as Bitcoin exists right now. In a forthcoming article in *Quantitative Finance*, Nassim Taleb at NYU argues that transactions in Bitcoin can be more expensive to execute than those done using African mobile phones⁹. Some analysts also note that Bitcoin uses a “secure hash” algorithm which is more than twenty years old, one which the US Department of Defense and firms like Microsoft found to be too weak for cyber-protection, decommissioning its use in the early 2010s¹⁰.

It has been twelve years since Bitcoin was created, and Taleb states that there are few prices fixed in Bitcoin other than the 3 Bitcoin cost of a permanent residence in El Salvador. “Prices fixed in Bitcoin” means something different than “merchants who accept Bitcoin”. While the latter is rising, the merchant’s Bitcoin price simply adjusts to reflect the price of the goods or services in fiat currency terms, and most merchants quickly hedge their Bitcoin exposure. As a result, merchant acceptance tells us nothing about the viability of an ecosystem whose wages, prices and assets are denominated in Bitcoin. The only items that appear to be priced in Bitcoin or linked directly to it are....other cryptocurrencies.

One last point. Layer-2 improvements refer to upgrades and applications which reduce cost and latency on blockchains. Even if such improvements occurred on the Bitcoin blockchain, unless Bitcoin’s volatility collapses, its medium of exchange usage will continue to be very low.

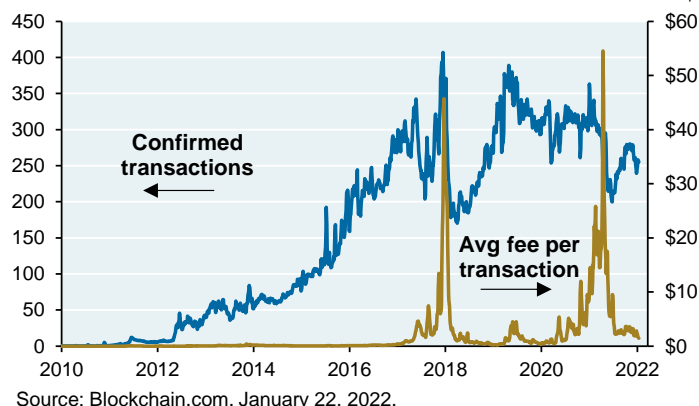
Bitcoin transactions per day

Confirmed transactions, thousands



Bitcoin transaction volume vs fees

Thousands



⁹ “Bitcoin, Currencies, and Fragility”, Nassim Nicholas Taleb (NYU), July 4, 2021

¹⁰ “Bitcoin’s social cost and regulatory responses”, Bindseil et al, ECB, January 2022

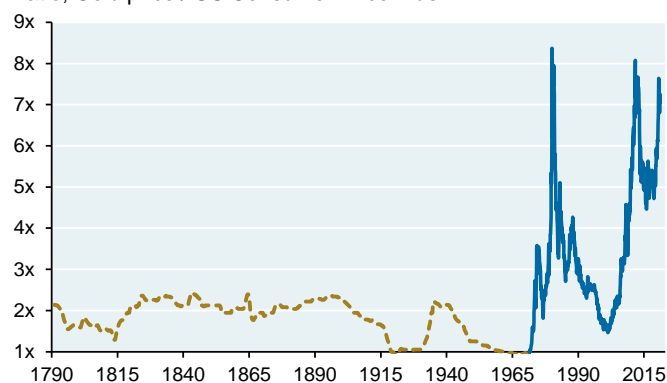


Some comments on gold as an inflation hedge, or as some other hedge

While we're talking about Bitcoin and gold, remember that gold hasn't been a reliable inflation hedge either for over a century. As shown in the first chart, from the year 1790 to 1900 gold worked very well as an inflation hedge: the real price of gold (i.e., gold prices adjusted for inflation) was very stable. However, since the year 1900 and in particular after the end of the gold standard, real gold prices have gyrated all over the place, indicating that it was a poor inflation hedge. Gold doesn't work well as a currency hedge either; changes in Emerging Market Central Bank gold reserves may actually be a better determinant of gold prices¹¹. If gold appears to be a hedge for anything, it's the *fear* of inflation, or the *fear* of financial instability as proxied by changes in government deficits (see third chart).

Real price of gold since 1790

Ratio, Gold price / US Consumer Price Index



Source: Bloomberg, NBER, JPMAM. December 2021.

Real price of gold since the advent of US futures trading

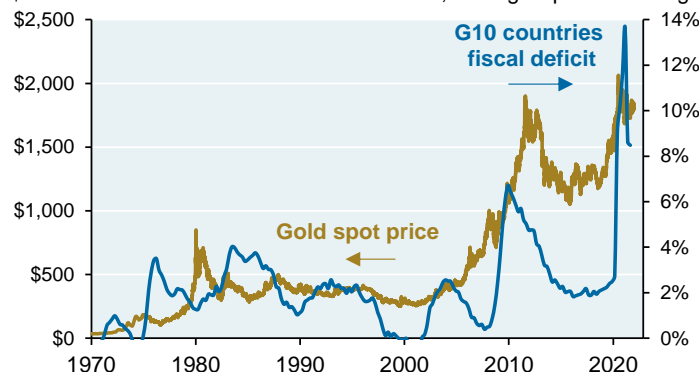
Ratio, Gold price / US Consumer Price Index



Source: Bloomberg, JPMAM. December 2021.

Gold prices vs developed markets deficit

\$/oz % of GDP, trailing 4-quarter average



Source: Bloomberg, central government sources, JPMAM. February 2, 2022.

¹¹ "The Golden Dilemma", Claude Erb and Campbell Harvey (Duke/NBER), May 2013.



[4] Cross-border remittances

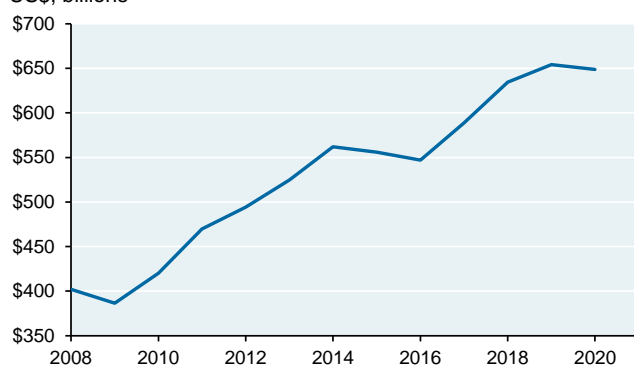
Cross-border remittances have ranged from \$500 to \$600 billion per year over the last decade. The largest recipient countries appear below. Currently, most remittances are made via wire transfer or bank transfer. The CEO of Moneygram estimates that only 1% of remittances are now sent via crypto¹², although other estimates are higher. The third chart shows the declining cost of cross border remittances through traditional networks, where remittance-weighted costs have fallen to around 5%.

Will families sending remittances start using crypto instead to save money? Perhaps, but recipients would need bank accounts in the destination country to be able to convert from crypto to cash. The second chart also shows the share of people with bank accounts, last estimated by the World Bank in 2017 (they are likely higher now). For people with bank accounts, off-ramp costs from crypto to fiat are equal to the cost of converting from dollar-based stablecoins (see next page) to local currency, and then any cost of withdrawing that fiat. The table below shows rough estimates of these costs from industry sources for a few high remittance countries. Even if these estimates are low, current remittance costs appear to be much higher.

Bottom line: the use of stablecoins for cross-border remittances is negligible right now but seems set to rise (in countries that allow them) by those with bank accounts given frequently higher costs of traditional channels. This view is augmented by the fact that remittance senders tend to own crypto at a much higher rate than the general population¹³. **To be clear, this would be deflationary for remittance companies like Western Union¹⁴, and not a driver of rising crypto valuations given the use of stablecoins in this use case.**

World personal remittances received

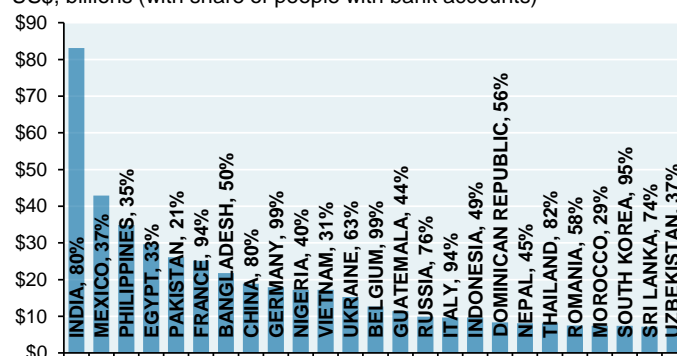
US\$, billions



Source: World Bank. 2020.

Personal remittances and bank account ownership

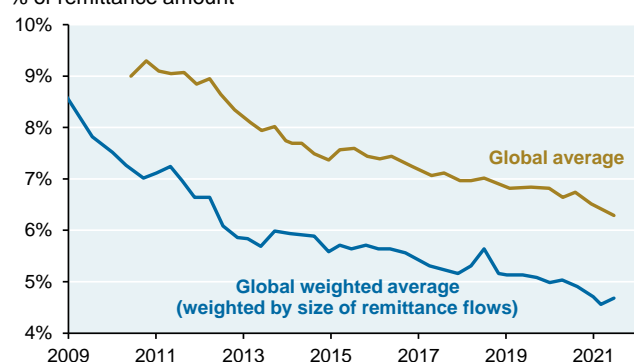
US\$, billions (with share of people with bank accounts)



Source: World Bank, JPMAM. 2020.

Global remittance costs

% of remittance amount



Source: World Bank. Q2 2021.

Select stablecoin off-ramp costs to fiat

	Transaction fee	Withdrawal fee	Total fee	Source
India	0.2%	0.0%	0.2%	CoinDCX
S Africa	0.2%	0.0%	0.2%	Luno
Mexico	0.1%	0.0%	0.1%	Bitso
Brazil	0.7%	0.0%	0.7%	Mercado Bitcoin
Philippines	0.5%	1.6%	2.1%	PDAX

Source: JPMAM. February 2022.

¹² "Great Expectations of Crypto for Cross-Border Payments", Alex Holmes (MoneyGram), September 14, 2021

¹³ PYMNTS Cross Border Remittance Report, September 2021

¹⁴ See Atlanta Federal Reserve Bank payments risk analyst comments in "A Mexican Crypto Startup Wants to Make Cash Remittances Cheaper", Bloomberg Business Week, November 30, 2021



For remittance receivers without bank accounts, crypto execution costs can be much higher even when they are possible at all via Bitcoin->fiat ATMs. According to Coin ATM Radar, there are only 2 such ATMs in all of India, 11 in Mexico and 13 in the Philippines. Most Bitcoin->fiat ATMs charge around 5% to convert Bitcoin into fiat currency (and around 10% to convert fiat into Bitcoin). As a result, the current remittance use case for crypto relies on bank account ownership, which in many EM countries is rising.

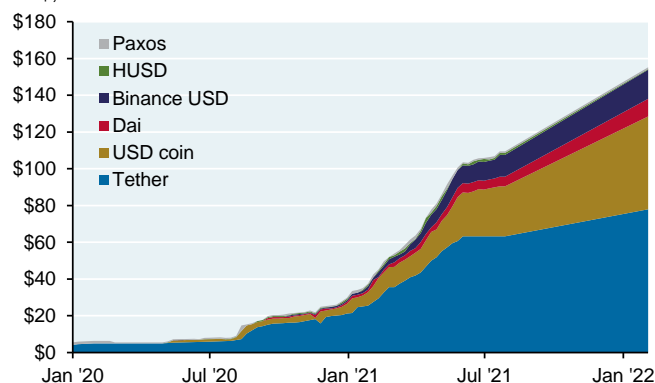
What might change? Moneygram announced that it's working on a project with Bitcoin ATM operators to offer Bitcoin->fiat conversions at 4% which could be used by those without bank accounts, and a partnership with the Stellar Development Foundation to allow users to convert from stablecoins to cash and back.

Understanding Stablecoins

Stablecoins emerged over the last year as a way of gaining access to blockchain protocols without taking on crypto price risk. Stablecoins are linked to a reserve of external assets, and in most cases, the entity developing the stablecoin owns reserves equal to the number of stablecoins in circulation. As a result, they should always be redeemable close to par value. There are questions about the reliability of certain stablecoin reserves; some remind me of the SIVs from 2008¹⁵. But if stablecoin risks can be controlled, they could be used for cross-border remittances and reduce volatility that remittance recipients are exposed to with traditional crypto. To reiterate, there are no implications in this use case for most crypto prices, since stablecoins by definition are meant to maintain their value close to par. USD coin and Tether stablecoin prices are shown below. Note that price volatility has declined with higher participation.

Select stablecoin market capitalization

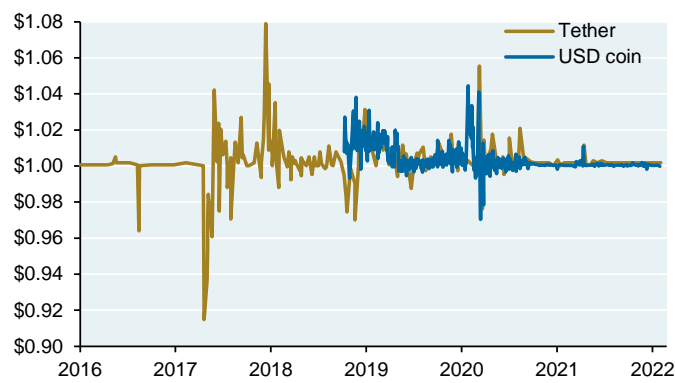
US\$, billions



Source: CoinDesk, CoinMarketCap, JPMAM. February 3, 2022.

USD Coin vs Tether stablecoin prices

Price



Source: CoinMarketCap. February 2, 2022.

Update: the US Federal Reserve issued a report in January 2022 on digital money and payment systems. The Fed is debating the risks and benefits of creating a Fed-backed US\$ stablecoin which would not entail any liquidity or reserve risks, and which would provide a firmer foundation for innovation in the digital payments space than private stablecoins.

¹⁵ **Stablecoins** are often described as being backed by “reserve assets.” However, there are no standards regarding composition of stablecoin reserve assets, and information made publicly available is not consistent as to content or frequency. Stablecoins differ in the riskiness of their reserve assets; some hold all reserve assets in deposits at insured depository institutions or in US T-bills, and others holding riskier reserve assets such as commercial paper, corporate and municipal bonds and other digital assets.

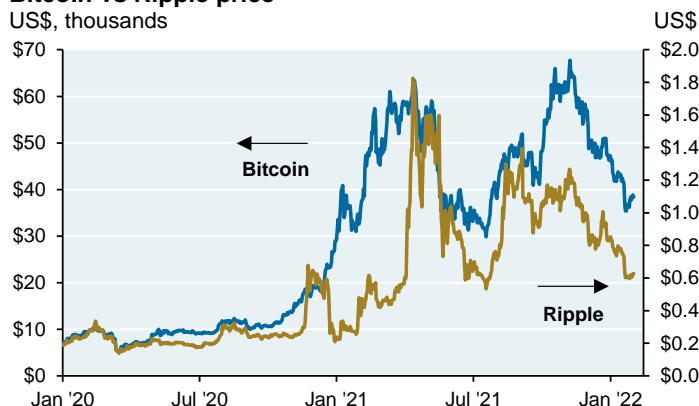
Example: **Tether's** first published reserve breakdown showed 49% backing by “unspecified commercial paper”. When Wells Fargo withdrew support for Tether in the spring of 2017 and its convertibility was temporarily suspended, Tether traded as low as 92 cents on the dollar.



Some unanswered remittance questions

The Ripple effect. Ripple reported fivefold growth in remittance transactions between 2019 and 2020. But if that's the case, **why is Ripple still trading so closely with Bitcoin, as shown below?** Wouldn't Ripple's separate and distinct use case result in a separate and distinct return profile from Bitcoin? It hasn't so far. From what we can tell, Ripple has been working with banks to help them build infrastructure to make cross-border payments but few are using Ripple's actual cryptocurrency to execute them.

Bitcoin vs Ripple price



Source: Bloomberg, JPMAM. February 2, 2022.

Government regulations. There are increasing calls for stablecoin regulations in the US according to the Bank Policy Institute. And while the Mexican crypto company Bitso reports handling 2.5% of all remittances sent from the US to Mexico, Mexican authorities have stated that crypto assets are not legal tender and are not considered currencies under current laws, and that financial institutions operating with them are subject to sanctions¹⁶. There's a good chance that crypto remittances will eventually be subject to "travel rule" regulations that require identification of sources and destinations of funds to ensure monitoring for money laundering and sanctions. See Appendix A for the latest on government crypto regulations.

The Silvergate nexus. What systemic risks are posed by **Silvergate**, a San Diego bank with \$5.5 billion in assets and \$5.0 billion in crypto deposits (Q4 2020)? Silvergate has emerged as a key nexus connecting traditional banks and the digital currency industry. While a small number of mature crypto firms have relationships with the largest banks, most crypto firms rely on Silvergate and other small community banks to settle the US\$ fiat leg of crypto-fiat trades¹⁷.

¹⁶ "Mexico says cryptocurrencies are not money, warns of risk", Reuters, June 28, 2021

¹⁷ "DeFi Protocol Risks: the Paradox of DeFi", Linda Jeng, Georgetown University Law Center, August 6, 2021



[5] Decentralized Finance

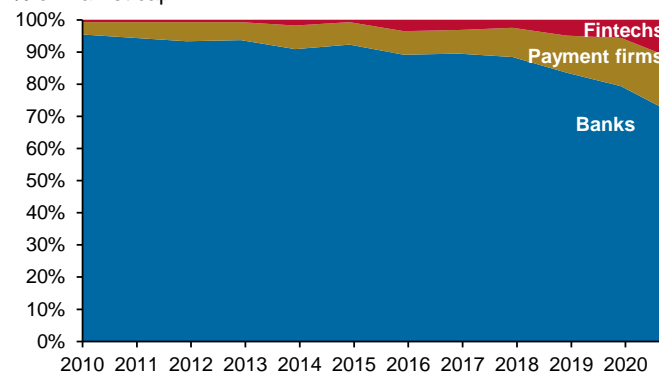
Decentralized Finance (DeFi) refers to activities that disintermediate financial services by migrating them to permission-less blockchains. Its advocates typically see the financial system as rife with inefficiencies, bloated costs and structural inequalities that DeFi can exploit. To be clear, disintermediation of banks is happening on multiple fronts. The non-bank share of US mortgage originations continues to rise, and as shown in the second chart, payment firms and fintech firms continue to take market share away from banks. Paypal's market cap is greater than Goldman Sachs, Morgan Stanley, Citigroup and Amex, and Stripe's latest pre-IPO valuation is over \$100 billion. But the ability of crypto-based blockchains to displace banking activities is a little more complicated, as this section will review.

Nonbank share of mortgage originations



Source: Inside Mortgage Finance, WSJ. June 2021.

Top 500 global banks, payment and fintech firms
% of market cap



Source: The Economist. October 7, 2020.

Around two thirds of DeFi activity currently takes place on the Ethereum network given its ability to host “smart contracts” which encode terms and conditions that are executed on it (the next chart shows the number of smart contracts executed). Ethereum trades not only as a store of value, but also as a token whose value is influenced by the number of people using that blockchain. **This highlights an important difference vs Bitcoin:** once Ethereum completes the migration from Proof of Work to Proof of Stake (see box and page 17), Ethereum token holders will have the opportunity to participate in “staking” (ledger verification) activities which could provide them with a yield on their tokens, as well as possibly sharing in network access “gas” fees. **This income component is the key investment thesis behind many investments in crypto projects on programmable public blockchains using Proof of Stake ledger verification.** Such projects often involve efforts to perform instant settlement, freeing up working capital and reducing back office costs.

Ethereum daily verified contracts

Total verified contracts per day, 7 day avg



Source: Etherscan, JPMAM. February 1, 2022.

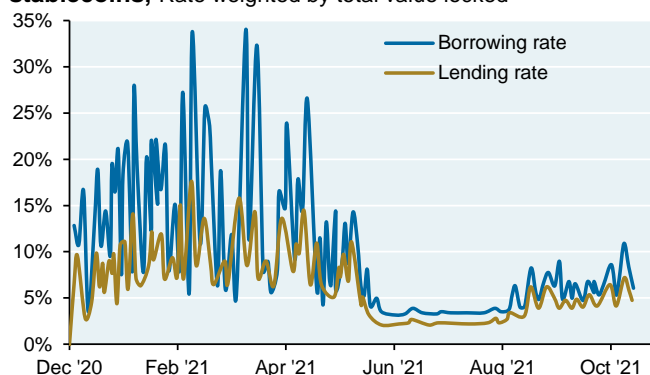
Proof of Work vs Proof of Stake

Blockchains require ledger verification by “validators” who are paid in that blockchain’s native token to do so. Proof of Work involves crypto miners competing to perform ledger verification using energy-intensive computers to solve complex mathematical puzzles. Proof of Stake involves validators simply being selected to perform ledger verification. On the Ethereum blockchain, the selection process will be random but also influenced by the number of tokens owned, leading to centralization of ledger verification activity. Proof of Stake is considered both faster and more scalable than Proof of Work.



Currently there's around \$100 billion "locked up" in DeFi activities. This refers to the amount of crypto collateral deposited in DeFi applications; this measure is imperfect due to double-counting and leverage. While some high yields have been offered by some DeFi lending platforms with temporary incentives¹⁸, CryptoVantage and Coinbase quote current unleveraged DeFi lending yields at 4%-5%. Analysts at Goldman Sachs were able to dig through some complex online data and derive similar borrowing and lending rates for stablecoins on the Aave platform¹⁹. Once more participants joined in the summer of 2021, Aave's rates declined. The largest DeFi protocols (Aave, Uniswap, SushiSwap and Compound) earned over \$2 billion in user fees and spreads in 2021.

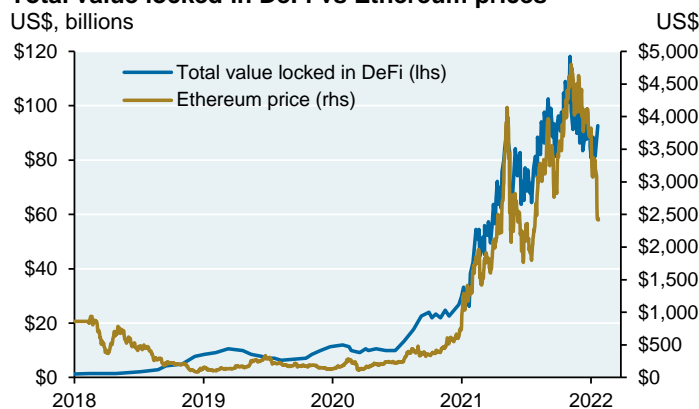
Aave DeFi protocol lending and borrowing rates for stablecoins, Rate weighted by total value locked



Source: Aave, The Graph, GS. October 22, 2021.

Yes, but what kind of lending is actually taking place here? From what we can tell, most DeFi lending is simply over-collateralized crypto loans to other holders of crypto so that the latter can either (a) buy more crypto, or (b) obtain liquidity against appreciated crypto holdings without incurring capital gains taxes. **Either way, it does not appear to be the kind of lending activity that could survive a large sustained decline in crypto prices themselves.** As shown below, there's a close connection between the total value of DeFi lending and Ethereum's price. Like Ripple vs Bitcoin, so many things in the crypto world are correlated to each other.

Total value locked in DeFi vs Ethereum prices



Source: DeFi Pulse. January 25, 2022.

¹⁸ DeFi protocols can become an overnight success by offering temporary incentives that are way above market. One example is **SushiSwap**, whose lending balances rose from a few thousand dollars to one billion dollars almost overnight in September 2020.

¹⁹ "Opportunities and Risks in Decentralized Finance", Zach Pandl and Isabella Rosenberg, Goldman Sachs Economics Research, October 22, 2021

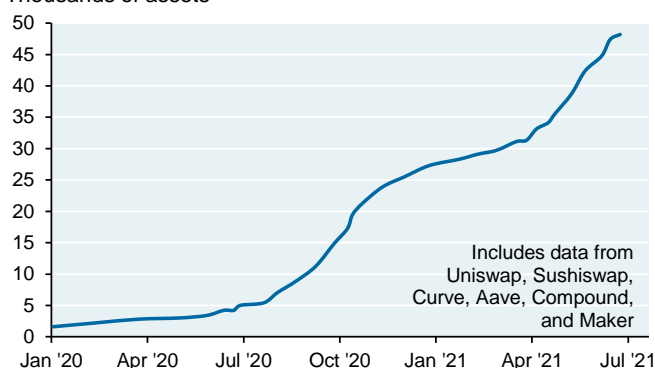


Collateralized lending on blockchains cannot eliminate the presence of bad actors or bad data. Some of its characteristics might terrify participants in traditional collateralized lending pools:

- **Crypto collateral may not be dedicated and assigned solely to the activity against which it is posted.** In other words, crypto collateral can be “rehypothecated” to back multiple activities²⁰. If you don’t remember what that word means, type “rehypothecation” into Google along with the words “financial crisis”
- **Unreliable valuations** of crypto assets posted as collateral. Some protocols do not restrict the kind of crypto assets that can be used as collateral. While a lot of collateral is stablecoins, some is not. There were 50,000 distinct crypto assets accepted as collateral in DeFi applications last July. Coin Metrics concedes that pricing data in DeFi liquidity pools on certain assets can be “manipulated and ultimately undermine value measurements”, and that “it is possible to use on-chain exchanges to estimate their current price, but there’s no guarantee that they are traded with enough frequency to give accurate prices”²¹
- **DeFi markets are NOT trustless.** Participants in DeFi markets inherently trust the programmers of the protocols they engage with, *and* other protocols linked to those protocols. In other words, seemingly distant protocols can cause problems such as fraud. DeFi fraud exceeded \$10.5 billion in 2021, up from \$1.5 billion in 2020²². Main DeFi vulnerabilities are (a) programming design errors that hackers exploit, and (b) theft from DeFi founders and developers who turned out to be crypto-criminals. As much as you might try, you cannot prevent humans from defrauding and stealing from each other, even on the blockchain. There’s also no DeFi-FDIC.

Distinct assets used as collateral in DeFi

Thousands of assets



Source: Coinmetrics. July 2021.

Smart contracts may eliminate the need for lawyers, banks, brokers and exchanges involved in traditional finance. However, some smart contracts will still depend on external data sources to function. For example: if a smart contract is a derivative that depends on the price of an underlying asset, the smart contract might have to pull that from a Bloomberg feed or some other live source. This has led to “oracle attacks” in which bad actors attempt to influence a reference price to create riskless arbitrage or trigger liquidations.

²⁰ “Rehypothecation: the myth of locked collateral”, Coin Metrics, July 2, 2021

²¹ “Collateral type variety: the myth of Value”, Coin Metrics, July 27, 2021

²² “Decentralized Finance Fraud in 2021 Is Up 600% Over 2020, Topping \$10.5 Billion, Research Finds”, The Ascent.com, November 25, 2021

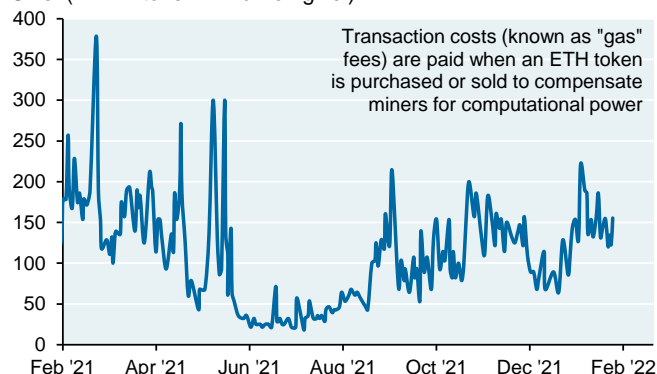


What's next for Ethereum and other programmable public blockchains?

The Ethereum network can be an expensive place to transact, and Ethereum doesn't communicate well with other blockchains. The first chart below shows the transaction "gas" fees that users pay to access the network. Since the beginning of 2021, Ethereum's competitors have been gaining ground as shown in the second chart.

Ethereum average daily transaction costs

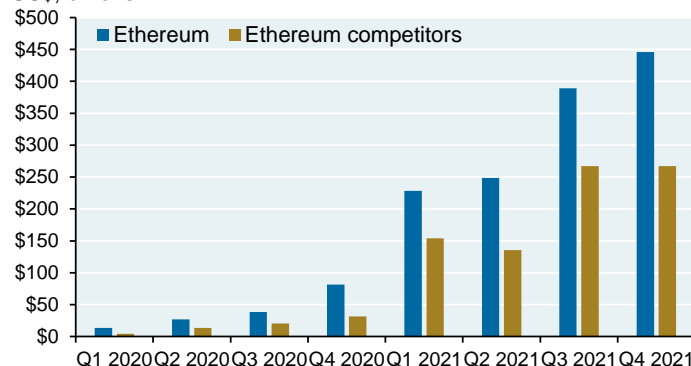
Gwei (1 ETH token = 1 billion gwei)



Source: ycharts.com. February 1, 2022.

Ethereum vs Ethereum competitors market cap

US\$, billions



Source: CoinMarketCap.com, J.P. Morgan. January 7, 2022.

Why might some Ethereum competitors be thriving²³? Financial ledger applications and related protocols are slow; see transaction processing speeds in the table. Some of Ethereum's competitors aim to improve upon it, such as Solana whose developers claim 50,000 transactions per second. Other competitors like Cardano aim to be more scalable, while Pokadot aims to be more interoperable. There's an endless list of others, including Avalanche, Hedera and Algorand. Like anything else in the venture capital world, only a few will survive; figuring out the likely winners early on could be a very rewarding endeavor.

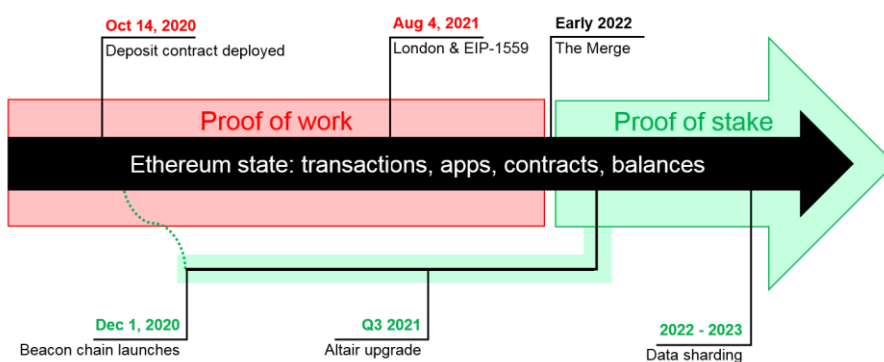
The Ethereum upgrade scheduled for 2022 entails a shift from Proof-of-Work to Proof-of-Stake and should improve its scalability, speed, cost and energy efficiency. The image below illustrates how this transition may occur. Some contacts tell us they are already experiencing 100x-1000x improvements in transaction costs and latency from something called "zero knowledge proof" Layer-2 offerings on the Ethereum blockchain. One apparent pre-requisite for blockchain professionals: use as much obtuse jargon as possible.

Processing speeds of financial infrastructures

Currency	Transactions per second
Bitcoin	7
Ethereum	15
Paypal	56,000
VISA	45,000
Ripple	1,500
EOS	8,000

Source: Zorba et al (Hacettepe University). November 2020.

Ethereum's projected upgrade path



Source: Honeycomb Digital. 2022.

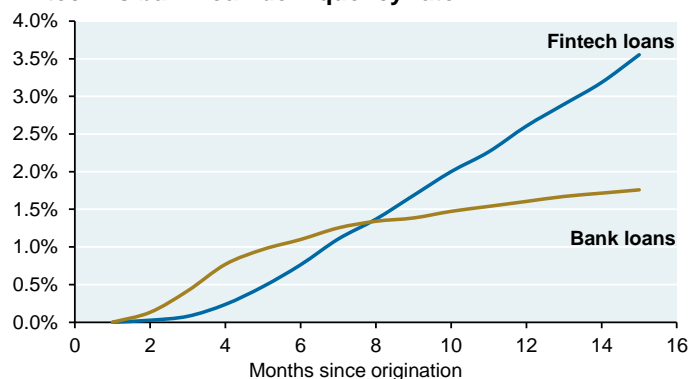
²³ For more on Ethereum competitors see pages 24-30 in "Cryptocurrency Markets: Crypto-101 and the State of the Crypto Markets", JP Morgan North America Equity Research, Ken Worthington, January 7, 2022



Many DeFi advocates anticipate a future world of peer-to-peer *uncollateralized* lending on blockchains, allowing crypto holders to lend and cut out fees charged by banks for credit scoring, monitoring and payment. **Good luck with that.** Fintech lending holds some clues since the industry uses AI tools to make uncollateralized lending decisions, and that's how peer-to-peer crypto lending applications might work as well. **Recent data on Fintech shows higher loan delinquency rates than traditional bank loans**, mostly a function of weaker underwriting standards. See Lending Club, whose stock has declined by 65% from its recent peak despite the use of AI and machine learning credit models derived from 150 billion cells of data.

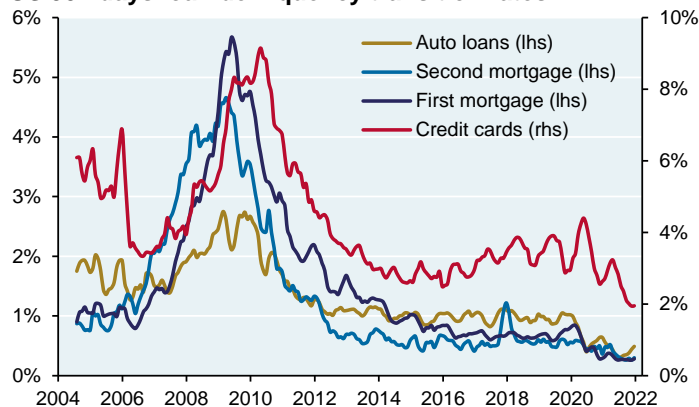
Remember: **Fintech lenders have primarily been operating at a time of rising household incomes, lots of gov't stimulus and very low household delinquency rates.** The real test will occur next time there's a recession that is unaccompanied by supplemental income payments, foreclosure moratoria and PPP loans. For an industry whose primary competitive advantage is **speed**²⁴ rather than access or cost, that's the real test.

Fintech vs bank loan delinquency rate



Source: "Fintech Borrowers: Lax-Screening or Cream-Skimming", Di Maggio (HBS) & Yao. 2020.

US 90+ days loan delinquency transition rates



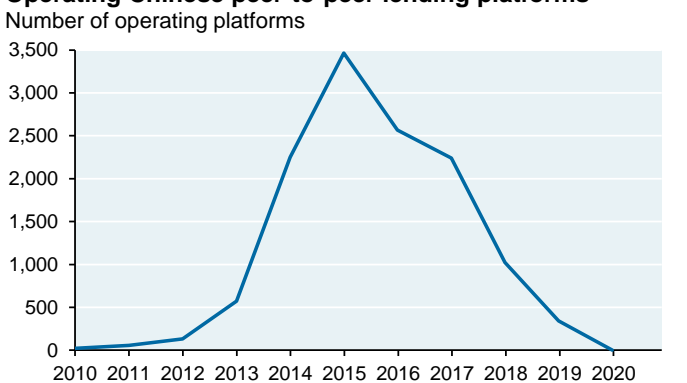
Source: S&P Dow Jones Indices, Experian. December 2021.

US home foreclosures



Source: Bloomberg, Federal Reserve. Q3 2021.

Operating Chinese peer-to-peer lending platforms



Source: "The Fall of Online P2P Lending in China", Huang and Wang (CUHK). January 2021.

China is a reminder of how peer-to-peer lending manias can go off the rails. Chinese P2P lenders promised returns of 8%-12% to depositors compared to 2.75% on 3 year bank deposits. High default rates and increased regulation led to the demise of Chinese P2P lending platforms, which at their peak in 2017 were extending 2.8 trillion RMB in credit. Some platforms ended up absconding with the cash, and many had difficulty returning money to lenders. By August 2020, Chinese retail investors had lost \$115 billion on their P2P activities.

²⁴ **Speed kills?** In a survey by "buy now pay later" lender Klarna, **50% of users** said that it's too much trouble to type in a bank account number or social security number to qualify for a loan (!!). Firms active on Alibaba's platform can fill out a credit application in 3 minutes, the approval takes 1 second and the process involves zero human interaction. And from Square: "You'll usually know if you're approved right away!"

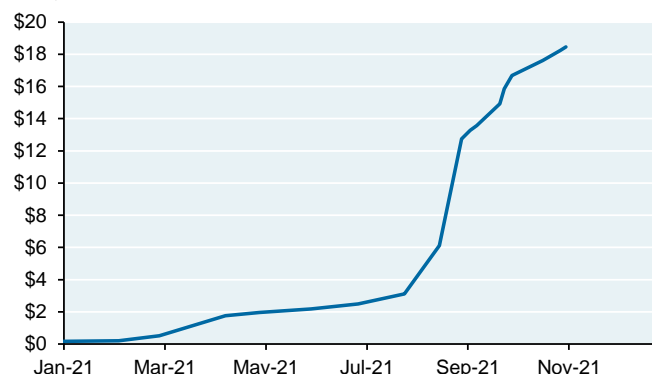


[6] Non-fungible tokens and the art market

DeFi uses tokens that are fungible and divisible across users. Non-fungible, indivisible tokens (NFTs) are a type of unique digital certificate that is registered on a blockchain to record ownership of any asset. They're best known for digital collectibles in art²⁵ and music, and also in gaming. The appeal of NFTs include the ability of artists to sell their work to buyers in a global market, and the ability to retain ownership rights over their own works as well as resale and royalty rights. As you are all aware by now, the NFT art market exploded in 2021: transaction volumes were reported to have hit \$20 billion last year. That compares with a global art market whose sales have fluctuated from \$50 to \$70 billion per year over the last decade.

2021 cumulative NFT art sales

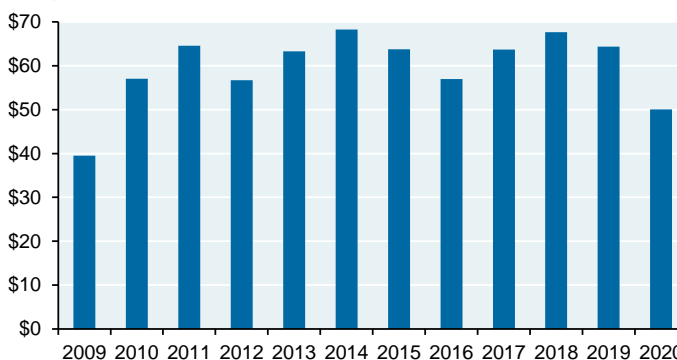
US\$, billions



Source: cointelegraph.com. November 2021.

Global art market sales

US\$, billions

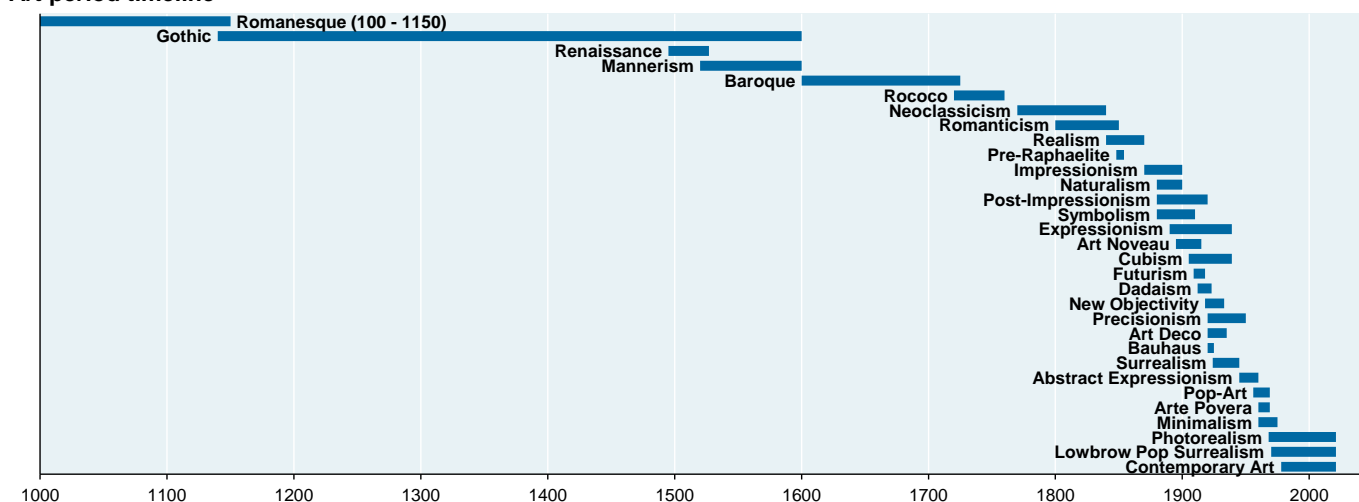


Source: Arts Economics. 2021.

Many of you will be tempted to dismiss the NFT market as a place of rampant and misguided speculation.

You may also look at works from top NFT sellers such as Mad Dog Jones, Pak and Beeple (now the third most expensive living artist behind Koons and Hockney) and conclude that they barely qualify as art at all. Oddly enough, I wouldn't dismiss the NFT art phenomenon that quickly. For many centuries Romanesque, Gothic and Baroque styles dominated the art scene among collectors. But look what happened in the twentieth century: new art movements rose to prominence much more frequently, and many of these works retained substantial value for decades after that. In other words, tastes and cultural preferences evolve more quickly now.

Art period timeline



Source: Art in Context. September 2021.

²⁵ **An NFT is only a marker to digital art.** Given the limited capacity of a token on most public blockchains, an NFT points to a location on the cloud where the actual art sits. If that cloud service failed, the NFT's value could be compromised.



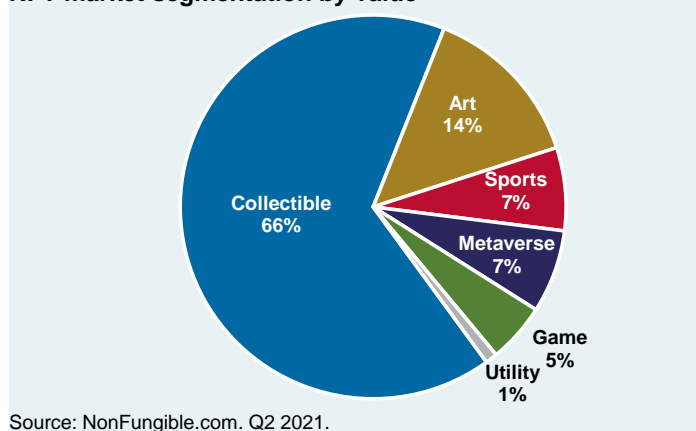
I don't really understand the appeal of digital art. Am I supposed to pester friends and family into looking at it on my phone? However, **I don't get some of the most expensive physical art of the last half century either;** I find works by Cindy Sherman, Damien Hirst and Christopher Wool to be inaccessible and boring. And that's the point; just because you might not appreciate the artistic merit of Bored Ape Yacht Club NFTs, that doesn't mean others won't. Between Feb 2020 and April 2021, the curated NFT art platform Nifty Gateway offered 145,000 works for sale, and sold 95% of them at an average price of \$1,200.

The greater the interest in NFTs that reside on the Ethereum network, the more Ethereum tokens that NFT purchasers have to acquire to own them. As a result, the NFT art and collectible market is a use case driving some investors to accumulate Ethereum tokens. I'm just not sure how they get comfortable that the preferred domicile for NFTs won't change to some other blockchain venue in the future. There's also the risk that at some point NFTs could be bought and sold on normal payment rails, which would separate the notion of "on-chain" data and digital assets (i.e., no need for Ethereum).

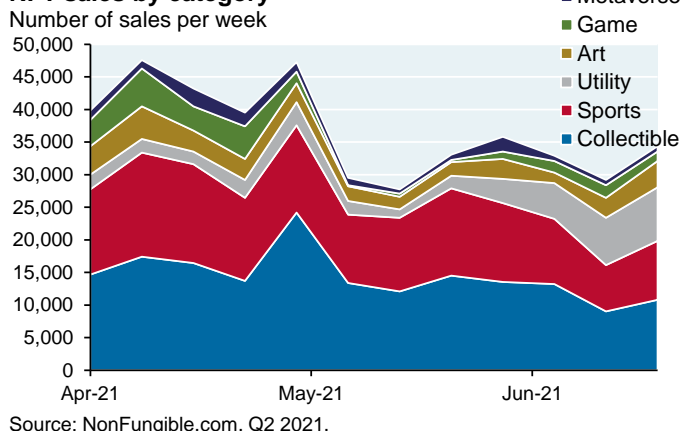
One Achilles heel of the NFT market: just as Bitcoin ownership is **highly concentrated**, the same is true for the NFT art market. A study of the SuperRare NFT art platform revealed that just four collectors owned most of its works with only three degrees of separation between them and the 16,000 works of art they collected²⁶. This is a very high degree of insularity, even for standards of the art market. The study also found that the secondary market was even more concentrated than the primary market. **More evidence of NFT art concentration:** an analysis of transactions between April and September 2021 found that the top 17% of NFT art owners controlled 81% of them²⁷. In the long run, concentration is rarely a good thing for investors.

To be clear, art is just a subset of the broader NFT market. The largest segment by value is a category called "collectibles" which mostly refers to personal avatars, some of which are algorithmically generated. Examples include CryptoPunks and Meebits that can be used in virtual reality environments. While it might seem strange that young people are willing to invest so much money in virtual status symbols, prior generations certainly spend a lot of money on physical status symbols of their own. The cost of women's high-end handbags (i.e., Hermes Birkin bags²⁸) is more disturbing to me than the price of a scarce virtual avatar. Gaming is described by some as an important use case for NFTs, but I am frankly too exhausted at this point to go into more detail.

NFT market segmentation by value



NFT sales by category



²⁶ "The art market often works in in secret. Here's a look inside", Albert-Laszlo Barabasi, NYT, May 7, 2021

²⁷ "An analysis of 7,020,950 NFT transactions on the Ethereum blockchain", Moonstream, October 22, 2021

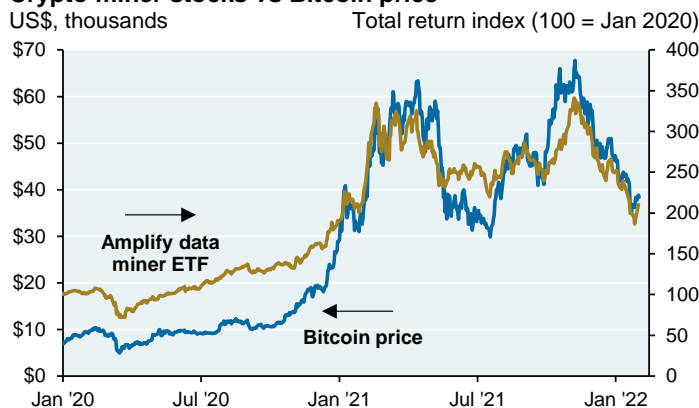
²⁸ Birkin bags can cost \$40,000 or more, although some can be found on the resale market for between \$12,000 and \$18,000. A study released in 2017 found that these bags appreciated by 14% per year over the last 35 years (Business Insider, June 30, 2021). Birkin bag supply is limited and controlled...**just like many digital avatars.**



[7] Financial services crypto and blockchain activities

There's a lot of crypto and blockchain activity going on at banks, asset managers, transaction processors and custodial firms. Let's start by describing what they are NOT trying to do: replicate the volatility of **crypto mining businesses**. As shown below, an ETF of crypto mining stocks looks just like another version of Bitcoin, a risk/return profile which is of little interest to large financial services firms.

Crypto miner stocks vs Bitcoin price



Source: Bloomberg, JPMAM. February 2, 2022.

Let's separate crypto and blockchain activities of financial services firms into three major categories.

Crypto trading accounts and custody

Goldman, JP Morgan, Morgan Stanley, State Street, US Bank and Fidelity are offering or exploring the ability to offer customers tools to trade cryptocurrencies, cash-settled futures and derivatives linked to them, and/or custodial services. Deutsche Bank is working on a trading and token issuance platform, and Susquehanna trades Bitcoin, Ether, Bitcoin Cash and Bitcoin futures its client base. The CME launched Bitcoin futures trading in 2017 and have added Ether futures. **The common denominator: very little principal risk in cryptocurrency**, with the goal of profiting from increased adoption, trading, hedging and lending by their customers.

Payments channels

Visa announced the launch of a Universal Payments Channel to support transactions between stablecoins and central bank digital currencies, enabling blockchain interoperability. Reading between the lines:

- Most large merchants incur an average of 0.78% interchange fees on debit cards²⁹ and 2.00% interchange fees on credit cards. If their customers were to use crypto instead, these interchange fees currently paid by merchants to issuing banks would go away. Visa is trying to ensure that it would still earn its 0.03%-0.18% card network fee in this scenario
- Since merchants are the ones saving money, customers might need incentives to use crypto instead. This is particularly true for credit card users who value points and rewards they receive. So, what would be the cost to merchants of building and integrating a crypto ecosystem, plus the cost of consumer incentives and a system for detecting fraud and handling chargebacks? Would such costs be well below the interchange fees merchants are now paying to banks? I'm not sure, but that window looks pretty tight
- **Since the most likely token for this use case is a stablecoin, there are few crypto valuation implications to think about.** Another example of where crypto adoption <> crypto appreciation

²⁹ This is a spending weighted average of 0.56% interchange fees charged by the largest regulated banks whose interchange fees are capped, and 1.18% charged by smaller banks whose fees are not capped. These averages are based on the average debit card purchase of \$40. Source: Federal Reserve.



Blockchain ledger systems designed to reduce processing costs or create new functionality

To reiterate, **blockchain adoption often has nothing to do with crypto valuations**. Let me use an example from our own firm to explain why. JP Morgan built a repo system on a blockchain with more than \$200 billion in transactions cleared to date. Other broker-dealers participate and more are joining. The important things to keep in mind here:

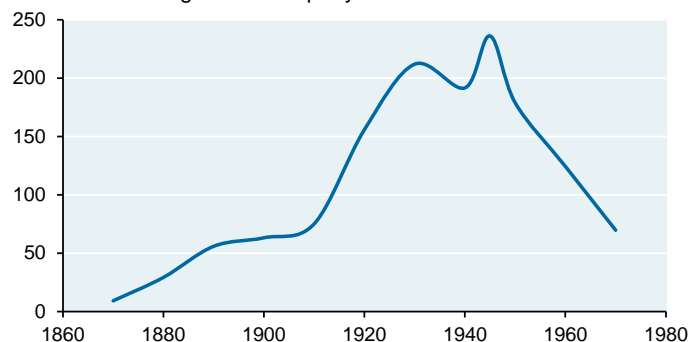
- This is a **permissioned, private blockchain**. In other words, it is not a public blockchain where anyone can participate and/or analyze the transactions taking place
- This permissioned, closed system is based on trust and **does not require any mechanism to reward miners for verifying ledger transactions**. Verification tasks are performed via software built onto the blockchain
- The unit of information exchange is a JP Morgan Coin whose value is unchanged irrespective of how often the network is used
- The primary purpose of this particular blockchain is not to save costs, but to add functionality that did not exist before: the ability to execute intraday repo transactions instead of having to execute them overnight
- **As a result, adoption of a permissioned, private blockchain using internally created stablecoins does not imply or result in increased value for any token anywhere**

There are also examples outside financial services: Walmart uses the blockchain to digitize its food supply chain and ensure safety of merchandise. Alibaba uses the blockchain to track e-commerce order movements. Real estate companies might adopt the blockchain to automate routine tasks and listings, and insurers might adopt the blockchain to improve fraud detection and recordkeeping. **But these examples do not validate crypto use cases, they validate blockchain use cases**. It remains to be seen if decentralized ledgers are the cost saving gold mines they are described to be. Even if they are, the value of permissioned, private blockchains would accrue to shareholders of companies using them, and also to IBM, Oracle and Microsoft and other enterprise blockchain vendors that design them; but not to any token holders.

For these firms, the blockchain is simply another cost-saving or productivity tool in the long history of such innovations. Carrier pigeons were used in the Middle Ages to transmit data related to commerce and navigation. The telegraph began to replace carrier pigeons in the 1830's, transmitting electrical signals over wire laid between stations; although as shown below, carrier pigeons were still used by soldiers during the Second World War. The telephone, fax and internet followed the telegraph, each obviating its predecessor. During each cycle, most incumbent *providers* of each service disappeared but incumbent *users* of these services simply switched to the next one that came along. JP Morgan, Walmart and Alibaba are examples of the latter.

The life cycle of the Telegraph

Millions of messages handled per year



Source: "Historical Statistics of the United States", "Report of the Superintendent of the Census for December 1, 1852". 2018.

British soldiers in the south of England train a carrier pigeon to deliver messages during World War II, August 1940



Source: FPG/Hulton Archives/Getty Images

**[8] Rebuttals to this piece**

I circulated this piece to a few people involved in the crypto and blockchain venture capital universe for their thoughts. Here are their unedited anonymous responses.

Not enough discussion of future income streams associated with crypto

Most people are unaware of the utility that certain cryptocurrencies possess. The ability of some blockchains to solve real economic and commercial problems through blockchain distributed ledger technology will convince people that there is a fundamental, rather than a speculative, value to cryptocurrencies. As newer blockchains move from Proof-of-Work to Proof-Of-Stake consensus mechanisms, the networks behind these cryptos will provide an income component in that the revenues the networks derive from fees will be proportionally spread to the coin holders themselves and thereby making the economics of these crypto projects similar to those of corporations. Also: blockchain projects are not just being developed for financial services, but for almost every industry in the S&P 500, including energy, retailing, data management, real estate and healthcare.

This piece is the equivalent of judging the value of the internet in 1995

The innovation around human-scale applications has just started. Judging the Internet in 1993-1995 would have missed at least 95% of the market value still to come: the idea that a search engine could be worth \$1 trillion, a “cloud computer”, a global scale social network, etc. I think part of technology isn’t to simply do what was being done before better, but to create wholly new experiences previously unimaginable prior to these disruptions.

Remember the electricity wars of the 1800’s

The first stage of any innovation cycle is development of infrastructure. The high value applications come later. That’s what happened during the electricity wars when future use cases were vastly underestimated, even by the likes of Junius Spencer Morgan (father of JP Morgan) who thought electricity was a fad and that kerosene lamps worked just fine. The infrastructure we are building today will transform many parts of the global financial system over the next 25 years.

Too US-centric

Too much focus on the developed world. In the developing world, financial institutions are less well organized (i.e., less able to enlist lobbyists and politicians to defend existing business lines against fintech and crypto competitors), and they pass along higher costs of capital and charge more for financial services (more exposed to innovation). Emerging economies are where a lot of the most profitable crypto use cases will emerge.

No discussion of generational wealth transfer and changing investment preferences

While the piece does a good job comparing gold and bitcoin, it misses perhaps the largest catalyst for money moving out of gold and into bitcoin as a store of value: generational wealth transfer. In the U.S. alone, \$70 trillion will be handed down from Boomers to Gen X and Millennials over the next 20 years. It is not unreasonable to expect that a disproportionately large percentage of what was allocated by Boomers to historical store of value investments – such as gold, art and real estate – will find its way into bitcoin once that money is transferred to the younger generation.

Not enough discussion about what the future might look like

It is difficult to predict the evolution of Web3 and Public blockchains. Having the ability to transact P2P, across the world, in real time with a low cost would be beneficial to all. However, it is too early to say whether public blockchains will achieve that outcome given how nascent the technology is and how fragmented regulatory and monetary frameworks are across the world. We are in the Napster era of crypto; you can see the promise but it is clunky and not really in the clear from a regulatory perspective. It is hard to say what the Spotify of crypto and public blockchain may look like one day.



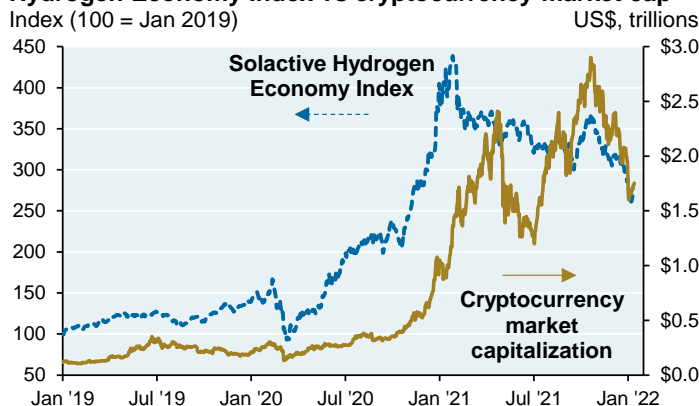
[9] Conclusions: The Maltese Falcoin

There are investment choices in the world of innovation: genetic medicine, the Metaverse, robotics, renewable energy, crypto/blockchain, etc. Each is said to be transformational by its true believers. Regarding advocates and their passion, crypto use cases remind me of debates on the hydrogen economy. There are examples of hydrogen projects, but what will its scale ultimately be? Which companies will actually make money and how many will go to zero? Are some valuations way ahead of themselves, setting investors up for disappointment?

Some hydrogen use cases make sense³⁰ but energy investors are pricing in a lot more than that, and **that's how I feel about crypto valuations too**. Some crypto use cases will endure but valuations assume broader and faster adoption. I'm tempted by the store of value thesis given the degradation of money but have no crypto valuation tools to time my investment, and its volatility and market concentration are hard to manage. Remittances and permissioned, private blockchains with little to no cryptocurrency impact are the use cases that seem most likely to survive in the world I inhabit. The success of permissionless public blockchains which could yield income for token holders is the big question. It is the most coherent argument I came across while working on this project, but: the higher the access fees, the higher the impediments for users who would migrate to the blockchain to reduce costs in the first place. I don't know how that tension gets resolved.

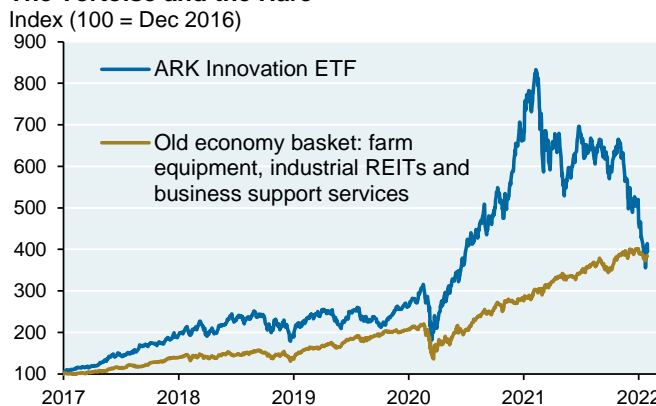
The bold visions on the rebuttals page are worth thinking about, but there's both a time *and* a price for innovation. As shown below, one widely cited innovation ETF has now converged with a decidedly "old economy" basket of agricultural farm equipment, business support services (uniforms, mops and cleaning supplies) and industrial REITs. While aggregate crypto valuations have declined by one trillion dollars from their peak, I think the price discovery process is still ongoing.

Hydrogen Economy Index vs cryptocurrency market cap



Source: Bloomberg, TradingView, JPMAM. February 2, 2022.

The Tortoise and the Hare



Source: Bloomberg, JPMAM. February 2, 2022.

³⁰ **Hydrogen use cases:** commercial back-up power in remote locations where it's too expensive to extend the grid and which rely on diesel generators; non-electrified residential and commercial rail; and maybe one day in the distant future, primary steel production using hydrogen as a reducing agent instead of carbon. There's excitement about new shipping engines that can be powered via liquid ammonia instead of heavy and light fuel oil. However: the round-trip efficiency of converting liquid ammonia made from renewable "green" hydrogen into power via fuel cells may be just 11%-19%.



In the 1941 movie *The Maltese Falcon*, Mary Astor and Sydney Greenstreet try desperately to obtain the long-lost statue of a golden falcon encrusted with rare jewels, produced in the 1500's as tribute to Charles V of Spain. They finally get their hands on the statue, but the one they obtain is a fake. Astor hired detective Humphrey Bogart to protect her, but Astor had also secretly killed Bogart's partner. At the end, Bogart decides to turn Astor in to the police despite having fallen in love with her. She begs him not to, and he replies:

"I won't play the sap for you...I won't because all of me wants to – regardless of consequences – and because you've counted on that with me the same as you counted on that with all the others..."

As it relates to my own money, that's how I feel about cryptocurrency right now. I won't be buying it even though part of me wants to, regardless of consequences, since that's what some crypto holders have been counting on from the beginning. I would take another look if crypto valuations and the companies linked to them plummeted to deeply distressed values. But until then, the most widely discussed use cases and the valuations at which they're trading are still the "stuff that dreams are made of"³¹.

Michael Cembalest, JP Morgan Asset Management



Source: Warner Brothers, AF Archive, Alamy.com

³¹ Bogart's last line in the film, describing what the fight over the statue was all about.

**Appendix A: Regulatory update³²**

- India may prohibit crypto-asset activities of individuals including it as a store of value, unit of account or means of transfer with violations by individuals being possibly sanctioned by arrest. The bill might include non-custodial wallets, an area of the Bitcoin network that is largely unregulated. However, the bill has not yet been presented to the Parliament
- Religious leaders in Indonesia have forbidden Muslims to use Bitcoin and other crypto assets. The MUI deemed crypto assets as having elements of “uncertainty, wagering and harm”
- The Chinese central bank announced that all transactions of crypto-assets were illegal, effectively banning Bitcoin and other crypto-assets entirely
- In November 2021, Sweden proposed an EU wide ban of proof-of work crypto-assets like Bitcoin due to their energy consumption
- The UK’s FCA prohibited activities of crypto-exchange Binance and issued a warning to consumers and on crypto-assets
- In December 2021, Australia introduced draft legislation aiming at licensing crypto-exchanges and activities in crypto-assets
- In the US, the President’s Working Group on Financial Markets, comprising the Secretary of the Treasury and the Heads of all the key US financial regulators, argued for greater regulation and more federal oversight of custodial wallet providers. The SEC also rejected a bitcoin-based exchange traded fund in November 2021 due to concerns of possible price manipulation. However, the SEC recently gave the green light for a first futures-based Bitcoin ETF despite rejecting the Bitcoin spot market ETF. The OCC requires banks to have controls prior to engaging in crypto-assets business and must receive a non-objection.
 - In December 2021, a bipartisan group of US Senators wrote a letter to Treasury Secretary Yellen asking her to restrict tax reporting requirements to digital asset brokers only, and not miners, stakers or other participants in the digital asset food chain, citing the importance of the US remaining a leader in financial innovation
- EU regulation will target intermediaries offering services in crypto-assets, require intermediaries to apply AML/CFT measures and forbids anonymous crypto asset wallet accounts. However, German legislators adopted in July 2021 a “Fondstandortgesetz”, which allows German investment funds for institutional investors (“Spezialfonds”) to invest up to 20 percent into crypto assets

Crypto and blockchain advanced primers

“A primer for blockchain”, Lawrence Trautman and Mason Molesky (George Washington University), January 2019

“Blockchain and other Distributed Ledger Technologies”, Gilles Hilary (Georgetown University), November 2020

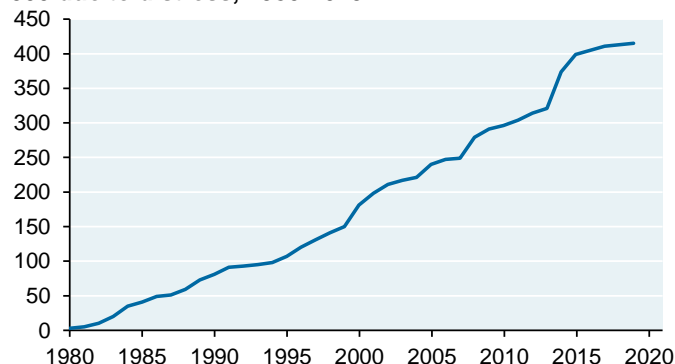
³² *“Bitcoin’s social cost and regulatory responses”*, Bindseil et al, ECB, January 2022



Appendix B: Tracking creative destruction

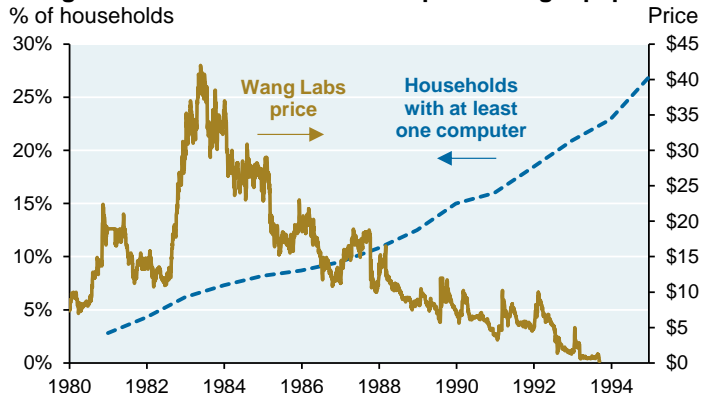
The best time to sell Wang Labs, newspaper stocks, DSL stocks and electronics retailers was when they were still on top; in other words, when the PC, digital advertising, greater demand for data consumption and e-commerce were still in their infancy.

Cumulative number of companies removed from the S&P 500 due to distress, 1980-2019



Source: Bloomberg, Factset, J.P. Morgan Wealth Management. 2019.

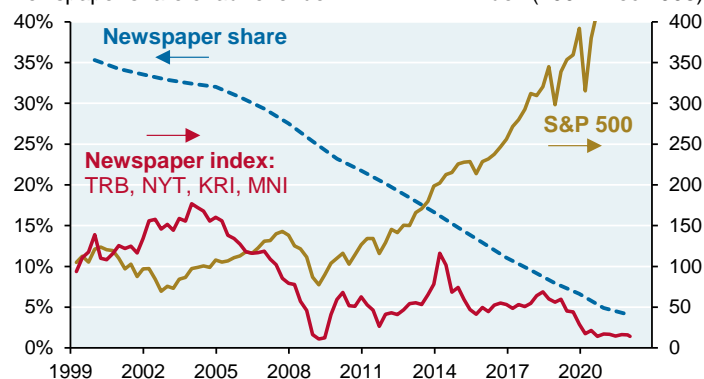
Wang Labs and the demise of data processing equipment



Source: Factset, IBISWorld, JPMAM. 2022.

Newspapers

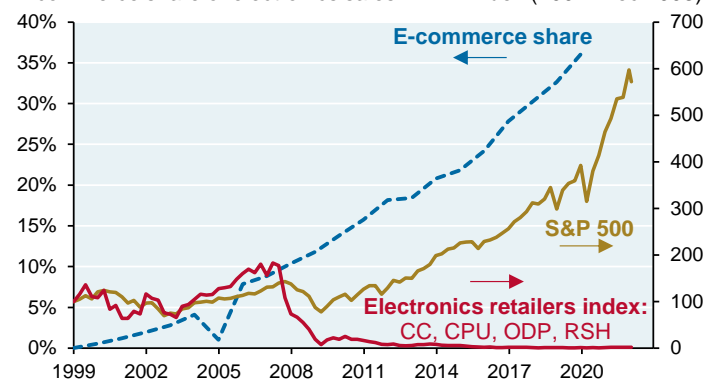
Newspaper share of ad revenue



Source: Bloomberg, GroupM, JPMAM. February 2, 2022.

Electronics retailers

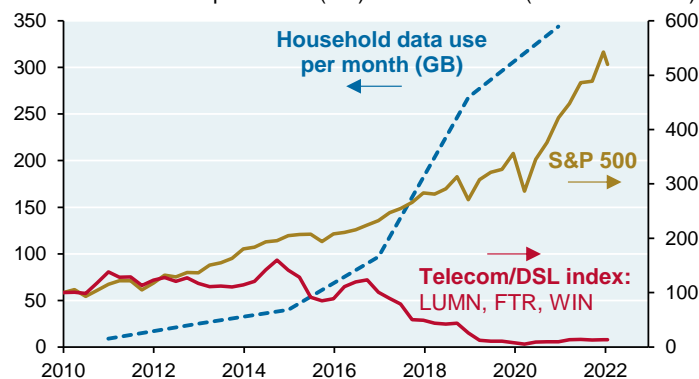
E-commerce share of electronics sales



Source: Bloomberg, Factset, Census, JPMAM. February 2, 2022.

Wireline telecom stocks

Household data use per month (GB)



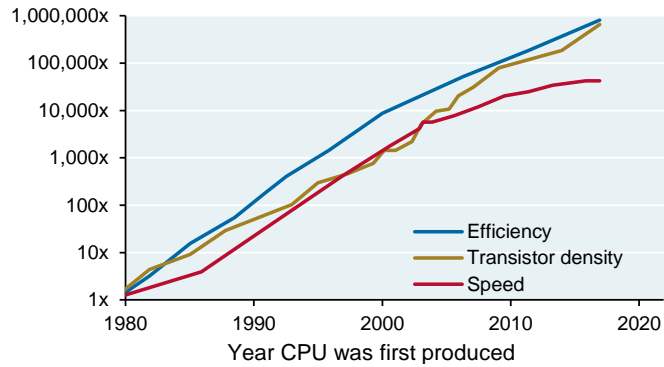
Source: Bloomberg, Factset, FCC, JPMAM. February 2, 2022.



Appendix C: Improvements in the Metaverse

CPU improvement rates

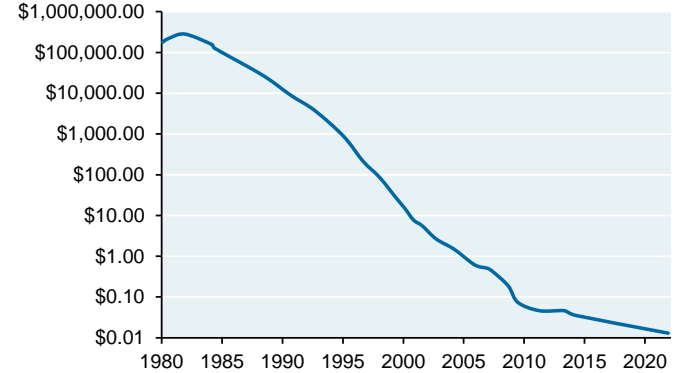
Improvement, multiple of 1979 value (log scale)



Source: Georgetown Center for Security and Emerging Technology. April 2020. Source: AI Impacts, DiskPrices, JPMAM. 2021.

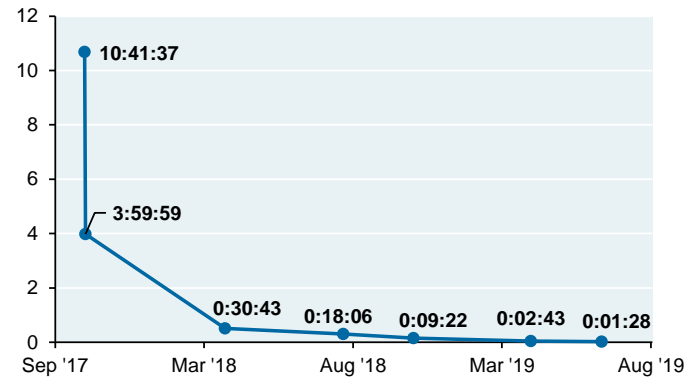
Cost of information storage

US\$, hard drive cost per gigabyte (log scale)



Time to train an AI model to classify images

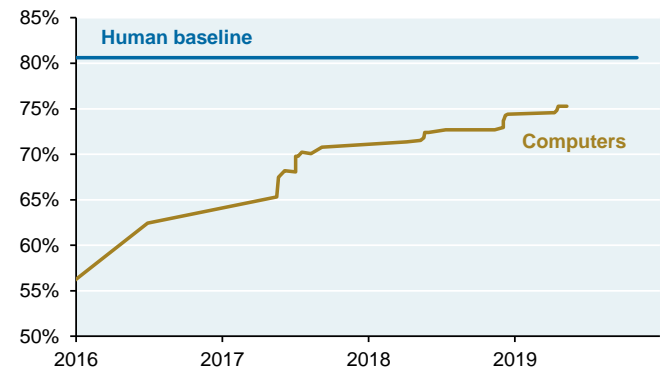
Hours



Source: Stanford Human-Centered Artificial Intelligence Institute. 2019.

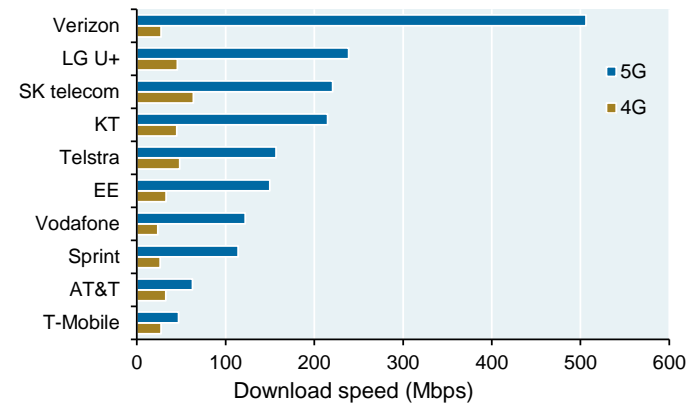
Image identification accuracy vs human baseline

% accuracy



Source: Stanford Human-Centered Artificial Intelligence Institute. 2019.

5G vs 4G: average download speed



Source: Opensignal. April 2020.

**IMPORTANT INFORMATION**

This report uses rigorous security protocols for selected data sourced from Chase credit and debit card transactions to ensure all information is kept confidential and secure. All selected data is highly aggregated and all unique identifiable information, including names, account numbers, addresses, dates of birth, and Social Security Numbers, is removed from the data before the report's author receives it. The data in this report is not representative of Chase's overall credit and debit cardholder population.

The views, opinions and estimates expressed herein constitute Michael Cembalest's judgment based on current market conditions and are subject to change without notice. Information herein may differ from those expressed by other areas of J.P. Morgan. This information in no way constitutes J.P. Morgan Research and should not be treated as such.

The views contained herein are not to be taken as advice or a recommendation to buy or sell any investment in any jurisdiction, nor is it a commitment from J.P. Morgan or any of its subsidiaries to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of production. This material does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, users should make an independent assessment of the legal, regulatory, tax, credit and accounting implications and determine, together with their own professional advisers, if any investment mentioned herein is believed to be suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that investment involves risks, the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yields are not reliable indicators of current and future results.

Non-affiliated entities mentioned are for informational purposes only and should not be construed as an endorsement or sponsorship of J.P. Morgan Chase & Co. or its affiliates.

For J.P. Morgan Asset Management Clients:

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide.

To the extent permitted by applicable law, we may record telephone calls and monitor electronic communications to comply with our legal and regulatory obligations and internal policies. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our privacy policies at <https://am.jpmorgan.com/global/privacy>.

ACCESSIBILITY

For U.S. only: If you are a person with a disability and need additional support in viewing the material, please call us at 1-800-343-1113 for assistance.

This communication is issued by the following entities:

In the United States, by J.P. Morgan Investment Management Inc. or J.P. Morgan Alternative Asset Management, Inc., both regulated by the Securities and Exchange Commission; in Latin America, for intended recipients' use only, by local J.P. Morgan entities, as the case may be.; in Canada, for institutional clients' use only, by JPMorgan Asset Management (Canada) Inc., which is a registered Portfolio Manager and Exempt Market Dealer in all Canadian provinces and territories except the Yukon and is also registered as an Investment Fund Manager in British Columbia, Ontario, Quebec and Newfoundland and Labrador. In the United Kingdom, by JPMorgan Asset Management (UK) Limited, which is authorized and regulated by the Financial Conduct Authority; in other European jurisdictions, by JPMorgan Asset Management (Europe) S.à r.l. In Asia Pacific ("APAC"), by the following issuing entities and in the respective jurisdictions in which they are primarily regulated: JPMorgan Asset Management (Asia Pacific) Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited, each of which is regulated by the Securities and Futures Commission of Hong Kong; JPMorgan Asset Management (Singapore) Limited (Co. Reg. No. 197601586K), which this advertisement or publication has not been reviewed by the Monetary Authority of Singapore; JPMorgan Asset Management (Taiwan) Limited; JPMorgan Asset Management (Japan) Limited, which is a member of the Investment Trusts Association, Japan, the Japan Investment Advisers Association, Type II Financial Instruments Firms Association and the Japan Securities Dealers Association and is regulated by the Financial Services Agency (registration number "Kanto Local Finance Bureau (Financial Instruments Firm) No. 330"); in Australia, to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Commonwealth), by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919). For all other markets in APAC, to intended recipients only.

For J.P. Morgan Private Bank Clients:**ACCESSIBILITY**

J.P. Morgan is committed to making our products and services accessible to meet the financial services needs of all our clients. Please direct any accessibility issues to the Private Bank Client Service Center at 1-866-265-1727.

LEGAL ENTITY, BRAND & REGULATORY INFORMATION

In the United States, bank deposit accounts and related services, such as checking, savings and bank lending, are offered by **JPMorgan Chase Bank, N.A.** Member FDIC. **JPMorgan Chase Bank, N.A.** and its affiliates (collectively "**JPMCB**") offer investment products, which may include bank managed investment accounts and custody, as part of its trust and fiduciary services. Other investment products and services, such as brokerage and advisory accounts, are offered through **J.P. Morgan Securities LLC ("JPMS")**, a member of **FINRA** and **SIPC**. Annuities are made available through Chase Insurance Agency, Inc. (CIA), a licensed insurance agency, doing business as Chase Insurance Agency Services, Inc. in Florida. JPMCB, JPMS and CIA are affiliated companies under the common control of JPM. Products not available in all states. In **Germany**, this material is issued by **J.P. Morgan SE**, with its registered office at Taunustor 1 (TaunusTurm), 60310 Frankfurt am Main, Germany, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB). In **Luxembourg**, this material is issued by **J.P. Morgan SE – Luxembourg Branch**, with registered office at European Bank and Business Centre, 6 route de Treves, L-2633, Senningerberg, Luxembourg, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Luxembourg Branch is also supervised by the Commission de Surveillance du Secteur Financier (CSSF); registered under R.C.S. Luxembourg B255938. In the **United Kingdom**, this material is issued by **J.P. Morgan SE – London Branch**, registered office at 25 Bank Street, Canary Wharf, London E14 5JP, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – London Branch is also supervised by the Financial Conduct Authority and Prudential Regulation Authority. In **Spain**, this material is distributed by **J.P. Morgan SE, Sucursal en España**, with registered office at Paseo de la Castellana, 31, 28046 Madrid, Spain, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE, Sucursal en España is also supervised by the Spanish Securities Market Commission (CNMV); registered with Bank of Spain as a branch of J.P. Morgan SE under code 1567. In **Italy**, this material is distributed by **J.P. Morgan SE – Milan Branch**, with its registered office at Via Cordusio, n.3, Milan 20123, Italy, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Milan Branch is also supervised by Bank of Italy and the Commissione Nazionale per le Società e la Borsa (CONSOB); registered with Bank of Italy as a branch of J.P. Morgan SE



under code 8076; Milan Chamber of Commerce Registered Number: REA MI 2536325. In the **Netherlands**, this material is distributed by **J.P. Morgan SE – Amsterdam Branch**, with registered office at World Trade Centre, Tower B, Strawinskylaan 1135, 1077 XX, Amsterdam, The Netherlands, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Amsterdam Branch is also supervised by De Nederlandsche Bank (DNB) and the Autoriteit Financiële Markten (AFM) in the Netherlands. Registered with the Kamer van Koophandel as a branch of J.P. Morgan SE under registration number 72610220. In **Denmark**, this material is distributed by **J.P. Morgan SE – Copenhagen Branch**, filial af J.P. Morgan SE, Tyskland, with registered office at Kalvebod Brygge 39-41, 1560 København V, Denmark, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Copenhagen Branch, filial af J.P. Morgan SE, Tyskland is also supervised by Finanstilsynet (Danish FSA) and is registered with Finanstilsynet as a branch of J.P. Morgan SE under code 29010. In **Sweden**, this material is distributed by **J.P. Morgan SE – Stockholm Bankfilial**, with registered office at Hamngatan 15, Stockholm, 11147, Sweden, authorized by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) and jointly supervised by the BaFin, the German Central Bank (Deutsche Bundesbank) and the European Central Bank (ECB); J.P. Morgan SE – Stockholm Bankfilial is also supervised by Finansinspektionen (Swedish FSA); registered with Finansinspektionen as a branch of J.P. Morgan SE. In **France**, this material is distributed by **JPMCB, Paris branch**, which is regulated by the French banking authorities Autorité de Contrôle Prudentiel et de Résolution and Autorité des Marchés Financiers. In **Switzerland**, this material is distributed by **J.P. Morgan (Suisse) SA**, with registered address at rue de la Confédération, 8, 1211, Geneva, Switzerland, which is authorised and supervised by the Swiss Financial Market Supervisory Authority (FINMA), as a bank and a securities dealer in Switzerland. Please consult the following link to obtain information regarding J.P. Morgan's EMEA data protection policy: <https://www.jpmmorgan.com/privacy>.

In **Hong Kong**, this material is distributed by **JPMCB, Hong Kong branch**. JPMCB, Hong Kong branch is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission of Hong Kong. In Hong Kong, we will cease to use your personal data for our marketing purposes without charge if you so request. In **Singapore**, this material is distributed by **JPMCB, Singapore branch**. JPMCB, Singapore branch is regulated by the Monetary Authority of Singapore. Dealing and advisory services and discretionary investment management services are provided to you by JPMCB, Hong Kong/Singapore branch (as notified to you). Banking and custody services are provided to you by JPMCB Singapore Branch. The contents of this document have not been reviewed by any regulatory authority in Hong Kong, Singapore or any other jurisdictions. You are advised to exercise caution in relation to this document. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. For materials which constitute product advertisement under the Securities and Futures Act and the Financial Advisers Act, this advertisement has not been reviewed by the Monetary Authority of Singapore. JPMorgan Chase Bank, N.A., a national banking association chartered under the laws of the United States, and as a body corporate, its shareholder's liability is limited.

With respect to countries in **Latin America**, the distribution of this material may be restricted in certain jurisdictions. We may offer and/or sell to you securities or other financial instruments which may not be registered under, and are not the subject of a public offering under, the securities or other financial regulatory laws of your home country. Such securities or instruments are offered and/or sold to you on a private basis only. Any communication by us to you regarding such securities or instruments, including without limitation the delivery of a prospectus, term sheet or other offering document, is not intended by us as an offer to sell or a solicitation of an offer to buy any securities or instruments in any jurisdiction in which such an offer or a solicitation is unlawful. Furthermore, such securities or instruments may be subject to certain regulatory and/or contractual restrictions on subsequent transfer by you, and you are solely responsible for ascertaining and complying with such restrictions. To the extent this content makes reference to a fund, the Fund may not be publicly offered in any Latin American country, without previous registration of such fund's securities in compliance with the laws of the corresponding jurisdiction. Public offering of any security, including the shares of the Fund, without previous registration at Brazilian Securities and Exchange Commission—CVM is completely prohibited. Some products or services contained in the materials might not be currently provided by the Brazilian and Mexican platforms.

References to "J.P. Morgan" are to JPM, its subsidiaries and affiliates worldwide. "J.P. Morgan Private Bank" is the brand name for the private banking business conducted by JPM. This material is intended for your personal use and should not be circulated to or used by any other person, or duplicated for non-personal use, without our permission. If you have any questions or no longer wish to receive these communications, please contact your J.P. Morgan team.

© 2022 JPMorgan Chase & Co. All rights reserved.

JPMorgan Chase Bank, N.A. (JPMCBNA) (ABN 43 074 112 011/AFS Licence No: 238367) is regulated by the Australian Securities and Investment Commission and the Australian Prudential Regulation Authority. Material provided by JPMCBNA in Australia is to "wholesale clients" only. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Corporations Act 2001 (Cth). Please inform us if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

JPMS is a registered foreign company (overseas) (ARBN 109293610) incorporated in Delaware, U.S.A. Under Australian financial services licensing requirements, carrying on a financial services business in Australia requires a financial service provider, such as J.P. Morgan Securities LLC (JPMS), to hold an Australian Financial Services Licence (AFSL), unless an exemption applies. **JPMS is exempt from the requirement to hold an AFSL under the Corporations Act 2001 (Cth) (Act) in respect of financial services it provides to you, and is regulated by the SEC, FINRA and CFTC under US laws, which differ from Australian laws.** Material provided by JPMS in Australia is to "wholesale clients" only. The information provided in this material is not intended to be, and must not be, distributed or passed on, directly or indirectly, to any other class of persons in Australia. For the purposes of this paragraph the term "wholesale client" has the meaning given in section 761G of the Act. Please inform us immediately if you are not a Wholesale Client now or if you cease to be a Wholesale Client at any time in the future.

This material has not been prepared specifically for Australian investors. It:

- may contain references to dollar amounts which are not Australian dollars;
- may contain financial information which is not prepared in accordance with Australian law or practices;
- may not address risks associated with investment in foreign currency denominated investments; and
- does not address Australian tax issues.

Cryptocurrencies are not a regulated form of currency. They can experience extreme volatility. An investor may lose all of their investment.

JPMorgan Securities LLC does not intermediate, mine, transmit, custody, store, sell, exchange, control, administer, or issue any type of virtual currency, which includes any type of digital unit used as a medium of exchange or a form of digitally stored value.

In the EEA and UK the information contained herein is intended for persons categorized as Professional Client under the applicable client categorization rules. Investments in crypto-currencies and instruments referencing crypto currencies may not be suitable for retail clients in the EEA and UK.

Any companies/products referenced are for informational/factual purposes only, and are not intended as recommendation, endorsement or financial promotion of those referenced companies/products by J.P. Morgan.

In This Issue

2 The SECURE Act 2.0



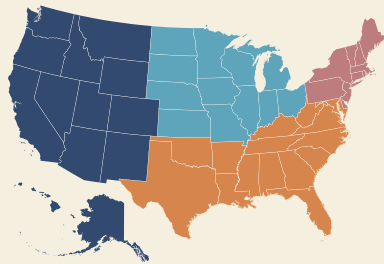
Indications are growing that major legislation to revise tax laws affecting retirement plans and their participants will begin moving in both the House and Senate this spring.

3 Executive Directors Corner



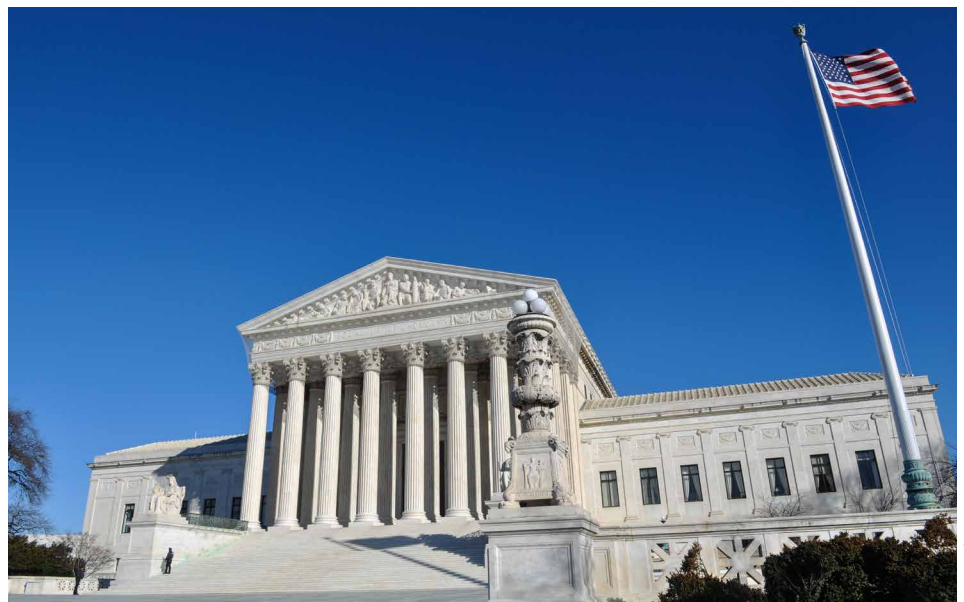
A thorough investigation by the law firm Womble Bond Dickinson found no evidence of criminal conduct related to a calculation error in the \$72.5 billion fund's reported investment figures.

4 Around the Regions



This month, we will highlight New York, Minnesota, Kentucky and Hawaii.

Auto-IRA Programs Are Going Strong as Supreme Court Denies Petition to Strike Down CalSavers



The U.S. Supreme Court on February 28 handed a big victory to auto-IRA programs, declining to review a case that sought to strike down the CalSavers program.

The decision exhausted the options for appeal by the Howard Jarvis Taxpayers Association, which has maintained that CalSavers violates ERISA. One federal court after another disagreed and upheld the program on grounds that it is not governed or pre-empted by ERISA. The Supreme Court's action was a denial of a writ of certiorari, meaning it agrees with the current law.

With the final legal challenge now swept aside, state-run programs to help private-sector workers save for retirement are positioned to thrive and grow. They are already off to an impressive start. Auto-IRA programs have made good on their promise in the five years since Oregon rolled out the first program in 2017, followed by California and Illinois. And the "big three" initiatives are just the tip of the iceberg.

The three active state-run auto-IRA programs have already helped workers sock away \$400 million in 430,000 accounts, according to the Georgetown University Center for

[CONTINUED ON PAGE 5](#)

The SECURE Act 2.0

By Tony Roda



Indications are growing that major legislation to revise tax laws affecting retirement plans and their participants will begin moving in both the House and Senate this spring. The most comprehensive retirement legislation now pending in Congress is commonly known as the SECURE Act 2.0 (H.R. 2954). You will recall that the original SECURE Act was signed into law in 2019. The SECURE Act 2.0 was approved in May 2021 unanimously by the House Ways and Means Committee. It is designed to increase opportunities to save for retirement.

Many of the provisions would affect retirement plans sponsored by state and local governments, such as the following:

- Increase the age trigger for Required Minimum Distributions from defined benefit and defined contribution plans incrementally to age 75 by 2032;
- Allow 403(b) plans to invest in collective investment trusts and join multiple employer plans;
- Provide additional flexibility for plan fiduciaries when seeking to recoup inadvertent retirement plan overpayments;
- Allow employer matching contributions on account of student loan payments for 457(b), 403(b), and 401(k) plans;
- Eliminate the first-day-of-the-month rule for 457(b) plans to

provide more flexibility to participants to make changes in elective deferral amounts;

- Exclude from tax certain disability payments for first responders;
- Increase the annual limits on catch-up contributions to \$10,000 for those age 62-64 for 457(b), 403(b), and 401(k) plans; and
- Require the Roth method for catch-up contributions, i.e. contributions must be made with after-tax dollars, for the plans listed above.

In addition, efforts are being made to attach to the Senate version of the SECURE Act 2.0 modifications to the Healthcare Enhancement for Local Public Safety Act, known as HELPS. This provision, which is found at Internal Revenue Code Section 402(l), allows eligible retired public safety officers to elect to exclude from gross income up to \$3,000 in annual distributions from a governmental retirement plan to pay qualified health care insurance or long-term care premiums, provided the payment of premiums is made directly by the retirement plan to the provider of the health or long-term care plan. HELPS was enacted as part of the Pension Protection Act of 2006.

Senator Sherrod Brown (D-OH) is considering amendments to

[CONTINUED ON PAGE 5](#)



PSERS Internal Investigation Finds No Evidence of Criminal Conduct



This is the way a painstaking internal investigation of the Pennsylvania Public School Employees' Retirement System ends: Not with a bang, but a whimper.

A thorough investigation by the law firm Womble Bond Dickinson found no evidence of criminal conduct related to a calculation error in the \$72.5 billion fund's reported investment figures. It also found no evidence of kickbacks, illegal payments, theft, self-dealing, or false or misleading statements in financial transactions.

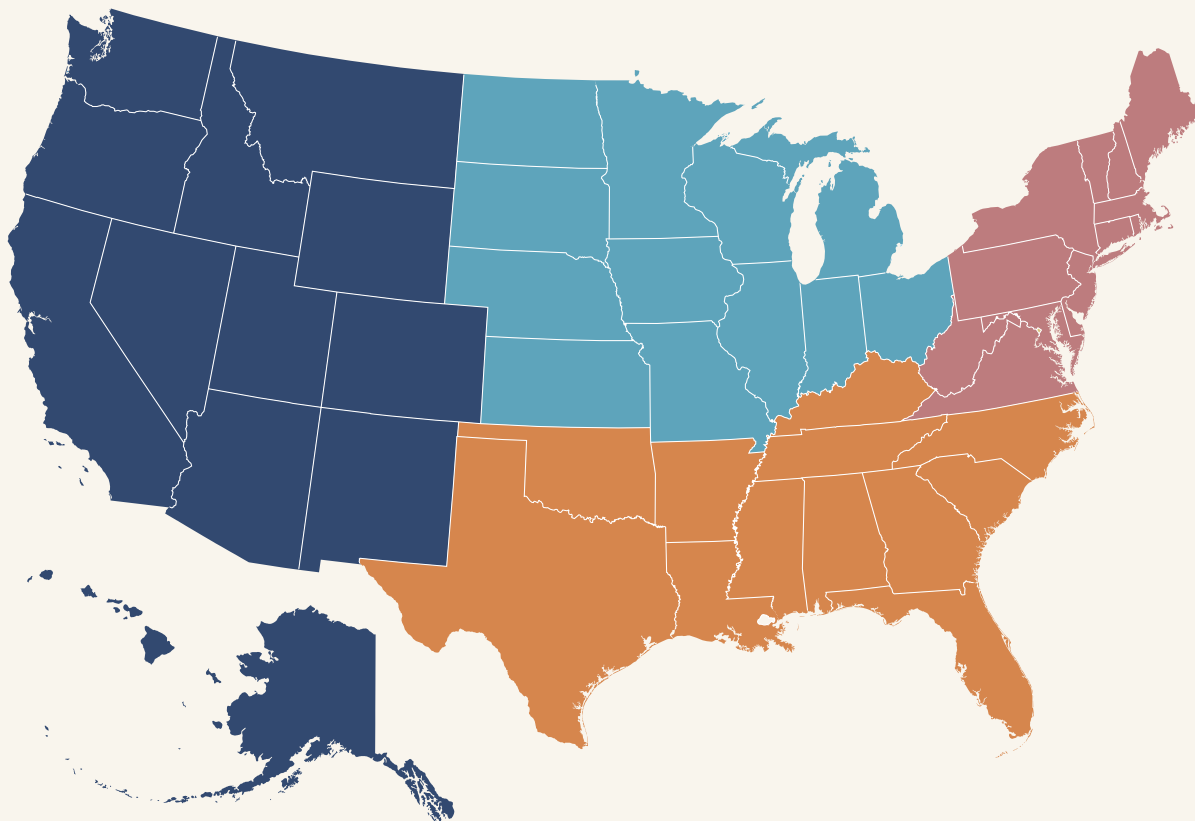
The board undertook the investigation in the spring of 2021 as a steady drumbeat of breathless reporting by a single *Philadelphia Inquirer* investigative reporter got louder and louder. Appointing an investigator to learn all the facts and recommend next steps was the right decision—but it was also costly. The investigation devoured nine months of time, an estimated \$484,000 of resources, and took down several executives whose careers were treated as collateral damage in the political crossfire.

A thorough investigation by the law firm Womble Bond Dickinson found no evidence of criminal conduct related to a calculation error in the \$72.5 billion fund's reported investment figures.

Then it all came to nothing. Critics who played politics with public pensions had their egos stroked, and that was it.

CONTINUED ON PAGE 6

This month, we will highlight New York, Minnesota, Kentucky and Hawaii.



NORTHEAST: New York



Implementation of the New York State Secure Choice Savings Program took an important step forward on January 26 as its governing board held its first meeting.

The board, which is responsible for the general administration and proper operation of the program, approved bylaws. It also voted to delegate authority to develop and implement the program to the Department of Taxation and Finance. Next steps include hiring a consultant to assist with program design, procuring program administration and investment management services, and obtaining legal counsel, said State Treasurer Chris Curtis, who chairs the board.

Governor Kathy Hochul signed the Secure Choice bill into law in October 2021. “Part of ensuring that New Yorkers are financially stable is guaranteeing they have a reliable retirement plan,” said Hochul, who is a Democrat. “This legislation allows all workers to have a sense of relief and security when it comes to retirement.”

Under the Secure Choice law, employers with 10 or more employees that do not offer a workplace retirement savings option will be required to automatically enroll employees in the program unless the employee opts out.

[CONTINUED ON PAGE 7](#)

AUTO-IRA PROGRAMS CONTINUED FROM PAGE 1

Retirement Initiatives, which tracks the state-led programs. And there's more to come. A total of 46 states have either implemented or considered legislation to create retirement savings initiatives for private-sector workers who don't have access to a retirement plan at work.

During 2022, Maryland and Colorado are expected to launch their own programs. Connecticut is moving out of the pilot phase and into a launch. Maine, New Mexico, and Virginia, are starting to build their programs. And Massachusetts, Vermont and Washington have implemented retirement programs that follow a different model than the auto-IRA, but pursue the same goal of helping to enhance the retirement security of American workers.

In California, the threshold for which employees must register with CalSavers if they don't offer a retirement plan is slated to drop to five employees on June 30, 2022, from 50 employees at present. Employers that offer no retirement benefits can be fined if they fail to facilitate their workers' access to CalSavers.

The advantages of saving for retirement via payroll deduction are indisputable. Individuals are 15 times more likely to save if they can do so through a workplace plan, according to AARP, the advocacy group for older Americans.

Automatic signups, which are a feature of auto-IRA plans, improve the odds further. The total average savings rate is 56% higher among 401(k) plans with auto enrollment, according to research from Vanguard.

Employees across California are participating at high levels, with a steady 70% participation rate among all employees offered the chance to join. These workers have an estimated median income of less than \$30,000 per year. Given this and the absence of financial incentives, "this is an incredible demonstration of workers' willingness to save when given an easy, automatic, portable solution implemented via their paycheck," said Katie Selenski, executive director of the CalSavers Retirement Savings Board, in the program's annual report. ♦

THE SECURE ACT 2.0 CONTINUED FROM PAGE 2

the next major retirement bill considered by the Senate Finance Committee that would make three changes to HELPS:

1. Repeal the direct payment requirement, which has become an administrative burden for many state and local retirement systems and has resulted in other systems making the decision to not implement HELPS, thereby resulting in their retired public safety officers being ineligible for the tax benefit;
2. Increase the current annual exclusion amount cap (\$3,000), which has not been increased since 2006 despite significant increases in premiums for health care and long-term care insurance over that 15-year period; and
3. Index the annual exclusion for inflation for future years so that Congress does not have to continually revisit the exclusion cap in subsequent years. Numerous retirement-related provisions in the tax code are indexed for inflation, including annual limits for contributions to 401(k), 457(b), and 403(b) accounts. A complete list of cost-of-living adjustments to dollar limitations for retirement plan benefits and contributions was recently released (see [Treasury Notice 2021-61 \(PDF\)](#)).

All of the potential changes to HELPS have the strong support of the Fraternal Order of Police, National Association of Police

Organizations, the International Association of Fire Fighters, and the public pension community. NCPERS has been active on the HELPS issue and has met with senior pension counsels of the Senate Committee on Finance, the Committee on Health, Education, Labor, and Pensions, and the Senate Select Committee on Aging.

The full House may take action on the SECURE 2.0 legislation by the end of March. The Senate Finance Committee is expected to mark up its version of the bill in late April or May. NCPERS will keep its members apprised of any major developments on the legislation. ♦

[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.

The whole sordid matter was a long exercise in no good deed going unpunished.

PSERS itself had uncovered a minuscule investment return error in 2020. The mistake was so small that had gone undetected for nine years. When PSERS corrected the calculation, the revised investment returns triggered an increase in PSERS' annual employer and employee contribution rates under the state's statutory shared-risk provisions. The rates went up because the recalculation meant that PSERS' investment performance landed on the wrong side of its target rate. The tweak resulted in a decline in the nine-year average return from the previously reported 6.38% to 6.34%, or 2 basis points below the target rate of 6.36%.

That's right, 2 basis points, or 0.02%.

One reason PSERS' performance dipped below the target was because of timing. This is something pension executives understand all too well. The fund's private equity and real estate holdings, unlike some other PSERS investments such as stocks and bonds, closed their 2020 books at the end of March during the depths of the pandemic market. This temporarily pushed performance slightly below the target.

Fund performance can be like the weather: If you don't like it, just wait around for a little while. Ironically, PSERS was still taking heat in the press for underperforming its targets when it announced in August 2021 that its investment return for the fiscal year that ended June 30 totaled 25% and generated \$12 billion. It was one of its biggest investment returns of the last 50 years.

In addition to analyzing the misstatement of investment performance returns, Womble Bond evaluated the purchase and valuation of four Harrisburg properties that PSERS purchased in 2019.

The report "found nothing to indicate that Staff took any actions (or inactions) to not 'play it Straight' with respect to the calculation error." Instead, it said that "a series of unfortunate oversights and a lack of transparency from a key consultant" led to the risk share error.

PSERS Board Chairman Christopher Santa Maria said the findings constituted "an important milestone in the internal investigation." He added, "We are committed to learning from this process and will continue our best efforts to serve our members."

One thing is certain: The public pension community will be talking about this episode for years to come. An inadvertent clerical error was all it took for a rabid reporter to convince his editors that he'd uncovered a scandal.

Of course, an error is no laughing matter, especially when measured against a \$72.5 billion fund. But miscalculations can and do occur, and that doesn't mean that anything nefarious is going on. Competent organizations can make mistakes. When they discover them, they do precisely what PSERS did: They correct their errors, publicly and plainly.

Hopefully the next time a public pension system makes an error, it will get some respect for catching it, disclosing it, and correcting it. ♦

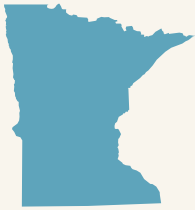


*Annual Conference
& Exhibition*

Including NCPERS University Programs TEDS and NAF

May 21–25
Omni Shoreham Hotel
Washington, D.C.
#ACE22

AROUND THE REGIONS CONTINUED FROM PAGE 4

**MIDWEST:
Minnesota**

Firefighters in the city of Rogers were granted a \$700 increase in their lump sum pension benefit, increasing the annual benefit level for active members to \$4,800 per year of service in 2022.

The benefit is paid upon retirement. City Administrator Steve Sahmer said it is an important tool for attraction and retention, “given the low hourly rate paid to on-call firefighters and the difficulty in recruiting new firefighters.” Rogers, in Hennepin County, is a northwestern suburb of Minneapolis-St. Paul.

The city council granted the increase at the request of the Rogers Fire Relief Association. It also authorized the hiring of three new firefighters, bringing the department up to 39 active members, out of 41 authorized positions.

The increase does not require increased funding from the city, according to Stahmer. He said the city began contributing an additional \$500 per firefighter per year to the pension fund in 2017, “in an effort to elevate the pension relative to the market,” according to a report in the Press & News, a weekly community newspaper. Stahmer noted that the majority of pension funds come from State Fire Aid and from the Fire Relief Association’s investment returns, along with a voluntary contribution from the city totaling \$500 per firefighter.

**SOUTH:
Kentucky**

Kentucky’s retired teachers are stepping up to help close staffing gaps as public schools struggle with higher-than-normal absences due to COVID-19.

An emergency bill that was signed into law last year temporarily gave public school districts greater flexibility to rehire retired teachers by increasing the “critical shortage limit” to 10% of staff, up from 1%. In January, Governor Andy Beshear, a Democrat, signed additional emergency legislation extending the 10% limit through June 30, 2022. The bill also permitted school districts to use federal pandemic funds to expense the costs of rehiring teachers.

Additionally, the legislation keeps a retired teachers’ pensions intact, allowing them to collect their earned benefit while being paid to help the schools through an emergency. According to the Kentucky Public Pensions Authority, more than 120,000 retired members are potentially affected.

Any Kentucky teacher who retired on or before Aug. 1, 2021, is eligible to be re-hired with a Kentucky public school district under SB 25.

CONTINUED ON PAGE 8



NCPERS Accredited Fiduciary (NAF) Program


A trustee accreditation program specifically designed and tailored for public pension governance.

SPRING CLASS
MAY 21 – 22 | WASHINGTON, DC

FALL CLASS
OCTOBER 22 – 23 | NASHVILLE, TN

For more information or to register, visit www.ncpers.org/naf

AROUND THE REGIONS CONTINUED FROM PAGE 7

**WEST:
Hawaii**

Two key committees of the Hawaii Senate have recommended that the full Senate approve legislation to create the Hawaii Retirement Savings Program, an auto-IRA program for private sector workers.

The Ways and Means Committee of the Hawaii Senate on February 23 unanimously approved SB 3289; the Senate Committee on Labor, Culture and the Arts approved it on February 18 on a vote of 3-0, with two absences. SB 3289 would create a state-facilitated payroll deduction plan to help private sector workers who don't have access to a retirement plan at work to save automatically for their post-work years. The proposed enactment date is July 1, 2024.

It is the seventh year in a row that the Hawaii State Legislature has considered such legislation, NCPERS noted in testimony submitted February 8 in support of SB 3289.

"Hawaii's numbers underscore the need to prompt action," Hank Kim, NCPERS executive director and counsel, said in the testimony. "Half of the state's private sector workers lack access to a workplace retirement savings plan, and the situation is worse for employees with companies with fewer than 100 workers." ♦

Don't Miss NCPERS' Social Media



The Voice for Public Pensions



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

Kathy Harrell
President

Dale Chase
First Vice President

James Lemonda
Second Vice President

Carol G. Stukes-Baylor
Secretary

Will Pryor
Treasurer

Daniel Fortuna
Immediate Past President

Executive Board Members

State Employees Classification
*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

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

BRIEFING ROOM

FACT SHEET: President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets

MARCH 09, 2022 • STATEMENTS AND RELEASES

Outlines First Whole-of-Government Strategy to Protect Consumers, Financial Stability, National Security, and Address Climate Risks

Digital assets, including cryptocurrencies, have seen explosive growth in recent years, surpassing a [\\$3 trillion market cap](#) last November and up from \$14 billion just five years prior. Surveys suggest that around 16 percent of adult Americans – approximately 40 million people – have invested in, traded, or used cryptocurrencies. Over 100 countries are exploring or piloting Central Bank Digital Currencies (CBDCs), a digital form of a country's sovereign currency.

The rise in digital assets creates an opportunity to reinforce American leadership in the global financial system and at the technological frontier, but also has substantial implications for consumer protection, financial stability, national security, and climate risk. The United States must maintain technological leadership in this rapidly growing space, supporting innovation while mitigating the risks for consumers, businesses, the broader financial system, and the climate. And, it must play a leading role in international engagement and global governance of digital assets consistent with democratic values and U.S. global competitiveness.

That is why today, President Biden will sign an Executive Order outlining the first ever, whole-of-government approach to addressing the risks and harnessing the potential benefits of digital assets and their underlying technology. The Order lays out a national policy for digital assets across six key priorities: consumer and investor protection; financial stability; illicit

finance; U.S. leadership in the global financial system and economic competitiveness; financial inclusion; and responsible innovation.

Specifically, the Executive Order calls for measures to:

- **Protect U.S. Consumers, Investors, and Businesses** by directing the Department of the Treasury and other agency partners to assess and develop policy recommendations to address the implications of the growing digital asset sector and changes in financial markets for consumers, investors, businesses, and equitable economic growth. The Order also encourages regulators to ensure sufficient oversight and safeguard against any systemic financial risks posed by digital assets.
- **Protect U.S. and Global Financial Stability and Mitigate Systemic Risk** by encouraging the Financial Stability Oversight Council to identify and mitigate economy-wide (i.e., systemic) financial risks posed by digital assets and to develop appropriate policy recommendations to address any regulatory gaps.
- **Mitigate the Illicit Finance and National Security Risks Posed by the Illicit Use of Digital Assets** by directing an unprecedented focus of coordinated action across all relevant U.S. Government agencies to mitigate these risks. It also directs agencies to work with our allies and partners to ensure international frameworks, capabilities, and partnerships are aligned and responsive to risks.
- **Promote U.S. Leadership in Technology and Economic Competitiveness to Reinforce U.S. Leadership in the Global Financial System** by directing the Department of Commerce to work across the U.S. Government in establishing a framework to drive U.S. competitiveness and leadership in, and leveraging of digital asset technologies. This framework will serve as a foundation for agencies and integrate this as a priority into their policy, research and development, and operational approaches to digital assets.
- **Promote Equitable Access to Safe and Affordable Financial Services** by affirming the critical need for safe, affordable, and accessible financial services as a U.S. national interest that must inform our approach to digital asset innovation, including disparate impact risk. Such safe access

is especially important for communities that have long had insufficient access to financial services. The Secretary of the Treasury, working with all relevant agencies, will produce a report on the future of money and payment systems, to include implications for economic growth, financial growth and inclusion, national security, and the extent to which technological innovation may influence that future.

- **Support Technological Advances and Ensure Responsible Development and Use of Digital Assets** by directing the U.S. Government to take concrete steps to study and support technological advances in the responsible development, design, and implementation of digital asset systems while prioritizing privacy, security, combating illicit exploitation, and reducing negative climate impacts.
- **Explore a U.S. Central Bank Digital Currency (CBDC)** by placing urgency on research and development of a potential United States CBDC, should issuance be deemed in the national interest. The Order directs the U.S. Government to assess the technological infrastructure and capacity needs for a potential U.S. CBDC in a manner that protects Americans' interests. The Order also encourages the Federal Reserve to continue its research, development, and assessment efforts for a U.S. CBDC, including development of a plan for broader U.S. Government action in support of their work. This effort prioritizes U.S. participation in multi-country experimentation, and ensures U.S. leadership internationally to promote CBDC development that is consistent with U.S. priorities and democratic values.

The Administration will continue work across agencies and with Congress to establish policies that guard against risks and guide responsible innovation, with our allies and partners to develop aligned international capabilities that respond to national security risks, and with the private sector to study and support technological advances in digital assets.

###

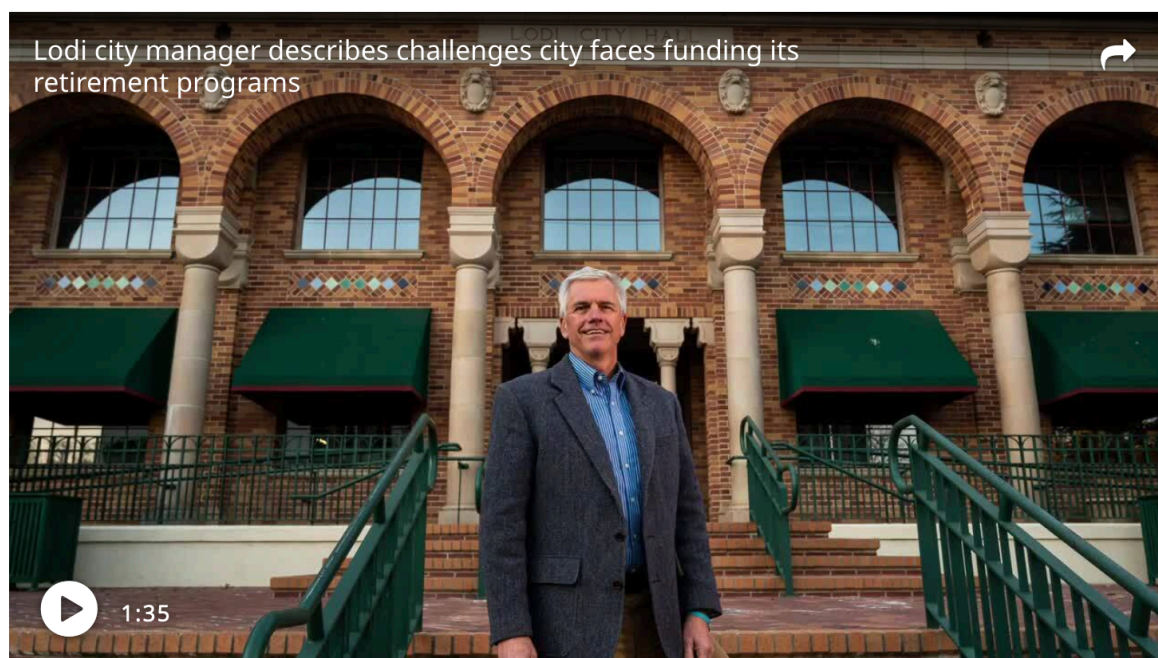
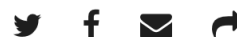
THE SACRAMENTO BEE

THE STATE WORKER

How higher interest rates could lift CalPERS and CalSTRS pension plans: 'Good for savers'

BY WES VENTEICHER

UPDATED MARCH 18, 2022 9:31 AM



Lodi City Manager Steve Schwabauer speaks in his City Hall office in February 2022 about CalPERS' funding problem, how it impacts his city ability to offer services, and what Lodi is doing about the problem.

BY XAVIER MASCAREÑAS

Interest rate hikes the Federal Reserve announced Wednesday come with a modest upside for public pension funds such as CalPERS and CalSTRS.

The Federal Reserve raised its key interest rate by a quarter of a percentage point and signaled six more increases this year, which would push the rate to nearly 2% by December, a little above the pre-pandemic rate. The change is meant to slow inflation, which reached a 40-year high last month.

While the interest rate hikes raise borrowing costs for consumers, they also improve returns on stable, long-term investments, and California's two largest pension funds, with a recent combined value of about \$790 billion, benefit from stability.

"When interest rates go up, that's generally good for savers, and public pension plans are a class of savers," said Hank Kim, executive director of the National Conference on Public

Employee Retirement Systems. The Fed signaled the rate hikes would continue into 2023, potentially reaching 2.75% under its forecast.

How much the series of rate hikes will help remains to be seen for California's pension funds, which have large holdings in public stocks along with private equity, real estate and other investments that are affected in various ways by inflation and global instability.

California State Teachers' Retirement System spokesman Ricardo Duran said in an email that the teachers system is "more concerned with inflation and stagflation."

"CalSTRS, like the financial markets, is pleased to see the Fed respond and take action," Duran said in the email. "Moving interest rates back to so-called normal helps pensions in the long run. The road to normal is challenging."

The rate hikes improve returns on fixed-income investments such as government-issued bonds, which are loans with terms of 10 to 30 years that pay periodic interest to bondholders until the loans mature.

Bond yields and interest rates have been unusually low since the Great Recession, making it harder for pension systems to earn enough to stay on top of their long-term debts.

"The last decade compared to history has not been typical or normal," said Keith Brainard, research director for the National Association of State Retirement Administrators.

CALPERS, CALSTRS INVESTMENT TARGETS

In the 1980s and 1990s, yields on 10-year U.S. Treasury bonds were often higher than pension systems' annual investment return targets, making it relatively easy to earn enough to keep up with long-term debts. The systems were "superfunded" in the late 1990s, with more money than they needed to cover all their debts.

Today, the California Public Employees' Retirement System aims to earn 6.8% on its total investment fund each fiscal year, and CalSTRS aims to earn 7%.

But the yield on 10-year bonds hasn't been above 7% since 1994. In 2020, the rate was 0.89%. And the pension systems have been underfunded since the Great Recession.

With lower bond yields, the systems have had to invest more money in riskier assets such as public and private equity. The systems have recorded big losses, as during the recession, and big gains, as happened last year. The underfunded systems have been charging local governments and the state much more money to make up for the bad years.

If interest rate increases work as planned, over time, pension systems' fixed income portfolios will be able to provide returns closer to 3% or 4%, rather than "something less than that, that they have been providing in the last decade or so," Brainard said.

"The key will be slow and steady, no-surprises-toward-normal rates," Duran, the CalSTRS spokesman, said in an email.

That pattern could also help the pension systems return to full funding and reduce cost burdens on the state and on local governments that have been shoveling increasing loads of taxpayer money toward pension debts in recent years.

MORE BONDS, LESS STOCKS

The Fed has been signaling that it planned to increase interest rates for at least the last six months to a year, said Kim.

"It's something plans have been anticipating and probably have been welcoming," Kim said.

CalPERS recently opted to increase its fixed income holdings from 28% to 30% of its total investment fund, which was valued at \$471 billion as of Wednesday.

CalPERS also reduced its target allocation for stock market holdings, aiming to drop those holdings from 50% to 42% of its investments.

"We are a long-term investor with a diversified portfolio," CalPERS spokeswoman Megan White said in an email. "We monitor the markets and interest rates, but we stay focused on our investment strategy."

A summary of CalSTRS' investment portfolio on the system's website says 11% of its portfolio was invested in fixed income as of February, but the system also holds investments that would fall under the traditional definition of fixed income in other asset classes, Duran said in the email.

Stocks made up about 43% of CalSTRS' investments, according to its most recent figures. The fund was valued at \$318 billion at of Feb. 28.

Inflation has other consequences for the pension systems. The inflation rate led to cost-of-living increases of up to 4.7% for some CalPERS retirees this year. The COLAs will cost \$765 million for the year, up from an increase of \$242 million for the prior year's COLAs.

And part of the Fed's goal with the rate increases is avoiding another recession. The last two recessions hit California's pension funds hard. While the systems have taken steps to better withstand the next downturn, big stock market losses would mean bigger pension bills for cities and the state, even with more favorable fixed income returns.

This story was originally published March 18, 2022 5:25 AM.