



AGENDA

RETIREMENT BOARD MEETING

REGULAR MEETING

November 2, 2022, 9:00 a.m.

The Board of Retirement will hold its meeting via teleconferencing as permitted by Government Code Section 54953(e). The meeting is accessible telephonically at 669-900-6833, Webinar ID: 837 8153 0670, Passcode: 764481, or via the web at:

<https://us06web.zoom.us/j/83781530670?pwd=ZHR3MEt2VG13cFZJckdEcFplSFQrZz09>

Passcode: 764481

Persons who wish to address the Board of Retirement during public comment may call in during the meeting by dialing the phone number and passcode above. Access via Zoom is also available at the weblink above. To indicate you wish to speak during public comment, please select *9 on your phone or “raise your hand” in the Zoom app.

Public comments are limited to any item that is within the subject matter jurisdiction of the Board of Retirement. Comments will be received in real time via telephone or Zoom, subject to a three-minute time limit per speaker.

THE RETIREMENT BOARD MAY DISCUSS AND TAKE ACTION ON THE FOLLOWING:

1. Pledge of Allegiance.
2. Roll Call.
3. Public Comment (3 minutes/speaker).
4. Recognition of Stephanie Shedd for 5 years of service.
5. Approve minutes from the October 12, 2022 meeting.
6. Approve the following routine items:
 - a. Certifications of membership.
 - b. Service and disability allowances.
 - c. Death benefits.
 - d. Investment liquidity report.

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.

7. Accept the following routine items:
 - a. Disability applications and authorize subpoenas as required.
 - b. Travel report.
 - c. Investment asset allocation report.

CLOSED SESSION

8. The Board will go into closed session pursuant to Govt. Code Section 54957 to consider recommendations from the medical advisor and/or staff regarding the following disability retirement applications:

<u>Member</u>	<u>Type Sought</u>	<u>Recommendation</u>
a. Jaime Ramirez	Non-Service Connected	Non-Service Connected
b. Casey Reel	Service Connected	Service Connected

9. The Board will continue in closed session pursuant to Govt. Code Section 54957 to consider the motion for reconsideration regarding the disability application for Mark Emery.

OPEN SESSION

10. Pension administration system project update:
 - a. Update from staff
 - b. Presentation from Segal
 - c. Presentation from Sagitec
11. Review of report on Risk Diversifying Sub-portfolio.
12. Educational presentation from AQR on trend following strategies.
13. Consider and take possible action to authorize the Board to conduct teleconference meetings under Government Code section 54953 (e) and to make related findings.
14. Consider and take possible action on 2023 Board meeting schedule.
15. Consider authorizing the attendance of Board:
 - a. NCPERS 2023 Legislative Conference & Pension Communications Summit, January 22-24, 2023, Washington, D.C.
16. Miscellaneous
 - a. Staff Report
 - b. Outside Professionals' Report
 - c. Trustees' comments

The Retirement Board will provide reasonable accommodations for persons with disabilities planning to attend Board meetings who contact the Retirement Office at least 24 hours before a meeting.



RETIREMENT BOARD MEETING MINUTES

REGULAR MEETING
October 12, 2022
9:00 a.m.

The Board of Retirement meeting was accessible telephonically at (669) 900-6833, Webinar ID 817 3480 6212 Passcode 574719, as permitted by Government Code Section 54953(e).

1. Pledge of Allegiance

The Board and staff joined in the *Pledge of Allegiance*.

2. Roll Call

Present: Candace Andersen, Dennis Chebotarev, Donald Finley, Scott Gordon, Jerry Holcombe, Louie Kroll, Jay Kwon, David MacDonald, John Phillips, Russell Watts and Samson Wong.

Absent: Mike Sloan

Staff: Gail Strohl, Chief Executive Officer; Christina Dunn, Deputy Chief Executive Officer; Karen Levy, General Counsel; Tim Hoppe, Retirement Services Manager and Jasmine Lee, Member Services Manager

Outside Professional Support:	Representing:
Vivian Shultz	Law Offices of Vivian Shultz

3. Accept comments from the public

Carol Nowicki spoke about her husband's experience in 2015 with CCCERA and provided more information.

Pete Nowicki spoke about his experience with CCCERA through litigation and provided more information.

4. Approve of Minutes

It was **M/S/C** to approve the minutes from the September 14, 2022 meeting. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).

5. Approval of Routine Items

It was **M/S/C** to approve the routine items of the October 12, 2022 Board meeting. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).

6. Acceptance of Routine Items

It was **M/S/C** to accept the routine items of the October 12, 2022 Board meeting. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).

Wong now present for subsequent discussion and voting

CLOSED SESSION

The Board moved into Closed Session pursuant to Govt. Code Section 54957 to consider recommendations from the medical advisor and/or staff regarding the following disability retirement applications:

The Board moved into open session.

7. It was **M/S/C to accept the Medical Advisor's recommendation and grant the following disability benefits:**

- a. Javier Espinoza – Service Connected (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).
- b. Julie Murphy – Service Connected (Yes: Andersen, Chebotarev, Gordon, Holcombe, Kroll, MacDonald, Phillips, Watts and Wong).

8. The Board continued in closed session pursuant to Govt. Code Section 54957 to consider the Hearing Officer's recommendation regarding the disability application for Mark Emery

It was **M/S/C** approve and adopt the Hearing Officer's recommendation to deny Mark Emery's disability application. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips, and Watts).

9. Presentation of disability retirement process

Hoppe presented the disability retirement process overview report.

10. Presentation of Semi-Annual Disability Retirement Report.

Hoppe presented the Semi-Annual Disability Retirement report.

11. Presentation of travel reimbursement and education tracking process

Dunn and Luz Casas presented the travel reimbursement and education tracking process.

12. Consider and take possible action to authorize the Board to conduct teleconference meetings under Government Code section 54953 (e) and to make related findings

It was **M/S/C** to authorize the Board and its committee(s) to continue to conduct teleconference meetings for the next 30 days under Government Code Section 54953 (e) and make the following findings:

1. The Board has reconsidered the circumstance of the statewide state of emergency proclaimed on March 4, 2020 and the countywide local emergency proclaimed on March 10, 2020.
2. The following circumstances currently exist:
 - a. The statewide state of emergency and the countywide local emergency continue to directly impact the ability of the Board and its committee(s) to meet safely in person at meeting that are open to the general public because of the COVID-19 pandemic.
 - b. The County Health Officer's recommendations for safely holding public meetings, which recommend virtual meeting and other measures to promote social distancing, are still in effect. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts).

16. Miscellaneous

- a. Staff Report- Dunn provided clarification regarding a member and their tier change listed in agenda item 5.
- b. Outside Professionals – None
- c. Trustee' comments – Kwon reported he attended the ILPA Private Equity for the Trustee and it was an educational conference.

MacDonald reported he attended the on-site due diligence visit with Blackstone yesterday and it was a great meeting that was very informative.

It was **M/S/C** to adjourn the meeting. (Yes: Andersen, Chebotarev, Finley, Gordon, Holcombe, Kroll, MacDonald, Phillips and Watts)

Scott Gordon, Chairman

Jerry R. Holcombe, Secretary

CERTIFICATION OF MEMBERSHIPS

Name	Employee Number	Tier	Membership Date	Employer
Alexander, Sharon	92355	P5.2	09/01/22	Contra Costa County
Allen-Coleman, Sharon	92297	P5.2	09/01/22	Contra Costa County
Anhold-Tung, Alisa	92349	P5.2	09/01/22	Contra Costa County
Arballo, Marina	92401	P5.2	09/01/22	Contra Costa County
Argo, Yuma	92306	P5.2	09/01/22	Contra Costa County
Avalos, Luis	90819	P5.2	09/01/22	Contra Costa County
Bennett, Faye	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Brown, Lauren	92367	P5.2	09/01/22	Contra Costa County
Brown-Batiste, Makayla	92399	P5.2	09/01/22	Contra Costa County
Bruns, Misty	92299	P5.2	09/01/22	Contra Costa County
Button, Kevin	92381	P5.2	09/01/22	Contra Costa County
Byrone, Angela	89115	P5.2	09/01/22	Contra Costa County
Cabral, Alicia	87750	P5.2	08/01/22	Contra Costa County
Calara, Marites	92371	P5.2	09/01/22	Contra Costa County
Calderon, Dara	91479	P5.2	09/01/22	Contra Costa County
Carlisle, Rachel	92363	P5.2	09/01/22	Contra Costa County
Chorro, Vanessa	92356	P5.2	09/01/22	Contra Costa County
Colin, Rosa	92339	P5.2	09/01/22	Contra Costa County
Cooper, Shante	92417	P5.2	09/01/22	Contra Costa County
Cooper, William	92329	III	09/01/22	Contra Costa County
Cooper-Belton, Ayanna	89623	P5.2	09/01/22	Contra Costa County
Coronel Jr, Privado	92308	P5.2	09/01/22	Contra Costa County
Damm, Matthew	92369	P5.2	09/01/22	Contra Costa County
Daryani, Manisha	92370	P5.2	09/01/22	Contra Costa County
Davis, Jonahthan	92335	P5.2	09/01/22	Contra Costa County
Diaz, Wendy	92407	P5.2	09/01/22	Contra Costa County
D'Souza, Kristin	87375	P5.2	09/01/22	Contra Costa County
Dupree, Antoinette	90104	P5.2	09/01/22	Contra Costa County
Dwiggins, Aisling	92323	P5.2	09/01/22	Contra Costa County

Key:

I = Tier I	P4.2 = PEPR Tier 4 (2% COLA)	S/A = Safety Tier A
II = Tier II	P4.3 = PEPR Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR Tier 5 (3% COLA)	S/E = Safety Tier E

CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Ferrer, Alison	92377	P5.2	09/01/22	Contra Costa County
Flores, Selyna	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Flores Figueroa, Alberto	D3406	P4.3	09/01/22	Central Contra Costa Sanitary District
Foster, Ashton	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Franco, Alejandra	90046	P5.2	06/01/22	Contra Costa County
Frey, Sunita	92343	P5.2	09/01/22	Contra Costa County
Gamoras-Young, Brandon	92434	P5.2	09/01/22	Contra Costa County
Gant, Annie	81372	P5.2	09/01/22	Contra Costa County
Gibbs, Rebecca	D4980	P4.3	09/01/22	CCCERA
Gocheva, Vihra	92358	P5.2	09/01/22	Contra Costa County
Gonzalez, Carlos	92296	P5.2	09/01/22	Contra Costa County
Gonzalez, Gerardo	92462	P5.2	09/01/22	Contra Costa County
Goudy, David	92412	P5.2	09/01/22	Contra Costa County
Grossi, Steven	92440	P5.2	09/01/22	Contra Costa County
Guerra, Dorthy	92420	P5.2	09/01/22	Contra Costa County
Gutierrez, Daniel	92362	P5.2	09/01/22	Contra Costa County
Gutierrez Torres, Yazari	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Guzman, Norma	89529	P5.2	06/01/22	Contra Costa County
Hansen, Valerie	91735	P5.2	09/01/22	Contra Costa County
Havili, Fielea	87350	P5.2	09/01/22	Contra Costa County
Holm, Jana	D4980	P4.3	09/01/22	CCCERA
Huezo-Miranda, Consuelo	89990	P5.2	09/01/22	Contra Costa County
Huynh, Jeremy	92338	PE.2	09/01/22	Contra Costa County
Jauhal, Isha	92435	P5.2	09/01/22	Contra Costa County
Jian, Jianhua	92400	P5.2	09/01/22	Contra Costa County
Jimenez, Danielle	92418	P5.2	09/01/22	Contra Costa County
Johns, Yolanda	92320	P5.2	09/01/22	Contra Costa County
Jones, Vickie	92424	P5.2	09/01/22	Contra Costa County
Jordan, Angelica	92375	P5.2	09/01/22	Contra Costa County
Jorgensen, Jason	92406	P5.2	09/01/22	Contra Costa County

Key:

I = Tier I	P4.2 = PEPR Tier 4 (2% COLA)	S/A = Safety Tier A
II = Tier II	P4.3 = PEPR Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR Tier 5 (3% COLA)	S/E = Safety Tier E

CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Kaisa, Cheyenne	86767	P5.2	09/01/22	Contra Costa County
Kawamoto, Warren	83336	P5.2	09/01/22	Contra Costa County
Kandel, Rita	92262	P5.2	09/01/22	Contra Costa County
Kaur, Amarpreet	92350	P5.2	09/01/22	Contra Costa County
Kaur, Mandeep	92325	P5.2	09/01/22	Contra Costa County
Keathley, Janet	50615	III	09/01/22	Contra Costa County
King, Hilary	92307	P5.2	09/01/22	Contra Costa County
Kociolek, Elaine	87937	III	09/01/22	Contra Costa County
Lampkin, Trishka	81606	P5.2	09/01/22	Contra Costa County
Larrequi, Man	92346	P5.2	09/01/22	Contra Costa County
Le, Ava	92430	P5.2	09/01/22	Contra Costa County
Leal, Michael	92183	P5.2	09/01/22	Contra Costa County
Lee, Joshua	92305	P5.2	09/01/22	Contra Costa County
Losado, Tiana	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Love, Joseph	92354	III	09/01/22	Contra Costa County
Lucido, Frank	92314	P5.2	09/01/22	Contra Costa County
Maciel-Bermudez, Karina	90370	P5.2	09/01/22	Contra Costa County
Mackey, Felicia	86185	P5.2	09/01/22	Contra Costa County
Maddox, Megan	92353	P5.2	09/01/22	Contra Costa County
Madrigal, Marcela	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Maldonado, Alexis	92392	P5.2	09/01/22	Contra Costa County
Mallik, Balark	92379	P5.2	09/01/22	Contra Costa County
Martinez, Alejandro	36208	III	09/01/22	Contra Costa County
Martinez Castillo, Lorena	92344	P5.2	09/01/22	Contra Costa County
Martinez, Jennifer	92291	P5.2	09/01/22	Contra Costa County
Matthews, Jackson	91277	P5.2	09/01/22	Contra Costa County
Medina, Marissa	91954	P5.2	09/01/22	Contra Costa County
Montufar, Maria	90383	P5.2	09/01/22	Contra Costa County
Moore, Anthony	92326	P5.2	09/01/22	Contra Costa County
Moore, Ashley	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Morales, Emily	92397	P5.2	09/01/22	Contra Costa County

Key:

I = Tier I	P4.2 = PEPR Tier 4 (2% COLA)	S/A = Safety Tier A
II = Tier II	P4.3 = PEPR Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR Tier 5 (3% COLA)	S/E = Safety Tier E

CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Moreira, Isaiah	91929	P5.2	09/01/22	Contra Costa County
Morris, Corlon	92313	P5.2	09/01/22	Contra Costa County
Myers, Brianna	92395	P5.2	09/01/22	Contra Costa County
Naicker-Velu, Dineshla	92290	P5.2	09/01/22	Contra Costa County
Navarro, Susan	D4980	P4.3	09/01/22	CCCERA
Nevigato, Gianfranco	90227	P5.2	09/01/22	Contra Costa County
Newaj, David	92293	III	09/01/22	Contra Costa County
Ng, Mieson	92300	P5.2	09/01/22	Contra Costa County
Nunez, Mariano	92267	P5.2	09/01/22	Contra Costa County
Ochoa Santillan, Brian	92312	P5.2	09/01/22	Contra Costa County
Orlina, Marlon	D3406	P4.3	09/01/22	Central Contra Costa Sanitary District
Pastoral, Jorge	92260	P5.2	09/01/22	Contra Costa County
Perez, Miguel	D9990	I	09/01/22	Contra Costa County Housing Authority
Perez Portillo, Beatriz	92360	P5.2	09/01/22	Contra Costa County
Perkins, Trevor	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Perryman, Kelly	92292	P5.2	09/01/22	Contra Costa County
Pierce, Angelic	92324	P5.2	09/01/22	Contra Costa County
Pospasil, Jordan	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Povlsen, Christi	91040	P5.2	09/01/22	Contra Costa County
Ramos Santiago, Jonathan	89725	P5.2	09/01/22	Contra Costa County
Reed, Joshua	92182	P5.2	09/01/22	Contra Costa County
Ruso, Bonnie	92410	P5.2	09/01/22	Contra Costa County
Saechao, May	D4980	P4.3	09/01/22	CCCERA
Saelaw, Maety	82633	P5.2	09/01/22	Contra Costa County
Salehpourjooneghani, Elham	92384	P5.2	09/01/22	Contra Costa County
Samra, Harkaran	90724	P5.2	09/01/22	Contra Costa County
Sattari, Nazaneen	92328	P5.2	09/01/22	Contra Costa County
Sengsouvang, Jordan	91656	P5.2	09/01/22	Contra Costa County
Sherdil, Mustafa	92382	P5.2	09/01/22	Contra Costa County
Smith, Daniel	92327	P5.2	09/01/22	Contra Costa County
Smith, Tina	91781	P5.2	09/01/22	Contra Costa County
Sparks, Nancy	D9990	I	09/01/22	Contra Costa County Housing Authority

Key:

I = Tier I	P4.2 = PEPR Tier 4 (2% COLA)	S/A = Safety Tier A
II = Tier II	P4.3 = PEPR Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR Tier 5 (3% COLA)	S/E = Safety Tier E

CERTIFICATION OF MEMBERSHIPS

<i>Name</i>	<i>Employee Number</i>	<i>Tier</i>	<i>Membership Date</i>	<i>Employer</i>
Tadokoro, Ashlyn	92318	P5.2	09/01/22	Contra Costa County
Taylor, Chevelle	92310	P5.2	09/01/22	Contra Costa County
Telesca, Peter	D9500	P5.3	09/01/22	Contra Costa County Superior Courts
Trigo, Elsa	92368	P5.2	09/01/22	Contra Costa County
Viale Gertler, Kristine	84633	P5.2	09/01/22	Contra Costa County
Washington, Regina	92294	P5.2	09/01/22	Contra Costa County
Weisse, Cameron	92388	P5.2	09/01/22	Contra Costa County
Wilcox, Amanda	66584	III	09/01/22	Contra Costa County
Willard, Vernon	D9990	P4.3	09/01/22	Contra Costa County Housing Authority
Williams, Tyler	92309	P5.2	09/01/22	Contra Costa County
Wilson, Sarah	92321	P5.2	09/01/22	Contra Costa County
Winston, Haley	92348	P5.2	09/01/22	Contra Costa County
Yan, Belle	92359	P5.2	09/01/22	Contra Costa County
Yusufi, Nawid	92396	P5.2	09/01/22	Contra Costa County
Zhu, Xing	92361	P5.2	09/01/22	Contra Costa County

Key:

I = Tier I	P4.2 = PEPR Tier 4 (2% COLA)	S/A = Safety Tier A
II = Tier II	P4.3 = PEPR Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR Tier 5 (3% COLA)	S/E = Safety Tier E

TIER CHANGES

<i>Name</i>	<i>Employee Number</i>	<i>Old Tier</i>	<i>New Tier</i>	<i>Effective Date</i>	<i>Employer</i>	<i>Reason for Change</i>
Bach, Sofia	90353	P4.2	PE.2	09/01/22	Contra Costa County Fire Protection District	Promotion to Fire Inspection II
Giddis, Christopher	88253	P4.2	PE.2	09/01/22	Contra Costa County Fire Protection District	Promotion to Fire Inspection II
Gutierrez, Monica	92055	P5.2	III	06/01/22	Contra Costa County	Reciprocity Established, Age & Tier Change

Key:

I = Tier I	P4.2 = PEPR A Tier 4 (2% COLA)	S/A = Safety Tier A
II = Tier II	P4.3 = PEPR A Tier 4 (3% COLA)	S/C = Safety Tier C
III = Tier III	P5.2 = PEPR A Tier 5 (2% COLA)	S/D = Safety Tier D
	P5.3 = PEPR A Tier 5 (3% COLA)	S/E = Safety Tier E

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

BOARD OF RETIREMENT

Meeting Date
11/02/2022
Agenda Item
#6b.

Service and Disability Retirement Allowances:

<u>Name</u>	<u>Number</u>	<u>Effective Date</u>	<u>Option Type</u>	<u>Tier</u>	<u>Selected</u>
Anderson, Patricia	75343	07/29/22	SR	PEPRA 5.3	Unmodified
Barnes, Jason	54980	07/27/22	SR	Safety A	Unmodified
Baulwin-Johnson, Kelley	56013	07/09/22	SR	I	Option 2
Bornemann, Keith	82036	06/30/22	SR	PEPRA 5.2	Unmodified
Caravantes, Gilbert	35592	03/31/22	SR	Safety A	Unmodified
Cloutier, Steven	39253	07/01/22	SR	II & III	Unmodified
Cole, Mami	D9500	07/01/22	SR	III	Unmodified
Creer, Shelly	D9500	07/30/22	SR	II & III	Unmodified
Dias, G M Pushpa	74684	07/01/22	SR	III	Unmodified
Dukes, Trina	61856	07/01/22	SR	II & III	Unmodified
Hernandez, Adam	65944	07/18/22	SR	Safety A	Unmodified
Jackson, Clinton	D3406	07/07/22	SR	I	Unmodified
Jackson, Lauren	66693	07/31/22	SR	III	Unmodified
Jones, Sharlene	56334	01/24/22	SR	Safety A	Unmodified
McClain, Carlotta	38100	06/08/22	SR	II & III	Unmodified
Moore, Sheree	68317	08/08/22	SR	III	Unmodified
Morabe, Dante	60135	07/31/22	SR	III	Unmodified
Oathout, Frank	67628	11/09/21	SCD	Safety A	Unmodified
Rogers, Gary	72386	08/22/22	SR	III	Unmodified
Sacauskas, Leo	38583	03/31/21	SR	II & III	Option 1
Shaw, Kimberly	63318	07/13/22	SR	II & III	Unmodified
Sterling, Antoinette	73298	08/14/22	SR	III	Unmodified
Street, Eric	56586	02/26/22	SR	II	Unmodified
Stuscavage, Julie	46314	07/26/22	SR	III	Unmodified
Thomas, Douglas	66196	07/31/22	SR	II & III	Unmodified
Venegas, Rosa	47491	07/22/22	SR	II & III	Unmodified
Wilkinson, Ana	81596	05/20/21	SR	PEPRA 5.2	Unmodified
Wilks, Pamela	79251	07/30/22	SR	PEPRA 5.3	Unmodified
Wooldridge, Monica	82629	08/01/22	SR	PEPRA 5.2	Unmodified

Option Type

NSP = Non-Specified
 SCD = Service Connected Disability
 SR = Service Retirement
 NSCD = Non-Service Connected Disability
 * = County Advance Selected w/option

Tier

I = Tier I
 II = Tier II
 III = Tier III
 S/A = Safety Tier A
 S/C = safety Tier C
 Pepra 4.2 = Pepra Tier 4 (2% COLA)
 Pepra 4.3 = Pepra Tier 4 (3% COLA)
 Pepra 5.2 = Pepra Tier 5 (2% COLA)
 Pepra 5.3 = Pepra Tier 5 (3% COLA)
 S/D = Pepra Safety Tier D
 S/E = Pepra Safety Tier E

CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

BOARD OF RETIREMENT

Meeting Date
11/02/2022
Agenda Item
#6c.

Deaths:

<u>Name</u>	<u>Date of Death</u>	<u>Employer as of Date of Death</u>
Alexander, Pamela	08/22/22	Superior Courts
Baitx, John	10/15/22	San Ramon Valley Fire Protection District
Bates, Mark	09/24/22	Contra Costa County
D'Aurizio, Joyce	09/22/22	Contra Costa County
Garrison, Betty	10/07/22	Contra Costa County
Grant, Garrett	10/04/22	Superior Courts
Johnson, Terry	09/02/22	Contra Costa County
Mays, Cecil	05/23/22	Contra Costa County
McGraw, Terrence	10/08/22	Contra Costa County
Mckinnon, Nancy	10/03/22	Contra Costa County
Melodias, Elba	07/24/22	Contra Costa County
Mitchell, Bettie	08/19/22	Contra Costa County
Nunnally, Donald	10/20/22	Contra Costa County



Meeting Date
11/02/2022
Agenda Item
#6d.

**Contra Costa County Employees' Retirement Association
Liquidity Report – September 2022**

September 2022 Performance

	Cash Flow	Coverage Ratio
Benefit Cash Flow Projected by Model	\$48,500,000	
Liquidity Sub-Portfolio Cash Flow	\$48,500,000	100%
Actual Benefits Paid	\$48,741,592	99.5%
<i>Next Month's Projected Benefit Payment</i>	<i>\$48,750,000</i>	

Monthly Manager Positioning – September 2022

	Beginning Market Value	Liquidity Program Cash Flow	Market Value Change/Other Activity	Ending Market Value
Sit	\$387,114,761	(\$19,500,000)	\$2,247,466	\$369,862,227
DFA	\$630,763,047	(\$10,750,000)	(\$12,527,853)	\$607,485,194
Insight	\$709,715,709	(\$18,250,000)	(\$15,056,827)	\$676,408,882
Liquidity	\$1,727,593,516	(\$48,500,000)	(\$25,337,213)	\$1,653,756,303
Cash	\$142,137,664	(\$241,592)	(\$20,033,393)	\$121,862,679
Liquidity + Cash	\$1,869,731,181	(\$48,741,592)	(\$45,370,606)	\$1,775,618,982

Functional Roles

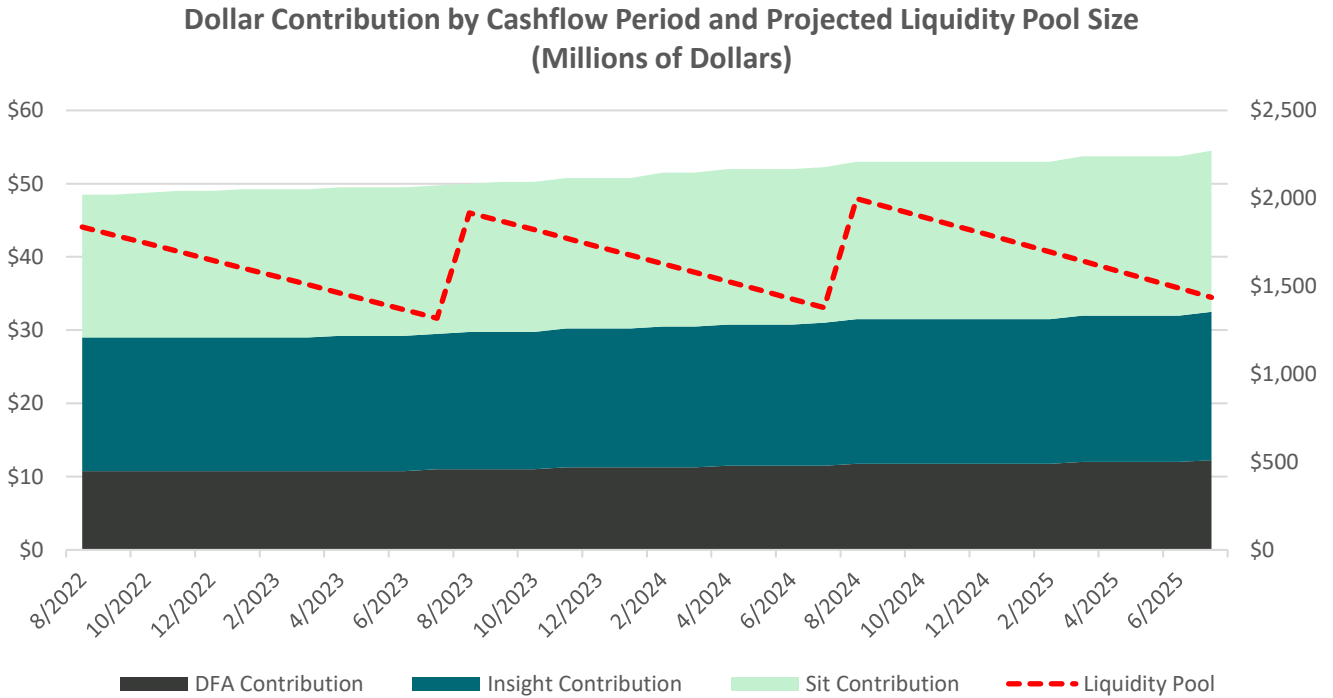
Manager	Portfolio Characteristics	Liquidity Contribution
Sit	High quality portfolio of small balance, government guaranteed mortgages with higher yields.	Pays out net income on monthly basis.
DFA	High quality, short duration portfolio of liquid, low volatility characteristics.	Pays out a pre-determined monthly amount. DFA sources liquidity from across their portfolio.
Insight	Buy and maintain (limited trading) portfolio of high quality, short duration, primarily corporates.	Completion portfolio makes a payment through net income and bond maturities that bridges the gap between other managers and projected payment.
Cash	STIF account at custodial bank.	Buffer in the event of any Liquidity shortfall/excess.

Notes

The ninth cash flow for 2022 from the liquidity program was completed on September 23rd. The actuarial model cash flow was lower than actual experience, \$252 thousand less than the actual benefits paid.

Cash Flow Structure

The chart below shows the sources of cash flow for the next three years of CCCERA's projected benefit payments. This table will change slightly as the model is tweaked and as the portfolios receive new rounds of funding each July as part of the Annual Funding Plan.



CONTRA COSTA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

BOARD OF RETIREMENT

<p><u>Meeting Date</u> 11/02/2022 <u>Agenda Item</u> #7a.</p>
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Disability Retirement Applications: *The Board's Hearing Officer is hereby authorized to issue subpoenas in the following cases involving disability applications:*

<u>Name</u>	<u>Number</u>	<u>Filed</u>	<u>Type</u>
Nogueria, Richard	D7830	10/03/22	SCD

<u>Option Type</u>	<u>Tier</u>
NSP = Non-Specified	I = Tier I
SCD = Service Connected Disability	II = Tier II
SR = Service Retirement	III = Tier III
NSCD = Non-Service Connected Disability	S/A = Safety Tier A
* = County Advance Selected w/option	S/C = safety Tier C
	Pepra 4.2 = Pepra Tier 4 (2% COLA)
	Pepra 4.3 = Pepra Tier 4 (3% COLA)
	Pepra 5.2 = Pepra Tier 5 (2% COLA)
	Pepra 5.3 = Pepra Tier 5 (3% COLA)
	S/D = Pepra Safety Tier D
	S/E = Pepra Safety Tier E

CCCERA Board of Trustees
Training & Educational Conference Expenses Paid During
Quarter 3 - 2022 (July to September)

Trustee:	Conference Name/Purpose:	Location:	Dates:	Total
Candace Andersen	NONE			
Dennis Chebotarev	NONE			
Donald Finley	NONE			
Scott Gordon	NASRA Annual Conference	Long Beach, CA	08/6-10/2022	\$ 1,400.00
	Value Edge Advisors -2022 Public Funds Forum	Laguna Beach, CA	09/6-8/2022	1,789.72
Jerry Holcombe	CALAPRS Trustees' Roundtable-PREPAID	Virtual	10/28/2022	50.00
Louie Kroll	SACRS Public Pension Investment Management Program (Registration prepaid in Q2)	Berkeley, CA	7/17-20/22	1,688.96
Jay Kwon	NONE			
David J. MacDonald	SACRS Public Pension Investment Management Program (Registration prepaid in Q2)	Berkeley, CA	7/17-20/22	1,661.46
	NASRA Annual Conference	Long Beach, CA	08/6-10/2022	2,692.32
	Value Edge Advisors -2022 Public Funds Forum	Laguna Beach, CA	9/6-8/22	2,193.91
	IFEBP 68th Annual Employee Benefits Conf-PREPAID	Las Vegas, NV	10/22-23/22	3,790.00
John Phillips	NONE			
Mike Sloan	SACRS Public Pension Investment Management Program (Registration prepaid in Q2)	Berkeley, CA	7/17-20/22	1,782.80
Russell V. Watts	NONE			
Samson Wong	NONE			

**Contra Costa County Employees' Retirement Association
Asset Allocation as of September 30, 2022**

**Meeting Date
11/02/2022
Agenda Item
#7c.**

Liquidity	Market Value	Percentage of Total Fund	Current Target* Percentage	Current Target Over/(Under)	Long Term Target	Long Term Over/(Under)
Dimensional Fund Advisors	369,862,227	3.7%	4.0%	-0.3%		
Insight	607,485,194	6.1%	6.5%	-0.4%		
Sit	676,408,882	6.8%	6.5%	0.3%		
Total Liquidity	1,653,756,303	16.7%	17.0%	-0.3%	17.0%	-0.3%

**Range
11-22%**

Growth						
Domestic Equity						
Boston Partners	354,136,574	3.6%	4.0%	-0.4%		
BlackRock Index Fund	812,251,026	8.2%	9.0%	-0.8%		
Emerald Advisers	183,462,408	1.8%	1.5%	0.3%		
Ceredex	169,124,837	1.7%	1.5%	0.2%		
Total Domestic Equity	1,518,974,845	15.3%	16.0%	-0.7%	13.0%	2.3%

Global & International Equity

Pyrford (Columbia)	378,677,612	3.8%	4.0%	-0.2%		
William Blair	363,072,018	3.7%	4.0%	-0.3%		
First Eagle	436,037,610	4.4%	4.5%	-0.1%		
Artisan Global Opportunities	440,119,455	4.4%	4.5%	-0.1%		
PIMCO/RAE Emerging Markets	303,223,241	3.1%	3.5%	-0.4%		
TT Emerging Markets	290,122,031	2.9%	3.5%	-0.6%		
Total Global & International Equity	2,211,251,967	22.3%	24.0%	-1.7%	19.0%	3.3%

Private Equity**

Private Credit	1,377,118,510	13.9%	13.0%	0.9%	18.0%	-4.1%
Real Estate - Value Add	943,924,700	9.5%	8.0%	1.5%	13.0%	-3.5%
Real Estate - Opportunistic & Distressed	247,172,786	2.5%	4.0%	-1.5%	5.0%	-2.5%
Real Estate - REIT	366,057,692	3.7%	4.0%	-0.3%	5.0%	-1.3%
Adelante	80,998,301	0.8%	2.0%	-0.2%	0.0%	1.8%
Invesco	102,118,451	1.0%				
High Yield (Allianz)	133,744,651	1.3%	1.5%	-0.2%	0.0%	1.3%
Risk Parity			3.0%	0.2%	3.0%	0.2%
AQR GRP EL	161,441,691	1.6%				
PanAgora	153,376,857	1.5%				
Total Other Growth Assets	3,565,953,639	35.9%	35.5%	0.4%	44.0%	-8.1%

Total Growth Assets	7,296,180,451	73.5%	75.5%	-2.0%	76.0%	-2.5%
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**Range
65-85%**

Risk Diversifying						
AFL-CIO	220,018,206	2.2%	2.5%	-0.3%	2.5%	-0.3%
Acadian MAARS	263,416,878	2.7%	2.5%	0.2%	1.5%	1.2%
Sit LLCAR	299,532,539	3.0%	2.5%		1.5%	
Total Risk Diversifying	782,967,623	7.9%	7.5%	0.4%	7.0%	0.9%

**Range
0% - 10%**

Cash and Overlay						
Overlay (Parametric)	76,470,069	0.8%		0.8%		
Cash	121,862,679	1.2%		1.2%		
Total Cash and Overlay	198,332,748	2.0%	0.0%	2.0%	0.0%	2.0%

Total Fund	9,931,237,125	100%	100%		100%	
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*Current targets and ranges reflect asset allocation targets accepted by the Board on July 27, 2022 (BOR Resolution 2022-2).

**Private Equity long-term target includes Real Assets/Infrastructure (see Asset Allocation Mix 5 adopted December 9, 2020).

**Private Market Investments
As of September 30, 2022**

REAL ESTATE - Value Add

	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
Invesco IREF III	08/01/13	08/01/20				35,000,000	0	0.00%	
Invesco IREF IV	12/01/14	12/01/21				35,000,000	2,821,874	0.03%	4,453,599
Invesco IREF V	09/11/18	09/11/25				75,000,000	77,485,738	0.78%	19,389,232
Invesco IREF VI	09/21/22	09/22/29				100,000,000	33,126,592	0.33%	66,873,408
Long Wharf FREG IV	08/14/13	09/30/21				25,000,000	1,362,298	0.01%	
Long Wharf FREG V	10/31/16	09/30/24				50,000,000	31,133,508	0.31%	
Long Wharf LREP VI	02/05/20	02/05/28				50,000,000	31,157,787	0.31%	9,377,283
LaSalle Income & Growth Fund VI	01/31/12	01/31/19				75,000,000	18,764,926	0.19%	3,946,000
LaSalle Income & Growth Fund VII	10/31/16	09/30/24				75,000,000	51,320,063	0.52%	5,859,352
						730,000,000	247,172,786	2.49%	109,898,874

Outstanding Commitments

Total

109,898,874

357,071,660

REAL ESTATE -Opportunistic & Distressed

	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
DLJ Real Estate Capital Partners, L.P. III	06/30/05	06/30/14	in full liq.			75,000,000	15,682,804	0.16%	4,031,338
DLJ Real Estate Capital Partners, L.P. IV	12/31/07	09/30/18				100,000,000	55,988,703	0.56%	1,876,084
DLJ Real Estate Capital Partners, L.P. V	07/31/13	12/31/22				75,000,000	31,679,926	0.32%	5,046,583
DLJ Real Estate Capital Partners, L.P. VI	02/28/19	01/31/29				50,000,000	23,712,716	0.24%	19,906,106
Oaktree Real Estate Opportunities Fund V	02/01/11	02/01/21				50,000,000	1,209,092	0.01%	25,750,000
Oaktree Real Estate Opportunities Fund VI	09/30/13	09/30/20				80,000,000	25,686,057	0.26%	18,400,000
Oaktree Real Estate Opportunities Fund VII	02/28/15	02/28/23				65,000,000	49,657,865	0.50%	16,120,000
PCCP Equity IX	04/11/22	04/01/30				75,000,000	32,839,382	0.33%	43,698,436
Siguler Guff Distressed Real Estate Opp. Fund	07/30/11	07/30/22				75,000,000	20,481,397	0.21%	5,625,000
Siguler Guff Distressed Real Estate Opp. Fund II	08/31/13	08/31/25				70,000,000	35,475,967	0.36%	8,015,000
Siguler Guff Distressed Real Estate Opp. II Co-Inv	01/31/16	10/31/25				25,000,000	12,408,040	0.12%	4,462,138
Paulson Real Estate Fund II	11/10/13	11/10/20				20,000,000	15,311,689	0.15%	654,377
Angelo Gordon Realty Fund VIII	12/31/11	12/31/18				80,000,000	13,102,108	0.13%	12,334,302
Angelo Gordon Realty Fund IX	10/10/14	10/10/22				65,000,000	32,821,946	0.33%	7,572,500
						905,000,000	366,057,692	3.69%	173,491,864

Outstanding Commitments

Total

173,491,864

539,549,556

PRIVATE CREDIT

	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
Torchlight Debt Opportunity Fund III	09/30/08	06/30/16	2nd 1 YR	LP	06/30/18	75,000,000	0	0.00%	0
Torchlight Debt Opportunity Fund IV	08/01/12	08/30/20				60,000,000	9,045,133	0.09%	0
Torchlight Debt Opportunity Fund V	12/31/14	09/17/22				75,000,000	8,321,350	0.08%	15,000,000
Angelo Gordon Energy Credit Opportunities	09/10/15	09/10/20				16,500,000	3,228,809	0.03%	2,319,783
CCERA StepStone	12/01/17	11/30/27				1,170,000,000	923,329,408	9.30%	404,220,001
StepStone CC Opportunities Fund, LLC - Series A						320,000,000	199,425,242		110,353,886
StepStone CC Opportunities Fund, LLC - Series B						350,000,000	323,030,397		126,648,953
StepStone CC Opportunities Fund, LLC - Series C						200,000,000	171,940,489		67,733,048
StepStone CC Opportunities Fund, LLC - Series D						150,000,000	175,287,974		2,249,592
StepStone CC Opportunities Fund, LLC - Series E						150,000,000	53,645,306		97,234,522
						1,524,500,000	943,924,700	9.50%	421,539,784

Outstanding Commitments

Total

421,539,784

1,365,464,484

**Private Market Investments
As of September 30, 2022**

PRIVATE EQUITY	Inception Date	Target Termination	# of Extension	Discretion by GP/LP	New Target Termination	Funding Commitment	Market Value	% of Total Asset	Outstanding Commitment
Adams Street Partners	12/22/95	12/22/25				269,565,614	144,853,013	1.46%	17,282,948
Adams Street Secondary II	12/31/08	12/31/20				30,000,000	3,921,820	0.04%	1,635,000
Adams Street Secondary V	10/31/12	10/31/22				40,000,000	11,756,602	0.12%	9,154,125
Adams Street Venture Innovation Fund	03/09/16	03/09/28				75,000,000	188,271,396	1.90%	8,962,500
AE Industrial Partners Fund II	05/18/18	05/18/28				35,000,000	43,562,185	0.44%	11,133,248
Bay Area Equity Fund	06/14/04	12/31/14	2nd 2 YR	LP	12/31/2017	10,000,000	1,236,397	0.01%	0
Bay Area Equity Fund II	2/29/09	12/31/19				10,000,000	20,000,401	0.20%	0
Carpenter Community BancFund	10/31/09	10/31/19				30,000,000	0	0.00%	0
EIF USPF II	06/15/05	06/15/15	3rd 1 YR	LP	06/15/18	50,000,000	33,193	0.00%	0
EIF USPF III	02/28/07	02/28/17	1st 1 YR	LP	02/28/18	65,000,000	1,913,232	0.02%	0
EIF USPF IV	06/28/10	06/28/20				50,000,000	22,767,637	0.23%	4
Ares EIF V	09/09/15	11/19/25				50,000,000	24,833,569	0.25%	6,194,129
Genstar Capital Partners IX	02/18/19	02/18/29				50,000,000	60,389,808	0.61%	6,161,902
Genstar Capital Partners X	04/01/21	04/01/31				42,500,000	18,020,620	0.18%	24,469,552
GTCR VIII	10/27/20	12/31/36				50,000,000	21,894,741	0.22%	31,675,000
Hellman & Friedman Capital Partners	05/10/21	05/10/31				75,000,000	37,906,080	0.38%	34,117,819
Leonard Green - Green Equity Investors IX	03/01/22	02/28/32				60,000,000	0	0.00%	0
Leonard Green - Jade Equity Investors II	03/01/22	02/28/32				15,000,000	0	0.00%	0
Oaktree Private Investment Fund 2009	02/28/10	12/15/19				40,000,000	425,876	0.00%	6,308,961
Ocean Avenue Fund II	05/07/14	05/07/24				30,000,000	27,405,633	0.28%	3,000,000
Ocean Avenue Fund III	12/09/15	12/09/25				50,000,000	53,563,388	0.54%	3,500,000
Paladin III	08/15/08	08/15/18				25,000,000	9,648,960	0.10%	387,482
Pathway	11/09/98	05/31/21				125,000,000	4,425,144	0.04%	10,597,048
Pathway 2008	12/26/08	12/26/23				30,000,000	18,626,237	0.19%	2,713,681
Pathway 6	05/24/11	05/24/26				40,000,000	39,055,004	0.39%	3,684,184
Pathway 7	02/07/13	02/07/23				70,000,000	78,779,278	0.79%	5,216,065
Pathway 8	11/23/15	11/23/25				50,000,000	79,191,365	0.80%	4,312,108
Siguler Guff CCCERA Opportunities	06/03/14	05/31/25				200,000,000	147,902,119	1.49%	29,597,500
Siguler Guff Secondary Opportunities	12/31/16	12/31/26				50,000,000	0	0.00%	0
Siris Partners IV	05/18/18	05/18/28				35,000,000	39,414,011	0.40%	8,845,760
TA XIV	05/27/21	05/27/31				50,000,000	17,630,820	0.18%	31,000,000
TPG Healthcare Partners, L.P.	06/27/19	06/27/29				24,000,000	16,720,288	0.17%	8,603,578
TPG Healthcare Partners II	06/30/22	06/30/32				65,000,000	0	0.00%	0
TPG Partners IX	06/30/22	06/30/32				50,000,000	4,456,786	0.04%	0
Trident VIII, L.P.	05/24/19	05/24/29				40,000,000	47,126,170	0.47%	5,426,540
Trident IX, L.P.	09/17/21	09/17/31				50,000,000	4,456,786	0.04%	44,769,075
Real Assets									
Aether III & III Surplus	11/30/13	11/30/20				75,000,000	62,899,955	0.63%	2,917,690
Aether IV	01/01/16	01/01/28				50,000,000	64,730,867	0.65%	3,468,001
Commonfund Capital Natural Resources IX	06/30/13	06/30/20				50,000,000	44,016,659	0.44%	2,725,007
Wastewater Opportunity Fund	12/31/15	11/30/22				25,000,000	19,739,255	0.20%	1,036,884
						2,226,065,614	1,377,118,510	15.37%	284,126,715
Outstanding Commitments							284,126,715		
Total							1,661,245,225		

Market value equals the most recent reported net asset value, plus capital calls after net asset value date, less distributions after net asset value date.
The Target Termination column is the beginning of liquidation of the fund, however, some funds may be extended for an additional two or three years.



Meeting Date
11/02/2022
Agenda Item
#10a.

MEMORANDUM

Date: November 2, 2022
To: CCCERA Board of Retirement
From: Gail Strohl, Chief Executive Officer
Subject: Pension administration system project update.

Background

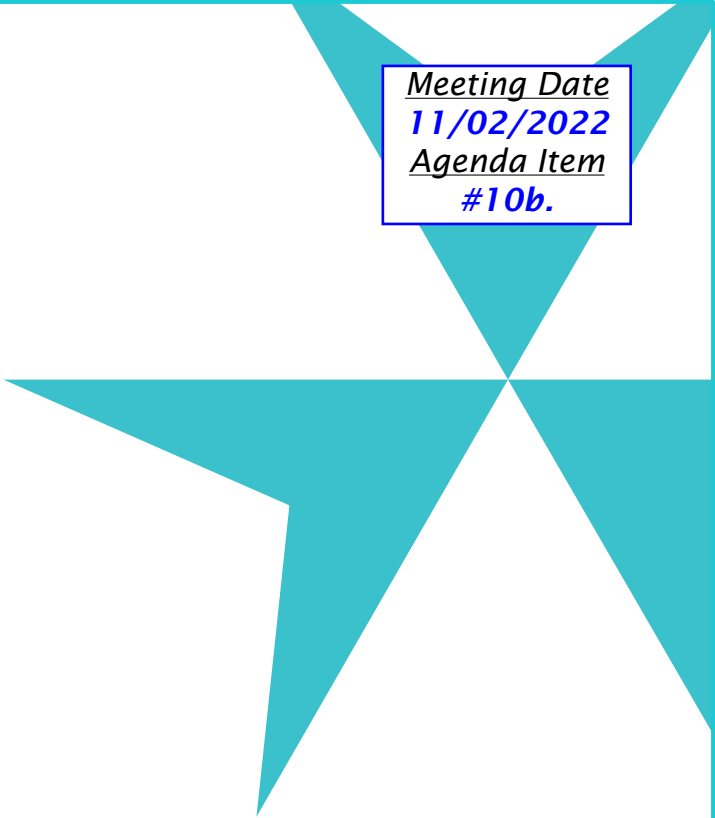
On April 14, 2021, the Board authorized the Chief Executive Officer to execute an agreement with Sagitec Solutions LLC (Sagitec) to provide pension administration system software, implementation, hosting and support services. CCCERA continues to work with Sagitec to improve communication and project management.

There will be a project update from:

- The Segal Group, Inc., Oversight Project Manager
- Sagitec, PAS vendor

Recommendation

Informational only. No action is necessary at this time.

A large teal star graphic is positioned in the upper right corner of the slide. It is composed of four overlapping triangles that meet at a central point. A white rectangular box with a blue border is placed over the top point of the star.

Meeting Date
11/02/2022
Agenda Item
#10b.

CCCERA Pension Administration System (PAS)
Modernization Project

Segal's Board Update

November 2, 2022

Board Recap as of September 14, 2022

- CCCERA, Segal and Sagitec provided an update to the CCCERA Board on **September 14, 2022**.
- Overall CCCERA PAS Project from 35% to 38%
 - Phase 5 CORS Implementation from 33% to 37%
 - Implementation: Pilot 1 from 78% to 82%
 - Implementation: Pilot 2 from 3% to 11%
- Project status remained Green, although some issues had surfaced since the July 27, 2022 Board update that led Segal to note the project is trending towards Yellow without some corrective action.
 - Primary PM was absent on medical leave for 4 weeks
 - Elaboration discussions led to identification of new scope items
 - The addition of a Business Process Reengineering effort, regarding Retirement Application Processing, introduces some risk to the CCCERA PAS Project in relation to a potential change in scope
- CCCERA, Sagitec, Icon, and Segal have developed an option to maintain the current schedule

Board Update as of October 25, 2022

- The project team continues to use the Sagitec “Re-Baselined” Project Plan and project activities have continued and percent complete values have improved since the last Board update
 - Overall CCCERA PAS Project from 38% to 46%
 - Phase 5 CORS Implementation from 37% to 45%
 - Implementation: Pilot 1 from 82% to 90%
 - Implementation: Pilot 2 from 11% to 23%
 - Implementation: Pilot 3 from 0% to 1%
- The project status remains Green as issues presented at the previous Board meeting have largely been mitigated and next steps have been approved in relation to the movement of non-core items to be released subsequent to the core items currently schedule for November 16, 2023 per the Sagitec Re-baselined Project Plan
- The Business Process Reengineering project regarding the Retirement Application Process continues to be closely monitored.
- Elaboration, data cleansing/conversion and methodology discussions are on-going and in various stages of review.

Board Update – Project Plan Review

Task Name	Baseline Start	Baseline Finish	Start	Finish	% Complete
▲ CCCERA Pension Administration System (PAS)	Mon 4/26/21	Tue 5/13/25	Mon 4/26/21	Tue 5/13/25	46%
Project Start	Mon 4/26/21	Mon 4/26/21	Mon 4/26/21	Mon 4/26/21	100%
▶ Phase 1 - Project Initiation and Start-up	Mon 4/26/21	Wed 6/23/21	Mon 4/26/21	Wed 6/23/21	100%
▶ Phase 2 - Hosting Environment Setup	Mon 4/26/21	Fri 7/23/21	Mon 4/26/21	Fri 7/23/21	100%
▶ Phase 3 - Requirements Confirmation	Mon 5/10/21	Fri 9/10/21	Mon 5/10/21	Fri 9/10/21	100%
▶ Phase 4: Imaging Implementation and Image Migration	Mon 12/6/21	Thu 9/1/22	Mon 12/6/21	Thu 10/20/22	100%
▶ Phase 5 - CORS Implementation	Mon 5/24/21	Thu 11/16/23	Mon 5/24/21	Thu 11/16/23	45%
▶ Phase 6 - Member/Retiree Self Service Rollout	Mon 11/7/22	Wed 2/14/24	Fri 2/3/23	Wed 2/14/24	0%
▶ Phase 7 - Post Implementation Support	Thu 11/16/23	Mon 5/13/24	Wed 11/15/23	Mon 5/13/24	0%
▶ Phase 8 - Warranty	Fri 2/16/24	Tue 5/13/25	Thu 2/15/24	Tue 5/13/25	0%

Information extracted as of 8/26/22

Board Update – Project Plan Review

Task Name	Baseline Start	Baseline Finish	Start	Finish	% Complete
▸ Implementation: Pilot 1	Thu 7/22/21	Fri 3/3/23	Thu 7/22/21	Fri 3/31/23	90%
▸ Elaboration and Design Phase: Pilot 1	Mon 8/16/21	Fri 8/5/22	Mon 8/16/21	Fri 8/5/22	100%
▸ Development Phase: Pilot 1	Fri 10/1/21	Fri 9/23/22	Fri 10/1/21	Fri 9/23/22	91%
▸ Data Conversion Phase: Pilot 1	Thu 7/22/21	Mon 8/29/22	Thu 7/22/21	Wed 10/12/22	97%
▸ Quality Assurance Phase: Pilot 1	Wed 9/29/21	Thu 2/23/23	Wed 9/29/21	Thu 3/23/23	80%
▸ Pilot Demonstration	Fri 2/24/23	Fri 3/3/23	Thu 3/23/23	Fri 3/31/23	0%
Pilot 1 Implementation Complete	Fri 3/3/23	Fri 3/3/23	Fri 3/31/23	Fri 3/31/23	0%
▸ Implementation: Pilot 2	Tue 5/31/22	Wed 6/21/23	Tue 5/31/22	Wed 7/26/23	23%
▸ Elaboration and Design Phase: Pilot 2	Tue 5/31/22	Mon 10/24/22	Tue 5/31/22	Tue 11/1/22	95%
▸ Development Phase: Pilot 2	Tue 7/5/22	Thu 12/22/22	Tue 7/5/22	Wed 2/22/23	16%
▸ Data Conversion Phase: Pilot 2	Tue 8/23/22	Wed 6/21/23	Thu 9/1/22	Wed 7/26/23	4%
▸ Quality Assurance Phase: Pilot 2	Thu 6/30/22	Mon 4/24/23	Thu 6/30/22	Thu 6/15/23	6%
▸ Pilot Demonstration	Tue 4/25/23	Tue 5/2/23	Fri 6/16/23	Fri 6/23/23	0%
Pilot 2 Implementation Complete	Tue 5/2/23	Tue 5/2/23	Fri 6/23/23	Fri 6/23/23	0%
▸ Implementation: Pilot 3	Mon 9/26/22	Mon 10/2/23	Mon 10/10/22	Thu 11/2/23	1%
▸ Elaboration and Design Phase: Pilot 3	Mon 9/26/22	Fri 2/3/23	Mon 10/10/22	Fri 2/3/23	6%
▸ Development Phase: Pilot 3	Fri 12/23/22	Wed 5/31/23	Tue 11/29/22	Tue 5/2/23	0%
▸ Data Conversion Phase: Pilot 3	Thu 6/22/23	Mon 10/2/23	Mon 7/3/23	Thu 11/2/23	0%
▸ Quality Assurance Phase: Pilot 3	Wed 12/14/22	Thu 8/24/23	Tue 1/10/23	Mon 8/21/23	0%
▸ Pilot Demonstration	Fri 8/25/23	Fri 9/1/23	Mon 8/21/23	Tue 8/29/23	0%
Pilot 3 Implementation Complete	Fri 9/1/23	Fri 9/1/23	Tue 8/29/23	Tue 8/29/23	0%

Information extracted as of 10/25/2022

Questions...?



CCCERA Online Retirement System Project Implementation Progress

November 02, 2022

- Project Overall Performance
- Project Progress
- Planned Milestones/Deliverables (For Next Period)
- Project Schedule/Resources

Project Overall Performance

Project Phase	Initial Planned Completion Percentage	Actual Completion Percentage
Overall Status	51%	46%
Phase-1 Project Startup & Planning	100%	100%
Phase-2 Hosting Infrastructure Setup	100%	100%
Phase-3 Requirements Confirmation	100%	100%
Phase-4 Imaging Implementation and Image Migration	100%	100%
Phase-5 Line Of Business (LOB) Implementation	52%	46%

Project Go-Live dates	Original Baseline	Re-Baselined
PAS Go Live (Line of Business Solution)	09/05/2023	11/16/2023
Member Self Service Go Live	01/08/2024	02/14/2024

Project Progress

Phase 1 – Project Initiation & Startup – Completed 100%

Phase 2 – Hosting Environment Setup – Completed 100% (Non-Production/UAT)

Phase 3 – Requirements Confirmation – Completed 100%

Phase 4 – Imaging Implementation and Image Migrations – Completed 100%

Phase 5 – PAS Implementation – Completed 46%

Phase 5 – PAS Implementation

➤ Pilot 1 – Membership Related Functionality

Pilot Stages	Modules Planned	Modules Completed	Modules in Progress	Modules Not Started
Elaboration and Design	10	10	0	0
Configuration/Development	10	9	1	0
Data Conversion ¹	9	9	0	0
Testing	10	6	2	2

1 – Includes 4 modules not needing conversion

➤ Pilot 2 – Benefit Calculation and Pension Payment Related Functionality

Pilot Stages	Modules Planned	Modules Completed	Modules in Progress	Modules Not Started
Elaboration and Design	8	7	1	0
Configuration/Development	8	1	2	5
Data Conversion	7	1 ²	0	6
Testing	8	0	3	5

2 – One module does not need conversion

Phase 5 – PAS Implementation (contd)

➤ Pilot 3 – Benefit Adjustments, Annual Processes and Tax Reporting

Pilot Stages	Modules Planned	Modules Completed	Modules in Progress	Modules Not Started
Elaboration and Design	6	0	2	4
Configuration/Development	6	0	0	6
Data Conversion ¹	8	0	0	8
Testing	6	0	0	6

1 – Includes 4 modules not needing conversion

Planned Milestones/Deliverables For Next Period

➤ Phase 5

○ Pilot 1

- Completion of the Configuration of Employer Self Service Module
- Completion of the Quality Assurance of Modules – System/Regression/Integration testing

○ Pilot 2

- Completion of the Configuration of all the 6 modules
- Completion of Data Mapping and Conversion Scripting of 3 modules
- Completion of unit testing of 6 modules and system testing of 4 modules

○ Pilot 3

- Completion of the Elaboration and Design all the 6 modules
- Initiated the System Configuration activities for the Pilot.
- Initiate the Data Mapping and Scripting tasks of the Data Conversion activity

Project Schedule/Resources

- No changes or effects on the Project Schedule.

- No changes to the key project Personnel.



Thank You

Meeting Date
11/02/2022
Agenda Item
#11



Timothy Price, CFA
Chief Investment Officer

Mitchell Taylor, CFA
Investment Officer

Risk Diversifying Sub-Portfolio Review

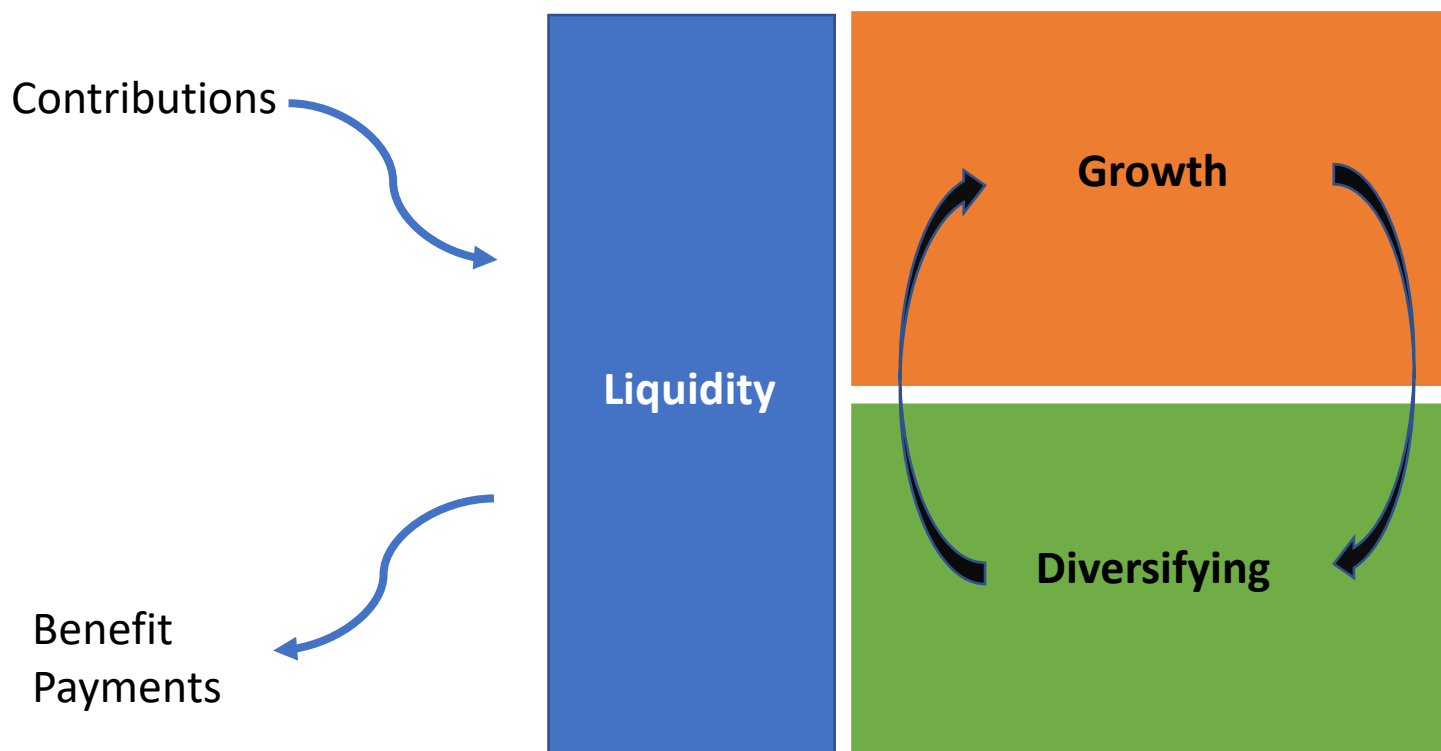
November 2, 2022

Review of Risk Diversifying Sub-Portfolio

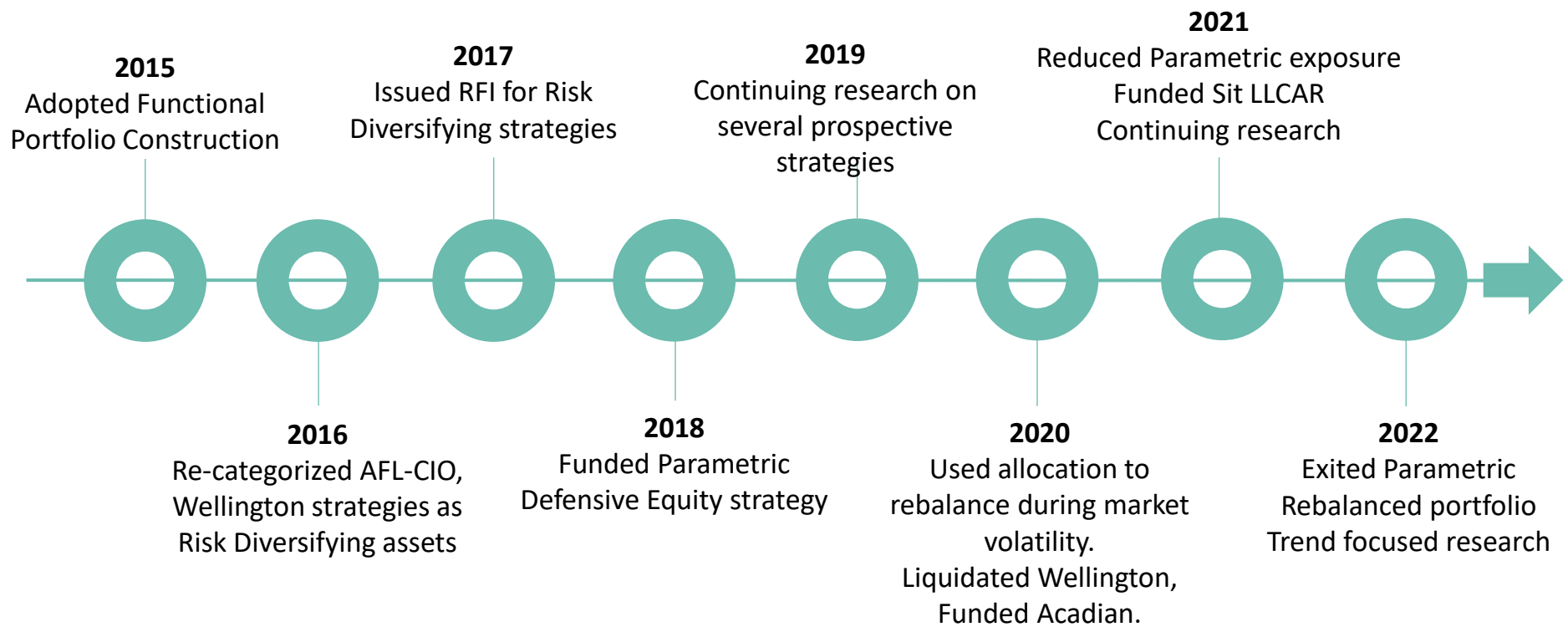
1. Role of Risk Diversifying in CCCERA portfolio
2. Characteristics of diversifying assets
3. Strategies, markets, and downturns
4. Structure of Risk Diversifying allocation
5. CCCERA performance
6. Potential programmatic enhancements

Role of Risk Diversifying in CCCERA Portfolio

- Downside protection to diversify the growth allocation
- Liquid pool of capital to capture stressed growth opportunities



Evolution of Risk Diversifying Allocation 2022



Characteristics of Risk Diversifying Strategies

Quality	Rationale
Low to negative correlation with growth assets	Act as diversifying offset to CCCERA's large growth (equity) allocation with positive returns in downturns.
High liquidity during periods of equity market stress	Must be able to redeploy these assets to capture opportunities in stressed environment.
Positive expected real return	We want strategies that can be held on a permanent basis without acting as a drag on overall expected returns
Diversification	Portfolio strategies must be diversified and provide required return characteristics under various macro scenarios

Risk Diversifying Universe

- **Two camps.** explicit and implicit market hedges
- **We focus on implicit hedges.**
- Trade-offs between hedge efficiency, reliability and cost
 - Explicit hedges are contractual; implicit hedges rely on the persistence of past correlation of returns.
 - Bond/Equity correlations positive in stagflation and periods of rate and inflation uncertainty. Bond/Equity return correlations reversed course and turned positive in 2022.

Hedge Type	Example	Efficiency of Hedge	Opportunity Cost
Explicit	Tail risk hedge (buying equity put options)	High, creates an explicit positive payoff when equity market conditions deteriorate	High, essentially an insurance premium is paid every month that the puts expire worthless
Implicit	US government guaranteed debt	Medium, not an explicit negative correlation, typically an uncorrelated return	Medium-low. Should have an economic rationale for a positive expected return

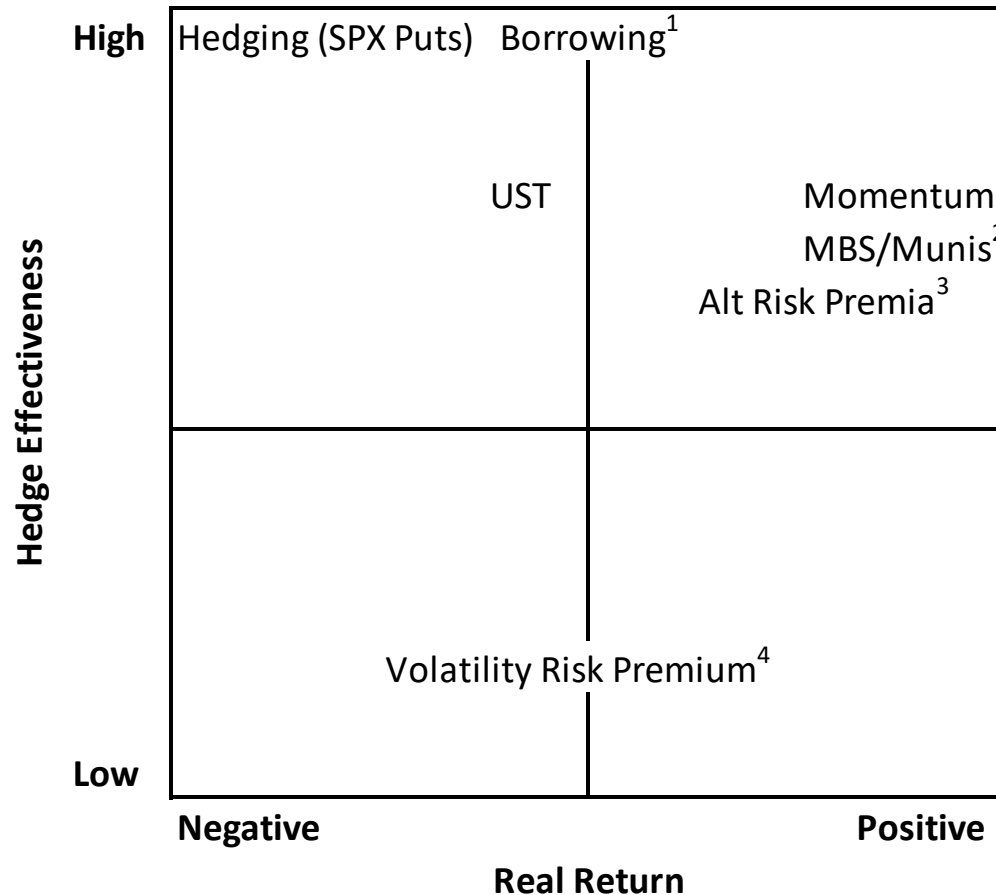
Dimensioning Risk Diversifying Strategies

Strategies	CCCERA	Cost	Liquidity	Most Effective Markets	Correlation	Alpha
Borrowing						
Revolver	No	Very Low	High	Sharp & Sustained Drawdowns	NM*	NM
Hedging						
Long SPX Puts	No	High	High	Sharp Drawdowns	NM*	High**
Long SPX/Short SPX Calls	No	High	High	Sharp Drawdowns	NM*	High**
Fixed Income						
US Treasuries	No	Very Low	High	Sharp Drawdowns	Negative	Moderate
MBS	AFL-CIO	Low	High	Sustained Drawdowns	Negative	Moderate
Muni Bonds	Sit LLCAR	Low	High	Sustained Drawdowns	Negative	Moderate
Alternative Risk Premium						
Systematic Multi Asset Macro Managed Futures	Acadian	Low	High	Sharp Drawdowns	Negative	Low
Volatility Risk Premia	Parametric	Low	High	Non-Trending	Positive	Negative
Systematic Momentum/Trend	No	Low	High	Sustained Drawdowns	Negative	Low

NM* These strategies are contractual and therefore effectiveness is not based on correlation of returns.

** Put gain is perfect offset to underlying index loss

Dimensioning Risk Diversifying Strategies Returns and Hedge Effectiveness



1 Committed line of credit utilized in drawdowns cost p.a. ~10bps

2 AFL-CIO and Sit LLCAR

3 Acadian

4 Parametric Volatility Risk Premium

Review. Risk Diversifying Strategies

- **Fixed Income.** Low or negative correlation to equities excluding periods of uncertainty re: rates and growth. Performs well in “flight to quality” regimes.
 - CCCERA manager: AFL-CIO.
- **Alternative Risk Premia.** Low or negative correlation to equities, performs well in most regimes including inflation.
 - CCCERA manager: Acadian.
- **Fixed Income Hybrid.** Low or negative correlation to equities. Performs well in “flight to quality” regimes. Ability to hedge equity risk and exploit behavioral biases.
 - CCCERA manager: Sit LLCAR.
- **Momentum aka Trend or Managed Futures.** Low or negative correlation to equities, performs well in most regimes, specifically in times with strong market trends, both positive and negative.
 - CCCERA manager: TBD.

Risk Diversifying Markets

- AFL-CIO/Sit LLCAR are discretionary with respect to timing and asset mix. Acadian is systematic, multi asset, relative value and long/short
- Parametric sells SPX calls and puts (lottery tickets and insurance)
- Multi Asset. Managers chose specific assets e.g., long oil/short gas

Index	9/30/2020	9/30/2021	9/30/2022	Yr/Yr 2021	Yr/Yr 2022
MSCI World (global developed)	2,367.3	3,006.6	2,378.7	27.0%	-20.9%
Taxable Municipals	245.5	250.3	202.9	1.9%	-18.9%
Mortgage Backed Securities (MBS)	2,317.8	2,307.8	1,985.2	-0.4%	-14.0%
S&P PutWrite (short puts, 2% OTM)	809.8	948.2	904.3	17.1%	-4.6%
S&P CallWrite (short calls, 2% OTM)	2,142.6	2,674.4	2,284.4	24.8%	-14.6%
US 10-Year TIPS	283.0	295.2	252.1	4.3%	-14.6%
Bloomberg Momentum*	1,015.6	987.9	1,025.4	-2.7%	3.8%
SG Trend Index**	2,568.3	3,078.9	4,121.0	19.9%	33.8%

Multi Asset components below

MSCI ACWI (all country)	565.2	709.5	553.4	25.5%	-22.0%
Volatility (US SPX)	26.4	23.1	31.6	-12.2%	36.6%
Global Sovereigns	244.2	237.7	185.3	-2.7%	-22.0%
US Dollar	93.9	94.2	112.1	0.4%	19.0%
Commodities	350.2	557.7	607.8	59.3%	9.0%

*Bloomberg returns to the Momentum Factor

**Index of Momentum Funds

Equity Drawdowns. Not all Created Equal

- **Drawdowns are unique in depth and length.** In general, can be sharp or sustained. Depth and length are correlated. Recovery speed varies. During stagflation of 1971-1981, SPX provided a nominal zero rate of return before dividends.
- **Average depth and length.** Since the Great Depression, recessions have, on average, contracted real GDP by 4.8% and taken 15 months to reestablish the prior real level of GDP.
- **Range.** GDP declines of 0.4% to 26.3%, lasting from 4 to 63 months.
- **COVID.** GDP declined by 3.4% lasting about 9 months.
- **GFC.** GDP declined by 4.0% lasting about 24 months.
- **2022.** Uncertain inflation, rate and growth paths, market expectation of a mild recession. GDP remains in positive territory on a year-over-year basis. S&P 500 is down 24.8% as of month-end September.

Sharp Downturn, COVID. Fixed Income Indices

- Bond/Equity negative return correlation
- MBS Index (e.g., AFL-CIO) & Taxable Munis Index (e.g., Sit LLCAR) vs MSCI ACWI Index
- **COVID Returns.** 2/19/20 to 4/3/20: ACWI -26.6%, MBS +1.8%, Munis -3.1%



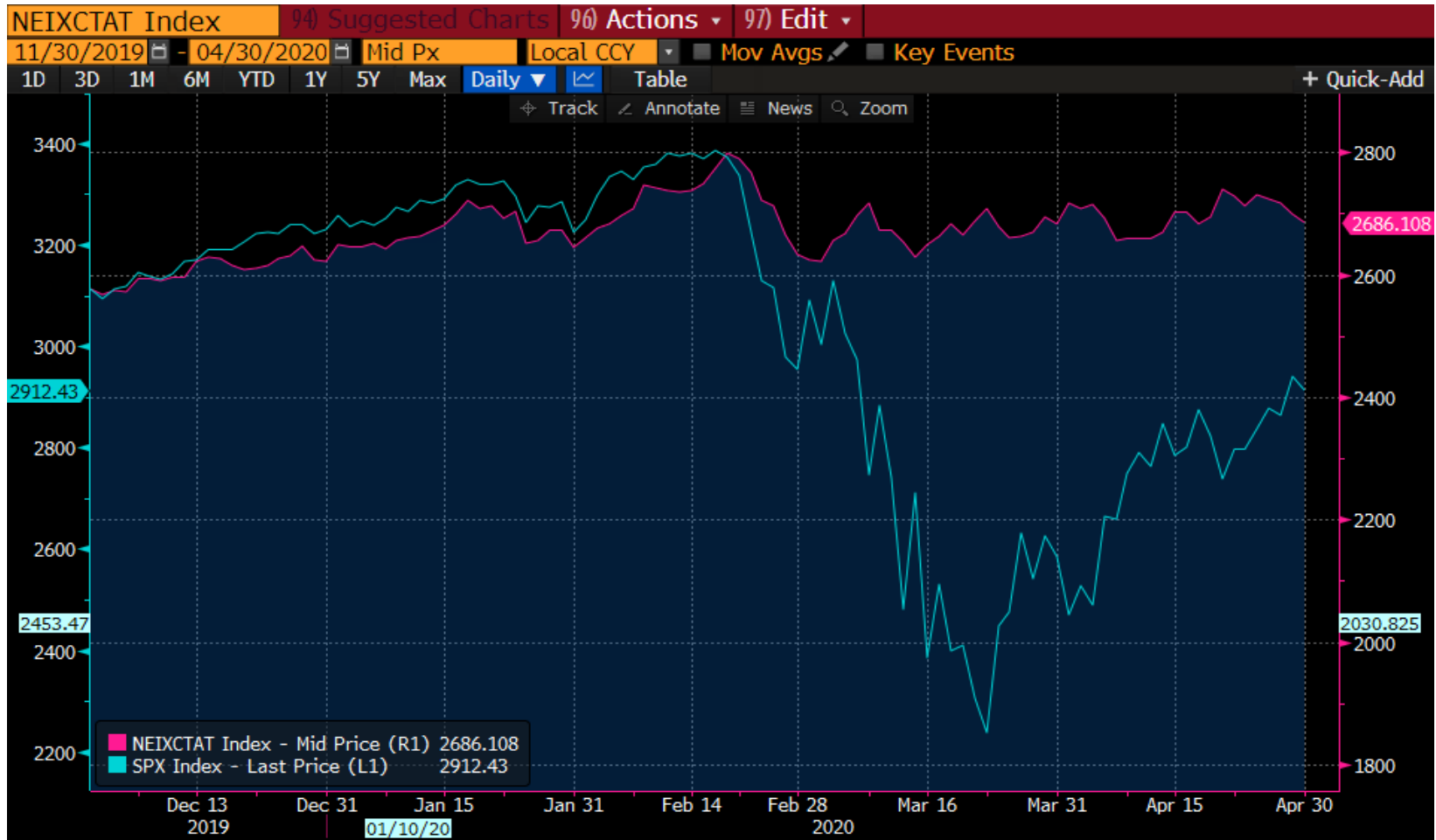
Sharp Downturn, COVID. Alternative Risk Premia

- Multi Asset Alternative Risk Premium (e.g., Acadian) vs SPX
- **COVID Returns.** From 2/20 to 4/20, SPX -26.9%, Loomis Sayles Multi Asset index +4.1%.



Sharp Downturn, COVID. Momentum

- Momentum aka trend (e.g., TBD) vs S&P 500 Index
- **COVID Returns.** From 2/15/2020 to 3/25/2020, or peak to trough, SPX -26.9%, SG CTA index -4.1%.



Sustained Downturn, GFC. Fixed Income Indices

- Bond/Equity negative return correlation
- MBS Index (e.g., AFL-CIO) & Taxable Munis Index (e.g., Sit LLCAR) vs MSCI ACWI Index
- **GFC Returns.** ACWI -57.8%, MBS +6.5% & Taxable Munis +9.2%



Sustained Downturn. Alternative Risk Premia

- Multi Asset ARP Index (e.g., Acadian) vs S&P 500 Index
- **GFC Returns.** SPX -55.8%, Multi Asset index +0.4%, (10/1/07 to trough on 3/6/2009).



Sustained Downturn, GFC. Momentum

- Momentum aka trend (e.g., TBD) vs S&P 500 Index
- **GFC Returns.** SPX -55.8%, SG CTA index +31.2%, (10/1/07 to trough on 3/6/2009).



2022, Inflation & Rates. Fixed Income Indices

- Bond/Equity return correlation turns positive
- MBS (e.g., AFL-CIO) & Taxable Munis (e.g., Sit LLCAR) vs MSCI ACWI
- **Inflation & Rates Returns.** ACWI -26.7%, MBS -13.7% & Munis -19.3%



2022 Inflation & Rates. Alternative Risk Premia

- Multi Asset ARP Index (e.g., Acadian) vs S&P 500 Index
- **Inflation & Rates Returns.** SPX -24.8%, Multi Asset index -8.0%, (YTD 9/30/2022).



2022, Inflation & Rates. Momentum

- Momentum aka Trend (e.g., TBD) vs S&P 500 Index
- **Inflation & Rates Returns.** SG CTA index returned +26.1% vs the SPX -24.8% (year-to-date ended 9/30/2022).



Review. Risk Diversifying Strategies

Returns and Correlation Macro Dependent

- **Risk Diversifying Portfolios Benefit from Diversification.** No strategy will perform well in all environments.
 - With the addition of Acadian and Sit LLCAR, RDP one-year return correlation decreased from 0.7 to 0.5.
- **Returns & Correlations are not Static.**
 - **AFL-CIO.** Return correlation was 0.3, or low from 2018 to 2020, from 2021 to today correlation is 0.7, or high.

Downturn Type	Downturn Example	Indices					Actual Strategies	
		Equity (ACWI)	MBS	Taxable Munis	Alt. Risk Risk Premia	Momentum	Volatility Risk Premium	Hybrid
Sharp Downturn	COVID*	-26.0%	2.0%	-2.8%	4.3%	-1.3%	-13.2%	-2.2%
Sustained Downturn	GFC**	-55.8%	12.9%	0.6%	0.6%	31.1%	8.9%	11.1%
Infl. & Rates	YTD Sep. '22	-25.3%	-13.7%	-19.3%	-8.0%	35.6%	-9.9%	-2.3%
	<i>Example:</i>	<i>Artisan</i>	<i>AFL-CIO</i>	<i>Sit slice</i>	<i>Acadian</i>	<i>Trend (TBD)</i>	<i>Parametric</i>	<i>Sit LLCAR</i>

Sources: Bloomberg, Northern Trust, CCCERA investment managers.

*COVID: 02/19/2020 - 04/03/2020 (Hybrid uses simply March 2020 due to data availability).

**GFC: 10/01/2007 - 03/06/2009 (VRP and Hybrid end February 2020 due to data availability).

Asset Allocation

- Risk Diversifying Portfolio – Slightly above 7.0% target at 7.9% due to denominator effect, i.e., depreciation of portfolio as a whole.
- Reduced level of core bond assets, increased alternative risk premia focused assets.
- Returns with low or negative correlation to equity.

Risk Diversifying Portfolio Allocation Year over Year

Investment Manager	\$ in MMs as of 9/30/2021	% of RDP	\$ in MMs as of 9/30/2022	% of RDP
AFL-CIO	263.6	34.4%	220.0	28.1%
Parametric Volatility Risk Premium	115.2	15.0%	-	0.0%
Acadian	181.3	23.7%	263.4	33.6%
Sit LLCAR	206.3	26.9%	299.5	38.3%
Total Risk Diversifying	766.5	100.0%	783.0	100.0%
Total CCCERA	11,252.0	6.8%	9,931.4	7.9%

Returns – Risk Diversifying Portfolio

- Over the one-year period ended 9/30/2022, CCCERA Global Equity returned -23.1% and the CCCERA Risk Diversifying Portfolio returned -4.4%, nominal.
- Over the one-year period ended 9/30/2022, the Investment added \$75MM to both Acadian and Sit LLCAR.

Returns, net of fees (09/30/2022)	3 Mos.	YTD	1 Yr.	3 Yrs	5 Yrs	10 Yrs.	ITD	Inception
Risk Diversifying Portfolio	-0.8%	-4.1%	-4.4%	-1.2%	0.1%	1.3%	0.1%	9/30/2016
CPI	0.2%	6.5%	8.2%	5.0%	3.8%	1.3%	3.5%	
AFL-CIO	-4.9%	-14.1%	-14.4%	-3.6%	-0.5%	0.7%	4.9%	08/31/1991
BBG US Aggregate	-4.8%	-14.6%	-14.6%	-3.3%	-0.3%	0.9%	4.8%	
Acadian Multi Asset	3.1%	3.5%	2.4%	NA	NA	NA	3.4%	07/31/2020
91 Day T-Bill + 5%	1.9%	4.8%	6.1%	NA	NA	NA	5.5%	
Sit LLCAR	-0.8%	-2.3%	-2.8%	NA	NA	NA	1.0%	03/31/2021
BB Barclays US Agg + 1%	-4.5%	-14.0%	-13.7%	NA	NA	NA	-7.9%	

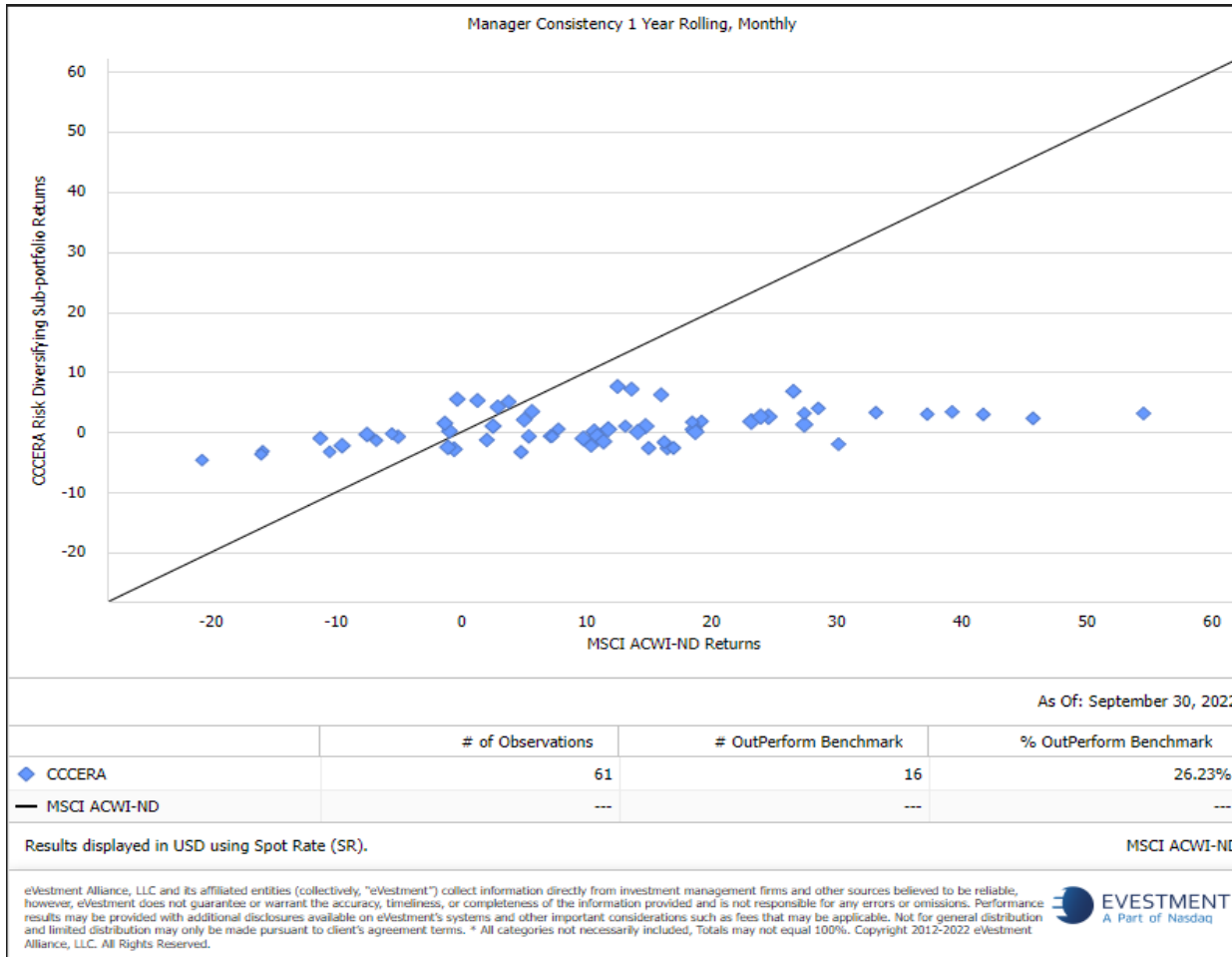
CCCERA Performance

- **Returns and Correlation.** Five-year correlation to MSCI ACWI is unchanged y/y at 0.8 (5-year correlation to CCCERA public equity is 0.6). The trailing five-year real returns have decreased from -1.5% to -3.8% (1.1% to 0.1% nominal). Trailing one-year correlation (ACWI) and returns are 0.2 and -4.4%, respectively.
- **September 2022.** For the LTM ended 9-30-22, SPX declined 23.1%, while the RDP declined 4.4%.
- **Short track record.** Initial RDP strategies were presented by Verus in 2Q2017.
- **Evolution.** Identified and funded strategies are diversified that function across drawdown and market scenarios.

As of September 30, 2022

Objective	Measurement	Current Period Data	Status
Offset Volatility in Growth Portfolio	Correlation	0.76 over trailing 5 years; TTM 0.2	Below Expectations
Positive Real Returns	Returns	Trailing 5-year real return -3.8%	Below Expectations
High Liquidity	% of Portfolio that can be liquidated within 90 days	100%	Meeting Expectations

Risk Diversifying vs. MSCI ACWI



Risk Diversifying trailing one-year performance vs. MSCI ACWI (global equity) index since 9/30/2016.

Demonstrates low correlation and modest positive performance historically.

RDP Portfolio Actions: 2021 and 2022

2021 Recovery

- Rebalancing & Funding
 - Sit LLCAR: \$150MM initial funding 2Q
 - Acadian: Added \$50MM 3Q
 - Sit LLCAR: Added \$50MM 3Q
 - Year-over-year, RDP as a percentage of CCCERAs total portfolio increased from 5.8% to 6.7%
 - RDP target allocation decreased from 10% to 7%

2022 Changing Macro/Policy

- Rate & Inflation
 - CPI peaks June 2022 at 9.1%
 - Policy rate up 0.25% from 0.30% to 3.25%.
- Rebalancing & Funding
 - Added to assets with low sensitivity to positive bond equity correlation: \$75MM to Acadian and \$75MM to Sit LLCAR.
 - No additions to AFL-CIO.

Future Enhancements



Identifying complementary strategies is a priority for the CCCERA investment team. Develop battle plan for specific drawdown depths and lengths.



Currently researching three types strategies for potential inclusion:

- Multi-asset absolute return strategies
- Momentum aka trend following or managed futures
- Alternative risk premia



Fund additional strategy in 2023

Investment Manager Discussion

- Investment manager discussion
 - AQR presentation Trend investing as a risk diversifying strategy.
- Agenda
 - AQR: Kim Trefz and Erik Stamelos
 - Overview Trend history, fundamentals, return characteristics and role within the CCCERA Risk Diversifying Sub-Portfolio.
 - Q&A from Trustees.

Meeting Date
11/02/2022
Agenda Item
#12

Managed Futures Overview

Prepared exclusively for Contra Costa

November 2, 2022



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Executive Summary

Overview of Managed Futures

1. Managed Futures is an established alternative strategy that takes advantage of behavioral biases, e.g., under-reaction, herding, in markets using a systematic trend-following approach.
2. Constructing a trend-following portfolio comes with many possible choices, and diversification and innovation can help achieve long-term success.
3. Trend following has a dual mandate – attractive returns during prolonged market downturns and economic shocks while achieving overall long-term positive, uncorrelated returns.



Over 20 Years of Managed Futures Research at AQR

\$3.8B in dedicated strategies and utilized in the \$41.5B alts platform

Journal of Financial Economics 104 (2012) 238–250

Contents lists available at ScienceDirect
Journal of Financial Economics

Time series momentum¹²

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ABSTRACT

We document significant “time series momentum” in equity index, currency, commodity, and bond returns for over 100 years. This paper provides a partial explanation for the momentum phenomenon in returns for returns to 10 periods that partially reverses over longer horizons, consistent with some theories of asset price bubbles and market microstructure. A diversified portfolio of time series momentum strategies across all asset classes consistently outperforms alternative strategies with little exposure to dividend yield, pricing factors and performs best during extreme markets. Examining the trading activities of operations and hedgers, we find that momentum profits from time series momentum at the expense of hedgers.

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Which Trend Is Your Friend?
An Levine and Lasse Heje Pedersen

Managed futures funds and commodity trading advisors (CTAs) use technical or statistical measures often called “filters” to trade on price trends. Two key statistical measures of trends are “time series momentum” and “moving-average crossovers.” We show, empirically and theoretically, that these trend indicators are closely related. In fact, they are equivalent representations in their most general forms. They also capture many other types of filters, such as the Haldrup–Pinnart (HP) filter, the Kalman filter, and all other linear filters. We show how these filters can be approximated through “trend signature plots,” demonstrating their dependence on past prices and returns by horizon.

ABSTRACT

Trend-following investing is the predominant investment style for managed futures hedge funds, commodity trading advisors (CTAs), and certain macro traders. Trend-following investing can be defined broadly as buying when prices have been rising and selling short when prices have been falling. The strategy is based on the idea that price trends are more likely to continue than not. Several studies have found trend following investing to be profitable,¹² but what is the best way to identify a price trend? What methods exist for identifying trends, and how do they compare with one another? These are the questions we seek to address in this article.

In part one, we find that, in a broader perspective, we note that because slow-moving price changes are “noisy,” finding a trend that predicts the near day’s price move in any market is never easy. According to the so-called random walk or efficient market hypothesis, future price moves are completely unpredictable.

August 2017

A Half Century of Macro Momentum

TRENDS EVERYWHERE

Abhilash Babu^a, Brian Hurst^a, Yao Hua Ooi^b, Lasse Heje Pedersen^{a,b}, and Erik Stamelew^a

We provide new out-of-sample evidence on trend following investing by studying its performance for 42 securities not previously examined and 10 long-short equity factors. Specifically, we study the performance of time series momentum for emerging market equity index futures, fixed income swaps, emerging market currencies, exotic commodity futures, credit default swap indices, volatility futures, and long-short equity factors. We find that time series momentum has worked across these asset classes and across several trend factors. We examine the cross-section of trends across asset classes and factors, the performance during different market environments, and discuss the implications for investors.

1 Introduction

Trend-following investing has attracted a lot of attention over the past decade due to its strong performance. When the past returns are negative (Moskowitz et al., 2012). Further, this time series momentum strategy can explain most of the performance of real-world CTA and managed futures funds.

JOURNAL OF INVESTMENT MANAGEMENT, Vol. 11, No. 3, (2013), pp. 43–58

DEMISTIFYING MANAGED FUTURES

Brian Hurst^a, Yao Hua Ooi^b, and Lasse Heje Pedersen^a

We show that the returns of Managed Futures Funds and CTAs can be explained by time series momentum strategies and we discuss the economic intuition behind these strategies. Time series momentum strategies produce high correlations and high R-squares with Managed Futures indices and individual manager returns, including the largest and most successful managers. While the largest Managed Futures managers have realized significant alphas to traditional long-only benchmarks, controlling for time series momentum strategies drives the alphas of most managers to zero. We consider a number of implementation issues relevant to time series momentum strategies, including risk management, risk allocation across asset classes and trend horizons, portfolio rebalancing frequency, transaction costs, and fees.

1 Introduction

Managed Futures hedge funds and commodity trading advisors (CTAs) have existed at least since Richard Doddman started his fund in 1949 and they have proliferated since the 1970s when futures exchanges expanded the set of tradable contracts.¹ BarclayHedge estimates that the CTA industry has grown to managing approximately \$300B as of the end of the first quarter of 2012. Although these funds have existed for decades and have attracted large amounts of capital, they have not been well understood. One potential reason for this is because the ability to charge high fees requires maintaining a certain amount of mystery as to the core underlying strategy. Fung and Hsieh (2001) find that portfolios of lock-back straddles have explanatory power for Managed Futures returns, but these lock-back straddles are not implementable as they use data from future time periods.

We show that simple implementable trend-following strategies—specifically time series momentum strategies—can explain the returns of Managed Futures Funds. We provide a detailed analysis of the economics of these strategies and apply them to explain the properties of Managed Futures funds. Using the returns to time series

Trend Following and Rising Rates

Brian Hurst
Principal

Yao Hua Ooi
Principal

Erik Stamelew
Vice President

May 2015

We examine the performance of a hypothetical trend following strategy over the past 70 years, paying particular attention to periods where short-term policy rates or long-term interest rates rise. We find that the strategy’s return characteristics and attractive diversification properties, particularly its tendency to perform well in protracted equity drawdowns, are not diminished during historical rising rate environments, and that the result is consistent across geographies. We also show that the strategy’s historical performance has shown little dependence on the level of starting nominal bond yields, as it has the potential to perform well in both high and low interest rate regimes.

The Journal of Portfolio Management

VOLUME 41, NUMBER 1 | www.aqr.com | FALL 2017

A Century of Evidence on Trend-Following Investing

BRIAN HURST, YAO HUA OOI, AND LASSE HEJE PEDERSEN

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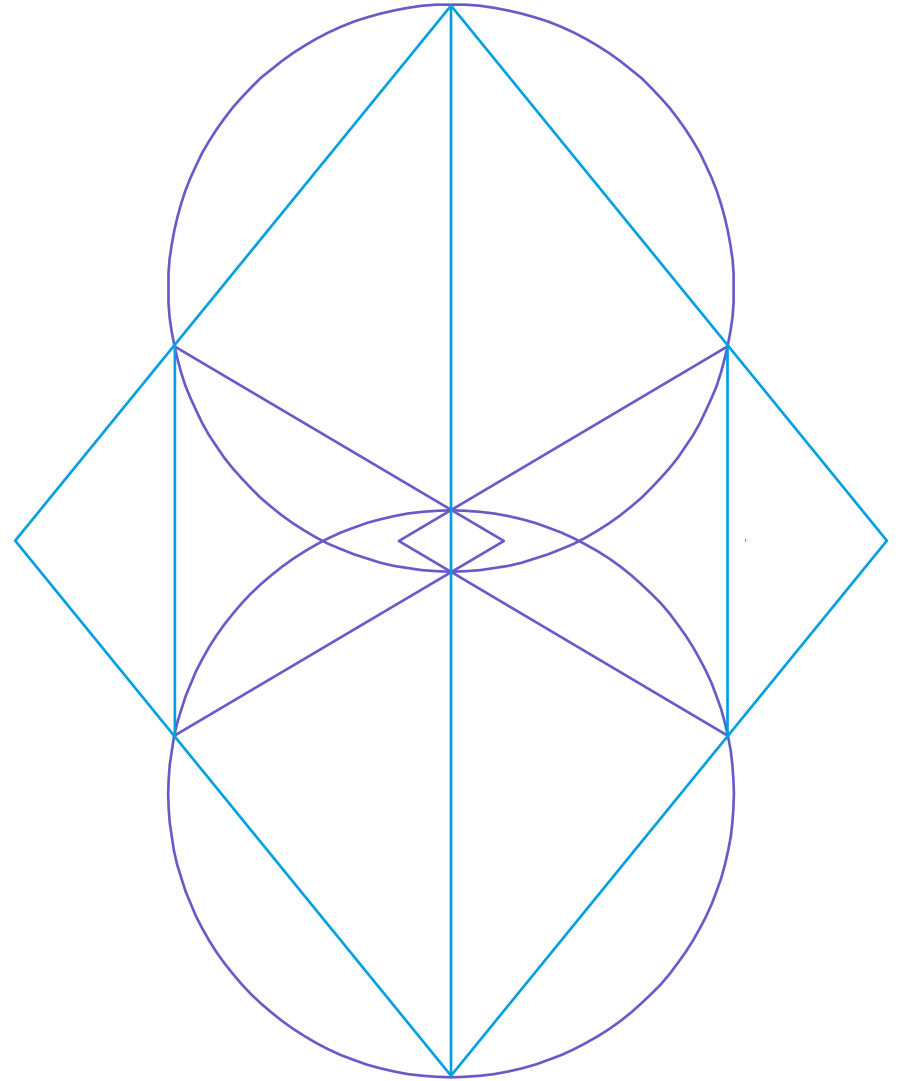
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You Can't Always Trend When You Want

ABHILASH BABU, BRENDAN HOFFMAN, ARI LEVINE, YAO HUA OOI, SARAH SCHROEDER, AND ERIK STAMELEW



What Is Managed Futures?



What Is Managed Futures?

Managed Futures is a strategy that:

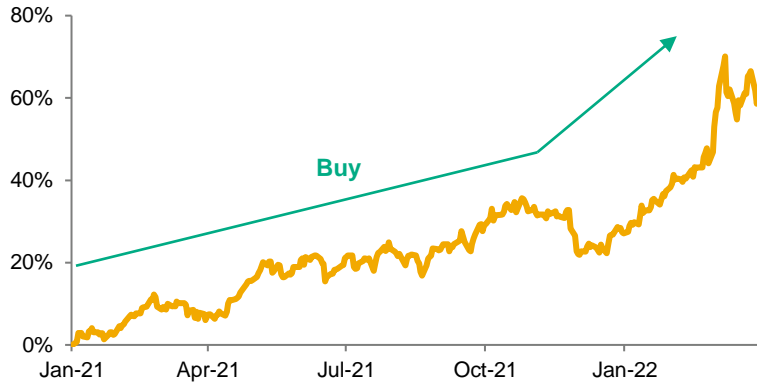
- Aims to deliver positive returns with low average correlation to traditional markets over the long term
- Uses a diversified set of liquid futures and other instruments
 - Futures provide a low cost, efficient solution to creating investment exposures and managing risk
 - Allows investors to maintain a highly liquid portfolio
 - Are often exchange-traded with safeguards to protect market participants
- Provides exposures to a broad range of markets and asset classes including:
 - Global equities
 - Global fixed income
 - Global currencies
 - Commodities
- Relies to a meaningful degree on a core **trend-following** approach
 - Buying assets as they rise in price over various horizons
 - Selling short assets as they fall in price over various horizons



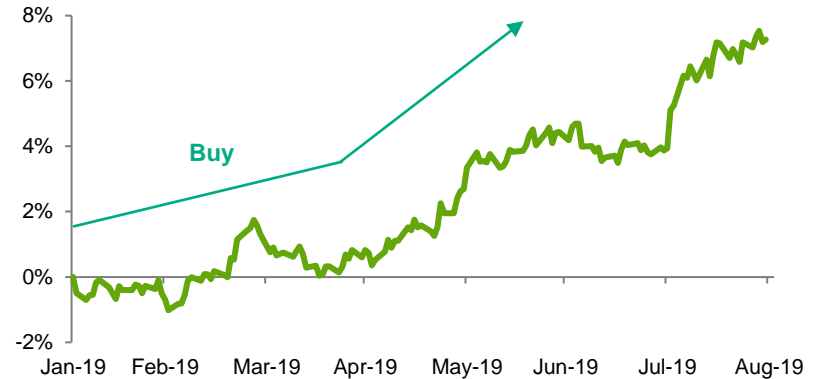
Trend Following as a Core Approach

A strategy that profits from “good to great” and “bad to worse”

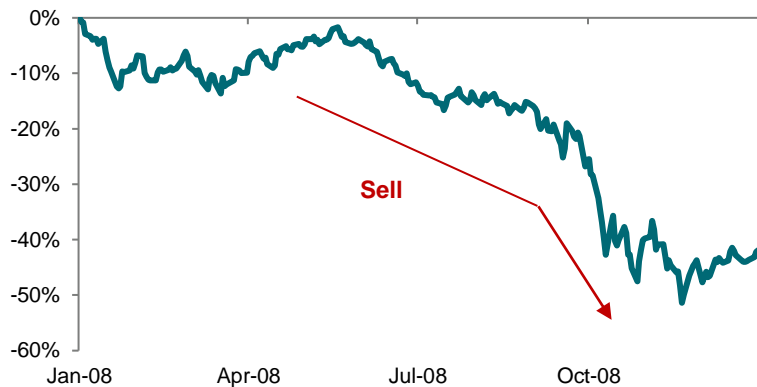
Good to Great: Bloomberg Commodity Index
January 2021 – March 2022



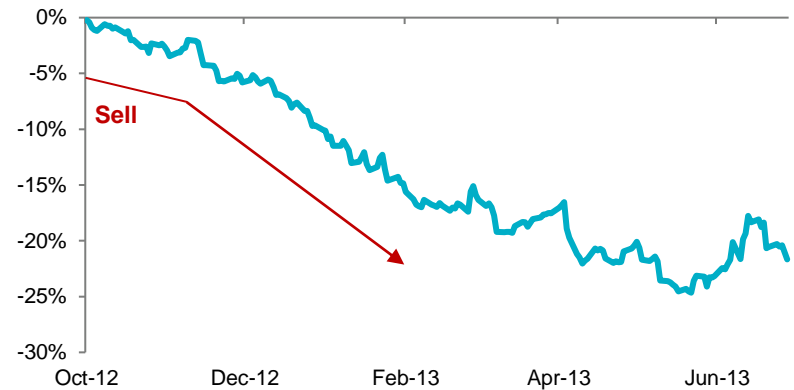
Good to Great: U.S. 10-Year Bonds
January 2019 – August 2019



Bad to Worse: MSCI World Index
January 2008 – December 2008

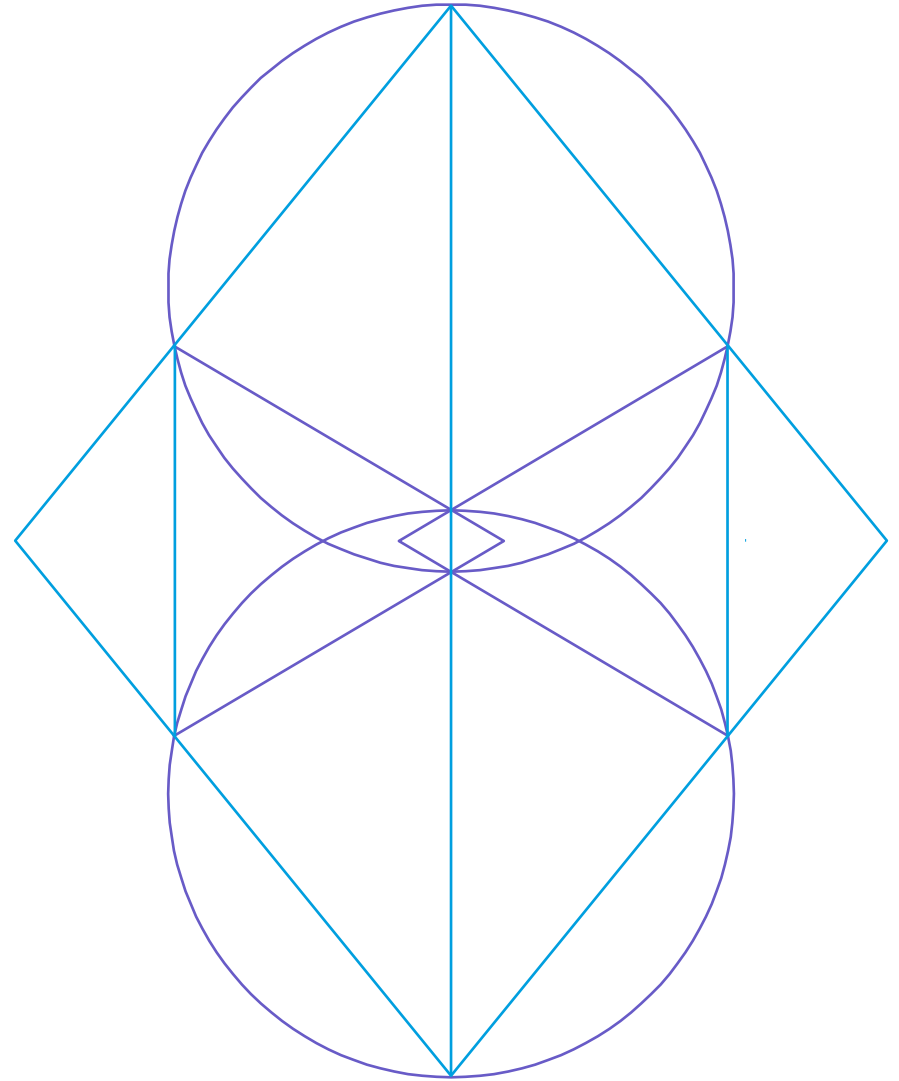


Bad to Worse: Japanese Yen versus U.S. Dollar
October 2012 – June 2013



Source: Bloomberg. The charts above are for illustrative purposes only. See Appendix for description of indices

Why Does Trend Following Work?



How Should Investors Behave?

...And how do they *actually* behave?

- **Rational view:** wealth maximizing and low risk-taking
 - Well-diversified, “efficient” portfolios
 - Incorporate all available information
 - Only “fundamentals” matter



- **Behavioral view**
 - Individuals suffer from biases and misperceptions
 - Don't always incorporate relevant information
 - Sometimes base decisions on “non-fundamentals” / emotions



Why Do Markets Trend?

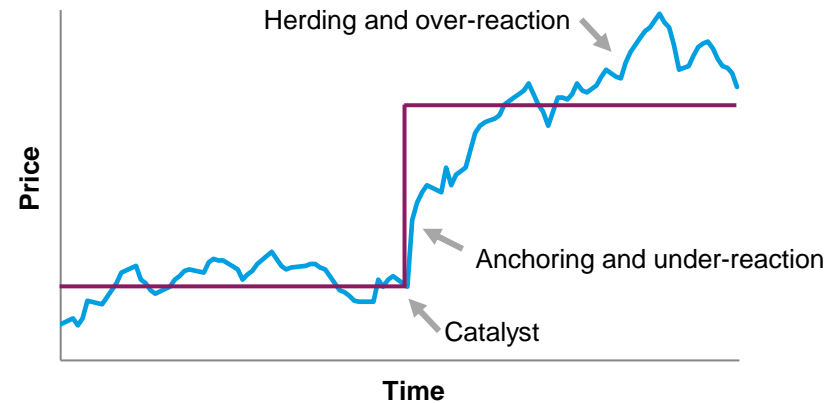
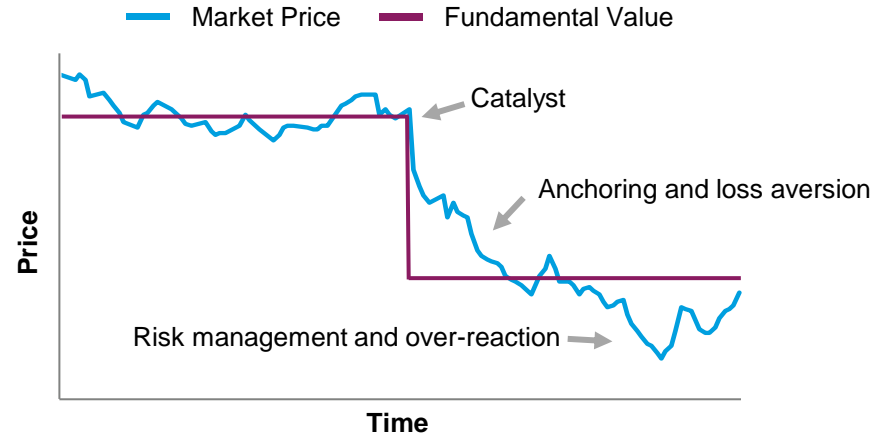
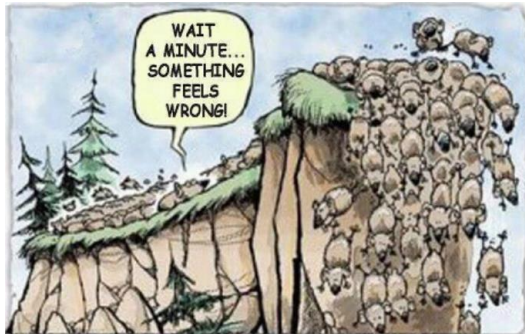
Prices tend to under-react to new information

Trends can result from behavioral biases and non-profit-seeking market participants (e.g., hedging, central banks).

Anchoring:



Herding:



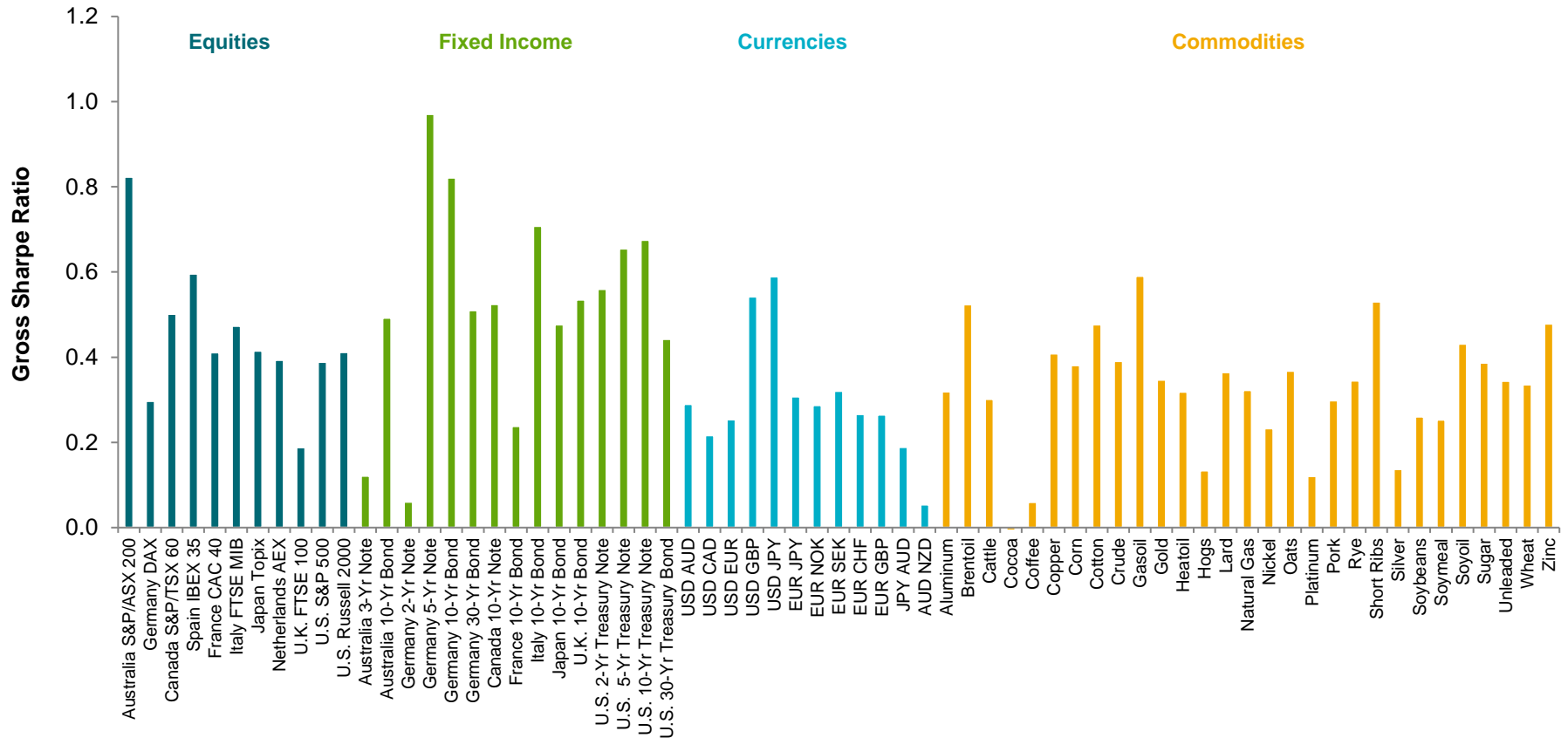
Source: AQR. The chart above is a hypothetical illustration and not representative of an actual investment. Image sources: <https://www.zillow.com/sellers-guide/when-to-reduce-house-price>, <https://greekshares.com/investing-and-herd-mentality-are-you-a-lemming>. For illustrative purposes only. The use of the logos and pictures is for informational purposes only and is not authorized by, sponsored by or associated with the trademark owners. Please read important disclosures in the Appendix.

Long-Term Evidence for Trend Following

Trends are pervasive across markets and asset classes

Hypothetical Trend-Following Sharpe Ratio for Individual Assets and Asset Classes

January 1880 – June 2022

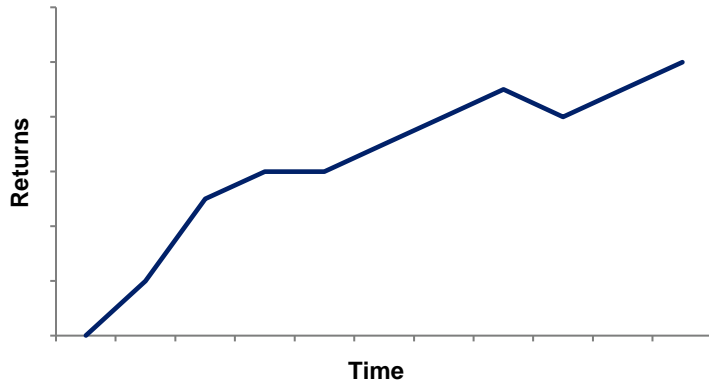


Source: AQR. The Sharpe ratios are based on the Hypothetical Trend-Following Strategy. The results are based on a backtest, gross of fees and estimated transaction costs. The 3-Month T-Bill is the risk-free rate used to derive the Sharpe ratio. This analysis is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Not all markets have return data going back to 1880, calculations are based on the longest time period available for each asset. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

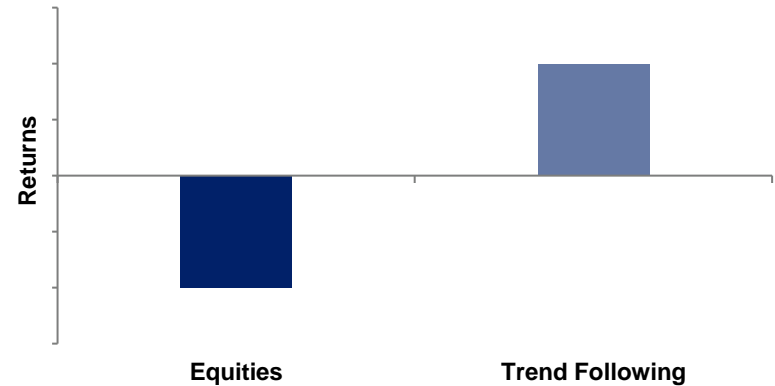
What Can Trend Following Deliver?

Trend following's implicit dual mandate

Deliver Positive Returns on Average

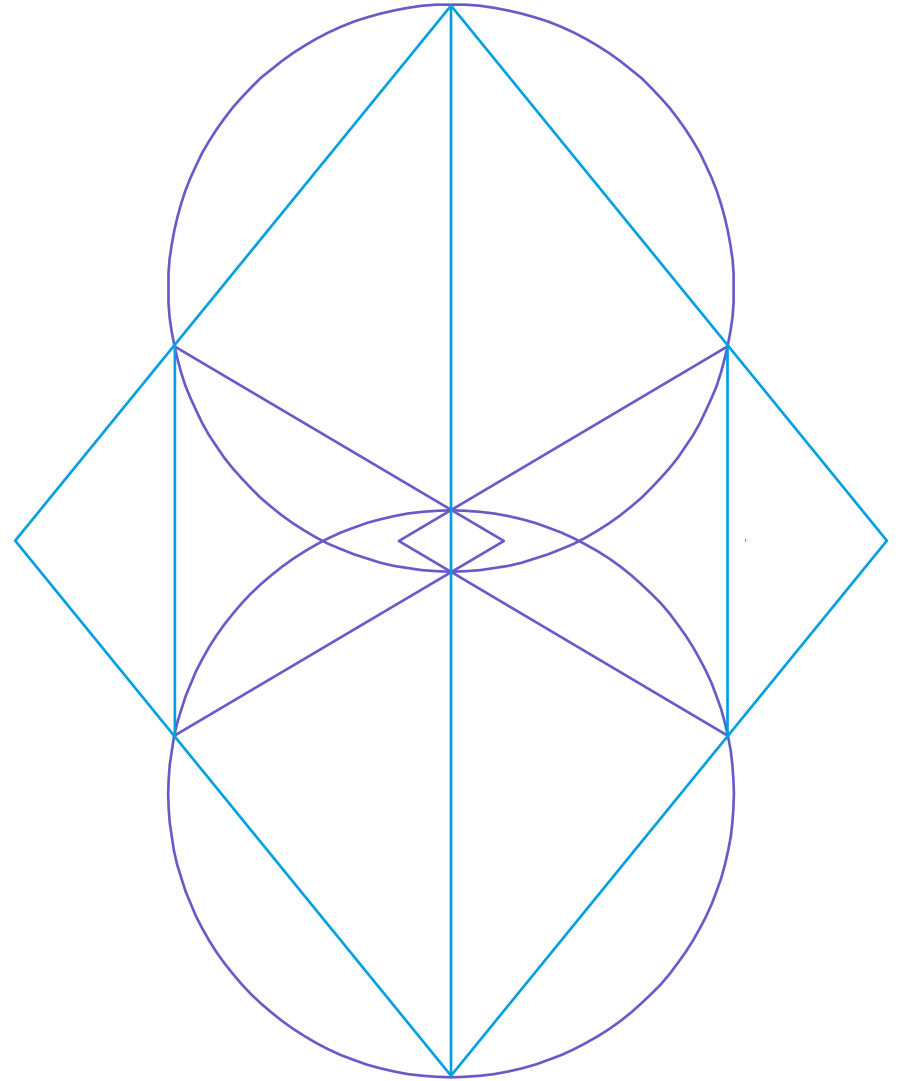


Generate Attractive Returns During Large Equity Market Drawdowns



Source: AQR. The charts above are hypothetical illustrations and not representative of an actual investment. For illustrative purposes only. Please read important disclosures in the Appendix.

Implementing Trend Following



Managers Face Many Choices When Implementing the Strategy

Trend following benefits from diversification and ongoing research

Asset Universe

- Define asset classes that show diversifying trends
 - e.g., equities, fixed income, commodities, currencies
 - Define assets to further improve diversification
 - e.g., within commodities, crude oil, copper and soybeans
 - Add new markets over time
-

Signal Types

- Define signals that deliver the dual mandate
 - e.g., short-term price trends, long-term price trends
 - Add new signals over time that maintain the dual mandate and are diversifying
 - e.g., fundamental trends can play a role
-

Portfolio Construction

- Define a risk-management based investment process
- Target the acceptable level of risk for the investor
- Prudently risk manage exposures and improve diversification
- Maintain high free cash and manage transaction costs



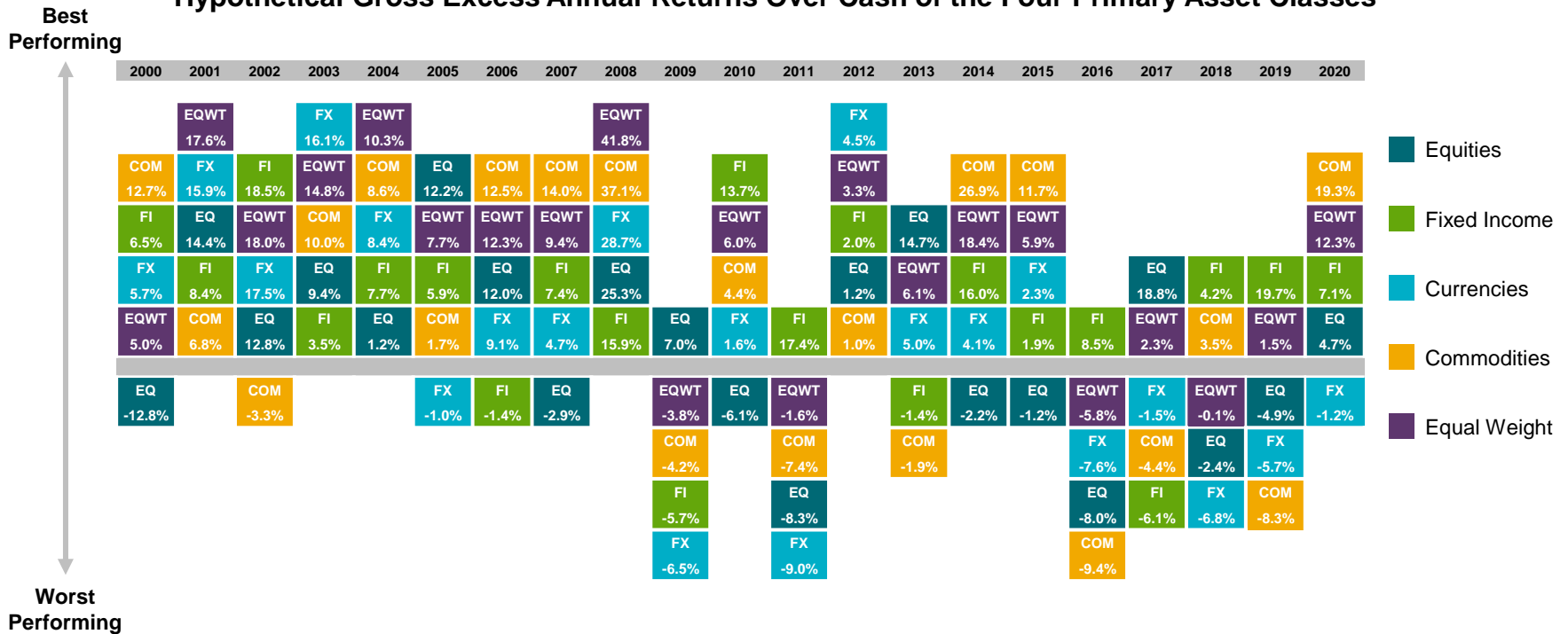
Benefits of Multiple Asset Class Exposures

Trend following works across many asset classes

Although trend-following strategies in each of these asset class signals tends to have positive returns over the long term, year by year results can vary and are difficult to predict.

An equally balanced approach may give the best chance for consistent success.

Hypothetical Gross Excess Annual Returns Over Cash of the Four Primary Asset Classes



Source: AQR. Data above is from January 1, 2000 through December 31, 2020. Analysis above is based on the AQR Managed Futures Strategy 10% Volatility Backtest. Hypothetical annual performance for each of the four primary asset classes in the AQR Managed Futures Strategy 10% Volatility Backtest are shown above. Please read performance disclosures in the Appendix for a description of the investment universe used to construct the backtests. Hypothetical performance is gross of management fees. Gross performance results do not reflect the deduction of investment advisory fees and other expenses, which would reduce an investor's actual return. Hypothetical performance results have inherent limitations, some of which are disclosed in the Appendix. Diversification does not eliminate the risk of experiencing investment loss.

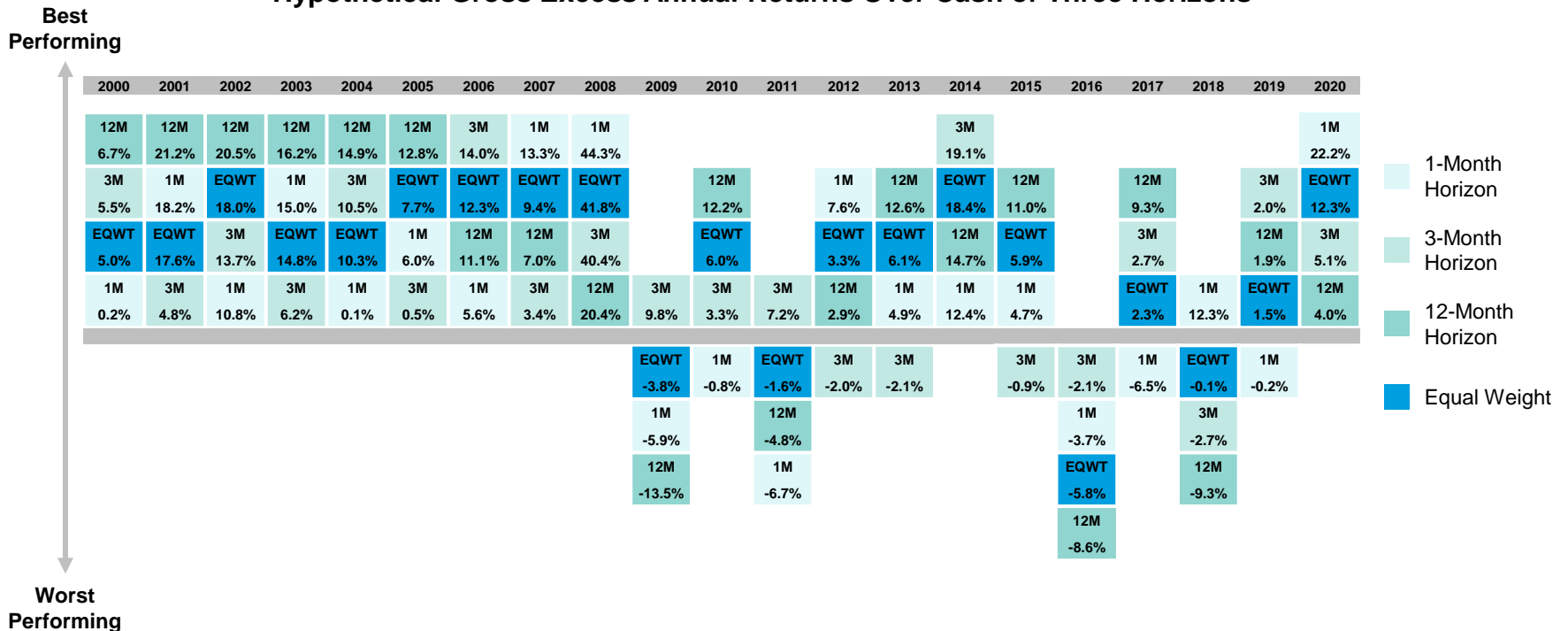
Benefits of Multiple Trend Horizons

Trend following works across many horizons

Although each of these trend horizon signals tends to have positive returns over the long term, it is difficult to predict when a particular trend horizon signal will work.

In our view, diversifying across many trend horizons maximizes the chance of success.

Hypothetical Gross Excess Annual Returns Over Cash of Three Horizons



Source: AQR. Data above is from January 1, 2000 through December 31, 2020. Analysis above is based on the AQR Managed Futures Strategy 10% Volatility Backtest. Hypothetical annual performance for each of the three horizons in the AQR Managed Futures Strategy 10% Volatility Backtest are shown above. Please read performance disclosures in the Appendix for a description of the investment universe used to construct the backtests. Hypothetical performance is gross of management fees. Gross performance results do not reflect the deduction of investment advisory fees and other expenses, which would reduce an investor's actual return. Hypothetical performance results have inherent limitations, some of which are disclosed in the Appendix. Diversification does not eliminate the risk of experiencing investment loss.

Building a Trend-Following Portfolio Using Futures

High levels of free cash allow for liquidity and prudent risk management

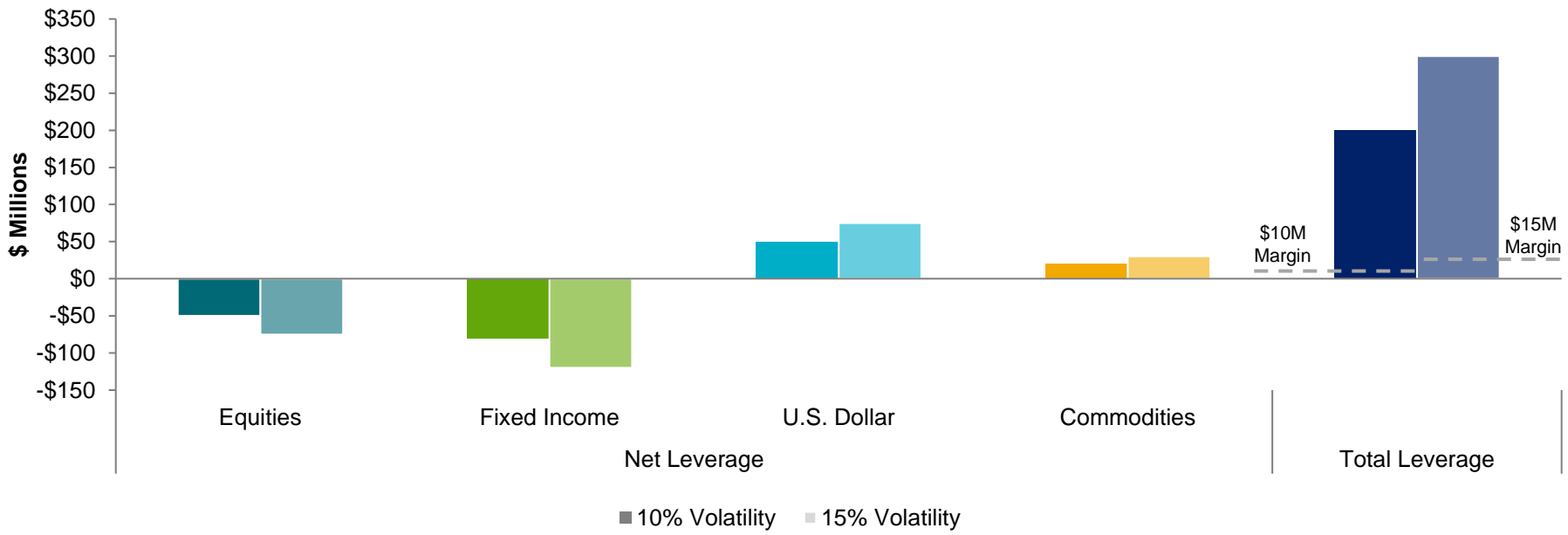
Trend Following 10% Vol. \$100M Balance Sheet

Assets		Liabilities	
Free Cash:	\$90M	Debt:	\$0M
Cash Collateral for Derivatives:	\$10M	No borrowed capital	

Trend Following 15% Vol. \$100M Balance Sheet

Assets		Liabilities	
Free Cash:	\$85M	Debt:	\$0M
Cash Collateral for Derivatives:	\$15M	No borrowed capital	

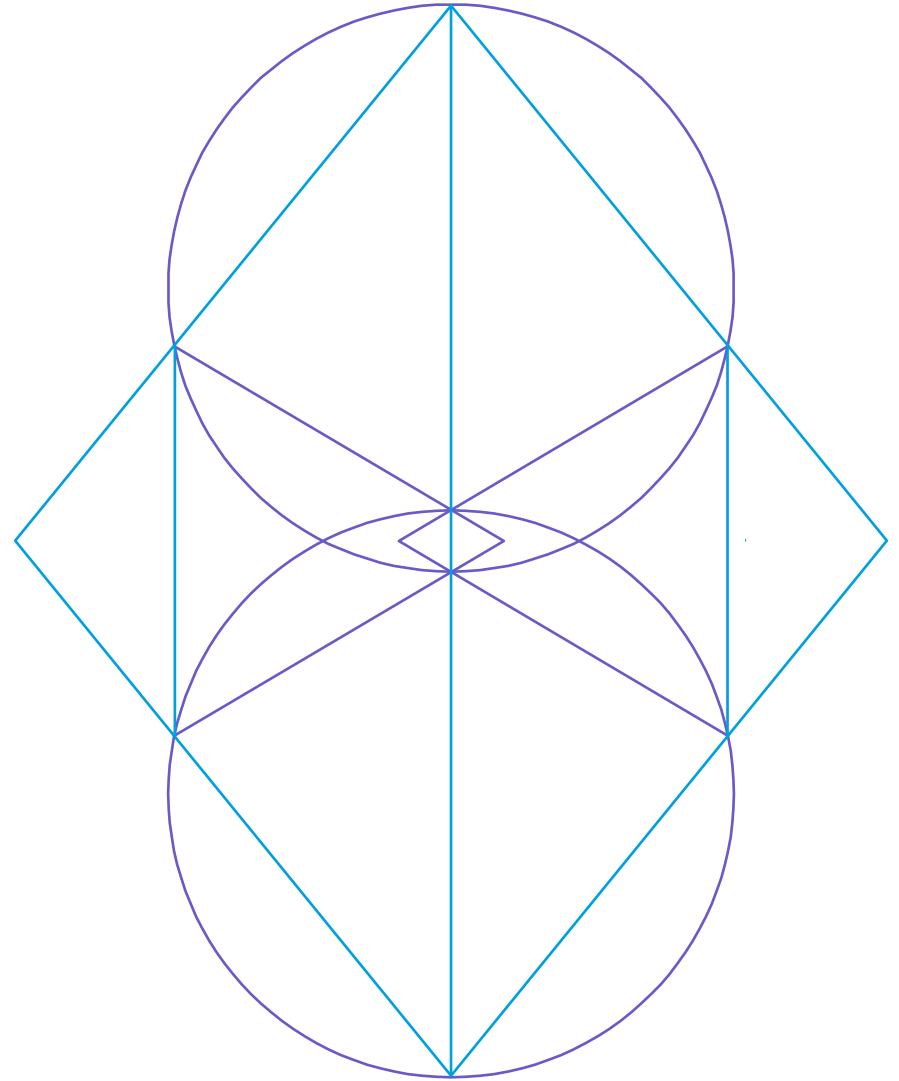
Example of Trend Following Economic Exposures



Source: AQR. Dollar amounts shown here are for illustrative purposes only and not representative of the actual or target assets/liabilities of any AQR client account, fund or strategy, or that of any other adviser. Please read important disclosures in the Appendix.

Why Invest in Trend Following?

Long-term results

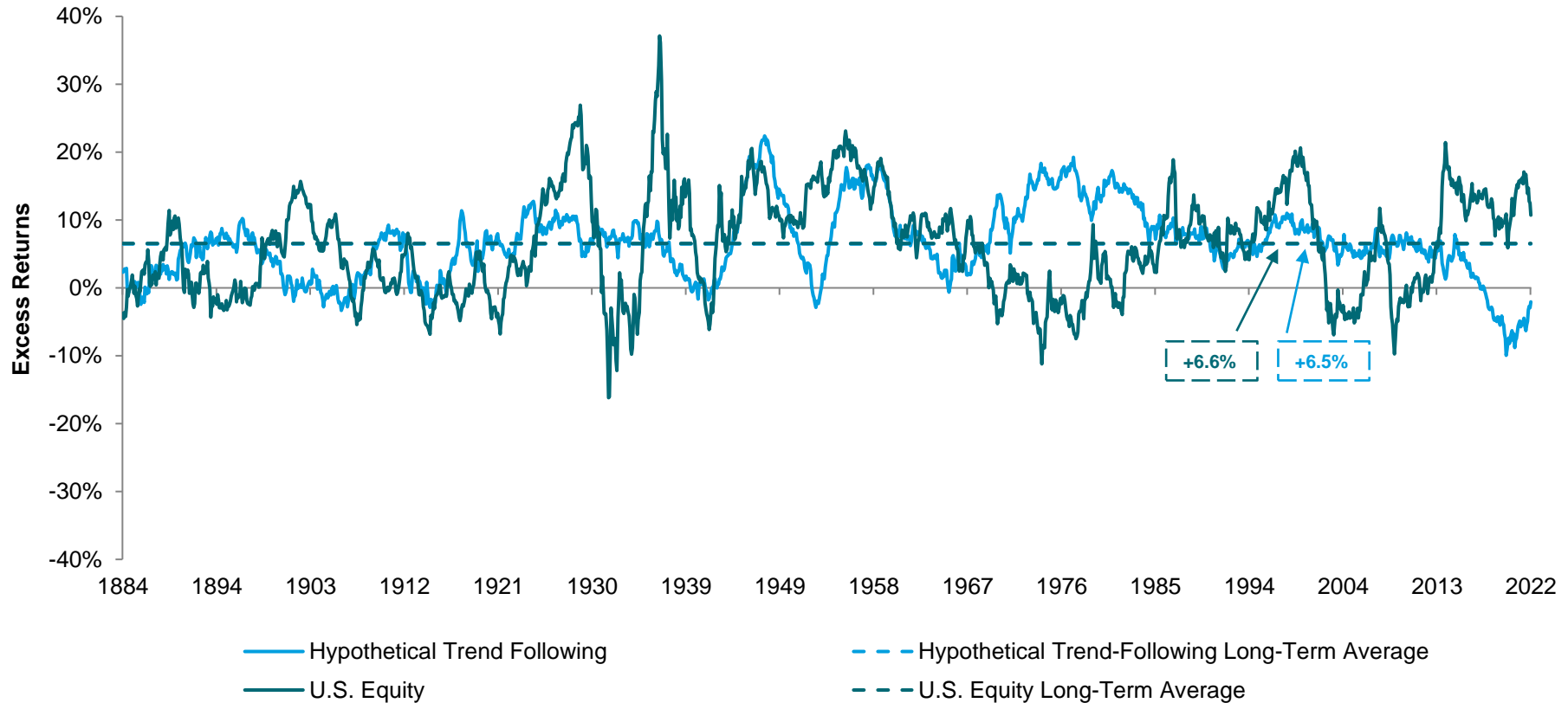


Why Invest in Trend Following?

Exhibits meaningful returns with low correlations to equities

5-Year Rolling Annualized Excess Returns

January 1880 – June 2022



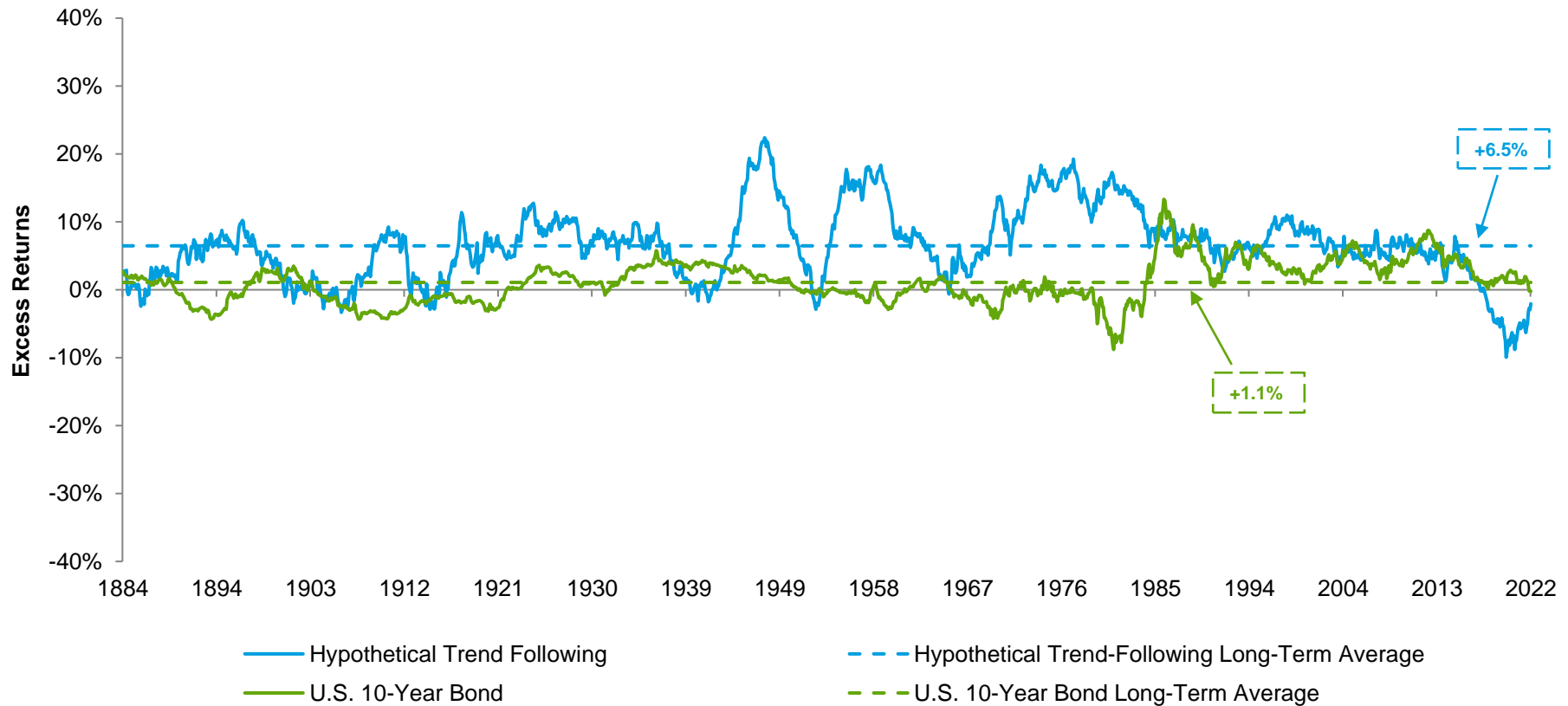
Source: AQR. The relevant cash rate is assumed to be U.S. 3-Month Treasury Bills. The results are based on the Hypothetical Trend-Following Strategy targeting 10% volatility. Performance is a backtest, net of 2/20 fees and estimated transaction costs. Excess returns are excess of cash. The relevant cash rate is assumed to be 3-Month T-Bills. This analysis is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy and for details on the construction of the U.S. Equity series. Markets considered only where data existed during the time period. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

Why Invest in Trend Following?

Exhibits meaningful returns with low correlations to bonds

5-Year Rolling Annualized Excess Returns

January 1880 – June 2022



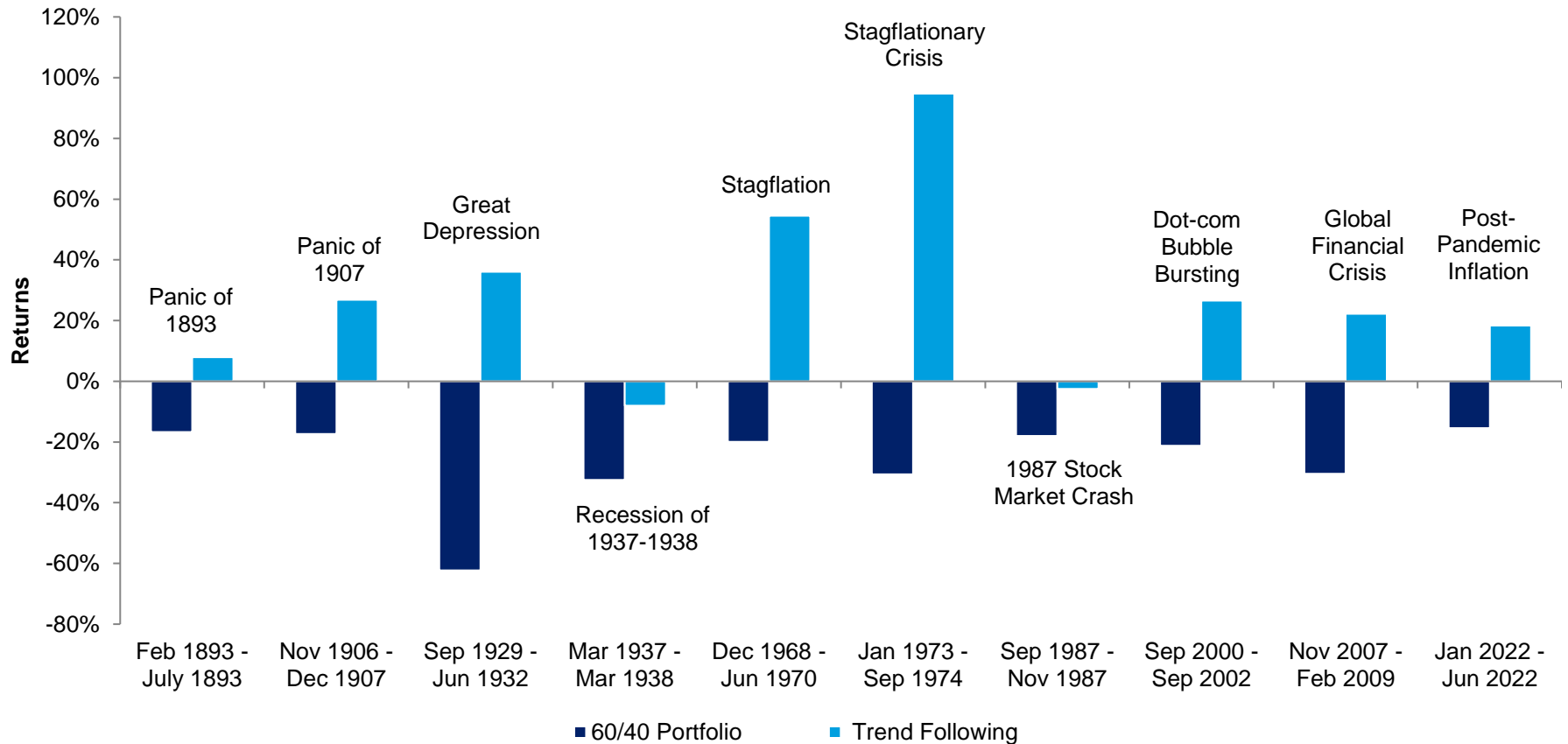
Source: AQR. The relevant cash rate is assumed to be U.S. 3-Month Treasury Bills. The results are based on the Hypothetical Trend-Following Strategy targeting 10% volatility. Performance is a backtest, net of 2/20 fees and estimated transaction costs. Excess returns are excess of cash. The relevant cash rate is assumed to be 3-Month T-Bills. This analysis is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy and for details on the construction of the U.S. 10-Year Bond series. Markets considered only where data existed during the time period. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

Why Invest in Trend Following?

Performed well in severe market downturns

Hypothetical Performance During the 10 Largest Drawdowns for a 60/40 Portfolio

January 1880 – June 2022



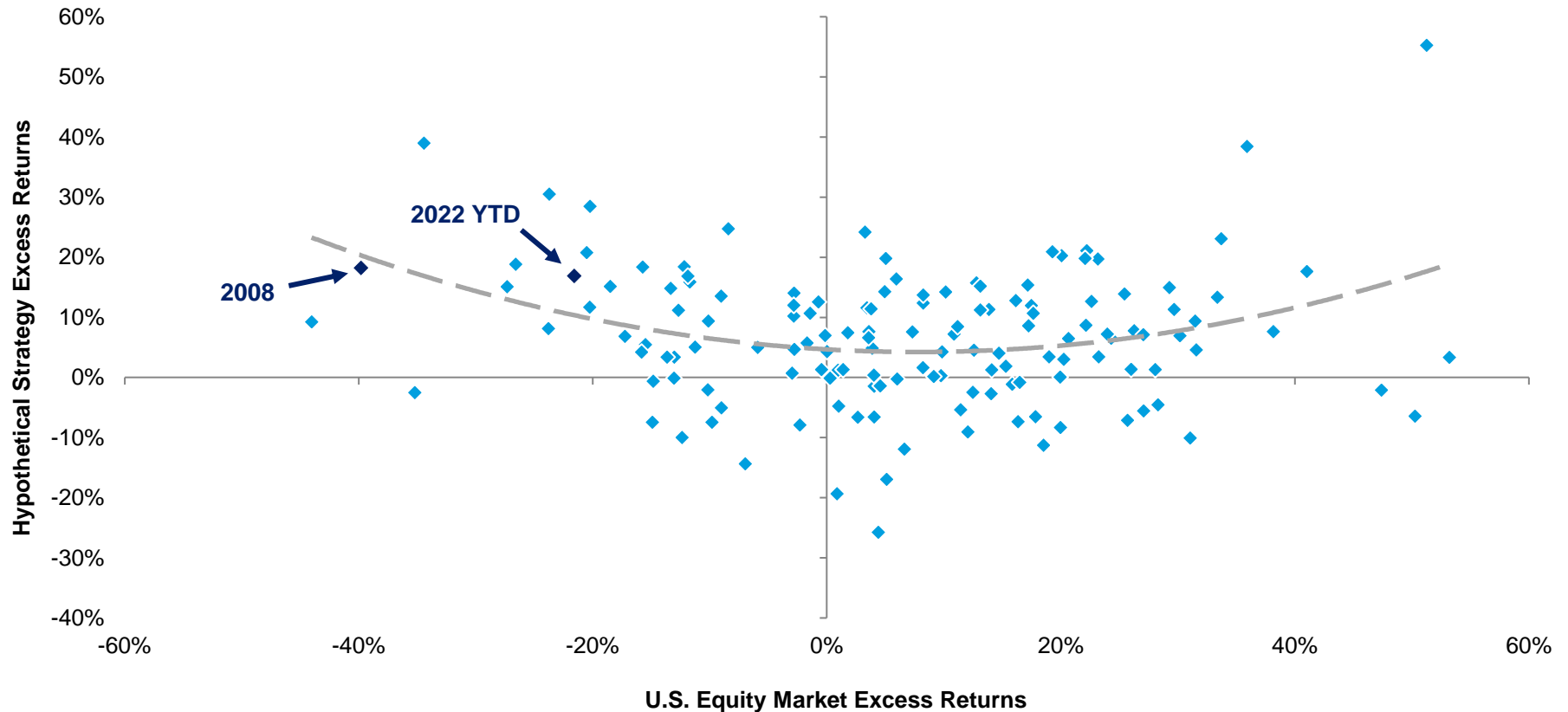
Source: AQR. The Hypothetical Trend-Following Strategy performance is a backtest, net of 2/20 fees and estimated transaction costs. The 60/40 portfolio has 60% invested in S&P 500 and 40% invested in U.S. 10-year bonds. The portfolio is rebalanced monthly, and no fees or transaction costs are subtracted from the returns. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy and for details on the construction of the S&P 500 series. Markets considered only where data existed during the time period. Chart is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

Why Invest in Trend Following?

Can perform well in bull and bear equity markets

Hypothetical Trend-Following vs. U.S. Equity Market Annual Returns

January 1880 – June 2022



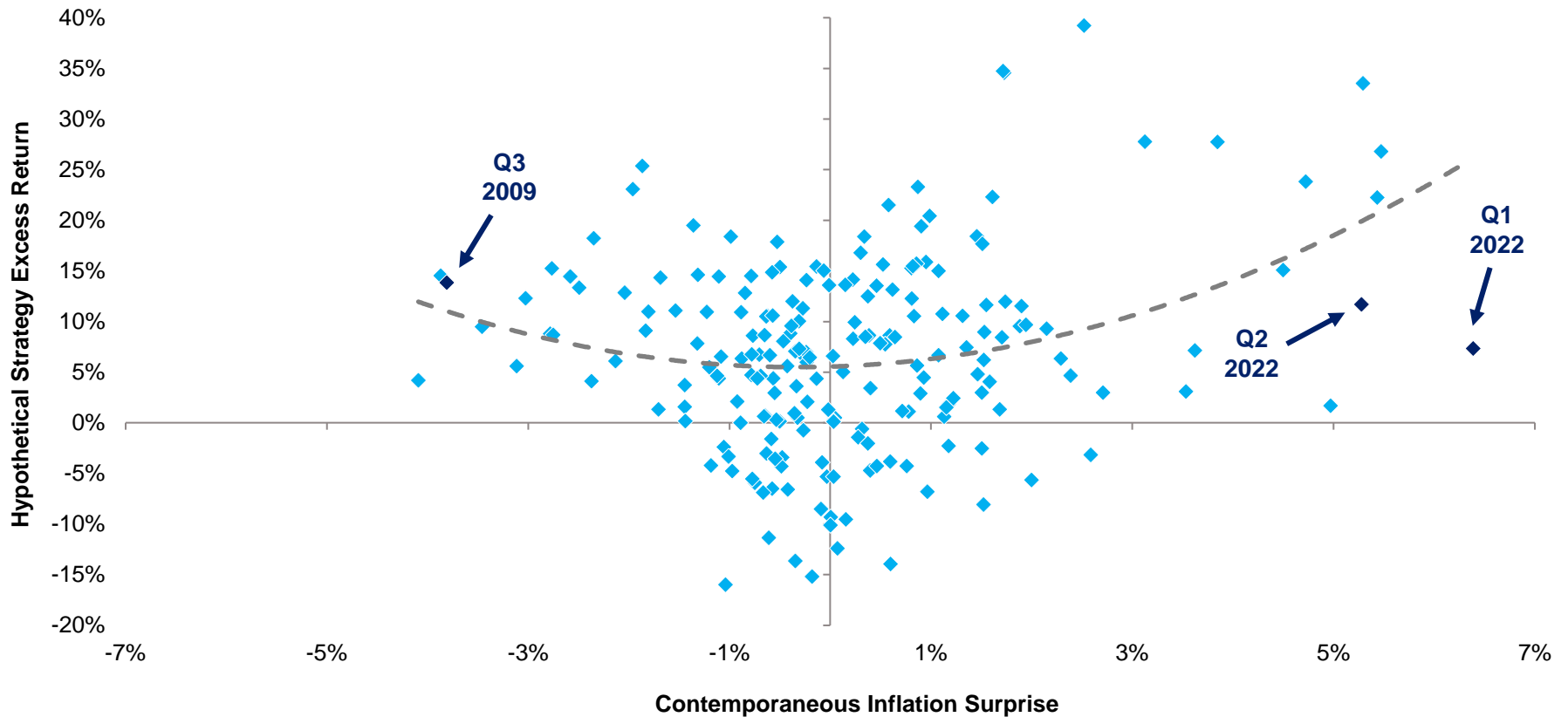
Source: AQR. The Hypothetical Trend-Following Strategy performance is a backtest targeting 10% volatility, and net of 2/20 fees and estimated transaction costs. This analysis is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Excess returns are excess of cash. The relevant cash rate is assumed to be 3-Month T-Bills. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy and for details on the construction of the U.S. Equity series. Markets considered only where data existed during the time period. Hypothetical data has inherent limitations, some of which are disclosed in the Appendix.

Why Invest in Trend Following?

Can perform well during inflation shocks to upside and downside

Hypothetical 1-Year Trend-Following Returns vs. Contemporaneous Inflation Surprise

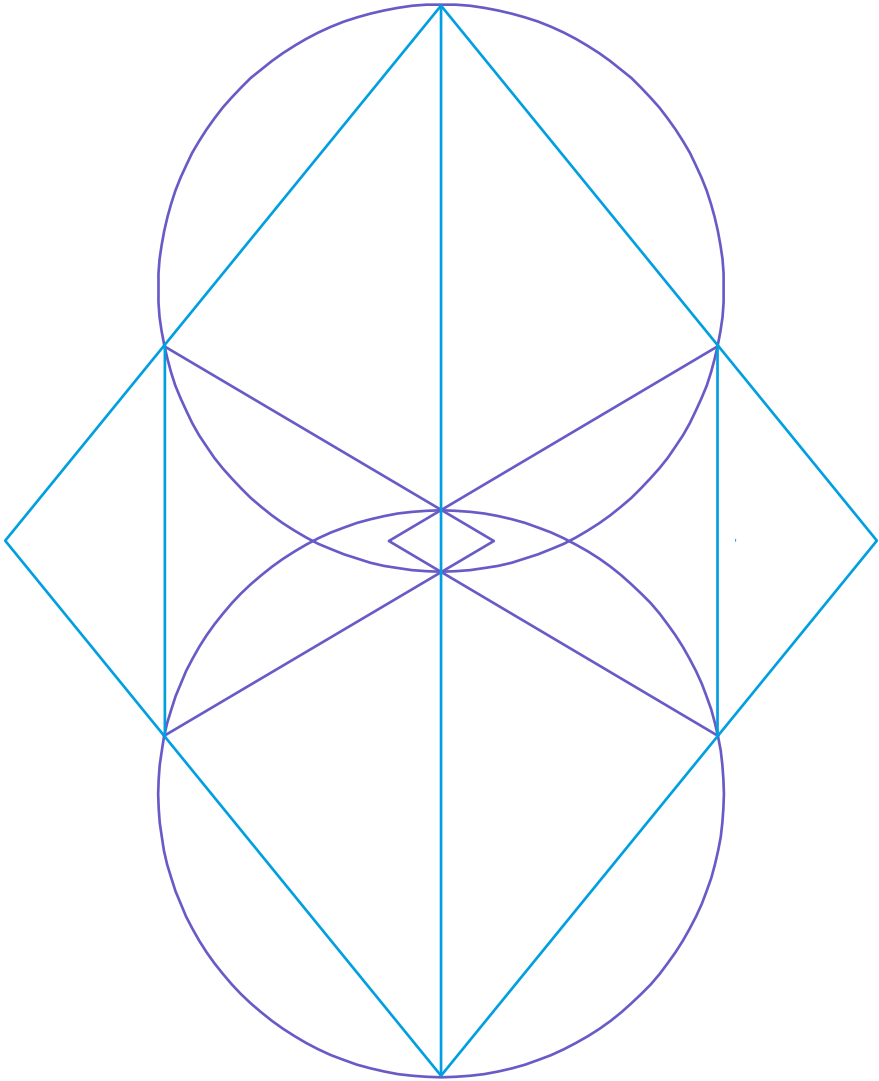
July 1970 – June 2022



Source: AQR, Bloomberg, Survey of Professional Forecasters, U.S. Bureau of Labor Statistics. The above graph is based on trailing 1-year returns that are excess of cash, net of transaction costs and fees. The Hypothetical Trend-Following Strategy performance is a backtest targeting 10% volatility and, net of 2/20 fees and estimated transaction costs. Please read performance disclosures in the Appendix for a description of the investment universe and the allocation methodology used to construct the Trend-Following Strategy, as well as for details on the construction of the inflation indicator. Risk free rate is U.S. 3-Month Treasury Bills. Chart is provided for illustrative purposes only and is not based on an actual portfolio AQR manages. Hypothetical data has certain inherent limitations, some of which are disclosed in the Appendix. Diversification does not eliminate the risk of experiencing investment losses.



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Performance Disclosures

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Gross performance results do not reflect the deduction of investment advisory fees and other expenses, which would reduce an investor's actual return. For example, assume that \$1 million is invested in an account with the Firm, and this account achieves a 10% compounded annualized return, gross of fees, for five years. At the end of five years that account would grow to \$1,610,510 before the deduction of management fees. Assuming management fees of 1.00% per year are deducted monthly from the account, the value of the account at the end of five years would be \$1,532,886 and the annualized rate of return would be 8.92%. For a ten-year period, the ending dollar values before and after fees would be \$2,593,742 and \$2,349,739, respectively. AQR's asset based fees may range up to 2.85% of assets under management, and are generally billed monthly or quarterly at the commencement of the calendar month or quarter during which AQR will perform the services to which the fees relate. Performance fees are generally equal to 20% of net realized and unrealized profits each year, after restoration of any losses carried forward from prior years. In addition, AQR funds incur expenses (including start-up, legal, accounting, audit, administrative and regulatory expenses) and may have redemption or withdrawal charges up to 2% based on gross redemption or withdrawal proceeds. Please refer to the Fund's Private Offering Memoranda and AQR's ADV Part 2A for more information on fees. Consultants supplied with gross results are to use this data in accordance with SEC, CFTC, NFA or the applicable jurisdiction's guidelines.

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There is a risk of substantial loss associated with trading commodities, futures, options, derivatives and other financial instruments. Before trading, investors should carefully consider their financial position and risk tolerance to determine if the proposed trading style is appropriate. Investors should realize that when trading futures, commodities, options, derivatives and other financial instruments one could lose the full balance of their account. It is also possible to lose more than the initial deposit when trading derivatives or using leverage. All funds committed to such a trading strategy should be purely risk capital.

Request ID: 365003



Performance Disclosures

Broad-based securities indices are unmanaged and are not subject to fees and expenses typically associated with managed accounts or investment funds. Investments cannot be made directly in an index.

The Bloomberg Barclays Global Aggregate Bond Index is a market-weighted index of global government, government-related agencies, corporate and securitized fixed-income investments.

The MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

The S&P 500 Index is the Standard & Poor's composite index of 500 stocks, a widely recognized, unmanaged index of common stock prices.

The SG Trend Index is designed to track the largest 10 (by AUM) CTAs and be representative of the managed futures trend-following space.

AQR Managed Futures Strategy 10% Volatility Backtest Construction

The AQR Managed Futures Strategy model uses data from January 1985 onward. The investment strategy consists of short-term and long-term trend signals in addition to over-extended signals. Short-term and long-term trend signals include price-based trend signals as well as economic trend signals that consider whether macroeconomic conditions are deteriorating or improving. All signals in aggregate determine the direction, long or short, and the size of each trade for each individual market in the model. The investment strategy is primarily based on trend-following investing which involves going long markets that have been rising and going short markets that have been falling, betting that those trends over the examined look-back periods will continue. The strategy analyzes and trades more than 100 markets across 4 major asset classes: commodities including agriculturals, energies, and metals; global developed and emerging equity indices; developed bond futures and short-term interest rates; and developed and emerging currency pairs. The strategy targets balanced risk exposures over time, and limits the amount of concentrated risk that can be taken in any one asset or asset class. The strategy targets a long-term volatility target of 10%, but does allow ex-ante volatility at any point in time to be either higher or lower than this number.

Hypothetical performance is gross of advisory fees and net of transaction costs, unless stated otherwise. The transactions costs used in the model are based on AQR's proprietary estimates of transaction costs for each market traded, including market impact and commissions. Backtested returns for the strategy are discounted such that the Sharpe ratio is reduced to account for potential differences in backtested implementation of a strategy versus hypothetical real-world implementation, including differences in trade execution, constraints, and transaction costs over time. Without this discount, backtested returns would be greater.

The benchmark and relevant cash rate is assumed to be 3-month Treasury bills.

Limitations of Backtested Performance. The returns presented reflect hypothetical performance an investor would have obtained had it invested in the manner shown and does not represents returns that any investor actually attained. The information presented is based upon the following hypothetical assumptions.



Performance Disclosures

Hypothetical Trend-Following Strategy

The Hypothetical Price-Based Trend-Following Strategy model uses data from January 1880 onward. The investment strategy is based on trend-following investing which involves going long markets that have been rising and going short markets that have been falling, betting that those trends over the examined look-back periods will continue. The strategy was constructed with an equal-weighted combination of 1-month, 3-month, and 12-month trend-following strategies for 67 markets across 4 major asset classes: 29 commodities, 11 equity indices, 15 bond markets, and 12 currency pairs. Since not all markets have return data going back to 1880, we construct the strategies using the largest number of assets for which return data exist at each point in time. We use futures returns when they are available. Prior to the availability of futures data, we rely on cash index returns financed at local short rates for each country. Please see Figure 2 for additional details. The strategy targets a long-term volatility target of 10% but does not limit volatility during periods where realized volatility may be higher or lower than this number.

Hypothetical performance is gross of advisory fees and net of transaction costs, unless stated otherwise. In order to calculate net-of-fee returns, we subtracted a 2% annual management fee and a 20% performance fee from the gross-of-fee, net-of-transaction-cost returns to the strategy. Actual fees may vary depending on, among other things, the applicable fee schedule. AQR's fees are available upon request and also may be found in Part 2A of its Form ADV. The transactions costs used in the strategy are based on AQR's estimates of average transaction costs for each of the four asset classes, including market impact and commissions. The transaction costs are assumed to be twice as high from 1993 to 2002 and six times as high from 1880–1992. The transaction costs used are shown in Figure 1.

This model is not based on an actual portfolio AQR manages. The performance of the AQR Managed Futures Strategy may be greater or less than the performance of the Trend-Following Strategy due to, among other things, differences in the investment strategy pursued by the AQR Managed Futures Strategy and the number of the holdings in and composition of the AQR Managed Futures Strategy's portfolio.

The benchmark and relevant cash rate is assumed to be ICE BofAML 3-Month T-Bill. Prior to 1929 when 3-month Treasury bills became available, the benchmark and relevant cash rate is assumed to be the NYSE call money rates (the rates for collateralized loans) through 1920, and returns on short-term government debt (certificates of indebtedness) from 1920 until 1929.

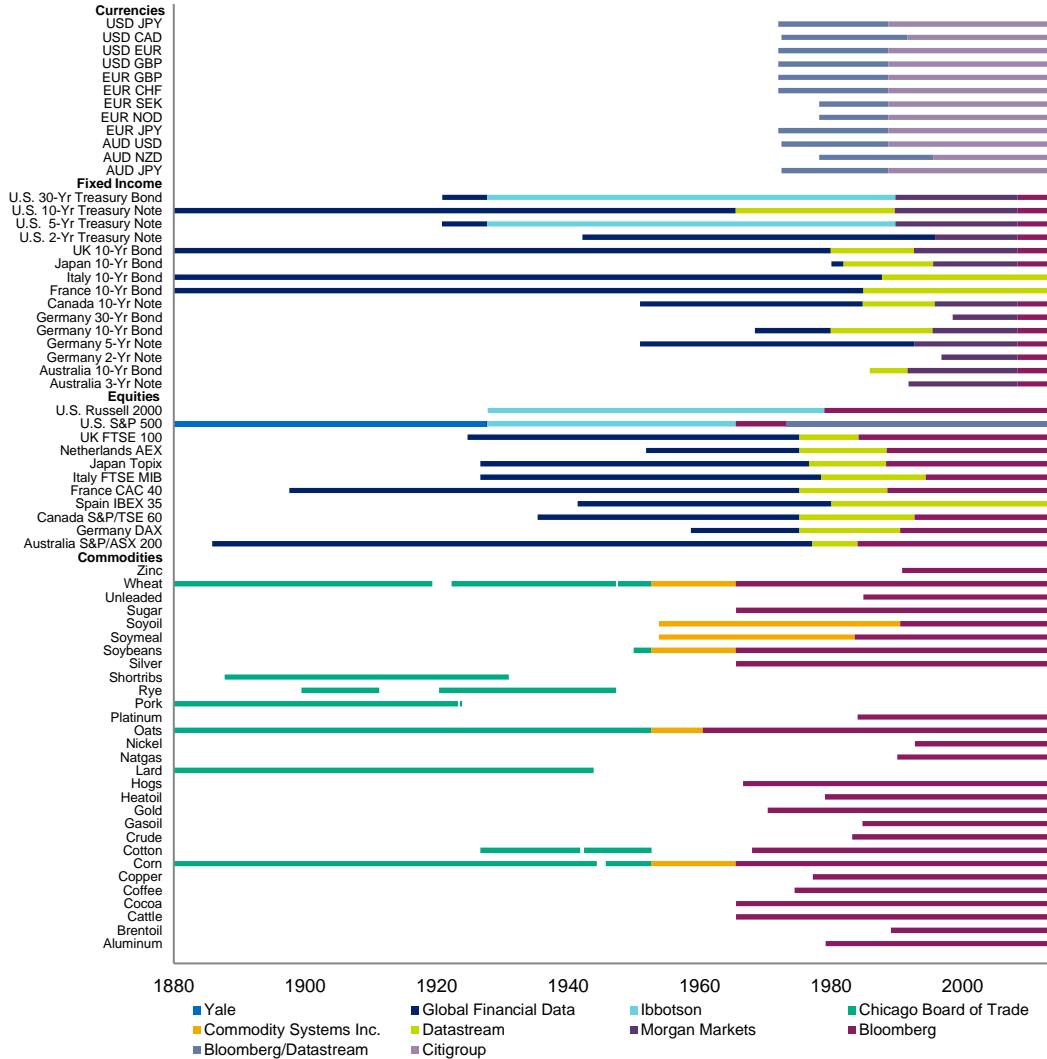
Figure 1

Asset Class	Time Period	One-Way Transaction Costs (as a % of notional traded)
Equities	1880 – 1992	0.34%
	1993 – 2002	0.11%
	2003 – Present	0.06%
Fixed Income	1880 – 1992	0.06%
	1993 – 2002	0.02%
	2003 – Present	0.01%
Currencies	1880 – 1992	0.18%
	1993 – 2002	0.06%
	2003 – Present	0.03%
Commodities	1880 – 1992	0.58%
	1993 – 2002	0.19%
	2003 – Present	0.10%



Performance Disclosures

Figure 2



Performance Disclosures

Construction of Macro indicators

Each of our macro indicators combines two series, which are first normalized to Z-scores: that is, we subtract a historical mean from each observation and divide by a historical volatility. For the growth and inflation indicators we use in-sample means and volatilities because we do not have long histories of economist forecasts needed to construct the surprise series. This choice does not seem to change any major results. When we classify our quarterly 12-month periods into, say, 'growth up' and 'growth down' periods, we compare actual observations to the median so as to have an equal number of up and down observations (because we are not trying to create an investable strategy where data should be available for investors in real time, we use the full sample median).

The underlying series for our **growth** indicator are the Chicago Fed National Activity Index (CFNAI) and the "surprise" in industrial production growth over the past year. Since there is no uniquely correct proxy way to capture "growth," averaging may make the results more robust and signals appropriate humility. CFNAI takes this averaging idea to extremes as it combines 85 monthly indicators of U.S. economic activity. The other series – the difference between actual annual growth in industrial production and the consensus economist forecast a year earlier – is narrower but more directly captures the surprise effect in economic developments. We use median forecasts from the Survey of Professional Forecasters data as published by the Philadelphia Fed. While data surprises a priori have a zero mean, this series has exhibited a downward trend in recent decades, reflecting the (partly unexpected) relative decline of the U.S. manufacturing sector.

Note that our growth indicator is constructed from fundamental economic data, rather than asset market returns. Market-based proxies of economic growth – which might include equity market returns, the relative performance of cyclical industries, dividend swaps, and estimates from cross-sectional regressions of asset returns on growth surprises – are "too close" to the patterns we try to explain. Our choice brings its own challenges: macroeconomic data are backward-looking, published with lags and later revised, while asset prices are clearly forward-looking. The impact of publication lags and the mismatch between backward- and forward-looking perspectives can be mitigated by using longer windows. Thus, we use contemporaneous annual economic data and asset returns through our analysis (past-year data with quarterly overlapping observations). Arguably composite growth surprise indices are the best proxies of economic growth news, but such composites are available at best from the 1990s. Forecast changes in economist surveys as well as business and consumer confidence surveys may be the next best choices because they are reasonably forward-looking and timely. We focus on U.S. data, which have the longest histories. Finally, it is not clear how real economic growth ties to expected corporate cash flow growth (e.g., earnings per share) that influence stock prices, or to real yields that influence all asset prices but especially those of bonds.

Our **inflation** indicator is also an average of two normalized series. One series measures the de-trended level of inflation (CPIYOY minus its mean, divided by volatility), while the other measures the surprise element in realized inflation (CPIYOY minus consensus economist forecast a year earlier).







Meeting Date
11/02/2022
Agenda Item
#13

MEMORANDUM

Date: November 2, 2022
To: CCCERA Board of Retirement
From: Karen Levy, General Counsel
Subject: Continuing teleconference meetings under Government Code section 54953 (e)

Background

All meetings of the Board of Retirement are open to the general public, as required by the Ralph M. Brown Act, California Government Code sections 54950 *et seq.* Section 54953 (e) of the Brown Act authorizes conducting public meetings via teleconferencing during a state of emergency.¹ The Board has approved conducting its meetings via teleconferencing under Section 54953 (e), finding that in-person meetings of the Board are open to the general public and would risk the health or safety of the public, staff, outside consultants and trustees attending public meetings, in light of the COVID-19 pandemic and related state of emergency. Under the law, if the Board wishes to continue using these special teleconferencing rules it must reconsider the circumstances of the state of emergency and make certain findings.

Proclaimed State of Emergency and Health and Safety Guidance

Currently, the COVID-19 state of emergency proclaimed by the Governor is in effect. On October 17, 2022, the Governor issued a press release advising that the COVID-19 state of emergency will end on February 28, 2023. (See Attachment A, Press Release.) The Press Release states:

With hospitalizations and deaths dramatically reduced due to the state's vaccination and public health efforts, California has the tools needed to continue fighting COVID-19 when the State of Emergency terminates at the end of February, including vaccines and boosters, testing, treatments and other mitigation measures like masking and indoor ventilation.

¹ This change in the Brown Act was enacted under AB 361, which sunsets by its own provisions on January 1, 2024.

The Contra Costa County Health Officer updated its recommendations for safely holding public meetings on October 4, 2022. The recommendations include measures to promote social distancing. (See Attachment B, Health Officer's Recommendations.) The Health Officer has recommended as follows:

Online meetings (i.e. teleconferencing meetings) are encouraged, where practical, as these meetings present the lowest risk of transmission of SARS CoV-2, the virus that causes COVID 19. This is particularly important when community prevalence rates are high. Our current trends as of October 4, 2022 in Covid-19 case rate, test positivity, Covid-19 hospitalizations, and COVID-19 wastewater surveillance are decreasing, but community transmission, as noted in CDC community transmission map, remains high. In addition to this, the predominant variant of COVID-19 being identified continues to be the Omicron variant and it's subvariants the impact of which on the spread of COVID-19 has shown to dramatically increase COVID-19 transmission.

Recommendation

Consider and take possible action to authorize the Board and its committee(s) to continue to conduct teleconference meetings for the next 30 days under Government Code section 54953 (e) and make the following findings:

1. The Board has reconsidered the circumstances of the statewide state of emergency proclaimed by the Governor on March 4, 2020 and the countywide local emergency proclaimed by the Contra Costa County Board of Supervisors on March 10, 2020.
2. The following circumstances currently exist:
 - a. The statewide state of emergency and the countywide local emergency continue to directly impact the ability of the Board and its committee(s) to meet safely in person at meetings that are open to the general public because of the COVID-19 pandemic.
 - b. The County Health Officer's recommendations for safely holding public meetings, which encourage virtual meetings and other measures to promote social distancing, are still in effect.

Attachment

A

Governor Newsom to End the COVID-19 State of Emergency

Published: Oct 17, 2022

California's pandemic response saved tens of thousands of lives, protected the economy, distributed nation-leading financial assistance and built up an unprecedented public health infrastructure

The SMARTER Plan will maintain California's operational preparedness to support communities and quickly respond to outbreaks

SACRAMENTO – Today, Governor Gavin Newsom announced that the COVID-19 State of Emergency will end on February 28, 2023, charting the path to phasing out one of the most effective and necessary tools that California has used to combat COVID-19. This timeline gives the health care system needed flexibility to handle any potential surge that may occur after the holidays in January and February, in addition to providing state and local partners the time needed to prepare for this phaseout and set themselves up for success afterwards.

With hospitalizations and deaths dramatically reduced due to the state's vaccination and public health efforts, California has the tools needed to continue fighting COVID-19 when the State of Emergency terminates at the end of February, including vaccines and boosters, testing, treatments and other mitigation measures like masking and indoor ventilation. As the State of Emergency is phased out, the SMARTER Plan continues to guide California's strategy to best protect people from COVID-19.

[SMARTER Plan progress update](#)

“Throughout the pandemic, we've been guided by the science and data – moving quickly and strategically to save lives. The State of Emergency was an effective and necessary tool that we utilized to protect our state, and we wouldn't have gotten to this point without it,” said Governor Newsom. “With the operational preparedness that we've built up and the measures that we'll continue to employ moving forward, California is ready to phase out this tool.”

To maintain California's COVID-19 laboratory testing and therapeutics treatment capacity, the Newsom Administration will be seeking two statutory changes immediately upon the Legislature's return: 1) The continued ability of nurses to dispense COVID-19 therapeutics; and 2) The continued ability of laboratory workers to solely process COVID-19 tests.

“California's response to the COVID-19 pandemic has prepared us for whatever comes next. As we move into this next phase, the infrastructure and processes we've invested in and built up will provide us the tools to manage any ups and downs in the future,” said Secretary of the California Health & Human Services Agency, Dr. Mark Ghaly. “While the threat of this virus is still real, our preparedness and collective work have helped turn this once crisis emergency into a manageable situation.”

Throughout the pandemic, Governor Newsom, the Legislature and state agencies have been guided by the science and data to best protect Californians and save lives – with a focus on those facing the greatest social and health inequities – remaining nimble to adapt mitigation efforts along the way as we learned more about COVID-19. The state's efforts to support Californians resulted in:

- Administration of 81 million vaccinations, distribution of a billion units of PPE throughout the state and processing of 186 million tests.
- Allocation of billions of dollars to support hospitals, community organizations, frontline workers, schools and more throughout the pandemic.
- The nation's largest stimulus programs to support people hardest hit by the pandemic – \$18.5 billion for direct payments to Californians, \$8 billion for rent relief, \$10 billion for small business grants and tax relief, \$2.8 billion to help with overdue utility bills, and more.

California's pandemic response efforts have saved tens of thousands of lives, kept people out of the hospital and protected the economy:

- California's [death rate](#) is the lowest amongst large states. If California had Texas' death rate, 27,000 more people would have died here. If California had Florida's rate, that figure jumps to approximately 56,000 more deaths.
- In only the first ten months of vaccines being available, a study showed that California's efforts [saved 20,000 lives](#), kept 73,000 people out of the hospital and prevented 1.5 million infections.
- California's actions during the pandemic protected the economy and the state continues to lead the nation in creating jobs and new business starts:
 - [“‘Lockdown’ states like California did better economically than ‘looser’ states like Florida, new COVID data shows,”](#) with **California's economy having contracted less** than such states – economic output shrank 3.5% on average for the U.S., compared with 2.8% for California.
 - Since February 2021, **California has created 1,628,300 new jobs** – over 16% of the nation's jobs, by far more than any other state. By comparison, Texas created 1,133,200 jobs (11.3% of the nation's) and Florida created 787,600 jobs (7.9% of the nation's) in that same timeframe.
 - Since the beginning of 2019, data from the [Bureau of Labor Statistics](#) shows that **over 569,000 businesses started in California**, by far more than any other state.

###

Attachment

B



Recommendations for safely holding public meetings

Each local government agency is authorized to determine whether to hold public meetings in person, on-line (teleconferencing only), or via a combination of methods. The following are recommendations from the Contra Costa County Health Officer to minimize the risk of COVID-19 transmission during a public meeting.

1. Online meetings (i.e. teleconferencing meetings) are encouraged, where practical, as these meetings present the lowest risk of transmission of SARS CoV-2, the virus that causes COVID 19. This is particularly important when community prevalence rates are high. Our current trends as of October 4, 2022 in Covid-19 case rate, test positivity, Covid-19 hospitalizations, and COVID-19 wastewater surveillance are decreasing, but community transmission, as noted in CDC community transmission map, remains high. In addition to this, the predominant variant of COVID-19 being identified continues to be the Omicron variant and it's subvariants the impact of which on the spread of COVID-19 has shown to dramatically increase COVID-19 transmission.
2. If a local agency determines to hold in-person meetings, offering the public the opportunity to attend via a call-in option or an internet-based service option is recommended, when possible, to give those at higher risk of and/or higher concern about COVID-19 an alternative to participating in person.
3. A written safety protocol should be developed and followed. It is recommended that the protocol require social distancing, where feasible – i.e. six feet of separation between attendees; and consider requiring or strongly encouraging face masking of all attendees and encouraging attendees to be up-to-date on their COVID-19 vaccine.
4. Seating arrangements should allow for staff and members of the public to easily maintain at least six-foot distance from one another at all practicable times.
5. Consider holding public meetings outdoors. Increasing scientific consensus is that outdoor airflow reduces the risk of COVID-19 transmission compared to indoor spaces. Hosting events outdoors also may make it easier to space staff and members of the public at least 6 feet apart. If unable to host outdoors, consider ways to [increase ventilation and flow](#) of the indoor space to reduce the risk of COVID-19 while indoors.
6. Current evidence is unclear as to the added benefit of temperature checks in addition to symptom checks. We encourage focus on symptom checks as they may screen out individuals with other Covid-19 symptoms besides fever and help reinforce the message to not go out in public if you are not feeling well.
7. Consider a voluntary attendance sheet with names and contact information to assist in contact tracing of any cases linked to a public meeting.

Revised 10-4-2022

Sefanit Mekuria

Sefanit Mekuria, MD, MPH
Deputy Health Officer, Contra Costa County



BOARD MEETINGS 2023

Meeting Date
11/02/2022
Agenda Item
#14

JANUARY						
Su	Mo	Tu	We	Th	Fr	Sa
1	H	3	4	5	6	7
8	9	10	B	12	13	14
15	H	17	18	19	20	21
22	23	24	B	26	27	28
29	30	31				

2 - New Year's Day Observed
16 - Martin Luther King Jr. Day

FEBRUARY						
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			1	2	3	4
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26	27	28				

20 - Presidents' Day

MARCH						
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APRIL						
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30						

MAY						
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28	H	30	31			

29 - Memorial Day

JUNE						
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JULY						
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30	31					

4 - Independence Day

AUGUST						
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27	28	29	30	31		

SEPTEMBER						
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24	25	26	B	28	29	30

4 - Labor Day

OCTOBER						
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22	23	24	B	26	27	28
29	30	31				

NOVEMBER						
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12	13	14	15	16	17	18
19	20	21	22	H	H	25
26	27	28	B	30		

10 - Veterans Day
23 and 24 - Thanksgiving

DECEMBER						
Su	Mo	Tu	We	Th	Fr	Sa
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24	H	26	27	28	29	30
31						

25 - Christmas Day

B Board Meeting

S SACRS

C CALAPRS - General Assembly



Meeting Date
11/02/2022
Agenda Item
#15a.

National Conference on Public Employee Retirement Systems
The Voice for Public Pensions



2023 Legislative Conference

Start Date: 1/22/2023 3:00 PM EST

End Date: 1/24/2023 4:00 PM EST

Venue Name: Renaissance Washington, DC Hotel

Location:

999 Ninth Street, NW
Washington, DC United States 20001

Organization Name: NCPERS

Contact:

NCPERS Registration
Email: registration@ncpers.org
Phone: (202) 601-2445

Attend BOTH the Legislative Conference and Pension Communications Summit and SAVE \$150 on your registration!

National Conference on Public Employee Retirement Systems
1201 New York Avenue, NW, Suite 850, Washington, DC 20005

☎ 202-601-2445 📠 202-688-2387

✉ info@ncpers.org

PRELIMINARY SCHEDULE OF EVENTS & AGENDA

SUNDAY, JANUARY 22

- 3:00 PM – 6:00 PM Registration
5:00 PM – 6:00 PM Networking Reception

MONDAY, JANUARY 23

- 7:00 AM – 4:30 PM Registration
7:00 AM – 8:00 AM Breakfast
8:00 AM – 12:00 PM General Session I
- Overview of the 2022 Mid-Term Elections
 - NCPERS 2023 Federal Policy Agenda
 - 2023 Agenda of the U.S. Congress
 - ESG Investing Roundtable
 - Secure Act 2.0
 - How to Lobby Congress
- 12:00 PM – 1:00 PM Lunch
1:00 PM – 5:00 PM General Session II
- 2022 Policymaker of the Year Award
 - Department of Treasury's Pension Activities for 2023
 - State Pension Outlook: State-By-State Analysis
 - GAO Retirement Security Report
- 5:30 PM – 6:30 PM Legislative Conference & Communications Summit Networking Reception

TUESDAY, JANUARY 24

- 7:00 AM – 8:00 AM Legislative Conference & Communications Summit Networking Breakfast
8:00 AM – 5:00 PM Congressional Visits (self-directed) - *Schedule your appointments before coming to DC!*

Attend both the Legislative Conference and Pension Communications Summit and SAVE \$150 on your registration!

LEGISLATIVE CONFERENCE REGISTRATION FEES

Early-Bird Registration Fee Before January 5

Fund/Stakeholder: \$515

Service Provider: \$825

Spouse/Guest: \$50

Late Registration Fee After January 5

Fund/Stakeholder: \$615

Service Provider: \$925

Spouse/Guest: \$75

PENSION COMMUNICATIONS SUMMIT

Early-Bird Registration Fee Before January 5

Fund/Stakeholder: \$250

Service Provider: \$450

Spouse/Guest: \$50

Late Registration Fee After January 5

Fund/Stakeholder: \$350

Service Provider: \$550

Spouse/Guest: \$75

HOW TO ADD A GUEST REGISTRATION

To register a guest after you have already registered for the conference, **please download and print the registration form**. Guest registration is located on this form. Please complete and provide payment information and email to registration@ncpers.org.

REGISTRATION DEADLINE

Register by January 5, to receive the early-bird conference rates and be included in the preliminary attendee list (this list is used by our Service Providers to send invitations to their client events). You may still register for the conference after this date, but higher conference fees will apply.

MEMBERSHIP REQUIRED

This conference is a members-only event. Your organization must be a current member of NCPERS for your registration to be processed. To verify your organization's membership status, please e-mail your inquiry to membership@ncpers.org.

WHO SHOULD ATTEND?

Pension trustees, pension staff members, plan sponsors, and public plan stakeholders. Service providers to the public pension community should also attend to understand the critical issues affecting your clients and prospective clients.

REGISTRATION FEE

the full conference rate will apply, regardless of the day you register. The registration fee includes breakfast, coffee breaks, and receptions. It does not include hotel accommodations, airfare, or transportation.