

# Pension Trust

1000 Mill Street  
San Luis Obispo, CA 93408  
(805) 781-5465 Phone  
(805) 781-5697 Fax  
www.SLOPensionTrust.org



## AGENDA

**Monday, February 28, 2022 9:30 AM**

### **PENSION TRUST BOARD OF TRUSTEES**

\* Online only

#### MEETING MATERIALS

Materials for the meeting may be found at

<http://www.slocounty.ca.gov/Departments/Pension-Trust/Board-of-Trustees>

Any supporting documentation that relates to an agenda item for open session of any regular meeting that is distributed after the agenda is posted and prior to the meeting will also be available at this location.

#### AMERICANS WITH DISABILITIES ACT (Government Code §54953.2)

Disabled individuals who need special assistance to listen to and/or participate in any meeting of the Board of Trustees may request assistance by calling 805/781-5465 or sending an email to [SLOCPT@co.slo.ca.us](mailto:SLOCPT@co.slo.ca.us). Every effort will be made to reasonably accommodate individuals with disabilities by making meeting materials and access available in alternative formats. Requests for assistance should be made at least two days in advance of a meeting whenever possible.

#### **\* TELE-CONFERENCE / VIDEO-CONFERENCE**

**Due to the current pandemic Board of Trustees meetings are closed to the public attending in person until further notice.**

This meeting of the Board of Trustees will be held via teleconference and/or videoconference. Pursuant to AB 361, and based on the guidance of our Public Health Officer, California Department of Public Health, the California Governor's Office, and data from the United States Centers for Disease Control, in order to minimize the spread of the COVID-19 virus, and to align with local and federal guidelines and social distance recommendations for the containment of the virus, we are authorized to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public, without making available any physical location for the public. Items of business will be limited to the matters shown on the agenda.

If you wish to view the videoconference of the meeting please access

<https://us06web.zoom.us/j/89910528315?pwd=ZkZmS1RsV3JyYWtoWTV5MjkzOUFvdz09>

If you wish to listen to the teleconference meeting, please dial 669/900-6833 (Meeting ID 899 1052 8315). If you have any questions or require additional service, please contact SLOCPT at 805/781-5465.

### **A) MEETING VENUE**

1. Resolution 2022-02 Providing Continuation of Virtual Meetings Pursuant to AB 361 (Recommend Approval).

### **B) PUBLIC COMMENT**

2. Public Comment: Members of the public wishing to address the Board on matters other than scheduled items may do so when recognized by the Chair. Presentations are limited to three minutes per individual.

### **C) ORGANIZATIONAL**

None

### **D) CONSENT**

3. Minutes of the Regular Meeting of January 24, 2022 (Approve Without Correction).
4. Report of Deposits and Contributions for the month of January 2022 (Receive and File).
5. Report of Service Retirements, Disability Retirements and DROP Participants for the month of January 2022 (Receive, Approve and File).

### **E) APPLICATIONS FOR DISABILITY RETIREMENT**

6. Application for Industrial Disability Retirement – Case 2021-10 (Recommend Approval).

### **F) OLD BUSINESS**

None

**G) NEW BUSINESS**

7. Approval of the Annual Cost-Of-Living Adjustments provided by the San Luis Obispo County Employees Retirement Plan (Recommend Approval).
8. 2022 Actuarial Experience Study and Valuation Planning - Presentation by Anne Harper, Cheiron - Plan Actuary - (Discuss, Direct Actuary and Staff as necessary).

**H) INVESTMENTS**

9. Quarterly Investment Report for the 4th Quarter of 2021 – Verus (Receive and File).
10. Monthly Investment Report for January 2022 (Receive and File).
11. Capital Market Assumptions – 2022 – Verus (Review, Discuss, Receive and File).
12. Private Markets Discretionary Advisor – Implementation Update (Review, Discuss, and Direct Staff).
13. Asset Allocation - (Review, Discuss, and Direct Staff as necessary).

**I) OPERATIONS**

14. Staff Reports
15. General Counsel Reports
16. Committee Reports:
  - i. Audit Committee No Report
  - ii. Personnel Committee No Report
  - iii. Private Markets Investments No Report
17. Upcoming Board Topics (subject to change)
  - i. March 28, 2022
    - a. Disabilities
    - b. Employer prefunding agreement and discount rate
    - c. FY 22-23 SLOCPT administrative budget – preliminary
    - d. TBD
  - ii. April 25, 2022 – planned as a non-meeting month
  - iii. May 23, 2022
    - a. Actuarial Experience Study
    - b. Actuarial Valuation Assumptions

- c. Annual Actuarial Valuation planning
  - d. Quarterly Investment Report 1Q22
  - e. FY 22-23 SLOCPT administrative budget – approval
  - f. TBD
- iv. June 27, 2022
- a. 2021 Financial Audit Report / ACFR Approval
  - b. 2022 Actuarial Valuation / Contribution Rate changes
  - c. Employer prefunding amount
  - d. TBD

18. Trustee Comments

**J) CLOSED SESSION**

None

**K) ADJOURNMENT**

## Board of Trustees

1000 Mill Street  
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Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director  
Chris Waddell – General Counsel

### **Agenda Item 1: Resolution 2022-02 – Virtual Meeting Pursuant to AB361**

Attached to this memo is a revised Resolution 2022-02 – on holding the February 28, 2022 Board of Trustees meeting as a virtual meeting. The reasons for the revised resolution are –

- As of February 18, 2022, the date the agenda and materials for the February Board of Trustees meeting were published there existed both a Statewide and a San Luis Obispo County state of emergency relative to the Covid pandemic. Accordingly, the provisions of AB361 modifying Brown Act measures to allow virtual meetings were in effect.
- The February 28<sup>th</sup> Board of Trustees meeting was noticed to the public as being a virtual meeting with the necessary Zoom link.
- Subsequently, on Friday, February 25<sup>th</sup> – one business day before the Board of Trustees meeting – the SLO County state of emergency was lifted by the Public Health Officer and the County CAO.
- Through consultation with General Counsel and the President of the Board of Trustees it was determined that –
  - Abruptly changing from a virtual Board of Trustees meeting on February 28<sup>th</sup> to an in-person meeting would not provide adequate time to re-notice the change of venue for the meeting. This would effectively conceal the meeting from the public inconsistent with the requirements of the Brown Act.
  - Irrespective of whatever room could have been found to hold an in-person meeting on short notice, the Pension Trust is not currently set up technologically to hold a hybrid in-person and on Zoom meeting. This planned for later meetings, but it is not available for the February 28<sup>th</sup> meeting.

- Therefore, Resolution 2022-02 has been revised to allow the Board of Trustees to decide to hold just the February 28<sup>th</sup> meeting virtually so as to provide proper public access to the meeting given the short notice of the change in the SLO County state of emergency.

Respectfully submitted,

**RESOLUTION NO. 2022-02**

**SAN LUIS OBISPO COUNTY PENSION TRUST**

**ADOPTING FINDINGS THAT THERE IS A PROCLAIMED STATE OF EMERGENCY IN THE STATE OF CALIFORNIA AND AUTHORIZATION OF REMOTE TELECONFERENCE MEETING FOR THE BOARD OF TRUSTEES ON FEBRUARY 28, 2022**

**WHEREAS**, on March 4, 2020, Governor Gavin Newsom declared a State of Emergency in the State of California; and

**WHEREAS** in light of ongoing concerns about public health and safety, on March 17, 2020, Governor Newsom issued Executive Order N-29-20, which suspended certain provisions of the Ralph M. Brown Act (the “Brown Act”) in order to allow local government bodies to conduct open meetings safely during the coronavirus pandemic. On June 11, 2021, the Governor issued Executive Order N-08-21, extending the suspension of these provisions to allow local government bodies to continue to conduct their meetings remotely through September 30, 2021; and

**WHEREAS**, on September 10, 2021, the Legislature took additional action to allow local agencies to forego compliance with Brown Act teleconferencing requirements under specific circumstances after the expiration of the Governor’s order by adopting AB 361, which amends the Brown Act’s requirements for teleconferencing during a proclaimed state of emergency and when certain other conditions are met and certain findings are made. Because the bill contained an urgency clause, it took effect upon Governor Newsom’s signature on September 16, 2021; and

**WHEREAS**, pursuant to AB 361, on November 15, 2021 the San Luis County Pension Trust (“SLOCPT”) adopted a resolution to continue to permit remote meetings based on the imminent health and safety risk to attendees of holding in-person meetings;

**WHEREAS**, the Brown Act, as amended, allows local agencies to make an initial determination to hold open meetings via teleconferencing when there is a proclaimed state of emergency and any of the following circumstances exist:

- 1) State or local officials have imposed or recommended social distancing
- 2) The local agency holds a meeting for the purposes of determining by majority vote if meeting in person would pose imminent health and safety risks to attendees
- 3) The local agency holds a meeting after having determined by majority vote that, as a result of the emergency, meeting in person would pose imminent risks to the health or safety of attendees.

The local agency must reconsider whether the state of emergency continues to impact the ability of the members to meet safely in person or whether local or state officials continue to impose or recommend social distancing every 30 days; and

**WHEREAS**, the rates of transmission of COVID-19 and variants in the County of San Luis Obispo on February 18, 2022, when the agenda materials were published for the Pension Trust Board of Trustees meeting, continued to pose imminent risks for health of attendees at indoor gatherings involving individuals from outside the same household; and

**WHEREAS**, as of February 18, 2022, California Department of Public Health and the federal Centers for Disease Control and Prevention (“CDC”) cautioned that the Delta and Omicron variants of COVID-19 are more transmissible than prior variants of the virus, may cause more severe illness, and that even fully vaccinated individuals can spread the virus to



others resulting in rapid and alarming rates of COVID-19 cases and hospitalizations

(<https://www.cdc.gov/coronavirus/2019-ncov/variants/delta-variant.html> &

<https://www.cdc.gov/coronavirus/2019-ncov/variants/omicron-variant.html>); and

**WHEREAS**, the CDC has established a “Community Transmission” metric with 4 tiers designed to reflect a community’s COVID-19 case rate and percent positivity (available at <https://www.cdc.gov/coronavirus/2019-nCoV/index.html>); and

**WHEREAS**, as of February 18 when the agenda materials were prepared the County of San Luis Obispo had a Community Transmission metric of “high” which is the most serious of the tiers; and

**WHEREAS**, to help protect against the spread of COVID-19 and variants, and to protect the health and safety of the public, the San Luis Obispo County Pension Trust (“SLOCPT”) had deemed it necessary to find that holding in person meetings would present imminent risks to the health or safety of attendees; and

**WHEREAS**, on Friday, February 25, on the last business day before the Board of Trustee’s regularly scheduled February 28 meeting, the County of San Luis Obispo ended its declared local state of emergency, noting that the local community transmission level was now “Low”; and

**WHEREAS**, given that there was insufficient time to re-notice the meeting as an in-person meeting that would enable full in-person public participation as well as other exigencies, and that the statewide declaration of emergency because of the Covid-19 virus remains in effect, the SLOCPT Board thus renews its invocation of the provisions of AB 361 related to teleconferencing for purposes of holding its meeting on Monday, February 28.

**NOW, THEREFORE, BE IT RESOLVED AND ORDERED** by the Board of Trustees of the San Luis Obispo County Pension Trust that:

1. The recitals set forth above are true and correct.
2. The Proclamation of State of Emergency in response to the COVID-19 pandemic issued by Governor Newsom on March 4, 2020 remains in effect.
3. Based on the recitals above, SLOCPT approves meeting via teleconference for the Regular Meeting of SLOCPT on February 28, 2022 in accordance with Government Code section 54953(e) and other applicable provisions of the Brown Act.

Upon motion of \_\_\_\_\_, seconded by \_\_\_\_\_, and on the following roll call vote, to wit:

AYES:

NOES:

ABSENT:

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Jeff Hamm, President, SLOCPT Board of Trustees

ATTEST:

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Carl Nelson, SLOCPT Secretary

**PENSION TRUST  
BOARD OF TRUSTEES**

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**MINUTES**

**Monday, January 24, 2022 \***  
Regular Meeting of the Pension Trust  
Board of Trustees

**PENSION TRUST  
BOARD OF TRUSTEES**

*\* Note – all attendees participated via videoconference as noticed on the agenda for the meeting.  
Public access was available via videoconference or an audio-only phone-in line.*

**Board Members Present:** Gere Sibbach  
Jeff Hamm  
Taylor Dacus  
David Grim  
Jim Hamilton  
Lisa Howe  
Michelle Shoresman

**Board Members Absent:** -

**Pension Trust Staff:** Carl Nelson Executive Director  
Amy Burke Deputy Director  
Jennifer Alderete Accountant  
Lisa Winter Retirement Program Specialist  
Anna Bastidos Retirement Program Specialist

**General Counsel:** Chris Waddell Olson | Remcho  
Kristen Rogers Olson | Remcho

**Consultants:** Scott Whalen Verus

**Others:** Ros Harding SLOOPT  
Larry Batchelder SLOCREA  
Jamie Elwell SLO County employee  
John Nichols SLO County employee  
Mike Brown COLAB  
Joe Ebisa Reporter – WithIntelligence.com

**Call to Order:** 9:37 AM by President Sibbach

**A) MEETING VENUE**

1. Resolution 2022-01 Providing Continuation of Virtual Meetings Pursuant to AB 361

**Motion:** Approve Resolution 2022-01

**Discussion:** -

**Public Comment:** None

**Motion Made:** Mr. Hamm

**Motion Seconded:** Mr. Hamilton

**Carried:** Unanimous (roll call vote)

**B) PUBLIC COMMENT**

2. None

**C) ORGANIZATIONAL**

3. Election of Officers (Pursuant to Section 3.05 and Section 3.06 of the By-Laws of the San Luis Obispo County Pension Trust).

**President:** Trustee Sibbach nominated Trustee Hamm to serve as Board of Trustees President for 2022. There were no other nominations.

Vote: Trustee Hamm elected President - Unanimous (roll call vote)

**Vice President:** Trustee Hamm nominated Trustee Hamilton to serve as Board of Trustees Vice President for 2022. There were no other nominations.

Vote: Trustee Hamilton elected Vice President - Unanimous (roll call vote)

*Trustee Hamm took over presiding at the meeting as newly elected President*

4. **Committees** – appointment of members by President:

Newly elected President Hamm appointed the following Trustees to the two standing committees and one ad hoc Committee as follows:

Audit Committee (standing):

Trustees Dacus, Howe, and Sibbach

Personnel Committee (standing):  
Trustees Grim, Hamilton, and Shoresman

Private Markets Investments Committee (ad hoc):  
Trustees Dacus, Hamilton, and Hamm

## D) CONSENT

5. Minutes of the Regular Meeting of November 15, 2021 (Approve with correction noted by Staff).
6. Reports of Deposits and Contributions for the months of November and December 2021 (Receive and File).
7. Reports of Service Retirements, Disability Retirements, and DROP Participants for the months of November and December 2021 (Receive, Approve and File).
8. Monthly Investment Report for October 2021 (Receive and File).
9. Monthly Investment Report for November 2021 (Receive and File).
10. Stipulation for the Division of Pension Benefits – Option Four Pension Benefit Election (Recommend Approval)
11. *Reserved (not used)*

**Motion:** Approve the Consent items

**Discussion:** Trustee Shoresman asked for further explanation of item 10 – Option Four Pension Benefit Election. General Counsel Waddell and Deputy Director Burke explained the option.

**Public Comment:** None

**Motion Made:** Mr. Sibbach                      **Motion Seconded:** Ms. Shoresman

**Carried:** Unanimous (roll call vote)

## E) APPLICATIONS FOR DISABILITY RETIREMENT

12. Application for Industrial Disability Retirement – Case 2021-02 (Recommend Approval)
  - Motion:** Approve Staff recommendation to approve Industrial Disability Retirement case 2021-02
  - Discussion:** Deputy Director Burke presented the Staff recommendation. Trustees asked various questions.

**Public Comment:** The disability retirement applicant thanked the Board and Staff for their consideration of this application. The applicant commented on the drawn-out process of getting scheduled for an Independent Medical Examination, but understands the scarcity of IME physician availability.

**Motion Made:** Mr. Sibbach                    **Motion Seconded:** Mr. Grim

**Carried:** Unanimous (roll call vote)

13. Application for Ordinary Disability Retirement – Case 2021-03 (Recommend Approval)

**Motion:** Approve Staff recommendation to approve Ordinary Disability Retirement case 2021-03

**Discussion:** Deputy Director Burke presented the Staff recommendation. Trustees commented on the severity of the case.

**Public Comment:** None

**Motion Made:** Mr. Grim                    **Motion Seconded:** Ms. Shoresman

**Carried:** Unanimous (roll call vote)

14. Application for Industrial Disability Retirement – Case 2021-04 (Recommend Approval)

**Motion:** Approve Staff recommendation to approve Industrial Disability Retirement case 2021-04

**Discussion** Deputy Director Burke presented the Staff recommendation. Trustee Grim asked for additional information regarding periodic review. Executive Director Nelson explained the process.

**Public Comment:** None

**Motion Made:** Mr. Dacus                    **Motion Seconded:** Mr. Hamilton

**Carried:**        Ayes – Dacus, Hamilton, Hamm, Howe, Shoresman, Sibbach  
                     Nays – Grim

15. *Reserved (not used)*

16. *Reserved (not used)*

17. *Reserved (not used)*

**F) OLD BUSINESS**

None

**G) NEW BUSINESS**

## 18. Disability Hearing Referee Panel Update (Recommend Approval)

**Motion:** Approve Staff recommendation regarding Disability Hearing Referee panelists

**Discussion:** General Counsel Waddell presented the item

**Public Comment:** None

**Motion Made:** Ms. Shoresman      **Motion Seconded:** Ms. Howe

**Carried:** Unanimous (roll call vote)

## 19. Benefits Administration Presentation – SLOCPT Staff

**Discussion:** Deputy Director Burke introduced SLOCPT Retirement Program Specialists Anna Bastidos and Lisa Winter, who presented the Lifecycle of a Member in SLOCPT and the numerous services provided to members.

Board President Hamm commented on the volume of tasks associated with and services provided to each member, and complimented Staff for the presentation and their hard work. Trustee Hamm described the presentation as “confidence inspiring”.

**Public Comment:** None

**No Action Necessary**

*10:50 AM – Board President Hamm called for a break*

*11:00 AM – back in session*

## 20. Fiduciary Refresher Briefing – General Counsel

**Discussion:** General Counsel Chris Waddell assisted by his colleague, Kristen Rogers led a discussion of Fiduciary Responsibilities focused on the Board responsibility of setting an actuarial Discount Rate. Trustees asked several questions.

**Public Comment:** None

**No Action Necessary**

*11:42 AM – Scott Whalen, Verus, joined the meeting*

## H) INVESTMENTS

### 21. Annual Cashflow Analysis

**Motion:** Receive and File

**Discussion:** Staff summarized the annual analysis of Plan cashflows as required by the Investment Policy Statement.

**Public Comment:** None

**Motion Made:** Mr. Sibbach                      **Motion Seconded:** Mr. Grim

**Carried:** Unanimous (roll call vote)

### 22. Monthly Investment Report for December 2021

**Motion:** Receive and File

**Discussion:** Staff summarized the December 2021 monthly investment report. The preliminary estimate for the Total Fund gross rate of return for 2021 is +15.3%.

**Public Comment:** None

**Motion Made:** Mr. Grim                      **Motion Seconded:** Ms. Howe

**Carried:** Unanimous (roll call vote)

### 23. Private Markets Program Review

**Discussion:** Scott Whalen of Verus presented a detailed review of the current private equity and private credit funds invested in by the Pension Trust. These legacy funds predate the HarbourVest SLO Fund being initiated in 2022.

**Public Comment:** None

**No Action Necessary**

### 24. Private Markets Discretionary Advisor – Implementation Update

**Discussion:** Executive Director Nelson provided a verbal update on the Private Markets Discretionary Advisor implementation. Final document review for the HarbourVest SLO Fund, LP, is nearly complete.

**Public Comment:** None

**No Action Necessary**



25. Asset Allocation

**Discussion:** Executive Director Nelson reported on the current asset allocation of the fund and that no action was necessary.

**Public Comment:** None

**No Action Necessary**

26. *Reserved*

*12:29 PM – Trustee Shoresman left the meeting*

**I) OPERATIONS**

27. Staff Reports

- i. SLOCPT staffing – Executive Director Nelson reported on SLOCPT staffing during the pandemic. Due to an uptick in local Covid cases, the SLOCPT staff has returned to a two-cohort in-office/WFH schedule to reduce the risk of multiple staff illness impacting the ability to do business.
- ii. 2021 Retirement statistics – Deputy Director Burke reported on the total number of retirements processed during 2021 – 136 – which is the same number processed in 2020. Of those 136 retirements, there was an increase in DROP retirements and a decrease in service retirements in 2021 as compared to 2020.
- iii. FPPC - Form 700 – Deputy Director Burke reminded the Trustees to complete and submit their Form 700 for 2021.
- iv. Audit Partner Rotation – Deputy Director Burke reported that Brown Armstrong rotated Rosalva Flores, CPA off the 2021 SLOCPT audit as Ms. Flores had been the audit partner for the engagement for the past six year. Andy Paulden, CPA, who had been the engagement audit partner before Ms. Flores, was rotated back onto the engagement.

28. General Counsel Reports

None

29. Committee Reports:

- i. Audit Committee No Report
- ii. Personnel Committee No Report
- iii. Private Markets Investments No Report

30. Upcoming Board Topics – published on meeting agenda

31. Trustee Comments

None

**J) CLOSED SESSION**

None

**K) ADJOURNMENT**

There being no further business, the meeting was adjourned at 12:40 PM. The next Regular Meeting was set for February 28, 2022, at 9:30 AM, with venue type (in-person or virtual online meeting) to be determined.

Respectfully submitted,

Carl Nelson  
Executive Director

**REPORT OF DEPOSITS AND CONTRIBUTIONS FOR THE MONTH OF  
JANUARY 2022**

PP 1	1/14/2022	Pensionable Salary	Employer Contributions	Employer Rate	Employee Contributions	Employer for		Combined Rate	Additional Contributions	Service Purchases	TOTAL Contributions
						Employee Contributions	Employee Rate				
	<b>By Employer and Tier:</b>										
	County Tier 1	2,802,620.86	859,608.25	30.67%	389,226.81	238,102.57	22.38%	53.06%	1,537.50	725.69	<b>1,489,200.82</b>
	County Tier 2	992,721.28	315,481.58	31.78%	67,106.26	83,576.47	15.18%	46.96%	-	-	<b>466,164.31</b>
	County Tier 3	4,100,578.60	1,237,319.90	30.17%	577,475.21	-	14.08%	44.26%	-	610.15	<b>1,815,405.26</b>
	Superior Court Tier 1	233,875.70	69,705.38	29.80%	48,015.46	-	20.53%	50.33%	-	-	<b>117,720.84</b>
	Superior Court Tier 3	153,836.59	44,305.10	28.80%	23,900.74	-	15.54%	44.34%	-	-	<b>68,205.84</b>
	APCD Tier 1	45,970.62	12,823.35	27.89%	7,643.96	3,680.20	24.63%	52.53%	-	-	<b>24,147.51</b>
	APCD Tier 2	3,471.20	939.31	27.06%	481.81	199.59	19.63%	46.69%	-	-	<b>1,620.71</b>
	APCD Tier 3	32,668.00	8,735.41	26.74%	5,318.53	-	16.28%	43.02%	-	-	<b>14,053.94</b>
	SLOCPT Tier 1	8,101.67	2,347.86	28.98%	1,229.83	752.65	24.47%	53.45%	-	-	<b>4,330.34</b>
	SLOCPT Tier 2	9,629.60	2,790.66	28.98%	544.07	894.59	14.94%	43.92%	-	-	<b>4,229.32</b>
	SLOCPT Tier 3	12,785.20	3,701.31	28.95%	1,836.00	-	14.36%	43.31%	250.00	-	<b>5,787.31</b>
	LAFCO Tier 3	9,173.97	2,849.44	31.06%	1,258.10	-	13.71%	44.77%	-	-	<b>4,107.54</b>
	RTA Tier 2	27,366.40	8,042.98	29.39%	565.36	3,557.63	15.07%	44.46%	-	-	<b>12,165.97</b>
	RTA Tier 3	15,999.14	4,972.05	31.08%	1,921.01	-	12.01%	43.08%	-	-	<b>6,893.06</b>
		<b>8,448,798.83</b>	<b>2,573,622.58</b>	<b>30.46%</b>	<b>1,126,523.15</b>	<b>330,763.70</b>	<b>17.25%</b>	<b>47.71%</b>	<b>1,787.50</b>	<b>1,335.84</b>	<b>\$ 4,034,032.77</b>

PP 2	1/28/2022	Pensionable Salary	Employer Contributions	Employer Rate	Employee Contributions	Employer for		Combined Rate	Additional Contributions	Service Purchases	TOTAL Contributions
						Employee Contributions	Employee Rate				
	<b>By Employer and Tier:</b>										
	County Tier 1	2,801,553.31	858,931.94	30.66%	389,072.72	238,220.39	22.39%	53.05%	1,537.50	725.69	<b>1,488,488.24</b>
	County Tier 2	982,999.84	312,712.16	31.81%	66,533.42	82,766.69	15.19%	47.00%	-	-	<b>462,012.27</b>
	County Tier 3	4,143,240.99	1,249,679.30	30.16%	585,157.54	-	14.12%	44.29%	-	638.32	<b>1,835,475.16</b>
	Superior Court Tier 1	232,259.57	69,163.32	29.78%	47,669.43	-	20.52%	50.30%	-	13,296.61	<b>130,129.36</b>
	Superior Court Tier 3	155,344.44	44,456.46	28.62%	24,353.69	-	15.68%	44.30%	-	-	<b>68,810.15</b>
	APCD Tier 1	45,970.65	12,823.37	27.89%	7,643.97	3,680.21	24.63%	52.53%	-	-	<b>24,147.55</b>
	APCD Tier 2	3,471.20	939.31	27.06%	481.81	199.59	19.63%	46.69%	-	-	<b>1,620.71</b>
	APCD Tier 3	33,773.82	9,038.78	26.76%	5,573.10	-	16.50%	43.26%	-	-	<b>14,611.88</b>
	SLOCPT Tier 1	8,101.67	2,347.86	28.98%	1,229.83	752.65	24.47%	53.45%	-	-	<b>4,330.34</b>
	SLOCPT Tier 2	9,629.60	2,790.66	28.98%	544.07	894.59	14.94%	43.92%	-	-	<b>4,229.32</b>
	SLOCPT Tier 3	12,785.20	3,701.31	28.95%	1,836.00	-	14.36%	43.31%	250.00	-	<b>5,787.31</b>
	LAFCO Tier 3	9,173.97	2,849.44	31.06%	1,258.10	-	13.71%	44.77%	-	-	<b>4,107.54</b>
	RTA Tier 2	28,057.40	8,246.06	29.39%	576.17	3,647.46	15.05%	44.44%	-	-	<b>12,469.69</b>
	RTA Tier 3	15,836.22	4,943.79	31.22%	1,876.66	-	11.85%	43.07%	-	-	<b>6,820.45</b>
		<b>8,482,197.88</b>	<b>2,582,623.76</b>	<b>30.45%</b>	<b>1,133,806.51</b>	<b>330,161.58</b>	<b>17.26%</b>	<b>47.71%</b>	<b>1,787.50</b>	<b>14,660.62</b>	<b>\$ 4,063,039.97</b>

<b>TOTAL FOR THE MONTH</b>	<b>16,930,996.71</b>	<b>5,156,246.34</b>	<b>30.45%</b>	<b>2,260,329.66</b>	<b>660,925.28</b>	<b>17.25%</b>	<b>47.71%</b>	<b>3,575.00</b>	<b>15,996.46</b>	<b>\$ 8,097,072.74</b>
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<b>TOTAL YEAR TO DATE</b>	<b>16,930,996.71</b>	<b>5,156,246.34</b>	<b>30.45%</b>	<b>2,260,329.66</b>	<b>660,925.28</b>	<b>17.25%</b>	<b>47.71%</b>	<b>3,575.00</b>	<b>15,996.46</b>	<b>\$ 8,097,072.74</b>
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**REPORT OF RETIREMENTS**

**January 2022**

<b>RETIREE NAME</b>	<b>DEPARTMENT</b>	<b>BENEFIT TYPE *</b>	<b>EFFECTIVE DATE</b>	<b>MONTHLY BENEFIT</b>	<b>SS TEMP ANNUITY**</b>
Abeyta, Marjory A	District Attorney	Service Retirement	01/01/2022	2,268.40	False
Auchinachie, Lynda L	Agricultural Commissioner	Service Retirement	01/01/2022	3,963.82	False
Becker, Cynthia T	Sheriff-Coroner	Service Retirement	12/31/2021	4,142.29	False
Boe, Cynthia Ann	Planning Department	Service Retirement	01/01/2022	3,158.31	False
Boisseau, Robin Ruth	District Attorney	Service Retirement	12/26/2021	2,295.19	False
Crawford, Celena	Public Health Department	Service Retirement	01/01/2022	1,601.87	False
Evans, Stacy Z	Public Health Department	DROP	01/01/2022	6,742.06	False
Fuhs, Stephanie	Planning Department	Service Retirement	12/30/2021	2,132.29	False
Garcia, Sonia Mejia	Public Health Department	Service Retirement	01/01/2022	3,481.98	False
Gofourth, Lesa J	Assessor	DROP	01/01/2022	11,043.13	False
Griffith, Steven L	Planning Department	Service Retirement	12/25/2021	5,103.77	False
Hernandez, Bridgette M	Public Health Department	Service Retirement	12/25/2021	4,253.69	False
Kokonas, Allison Eliza	Department of Social Services	Service Retirement	01/01/2022	1,636.57	False
Loden, David W	Facilities Management	Service Retirement	12/29/2021	3,913.60	False
Loden, David W	Facilities Management	Additional Annuity	12/29/2021	28.12	False
Marrs, Leisa J	Sheriff-Coroner	DROP	01/01/2022	3,704.20	False
Marrs, Leisa J	Sheriff-Coroner	Additional Annuity	01/01/2022	293.40	False
McKenney, John Eric	Sheriff-Coroner	DROP	01/01/2022	3,589.69	False
Nash, Theresa M	Department of Social Services	DROP	01/01/2022	5,044.39	False
Ochoa, Cindy M	Superior Court	Service Retirement	01/01/2022	3,567.37	False
Perkins, Mona J	Behavioral Health	Service Retirement	01/01/2022	3,246.12	False
Radtke, Brenda L	Calif Childrens Services	Service Retirement	01/01/2022	1,399.16	False
Radtke, Brenda L	Calif Childrens Services	Additional Annuity	01/01/2022	49.75	False
Read, Sonja M	Department of Social Services	DROP	01/01/2022	3,295.95	False
Read, Sonja M	Department of Social Services	Additional Annuity	01/01/2022	17.69	False
Retzer, August S	Sheriff-Coroner	DROP	01/01/2022	3,689.89	False
Retzer, August S	Sheriff-Coroner	Additional Annuity	01/01/2022	90.27	False
Steven, Carmen	Public Health	Service Retirement	12/31/2021	510.61	False
Walden, Nancy	General Hospital	Service Retirement	12/31/2021	1,038.23	False

\* Additional Annuity Benefits are calculated based on the Additional Contribution and associated Interest balance of the Retiree at the point of retirement (per Sections 5.07, 27.12, 28.12, 29.12, 30.12, and 31.12 of the Plan)

\*\* If "True" Retiree has elected an optional Social Security Coordinated Temporary Annuity (per Section 13.06 of the Plan), actual monthly allowance will be increased until age 62 and then actuarially reduced going forward

## Board of Trustees

1000 Mill Street  
San Luis Obispo, CA 93408  
Phone: (805) 781-5465  
Fax: (805) 781-5697  
www.SLOPensionTrust.org



Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director

### **Agenda Item 7: Annual Cost-Of-Living Adjustments provided by the San Luis Obispo County Employees Retirement Plan**

#### **Recommendation:**

It is recommended that the Board approve Cost-Of-Living Adjustments (COLAs) in accordance with the Retirement Plan and calculated by SLOCPT's Actuary (Cheiron).

1. **Tier 1 benefit recipients, 2022 COLA of 2.6%** (cumulative carryover of past inflation – the "COLA Bank" will apply in some cases).
2. **Tier 2 and Tier 3 recipients, 2022 COLA of 2.00% (the maximum allowed).**

#### **Discussion:**

**COLA Adjustments** - The Retirement Plan provides for annual cost-of-living adjustments for retirees in: Section 19.01 and Section 19.02 of Article 19: Cost-Of-Living; Section 27.25 of Article 27: Tier Two –Miscellaneous; Section 28.25 of Article 28: Tier Two – Safety; Section 29.25 of Article 29: Tier Three – AB 340: Miscellaneous; Section 30.25 of Article 30: Tier Three – AB 340: Safety; and Section 31.24 of Article 31: Tier Three – AB 340: Probation.

**CPI-U Benchmarks** - The COLA percentage, as specified by the Plan, is determined by the annual average of the All Urban Consumers Consumer Price Index – all items (CPI-U) for the Los Angeles and the San Francisco metropolitan areas.

The SLOCPT's Actuary calculates the recommended COLA as a smoothed value using the two most recent annual averages published by the Bureau of Labor Statistics for each specified metropolitan area. While COLAs have historically been calculated as increases to benefits with positive inflation, the Plan also allows for decreases should there be deflation in the CPI-U data.

**Financial:**

This year’s recommended COLA is expected to cumulatively increase the current monthly retiree payroll distribution by approximately \$290k.

The 2021 Actuarial Valuation used a long-term COLA assumption of 2.50% for Tier 1 COLA adjustments. Most Tier 1 recipients currently have a COLA bank of at least 0.3% that will be added to the base COLA rate (up to a maximum of 3.0%) this year. As a result, the above assumed COLA for 2022 will contribute to an actuarial loss in the 2023 actuarial valuation.

**Implementation:**

**COLA Recommendation** - The recommended COLA based on average of the years 2021 and 2020 has been calculated as 2.6%. As dictated by the Plan, COLAs may not exceed 3% for Tier 1 retirees or 2% for Tier 2 and Tier 3 retirees. Furthermore, for Tier 1 retirees, if the calculated average percentage increase is less than 3%, recipients who have a Cumulative Carryover COLA balance from prior years (where the calculated COLA was greater than the 3.0% maximum) will have this balance applied to their COLA % up to the maximum 3.0%. Tier 2 and Tier 3 retirees are not eligible for the Cumulative Carryover as stipulated by the Plan.

Upon Board approval, all eligible retirees (those retired on or before January 1, 2022) will receive a COLA increase starting April 1, 2022, as shown in the following table. The Cumulative Carryover (COLA Bank) for each vintage year of retirees will change as shown on the attached letter from SLOCPT’s Actuary.

<b>Tier:</b>	<b>Retirement Date:</b>	<b>COLA:</b>
1	On or Before January 1, 1981	3.0%
1	January 2, 1981 through January 1, 2019	2.9%
1	January 2, 2019 through January 1, 2022	2.6%
2 & 3	On or Before January 1, 2022	2.0%

Respectfully Submitted

**Via Electronic Mail**

February 1, 2022

Mr. Carl Nelson  
 Executive Director  
 San Luis Obispo County Pension Trust  
 1000 Mill Street  
 San Luis Obispo, California 93408

**Re: Cost-of-Living Adjustment (COLA) as of April 1, 2022**

Dear Carl:

Per your request, we are providing you with the April 1, 2022 Cost-of-Living Adjustment computations for San Luis Obispo County Pension Trust (SLOCPT) members, prepared in accordance with Sections 19.01 and 19.02 of the SLOCPT Retirement Plan.

**Background**

The Cost-of-Living Adjustment (COLA) is determined annually based on the percentage increase or decrease in the cost of living, using the annual average of the Los Angeles-Long Beach-Anaheim and San Francisco-Oakland-Hayward Consumer Price Indices (CPI) for All Urban Consumers, for all items, using a base period of 1982-1984.

At the direction of SLOCPT and the terms of Section 19.01 of the Retirement Plan, we are using a two-year average of the percentage changes in the annual averages of the indices described above to determine the COLAs as of April 1, 2022. We understand this is permissible based on legal counsel’s interpretation of “found by the Board of Trustees to approximate” in Section 19.01 of the Retirement Plan.

**COLA Calculations**

The Consumer Price Indices and calculations described above are as follows:

		Annual Average CPI-U	Average Annual Increase
Los Angeles metropolitan area:	2019:	274.114	
	2020:	278.567	1.625%
	2021:	289.244	3.833%
San Francisco metropolitan area:	2019:	295.004	
	2020:	300.084	1.722%
	2021:	309.721	3.211%

Based on the averaging method, this represents an increase of 2.598%, which when rounded to the nearest one-tenth percent results in a two-year annual average CPI increase of 2.6%.

**Section 19.01 and 19.02**

Tier 1 members are subject to the COLA provisions of Sections 19.01 and 19.02, which limits the COLA increases to 3.0% annually. Any excess of the COLA increase calculated without regard to the maximum above 3.0% is to be accumulated and carried over each year, rounded to the nearest one-tenth percent.

Members who retired on or before January 1, 1981 will receive a COLA increase of 3.0% to their monthly benefit, and members who retired after January 1, 1981 and on or before January 1, 2019 will receive a benefit increase of 2.9%; based on their accumulated carry-over balances (“COLA bank”) as of April 1, 2021. Finally, members who retired after January 1, 2019 will receive a 2.6% increase in their benefits. There is no COLA bank remaining for members who retired after January 1, 1981.

The attached exhibit summarizes the COLAs and carry-over balances for Tier 1 members subject to Sections 19.01 and 19.02. The accumulated carry-over balances are consistent with last year; however, we have not reviewed the historical carry-over balances.

**Sections 27.25, 28.25, 29.25, 30.25, 31.25**

Tier 2 and Tier 3 (AB 340) members are subject to the COLA provisions of Sections 27.25, 28.25, 29.25, 30.25, and 31.25, and are also governed by Sections 19.01 and 19.02. The annual COLA for members in these Tiers is limited to 2.0% and they do not carry forward any accumulation of COLAs above the annual 2.0% maximum. Thus, Tier 2 and Tier 3 members will receive a COLA of 2.0%.

This letter was prepared exclusively for SLOCPT for the purpose described herein. Other users of this letter are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Please contact us if you have any questions regarding these calculations.

Sincerely,  
Cheiron



Anne D. Harper, FSA, MAAA, EA  
Principal Consulting Actuary

Attachment

cc: Amy Burke  
Alice Alsberghe, ASA, MAAA, EA  
Tim Hall, ASA, CERA



**San Luis Obispo County Pension Trust**  
**Cost of Living Adjustments (COLA) - Section 19.01 and 19.02**  
**Tier 1 Members**

**Maximum Annual COLA: 3.0%**

Initial Retirement Date	April 1, 2021			April 1, 2022		
	CPI Change <sup>1</sup>	COLA Granted	Accumulated Carry-Over	CPI Change <sup>1</sup>	COLA Granted	Accumulated Carry-Over
	(A)	(B)	(C)	(D)	(E)	(F)
On or Before 1/1/1979	2.4%	3.0%	16.8%	2.6%	3.0%	16.4%
1/2/1979 to 1/1/1980	2.4%	3.0%	12.5%	2.6%	3.0%	12.1%
1/2/1980 to 1/1/1981	2.4%	3.0%	5.8%	2.6%	3.0%	5.4%
1/2/1981 to 1/1/2019	2.4%	3.0%	0.3%	2.6%	2.9%	0.0%
1/2/2019 to 1/1/2020	2.4%	2.9%	0.0%	2.6%	2.6%	0.0%
1/2/2020 to 1/1/2021	2.4%	2.4%	0.0%	2.6%	2.6%	0.0%
1/2/2021 to 1/1/2022	-	-	-	2.6%	2.6%	0.0%

<sup>1</sup> Two-year average of annual average increases of the Los Angeles-Long Beach-Anaheim and San Francisco-Hayward-Oakland

All Urban Consumer Price Indices, for all items, 1982-1984 base (Section 19.01 and 19.02).

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# Pension Trust

1000 Mill Street  
San Luis Obispo, CA 93408  
(805) 781-5465 Phone  
(805) 781-5697 Fax  
www.SLOPensionTrust.org



Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director

## **Agenda Item 8: 2022 Actuarial Experience Study and Valuation Planning**

### **Recommendation:**

The SLOCPT Plan Actuaries, Anne Harper and Alice Alsberghe of Cheiron will make a presentation on planning for the 2022 Actuarial Valuation. The Board of Trustees should discuss the actuarial issues presented and direct Staff and Actuary as necessary.

### **Decision Schedule:**

February 28, 2022

- Experience Study/Valuation preview
- Preliminary projections with prior year's asset return

May 23, 2022

- 2022 Experience Study results
- **Board of Trustees approval of 2022 Actuarial assumptions**

June 27, 2022

- Final Actuarial Valuation report and presentation
- **Board of Trustees approval of –**
  - **2022 Actuarial Valuation**
  - **Pension Contribution Rates**

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# San Luis Obispo County Pension Trust



## Planning for the 2022 Experience Study and Actuarial Valuation

February 28, 2022

Anne D. Harper, FSA, MAAA, EA  
Alice I. Alsberghe, ASA, MAAA, EA



# Topics for Discussion



## 2022 Actuarial Timeline

Inflation and Discount Rate Assumptions

Review of Current Market Expectations

Preview of 2022 Experience Study

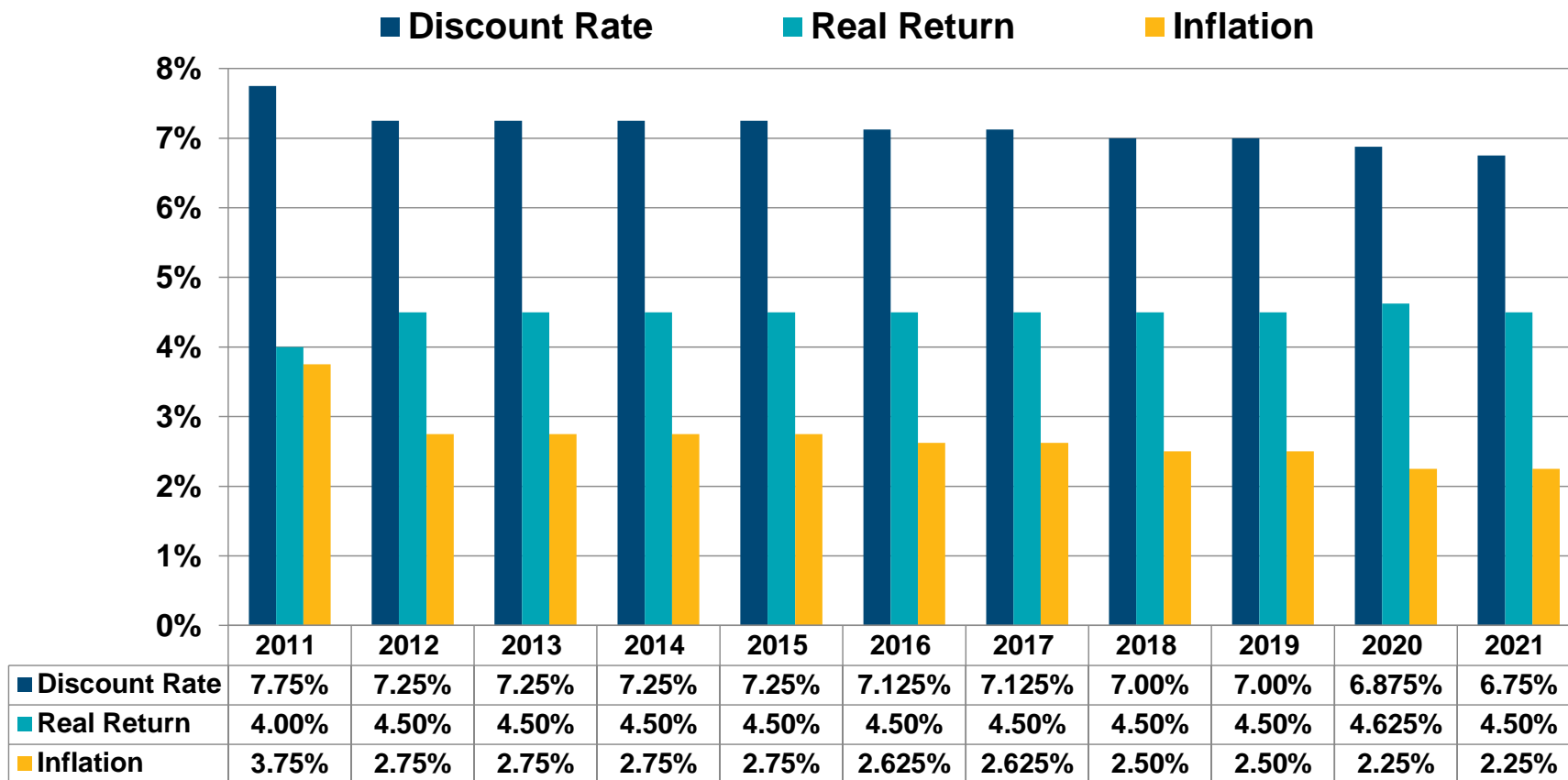
Preliminary Projections

# 2022 Actuarial Timeline



- February 28, 2022 Board Meeting
  - Preview of the December 31, 2021 Experience Study
  - Projections with preliminary asset return of 15%
    - With reductions in discount rate to 6.50% or 6.625%
- May 23, 2022 Board Meeting
  - Present results of December 31, 2021 Experience Study
  - Board to adopt actuarial assumptions for 2022
- June 27, 2022 Board Meeting
  - Present results of the January 1, 2022 Actuarial Valuation
  - Board to adopt contribution rates

# Economic Assumptions History







- Price inflation is the foundation for all economic assumptions
  - Assumed rate of return = Price inflation + Real return
  - Wage inflation = Price inflation + Real wage growth
- Current price inflation assumption = 2.25%
- Separate assumption for retiree COLAs:
  - 2.50% for Tier 1
  - 2.00% for Tier 2 and Tier 3

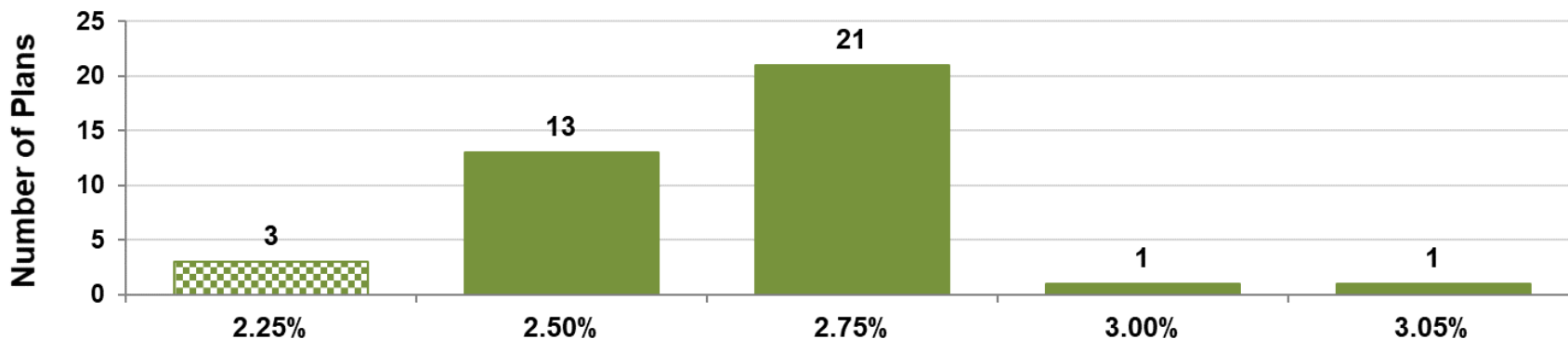
# Price Inflation – Industry Trends



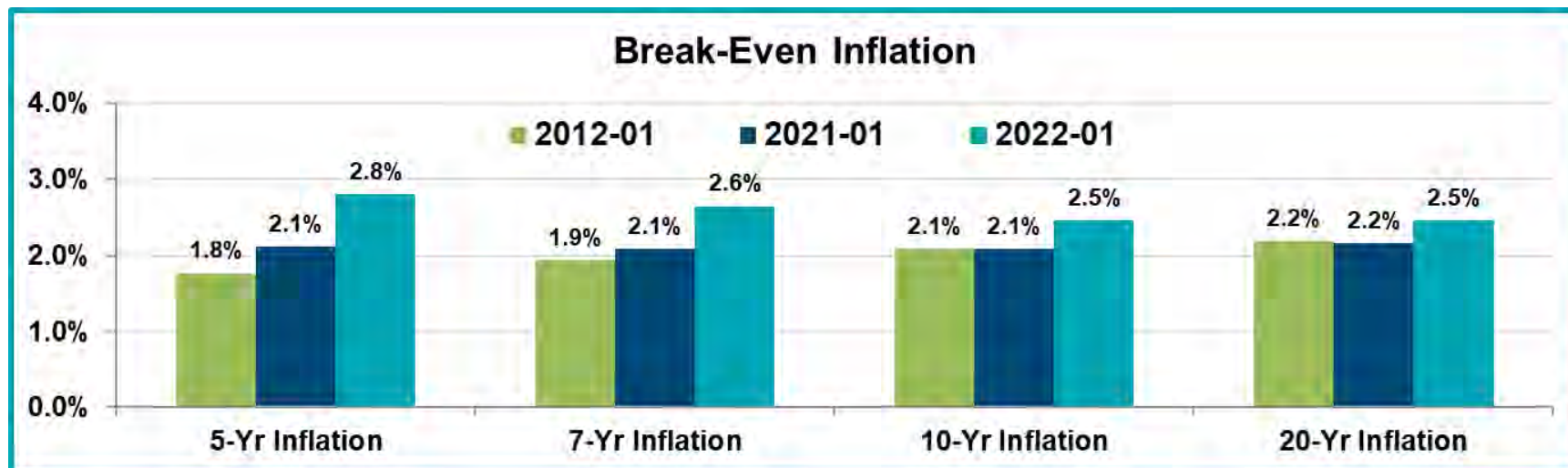
**Price Inflation Assumption Trends**  
Cheiron Survey of California Systems



**Distribution of Latest Price Inflation Assumptions**  
Cheiron Survey of California Systems



# Price Inflation – Market Expectations



- Break-even inflation is the difference in yields between conventional treasury bonds and Treasury Inflation-Protected Securities (TIPS)
- It represents a market estimate of future inflation
- Short-term inflation expectations have increased substantially, especially in the last year
- Long-term expectations have also increased, but only slightly

# Discount Rate – Analysis

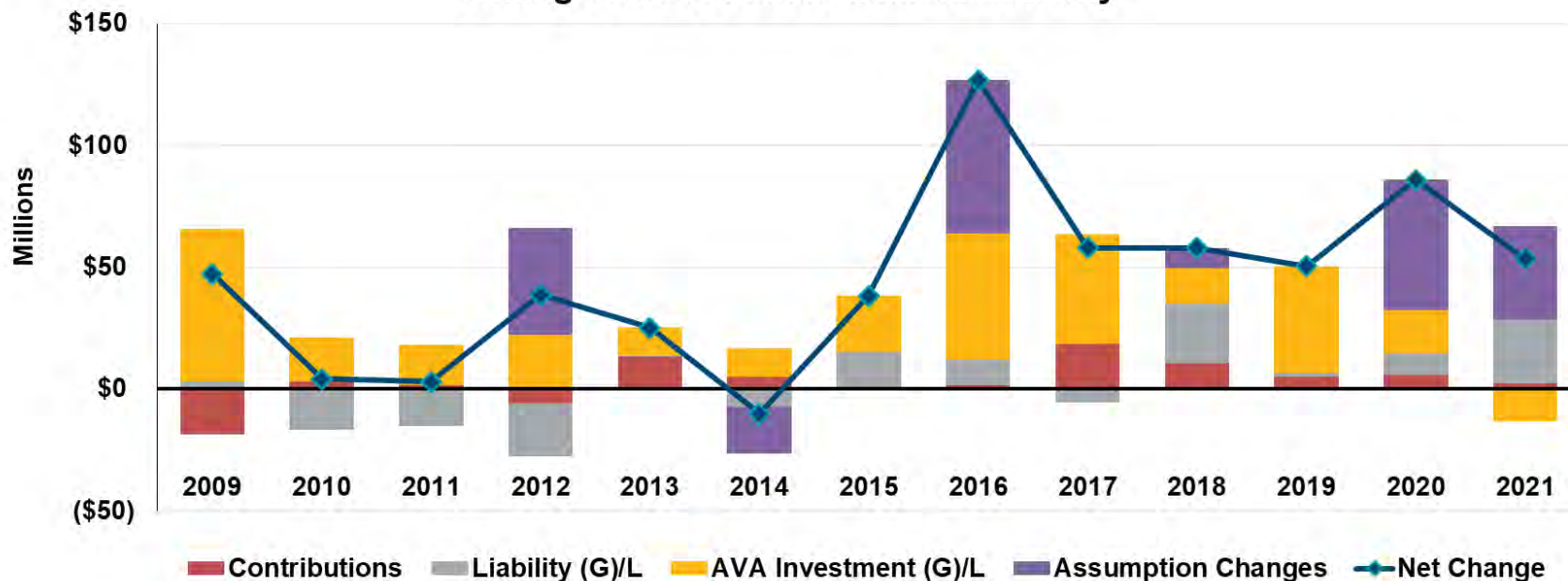


- Current assumption = 6.75%
  - Real rate of return = 4.50%
  - Price Inflation = 2.25%
- Context for selecting the discount rate
  - Historical experience
  - Industry trends
- Primary factors considered in selecting the discount rate
  - Expectations for the future
  - Board's risk preference

# Discount Rate – Historical Experience



Changes in Unfunded Actuarial Liability



- \$325 million in actuarial investment losses
- Losses in all years except January 1, 2021 valuation
- Accounts for 56% of SLOCPT's UAL since 2008

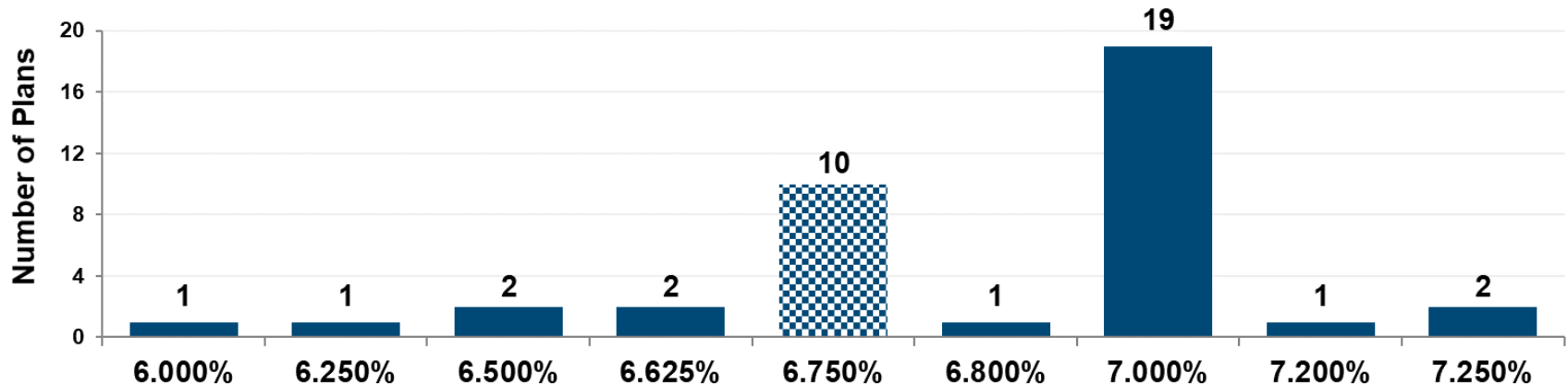
# Discount Rate – Industry Trends



**Discount Rate Trends**  
Cheiron Survey of California Systems



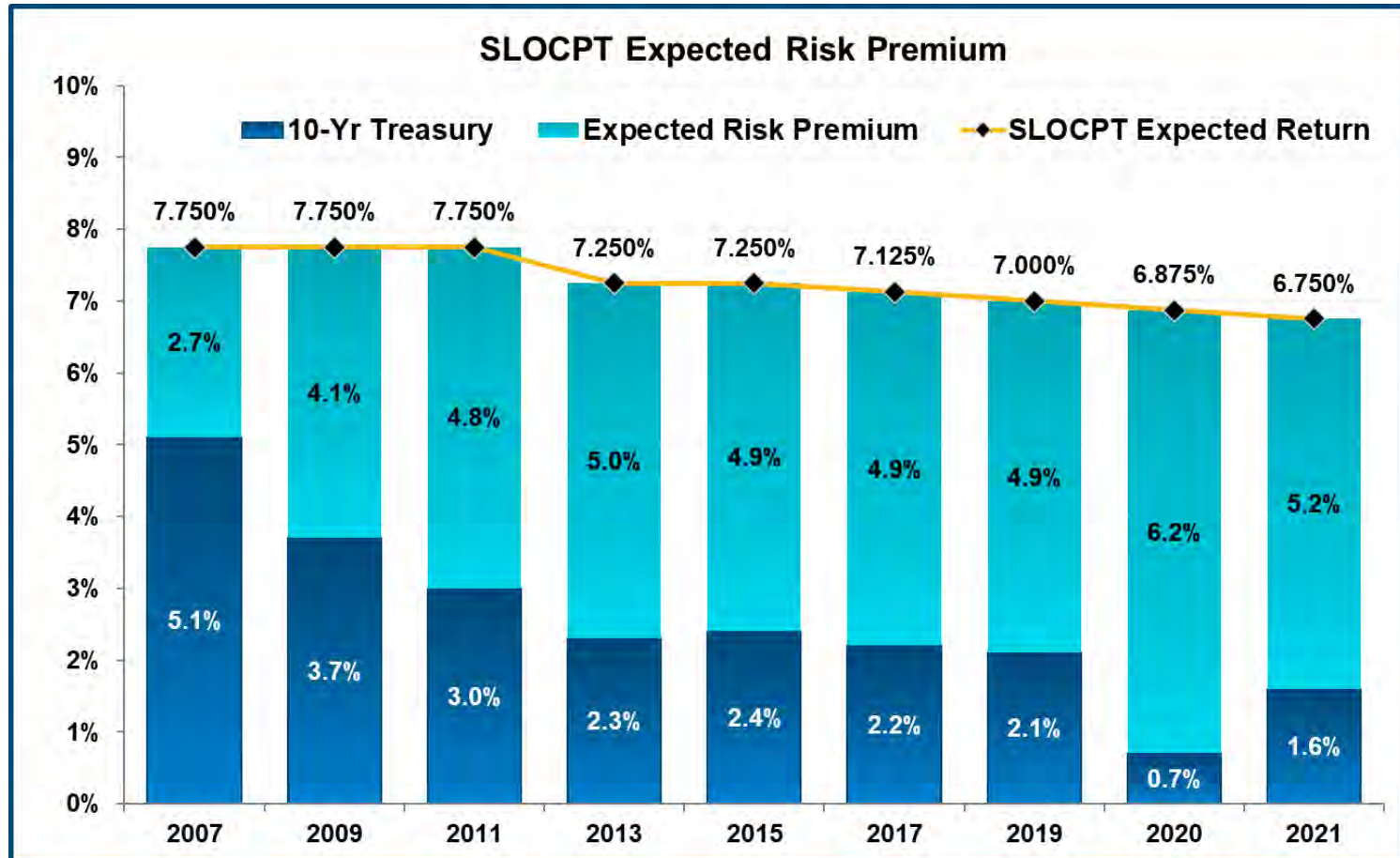
**Distribution of Latest Discount Rates**  
Cheiron Survey of California Systems



# Discount Rate and Expected Risk Premium



- Today, more risk needs to be taken to achieve a lower expected return



# Comparison of CMA Expectations



- Comparison to other investment consultants' capital market assumptions (CMA)
  - Asset classes aren't always a perfect match
  - Used Verus' assumptions when no reasonable match available (e.g. alternative asset classes)
- Horizon Survey of 39 Investment Consultants including:

Verus

Aon

BlackRock

Callan

Cambridge

Marquette

Meketa

Morgan Stanley

RVK

Voya





## SLOCPT Portfolio Updated Return Expectations

Source	Nominal	Inflation	Real
Verus (10-year)	6.28%	2.50%	3.78%
Horizon Survey (10-year)	6.42%	2.12%	4.30%
Verus (30-year)	6.56%	2.30%	4.26%
Horizon Survey (20-year)	<u>7.01%</u>	<u>2.23%</u>	<u>4.78%</u>
Average	6.57%	2.29%	4.28%
Current SLOCPT Assumptions	6.75%	2.25%	4.50%



# Expected Return Assumptions (based on CMAs)



Expected Distribution of Average Annual Asset Return				
Percentile	Verus		Horizon Survey	
	10 Years	30 Years	10 Years	20 Years
<b>95th</b>	12.5%	10.1%	12.8%	10.6%
<b>75th</b>	8.8%	8.0%	9.0%	8.5%
<b>65th</b>	<b>7.7%</b>	<b>7.4%</b>	<b>7.9%</b>	<b>7.9%</b>
<b>55th</b>	<b>6.7%</b>	<b>6.8%</b>	<b>6.9%</b>	<b>7.3%</b>
<b>50th</b>	<b>6.3%</b>	<b>6.6%</b>	<b>6.4%</b>	<b>7.0%</b>
<b>45th</b>	<b>5.8%</b>	<b>6.3%</b>	<b>6.0%</b>	<b>6.7%</b>
<b>35th</b>	<b>4.9%</b>	<b>5.7%</b>	<b>5.0%</b>	<b>6.2%</b>
<b>25th</b>	3.8%	5.1%	3.9%	5.6%
<b>5th</b>	0.4%	3.1%	0.4%	3.5%

- 2021 range of SLOCPT expected returns was 5.4%- 6.8%
- Marked improvement, still less than 50% chance of achieving 6.75% in all scenarios, except Horizon's 20-year expectations

# Capital Market Assumption Volatility



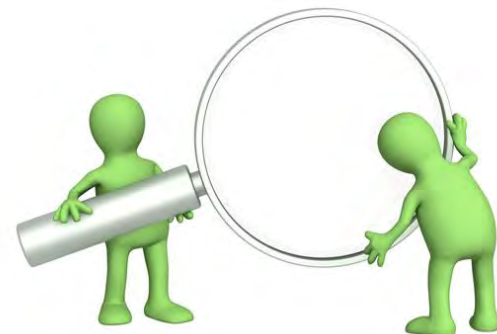
Gray bars represent Verus' 10-year and 30-year range of SLOCPT's expected returns.

Blue bar represents the range of expected returns, 10-year and 20-year, using the 8/2021 Horizon Survey's capital market assumptions.

Returns are gross of expected administrative expenses.

- Capital market assumptions change annually as market conditions change
- Recent economic environment volatile and uncertain
- Discount rate should be adjusted to reflect long-term trends, but shouldn't overreact to short-term fluctuations

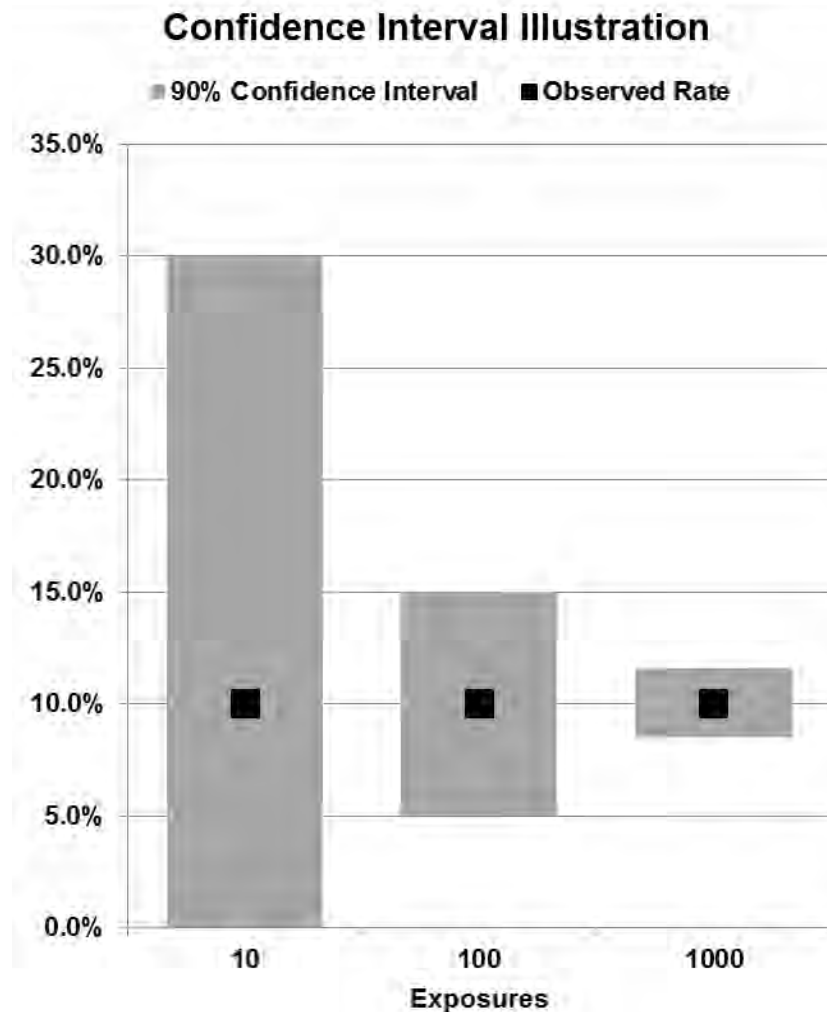
# Preview of 2022 Experience Study





- Highlights of Assumption Review
  - Consider reduction to the real rate of investment return
    - By reducing discount rate to 6.625% or 6.50%; and/or
    - By increasing inflation to 2.375% or 2.50%
  - Consider using public sector Safety mortality table for Safety and Probation members
  - Analyze retirement rates based on service and age, not just age
    - A member is more likely to retire if they have 30 years of service than 15 years, due to receiving a larger retirement benefit, all else equal
    - Age-based only rates potentially underestimate liabilities
  - Analyze salary merit increase separately for General and Safety members
    - Tend to have different patterns of salary increase throughout careers

# Confidence Intervals



- How much data is available is critical in determining if the assumption warrants a change
  - 1 retirement out of 10 eligible members; rate is between 0% and 30%
  - 10 out of 100; rate is between 5% and 15%.
  - 100 out of 1000; rate is between 8.5% and 11.5%

# Confidence Intervals



- Example of a CA public pension system where actual retirement rates varied significantly based on service, but assumptions were set uniformly by age, regardless of service

# Projections

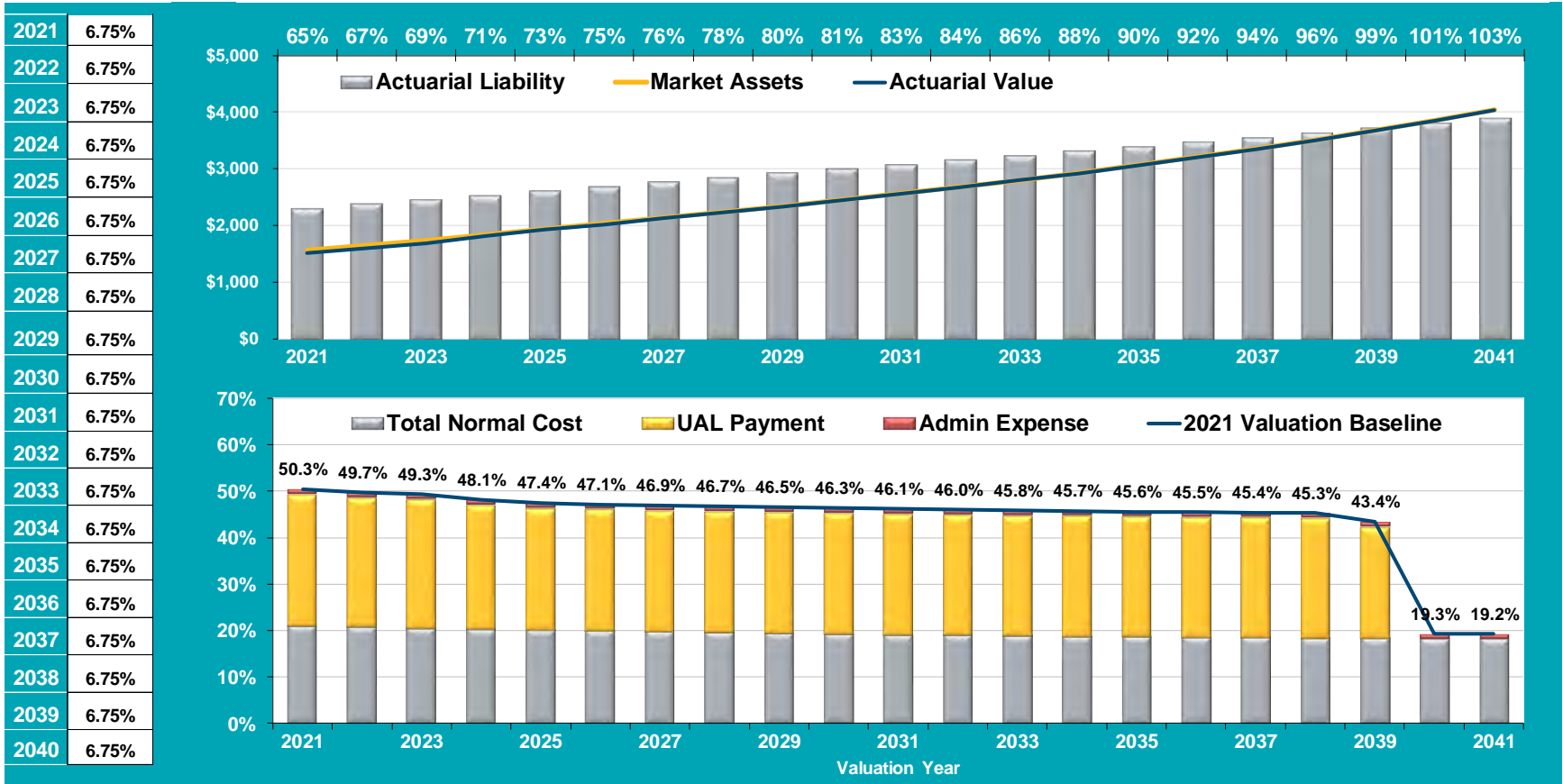




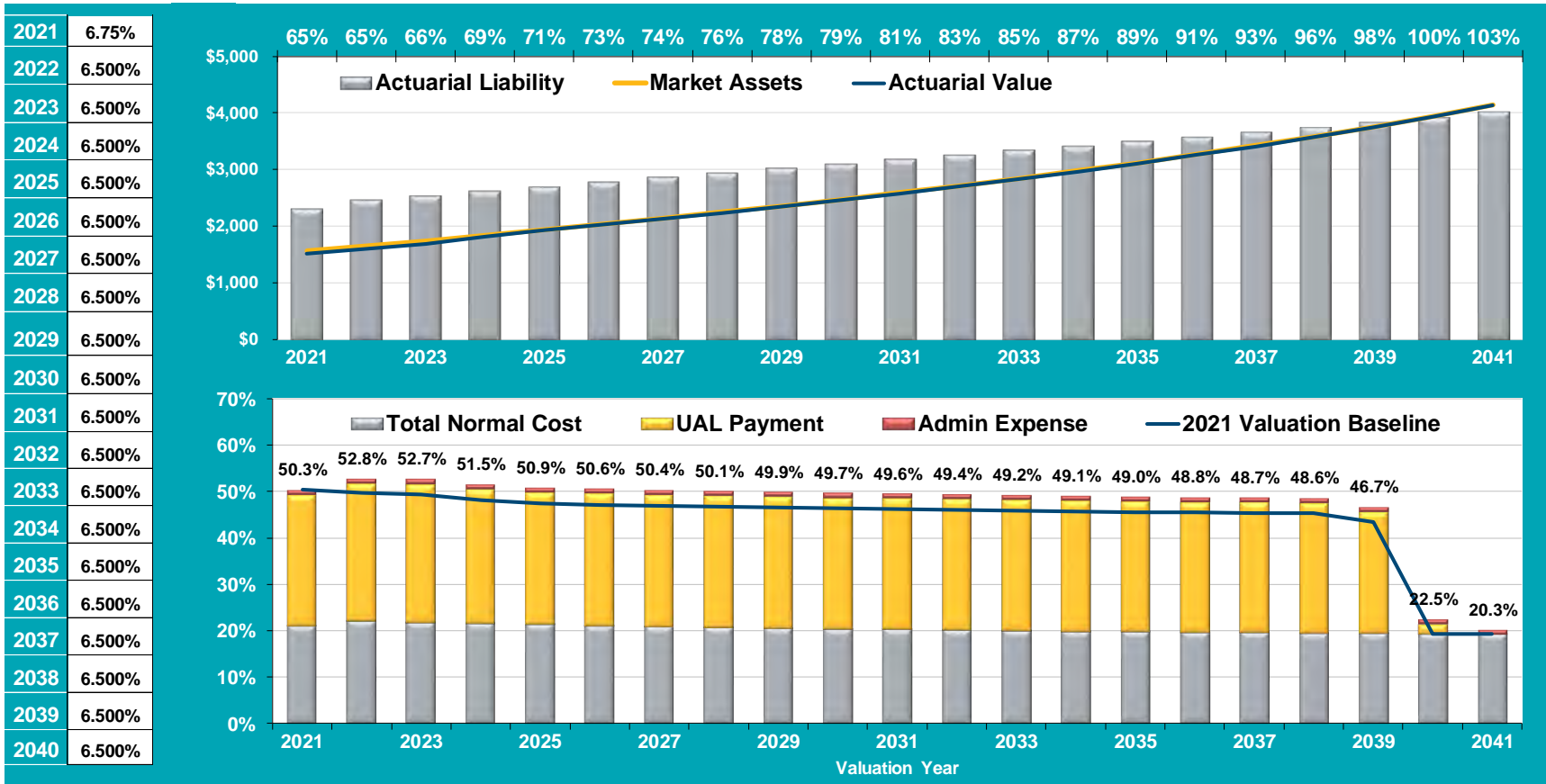


- The projected returns on the Market Value of Assets are equal to the assumed discount rate for the specified scenario, for each and every year in the projection period; unless otherwise noted
- All other actuarial assumptions are assumed to be met each and every year
- Actuarially Determined Contribution (ADC) rate is assumed to be paid by employers and employees
- Assume a stable active population; PEPRA members will replace legacy members when they leave active employment
  - Payroll expected to grow by 2.75% per year

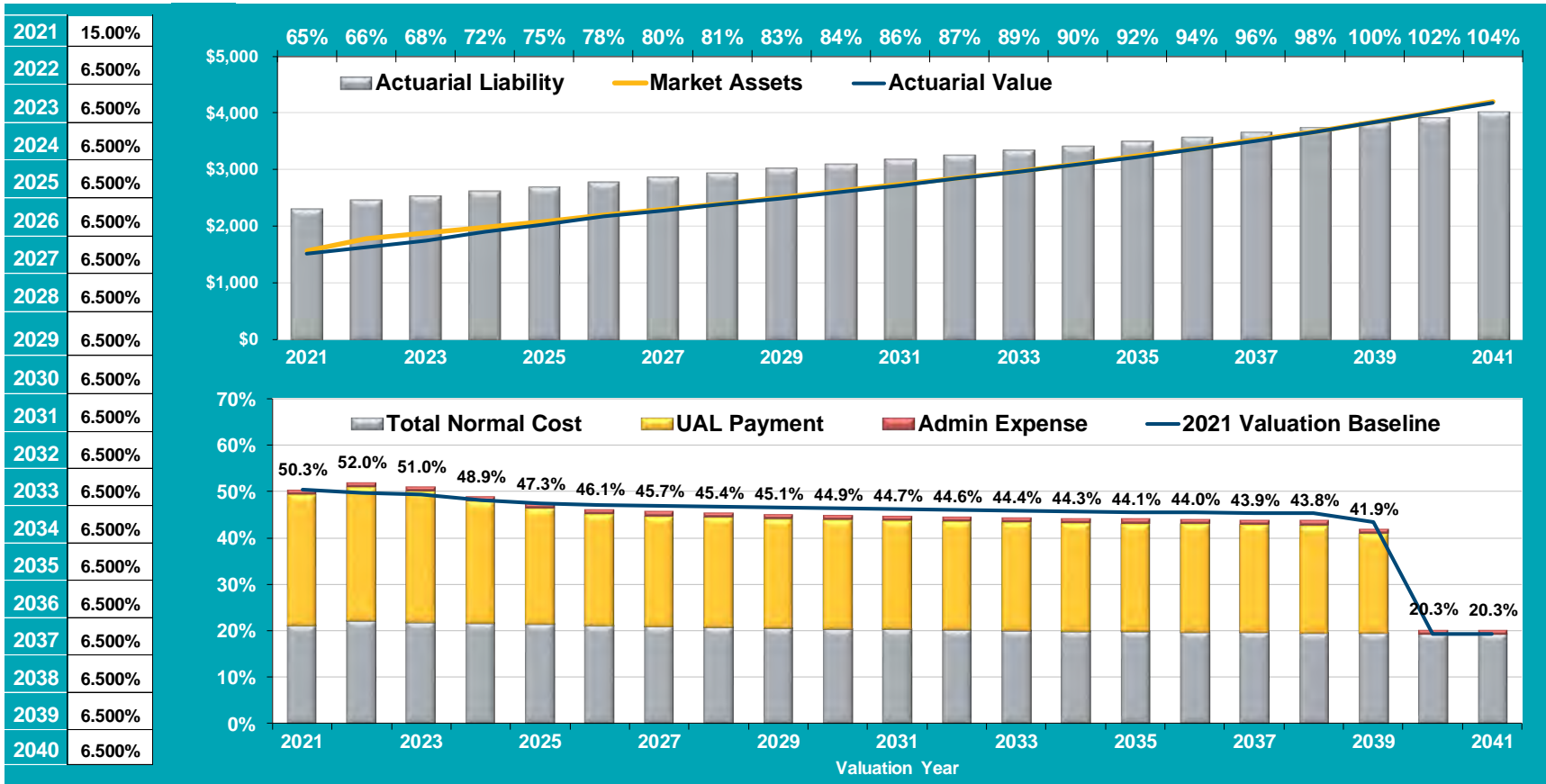
# Baseline Projections – 6.75% Discount Rate



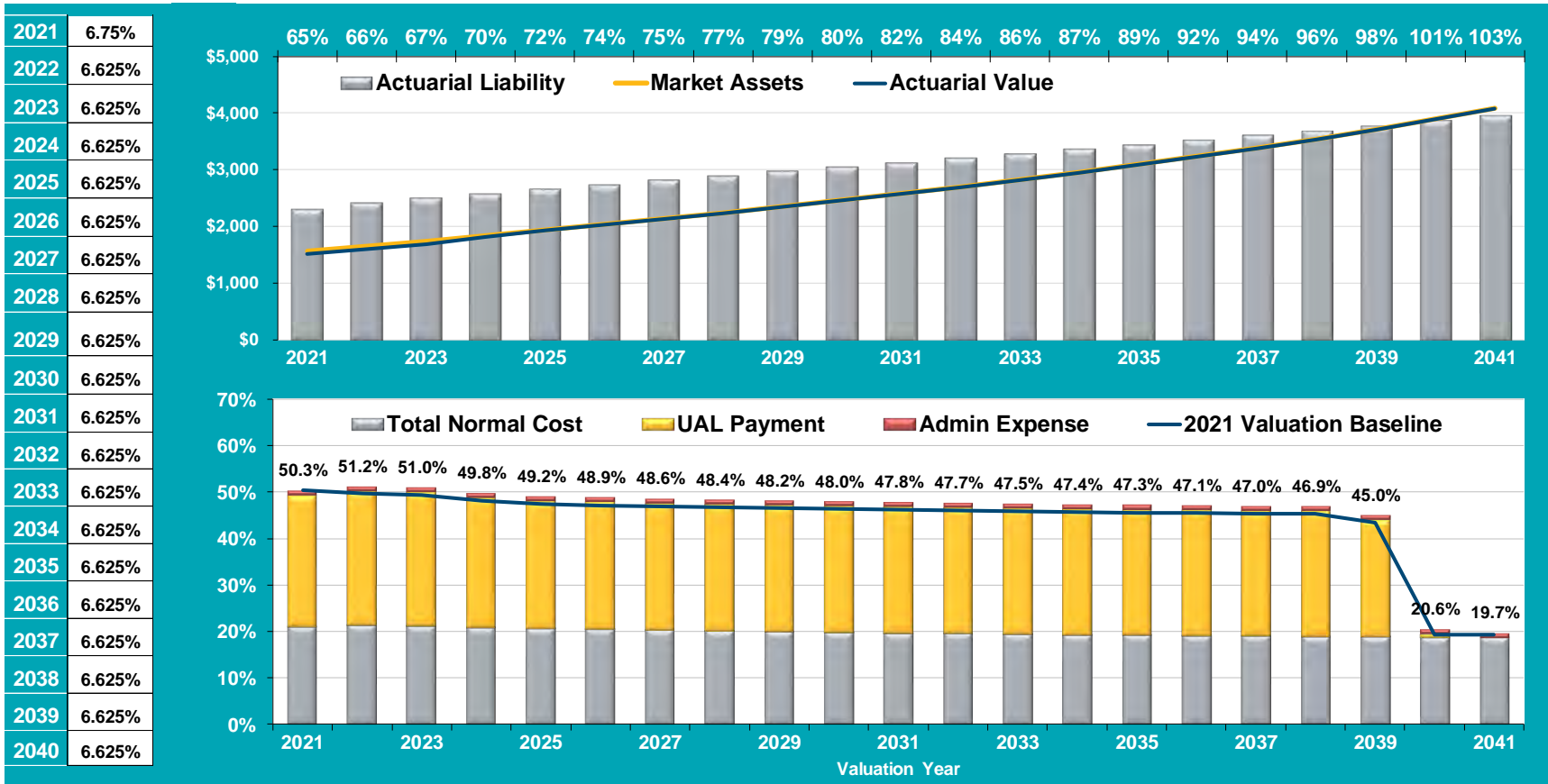
# Projections – 6.50% Discount Rate



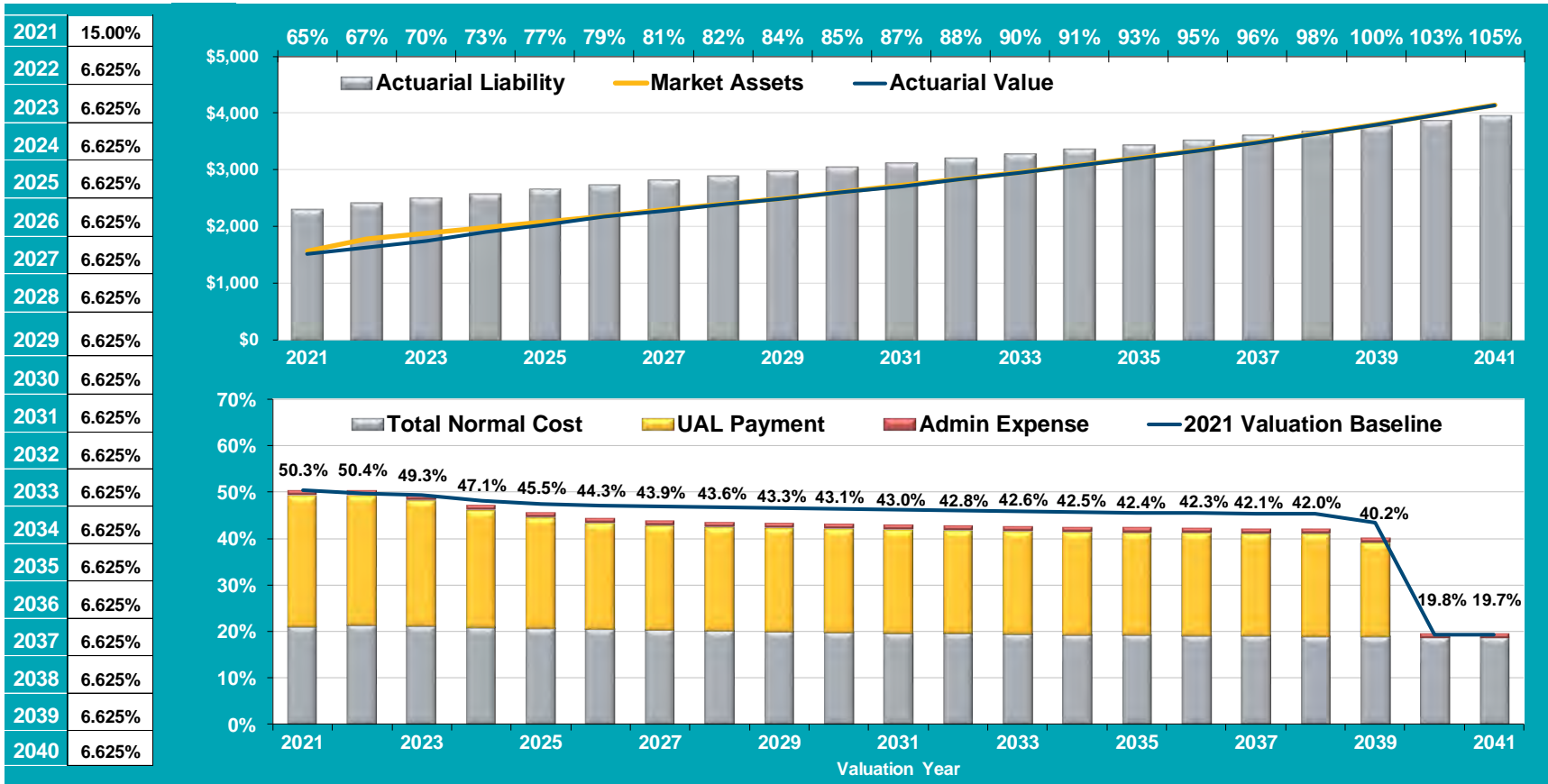
# 6.50% DR, 15% FYE 2021 Asset Return



# Projections - 6.625% Discount Rate



# 6.625% DR, 15% FYE 2021 Asset Return



# Required Disclosures



The purpose of this presentation is to review the 2022 actuarial timeline, preview the 2022 Experience Study, and present preliminary projections for the San Luis Obispo County Pension Trust. This presentation is for the use of the Board of Trustees.

In preparing our presentation, we relied on information, some oral and some written, supplied by the San Luis Obispo County Pension Trust. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The actuarial assumptions, data, and methods are those used in the preparation of the actuarial valuation report as of January 1, 2021; unless otherwise noted.

The assumptions reflect our understanding of the likely future experience of the Retirement Plan, and the assumptions as a whole represent our best estimate for the future experience of the Retirement Plan. Future results may differ significantly from the current results presented in this presentation due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

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

Deterministic projections in this presentation were developed using P-scan, a proprietary tool used to illustrate the impact of changes in assumptions, methods, plan provisions, or actual experience (particularly investment experience) on the future financial status of the Retirement Plan. P-scan uses standard roll-forward techniques that implicitly assume a stable active population. Because P-scan does not automatically capture how changes in one variable affect all other variables, some scenarios may not be consistent.

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

This presentation was prepared exclusively for the San Luis Obispo County Pension Trust for the purpose described herein. Other users of this presentation are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

Anne Harper, FSA, MAAA, EA  
Principal Consulting Actuary

Alice Alsberghe, ASA, MAAA, EA  
Consulting Actuary

# Appendix A – California Systems in Cheiron Survey



## Cheiron's 2021 Survey of Public Retirement Systems in California

System Name	Discount Rate	Valuation Date	System Name	Discount Rate	Valuation Date
AC Transit	6.75%	1/1/2021	MCERA - Merced County	6.75%	6/30/2021
ACERA - Alameda County	7.00%	12/31/2020	OCERS - Orange County	7.00%	12/31/2020
CalPERS	6.80%	6/30/2021	SACRT - Sacramento Regional Transit	6.75%	7/1/2021
CalSTRS - Defined Benefit	7.00%	6/30/2020	SamCERA - San Mateo County	6.25%	6/30/2021
City of Fresno - Employee System	7.00%	6/30/2021	San Diego Transit	6.00%	7/1/2021
City of Fresno - Fire & Police	7.00%	6/30/2021	SBCERA - San Bernardino County	7.25%	6/30/2021
City of San Jose Federated	6.625%	6/30/2021	SBCERS - Santa Barbara County	7.00%	6/30/2021
City of San Jose Police & Fire	6.625%	6/30/2021	SCERA - Sonoma County	7.00%	12/31/2020
Contra Costa County ERA	7.00%	12/31/2020	SCERS - Sacramento County	6.75%	6/30/2021
East Bay Municipal Utility District	7.00%	6/30/2021	SDCERA - San Diego County	7.00%	6/30/2021
FCERA - Fresno County	6.50%	6/30/2021	SDCERS - San Diego City	6.50%	6/30/2021
Golden Gate Transit	7.00%	1/1/2021	SFERS - San Francisco	7.20%	7/1/2021
ICERS - Imperial County	7.00%	6/30/2021	SJCERA - San Joaquin County	7.00%	1/1/2021
KCERA - Kern County	7.25%	6/30/2021	SLOCPT - San Luis Obispo County	6.75%	1/1/2021
LACERA - Los Angeles County	7.00%	6/30/2021	StanCERA - Stanislaus County	6.75%	6/30/2021
LACERS - Los Angeles City	7.00%	6/30/2021	TCERA - Tulare County	7.00%	6/30/2021
Los Angeles Fire & Police Pension	7.00%	6/30/2021	University of California	6.75%	7/1/2021
Los Angeles Water and Power	7.00%	7/1/2021	Valley Transit Authority	6.75%	1/1/2021
MCERA - Marin County	6.75%	6/30/2021	VCERA - Ventura County	7.00%	6/30/2021
MCERA - Mendocino County	6.75%	6/30/2021			





# CHEIRON



**Classic Values, Innovative Advice.**

***Cheiron** (pronounced kī'·ron), the immortal centaur from Greek mythology, broke away from the pack and was educated by the gods. Cheiron became a mentor to classical Greek heroes, then sacrificed his immortality and was awarded in eternity as the constellation Sagittarius.*

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# Board of Trustees

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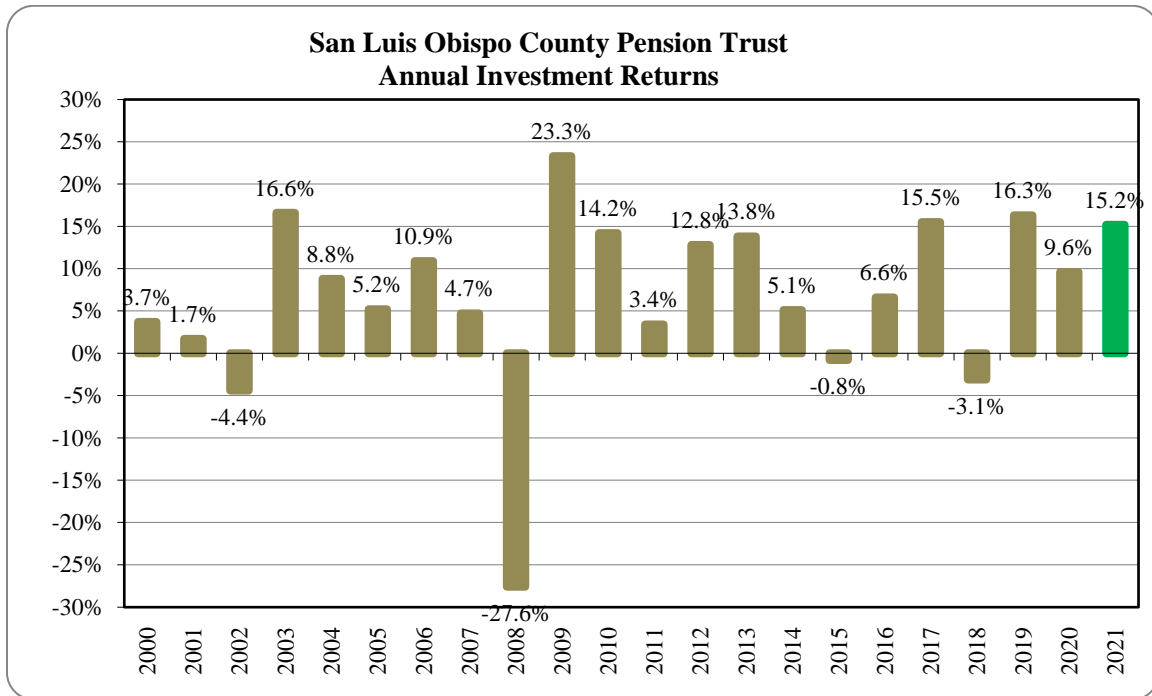
Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director  
Scott Whalen - Verus

## **Agenda Item 9: Quarterly Investment Report for the 4th Quarter of 2021**

Attached to this memo is the 4Q21 quarterly investment report prepared by the Trust’s investment consultant Verus. Scott Whalen of Verus will make a detailed presentation and discuss the quarterly report. The history of the rates of return gross of fees of the Pension Trust are shown below as an extension of the data in the Verus report.



Respectfully submitted

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**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: DECEMBER 31, 2021**

Investment Performance Review for

**San Luis Obispo County Pension Trust**

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Investment Landscape

TAB I

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Investment Performance  
Review

TAB II



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

1<sup>ST</sup> QUARTER 2022  
Investment Landscape

# Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

## Topics of interest

### THE ROLE OF INCOME IN PORTFOLIOS

Many aspects of investing are fundamentally rooted in the idea that total investment return includes both investment income and investment price appreciation (growth). Nearly every asset class can be decomposed into these two characteristics—some assets being composed mostly of income and some assets being composed mostly of price appreciation. As interest rates have fallen around the world, the importance of income, and the role it plays in portfolios, has seen a dramatic increase. In this Topic of Interest, we revisit these two fundamental characteristics to provide investors with a lens with which to view decision-making in the current market environment.

### INTEGRATING ACTIVE RETURN INTO ASSET ALLOCATION MODELING

Long-term asset class forecasts, or capital market assumptions, typically focus on the future performance of broad markets. However, most investors employ some combination of passive and active management in their portfolios. And active management is most often pursued with the expectation that returns will be different than that of the broad market (specifically, that “active return” will be achieved above and beyond the market return). If capital market assumptions are typically comprised of market forecasts, but investors tend to build portfolios with the expectation of market return plus active return, how might investors estimate the expected behavior of active management (active return) in their asset allocation work? In this Topic of Interest we look at this question from multiple angles.

## Annual research

### 2022 CAPITAL MARKET ASSUMPTIONS

Some important developments occurred in the last year. During our 2022 Capital Market Assumptions webinar, we discussed:

- Market movements of 2021 and how these shifts have improved our long-term outlook,
- The impact of rising inflation and interest rates on asset class expectations,
- And our newly released forecasts for specific hedge fund styles, and forecasts for various strategies/approaches with the private credit universe.



# Verus business update

## 2021

- We celebrated our 35<sup>th</sup> anniversary. Wurts Johnson & Company (founding name) was established in January 1986.
- Eight employees passed their CFA exams, including two who passed Level III, earning their charters. Verus now has a total of 32 CFA charterholders.
- Jeff MacLean, CEO, was awarded the 2021 Knowledge Broker Award by CIO Magazine in September.
- Verus expanded the ownership group to 30 employees. 95% of senior consultants are shareholders.
- We continued to grow our Pittsburgh footprint by adding three professionals for a total of five and moved to a new space on Liberty Avenue. Verus established our “east coast” office in Pittsburgh, PA in May 2020.
- Our national client footprint expanded to 23 states, with our recent additions of clients in Massachusetts, Illinois, and Texas.
- Our assets under advisement has reached over \$664 billion, as a result of strong markets and success in retaining several new clients. Our OCIO business saw continued growth as well, surpassing \$5 billion in assets.
- We completed a third-party verification process that supports our claim of GIPS\* compliance and have implemented the verified GIPS and policies and procedure for our OCIO performance composites. We have 17 unique composites. Our E&F and Taft-Hartley composites now have >5-year track records.
- The IIDC grew to 24 consulting firms with over \$32 trillion in assets under advisement. Verus founded the Institutional Investing Diversity Cooperative in December 2020, leading a call to action in the consulting industry for disclosure of asset manager diversity data at the investment team level.

## 2022

- Managing Director | Senior Consultant, Margaret Jadallah plans to retire towards the end of the year.



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Fixed income rates & credit 21

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Equity 26

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Other assets 35

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Appendix 38

# 4<sup>th</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). A slowdown in consumer spending contributed to a lower rate of growth. This was due to a combination of factors, including new COVID-19 restrictions, a delay in the reopening of businesses across the country, and general fear of virus spread which has led to less spending on services. **p. 9**
- The U.S. labor market improved further, as unemployment fell from 4.8% to 3.9%. The labor force participation rate has also improved, though very gradually, rising from 61.6% to 61.9%. **p. 14**

## PORTFOLIO IMPACTS

- Credit spreads have reached extremely tight levels. High yield bonds traded at a credit spread of 283 bps at year-end. However, these spread levels may be justified by record-low bond default activity. Just 0.4% of U.S. high yield bonds defaulted in 2021, on a par-weighted basis. **p. 24**
- U.S. core CPI increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles. **p. 13**

## THE INVESTMENT CLIMATE

- In December it was announced that Senator Joe Manchin had communicated a hard “No” regarding his support for the Build Back Better bill. For months, Democrats have sought a solution to the disparate needs and spending interests of their party. **p. 12**
- Extremely fast spread of the Omicron variant worldwide does not seem to have had an outsized impact on the markets. While this new wave has in fact led to shutdowns in certain economies, much of the world has remained open, perhaps in acknowledgment that the health effects of Omicron are believed to be milder in nature. **p. 10**

## ASSET ALLOCATION ISSUES

- Equity markets delivered strong returns in Q4, up +6.7% and ending the year up 18.5% (MSCI ACWI). U.S. equities delivered 11.0% during the quarter, while international equities delivered 2.7% and emerging market equities saw a slight loss of -1.3%, on an unhedged currency basis. **p. 27**
- Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks and Growth beat Value. Tighter monetary conditions and a pullback in some growth stocks has renewed talks of a possible Value rotation. **p. 29**

Risk assets continue to perform strongly, despite rapid global spread of the Omicron variant

# What drove the market in Q4?

“World is put on high alert over the Omicron coronavirus variant”

NUMBER OF NEW DETECTED COVID-19 INFECTIONS WORLDWIDE (MILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
15.6	19.9	16.0	13.0	15.7	25.4

Article Source: CNN, as of November 28<sup>th</sup>, 2021

“Transitory’ is out for describing inflation at the Fed... what will take its place?”

HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Jul	Aug	Sep	Oct	Nov	Dec
5.4%	5.3%	5.4%	6.2%	6.8%	7.0%

Article Source: MarketWatch, December 15<sup>th</sup>, 2021

“Unphased by Omicron, Fed policymakers show greater consensus for faster taper”

FEDERAL RESERVE BALANCE SHEET SIZE (TRILLIONS)

Jul	Aug	Sep	Oct	Nov	Dec
\$8.2T	\$8.3T	\$8.4T	\$8.6T	\$8.7T	\$8.8T

Article Source: Reuters, December 2<sup>nd</sup>, 2021

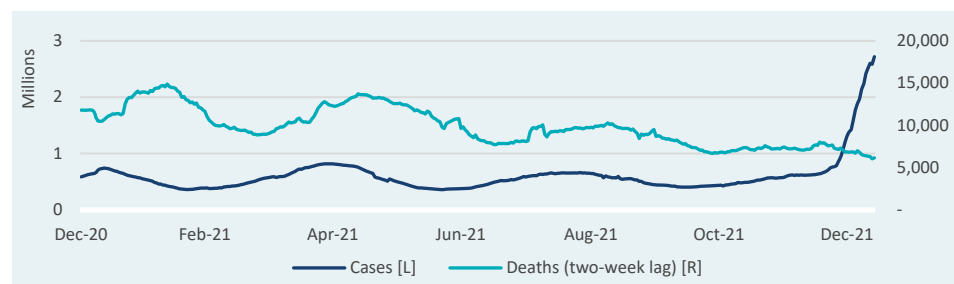
“Dow, S&P 500 end at all-time records as U.S. stocks extend winning streak amid strong company earnings”

S&P 500 INDEX – NUMBER OF CUMULATIVE YEAR-TO-DATE RECORD CLOSES

Jul	Aug	Sep	Oct	Nov	Dec
41	53	54	59	66	70

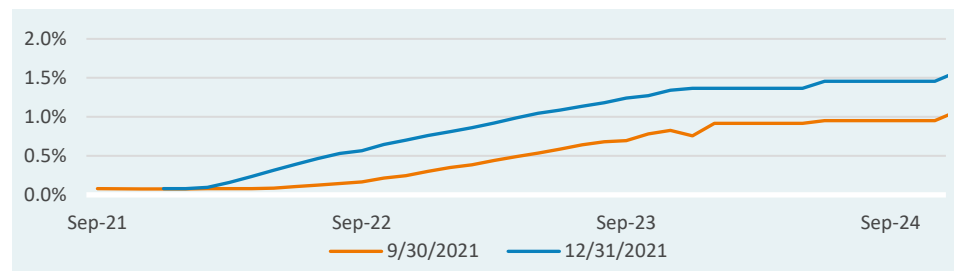
Article Source: October 26<sup>th</sup>, 2021

GLOBAL CASE GROWTH VS. LAGGED DEATHS (7-DAY TRAILING AVERAGE)



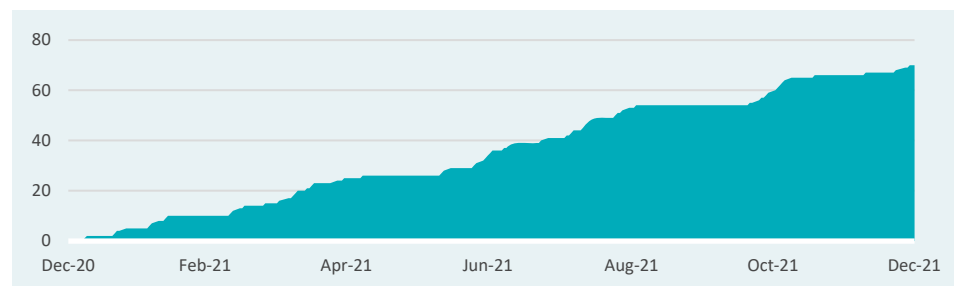
Source: Bloomberg, as of 12/31/21

IMPLIED EFFECTIVE FED FUNDS RATE



Source: Bloomberg, as of 12/31/21

S&P 500 INDEX – CUMULATIVE NUMBER OF RECORD CLOSES IN 2021



Source: Standard & Poor's, Bloomberg, as of 12/31/21

# Economic environment

# U.S. economics summary

- Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). A slowdown in consumer spending contributed to a lower pace of growth. This was due to a combination of factors, including new COVID-19 restrictions, a delay in the reopening of businesses, and general fear of virus spread which has led to less spending on services. As GDP growth is stated in *inflation-adjusted* terms, higher inflation has also contributed to slower economic growth.
- U.S. core CPI, which excludes food and energy prices, increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles.
- The U.S. unemployment fell further, from 4.8% to 3.9% during Q4. The labor force participation rate has improved, though very gradually, rising from 61.6% to 61.9%.
- After months of political brinksmanship, it appears the Build Back Better plan has stalled, as Senator Joe Manchin had communicated a hard “No” on his support for the Build Back Better bill. Democrats continue to seek a solution to the disparate needs and spending interests of their party.
- U.S. home prices increased +19.1% over the past year ending October. However, price growth may be cooling off, as the inventory of homes has expanded materially and mortgage interest rates have begun to rise.
- Consumer sentiment was mixed during the quarter. Depressed survey levels suggest we are no longer in the euphoric spending environment of mid to late 2021.

	Most Recent	12 Months Prior
Real GDP (YoY)	4.9% 9/30/21	(2.9%) 9/30/20
Inflation (CPI YoY, Core)	5.5% 12/31/21	1.6% 12/31/20
Expected Inflation (5yr-5yr forward)	2.3% 12/31/21	2.0% 12/31/20
Fed Funds Target Range	0% – 0.25% 12/31/21	0% – 0.25% 12/31/20
10-Year Rate	1.51% 12/31/21	0.91% 12/31/20
U-3 Unemployment	3.9% 12/31/21	6.7% 12/31/20
U-6 Unemployment	7.3% 12/31/21	11.7% 12/31/20

# GDP growth

Real GDP grew at a 4.9% rate year-over-year in the third quarter (+2.3% quarterly annualized rate). During the quarter, a slowdown in consumer spending resulted in a lower pace of growth. This was partly a factor of new COVID-19 restrictions and a delay in the reopening of businesses across the country. Fear of contracting the virus likely led to less spending on services. Government assistance to businesses and households also continued to fall, creating a drag on growth. On the other hand, a strong rebuilding of inventories by businesses had a large positive impact on economic growth.

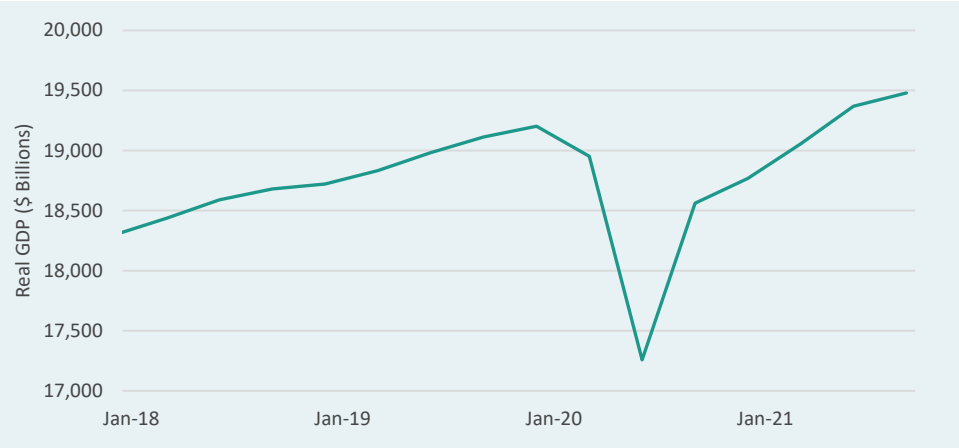
Although Q3 showed a weaker rate of growth, expectations more broadly are for further strong economic expansion—

materially above pre-pandemic rates. The Atlanta Fed GDPNow estimate, as of January 14<sup>th</sup>, suggests a GDP growth rate of 6.8% in the fourth quarter (seasonally-adjusted quarterly annualized rate).

U.S. GDP growth is traditionally quoted in *inflation-adjusted* terms. This means that higher inflation has contributed to slower GDP growth, as shown below. It will be important to watch the rate of inflation and the impact of higher inflation on GDP figures. Multiple past U.S. recessions were caused at least partially by rising inflation rather than solely by slowing growth (see 1970s, 1980s).

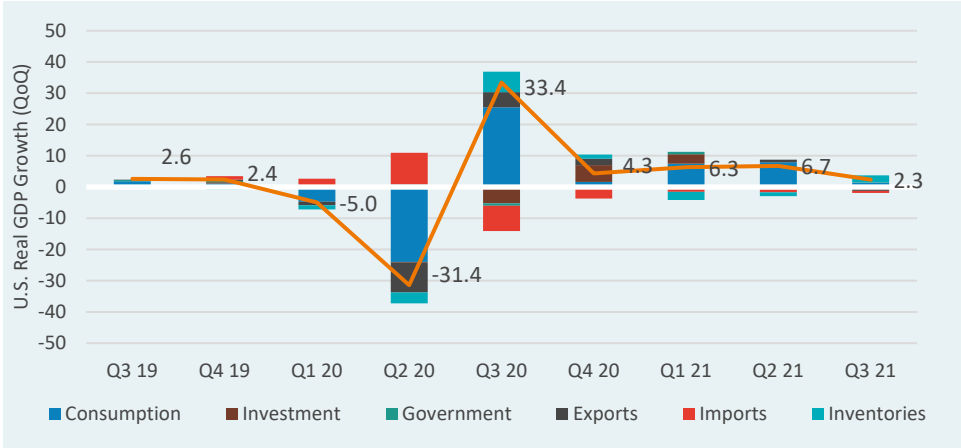
Although Q3 was relatively weak, economists expect continued above-average GDP growth

## U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 9/30/21

## U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 9/30/21

# Omicron variant

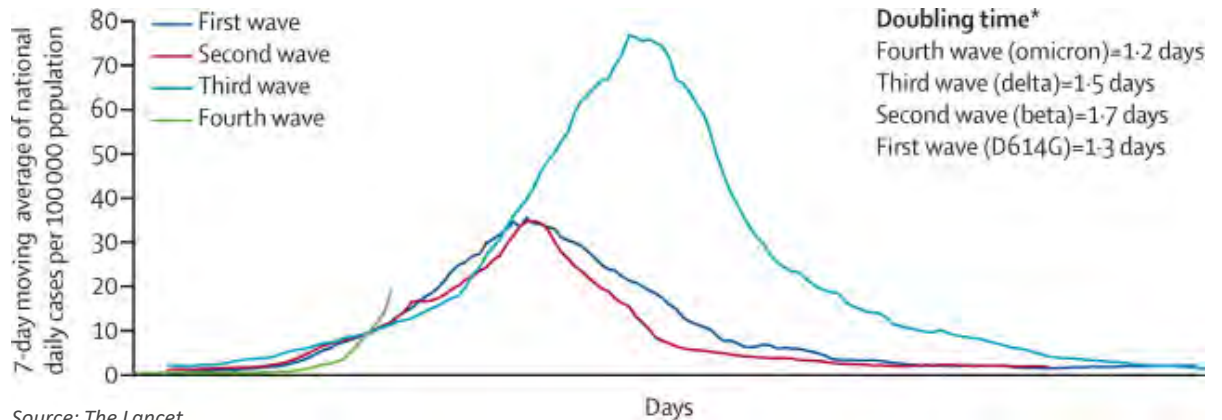
**COVID-19 variant B.1.1.529 (Omicron) was discovered in Botswana on November 11<sup>th</sup> and has since spread exponentially around the globe, replacing the delta variant as the dominant global strain.**

Based on available studies and data, the Omicron variant is much more infectious than prior variants, but its symptoms are less severe. In the Gauteng province within South Africa, the doubling time of cases proved to be faster than each of the previous three waves at 1.2 days

While case growth has accelerated more quickly than in previous waves in South Africa, hospitalizations and deaths have not paced the increase in cases, leaving some to predict that symptoms may be less severe.

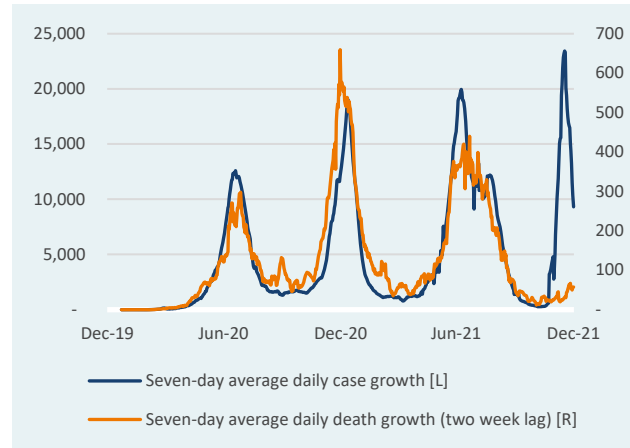
Some have argued that it is a good thing that a highly infectious but not severe strain is spreading around the world, because it will provide some level of neutralizing antibodies to the people it infects, shortening the path to herd immunity. A more pessimistic view would be that “letting it rip” would allow more time for the virus to mutate to a more deadly strain.

**COVID WAVE CASE DOUBLING TIME – GAUTENG PROVINCE, SOUTH AFRICA**



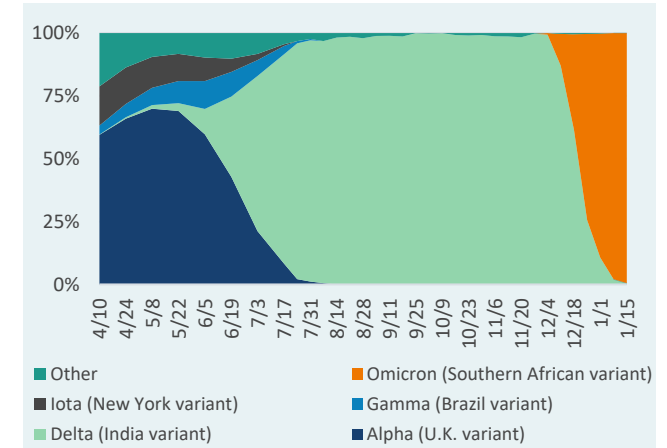
Source: The Lancet

**SOUTH AFRICAN CASES AND DEATHS**



Source: Bloomberg, as of 12/31/21

**STRAIN DOMINANCE IN THE UNITED STATES**

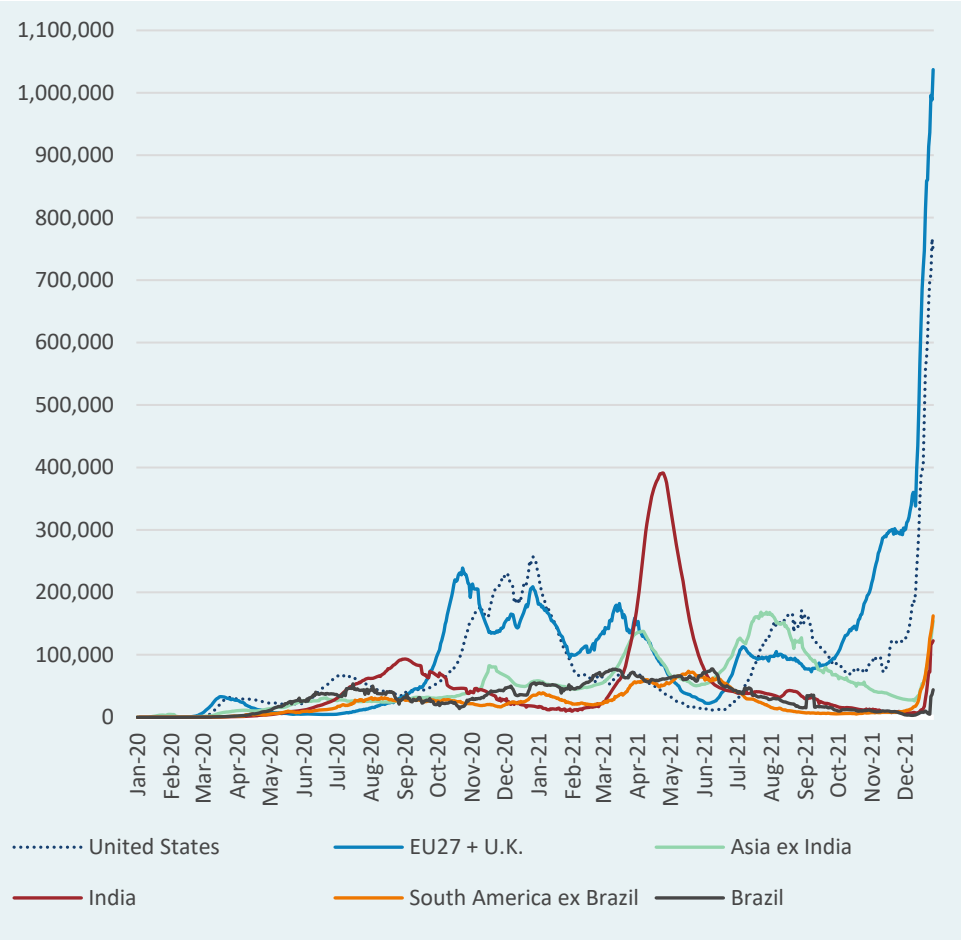


Source: CDC, as of 1/15/22

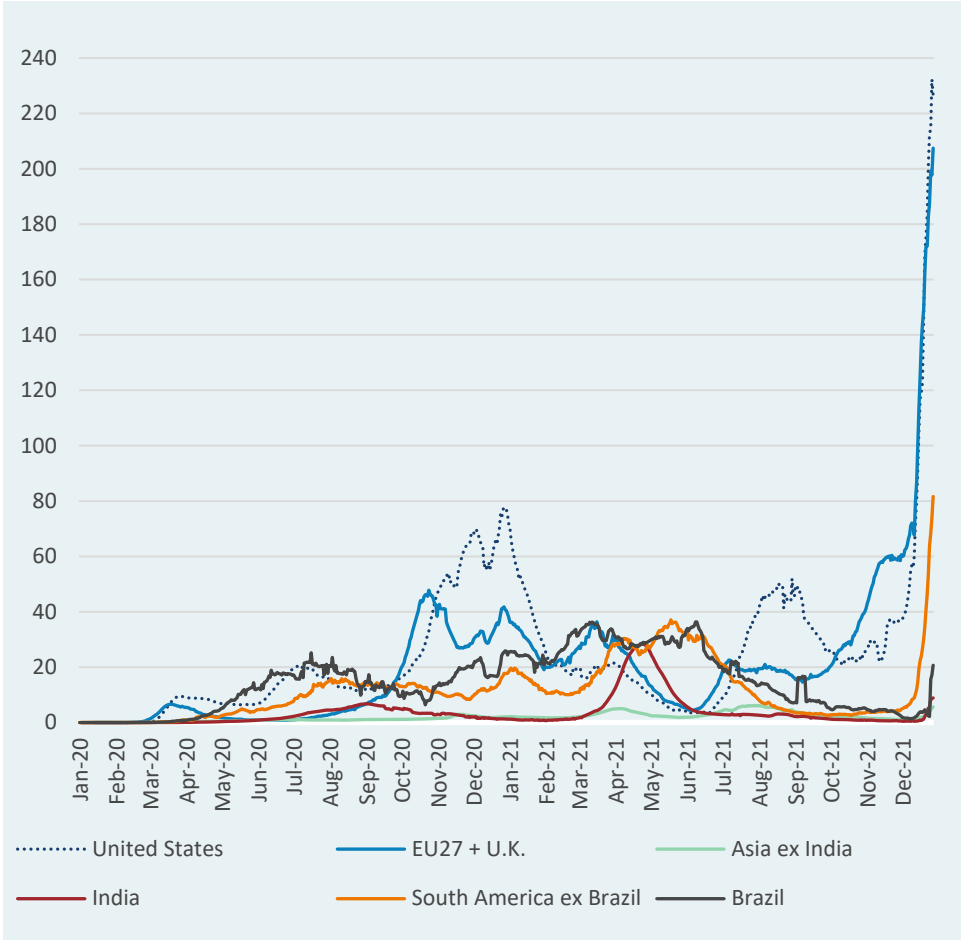


# COVID-19 case growth monitors

DAILY AVERAGE CASE GROWTH (SEVEN-DAY TRAILING)



DAILY AVERAGE CASE GROWTH (SEVEN-DAY TRAILING) – PER 100,000



Source: Bloomberg, as of 1/11/22

# “Build Back Better” update

After months of political brinksmanship, it appears the BBB plan has stalled

- For months, Democrats have sought a solution to the disparate needs and spending interests of their party. This ranged from the more aggressive spending demands of Bernie Sanders, who hoped for a total of nearly \$6 trillion in new spending, to Senator Joe Manchin who had expressed throughout the year a willingness to support a maximum of \$1.5 trillion in new spending. In December it was announced that Senator Joe Manchin communicated a hard “No” regarding his support for the bill.
- The party appears to have taken a calculated risk in continuing to push for spending in excess of the \$1.5 trillion limit that Joe Manchin had indicated, as well as refusing to negotiate on other items where disagreement existed, such as tax credits and climate change legislation. Despite DNC claims that the Build Back Better would not raise the national deficit, Manchin also expressed skepticism around sunset clauses and other assumptions within the bill that he believed hid the true magnitude of spending and its likely impact on the U.S. deficit.
- Some remain hopeful for a revival of negotiations and perhaps an agreement on many or most of the items within the bill. However, in January Senator Manchin indicated that he will not support the bill altogether—a reversal from the sentiments expressed during earlier negotiations.

# Inflation

U.S. core CPI, which excludes food & energy prices, increased 5.5% year-over-year in December. Headline inflation, which includes all goods, reached 7.0%. Large price increases have occurred across many goods and services, though approximately half of the rise in inflation continues to be driven by energy prices and automobiles. Inflation has proven more “sticky”, which suggests that higher prices may be less transitory than previously believed.

The price of shelter continue to be a notable driver of U.S. inflation, as shelter costs have risen 4.1% over the past year. Although the rate of price growth in this area has been fairly modest, the cost of shelter makes up nearly one third of the overall CPI basket (32.4% as of November). As we have mentioned

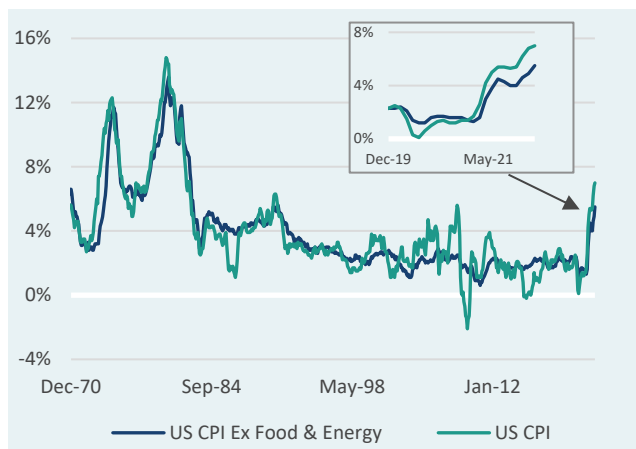
previously, the way in which housing costs are captured in official statistics is nuanced, and increases in home prices do not necessarily flow through directly to official inflation numbers. Instead, today’s higher shelter costs may take quarters or even years to show up in government statistics.

We maintain our view that inflation will most likely begin falling towards previous levels later in 2022, though this could be a slower process. The variables that will likely impact this outcome include: whether energy and automobile prices plateau, the speed at which supply chain problems are resolved, and the willingness of businesses to raise wages in line with rates of inflation (quickly rising wages could further pressure prices upward).

Inflation has proven more “sticky”

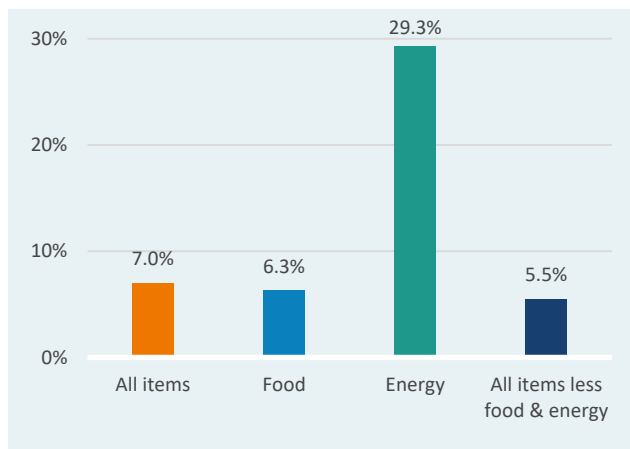
Higher prices may be less transitory than previously believed

U.S. CPI (YOY)



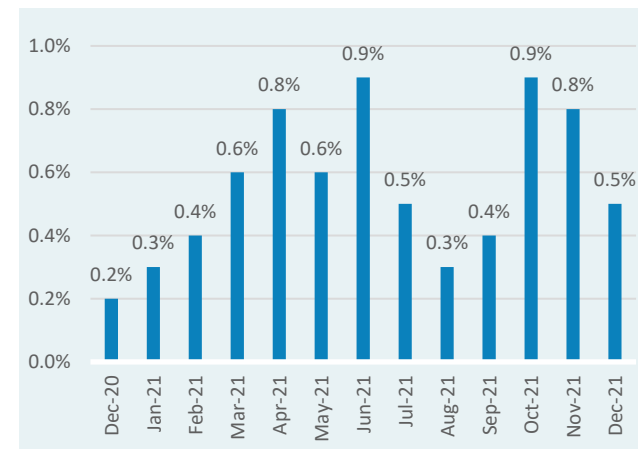
Source: BLS, as of 12/31/21

U.S. CPI (YOY)



Source: BLS, as of 12/31/21

MONTHLY PRICE MOVEMENT



Source: BLS, as of 12/31/21

# Labor market

The U.S. unemployment rate fell further, from 4.8% to 3.9% during Q4. The labor force participation rate has improved, though very gradually, rising from 61.6% to 61.9%. The U.S. labor shortage has reached historic proportions. Job openings far exceed the supply of workers. As of November, 10.5 million job openings were posted, while only 6.8 million Americans were seeking work.

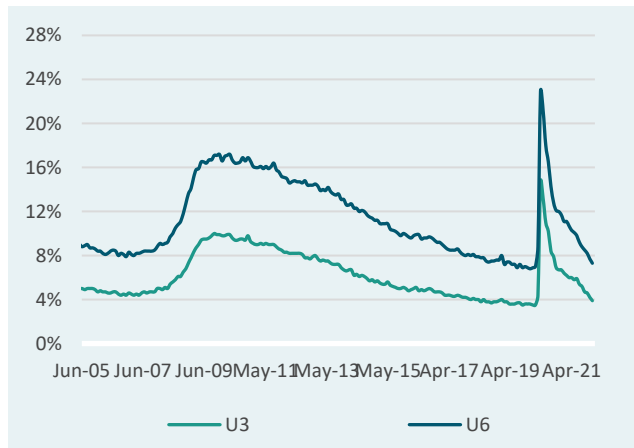
In 2021, using U.S. government employment and retirement data, we reached a conclusion that the sudden and historically large quantity of workers leaving the labor force was mostly caused by early retirements. At the time, multiple theories had

been proposed, such as COVID-19 fear (workers were not seeking employment due to a fear of human interaction) or that this was due to government aid and stimulus (workers flush with cash were finding it temporarily unnecessary to hold a job). Over recent quarters it does appear that our thesis has held. The U.S. labor force participation rate remains stuck, as two million abnormally early retirements imply that the available workforce is now permanently smaller. This reduction in workforce likely reduces the productive capacity of the U.S. economy and aggregate household income, though it may have an incremental lifting effect on the wages of existing workers.

A portion of the U.S. labor force remains neither employed nor seeking work

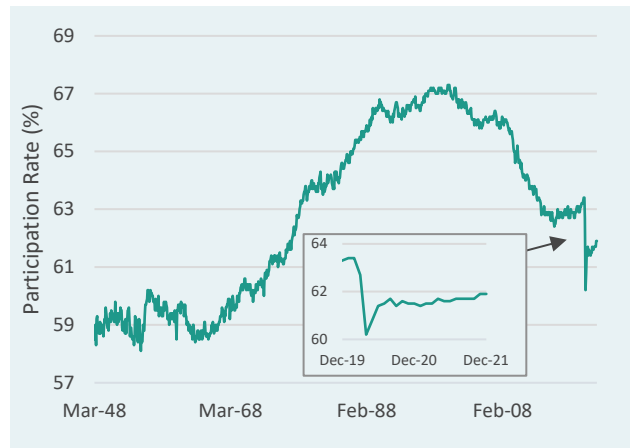
Much of this loss appears to be due to early retirements

## U.S. UNEMPLOYMENT



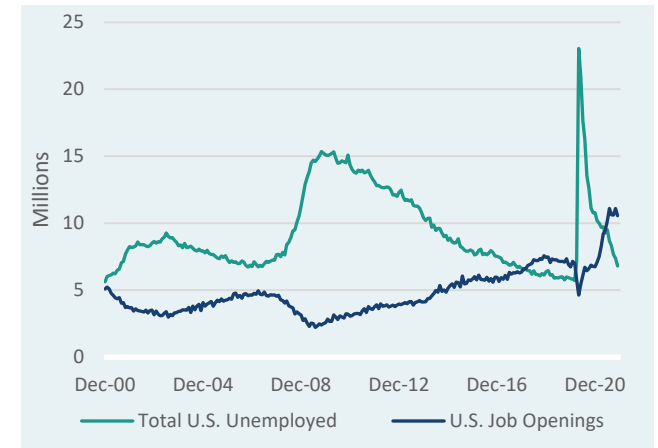
Source: FRED, as of 12/31/21

## LABOR PARTICIPATION RATE



Source: FRED, as of 12/31/21

## # UNEMPLOYED VS # JOBS AVAILABLE



Source: FRED, as of 11/30/21

# Labor costs & shortages

“We could see mid-single-digit inflation in retails, as **rising raw material pricing, labor and transportation costs are all impacting us and our suppliers**. We have no way to say how long this will last, but our industry has been disciplined about pricing for decades, and we expect that to continue.” -AutoZone (Dec. 7)



“Moving on to inflation, again, it's pretty much the same story that we told during each of the last two quarters. **There have been and are a variety of inflationary pressures that we and others are seeing from labor cost to freight cost, to higher demand, to container shortages and port delays, to increased demand on certain product categories**, much of what you see and read out there. Various shortages on everything from chips to oils and chemicals supplied by facilities hit by the Gulf storms a while back. Higher commodities prices.” -Costco (Dec. 9)



“To further impact our second-quarter results, I will highlight several key drivers. **The difficult labor market once again had the largest effect on our bottom line, representing an estimated \$470 million in additional year-over-year costs**. As I did last quarter, I'll separate the effect of the labor market into two components: **higher rates and network inefficiencies resulting from labor shortages**.” -FedEx (Dec. 16)



“To add to the challenge, **industry-wide shortages in the labor market are impacting every part of the supply chain, adding significant costs that are above and beyond inflation**. We're seeing record levels of **disruptions across our raw material suppliers, internal and external production facilities, our own distribution centers, our customers' warehouses and the logistics networks required to connect each of these elements of the supply chain**. These disruptions are resulting in service challenges and elevated costs across the industry.” -General Mills (Dec. 21)



“**Lost production days and unplanned downtimes** were primarily due to **labor shortages** across our manufacturing network, including **COVID-related absenteeism**.” -Lamb Weston (Jan. 6)



Source: FactSet, as of 1/13/22

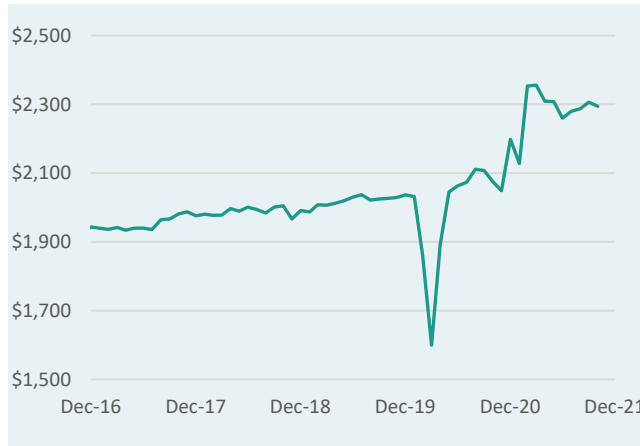
# The consumer

U.S. real retail sales remain strong, up 10.6% year-over-year. It is worth noting that this was the growth rate *after* adjusting for inflation. American households continue to spend at a rapid pace, though this could be set to slow down as government spending and other easy money policies are likely in the rearview mirror.

Auto sales volumes fell dramatically in the second half of 2021. Multiple variables are having an impact, as microchip shortages crimp new car production, many households already purchased a vehicle recently (assisted by stimulus checks), and very high auto prices have disincentivized purchases more generally.

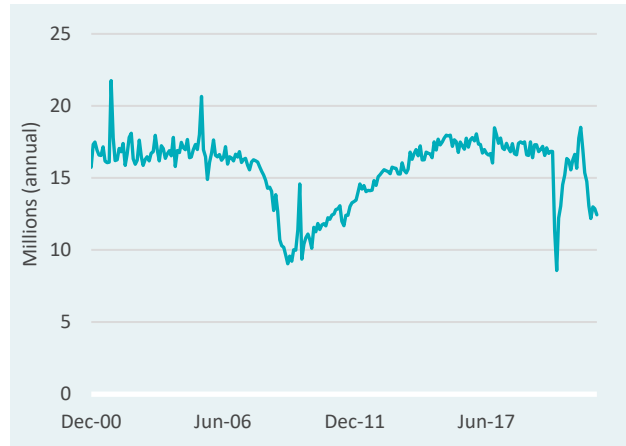
A rather surprising economic result of the pandemic has been the jump in household savings rates, paying down of debt, and broadly improved financial situation of domestic households. As we have discussed in recent quarters, the inability of Americans to take vacations during much of the past two years, as well as reduced spending on services such as dining out, meant greater saving and less spending. However, it is incredibly important to point out that economic metrics such as the ones discussed here inherently involve an *averaging* of all household situations. The recent recession has had particularly destructive effects on specific sectors of the economy, and many have yet to recover.

**REAL RETAIL SALES GROWTH (MONTHLY)**



Source: FRED, as of 11/30/21

**AUTO SALES**



Source: Federal Reserve, as of 12/31/21

**U.S. HOUSEHOLD DEBT BURDEN**



Source: FRED, as of 9/30/21 – household debt service payments as a percent of disposable personal income

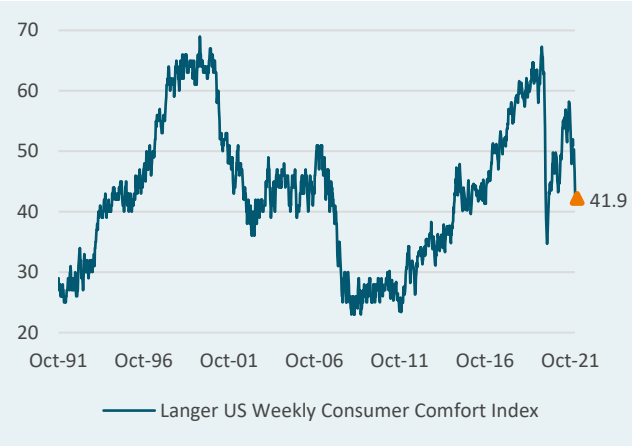
# Sentiment

Consumer sentiment was mixed during the quarter. The University of Michigan survey indicated relatively depressed but stable sentiment. Announced increases to Social Security payments (+5.9% YoY) due to inflation and a rise in wages among younger workers lifted sentiment slightly. On the other hand, the Langer U.S. Weekly Consumer Comfort Index suggested a sharp falloff in sentiment. Rising inflation, the spreading Omicron variant, and the steepest one week drop in “buying conditions” in 36 years translated to much poorer sentiment to start 2022. Both surveys seem to communicate an end to the euphoric spending spree that occurred in mid to late 2021.

The NFIB Small Business Optimism index was rangebound during the quarter but remained near the long-term average level. As outlined by the survey, 59% of small businesses have increased prices, which was the highest reading since 1979. The December survey suggests that business conditions are not encouraging to small business owners, as new government mandates and tax increases have been discussed in the legislature. Furthermore, high inflation and supply chain issues continue to create challenges.

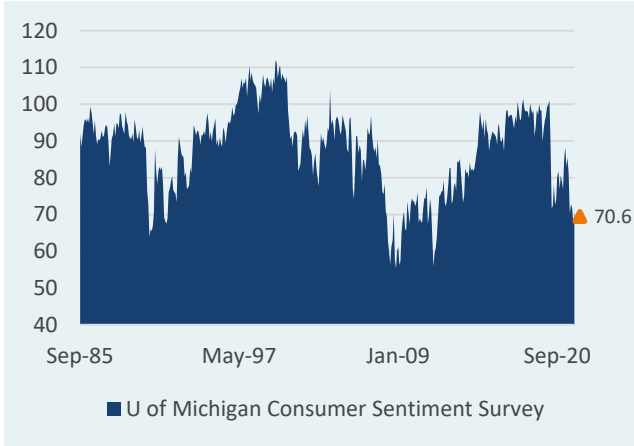
Sentiment remains depressed, as concerns exist around inflation, Omicron, and economic restrictions

**CONSUMER COMFORT**



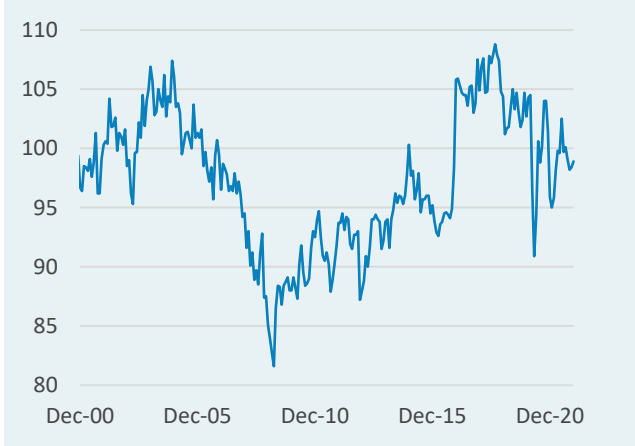
Source: Bloomberg, as of 1/9/22

**CONSUMER SENTIMENT**



Source: University of Michigan, as of 12/31/21

**SMALL BUSINESS OPTIMISM**



Source: NFIB, as of 12/31/21

# Housing

U.S. home prices increased +19.1% over the past year, ending October. However, price growth may be cooling off, as the inventory of homes has expanded materially and mortgage interest rates have begun to rise. The dramatic surge in real estate values throughout the pandemic resulted in considerable wealth gains for those who owned homes, but has also created real financial issues for many who rent as housing costs have risen faster than incomes.

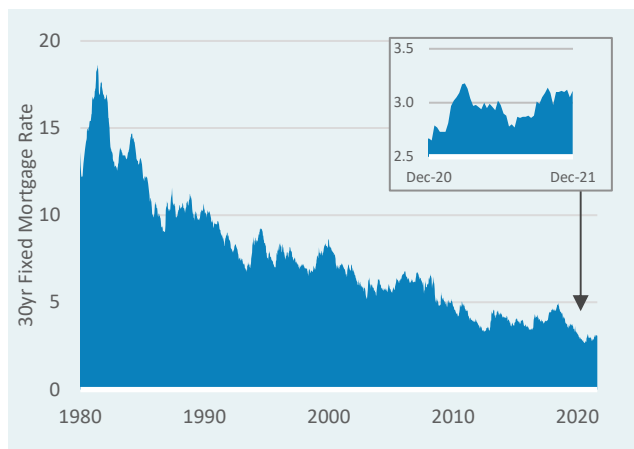
Much higher living costs may lead to further social unrest and political discussions on topics such as the relaxation of

zoning restrictions and rent control. The growing homeless crisis in many U.S. areas further compounds the need, both real and perceived, for bringing the costs of housing under control.

U.S. mortgage rates have risen off the all-time-low (2.65%) achieved earlier in 2021. During the first week of January, the 30-year average fixed rate mortgage reached 3.22%. Given high home prices, small increases in interest rates will have a larger impact on affordability. Higher borrowing costs would act as a headwind to further home price appreciation.

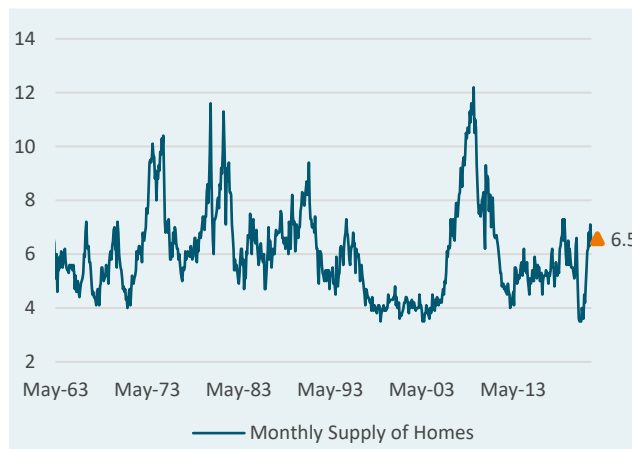
A dramatic jump in shelter costs may be adding pressure to household budgets

**30YR FIXED MORTGAGE RATE (AVERAGE)**



Source: U.S. Census Bureau, as of 12/31/21

**SUPPLY OF HOMES**



Source: FRED, as of 11/30/21

**CASE-SHILLER HOME PRICE INDEX**



Source: FRED, as of 10/31/21



# International economics summary

— COVID-19 variant B.1.1.529 (Omicron) was discovered in Botswana on November 11<sup>th</sup> and has since spread exponentially around the globe, replacing the delta variant as the dominant global strain. Based on available studies and data, the Omicron variant is much more infectious than prior variants, but its symptoms are less severe. Many countries have taken a cautious approach and have reinstated social distancing controls.

— Several countries including China and New Zealand have implemented zero-COVID approaches with the goal of completely eradicating the virus within their borders. These policies may present upside risks for inflation looking ahead, as they are likely to result in more uncertainty and therefore potentially sustain or even worsen current supply chain problems.

— Prices paid by global producers of

goods and services have surged over the last year. Chinese producer price growth (+10.3% in December) hit its highest level in 26 years, and German producer prices (+19.2% in November) grew very quickly as supply chain disruptions squeezed prices for timber and raw metal materials.

— Eurozone GDP grew +3.7% year-over-year in Q3, lagging U.S. growth over the same period (+4.9%). Economic growth was more robust in Italy (+3.8%) and a bit weaker in Germany (+2.5%).

— China's real estate crisis seems to be spreading. In early December, Evergrande, one of the largest property developers in China, defaulted on its debt. An increasing number of Chinese property developers have been strained. Given that real estate development makes up nearly one third of China's economy, a crisis in this sector could have serious ramifications.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	4.9% 9/30/21	7.0% 12/31/21	3.9% 12/31/21
Eurozone	3.9% 9/30/21	5.0% 12/31/21	7.2% 11/30/21
Japan	1.2% 9/30/21	0.8% 12/31/21	2.7% 11/30/21
BRICS Nations	5.2% 9/30/21	3.3% 12/31/21	5.4% 6/30/21
Brazil	4.0% 9/30/21	10.1% 12/31/21	12.1% 10/31/21
Russia	4.3% 9/30/21	8.4% 12/31/21	4.3% 11/30/21
India	8.4% 9/30/21	5.6% 12/31/21	7.9% 12/31/21
China	4.0% 12/31/21	1.5% 12/31/21	5.1% 12/31/21

*NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.*

# International economics

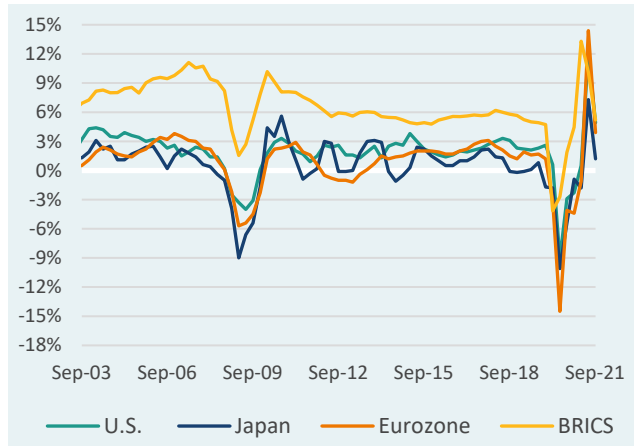
The rate of economic growth across most economies has moved back towards average levels, as the global recession and recovery fades from the rearview mirror. In October, the International Monetary Fund cut their 2021 advanced economy growth projections (from 5.6% to 5.2%), citing supply chain disruptions which have dampened the outlook for these economies. Worsening pandemic dynamics were flagged as a greater risk for emerging and developing economies, though 2021 growth expectations were revised up 0.1% to 6.4%.

Inflation moved higher in many areas, and the United States continues to cope with one of the highest rates of inflation among other major developed economies. Several countries

including China and New Zealand have implemented zero-COVID approaches with the goal of completely eradicating the virus within their borders. These policies may present upside risks for inflation looking ahead, as they are likely to result in more uncertainty and therefore potentially sustain or even worsen current supply chain problems. Inflation trends and the reaction of central banks to these trends will have important implications for markets.

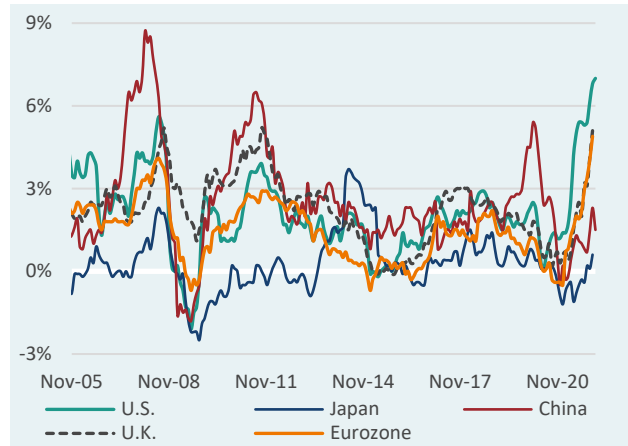
Unemployment has generally improved to pre-pandemic levels, as government restrictions are relaxed, people regain comfort in moving out and about, and economies trend back towards normalcy.

**REAL GDP GROWTH (YOY)**



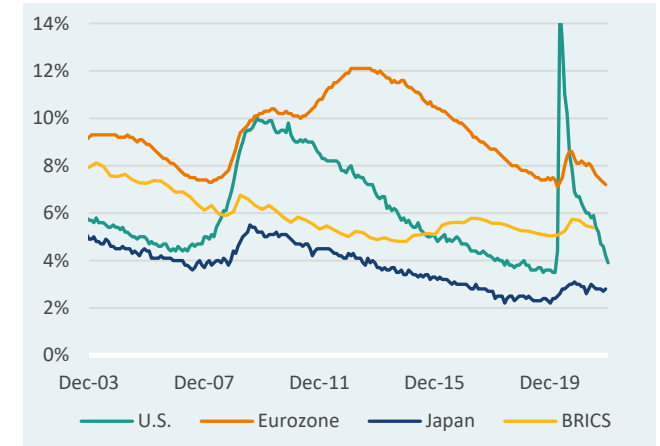
Source: Bloomberg, as of 9/30/21

**INFLATION (CPI YOY)**



Source: Bloomberg, as of 12/31/21 – or most recent release

**UNEMPLOYMENT**



Source: Bloomberg, as of 12/31/21 – or most recent release

# Fixed income rates & credit

# Fixed income environment

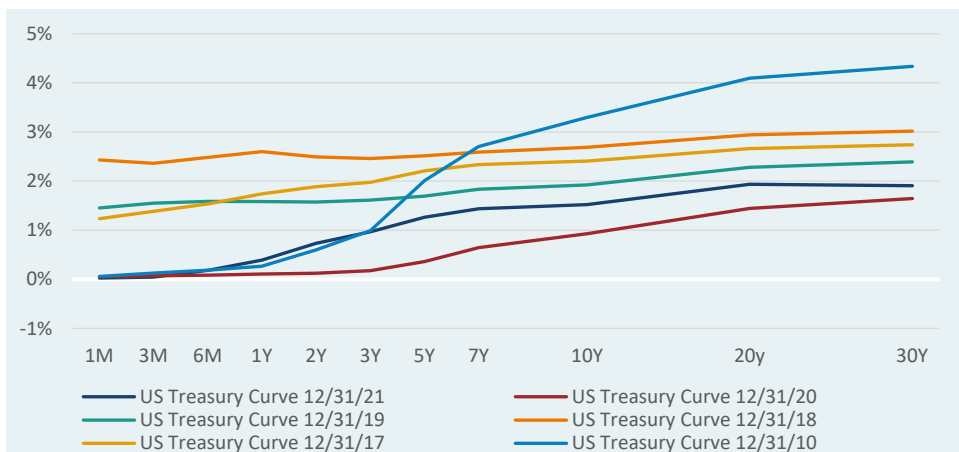
- The 10-year U.S. Treasury yield was relatively rangebound during the quarter, remaining at a yield of 1.5%. Thus far, U.S. interest rates have not noticeably reacted to an inflation rate of 7.0%. Market pricing seems to indicate that investors generally expect inflation to be transitory—perhaps falling towards normal levels by the end of this year.
- One of the largest stories over the quarter was the Fed’s pivot on inflation, the retirement of the word “transitory” to describe inflation, and a more aggressive policy path expected by investors. The conversation around the balance sheet shifted from concluding the taper in June to concluding in March, and perhaps selling assets as soon as June. The conversation around interest rates shifted from potentially hiking around June to the market fully pricing in a hike by March and maybe two by May. The Fed is now clearly more concerned with inflation relative to unemployment.
- Although credit spreads are tight, bond defaults have dropped to incredibly low levels. The one-year high-yield bond default rate reached 0.4% in December, one of the lowest rates on record.
- New issue activity across credit markets has been historically high. In the fourth quarter, \$285 billion of investment grade credit was issued. Over the full year, gross issuance totaled \$1.4 trillion, which was second only to the \$1.8 trillion issued in 2020.
- In early December, Evergrande, one of the largest property developers in China, defaulted on its debt. At the start of 2022, property developer Shimao also defaulted on its debt. These bonds had been classified as investment grade until recently. Credit spreads of Chinese debt have expanding enormously, from near 750 bps in June to 2,175 bps in November.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	0.0%	(1.5%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	0.0%	(1.1%)
U.S. Treasuries (Bloomberg U.S. Treasury)	0.2%	(2.3%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	0.7%	5.3%
Bank Loans (S&P/LSTA Leveraged Loan)	0.7%	5.2%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(2.5%)	(8.7%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(0.4%)	(1.8%)
Mortgage-Backed Securities (Bloomberg MBS)	(0.4%)	(1.0%)

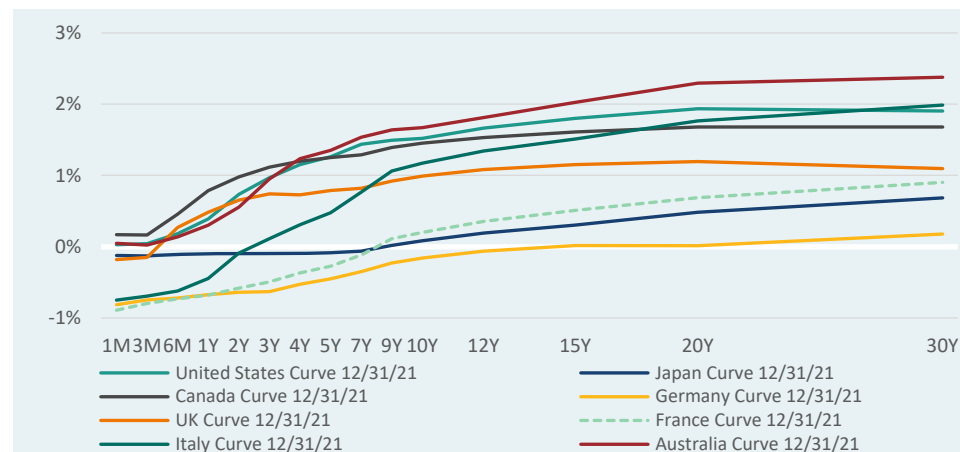
Source: Bloomberg, as of 12/31/21

# Yield environment

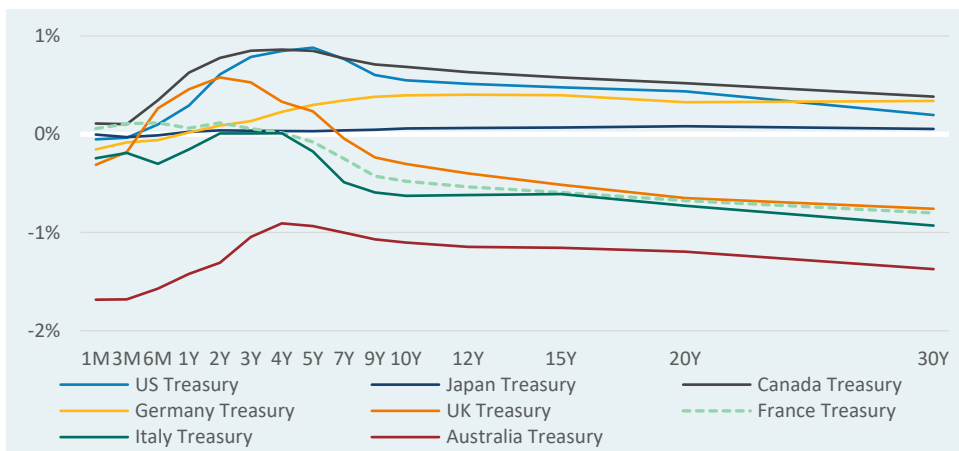
## U.S. YIELD CURVE



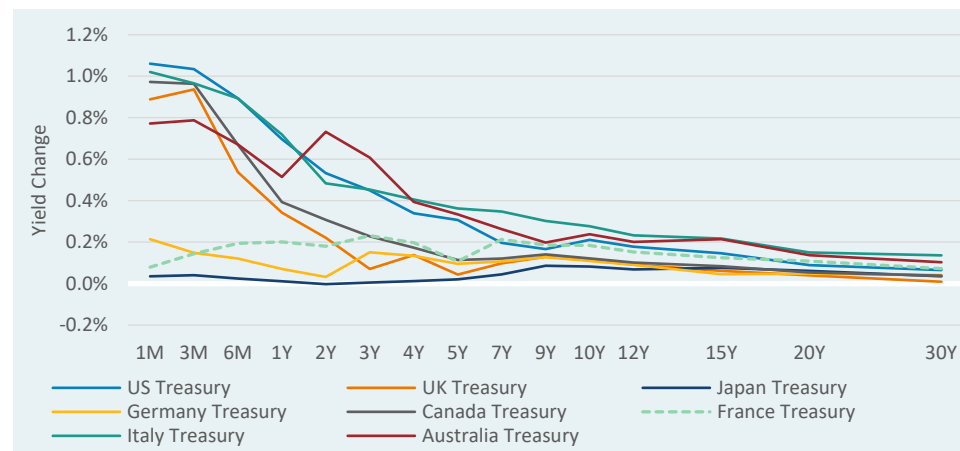
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 12/31/21

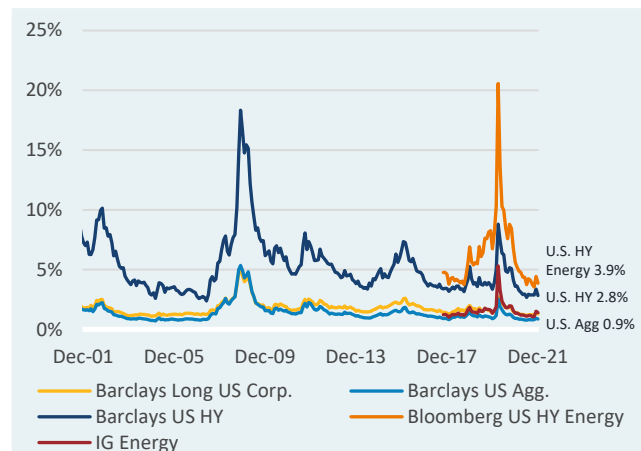
# Credit environment

During the fourth quarter, high yield bonds returned 0.7%, matching the performance of loans and outperforming investment grade credit (+0.2%). Over the full year, leveraged loans returned 5.4%, exceeding high yield performance (+5.3%) as well as investment grade credit (-1.2%). Credit spreads tightened modestly over the course of the year with pockets of volatility. This was also the case during Q4 as the Omicron variant circulated across the globe, reducing the appetite for risk. Investment grade spreads widened 8 basis points to 92 bps, which was 4 bps tighter relative to the beginning of the year. High yield corporate spreads finished 2021 at 283 bps, 6 bps tighter for the quarter and 77 bps tighter to end the year.

The search for yield continues within credit markets as option-adjusted

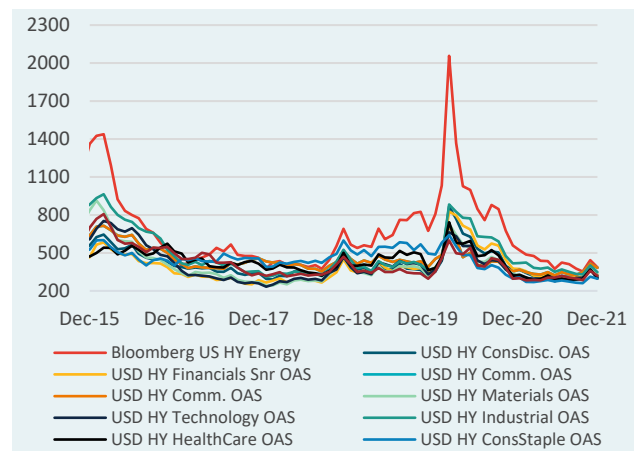
spreads continue to be at or near historic lows and short-term interest rates remain near zero. We have observed that numerous managers are positioning portfolios relatively more defensively with an eye toward capitalizing on potential future volatility, as well as placing greater focus on more niche segments within credit markets. Despite tight spreads, increased rate volatility, and surging inflation, a record amount of funds (\$583 billion) flowed into fixed income funds and ETFs in 2021, exceeding the previous record set in 2019 (\$459 billion). Demand was broad-based, driven by demographics, an abundance of cash on corporate balance sheets, and strong equity market returns which led to increased rebalancing activity. Furthermore, given continued low rates across developed markets, U.S. fixed income remains an attractive market for foreign investors to pick up yield.

## SPREADS



Source: Barclays, Bloomberg, as of 12/31/21

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 12/31/21

Market	Credit Spread (OAS)	
	12/31/21	12/31/20
Long U.S. Corp	1.3%	1.4%
U.S. Inv Grade Corp	0.9%	1.0%
U.S. High Yield	2.8%	3.6%
U.S. Bank Loans*	4.3%	4.6%

Source: Barclays, Credit Suisse, Bloomberg, as of 12/31/21

\*Discount margin (4-year life)

# Default & issuance

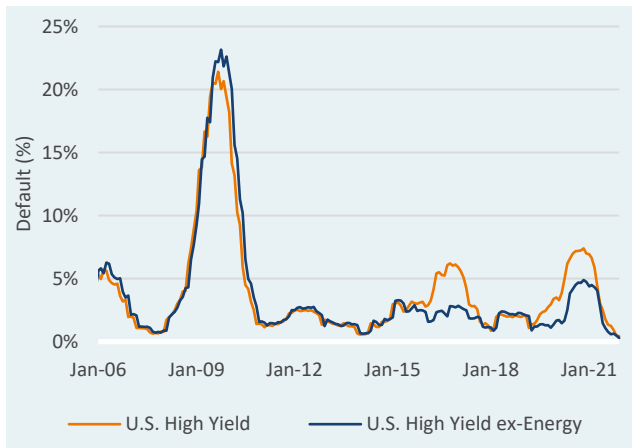
Contrasting the pandemic-driven surge of credit defaults in 2020, which resulted in the second highest annual dollar volume of defaulted bonds and loans on record, default activity in 2021 was very modest. Overall, 14 companies defaulted on loans and bonds during the year on debt totaling \$9.8 billion. The year-over-year improvement was largely fueled by robust economic growth, improving credit fundamentals, and greater access to capital markets, as record bond and loan refinancing activity totaling roughly \$1 trillion since 2020 has improved corporate liquidity.

The par-weighted U.S. high yield default rate ended the year at a historic low of 0.4%, down 82 bps for the quarter and down 656 bps for the year. The par-weighted loan default rate ended the year at 0.5%, down 23 bps for the quarter and 348 bps for the year. For context, the 25-year average annual

default rate of high yield was 3.1%, while the default rate for loans has averaged 3.0% since 1998.

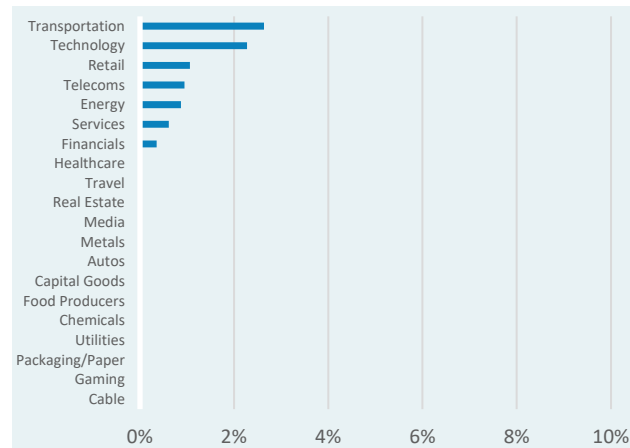
While new issue activity across credit markets fell broadly during the second half of the year, total credit issuance in 2021 was historically high. In the fourth quarter, \$285 billion of investment grade credit was issued. Over the full year, gross issuance totaled \$1.4 trillion, which was second only to the \$1.8 trillion issued in 2020. Similarly, the fourth quarter was the lightest quarter for new issue activity for both high yield bonds and loans with \$87.3 billion and \$114.4 billion, respectively. However, each asset class experienced record issuance over the year with \$557.1 billion in high yield bonds and \$534.4 billion in loans.

**HY DEFAULT RATE (ROLLING 1-YEAR)**



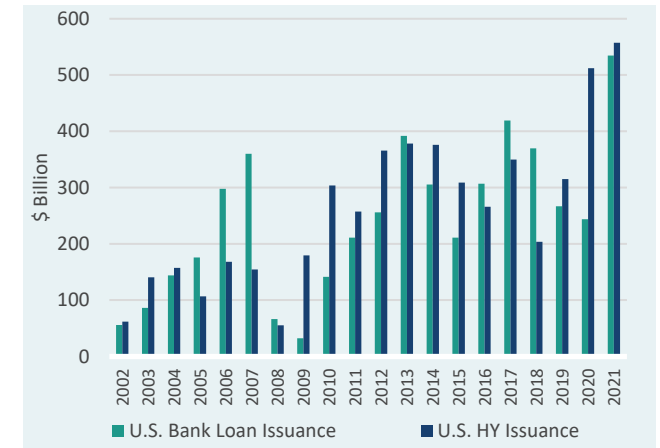
Source: BofA Merrill Lynch, as of 12/31/21

**U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)**



Source: BofA Merrill Lynch, as of 12/31/21 – par weighted

**U.S. ISSUANCE (\$ BILLIONS)**



Source: BofA Merrill Lynch, as of 12/31/21

# Equity



# Equity environment

- Equity markets delivered strong returns in Q4, up 6.7% and ending the year up 18.5% (MSCI ACWI). U.S. equities delivered 11.0% during the quarter, while international equities delivered 2.7% and emerging market equities saw a slight loss of -1.3%, on an unhedged currency basis.
- Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks (Russell 1000 +9.8%, Russell 2000 +2.1%) and Growth exceeded Value (Russell 1000 Growth +11.6%, Russell 1000 Value +7.8%). This theme held for full-year 2021.
- Extremely fast spread of the Omicron variant worldwide does not seem to have had an outsized impact on the markets. While this new wave has in fact led to shutdowns in certain countries,

much of the world has remained open, perhaps in acknowledgment that the health effects of Omicron are milder in nature.

- Labor costs and labor supply issues are front-of-mind in corporate boardrooms, and 60% of S&P 500 companies have reported negative impacts to Q4 earnings during quarterly calls so far, as reported by FactSet.
- Weakness in Chinese equities (MSCI China -6.1%) continued to drive the broader underperformance of emerging market equities. Chinese policymakers have signaled a shift in focus from containing excessive leverage in the property sector to promoting growth and stability ahead of next year's parliamentary meeting. Still, the risk of further crackdowns on targeted sectors of the economy remains in place.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	11.0%		28.7%	
U.S. Small Cap (Russell 2000)	2.1%		14.8%	
U.S. Equity (Russell 3000)	9.3%		25.7%	
U.S. Large Value (Russell 1000 Value)	7.8%		25.2%	
US Large Growth (Russell 1000 Growth)	11.6%		27.6%	
Global Equity (MSCI ACWI)	6.7%	7.1%	18.5%	20.9%
International Large (MSCI EAFE)	2.7%	4.2%	11.3%	19.4%
Eurozone (Euro Stoxx 50)	4.4%	6.9%	14.6%	24.4%
U.K. (FTSE 100)	5.2%	5.1%	17.3%	18.9%
Japan (NIKKEI 225)	(5.3%)	(2.0%)	(4.7%)	6.7%
Emerging Markets (MSCI Emerging Markets)	(1.3%)	(1.3%)	(2.5%)	(1.3%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 12/31/21

# Domestic equity

U.S. equities were a top performer in Q4, delivering 11.0% (S&P 500). The S&P 500 Index achieved all-time closing highs on 70 days over the course of the year, which was nearly a record number in and of itself. Performance across sectors was broadly positive during Q4, though those with a greater “value” bias lagged the index (ex: Financials, Energy, Industrials). Per FactSet, the bottom-up price target for the S&P 500 Index by 2022 year-end is around 5300, which implies a price return of roughly 11% for the year.

While supply chain disruptions remain a key concern for chief financial officers in the United States and around the globe, the number one headwind for earnings in Q4 shifted to labor costs and shortages, based on earnings calls transcribed by FactSet. Workers have been quitting their jobs in great numbers

for a wide variety of reasons, pushing many employers to raise wages in order to retain employees, which could erode margins. Of companies that had reported Q4 earnings, 60% reported that rising labor costs had negatively impacted earnings. On a more optimistic note, those companies reported aggregate year-over-year earnings growth of around 28%, suggesting somewhat defensible margins and modest pricing power. Of companies mentioning labor issues, 85% discussed increasing prices or improving price realization on their earnings calls.

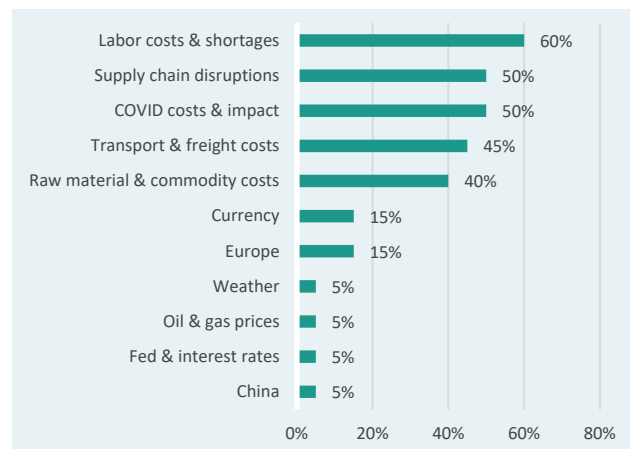
Net profit margins have fallen a percentage point from the record level of 13% achieved in Q2 2021, but remain historically high. If earnings growth in Q4 2021 meets expectations (21.4%), it will mark the fourth consecutive quarter of 20% YoY earnings growth.

## S&P 500 INDEX



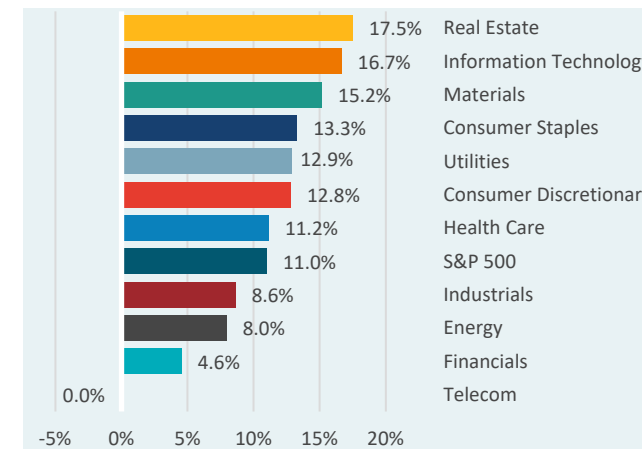
Source: Standard & Poor's, as of 12/31/21

## S&P 500 COS. CITING NEGATIVE IMPACT – 4Q21



Source: FactSet, as of 1/13/22

## Q4 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 12/31/21

# Domestic equity size & style

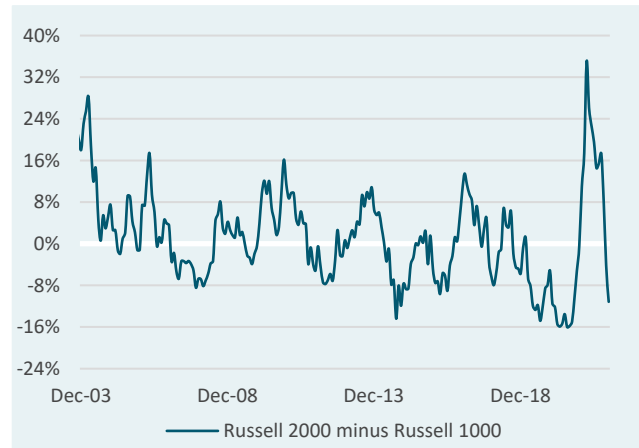
Size and Value factor performance was negative once again during Q4. Large capitalization stocks significantly outperformed small capitalization stocks (Russell 1000 +9.8%, Russell 2000 +2.1%) and Growth exceeded Value (Russell 1000 Growth +11.6%, Russell 1000 Value +7.8%). This theme held for full-year 2021.

Within MSCI's suite of long-only factor indices, Quality (+11.0%) was the top performer in Q4 which generally implies investor appetite for more defensive positioning. The strong performance of the Quality factor was skewed by Nvidia (+42.0%), Apple (+25.7%) and Microsoft (+19.5%).

Towards the end of the year, investor expectations for tighter Fed policy and interest rate hikes increased markedly. If the market is in fact undergoing a transition to tighter monetary conditions, this could have a notable impact on Value and Growth stock performance. The general cheapness of certain Value stocks and richness of certain Growth stocks may accentuate a value rotation, if and when this occurs. As always, we like to keep in mind that factor performance tends to be noisy and difficult to predict, which suggests that style investing should in most cases involve a longer-term focus.

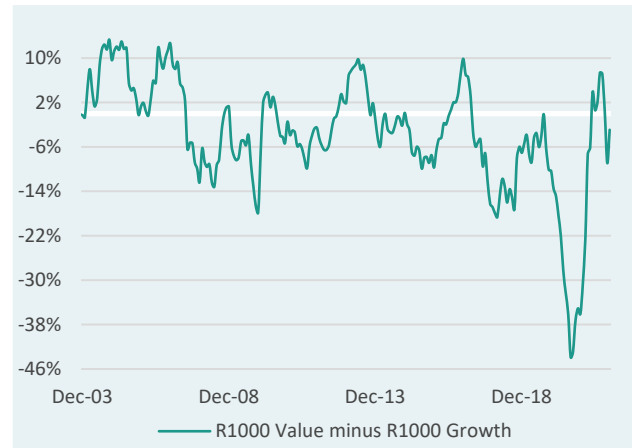
Size and Value underperformed during Q4 2021

SMALL CAP VS LARGE CAP (YOY)



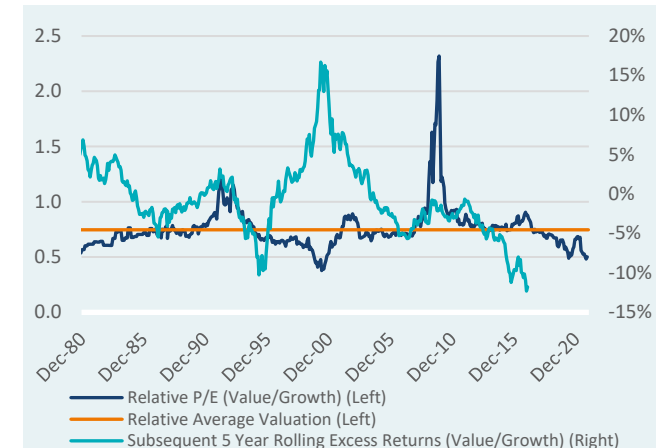
Source: FTSE, as of 12/31/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 12/31/21

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 12/31/21

# International developed equity

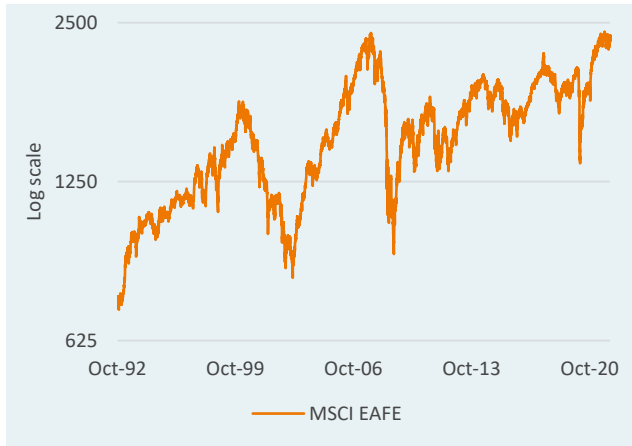
International developed equities delivered 2.7% during the quarter. U.S. equities were the top performer (S&P 500 +11.0%) while emerging market equities saw a slight loss (MSCI Emerging Markets -1.3%), on an unhedged currency basis. Currency movement during the quarter resulted in a loss of -1.5% (MSCI EAFE) relative to those investors with a currency hedging program.

Japanese equities (MSCI Japan -4.0%) underperformed most developed markets, reversing strong third quarter returns, though this was mostly caused by currency market movement (Yen -3.1%). The yen fell to its weakest level relative to the dollar since early 2017 in the fourth quarter as

the Bank of Japan's dovish policy increasingly diverged from peers, many of which have signaled the beginning of a normalization process from pandemic stimulus. Rising interest rate differentials, as well as speculation that the new strain of COVID-19 might not be as disruptive as had been feared, has likely contributed to investor flows out of yen positions.

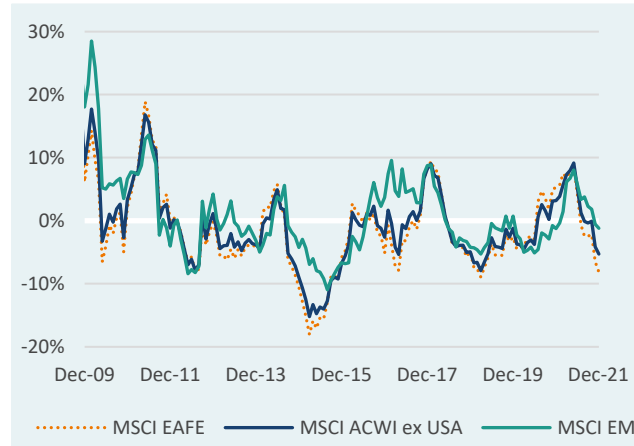
Swiss equities (MSCI Switzerland +12.8%) were the top performer in developed European markets, and unhedged U.S. investors benefitted from a 2.1% appreciation in the Swiss Franc relative to the U.S. dollar.

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



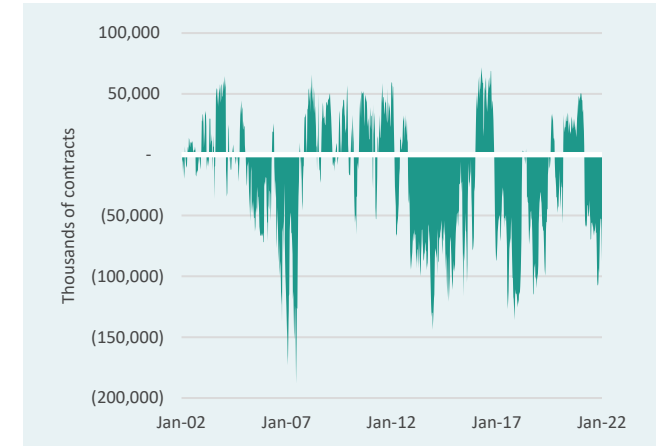
Source: MSCI, as of 12/31/21

**INTERNATIONAL DEVELOPED EQUITIES**



Source: MSCI, as of 12/31/21

**YEN NET FUTURES POSITIONING**



Source: CFTC, non-commercial positioning, as of 1/11/22

# Emerging market equity

Emerging market equities saw a mild loss (MSCI EM -1.5%) on an unhedged currency basis, underperforming global markets again in the fourth quarter. Latin American and Asian emerging markets performed generally on par during the quarter (MSCI EM Latin America -2.7%, MSCI EM Asia -1.0%).

Weakness in Chinese equities (MSCI China -6.1%) continues to drive broader emerging market underperformance, as China delivered -21.7% return in 2021, while the broader complex was down -2.5% (MSCI China, MSCI Emerging Markets).

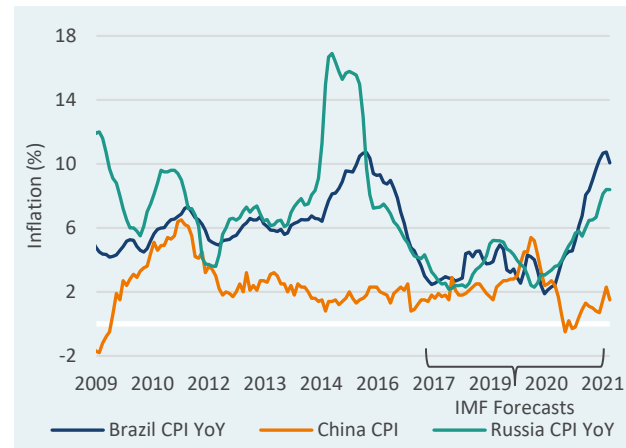
Inflation in Brazil has reached 10.7%, while Russia saw an 8.4% rise in prices and China sits near the longer-term average at 1.5%. Emerging market central banks have continued to raise interest rates. Brazil hiked their rate during the quarter from 6.25% to 9.25% in order to fight rising prices, while Russia hiked its rate from 6.75% to 8.50%. It is worth noting that many of these central banks have very recently implemented a domestic interest rate tightening cycle in order to battle price fluctuations and/or unwanted domestic currency movements. In other words, many emerging central banks deal with these types of issues more often than developed central bankers.

## EMERGING MARKET EQUITY



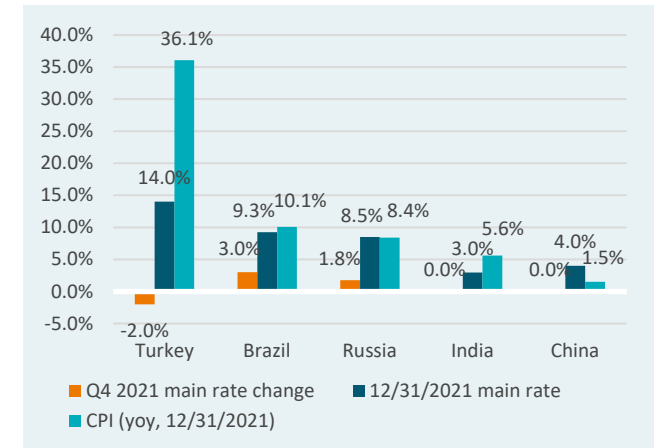
Source: MSCI, as of 12/31/21

## INFLATION (YOY)



Source: Bloomberg, as of 12/31/21 or most recent data

## CENTRAL BANK RATE CHANGES AND INFLATION



Source: Bloomberg, various, as of 12/31/21

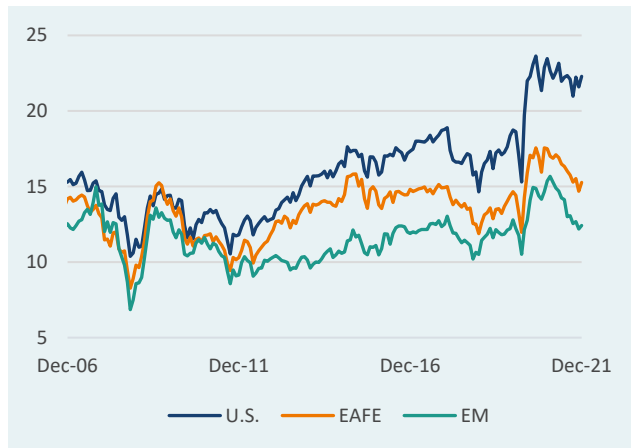
# Equity valuations

Forward price/earnings equity multiples have been falling around the world, as earnings expectations rise faster than equity prices. U.S. equities remain the exception in this regard, as U.S. valuations have stayed elevated. The domestic equity market offers one half of the dividend yield of international developed equities (MSCI EAFE), with a forward P/E multiple that is 50% higher. The valuation difference between U.S. and the rest of the world is wider than ever before. This effect is partly due to the rising share of domestic technology stocks, as the technology sector tends to demand loftier valuations than most other sectors, but only partly so. The high prices of U.S. equities may imply more muted returns over the longer-term.

U.S. equity trailing P/E ratio was unmoved during the quarter, while international developed equity valuations fell (19.3 to 17.2) along with emerging market equity valuations (15.8 to 14.0). Relative valuation differences across global markets are apparent in the yield (carry) offered by each market. U.S. equities offer a 3.8% earnings yield, while international developed offer 5.8% and emerging market equities offer 7.1%. In simple terms, for the U.S. market to deliver future performance equivalent to other markets, domestic stocks will either need to deliver outsized profit growth or higher valuations.

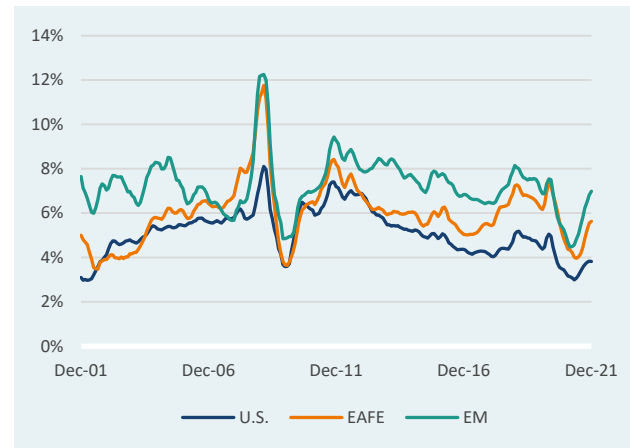
Most equity valuations have moved back towards normal levels, though U.S. prices remain exceptionally rich

## FORWARD P/E RATIOS



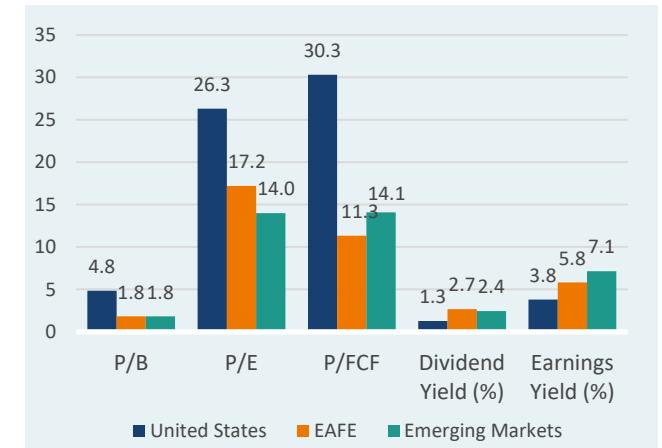
Source: MSCI, 12m forward P/E, as of 12/31/21

## CURRENT EARNINGS YIELD (3-MONTH AVERAGE)



Source: Bloomberg, MSCI, as of 12/31/21

## VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 12/31/21 - trailing P/E

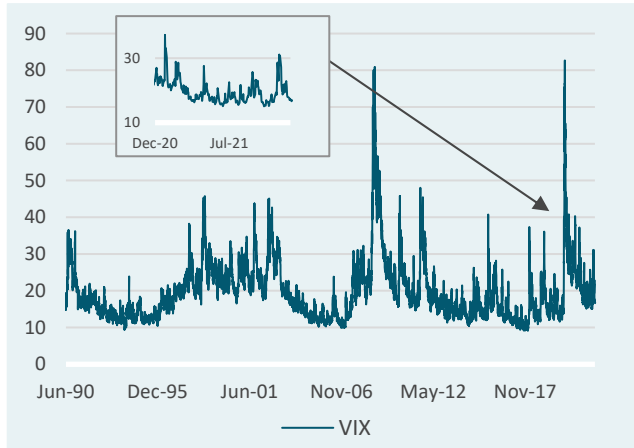
# Equity volatility

The Cboe VIX Index stayed near average levels throughout the fourth quarter, with the exception of market choppiness at the end of November which briefly sent the VIX Index above 30. Realized volatility over the past year was muted. U.S. and emerging market equities exhibited 11% volatility during the calendar year, while international developed showed 9.8%. Historically, it has been uncommon for global markets to show similar levels of volatility, as developed markets tend to deliver lower volatility, and emerging markets higher volatility.

Market response to the Omicron variant was minimal, with a few larger market drops followed by quick recoveries. We

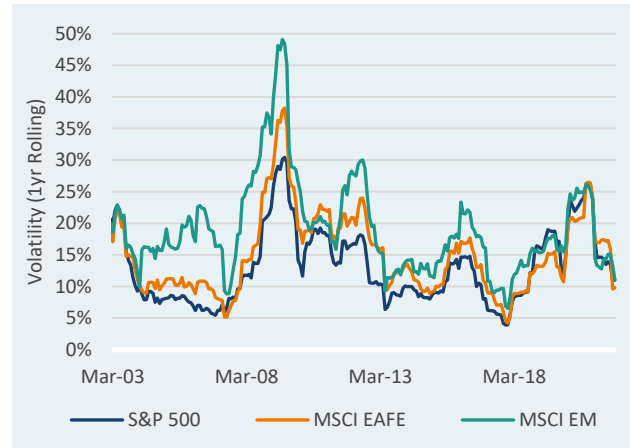
believe that investors have largely moved beyond COVID-19, and that markets have adjusted to the transition away from fiscal stimulus and many of the recent unique government spending programs. As we enter 2022, investors seem to be focused on Federal Reserve plans for tapering and interest rate hikes. It is very possible that this rate hike cycle will look similar to those of the past decade—bouts of volatility as markets either accept or push back against tightening financial conditions, “good news is bad news” as positive economic developments are seen as potentially encouraging tighter Fed policy, and “bad news is good news” as economic weakness is interpreted as an excuse for Federal Reserve easiness and accommodation.

## U.S. IMPLIED VOLATILITY (VIX)



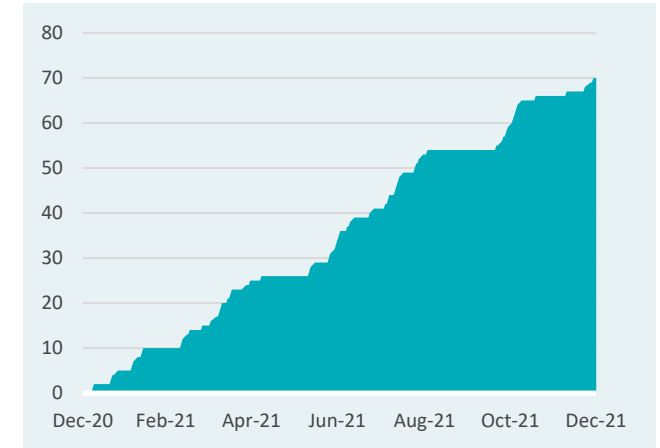
Source: Cboe, as of 12/31/21

## REALIZED VOLATILITY



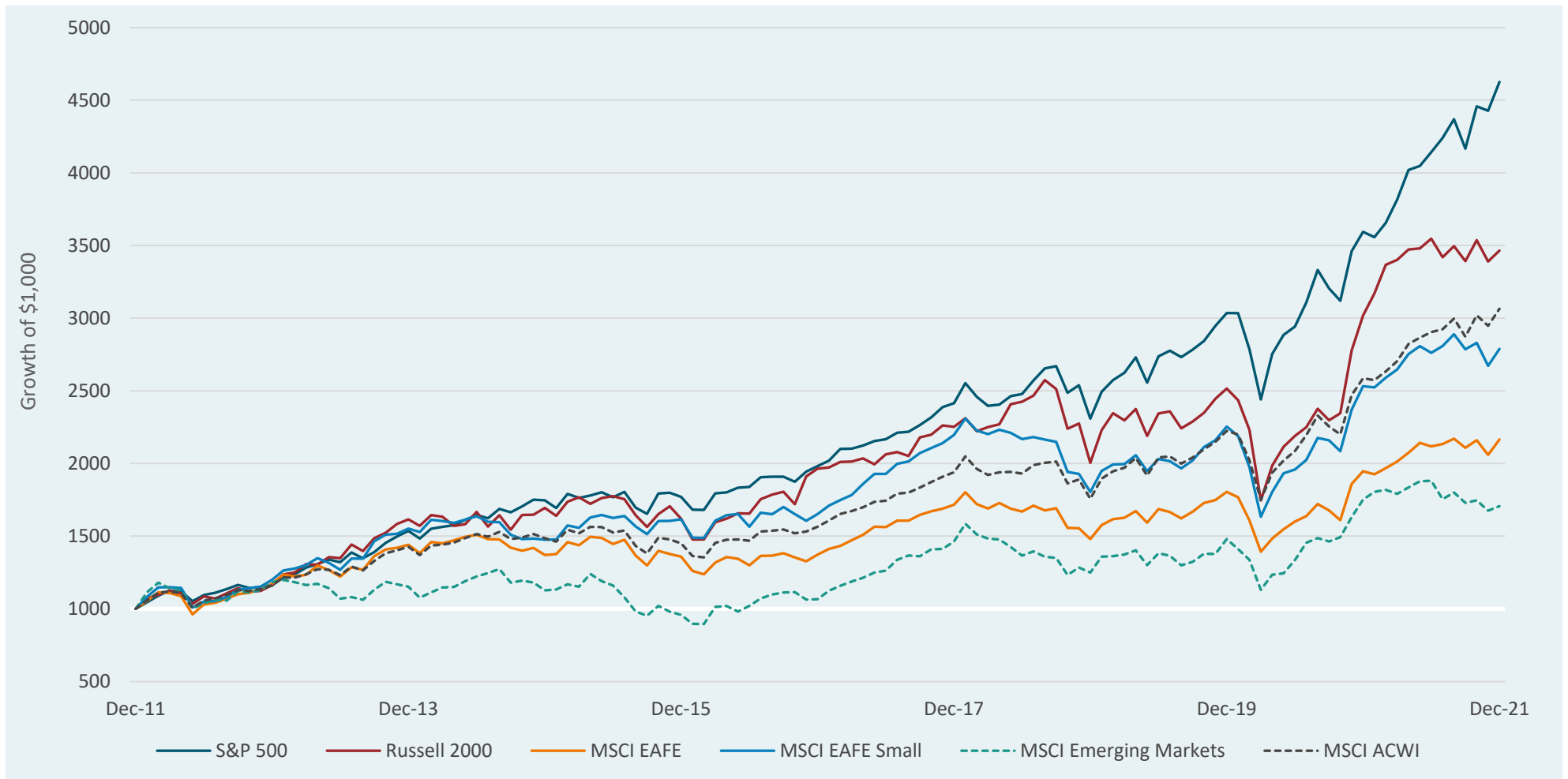
Source: Standard & Poor's, MSCI, as of 12/31/21

## S&P 500 INDEX – CUMULATIVE NUMBER OF RECORD CLOSES IN 2021



Source: Standard & Poor's, Bloomberg, as of 12/31/21

# Long-term equity performance



Source: Morningstar, as of 12/31/21



# Other assets

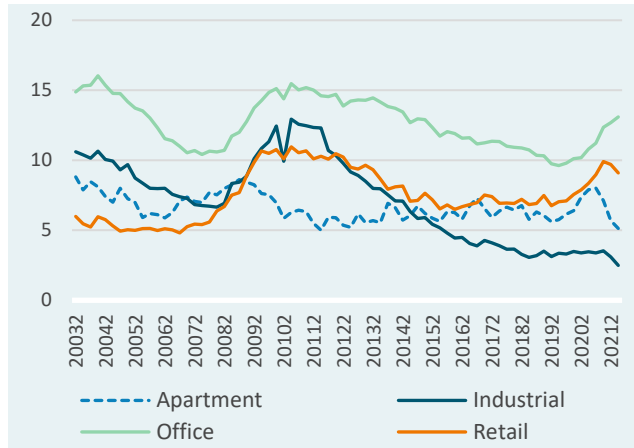
# Private real estate fundamentals

Private real estate fundamentals have seen steady improvement in vacancy rates and net operating income (NOI) growth during 2021.

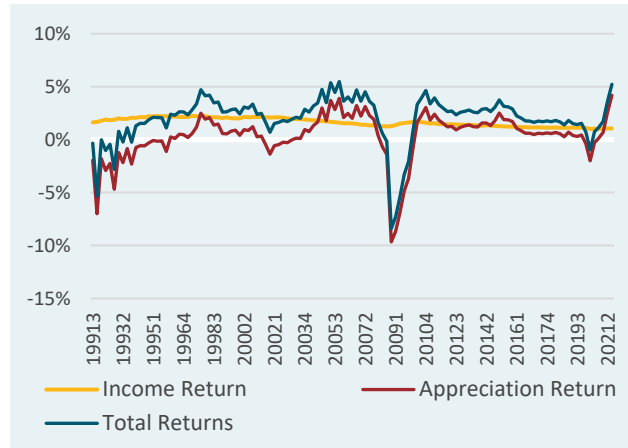
Performance has also been very strong. In Q3 2021, the NCREIF ODCE posted a 6.4% net return, the highest single quarter return in the history of the index, beating the previous high of 6.2% (Q4 1978). Early indications are Q4 2021 will be another strong quarter.

The office sector has been one exception where vacancy rates have continued to climb and NOI growth has been modest (although still positive).

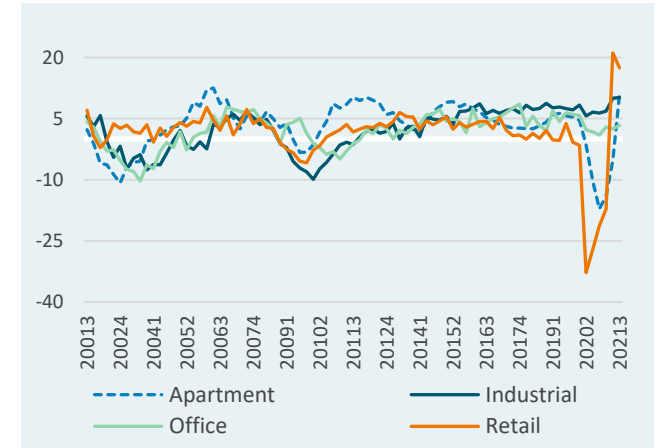
VACANCY BY PROPERTY TYPE



NCREIF PROPERTY INDEX QUARTERLY RETURNS



NOI GROWTH BY PROPERTY TYPE (4-QTR ROLLING)



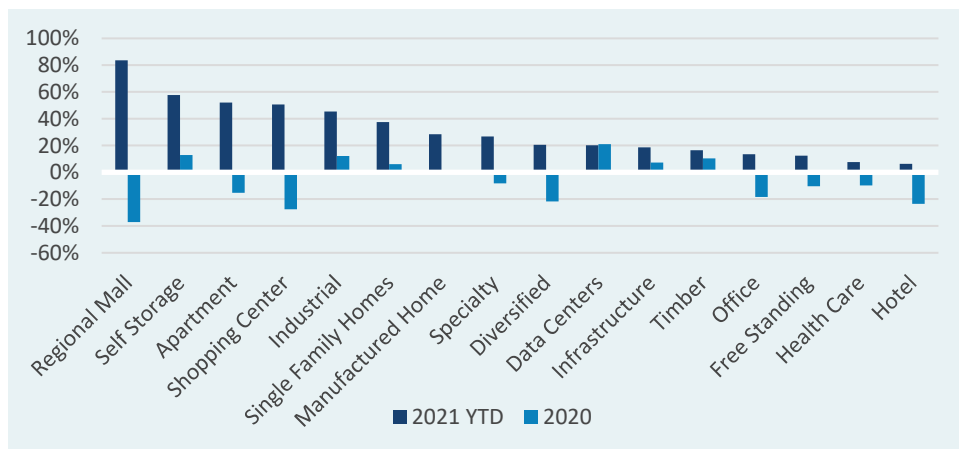
Source: NCREIF, as of 9/30/21

# Strong rebound in REITs

REITs rebounded strongly in 2021 posting an overall return of +42.3% for the FTSE NAREIT Equity Index. Several of the strongest sectors of 2021 were those that struggled the most in 2020, such as Regional Malls, Shopping Centers, and Apartments. Sectors with pandemic-driven tailwinds such as Industrial and Data Centers continued to perform well in 2021.

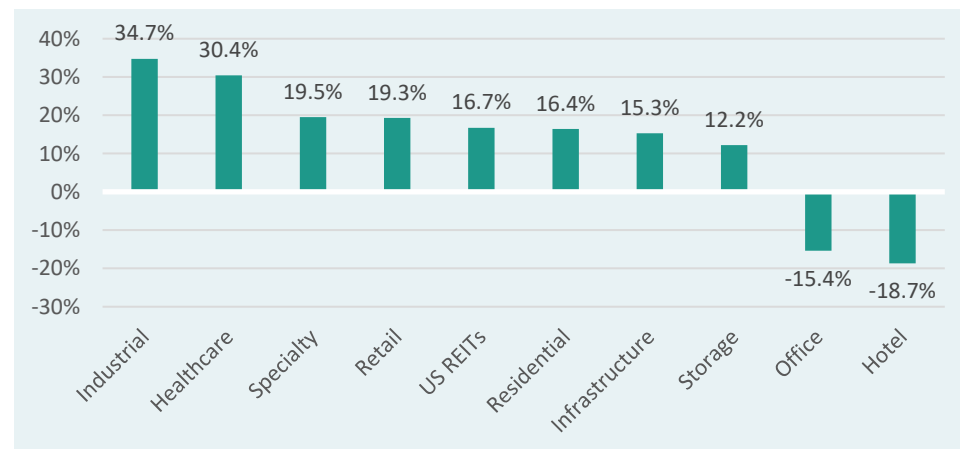
Valuations have become rich across a number of sectors, trading at substantial premiums to their net asset values (NAVs). The U.S. REIT market overall is currently trading at a 16% premium to NAV.

REIT PERFORMANCE BY SUB SECTOR (2021 VS 2020)



Source: Cohen & Steers, as of 11/30/21

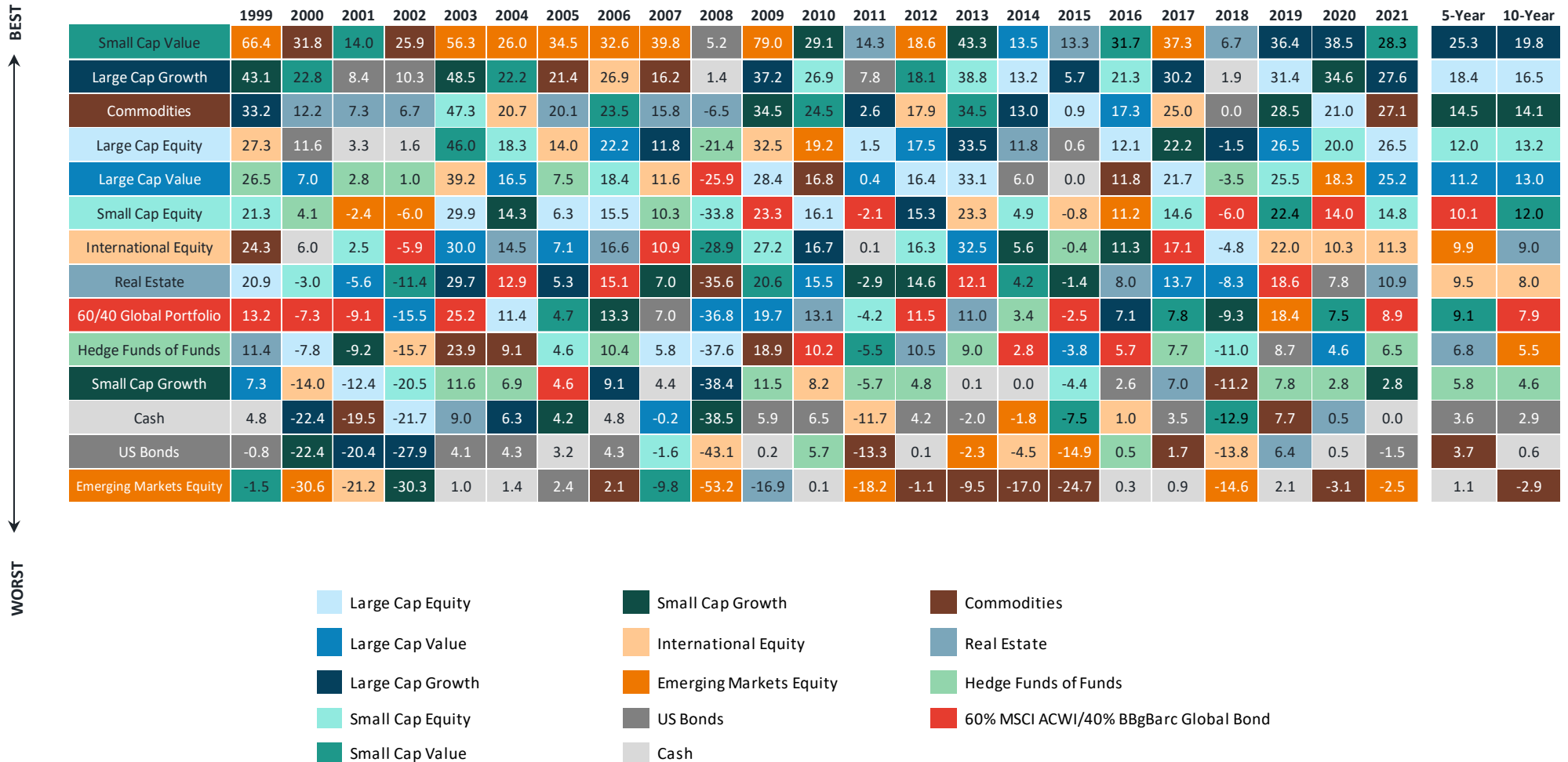
REIT PREMIUM/DISCOUNT TO NAV BY SUB SECTOR



Source: Heitman, as of 12/31/21

# Appendix

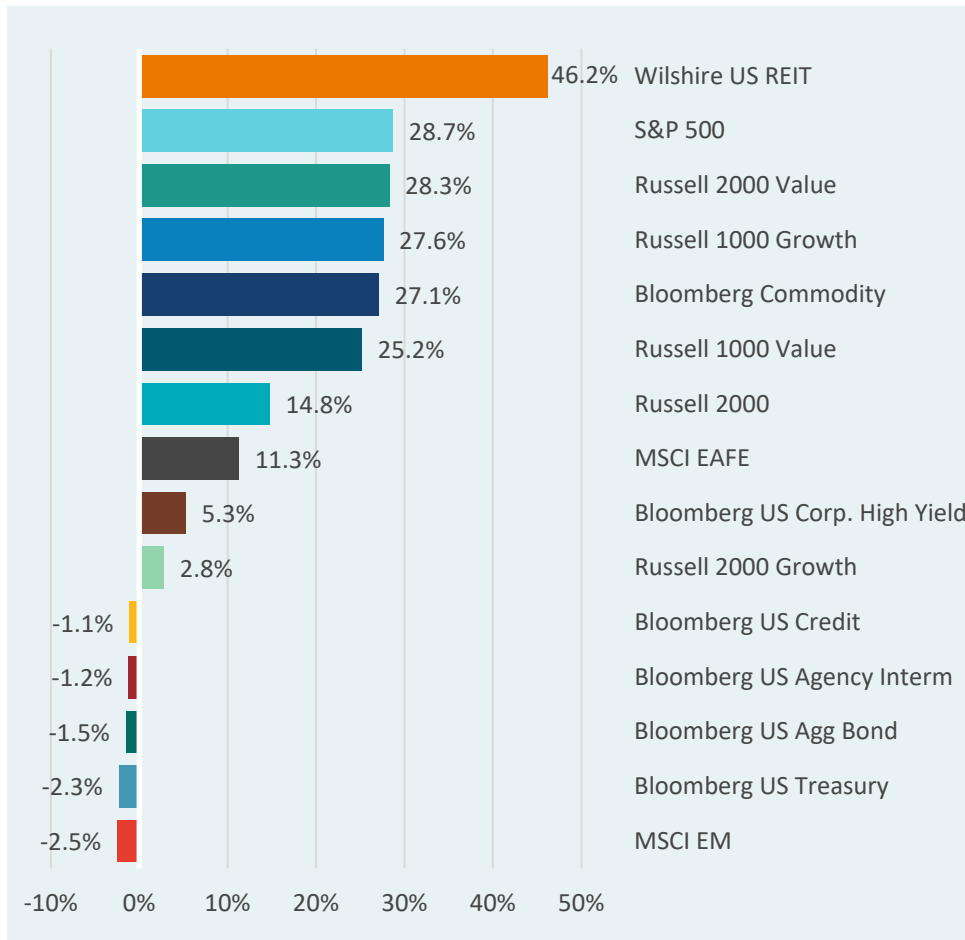
# Periodic table of returns



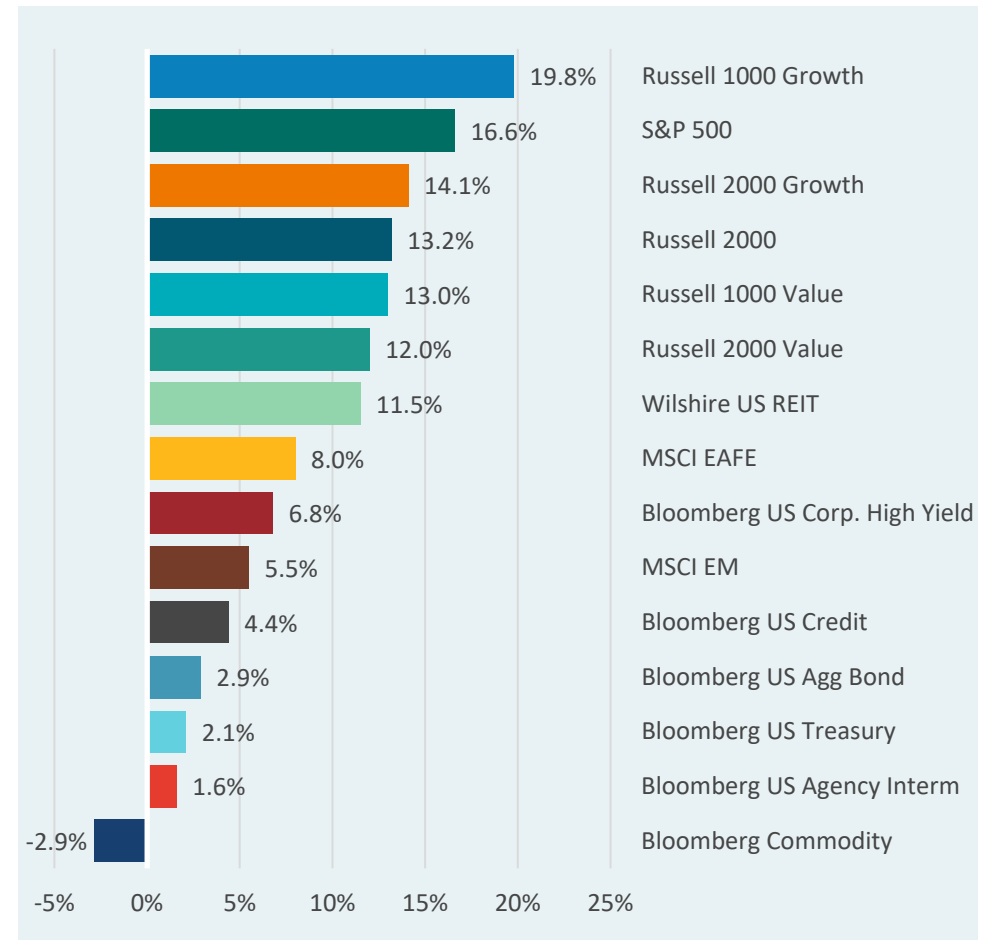
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 9/30/21.

# Major asset class returns

ONE YEAR ENDING DECEMBER



TEN YEARS ENDING DECEMBER



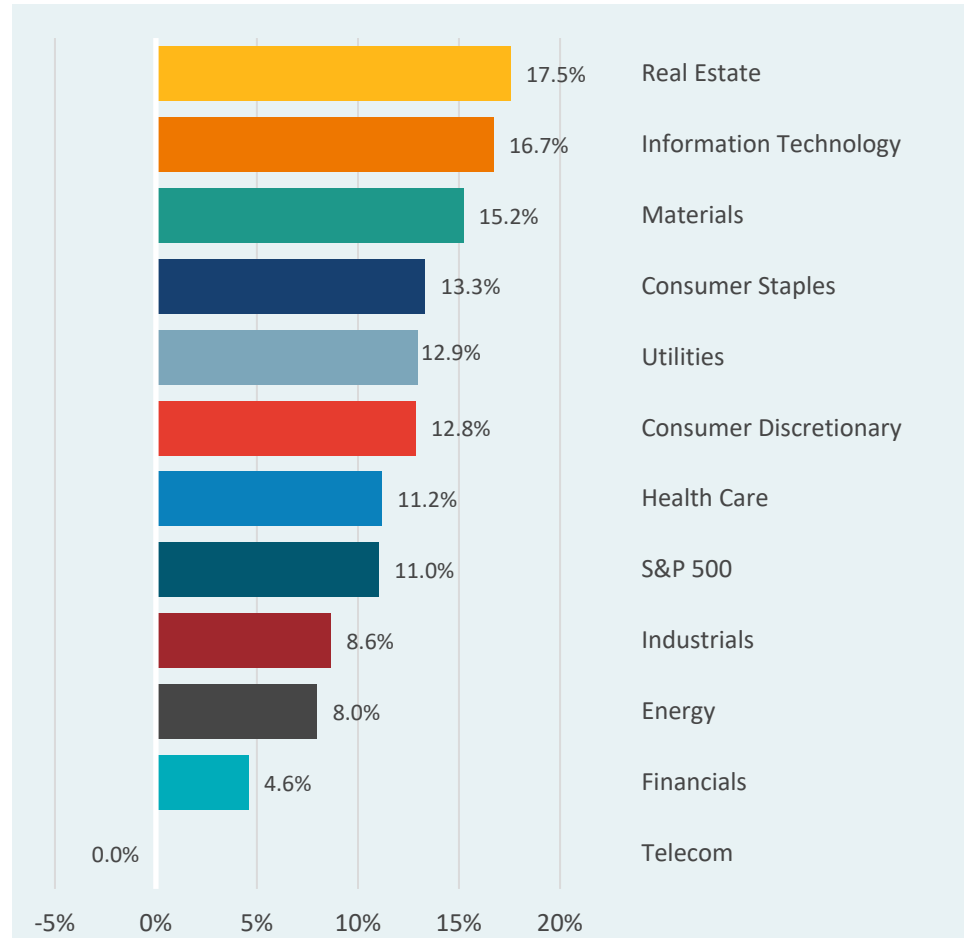
\*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 12/31/21

Source: Morningstar, as of 12/31/21

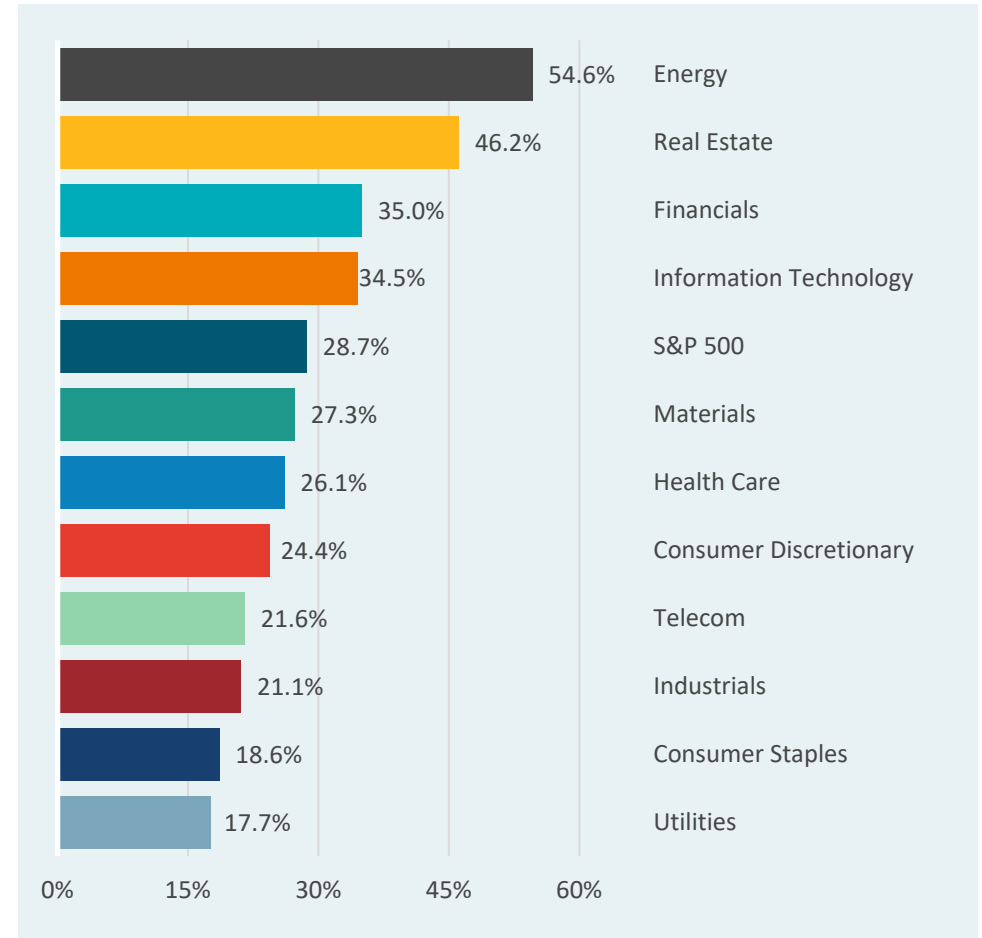
# S&P 500 sector returns

Q4 2021



Source: Morningstar, as of 12/31/21

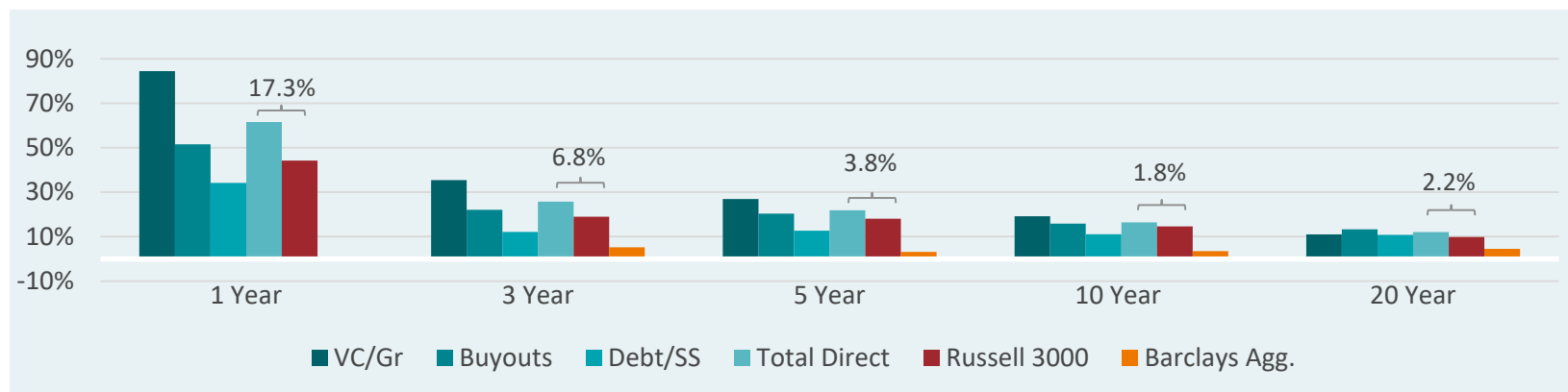
ONE YEAR ENDING DECEMBER



Source: Morningstar, as of 12/31/21

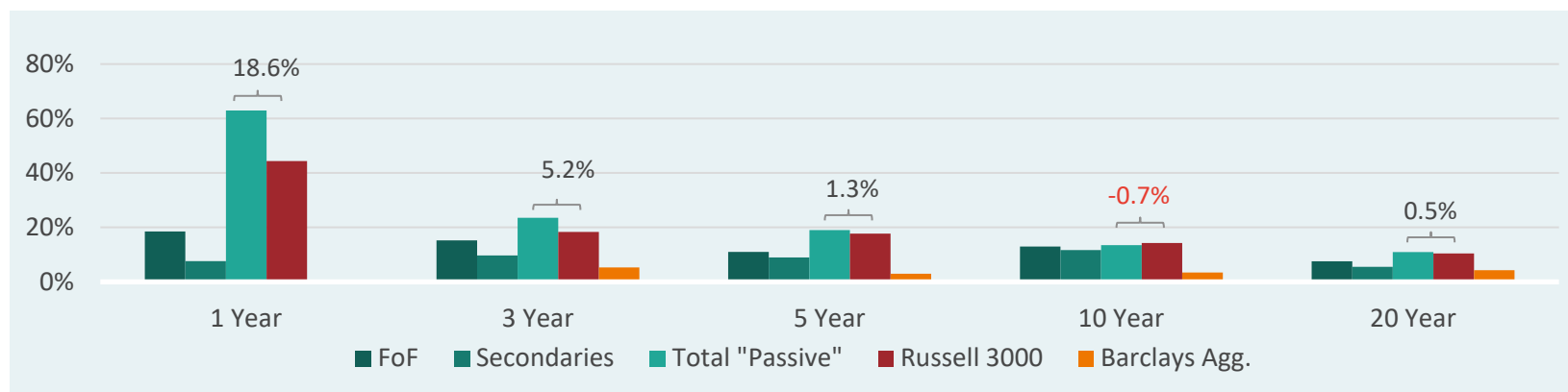
# Private equity vs. traditional assets performance

## DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods.

## “PASSIVE” STRATEGIES



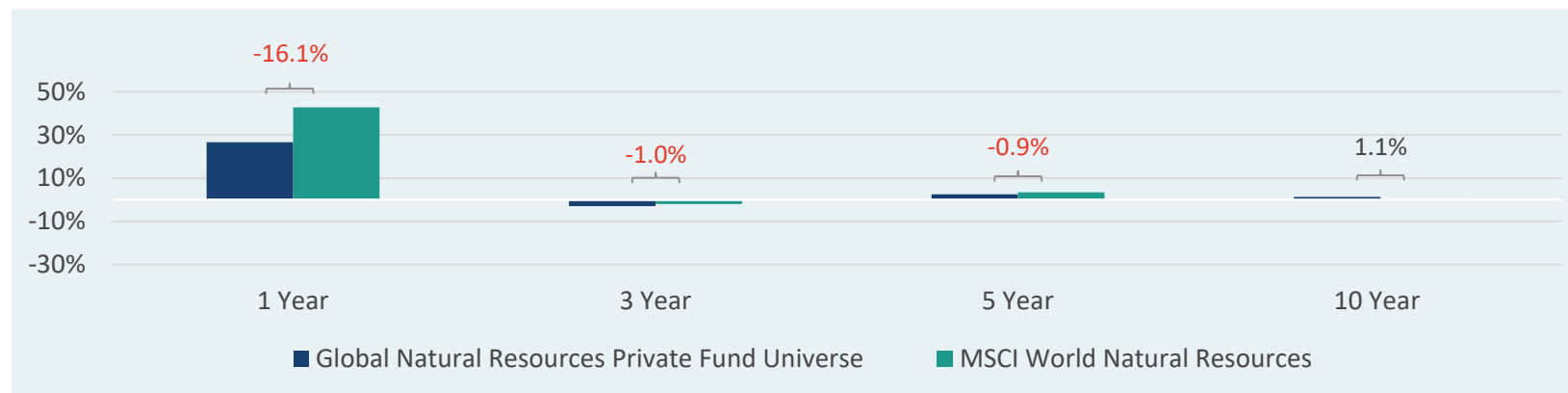
“Passive” strategies outperformed comparable public equities across all time periods, aside from the 10-year basis.

Sources: Refinitiv CJA PME: U.S. Private Equity Funds sub asset classes as of June 30, 2021. Public Market Equivalent returns resulted from “Total Passive” and Total Direct’s identical cash flows invested into and distributed from respective traditional asset comparable.



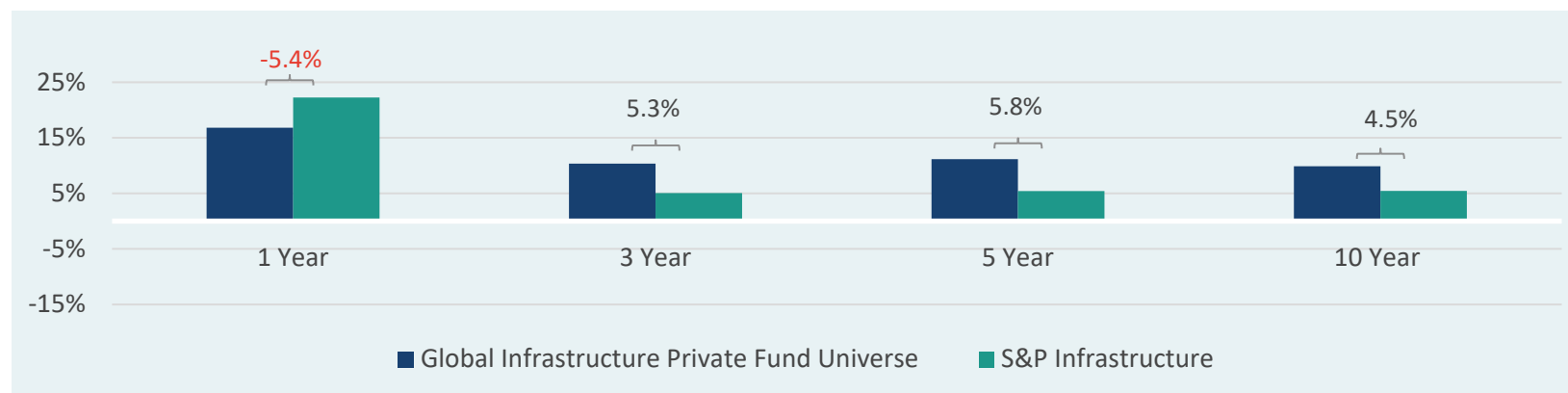
# Private vs. liquid real assets performance

## GLOBAL NATURAL RESOURCES FUNDS



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods, aside from the 10-year basis.

## GLOBAL INFRASTRUCTURE FUNDS

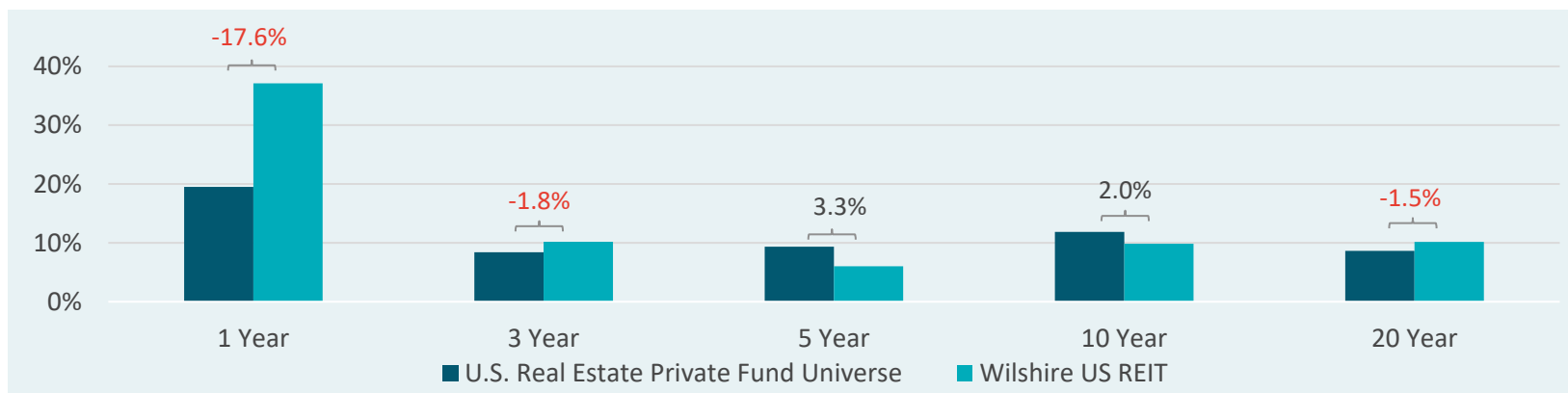


Infra. funds outperformed the S&P Infra. across all periods, aside from the 1-year basis.

Sources: Refinitiv CJA PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of June 30, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

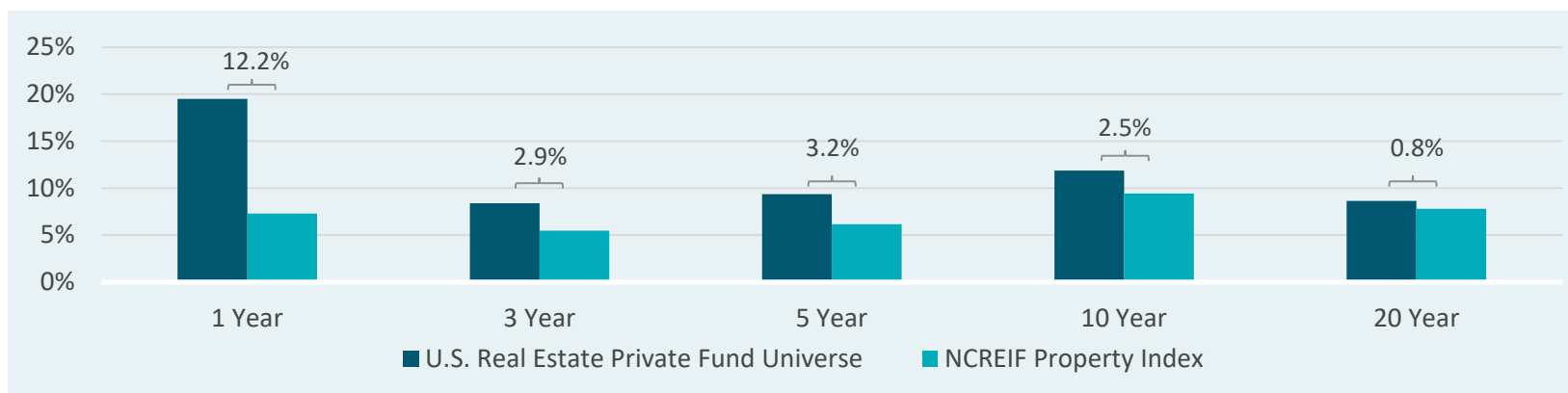
# Private vs. liquid and core real estate performance

## U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index across all time periods, aside on a 5-year and 10-year basis.

## U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods.

Sources: Refinitiv C/A PME: Global and U.S. Real Estate universes as of June 30, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	4.5	11.0	28.7	28.7	26.1	18.5	16.6
S&P 500 Equal Weighted	6.2	9.0	29.6	29.6	23.6	15.7	15.6
DJ Industrial Average	5.5	7.9	20.9	20.9	18.5	15.5	14.2
Russell Top 200	4.0	11.0	27.9	27.9	27.3	19.7	17.2
Russell 1000	4.1	9.8	26.5	26.5	26.2	18.4	16.5
Russell 2000	2.2	2.1	14.8	14.8	20.0	12.0	13.2
Russell 3000	3.9	9.3	25.7	25.7	25.8	18.0	16.3
Russell Mid Cap	4.1	6.4	22.6	22.6	23.3	15.1	14.9
<b>Style Index</b>							
Russell 1000 Growth	2.1	11.6	27.6	27.6	34.1	25.3	19.8
Russell 1000 Value	6.3	7.8	25.2	25.2	17.6	11.2	13.0
Russell 2000 Growth	0.4	0.0	2.8	2.8	21.2	14.5	14.1
Russell 2000 Value	4.1	4.4	28.3	28.3	18.0	9.1	12.0

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	4.0	6.7	18.5	18.5	20.4	14.4	11.9
MSCI ACWI ex US	4.1	1.8	7.8	7.8	13.2	9.6	7.3
MSCI EAFE	5.1	2.7	11.3	11.3	13.5	9.5	8.0
MSCI EM	1.9	(1.3)	(2.5)	(2.5)	10.9	9.9	5.5
MSCI EAFE Small Cap	4.4	0.1	10.1	10.1	15.6	11.0	10.8
<b>Style Index</b>							
MSCI EAFE Growth	4.3	4.1	11.3	11.3	19.0	13.6	10.1
MSCI EAFE Value	6.0	1.2	10.9	10.9	7.8	5.3	5.8
<b>Regional Index</b>							
MSCI UK	7.3	5.6	18.5	18.5	8.7	6.2	5.1
MSCI Japan	1.9	(4.0)	1.7	1.7	11.7	8.5	8.3
MSCI Euro	6.3	3.9	14.9	14.9	14.6	9.7	8.4
MSCI EM Asia	1.5	(1.0)	(5.1)	(5.1)	13.3	11.9	8.1
MSCI EM Latin American	5.9	(2.7)	(8.1)	(8.1)	(2.4)	1.5	(2.2)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
Bloomberg US TIPS	0.3	2.4	6.0	6.0	8.4	5.3	3.1
Bloomberg US Treasury Bills	0.0	0.0	0.0	0.0	1.0	1.2	0.7
Bloomberg US Agg Bond	(0.3)	0.0	(1.5)	(1.5)	4.8	3.6	2.9
Bloomberg US Universal	(0.1)	(0.0)	(1.1)	(1.1)	5.2	3.8	3.3
<b>Duration</b>							
Bloomberg US Treasury 1-3 Yr	(0.2)	(0.6)	(0.6)	(0.6)	2.0	1.6	1.1
Bloomberg US Treasury Long	(1.4)	3.1	(4.6)	(4.6)	8.8	6.5	4.5
Bloomberg US Treasury	(0.5)	0.2	(2.3)	(2.3)	4.1	3.1	2.1
<b>Issuer</b>							
Bloomberg US MBS	(0.1)	(0.4)	(1.0)	(1.0)	3.0	2.5	2.3
Bloomberg US Corp. High Yield	1.9	0.7	5.3	5.3	8.8	6.3	6.8
Bloomberg US Agency Interm	(0.2)	(0.7)	(1.2)	(1.2)	2.4	2.0	1.6
Bloomberg US Credit	(0.1)	0.2	(1.1)	(1.1)	7.2	5.1	4.4
<b>OTHER</b>							
<b>Index</b>							
Bloomberg Commodity	3.5	(1.6)	27.1	27.1	9.9	3.7	(2.9)
Wilshire US REIT	8.8	17.1	46.2	46.2	19.2	10.9	11.5
CS Leveraged Loans	0.6	0.7	5.4	5.4	5.4	4.3	4.8
S&P Global Infrastructure	6.6	4.6	11.9	11.9	10.2	7.8	7.7
Alerian MLP	3.7	0.9	40.9	40.9	1.0	(3.7)	(0.3)
<b>Regional Index</b>							
JPM EMBI Global Div	1.4	(0.4)	(1.8)	(1.8)	5.9	4.7	5.3
JPM GBI-EM Global Div	1.6	(2.5)	(8.7)	(8.7)	2.1	2.8	0.7
<b>Hedge Funds</b>							
HFRI Composite	1.3	0.6	10.3	10.3	10.9	7.1	5.8
HFRI FOF Composite	0.8	0.7	6.5	6.5	8.6	5.8	4.6
<b>Currency (Spot)</b>							
Euro	1.0	(1.9)	(7.1)	(7.1)	(0.2)	1.5	(1.3)
Pound Sterling	2.4	0.5	(0.9)	(0.9)	2.1	1.9	(1.4)
Yen	(1.4)	(3.1)	(10.3)	(10.3)	(1.6)	0.3	(4.0)

Source: Morningstar, HFRI, as of 12/31/21

# Definitions

**Bloomberg US Weekly Consumer Comfort Index** - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. ([www.lanqerresearch.com](http://www.lanqerresearch.com))

**University of Michigan Consumer Sentiment Index** - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. ([www.Bloomberg.com](http://www.Bloomberg.com))

**NFIB Small Business Outlook** - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

**NAHB Housing Market Index** – the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula  $(\text{Good-Poor} + 100)/2$  to the present and future sales series and  $(\text{High/Very High-Low/Very Low} + 100)/2$  to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

# Notices & disclosures

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# San Luis Obispo County Pension Trust

Investment Performance Review

Period Ending: December 31, 2021



[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

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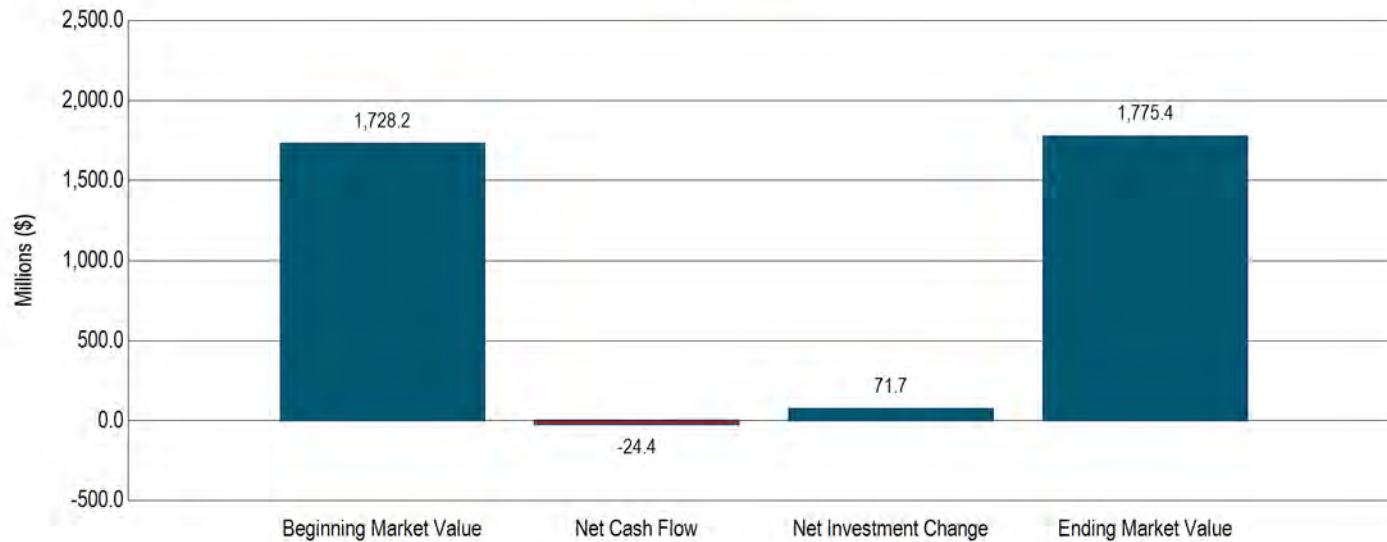
SAN FRANCISCO 415-362-3484

PITTSBURGH 412-784-6678

Portfolio Reconciliation

	Last Three Months	One Year
Beginning Market Value	\$1,728,214,678	\$1,568,213,751
Net Cash Flow	-\$24,423,000	-\$23,901,135
Net Investment Change	\$71,653,429	\$231,132,492
Ending Market Value	\$1,775,445,107	\$1,775,445,107

Change in Market Value  
Last Three Months



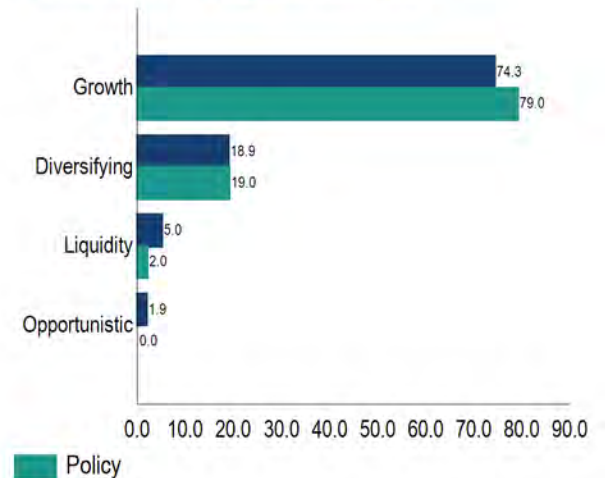
Contributions and withdrawals may include intra-account transfers between managers/funds.

# Total Fund Executive Summary (Gross of Fees)

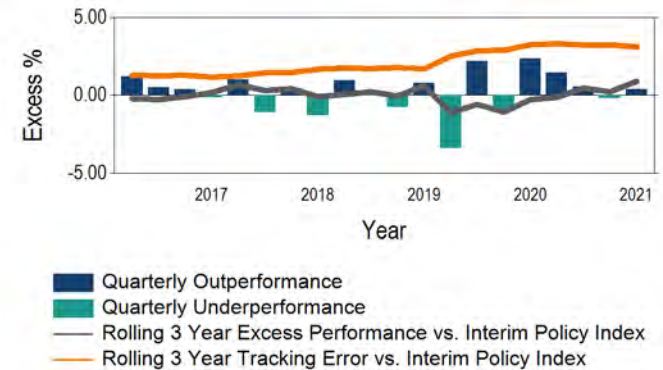
Period Ending: December 31, 2021

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Total Fund</b>	<b>4.2</b>	<b>49</b>	<b>15.2</b>	<b>47</b>	<b>13.7</b>	<b>85</b>	<b>10.4</b>	<b>77</b>
Interim Policy Index	3.9	67	12.8	81	12.8	94	9.7	94
FFP SAA Index	4.8	22	21.0	5	--	--	--	--
<b>Total Growth</b>	<b>6.6</b>	<b>--</b>	<b>23.5</b>	<b>--</b>	<b>18.2</b>	<b>--</b>	<b>13.8</b>	<b>--</b>
Custom Growth Benchmark	4.8	--	16.7	--	15.2	--	11.6	--
<b>Total Public Equity</b>	<b>6.7</b>	<b>52</b>	<b>20.3</b>	<b>51</b>	<b>22.1</b>	<b>22</b>	<b>15.8</b>	<b>16</b>
Russell 3000	9.3	1	25.7	1	25.8	1	18.0	1
<b>Total Domestic Equity</b>	<b>8.8</b>	<b>67</b>	<b>25.3</b>	<b>62</b>	<b>22.6</b>	<b>92</b>	<b>16.9</b>	<b>54</b>
Russell 3000	9.3	41	25.7	57	25.8	22	18.0	23
<b>Total International Equity</b>	<b>4.1</b>	<b>4</b>	<b>15.2</b>	<b>1</b>	<b>21.4</b>	<b>1</b>	<b>14.8</b>	<b>2</b>
MSCI ACWI ex USA Gross	1.9	28	8.3	45	13.7	68	10.1	60
<b>Total Private Equity</b>	<b>8.3</b>	<b>--</b>	<b>58.4</b>	<b>--</b>	<b>27.9</b>	<b>--</b>	<b>24.3</b>	<b>--</b>
Private Equity Benchmark	8.3	--	58.4	--	--	--	--	--
<b>Total Private Credit</b>	<b>1.5</b>	<b>--</b>	<b>25.9</b>	<b>--</b>	<b>9.1</b>	<b>--</b>	<b>8.0</b>	<b>--</b>
Private Credit Benchmark	1.5	--	25.9	--	--	--	--	--
<b>Total Real Estate</b>	<b>7.4</b>	<b>--</b>	<b>18.5</b>	<b>--</b>	<b>7.7</b>	<b>--</b>	<b>7.7</b>	<b>--</b>
NCREIF Property Index	6.2	--	17.7	--	8.4	--	7.8	--

Actual vs Interim Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Interim Policy Index



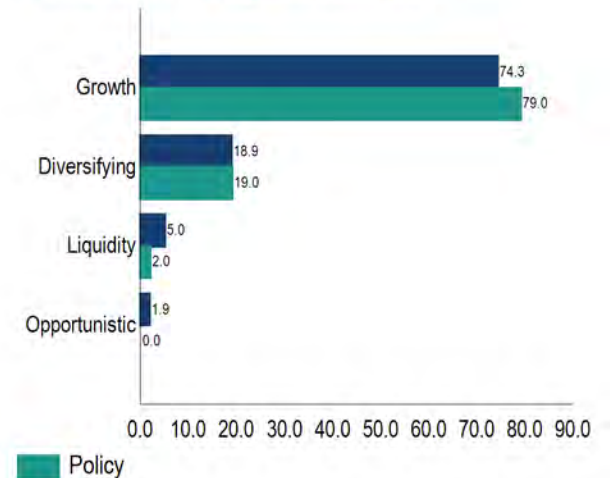
Interim Policy Index as of 1/1/2021: 23% Russell 3000, 20% MSCI ACWI ex-US (Gross), 12% Bloomberg U.S. Aggregate, 3% Bloomberg US Treasury 7-10 yr, 2% Bloomberg US TIPS, 11% FTSE World Govt Bond Index, 15% NCREIF Property Index, 5% Actual Private Equity Return, 5% Actual Private Credit Bench Return, 2% 91 day T-Bills, 2% Bloomberg 1-3 yr Gov/Credit. FFP SAA Index as of 1/1/2021: 30% MSCI ACWI, 8% Bloomberg U.S. Treasury 7-10 yr, 7% Bloomberg U.S. TIPS, 4% 91 day T-Bills, 6% Bloomberg U.S. Govt/Credit 1-3 yr, 18% Actual Private Equity Return, 12% Actual Private Credit Return, 15% NCREIF Property Index. Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. All returns are (G) Gross of fees. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. (e) To avoid unnecessary and possibly misleading Tracking Error, the Total Fund Policy Benchmark uses actual time-weighted private markets returns applied to actual private market asset class weights rounded to the nearest whole percentage point. The difference in actual weight versus target is allocated to the private market investment's public market "equivalent" (e.g., private equity to public equity; private credit to public fixed income).

# Total Fund Executive Summary (Gross of Fees)

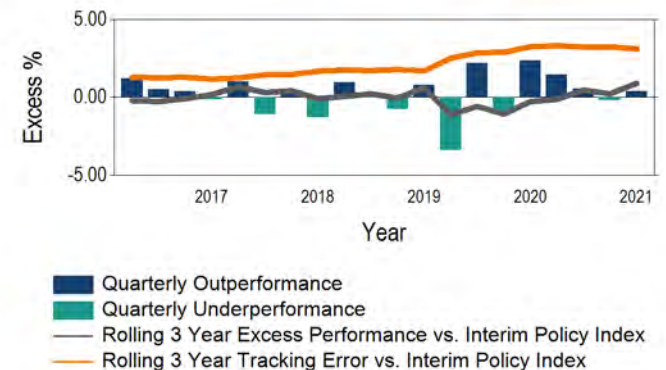
Period Ending: December 31, 2021

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Total Risk Diversifying</b>	-0.5	90	-1.6	89	4.5	58	3.9	43
<i>Custom Risk Diversifying Benchmark</i>	-0.2	56	-3.2	99	4.2	71	3.2	68
<b>Total Domestic Fixed Income</b>	0.2	15	0.9	15	6.2	17	4.6	22
<i>Bloomberg US Aggregate TR</i>	0.0	29	-1.5	88	4.8	56	3.6	53
<b>Total Global Fixed</b>	-2.5	--	-7.0	--	2.1	--	3.0	--
<i>FTSE World Govt Bond Index</i>	-1.1	--	-7.0	--	2.7	--	2.9	--
<b>Total Liquidity</b>	-0.1	--	0.2	--	1.3	--	2.7	--
<i>91 Day T-Bills</i>	0.0	--	0.0	--	0.8	--	1.1	--
<b>Total Cash</b>	-0.1	--	0.2	--	1.3	--	2.7	--
<i>91 Day T-Bills</i>	0.0	--	0.0	--	0.8	--	1.1	--
<b>Total Opportunistic</b>	4.4	--	25.6	--	5.8	--	9.6	--
<i>Russell 3000 + 3%</i>	10.1	--	29.4	--	29.5	--	21.5	--

Actual vs Interim Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Interim Policy Index



Interim Policy Index as of 1/1/2021: 23% Russell 3000, 20% MSCI ACWI ex-US (Gross), 12% Bloomberg U.S. Aggregate, 3% Bloomberg US Treasury 7-10 yr, 2% Bloomberg US TIPS, 11% FTSE World Govt Bond Index, 15% NCREIF Property Index, 5% Actual Private Equity Return, 5% Actual Private Credit Bench Return, 2% 91 day T-Bills, 2% Bloomberg 1-3 yr Govt/Credit. FFP SAA Index as of 1/1/2021: 30% MSCI ACWI, 8% Bloomberg U.S. Treasury 7-10 yr, 7% Bloomberg U.S. TIPS, 4% 91 day T-Bills, 6% Bloomberg U.S. Govt/Credit 1-3 yr, 18% Actual Private Equity Return, 12% Actual Private Credit Return, 15% NCREIF Property Index. Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. All returns are (G) Gross of fees. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. (e) To avoid unnecessary and possibly misleading Tracking Error, the Total Fund Policy Benchmark uses actual time-weighted private markets returns applied to actual private market asset class weights rounded to the nearest whole percentage point. The difference in actual weight versus target is allocated to the private market investment's public market "equivalent" (e.g., private equity to public equity; private credit to public fixed income).

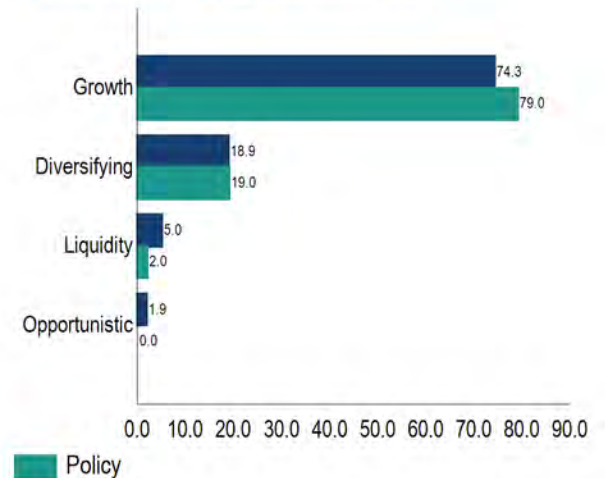


# Total Fund Executive Summary (Net of Fees)

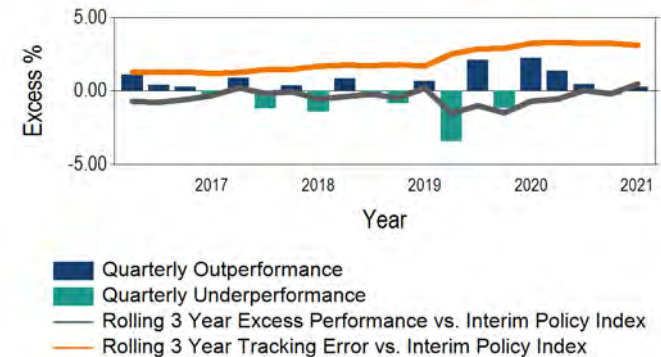
Period Ending: December 31, 2021

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Total Fund</b>	<b>4.2</b>	<b>50</b>	<b>14.8</b>	<b>52</b>	<b>13.3</b>	<b>90</b>	<b>10.0</b>	<b>90</b>
<i>Interim Policy Index</i>	3.9	67	12.8	81	12.8	94	9.7	94
<i>FFP SAA Index</i>	4.8	22	21.0	5	--	--	--	--
<b>Total Growth</b>	<b>6.5</b>	<b>--</b>	<b>23.1</b>	<b>--</b>	<b>17.8</b>	<b>--</b>	<b>13.4</b>	<b>--</b>
<i>Custom Growth Benchmark</i>	4.8	--	16.7	--	15.2	--	11.6	--
<b>Total Public Equity</b>	<b>6.5</b>	<b>59</b>	<b>19.6</b>	<b>64</b>	<b>21.4</b>	<b>35</b>	<b>15.2</b>	<b>33</b>
<i>Russell 3000</i>	9.3	1	25.7	1	25.8	1	18.0	1
<b>Total Domestic Equity</b>	<b>8.7</b>	<b>72</b>	<b>24.6</b>	<b>74</b>	<b>22.0</b>	<b>97</b>	<b>16.3</b>	<b>73</b>
<i>Russell 3000</i>	9.3	41	25.7	57	25.8	22	18.0	23
<b>Total International Equity</b>	<b>4.0</b>	<b>4</b>	<b>14.4</b>	<b>1</b>	<b>20.6</b>	<b>1</b>	<b>14.0</b>	<b>4</b>
<i>MSCI ACWI ex USA Gross</i>	1.9	28	8.3	45	13.7	68	10.1	60
<b>Total Private Equity</b>	<b>8.3</b>	<b>--</b>	<b>58.4</b>	<b>--</b>	<b>27.9</b>	<b>--</b>	<b>24.3</b>	<b>--</b>
<i>Private Equity Benchmark</i>	8.3	--	58.4	--	--	--	--	--
<b>Total Private Credit</b>	<b>1.5</b>	<b>--</b>	<b>25.9</b>	<b>--</b>	<b>9.1</b>	<b>--</b>	<b>8.0</b>	<b>--</b>
<i>Private Credit Benchmark</i>	1.5	--	25.9	--	--	--	--	--
<b>Total Real Estate</b>	<b>7.4</b>	<b>--</b>	<b>18.5</b>	<b>--</b>	<b>7.7</b>	<b>--</b>	<b>7.7</b>	<b>--</b>
<i>NCREIF Property Index</i>	6.2	--	17.7	--	8.4	--	7.8	--

Actual vs Interim Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Interim Policy Index



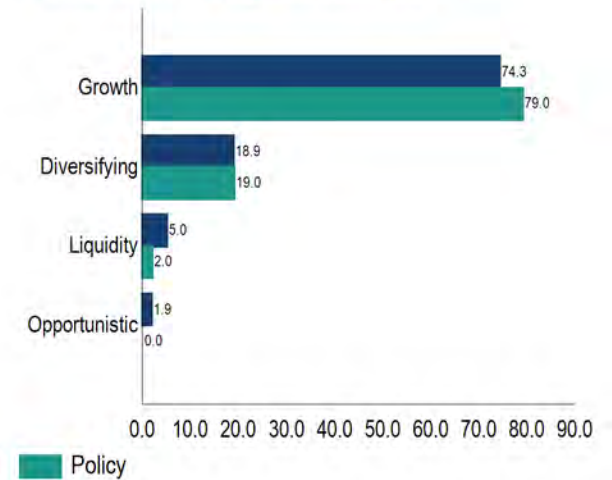
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# Total Fund Executive Summary (Net of Fees)

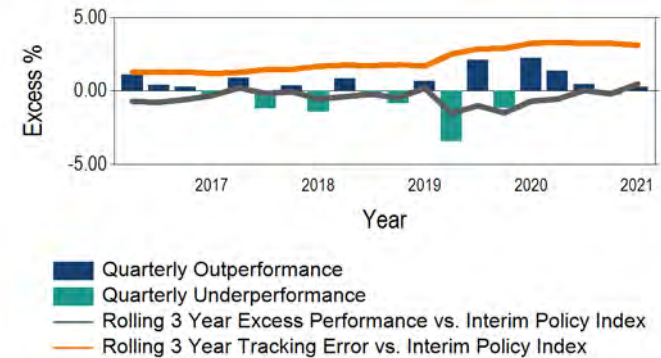
Period Ending: December 31, 2021

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
<b>Total Risk Diversifying</b>	-0.7	98	-2.0	99	4.1	81	3.5	56
<i>Custom Risk Diversifying Benchmark</i>	-0.2	56	-3.2	99	4.2	71	3.2	68
<b>Total Domestic Fixed Income</b>	0.2	18	0.5	17	5.9	21	4.3	28
<i>Bloomberg US Aggregate TR</i>	0.0	29	-1.5	88	4.8	56	3.6	53
<b>Total Global Fixed</b>	-2.7	--	-7.7	--	1.5	--	2.5	--
<i>FTSE World Govt Bond Index</i>	-1.1	--	-7.0	--	2.7	--	2.9	--
<b>Total Liquidity</b>	-0.1	--	0.2	--	1.3	--	2.7	--
<i>91 Day T-Bills</i>	0.0	--	0.0	--	0.8	--	1.1	--
<b>Total Cash</b>	-0.1	--	0.2	--	1.3	--	2.7	--
<i>91 Day T-Bills</i>	0.0	--	0.0	--	0.8	--	1.1	--
<b>Total Opportunistic</b>	4.4	--	25.6	--	5.8	--	9.6	--
<i>Russell 3000 + 3%</i>	10.1	--	29.4	--	29.5	--	21.5	--

Actual vs Interim Target Allocation (%)



Rolling Annualized Excess Performance and Tracking Error  
Total Fund vs. Interim Policy Index



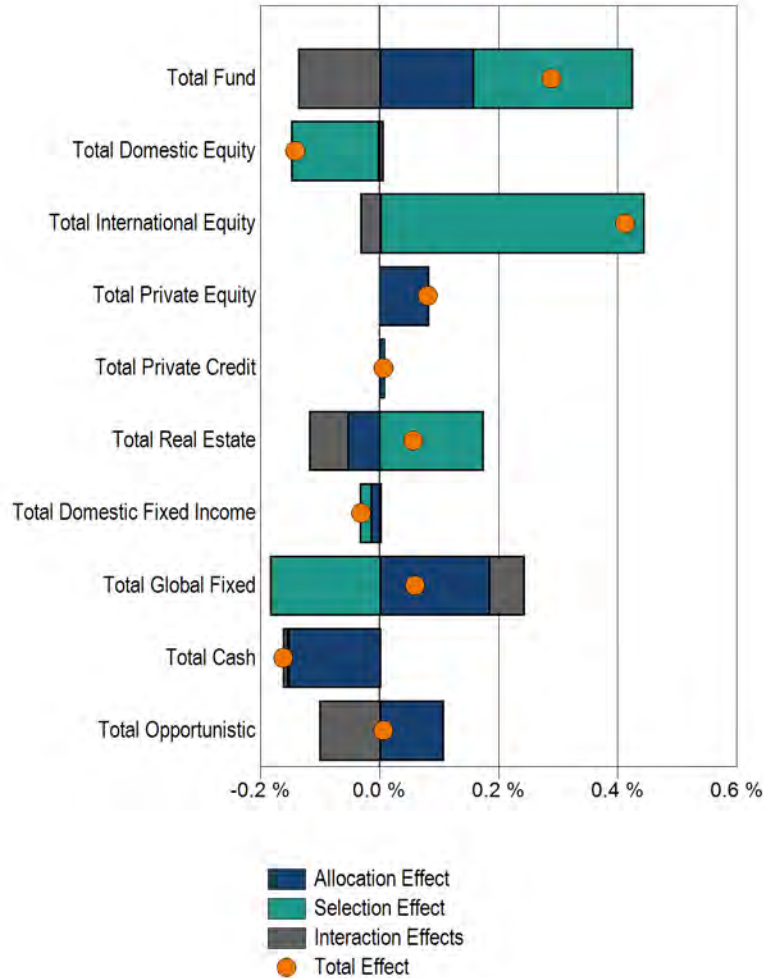
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Total Fund  
Attribution (Net of Fees)

Period Ending: December 31, 2021

Performance Attribution

Attribution Effects  
3 Months Ending December 31, 2021



	Last 3 Mo.
Wtd. Actual Return	4.16%
Wtd. Index Return *	3.87%
<b>Excess Return</b>	<b>0.29%</b>
Selection Effect	0.27%
Allocation Effect	0.16%
Interaction Effect	-0.13%

\*Calculated from policy benchmark returns and policy weightings of each component of the policy benchmark.

Attribution Summary  
3 Months Ending December 31, 2021

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	8.66%	9.28%	-0.62%	-0.14%	0.00%	0.01%	-0.14%
Total International Equity	3.97%	1.88%	2.09%	0.44%	0.00%	-0.03%	0.41%
Total Private Equity	8.30%	8.30%	0.00%	0.00%	0.08%	0.00%	0.08%
Total Private Credit	1.49%	1.49%	0.00%	0.00%	0.01%	0.00%	0.01%
Total Real Estate	7.42%	6.15%	1.27%	0.17%	-0.05%	-0.06%	0.06%
Total Domestic Fixed Income	0.16%	0.25%	-0.09%	-0.02%	-0.01%	0.00%	-0.03%
Total Global Fixed	-2.71%	-1.10%	-1.60%	-0.18%	0.18%	0.06%	0.06%
Total Cash	-0.13%	0.01%	-0.14%	0.00%	-0.15%	-0.01%	-0.16%
Total Opportunistic	4.42%	10.06%	-5.65%	0.00%	0.11%	-0.10%	0.01%
<b>Total</b>	<b>4.16%</b>	<b>3.87%</b>	<b>0.29%</b>	<b>0.27%</b>	<b>0.16%</b>	<b>-0.13%</b>	<b>0.29%</b>

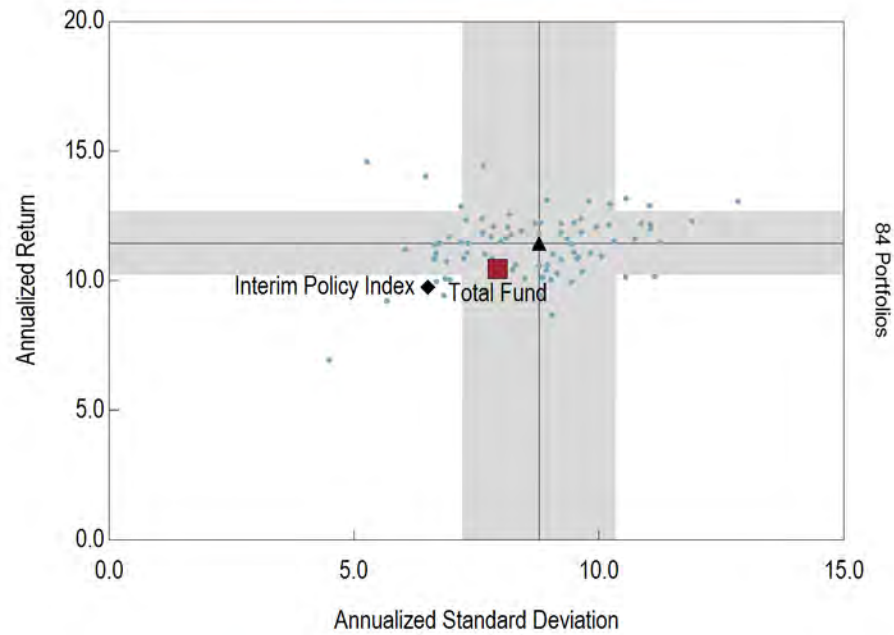
Attribution does not account for effects of overlay program. Weighted returns shown in attribution analysis may differ from actual returns. Wtd. Actual Return is the sum of the products of each group's return and its respective weight at the beginning of the period.

Total Fund  
Risk Analysis - 5 Years (Gross of Fees)

Period Ending: December 31, 2021

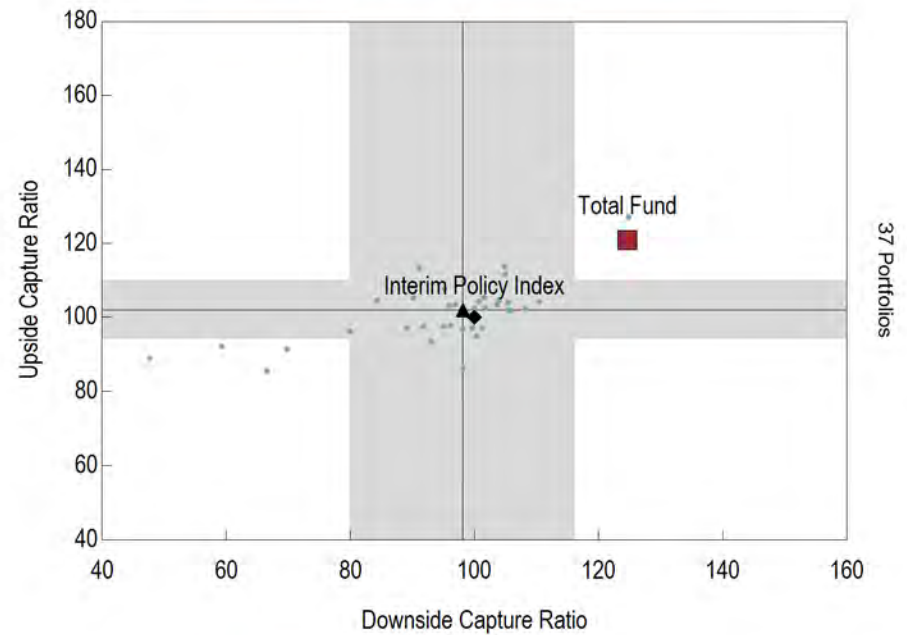
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	10.45%	0.71%	7.93%	-1.00%	1.17	2.39%	0.93	1.18	0.30	120.93%	124.63%

Annualized Return vs. Annualized Standard Deviation



- Total Fund
- ◆ Interim Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

Upside Capture Ratio vs. Downside Capture Ratio

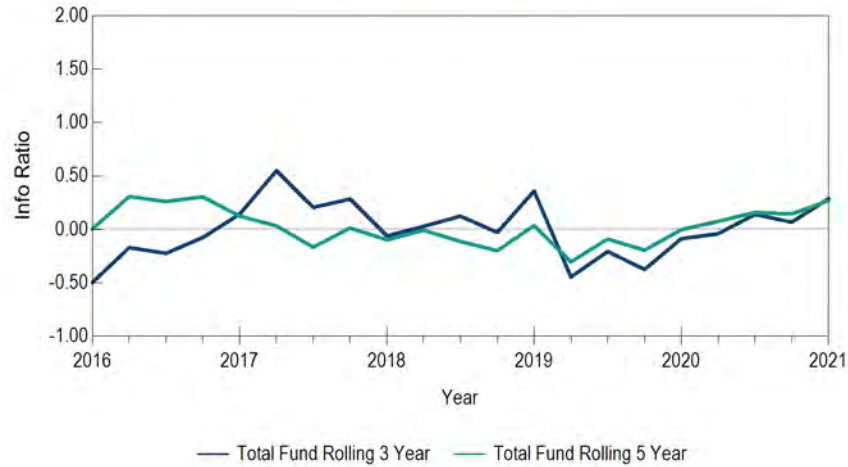


- Total Fund
- ◆ Interim Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

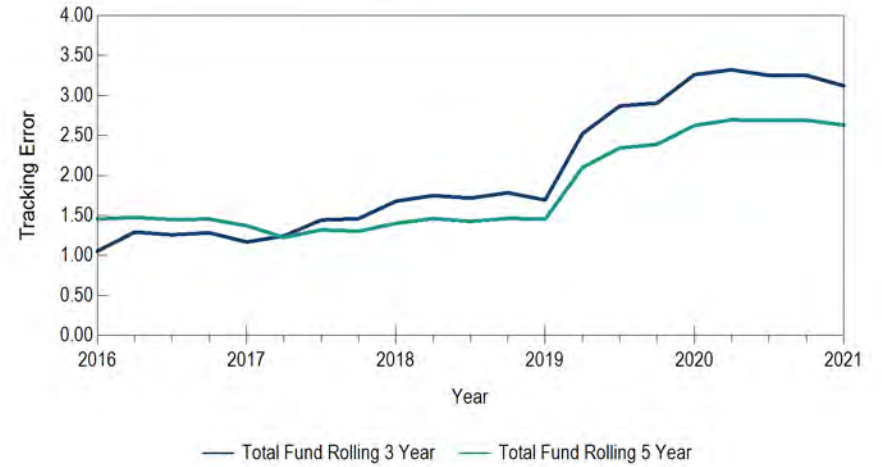
Total Fund  
Rolling Risk Statistics (Gross of Fees)

Period Ending: December 31, 2021

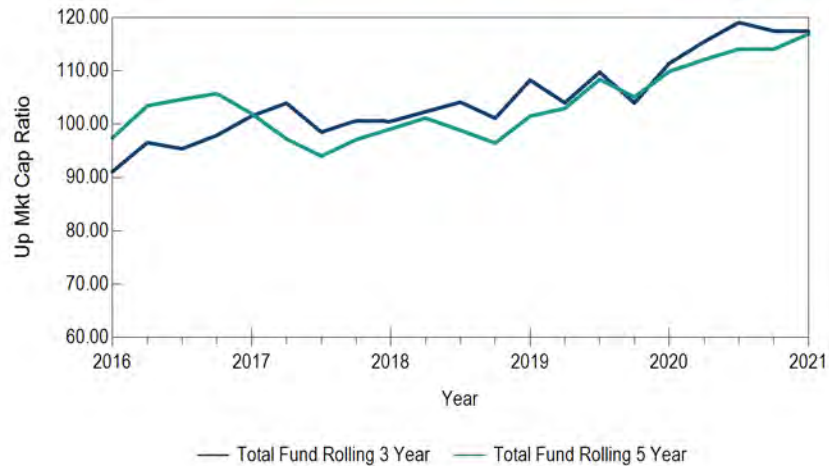
Rolling Information Ratio



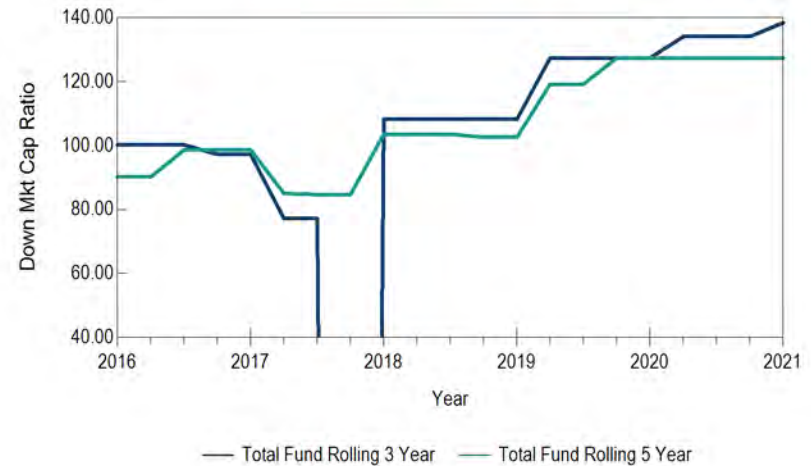
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



# Total Fund Performance Summary (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
<b>Total Fund</b>	<b>1,775,445,107</b>	<b>100.0</b>	<b>4.2</b>	<b>15.2</b>	<b>13.7</b>	<b>10.4</b>	<b>8.9</b>	<b>15.2</b>	<b>9.6</b>	<b>16.3</b>	<b>-3.1</b>	<b>15.5</b>	<b>--</b>	<b>Feb-07</b>
Interim Policy Index			3.9	12.8	12.8	9.7	8.5	12.8	10.3	15.3	-2.1	13.3	--	Feb-07
FFP SAA Index			4.8	21.0	--	--	--	21.0	--	--	--	--		
InvMetrics Public DB > \$1B Gross Rank			49	47	85	77	92	47	74	60	36	69		
<b>Total Growth</b>	<b>1,191,740,130</b>	<b>67.1</b>	<b>6.6</b>	<b>23.5</b>	<b>18.2</b>	<b>13.8</b>	<b>12.0</b>	<b>23.5</b>	<b>11.2</b>	<b>20.3</b>	<b>-4.0</b>	<b>20.2</b>		
Custom Growth Benchmark			4.8	16.7	15.2	11.6	10.1	16.7	12.3	16.6	-2.8	16.4		
<b>Total Public Equity</b>	<b>760,345,720</b>	<b>42.8</b>	<b>6.7</b>	<b>20.3</b>	<b>22.1</b>	<b>15.8</b>	<b>13.2</b>	<b>20.3</b>	<b>16.5</b>	<b>29.8</b>	<b>-9.0</b>	<b>25.9</b>		
Russell 3000			9.3	25.7	25.8	18.0	16.3	25.7	20.9	31.0	-5.2	21.1		
InvMetrics Public DB Total Eq Gross Rank			52	51	22	16	55	51	31	5	67	14		
<b>Total Domestic Equity</b>	<b>425,303,062</b>	<b>24.0</b>	<b>8.8</b>	<b>25.3</b>	<b>22.6</b>	<b>16.9</b>	<b>15.2</b>	<b>25.3</b>	<b>13.7</b>	<b>29.4</b>	<b>-5.2</b>	<b>25.1</b>		
Russell 3000			9.3	25.7	25.8	18.0	16.3	25.7	20.9	31.0	-5.2	21.1		
InvMetrics Public DB US Eq Gross Rank			67	62	92	54	72	62	91	66	36	4		
PIMCO RAE US	115,073,115	6.5	9.3	28.3	18.9	12.9	14.0	28.3	4.4	25.5	-6.6	17.0	9.4	Nov-07
S&P 500			11.0	28.7	26.1	18.5	16.6	28.7	18.4	31.5	-4.4	21.8	10.9	Nov-07
eV US Large Cap Core Equity Gross Rank			73	47	94	94	90	47	96	83	72	89		
Loomis Sayles Large Cap Growth	109,918,719	6.2	6.8	19.4	28.1	22.6	--	19.4	32.8	32.7	-1.7	34.1	22.6	Dec-16
Russell 1000 Growth			11.6	27.6	34.1	25.3	--	27.6	38.5	36.4	-1.5	30.2	25.3	Dec-16
eV US Large Cap Growth Equity Gross Rank			74	81	79	67	--	81	61	68	58	16		
Boston Partners Large Cap Value	112,643,851	6.3	9.5	30.9	18.6	--	--	30.9	2.4	24.3	-8.5	--	12.9	Jan-17
Russell 1000 Value			7.8	25.2	17.6	--	--	25.2	2.8	26.5	-8.3	--	11.2	Jan-17
eV US Large Cap Value Equity Gross Rank			28	19	59	--	--	19	64	77	54	--		
Atlanta Capital Mgmt	87,667,377	4.9	9.7	23.0	22.8	17.5	16.7	23.0	11.4	35.1	-4.5	26.6	17.9	Aug-10
Russell 2500			3.8	18.2	21.9	13.8	14.1	18.2	20.0	27.8	-10.0	16.8	14.6	Aug-10
eV US Small-Mid Cap Equity Gross Rank			9	58	53	35	25	58	62	14	25	15		
<b>Total International Equity</b>	<b>335,042,658</b>	<b>18.9</b>	<b>4.1</b>	<b>15.2</b>	<b>21.4</b>	<b>14.8</b>	<b>11.0</b>	<b>15.2</b>	<b>19.4</b>	<b>30.2</b>	<b>-12.2</b>	<b>26.6</b>		
MSCI ACWI ex USA Gross			1.9	8.3	13.7	10.1	7.8	8.3	11.1	22.1	-13.8	27.8		
InvMetrics Public DB ex-US Eq Gross Rank			4	1	1	2	2	1	12	1	9	81		
Dodge & Cox Intl Stock	162,092,005	9.1	2.6	11.7	12.4	7.9	8.3	11.7	2.8	23.6	-17.5	24.7	3.7	Dec-07
MSCI ACWI ex USA Value Gross			1.3	11.1	8.9	6.6	5.9	11.1	-0.2	16.5	-13.4	23.3	1.9	Dec-07
eV ACWI ex-US All Cap Value Eq Gross Rank			22	46	26	51	36	46	33	35	84	71		
WCM International Growth	172,950,653	9.7	5.7	18.5	29.5	--	--	18.5	34.0	36.7	-6.7	--	21.0	Feb-17
MSCI ACWI ex USA Growth Gross			2.4	5.4	18.2	--	--	5.4	22.6	27.8	-14.1	--	12.5	Feb-17
eV ACWI ex-US All Cap Growth Eq Gross Rank			4	6	13	--	--	6	28	11	1	--		

Since Inception ranking is from the beginning of the first complete month of performance. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019. Pathway Private Equity Fund Investors 10 L.P. funded 3/25/2020. Sixth Street Partners TAO funded 4/16/2020.

Total Fund  
Performance Summary (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
<b>Total Private Equity</b>	<b>132,334,231</b>	<b>7.5</b>												
Harbourvest Partners IX Buyout Fund L.P.	18,562,941	1.0												
Pathway Private Equity Fund Investors 9 L.P.	86,389,149	4.9												
Harbourvest 2018 Global Fund L.P.	18,597,751	1.0												
Pathway Private Equity Fund Investors 10 L.P.	8,784,390	0.5												
<b>Total Private Credit</b>	<b>78,418,331</b>	<b>4.4</b>												
Sixth Street Partners DCP	78,418,331	4.4												
<b>Total Real Estate</b>	<b>220,641,848</b>	<b>12.4</b>	<b>7.4</b>	<b>18.5</b>	<b>7.7</b>	<b>7.7</b>	<b>9.7</b>	<b>18.5</b>	<b>1.1</b>	<b>4.3</b>	<b>7.5</b>	<b>7.8</b>		
NCREIF Property Index			6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0		
JP Morgan Core Real Estate	166,852,959	9.4	7.9	19.9	7.6	7.2	9.8	19.9	0.5	3.4	7.0	6.1	6.1	Mar-08
NCREIF-ODCE			8.0	22.2	9.2	8.7	10.4	22.2	1.2	5.3	8.3	7.6	6.2	Mar-08
NCREIF Property Index			6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0		
ARA American Strategic Value Realty	53,788,889	3.0	6.0	14.0	8.3	8.3	--	14.0	3.8	7.3	9.1	7.4	8.5	Jun-16
NCREIF-ODCE			8.0	22.2	9.2	8.7	--	22.2	1.2	5.3	8.3	7.6	8.7	Jun-16
NCREIF Property Index			6.2	17.7	8.4	7.8	--	17.7	1.6	6.4	6.7	7.0		
<b>Total Risk Diversifying</b>	<b>461,893,880</b>	<b>26.0</b>	<b>-0.5</b>	<b>-1.6</b>	<b>4.5</b>	<b>3.9</b>	<b>3.0</b>	<b>-1.6</b>	<b>6.6</b>	<b>8.8</b>	<b>-1.8</b>	<b>7.9</b>		
Custom Risk Diversifying Benchmark			-0.2	-3.2	4.2	3.2	2.7	-3.2	7.5	8.7	0.0	3.5		
InvMetrics Public DB US Fix Inc Gross Rank			90	89	58	43	56	89	75	32	99	4		
<b>Total Domestic Fixed Income</b>	<b>335,329,714</b>	<b>18.9</b>	<b>0.2</b>	<b>0.9</b>	<b>6.2</b>	<b>4.6</b>	<b>3.8</b>	<b>0.9</b>	<b>8.1</b>	<b>9.9</b>	<b>0.4</b>	<b>4.3</b>		
Bloomberg US Aggregate TR			0.0	-1.5	4.8	3.6	2.9	-1.5	7.5	8.7	0.0	3.5		
InvMetrics Public DB US Fix Inc Gross Rank			15	15	17	22	30	15	46	11	55	50		
BlackRock Core Bond	88,124,134	5.0	-0.5	-1.6	5.9	--	--	-1.6	9.4	10.2	0.3	--	4.2	Jan-17
Bloomberg US Aggregate TR			0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--	3.6	Jan-17
eV US Core Fixed Inc Gross Rank			99	77	22	--	--	77	23	10	27	--		
Dodge & Cox Income Fund	93,211,502	5.3	-0.3	-0.5	6.4	--	--	-0.5	9.9	10.2	0.1	--	4.8	Jan-17
Bloomberg US Aggregate TR			0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--	3.6	Jan-17
eV US Core Fixed Inc Gross Rank			91	20	7	--	--	20	14	11	43	--		
Pacific Asset Corporate Loan	78,904,369	4.4	1.0	5.6	5.9	4.7	--	5.6	3.0	9.1	1.0	4.9	4.6	Sep-14
S&P/LSTA Leveraged Loan Index			0.7	5.2	5.6	4.3	--	5.2	3.1	8.6	0.4	4.1	4.0	Sep-14
eV US Float-Rate Bank Loan Fixed Inc Gross Rank			13	38	37	29	--	38	42	36	29	26		
SSGA U.S. Govt Bond Index	39,691,667	2.2	0.2	--	--	--	--	--	--	--	--	--	-0.7	Jul-21
Bloomberg US Govt/Credit 1-3 Yr. TR			-0.6	--	--	--	--	--	--	--	--	--	-0.5	Jul-21
eV US Government Fixed Inc Gross Rank			16	--	--	--	--	--	--	--	--	--		

Since Inception ranking is from the beginning of the first complete month of performance. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019. Pathway Private Equity Fund Investors 10 L.P. funded 3/25/2020. Sixth Street Partners TAO funded 4/16/2020. Brandywine has changed its strategy from Global Fixed Income to International Fixed Income as of 6/30/2020.

# Total Fund Performance Summary (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
BlackRock TIPS	35,398,042	2.0	2.3	--	--	--	--	--	--	--	--	--	1.6	Sep-21
<i>Bloomberg US TIPS TR</i>			2.4	--	--	--	--	--	--	--	--	--	1.6	Sep-21
<i>eV US TIPS / Inflation Fixed Inc Gross Rank</i>			30	--	--	--	--	--	--	--	--	--		
<b>Total Global Fixed</b>	<b>126,564,167</b>	<b>7.1</b>	<b>-2.5</b>	<b>-7.0</b>	<b>2.1</b>	<b>3.0</b>	<b>1.5</b>	<b>-7.0</b>	<b>6.7</b>	<b>7.4</b>	<b>-4.3</b>	<b>13.8</b>		
<i>FTSE World Govt Bond Index</i>			-1.1	-7.0	2.7	2.9	1.0	-7.0	10.1	5.9	-0.8	7.5		
Brandywine Global Fixed Income	59,195,421	3.3	-0.1	-4.0	--	--	--	-4.0	--	--	--	--	5.8	Jun-20
<i>FTSE WGBI ex US TR</i>			-2.0	-9.7	--	--	--	-9.7	--	--	--	--	-0.7	Jun-20
<i>eV All Global Fixed Inc Gross Rank</i>			45	71	--	--	--	71	--	--	--	--		
Ashmore EM Blended Debt Fund	67,368,746	3.8	-4.5	-9.5	--	--	--	-9.5	3.2	--	--	--	-0.6	Mar-19
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>			-1.1	-3.9	--	--	--	-3.9	3.9	--	--	--	2.5	Mar-19
<i>eV All Emg Mkts Fixed Inc Gross Rank</i>			98	97	--	--	--	97	85	--	--	--		
<b>Total Liquidity</b>	<b>88,299,283</b>	<b>5.0</b>	<b>-0.1</b>	<b>0.2</b>	<b>1.3</b>	<b>2.7</b>	<b>1.6</b>	<b>0.2</b>	<b>1.5</b>	<b>2.1</b>	<b>1.6</b>	<b>8.4</b>		
<i>91 Day T-Bills</i>			0.0	0.0	0.8	1.1	0.6	0.0	0.5	2.1	1.9	0.9		
<b>Total Cash</b>	<b>88,299,283</b>	<b>5.0</b>	<b>-0.1</b>	<b>0.2</b>	<b>1.3</b>	<b>2.7</b>	<b>1.6</b>	<b>0.2</b>	<b>1.5</b>	<b>2.1</b>	<b>1.6</b>	<b>8.4</b>		
<i>91 Day T-Bills</i>			0.0	0.0	0.8	1.1	0.6	0.0	0.5	2.1	1.9	0.9		
PIMCO Short Duration Fund	29,730,651	1.7	-0.7	--	--	--	--	--	--	--	--	--	-0.7	Jul-21
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			-0.6	--	--	--	--	--	--	--	--	--	-0.5	Jul-21
<i>Short-Term Bond MStar MF Rank</i>			83	--	--	--	--	--	--	--	--	--		
Cash Account	54,010,256	3.0	0.2	0.8	1.6	1.5	0.9	0.8	1.9	2.2	1.5	1.0		
<i>91 Day T-Bills</i>			0.0	0.0	0.8	1.1	0.6	0.0	0.5	2.1	1.9	0.9		
Investment Cash	4,558,376	0.3	0.0	--	--	--	--	--	--	--	--	--	0.0	Jun-21
<i>91 Day T-Bills</i>			0.0	--	--	--	--	--	--	--	--	--	0.0	Jun-21
<b>Total Opportunistic</b>	<b>33,511,814</b>	<b>1.9</b>												
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	5,206,085	0.3												
Sixth Street Partners TAO	28,305,729	1.6												

Since Inception ranking is from the beginning of the first complete month of performance. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated as of 12/19/2019. Pathway Private Equity Fund Investors 10 L.P. funded 3/25/2020. Sixth Street Partners TAO funded 4/16/2020. Gresham liquidated as of 9/30/2020. PIMCO Short Duration funded 7/14/2021. SSGA U.S. Govt Bond Index funded 7/16/2021. BlackRock TIPS funded 9/1/2021.



Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Fund</b>	<b>1,775,445,107</b>	<b>100.0</b>	<b>4.2</b>	<b>14.8</b>	<b>13.3</b>	<b>10.0</b>	<b>8.4</b>	<b>14.8</b>	<b>9.2</b>	<b>15.8</b>	<b>-3.5</b>	<b>15.0</b>
<i>Interim Policy Index</i>			3.9	12.8	12.8	9.7	8.5	12.8	10.3	15.3	-2.1	13.3
<i>FFP SAA Index</i>			4.8	21.0	--	--	--	21.0	--	--	--	--
<b>Total Growth</b>	<b>1,191,740,130</b>	<b>67.1</b>	<b>6.5</b>	<b>23.1</b>	<b>17.8</b>	<b>13.4</b>	<b>11.4</b>	<b>23.1</b>	<b>10.8</b>	<b>19.9</b>	<b>-4.4</b>	<b>19.7</b>
<i>Custom Growth Benchmark</i>			4.8	16.7	15.2	11.6	10.1	16.7	12.3	16.6	-2.8	16.4
<b>Total Public Equity</b>	<b>760,345,720</b>	<b>42.8</b>	<b>6.5</b>	<b>19.6</b>	<b>21.4</b>	<b>15.2</b>	<b>12.5</b>	<b>19.6</b>	<b>15.9</b>	<b>29.1</b>	<b>-9.5</b>	<b>25.2</b>
<i>Russell 3000</i>			9.3	25.7	25.8	18.0	16.3	25.7	20.9	31.0	-5.2	21.1
<b>Total Domestic Equity</b>	<b>425,303,062</b>	<b>24.0</b>	<b>8.7</b>	<b>24.6</b>	<b>22.0</b>	<b>16.3</b>	<b>14.7</b>	<b>24.6</b>	<b>13.1</b>	<b>28.7</b>	<b>-5.7</b>	<b>24.5</b>
<i>Russell 3000</i>			9.3	25.7	25.8	18.0	16.3	25.7	20.9	31.0	-5.2	21.1
PIMCO RAE US	115,073,115	6.5	9.2	27.8	18.4	12.5	13.6	27.8	3.9	25.0	-7.0	16.5
<i>S&amp;P 500</i>			11.0	28.7	26.1	18.5	16.6	28.7	18.4	31.5	-4.4	21.8
Loomis Sayles Large Cap Growth	109,918,719	6.2	6.7	18.9	27.6	22.1	--	18.9	32.3	32.1	-2.1	33.5
<i>Russell 1000 Growth</i>			11.6	27.6	34.1	25.3	--	27.6	38.5	36.4	-1.5	30.2
Boston Partners Large Cap Value	112,643,851	6.3	9.4	30.4	18.1	--	--	30.4	2.0	23.8	-8.9	--
<i>Russell 1000 Value</i>			7.8	25.2	17.6	--	--	25.2	2.8	26.5	-8.3	--
Atlanta Capital Mgmt	87,667,377	4.9	9.5	22.0	21.8	16.6	15.8	22.0	10.5	34.1	-5.3	25.6
<i>Russell 2500</i>			3.8	18.2	21.9	13.8	14.1	18.2	20.0	27.8	-10.0	16.8
<b>Total International Equity</b>	<b>335,042,658</b>	<b>18.9</b>	<b>4.0</b>	<b>14.4</b>	<b>20.6</b>	<b>14.0</b>	<b>10.3</b>	<b>14.4</b>	<b>18.6</b>	<b>29.3</b>	<b>-12.8</b>	<b>25.8</b>
<i>MSCI ACWI ex USA Gross</i>			1.9	8.3	13.7	10.1	7.8	8.3	11.1	22.1	-13.8	27.8
Dodge & Cox Intl Stock	162,092,005	9.1	2.4	11.0	11.6	7.2	7.6	11.0	2.1	22.8	-18.0	23.9
<i>MSCI ACWI ex USA Value Gross</i>			1.3	11.1	8.9	6.6	5.9	11.1	-0.2	16.5	-13.4	23.3
WCM International Growth	172,950,653	9.7	5.5	17.7	28.6	--	--	17.7	33.1	35.8	-7.4	--
<i>MSCI ACWI ex USA Growth Gross</i>			2.4	5.4	18.2	--	--	5.4	22.6	27.8	-14.1	--
<b>Total Private Equity</b>	<b>132,334,231</b>	<b>7.5</b>										
Harbourvest Partners IX Buyout Fund L.P.	18,562,941	1.0										
Pathway Private Equity Fund Investors 9 L.P.	86,389,149	4.9										
Harbourvest 2018 Global Fund L.P.	18,597,751	1.0										
Pathway Private Equity Fund Investors 10 L.P.	8,784,390	0.5										

Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidatrf as of 12/19/2019. Pathway Private Equity Fund Investors 10 L.P. funded 3/25/2020. Sixth Street Partners TAO funded 4/16/2020. Brandywine has changed its strategy from Global Fixed Income to International Fixed Income as of 6/30/2020.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Private Credit</b>	<b>78,418,331</b>	<b>4.4</b>										
Sixth Street Partners DCP	78,418,331	4.4										
<b>Total Real Estate</b>	<b>220,641,848</b>	<b>12.4</b>	<b>7.4</b>	<b>18.5</b>	<b>7.7</b>	<b>7.7</b>	<b>9.3</b>	<b>18.5</b>	<b>1.1</b>	<b>4.3</b>	<b>7.5</b>	<b>7.8</b>
NCREIF Property Index			6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0
JP Morgan Core Real Estate	166,852,959	9.4	7.9	19.9	7.6	7.2	9.3	19.9	0.5	3.4	7.0	6.1
NCREIF-ODCE			8.0	22.2	9.2	8.7	10.4	22.2	1.2	5.3	8.3	7.6
NCREIF Property Index			6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0
ARA American Strategic Value Realty	53,788,889	3.0	6.0	14.0	8.3	8.3	--	14.0	3.8	7.3	9.1	7.4
NCREIF-ODCE			8.0	22.2	9.2	8.7	--	22.2	1.2	5.3	8.3	7.6
NCREIF Property Index			6.2	17.7	8.4	7.8	--	17.7	1.6	6.4	6.7	7.0
<b>Total Risk Diversifying</b>	<b>461,893,880</b>	<b>26.0</b>	<b>-0.7</b>	<b>-2.0</b>	<b>4.1</b>	<b>3.5</b>	<b>2.6</b>	<b>-2.0</b>	<b>6.1</b>	<b>8.4</b>	<b>-2.2</b>	<b>7.5</b>
Custom Risk Diversifying Benchmark			-0.2	-3.2	4.2	3.2	2.7	-3.2	7.5	8.7	0.0	3.5
<b>Total Domestic Fixed Income</b>	<b>335,329,714</b>	<b>18.9</b>	<b>0.2</b>	<b>0.5</b>	<b>5.9</b>	<b>4.3</b>	<b>3.5</b>	<b>0.5</b>	<b>7.7</b>	<b>9.5</b>	<b>0.0</b>	<b>3.9</b>
Bloomberg US Aggregate TR			0.0	-1.5	4.8	3.6	2.9	-1.5	7.5	8.7	0.0	3.5
BlackRock Core Bond	88,124,134	5.0	-0.6	-1.8	5.6	--	--	-1.8	9.1	9.9	0.1	--
Bloomberg US Aggregate TR			0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--
Dodge & Cox Income Fund	93,211,502	5.3	-0.4	-0.9	6.0	--	--	-0.9	9.4	9.7	-0.3	--
Bloomberg US Aggregate TR			0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--
Pacific Asset Corporate Loan	78,904,369	4.4	0.9	5.2	5.5	4.3	--	5.2	2.6	8.7	0.7	4.6
S&P/LSTA Leveraged Loan Index			0.7	5.2	5.6	4.3	--	5.2	3.1	8.6	0.4	4.1
SSGA U.S. Govt Bond Index	39,691,667	2.2	0.1	--	--	--	--	--	--	--	--	--
Bloomberg US Govt/Credit 1-3 Yr. TR			-0.6	--	--	--	--	--	--	--	--	--
BlackRock TIPS	35,398,042	2.0	2.3	--	--	--	--	--	--	--	--	--
Bloomberg US TIPS TR			2.4	--	--	--	--	--	--	--	--	--

Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidatrf as of 12/19/2019. Pathway Private Equity Fund Investors 10 L.P. funded 3/25/2020. Sixth Street Partners TAO funded 4/16/2020. Gresham liquidated as of 9/30/2020. PIMCO Short Duration funded 7/14/2021. SSGA U.S. Govt Bond Index funded 7/16/2021. BlackRock TIPS funded 9/1/2021.

Total Fund  
Performance Summary (Net of Fees)

Period Ending: December 31, 2021

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Global Fixed</b>	<b>126,564,167</b>	<b>7.1</b>	<b>-2.7</b>	<b>-7.7</b>	<b>1.5</b>	<b>2.5</b>	<b>0.9</b>	<b>-7.7</b>	<b>6.0</b>	<b>6.9</b>	<b>-4.7</b>	<b>13.3</b>
<i>FTSE World Govt Bond Index</i>			-1.1	-7.0	2.7	2.9	1.0	-7.0	10.1	5.9	-0.8	7.5
Brandywine Global Fixed Income	59,195,421	3.3	-0.3	-4.4	--	--	--	-4.4	--	--	--	--
<i>FTSE WGBI ex US TR</i>			-2.0	-9.7	--	--	--	-9.7	--	--	--	--
Ashmore EM Blended Debt Fund	67,368,746	3.8	-4.8	-10.4	--	--	--	-10.4	2.1	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>			-1.1	-3.9	--	--	--	-3.9	3.9	--	--	--
<b>Total Liquidity</b>	<b>88,299,283</b>	<b>5.0</b>	<b>-0.1</b>	<b>0.2</b>	<b>1.3</b>	<b>2.7</b>	<b>1.6</b>	<b>0.2</b>	<b>1.5</b>	<b>2.1</b>	<b>1.6</b>	<b>8.4</b>
<i>91 Day T-Bills</i>			0.0	0.0	0.8	1.1	0.6	0.0	0.5	2.1	1.9	0.9
<b>Total Cash</b>	<b>88,299,283</b>	<b>5.0</b>	<b>-0.1</b>	<b>0.2</b>	<b>1.3</b>	<b>2.7</b>	<b>1.6</b>	<b>0.2</b>	<b>1.5</b>	<b>2.1</b>	<b>1.6</b>	<b>8.4</b>
<i>91 Day T-Bills</i>			0.0	0.0	0.8	1.1	0.6	0.0	0.5	2.1	1.9	0.9
PIMCO Short Duration Fund	29,730,651	1.7	-0.8	--	--	--	--	--	--	--	--	--
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>			-0.6	--	--	--	--	--	--	--	--	--
Cash Account	54,010,256	3.0	0.2	0.8	1.6	1.5	0.9	0.8	1.9	2.2	1.5	1.0
<i>91 Day T-Bills</i>			0.0	0.0	0.8	1.1	0.6	0.0	0.5	2.1	1.9	0.9
Investment Cash	4,558,376	0.3	0.0	--	--	--	--	--	--	--	--	--
<i>91 Day T-Bills</i>			0.0	--	--	--	--	--	--	--	--	--
<b>Total Opportunistic</b>	<b>33,511,814</b>	<b>1.9</b>										
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	5,206,085	0.3										
Sixth Street Partners TAO	28,305,729	1.6										

Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidatrf as of 12/19/2019. Pathway Private Equity Fund Investors 10 L.P. funded 3/25/2020. Sixth Street Partners TAO funded 4/16/2020. Gresham liquidated as of 9/30/2020. PIMCO Short Duration funded 7/14/2021. BlackRock TIPS funded 9/1/2021.

Investment Manager  
Performance Analysis - 3 & 5 Years (Net of Fees)

Period Ending: December 31, 2021

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
PIMCO RAE US	18.41%	-7.66%	19.92%	-9.49%	1.07	7.13%	0.88	0.88	-1.07	83.75%	112.87%
Loomis Sayles Large Cap Growth	27.57%	-6.50%	16.47%	-1.85%	0.86	4.94%	0.93	1.62	-1.32	74.63%	89.03%
Boston Partners Large Cap Value	18.08%	0.44%	20.50%	-0.45%	1.05	2.94%	0.98	0.84	0.15	104.01%	101.95%
Atlanta Capital Mgmt	21.83%	-0.08%	20.49%	3.45%	0.84	8.20%	0.87	1.02	-0.01	80.00%	80.36%
Dodge & Cox Intl Stock	11.64%	2.74%	23.03%	1.45%	1.15	4.78%	0.97	0.46	0.57	129.91%	109.42%
WCM International Growth	28.62%	10.43%	15.43%	11.20%	0.96	5.09%	0.89	1.80	2.05	122.05%	71.67%
BlackRock Core Bond	5.60%	0.81%	4.45%	-0.05%	1.18	2.02%	0.81	1.07	0.40	127.42%	136.67%
Dodge & Cox Income Fund	5.97%	1.18%	3.84%	1.68%	0.90	2.37%	0.63	1.33	0.50	112.66%	87.62%
Pacific Asset Corporate Loan	5.48%	-0.15%	6.29%	1.41%	0.72	2.57%	0.98	0.74	-0.06	80.84%	70.06%
JP Morgan Core Real Estate	7.61%	-1.59%	3.51%	4.83%	0.30	5.34%	0.30	1.89	-0.30	30.72%	109.22%
ARA American Strategic Value Realty	8.27%	-0.93%	4.67%	9.68%	-0.15	8.67%	0.04	1.59	-0.11	--	--

5 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
PIMCO RAE US	12.47%	-6.01%	17.00%	-6.76%	1.04	5.75%	0.89	0.67	-1.04	77.79%	107.29%
Atlanta Capital Mgmt	16.56%	2.81%	18.07%	4.73%	0.86	6.90%	0.88	0.85	0.41	90.79%	84.95%
Dodge & Cox Intl Stock	7.18%	0.55%	19.51%	-0.40%	1.14	4.42%	0.96	0.31	0.12	124.13%	108.22%
Pacific Asset Corporate Loan	4.32%	0.05%	5.07%	1.18%	0.74	1.99%	0.97	0.64	0.03	85.57%	75.31%
JP Morgan Core Real Estate	7.18%	-1.53%	2.75%	4.81%	0.27	4.53%	0.28	2.21	-0.34	29.13%	109.22%

Private Markets  
Non Marketable Securities Overview

Period Ending: December 31, 2021

Vintage	Manager & Fund Name	Estimated 12/31 Market Value <sup>3</sup>	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Net IRR Since Inception <sup>5</sup>	IRR Date
2011	HarbourVest Partners IX-Buyout Fund L.P.	\$18,562,941	\$20,000,000	\$17,050,000	85%	\$2,950,000	\$19,481,288	\$18,562,941	114.3%	223.1%	20.5%	9/30/21
2018	HarbourVest Partners 2018 Global Fund L.P.	\$18,597,751	\$20,000,000	\$11,800,000	58%	\$8,400,000	\$1,022,070	\$18,597,751	8.8%	169.1%	38.2%	9/30/21
2010	KKR Mezzanine Partners I L.P. <sup>4</sup>	\$5,206,085	\$20,000,000	\$26,893,560	134%	-\$6,893,560	\$26,702,877	\$5,206,085	99.3%	118.6%	6.9%	9/30/21
2016	Sixth Street Partners DCP	\$78,418,331	\$132,500,000	\$89,019,828	67%	\$43,480,172	\$35,788,692	\$83,026,181	40.2%	128.3%	11.2%	6/30/21
2017	Pathway Private Equity Fund Investors 9 L.P.	\$86,389,149	\$65,000,000	\$51,191,286	79%	\$13,808,714	\$9,284,419	\$57,153,982	18.1%	186.9%	29.8%	3/31/21
2020	Pathway Private Equity Fund Investors 10 L.P.	\$8,784,390	\$20,000,000	\$5,346,581	27%	\$14,653,419	\$0	\$0	0.0%	164.3%	-	-
2020	Sixth Street Partners TAO	\$28,305,729	\$60,000,000	\$26,445,394	44%	\$33,554,606	\$4,132,476	\$24,984,663	15.6%	122.7%	11.2%	9/30/21
<b>Total Alternative Illiquids</b>		<b>\$244,264,376</b>	\$337,500,000	\$227,546,650	67%	\$109,953,350	\$96,411,821	\$207,531,603	91.2%	133.6%		
<b>% of Portfolio (Market Value)</b>		<b>14.6%</b>										

	Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense <sup>6</sup>
HarbourVest Partners IX-Buyout Fund L.P.	\$49,819	\$0	\$0	\$6,133	\$55,952
HarbourVest Partners 2018 Global Fund L.P.	\$46,656	\$0	\$0	\$21,156	\$67,812
KKR Mezzanine Partners I L.P.	\$7,919	\$0	\$0	\$4,554	\$12,473
Sixth Street Partners DCP	\$0	\$0	\$0	\$38,473	\$38,473
Pathway Private Equity Fund Investors 9 L.P.	\$0	\$0	\$0	\$0	\$0
Pathway Private Equity Fund Investors 10 L.P.	\$0	\$0	\$0	\$0	\$0
Sixth Street Partners TAO	\$146,324	\$0	\$209,894	\$35,181	\$391,399
	\$250,718	\$0	\$209,894	\$105,497	<b>\$566,109</b>

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

<sup>2</sup>(TVPI) is equal to (market value + capital returned) / capital called

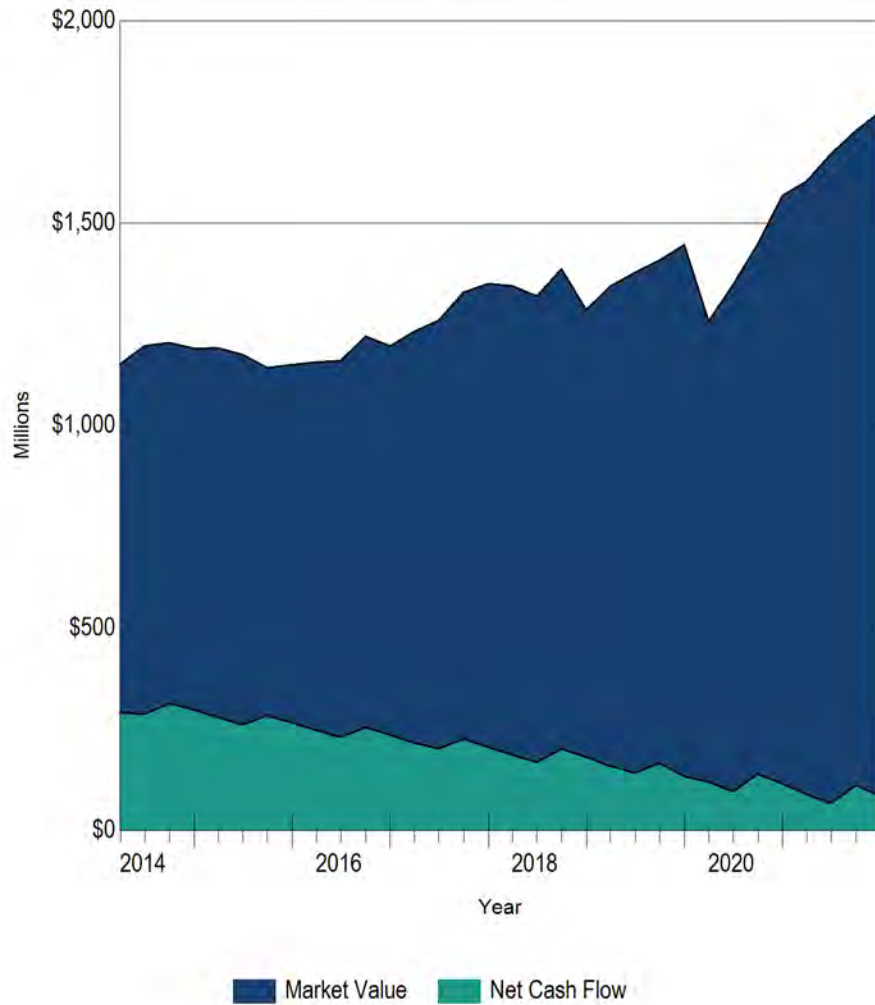
<sup>3</sup>Last known market value + capital calls - distributions

<sup>4</sup>Investment period ended, capital called includes recycled capital. Liquidated as of June 2020.

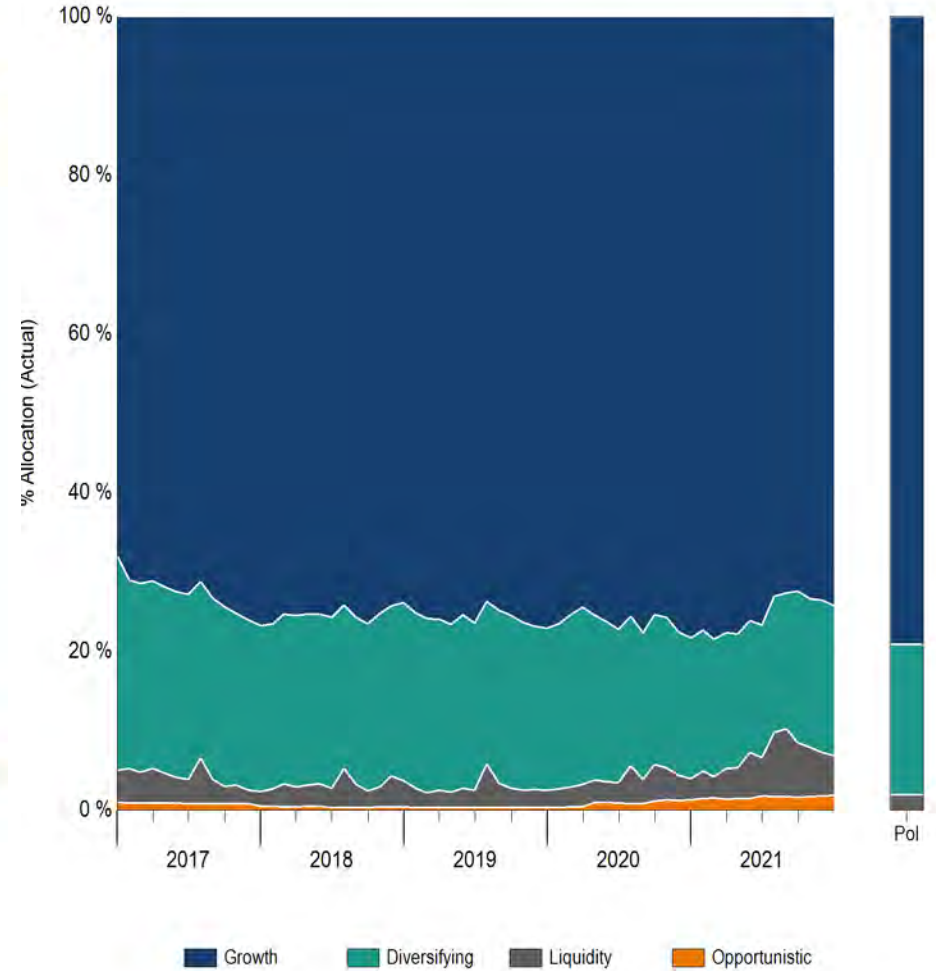
<sup>5</sup>Net IRR is calculated on the cash flows of the underlying investments of the fund and is net of the underlying fund fees and carried interest.

<sup>6</sup>All fees and expenses are for 2Q 2021.

Market Value History



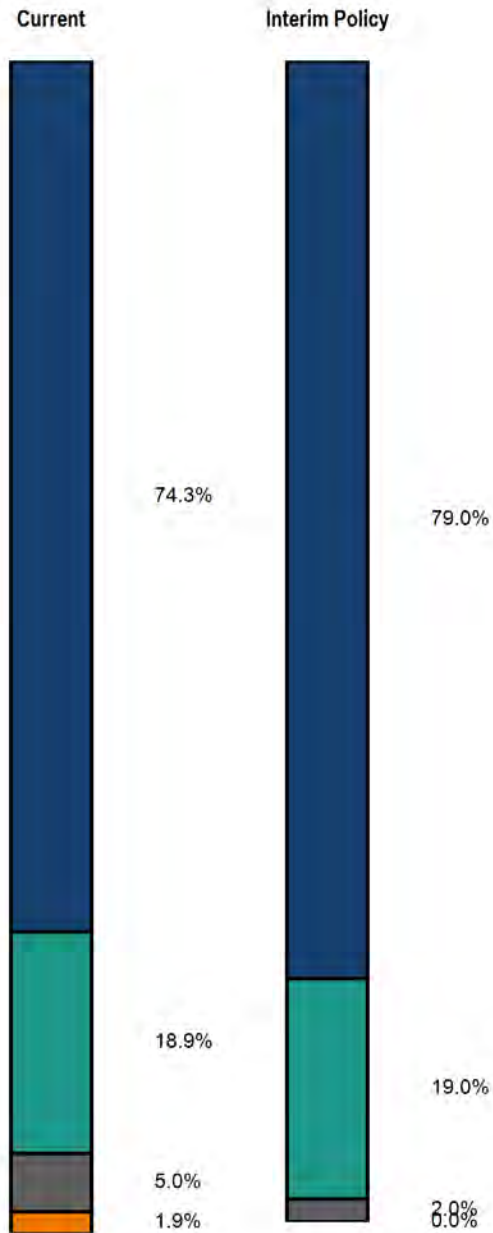
Asset Allocation History



Total Fund

Asset Allocation vs. Interim Policy

Period Ending: December 31, 2021



	Current Balance	Current Allocation	Interim Policy	Difference	Interim Policy Range	Within IPS Range?
Growth	\$1,318,304,296	74.3%	79.0%	-\$84,297,338	0.0% - 100.0%	Yes
Diversifying	\$335,329,714	18.9%	19.0%	-\$2,004,857	10.0% - 30.0%	Yes
Liquidity	\$88,299,283	5.0%	2.0%	\$52,790,381	0.0% - 5.0%	Yes
Opportunistic	\$33,511,814	1.9%	0.0%	\$33,511,814	0.0% - 10.0%	Yes
<b>Total</b>	<b>\$1,775,445,107</b>	<b>100.0%</b>	<b>100.0%</b>			

# Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2021

Account	Fee Schedule	Market Value As of 12/31/2021	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
ARA American Strategic Value Realty	1.25% of First 10.0 Mil, 1.20% of Next 15.0 Mil, 1.10% of Next 25.0 Mil, 1.00% Thereafter	\$53,788,889	3.0%	\$617,889	1.15%
Ashmore EM Blended Debt Fund	1.00% of Assets	\$67,368,746	3.8%	\$673,687	1.00%
Atlanta Capital Mgmt	0.80% of First 50.0 Mil, 0.70% of Next 100.0 Mil, 0.60% Thereafter	\$87,667,377	4.9%	\$663,672	0.76%
BlackRock Core Bond	0.28% of First 100.0 Mil, 0.26% Thereafter	\$88,124,134	5.0%	\$246,748	0.28%
BlackRock TIPS	0.02% of First 100.0 Mil, 0.02% of Next 400.0 Mil, 0.01% Thereafter	\$35,398,042	2.0%	\$7,965	0.02%
Boston Partners Large Cap Value	0.40% of Assets	\$112,643,851	6.3%	\$450,575	0.40%
Brandywine Global Fixed Income	0.45% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$59,195,421	3.3%	\$261,782	0.44%
Cash Account	No Fee	\$54,010,256	3.0%	--	--
Dodge & Cox Income Fund	0.42% of Assets	\$93,211,502	5.3%	\$391,488	0.42%
Dodge & Cox Intl Stock	0.64% of Assets	\$162,092,005	9.1%	\$1,037,389	0.64%
Harbourvest 2018 Global Fund L.P.	282,000 Annually	\$18,597,751	1.0%	\$282,000	1.52%
Harbourvest Partners IX Buyout Fund L.P.	200,000 Annually	\$18,562,941	1.0%	\$200,000	1.08%
Investment Cash	No Fee	\$4,558,376	0.3%	--	--
JP Morgan Core Real Estate	0.92% of First 100.0 Mil, 0.80% of Next 150.0 Mil, 0.70% of Next 250.0 Mil, 0.50% Thereafter	\$166,852,959	9.4%	\$1,454,824	0.87%

HarbourVest, KKR and PIMCO Distressed Credit fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund. Pathway fee steps up and down over time, with an effective average of 0.71% up to \$25m, 0.67% up to \$50m, 0.63% up to \$75m, and 0.40% above \$75m.

Clifton Group fee schedule represents contractual minimum fee. Actual fee charged is \$1,500 per month through at least 6/30/2015.

TPG: No management fee at SMA level. Subject to the annual fees of each of the underlying TSSP funds. (1) TAO 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions (4) TCS 1.0% on unfunded commitments, 1.5% on remaining capital contributions.



# Total Fund Investment Fund Fee Analysis

Period Ending: December 31, 2021

Account	Fee Schedule	Market Value As of 12/31/2021	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	300,000 Annually	\$5,206,085	0.3%	\$300,000	5.76%
Loomis Sayles Large Cap Growth	0.45% of First 100.0 Mil, 0.40% Thereafter	\$109,918,719	6.2%	\$489,675	0.45%
Pacific Asset Corporate Loan	0.37% of Assets	\$78,904,369	4.4%	\$291,946	0.37%
Pathway Private Equity Fund Investors 10 L.P.	Please see footnote	\$8,784,390	0.5%	--	--
Pathway Private Equity Fund Investors 9 L.P.	Please see footnote	\$86,389,149	4.9%	--	--
PIMCO RAE US	0.40% of Assets	\$115,073,115	6.5%	\$460,292	0.40%
PIMCO Short Duration Fund	0.50% of Assets	\$29,730,651	1.7%	\$148,653	0.50%
Sixth Street Partners DCP	Please see footnote	\$78,418,331	4.4%	--	--
Sixth Street Partners TAO	Please see footnote	\$28,305,729	1.6%	--	--
SSGA U.S. Govt Bond Index	0.04% of First 50.0 Mil, 0.03% of Next 50.0 Mil, 0.03% Thereafter	\$39,691,667	2.2%	\$15,877	0.04%
WCM International Growth	0.70% of Assets	\$172,950,653	9.7%	\$1,210,655	0.70%
<b>Investment Management Fee</b>		<b>\$1,775,445,107</b>	<b>100.0%</b>	<b>\$9,205,116</b>	<b>0.52%</b>

HarbourVest, KKR and PIMCO Distressed Credit fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund. Pathway fee steps up and down over time, with an effective average of 0.71% up to \$25m, 0.67% up to \$50m, 0.63% up to \$75m, and 0.40% above \$75m.

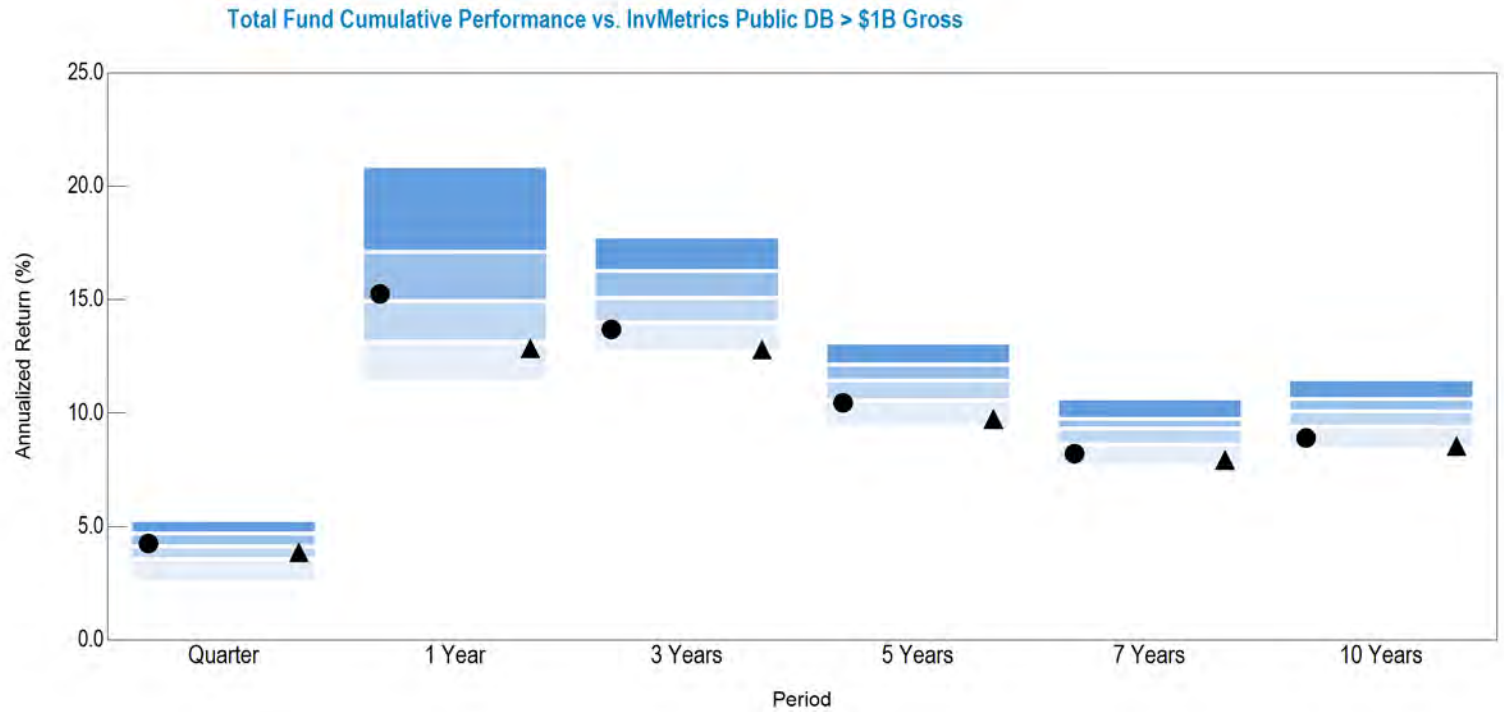
Clifton Group fee schedule represents contractual minimum fee. Actual fee charged is \$1,500 per month through at least 6/30/2015.

TPG: No management fee at SMA level. Subject to the annual fees of each of the underlying TSSP funds. (1) TAO 65bps on unfunded commitments and 1.35% on remaining capital contributions (long-term designation) (2) TSLE 1.5% on commitments, 1.25% on remaining capital contributions post commitment period (3) TICP 30bps on remaining capital contributions (4) TCS 1.0% on unfunded commitments, 1.5% on remaining capital contributions.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: December 31, 2021

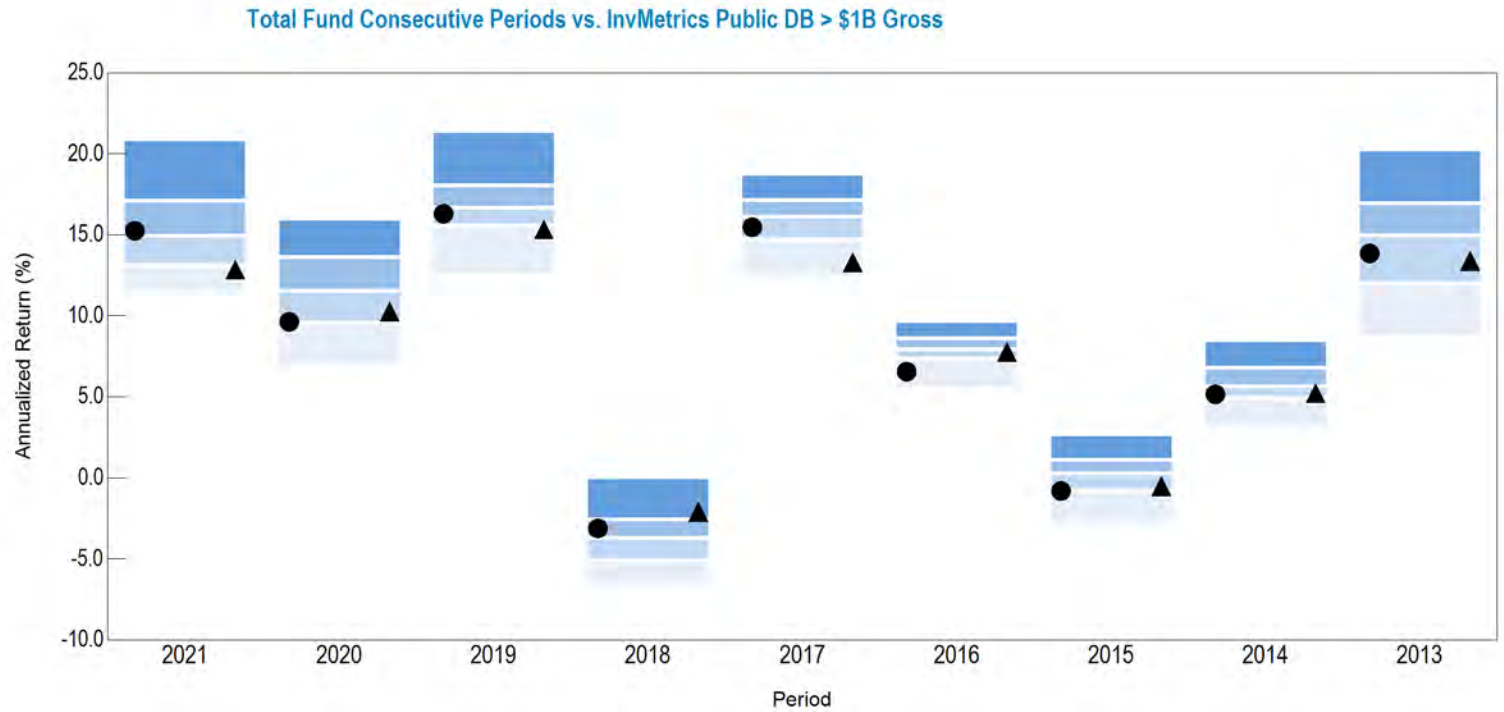


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	5.3		20.9		17.8		13.1		10.6		11.5	
<b>25th Percentile</b>	4.7		17.1		16.3		12.1		9.8		10.6	
<b>Median</b>	4.1		14.9		15.1		11.4		9.3		10.1	
<b>75th Percentile</b>	3.6		13.2		14.0		10.6		8.6		9.4	
<b>95th Percentile</b>	2.6		11.4		12.7		9.4		7.7		8.4	
<b># of Portfolios</b>	85		84		84		84		83		80	
<b>● Total Fund</b>	4.2	(49)	15.2	(47)	13.7	(85)	10.4	(77)	8.2	(88)	8.9	(92)
<b>▲ Interim Policy Index</b>	3.9	(67)	12.8	(81)	12.8	(94)	9.7	(94)	7.9	(94)	8.5	(95)

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: December 31, 2021

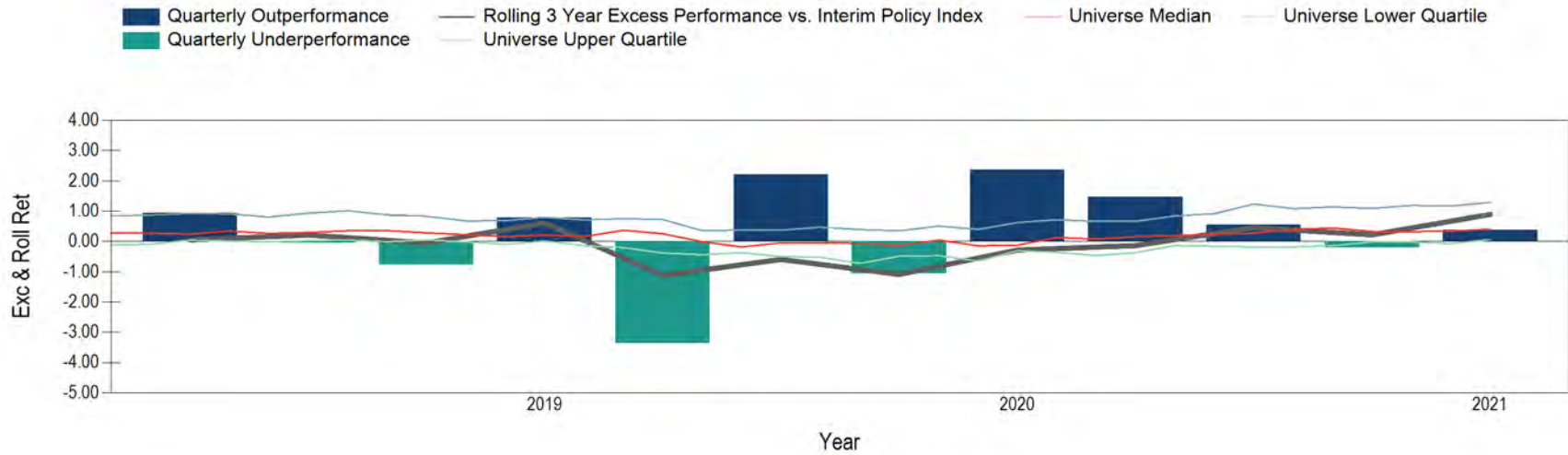


	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Return (Rank)</b>									
5th Percentile	20.9	16.0	21.4	0.0	18.8	9.7	2.7	8.5	20.2
25th Percentile	17.1	13.6	18.1	-2.6	17.2	8.6	1.1	6.8	17.0
Median	14.9	11.5	16.7	-3.7	16.2	8.0	0.3	5.7	15.0
75th Percentile	13.2	9.6	15.6	-5.1	14.8	7.4	-0.7	4.9	12.0
95th Percentile	11.4	6.9	12.5	-6.6	12.4	5.5	-2.8	3.1	8.7
# of Portfolios	84	94	81	71	98	92	98	79	67
● Total Fund	15.2 (47)	9.6 (74)	16.3 (60)	-3.1 (36)	15.5 (69)	6.6 (91)	-0.8 (80)	5.1 (69)	13.8 (69)
▲ Interim Policy Index	12.8 (81)	10.3 (69)	15.3 (81)	-2.1 (20)	13.3 (90)	7.8 (62)	-0.5 (70)	5.2 (67)	13.4 (70)

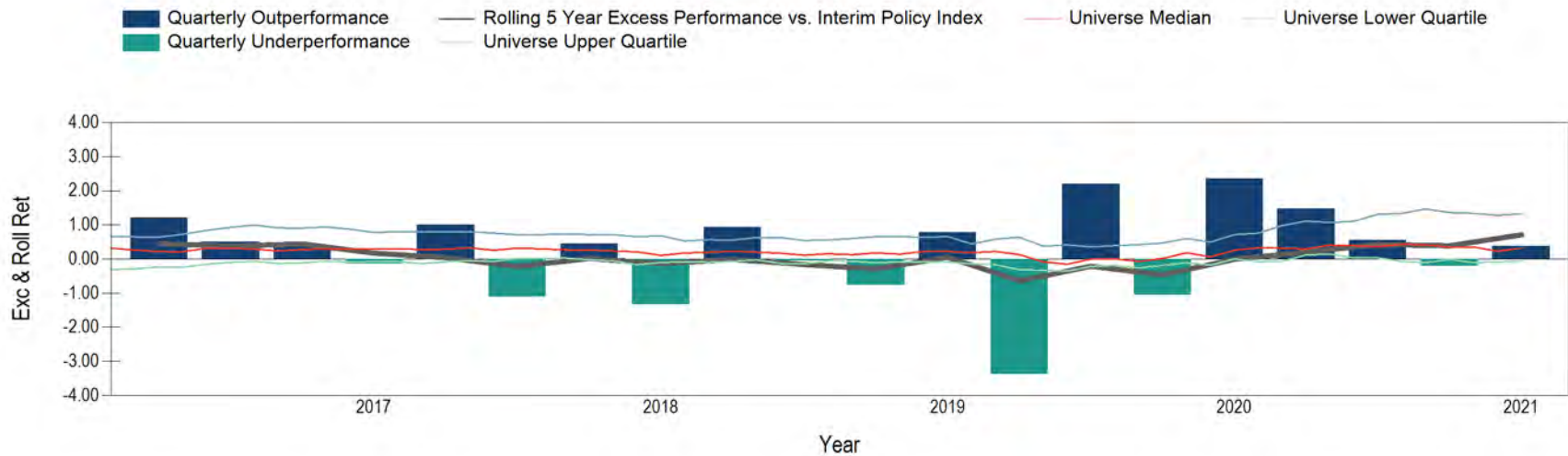
Total Fund  
 Rolling Return Analysis (Gross of Fees)

Period Ending: December 31, 2021

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



Total Domestic Equity  
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Domestic Equity</b>	<b>425,303,062</b>	<b>8.8</b>	<b>25.3</b>	<b>22.6</b>	<b>16.9</b>	<b>15.2</b>	<b>25.3</b>	<b>13.7</b>	<b>29.4</b>	<b>-5.2</b>	<b>25.1</b>
<i>Russell 3000</i>		9.3	25.7	25.8	18.0	16.3	25.7	20.9	31.0	-5.2	21.1
<i>InvMetrics Public DB US Eq Gross Rank</i>		67	62	92	54	72	62	91	66	36	4
PIMCO RAE US	115,073,115	9.3	28.3	18.9	12.9	14.0	28.3	4.4	25.5	-6.6	17.0
<i>S&amp;P 500</i>		11.0	28.7	26.1	18.5	16.6	28.7	18.4	31.5	-4.4	21.8
<i>eV US Large Cap Core Equity Gross Rank</i>		73	47	94	94	90	47	96	83	72	89
Loomis Sayles Large Cap Growth	109,918,719	6.8	19.4	28.1	22.6	--	19.4	32.8	32.7	-1.7	34.1
<i>Russell 1000 Growth</i>		11.6	27.6	34.1	25.3	--	27.6	38.5	36.4	-1.5	30.2
<i>eV US Large Cap Growth Equity Gross Rank</i>		74	81	79	67	--	81	61	68	58	16
Boston Partners Large Cap Value	112,643,851	9.5	30.9	18.6	--	--	30.9	2.4	24.3	-8.5	--
<i>Russell 1000 Value</i>		7.8	25.2	17.6	--	--	25.2	2.8	26.5	-8.3	--
<i>eV US Large Cap Value Equity Gross Rank</i>		28	19	59	--	--	19	64	77	54	--
Atlanta Capital Mgmt	87,667,377	9.7	23.0	22.8	17.5	16.7	23.0	11.4	35.1	-4.5	26.6
<i>Russell 2500</i>		3.8	18.2	21.9	13.8	14.1	18.2	20.0	27.8	-10.0	16.8
<i>eV US Small-Mid Cap Equity Gross Rank</i>		9	58	53	35	25	58	62	14	25	15

U.S. Effective Style Map  
3 Years Ending December 31, 2021



U.S. Effective Style Map  
5 Years Ending December 31, 2021



Total Domestic Equity  
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2021

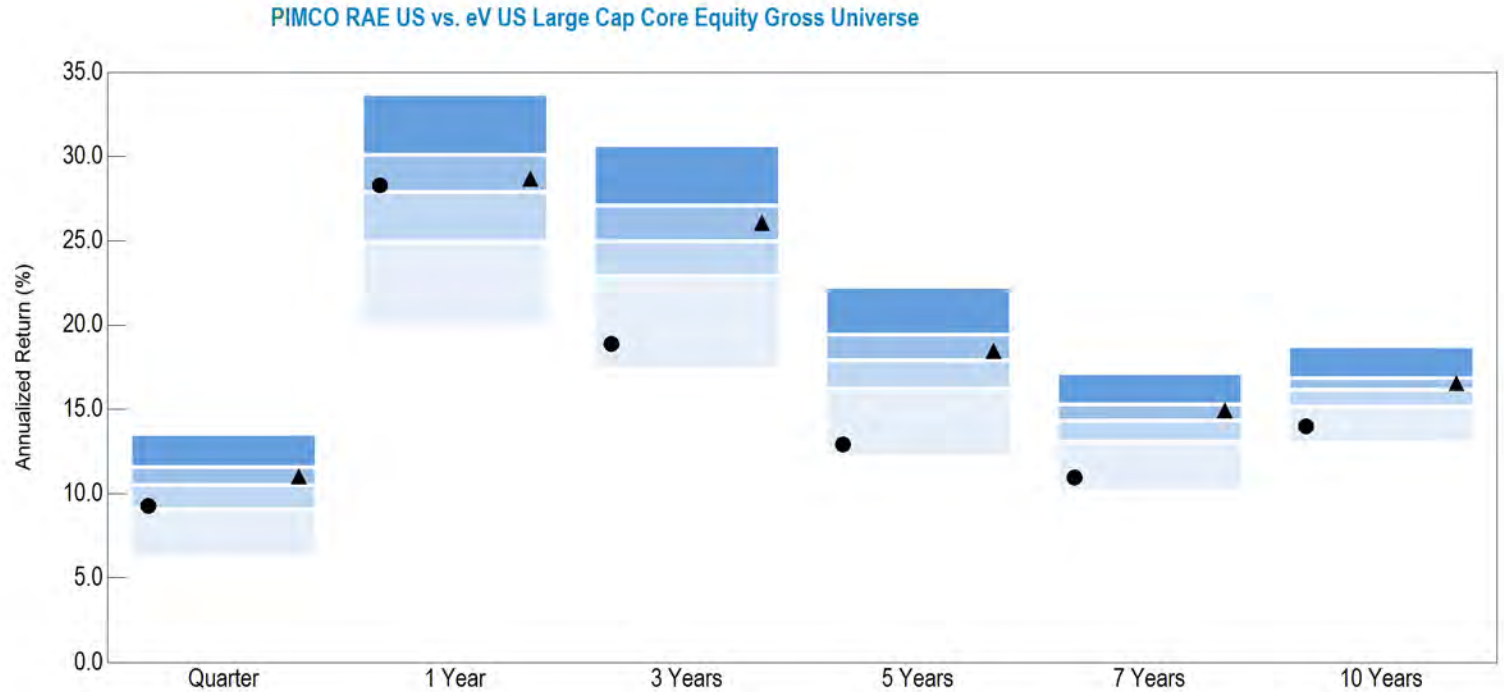
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Domestic Equity</b>	<b>425,303,062</b>	<b>8.7</b>	<b>24.6</b>	<b>22.0</b>	<b>16.3</b>	<b>14.7</b>	<b>24.6</b>	<b>13.1</b>	<b>28.7</b>	<b>-5.7</b>	<b>24.5</b>
<i>Russell 3000</i>		9.3	25.7	25.8	18.0	16.3	25.7	20.9	31.0	-5.2	21.1
PIMCO RAE US	115,073,115	9.2	27.8	18.4	12.5	13.6	27.8	3.9	25.0	-7.0	16.5
<i>S&amp;P 500</i>		11.0	28.7	26.1	18.5	16.6	28.7	18.4	31.5	-4.4	21.8
Loomis Sayles Large Cap Growth	109,918,719	6.7	18.9	27.6	22.1	--	18.9	32.3	32.1	-2.1	33.5
<i>Russell 1000 Growth</i>		11.6	27.6	34.1	25.3	--	27.6	38.5	36.4	-1.5	30.2
Boston Partners Large Cap Value	112,643,851	9.4	30.4	18.1	--	--	30.4	2.0	23.8	-8.9	--
<i>Russell 1000 Value</i>		7.8	25.2	17.6	--	--	25.2	2.8	26.5	-8.3	--
Atlanta Capital Mgmt	87,667,377	9.5	22.0	21.8	16.6	15.8	22.0	10.5	34.1	-5.3	25.6
<i>Russell 2500</i>		3.8	18.2	21.9	13.8	14.1	18.2	20.0	27.8	-10.0	16.8

Total Domestic Equity  
 Asset Class Overview (Net of Fees)

Period Ending: December 31, 2021

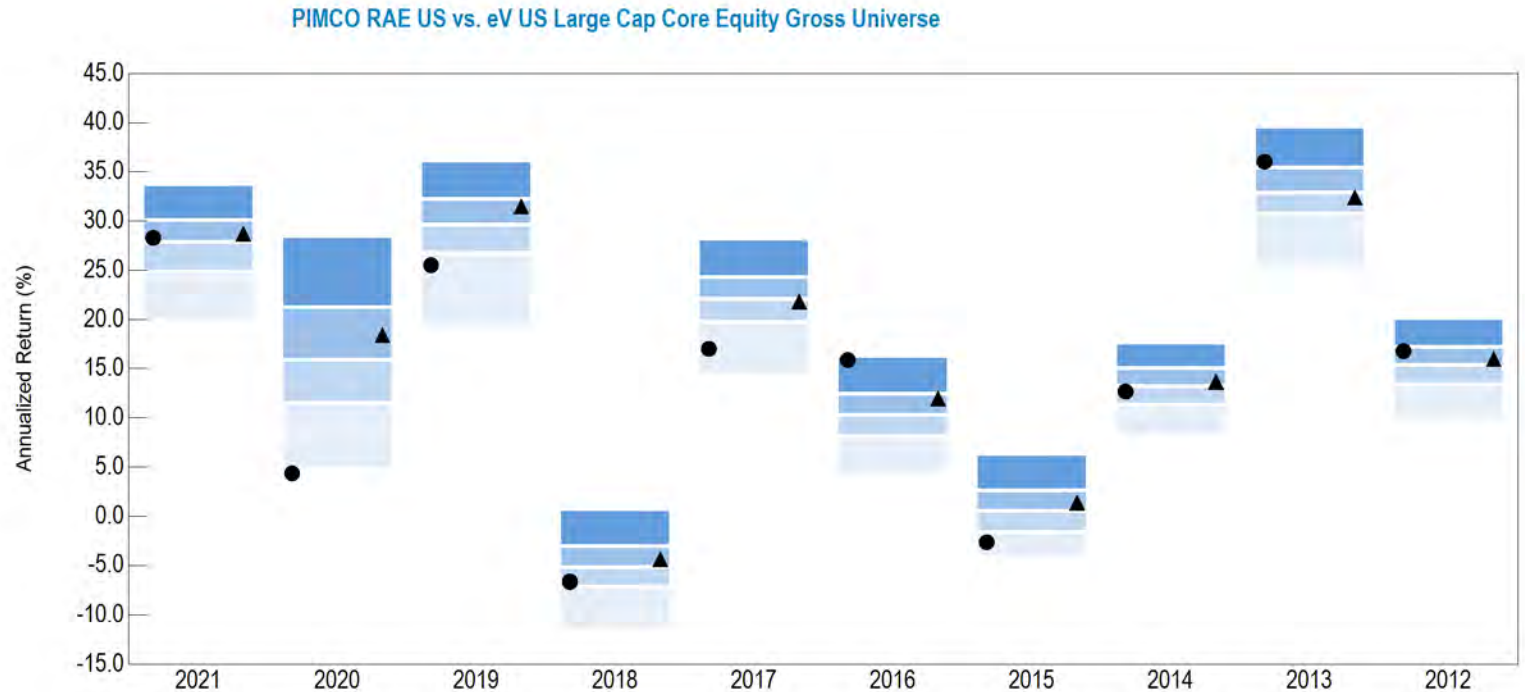
Correlation Matrix  
 Last 1 Year

	Total Domestic Equity	PIMCO RAE US	Loomis Sayles Large Cap Growth	Boston Partners Large Cap Value	Atlanta Capital Mgmt	Russell 3000
Total Domestic Equity	1.00	--	--	--	--	--
PIMCO RAE US	0.95	1.00	--	--	--	--
Loomis Sayles Large Cap Growth	0.67	0.41	1.00	--	--	--
Boston Partners Large Cap Value	0.93	1.00	0.36	1.00	--	--
Atlanta Capital Mgmt	0.97	0.91	0.64	0.89	1.00	--
Russell 3000	0.90	0.72	0.89	0.68	0.92	1.00



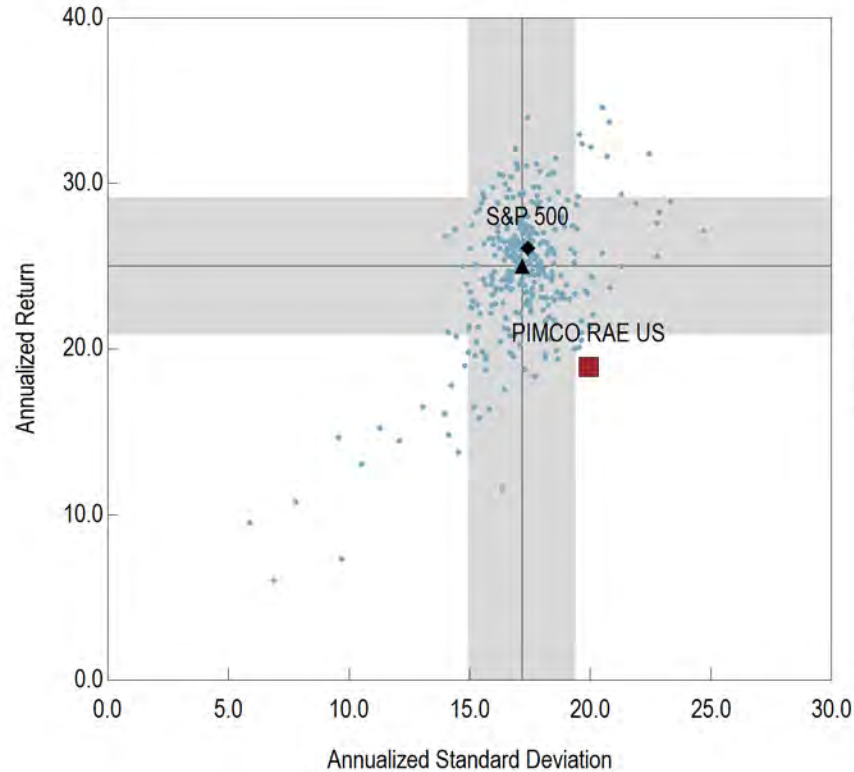
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	13.5		33.7		30.7		22.3		17.1		18.7	
<b>25th Percentile</b>	11.6		30.1		27.1		19.5		15.3		16.9	
<b>Median</b>	10.5		27.9		25.0		17.9		14.4		16.2	
<b>75th Percentile</b>	9.1		25.0		23.0		16.3		13.1		15.2	
<b>95th Percentile</b>	6.2		19.9		17.4		12.2		10.2		13.0	
<b># of Portfolios</b>	328		328		318		297		275		239	
<b>● PIMCO RAE US</b>	9.3	(73)	28.3	(47)	18.9	(94)	12.9	(94)	11.0	(94)	14.0	(90)
<b>▲ S&amp;P 500</b>	11.0	(38)	28.7	(40)	26.1	(38)	18.5	(42)	14.9	(34)	16.6	(37)





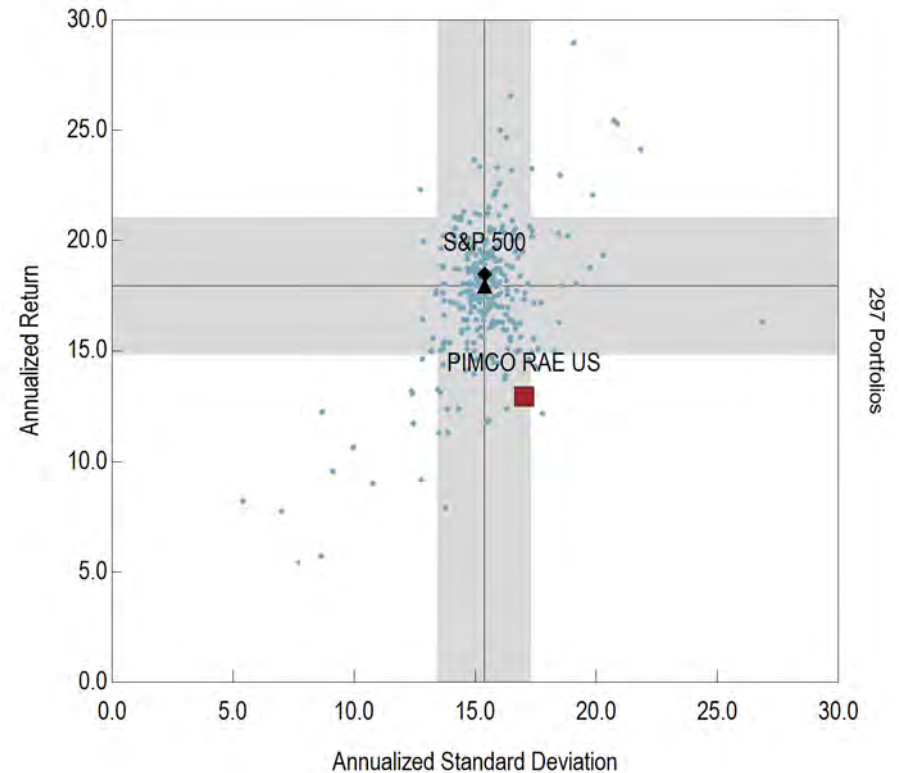
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Return (Rank)</b>										
5th Percentile	33.7	28.5	36.1	0.7	28.2	16.3	6.3	17.7	39.6	20.1
25th Percentile	30.1	21.3	32.3	-3.0	24.3	12.5	2.7	15.1	35.5	17.2
Median	27.9	15.9	29.7	-5.1	22.1	10.4	0.6	13.3	32.9	15.4
75th Percentile	25.0	11.6	26.8	-7.1	19.8	8.2	-1.6	11.4	30.8	13.4
95th Percentile	19.9	4.8	19.2	-11.4	14.4	4.3	-4.1	8.2	25.4	9.8
# of Portfolios	328	323	318	316	318	308	267	267	261	254
● PIMCO RAE US	28.3 (47)	4.4 (96)	25.5 (83)	-6.6 (72)	17.0 (89)	15.9 (6)	-2.7 (86)	12.7 (58)	36.0 (22)	16.8 (29)
▲ S&P 500	28.7 (40)	18.4 (41)	31.5 (33)	-4.4 (40)	21.8 (53)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2021

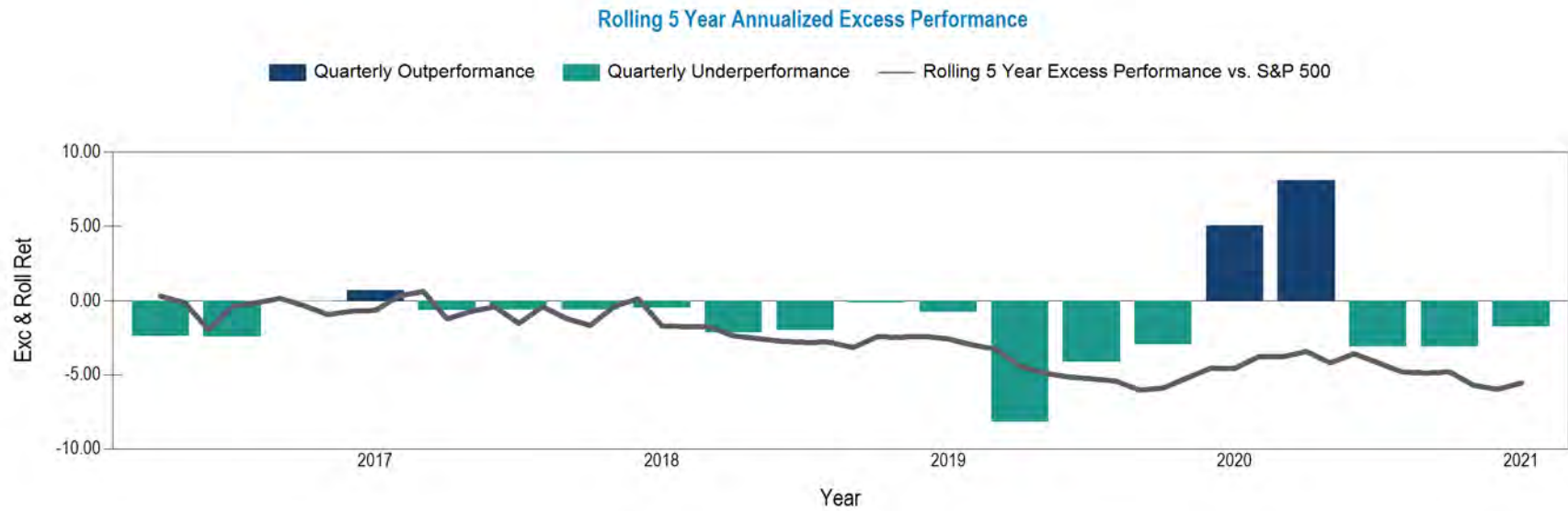


- PIMCO RAE US
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2021

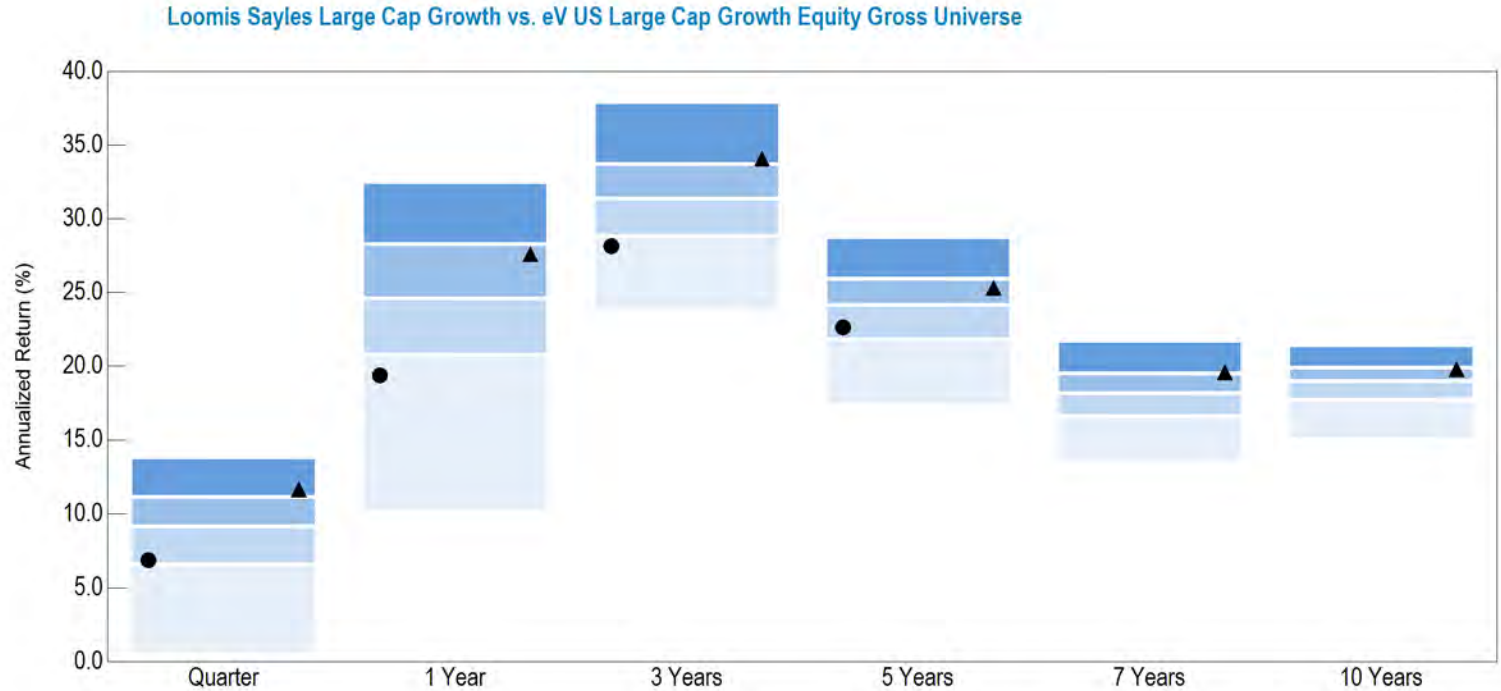


- PIMCO RAE US
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross



Loomis Sayles Large Cap Growth  
 Cumulative Performance Comparison (Gross of Fees)

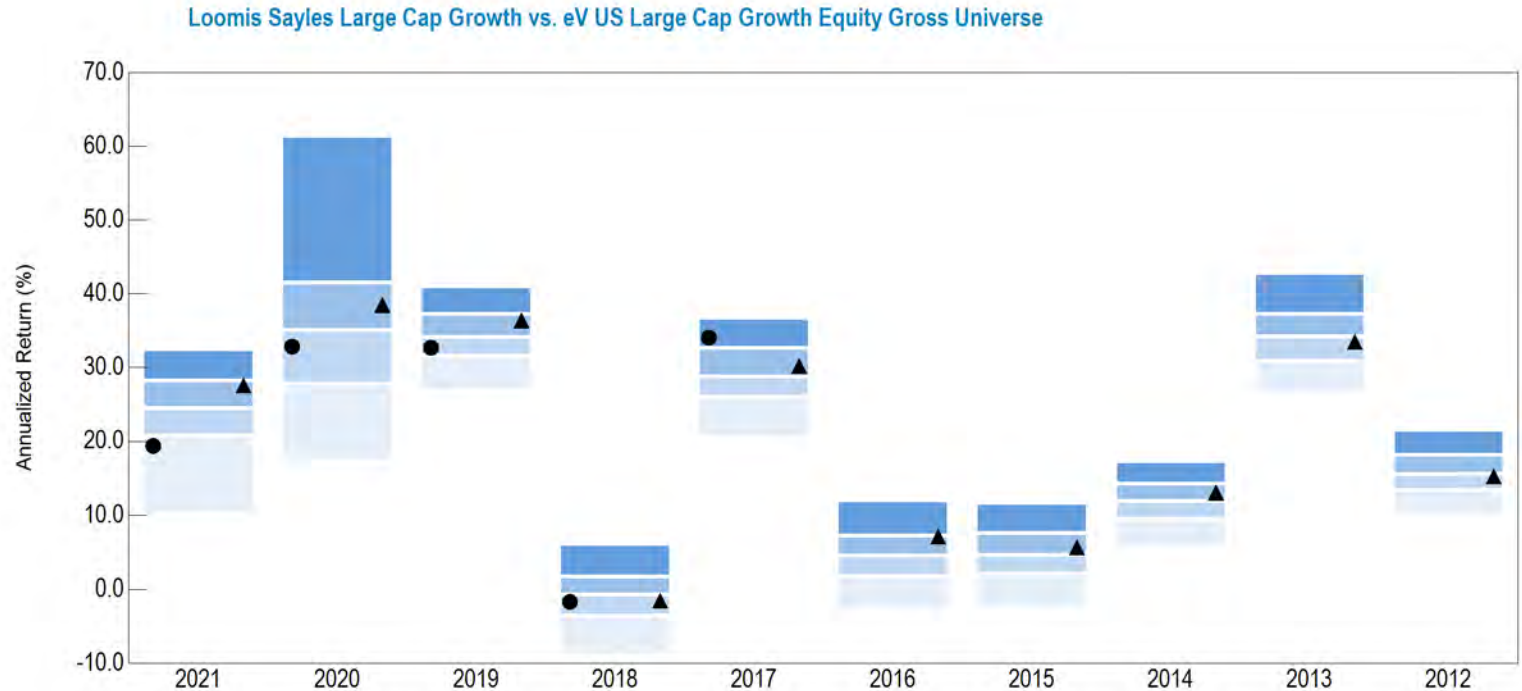
Period Ending: December 31, 2021



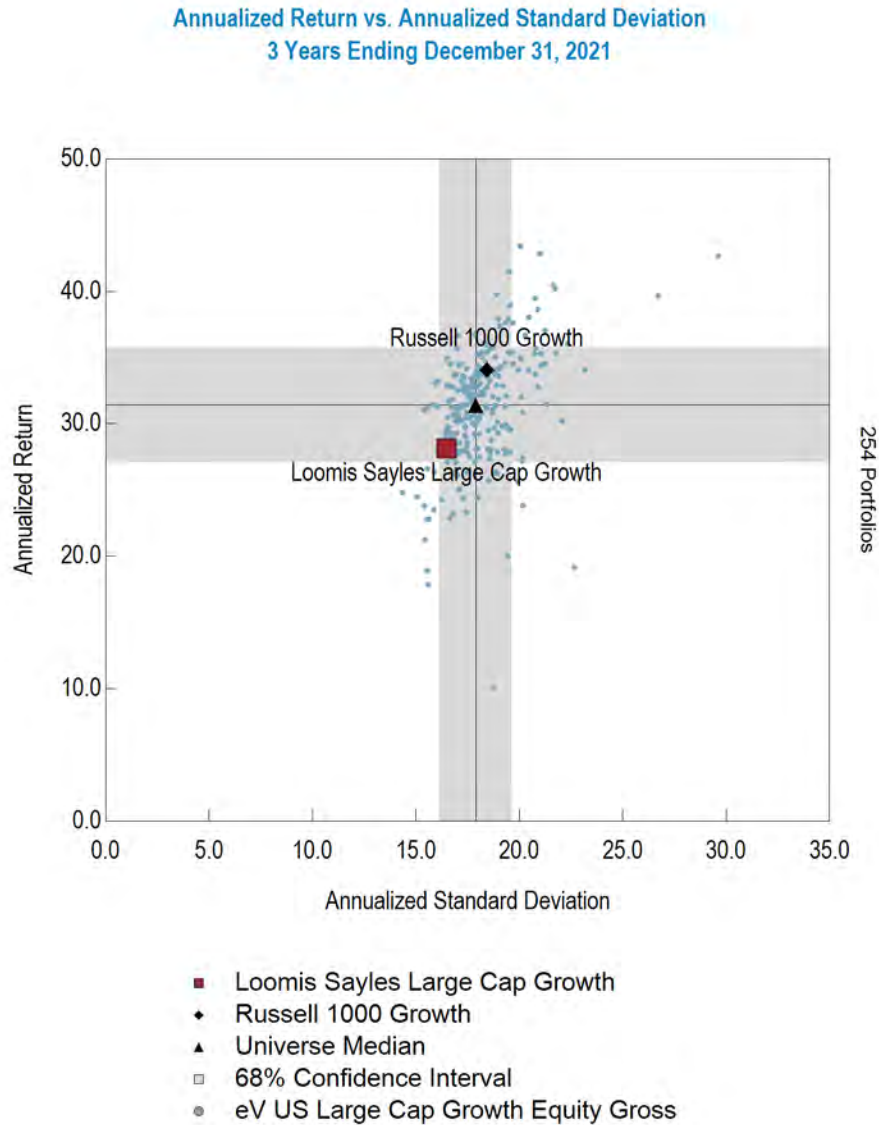
	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	13.8		32.5		37.9		28.8		21.7		21.4	
25th Percentile	11.2		28.3		33.8		26.0		19.5		19.9	
Median	9.2		24.6		31.4		24.2		18.2		19.0	
75th Percentile	6.6		20.8		28.9		21.8		16.6		17.8	
95th Percentile	0.6		10.2		23.8		17.4		13.6		15.1	
# of Portfolios	258		258		254		238		226		209	
● Loomis Sayles Large Cap Growth	6.8	(74)	19.4	(81)	28.1	(79)	22.6	(67)	--	(--)	--	(--)
▲ Russell 1000 Growth	11.6	(21)	27.6	(29)	34.1	(22)	25.3	(32)	19.6	(25)	19.8	(30)

Loomis Sayles Large Cap Growth  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021

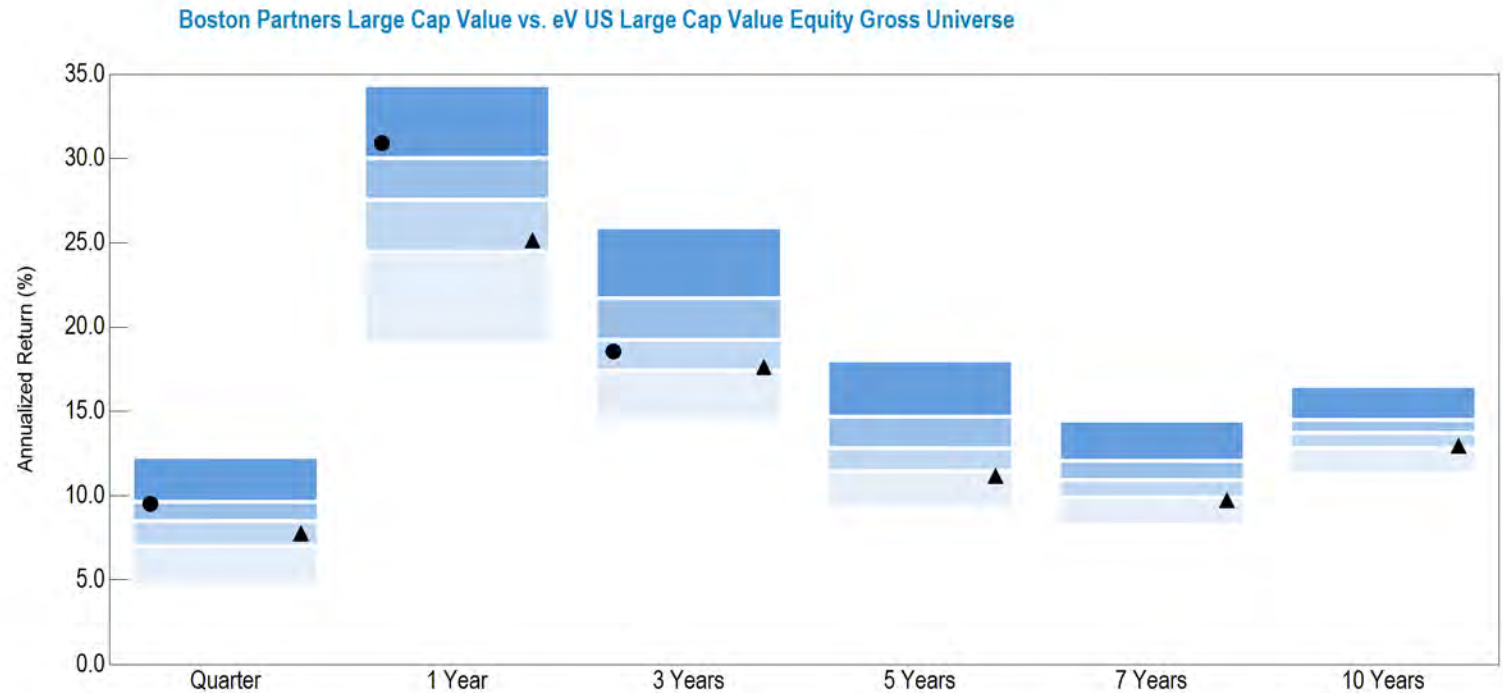


	Return (Rank)									
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
5th Percentile	32.5	61.4	41.0	6.1	36.7	12.0	11.6	17.3	42.8	21.6
25th Percentile	28.3	41.6	37.3	1.7	32.7	7.3	7.6	14.3	37.3	18.2
Median	24.6	35.2	34.2	-0.6	28.8	4.6	4.7	12.0	34.3	15.7
75th Percentile	20.8	27.9	31.7	-3.5	26.2	1.8	2.1	9.5	31.0	13.4
95th Percentile	10.2	17.4	26.9	-8.8	20.5	-2.7	-2.4	5.8	26.6	10.2
# of Portfolios	258	263	253	255	265	282	270	291	274	274
● Loomis Sayles Large Cap Growth	19.4 (81)	32.8 (61)	32.7 (68)	-1.7 (58)	34.1 (16)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 1000 Growth	27.6 (29)	38.5 (34)	36.4 (32)	-1.5 (57)	30.2 (42)	7.1 (26)	5.7 (42)	13.0 (38)	33.5 (56)	15.3 (55)



Boston Partners Large Cap Value  
 Cumulative Performance Comparison (Gross of Fees)

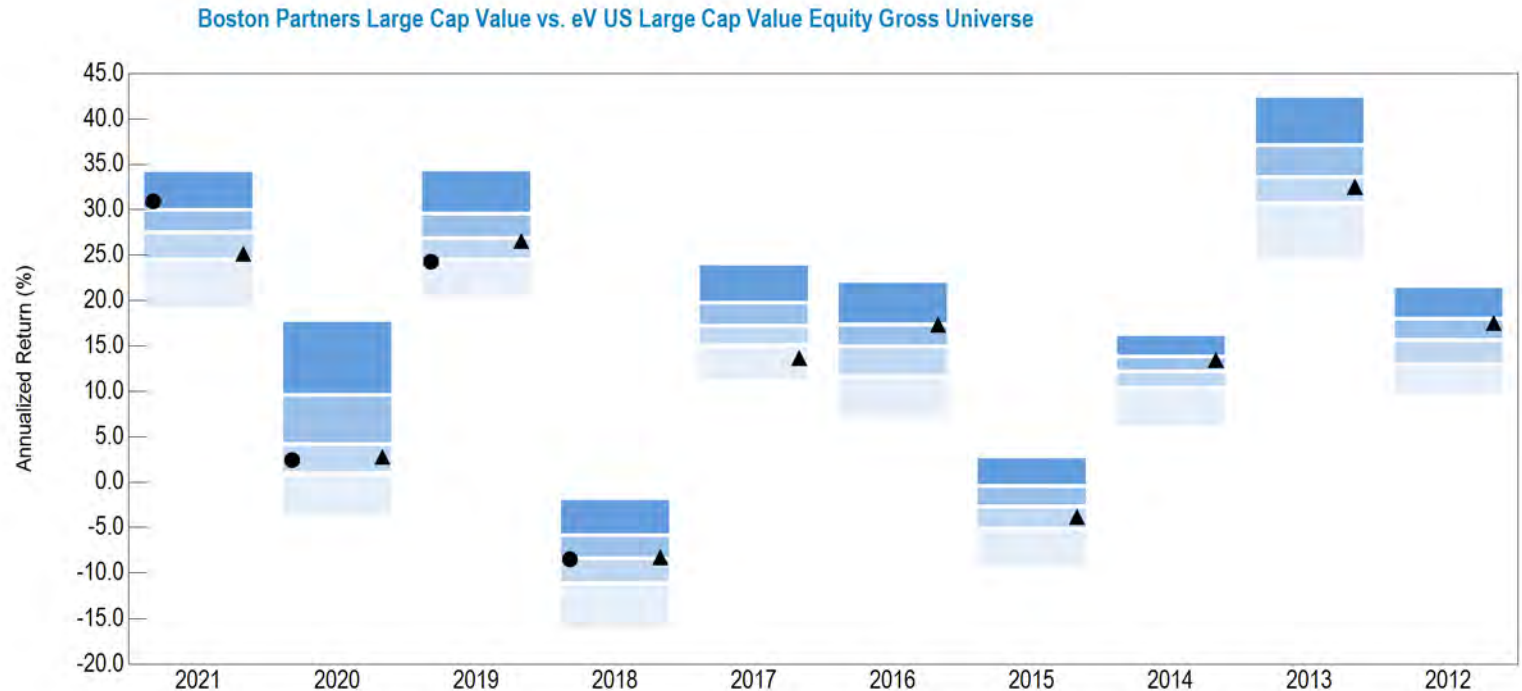
Period Ending: December 31, 2021



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>												
5th Percentile	12.3		34.4		25.9		18.0		14.5		16.5	
25th Percentile	9.7		30.0		21.7		14.7		12.1		14.5	
Median	8.5		27.6		19.2		12.8		11.0		13.8	
75th Percentile	7.0		24.5		17.4		11.5		9.9		12.9	
95th Percentile	4.8		19.1		14.5		9.3		8.3		11.3	
# of Portfolios	337		337		327		315		301		275	
● Boston Partners Large Cap Value	9.5	(28)	30.9	(19)	18.6	(59)	--	(--)	--	(--)	--	(--)
▲ Russell 1000 Value	7.8	(64)	25.2	(72)	17.6	(73)	11.2	(80)	9.7	(80)	13.0	(73)

Boston Partners Large Cap Value  
 Consecutive Performance Comparison (Gross of Fees)

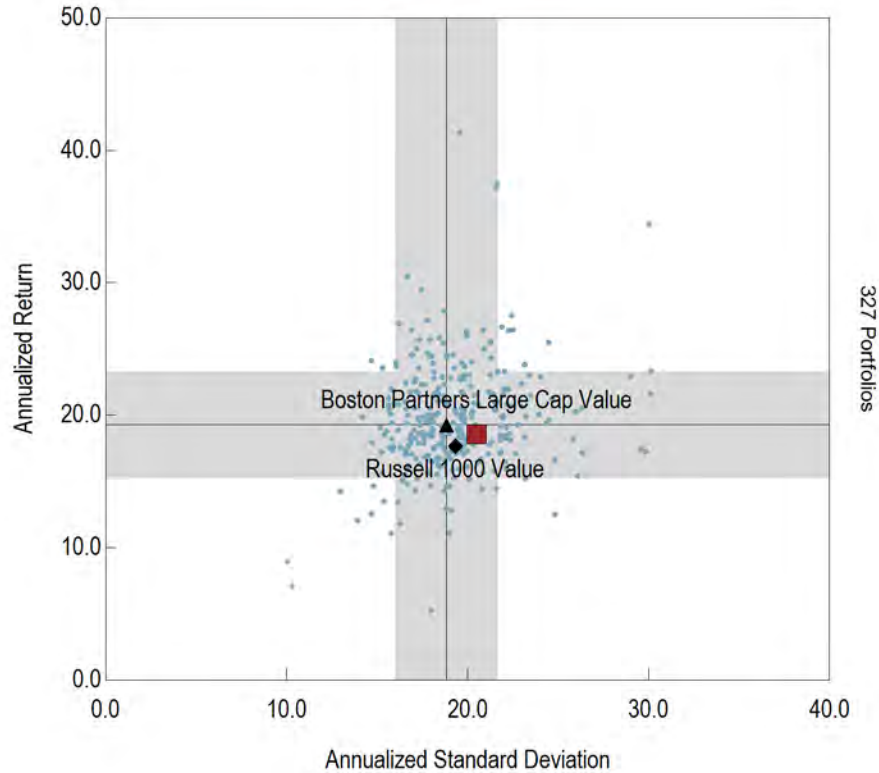
Period Ending: December 31, 2021



	2021		2020		2019		2018		2017		2016		2015		2014		2013		2012	
<b>Return (Rank)</b>	34.4	17.8	34.4	-1.8	24.0	22.1	2.8	16.3	42.5	21.5										
5th Percentile	30.0	9.6	29.6	-5.8	19.8	17.4	-0.4	13.9	37.2	18.0										
25th Percentile	27.6	4.2	26.9	-8.3	17.2	15.0	-2.6	12.2	33.6	15.7										
Median	24.5	1.1	24.5	-11.1	15.1	11.8	-5.1	10.4	30.8	13.0										
75th Percentile	19.1	-3.8	20.3	-16.1	11.2	7.0	-9.4	5.9	24.6	9.6										
95th Percentile	337	326	331	336	342	346	312	307	310	303										
# of Portfolios	● Boston Partners Large Cap Value	30.9 (19)	2.4 (64)	24.3 (77)	-8.5 (54)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)
▲ Russell 1000 Value	25.2 (72)	2.8 (62)	26.5 (54)	-8.3 (50)	13.7 (87)	17.3 (26)	-3.8 (64)	13.5 (33)	32.5 (60)	17.5 (30)										



Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2021

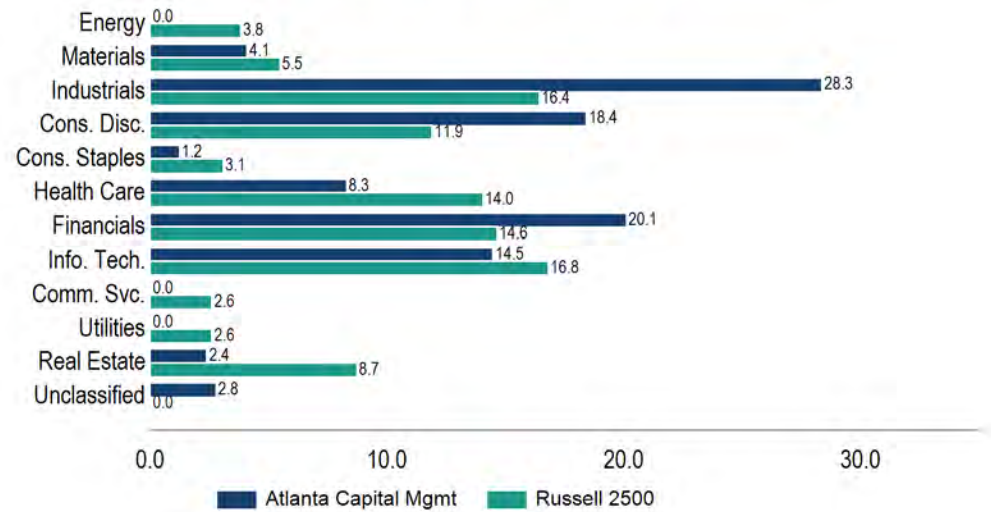


- Boston Partners Large Cap Value
- ◆ Russell 1000 Value
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Value Equity Gross

Characteristics

	Portfolio	Russell 2500
Number of Holdings	55	2,542
Weighted Avg. Market Cap. (\$B)	12.23	8.09
Median Market Cap. (\$B)	11.79	1.84
Price To Earnings	25.61	18.76
Price To Book	3.81	3.04
Price To Sales	2.67	2.16
Return on Equity (%)	22.39	8.67
Yield (%)	0.68	1.17
Beta	0.83	1.00

Sector Allocation (%) vs Russell 2500



\*Unclassified includes Cash

Top Holdings  
 Ending Period Weight

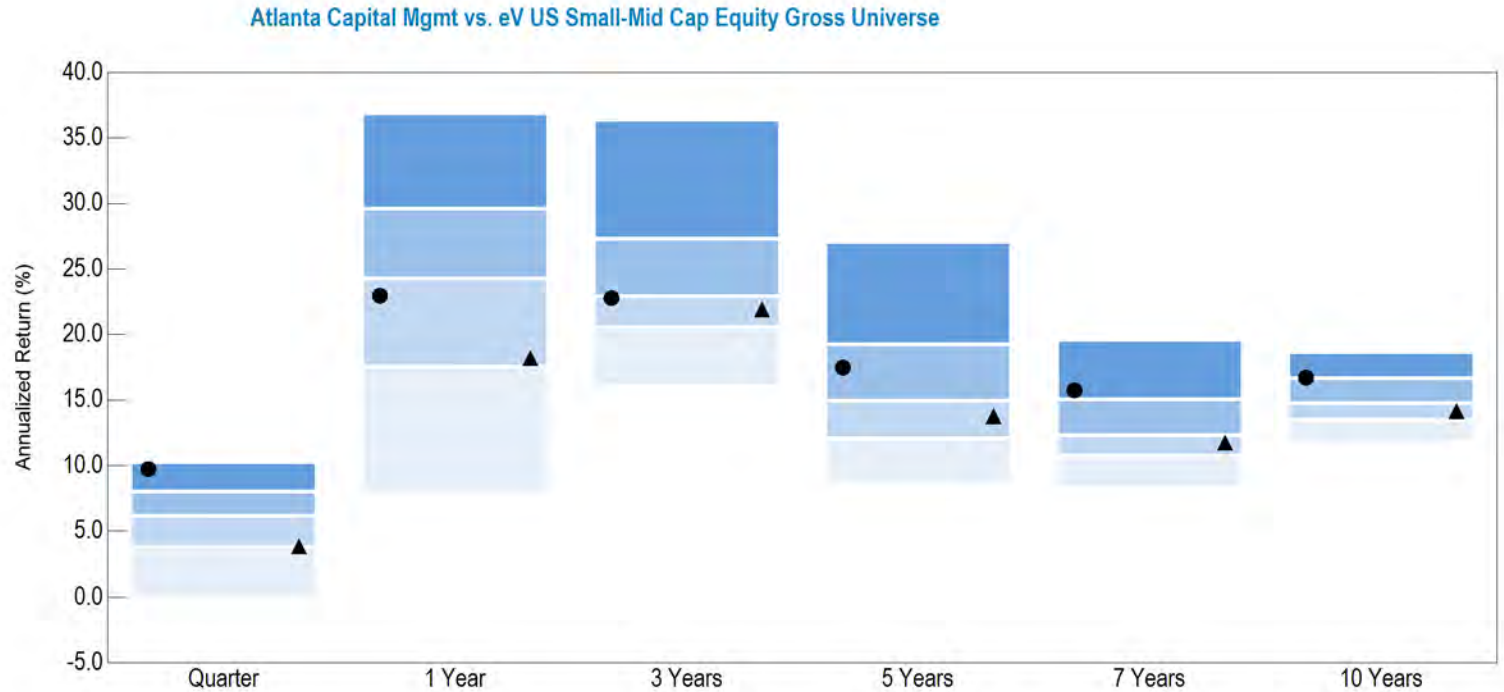
CARLISLE COS INC	4.74%
BERKLEY (W.R.) CORP	4.68%
J.B. HUNT TRANSPORT SERVICES INC.	3.79%
ARAMARK	3.68%
ENVISTA HOLDINGS CORP	3.32%
CASH - USD	2.76%
BROWN & BROWN INC	2.69%
TERMINIX GLOBAL HOLDINGS INC	2.65%
MORNINGSTAR INC	2.52%
SEI INVESTMENTS CO	2.42%
<b>Total</b>	<b>33.24%</b>

Top Contributors

	Avg Wgt	Return	Contribution
CARLISLE COS INC	4.17	25.10	1.05
J.B. HUNT TRANSPORT SERVICES INC.	3.40	22.42	0.76
MORNINGSTAR INC	2.10	32.18	0.67
BROWN & BROWN INC	2.33	26.95	0.63
BERKLEY (W.R.) CORP	4.56	12.77	0.58
RPM INTERNATIONAL INC	1.68	30.69	0.52
CHOICE HOTELS INTERNATIONAL INC.	2.08	23.44	0.49
ARAMARK	3.05	12.50	0.38
ACUITY BRANDS INC.	1.56	22.20	0.35
LKQ CORPORATION	1.70	19.82	0.34

Bottom Contributors

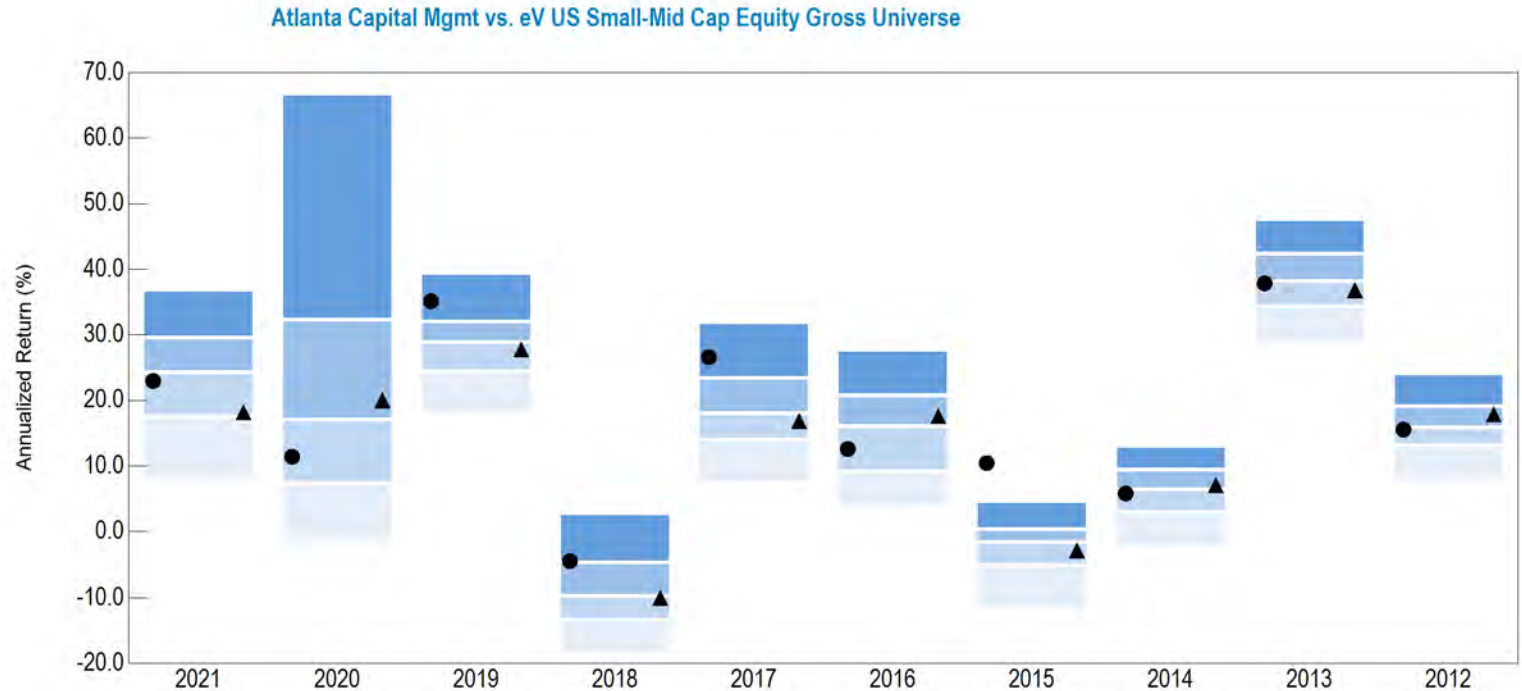
	Avg Wgt	Return	Contribution
WEX INC	2.82	-20.30	-0.57
HEXCEL CORP	2.03	-12.78	-0.26
IAA INC	1.77	-7.24	-0.13
FRONTDOOR INC	0.71	-12.53	-0.09
DENTSPLY SIRONA INC	2.12	-3.70	-0.08
TELEFLEX INC	0.48	-12.68	-0.06
UMPQUA HOLDINGS CORP	1.51	-4.00	-0.06
WOODWARD INC	0.94	-3.17	-0.03
TELEDYNE TECHNOLOGIES INC.	0.00	1.70	0.00
HENRY SCHEIN INC	0.63	1.80	0.01



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	10.2		36.9		36.4		27.0		19.6		18.6	
25th Percentile	8.0		29.6		27.3		19.3		15.1		16.7	
Median	6.2		24.3		22.9		15.0		12.4		14.8	
75th Percentile	3.8		17.6		20.6		12.1		10.8		13.5	
95th Percentile	-0.1		7.9		16.1		8.7		8.3		11.8	
# of Portfolios	245		245		232		212		185		153	
● Atlanta Capital Mgmt	9.7	(9)	23.0	(58)	22.8	(53)	17.5	(35)	15.7	(22)	16.7	(25)
▲ Russell 2500	3.8	(76)	18.2	(74)	21.9	(62)	13.8	(61)	11.7	(60)	14.1	(61)

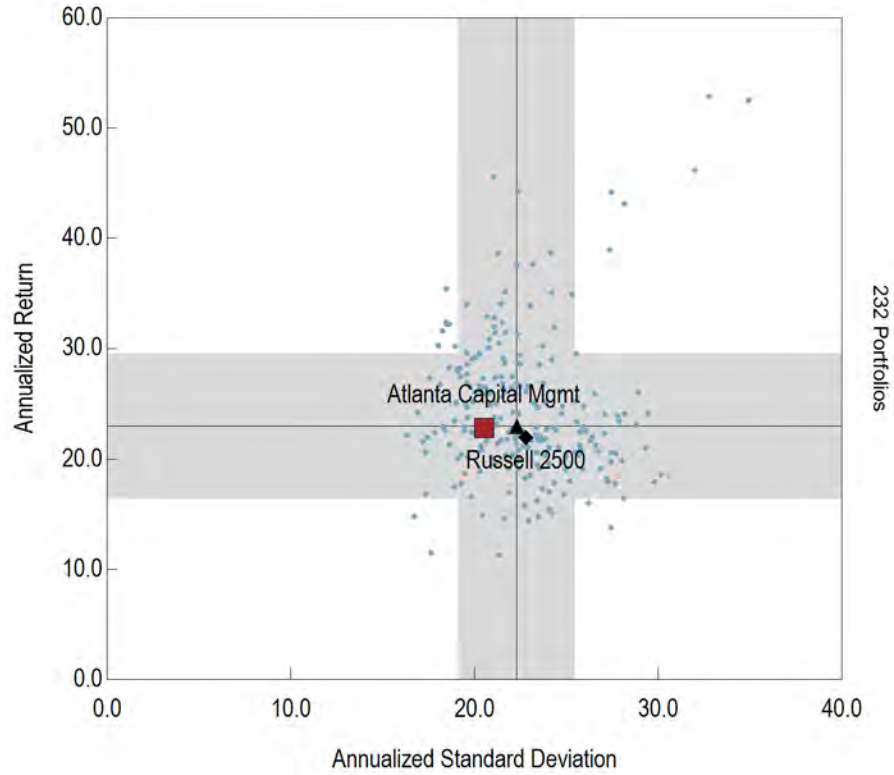
Atlanta Capital Mgmt  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021



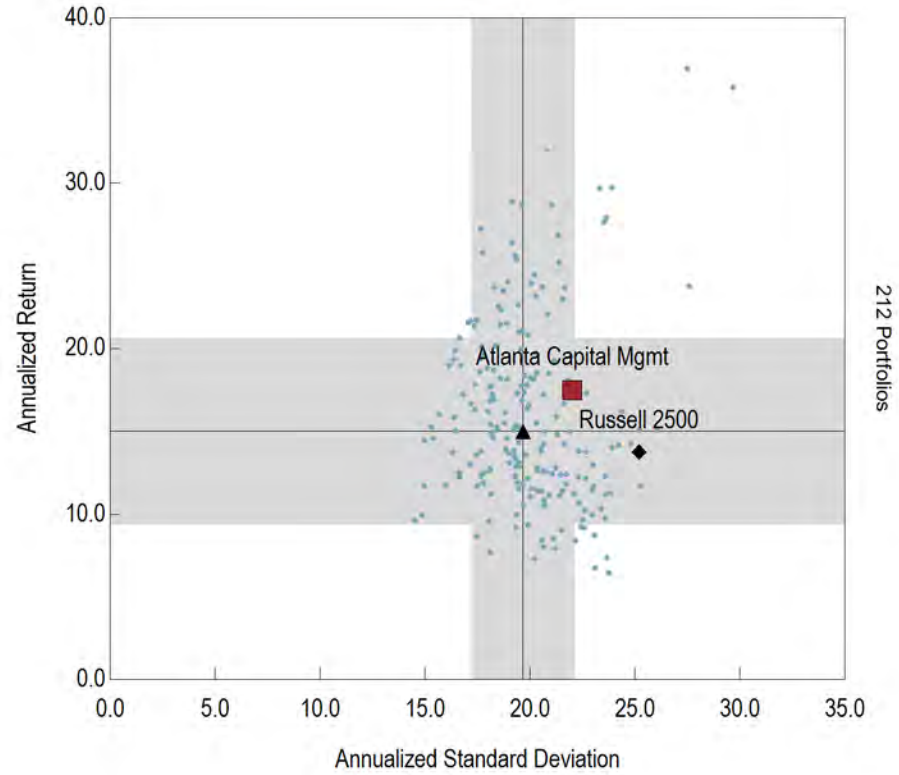
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Return (Rank)</b>										
5th Percentile	36.9	66.8	39.4	2.8	31.9	27.6	4.6	13.0	47.6	24.1
25th Percentile	29.6	32.3	32.1	-4.6	23.5	20.8	0.4	9.6	42.5	19.2
Median	24.3	17.2	29.0	-9.6	18.1	16.1	-1.5	6.5	38.2	16.0
75th Percentile	17.6	7.4	24.5	-13.3	14.1	9.2	-5.0	3.1	34.4	13.3
95th Percentile	7.9	-1.4	18.1	-18.5	7.5	3.8	-11.6	-2.3	28.7	7.8
# of Portfolios	245	238	237	236	233	238	215	210	210	216
● Atlanta Capital Mgmt	23.0 (58)	11.4 (62)	35.1 (14)	-4.5 (25)	26.6 (15)	12.6 (62)	10.4 (1)	5.8 (56)	37.8 (52)	15.5 (55)
▲ Russell 2500	18.2 (74)	20.0 (45)	27.8 (58)	-10.0 (53)	16.8 (61)	17.6 (38)	-2.9 (64)	7.1 (46)	36.8 (58)	17.9 (36)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2021

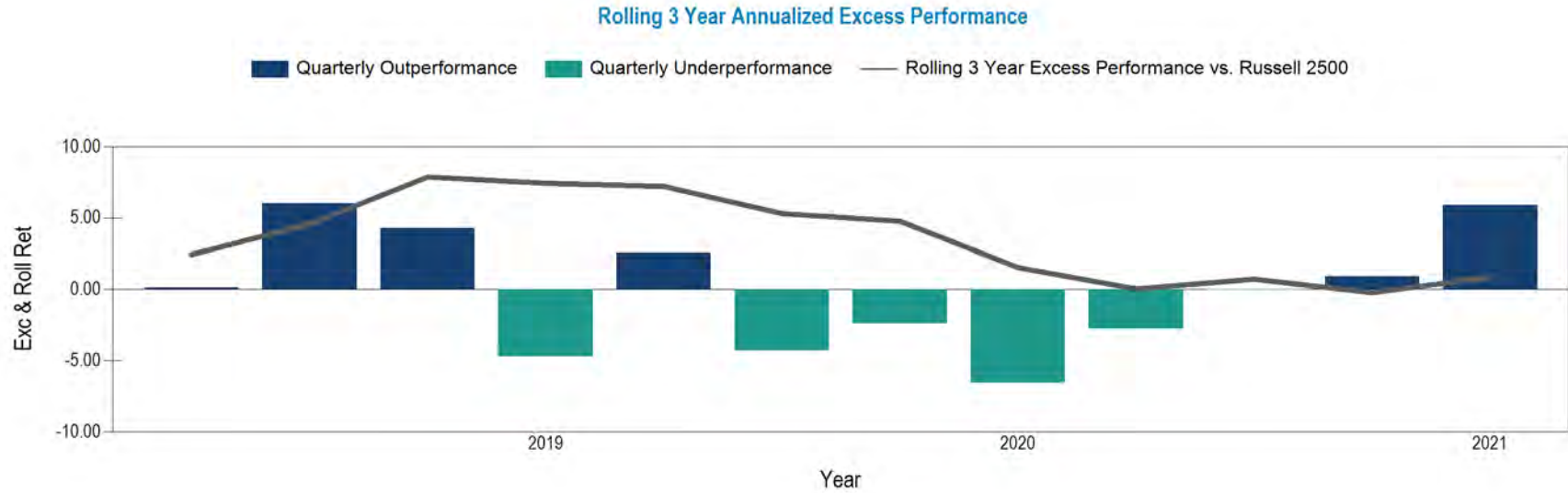


- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2021



- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross



Total International Equity  
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total International Equity</b>	<b>335,042,658</b>	<b>4.1</b>	<b>15.2</b>	<b>21.4</b>	<b>14.8</b>	<b>11.0</b>	<b>15.2</b>	<b>19.4</b>	<b>30.2</b>	<b>-12.2</b>	<b>26.6</b>
MSCI ACWI ex USA Gross		1.9	8.3	13.7	10.1	7.8	8.3	11.1	22.1	-13.8	27.8
InvMetrics Public DB ex-US Eq Gross Rank		4	1	1	2	2	1	12	1	9	81
Dodge & Cox Intl Stock	162,092,005	2.6	11.7	12.4	7.9	8.3	11.7	2.8	23.6	-17.5	24.7
MSCI ACWI ex USA Value Gross		1.3	11.1	8.9	6.6	5.9	11.1	-0.2	16.5	-13.4	23.3
eV ACWI ex-US All Cap Value Eq Gross Rank		22	46	26	51	36	46	33	35	84	71
WCM International Growth	172,950,653	5.7	18.5	29.5	--	--	18.5	34.0	36.7	-6.7	--
MSCI ACWI ex USA Growth Gross		2.4	5.4	18.2	--	--	5.4	22.6	27.8	-14.1	--
eV ACWI ex-US All Cap Growth Eq Gross Rank		4	6	13	--	--	6	28	11	1	--

EAFE Effective Style Map  
3 Years Ending December 31, 2021



EAFE Effective Style Map  
5 Years Ending December 31, 2021



Total International Equity  
 Asset Class Overview (Net of Fees)

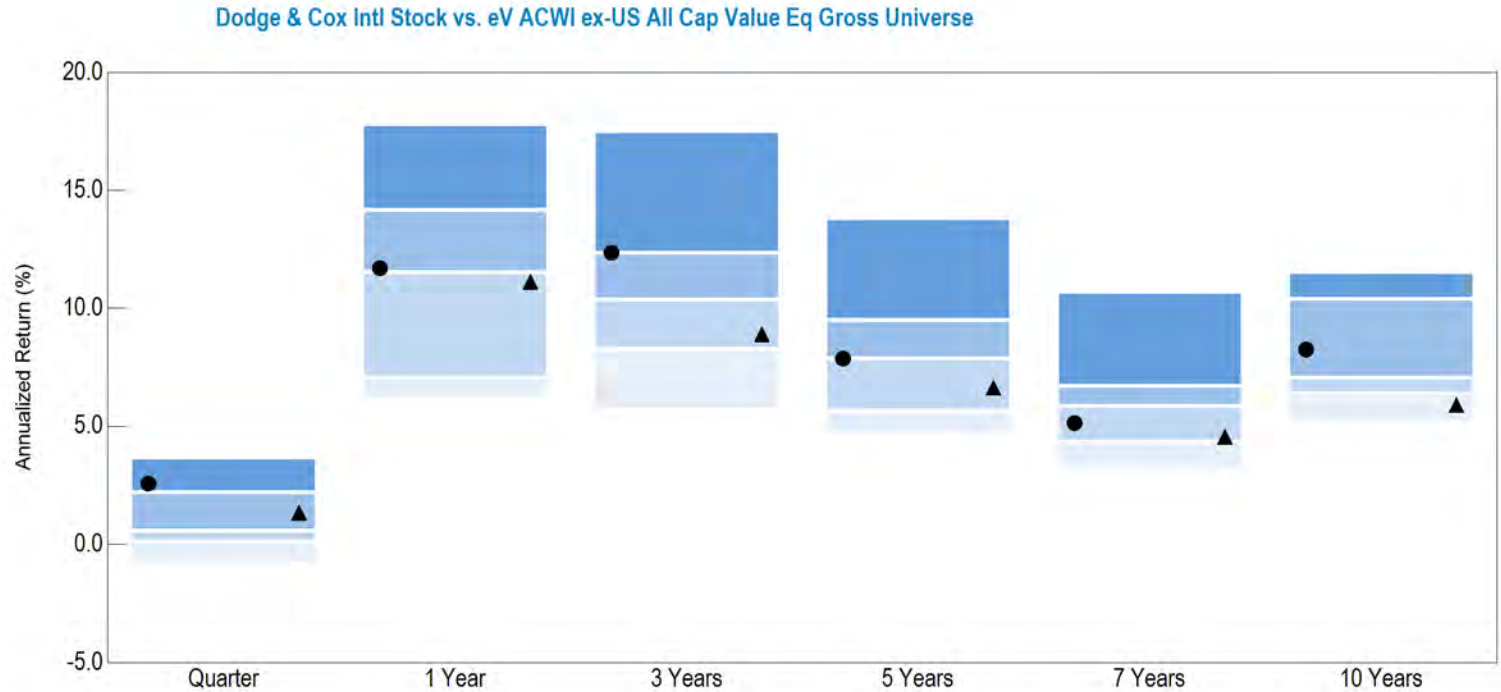
Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total International Equity</b>	<b>335,042,658</b>	<b>4.0</b>	<b>14.4</b>	<b>20.6</b>	<b>14.0</b>	<b>10.3</b>	<b>14.4</b>	<b>18.6</b>	<b>29.3</b>	<b>-12.8</b>	<b>25.8</b>
<i>MSCI ACWI ex USA Gross</i>		1.9	8.3	13.7	10.1	7.8	8.3	11.1	22.1	-13.8	27.8
Dodge & Cox Intl Stock	162,092,005	2.4	11.0	11.6	7.2	7.6	11.0	2.1	22.8	-18.0	23.9
<i>MSCI ACWI ex USA Value Gross</i>		1.3	11.1	8.9	6.6	5.9	11.1	-0.2	16.5	-13.4	23.3
WCM International Growth	172,950,653	5.5	17.7	28.6	--	--	17.7	33.1	35.8	-7.4	--
<i>MSCI ACWI ex USA Growth Gross</i>		2.4	5.4	18.2	--	--	5.4	22.6	27.8	-14.1	--



Dodge & Cox Intl Stock  
 Cumulative Performance Comparison (Gross of Fees)

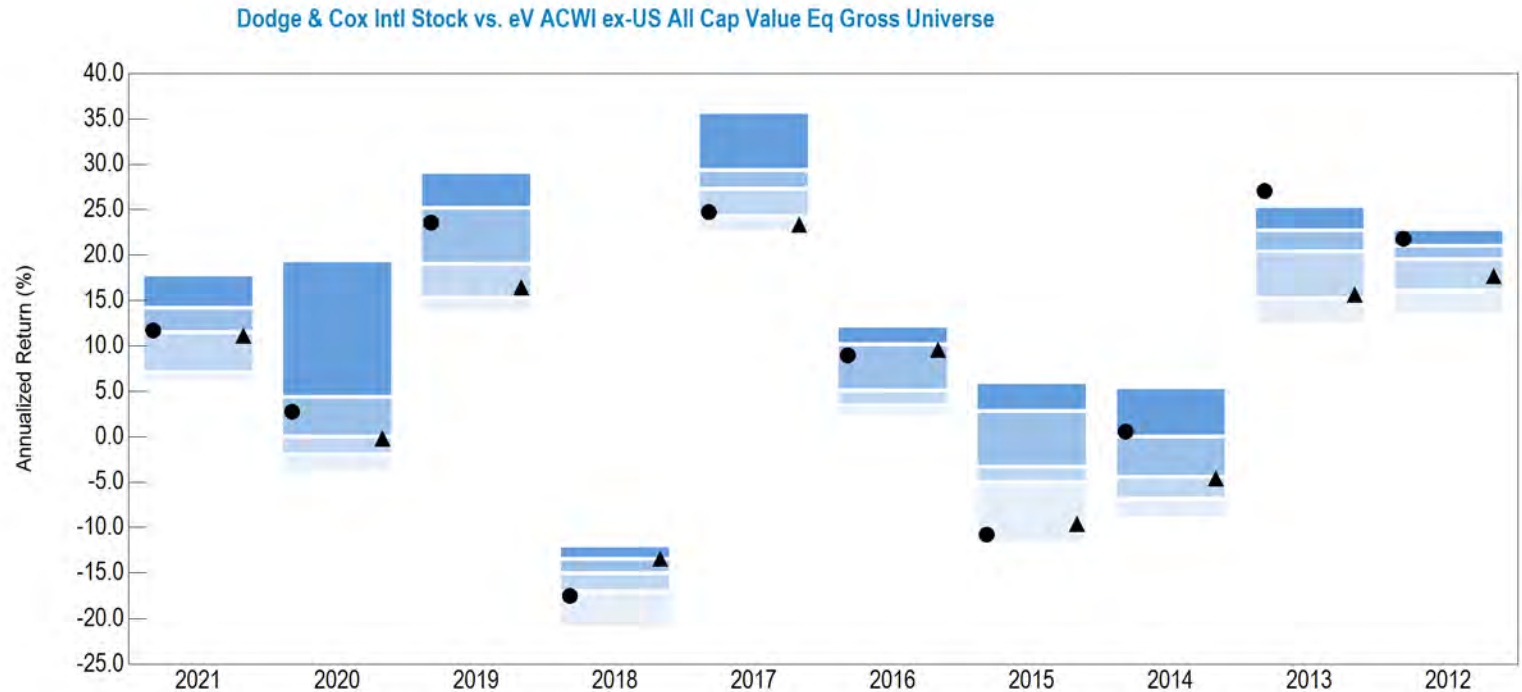
Period Ending: December 31, 2021



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	3.7		17.8		17.5		13.8		10.7		11.5	
<b>25th Percentile</b>	2.2		14.2		12.4		9.5		6.7		10.4	
<b>Median</b>	0.6		11.5		10.4		7.9		5.9		7.1	
<b>75th Percentile</b>	0.1		7.1		8.3		5.7		4.4		6.4	
<b>95th Percentile</b>	-0.8		6.2		5.7		4.7		3.2		5.2	
<b># of Portfolios</b>	16		16		16		16		13		12	
<b>● Dodge &amp; Cox Intl Stock</b>	2.6	(22)	11.7	(46)	12.4	(26)	7.9	(51)	5.1	(71)	8.3	(36)
<b>▲ MSCI ACWI ex USA Value Gross</b>	1.3	(42)	11.1	(55)	8.9	(74)	6.6	(59)	4.6	(74)	5.9	(79)

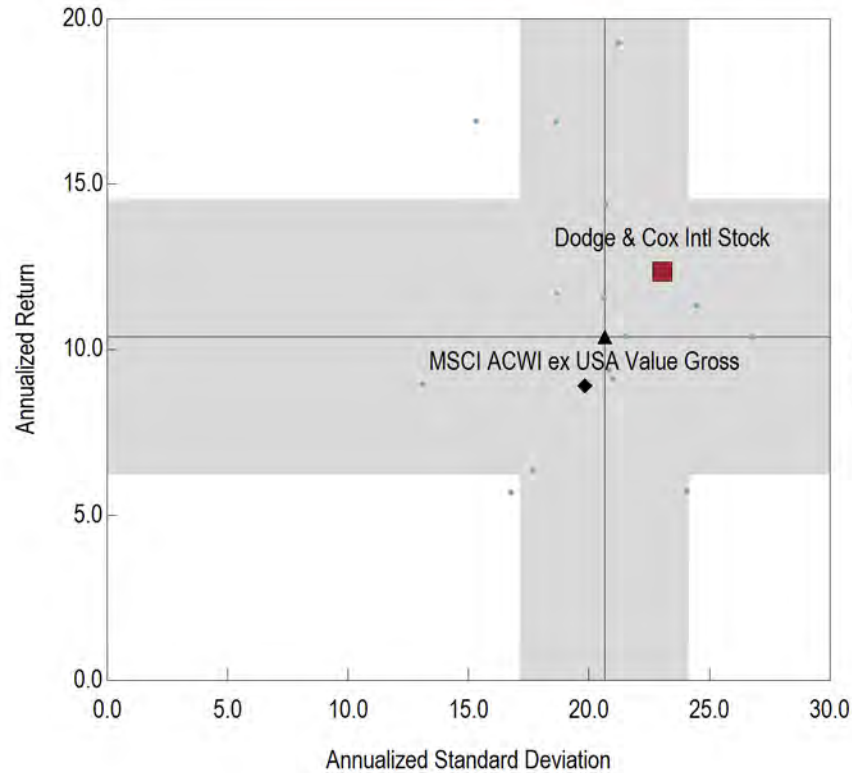
Dodge & Cox Intl Stock  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021



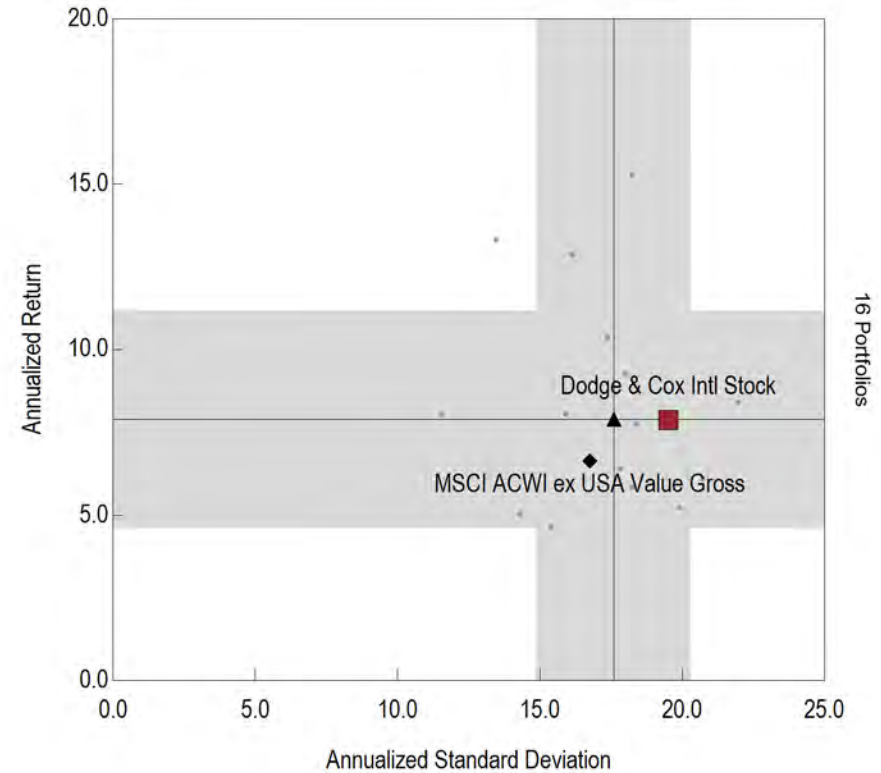
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
<b>Return (Rank)</b>										
5th Percentile	17.8	19.4	29.1	-12.0	35.8	12.2	6.0	5.4	25.4	22.9
25th Percentile	14.2	4.4	25.2	-13.4	29.4	10.2	2.9	0.0	22.8	21.1
Median	11.5	0.1	19.1	-15.0	27.3	5.1	-3.3	-4.4	20.5	19.6
75th Percentile	7.1	-1.9	15.4	-16.9	24.3	3.5	-4.9	-6.8	15.3	16.1
95th Percentile	6.2	-3.7	13.8	-21.0	22.6	2.4	-11.7	-8.9	12.5	13.5
# of Portfolios	16	21	21	24	23	21	13	13	12	11
● Dodge & Cox Intl Stock	11.7 (46)	2.8 (33)	23.6 (35)	-17.5 (84)	24.7 (71)	9.0 (31)	-10.8 (92)	0.6 (16)	27.1 (2)	21.8 (18)
▲ MSCI ACWI ex USA Value Gross	11.1 (55)	-0.2 (52)	16.5 (71)	-13.4 (26)	23.3 (81)	9.6 (30)	-9.6 (89)	-4.6 (52)	15.7 (74)	17.7 (66)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2021

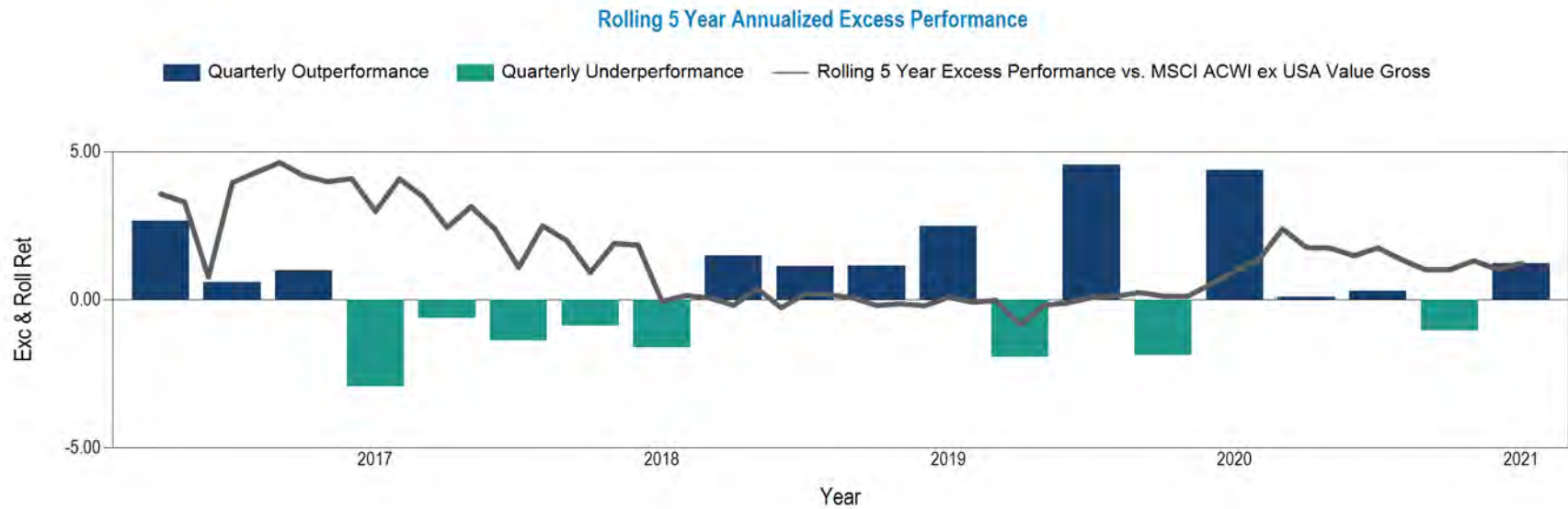


- Dodge & Cox Intl Stock
- ◆ MSCI ACWI ex USA Value Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV ACWI ex-US All Cap Value Eq Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2021

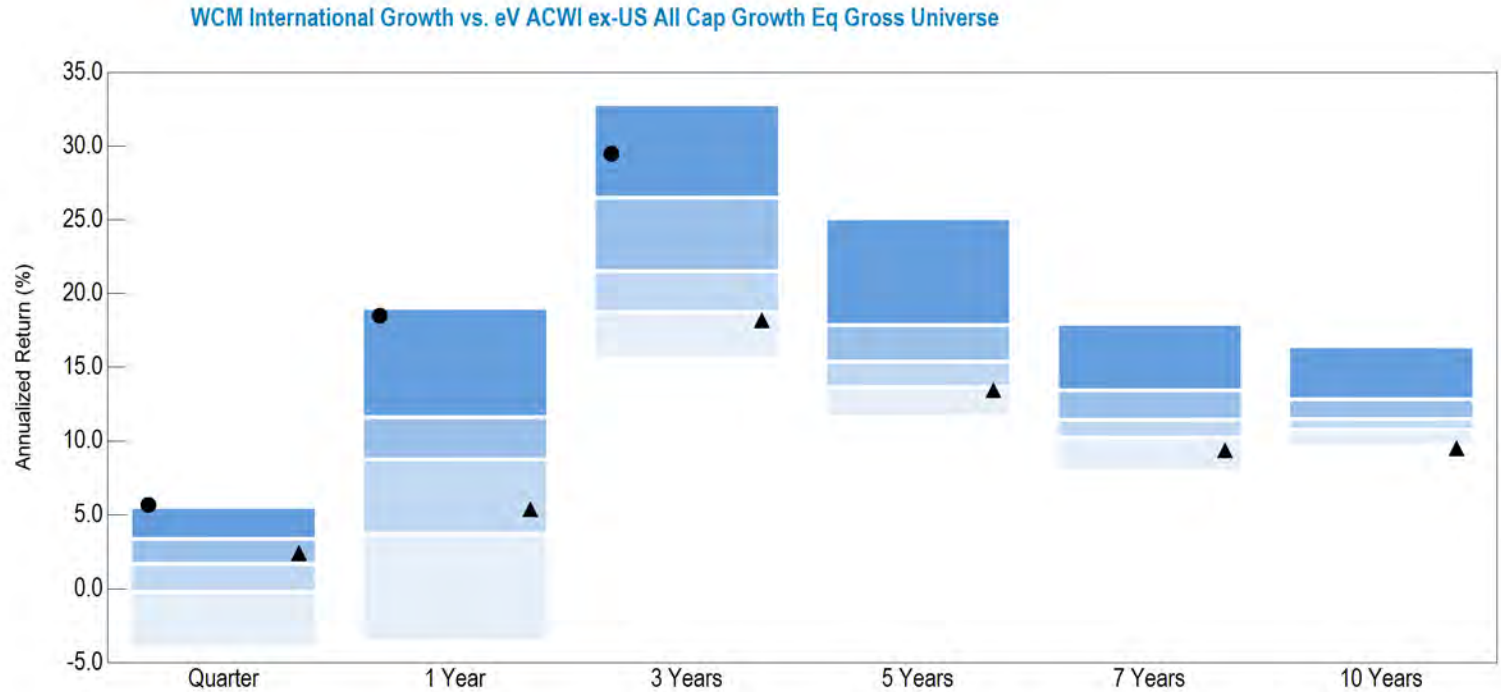


- Dodge & Cox Intl Stock
- ◆ MSCI ACWI ex USA Value Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV ACWI ex-US All Cap Value Eq Gross



WCM International Growth  
 Cumulative Performance Comparison (Gross of Fees)

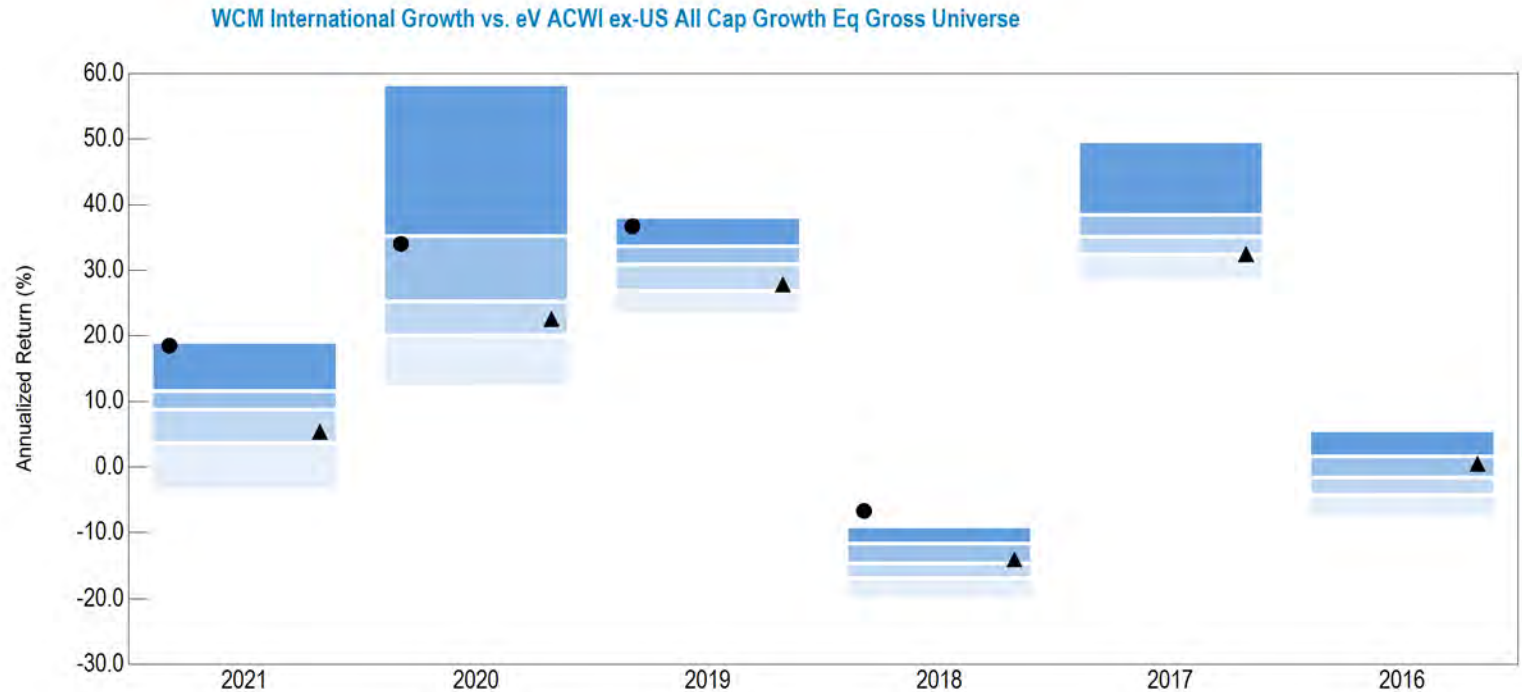
Period Ending: December 31, 2021



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	5.5		19.0		32.8		25.1		17.9		16.4	
25th Percentile	3.4		11.6		26.5		17.9		13.5		12.8	
Median	1.7		8.7		21.5		15.4		11.4		11.5	
75th Percentile	-0.2		3.8		18.8		13.7		10.2		10.8	
95th Percentile	-4.0		-3.5		15.7		11.6		8.0		9.7	
# of Portfolios	36		36		34		31		29		26	
● WCM International Growth	5.7	(4)	18.5	(6)	29.5	(13)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Growth Gross	2.4	(40)	5.4	(72)	18.2	(81)	13.4	(78)	9.4	(84)	9.5	(97)

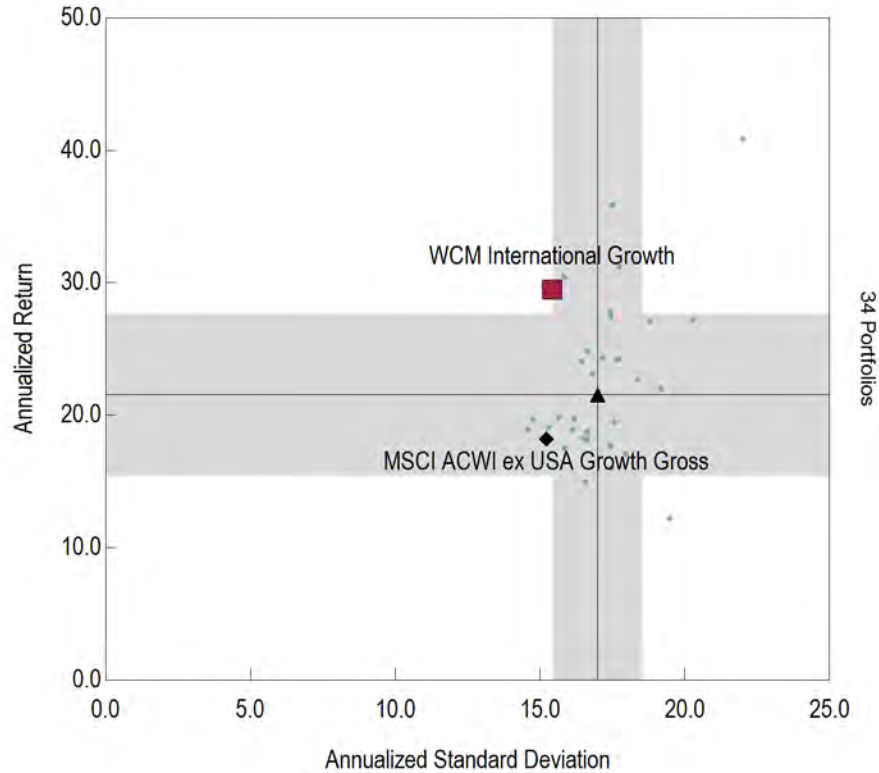
WCM International Growth  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021



	2021		2020		2019		2018		2017		2016	
<b>Return (Rank)</b>												
5th Percentile	19.0		58.3		38.1		-9.1		49.7		5.5	
25th Percentile	11.6		35.2		33.7		-11.6		38.5		1.7	
Median	8.7		25.3		31.0		-14.6		35.2		-1.6	
75th Percentile	3.8		20.1		26.9		-16.9		32.4		-4.2	
95th Percentile	-3.5		12.2		23.3		-19.8		28.5		-7.7	
# of Portfolios	36		38		35		28		29		28	
● WCM International Growth	18.5	(6)	34.0	(28)	36.7	(11)	-6.7	(1)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Growth Gross	5.4	(72)	22.6	(62)	27.8	(71)	-14.1	(50)	32.5	(70)	0.5	(37)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2021



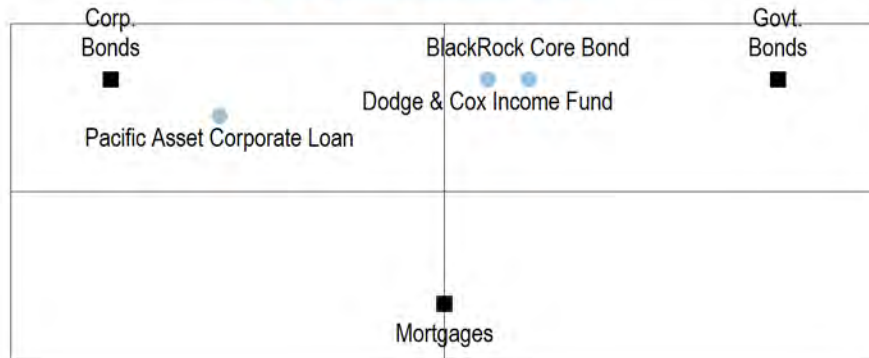
- WCM International Growth
- ◆ MSCI ACWI ex USA Growth Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV ACWI ex-US All Cap Growth Eq Gross

Total Domestic Fixed Income  
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Domestic Fixed Income</b>	<b>335,329,714</b>	<b>0.2</b>	<b>0.9</b>	<b>6.2</b>	<b>4.6</b>	<b>3.8</b>	<b>0.9</b>	<b>8.1</b>	<b>9.9</b>	<b>0.4</b>	<b>4.3</b>
<i>Bloomberg US Aggregate TR</i>		0.0	-1.5	4.8	3.6	2.9	-1.5	7.5	8.7	0.0	3.5
<i>InvMetrics Public DB US Fix Inc Gross Rank</i>		15	15	17	22	30	15	46	11	55	50
<b>BlackRock Core Bond</b>	<b>88,124,134</b>	<b>-0.5</b>	<b>-1.6</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>-1.6</b>	<b>9.4</b>	<b>10.2</b>	<b>0.3</b>	<b>--</b>
<i>Bloomberg US Aggregate TR</i>		0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--
<i>eV US Core Fixed Inc Gross Rank</i>		99	77	22	--	--	77	23	10	27	--
<b>Dodge &amp; Cox Income Fund</b>	<b>93,211,502</b>	<b>-0.3</b>	<b>-0.5</b>	<b>6.4</b>	<b>--</b>	<b>--</b>	<b>-0.5</b>	<b>9.9</b>	<b>10.2</b>	<b>0.1</b>	<b>--</b>
<i>Bloomberg US Aggregate TR</i>		0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--
<i>eV US Core Fixed Inc Gross Rank</i>		91	20	7	--	--	20	14	11	43	--
<b>Pacific Asset Corporate Loan</b>	<b>78,904,369</b>	<b>1.0</b>	<b>5.6</b>	<b>5.9</b>	<b>4.7</b>	<b>--</b>	<b>5.6</b>	<b>3.0</b>	<b>9.1</b>	<b>1.0</b>	<b>4.9</b>
<i>S&amp;P/LSTA Leveraged Loan Index</i>		0.7	5.2	5.6	4.3	--	5.2	3.1	8.6	0.4	4.1
<i>eV US Float-Rate Bank Loan Fixed Inc Gross Rank</i>		13	38	37	29	--	38	42	36	29	26
<b>SSGA U.S. Govt Bond Index</b>	<b>39,691,667</b>	<b>0.2</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>		-0.6	--	--	--	--	--	--	--	--	--
<i>eV US Government Fixed Inc Gross Rank</i>		16	--	--	--	--	--	--	--	--	--
<b>BlackRock TIPS</b>	<b>35,398,042</b>	<b>2.3</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
<i>Bloomberg US TIPS TR</i>		2.4	--	--	--	--	--	--	--	--	--
<i>eV US TIPS / Inflation Fixed Inc Gross Rank</i>		30	--	--	--	--	--	--	--	--	--

Fixed Income Effective Style Map  
3 Years Ending December 31, 2021



Fixed Income Effective Style Map  
3 Years Ending December 31, 2021





Total Domestic Fixed Income  
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2021

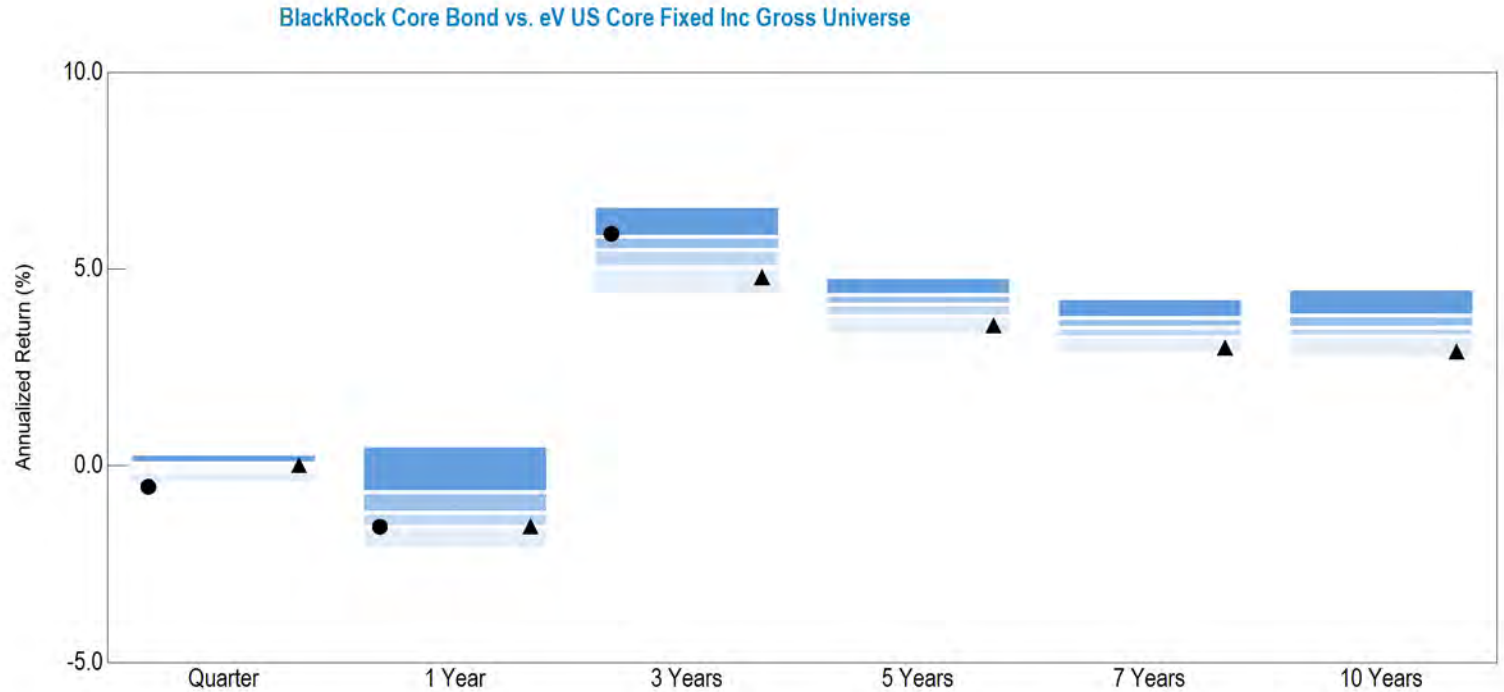
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Domestic Fixed Income</b>	<b>335,329,714</b>	<b>0.2</b>	<b>0.5</b>	<b>5.9</b>	<b>4.3</b>	<b>3.5</b>	<b>0.5</b>	<b>7.7</b>	<b>9.5</b>	<b>0.0</b>	<b>3.9</b>
<i>Bloomberg US Aggregate TR</i>		0.0	-1.5	4.8	3.6	2.9	-1.5	7.5	8.7	0.0	3.5
BlackRock Core Bond	88,124,134	-0.6	-1.8	5.6	--	--	-1.8	9.1	9.9	0.1	--
<i>Bloomberg US Aggregate TR</i>		0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--
Dodge & Cox Income Fund	93,211,502	-0.4	-0.9	6.0	--	--	-0.9	9.4	9.7	-0.3	--
<i>Bloomberg US Aggregate TR</i>		0.0	-1.5	4.8	--	--	-1.5	7.5	8.7	0.0	--
Pacific Asset Corporate Loan	78,904,369	0.9	5.2	5.5	4.3	--	5.2	2.6	8.7	0.7	4.6
<i>S&amp;P/LSTA Leveraged Loan Index</i>		0.7	5.2	5.6	4.3	--	5.2	3.1	8.6	0.4	4.1
SSGA U.S. Govt Bond Index	39,691,667	0.1	--	--	--	--	--	--	--	--	--
<i>Bloomberg US Govt/Credit 1-3 Yr. TR</i>		-0.6	--	--	--	--	--	--	--	--	--
BlackRock TIPS	35,398,042	2.3	--	--	--	--	--	--	--	--	--
<i>Bloomberg US TIPS TR</i>		2.4	--	--	--	--	--	--	--	--	--

Correlation Matrix  
Last 1 Year

	Total Domestic Fixed Income	BlackRock Core Bond	Dodge & Cox Income Fund	Pacific Asset Corporate Loan	Bloomberg US Aggregate TR
Total Domestic Fixed Income	1.00	--	--	--	--
BlackRock Core Bond	0.99	1.00	--	--	--
Dodge & Cox Income Fund	1.00	1.00	1.00	--	--
Pacific Asset Corporate Loan	-0.01	-0.02	0.02	1.00	--
Bloomberg US Aggregate TR	0.98	0.98	0.98	-0.18	1.00

BlackRock Core Bond  
 Cumulative Performance Comparison (Gross of Fees)

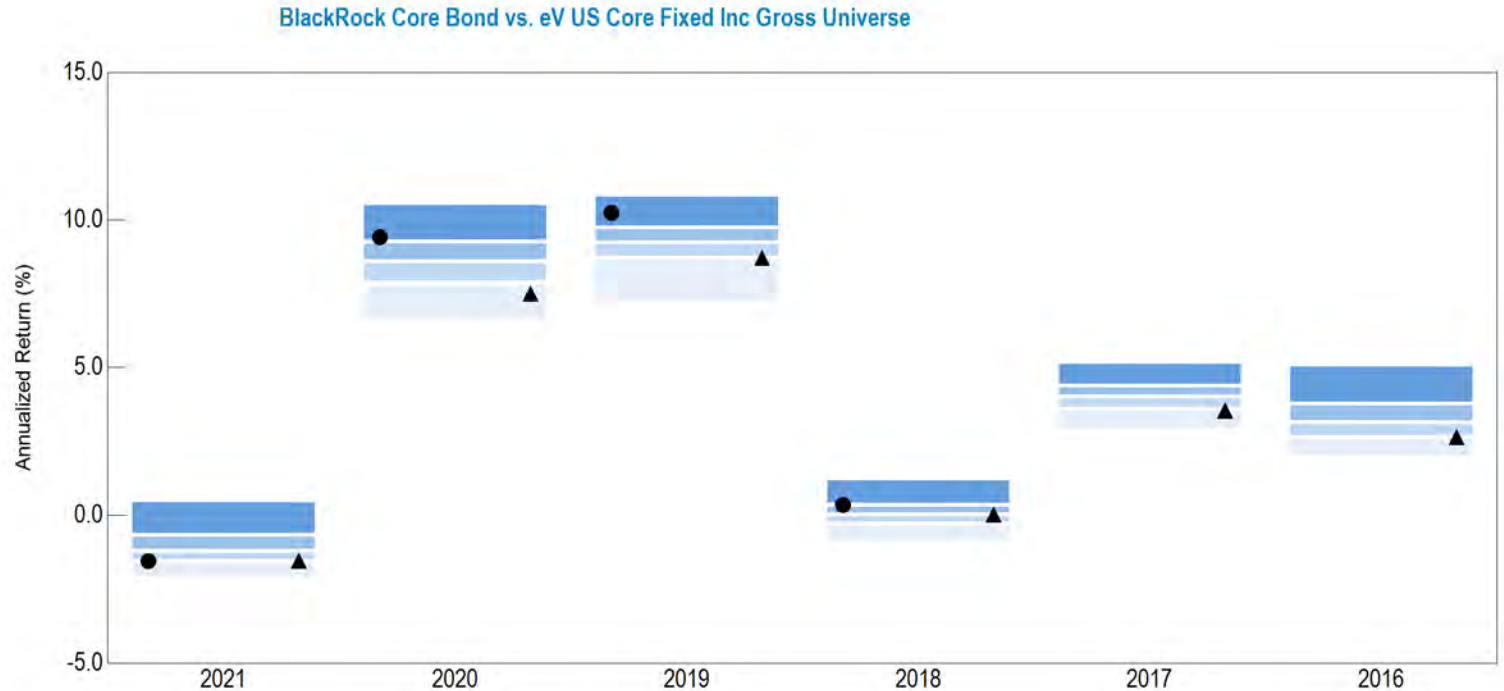
Period Ending: December 31, 2021



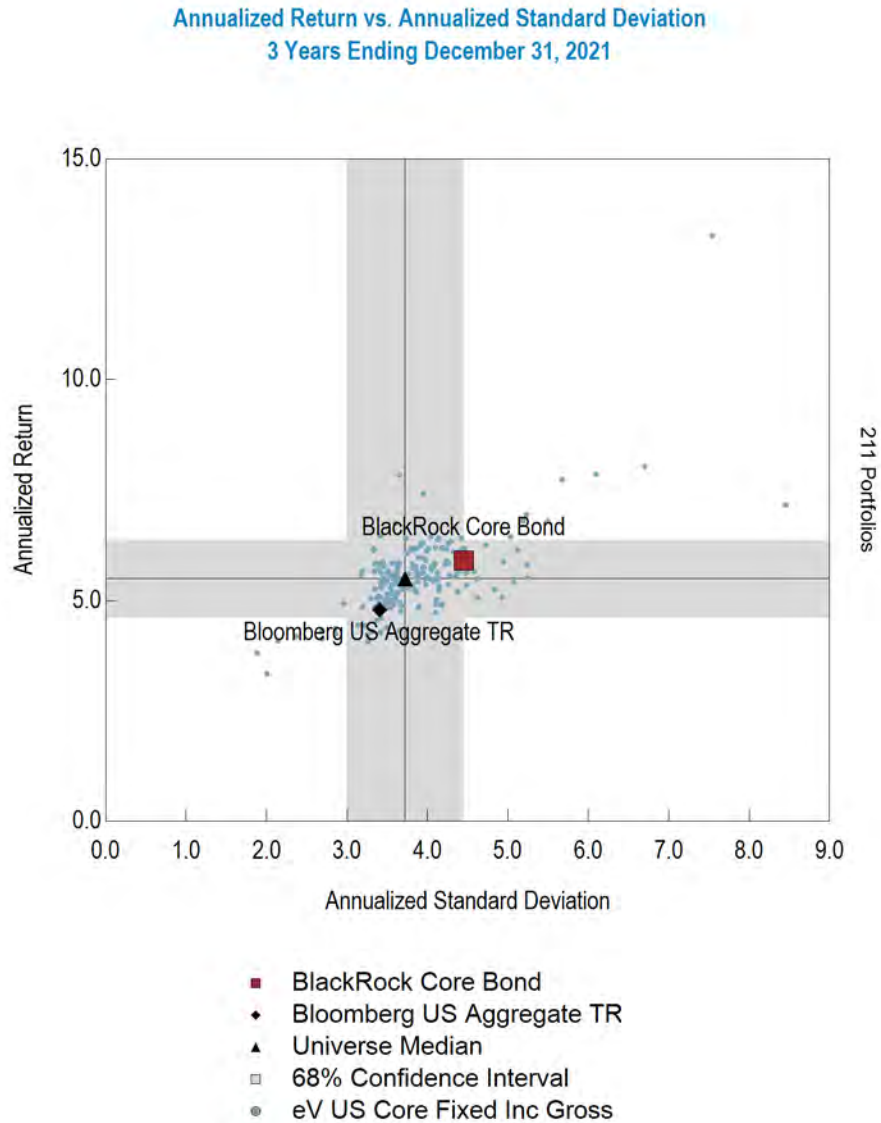
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.3	0.5	6.6	4.8	4.3	4.5						
25th Percentile	0.1	-0.7	5.8	4.3	3.8	3.8						
Median	0.0	-1.2	5.5	4.1	3.5	3.5						
75th Percentile	-0.1	-1.5	5.1	3.8	3.3	3.3						
95th Percentile	-0.4	-2.1	4.3	3.3	2.9	2.8						
# of Portfolios	217	217	211	208	204	200						
● BlackRock Core Bond	-0.5	(99)	-1.6	(77)	5.9	(22)	--	(--)	--	(--)	--	(--)
▲ Bloomberg US Aggregate TR	0.0	(38)	-1.5	(76)	4.8	(90)	3.6	(91)	3.0	(93)	2.9	(95)

BlackRock Core Bond  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021

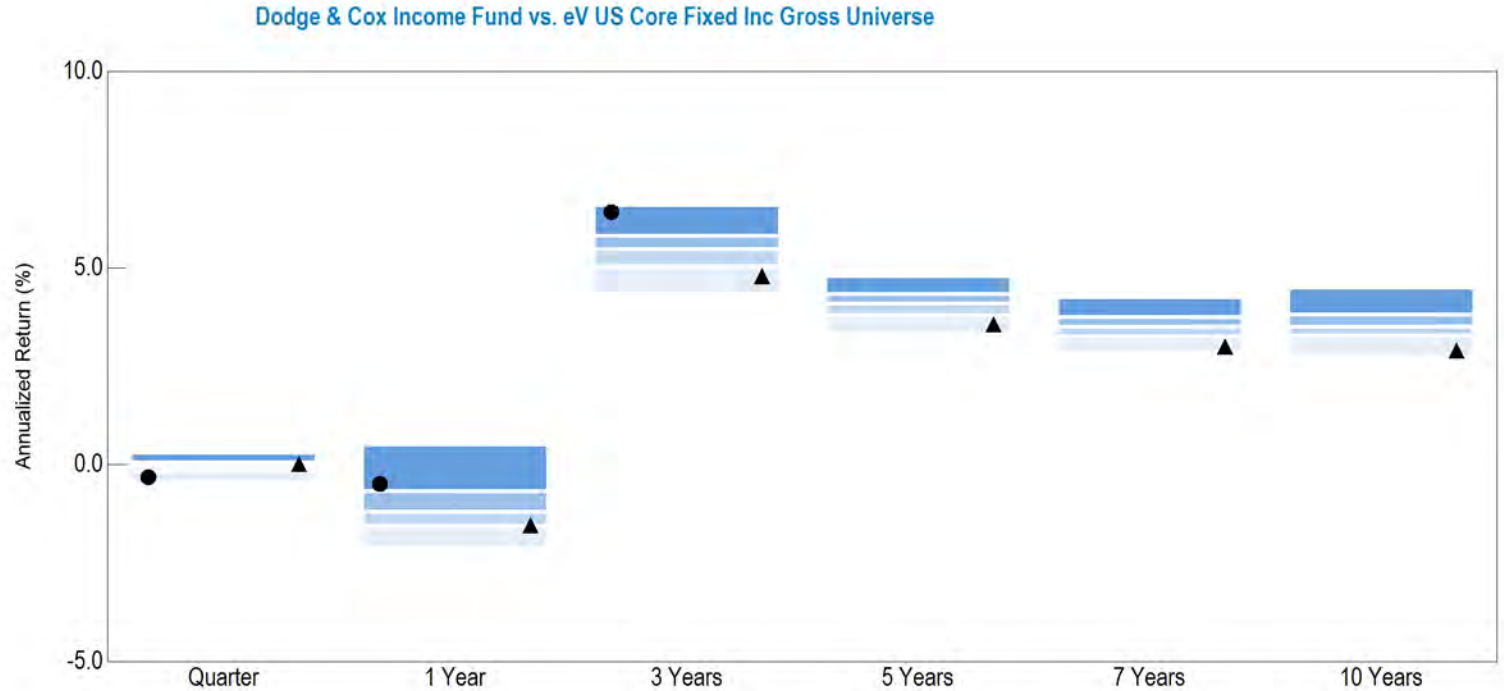


	2021		2020		2019		2018		2017		2016	
<b>Return (Rank)</b>	0.5		10.6		10.9		1.2		5.2		5.1	
5th Percentile	-0.7		9.3		9.8		0.4		4.4		3.8	
25th Percentile	-1.2		8.6		9.3		0.0		4.0		3.2	
Median	-1.5		7.9		8.7		-0.3		3.6		2.7	
75th Percentile	-2.1		6.6		7.2		-0.9		2.9		2.0	
95th Percentile												
# of Portfolios	217		225		228		240		233		223	
● BlackRock Core Bond	-1.6	(77)	9.4	(23)	10.2	(10)	0.3	(27)	--	(--)	--	(--)
▲ Bloomberg US Aggregate TR	-1.5	(76)	7.5	(85)	8.7	(77)	0.0	(54)	3.5	(79)	2.6	(77)



Dodge & Cox Income Fund  
 Cumulative Performance Comparison (Gross of Fees)

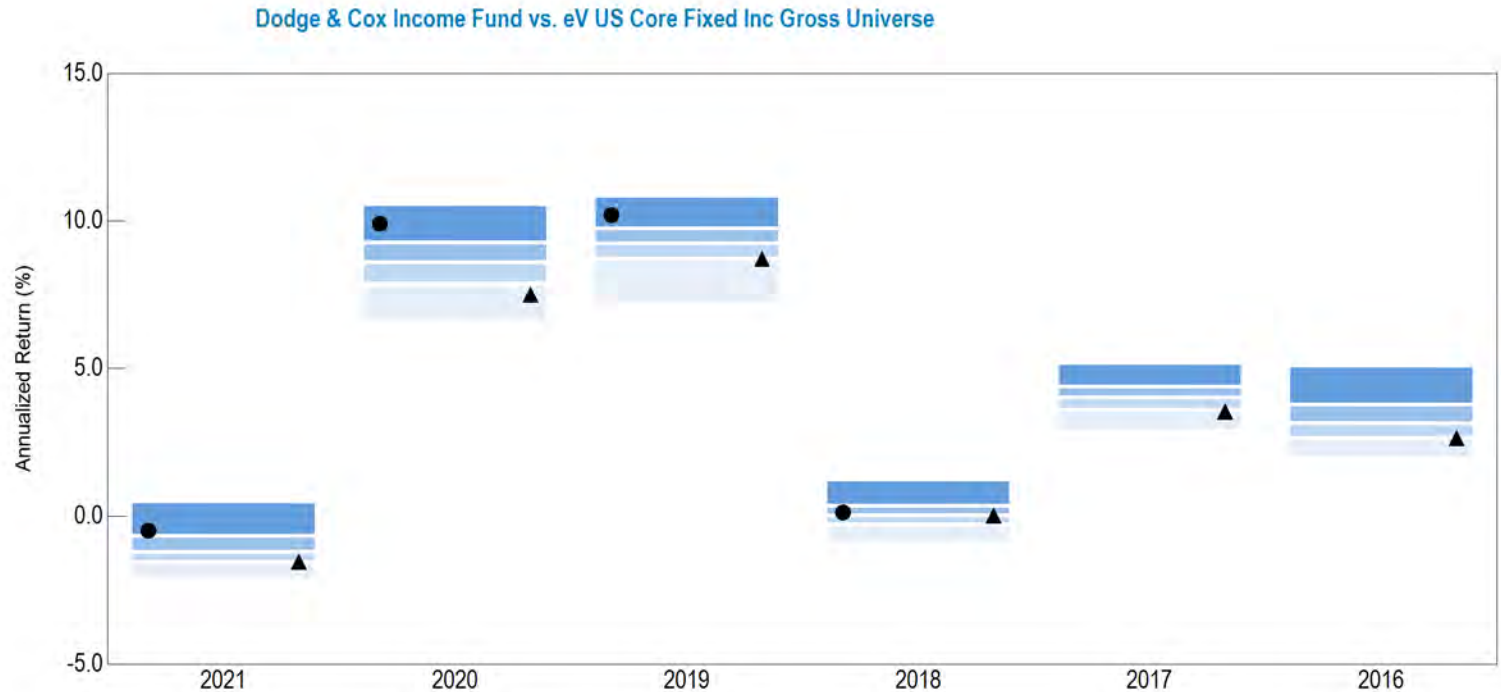
Period Ending: December 31, 2021



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.3		0.5		6.6		4.8		4.3		4.5	
25th Percentile	0.1		-0.7		5.8		4.3		3.8		3.8	
Median	0.0		-1.2		5.5		4.1		3.5		3.5	
75th Percentile	-0.1		-1.5		5.1		3.8		3.3		3.3	
95th Percentile	-0.4		-2.1		4.3		3.3		2.9		2.8	
# of Portfolios	217		217		211		208		204		200	
● Dodge & Cox Income Fund	-0.3	(91)	-0.5	(20)	6.4	(7)	--	(--)	--	(--)	--	(--)
▲ Bloomberg US Aggregate TR	0.0	(38)	-1.5	(76)	4.8	(90)	3.6	(91)	3.0	(93)	2.9	(95)

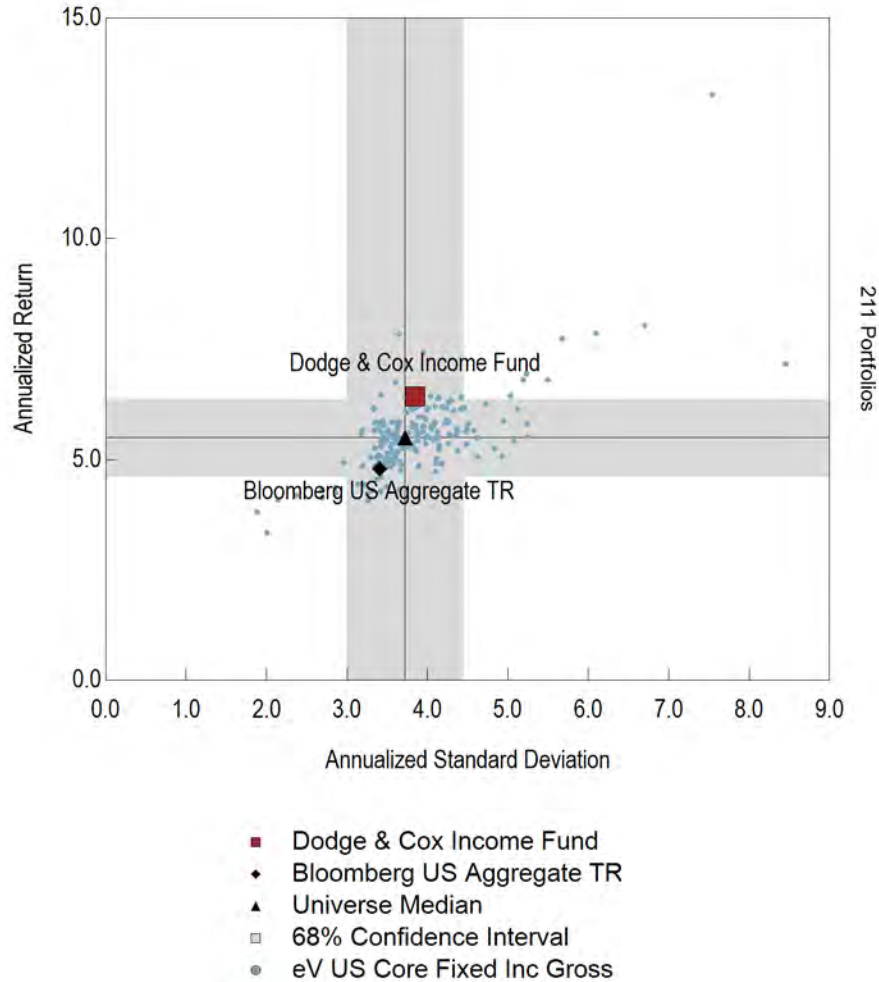
Dodge & Cox Income Fund  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021



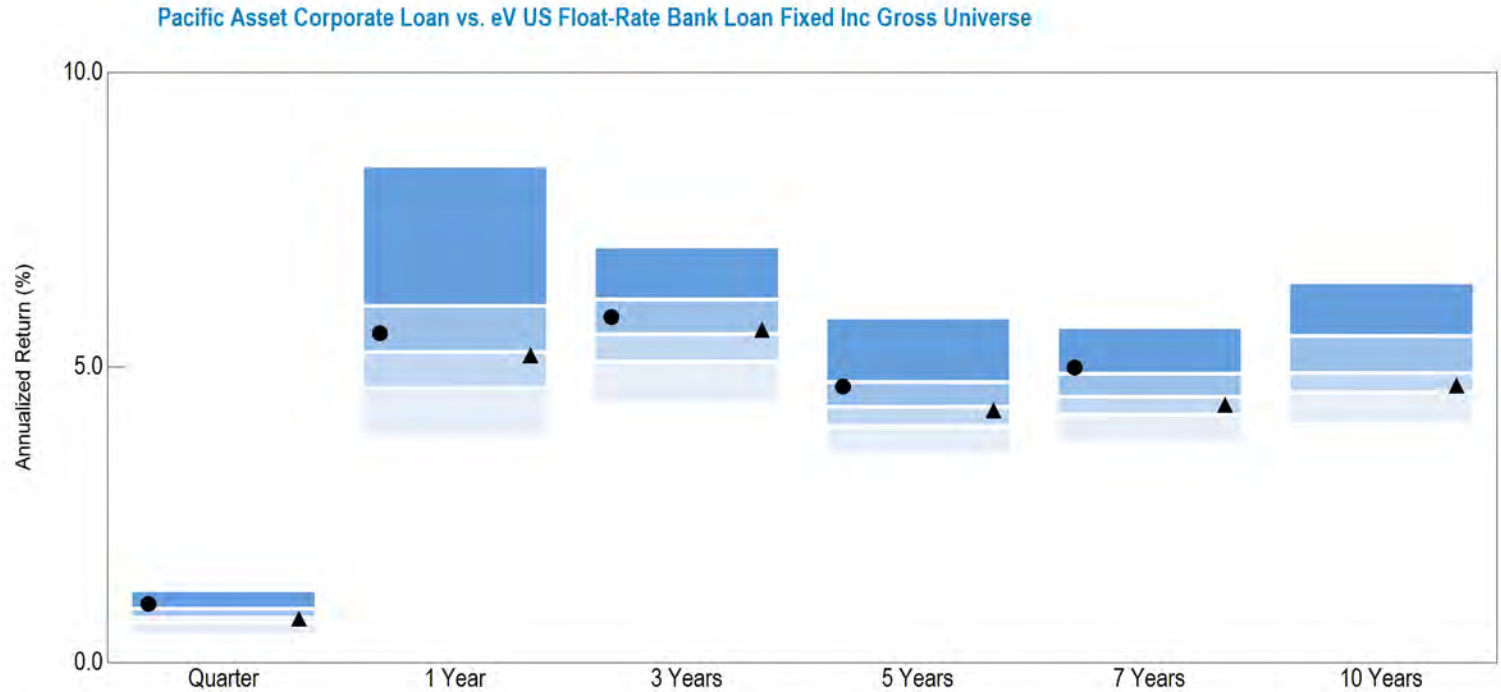
	2021		2020		2019		2018		2017		2016	
<b>Return (Rank)</b>	0.5		10.6		10.9		1.2		5.2		5.1	
5th Percentile	-0.7		9.3		9.8		0.4		4.4		3.8	
25th Percentile	-1.2		8.6		9.3		0.0		4.0		3.2	
Median	-1.5		7.9		8.7		-0.3		3.6		2.7	
75th Percentile	-2.1		6.6		7.2		-0.9		2.9		2.0	
95th Percentile												
# of Portfolios	217		225		228		240		233		223	
● Dodge & Cox Income Fund	-0.5	(20)	9.9	(14)	10.2	(11)	0.1	(43)	--	(--)	--	(--)
▲ Bloomberg US Aggregate TR	-1.5	(76)	7.5	(85)	8.7	(77)	0.0	(54)	3.5	(79)	2.6	(77)

Annualized Return vs. Annualized Standard Deviation  
3 Years Ending December 31, 2021



Pacific Asset Corporate Loan  
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021

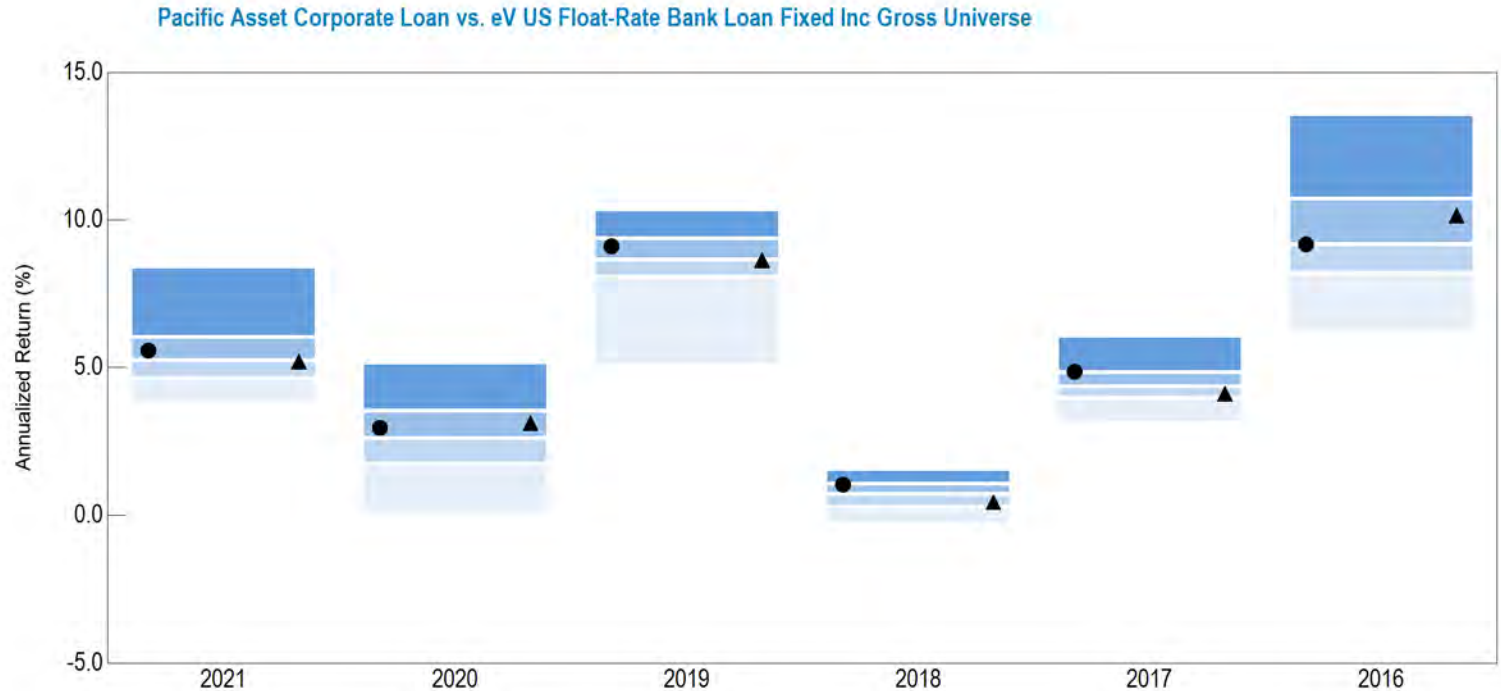


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.2		8.4		7.0		5.8		5.7		6.4	
25th Percentile	0.9		6.1		6.2		4.8		4.9		5.5	
Median	0.8		5.3		5.6		4.3		4.5		4.9	
75th Percentile	0.7		4.7		5.1		4.0		4.2		4.6	
95th Percentile	0.5		3.8		4.4		3.5		3.7		4.0	
# of Portfolios	76		76		76		71		70		61	
● Pacific Asset Corporate Loan	1.0	(13)	5.6	(38)	5.9	(37)	4.7	(29)	5.0	(19)	--	(--)
▲ S&P/LSTA Leveraged Loan Index	0.7	(58)	5.2	(52)	5.6	(47)	4.3	(57)	4.4	(65)	4.7	(68)



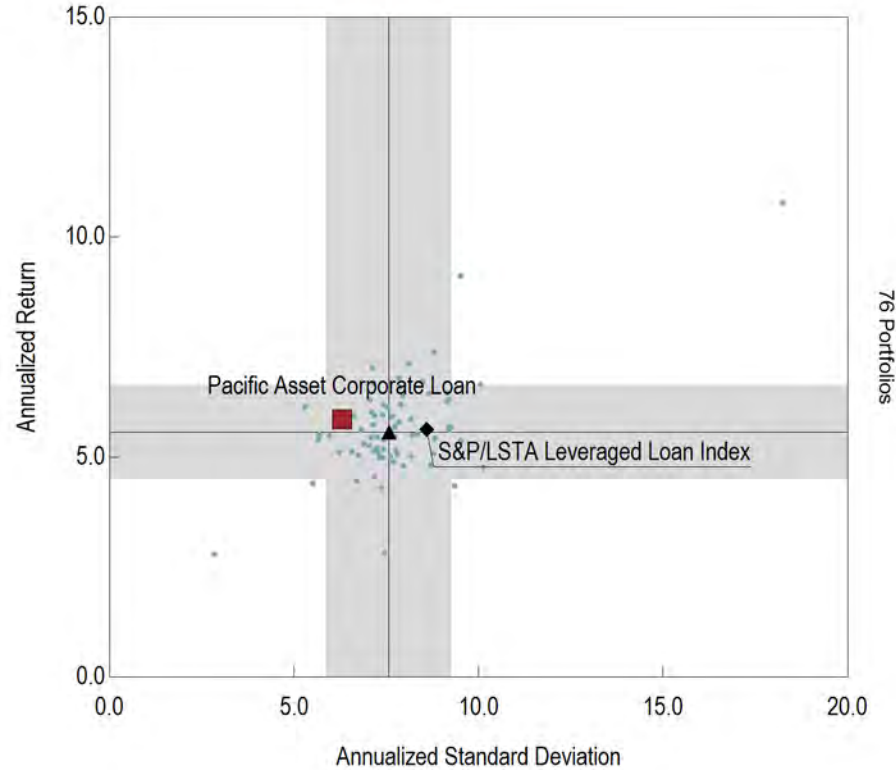
Pacific Asset Corporate Loan  
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021



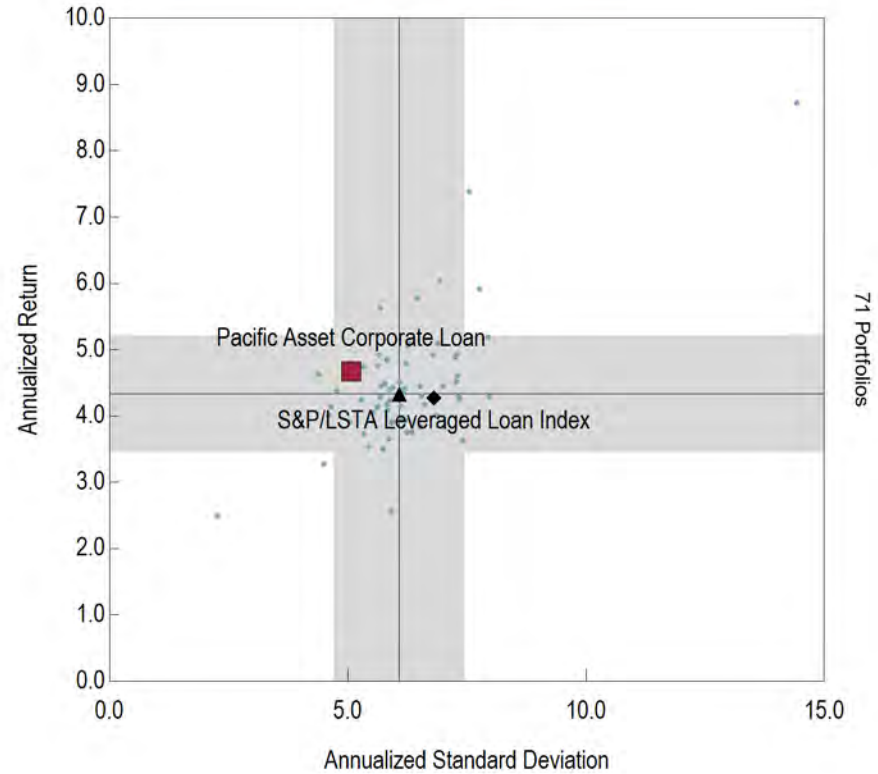
	2021		2020		2019		2018		2017		2016	
<b>5th Percentile</b>	8.4		5.2		10.3		1.6		6.1		13.6	
<b>25th Percentile</b>	6.1		3.6		9.4		1.1		4.9		10.7	
<b>Median</b>	5.3		2.6		8.7		0.7		4.4		9.2	
<b>75th Percentile</b>	4.7		1.7		8.1		0.3		4.0		8.2	
<b>95th Percentile</b>	3.8		0.0		5.1		-0.3		3.1		6.2	
<b># of Portfolios</b>	76		82		76		76		75		69	
<b>● Pacific Asset Corporate Loan</b>	5.6	(38)	3.0	(42)	9.1	(36)	1.0	(29)	4.9	(26)	9.2	(51)
<b>▲ S&amp;P/LSTA Leveraged Loan Index</b>	5.2	(52)	3.1	(36)	8.6	(52)	0.4	(68)	4.1	(71)	10.2	(35)

Annualized Return vs. Annualized Standard Deviation  
 3 Years Ending December 31, 2021



- Pacific Asset Corporate Loan
- ◆ S&P/LSTA Leveraged Loan Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Float-Rate Bank Loan Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation  
 5 Years Ending December 31, 2021



- Pacific Asset Corporate Loan
- ◆ S&P/LSTA Leveraged Loan Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Float-Rate Bank Loan Fixed Inc Gross



Total Global Fixed  
Asset Class Overview (Gross of Fees)

Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Global Fixed</b>	<b>126,564,167</b>	<b>-2.5</b>	<b>-7.0</b>	<b>2.1</b>	<b>3.0</b>	<b>1.5</b>	<b>-7.0</b>	<b>6.7</b>	<b>7.4</b>	<b>-4.3</b>	<b>13.8</b>
<i>FTSE World Govt Bond Index</i>		-1.1	-7.0	2.7	2.9	1.0	-7.0	10.1	5.9	-0.8	7.5
Brandywine Global Fixed Income	59,195,421	-0.1	-4.0	--	--	--	-4.0	--	--	--	--
<i>FTSE WGBI ex US TR</i>		-2.0	-9.7	--	--	--	-9.7	--	--	--	--
<i>eV All Global Fixed Inc Gross Rank</i>		45	71	--	--	--	71	--	--	--	--
Ashmore EM Blended Debt Fund	67,368,746	-4.5	-9.5	--	--	--	-9.5	3.2	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		-1.1	-3.9	--	--	--	-3.9	3.9	--	--	--
<i>eV All Emg Mkts Fixed Inc Gross Rank</i>		98	97	--	--	--	97	85	--	--	--

Total Global Fixed  
Asset Class Overview (Net of Fees)

Period Ending: December 31, 2021

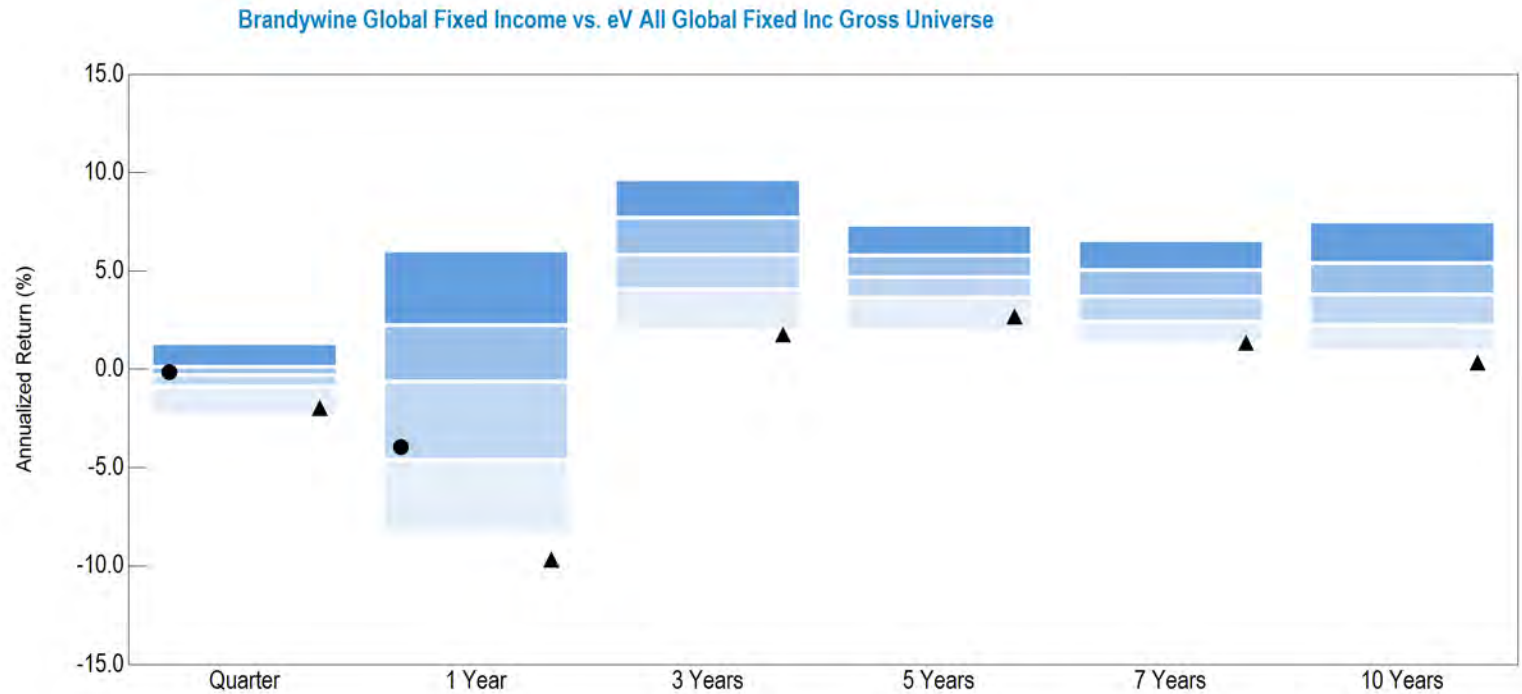
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Global Fixed</b>	<b>126,564,167</b>	<b>-2.7</b>	<b>-7.7</b>	<b>1.5</b>	<b>2.5</b>	<b>0.9</b>	<b>-7.7</b>	<b>6.0</b>	<b>6.9</b>	<b>-4.7</b>	<b>13.3</b>
<i>FTSE World Govt Bond Index</i>		-1.1	-7.0	2.7	2.9	1.0	-7.0	10.1	5.9	-0.8	7.5
Brandywine Global Fixed Income	59,195,421	-0.3	-4.4	--	--	--	-4.4	--	--	--	--
<i>FTSE WGBI ex US TR</i>		-2.0	-9.7	--	--	--	-9.7	--	--	--	--
Ashmore EM Blended Debt Fund	67,368,746	-4.8	-10.4	--	--	--	-10.4	2.1	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		-1.1	-3.9	--	--	--	-3.9	3.9	--	--	--

Correlation Matrix  
Last 1 Year

	Total Global Fixed	Brandywine Global Fixed Income	Ashmore EM Blended Debt Fund	FTSE World Govt Bond Index
Total Global Fixed	1.00	--	--	--
Brandywine Global Fixed Income	0.91	1.00	--	--
Ashmore EM Blended Debt Fund	0.99	0.85	1.00	--
FTSE World Govt Bond Index	0.78	0.77	0.77	1.00

Brandywine Global Fixed Income  
 Cumulative Performance Comparison (Gross of Fees)

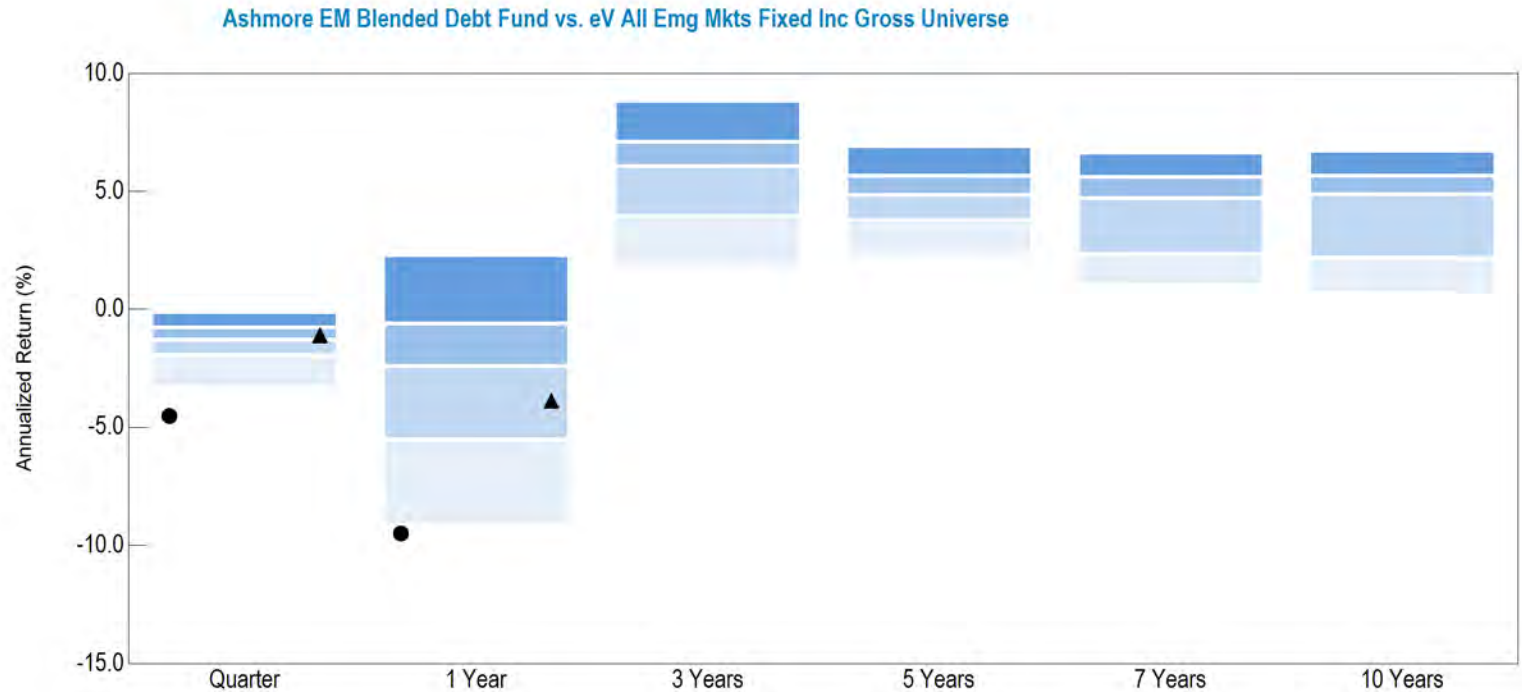
Period Ending: December 31, 2021



	Return (Rank)											
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.3	6.1	9.6	7.3	6.6	7.5						
25th Percentile	0.1	2.3	7.7	5.8	5.1	5.4						
Median	-0.3	-0.6	5.8	4.7	3.7	3.8						
75th Percentile	-0.9	-4.6	4.1	3.7	2.4	2.3						
95th Percentile	-2.4	-8.3	2.0	2.0	1.4	0.9						
# of Portfolios	519	518	493	459	405	313						
● Brandywine Global Fixed Income	-0.1	(45)	-4.0	(71)	--	(--)	--	(--)	--	(--)	--	(--)
▲ FTSE WGBI ex US TR	-2.0	(92)	-9.7	(98)	1.8	(97)	2.7	(92)	1.3	(96)	0.3	(97)

Ashmore EM Blended Debt Fund  
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: December 31, 2021



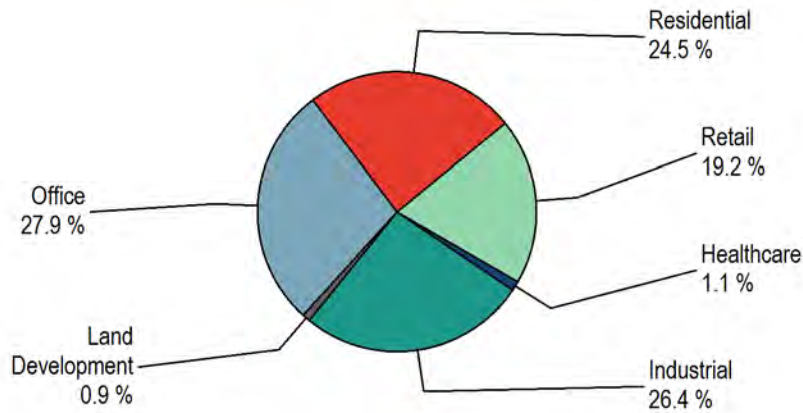
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>5th Percentile</b>	-0.1	2.3	8.8	6.9	6.6	6.7						
<b>25th Percentile</b>	-0.8	-0.6	7.1	5.7	5.6	5.7						
<b>Median</b>	-1.3	-2.4	6.1	4.9	4.7	4.9						
<b>75th Percentile</b>	-1.9	-5.5	4.0	3.8	2.4	2.2						
<b>95th Percentile</b>	-3.3	-9.1	1.8	2.3	1.0	0.7						
<b># of Portfolios</b>	308	308	290	267	236	170						
● Ashmore EM Blended Debt Fund	-4.5	(98)	-9.5	(97)	--	(--)	--	(--)	--	(--)	--	(--)
▲ 50% JPM EMBI GD/25% JPM GBI EM GD/25%	-1.1	(41)	-3.9	(63)	--	(--)	--	(--)	--	(--)	--	(--)

Total Real Estate  
Asset Class Overview (Gross of Fees)

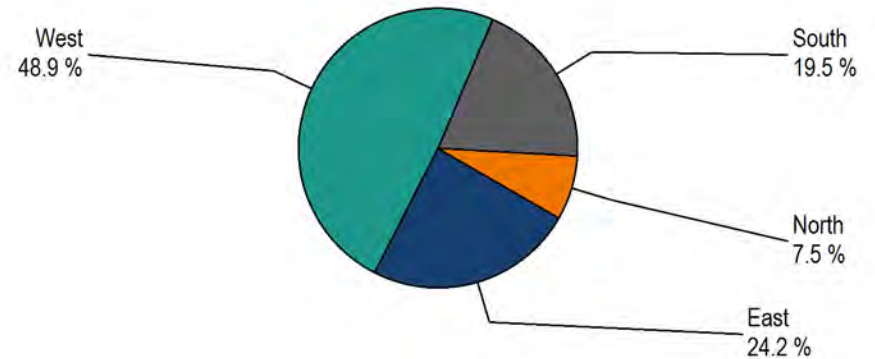
Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Real Estate</b>	<b>220,641,848</b>	<b>7.4</b>	<b>18.5</b>	<b>7.7</b>	<b>7.7</b>	<b>9.7</b>	<b>18.5</b>	<b>1.1</b>	<b>4.3</b>	<b>7.5</b>	<b>7.8</b>
<i>NCREIF Property Index</i>		6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0
JP Morgan Core Real Estate	166,852,959	7.9	19.9	7.6	7.2	9.8	19.9	0.5	3.4	7.0	6.1
<i>NCREIF-ODCE</i>		8.0	22.2	9.2	8.7	10.4	22.2	1.2	5.3	8.3	7.6
<i>NCREIF Property Index</i>		6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0
ARA American Strategic Value Realty	53,788,889	6.0	14.0	8.3	8.3	--	14.0	3.8	7.3	9.1	7.4
<i>NCREIF-ODCE</i>		8.0	22.2	9.2	8.7	--	22.2	1.2	5.3	8.3	7.6
<i>NCREIF Property Index</i>		6.2	17.7	8.4	7.8	--	17.7	1.6	6.4	6.7	7.0

Property Type Allocation  
Allocation as of December 31, 2021



Geographic Diversification  
Allocation as of December 31, 2021



ARA American Strategic Value Realty is lagged one quarter.

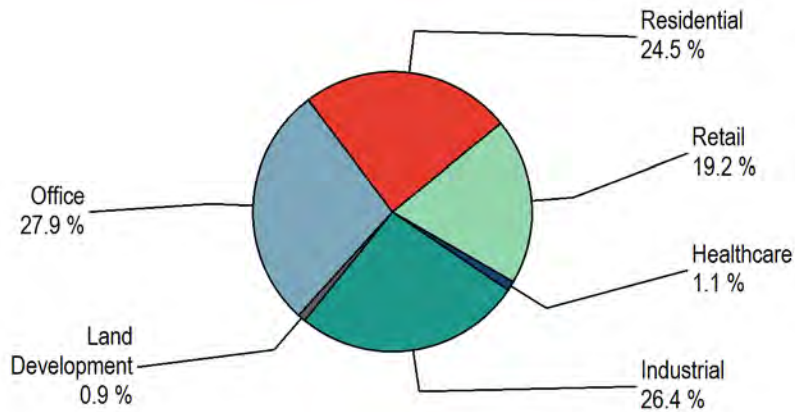


Total Real Estate  
Asset Class Overview (Net of Fees)

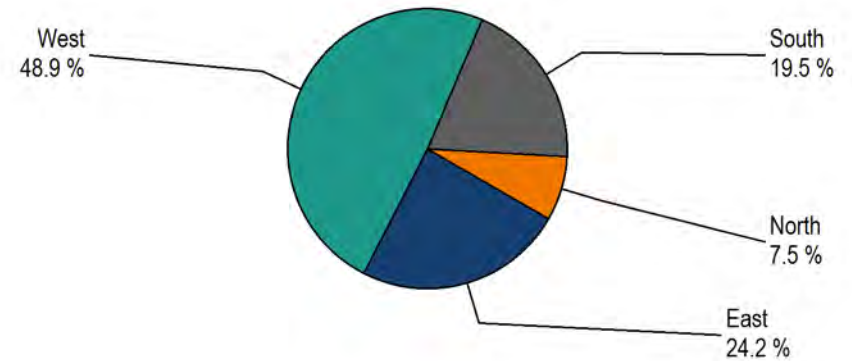
Period Ending: December 31, 2021

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
<b>Total Real Estate</b>	<b>220,641,848</b>	<b>7.4</b>	<b>18.5</b>	<b>7.7</b>	<b>7.7</b>	<b>9.3</b>	<b>18.5</b>	<b>1.1</b>	<b>4.3</b>	<b>7.5</b>	<b>7.8</b>
<i>NCREIF Property Index</i>		6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0
JP Morgan Core Real Estate	166,852,959	7.9	19.9	7.6	7.2	9.3	19.9	0.5	3.4	7.0	6.1
<i>NCREIF-ODCE</i>		8.0	22.2	9.2	8.7	10.4	22.2	1.2	5.3	8.3	7.6
<i>NCREIF Property Index</i>		6.2	17.7	8.4	7.8	9.3	17.7	1.6	6.4	6.7	7.0
ARA American Strategic Value Realty	53,788,889	6.0	14.0	8.3	8.3	--	14.0	3.8	7.3	9.1	7.4
<i>NCREIF-ODCE</i>		8.0	22.2	9.2	8.7	--	22.2	1.2	5.3	8.3	7.6
<i>NCREIF Property Index</i>		6.2	17.7	8.4	7.8	--	17.7	1.6	6.4	6.7	7.0

Property Type Allocation  
Allocation as of December 31, 2021



Geographic Diversification  
Allocation as of December 31, 2021



ARA American Strategic Value Realty is lagged one quarter.

**Performance Return Calculations**

Performance is calculated using Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

**Data Source**

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

**Illiquid Alternatives**

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

**Manager Line Up**

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
PIMCO RAE Fundamental PLUS	11/30/2007	J.P. Morgan	PIMCO Short Duration Fund	7/14/2021	PIMCO
Loomis Sayles Large Cap Growth	12/31/2016	J.P. Morgan	JP Morgan Core Real Estate	3/6/2008	J.P. Morgan
Boston Partners Large Cap Value	1/31/2017	Boston Partners	Gresham MTAP Commodity	8/31/2013	BNY Mellon
Atianta Capital Management	8/31/2010	J.P. Morgan	Cash Account	-	SLOCPT
Dodge & Cox Intl Stock	12/6/2007	J.P. Morgan	HarbourVest Partners IX-Buyout	2011 <sup>1</sup>	HarbourVest
WCM International Growth	2/15/2017	WCM	HarbourVest 2018 Global Fund L.P.	-	HarbourVest
BlackRock Core Bond	1/19/2017	J.P. Morgan	KKR Mezzanine Partners	2010 <sup>1</sup>	KKR
Dodge & Cox Income	1/19/2017	Deutsche Bank	PIMCO Distressed Credit Fund	2010 <sup>1</sup>	Brown Brothers Harriman
Pacific Asset Corporate Loan	9/1/2014	Deutsche Bank	ARA American Strategic Value	6/22/2016	American Realty Adv.
SSGA U.S. Govt Bond Index	7/16/2021	SSGA	Sixth Street Partners DCP	2016 <sup>1</sup>	TPG
BlackRock TIPS	9/1/2021	BlackRock	Pathway Private Equity Fund 9	2017 <sup>1</sup>	Pathway
Brandywine Global Fixed	6/24/2020	J.P. Morgan	Pathway Private Equity Fund 10	3/25/2020	Pathway
Ashmore EM Blended Debt Fund	3/31/2019	Ashmore	Sixth Street Partners TAO	4/16/2020	TPG

<sup>1</sup>Represents fund vintage year.

**Policy & Custom Index Composition**

Policy Index (1/1/2021-Current)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 12% Bloomberg U.S. Aggregate, 11% FTSE World Govt Bond Index, 3% Bloomberg US Treasury 7-10 yr, 2% Bloomberg US TIPS, 15% NCREIF Property Index, 3% Russell 3000, 5% Private Equity Benchmark, 5% Private Credit Benchmark, 2% Bloomberg US Govt/Credit 1-3 yr, 2% 91 Day T-Bill.
Policy Index (10/1/2020-12/31/2020)	21% Russell 3000, 21% MSCI ACWI ex-US (Gross), 31% Bloomberg U.S. Aggregate, 17% NCREIF Property Index, 1% Russell 3000, 4 Private Equity Benchmark, 5% Private Credit Benchmark.
Policy Index (4/1/2020-9/30/2020)	21% Russell 3000, 21% MSCI ACWI ex-US (Gross), 31% Bloomberg U.S. Aggregate, 17% NCREIF Property Index, 5% Russell 3000+ 300 bps (lagged), 5% Bloomberg High Yield +2% (lagged).
Policy Index (1/1/2017-3/31/2020)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% Bloomberg U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps (lagged), 5% Bloomberg High Yield +2% (lagged).
Policy Index (10/1/2016-12/31/2016)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% Bloomberg U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps, 5% Bloomberg High Yield +2% (lagged).
Policy Index (7/1/2014-9/30/2016)	23% Russell 3000, 22% MSCI ACWI ex-US (Gross), 35% Bloomberg U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (7/1/2013-6/30/2014)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 30% Bloomberg U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (4/1/2011-6/30/2013)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 20% Bloomberg U.S. Aggregate, 5% Citi World Govt Bond, 5% Barclays US TIPS, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Private Equity Index (1/1/2017-10/1/2020)	Russell 3000 +3% (Lagged)
Private Equity Index (6/1/2011-12/31/2016)	Russell 3000 +3%
Private Equity Benchmark and Private Credit Benchmarks are equal to the actual private equity and private credit returns, respectively.	
Custom Growth Benchmark (1/1/2021-Present)	29.11% Russell 3000, 25.32% MSCI ACWI Gross, 6.33% Private Equity Benchmark, 6.33% Private Credit Benchmark, 13.92% FTSE World Govt Bond Index, 18.99% NCREIF Property Index.
Custom Fixed Income Benchmark (1/1/2021-Present)	63.15% Bloomberg U.S. Aggregate, 15.79% Bloomberg US Treasury 7-10 yr, 10.53% Bloomberg US TIPS, 10.53% Bloomberg US Govt/Credit 1-3 yr.
Custom Risk Diversifying Benchmark (1/1/2021-Present)	63.33% Custom Fixed Income Benchmark, 36.67% FTSE World Govt Bond Index.

**Other Disclosures**

# Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

## Disclaimer

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The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.

# Board of Trustees

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www.SLOPensionTrust.org



Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director

## Agenda Item 10: Monthly Investment Report for January 2022

	January	Year to Date 2022	2021	2020	2019	2018	2017
Total Trust Investments (\$ millions)	\$1,735		\$1,775	\$1,552 year end	\$1,446 year end	\$1,285 year end	\$1,351 year end
<b>Total Fund Return</b>	-1.8% Gross	<b>-1.8% Gross</b>	15.2% Gross	8.9 % Gross	16.3 % Gross	-3.2 % Gross	15.5 % Gross
Policy Index Return (r)	-2.7%	-2.7%	12.8%	10.0 %	16.4 %	-3.2 %	13.4 %

- (r) Policy index as of Nov. 2021 Strategic Asset Allocation Policy with 2022 Interim targets:
- Public Mkt Equity- 24% Russell 3000, 17% MSCI ACWI ex-US
  - Public Mkt Debt- 11% Barclays US Aggregate,
  - Risk Diversifying 8% Barclays US Aggregate, 4% Barclays 7-10yr Treasury, 3% Barclays 5-10yr US TIPS
  - Real Estate & Infrastructure- 13% NCREIF Index (inc. Infrastructure)
  - Private Equity- 7% actual private equity returns
  - Private Credit- 4% actual private credit returns
  - Liquidity- 6% 90 day T-Billst
- Pending annual updates to interim targets.

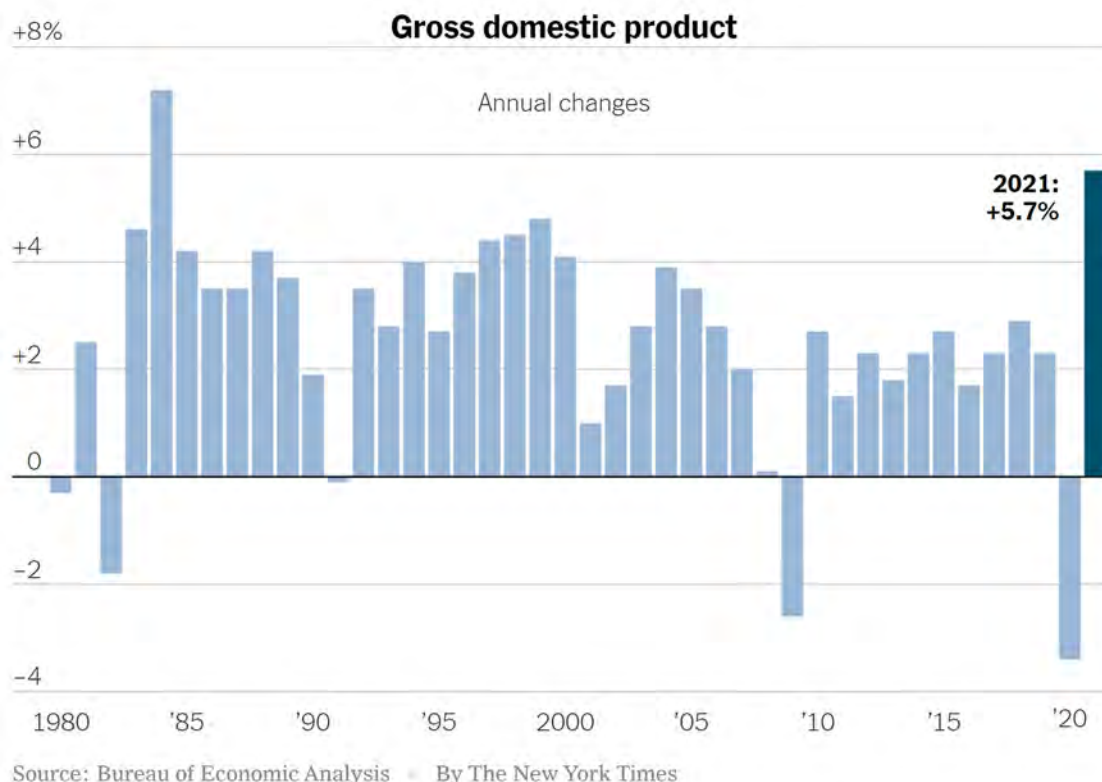
### **SLOCPT Investment Returns:**

The attached report from Verus covers the preliminary investment returns of the SLOCPT portfolio and general market conditions through the end of January. The attached market commentary from Verus details market conditions in January, but subsequent activity in February is not yet factored into these numbers. As of February 18th, the month has had negative returns.

## The Economy and Capital Markets:

- **The Economy**

- **GDP Growth** – The 4Q21 report on U.S. domestic real GDP growth (adjusted for inflation) came in at a quarterly increase of 1.7% bringing the full year of 2021 to a 5.7% increase. This was the fastest growth rate for the U.S. economy since 1984.



Strong consumer spending fueled much of the 4<sup>th</sup> quarter GDP increase as Americans buoyed by their large cash balances went shopping. The lull between the Covid Delta variant infection surge and the Omicron variant surge also helped consumer activity. Part of the GDP growth came from increasing inventories indicating progress in resolving supply chain issues that have dogged the economy in 2021.

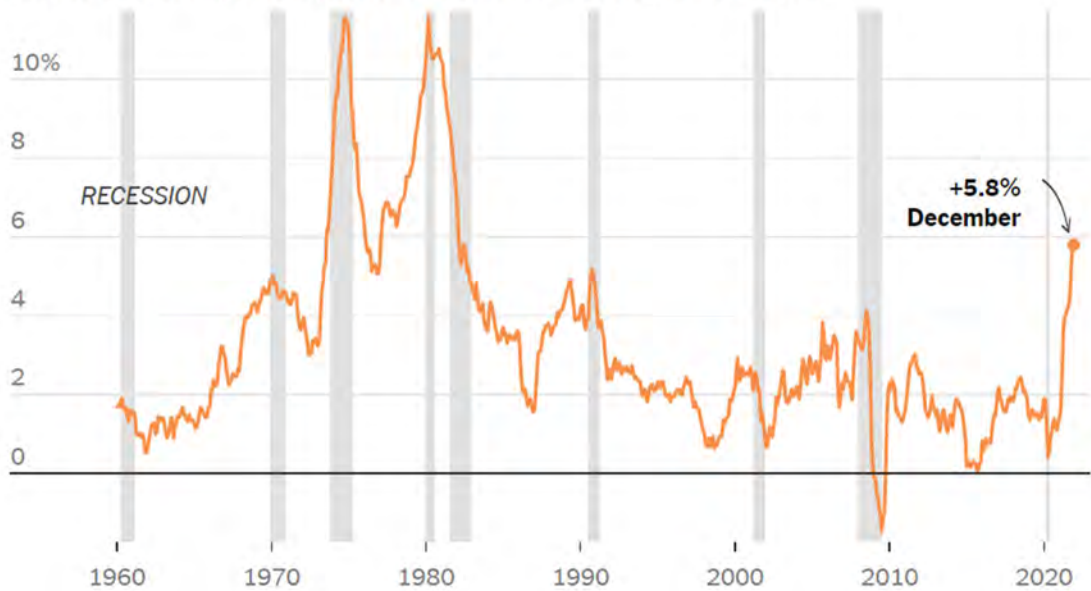
GDP growth was supported by aggressive fiscal stimulus from the Federal government and continued extremely accommodative monetary policy – both successful measures. The unwinding of those stimulus measures in 2022 and beyond in response to the predictable inflationary fall-out may slow GDP growth to more sustainable levels.

Economists expect a chilling effect on 1Q22 GDP growth from a retreat in consumer spending due to Omicron fears. However, it is also expected that the later three quarters of 2022 should see a return to normalized growth less than the buoyant 2021 growth, but above the long-term potential growth rate of around 2.5%.

- **Inflation** – Inflation continued to spook the economy. The CPI index ended January with a 7.5% year-over-year increase. The Fed’s preferred measure of inflation is the

Personal Consumptions Expenditures Index. The PCE finished 2021 with a 5.8% increase – the highest rate since 1982.

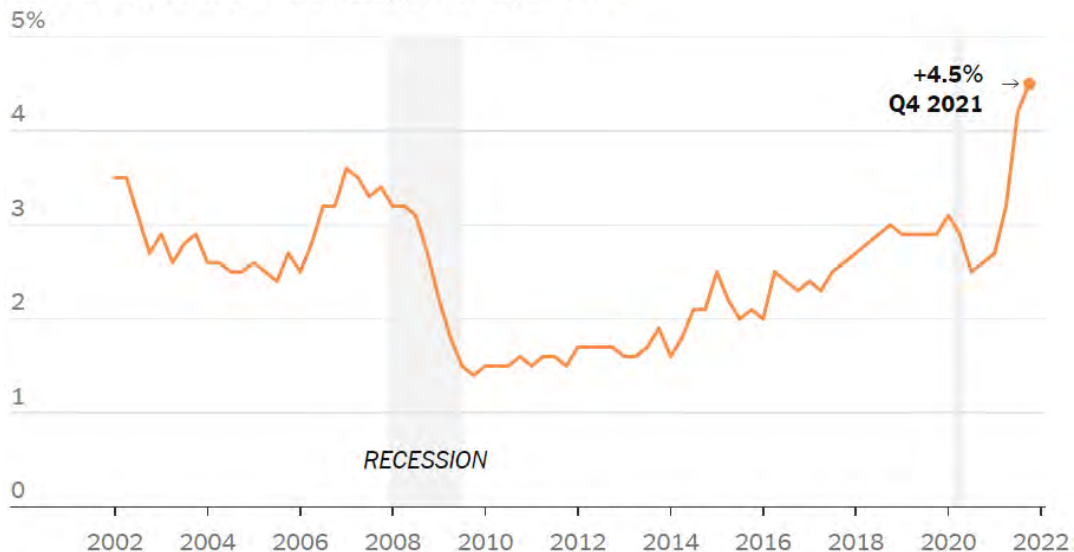
**Personal Consumption Expenditures index, change from a year prior**



Source: U.S. Bureau of Economic Analysis • By The New York Times

**Wage Growth** – Inflation high trailing year measures include brisk pay growth. While strong wage growth is good news for workers, it increases the risk of sustained high inflation: Companies may raise prices to try to cover rising labor costs. The Employment Cost Index, a Fed favored measure, increased 1.0% in 4Q21. The full-year measure of the wages and salaries component of employment costs increased 4.5%.

**Civilian wages and salaries, change from a year prior**



Source: Employment Cost Index, U.S. Bureau of Economic Analysis • By The New York Times

- **Economic Policy**

- **Monetary Policy** – At its January 26th meeting Fed statements indicated that the asset purchase monetary stimulus could be ended as early as March – faster than expected. Acting to rein in surging inflation the Fed left indications that a following increase in the Fed Funds rate as early as March-June was possible - also sooner than expected. The stock and bond markets reacted negatively to the increasingly hawkish tone from the Fed.

- **Employment and Wages** –

- **New Jobs** - The January jobs report from the BLS on nonfarm employment showed a larger than expected gain of 467k new jobs. Analysts had expected a slowing effect on new jobs from the peak surge of the Covid Omicron variant infections.
- **Unemployment** - The unemployment rate in January was little changed at 4.0%.
- **Forecast for Unemployment** - The President of the St. Louis Federal Reserve Bank, James Bullard, forecast that the U.S. unemployment rate could fall below 3% by the end of 2022. If so, this would be the lowest unemployment rate since the Korean War. Such a low unemployment rate is associated with an economy that may be overheating and fueling price and wage increases in the inflation rate.

### **Investment Markets** –

- **The Era of Free Money** - The Economist Magazine in the January 29<sup>th</sup> edition featured an article titled “Markets have fallen because the era of free money is coming to an end”. The article about the effects of monetary policy rate normalization and interest rate increases included the following excerpts –

“After the interest-rate cuts and hectic central-bank bond-buying of early 2020, investors came to believe that central-bank stimulus would pretty much last forever. Today, however, as investors come to terms with the end of the era of free money, financial markets are in spasms. Markets now expect interest rates to increase four times in 2022 as the Fed fights the inflation that has lifted growth in the consumer-price index to 7%, a level barely imaginable a year ago.”

“This hawkish shift is the most important among many to have taken place in the world’s central banks in recent months. But it has only recently begun to bite in asset markets. After reaching a vertiginous high of nearly 40 times earnings at the turn of the year, the S&P 500 index of stocks has fallen by 9% in January.”

“The effect of higher rates on the real economy is slower-burning and harder to anticipate. Ultra-cheap money let companies raise vast amounts of capital in 2021, a



boom that will not be repeated. Homebuyers have assumed big mortgages as house prices have soared. Distressed firms have taken advantage of government-backed loans. Government debt-to- GDP ratios have ballooned, because of large, sustained deficits in the rich world and a collapse in growth in many emerging economies.”

“As they aim for a narrow landing strip, central banks also face high winds, because of the risk of war in Ukraine and uncertainties associated with the pandemic. Economists are struggling to forecast how many people who left the workforce in 2020 will eventually return—and the more that do, the less the chance that a damaging wage-price spiral will take hold.

They are also grappling with doubts over when consumers will shift their spending back to services, easing the upward pressure on goods prices caused by bugged-up supply chains. Economic data have become harder to interpret. If retail sales fall, for example, does it reflect economic weakening, or a welcome return to normal patterns of consumption?

The uncertainty about the global economy’s strength and its ability to withstand higher rates, combined with central banks’ twitchy trigger-fingers as they worry about inflation, means that markets are entering a new phase. During much of the pandemic, cheap money drove asset prices to astonishing highs even as the world economy was in the dumps. Today they are tightly bound to its fate.”

Respectfully Submitted,

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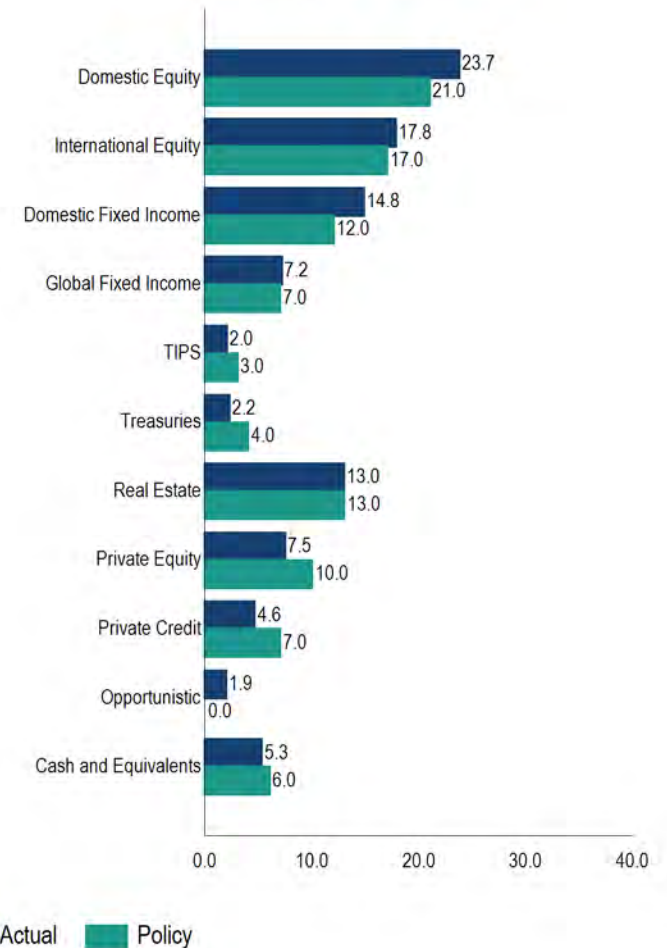
# San Luis Obispo County Pension Trust

## Executive Summary - Preliminary (Gross of Fees)

Period Ending: January 31, 2022

	Market Value	% of Portfolio	1 Mo	YTD
<b>Total Fund</b>	<b>1,735,454,146</b>	<b>100.0</b>	<b>-1.8</b>	<b>-1.8</b>
Interim Policy Index			-2.7	-2.7
FFP SAA Index			-1.9	-1.9
<b>Total Growth</b>	<b>1,155,396,132</b>	<b>66.6</b>	<b>-2.1</b>	<b>-2.1</b>
Custom Growth Benchmark			-3.0	-3.0
<b>Total Public Equity</b>	<b>720,753,581</b>	<b>41.5</b>	<b>-3.9</b>	<b>-3.9</b>
Russell 3000			-5.9	-5.9
<b>Total Domestic Equity</b>	<b>411,917,574</b>	<b>23.7</b>	<b>-3.1</b>	<b>-3.1</b>
Russell 3000			-5.9	-5.9
PIMCO RAE US	114,647,549	6.6	-0.3	-0.3
S&P 500			-5.2	-5.2
Loomis Sayles Large Cap Growth	103,034,853	5.9	-6.1	-6.1
Russell 1000 Growth			-8.6	-8.6
Boston Partners Large Cap Value	112,703,917	6.5	0.1	0.1
Russell 1000 Value			-2.3	-2.3
Atlanta Capital Mgmt	81,531,256	4.7	-7.0	-7.0
Russell 2500			-8.3	-8.3
<b>Total International Equity</b>	<b>308,836,007</b>	<b>17.8</b>	<b>-5.0</b>	<b>-5.0</b>
MSCI ACWI ex USA Gross			-3.7	-3.7
Dodge & Cox Intl Stock	166,959,221	9.6	3.1	3.1
MSCI ACWI ex USA Value Gross			0.9	0.9
WCM International Growth	141,876,786	8.2	-12.9	-12.9
MSCI ACWI ex USA Growth Gross			-8.1	-8.1
<b>Total Private Equity</b>	<b>129,420,581</b>	<b>7.5</b>		
Harbourvest Partners IX Buyout Fund L.P.	16,851,850	1.0		
Pathway Private Equity Fund Investors 9 L.P.	85,235,985	4.9		
Harbourvest 2018 Global Fund L.P.	18,597,751	1.1		
Pathway Private Equity Fund Investors 10 L.P.	8,734,995	0.5		
<b>Total Private Credit</b>	<b>80,014,575</b>	<b>4.6</b>		
Sixth Street Partners DCP	80,014,575	4.6		

Actual vs Interim Target Allocation (%)



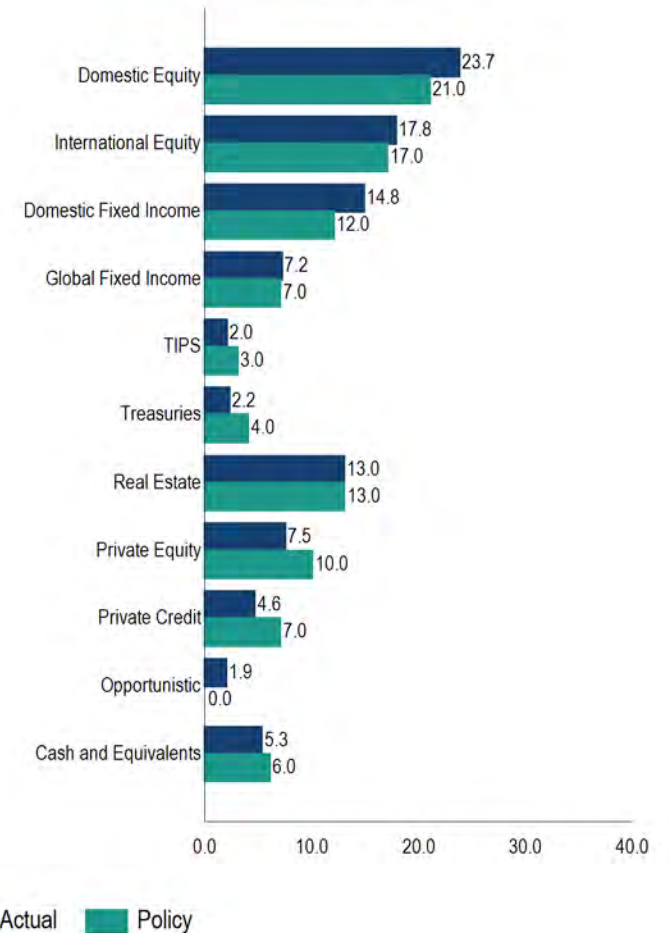
New Policy Index as of 1/1/2022 24% Russell 3000, 17% MSCI ACWI ex-US (Gross), 15% BBgBarc U.S. Aggregate, 7% FTSE WGBI, 4% BbgBarc US Treasury 7-10 yr, 3% BBgBarc US TIPS, 13% NCREIF Property Index, 7% Actual Private Equity Return, 4% Actual Private Credit Return, 6% 91 day T-Bills. 2% allocation to Infrastructure is to NCREIF Property, until a more appropriate benchmark is established. Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. All returns are (G) Gross of fees. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. (e) To avoid unnecessary and possibly misleading Tracking Error, the Total Fund Policy Benchmark uses actual time-weighted private markets returns applied to actual private market asset class weights rounded to the nearest whole percentage point. The difference in actual weight versus target is allocated to the private market investment's public market "equivalent" (e.g., private equity to public equity; private credit to public fixed income, private real estate to public real estate). All data is preliminary

San Luis Obispo County Pension Trust  
 Executive Summary - Preliminary (Gross of Fees)

Period Ending: January 31, 2022

	Market Value	% of Portfolio	1 Mo	YTD
<b>Total Real Estate</b>	<b>225,207,395</b>	<b>13.0</b>	<b>2.1</b>	<b>2.1</b>
NCREIF Property Index			0.0	0.0
JP Morgan Core Real Estate	168,839,129	9.7	1.1	1.1
NCREIF-ODCE			0.0	0.0
NCREIF Property Index			0.0	0.0
ARA American Strategic Value Realty	56,368,266	3.2	5.0	5.0
NCREIF-ODCE			0.0	0.0
NCREIF Property Index			0.0	0.0
<b>Total Risk Diversifying</b>	<b>455,074,644</b>	<b>26.2</b>	<b>-1.5</b>	<b>-1.5</b>
Custom Risk Diversifying Benchmark			-2.2	-2.2
<b>Total Domestic Fixed Income</b>	<b>330,641,810</b>	<b>19.1</b>	<b>-1.4</b>	<b>-1.4</b>
Bloomberg US Aggregate TR			-2.2	-2.2
BlackRock Core Bond	86,303,096	5.0	-2.0	-2.0
Bloomberg US Aggregate TR			-2.2	-2.2
Dodge & Cox Income Fund	91,421,523	5.3	-1.9	-1.9
Bloomberg US Aggregate TR			-2.2	-2.2
Pacific Asset Corporate Loan	79,266,778	4.6	0.5	0.5
S&P/LSTA Leveraged Loan Index			0.4	0.4
SSGA U.S. Govt Bond Index	38,947,082	2.2	-1.9	-1.9
Bloomberg US Treasury 7-10 Yr TR			-2.4	-2.4
BlackRock TIPS	34,703,331	2.0	-2.0	-2.0
Bloomberg US TIPS TR			-2.0	-2.0
<b>Total Global Fixed</b>	<b>124,432,834</b>	<b>7.2</b>	<b>-1.7</b>	<b>-1.7</b>
FTSE World Govt Bond Index			-2.1	-2.1
Brandywine Global Fixed Income	58,624,988	3.4	-1.0	-1.0
FTSE WGBI ex US TR			-2.3	-2.3
Ashmore EM Blended Debt Fund	65,807,846	3.8	-2.3	-2.3
50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+			-1.4	-1.4

Actual vs Interim Target Allocation (%)



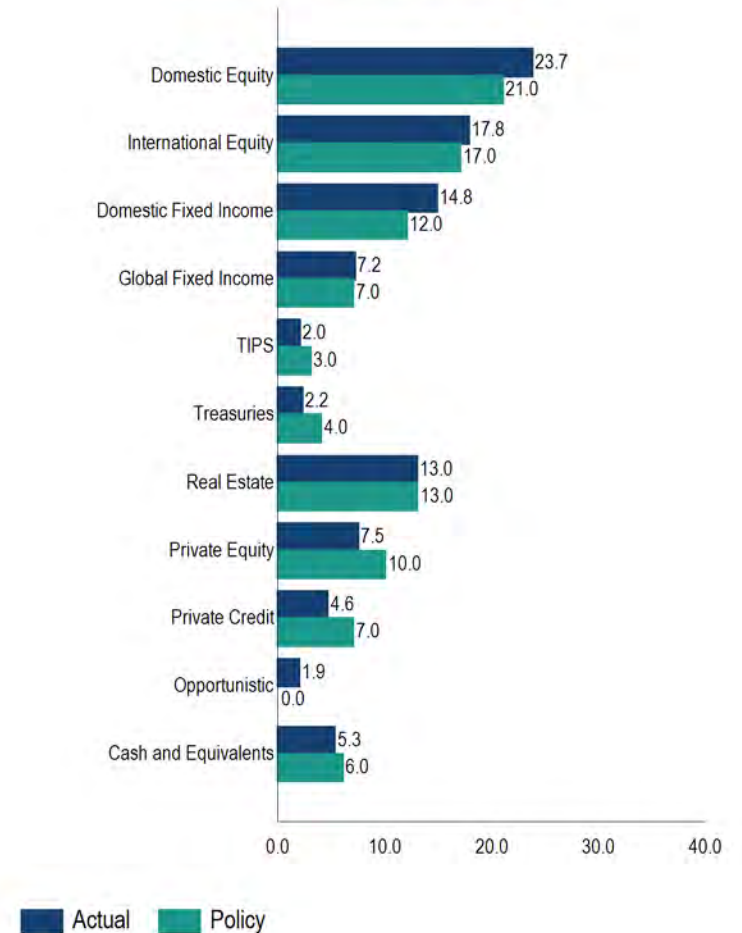
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San Luis Obispo County Pension Trust  
 Executive Summary - Preliminary (Gross of Fees)

Period Ending: January 31, 2022

	Market Value	% of Portfolio	1 Mo	YTD
<b>Total Liquidity</b>	<b>91,409,705</b>	<b>5.3</b>	<b>-0.1</b>	<b>-0.1</b>
91 Day T-Bills			0.0	0.0
<b>Total Cash</b>	<b>91,409,705</b>	<b>5.3</b>	<b>-0.1</b>	<b>-0.1</b>
91 Day T-Bills			0.0	0.0
PIMCO Short Duration Fund	29,522,522	1.7	-0.7	-0.7
Bloomberg US Govt/Credit 1-3 Yr. TR			-0.7	-0.7
Cash Account	46,292,838	2.7	0.2	0.2
91 Day T-Bills			0.0	0.0
Investment Cash	15,594,345	0.9	0.0	0.0
91 Day T-Bills			0.0	0.0
<b>Total Opportunistic</b>	<b>33,573,665</b>	<b>1.9</b>		
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	5,267,936	0.3		
Sixth Street Partners TAO	28,305,729	1.6		

Actual vs Interim Target Allocation (%)



New Policy Index as of 1/1/2022 24% Russell 3000, 17% MSCI ACWI ex-US (Gross), 15% BbgBarc U.S. Aggregate, 7% FTSE WGBI, 4% BbgBarc US Treasury 7-10 yr, 3% BbgBarc US TIPS, 13% NCREIF Property Index, 7% Actual Private Equity Return, 4% Actual Private Credit Return, 6% 91 day T-Bills. 2% allocation to Infrastructure is to NCREIF Property, until a more appropriate benchmark is established. Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. All returns are (G) Gross of fees. Effective 1/1/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. (e) To avoid unnecessary and possibly misleading Tracking Error, the Total Fund Policy Benchmark uses actual time-weighted private markets returns applied to actual private market asset class weights rounded to the nearest whole percentage point. The difference in actual weight versus target is allocated to the private market investment's public market "equivalent" (e.g., private equity to public equity; private credit to public fixed income, private real estate to public real estate). All data is preliminary

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**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

JANUARY 2022  
Capital Markets Update

# Market commentary

## U.S. ECONOMICS

- U.S. GDP grew at a quarterly annualized rate of 6.9% in Q4 2021, beating expectations of a 5.5% growth rate. Inventory growth in the fourth quarter accounted for roughly 70% of the print – though private inventories remain 2.7% below pre-pandemic levels in real dollar terms.
- Headline CPI accelerated to 7.5% year-over-year – the highest level since February 1982 – and beat expectations (7.3%). Strong month-over-month increases in the cost of food (+0.9%), energy (+0.9%), and shelter costs (+0.3%) helped drive the overall rate higher.
- Shelter costs have risen +4.4% year-over-year. While growth in this component has been far lower than that of used cars (+40.5%) and fuel oil (+46.5), increases in shelter costs – which make up ~40% of core CPI – are often considered to be ‘stickier’ and may help support higher levels of inflation as other categories begin to moderate.

## U.S. EQUITIES

- The S&P 500 dropped -5.2% and recorded its worst month of performance since March 2020. Rising discount rates amid expectations for more rate hikes in 2022 likely drove the sell off.
- Of the 56% of S&P 500 companies which have reported Q4 earnings, 76% have beat revenue estimates. If all remaining financials come in at expectations for revenues, year-over-year revenue growth will be 15.0% for Q4 2021 which represents the third highest rate since 2008 per FactSet.
- The blended net profit margin for the S&P 500 fell in Q4 to 12.4%, from 12.9% the quarter before. Multiple measures of the labor market continued to indicate tightness – rising wages have likely compressed profit margins in recent months.

## U.S. FIXED INCOME

- The FOMC indicated its intent to begin raising rates in March following the conclusion of the asset purchases taper. Fed Chairman Powell took an even more hawkish tone and stated there is ample room to raise rates without detriment to the labor market. Also noted was the “orderly and predictable” unwinding of the Fed’s balance sheet which will follow the rate increases.
- The number of rate hikes expected in 2022 implied by Fed Funds Futures has increased from three to five with investors pricing in an effective fed funds rate of 1.3% for December 2022. Continued strength in the labor market and sustained high inflation helps support expectations that the Fed will use rates more aggressively to achieve its price stability goal.
- The yield curve flattened as bonds sold off across maturities on the prospect of more rate hikes than previously expected. The two-year Treasury yield climbed 45 basis-points and the spread between 30- and two-year yields declined by 24 basis-points.

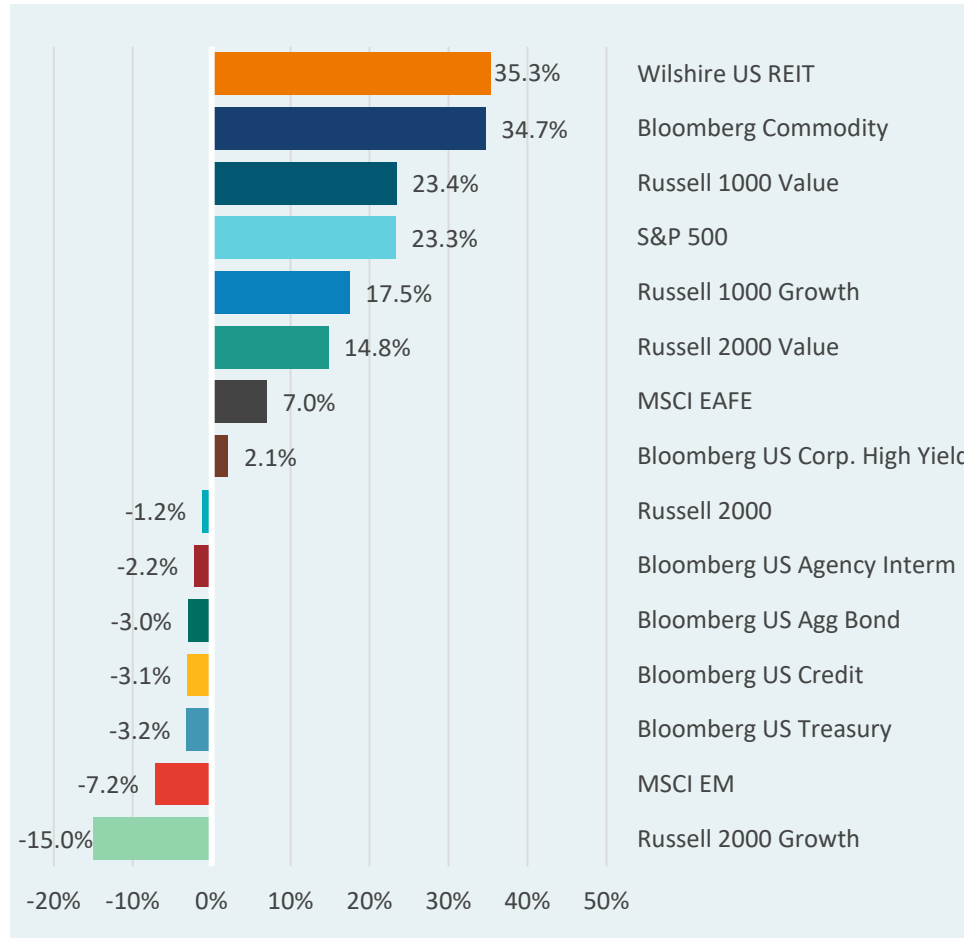
## INTERNATIONAL MARKETS

- China’s CSI 300 Index (-7.4%) entered a bear market intra-month, marking the first such market for the index since the trade disputes between the U.S. and China intensified in 2018.
- Geopolitical tensions escalated in Europe as Russia (MSCI Russia -8.7%) amassed troops near the Ukrainian border. The U.S. and its allies have threatened sanctions as a deterrent against Russian invasion.
- China continued its zero-Covid policy and imposed targeted lockdowns in key port cities. Constrained supply chains may continue to boost the cost of China’s manufactured goods.

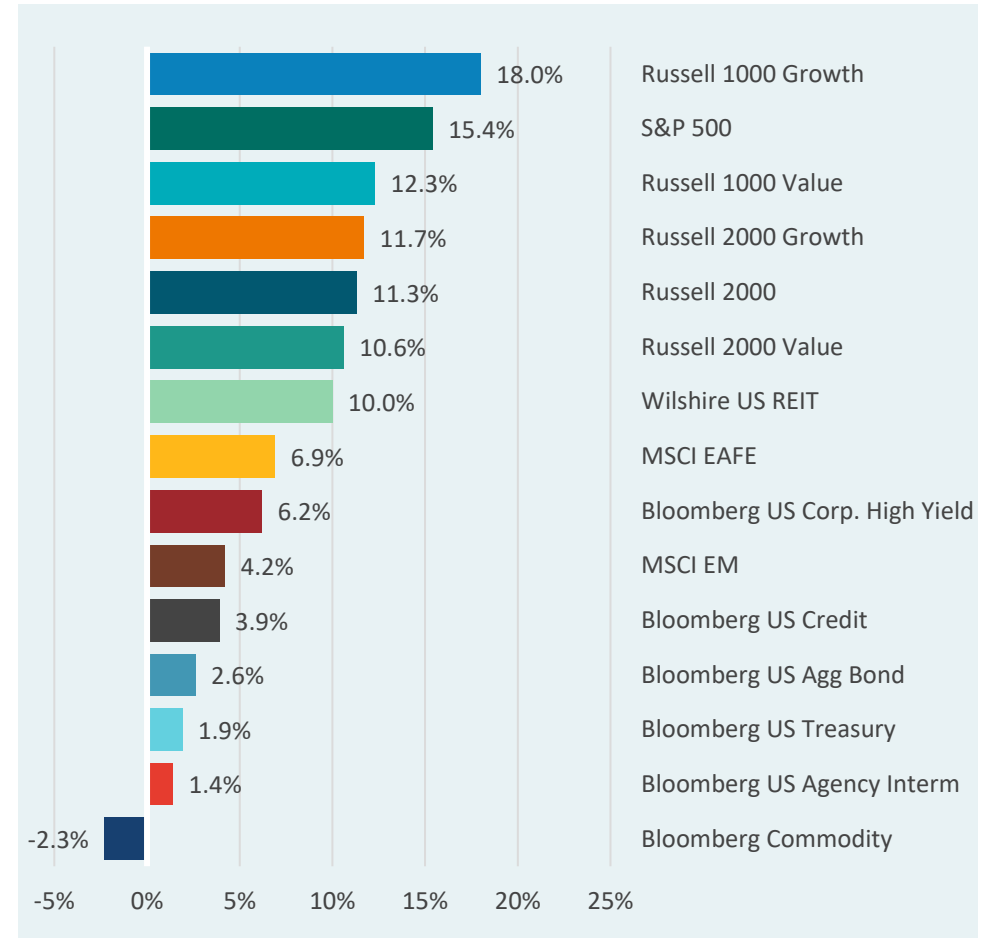


# Major asset class returns

ONE YEAR ENDING JANUARY



TEN YEARS ENDING JANUARY



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

Source: Morningstar, as of 1/31/22

Source: Morningstar, as of 1/31/22

# U.S. large cap equities

- The S&P 500 Index fell -5.2% and neared technical correction intra-month as the index sold-off. A technical correction is marked by a decline of at least 10% from peak to trough, while a technical bear market is marked by a 20% drop from peak to trough.
- The Energy sector rose 19.1%, and strongly outperformed both the overall index (S&P 500 -5.2%) and all 10 other S&P 500 GICS sectors. Energy stocks benefitted from rising oil prices. Oil prices were supported by an increase in geopolitical risk premium as Russo-Ukrainian tensions neared boiling over.
- Of the 11 S&P 500 GICS sectors, only Energy (+19.1%) and Financials (+0.1%) posted positive returns. The Consumer Discretionary (-9.7%), Real Estate (-8.5%), and Information Technology (-6.9%) sectors retreated and led the index lower.
- The Cboe VIX Index of implied volatility ended the month at 24.8 after reaching an intra-month high of 32.0, the highest level in a year. Increasingly hawkish positioning by the Fed and geopolitical tension between Ukraine and Russia likely elevated volatility levels to above the five-year average of 18.6.

**S&P 500 PRICE INDEX**



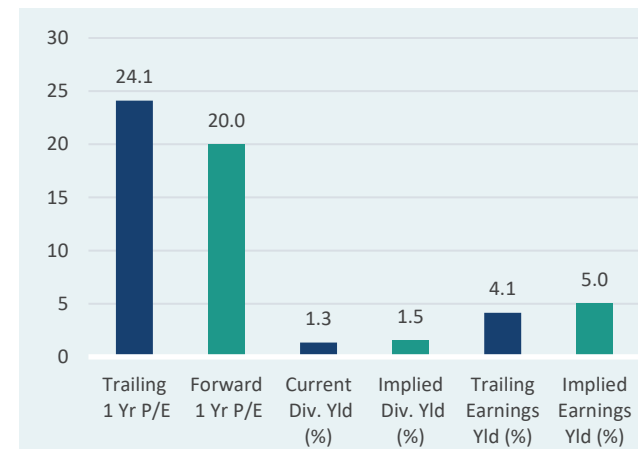
Source: Bloomberg, as of 1/31/22

**IMPLIED VOLATILITY (VIX INDEX)**



Source: Cboe, as of 1/31/22

**S&P 500 VALUATION SNAPSHOT**

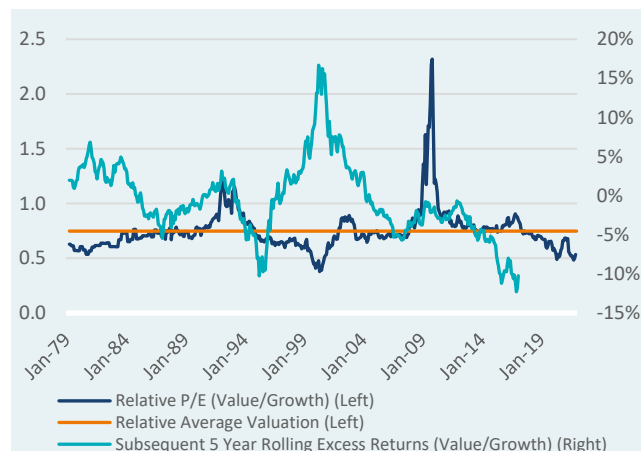


Source: Bloomberg, as of 1/31/22

# Domestic equity size and style

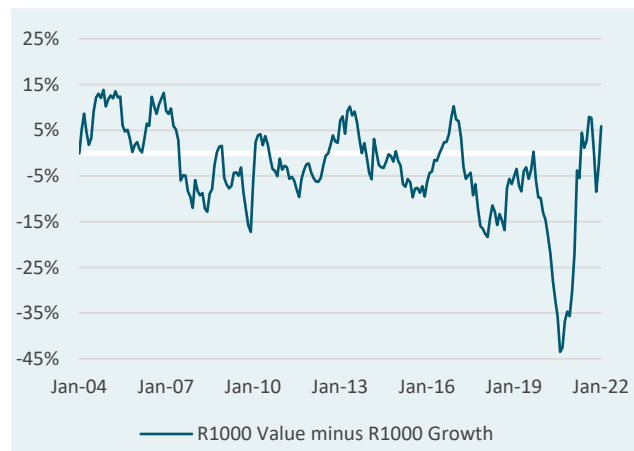
- Value factor stocks (Russell 3000 Value -2.6%) declined over the month and outpaced growth factor stocks (Russell 3000 Growth -8.9%) by the largest amount since March 2001. Rising Treasury yields weighed on growth stocks which are expected to realize more earnings further in the future relative to value stocks.
- The Russell 3000 Value Index holds a 4.3% relative overweight to the energy sector as compared to the Russell 3000 Growth Index. Within the Russell 3000 Value Index Exxon Mobile, Conoco Phillips, and Chevron contributed roughly 19% of the index's return.
- Small-cap equities (Russell 2000 -9.6%) are generally more sensitive to broad economic conditions and lagged over the month, while larger-cap companies' (Russell 1000 -5.6%) who have more robust balance sheets are usually better able to weather worsening economic conditions. Concerns surrounding the Fed tightening weighed on both large- and small-cap equities in January but more so on small-cap equities.
- The S&P 500 High Dividend Index (+1.8%) outpaced the broader S&P 500 (-5.2%), a sign that investors left riskier stocks for more secure dividend paying stocks.

**VALUE VS. GROWTH RELATIVE VALUATIONS**



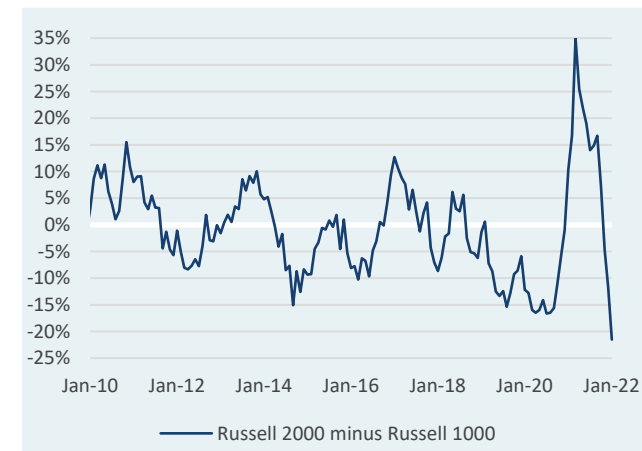
Source: FTSE, Bloomberg, as of 1/31/22

**VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE**



Source: FTSE, Bloomberg, as of 1/31/22

**SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE**

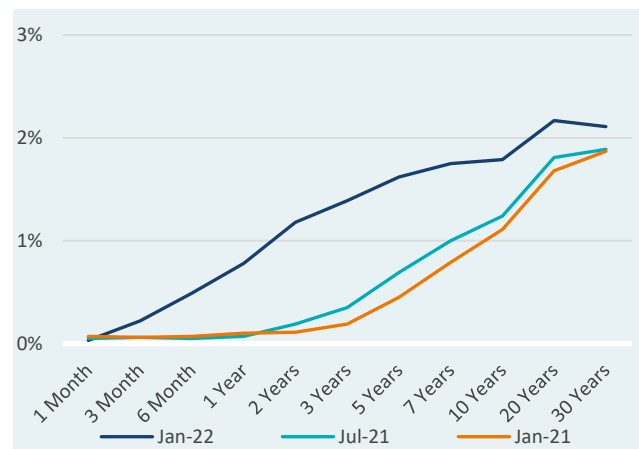


Source: FTSE, Bloomberg, as of 1/31/22

# Fixed income

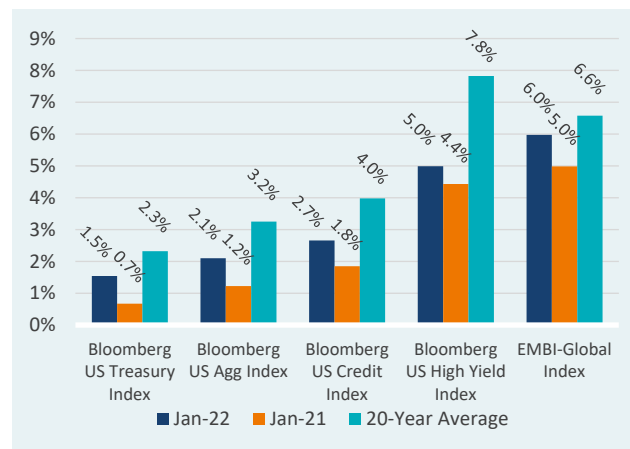
- Fixed income returns were negative in January as interest rates rose. Given the sensitivity of a bond's price to interest rate changes is greater for bonds with more time to maturity, lower duration (Bloomberg US Treasury 1-3 Year -0.7%) outperformed higher duration Treasuries (Bloomberg US Treasury Long -4.1%).
- High-yield spreads (ICE BofA High Yield Index Option-Adjusted Spread) widened 53 bps in January as investors raised expectations for default rates. The Markit North American High-Yield CDX Index fell -2.1% – a decline in the index reflects increased expectations for defaults in high-yield bonds.
- The Bloomberg US TIPS Index declined -2.0%, pressured by rising nominal yields and declining breakeven inflation rates. The 5-year breakeven inflation rate – the markets expectation for annualized inflation over the period – declined as nearly five Fed rate hikes were priced into the market and weighed on longer-term inflation expectations.
- Declines in breakeven inflation rates and increases in nominal yields led real yields to surge. The five-year real-yield rose 41 basis points to -1.2%, its highest level since October 2020.

## U.S. TREASURY YIELD CURVE



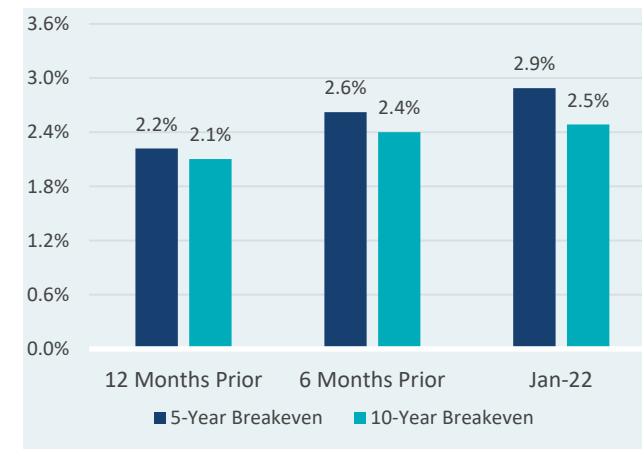
Source: Bloomberg, as of 1/31/22

## NOMINAL YIELDS



Source: Morningstar, as of 1/31/22

## BREAKEVEN INFLATION RATES

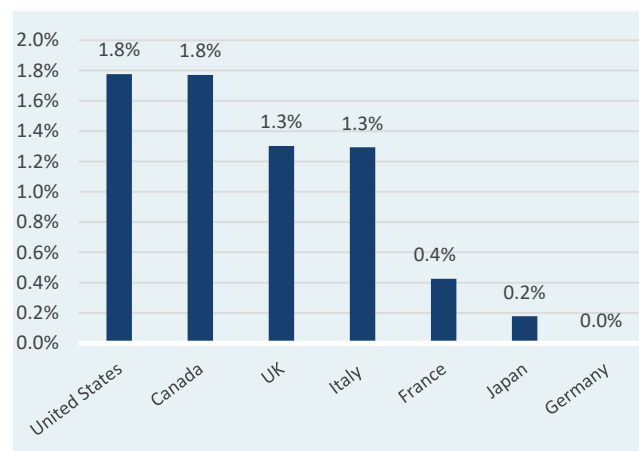


Source: Bloomberg, as of 1/31/22

# Global markets

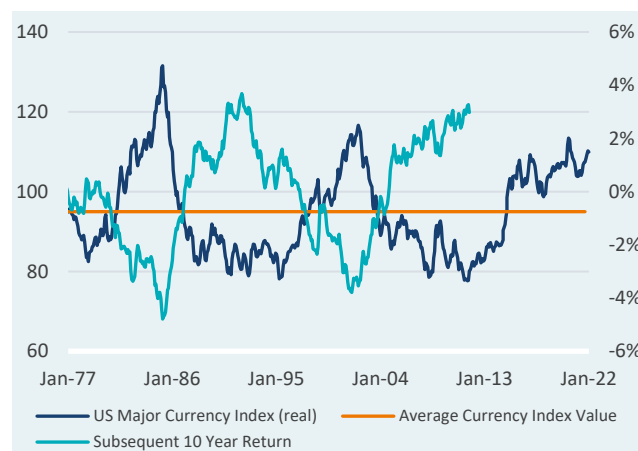
- Global equities (MSCI ACWI -4.9%) were weighed down by U.S. equities (S&P 500 -5.2%). Emerging market equities' (MSCI EM -1.9%) relative outperformance was a benefit to the global equity index.
- Ten-year German Bund yields climbed 21 basis points to end the month at 0.03% and crossed into positive territory for the first time since 2019. The German Bund yield has been held in negative territory as the ECB targeted negative rates to stimulate economic growth. High Euro-Area inflation relative to history – 5.1% year-over-year – is stoking expectations for a shift in policy.
- Latin American equities were a bright spot within emerging markets (MSCI EM Latin America +7.4%). Brazil (+13.0%), Chile (+12.5%), Peru (+11.8%), and Columbia (+10.6%) led the region higher. The local currencies of each of these countries also saw some of the largest currency appreciations globally.
- The International Monetary Fund lowered its 2022 global growth forecast by 50 basis points to 4.4%. The report cited decreased stimulus spending, tightening monetary policies, and lingering supply shortages as drivers for global growth moderation.

## GLOBAL SOVEREIGN 10-YEAR YIELDS



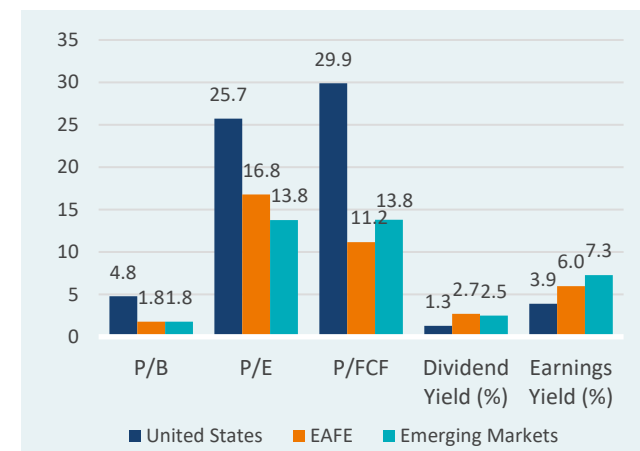
Source: Bloomberg, as of 1/31/22

## U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 1/31/22

## MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 1/31/22

# Commodities

- The Bloomberg Commodity Index (+8.8%) continued strong performance. The index was helped higher from the Energy Sub-Index (+22.0%) as natural gas and oil prices rallied following a year of strong performance.
- The precious metals sub-index (-2.4%) was the only commodity sub-index to decline as gold and silver prices retreated. Gold, which makes up ~75% of the sub-index, is generally negatively correlated to interest rates, and the Fed's more hawkish positioning was a headwind for the metal. Historically seen as a hedge against inflation, the connection between gold prices and inflation has weakened during the post-covid inflationary period.

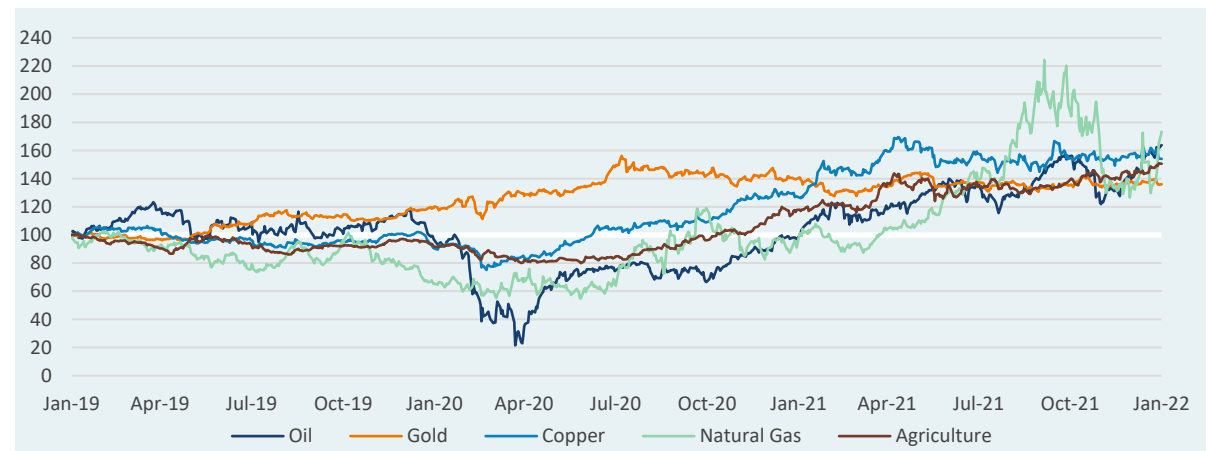
- Natural gas prices rose +38.3% as increasing tensions between Russia and Ukraine raised concerns that Russia may halt flows into Europe if stringent sanctions are put in place against the major exporter. Russian natural gas accounts for nearly a third of European supply. Europe is already facing a tight natural gas market and any deficit could present upside to energy prices for the area.
- Brent crude oil prices climbed +19.6% and ended the month at \$92.35 – the highest level in more than seven years. Severe winter weather hindered production in Texas and further escalation between Russia and Ukraine could have implications for global oil supplies.

## INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	8.8	8.8	8.8	34.7	11.0	5.4	(2.3)
Bloomberg Agriculture	5.8	5.8	5.8	27.9	15.5	4.1	(1.2)
Bloomberg Energy	22.0	22.0	22.0	76.0	2.9	1.4	(8.3)
Bloomberg Grains	5.3	5.3	5.3	18.4	13.8	4.2	(1.6)
Bloomberg Industrial Metals	3.0	3.0	3.0	34.2	15.6	10.1	1.1
Bloomberg Livestock	3.0	3.0	3.0	10.3	(6.5)	(3.1)	(4.1)
Bloomberg Petroleum	16.5	16.5	16.5	77.1	10.0	7.1	(5.7)
Bloomberg Precious Metals	(2.4)	(2.4)	(2.4)	(6.8)	9.3	6.1	(1.7)
Bloomberg Softs	3.6	3.6	3.6	49.0	15.2	(0.1)	(4.5)

Source: Morningstar, as of 1/31/22

## COMMODITY PERFORMANCE



Source: Bloomberg, as of 1/31/22

# Appendix

# Periodic table of returns

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD	5-Year	10-Year
Commodities	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	8.8	22.3	18.0
Real Estate	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	27.6	0.0	16.6	15.3
Cash	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	27.1	0.0	10.9	12.3
Hedge Funds of Funds	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	26.5	-1.3	10.5	11.7
Emerging Markets Equity	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	25.2	-1.9	9.7	11.3
US Bonds	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	14.0	17.7	-2.2	8.8	10.6
Large Cap Value	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	10.3	14.8	-2.3	8.3	9.3
60/40 Global Portfolio	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	11.3	-3.8	7.9	7.1
International Equity	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	8.9	-4.8	7.9	6.9
Large Cap Equity	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-5.6	7.8	4.2
Small Cap Value	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-5.8	5.4	4.2
Large Cap Growth	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	-8.6	5.2	2.6
Small Cap Equity	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	-1.5	-9.6	3.1	0.6
Small Cap Growth	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-2.5	-13.4	1.1	-2.3

BEST  
↑  
↓  
WORST

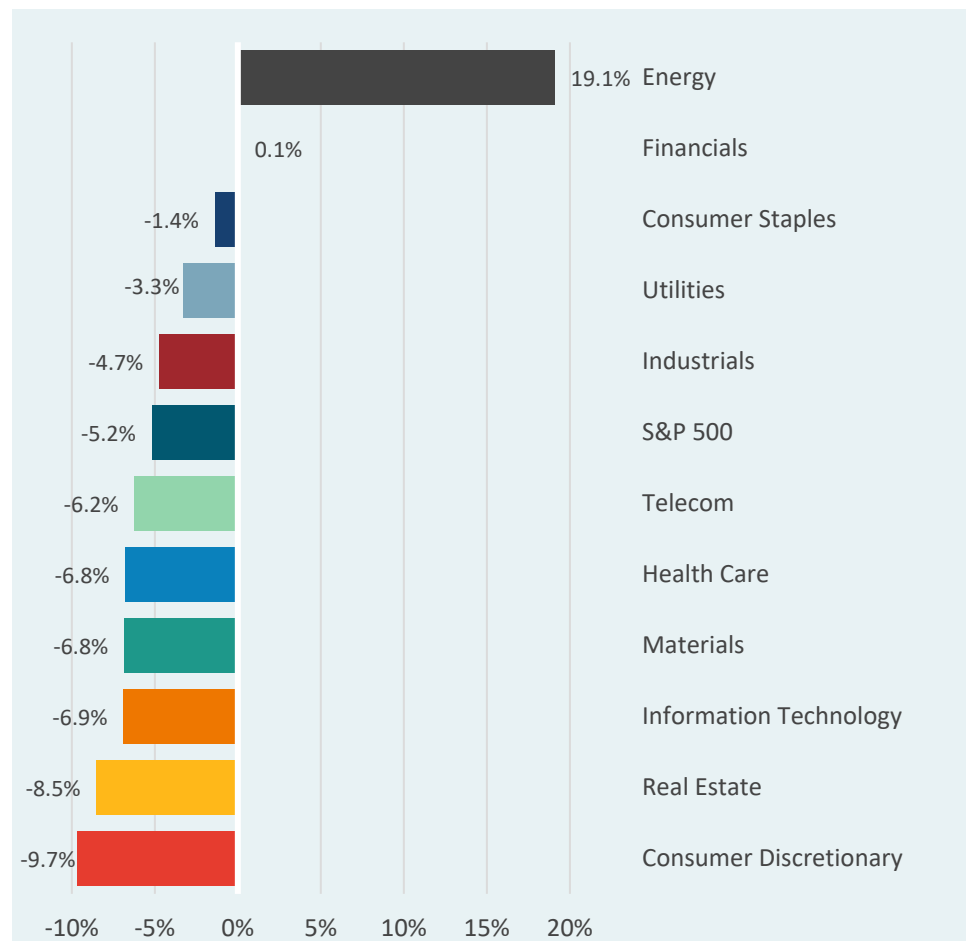
- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- Large Cap Growth
- Emerging Markets Equity
- Hedge Funds of Funds
- US Bonds
- 60% MSCI ACWI/40% BBgBarc Global Bond
- Cash

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 12/31/21.



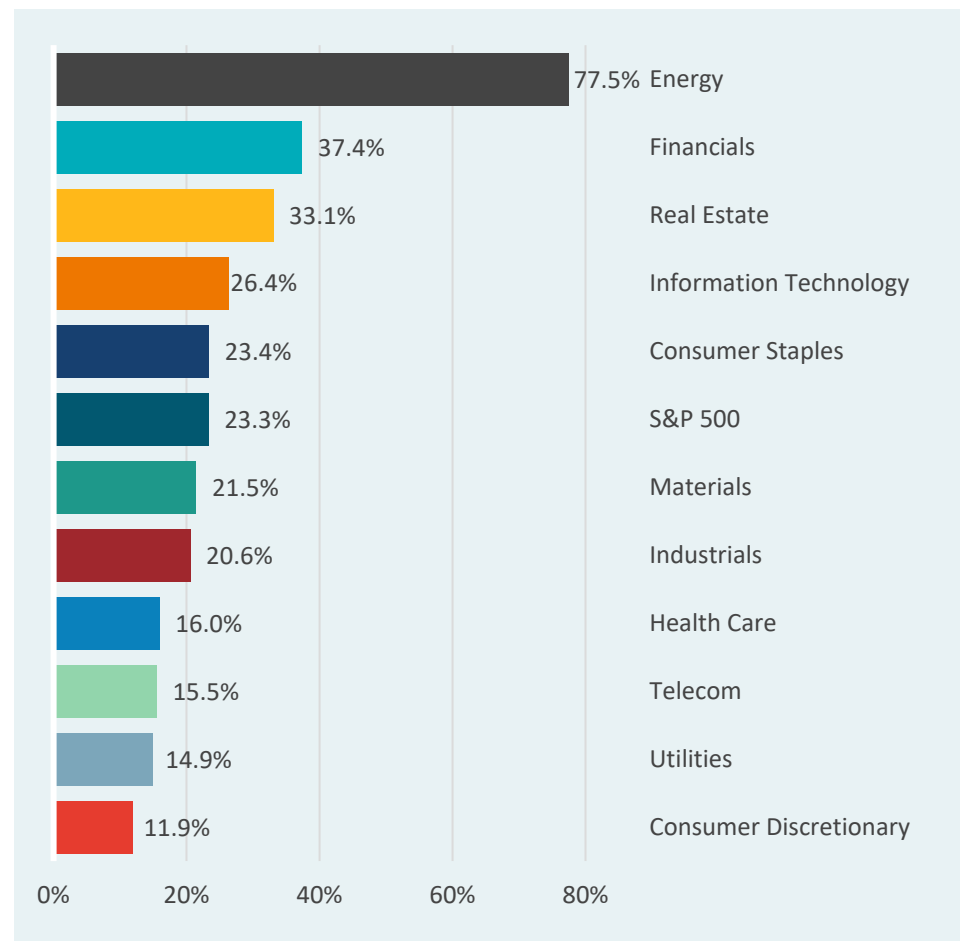
# S&P 500 sector returns

QTD



Source: Morningstar, as of 1/31/22

ONE YEAR ENDING JANUARY



Source: Morningstar, as of 1/31/22

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	(5.2)	(5.2)	(5.2)	23.3	20.7	16.8	15.4
S&P 500 Equal Weighted	(4.3)	(4.3)	(4.3)	25.0	18.1	14.2	14.5
DJ Industrial Average	(3.2)	(3.2)	(3.2)	19.4	14.5	14.6	13.4
Russell Top 200	(5.0)	(5.0)	(5.0)	22.7	22.1	18.0	16.1
Russell 1000	(5.6)	(5.6)	(5.6)	20.3	20.5	16.6	15.3
Russell 2000	(9.6)	(9.6)	(9.6)	(1.2)	12.0	9.7	11.3
Russell 3000	(5.9)	(5.9)	(5.9)	18.8	19.9	16.1	15.0
Russell Mid Cap	(7.4)	(7.4)	(7.4)	13.9	16.1	12.8	13.4
<b>Style Index</b>							
Russell 1000 Growth	(8.6)	(8.6)	(8.6)	17.5	26.4	22.3	18.0
Russell 1000 Value	(2.3)	(2.3)	(2.3)	23.4	13.8	10.5	12.3
Russell 2000 Growth	(13.4)	(13.4)	(13.4)	(15.0)	11.4	10.9	11.7
Russell 2000 Value	(5.8)	(5.8)	(5.8)	14.8	11.7	7.9	10.6

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	(4.9)	(4.9)	(4.9)	13.2	15.4	12.6	10.7
MSCI ACWI ex US	(3.7)	(3.7)	(3.7)	3.6	9.1	8.0	6.2
MSCI EAFE	(4.8)	(4.8)	(4.8)	7.0	9.3	7.9	6.9
MSCI EM	(1.9)	(1.9)	(1.9)	(7.2)	7.2	8.3	4.2
MSCI EAFE Small Cap	(7.3)	(7.3)	(7.3)	2.4	9.9	8.6	9.1
<b>Style Index</b>							
MSCI EAFE Growth	(10.5)	(10.5)	(10.5)	0.9	12.3	10.4	8.3
MSCI EAFE Value	1.0	1.0	1.0	12.9	5.9	5.1	5.4
<b>Regional Index</b>							
MSCI UK	0.9	0.9	0.9	19.8	6.6	6.1	4.8
MSCI Japan	(5.1)	(5.1)	(5.1)	(2.5)	7.6	6.6	7.3
MSCI Euro	(4.4)	(4.4)	(4.4)	12.3	10.6	8.5	7.3
MSCI EM Asia	(3.5)	(3.5)	(3.5)	(12.2)	9.3	9.9	6.6
MSCI EM Latin American	7.4	7.4	7.4	5.8	(4.6)	1.4	(2.6)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
Bloomberg US TIPS	(2.0)	(2.0)	(2.0)	3.5	7.2	4.7	2.6
Bloomberg US Treasury Bills	(0.0)	(0.0)	(0.0)	0.0	0.9	1.1	0.6
Bloomberg US Agg Bond	(2.2)	(2.2)	(2.2)	(3.0)	3.7	3.1	2.6
Bloomberg US Universal	(2.2)	(2.2)	(2.2)	(2.7)	3.9	3.3	3.0
<b>Duration</b>							
Bloomberg US Treasury 1-3 Yr	(0.7)	(0.7)	(0.7)	(1.3)	1.7	1.4	1.0
Bloomberg US Treasury Long	(4.1)	(4.1)	(4.1)	(5.2)	7.1	5.6	4.1
Bloomberg US Treasury	(1.9)	(1.9)	(1.9)	(3.2)	3.3	2.6	1.9
<b>Issuer</b>							
Bloomberg US MBS	(1.5)	(1.5)	(1.5)	(2.6)	2.2	2.2	2.1
Bloomberg US Corp. High Yield	(2.7)	(2.7)	(2.7)	2.1	6.3	5.4	6.2
Bloomberg US Agency Interm	(1.1)	(1.1)	(1.1)	(2.2)	1.9	1.7	1.4
Bloomberg US Credit	(3.2)	(3.2)	(3.2)	(3.1)	5.3	4.3	3.9

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	8.8	8.8	8.8	34.7	11.0	5.4	(2.3)
Wilshire US REIT	(6.9)	(6.9)	(6.9)	35.3	12.2	9.5	10.0
CS Leveraged Loans	0.4	0.4	0.4	4.5	4.8	4.3	4.7
S&P Global Infrastructure	6.6	4.6	11.9	11.9	10.2	7.8	7.7
Alerian MLP	11.1	11.1	11.1	48.3	0.5	(2.5)	0.6
<b>Regional Index</b>							
JPM EMBI Global Div	(2.8)	(2.8)	(2.8)	(3.5)	3.4	3.8	4.8
JPM GBI-EM Global Div	(0.0)	(0.0)	(0.0)	(7.8)	0.3	2.4	0.0
<b>Hedge Funds</b>							
HFRI Composite	(1.7)	(1.7)	(1.7)	6.9	8.9	6.4	5.3
HFRI FOF Composite	(1.3)	(1.3)	(1.3)	5.4	7.0	5.2	4.2
<b>Currency (Spot)</b>							
Euro	(1.4)	(1.4)	(1.4)	(7.7)	(0.8)	0.7	(1.5)
Pound Sterling	(0.9)	(0.9)	(0.9)	(2.3)	0.7	1.3	(1.6)
Yen	(0.1)	(0.1)	(0.1)	(9.1)	(1.9)	(0.5)	(4.0)

Source: Morningstar, HFRI, as of 1/31/22

# Detailed private market returns

## Comparison to public market index returns

Private Equity Pooled IRRs	1 Year	3 Year	5 Year	10 Year
Global Private Equity FoFs & Secondary Funds	58.6	23.9	19.8	14.2
Global Private Equity Direct Funds *	52.3	26.6	22.7	17.4
U.S. Private Equity Direct Funds *	58.4	29.2	24.2	18.9
Europe Private Equity Direct Funds *	52.1	26.2	23.7	15.4
Asia Private Equity Direct Funds *	31.4	19.0	17.6	15.5

Public Index Time-weighted Returns				
MSCI World	28.8	13.1	13.7	12.7
S&P 500	30.0	16.0	16.9	16.6
MSCI Europe	27.3	7.8	8.8	8.2
MSCI AC Asia Pacific	18.3	8.5	9.6	8.3

Private Real Estate Pooled IRRs	1 Year	3 Year	5 Year	10 Year
U.S. All Private Real Estate	25.3	10.7	10.6	12.6

Public Index Time-weighted Returns				
FTSE NAREIT Equity REIT	37.4	10.0	6.8	11.3

Private Credit Pooled IRRs	1 Year	3 Year	5 Year	10 Year
U.S. All Private Debt **	33.5	13.7	13.0	12.6

Public Index Time-weighted Returns				
S&P / LSTA U.S. Leveraged Loan 100 Index	6.7	3.9	4.3	4.7

Private Real Assets Pooled IRRs	1 Year	3 Year	5 Year	10 Year
Global Nature Resources ***	30.6	(2.4)	2.7	2.1
Global Infrastructure	14.8	10.4	11.2	10.4

Public Index Time-weighted Returns				
S&P Global Natural Resources	42.2	4.6	9.5	4.6
S&P Global Infrastructure	23.0	6.7	6.0	7.8

Source: Pooled IRRs are from Thompson Reuters C/A and Time-weighted Returns are from Investment Metrics, as of September 30<sup>th</sup>, 2021. All returns in U.S. dollars.

\* Includes Buyout, Growth Equity and Venture Capital.

\*\* Includes Control-Oriented Distressed, Credit Opportunities, Senior Debt and Subordinated Capital.

\*\*\* Includes Private Equity Energy, Timber and Upstream Energy & Royalties.

# Notices & disclosures

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## Board of Trustees

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Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director  
Scott Whalen - Verus

### **Agenda Item 11: Capital Market Assumptions 2022 - Verus**

#### **Recommendation:**

Staff recommends that the Board of Trustees review and discuss the presentation to be given by Scott Whalen of Verus, the Pension Trust’s investment consultant.

#### **Capital Market Assumptions:**

It is the practice of the Pension Trust to include in the February Board of Trustees meeting an annual review of asset allocation and Capital Market Assumptions (CMA). Verus’ CMAs are primarily for a 10-year period. CMAs are inherently heavily influenced by current market valuation levels and interest rates. The starting point determines the path to the eventual reversion-to-the-mean of returns. In the current investment environment -

- Pervasively low interest rates suppress lower risk assets’ return expectations – albeit with some improvements this year.
- Elevated equity market valuations (high P/E ratios) lower future expectations in anticipation of at some point contracting equity valuations – albeit with some improvements this year.

For context the impact of CMA changes on forecasted performance expectations from SAA reviews conducted over the past five years is shown in the table below:

<b>Year</b>	<b>Exp. 10-year Annualized Return</b>	<b>Expected Risk (Std. Dev.)</b>
2017	6.3%	11.1%
2018	6.0%	11.4%
2019	6.7%	11.4%
2020 (legacy)	6.2%	11.1%
2020 (FFP)	6.9%	11.4%
2021	5.6%	11.4%
2022	6.3%	11.8%

**Discount Rate Considerations:**

As a summarized review of pension funding and discount rates – the Discount Rate for pension liabilities in the actuarial process should reflect very long-term expectations for investment returns at an appropriate level of risk for the fund. Actual returns will, of course, vary widely year to year. If a long-term discount rate is used that is unrealistically high, it increases the probability that actual returns will average below that rate. This will have the effect of creating actuarial losses over time that will be smoothed into the necessary contribution rates to fund the Plan. If this is consistently the case, it will defer pension costs properly attributable to the current generation of pension rate payers to future generations. Hence, the importance of using a realistic long term expected investment return as the discount rate for Plan liabilities. The range of reasonable discount rates has been reducing significantly in recent years.

Pension Trust practice has been to consider changes to the long-term actuarial discount rate in conjunction with biennial Actuarial Experience Studies. This allows for an integrated consideration of not just the discount rate, but the other key actuarial assumptions (e.g., inflation, mortality, etc.) that go into determining the necessary funding for the Plan. The Plan Actuary, Cheiron, will be addressing inflation as one of the key assumptions evaluated in the 2022 Experience Study. Note that the Verus CMA estimate for inflation in 2021 was 2.0% and for 2022 it has increased to 2.5%

During the 2021 Actuarial Valuation a non-Experience Study year change to the discount rate for the SLOCPT Plan was approved. The 2021 Discount rate was lowered to 6.75% and Plan administrative costs were made an explicit assumption as well (a more conservative treatment) instead of assuming they were netted in the Discount Rate. The discussion at that time among the Trustees indicated interest in further lowering of the discount rate on a gradual path, possibly continuing in 2022-2024. The selection of a prudent discount rate is done by the Board of Trustees in consultation with the Plan’s Actuary. It considers the CMAs of SLOCPT’s investment consultant and other consultants. This discussion on discount rates is scheduled for the February, May and June Board of Trustees meetings

Respectfully Submitted,



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**FEBRUARY 2022**

2022 Capital Market Assumptions

**San Luis Obispo County Pension Trust**

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[VERUSINVESTMENTS.COM](https://www.verusinvestments.com)

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

PITTSBURGH 412-784-6678

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2022 CMAs **PAGE 3**

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Portfolio impact **PAGE 11**

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Appendix – 30-year return  
and risk assumptions **PAGE 16**



# 2022 Capital Market Assumptions

# Methodology

## CORE INPUTS

- We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
- For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
- Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the 10-year TIPS breakeven rate	-
Cash	75% * current federal funds rate + 25% * U.S. 10-year Treasury yield	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Levered gross return (LIBOR + spread + original issuance discounts) – management fees – carried interest	Estimated volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 3%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

\*Long-term historical volatility data is adjusted for autocorrelation (see Appendix)

# 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
<b>Equities</b>								
U.S. Large	S&P 500	5.3%	6.4%	15.7%	0.31	0.39	1.21	1.19
U.S. Small	Russell 2000	5.3%	7.4%	21.6%	0.23	0.32	0.77	0.81
International Developed	MSCI EAFE	6.1%	7.6%	17.9%	0.32	0.40	0.52	0.57
International Small	MSCI EAFE Small Cap	4.7%	6.9%	22.2%	0.19	0.29	0.66	0.71
Emerging Markets	MSCI EM	6.1%	8.9%	25.3%	0.23	0.34	0.32	0.40
Global Equity	MSCI ACWI	5.7%	7.1%	17.3%	0.31	0.39	0.84	0.86
Private Equity	Cambridge U.S. Private Equity	9.5%	12.4%	26.0%	0.35	0.46	-	-
Private Equity (Direct)	Cambridge U.S. Private Equity	10.5%	13.4%	26.0%	0.39	0.50	-	-
Private Equity (Fund of Funds)	Cambridge U.S. Private Equity	8.5%	11.4%	26.0%	0.31	0.42	-	-
<b>Fixed Income</b>								
Cash	30 Day T-Bills	0.4%	0.4%	1.2%	-	-	-	-
U.S. TIPS	Bloomberg U.S. TIPS 5-10	1.7%	1.8%	5.3%	0.25	0.27	0.59	0.60
U.S. Treasury	Bloomberg Treasury 7-10 Year	1.5%	1.7%	6.8%	0.16	0.20	0.43	0.45
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	0.5%	1.0%	9.5%	0.01	0.06	-0.01	0.02
Global Aggregate	Bloomberg Global Aggregate	1.4%	1.6%	6.1%	0.16	0.20	0.28	0.30
Core Fixed Income	Bloomberg U.S. Aggregate Bond	2.2%	2.3%	4.1%	0.44	0.46	0.80	0.80
Core Plus Fixed Income	Bloomberg U.S. Universal	2.4%	2.5%	4.0%	0.50	0.51	0.82	0.83
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1-3 Year	1.5%	1.6%	3.6%	0.31	0.33	1.07	1.06
Short-Term Credit	Bloomberg Credit 1-3 Year	1.6%	1.7%	3.6%	0.34	0.35	1.25	1.24
Long-Term Credit	Bloomberg Long U.S. Corporate	2.4%	2.8%	9.4%	0.21	0.26	0.67	0.70
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	3.1%	3.7%	11.2%	0.24	0.30	1.01	1.00
Bank Loans	S&P/LSTA Leveraged Loan Index	2.3%	2.7%	9.3%	0.20	0.25	0.82	0.83
Global Credit	Bloomberg Global Credit	1.5%	1.8%	7.3%	0.15	0.19	0.67	0.68
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.2%	5.9%	12.6%	0.38	0.44	0.66	0.68
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	4.2%	4.9%	12.2%	0.31	0.37	0.04	0.09
Private Credit	S&P LSTA Leveraged Loan Index	6.8%	7.8%	14.6%	0.44	0.51	-	-
Private Credit (Direct Lending - Unlevered)	S&P LSTA Leveraged Loan Index	5.0%	5.5%	10.5%	0.44	0.49	-	-
Private Credit (Direct Lending - Levered)	S&P LSTA Leveraged Loan Index	8.0%	9.4%	17.4%	0.44	0.51	-	-
Private Credit (Credit Opportunities)	S&P LSTA Leveraged Loan Index	7.0%	8.0%	15.0%	0.44	0.51	-	-
Private Credit (Junior Capital / Mezzanine)	S&P LSTA Leveraged Loan Index	8.8%	10.4%	19.0%	0.44	0.53	-	-
Private Credit (Distressed)	S&P LSTA Leveraged Loan Index	9.0%	12.6%	29.1%	0.30	0.42	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

# 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
<b>Other</b>								
Commodities	Bloomberg Commodity	3.0%	4.2%	15.9%	0.16	0.24	-0.25	-0.18
Hedge Funds	HFRI Fund Weighted Composite	3.8%	4.1%	7.7%	0.44	0.48	0.88	0.49
Hedge Funds (Fund of Funds)	HFRI Fund of Funds Composite	2.8%	3.1%	7.7%	0.31	0.35	-	-
Hedge Funds (Equity Style)	Custom HFRI Benchmark Mix*	4.5%	5.6%	15.0%	0.27	0.34	-	-
Hedge Funds (Credit Style)	Custom HFRI Benchmark Mix*	3.6%	4.1%	10.1%	0.32	0.37	-	-
Hedge Funds (Asymmetric Style)	Custom HFRI Benchmark Mix*	2.3%	2.4%	4.9%	0.39	0.41	-	-
Real Estate Debt	Bloomberg CMBS IG	2.1%	2.4%	7.4%	0.23	0.27	1.12	1.11
Core Real Estate	NCREIF Property	6.5%	7.2%	12.5%	0.49	0.54	2.08	2.02
Value-Add Real Estate	NCREIF Property + 200bps	8.5%	9.8%	16.7%	0.49	0.56	-	-
Opportunistic Real Estate	NCREIF Property + 300bps	9.5%	11.1%	18.7%	0.49	0.57	-	-
REITs	Wilshire REIT	6.5%	8.2%	19.3%	0.32	0.40	0.67	0.72
Global Infrastructure	S&P Global Infrastructure	6.6%	8.0%	17.6%	0.35	0.43	0.45	0.51
Risk Parity	S&P Risk Parity 10% Vol Index	5.4%	5.9%	10.0%	0.50	0.55	-	-
Currency Beta	MSCI Currency Factor Index	0.8%	0.9%	3.4%	0.12	0.13	0.24	0.25
Inflation		2.5%	-	-	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

\*To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro

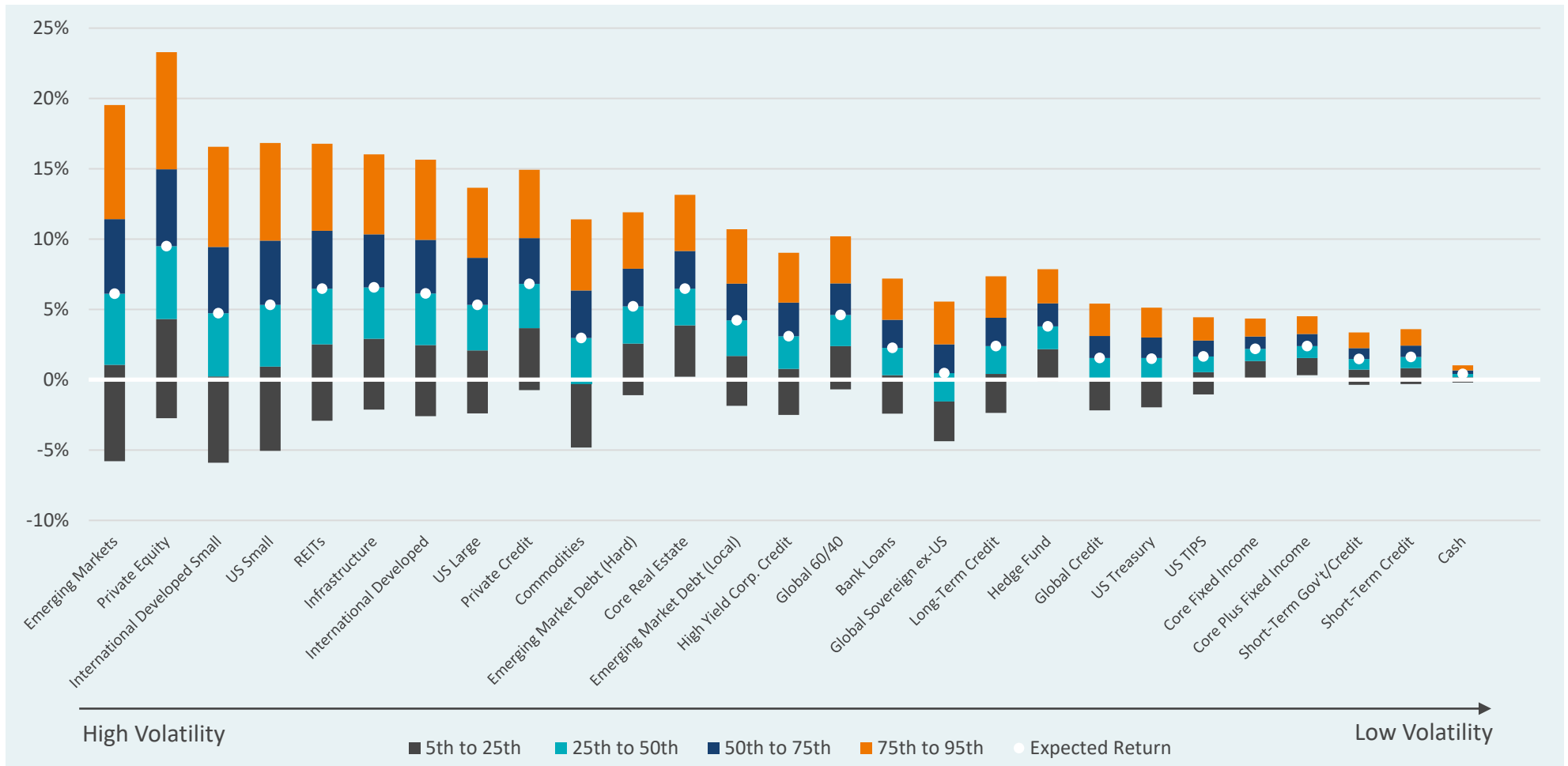
# Correlation assumptions

	Cash	US Large	US Small	Intl Large	Intl Small	EM	Global Equity	PE	US TIPS	US Treasury	Global Sovereign ex-US	US Core	Core Plus	Short-Term Gov't/Credit	Short-Term Credit	Long-Term Credit	US HY	Bank Loans	Global Credit	EMD USD	EMD Local	Commodities	Hedge Funds	Real Estate	REITs	Infrastructure	Risk Parity	Currency Beta	
Cash	1.0																												
US Large	-0.2	1.0																											
US Small	-0.2	0.9	1.0																										
Intl Large	-0.2	0.9	0.8	1.0																									
Intl Small	-0.2	0.9	0.8	1.0	1.0																								
EM	-0.1	0.7	0.7	0.8	0.8	1.0																							
Global Equity	-0.2	1.0	0.9	1.0	0.9	0.9	1.0																						
PE	-0.2	0.7	0.6	0.6	0.6	0.6	0.7	1.0																					
US TIPS	0.0	0.2	0.1	0.2	0.2	0.3	0.2	0.2	1.0																				
US Treasury	0.2	-0.3	-0.4	-0.3	-0.3	-0.2	-0.3	-0.2	0.7	1.0																			
Global Sovereign ex-US	0.1	0.2	0.1	0.3	0.4	0.5	0.3	0.1	0.6	0.4	1.0																		
US Core	0.2	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	0.8	0.9	0.6	1.0																	
Core Plus	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.8	0.8	0.6	1.0	1.0																
Short-Term Gov't/Credit	0.4	-0.1	-0.1	0.0	0.0	0.1	0.0	-0.1	0.6	0.7	0.5	0.8	0.7	1.0															
Short-Term Credit	0.0	0.4	0.4	0.4	0.4	0.5	0.4	0.0	0.6	0.3	0.5	0.6	0.7	0.6	1.0														
Long-Term Credit	0.0	0.3	0.2	0.3	0.3	0.4	0.3	0.1	0.7	0.6	0.5	0.8	0.9	0.5	0.7	1.0													
US HY	-0.2	0.8	0.7	0.8	0.8	0.8	0.8	0.5	0.4	-0.2	0.4	0.2	0.5	0.1	0.7	0.6	1.0												
Bank Loans	-0.3	0.6	0.7	0.6	0.7	0.6	0.7	0.3	0.3	-0.3	0.2	0.1	0.3	0.0	0.6	0.4	0.9	1.0											
Global Credit	-0.1	0.6	0.5	0.7	0.7	0.8	0.7	0.3	0.6	0.2	0.7	0.5	0.7	0.4	0.8	0.8	0.8	0.6	1.0										
EMD USD	-0.2	0.6	0.5	0.7	0.7	0.7	0.7	0.4	0.6	0.1	0.6	0.5	0.7	0.3	0.7	0.7	0.8	0.7	0.9	1.0									
EMD Local	0.0	0.6	0.5	0.7	0.7	0.8	0.7	0.4	0.4	0.0	0.7	0.3	0.5	0.3	0.6	0.5	0.7	0.5	0.8	0.8	1.0								
Commodities	-0.1	0.5	0.5	0.6	0.6	0.6	0.6	0.3	0.2	-0.3	0.3	-0.1	0.1	0.0	0.3	0.1	0.6	0.5	0.5	0.5	0.6	1.0							
Hedge Funds	-0.2	0.8	0.8	0.8	0.8	0.7	0.8	0.6	0.2	-0.3	0.2	0.0	0.2	0.0	0.5	0.4	0.8	0.7	0.6	0.6	0.5	0.5	1.0						
Real Estate	-0.2	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.2	-0.1	0.2	0.1	0.1	-0.1	0.1	0.2	0.4	0.3	0.3	0.4	0.4	0.3	0.5	1.0					
REITs	-0.2	0.7	0.6	0.6	0.6	0.5	0.7	0.5	0.5	0.1	0.3	0.4	0.5	0.2	0.5	0.5	0.7	0.5	0.6	0.6	0.5	0.3	0.5	0.7	1.0				
Infrastructure	-0.2	0.8	0.7	0.8	0.8	0.7	0.8	0.7	0.4	-0.1	0.5	0.3	0.4	0.2	0.6	0.5	0.8	0.7	0.8	0.8	0.8	0.5	0.7	0.3	0.7	1.0			
Risk Parity	-0.1	0.7	0.6	0.7	0.7	0.7	0.8	0.4	0.5	0.0	0.4	0.3	0.5	0.3	0.7	0.5	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.4	0.6	0.8	1.0		
Currency Beta	0.0	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	1.0	

Note: Correlation assumptions are based on the last ten years. Private Equity and Real Estate correlations are especially difficult to model – we have therefore used BarraOne correlation data to strengthen these correlation estimates.

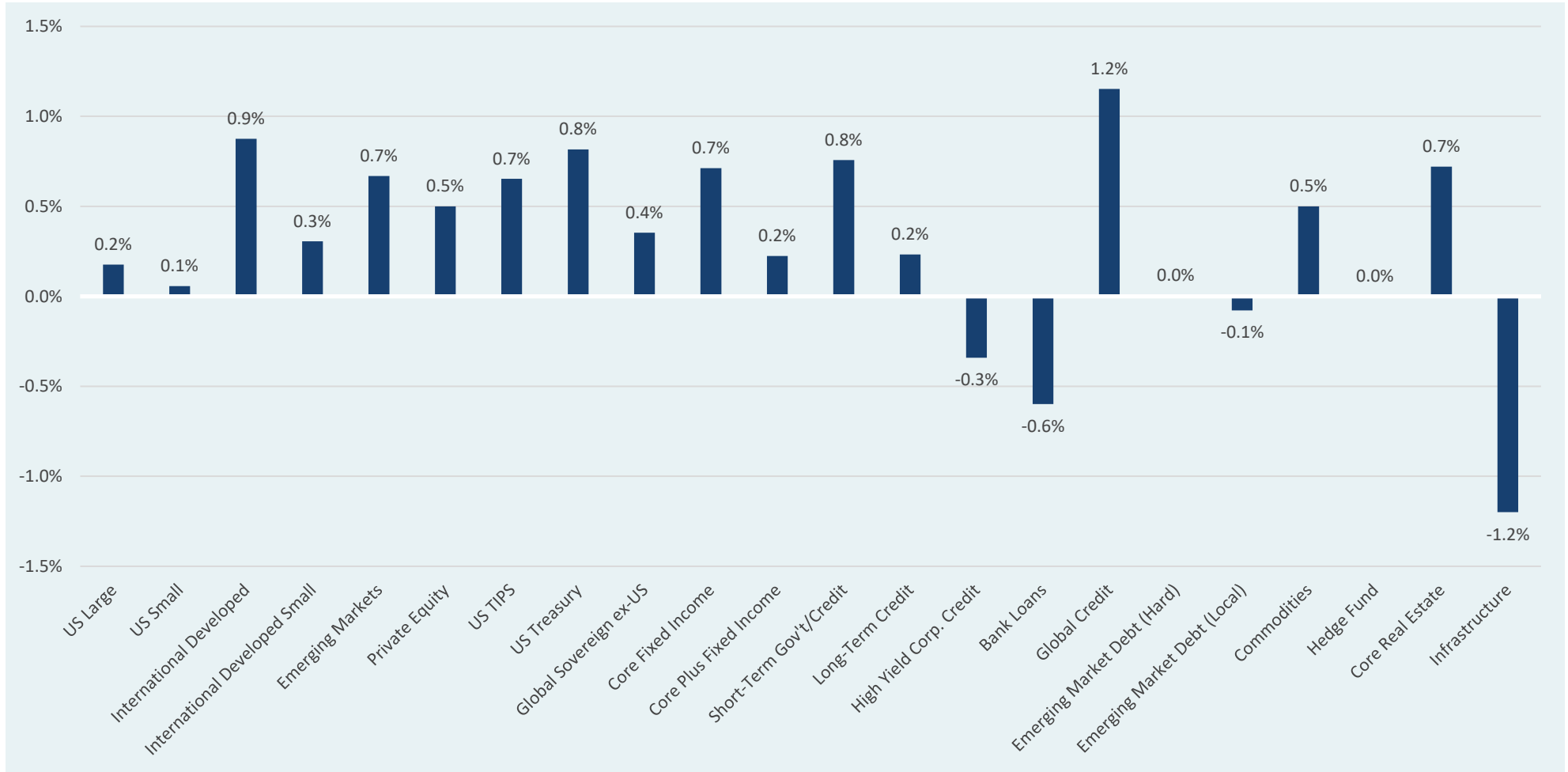
# Range of likely 10-year outcomes

10-YEAR RETURN 90% CONFIDENCE INTERVAL



Source: Verus, MPI

# 2022 vs. 2021 return forecast



Source: Verus, as of 9/30/21

# Relevant forecast changes

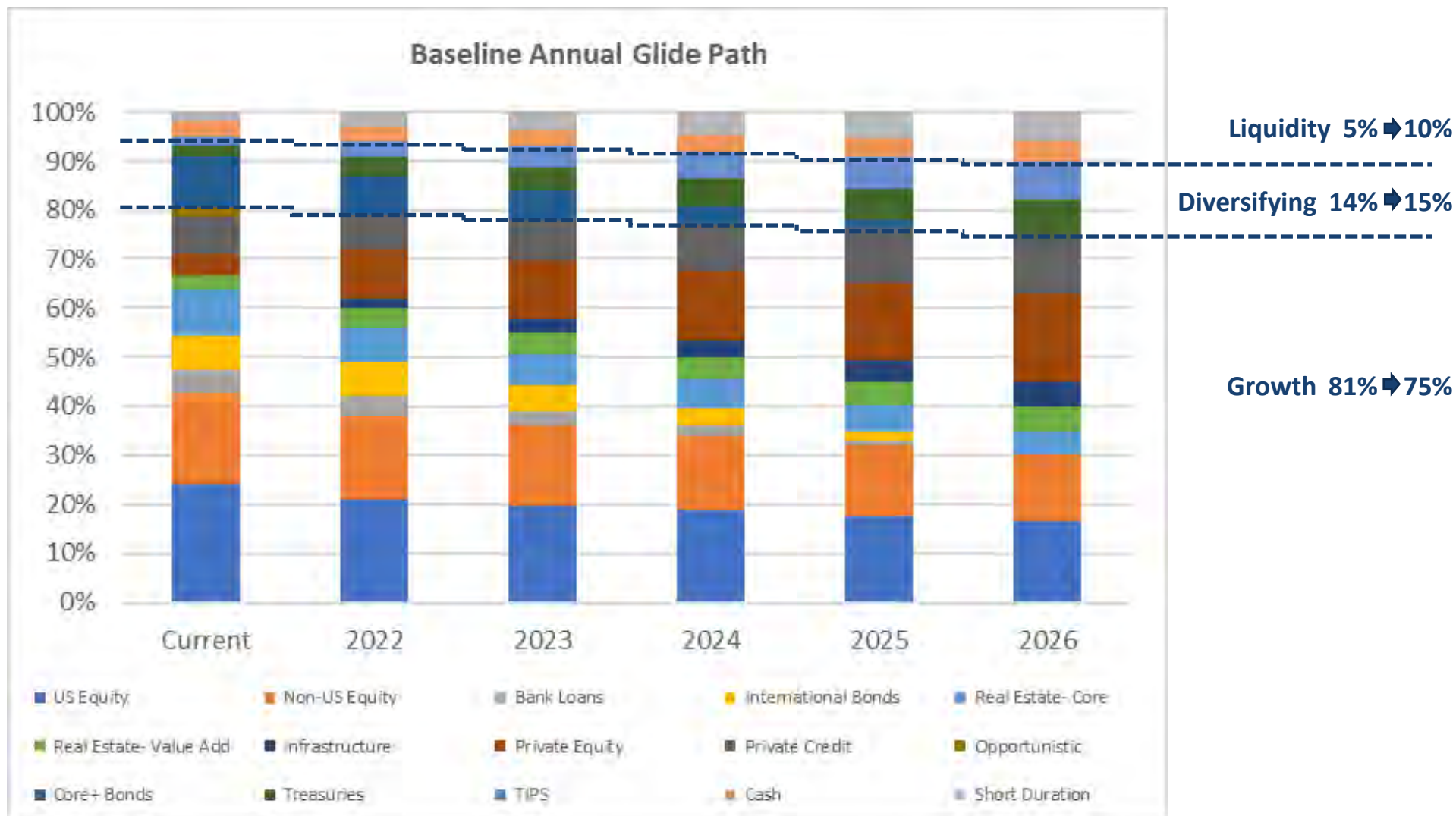
- The return expectations of higher quality fixed income increased, as bond yields recovered from pandemic lows. On the other hand, riskier fixed income forecasts were generally lower due to extremely tight credit spreads. Equity return expectations increased modestly as valuations fell and inflation moved higher.
- Inflation expectations increased materially throughout the year as price pressures ramped up and year-over-year growth in U.S. consumer prices reached 5.4% in September. The U.S. TIPS breakeven inflation rate increased from 1.6% to 2.4%, as inflation expectations surpassed pre-COVID levels in the first quarter. Household inflation expectations (University of Michigan) jumped and have tracked much more closely to current inflation levels, moving from 2.7% to 3.0%. The Survey of Professional Forecasters also increased from 2.0% to 2.4%. Overall, our inflation forecast increased from 2.0% to 2.5%. Inflation is an important component of the performance of asset classes such as equities, real estate, and commodities. It is worth noting that inflation expectations affect *nominal* returns, rather than *real* returns.
- Credit spreads have steadily trended lower as markets recovered and the social and business risks from COVID-19 subsided. Spreads are now at historically tight levels, though this may be reflective of very muted credit default activity. Core fixed income spreads came in slightly from 90 bps to 81 bps, and high yield spreads fell from 551 bps to 323 bps.
- The long end of the yield curve increased as the 10-year U.S. Treasury yield climbed from 0.68% to 1.49%. The short end of the curve remained anchored at zero, though as the economy has improved, the market has priced in Fed interest rate hikes as early as 2022. The three-month U.S. dollar LIBOR reference rate showed little change, moving from 0.23% to 0.13%.
- Emerging market hard and local currency debt forecasts were mixed. Hard currency-denominated debt spreads to U.S. Treasury yields decreased from 471 bps to 392 bps. The yield of local-denominated debt fell very slightly from 4.6% to 4.5%.

All data cited above is as of 9/30/21



# Portfolio impact

# Implementation glide path



# Implementation glide path

Asset Class	Current	Baseline Annual Glidepath				
	12/31/2021	2022	2023	2024	2025	2026
US Equity	24%	21%	20%	19%	18%	17%
Non-US Equity	19%	17%	16%	15%	14%	14%
Bank Loans	4%	4%	3%	2%	1%	0%
International Bonds	7%	7%	5%	4%	2%	0%
Real Estate- Core	9%	7%	7%	6%	6%	5%
Real Estate- Value Add	3%	4%	4%	5%	5%	5%
Infrastructure	0%	2%	3%	4%	4%	5%
Private Equity	4%	10%	12%	14%	16%	18%
Private Credit	8%	7%	8%	10%	11%	12%
Opportunistic	2%	0%	0%	0%	0%	0%
<b>Total Growth</b>	<b>81%</b>	<b>79%</b>	<b>78%</b>	<b>77%</b>	<b>76%</b>	<b>75%</b>
Core+ Bonds	10%	8%	6%	4%	2%	0%
Treasuries	2%	4%	5%	6%	6%	7%
TIPS	2%	3%	4%	6%	7%	8%
<b>Total Diversifying</b>	<b>14%</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>
Cash	3%	3%	3%	4%	4%	4%
Short Duration	2%	3%	4%	5%	5%	6%
<b>Total Liquidity</b>	<b>5%</b>	<b>6%</b>	<b>7%</b>	<b>8%</b>	<b>9%</b>	<b>10%</b>
<b>Total Portfolio</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

- Public equities decline from 43% to 31%
- Private investments (PE, PC, Infrastructure) increase from 12% to 35%
- Core real estate declines from 9% to 5%
- Treasuries and TIPS increase from 4% to 15%
- Cash/short-term investments increase from 5% to 10%

# 10-year CMA impact on transition portfolios

Verus  
2022 CMA's (10 Yr)

	Current 12/31/21	2022 Policy	2023 Forecast	2024 Forecast	2025 Forecast	Long-Term SAA	Return (g)	Return (a)	Standard Deviation	Sharpe Ratio (a)
<b>Growth</b>	<b>81</b>	<b>79</b>	<b>78</b>	<b>77</b>	<b>76</b>	<b>75</b>				
Global Equity	42.9	38.0	36.0	34.0	32.0	30.0	5.7	7.1	17.3	0.39
Private Equity	7.5	10.0	12.0	14.0	16.0	18.0	9.5	12.4	26.0	0.46
Private Credit	6.3	7.0	8.3	9.5	10.8	12.0	6.8	7.8	14.6	0.51
Global Aggregate	3.3	3.0	2.3	1.5	0.8	0.0	1.4	1.6	6.1	0.20
Bank Loans	4.4	4.0	3.0	2.0	1.0	0.0	2.3	2.7	9.3	0.25
Emerging Market Debt (Hard)	1.9	2.0	1.5	1.0	0.5	0.0	5.2	5.9	12.6	0.44
Emerging Market Debt (Local)	1.9	2.0	1.5	1.0	0.5	0.0	4.2	4.9	12.2	0.37
Core Real Estate	9.4	7.0	6.5	6.0	5.5	5.0	6.5	7.2	12.5	0.54
Value Add Real Estate	3.0	4.0	4.3	4.5	4.8	5.0	8.5	9.8	16.7	0.56
Infrastructure	0.0	2.0	2.8	3.5	4.3	5.0	6.6	8.0	17.6	0.35
<b>Diversifying</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>				
Core Plus Fixed Income	10.2	8.0	6.0	4.0	2.0	0.0	2.4	2.5	4.0	0.51
US Treasury	2.2	4.0	4.8	5.5	6.3	7.0	1.5	1.7	6.8	0.20
US TIPS	2.0	3.0	4.3	5.5	6.8	8.0	1.7	1.8	5.3	0.27
<b>Liquidity</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>				
Cash	3.3	3.0	3.3	3.5	3.8	4.0	0.4	0.4	1.2	-
Short-Term Gov't/Credit	1.7	3.0	3.8	4.5	5.3	6.0	1.5	1.6	3.6	0.33
<b>Total Allocation</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>				

	Current 12/31/21	2022 Policy	2023 Forecast	2024 Forecast	2025 Forecast	Long-Term SAA
<b>Mean Variance Analysis</b>						
<b>Forecast 30 Year Return</b>	<b>5.6</b>	<b>5.7</b>	<b>5.8</b>	<b>6.0</b>	<b>6.1</b>	<b>6.3</b>
Standard Deviation	11.3	11.2	11.3	11.5	11.6	11.8
Return/Std. Deviation	0.5	0.5	0.5	0.5	0.5	0.5
1st percentile ret. 1 year	-17.5	-17.2	-17.3	-17.4	-17.6	-17.7
Sharpe Ratio	0.50	0.51	0.52	0.53	0.53	0.54

MPI and Verus

# 30-year CMA impact on transition portfolios

	Current 12/31/21	2022 Policy	2023 Forecast	2024 Forecast	2025 Forecast	Long-Term SAA	Return (g)	Return (a)	Standard Deviation	Sharpe Ratio (a)
<b>Growth</b>	<b>81</b>	<b>79</b>	<b>78</b>	<b>77</b>	<b>76</b>	<b>75</b>				
Global Equity	42.9	38.0	36.0	34.0	32.0	30.0	5.9	7.3	17.3	0.39
Private Equity	7.5	10.0	12.0	14.0	16.0	18.0	10.1	13.0	26.0	0.48
Private Credit	6.3	7.0	8.3	9.5	10.8	12.0	6.8	7.8	14.6	0.49
Global Aggregate	3.3	3.0	2.3	1.5	0.8	0.0	1.5	1.7	6.1	0.18
Bank Loans	4.4	4.0	3.0	2.0	1.0	0.0	2.3	2.7	9.3	0.23
Emerging Market Debt (Hard)	1.9	2.0	1.5	1.0	0.5	0.0	6.1	6.8	12.6	0.49
Emerging Market Debt (Local)	1.9	2.0	1.5	1.0	0.5	0.0	4.2	4.9	12.2	0.35
Core Real Estate	9.4	7.0	6.5	6.0	5.5	5.0	6.2	6.9	12.5	0.50
Value Add Real Estate	3.0	4.0	4.3	4.5	4.8	5.0	8.2	9.5	16.7	0.53
Infrastructure	0.0	2.0	2.8	3.5	4.3	5.0	7.2	8.6	17.6	0.45
<b>Diversifying</b>	<b>14</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>15</b>				
Core Plus Fixed Income	10.2	8.0	6.0	4.0	2.0	0.0	3.4	3.5	4.0	0.71
US Treasury	2.2	4.0	4.8	5.5	6.3	7.0	2.0	2.2	6.8	0.24
US TIPS	2.0	3.0	4.3	5.5	6.8	8.0	2.0	2.1	5.3	0.29
<b>Liquidity</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>				
Cash	3.3	3.0	3.3	3.5	3.8	4.0	0.6	0.6	1.2	-
Short-Term Gov't/Credit	1.7	3.0	3.8	4.5	5.3	6.0	2.2	2.3	3.6	0.46
<b>Total Allocation</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>				

	Current 12/31/21	2022 Policy	2023 Forecast	2024 Forecast	2025 Forecast	Long-Term SAA
<b>Mean Variance Analysis</b>						
<b>Forecast 30 Year Return</b>	<b>5.8</b>	<b>6.0</b>	<b>6.1</b>	<b>6.3</b>	<b>6.4</b>	<b>6.5</b>
Standard Deviation	11.3	11.2	11.3	11.5	11.6	11.8
Return/Std. Deviation	0.5	0.5	0.5	0.5	0.6	0.6
1st percentile ret. 1 year	-17.3	-17.0	-17.0	-17.2	-17.3	-17.5
Sharpe Ratio	0.50	0.52	0.52	0.53	0.54	0.54

MPI and Verus

# Appendix

# 30-year return & risk assumptions

- Occasionally investors may have a specific need for longer-term capital market forecasts. We have developed a set of 30-year assumptions to meet those needs.
- The return forecasts below have been constructed using our existing building block approach, but with longer-term inputs. Risks and correlations are estimated using the same approach as our 10-year forecasts, using full-history autocorrelation-adjusted realized risk and past 10 year realized correlations.
- These return figures must be thought of separately from our 10-year forecasts and are not meant to imply performance for the 20 years *beyond* our 10-year forecasts.
- Please reach out to your Verus consultant with questions regarding whether 30-year Capital Market Assumptions might be appropriate for your needs.

Asset Class	Index Proxy	Thirty Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)
		Geometric	Arithmetic			
<b>Equities</b>						
U.S. Large	S&P 500	5.7%	6.8%	15.7%	0.33	0.40
U.S. Small	Russell 2000	5.7%	7.8%	21.6%	0.24	0.33
International Developed	MSCI EAFE	6.1%	7.6%	17.9%	0.31	0.39
International Small	MSCI EAFE Small Cap	4.7%	6.9%	22.2%	0.18	0.28
Emerging Markets	MSCI EM	5.9%	8.7%	25.3%	0.21	0.32
Global Equity	MSCI ACWI	5.9%	7.3%	17.3%	0.31	0.39
Private Equity	Cambridge U.S. Private Equity	10.1%	13.0%	26.0%	0.37	0.48
Private Equity (Direct)	Cambridge U.S. Private Equity	11.1%	14.0%	26.0%	0.40	0.51
Private Equity (Fund of Funds)	Cambridge U.S. Private Equity	9.1%	12.0%	26.0%	0.33	0.44
<b>Fixed Income</b>						
Cash	30 Day T-Bills	0.6%	0.6%	1.2%	-	-
U.S. TIPS	Bloomberg U.S. TIPS 5 - 10	2.0%	2.1%	5.3%	0.26	0.29
U.S. Treasury	Bloomberg Treasury 7-10 Year	2.0%	2.2%	6.8%	0.21	0.24
U.S. 30-year Treasuries	Bloomberg U.S. Treasury 20+ Year	2.0%	2.8%	12.8%	0.11	0.17
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	1.0%	1.5%	9.5%	0.04	0.09
Global Aggregate	Bloomberg Global Aggregate	1.5%	1.7%	6.1%	0.15	0.18
Core Fixed Income	Bloomberg U.S. Aggregate Bond	2.9%	3.0%	4.1%	0.56	0.58
Core Plus Fixed Income	Bloomberg U.S. Universal	3.4%	3.5%	4.0%	0.70	0.71
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1 - 3 year	2.2%	2.3%	3.6%	0.45	0.46
Short-Term Credit	Bloomberg Credit 1-3 Year	2.8%	2.9%	3.6%	0.62	0.63
Long-Term Credit	Bloomberg Long U.S. Corporate	3.2%	3.6%	9.4%	0.28	0.32
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	4.7%	5.3%	11.2%	0.37	0.42
Bank Loans	S&P/LSTA Leveraged Loan	2.3%	2.7%	9.3%	0.18	0.23
Global Credit	Bloomberg Global Credit	1.2%	1.5%	7.3%	0.08	0.12
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	6.1%	6.8%	12.6%	0.44	0.49
Emerging Markets Debt (Local)	JPM GBI EM Global Diversified	4.2%	4.9%	12.2%	0.30	0.35
Private Credit	S&P LSTA Leveraged Loan Index	6.8%	7.8%	14.6%	0.43	0.49
Private Credit (Direct Lending – Unlevered)	S&P LSTA Leveraged Loan Index	5.0%	5.5%	10.4%	0.43	0.47
Private Credit (Direct Lending – Levered)	S&P LSTA Leveraged Loan Index	8.0%	9.4%	17.4%	0.43	0.50
Private Credit (Credit Opportunities)	S&P LSTA Leveraged Loan Index	7.0%	8.0%	15.0%	0.43	0.49
Private Credit (Junior Capital / Mezzanine)	S&P LSTA Leveraged Loan Index	8.8%	10.4%	19.0%	0.43	0.52
Private Credit (Distressed)	S&P LSTA Leveraged Loan Index	9.0%	12.6%	29.1%	0.29	0.41

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

# 30-year return & risk assumptions (cont'd)

Asset Class	Index Proxy	Thirty Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)
		Geometric	Arithmetic			
<b>Other</b>						
Commodities	Bloomberg Commodity	2.8%	4.0%	15.9%	0.14	0.21
Hedge Fund	HFRI Fund Weighted Composite	4.4%	4.7%	7.7%	0.50	0.53
Hedge Fund of Funds	HFRI Fund of Funds Composite	3.4%	3.7%	7.7%	0.37	0.40
Hedge Fund (Equity Style)	Custom HFRI Benchmark Mix*	5.3%	6.3%	15.0%	0.31	0.38
Hedge Fund (Credit Style)	Custom HFRI Benchmark Mix*	4.6%	5.1%	10.1%	0.40	0.45
Hedge Fund (Asymmetric Style)	Custom HFRI Benchmark Mix*	2.7%	2.8%	4.9%	0.43	0.45
Real Estate Debt	Bloomberg IG CMBS	2.1%	2.4%	7.4%	0.20	0.24
Core Real Estate	NCREIF Property	6.2%	6.9%	12.5%	0.45	0.50
Value-Add Real Estate	NCREIF Property + 200bps	8.2%	9.5%	16.7%	0.46	0.53
Opportunistic Real Estate	NCREIF Property + 300bps	9.2%	10.8%	18.7%	0.46	0.54
REITs	Wilshire REIT	6.2%	7.9%	19.3%	0.29	0.38
Global Infrastructure	S&P Global Infrastructure	7.2%	8.6%	17.6%	0.37	0.45
Risk Parity	S&P Risk Parity 10% Vol Index	5.6%	6.1%	10.0%	0.50	0.55
Currency Beta	MSCI Currency Factor Index	0.8%	0.9%	3.4%	0.06	0.07
Inflation		2.3%	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

\*To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro



## Board of Trustees

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Date: February 28, 2022

To: Board of Trustees

From: Carl Nelson – Executive Director  
Amy Burke – Deputy Director

### **Agenda Item 12: Asset Allocation – January 2021**

This item on the agenda provides a properly noticed opportunity for the Board of Trustees to discuss and take action, if necessary, regarding asset allocation and related investment matters.

As a report on current asset allocation relative to the 2022 Interim SAA Target Allocation the following table provides details. Asset values may differ slightly from those shown in the Monthly Investment report due to when the report was run as various market values are finalized for month-end.

Note that the \$70 million prefunding of SLO County employed contributions took place during July. The remaining amount of this contribution prefunding remains in the Liquidity portfolios for payment of retirement benefits over the remainder of 2021 and early 2022. This accounts for the higher than typical allocation to the Treasury portfolio in the Liquidity area.

<b>FFP Asset Mix</b>	<b>Est. Market Value (\$000s)</b> 01/31/22	<b>% Allocation</b>	<b>SAA Target Allocation</b> 2022 Interim	<b>Variance</b>
Bank (operating)	2,195	0.1%	0.1%	0.0%
SLOC Treasury	44,120	2.5%	1.6%	0.9%
JPM short term	15,597	0.9%	1.3%	-0.4%
Short Duration	29,523	1.7%	3.0%	-1.3%
<b>LIQUIDITY</b>	91,435	5.3%	6.0%	-0.7%
Equity- Public Mkt US	411,918	23.7%	21.0%	2.7%
Equity- Public Mkt Intl	308,836	17.8%	17.0%	0.8%
Equity- Public Mkt Global	-	0.0%		0.0%
Bank Loans	79,267	4.6%	4.0%	0.6%
Bonds- Intl.	58,625	3.4%	3.0%	0.4%
Bonds- Emerging Mkts	65,808	3.8%	4.0%	-0.2%
Real Estate- Core	168,839	9.7%	7.0%	2.7%
Real Estate- Value Add	56,368	3.2%	4.0%	-0.8%
Infrastructure	-	0.0%	2.0%	-2.0%
Private Equity	80,015	4.6%	10.0%	-5.4%
Private Credit	131,132	7.5%	7.0%	0.5%
Opportunistic	33,512	1.9%	0.0%	1.9%
<b>GROWTH</b>	1,394,319	80.3%	79.0%	1.3%
Bonds- Core	177,724	10.2%	8.0%	2.2%
Treasuries - Intermediate	38,947	2.2%	4.0%	-1.8%
TIPS	34,703	2.0%	3.0%	-1.0%
<b>RISK DIVERSFYING</b>	251,374	14.5%	15.0%	-0.5%
<b>TOTAL</b>	1,737,127	100.0%	100.0%	

Respectfully submitted,