AGENDA

DALLAS POLICE & FIRE PENSION SYSTEM

Date: March 4, 2022

The regular meeting of the Dallas Police and Fire Pension System Board of Trustees will be held at **8:30 a.m. on Thursday, March 10, 2022, in the Second Floor Board Room at 4100 Harry Hines Boulevard, Dallas, Texas and via telephone conference for audio at 214-271-5080 access code 588694 or Toll-Free (US & CAN): 1-800-201-5203 and Zoom meeting for visual https://us02web.zoom.us/j/86007072017?pwd=Z3RaVThyRDUzdVZDVUpvS2k4TE1mUT09 Passcode: 564928.** Items of the following agenda will be presented to the Board:

A. MOMENT OF SILENCE

B. CONSENT AGENDA

1. Approval of Minutes

Regular meeting of February 10, 2022

2. Approval of Refunds of Contributions for the Month of February 2022

3. **Approval of Estate Settlements**

4. **Approval of Survivor Benefits**

5. **Approval of Service Retirements**

C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. **Report on Professional Services Provider Meeting**

2. **Fiduciary Attorney Services**

3. **Monthly Contribution Report**

4. **Board approval of Trustee education and travel**

   a. Future Education and Business-related Travel
   b. Future Investment-related Travel

5. **Portfolio Update**

6. Fourth Quarter 2021 Investment Performance Analysis and Third Quarter 2021 Private Markets & Real Assets Review

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

7. Real Estate Portfolio Review

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

a. Clarion
b. L&B

8. Cybersecurity Update

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.089 of the Texas Government Code.

9. Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.

10. Chief Investment Officer Appointment

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.074 of the Texas Government Code.

D. BRIEFING ITEMS

1. Public Comment

2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (March 2022)
- NCPERS PERSist (Winter 2022)

b. Open Records

c. Employee Service Awards

The term "possible action" in the wording of any Agenda item contained herein serves as notice that the Board may, as permitted by the Texas Government Code, Section 551, in its discretion, dispose of any item by any action in the following non-exclusive list: approval, disapproval, deferral, table, take no action, and receive and file. At the discretion of the Board, items on this agenda may be considered at times other than in the order indicated in this agenda.

At any point during the consideration of the above items, the Board may go into Closed Executive Session as per Texas Government Code, Section 551.071 for consultation with attorneys, Section 551.072 for real estate matters, Section 551.074 for personnel matters, and Section 551.078 for review of medical records.

DALLAS POLICE & FIRE PENSION SYSTEM

MOMENT OF SILENCE

In memory of our Members and Pensioners who recently passed away

NAME	ACTIVE/ RETIRED	DEPARTMENT	DATE OF DEATH
Gerry Friday	Retired	Fire	Jan. 30, 2022
William M. Dollar	Retired	Fire	Feb. 4, 2022
Clyde T. Patton	Retired	Police	Feb. 6, 2022
Richard P. Rucks	Retired	Fire	Feb. 7, 2022
Alvin M. Farley	Retired	Fire	Feb. 9, 2022
Jimmy F. Stark	Retired	Fire	Feb. 9, 2022
John E. Westphalen	Retired	Police	Feb. 11, 2022
Larry W. Knight	Retired	Fire	Feb. 14, 2022
C. D. Rothrock	Retired	Fire	Feb. 17, 2022
Leo J. Taylor, Jr.	Retired	Fire	Feb. 18, 2022
Barry E. Cauley	Retired	Police	Feb. 20, 2022

Regular Board Meeting –Thursday, March 10, 2022

Dallas Police and Fire Pension System
Thursday, February 10, 2022
8:30 a.m.
4100 Harry Hines Blvd., Suite 100
Second Floor Board Room
Dallas, TX

Regular meeting, Nicholas A. Merrick, Chairman, presiding:

ROLL CALL

Board Members

Present at 8:30	Nicholas A. Merrick, William F. Quinn, Armando Garza (by telephone), Michael Brown (by telephone), Gilbert A. Garcia (by telephone), Kenneth Haben, Tina Hernandez Patterson, Mark Malveaux (by telephone)
Present at 8:33	Steve Idoux
Absent:	Robert B. French
Staff	Kelly Gottschalk, Josh Mond, Brenda Barnes, Ryan Wagner, John Holt, Greg Irlbeck, Akshay Patel, Michael Yan, Milissa Romero, Cynthia Thomas (by telephone)
Others	Chuck Campbell, Iva Giddings (by telephone), James Martinez (by telephone), Joseph Thompson

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The meeting was called to order at 8:30 a.m.

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A. MOMENT OF SILENCE

The Board observed a moment of silence in memory of active police officer Christopher Gibson, retired police officers Richard V. Crosby, Larry L. Barbee, Ralph J. Carr, retired firefighters J. W. Hadaway, Gary A. Harper, Danny C. Beck, David Nunns, Gerry Friday, James M. Blackburn, W. G. Dyer, A. M. Harrell.

No motion was made.

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Regular Board Meeting
Thursday, February 10, 2022

B. CONSENT AGENDA

1. Approval of Minutes

Regular meeting of January 13, 2022

2. Approval of Refunds of Contributions for the Month of January 2022

3. Approval of Activity in the Deferred Retirement Option Plan (DROP) for February 2022

4. Approval of Estate Settlements

5. Approval of Survivor Benefits

6. Approval of Service Retirements

7. Approval of Alternate Payee Benefits

8. Approval of Payment of Previously Withdrawn Contributions

After discussion, Mr. Haben made a motion to approve the minutes of the Regular meeting of January 13, 2022. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

After discussion, Mr. Quinn made a motion to approve the remaining items on the Consent Agenda, subject to the final approval of the staff. Mr. Haben seconded the motion, which was unanimously approved by the Board.

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C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. Communication Plan

The Communication Plan was postponed for a future Board meeting.

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Regular Board Meeting
Thursday, February 10, 2022

2. Fiduciary Duties of Trustee

Chuck Campbell with Jackson Walker, fiduciary counsel for the Board, gave a presentation on the fiduciary duties of trustees.

No motion was made.

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3. Trustee Terms

As required by the Trustee Election Procedures, staff presented the draft election schedule and notified the Board that the terms of the following Trustees expire on August 31, 2022:

Robert French, Non-Member Trustee
Gilbert Garcia, Non-Member Trustee
Tina Hernandez Patterson, Non-Member Trustee
William Quinn, Mayoral Appointee
Michael Brown, Mayoral Appointee

After discussion, Mr. Idoux made a motion to adopt the draft 2022 Non-member Election schedule, subject to adjustment by the Nominations Committee provided the first election is completed prior to the August 2022 Board meeting and a subsequent election, if necessary, is completed prior to the September 2022 Board meeting. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

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4. Monthly Contribution Report

The Executive Director reviewed the Monthly Contribution Report.

No motion was made.

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Regular Board Meeting
Thursday, February 10, 2022

5. Board approval of Trustee education and travel

a. Future Education and Business-related Travel
b. Future Investment-related Travel

The Board and staff discussed future Trustee education. There was no investment-related travel scheduled.

After discussion, Mr. Haben made a motion to approve Tina Hernandez Patterson to attend the TEXPERS Annual Conference. Mr. Quinn seconded the motion, which was unanimously approved by the Board.

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6. Quarterly Financial Statements

The Chief Financial Officer presented the fourth quarter 2021 financial statements.

No motion was made.

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7. Risk Insurance Renewal

Iva Giddings, Area Managing Director, and James Martinez, Fiduciary Liability Program Specialist, with Arthur J. Gallagher & Co., DPFP's insurance broker, discussed the insurance market and the risk renewal status. The Board directed staff to maintain the current level of fiduciary insurance coverage recognizing that the cost for this insurance was in excess of the budgeted amount.

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8. Portfolio Update

Investment staff briefed the Board on recent events and current developments with respect to the investment portfolio.

No motion was made.

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Regular Board Meeting
Thursday, February 10, 2022

9. **Investment Policy Amendments**

Staff reviewed possible amendments to the Investment Policy Statement to add a 5% asset class concentration limit to any single issuer in both the Public Equity and Public Fixed Income portfolios. Each asset class will be treated separately for purposes of the 5% limit.

After discussion, Mr. Quinn made a motion to approve the revised Investment Policy Statement. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

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10. **Hardship Request**

No discussion was held, and no motion was made regarding the Hardship Request.

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11. **Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.**

The Board went into closed executive session at 10:38 a.m.

The meeting was reopened at 11:02 a.m.

The Board and staff discussed legal issues.

No motion was made.

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Regular Board Meeting
Thursday, February 10, 2022

D. BRIEFING ITEMS

1. Public Comments

Prior to commencing items for Board discussion and deliberation, the Board received public comments during the open forum.

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2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (February 2022)
- TEXPERS Pension Observer (Vol. 1 2022) http://online.anyflip.com/mxfu/kcff/mobile/index.html

b. Open Records
c. CIO Recruitment

The Executive Director's report was presented.

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Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Haben and a second by Ms. Hernandez Patterson, the meeting was adjourned at 11:03 a.m.

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Nicholas A. Merrick
Chairman

ATTEST:

____
Kelly Gottschalk
Secretary

DISCUSSION SHEET

ITEM #C1

Topic: **Report on Professional Services Provider Meeting**

Discussion: According to the Committee Policy and Procedure, the Professional Services Committee is responsible for meeting privately with the external service providers, without DPFP staff present, at minimum on an annual basis. The purpose of such a meeting is to provide a forum for the service provider to provide candid comments to the Professional Services Committee.

The Professional Services Committee had a phone meeting with the investment consultant, Meketa on March 7, 2022 and will report on the results of that meeting.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C2

Topic: **Fiduciary Attorney Services**

Discussion: In 2015, the Board gave direction to conduct a competitive selection process for specific service providers, including the fiduciary counsel, every five years unless the Board explicitly waives or extends the requirement.

In September of 2016, DPFP engaged Jackson Walker as fiduciary counsel. Chuck Campbell is the primary contact at Jackson Walker. Mr. Campbell has an excellent understanding of the DPFP plan and has been involved in a number of plan issues since being engaged. Additionally, Mr. Campbell was actively involved with staff in the drafting of HB 3158 in 2017. Staff believes Mr. Campbell's assistance will be important in the next few years, especially for the 2024-2025 time period when certain actions must be taken as required under 6243a-1.

Staff Recommendation: **Waive** the requirement to conduct a competitive selection process until the end of the 2025 legislative session.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

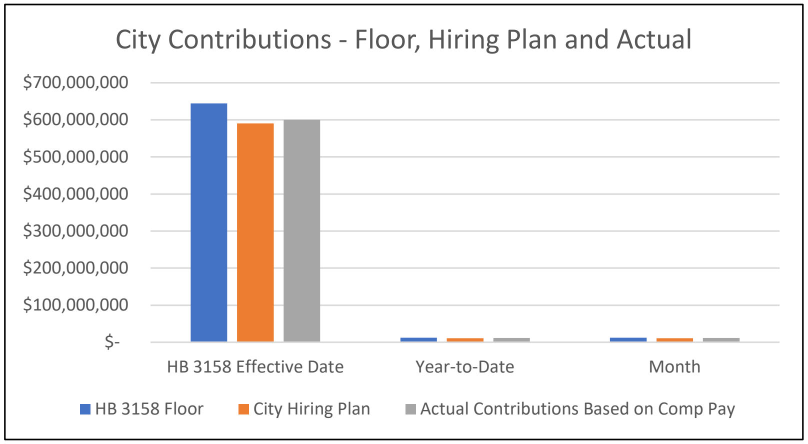
ITEM #C3

Topic: **Monthly Contribution Report**

Discussion: Staff will review the Monthly Contribution Report.

Regular Board Meeting – Thursday, March 10, 2022

Contribution Tracking Summary - March 2022 (January 2022 Data)



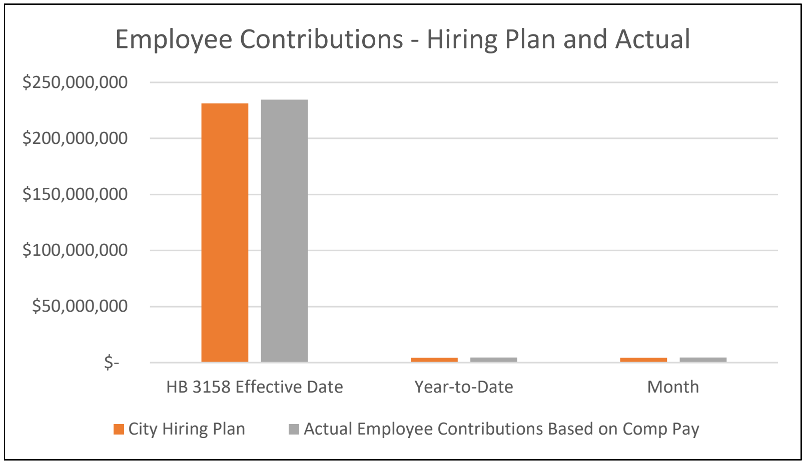
Actual Comp Pay was 102% of the Hiring Plan estimate since the effective date of HB 3158.

In the most recent month Actual Comp Pay was 103% of the Hiring Plan estimate and 95% of the Floor amount.

The Hiring Plan Comp Pay estimate increased by 3.43% in 2022. The Floor increased by 2.74%.

Through 2024 the HB 3158 Floor is in place so there is no City Contribution shortfall.

The combined actual employees was 167 less than the Hiring Plan for the pay period ending February 1, 2022. Fire was over the estimate by 35 fire fighters and Police under by 202 officers. The number of estimate police officers increase by 25 officer for 2022 from the 2021 estimate.



Employee contributions exceeded the Hiring Plan estimate for the month, the year and since inception.

There is no Floor on employee contributions.

Contribution Summary Data

City Contributions

Jan-22	Number of Pay Periods Beginning in the Month	HB 3158 Floor	City Hiring Plan	Actual Contributions Based on Comp Pay	Additional Contributions to Meet Floor Minimum	Comp Pay Contributions as a % of Floor Contributions	Comp Pay Contributions as a % of Hiring Plan Contributions
Month	2	$ 12,086,000	$ 11,199,231	$ 11,510,284	$ 575,716	95%	103%
Year-to-Date		$ 12,086,000	$ 11,199,231	$ 11,510,284	$ 575,716	95%	103%
HB 3158 Effective Date		$ 644,189,000	$ 590,719,615	$ 600,323,108	$ 43,939,598	93%	102%

Due to the Floor through 2024, there is no cumulative shortfall in City Contributions
Does not include the flat $13 million annual City Contribution payable through 2024.
Does not include Supplemental Plan Contributions.

Employee Contributions

Jan-22	Number of Pay Periods Beginning in the Month	City Hiring Plan	Actual Employee Contributions Based on Comp Pay	Actual Contribution Shortfall Compared to Hiring Plan	Actuarial Valuation Contribution Assumption	Actual Contributions as a % of Hiring Plan Contributions	Actual Contributions as a % of Actuarial Val Assumption
Month	2	$ 4,382,308	$ 4,503,378	$ 121,070	$ 4,236,924	103%	106%
Year-to-Date		$ 4,382,308	$ 4,503,378	$ 121,070	$ 4,236,924	103%	106%
HB 3158 Effective Date		$ 231,151,154	$ 234,752,290	$ 3,601,137	$ 225,896,578	102%	104%
Potential Earnings Loss from the Shortfall based on Assumed Rate of Return				$ (372,997)			

Does not include Supplemental Plan Contributions.

Reference Information

City Contributions: HB 3158 Bi-weekly Floor and the City Hiring Plan Converted to Bi-weekly Contributions

	HB 3158 Bi-weekly Floor	City Hiring Plan- Bi-weekly	HB 3158 Floor Compared to the Hiring Plan	Hiring Plan as a % of the Floor	% Increase/ (decrease) in the Floor	% Increase/ (decrease) in the Hiring Plan
2017	$ 5,173,000	$ 4,936,154	$ 236,846	95%		
2018	$ 5,344,000	$ 4,830,000	$ 514,000	90%	3.31%	-2.15%
2019	$ 5,571,000	$ 5,082,115	$ 488,885	91%	4.25%	5.22%
2020	$ 5,724,000	$ 5,254,615	$ 469,385	92%	2.75%	3.39%
2021	$ 5,882,000	$ 5,413,846	$ 468,154	92%	2.76%	3.03%
2022	$ 6,043,000	$ 5,599,615	$ 443,385	93%	2.74%	3.43%
2023	$ 5,812,000	$ 5,811,923	$ 77	100%	-3.82%	3.79%
2024	$ 6,024,000	$ 6,024,231	$ (231)	100%	3.65%	3.65%

The HB 3158 Bi-weekly Floor ends after 2024

Employee Contributions: City Hiring Plan and Actuarial Val. Converted to Bi-weekly Contributions

		City Hiring Plan Converted to Bi-weekly Employee Contributions	Actuarial Valuation Assumption Converted to Bi-weekly Employee contributions	Actuarial Valuation as a % of Hiring Plan
2017		$ 1,931,538	$ 1,931,538	100%
2018		$ 1,890,000	$ 1,796,729	95%
2019		$ 1,988,654	$ 1,885,417	95%
2020		$ 2,056,154	$ 2,056,154	100%
2021		$ 2,118,462	**$ 2,118,462**	100%
2022		$ 2,191,154	**$ 2,191,154**	100%
2023		$ 2,274,231	**$ 2,274,231**	100%
2024		$ 2,357,308	**$ 2,357,308**	100%

The information on this page is for reference. The only numbers on this page that may change before 2025 are the Actuarial Valuation Employee Contributions Assumptions for the years 2020-2024 and the associated percentage.

Reference Information - Actuarial Valuation and GASB 67/68 Contribution Assumptions

Actuarial Assumptions Used in the Most Recent Actuarial Valuation - These assumptions will be reevaluated annually & may change.

City Contributions are based on the Floor through 2024, the Hiring Plan from 2025 to 2037, after 2037 an annual growth rate of 2.75% is assumed

Employee Contributions for 2018 are based on the 2017 actual employee contributions inflated by the growth rate of 2.75% and the Hiring Plan for subsequent years until 2038, when the 2037 Hiring Plan is increased by the 2.75 growth rate for the next 10 years

Actuarial/GASB Contribution Assumption Changes Since the Passage of HB 3158

	Actuarial Valuation	GASB 67/68
YE 2017 (1/1/2018 Valuation)		
2018 Employee Contributions Assumption - based on 2017 actual plus growth rate not the Hiring Plan Payroll	$ (2,425,047)	*
2019 Estimate (1/1/2019 Valuation)		
2019 Employee Contribution Assumption	$ 9,278	*

**90% of Hiring Plan was used for the Cash Flow Projection for future years in the 12/31/2017 GASB 67/68 calculation. At 12-31-17, 12-31-18 and 12-31-2019 this did not impact the pension liability or the funded percentage.*

The information on this page is for reference. It is intended to document contribution related assumptions used to prepare the Actuarial Valuation and changes to those assumptions over time, including the dollar impact of the changes. Contribution changes impacting the GASB 67/68 liability will also be included.

City Hiring Plan - Annual Computation Pay and Numbers of Employees						
	Computation Pay			**Number of Employees**		
Year	**Hiring Plan**	**Actual**	**Difference**	**Hiring Plan**	**Actual EOY**	**Difference**
2017	$ 372,000,000	Not Available	Not Available	5,240	4,935	(305)
2018	$ 364,000,000	$ 349,885,528	$ (14,114,472)	4,988	4,983	(5)
2019	$ 383,000,000	$ 386,017,378	$ 3,017,378	5,038	5,104	66
2020	$ 396,000,000	$ 421,529,994	$ 25,529,994	5,063	4,988	(75)
2021	$ 408,000,000	$ 429,967,675	$ 21,967,675	5,088	4,958	(130)
2022	$ 422,000,000			5,113		
2023	$ 438,000,000			5,163		
2024	$ 454,000,000			5,213		
2025	$ 471,000,000			5,263		
2026	$ 488,000,000			5,313		
2027	$ 507,000,000			5,363		
2028	$ 525,000,000			5,413		
2029	$ 545,000,000			5,463		
2030	$ 565,000,000			5,513		
2031	$ 581,000,000			5,523		
2032	$ 597,000,000			5,523		
2033	$ 614,000,000			5,523		
2034	$ 631,000,000			5,523		
2035	$ 648,000,000			5,523		
2036	$ 666,000,000			5,523		
2037	$ 684,000,000			5,523		

Comp Pay by Month - 2022	**Annual Divided by 26 Pay Periods**	**Actual**	**Difference**	**2022 Cumulative Difference**	**Number of Employees - EOM**	**Difference**
January	$ 32,461,538	$ 33,363,143	$ 901,604	$ 901,604	4946	(167)
February	$ 32,461,538					
March	$ 48,692,308					
April	$ 32,461,538					
May	$ 32,461,538					
June	$ 32,461,538					
July	$ 32,461,538					
August	$ 48,692,308					
September	$ 32,461,538					
October	$ 32,461,538					
November	$ 32,461,538					
December	$ 32,461,538					

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C4

Topic: **Board approval of Trustee education and travel**

a. Future Education and Business-related Travel
b. Future Investment-related Travel

Discussion:

a. Per the Education and Travel Policy and Procedure, planned Trustee education and business-related travel and education which does not involve travel requires Board approval prior to attendance.

Attached is a listing of requested future education and travel noting approval status.

b. Per the Investment Policy Statement, planned Trustee travel related to investment monitoring, and in exceptional cases due diligence, requires Board approval prior to attendance.

There is no future investment-related travel for Trustees at this time.

Future Education and Business Related Travel & Webinars
Regular Board Meeting – March 10, 2022

ATTENDING APPROVED

2022 EVENTS

			ATTENDING	APPROVED
1.	**Conference:**	**TEXPERS Annual Conference**	**KH, TH**	**01/13/22**
	Dates:	April 3-6, 2022		
	Location:	Fort Worth, TX		
	Est Cost:	$700.00		
2.	**Conference:**	**NCPERS Trustee Educational Seminar (TEDS)**		
	Dates:	May 21 – 22, 2022		
	Location:	Washington, DC		
	Est Cost:	TBD		
3.	**Conference:**	**NCPERS Program for Advanced Trustee Studies (PATS)**		
	Dates:	May 21 – 22, 2022		
	Location:	Washington, DC		
	Est Cost:	TBD		
4.	**Conference:**	**NCPERS Accredited Fiduciary (NAF) Program**		
	Dates:	May 21 – 22, 2022		
	Location:	Washington, DC		
	Est Cost:	TBD		

Future Education and Business Related Travel & Webinars
Regular Board Meeting – March 10, 2022

ATTENDING APPROVED

2022 EVENTS
(continued)

5. **Conference:** **NCPERS Annual Conference & Exhibition (ACE)**
Dates: May 22 – 25, 2022
Location: Washington, DC
Est Cost: TBD

6. **Conference:** **NCPERS Public Safety Conference**
Dates: October 25-28, 2022
Location: Nashville, TN
Est Cost: **TBD**

DISCUSSION SHEET

ITEM #C5

Topic: **Portfolio Update**

Discussion: Investment Staff will brief the Board on recent events and current developments with respect to the investment portfolio.

Regular Board Meeting – Thursday, March 10, 2022

DALLAS POLICE & FIRE PENSION SYSTEM

Portfolio Update

March 10th, 2022

Executive Summary

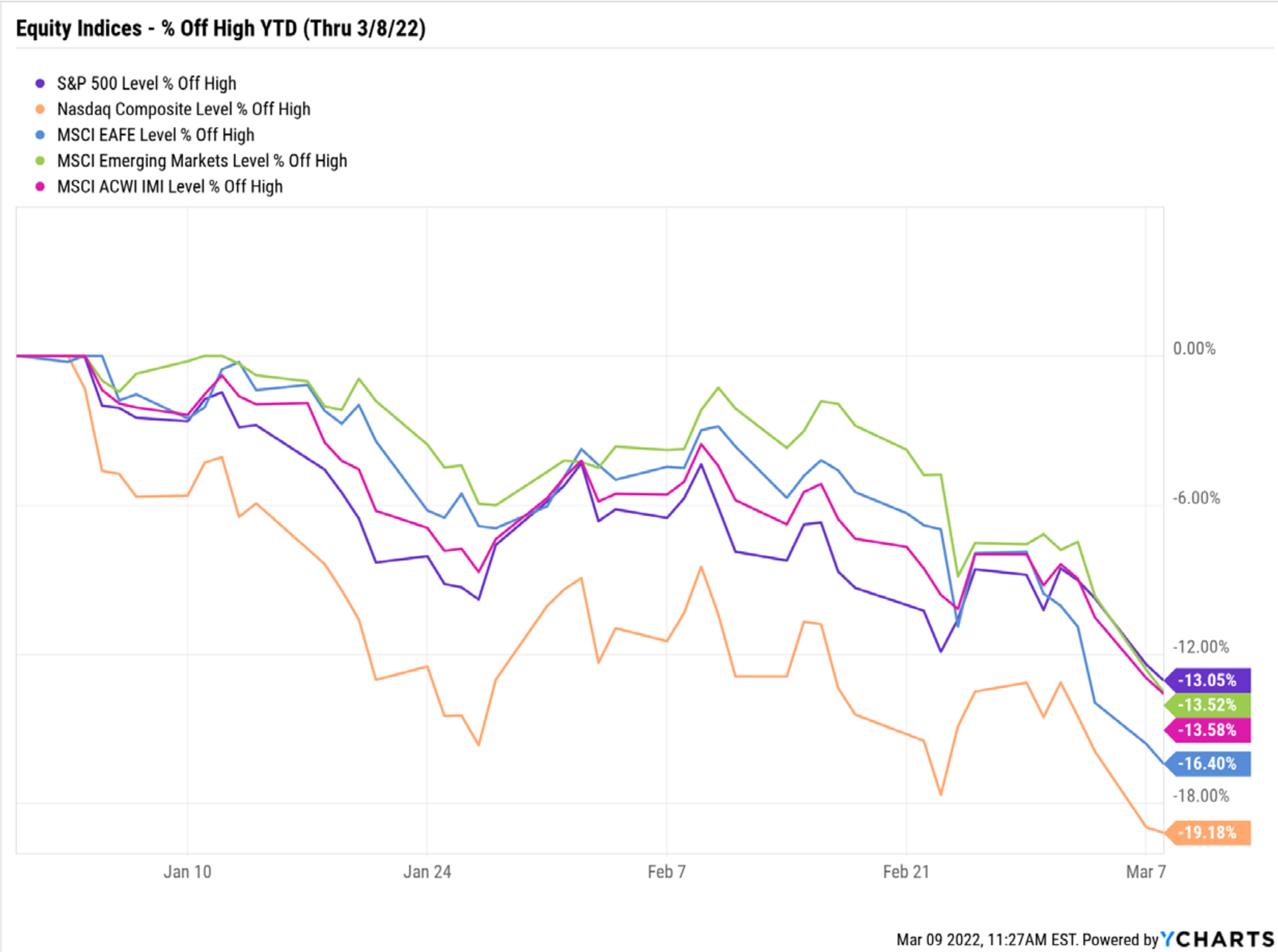
- Liquidation of private market assets remains the top focus.
    - $7.8M in distributions received in 2022 YTD. $25M+ in distributions expected in Q2.

- Given market downturn in 2022, staff intends to draw down the Safety Reserve to meet net benefit outflows, as opposed to rebalancing to 9% target from other liquid assets.

- Plan to fund initial $40M allocation to new International Small Cap equity manager, Global Alpha, in Q2. Funding expected to come from the passive Northern Trust account.

- Estimated Year-to-Date Return (as of 2/28/22): -4.4% for DPFP portfolio; -6.3% for Public Markets (ex-Cash) which accounts for 70% of the assets.

Equity Market Correction



DALLAS POLICE & FIRE PENSION SYSTEM

Public Markets Performance Snapshot - Estimates

Public Markets (ex-Cash) currently make up 70% of DPFP Investment Portfolio.

		Feb-22			YTD as of 2/28/2022		
Net of fees	**Index**	**Manager**	**Index**	**Excess**	**Manager**	**Index**	**Excess**
Total Public Portfolio (ex-Cash)	**60% MSCI ACWI IMI / 40% BBG Global AGG**	**-2.6%**	**-1.9%**	**-0.8%**	**-6.3%**	**-5.7%**	**-0.5%**
Global Equity	**MSCI ACWI IMI**	**-2.9%**	**-2.3%**	**-0.6%**	**-8.1%**	**-7.4%**	**-0.7%**
Boston Partners	MSCI World	0.3%	-2.5%	2.8%	-0.1%	-7.7%	7.6%
Manulife	MSCI ACWI	-3.5%	-2.6%	-1.0%	-6.5%	-7.4%	0.9%
Invesco (OFI)	MSCI ACWI	-6.9%	-2.6%	-4.3%	-15.7%	-7.4%	-8.3%
Walter Scott	MSCI ACWI	-3.2%	-2.6%	-0.6%	-11.1%	-7.4%	-3.8%
Northern Trust ACWI IMI Index	MSCI ACWI IMI	-2.6%	-2.3%	-0.3%	-7.3%	-7.4%	0.1%
Eastern Shore US Small Cap	Russell 2000	-0.6%	1.1%	-1.7%	-10.7%	-8.7%	-2.0%
EM Equity - RBC	**MSCI EM IMI**	**-3.7%**	**-2.9%**	**-0.7%**	**-3.2%**	**-5.1%**	**1.9%**
Public Fixed Income (ex-Cash)	**BBG Multiverse TR**	**-1.8%**	**-1.2%**	**-0.6%**	**-3.1%**	**-3.2%**	**0.1%**
S/T IG Bonds - IR+M	BBG 1-3YR AGG	-0.5%	-0.4%	-0.1%	-1.1%	-1.2%	0.0%
IG Bonds - Longfellow	BBG US AGG	-1.4%	-1.1%	-0.3%	-3.4%	-3.2%	-0.1%
Bank Loans - Pacific Asset Management	CS Leveraged Loan	-0.4%	-0.5%	0.2%	0.1%	-0.2%	0.3%
High Yield - Loomis Sayles	BBG USHY 2% Cap	-0.9%	-1.0%	0.1%	-3.7%	-3.7%	0.0%
EM Debt - Ashmore*	50% JPM EMBI / 25% ELMI / 25% GBI-EM	-6.7%	-6.7%	0.0%	-8.8%	-8.0%	-0.9%

Source: JPM Morgan custody data, manager reports, Investment Staff estimates and calculations. Numbers may not foot due to rounding.

** - Ashmore Benchmark performance for prior month is equal to the manager return due to lag in benchmark reporting*

Safety Reserve Status and Drawdown Determination

- The Safety Reserve ended February with an allocation of 8.2% ($161M), compared to a target allocation of 9% ($169M).
- During periods of market distress, the Safety Reserve is intended to serve as the primary source to meet liquidity needs for net benefit outflows.
- **Section 6.D Rebalancing of the IPS requires "Staff will notify the Board if the determination has been made to drawn down the Safety Reserve to meet liquidity needs, rather than rebalancing to target." Staff is notifying the Board that this is our intent.**
- Operationally this means when the Cash Allocation needs to be replenished, these proceeds will now come from Short Term Core Bonds (within the Safety Reserve) instead of another liquid asset class.
- The current Safety Reserve level is enough to pay expected net benefit outflows for the next 18-months, or through August 2023.

Forward Cash Flow Projection

- Cash was below target at end of February, but sufficient based on the forward cash flow forecast.
- Absent a market recovery, staff would look to rebalance cash towards 3% target from Short Term Core Bonds, within the Safety Reserve, by the end of May at latest.

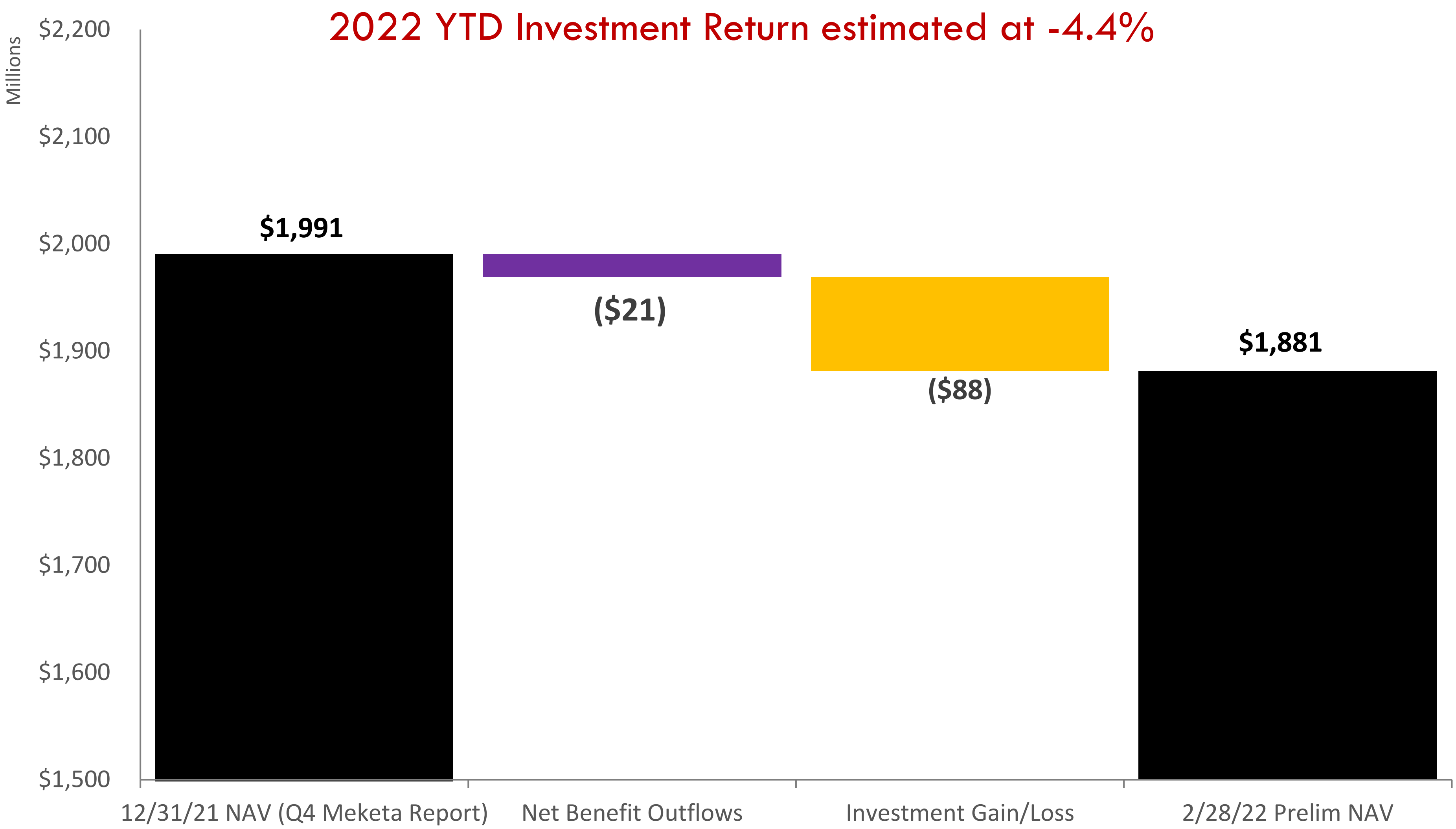
Expected Cash Activity	Date	Amount ($M)	Projected Cash Balance ($M)	Projectd Cash %
	3/2/22		**$44.2**	**2.3%**
City Contribution	3/4/22	$8.5	$52.7	2.8%
City Contribution	3/18/22	$8.5	$61.2	3.3%
Pension Payroll	3/29/22	($27.5)	$33.7	1.8%
City Contribution	4/1/22	$8.5	$42.2	2.2%
City Contribution	4/15/22	$8.5	$50.7	2.7%
Pension Payroll	4/27/22	($27.5)	$23.2	1.2%
City Contribution	4/29/22	$8.5	$31.7	1.7%
City Contribution	5/13/22	$8.5	$40.2	2.1%
City Contribution	5/27/22	$8.5	$48.7	2.6%
Pension Payroll	5/27/22	($27.5)	$21.2	1.1%
City Contribution	6/10/22	$8.5	$29.7	1.6%
City Contribution	6/24/22	$8.5	$38.2	2.0%
Pension Payroll	6/29/22	($27.5)	$10.7	0.6%

Projected Cash activity includes expected benefit contributions, payments, and material expected distributions or capital calls.

Numbers may not foot due to rounding

2022 YTD Change in Market Value Bridge Chart

In Millions



DALLAS POLICE & FIRE PENSION SYSTEM

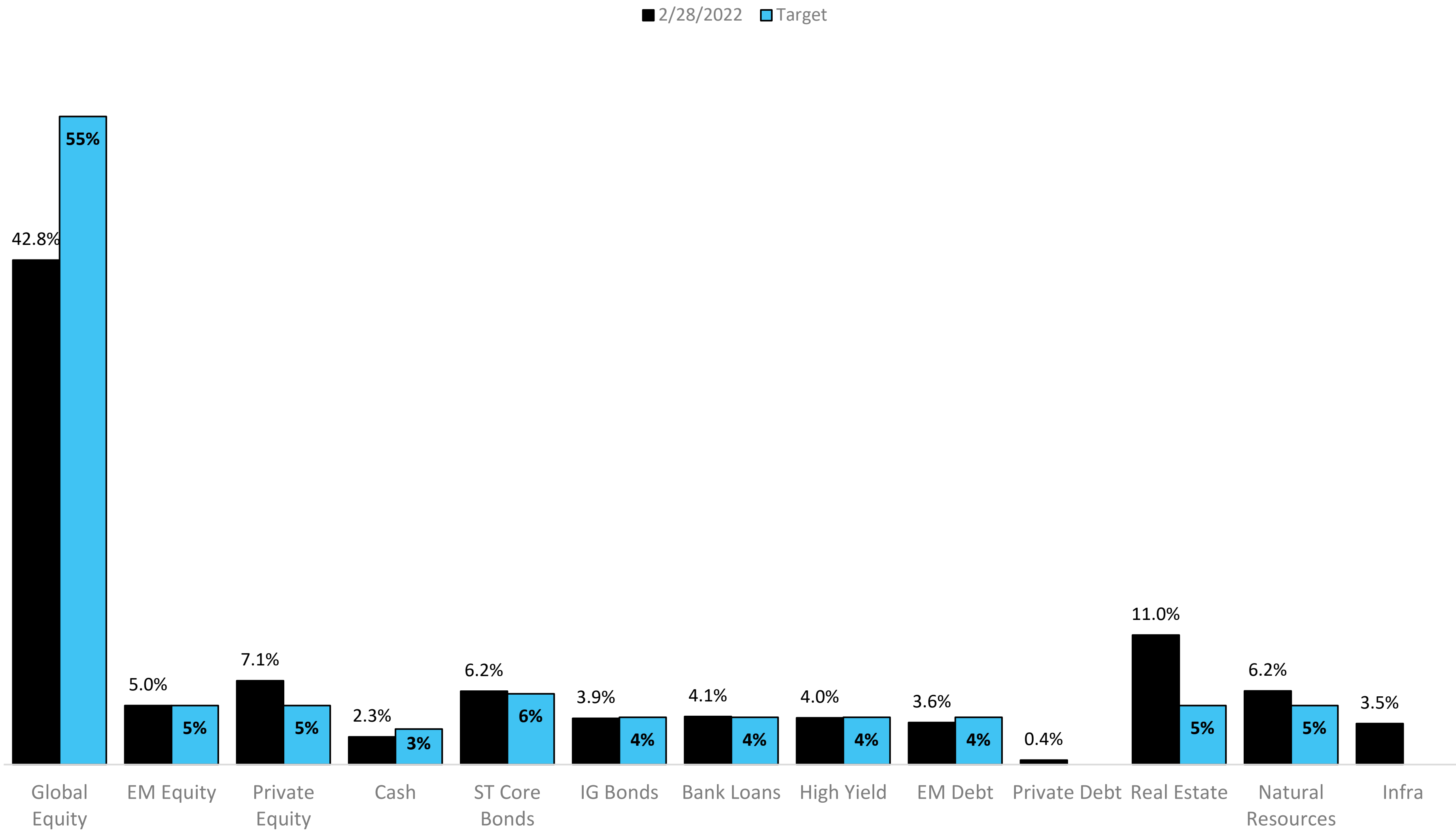
Asset Allocation Detail

DPFP Asset Allocation	2/28/2022		Target		Variance	
	NAV	%	$ mil.	%	$ mil.	%
Equity	**1,033**	**54.9%**	**1,223**	**65%**	**-190**	**-10.1%**
Global Equity	805	42.8%	1,035	55%	-229	-12.2%
Boston Partners	*148*	*7.9%*	*151*	*8%*	*-2*	*-0.1%*
Manulife	*139*	*7.4%*	*151*	*8%*	*-11*	*-0.6%*
Invesco (OFI)	*120*	*6.4%*	*151*	*8%*	*-31*	*-1.6%*
Walter Scott	*131*	*7.0%*	*151*	*8%*	*-19*	*-1.0%*
Northern Trust ACWI IMI Index	*230*	*12.2%*	*282*	*15%*	*-53*	*-2.8%*
Eastern Shore US Small Cap	*36*	*1.9%*	*75*	*4%*	*-39*	*-2.1%*
Future International Small Cap Mandate	*0*	*0.0%*	*75*	*4%*	*-75*	*-4.0%*
Russell Transition	*0*	*0.0%*	*0*	*0%*	*0*	*0.0%*
Emerging Markets Equity - RBC	94	5.0%	94	5%	0	0.0%
Private Equity*	134	7.1%	94	5%	40	2.1%
Fixed Income	**460**	**24.4%**	**470**	**25%**	**-11**	**-0.6%**
Cash	44	2.3%	56	3%	-12	-0.7%
S/T Investment Grade Bonds - IR+M	117	6.2%	113	6%	4	0.2%
Investment Grade Bonds - Longfellow	74	3.9%	75	4%	-2	-0.1%
Bank Loans - Pacific Asset Management	77	4.1%	75	4%	1	0.1%
High Yield Bonds - Loomis Sayles	74	4.0%	75	4%	-1	0.0%
Emerging Markets Debt - Ashmore	67	3.6%	75	4%	-8	-0.4%
Private Debt*	7	0.4%	0	0%	7	0.4%
Real Assets*	**389**	**20.7%**	**188**	**10%**	**201**	**10.7%**
Real Estate*	207	11.0%	94	5%	113	6.0%
Natural Resources*	117	6.2%	94	5%	23	1.2%
Infrastructure*	65	3.5%	0	0%	65	3.5%
Total	**1,881**	**100.0%**	**1,881**	**100%**	**0**	**0.0%**
Safety Reserve ~$162M=18 mo net CF	161	8.6%	169	9%	-8	-0.4%
*Private Market Assets	529	28.1%	282	15%	247	13.1%

Source: Preliminary JP Morgan Custodial Data, Staff Estimates and Calculations
Numbers may not foot due to rounding

DALLAS POLICE & FIRE PENSION SYSTEM

Asset Allocation – Actual vs Target

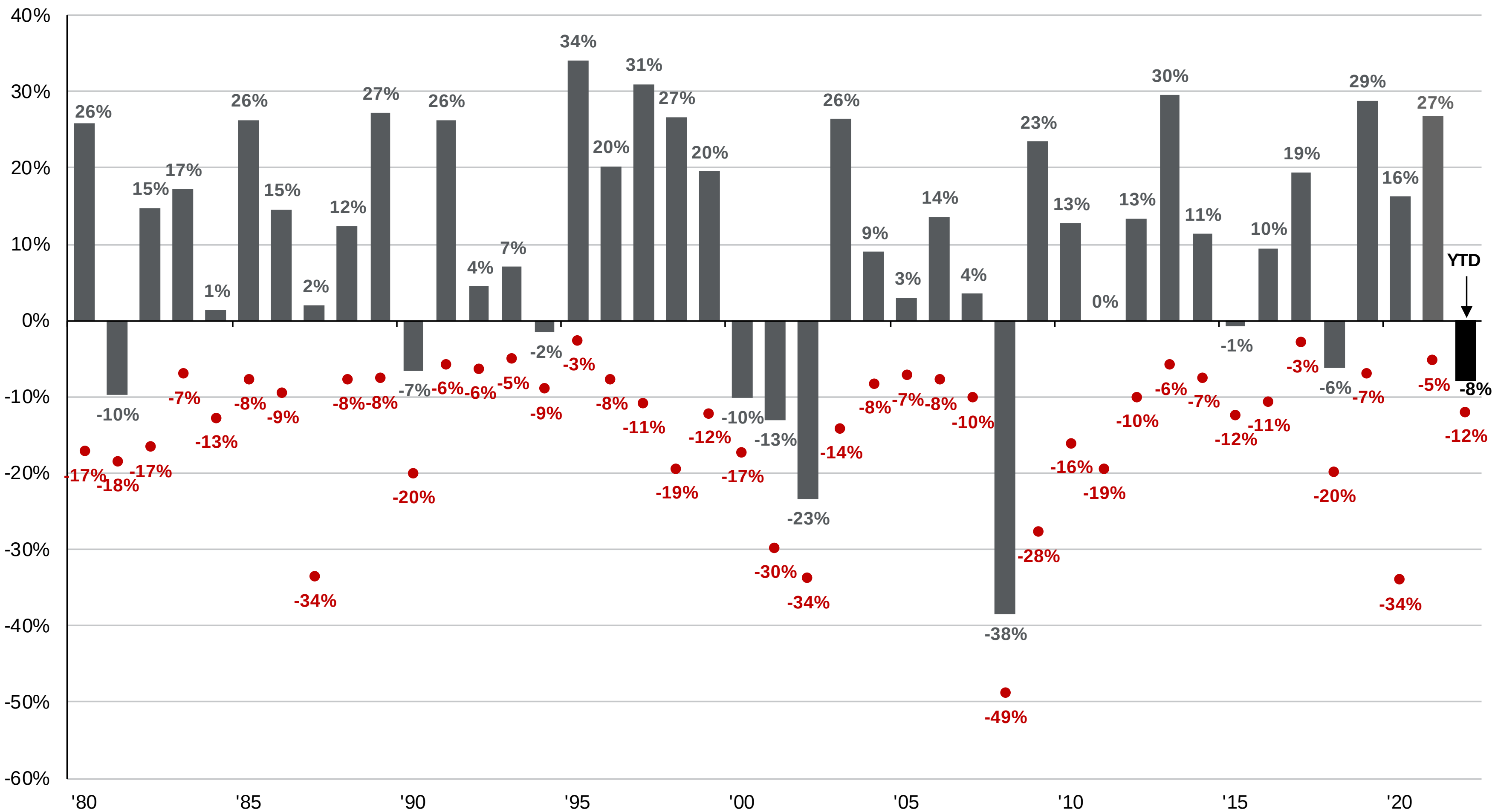


DALLAS POLICE & FIRE PENSION SYSTEM

S&P Intra-Year Declines

S&P intra-year declines vs. calendar year returns

Despite average intra-year drops of 14.0%, annual returns were positive in 32 of 42 years



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

Returns are based on price index only and do not include dividends. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1980 to 2021, over which time period the average annual return was 9.4%.

Guide to the Markets – U.S. Data are as of February 28, 2022.

DALLAS POLICE & FIRE PENSION SYSTEM

Asset Class Returns – JPM Guide to the Markets

																2007 - 2021	
2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD	Ann.	Vol.
EM Equity 39.8%	Fixed Income 5.2%	EM Equity 79.0%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Small Cap 38.8%	REITs 28.0%	REITs 2.8%	Small Cap 21.3%	EM Equity 37.8%	Cash 1.8%	Large Cap 31.5%	Small Cap 20.0%	REITs 41.3%	Comdty. 15.6%	Large Cap 10.6%	REITs 23.2%
Comdty. 16.2%	Cash 1.8%	High Yield 59.4%	Small Cap 26.9%	Fixed Income 7.8%	High Yield 19.6%	Large Cap 32.4%	Large Cap 13.7%	Large Cap 1.4%	High Yield 14.3%	DM Equity 25.6%	Fixed Income 0.0%	REITs 28.7%	EM Equity 18.7%	Large Cap 28.7%	Cash 0.0%	Small Cap 8.7%	EM Equity 22.9%
DM Equity 11.6%	Asset Alloc. -25.4%	DM Equity 32.5%	EM Equity 19.2%	High Yield 3.1%	EM Equity 18.6%	DM Equity 23.3%	Fixed Income 6.0%	Fixed Income 0.5%	Large Cap 12.0%	Large Cap 21.8%	REITs -4.0%	Small Cap 25.5%	Large Cap 18.4%	Comdty. 27.1%	Fixed Income -3.2%	REITs 7.5%	Small Cap 22.5%
Asset Alloc. 7.1%	High Yield -26.9%	REITs 28.0%	Comdty. 16.8%	Large Cap 2.1%	DM Equity 17.9%	Asset Alloc. 14.9%	Asset Alloc. 5.2%	Cash 0.0%	Comdty. 11.8%	Small Cap 14.6%	High Yield -4.1%	DM Equity 22.7%	Asset Alloc. 10.6%	Small Cap 14.8%	EM Equity -4.8%	High Yield 6.6%	Comdty. 19.1%
Fixed Income 7.0%	Small Cap -33.8%	Small Cap 27.2%	Large Cap 15.1%	Cash 0.1%	Small Cap 16.3%	High Yield 7.3%	Small Cap 4.9%	DM Equity -0.4%	EM Equity 11.6%	Asset Alloc. 14.6%	Large Cap -4.4%	Asset Alloc. 19.5%	DM Equity 8.3%	Asset Alloc. 13.5%	High Yield -4.9%	Asset Alloc. 5.7%	DM Equity 18.9%
Large Cap 5.5%	Comdty. -35.6%	Large Cap 26.5%	High Yield 14.8%	Asset Alloc. -0.7%	Large Cap 16.0%	REITs 2.9%	Cash 0.0%	Asset Alloc. -2.0%	REITs 8.6%	High Yield 10.4%	Asset Alloc. -5.8%	EM Equity 18.9%	Fixed Income 7.5%	DM Equity 11.8%	Asset Alloc. -4.9%	EM Equity 4.8%	Large Cap 16.9%
Cash 4.8%	Large Cap -37.0%	Asset Alloc. 25.0%	Asset Alloc. 13.3%	Small Cap -4.2%	Asset Alloc. 12.2%	Cash 0.0%	High Yield 0.0%	High Yield -2.7%	Asset Alloc. 8.3%	REITs 8.7%	Small Cap -11.0%	High Yield 12.6%	High Yield 7.0%	High Yield 1.0%	DM Equity -6.5%	DM Equity 4.1%	High Yield 12.2%
High Yield 3.2%	REITs -37.7%	Comdty. 18.9%	DM Equity 8.2%	DM Equity -11.7%	Fixed Income 4.2%	Fixed Income -2.0%	EM Equity -1.8%	Small Cap -4.4%	Fixed Income 2.6%	Fixed Income 3.5%	Comdty. -11.2%	Fixed Income 8.7%	Cash 0.5%	Cash 0.0%	Large Cap -8.0%	Fixed Income 4.1%	Asset Alloc. 11.7%
Small Cap -1.6%	DM Equity -43.1%	Fixed Income 5.9%	Fixed Income 6.5%	Comdty. -13.3%	Cash 0.1%	EM Equity -2.3%	DM Equity -4.5%	EM Equity -14.6%	DM Equity 1.5%	Comdty. 1.7%	DM Equity -13.4%	Comdty. 7.7%	Comdty. -3.1%	Fixed Income -1.5%	Small Cap -8.7%	Cash 0.8%	Fixed Income 3.3%
REITs -15.7%	EM Equity -53.2%	Cash 0.1%	Cash 0.1%	EM Equity -18.2%	Comdty. -1.1%	Comdty. -9.5%	Comdty. -17.0%	Comdty. -24.7%	Cash 0.3%	Cash 0.8%	EM Equity -14.2%	Cash 2.2%	REITs -5.1%	EM Equity -2.2%	REITs -11.5%	Comdty. -2.6%	Cash 0.7%

Source: Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management.
Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Bloomberg Global HY Index, Fixed Income: Bloomberg US Aggregate, REITs: NAREIT Equity REIT Index, Cash: Bloomberg 1-3m Treasury. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg US Aggregate, 5% in the Bloomberg 1-3m Treasury, 5% in the Bloomberg Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. Annualized (Ann.) return and volatility (Vol.) represents period from 12/31/2006 to 12/31/2021. Please see disclosure page at end for index definitions. All data represents total return for stated period. The "Asset Allocation" portfolio is for illustrative purposes only. Past performance is not indicative of future returns.
Guide to the Markets – U.S. Data are as of February 28, 2022.

2022 Board Investment Review Plan*

Staff presentations targeted for 15 minutes, Manager presentations 30 – 60 minutes.

March	• Real Estate: Clarion Presentation & other real estate review
April	• Real Estate: AEW Presentation
May	• Natural Resources: Hancock Presentation
June	• Natural Resources: Staff review of BTG Pactual (Timber)
August	• Infrastructure: Staff review of AIRRO and JPM Maritime
September	• Staff review of Public Fixed Income managers
October	• Staff review of Public Equity managers
November	• Staff review of Private Equity and Debt

*Presentation schedule is subject to change.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C7

Topic: **Fourth Quarter 2021 Investment Performance Analysis and Third Quarter 2021 Private Markets & Real Assets Review**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

Attendees: Leandro Festino, Managing Principal - Meketa Investment Group
Aaron Lally, Principal - Meketa Investment Group
Colin Kowalski, Associate - Meketa Investment Group

Discussion: Meketa and Investment Staff will review investment performance.

Regular Board Meeting – Thursday, March 10, 2022

MEKETA INVESTMENT GROUP

Dallas Police & Fire Pension System

December 31, 2021

Fund Evaluation Report

MEKETA

Dallas Police & Fire Pension System

Agenda

Agenda

1. Executive Summary
2. Performance Update as of December 31, 2021
3. Disclaimer, Glossary, and Notes

Executive Summary

As of December 31, 2021

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Dallas Police and Fire Pension System

Executive Summary

DPFP Trailing One-Year Flash Summary

Category	Results	Notes
Total Fund Performance Return	Positive	5.0%
Performance vs. Policy Index	Underperformed	5.0% vs. 10.7%
Performance vs. Peers[1]	Underperformed	5.0% vs. 14.1% median (99th percentile in peer group)
Asset Allocation vs. Targets	Positive	Underweight bonds and emerging market equity helped
Public Active Management	Mixed	5/10 public managers beat benchmarks
DPFP Public Markets vs. 60/40[2]	Outperformed	10.1% vs. 8.6%
DPFP Public Markets vs. Peers	Underperformed	10.1% vs. 14.1%
Safety Reserve Exposure	Sufficient	$176.6 million (approximately 8.9%)
Compliance with Targets	Yes	All asset classes in compliance

[1] InvestorForce Public DB $1-5 billion net.

[2] Performance of Total Fund excluding private market investments relative to a 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index.

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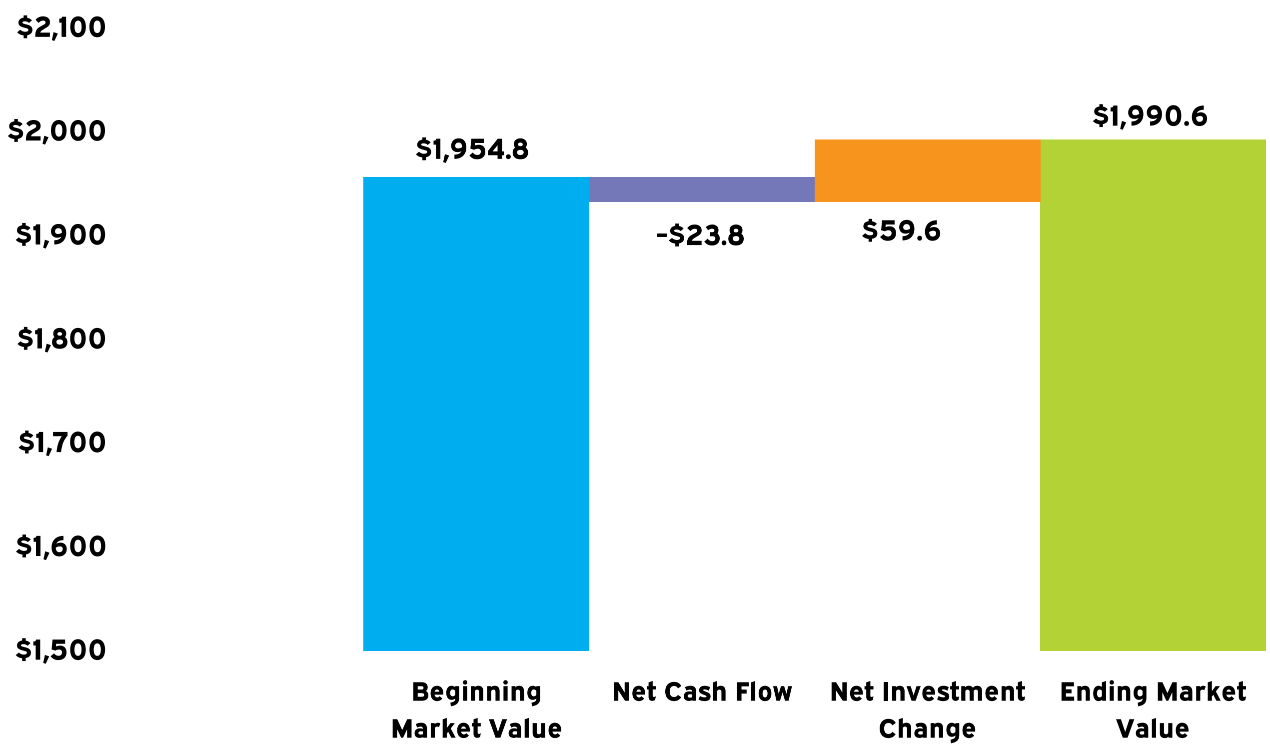
Dallas Police and Fire Pension System

Executive Summary

Quarterly Change in Market Value



- Total market value increased due to positive investment performance despite net outflows.

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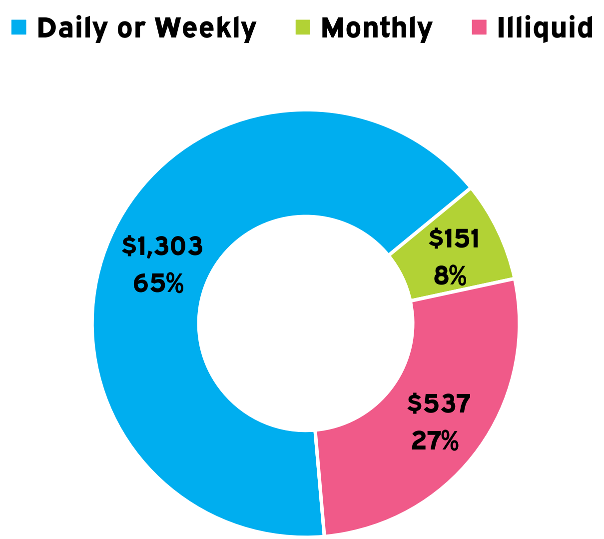
Dallas Police and Fire Pension System

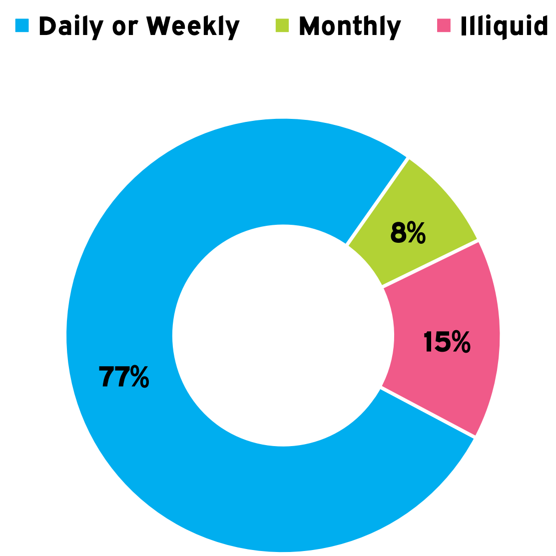
Executive Summary

Liquidity Exposure

As of December 31, 2021

Exposure ($M)	Targets





- Approximately 27% of the DPFP's assets are illiquid versus 15% of the target allocation.

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Dallas Police and Fire Pension System

Executive Summary

Quarterly Manager Scorecard

	1 Yr Outperformance vs. Benchmark	3 Yr Outperformance vs. Benchmark	5 Yr Outperformance vs. Benchmark
Boston Partners Global Equity Fund	Yes	No	NA
Manulife Global Equity Strategy	Yes	No	NA
Invesco (fka OFI) Global Equity	No	Yes	Yes
Walter Scott Global Equity Fund	Yes	Yes	Yes
Eastern Shore US Small Cap	NA	NA	NA
RBC Emerging Markets Equity	No	No	NA
IR&M 1-3 Year Strategy	Yes	Yes	NA
Longfellow Core Fixed Income	Yes	NA	NA
Pacific Asset Management Corporate (Bank) Loans	No	Yes	NA
Loomis US High Yield Fund	No	NA	NA
Ashmore EM Blended Debt	No	No	NA

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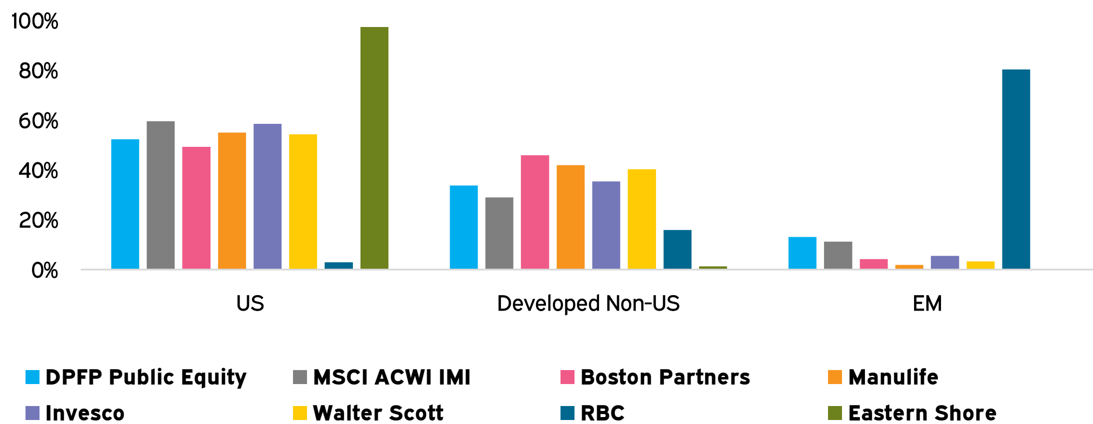
Dallas Police and Fire Pension System

Executive Summary

Equity Regional Exposure

	Market Value ($)	% of DPFP Public Equity (%)	US (%)	Developed Non-US (%)	EM (%)
NT MSCI ACWI IMI	247,689,585.00	26	60	29	11
Boston Partners	148,561,058.00	15	49	46	4
Manulife	149,089,480.00	15	55	42	2
Invesco	142,136,419.00	15	58	35	6
Walter Scott	147,850,852.00	15	54	40	3
RBC	96,966,057.00	10	3	16	80
Eastern Shore	40,736,624.00	4	97	1	0
Total DPFP Public Equity	$973,030,075.00	100	52	34	13
MSCI ACWI IMI			*60*	*29*	*11*



Performance Update
As of December 31, 2021

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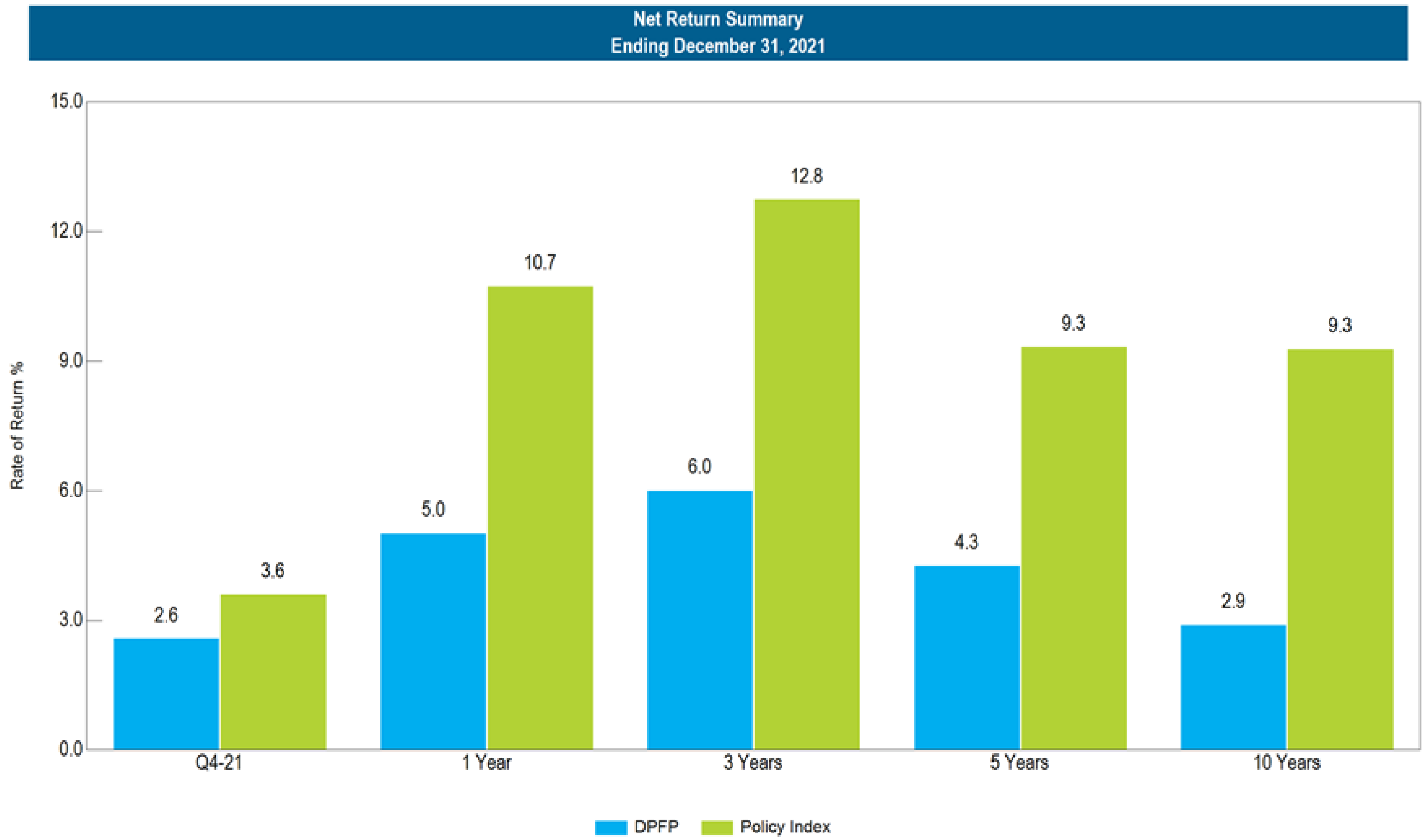
DPFP | As of December 31, 2021



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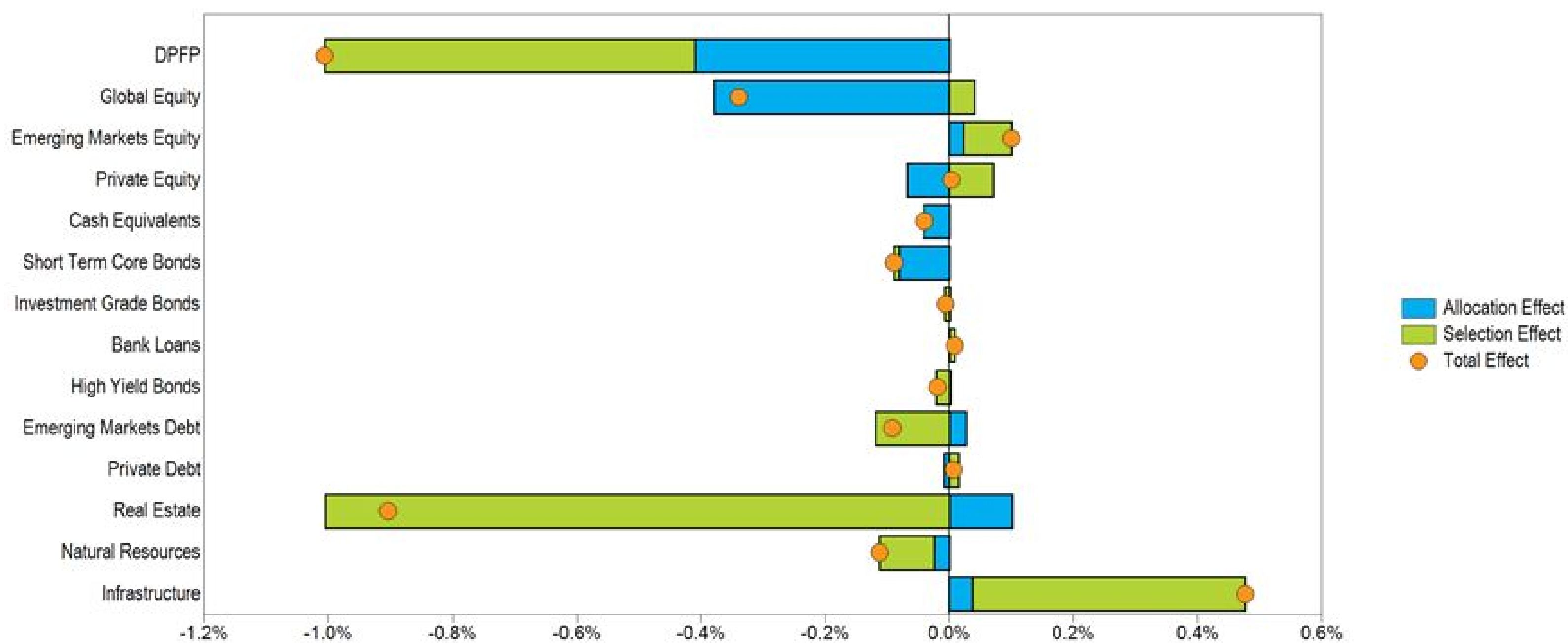
DPFP | As of December 31, 2021

Attribution Effects vs. Policy Benchmark
3 Months Ending December 31, 2021



Attribution Summary 3 Months Ending December 31, 2021	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**2.6%**	**3.6%**	**-1.0%**	**-0.6%**	**-0.4%**	**-1.0%**

The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

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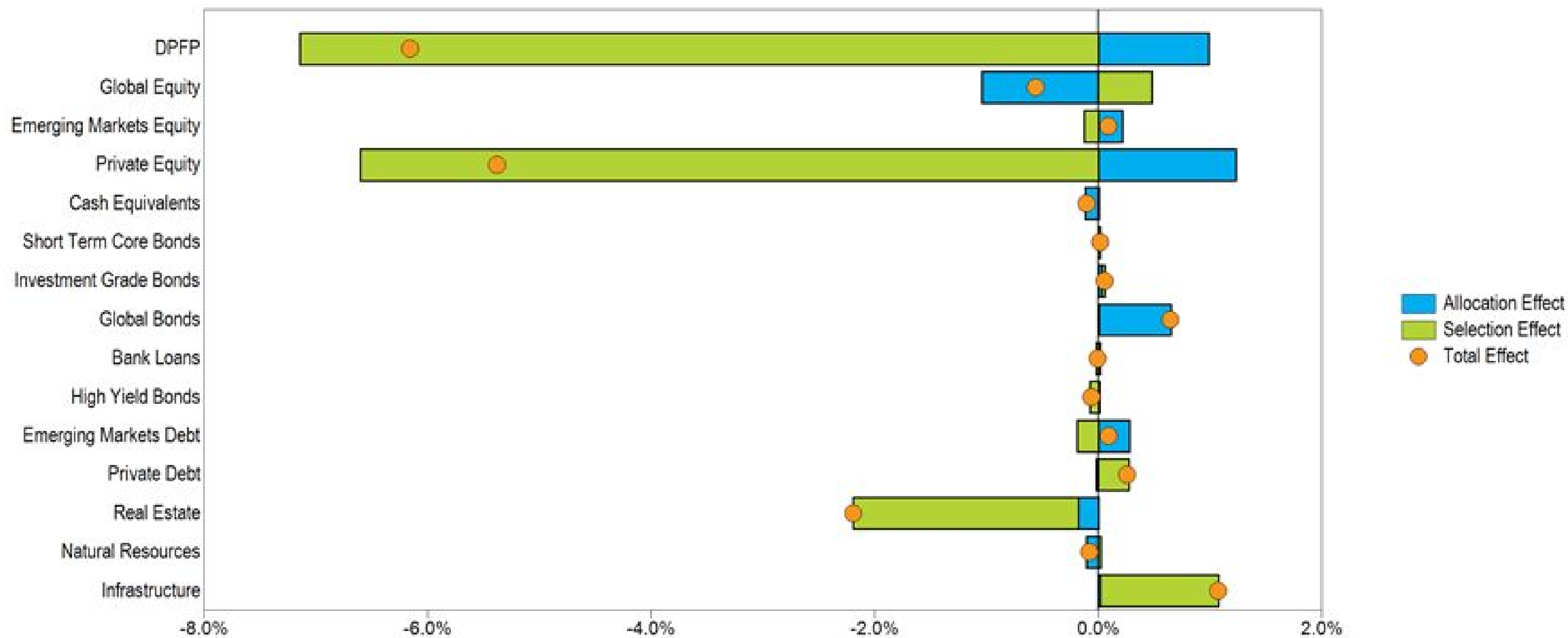
Dallas Police & Fire Pension System

DPFP | As of December 31, 2021

Attribution Effects vs. Policy Benchmark
1 Year Ending December 31, 2021



Attribution Summary
1 Year Ending December 31, 2021

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**5.2%**	**10.8%**	**-5.6%**	**-7.1%**	**1.6%**	**-5.5%**

The performance calculation methodology in attribution tables is different from the standard time weighted returns (geometric linkage of monthly returns) found throughout the rest of the report. In attribution tables, the average weight of each asset class (over the specified time period) is multiplied by the time period performance of that asset class and summed. Values may not sum due to rounding.

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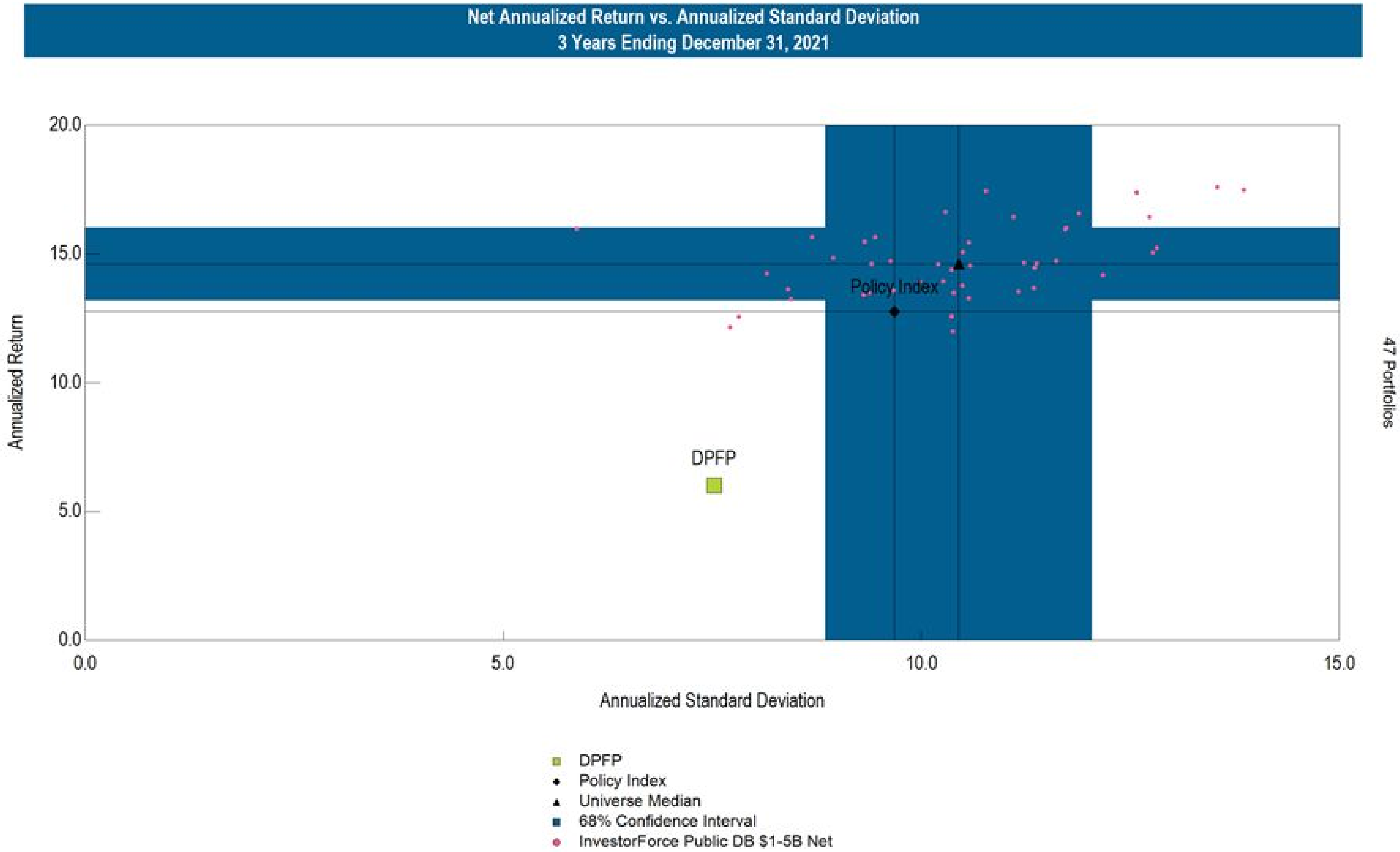
Dallas Police & Fire Pension System

DPFP | As of December 31, 2021



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Dallas Police & Fire Pension System

DPFP | As of December 31, 2021

Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DPFP	**1,990,600,761**	**100.0**	**2.6**	**5.0**	**5.0**	**6.0**	**4.3**	**2.9**	**5.7**	**Jun-96**
Policy Index			*3.6*	*10.7*	*10.7*	*12.8*	*9.3*	*9.3*	*--*	*Jun-96*
Allocation Index			*3.5*	*13.5*	*13.5*	*11.5*	*9.0*	*9.8*	*7.6*	*Jun-96*
Total Fund Ex Private Markets			*3.4*	*10.1*	*10.1*	*12.9*	*8.9*	*8.0*	*6.0*	*Jun-96*
60% MSCI ACWI IMI Net/40% Bloomberg Global Aggregate Index			*3.4*	*8.6*	*8.6*	*13.6*	*10.0*	*7.9*	*6.6*	*Jun-96*
Global Equity	**876,064,018**	**44.0**	**6.1**	**19.5**	**19.5**	**21.1**	**15.6**	**12.7**	**8.3**	**Jul-06**
MSCI ACWI IMI Net USD			*6.1*	*18.2*	*18.2*	*20.2*	*14.1*	*11.8*	*7.8*	*Jul-06*
Emerging Markets Equity	**96,966,057**	**4.9**	**0.6**	**-4.3**	**-4.3**	**9.5**	**--**	**--**	**4.2**	**Jan-18**
MSCI Emerging Market IMI Net			*-1.0*	*-0.3*	*-0.3*	*11.6*	*10.1*	*5.7*	*4.2*	*Jan-18*
Private Equity	**133,521,970**	**6.7**	**1.0**	**-30.1**	**-30.1**	**-16.7**	**-16.1**	**-9.1**	**-3.9**	**Oct-05**
Private Equity Benchmark			*1.0*	*40.5*	*40.5*	*19.7*	*18.8*	*15.8*	*14.2*	*Oct-05*
Cash Equivalents	**58,376,141**	**2.9**	**0.0**	**0.2**	**0.2**	**1.0**	**1.2**	**--**	**1.2**	**Apr-15**
91 Day T-Bills			*0.0*	*0.0*	*0.0*	*0.8*	*1.1*	*0.6*	*0.8*	*Apr-15*
Short Term Core Bonds	**118,245,816**	**5.9**	**-0.6**	**-0.4**	**-0.4**	**2.8**	**--**	**--**	**2.3**	**Jun-17**
Bloomberg US Aggregate 1-3 Yr TR			*-0.6*	*-0.5*	*-0.5*	*2.2*	*1.8*	*1.4*	*1.8*	*Jun-17*
Investment Grade Bonds	**76,110,992**	**3.8**	**-0.2**	**-0.9**	**-0.9**	**--**	**--**	**--**	**3.4**	**Oct-19**
Bloomberg US Aggregate TR			*0.0*	*-1.5*	*-1.5*	*4.8*	*3.6*	*2.9*	*2.6*	*Oct-19*
Bank Loans	**77,012,436**	**4.0**	**0.9**	**5.0**	**5.0**	**5.6**	**4.6**	**--**	**4.3**	**Jan-14**
Credit Suisse Leveraged Loan			*0.7*	*5.4*	*5.4*	*5.4*	*4.3*	*--*	*4.1*	*Jan-14*
High Yield Bonds	**77,194,961**	**4.0**	**0.2**	**3.4**	**3.4**	**6.8**	**5.6**	**6.1**	**6.1**	**Dec-10**
Bloomberg US Corporate High Yield TR			*0.7*	*5.3*	*5.3*	*8.8*	*6.3*	*6.8*	*6.7*	*Dec-10*
Emerging Markets Debt	**73,636,394**	**3.6**	**-4.7**	**-10.2**	**-10.2**	**0.5**	**1.9**	**2.2**	**2.3**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM			*-1.5*	*-5.3*	*-5.3*	*4.0*	*3.8*	*2.9*	*3.0*	*Dec-10*
Private Debt	**6,401,362**	**0.3**	**5.6**	**126.7**	**126.7**	**24.8**	**15.9**	**--**	**14.7**	**Jan-16**
Barclays Global High Yield +2%			*-0.2*	*3.0*	*3.0*	*8.9*	*7.3*	*--*	*8.8*	*Jan-16*

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Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Real Estate	**215,661,587**	**10.8**	**-3.4**	**-2.8**	**-2.8**	**-0.8**	**1.5**	**-3.7**	**3.4**	**Mar-85**
NCREIF Property (1 Qtr Lag)			*5.2*	*12.2*	*12.2*	*6.7*	*6.8*	*9.0*	*8.0*	*Mar-85*
Natural Resources	**116,340,954**	**5.8**	**0.1**	**5.6**	**5.6**	**3.2**	**-0.4**	**3.3**	**3.6**	**Dec-10**
NCREIF Farmland Total Return Index (1 Qtr Lag)			*1.5*	*5.5*	*5.5*	*4.9*	*5.5*	*10.2*	*10.4*	*Dec-10*
Infrastructure	**65,068,074**	**3.3**	**20.5**	**61.4**	**61.4**	**6.7**	**14.4**	**--**	**7.6**	**Jul-12**
S&P Global Infrastructure TR USD			*4.6*	*11.9*	*11.9*	*10.2*	*7.8*	*7.7*	*7.7*	*Jul-12*

[1] Please see the Appendix for composition of the Custom Benchmarks. [2]As of 12/31/2021, the Safety Reserve exposure was approximately $176.6 million (8.9%).
[3] All private market data is one quarter lagged, unless otherwise noted. [4] Lone Star Funds 12/31/2020 valuation used [5] Museum Tower 12/31/2020 valuation used.

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Trailing Net Performance	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DPFP	**1,990,600,761**	**100.0**	**--**	**2.6**	**5.0**	**5.0**	**6.0**	**4.3**	**2.9**	**5.7**	**Jun-96**
Policy Index				*3.6*	*10.7*	*10.7*	*12.8*	*9.3*	*9.3*	*--*	*Jun-96*
Allocation Index				*3.5*	*13.5*	*13.5*	*11.5*	*9.0*	*9.8*	*7.6*	*Jun-96*
Total Fund Ex Private Markets				*3.4*	*10.1*	*10.1*	*12.9*	*8.9*	*8.0*	*6.0*	*Jun-96*
60% MSCI ACWI IMI Net/40% Bloomberg Global Aggregate Index				*3.4*	*8.6*	*8.6*	*13.6*	*10.0*	*7.9*	*6.6*	*Jun-96*
InvestorForce Public DB $1-5B Net Rank				*93*	*99*	*99*	*99*	*99*	*99*	*99*	*Jun-96*
Total Equity	**1,106,552,045**	**55.6**	**55.6**	**5.0**	**7.7**	**7.7**	**11.1**	**4.1**	**6.6**	**5.3**	**Dec-10**
MSCI ACWI IMI Net USD				*6.1*	*18.2*	*18.2*	*20.2*	*14.1*	*11.8*	*9.9*	*Dec-10*
Public Equity	**973,030,075**	**48.9**	**87.9**	**5.6**	**17.2**	**17.2**	**20.3**	**15.1**	**12.5**	**8.1**	**Jul-06**
MSCI ACWI IMI Net USD				*6.1*	*18.2*	*18.2*	*20.2*	*14.1*	*11.8*	*7.8*	*Jul-06*
eV All Global Equity Net Rank				*56*	*64*	*64*	*52*	*44*	*43*	*41*	*Jul-06*
Global Equity	**876,064,018**	**44.0**	**90.0**	**6.1**	**19.5**	**19.5**	**21.1**	**15.6**	**12.7**	**8.3**	**Jul-06**
MSCI ACWI IMI Net USD				*6.1*	*18.2*	*18.2*	*20.2*	*14.1*	*11.8*	*7.8*	*Jul-06*
eV All Global Equity Net Rank				*52*	*46*	*46*	*48*	*39*	*41*	*40*	*Jul-06*
Boston Partners Global Equity Fund	148,561,058	7.5	17.0	4.9	23.2	23.2	16.1	--	--	9.4	Jul-17
MSCI World Net				*7.8*	*21.8*	*21.8*	*21.7*	*15.0*	*12.7*	*14.2*	*Jul-17*
MSCI World Value				*7.2*	*21.9*	*21.9*	*13.6*	*8.9*	*9.5*	*8.3*	*Jul-17*
eV Global All Cap Value Eq Net Rank				*26*	*5*	*5*	*41*	*--*	*--*	*40*	*Jul-17*
Manulife Global Equity Strategy	149,089,480	7.5	17.0	7.3	22.6	22.6	19.8	--	--	11.7	Jul-17
MSCI ACWI Net				*6.7*	*18.5*	*18.5*	*20.4*	*14.4*	*11.9*	*13.3*	*Jul-17*
MSCI ACWI Value NR USD				*6.3*	*19.6*	*19.6*	*12.9*	*8.7*	*8.8*	*7.9*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*12*	*15*	*15*	*9*	*--*	*--*	*16*	*Jul-17*

[1] All Private Equity market values are one quarter lagged unless otherwise noted.

[2] 60% MSCI ACWI IMI Net/40% Bloomberg Global Aggregate Index composed of 60% MSCI ACWI (Net)/ 40% Bloomberg Global Aggregate in periods before 2/1/1997.

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Walter Scott Global Equity Fund	147,850,852	7.4	16.9	8.3	19.2	19.2	22.9	18.0	13.8	11.9	Dec-09
MSCI ACWI Net				*6.7*	*18.5*	*18.5*	*20.4*	*14.4*	*11.9*	*10.3*	*Dec-09*
MSCI ACWI Growth				*6.9*	*17.1*	*17.1*	*27.6*	*19.9*	*14.7*	*12.9*	*Dec-09*
eV Global Large Cap Growth Eq Net Rank				*17*	*27*	*27*	*79*	*84*	*85*	*87*	*Dec-09*
Invesco (fka OFI) Global Equity	142,136,419	7.1	16.2	2.8	13.8	13.8	24.8	18.2	14.5	8.7	Oct-07
MSCI ACWI Net				*6.7*	*18.5*	*18.5*	*20.4*	*14.4*	*11.9*	*6.5*	*Oct-07*
MSCI ACWI Growth				*6.9*	*17.1*	*17.1*	*27.6*	*19.9*	*14.7*	*8.7*	*Oct-07*
eV Global Large Cap Growth Eq Net Rank				*74*	*64*	*64*	*63*	*84*	*72*	*64*	*Oct-07*
NT ACWI Index IMI	247,689,585	12.4	28.3	6.3	--	--	--	--	--	12.7	Apr-21
MSCI ACWI IMI Net USD				*6.1*	*18.2*	*18.2*	*20.2*	*14.1*	*11.8*	*12.4*	*Apr-21*
eV Global All Cap Equity Net Rank				*38*	*--*	*--*	*--*	*--*	*--*	*45*	*Apr-21*
Eastern Shore US Small Cap	40,736,624	2.0	4.6	7.1	--	--	--	--	--	7.1	Oct-21
Russell 2000				*2.1*	*14.8*	*14.8*	*20.0*	*12.0*	*13.2*	*2.1*	*Oct-21*
eV US Small Cap Equity Net Rank				*27*	*--*	*--*	*--*	*--*	*--*	*27*	*Oct-21*
Emerging Markets Equity	**96,966,057**	**4.9**	**10.0**	**0.6**	**-4.3**	**-4.3**	**9.5**	**--**	**--**	**4.2**	**Jan-18**
MSCI Emerging Market IMI Net				*-1.0*	*-0.3*	*-0.3*	*11.6*	*10.1*	*5.7*	*4.2*	*Jan-18*
eV Emg Mkts Equity Net Rank				*27*	*70*	*70*	*81*	*--*	*--*	*52*	*Jan-18*
RBC Emerging Markets Equity	96,966,057	4.9	100.0	0.6	-4.3	-4.3	9.5	--	--	4.2	Jan-18
MSCI Emerging Market IMI Net				*-1.0*	*-0.3*	*-0.3*	*11.6*	*10.1*	*5.7*	*4.2*	*Jan-18*
eV Emg Mkts Equity Net Rank				*27*	*70*	*70*	*81*	*--*	*--*	*52*	*Jan-18*

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Private Equity	**133,521,970**	**6.7**	**12.1**	**1.0**	**-30.1**	**-30.1**	**-16.7**	**-16.1**	**-9.1**	**-3.9**	**Oct-05**
Private Equity Benchmark (1 Qtr Lag)				*0.0*	*39.1*	*39.1*	*19.3*	*18.6*	*15.7*	*14.2*	*Oct-05*
Total Fixed Income and Cash	**486,978,101**	**24.5**	**24.5**	**-0.6**	**0.6**	**0.6**	**3.8**	**3.0**	**4.2**	**4.9**	**Jul-06**
Bloomberg Multiverse TR				*-0.7*	*-4.5*	*-4.5*	*3.7*	*3.4*	*2.0*	*3.6*	*Jul-06*
eV All Global Fixed Inc Net Rank				*64*	*37*	*37*	*79*	*84*	*42*	*39*	*Jul-06*
Cash Equivalents	**58,376,141**	**2.9**	**12.0**	**0.0**	**0.2**	**0.2**	**1.0**	**1.2**	**--**	**1.2**	**Apr-15**
91 Day T-Bills				*0.0*	*0.0*	*0.0*	*0.8*	*1.1*	*0.6*	*0.8*	*Apr-15*
Public Fixed Income	**422,200,599**	**21.2**	**86.7**	**-0.8**	**-0.4**	**-0.4**	**4.0**	**4.3**	**4.5**	**4.8**	**Dec-10**
Bloomberg Multiverse TR				*-0.7*	*-4.5*	*-4.5*	*3.7*	*3.4*	*2.0*	*2.3*	*Dec-10*
eV All Global Fixed Inc Net Rank				*72*	*47*	*47*	*74*	*52*	*35*	*29*	*Dec-10*
Short Term Core Bonds	**118,245,816**	**5.9**	**28.0**	**-0.6**	**-0.4**	**-0.4**	**2.8**	**--**	**--**	**2.3**	**Jun-17**
Bloomberg US Aggregate 1-3 Yr TR				*-0.6*	*-0.5*	*-0.5*	*2.2*	*1.8*	*1.4*	*1.8*	*Jun-17*
IR&M 1-3 Year Strategy	118,245,816	5.9	100.0	-0.6	-0.4	-0.4	2.8	--	--	2.3	Jul-17
Bloomberg US Aggregate 1-3 Yr TR				*-0.6*	*-0.5*	*-0.5*	*2.2*	*1.8*	*1.4*	*1.8*	*Jul-17*
eV US Short Duration Fixed Inc Net Rank				*82*	*41*	*41*	*40*	*--*	*--*	*33*	*Jul-17*
Investment Grade Bonds	**76,110,992**	**3.8**	**18.0**	**-0.2**	**-0.9**	**-0.9**	**--**	**--**	**--**	**3.4**	**Oct-19**
Bloomberg US Aggregate TR				*0.0*	*-1.5*	*-1.5*	*4.8*	*3.6*	*2.9*	*2.6*	*Oct-19*
eV US Core Fixed Inc Net Rank				*70*	*22*	*22*	*--*	*--*	*--*	*26*	*Oct-19*
Longfellow Core Fixed Income	76,110,992	3.8	100.0	-0.2	-0.9	-0.9	--	--	--	0.8	Jul-20
Bloomberg US Aggregate TR				*0.0*	*-1.5*	*-1.5*	*4.8*	*3.6*	*2.9*	*-0.2*	*Jul-20*
eV US Core Fixed Inc Net Rank				*70*	*22*	*22*	*--*	*--*	*--*	*38*	*Jul-20*

[1] All Private Equity market values are one quarter lagged unless otherwise noted.

[2] Lone Star Funds 12/31/2020 valuation used.

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Bank Loans	**77,012,436**	**3.9**	**18.2**	**0.9**	**5.0**	**5.0**	**5.6**	**4.6**	**--**	**4.3**	**Jan-14**
Credit Suisse Leveraged Loan				*0.7*	*5.4*	*5.4*	*5.4*	*4.3*	*--*	*4.1*	*Jan-14*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*10*	*33*	*33*	*24*	*11*	*--*	*15*	*Jan-14*
Pacific Asset Management Corporate (Bank) Loans	77,012,436	3.9	100.0	0.9	5.2	5.2	5.5	--	--	4.3	Aug-17
Credit Suisse Leveraged Loan				*0.7*	*5.4*	*5.4*	*5.4*	*4.3*	*--*	*4.3*	*Aug-17*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*10*	*29*	*29*	*28*	*--*	*--*	*19*	*Aug-17*
High Yield Bonds	**77,194,961**	**3.9**	**18.3**	**0.2**	**3.4**	**3.4**	**6.8**	**5.6**	**6.1**	**6.1**	**Dec-10**
Bloomberg US Corporate High Yield TR				*0.7*	*5.3*	*5.3*	*8.8*	*6.3*	*6.8*	*6.7*	*Dec-10*
eV US High Yield Fixed Inc Net Rank				*92*	*90*	*90*	*82*	*61*	*68*	*59*	*Dec-10*
Loomis US High Yield Fund	77,194,961	3.9	100.0	0.2	3.6	3.6	--	--	--	3.6	Jan-21
Bloomberg US High Yield 2% Issuer Cap TR				*0.7*	*5.3*	*5.3*	*8.8*	*6.3*	*6.8*	*5.3*	*Jan-21*
eV US High Yield Fixed Inc Net Rank				*92*	*84*	*84*	*--*	*--*	*--*	*84*	*Jan-21*
Emerging Markets Debt	**73,636,394**	**3.7**	**17.4**	**-4.7**	**-10.2**	**-10.2**	**0.5**	**1.9**	**2.2**	**2.3**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM				*-1.5*	*-5.3*	*-5.3*	*4.0*	*3.8*	*2.9*	*3.0*	*Dec-10*
eV All Emg Mkts Fixed Inc Net Rank				*99*	*98*	*98*	*98*	*93*	*73*	*70*	*Dec-10*
Ashmore EM Blended Debt	73,636,394	3.7	100.0	-4.7	-10.2	-10.2	0.5	--	--	-0.6	Dec-17
Ashmore Blended Debt Benchmark				*-1.1*	*-3.9*	*-3.9*	*3.8*	*3.7*	*3.0*	*1.9*	*Dec-17*
eV All Emg Mkts Fixed Inc Net Rank				*99*	*98*	*98*	*98*	*--*	*--*	*94*	*Dec-17*
Private Debt	**6,401,362**	**0.3**	**1.3**	**5.6**	**126.7**	**126.7**	**24.8**	**11.1**	**--**	**9.9**	**Jan-16**
BBg US High Yield+2%				*1.2*	*7.4*	*7.4*	*11.0*	*8.4*	*9.0*	*10.2*	*Jan-16*

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Total Real Assets	**397,070,615**	**19.9**	**19.9**	**0.9**	**6.0**	**6.0**	**1.5**	**3.6**	**-1.3**	**-1.2**	**Dec-10**
Total Real Assets Policy Index				*3.4*	*8.8*	*8.8*	*5.8*	*6.2*	*9.6*	*10.0*	*Dec-10*
Real Estate	**215,661,587**	**10.8**	**54.3**	**-3.4**	**-2.8**	**-2.8**	**-0.8**	**1.5**	**-3.7**	**3.4**	**Mar-85**
NCREIF Property (1 Qtr Lag)				*5.2*	*12.2*	*12.2*	*6.7*	*6.8*	*9.0*	*8.0*	*Mar-85*
Natural Resources	**116,340,954**	**5.8**	**29.3**	**0.1**	**5.6**	**5.6**	**3.2**	**-0.4**	**3.3**	**3.6**	**Dec-10**
NCREIF Farmland Total Return Index (1 Qtr Lag)				*1.5*	*5.5*	*5.5*	*4.9*	*5.5*	*10.2*	*10.4*	*Dec-10*
Infrastructure	**65,068,074**	**3.3**	**16.4**	**20.5**	**61.4**	**61.4**	**6.7**	**14.4**	**--**	**7.6**	**Jul-12**
S&P Global Infrastructure TR USD				*4.6*	*11.9*	*11.9*	*10.2*	*7.8*	*7.7*	*7.7*	*Jul-12*

[1] All Private Market market values are one quarter lagged unless otherwise noted.

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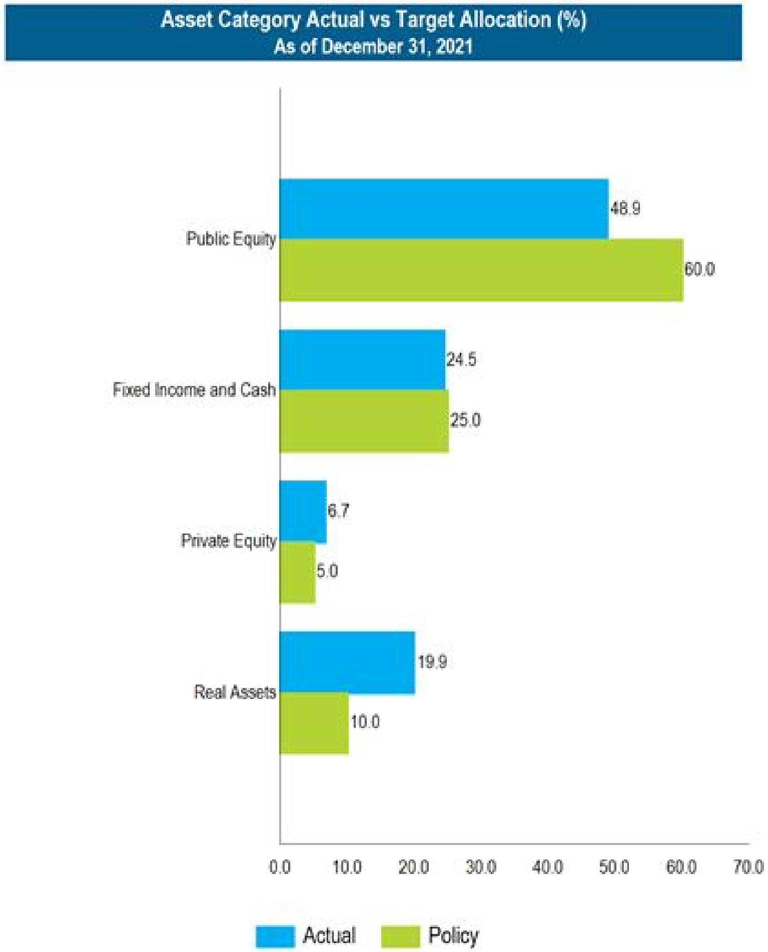

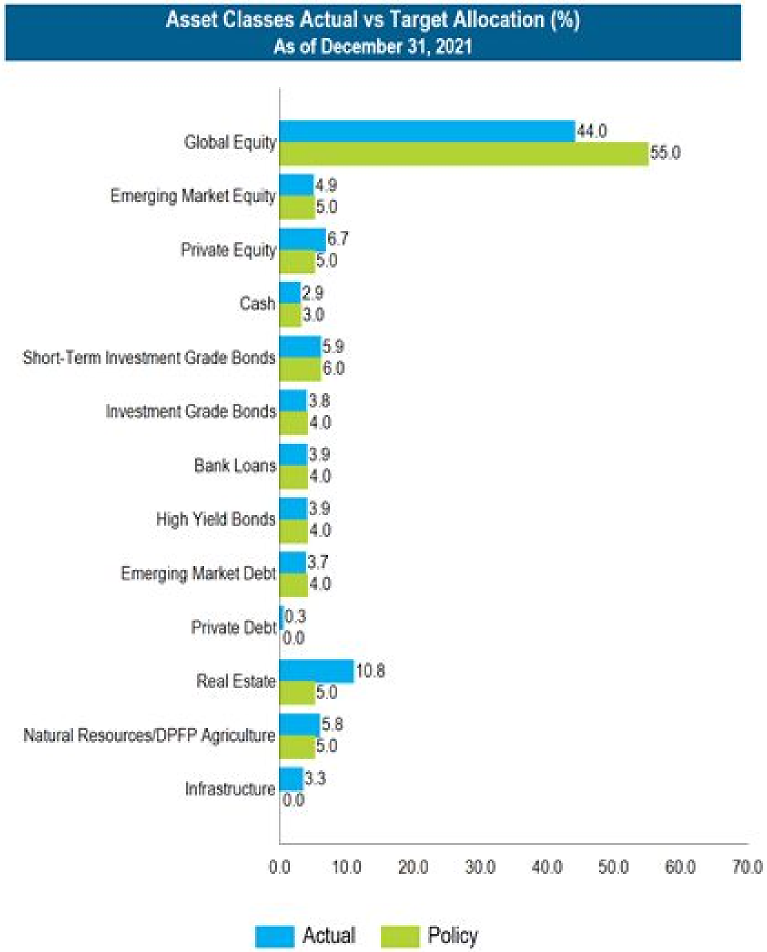

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	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Equity	**$973,030,075**	**56%**	**65%**		
Global Equity	$876,064,018	44%	55%	36% - 60%	Yes
Emerging Market Equity	$96,966,057	5%	5%	3% - 7%	Yes
Private Equity	$133,521,970	7%	5%		
Fixed Income and Cash	**$486,978,101**	**24%**	**25%**		
Cash	$58,376,141	3%	3%	0% - 6%	Yes
Short-Term Investment Grade Bonds	$118,245,816	6%	6%	0% - 9%	Yes
Investment Grade Bonds	$76,110,992	4%	4%	2% - 6%	Yes
Bank Loans	$77,012,436	4%	4%	2% - 6%	Yes
High Yield Bonds	$77,194,961	4%	4%	2% - 6%	Yes
Emerging Market Debt	$73,636,394	3%	4%	2% - 6%	Yes
Private Debt	$6,401,362	0%	0%		
Real Assets	**$397,070,615**	**20%**	**10%**		
Real Estate	$215,661,587	11%	5%		
Natural Resources/DPFP Agriculture	$116,340,954	6%	5%		
Infrastructure	$65,068,074	3%	0%		
Total	**$1,990,600,761**	**100%**	**100%**		

[1] As of 12/31/2021, the Safety Reserve exposure was approximately $176.6 million (8.9%).
[2] Global equity consists of 25% US, 16% Developed Non-US, and 2% Emerging Markets.
[3] Rebalancing ranges are not established for illiquid assets (Private Equity, Private Debt, Natural Resources, Infrastructure and Real Estate).

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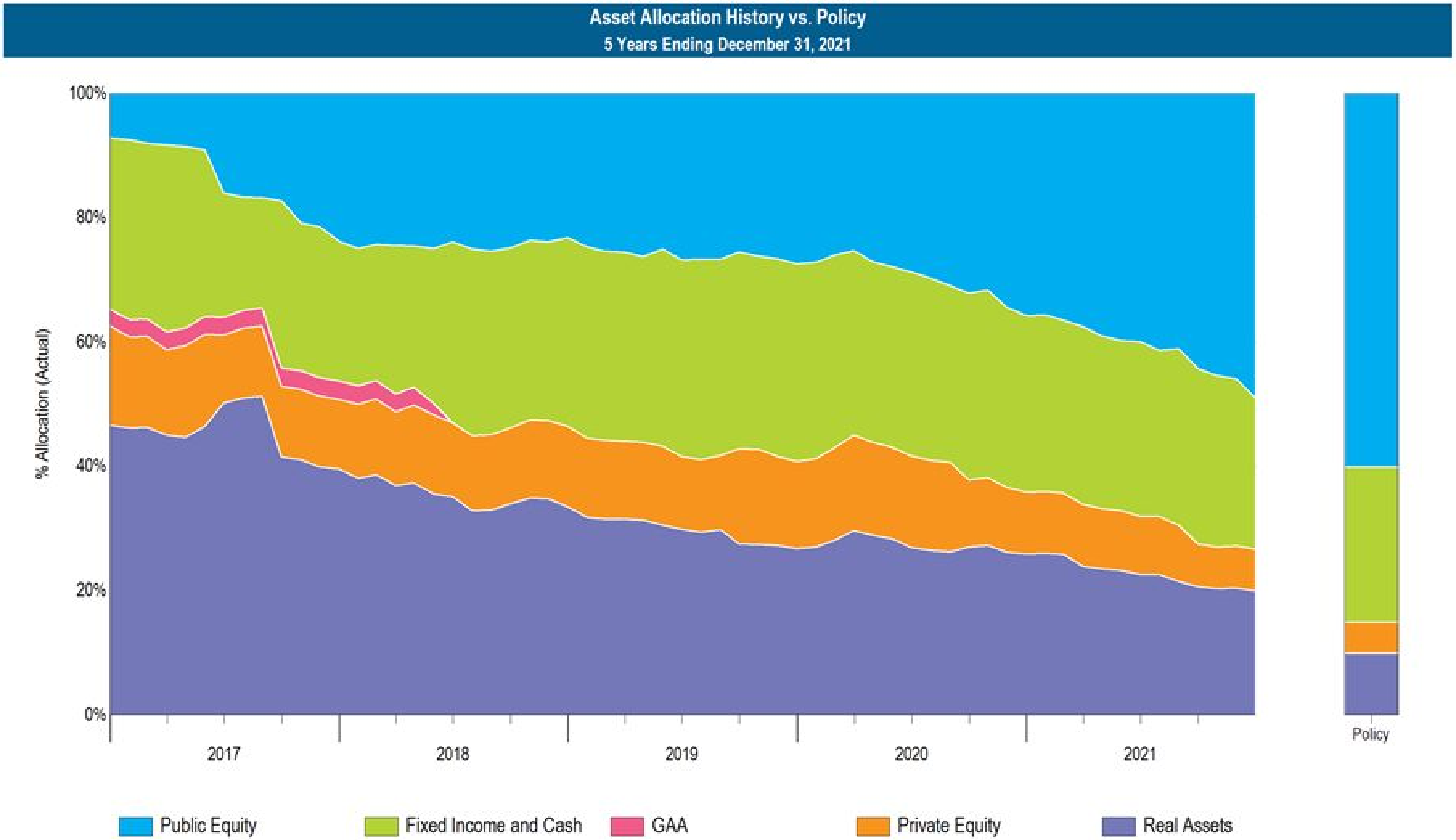

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Statistics Summary

5 Years Ending December 31, 2021

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DPFP	4.3%	6.1%	-1.0	0.6	0.5	5.1%
Policy Index	9.3%	8.4%	--	1.0	1.0	0.0%
Public Equity	15.1%	14.9%	0.4	1.0	0.9	2.1%
MSCI ACWI IMI Net USD	14.1%	15.2%	--	1.0	0.9	0.0%
Global Equity	15.6%	15.3%	0.6	1.0	0.9	2.2%
MSCI ACWI IMI Net USD	14.1%	15.2%	--	1.0	0.9	0.0%
Private Equity	-16.1%	28.1%	-1.0	-0.8	-0.6	34.9%
Cambridge Associates US All PE (1 Qtr Lag)	18.6%	12.6%	--	1.0	1.4	0.0%
Bank Loans	4.6%	4.4%	0.1	0.6	0.8	2.8%
Credit Suisse Leveraged Loan	4.3%	6.8%	--	1.0	0.5	0.0%
High Yield Bonds	5.6%	8.3%	-0.4	1.1	0.5	2.0%
Bloomberg US Corporate High Yield TR	6.3%	7.4%	--	1.0	0.7	0.0%
Emerging Markets Debt	1.9%	12.7%	-0.4	1.3	0.1	4.4%
50% JPM EMBI/50% JPM GBI-EM	3.8%	9.2%	--	1.0	0.3	0.0%

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5 Years Ending December 31, 2021

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Real Estate	1.5%	3.5%	-1.1	0.1	0.1	4.8%
NCREIF Property (1 Qtr Lag)	6.8%	3.6%	--	1.0	1.6	0.0%
Natural Resources	-0.4%	6.7%	-1.0	0.9	-0.2	6.2%
NCREIF Farmland Total Return Index (1 Qtr Lag)	5.5%	2.8%	--	1.0	1.6	0.0%
Infrastructure	14.4%	32.6%	0.2	0.1	0.4	35.9%
S&P Global Infrastructure TR USD	7.8%	16.6%	--	1.0	0.4	0.0%

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Dallas Police & Fire Pension System

DPFP | As of December 31, 2021

Benchmark History
As of December 31, 2021

DPFP		
8/1/2021	Present	DPFP Policy Benchmark is based upon the asset class target weight multiplied by its respective benchmark for every period and was updated when benchmark or asset allocation targets changed. The most recent Policy Benchmark changes are shown below.
1/1/2019	7/31/2021	Qtr Lag) / 3% 91 Day T-Bills
10/1/2018	12/31/2018	40% MSCI ACWI Gross / 10% MSCI Emerging Markets Gross / 5% Private Equity Custom Benchmark / 12% Bloomberg US Aggregate 1-3 Yr TR / 4% Bloomberg Global Aggregate TR / 4% Bloomberg US High Yield 2% Issuer Cap TR / 4% S&P/LSTA Leveraged Loan / 4% Bloomberg US Aggregate TR / 4% 50% JPM EMBI/50% JPM GBI-EM / 5% Natural Resources Benchmark (Linked) / 5% NCREIF Property Index / 3% 91 Day T-Bills
4/1/2016	9/30/2018	20% MSCI ACWI Gross / 5% MSCI Emerging Markets Gross / 5% Private Equity Custom Benchmark / 2% Bloomberg US Aggregate 1-3 Yr TR / 3% Bloomberg Global Aggregate TR / 5% Bloomberg Global High Yield TR / 6% S&P/LSTA Leveraged Loan / 6% HFRI RV: FI (50/50-ABS/Corp) / 6% 50% JPM EMBI/50% JPM GBI-EM / 5% Barclays Global High Yield +2% / 5% 60% MSCI ACWI/40% Barclays Global Agg / 3% 60% MSCI ACWI/40% Barclays Global Agg / 2% HFRX Absolute Return Index / 5% Natural Resources Benchmark (Linked) / 5% S&P Global Infrastructure TR USD / 12% NCREIF Property Index / 3% CPI + 5% (Seasonally Adjusted) / 2% 91 Day T-Bills
4/1/2014	3/31/2016	15% MSCI ACWI / 15% S&P 500 + 2% / 10% Total Global Natural Resources Custom Benchmark / 15% Bloomberg Global Aggregate TR / 20% CPI + 5% (Seasonally Adjusted) / 10% CPI + 5% (Seasonally Adjusted) / 15% NCREIF Property Index
1/1/2014	3/31/2014	15% MSCI ACWI / 15% Private Markets / 10% Total Global Natural Resources Custom Benchmark / 15% Bloomberg Global Aggregate TR / 20% CPI + 5% (Seasonally Adjusted) / 10% Infrastructure / 15% Real Estate
DPFP Ex Debt		
6/1/1996	Present	Allocation Index Ex Debt
Ashmore EM Blended Debt		
12/1/2017	Present	50% JP Morgan EMBI Global Diversified / 25% JPM ELMI+ TR USD / 25% JP Morgan GBI EM Global Diversified TR USD
Total Real Assets		
12/31/2010	Present	50% NCREIF Property (1 Qtr Lag) / 50% NCREIF Farmland Total Return Index (1 Qtr Lag)

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Disclaimer, Glossary, and Notes

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Dallas Police & Fire Pension System

As of September 30, 2021

Private Markets Review

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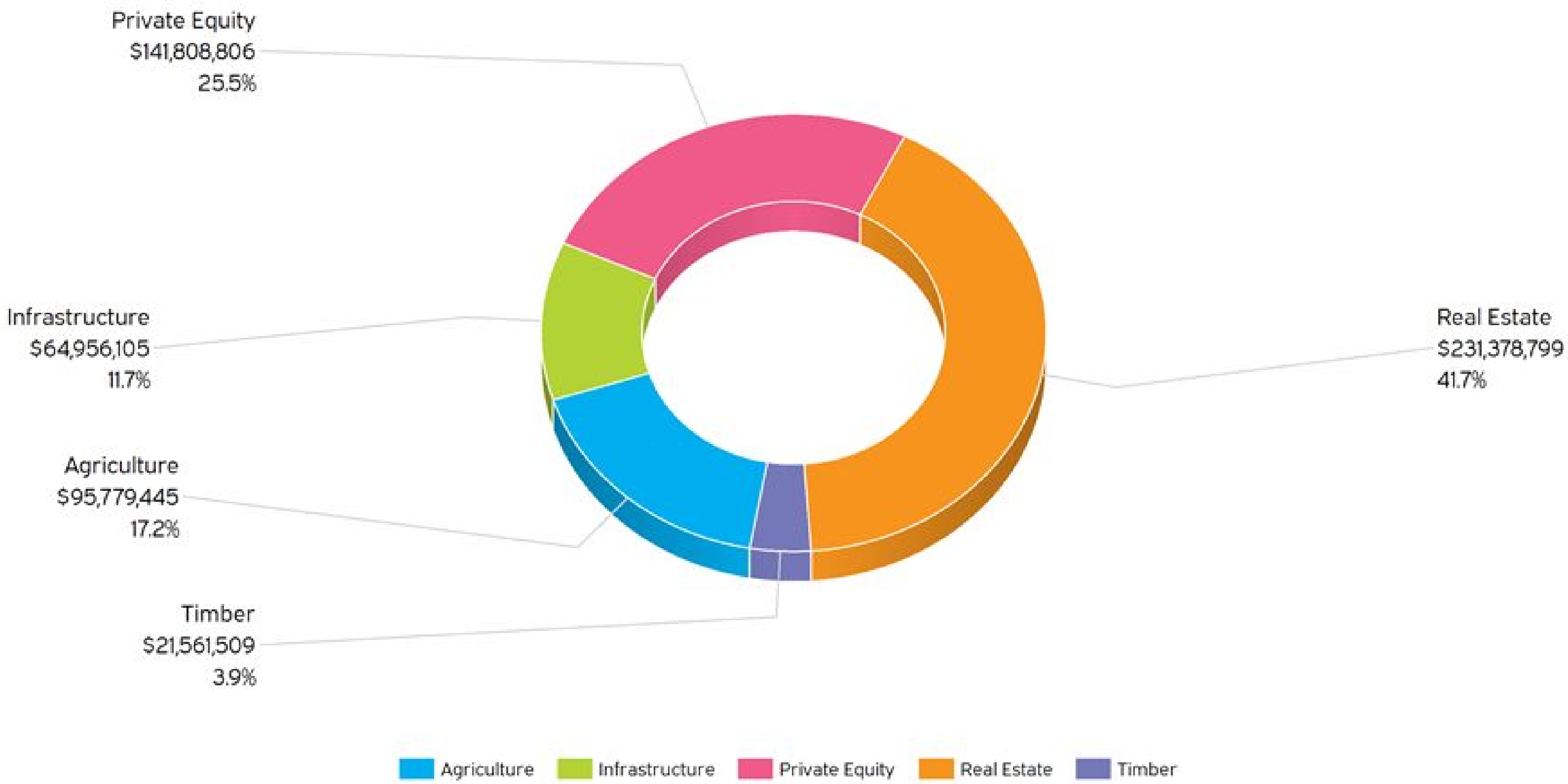
Dallas Police & Fire Pension System

Private Markets Review | As of September 30, 2021

Private Market Investments as of September 30, 2021
Market Value Allocation by Asset Class



1. Private Equity is composed of Private Equity and Private Debt.

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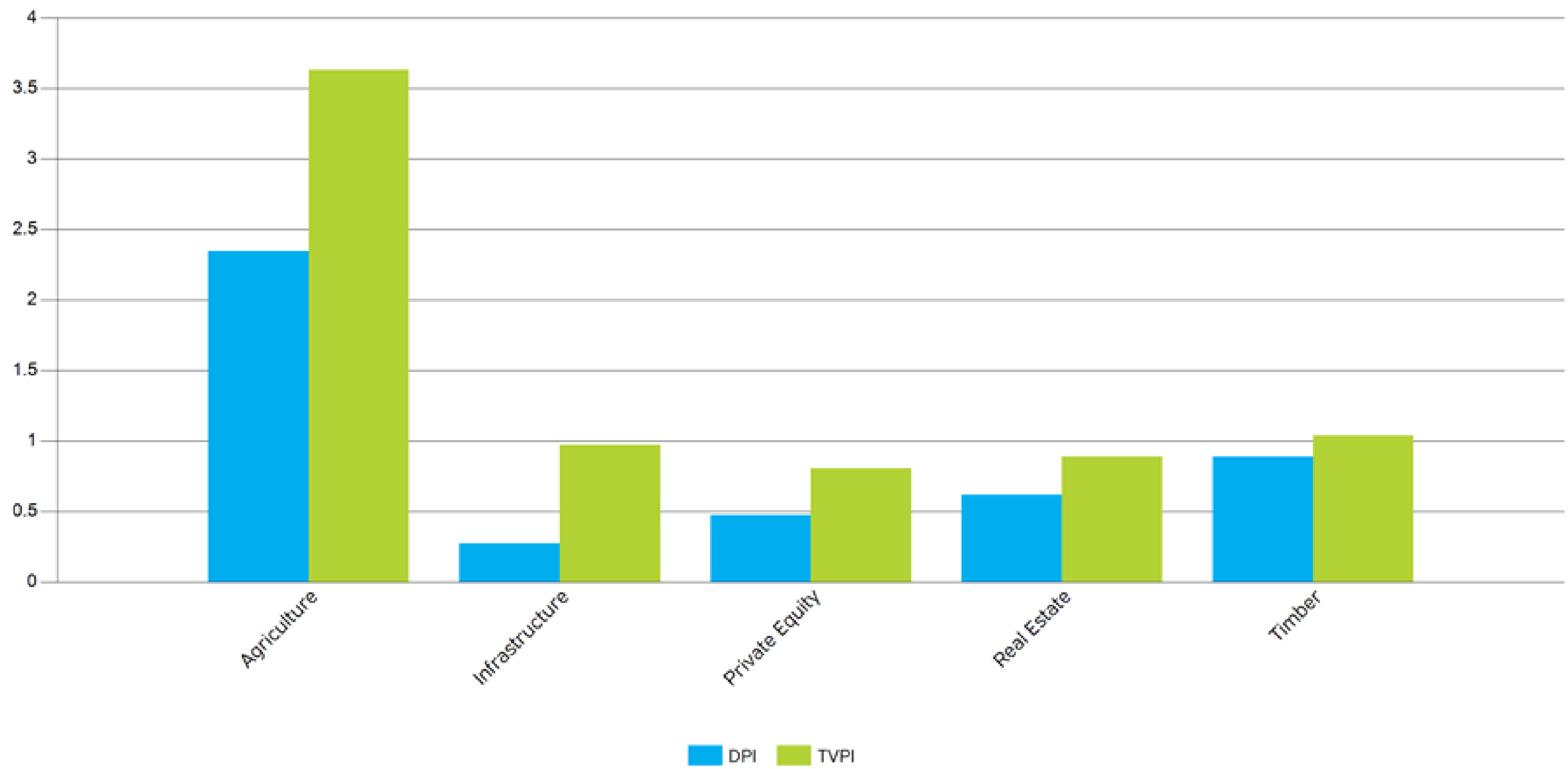
Dallas Police & Fire Pension System

Private Markets Review | As of September 30, 2021

Private Market Investments as of September 30, 2021
DPI and TVPI by Asset Class



1. Private Equity is composed of Private Equity and Private Debt.

2. Private markets performance reflected is composed of active investments only.

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Private Markets Review | As of September 30, 2021

Private Market Investments Overview

Active Funds	Commitments		Distributions & Valuations				Performance			
Asset Class	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Agriculture	74,420,001	74,420,001	174,592,840	95,779,445	270,372,285	195,952,284	1.00	2.35	3.63	14.75
Total Infrastructure	97,000,000	93,789,491	24,232,056	64,956,104	89,188,160	-4,601,331	0.97	0.26	0.95	-0.43
Total Private Equity	409,251,115	444,659,631	204,761,033	141,808,807	346,569,839	-98,089,792	1.09	0.46	0.78	-4.36
Total Real Estate	827,183,552	816,546,607	499,543,446	231,378,799	730,922,245	-85,624,362	0.99	0.61	0.90	-1.44
Total Timber	142,682,318	142,682,318	126,045,920	21,561,509	147,607,429	4,925,111	1.00	0.88	1.03	0.63
Total	**1,550,536,986**	**1,572,098,048**	**1,029,175,294**	**555,484,664**	**1,584,659,958**	**12,561,911**	**1.01**	**0.65**	**1.01**	**0.15**

1. Private Equity is composed of Private Equity and Private Debt.
2. Private markets performance reflected is composed of active investments only.
3. Commitment value is equal to paid in capital for direct investments made outside of a traditional limited partnership fund structure.

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Dallas Police & Fire Pension System

Active Funds with Unfunded Commitments Overview | As of September 30, 2021

Active Funds with Unfunded Commitments				
Active Funds		Commitments		
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Unfunded Commitment ($)
Infrastructure				
TRG AIRRO	2008	37,000,000	37,843,232	2,484,199
TRG AIRRO II	2013	10,000,000	7,304,402	2,283,286
JPM Maritime Fund, LP	2009	50,000,000	48,641,857	1,365,941
Total Infrastructure		**97,000,000**	**93,789,491**	**6,133,426**
Private Equity				
Industry Ventures Partnership IV	2016	5,000,000	3,754,985	700,000
Riverstone Credit Partners LP	2016	10,000,000	12,242,390	514,296
Total Private Equity		**15,000,000**	**15,997,375**	**1,214,296**
Real Estate				
Hearthstone MS II Homebuilding Investors	1999	10,000,000	7,973,058	1,005,708
Hearthstone MS III Homebuilding Investors	2003	10,000,000	1,221,446	1,997,675
Total Real Estate		**20,000,000**	**9,194,504**	**3,003,383**
Total		**132,000,000**	**118,981,369**	**10,351,105**

1. Private markets performance reflected is composed of active investments only.
2. The funds and figures above represent investments with unfunded capital commitments.

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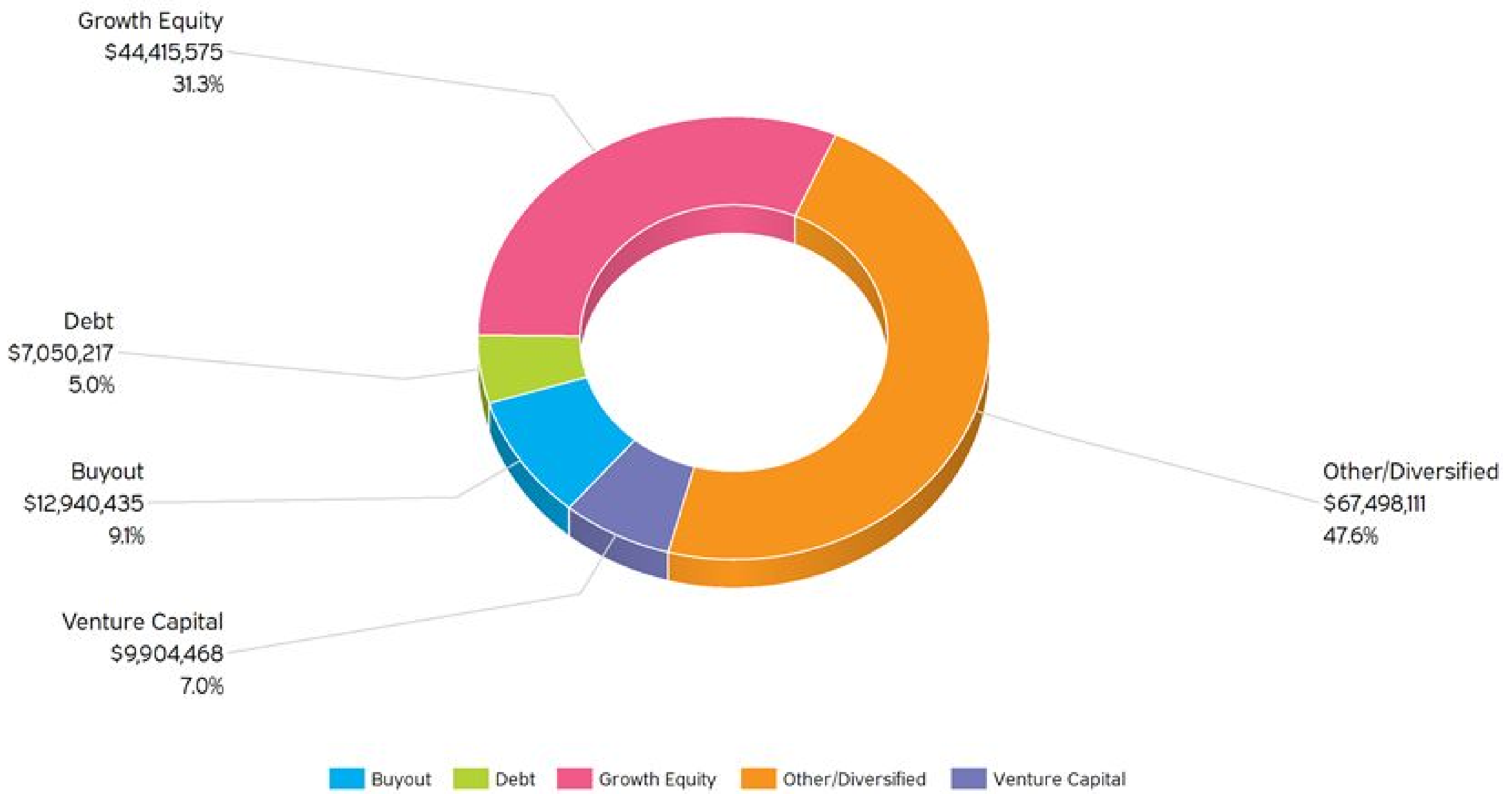
Dallas Police & Fire Pension System

Private Equity and Debt | As of September 30, 2021

Private Equity and Debt Investments as of September 30, 2021
Market Value Allocation by Strategy



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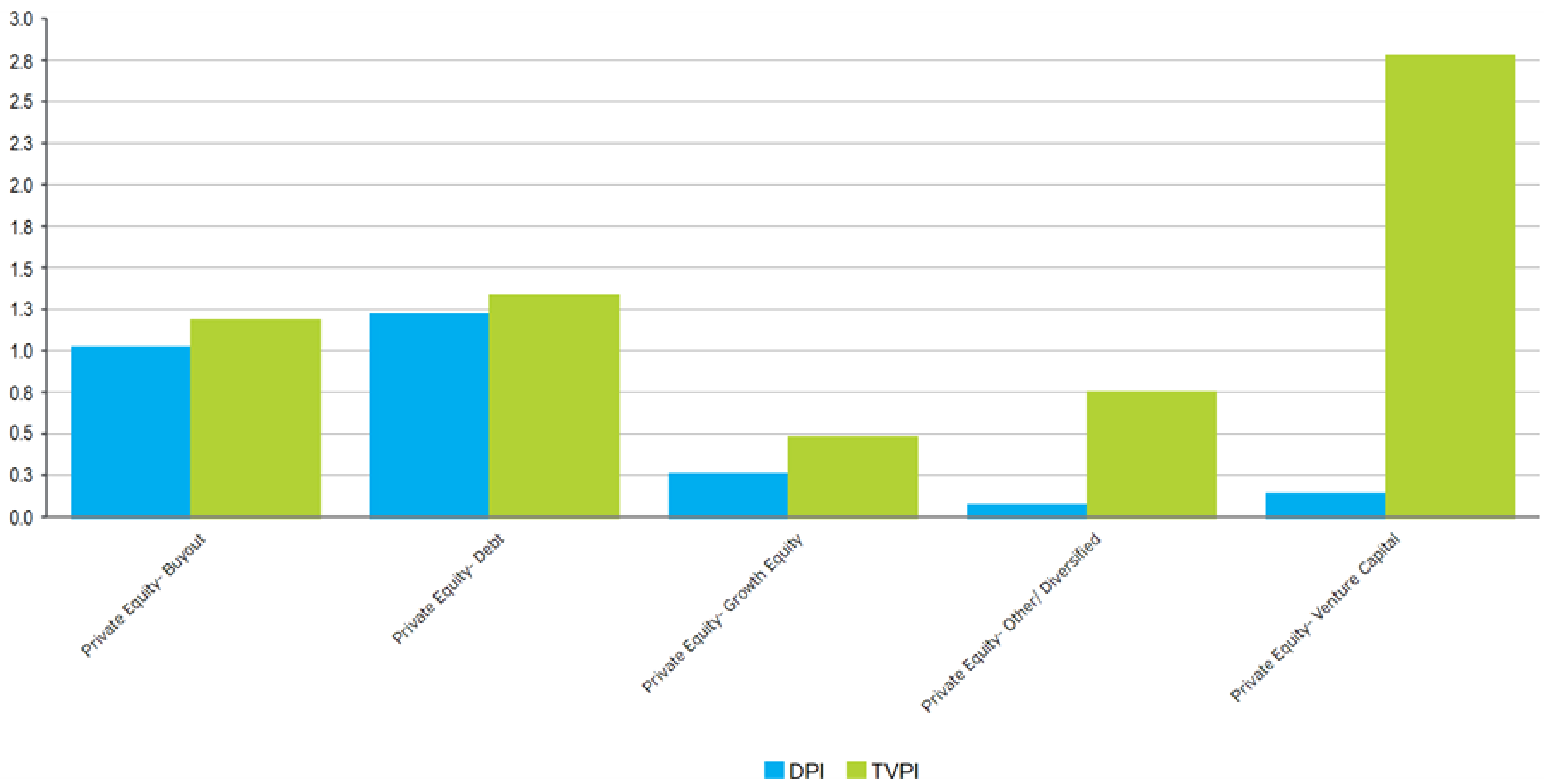
Dallas Police & Fire Pension System

Private Equity and Debt | As of September 30, 2021

Private Equity and Debt Investments as of September 30, 2021
DPI and TVPI by Strategy



1. Private markets performance reflected is composed of active investments only.

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Dallas Police & Fire Pension System

Private Equity and Debt | As of September 30, 2021

Private Equity and Debt Investments Overview

Active Funds		Commitments		Distributions & Valuations				Performance			
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Buyout											
Huff Alternative Fund	2000	66,795,718	78,833,017	78,256,890	12,940,435	91,197,325	12,364,308	1.18	0.99	1.16	1.73
Total Buyout		**66,795,718**	**78,833,017**	**78,256,890**	**12,940,435**	**91,197,325**	**12,364,308**	**1.18**	**0.99**	**1.16**	**1.73**
Debt											
Highland Crusader Fund	2003	50,955,397	50,955,397	66,721,549	2,241,652	68,963,201	18,007,804	1.00	1.31	1.35	4.88
Riverstone Credit Partners LP	2016	10,000,000	12,242,390	8,834,834	4,808,565	13,643,399	1,401,009	1.22	0.72	1.11	4.97
Total Debt		**60,955,397**	**63,197,787**	**75,556,383**	**7,050,217**	**82,606,600**	**19,408,813**	**1.04**	**1.20**	**1.31**	**4.88**
Growth Equity											
Hudson Clean Energy	2009	25,000,000	24,994,470	4,732,352	856,988	5,589,340	-19,405,130	1.00	0.19	0.22	-21.97
Lone Star CRA	2008	50,000,000	60,703,798	18,811,051	39,849,647	58,660,698	-2,043,100	1.21	0.31	0.97	-0.91
Lone Star Growth Capital	2006	16,000,000	26,679,375	12,800,000	0	12,800,000	-13,879,375	1.67	0.48	0.48	-52.00
Lone Star Opportunities V	2012	75,000,000	75,153,125	531,444	0	531,444	-74,621,681	1.00	0.01	0.01	-99.30
Lone Star Bridge Loan	2020	500,000	1,930,000	0	2,104,110	2,104,110	174,110	3.86	0.00	1.09	9.92
North Texas Opportunity Fund	2000	10,000,000	10,000,000	9,127,239	1,604,830	10,732,069	732,069	1.00	0.91	1.07	0.77
Total Growth Equity		**176,500,000**	**199,460,768**	**46,002,086**	**44,415,575**	**90,417,661**	**-109,043,107**	**1.13**	**0.23**	**0.45**	**-20.22**
Other/Diversified											
Huff Energy Fund LP	2006	100,000,000	99,210,178	4,477,394	67,498,111	71,975,505	-27,234,673	0.99	0.05	0.73	-2.83
Total Other/Diversified		**100,000,000**	**99,210,178**	**4,477,394**	**67,498,111**	**71,975,505**	**-27,234,673**	**0.99**	**0.05**	**0.73**	**-2.83**
Venture Capital											
Industry Ventures Partnership IV	2016	5,000,000	3,754,985	423,080	9,904,468	10,327,548	6,572,563	0.75	0.11	2.75	34.29
Total Venture Capital		**5,000,000**	**3,754,985**	**423,080**	**9,904,468**	**10,327,548**	**6,572,563**	**0.75**	**0.11**	**2.75**	**34.29**
Unclassified											
Miscellaneous Private Equity Expenses	2016		202,896	45,200							
Total Unclassified			**202,896**	**45,200**							
Total		**409,251,115**	**444,659,631**	**204,761,033**	**141,808,807**	**346,569,839**	**-98,089,792**	**1.09**	**0.46**	**0.78**	**-4.36**

1. Private Markets performance reflected is composed of active investments only.
2. Lone Star valuations are as of 12/31/20, provided by Conway Mackenzie.
3. The "IRRs" listed for Lone Star Growth Capital and Lone Star Opportunities Fund V are since inception total return figures.

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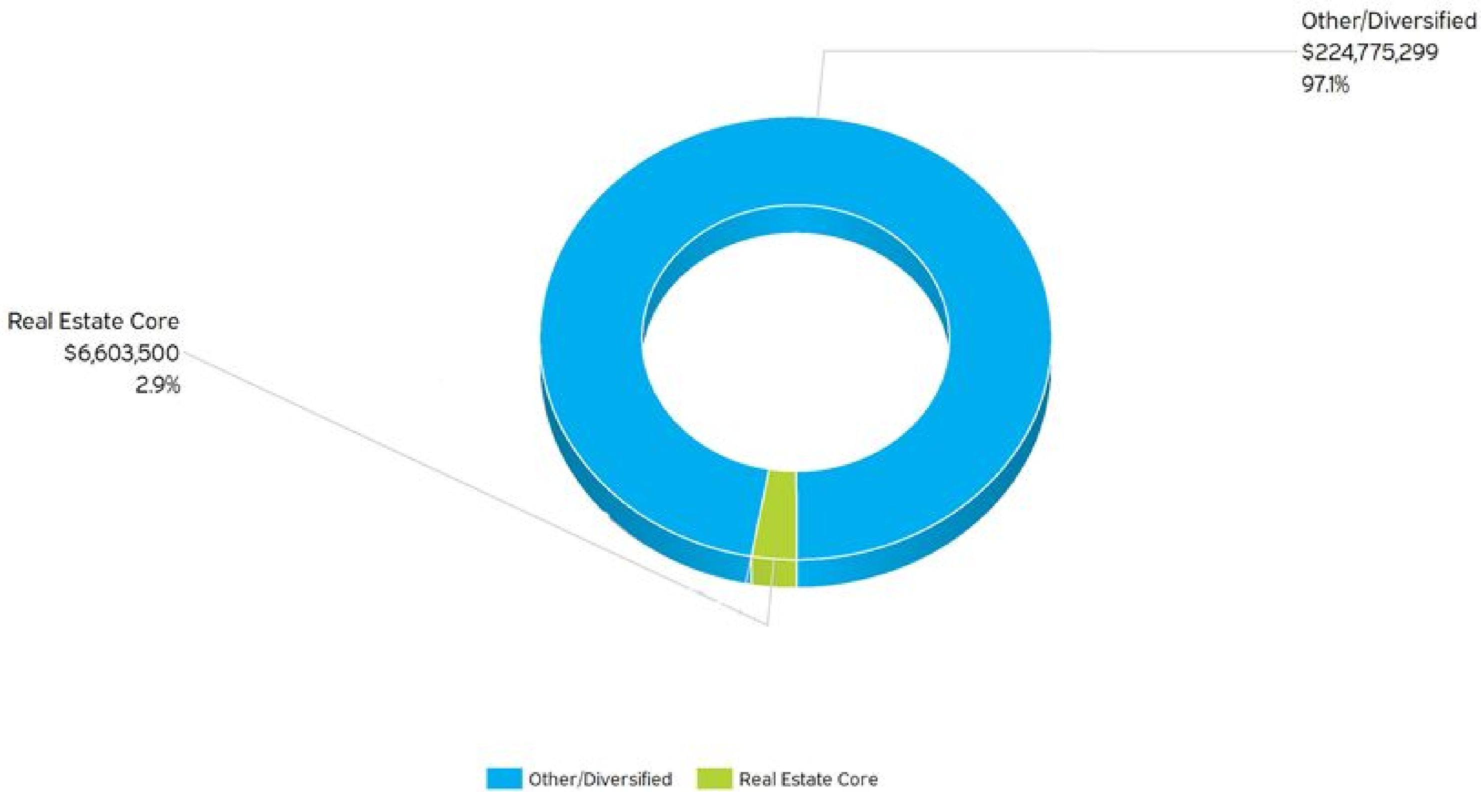
Dallas Police & Fire Pension System

Real Estate | As of September 30, 2021

Real Estate Investments as of September 30, 2021
Market Value Allocation by Strategy



1. Other/Diversified is composed of direct real estate investments made by the fund.

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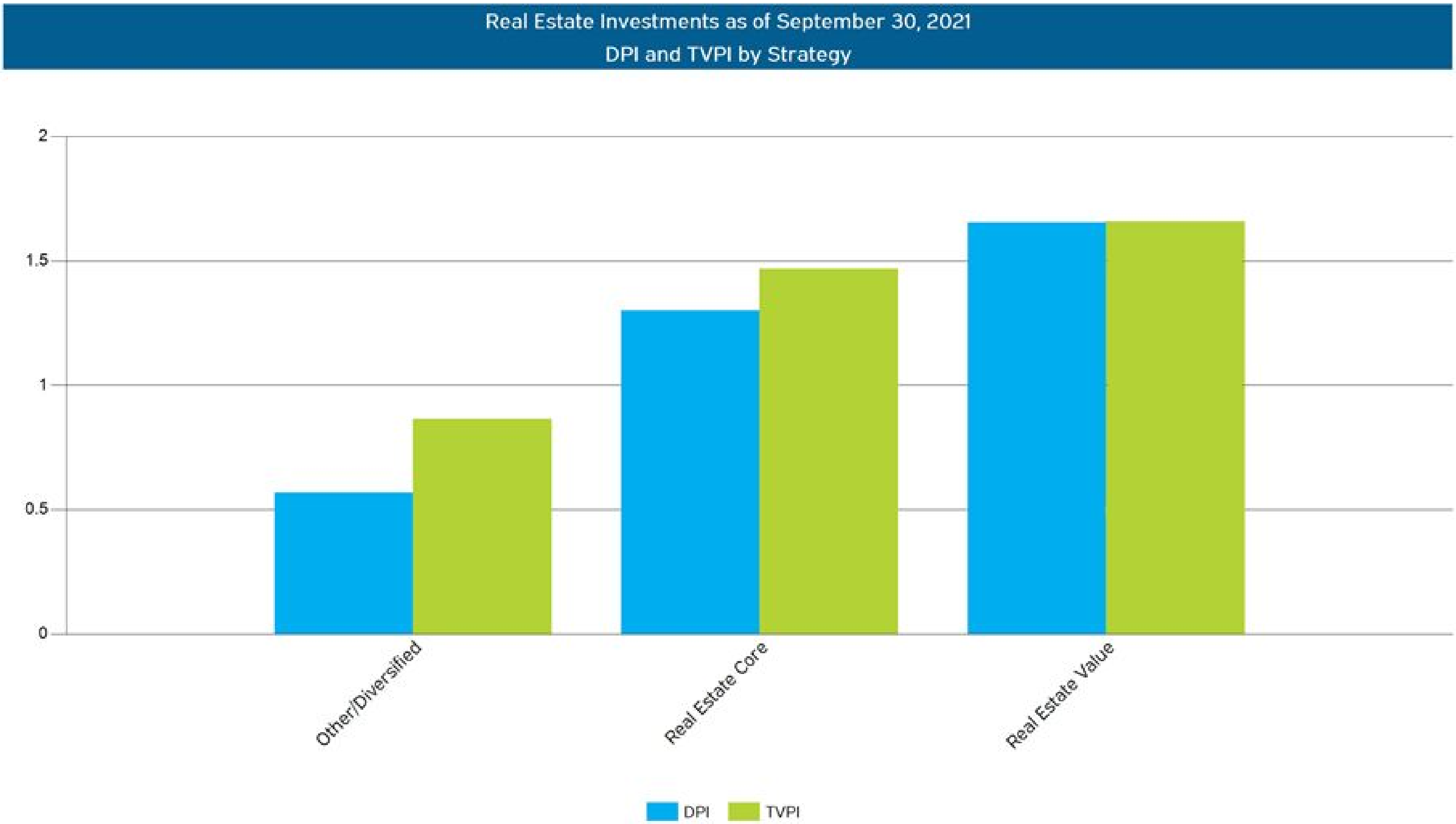
Dallas Police & Fire Pension System

Real Estate | As of September 30, 2021



1. Other/Diversified is composed of direct real estate investments made by the fund.
2. Private markets performance reflected is composed of active investments only.

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Dallas Police & Fire Pension System

Real Estate | As of September 30, 2021

Real Estate Investments Overview

Active Funds	Commitments		Valuations				Performance			
Investment Name	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Other/Diversified	767,595,151	767,595,151	432,462,796	224,775,299	657,238,095	-110,357,056	1.00	0.56	0.86	-1.98
Real Estate Core										
Total Real Estate Core	39,588,401	39,588,401	51,115,156	6,603,500	57,718,656	18,130,255	1.00	1.29	1.46	5.18
Real Estate Value										
Total Real Estate Value	20,000,000	9,194,504	15,206,576	0	15,206,576	6,012,072	0.46	1.65	1.65	25.93
Total	**827,183,552**	**816,546,607**	**499,543,446**	**231,378,799**	**730,922,245**	**-85,624,362**	**0.99**	**0.61**	**0.90**	**-1.44**

1. Private markets performance reflected is composed of active investments only.
2. Commitment value is equal to paid in capital for direct investments made outside of a traditional Limited Partnership fund structure.

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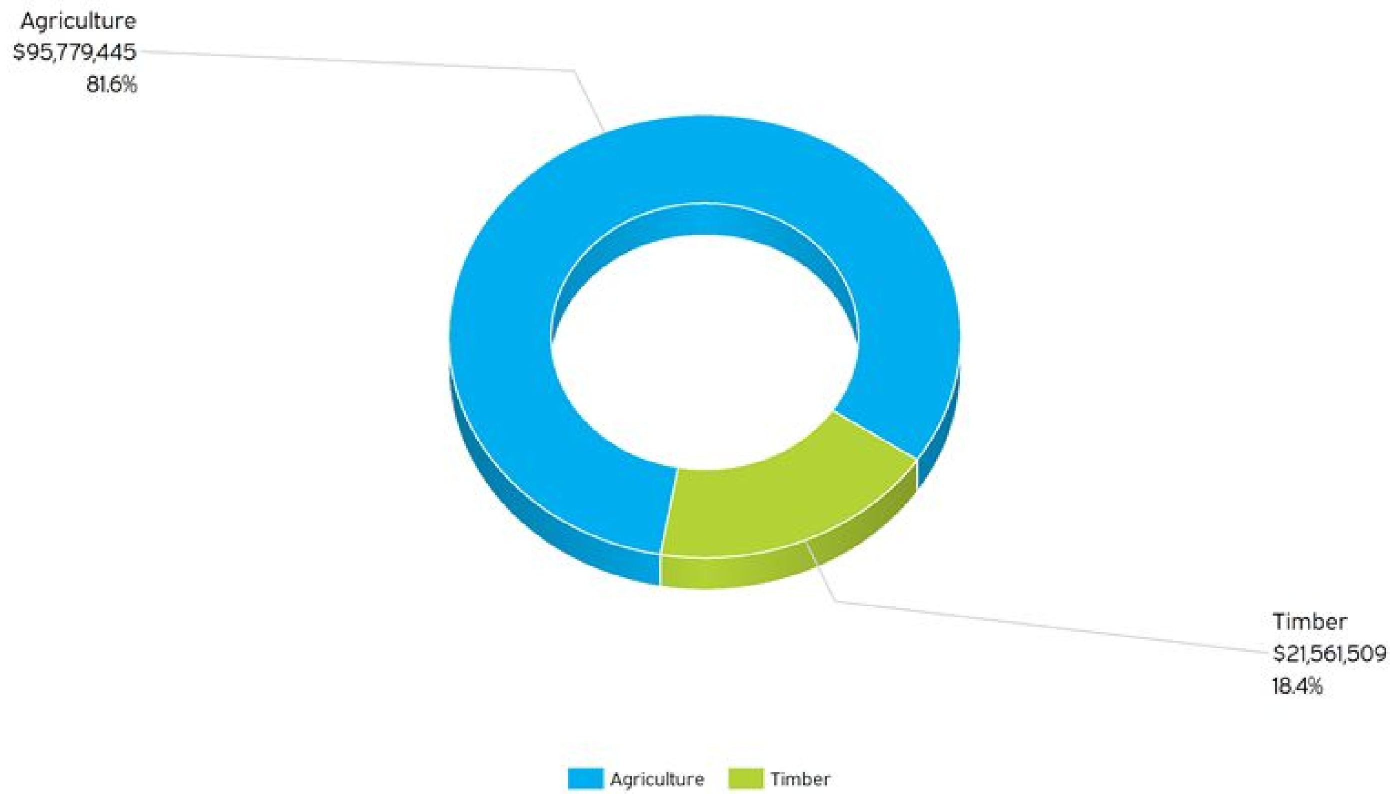
Dallas Police & Fire Pension System

Natural Resources | As of September 30, 2021

Natural Resources Investments as of September 30, 2021
Market Value Allocation by Asset Class



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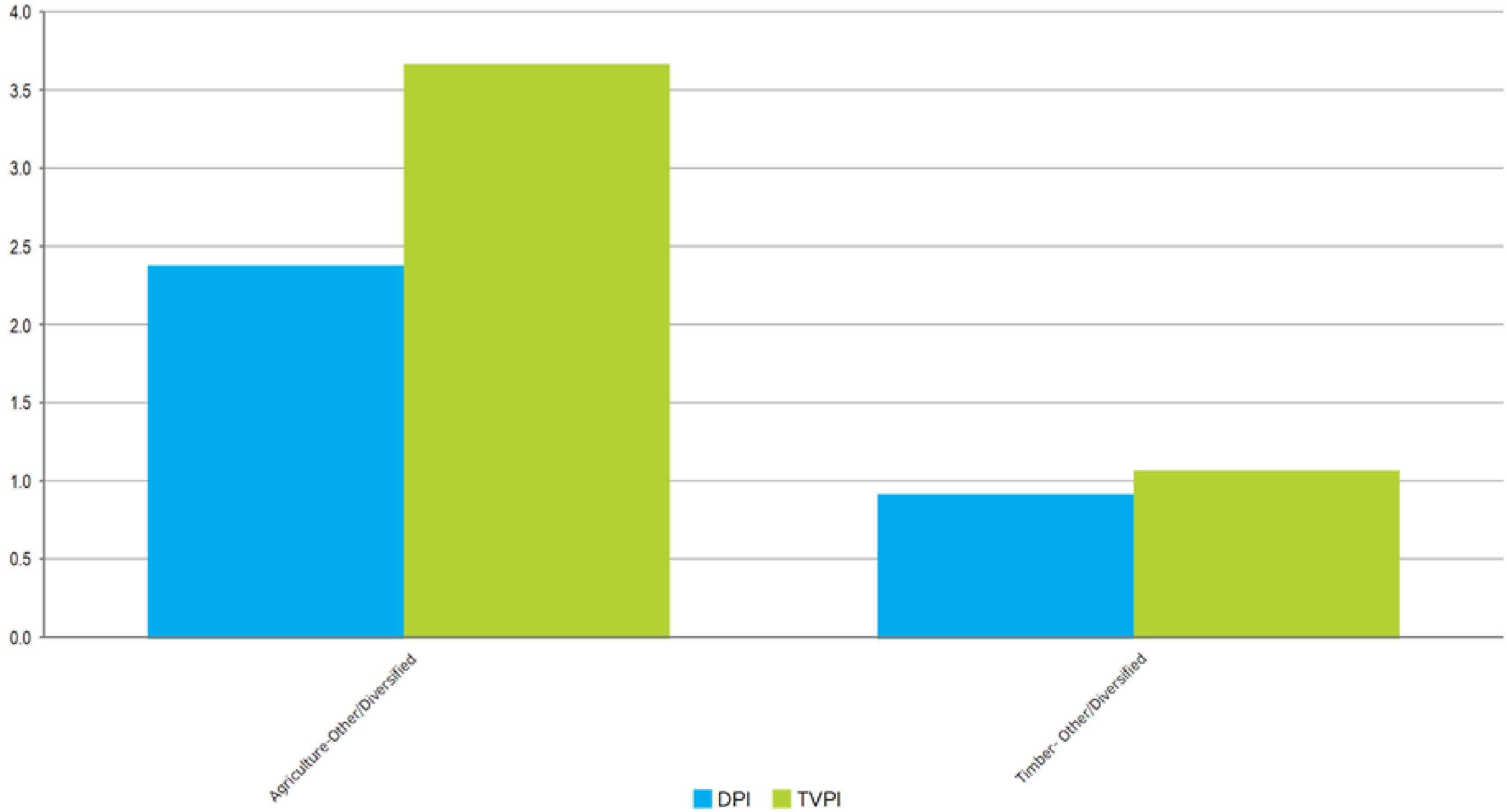
Dallas Police & Fire Pension System

Natural Resources | As of September 30, 2021

Natural Resource Investments as of September 30, 2021
DPI and TVPI by Strategy



1. Agriculture 'Other/Diversified' is composed of permanent and row crops exposure.
2.Timber 'Other/Diversified' is composed of domestic and global timber exposure.
3. Private markets performance reflected is composed of active investments only.

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Dallas Police & Fire Pension System

Natural Resources | As of September 30, 2021

Natural Resource Investments Overview												
Active Funds		Commitments		Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Unrealized Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Agriculture											
Hancock Agricultural	1998	74,420,001	74,420,001	174,592,840	95,779,445	270,372,285	195,952,284	1.00	2.35	3.63	14.75
Total Agriculture		**74,420,001**	**74,420,001**	**174,592,840**	**95,779,445**	**270,372,285**	**195,952,284**	**1.00**	**2.35**	**3.63**	**14.75**
Timber											
BTG Pactual	2006	83,032,622	83,032,622	21,150,000	21,561,509	42,711,509	-40,321,113	1.00	0.25	0.51	-8.20
Forest Investment Associates	1992	59,649,696	59,649,696	104,895,920	0	104,895,921	45,246,225	1.00	1.76	1.76	7.41
Total Timber		**142,682,318**	**142,682,318**	**126,045,920**	**21,561,509**	**147,607,429**	**4,925,111**	**1.00**	**0.88**	**1.03**	**0.63**
Total		**217,102,319**	**217,102,319**	**300,638,760**	**117,340,954**	**417,979,714**	**200,877,395**	**1.00**	**1.38**	**1.93**	**8.62**

1. Private markets performance reflected is composed of active investments only.
2. Commitment value is equal to paid in capital for direct investments made outside of a traditional limited partnership fund structure.

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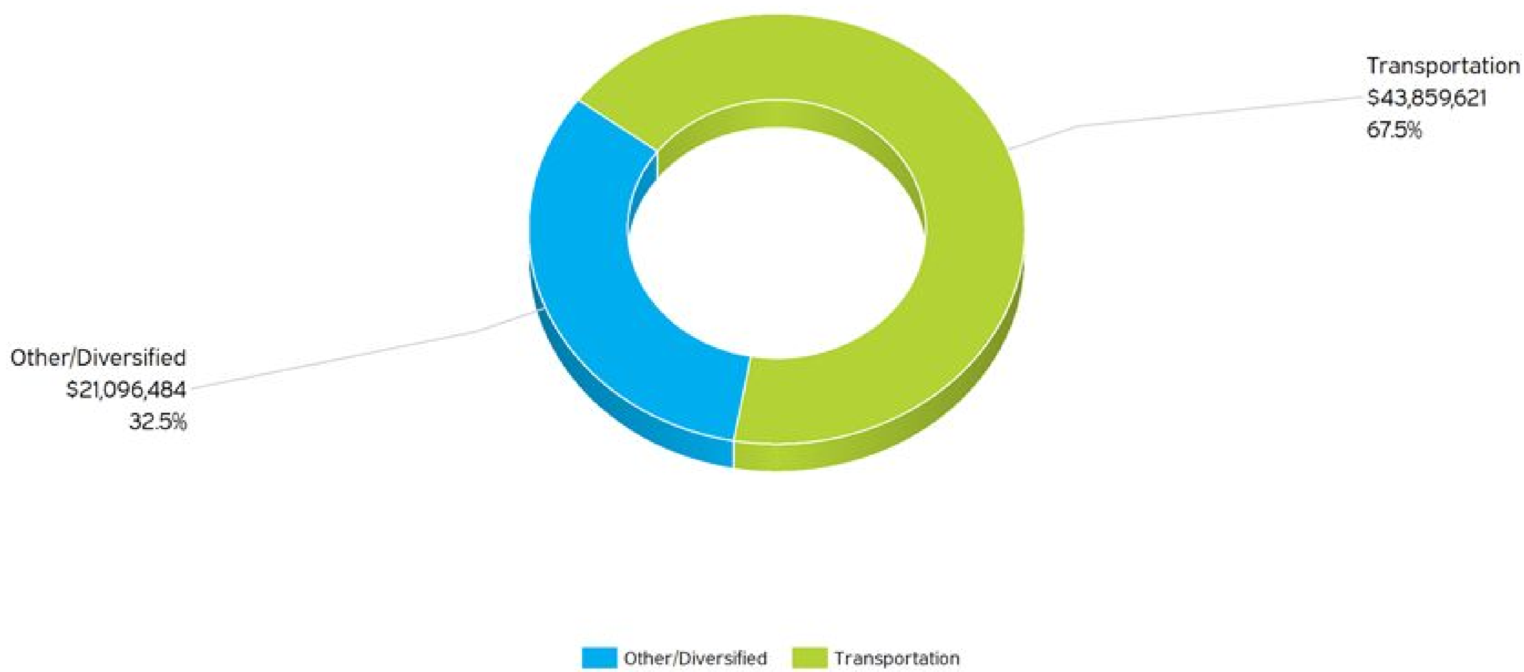
Dallas Police & Fire Pension System

Infrastructure | As of September 30, 2021

Infrastructure Investments as of September 30, 2021
Market Value Allocation by Strategy



1.'Other/Diversified' is composed of various operating and developing infrastructure project exposure.

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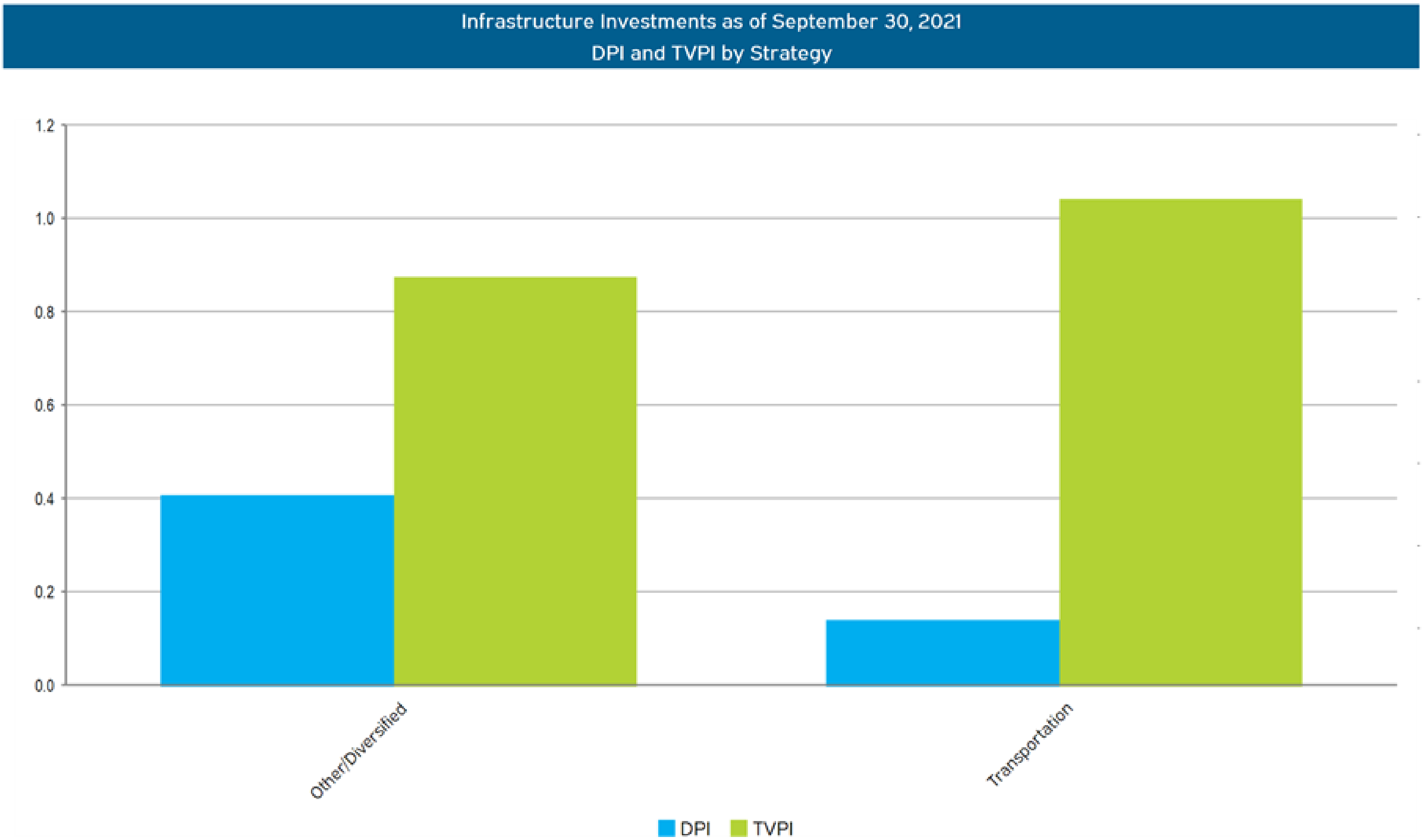
Dallas Police & Fire Pension System

Infrastructure | As of September 30, 2021



1. Other/Diversified' is composed of various operating and developing infrastructure project exposure.
2. Private markets performance reflected is composed of active investments only.

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Dallas Police & Fire Pension System

Infrastructure | As of September 30, 2021

Infrastructure Investments Overview												
Active Funds		Commitments		Distributions & Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid-In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Infrastructure											
TRG AIRRO	2008	37,000,000	37,843,232	17,873,234	16,931,566	34,804,800	-3,038,433	1.02	0.47	0.92	-1.18
TRG AIRRO II	2013	10,000,000	7,304,402	58,731	4,164,918	4,223,649	-3,080,753	0.73	0.01	0.58	-7.10
JPM Maritime Fund, LP	2009	50,000,000	48,641,857	6,300,091	43,859,621	50,159,712	1,517,855	0.97	0.13	1.03	1.02
Total Infrastructure		**97,000,000**	**93,789,491**	**24,232,056**	**64,956,104**	**89,188,160**	**-4,601,331**	**0.97**	**0.26**	**0.95**	**-0.43**

1. Private markets performance reflected is composed of active investments only.

Private Markets Review
List of Completed Funds

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Dallas Police & Fire Pension System

Private Markets Review | As of September 30, 2021

Total Real Assets Program

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Addtnl Fees	Cummulative Distributions	Valuation	Total Value	Gain/Loss	DPI Ratio	TVPI Ratio	IRR
AEW Creative Holdings	2007	13,035,849	13,035,849	0	0	0	0	0	-13,035,849	0.00	0.00	N/A
Barings Lake Luciana	2006	95,025,191	95,025,191	0	0	17,872,293	0	17,872,293	-77,152,898	0.19	0.19	-19.89%
Barings Lake P&F Real Estate	2010	18,112,486	18,112,486	0	0	4,227,991	0	4,227,991	-13,884,495	0.23	0.23	-15.79%
BTG U.S. Timberland	2007	22,230,000	22,230,000	0	0	33,065,920	0	33,065,920	10,835,920	1.49	1.49	4.82%
CDK Multifamily I	2014	10,559,876	10,617,376	0	0	10,025,434	0	10,025,434	-591,942	0.94	0.94	-1.99%
Clarion 1210 South Lamar	2014	10,500,000	10,201,489	0	0	13,214,065	0	13,214,065	3,012,576	1.30	1.30	12.85%
Clarion 4100 Harry Hines Land	2006	3,088,810	3,092,788	0	0	3,641,946	0	3,641,946	549,158	1.18	1.18	1.69%
Clarion Beat Lofts	2005	8,729,783	8,730,183	0	0	1,137,817	0	1,137,817	-7,592,366	0.13	0.13	-30.76%
Clarion Bryan Street Lofts	2005	5,112,048	5,112,048	0	0	4,163,659	0	4,163,659	-948,389	0.81	0.81	-2.23%
Clarion Four Leaf	2005	16,892,767	16,892,767	0	0	3,733,148	0	3,733,148	-13,159,619	0.22	0.22	-39.69%
Clarion The Tribute	2007	29,929,676	29,929,676	0	0	47,138,778	0	47,138,778	17,209,102	1.57	1.57	4.84%
Hearthstone Dry Creek	2005	52,303,043	52,303,043	0	0	8,973,059	0	8,973,059	-43,329,984	0.17	0.17	-38.78%
Hearthstone Nampa	2006	11,666,284	11,666,284	0	0	2,562,654	0	2,562,654	-9,103,630	0.22	0.22	-31.90%
JP Morgan Infrastructure Investments Fund	2007	37,000,000	37,000,000	0	-5,658	44,302,131	0	44,302,131	7,307,789	1.20	1.20	2.48%
L&B Realty Advsiors Beach Walk	2006	33,013,796	33,013,796	0	0	36,752,690	0	36,752,690	3,738,894	1.11	1.11	2.19%
L&B Realty Advisors KO Olina	2008	28,609,658	28,609,658	0	0	30,529,136	0	30,529,136	1,919,478	1.07	1.07	1.11%
L&B Realty Advisors West Bay Villas	2007	8,712,411	8,712,411	0	0	3,785,480	0	3,785,480	-4,926,931	0.43	0.43	-8.29%
LBJ Infrastructure Group Holdings, LLC (LBJ)	2009	50,000,000	44,346,229	0	0	77,892,000	0	77,892,000	33,545,771	1.76	1.76	12.77%
Lone Star Fund III (U.S.), L.P.	2000	20,000,000	19,827,576	0	0	40,701,250	0	40,701,250	20,873,674	2.05	2.05	31.88%
Lone Star Fund IV (U.S.), L.P.	2001	20,000,000	19,045,866	0	0	43,898,442	0	43,898,442	24,852,576	2.30	2.30	30.15%
Lone Star Fund V (U.S.), L.P.	2005	22,500,000	22,275,229	0	0	20,605,895	0	20,605,895	-1,669,334	0.93	0.93	-1.41%
Lone Star Fund VI (U.S.), L.P.	2008	25,000,000	20,034,018	0	0	31,712,968	0	31,712,968	11,678,950	1.58	1.58	21.76%
Lone Star Real Estate Fund (U.S.), L.P.	2008	25,000,000	20,743,769	0	0	25,403,707	0	25,403,707	4,659,938	1.22	1.22	5.15%
Lone Star Real Estate Fund II	2011	25,000,000	22,169,907	0	0	32,789,371	0	32,789,371	10,619,464	1.48	1.48	24.73%
Lone Star Real Estate Fund III	2014	25,000,000	23,490,784	0	0	26,638,028	0	26,638,028	3,147,244	1.13	1.13	8.20%
M&G Real Estate Debt Fund II	2013	29,808,841	21,523,663	0	0	17,088,107	0	17,088,107	-4,435,556	0.79	0.79	-15.04%
NTE 3a-3b	2012	50,000,000	23,794,565	0	0	28,186,978	0	28,186,978	4,392,413	1.18	1.18	16.03%
NTE Mobility Partners Holding, LLC (NTE)	2009	50,000,000	43,397,054	0	0	105,890,000	0	105,890,000	62,492,946	2.44	2.44	19.33%
Olympus II-Hyphen Solutions	2007	836,511	836,511	0	0	1,418,149	0	1,418,149	581,638	1.70	1.70	5.96%
P&F Housing IV	2006	134,015,889	134,015,889	0	0	83,179,802	0	83,179,802	-50,836,087	0.62	0.62	-8.44%
RREEF North American Infrastructure Fund	2007	50,000,000	50,000,000	0	846,289	55,238,755	0	55,238,755	4,392,466	1.09	1.09	12.59%
Sungate	2005	6,481,568	6,481,568	0	0	308,624	0	308,624	-6,172,944	0.05	0.05	-22.30%
Tucson Loan	2014	4,500,000	4,500,000	0	0	5,082,785	0	5,082,785	582,785	1.13	1.13	5.75%
Total Completed Funds		**942,664,487**	**880,767,673**	**0**	**840,631**	**861,161,062**	**0**	**861,161,062**	**-20,447,242**	**0.98**	**0.98**	

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Dallas Police & Fire Pension System

Private Markets Review | As of September 30, 2021

Private Equity & Debt Funds

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Addtnl Fees	Cummulative Distributions	Valuation	Total Value	Gain/Loss	DPI Ratio	TVPI Ratio	IRR
Ashmore Global Special Situations Fund IV	2007	70,000,000	70,012,300	0	0	39,652,711	0	39,652,711	-30,359,589	0.57	0.57	-10.12%
BankCap Partners Fund I	2007	20,000,000	20,000,000	0	0	24,960,986	0	24,960,986	4,960,986	1.25	1.25	2.58%
BankCap Partners Opportunity Fund, LP	2013	20,000,000	19,587,052	0	0	18,266,454	0	18,266,454	-1,320,598	0.93	0.93	-5.69%
CDK Southern Cross	2008	1,535,316	1,535,316	0	0	0	0	0	-1,535,316	0.00	0.00	-20.08%
Highland Credit Ops	2006	35,348,165	35,348,165	0	0	29,994,190	0	29,994,190	-5,353,975	0.85	0.85	-2.06%
HM Capital Sector Performance Fund	2008	47,300,000	44,354,248	0	1,933,378	39,792,545	0	39,792,545	-6,495,081	0.86	0.86	-4.01%
Huff Alternative Income Fund	1994	40,000,000	40,000,000	0	2,018,676	66,940,198	0	66,940,198	24,921,522	1.59	1.59	17.82%
Kainos Capital Partners, L.P.	2013	35,000,000	30,316,015	0	0	43,263,688	0	43,263,688	12,947,673	1.43	1.43	24.76%
Levine Leichtman Capital Partners IV	2008	50,000,000	38,009,085	0	0	78,916,788	0	78,916,788	40,907,703	2.08	2.08	20.12%
Levine Leichtman Capital Partners V, L.P.	2013	25,000,000	19,181,272	0	-4,405	24,506,336	0	24,506,336	5,329,469	1.28	1.28	15.26%
Levine Leichtman Deep Value Fund	2006	75,000,000	75,000,000	0	11,025,662	88,688,224	0	88,688,224	2,662,562	1.03	1.03	0.73%
Levin Leichtman Private Capital Solutions II, L.P.	2012	25,000,000	17,961,807	0	-175	18,691,764	0	18,691,764	730,132	1.04	1.04	1.30%
Lone Star Fund IX (U.S.), L.P.	2014	35,000,000	24,241,467	0	0	23,459,730	0	23,459,730	-781,737	0.97	0.97	-3.28%
Lone Star Fund VII (U.S.), L.P.	2011	25,000,000	23,469,024	0	0	41,624,566	0	41,624,566	18,155,542	1.77	1.77	47.54%
Lone Star Fund VIII (U.S.), L.P.	2013	25,000,000	22,564,537	0	0	28,017,551	0	28,017,551	5,453,014	1.24	1.24	16.26%
Merit Energy Partners E-I	2004	7,018,930	7,031,052	0	-1,741	14,975,776	0	14,975,776	7,946,465	2.13	2.13	14.48%
Merit Energy Partners F-I	2005	8,748,346	8,749,275	0	0	3,801,206	0	3,801,206	-4,948,069	0.43	0.43	-17.19%
Merit Energy Partners G, LP	2008	39,200,000	39,320,050	0	0	26,756,651	0	26,756,651	-12,563,399	0.68	0.68	-9.96%
Merit Energy Partners H, LP	2010	10,000,000	10,033,415	0	0	6,870,451	0	6,870,451	-3,162,964	0.68	0.68	-13.78%
Oaktree Fund IV	2001	50,000,000	50,000,000	0	0	82,516,590	0	82,516,590	32,516,590	1.65	1.65	28.36%
Oaktree Loan Fund 2X	2007	60,000,000	60,004,628	0	0	65,066,951	0	65,066,951	5,062,323	1.08	1.08	2.24%
Oaktree Power Fund III	2011	30,000,000	16,167,147	0	0	23,839,959	0	23,839,959	7,672,812	1.47	1.47	12.35%
Pharos Capital Co-Investment, LLC	2007	20,000,000	20,000,000	0	0	10,019,157	0	10,019,157	-9,980,843	0.50	0.50	-9.92%
Pharos Capital Co-Investment, LP	2008	40,000,000	40,000,000	0	0	67,459,271	0	67,459,271	27,459,271	1.69	1.69	8.42%
Pharos Capital Partners IIA, L.P.	2005	20,000,000	20,080,306	0	0	17,715,199	0	17,715,199	-2,365,107	0.88	0.88	-2.39%
Pharos Capital Partners III, LP	2012	50,000,000	28,397,038	0	-54,286	20,196,932	0	20,196,932	-8,145,820	0.71	0.71	-19.95%
Yellowstone Capital	2008	5,283,254	5,112,307	0	0	1,465,725	0	1,465,725	-3,646,582	0.29	0.29	-31.26%
Total Completed Funds		**869,434,011**	**786,475,506**	**0**	**14,917,109**	**907,459,599**	**0**	**907,459,599**	**106,066,984**	**1.13**	**1.13**	

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

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

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

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

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C8

Topic: **Real Estate Portfolio Review**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.072 of the Texas Government Code.

a. Clarion

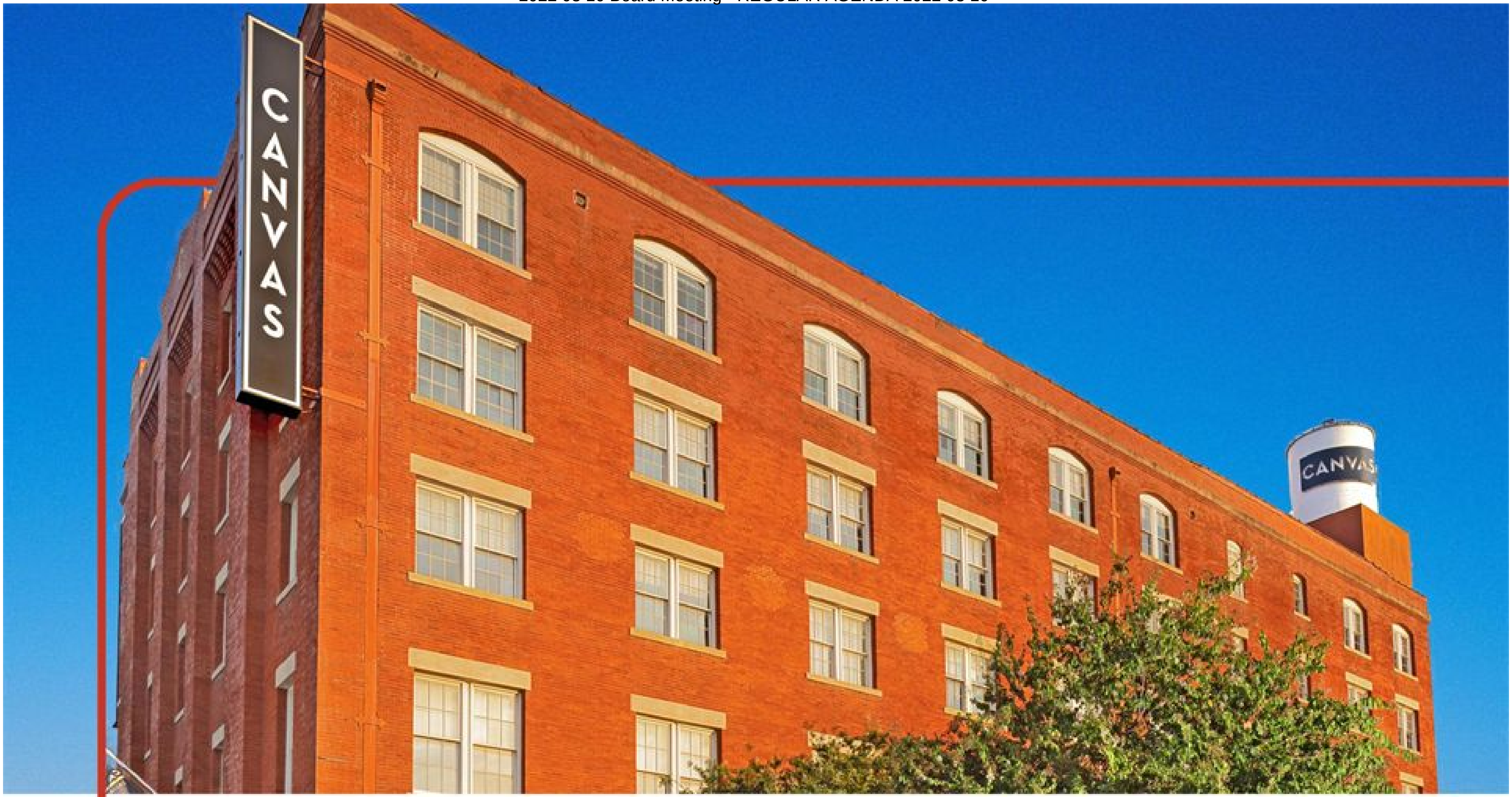
b. L&B

Attendees: Bohdy Hedgcock, Senior Vice President - Clarion
Kevin McCabe, Associate - Clarion

Discussion:

a. Clarion will update the Board on the status and plans for DPFP's investment in CCH Lamar. Clarion was engaged in October 2015 to take over the investment management of DPFP's interest in several Dallas area real estate assets, with only one asset remaining.

b. Staff will provide an overview of the asset and a review of strategy for Kings Harbor managed by L&B.



CLARION PARTNERS

Dallas Police and Fire Pension System

| DPFP BOARD | MARCH 2022

Global Investment Management Platform with Local Execution

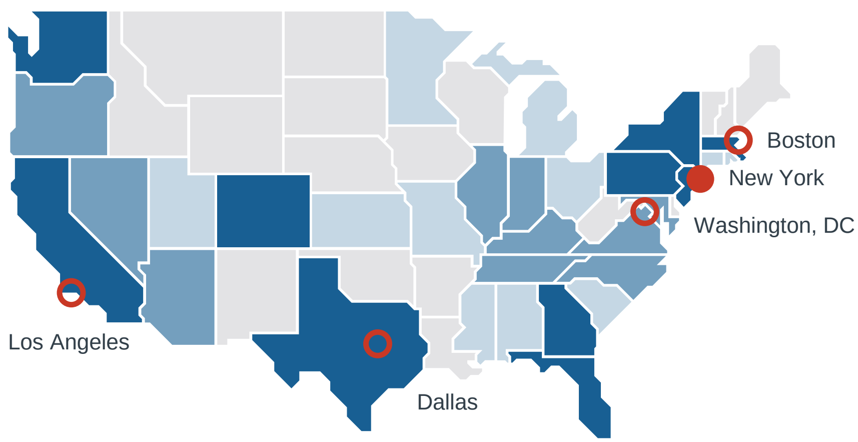
$71.0
AUM ($bn)

1,417
ASSETS

9
OFFICES

303
EMPLOYEES

UNITED STATES



● Headquarters
○ Regional

AUM Statewide

■ < $500 M ■ $500 M - $1,500 M ■ $1,500 M+

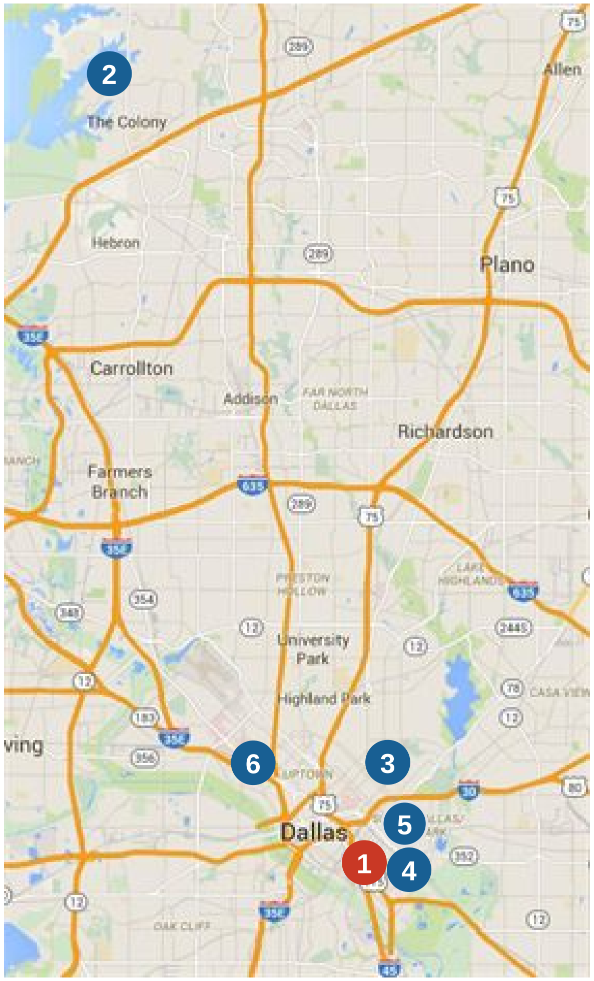
EUROPE

INVESTMENT RESEARCH	ACQUISITIONS	ASSET MANAGEMENT
9 TEAM MEMBERS	34 TEAM MEMBERS	76 TEAM MEMBERS

As of December 31, 2021.
Geographic information represents GRE; compared to Firm-level GAV. Please see the important disclosures at the end of this presentation.

Portfolio Overview

Take Over Assignment Awarded October 2015



Property	Property Type	Location	Partner	Status
1 CCH Lamar	**Mixed Use**	**Cedars**	**MSW**	**Active**
2 The Tribute	Residential Lots & Land; Golf Courses	The Colony	MSW	Realized November 2019
3 3030 Bryan	Condos	East Dallas	Reeder/ Smith	Realized June 2018
4 South Side Flats Mezz. Loan	Multifamily	Cedars	Buitte Againn	Realized June 2017
5 The Beat	Condos	Cedars	MSW	Realized February 2017
6 4100 Harry Hines Land	Vacant Land	Uptown	None	Realized December 2016

Past performance is not indicative of future results. Please see the important disclosures at the end of this presentation.

Portfolio Distributions Since Clarion Takeover

Gross distributions of $78.6 million since takeover; $27.7 million current NAV

Past performance is not indicative of future results. Please see the important disclosures at the end of this presentation.

Important Information

Note: The impact of the outbreak of COVID-19 on the economy and the properties and operations of any fund or portfolio is highly uncertain. Valuations and incomes may change more rapidly and significantly than under standard market conditions.

This is not an offer to sell, or a solicitation of an offer to buy, securities. Investment in real estate and real estate derivatives entails significant risk and is suitable only for certain qualified investors as part of an overall diversified investment strategy and only for investors able to withstand a total loss of investment. This material is for distribution only to prospective investors who are highly sophisticated and are, as applicable, "accredited investors" and "qualified purchasers," as those terms are defined in the Securities Act of 1933 and the Investment Company Act of 1940, respectively. This presentation is strictly confidential and is not intended for distribution without the written permission of Clarion Partners. Unless otherwise indicated, returns are presented on a gross basis and do not reflect expenses, management fees or incentive allocations. References to indexes are hypothetical illustrations of aggregate returns and do not reflect the performance of any actual investment. Investors cannot invest in an index. Past performance is not indicative of future results and a risk of loss exists. Any investor's actual returns may vary significantly from any aggregate returns set forth in this presentation. Forecasts and projections rely on a number of economic and financial variables and are inherently speculative. Such forecasts and projections are based on complex calculations and formulas that contain substantial subjectivity. There can be no assurance that market conditions will perform according to any forecast or that any fund or account will achieve its objectives. Investors are cautioned not to place undue reliance on any forward-looking statements. Clarion Partners does not assume any obligation to update any forward-looking statements as a result of new information. Such statements are believed to be accurate as of the date provided but are not guaranteed and are subject to change without notice. This material does not constitute investment advice and should not be viewed as a current or past recommendation to buy or sell any securities or to adopt any investment strategy. Clarion Partners does not provide tax or legal advice. Tax-related statements are based on Clarion Partners' understanding of the tax laws. Investors must seek the advice of their independent legal and tax counsel before investing. Certain information contained in this material may have been obtained or derived from independent sources believed to be reliable. Clarion Partners cannot guarantee the accuracy or completeness of such information and has not reviewed the assumptions on which such information is based.

Target Return Disclosure. Target returns may be included herein and, if so, are based on historical performance of the real estate market, current market conditions, the amount of risk to be assumed by the account or fund, as applicable, and certain subjective assumptions relating to the respective investment strategy. Fund-level target returns assume investment through a complete real estate investment cycle. Target returns are presented to establish a benchmark for future evaluation of fund performance, to provide a measure to assist in assessing the anticipated risk and reward characteristics of an investment in the strategy and to facilitate comparisons with other investments. In general, the higher a target return is for an investment, the greater the amount of risk that is associated with that investment. The target is not intended to provide an investor with a prediction of performance and no investment should be made as a result of the target. Any target data or other forecasts contained herein are based upon estimates and assumptions about circumstances and events that may not occur or may change over time. For instance, the target may assume a certain rate of increase in the value of real estate over a particular period of time. If any of the assumptions used do not prove to be true, actual results may be lower than targeted returns. The target investment returns are subject to change at any time and are current as of the date hereof only. In any given year, there may be significant variation from these targets, and Clarion Partners makes no guarantee that an investment will be able to achieve the target investment returns in the short term or the long term (i.e., over a complete real estate investment cycle). Targets are subjective and should not be construed as providing any assurance as to the results that may be realized.

Target Internal Rates of Return. "Target Gross IRRs" are returns calculated gross of fund-level management fees, incentive allocations and expenses, which in the aggregate will be substantial and will have the effect of reducing returns. "Target Net IRRs" are returns calculated net of fund-level management fees, incentive allocations and expenses, unless otherwise disclosed. Target IRRs are based solely on internal cash flow projections and estimates of current market value and do not reflect opinions of value from third party appraisals.

Aggregated Property-Level Data. Aggregated (or "blended") property-level return targets, capitalization rates and internal rates of return (IRR), as applicable, are based, in part, on the value of the properties held in the portfolio. Values are assigned to each property using a consistent methodology that is applied in accordance with the written valuation policies. Aggregated asset-level return targets, capitalization rates and IRRs may incorporate property values assigned to properties on different dates within the prior year. Such property values are estimates only. This data is provided for illustrative purposes only and should not be viewed as a guarantee of current property value, capitalization rate or internal rate of return, as applicable. Neither individual nor aggregated cap rates represent a return or distribution from the portfolio itself.

Important Information (cont.)

Private Fund Disclosure. The information provided herein with respect to one or more funds (each, a “Fund”), as applicable, has been provided for informational purposes only and does not constitute an offer to sell, or solicitation of offers to buy or convert, securities in any existing or to-be-formed issuer. Investment in a Fund can be made only pursuant to the subscription agreement, offering memorandum and related documents and after careful consideration of the risk factors set forth therein. The information provided with respect to any Fund is qualified in its entirety by reference to, and will be superseded by, such documents.

An investment in a Fund is speculative and involves a high degree of risk, potentially including risks related to the use of leverage. The performance of the Fund and its assets may be volatile. An investor may lose all or a significant amount of its investment in the Fund. Investment in a Fund is suitable only for sophisticated investors and requires the financial ability and willingness to accept the high risk and lack of liquidity inherent in the investment.

There can be no assurance that unrealized investments will be realized at the current valuations. There can be no guarantee that any Fund will be successful in implementing its investment strategy or that target returns will be realized. Gross returns are calculated prior to deduction of all fund-level fees, including asset management fees and incentive distributions, and investor-level taxes, all of which will reduce returns to investors.

Value Definitions, As Applicable. Gross Asset Value (“GAV”) is the Firm’s consolidated wholly owned total assets and proportionate share of joint venture total assets. Gross Real Estate (“GRE”) is the Firm’s consolidated wholly owned real estate assets and proportionate share of joint venture real estate assets. In contrast to GAV, GRE excludes cash and other assets. For Periods on or after 12/31/2013, Assets under Management (“AuM”) is Gross Asset Value (“GAV”). Prior to that date, AuM is Gross Real Estate Value (“GRE”).

Important Disclosure Relating to Clarion Partners Property Performance and Comparisons to the NCREIF Property Index

Inception date is 10/1/1984. Clarion Partners’ performance is calculated by blending the performance of assets from all client portfolios that meet the criteria for inclusion in the NCREIF Property Index (“NPI”). If the performance shown is for a subset of accounts of Clarion Partners, then all properties that would meet the criteria for inclusion in such subset in the NPI are included. Except with respect to subsets (e.g., industrial properties), qualifying properties include all Clarion Partners client-owned U.S. office, industrial, retail, residential and hospitality operating properties accounted for at market value, pursuant to the current valuation policy applicable to the respective client. New qualifying properties are included in the first full quarter in which they reach a minimum of 60% occupancy or, for newly acquired renovation or development assets, the earlier of 60% occupancy or 1 year after completion of the renovation or development. Once a property is included by Clarion Partners, it remains in the track record until it is disposed or converted to a property type which does not meet NPI inclusion criteria. With the exception of subsets outside of the hospitality sector, Clarion Partners includes the historical performance of 2 hotel investments managed by a Clarion Partners employee between 2002 and 2005 while working at Sarofim Realty Advisors and transferred to Clarion Partners in 2006 and 2007. The performance of Clarion Partners is hypothetical in that it does not track the aggregate performance of all assets held in Clarion Partners client accounts or of any individual account. No client has received the performance shown. Except as otherwise noted, Clarion Partners performance is shown unleveraged and gross of taxes, investment management fees, incentive fees, and, any fund expenses, if applicable. If such fees and expenses were deducted from the assets shown, performance would be substantially lower.

The NPI is a primary benchmark for the commercial real estate industry calculated and maintained by the National Council of Real Estate Investment Fiduciaries. The NPI is a total rate of return measure of the investment performance of a large pool of individual commercial properties that have been acquired in the private market for investment purposes. The NPI includes only U.S. office, industrial, retail, residential and hospitality operating properties owned in whole or in part by non-taxable institutional investors and accounted for at market value. The NPI is gross of investment management fees and is unleveraged. Information regarding NPI’s methodology is available at http://www.reportingstandards.info/. Substantial differences exist between the methodology for calculating the NPI and the Clarion Partners performance data. Performance was achieved under certain economic conditions that may not be repeated. Past performance is not a guarantee of future results.

Effect of Fees on Gross Performance

If management and other fees were included, performance would be lower. Advisory fees are disclosed in each fund’s private placement memorandum, in each investment advisory agreement for separate accounts, and are summarized in Part 2A of Clarion Partners’ Form ADV.

Important Information (cont.)

Additional Index Definitions

The NCREIF Total Return Property Index (NPI). The NPI quarterly, annual and annualized total returns consist of three components of return – income, capital and total. Total Return is computed by adding the Income Return and the Capital Value Return.

NPI Market Value Index (MVI). The NPI MVI is simply an equal-weighted average of quarterly changes in reported market value for the properties that are not undergoing a major capital expansion. MVI is designed to reflect how property values are changing over time and be an alternative to the NCREIF capital index.

NCREIF Appreciation Index. The NCREIF Appreciation Index is a quarterly, unleveraged composite appreciation return for private commercial real estate properties held for investment purposes only.

NCREIF Industrial Sub-Index. The NCREIF Industrial Sub-Index is a quarterly, unleveraged composite total return for private industrial real estate properties held for investment purposes only.

Bloomberg Barclays US Aggregate Bond Index. The Bloomberg Barclays US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency).

EURO STOXX 600. The STOXX Europe 600 or STOXX 600 is a stock index of European stocks designed by STOXX Ltd. This index has a fixed number of 600 components, among them large companies capitalized among 18 European countries, covering approximately 90% of the free-float market capitalization of the European stock market (not limited to the Eurozone).

FTSE NAREIT All Equity REIT Index. The FTSE NAREIT All Equity REITs Index is a free-float adjusted, market capitalization-weighted index of U.S. Equity REITs. Constituents of the Index include all tax-qualified REITs with more than 50 percent of total assets in qualifying real estate assets other than mortgages secured by real property.

JLL Global RE Transparency Index. The JLL Global Real Estate Transparency Index is based on a combination of quantitative market data and information gathered through a survey of the global business network of JLL and LaSalle Investment Management across 109 markets.

Morgan Stanley EAFE Int'l Stock (MSCI EAFE) Index. The MSCI EAFE Index is designed to represent the performance of large and mid-cap securities across 21 developed markets, including countries in Europe, Australasia and the Far East, excluding the U.S. and Canada.

Morgan Stanley Emerging Markets (MSCI EM) Index. The MSCI Emerging Markets Index captures large and mid-cap representation across 24 Emerging Markets (EM) countries. With 845 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

NAREIT Equity REIT. NAREIT Equity REIT Index is an index designed to provide the most comprehensive assessment of overall industry performance, and includes all tax-qualified real estate investment trusts (REITs) that are listed on the New York Stock Exchange, the NYSE AMEX Equities or the NASDAQ National Market List.

The FTSE NAREIT Equity REITs index contains all Equity REITs not designated as Timber REITs or Infrastructure REITs.

Investment Property Databank (IPD) Index. The IPD Index is a composite of investment returns on both a historical and current basis of its participating members, who must qualify as being open-end, core, diversified funds pursuing a core investment strategy and includes all investments owned by them including real estate, cash and other investments (mezzanine loans receivable, notes receivable, forward commitments, etc.). The IPD Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted. Unless otherwise noted, IPD Index returns are presented without leverage and before the deduction of portfolio level management fees and do not reflect the results of any actual investment portfolio. The index's history is unfrozen; therefore, any reconstitution would result in a revision to the index's historical data. For comparative purposes, IPD calculates LPF returns using the same methodology as the IPD Index. Further information is available online at http://www.ipd.com.

S&P 500 - Standard and Poor's 500 Index. The S&P 500 Index is a capitalization-weighted index of 500 large U.S. stocks. The index is designed to capture the returns of many different sectors of the U.S. economy. The total return calculation includes the price-plus-gross cash dividend return.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C8

Topic: **Cybersecurity Update**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.089 of the Texas Government Code.

Discussion: Staff will discuss the current security measures in place as well as future plans with regard to testing and improvements.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C9

Topic: **Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.**

Discussion: Counsel will brief the Board on these issues.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C10

Topic: **Chief Investment Officer Appointment**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.074 of the Texas Government Code.

Discussion: Section 3.025 of Article 6243a-1 allows the Executive Director to hire a Chief Investment Officer, subject to confirmation by the Board.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D1

Topic: **Public Comment**

Discussion: Comments from the public will be received by the Board.

Regular Board Meeting – Thursday, March 10, 2022

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D2

Topic: **Executive Director's report**

a. Associations' newsletters
- NCPERS Monitor (March 2022)
- NCPERS PERSist (Winter 2022)

b. Open Records

c. Employee Service Awards

Discussion: The Executive Director will brief the Board regarding the above information.

THE NCPERS

MONITOR

The Latest in Legislative News

March 2022

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

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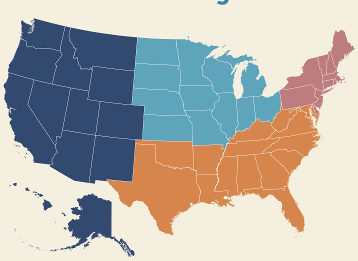

This month, we will highlight New York, Minnesota, Kentucky and Hawaii.

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

Photo Illustration © 2021, 123RF.com

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

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

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

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

CONTINUED ON PAGE 5

The SECURE Act 2.0

By Tony Roda

Photo Illustration © 2021, iStock.com

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

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

- Increase the age trigger for Required Minimum Distributions from defined benefit and defined contribution plans incrementally to age 75 by 2032;
- Allow 403(b) plans to invest in collective investment trusts and join multiple employer plans;
- Provide additional flexibility for plan fiduciaries when seeking to recoup inadvertent retirement plan overpayments;
- Allow employer matching contributions on account of student loan payments for 457(b), 403(b), and 401(k) plans;
- Eliminate the first-day-of-the-month rule for 457(b) plans to provide more flexibility to participants to make changes in elective deferral amounts;
- Exclude from tax certain disability payments for first responders;
- Increase the annual limits on catch-up contributions to $10,000 for those age 62-64 for 457(b), 403(b), and 401(k) plans; and
- Require the Roth method for catch-up contributions, i.e. contributions must be made with after-tax dollars, for the plans listed above.

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

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

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NCPERS Executive Directors Corner

PSERS Internal Investigation Finds No Evidence of Criminal Conduct

Photo illustration © 2021, iStock.com

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

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

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

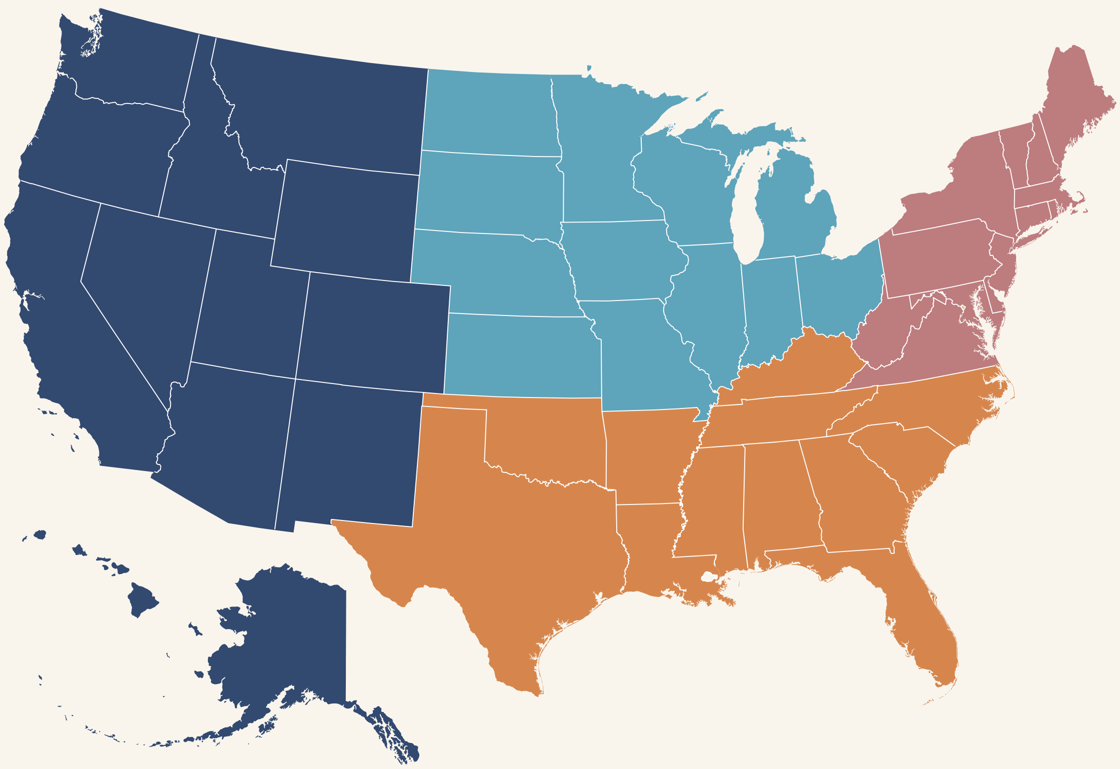
A thorough investigation by the law firm Womble Bond Dickinson found no evidence of criminal conduct related to a calculation error in the $72.5 billion fund's reported investment figures.

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

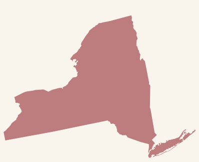
CONTINUED ON PAGE 6

NCPERS Around the Regions

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



NORTHEAST: New York



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

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

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

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

CONTINUED ON PAGE 7

AUTO-IRA PROGRAMS CONTINUED FROM PAGE 1

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

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

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

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

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

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

THE SECURE ACT 2.0 CONTINUED FROM PAGE 2

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

1. Repeal the direct payment requirement, which has become an administrative burden for many state and local retirement systems and has resulted in other systems making the decision to not implement HELPS, thereby resulting in their retired public safety officers being ineligible for the tax benefit;

2. Increase the current annual exclusion amount cap ($3,000), which has not been increased since 2006 despite significant increases in premiums for health care and long-term care insurance over that 15-year period ; and

3. Index the annual exclusion for inflation for future years so that Congress does not have to continually revisit the exclusion cap in subsequent years. Numerous retirement-related provisions in the tax code are indexed for inflation, including annual limits for contributions to 401(k), 457(b), and 403(b) accounts. A complete list of cost-of-living adjustments to dollar limitations for retirement plan benefits and contributions was recently released (see Treasury Notice 2021-61 (PDF)).

All of the potential changes to HELPS have the strong support of the Fraternal Order of Police, National Association of Police Organizations, the International Association of Fire Fighters, and the public pension community. NCPERS has been active on the HELPS issue and has met with senior pension counsels of the Senate Committee on Finance, the Committee on Health, Education, Labor, and Pensions, and the Senate Select Committee on Aging.

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

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

EXECUTIVE DIRECTORS CORNER CONTINUED FROM PAGE 3

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

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

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

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

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

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

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

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

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

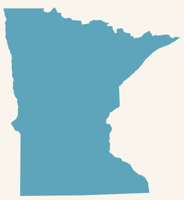
Of course, an error is no laughing matter, especially when measured against a $72.5 billion fund. But miscalculations can and do occur, and that doesn't mean that anything nefarious is going on. Competent organizations can make mistakes. When they discover them, they do precisely what PSERS did: They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

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

NCPERS Around the Regions

AROUND THE REGIONS CONTINUED FROM PAGE 4

MIDWEST: Minnesota



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

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

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

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

SOUTH: Kentucky

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

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

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

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

CONTINUED ON PAGE 8

AROUND THE REGIONS CONTINUED FROM PAGE 7

WEST:
New Mexico

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

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

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

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

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Calendar of Events 2022

May

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

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

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

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

June

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

August

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

October

Public Safety Conference
October 25 – 28
Nashville, TN

The Voice for Public Pensions

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

PERSist

The Voice for Public Pensions

Winter 2022 | Volume 35 | Number 1

NCPERS Message

NCPERS is happy to announce we are moving forward with the return of in-person educational conferences! After an extraordinary two years, we believe it is essential to return to the business of valuable in-person education. That's why NCPERS is happy to host our Annual Conference & Exhibition (ACE) and our two pre-programs, the Trustee Educational Seminar (TEDS) and NCPERS Accredited Fiduciary (NAF) Program May 21-25, 2022 in Washington, D.C.

TEDS & NAF will be held May 21-22at the Omni Shoreham Hotel. TEDS is intended for new and novice trustees seeking a better understanding of their role and responsibilities as a trustee of their pension fund.

NAF is a trustee accreditation program specifically designed and tailored for individuals involved in public pension governance. All four of the NAF modules will be offered in May:

Module 1: Governance & The Board's Role

Module 2: Investment & Finance

Module 3: Legal, Risk Management & Communication

Module 4: Human Capital

October 22-23, we will host the fall class of NAF before the Public Safety Conference in Nashville, Tennessee.

From May 22 - 25 are thrilled to host our annual event in our home city of Washington, D.C. ACE is the comprehensive educational program for the public pension community. Trustees, administrators, state and local officials, and service providers come together to share learning, ideas, and connect with their peers. After the last two years, we agree that this will be an amazing opportunity for our community.

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In This Issue

Competing Priorities for Well-Funded Plans

By: Tom Vincente

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The recent run up in the markets has greatly improved the funding of many plans including putting some over 100% funded. Different interested parties may see this as an opportunity to enact changes. We suggest Trustees take proactive steps and consider the likely requests and how to view them, being mindful to not repeat mistakes made 20 years ago in a similar environment and considering the implications of a maturing plan.

- The people side often wants to improve benefits. Boards seldom control changes in benefits, however, they can assist unions and employers in thinking about the "why" and "how much". If the plan is meeting retirement needs now there may be little reason to increase benefits. Improving benefits in good times can lead to the need to reduce benefits in bad times (which we have seen happen). The plan should strive to be consistent over time so members can plan and be prepared for retirement with as much confidence as possible.
- The employer side likes lower costs, but more importantly they want stable costs. Often, they would rather costs stay level within the budget than bounce around. Boards can work with their actuary to develop a funding policy that helps make that happen. A good funding policy should include features that allow for gradual recognition of surpluses so employers get some credit when the plan is overfunded to offset the increase in cost when there is an unfunded liability. Actuaries tend to prefer longer amortizations of surpluses than unfunded liabilities which further helps to stabilize costs. Requiring that the employer pay the Normal Cost as a minimum even if the plan is over funded might work well, to a point, depending on the size of the surplus. Some plans have taken the approach of not giving credit for the entire surplus, but only for surplus

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Tom Vicente, FSA, FCA, EA, MAAA *is a Senior Consulting actuary at Bolton Inc. Tom has 30 years of experience working with public pension plans and actively participates in professional organizations such as the Society of Actuaries, Conference of Consulting Actuaries, and the American Academy of Actuaries. He recently helped the Society present their research paper,* Trends in Maturity Metrics, Asset Allocations and Expected Rates of Return for Large U. S. Public Pension Plans.

Growth with a side of inflation

By: David Lebovitz


Photo illustration © 2022 shutterstock.com

The global economy seems to have finished 2021 with solid momentum. While we believe the pace of economic growth will gradually decelerate over the course of the year, we expect it will remain above-trend. Driving this solid economic activity will be three distinct forces – the consumer, inventories, and business investment.

The consumer is in good financial shape. That's partly because the fiscal policy response to COVID-19 lined the pockets of individuals with cash, particularly in the developed world. With checking account balances still well-above their long-run average and debt-to-income ratios near their lowest levels on record, it seems reasonable to expect consumption will be a key driver of growth this year.

In addition to solid consumption, inventory growth looks set to support above-trend economic activity. We began to see an inventory build as we came into the fourth quarter and it seems to have continued through the end of 2021. Looking ahead, we believe that inventory growth will provide an additional tailwind for economic growth in 2022.

Finally, investment spending looks set to accelerate. First, there has historically been a tight relationship between earnings growth and non-residential investment spending 12 months later; 2021 was a fantastic year for profits, and we expect that will translate into stronger capital spending. Second, management teams have stated openly that they plan to defend margins against rising input prices by passing along these higher costs to the consumer and, where possible, focusing on automation and efficiency. The latter requires investment, which we believe will increase in 2022.

CONTINUED ON PAGE 8

David M. Lebovitz, *Executive Director, is a Global Market Strategist on the J.P. Morgan Asset Management Global Market Insights Strategy Team. In this role, David is responsible for delivering timely market and economic insights to clients across the country. David helped build the Market Insights program in the United Kingdom and Europe, has appeared on both Bloomberg TV and CNBC, and is often quoted in the financial press.*

David first joined J.P. Morgan in 2010. Prior to joining the firm, he was a Research Analyst at Kobren Insight Management.

David obtained a B.A. in Political Science and Philosophy, with a concentration in Leadership Studies, from Williams College in 2009. He earned a dual-MBA degree from Columbia University and London Business School in 2015.

Healthcare: The Best Defense Is a Good Offense

By: Thomas A. Sternberg

Photo Illustration © 2022 shutterstock.com

The best offenses in football typically have some combination of a top-notch strategy and top-tier players, and we take a similar approach to investing. Our top-down identification of key growth themes is our strategy, and the individual companies in which we invest are the players.

The Playbook (Top-Down Strategy)

Outsourcing to CROs and CDMOs. Increasingly, biopharmaceutical companies are outsourcing their research and development (R&D) and manufacturing to contract research organizations (CROs) and contract development and manufacturing organizations (CDMOs), adding a layer of growth potential on top of the consistent growth that we have already seen in life science research spend.

*Gene Therapy Development***.** Cell and gene therapies, which find novel ways to treat patients with cancer and genetic disorders, are being investigated for use in sickle cell disease, hemophilia, muscular dystrophy, and even congenital deafness. And you're not just treating the symptoms; you're addressing the underlying cause of a particular disease.

Telemedicine. While we don't see telemedicine itself as a bastion of value creation, we do see many tangential areas of growth when we widen our lens to encompass companies that are enabling digital adoption across the healthcare spectrum. One example is companies that help pharmaceutical manufacturers use digital solutions to sell and market to doctors. Another is software companies making R&D organizations within leading life sciences firms more efficient. *Related Industries: Dental and Animal.* Ongoing demographic trends and rising spending on aesthetics support steady growth in the dental market, while demand for animal health products and

CONTINUED ON PAGE 9

Tommy Sternberg, CFA, partner, *is a global equity research analyst. He covers large-cap healthcare companies. Previously, he was a research associate focused on the healthcare industry. Before joining William Blair in 2004, Tommy spent two years as an equity analyst in Oak Brook Bank's investment management and trust department. He is a member of the CFA Institute and the CFA Society Chicago. Tommy received a B.S. in economics from Duke University and an M.B.A. from the University of Chicago's Booth School of Business.*

NCPERS **Investment Consultants**

Cryptocurrencies and Institutional Investors

By: Frank Benham and Alison Adams

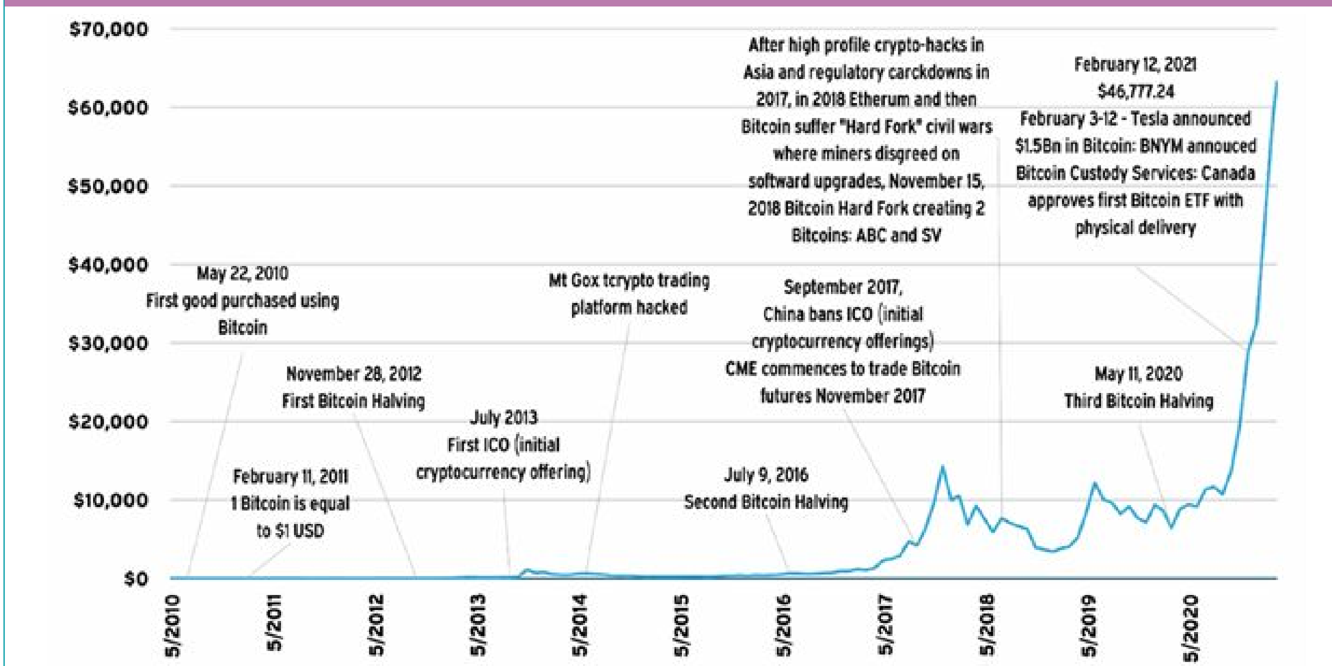
Photo Illustraton © 2022 shutterstock.com

The cryptocurrency market is rapidly evolving, becoming more liquid, and an increasing number of institutions are offering services that cater to institutional investors. An ever-greater number of investors are showing interest, not least due to the outsized returns of recent years.

The first and very popular cryptocurrency is Bitcoin, which was created in 2009. It was designed to be peer-to-peer, anonymous, decentralized, and an alternative to national currencies. Cryptocurrencies such as Bitcoin rely on blockchain technology, a digital, decentralized, and distributed ledger that encodes all transactions within its network through a system of linked and encrypted ledgers, or "blocks," which memorialize all previous transactions. The Bitcoin blockchain was designed to eliminate the verification and physical payment systems that slow the pace of transactions.

CONTINUED ON PAGE 10

FIGURE 1: Bitcoin Price History and Events



Source: Meketa Research, Bloomberg, and Coinbase

NCPERS Signs Amicus Brief in Support of Investors' Appeal of *Overstock* Dismissal

By: Laura H. Posner and Richard Lorant

Photo Illustration © 2022 shutterstock.com

Shareholders of online-retailer-turned-blockchain-technology-company Overstock.com Inc. have asked a federal appeals court to revive their securities fraud class action against Overstock and its founder, Patrick Byrne, after the district court ruled that Byrne's plan to manipulate Overstock's stock to harm short sellers was legal.

The complaint filed by Cohen Milstein on behalf of lead plaintiff Mangrove Partners Master Fund Ltd. reads more like a John Grisham novel than a typical stock fraud case. Plaintiffs allege that Byrne decided to resign as Overstock CEO in August 2019 after learning that his romantic relationship with a Russian spy was about to become public. But before leaving, he devised a scheme to goose the Overstock's sagging share price by creating a sham illiquid "Digital Dividend" that would force the stock's legion of short sellers to buy company stock at any price.

A month later, the recently resigned CEO was in Indonesia, safe from extradition, where he spent three days on a boat dumping his remaining 4.7 million Overstock shares for a cool $90 million – money he quickly invested in precious metals and cryptocurrencies to avoid the clutches of the "Deep State." On September 18, 2019, the same day Byrne sold his last million shares, Overstock ended the "short squeeze." Over the next 10 days, the stock tanked 62%, leaving investors holding the bag.

Plaintiffs quote statements from Byrne on his blog showing that he deliberately designed the unregistered Digital Dividend to create the short squeeze that artificially increased Overstock's stock price so that he could knowingly sold his stock at inflated prices.

CONTINUED ON PAGE 12

__Laura H. Posner__ Laura H. Posner is a partner at Cohen Milstein Sellers & Toll PLLC with a long history of representing institutional investors in securities class actions, including the Overstock case. Prior to joining the firm, Ms. Posner served as Bureau Chief for the New Jersey Bureau of Securities, the state's top securities regulator.

__Richard Lorant__ is Cohen Milstein's director of institutional client relations.

NCPERS Real Estate

New Research Points to Advantages of Larger REIT Allocations

By: Thomas Arnold, David Ling, and Andy Naranjo

Photo illustration © 2022 shutterstock.com

As pension plans have sought to boost their returns to meet growing obligations to plan participants, many have increased their allocations to real estate, primarily through closed-end private equity real estate funds. Since these funds typically employ more leverage and are less liquid than publicly listed REITs, many investors expect them to provide higher returns. In our recent article *Private Equity Real Estate Fund Performance: A Comparison to Listed REITs and Open-end Core Funds*, published in the *Journal of Portfolio Management* Special Real Estate Issue, we explored whether comparative performance data support the assumption of higher returns.

Unlike other analyses of public versus private market real estate performance that compare returns on investable public real estate market indices to uninvestable private market indices, such as ODCE or NCREIF, our research compares the actual performance of individual closed-end private real estate funds to the performance each fund's investors would have realized had they invested in an index of equity REITs over the same investment horizon.

Our study includes 375 head-to-head comparisons between closed-end private equity real estate funds that invest primarily in the U.S. and the FTSE/Nareit U.S. index over various time periods between 2000 and 2014. Our exclusion of post-2014 funds minimizes the risk of including funds whose performance was not final.

CONTINUED ON PAGE 13

Thomas R. Arnold *is the former Global Head of Real Estate of the Abu Dhabi Investment Authority and is currently a Senior Advisor to McKinsey & Company, and a Visiting Scholar in the Eugene F. Brigham Finance, Insurance& Real Estate Department, Warrington College of Business, University of Florida, Gainesville, FL.*

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Andy Naranjo *is the John B. Hall Professor of Finance & Chairman in the Eugene F. Brigham Finance, Insurance & Real Estate Department, Warrington College of Business, University of Florida, Gainesville, FL.*

NCPERS MESSAGE CONTINUED FROM PAGE 1

In keeping with Spring and renewal & rebirth, we have revamped the ACE schedule of events to optimize learning and networking. For the first time, we will host an Opening General Session on Sunday, May 22, from 3:00 pm to 4:00 pm, followed by our Welcoming Reception. And the changes don't stop there! On Monday, May 23, and Tuesday, May 24, we will host 8:00 am General Sessions, followed by two sets of three concurrent breakout sessions. The days will continue with new town halls, our Lunch & Lecture series, and end the day with networking receptions. We will host our last sets of breakout sessions and closeout ACE with a Closing General Session that will conclude around noon on Wednesday, May 25.

We can't overstate the importance of networking opportunities you get by attending ACE. In the exhibit hall and during breakfasts, lunches, refreshment breaks, and receptions, members can mix and share ideas and insights. We can't wait to return to in-person networking events and look forward to seeing everyone in our nation's capital, May 21-25!

After what is sure to be a successful ACE season, we will continue with our in-person educational opportunities throughout the summer and fall. On June 27-29, 2022, we will host our Chief Officers Summit in San Francisco, California. We will host our Public Pension Funding Forum in Los Angeles, California, on August 21-23, 2022. And finally, we are happy to announce that we will host our Public Safety Conference and NAF on October 21-26, 2022, in Nashville, Tennessee.

We are excited about our upcoming in-person conferences and look forward to seeing everyone there! ◆

ACTUARY CONTINUED FROM PAGE 2

above a certain level. Actuarially speaking, this treatment avoids the high degree of leverage that occurs when plans reach 100% funding.

- Boards can use this opportunity to lower the risk profile of the plan. This can include updating long term return assumptions, asset allocation, mortality/improvement assumptions, etc. If assumptions are not already within the actuary's range of reasonableness, this should be the Board's top priority. Even if the current assumptions are acceptable, Boards could ask that they be moved to a more conservative (but still reasonable) position to decrease the risk of future adverse outcomes. This allows the Board to stay ahead of changing risk exposures that occur as plans mature, rather than being reactive. As John F. Kennedy said: "The time to fix the roof is when the sun is shining…"

What goes up can come down. Having an approach to deal with surplus is important and can avoid throwing the plan out of balance and risking future problems. Boards have limited control in plan management but developing a strong policy in advance can keep all constituents satisfied and avoid the mistakes of the past. ◆

ASSET MANAGER CONTINUED FROM PAGE 3

While we are constructive on the 2022 economic growth outlook, we recognize that above-trend growth will be served with a side of inflation. In 2021 it became clear that inflation was not as transitory as many investors and policymakers had assumed. While we do not believe that inflation will evolve into a structural issue, we do believe that it will be elevated relative to the Federal Reserve's (Fed's) target over the coming year.

This macroeconomic backdrop has created significant questions around the appropriate trajectory of monetary policy in 2022. At its December meeting, the Federal Open Market Committee (FOMC) announced that it would accelerate the pace of asset purchase reduction (i.e. "tapering") and aim to hike the federal funds rate three times in 2022. It seems perfectly reasonable for tapering to be accelerated, as the financial plumbing of the economy looks fine. However, tapering is very different from tightening, and it will likely be more difficult for the Fed to hike rates faster than they currently expect.

Although we take a constructive view of the economy we recognize that investment returns may be more difficult to come by. Public markets have delivered remarkable performance over the past two years, but we expect that returns will be lower and volatility higher going forward. Further, while interest rates should rise, they will likely only do so gradually. At the end of the day, it will be essential for investors to embrace alternatives as they navigate a world characterized by muted expected returns, historically low interest rates, and elevated volatility. ◆

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HEALTHCARE CONTINUED FROM PAGE 4

services continues to benefit from increasing household spending on our pets. Innovation and digitalization are potential growth drivers in both markets. This may surprise some, as these industries are not necessarily regarded as highly innovative. But individual companies are differentiating themselves from the competition in their ability to innovate with new products and/or adapt more business processes to a digital format—and these companies are disproportionately delivering outsized growth and returns.

The Players

While the identification of growth themes is critical, we ultimately seek companies that also have distinct and enduring competitive advantages (having the right "players"). But if we've identified the growth opportunity, no doubt other industry participants have done so as well. So when looking for the right "players," we focus more on whether they possess durable competitive advantages (such as an ability to bring innovative new products to the market, an acute focus on customer needs, a strong brand, and a winning corporate culture) rather than whether they fit nicely into a well-defined and easily understood existing market.

For instance, one of our long-term holdings is a company that produces eyeglass lenses and other medical devices as well as niche IT hardware components that can be used in the manufacturing of semiconductors and hard disk drives for data storage. This might seem like an unlikely holding. After all, the end-markets for IT components are typically more cyclical and less predictable than the end-markets for healthcare. But we didn't shy away from the growth opportunity, and the company has seen its IT components business perform better than anticipated.

Beyond the Horizon: AI

Future areas of interest for us within healthcare include drug discovery enabled by artificial intelligence, digital-first primary care models, advanced robotics in medical technology, synthetic biology, and gene editing, to name a few. Given the accelerating level of innovation we are seeing across the medical field, we are hopeful that these opportunities keep lighting up the scoreboard. ◆

This article is an excerpt from our blog post.

INVESTMENT CONSULTANTS CONTINUED FROM PAGE 5

In many ways, Bitcoin and other digital currencies effectively represent a new type of asset. Most investors perceive crypto as an alternative currency; however, digital currencies do not meet the traditional requirements for an asset to be considered money (see table below).

The majority of national currencies, including the US dollar, are fiat money. Fiat money is government-issued currency not backed by gold or other commodities. Like fiat money, Bitcoin is not backed by commodities, and its value is based on the belief that it does in fact have value. However, Bitcoin is more volatile than fiat money primarily because there is no government or economy on which to base its stability. The supply of cryptocurrency is a result of blockchain miners' hashing[1] blocks rather than a product of economic growth.

The independence of cryptocurrencies from central banks often makes them attractive to some less speculative investors who perceive crypto as a sort of digital form of gold, with the ability to serve as a store of wealth and an inflation hedge.

Regulators and central banks are likewise exhibiting growing interest and are evaluating issuing their own digital currencies that could compete with and potentially supplant independent cryptocurrencies. The potential for national governments and regulators to prohibit or circumscribe use of cryptocurrencies in defense of their own fiat currencies, payment systems, and monetary policy creates a great detail of uncertainty about the future of cryptocurrencies.

Turning now to performance, in February 2011, the price of a single Bitcoin was equal to $1; by February 2021, a single Bitcoin was worth over $50,000. Bitcoin dominates the cryptocurrency markets, comprising approximately two-thirds of the tradable market and is viewed as the premier cryptocurrency, commanding higher prices and higher investor demand.

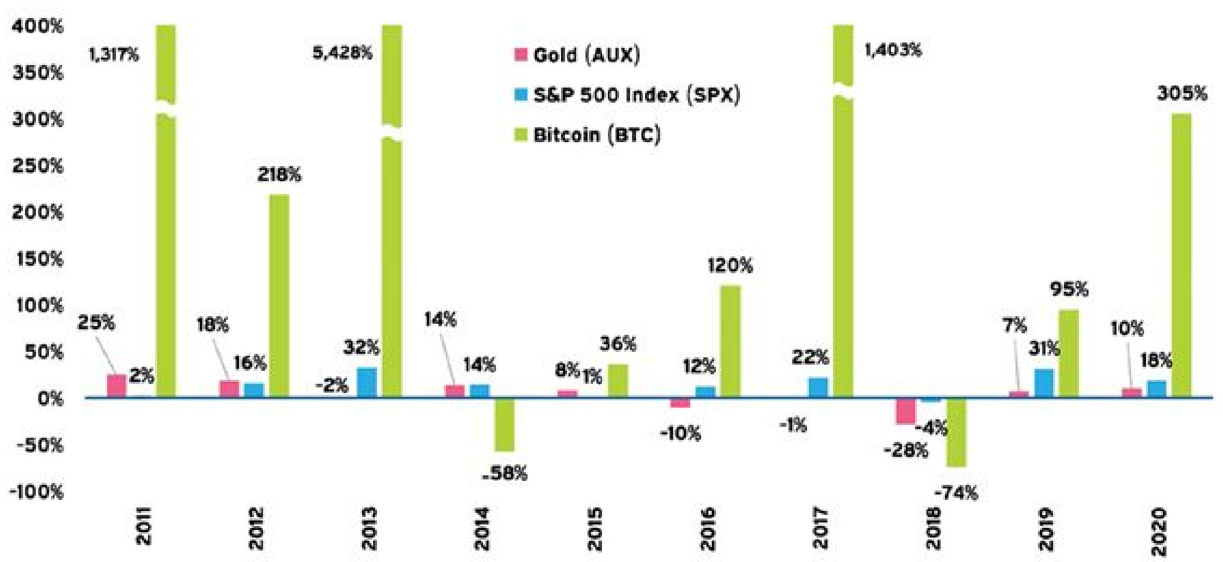
CONTINUED ON PAGE 11

FIGURE 2: Digital Currency Asset Requirements to be Considered Money

Criteria	Current Status
Store of value	Too volatile
Means of exchange for goods and services	Minimal acceptance
Unit of account that measures value	Too volatile

Source: Meketa Investment Group

FIGURE 3: Gold, Bitcoin, and S&P500 Index



2011- 2020 Calendar Year Returns (%)

INVESTMENT CONSULTANTS CONTINUED FROM PAGE 10

FIGURE 4: Historical Performance Characteristics as of December 31, 2020

	Gold	S&P 500 Index	Bitcoin (BTC)
10–Yr. Annualized Return	2.9%	13.9%	215.2%
10-Yr. Standard Deviation	16.4%	13.5%	201.9%
10-Yr. Skew	0.2	-0.3	4.6
Largest Drawdown	-62.2%	-86.2%	-85.9%
Source: Bloomberg.			

As of December 31, 2020, Bitcoin has delivered an annualized return of 215% over the past 10 years, its volatility has been equally spectacular. Bitcoin's annualized 10-year standard deviation is 201.9% or approximately 12 times that of gold. Moreover, in its short history, Bitcoin has already matched the S&P 500's maximum drawdown from 1932.

Based on this limited - and quite volatile - history, an investor would be hard pressed to create any kind of reliable long-term capital markets expectations for the asset class.

In summary digital currencies should be taken seriously by institutional investors, as they are likely here to stay. However, there are a number of concerns about the current state of the cryptocurrency market that should give institutional investors pause before investing directly.

While Bitcoin appears to have a low correlation with equities and bonds, it lacks a sufficiently long track record to draw meaningful conclusions about its future return behavior. And despite the aforementioned growth in liquidity and institutional services, there is an insufficient amount of both to meet the needs of most large institutional investors. ◆

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Data contained in this document may be obtained from a variety of sources and may be subject to change. Nothing in this document should be interpreted to state or imply that past results are an indication of future performance. Investing involves substantial risk. It is highly unlikely that the past will repeat itself. Selecting an advisor, fund, or strategy based solely on past returns is a poor investment strategy. Past performance does not guarantee future results.

[1] For more information on hashing, visit https://www.coindesk.com/bitcoin-hash-functions-explained.

Frank Benham, CFA, CAIA, *Managing Principal/Director of Research, joined Meketa Investment Group in 1999. As Director of Research, Mr. Benham oversees all research projects, including white papers and the firm's annual asset study. Mr. Benham leads the design of the firm's portfolio construction initiatives and he is key in constructing customized investment programs. Mr. Benham is the chair of the firm's Investment Policy and Strategic Asset Allocation / Risk Management Committees and a member of the Executive and Private Markets Policy Committee.*

Alison Adams, PhD, *Senior Vice President/Research Consultant, joined Meketa Investment Group in 2021 and has been in the financial services industry for 17 years. Ms. Adams serves as a research consultant where her responsibilities include global macroeconomic research and writing thought leadership materials. She is also a member of the firm's Global Macroeconomic Investment, Asset-Liability Risk Management, and Strategic Asset Allocation/Risk Management Committees.*

LEGAL CONTINUED FROM PAGE 6

But U.S. District Judge Dale A. Kimball said the defendants – Utah-based Overstock, Byrne, the company's former CFO, and its current retail president – didn't violate federal securities laws because, among other reasons, plaintiffs had not shown that the market was "deceived" by the Digital Dividend because news reports had published details of the short squeeze after it started.

In their appeal to the United States Court of Appeals for the Tenth Circuit, shareholders make numerous arguments as to why the district court's decision should be reversed – among them Judge Kimball's finding that because lead plaintiff Mangrove Partners was a short seller, it was not entitled to benefit from the fraud-on-the-market presumption that underpins all securities fraud class actions.

That aspect of the *Overstock* decision prompted enough concern from NCPERS and several public employee retirement systems in the Tenth Circuit (which includes Utah, Colorado, Oklahoma, New Mexico, Kansas, and Wyoming) to sign a friend-of-the-court, or amicus, brief in support of the appellant shareholders.

Established in two Supreme Court decisions, *Affiliated Ute* (1972) and *Basic v. Levinson* (1988), the fraud-on-the-market presumption holds that because stock prices factor in all material public information, investors need not show individually that they relied on a particular fraudulent statement or omission when they bought or sold that stock. That reliance is presumed, unless rebutted by defendants. Without the *Basic* presumption, shareholders wouldn't be able to form a class to pool their claims, and all but the largest investors would have damages too small to merit litigating.

If the district court's standard prevails in the Tenth Circuit, the amicus brief argues, it would impact public pension funds' ability to serve as lead plaintiffs, or even participate as passive class members, in securities class actions where they had shorted defendant company stock. Such a holding flies in the face of both logic and longstanding precedent, the amicus brief maintains.

Other friend-of-the-court briefs were submitted by consumer advocates and law professors. ◆

REAL ESTATE CONTINUED FROM PAGE 7

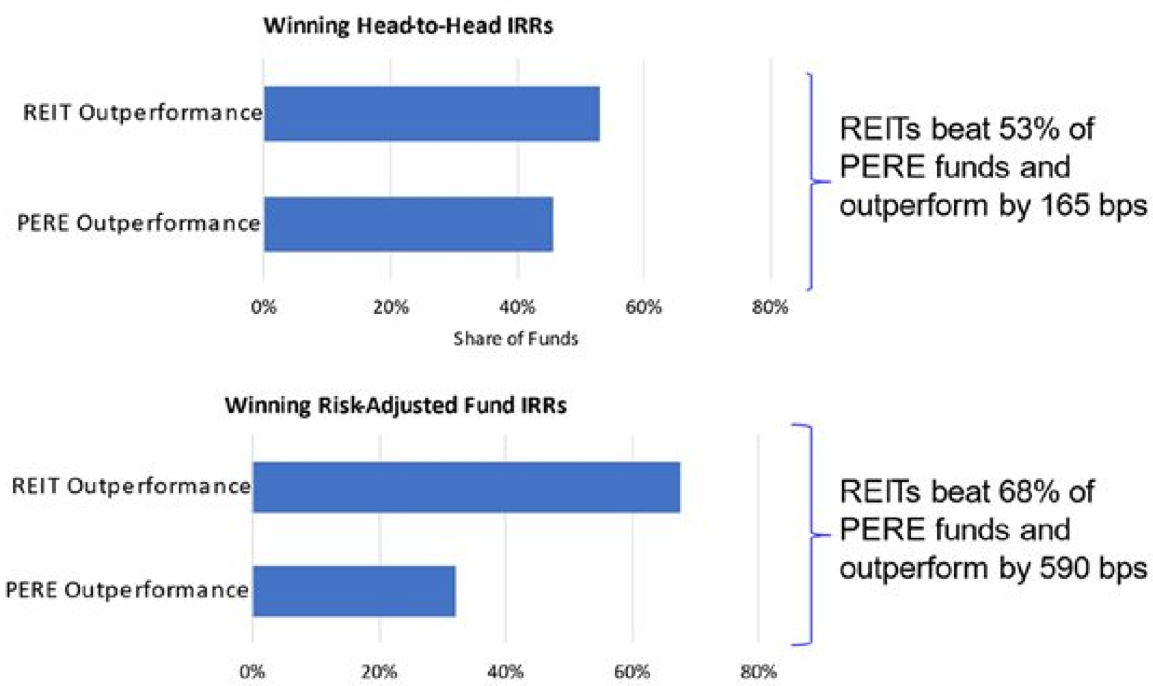
Our initial comparison showed that the REIT index outperformed 53% of the closed-end private equity real estate funds; the average IRR outperformance was 165 basis points. However, we believe this understates the extent to which the equity REIT index outperformed contemporaneous investments in closed-end funds. This is because private real estate funds (a) typically employ more leverage than equity REITs, (b) are less liquid than equity REITs, (c) are more likely to invest in in development projects or assets in need of renovation and re-tenanting, and (d) impose an additional opportunity cost on investors because the timing of capital calls is uncertain, requiring investors to maintain "dry powder."

The additional expected return required to compensate LP investors for the increased risk and illiquidity associated with closed-end fund investments varies over time and across investor class, even among similar types of investors. However, we incorporated what we believe to be a conservative incremental expected rate of return for leverage (100 basis points), illiquidity (200 basis points), and the opportunity cost of maintaining dry powder (125 basis points). With this 425-basis point IRR risk-adjustment, the REIT index outperformed the private equity real estate funds with which it was matched 68% of the time. The average REIT IRR outperformance was 590 basis points (165 basis points plus the 425 basis points for the additional risk premia).

We find similar results when comparing closed-end private equity real estate funds invested in non-U.S. properties to a global REIT index that excludes U.S. REITs.

These findings suggest that investors may benefit from reweighting their real estate allocations, using REITs to gain general market and sector specific exposures and private real estate funds more tactically to gain exposures not otherwise obtainable through public markets. ◆

REITs Win 53% to 68% of Head-to-Head Comparisons Depending on Assumed Risk Adjustments



Source: Thomas Arnold, David Ling, and Andy Naranjo, Private Equity Real Estate Fund Performance: A Comparison to Listed REIT and Open-end Core Funds, Journal of Portfolio Management, 2021.

Don't Miss NCPERS' Social Media

The Voice for Public Pensions

Calendar of Events 2022

May

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

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

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

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

June

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

August

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

October

NCPERS Accredited Fiduciary (NAF) Program
October 22 – 23
Nashville, TN

Public Safety Conference
October 25 – 28
Nashville, TN

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