AGENDA

Date: December 7, 2018

The regular meeting of the Dallas Police and Fire Pension System Board of Trustees will be held at **8:30 a.m. on Thursday, December 13, 2018, in the Second Floor Board Room at 4100 Harry Hines Boulevard, Dallas, Texas.** 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 November 8, 2018

2. Approval of Refunds of Contributions for the Month of November 2018

3. Approval of Survivor Benefits

4. Approval of Service Retirements

5. Approval of Alternate Payee Benefits

6. Spouse Wed After Retirement (SWAR)

7. Approval of Payment of Military Leave Contributions

C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. Emerging Markets Debt

a. Emerging Markets Debt Education Session
b. Emerging Markets Debt Funding

2. Passive Investment Grade Bond Recommendation

3. Investment Policy Statement

4. Third Quarter 2018 Investment Performance Analysis and Second Quarter 2018 Private Markets & Real Assets Review

5. **Portfolio Update**

6. **86th Legislative Session Preview**

7. **Monthly Contribution Report**

8. **Amendment to Deferred Retirement Option Plan (DROP) Policy**

   Portions of the discussion under this topic may be closed to the public under the terms of Section 551.071 of the Texas Government Code.

9. **2019 Budget**

10. **Trustee meeting with City**

11. **Professional Services Provider Report**

12. **Open Records Requests**

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

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

14. Investment Advisory Committee

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.

15. Lone Star Investment Advisors Update

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.071 of the Texas Government Code.

16. Hardship Request

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.078 of the Texas Government Code.

17. Consideration of Granting a Survivor Benefit under the Disabled Child Benefit Provisions

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.078 of the Texas Government Code.

18. 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.

19. Executive Director Compensation

D. BRIEFING ITEMS

1. Reports and concerns of active members and pensioners of the Dallas Police and Fire Pension System

2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (November 2018)
- NCPERS Monitor (December 2018)

b. City of Dallas Actuarial Audit (Government Code, Sec. 802.1012)

c. Employee Service Award

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

ITEM #A

MOMENT OF SILENCE

In memory of our Members and Pensioners who recently passed away

(October 31, 2018 – November 24, 2018)

NAME	ACTIVE/ RETIRED	DEPARTMENT	DATE OF DEATH
Johnny W. Corum	Retired	Police	Oct. 31, 2018
E. L. Swindle	Retired	Fire	Oct. 31, 2018
Dick B. Franklin	Retired	Fire	Nov. 4, 2018
Marvin L. Wise	Retired	Police	Nov. 4, 2018
W. O. Hare	Retired	Fire	Nov. 15, 2018
David W. Walters	Active	Fire	Nov. 23, 2018
J. L. Lybrand	Retired	Fire	Nov. 24, 2018

Regular Board Meeting – Thursday, December 13, 2018

Dallas Police and Fire Pension System
Thursday, November 8, 2018
8:30 a.m.
4100 Harry Hines Blvd., Suite 100
Second Floor Board Room
Dallas, TX

Regular meeting, William F. Quinn, Chairman, presiding:

ROLL CALL

Board Members

Present at 8:32 a.m.	William F. Quinn, Nicholas A. Merrick, Samuel L. Friar, Blaine Dickens (by telephone), Gilbert A. Garcia, Frederick E. Rowe, Tina Hernandez Patterson, Robert C. Walters, Joseph P. Schutz,
Present at 9:50 a.m.	Kneeland Youngblood (by telephone and in person at 10:20 a.m.)
Absent:	Ray Nixon
Staff	Kelly Gottschalk, Josh Mond, Kent Custer, Brenda Barnes, John Holt, Damion Hervey, Cynthia Thomas, Greg Irlbeck, Carol Huffman
Others	Leo Festino (by telephone), Janis Elliston, David Elliston, Kenneth Sprecher, Thomas Moorman, Tony Moore, Frank Ruspoli, Joel Lavender, Lingburge Williams, Bill Ingram, H. Holland, Zaman Hemani

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The meeting was called to order at 8:32 a.m.

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A. MOMENT OF SILENCE

The Board observed a moment of silence in memory of active police officer Eugene J. Fox, and retired police officers Raymond L. Ysasaga, Alexander P. Csaszar, and Jimmy R. Kincaid

No motion was made.

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Regular Board Meeting
Thursday, November 8, 2018

B. CONSENT AGENDA

1. **Approval of Minutes**

   Regular meeting of October 10, 2018

2. **Approval of Refunds of Contributions for the Month of October 2018**

3. **Approval of Activity in the Deferred Retirement Option Plan (DROP) for November 2018**

4. **Approval of Estate Settlements**

5. **Approval of Survivor Benefits**

6. **Approval of Service Retirements**

7. **Approval of Payment of Military Service Contributions**

After discussion, Mr. Garcia made a motion to approve the minutes of the meeting of October 10, 2018. Mr. Walters seconded the motion, which was unanimously approved by the Board. Mr. Youngblood was not present for the vote.

After discussion, Mr. Garcia made a motion to approve the remaining items on the Consent Agenda, subject to the final approval of the staff. Mr. Friar seconded the motion, which was unanimously approved by the Board. Mr. Youngblood was not present for the vote.

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C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. **Asset Allocation Implementation**

   Leandro Festino, Managing Principal of Meketa Investment Group (by telephone) and Kent Custer, DPFP Chief Investment Officer, discussed implementation of the long-term asset allocation that was approved at the October 10 meeting of the Board.

Regular Board Meeting
Thursday, November 8, 2018

1. Asset Allocation Implementation (continued)

After discussion, Mr. Merrick made a motion to approve the asset allocation implementation plan, subject to receiving more information concerning emerging markets debt and conducting a search for an active investment grade bond manager within 12 months. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board. Mr. Youngblood was not present for the vote.

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2. 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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3. Legislative Consultant Contract Renewal

DPFP's contract with its legislative consultant HillCo Partners expires November 30, 2018. Staff recommended to the Board that DPFP renew the contract on the same terms through November 30, 2020.

After discussion, Mr. Friar made a motion to authorize the Executive Director to renew DPFP's contract with HillCo Partners on its current terms for two years. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board. Mr. Youngblood was not present for the vote.

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4. Second reading and discussion of the 2019 Budget

The Chief Financial Officer briefed the Board on changes that were made to the proposed budget from the first reading.

After discussion, Mr. Garcia made a motion to approve the 2019 budget. Mr. Walters seconded the motion, which was unanimously approved by the Board. Mr. Youngblood was not present for the vote.

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Regular Board Meeting
Thursday, November 8, 2018

Mr. Youngblood called in at 9:51 a.m.

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5. Third Quarter 2018 Financial Statements

The Chief Financial Officer presented the third quarter 2018 financial statements.

No motion was made.

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6. Trustee Absences at October 10, 2018 Board Meeting

Because of the short notice in moving the October Board meeting from October 11 to October 10, the Chairman is recommending that the all Trustee absences at the October Board meeting be considered excused absences under the Board of Trustees Governance and Conduct Policy.

After discussion, Mr. Garcia made a motion that all Trustee absences at the October 10, 2018 Board meeting be deemed to be excused absences for all purposes. Mr. Friar seconded the motion, which was unanimously approved by the Board.

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7. 401(a) Money Purchase Plan and 457(b) Deferred Compensation Plan

DPFP maintains for employees of DPFP a mandatory 401(a) money purchase plan and 457(b) voluntary deferred compensation plan. Each plan is administered by the Executive Director. The Board is the ultimate fiduciary with respect to each plan.

After discussion, Ms. Hernandez Patterson made a motion to appoint a committee, chaired by the Executive Director and consisting of all DPFP executives, which is authorized to adopt rules with respect to each plan for meeting periodically to review the plans and their offerings and fees using the Government Finance Officer Association's relevant Best Practices documents for guidance and to report annually to the Board with respect to each plan. Mr. Walters seconded the motion, which was unanimously approved by the Board.

Regular Board Meeting
Thursday, November 8, 2018

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8. Required Training Manual Delivery

Section 3.013(c) of Article 6243a-1 requires the Executive Director to deliver a training manual covering certain subject areas set forth in Section 3.013(b).

The Executive Director provided an overview of the contents in the Trustee Training Manual and answered questions.

No motion was made.

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Mr. Youngblood was present at the meeting

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9. Internal Controls Review

The Chief Financial Officer presented a brief overview of internal controls in place at DPFP and her assessment of the appropriateness of the controls for DPFP.

No motion was made.

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10. Reconsideration of Board Motion regarding transmittal of CAFR to City of Dallas

The Board discussed its motion from the earlier month concerning the transmittal letter of the CAFR to the City of Dallas as well as other methods of communicating the intended concerns of the transmittal letter with the City.

After discussion, Mr. Merrick made a motion to rescind its previous motion concerning preparation of a letter to the City of Dallas, authorized the Chairman to appoint a subcommittee of two mayoral appointees and two member appointees to meet with DPFP and City staff regarding the Board's concern over future contribution levels and directed staff to begin reporting monthly to the Board the amount of contributions actually received as compared to contribution dollars used by DPFP's actuary in preparing DPFP's actuarial valuation and contributions based on the City Hiring Plan. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

Regular Board Meeting
Thursday, November 8, 2018

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11. Board approval of Trustee education and travel

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

No discussion was held, and no motion was made regarding Trustee education and travel.

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12. Board Members' reports on meetings, seminars and/or conferences attended

Mr. Dickens reported on the following seminar that he attended:

IFEBP New Trustee Training Level 1

No motion was made.

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13. Closed Session – Board serving as Medical Committee

Disability application

The Board went into closed executive session – medical at 10:52 a.m.

The meeting was reopened at 10:56 a.m.

Staff presented an application for On-Duty disability pension for consideration by the Board in accordance with Section 6.03(f) of the Plan.

After discussion, Mr. Youngblood made a motion to deny an application for On-Duty disability pension for Police Officer 2018-1 in accordance with Section 6.03(f) of the Plan. Mr. Garcia seconded the motion, which was unanimously approved by the Board.

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Regular Board Meeting
Thursday, November 8, 2018

14. 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, including Open Records litigation with the Texas Attorney General 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 a closed executive session – legal at 10:57 a.m.

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

After discussion, Mr. Youngblood made a motion to authorize the Executive Director and General Counsel to enter into a Settlement Agreement with the Texas Attorney General with respect to all active open records cases involving Public Information Act requests by the Dallas Morning News. Mr. Walters seconded the motion, which was unanimously approved by the Board.

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15. Performance Input to the Executive Director regarding the General Counsel

The Board went into a closed executive session – personnel at 11:13 a.m.

The meeting was reopened at 12:01 p.m.

No motion was made.

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16. Performance Review of Executive Director

The Board went into a closed executive session – personnel at 11:13 a.m.

The meeting was reopened at 12:01 p.m.

The Board reviewed the performance and provided recommendations concerning yearly objectives, goals, and performance of the Executive Director.

No motion was made.

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Regular Board Meeting
Thursday, November 8, 2018

D. BRIEFING ITEMS

1. Reports and concerns of active members and pensioners of the Dallas Police and Fire Pension System

No active member or pensioner requested to address the Board with concerns.

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2. Executive Director's report

Associations' newsletters
- NCPERS Monitor (October 2018)
- NCPERS PERSist (Fall 2018)

The Executive Director's report was presented.

No motion was made.

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Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Youngblood and a second by Mr. Garcia, the meeting was adjourned at 12:01 p.m.

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William F. Quinn
Chairman

ATTEST:

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Kelly Gottschalk
Secretary

DISCUSSION SHEET

ITEM #C1

Topic: **Emerging Markets Debt**

a. Emerging Markets Debt Education Session
b. Emerging Markets Debt Funding

Attendees: Leandro Festino, Managing Principal – Meketa Investment Group
Aaron Lally, Executive Vice President – Meketa Investment Group

Discussion: In November 2018, the Board approved the Asset Allocation Implementation Plan subject to receiving more information concerning emerging markets debt.

a. Meketa will provide education regarding the Emerging Markets Debt asset class and its role in the DPFP asset allocation.

b. Staff will discuss funding expectations for Emerging Markets Debt. Based on preliminary asset values as of 11/30/18 Staff anticipates an eventual contribution of $62 million to the Ashmore Emerging Markets Blended Debt Fund, to be sourced from future private market distributions in accordance with the Asset Allocation Implementation Plan.

Staff Recommendation: **Approve** funding the Emerging Markets Debt asset class in accordance with the Asset Allocation Implementation Plan.

Dallas Police and Fire Pension System

Why Invest in Emerging Markets Debt

MEKETA INVESTMENT GROUP
5796 ARMADA DRIVE SUITE 110 CARLSBAD CA 92008
760 795 3450 fax 760 795 3445 www.meketagroup.com

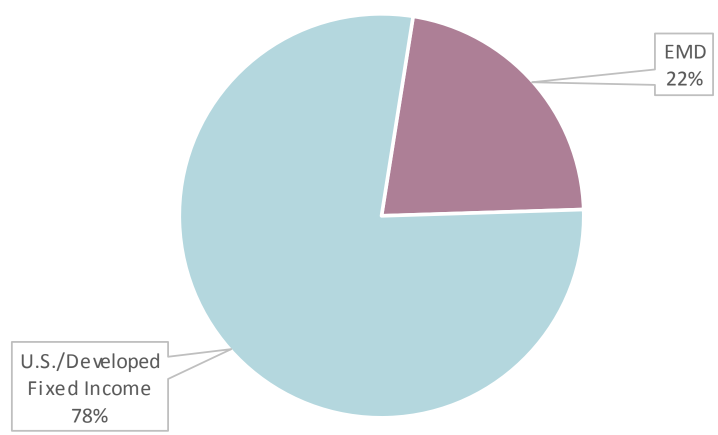
Overview

- Emerging Markets Debt ("EMD") is an asset class that has become common in most institutional investors' portfolios.
- The primary rationale for investing in EMD is to gain exposure to fast-growing, increasingly creditworthy emerging market countries and companies, providing an attractive return/risk opportunity.
- Over the following slides, we will discuss the reasons why we feel investors should have a strategic allocation to EMD.
- We will set the stage by providing information on the size of the EMD universe relative to the total fixed income market, detail the typical EMD exposure within public pension plans relative to DPFP's target weight, and will list some of the risks of the asset class toward the end of the presentation.

Size of Emerging Markets Debt Market

- Emerging market economies include much of Africa, Eastern Europe, Latin America, Russia, the Middle East, and Asia (excluding Japan).
- The asset class has continued to grow over the past decade as capital markets have developed, liquidity has increased, and credit quality has improved. The EMD market has grown more than 15x since 2000[1].
- According to Ashmore[1], the EMD universe is $24 trillion in assets out of total global bond market of $110 trillion.

Proportion of Global Bond Universe



[1] Ashmore, Bank of International Settlements, IMF data as of end of 2017.

Size of Most Pension Plans' EMD Allocation

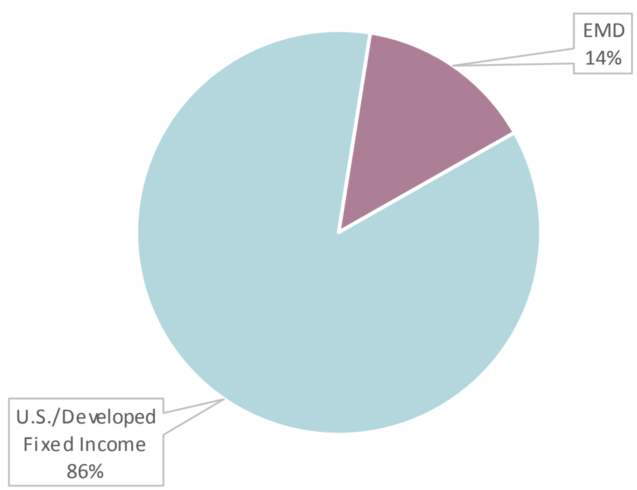
- Investors have increased their allocation to EMD as the market has grown but still maintain much lower exposure (on average) than EMD's proportion of the global universe.
- The average EMD exposure[1] for all public pension plans (as well as the sub-set of public pension plans over $1 billion) has ranged between 3% and 4% during the last couple of quarters.
- This allocation is in line with DPFP's target weight of 4%.

[1] Investor Force peer universe EMD allocations.

Size of DPFP's EMD Allocation within Total Fixed Income

- DPFP has a total fixed income target of 35%[1].
- DPFP has a 4% target to EMD but also has a 4% target to global bonds.
- If you assume a market weight portion of the global bond allocation is invested in EMD (i.e. 22% of the 4% global bond target) that adds roughly another 1% of total EMD exposure to DPFP.
- A 5% allocation to EMD within a total fixed income target of 35% implies roughly 14% of the total fixed income exposure will likely be invested in EMD (at target weight). Again, this is within range of the typical peer investor, which has centered around 11% of peer total fixed income exposure.
- As a proportion of the global bond universe, however, 14% in EMD still represents a below market exposure.

Estimated Allocation to EMD within DPFP's Total Fixed Income Target



[1] Inclusive of Safety Reserve.

Why Invest in Emerging Markets

- The three most common reasons pension plans have diversified into emerging markets debt include:

1. **Non – Correlated benefits**
   - Different regions perform better (or worse) at different times (i.e. non correlated). Combining them in a portfolio allows investors to benefit from the assets' different behaviors and reduce risk.
2. **Growth opportunities outside the United States**
   - Countries outside of the United States, specifically emerging market and frontier nations, have a lower starting point of economic activity and favorable demographics, on average. Younger and larger populations that can import technology (cheaply) from developed nations may result in large increases in GDP growth over the coming decades. In addition, many emerging market countries (on average) have less debt outstanding vs. their developed market counterparts.
3. **Yield advantage relative to U.S. bonds and other developed market bonds**
   - Both local currency EMD and hard currency EMD have historically (and currently) offered more than a 3% yield advantage relative to U.S. Barclays Aggregate. However this increased yield comes with added risks not found within the U.S. Barclays Aggregate (i.e. currency risk, sovereign risk, possibly lower credit quality).

1. Non- Correlated Benefits

- It is impossible to predict which region or asset class will perform the best in any given year.

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Emerging Equity 55.8%	Emerging Equity 25.6%	Emerging Equity 34.0%	Emerging Equity 32.2%	Emerging Equity 39.4%	Bonds 5.2%	Emerging Equity 78.5%	Emerging Equity 18.9%	Real Estate 14.3%	Emerging Equity 18.2%	US Equity 32.4%	Private Equity 16.1%	Real Estate 13.3%	High Yield 17.1%	Emerging Equity 37.3%
EAFE Equity 39.1%	Emerging Markets Debt 23.0%	Private Equity 30.4%	EAFE Equity 26.3%	Private Equity 26.6%	Cash 1.7%	High Yield 58.2%	Commodities 16.7%	TIPS 14.1%	EAFE Equity 17.3%	EAFE Equity 22.8%	US Equity 13.7%	Private Equity 11.6%	US Equity 12.0%	EAFE Equity 25.0%
High Yield 29.0%	EAFE Equity 20.6%	Commodities 21.4%	Private Equity 18.6%	Emerging Markets Debt 18.1%	TIPS -1.1%	EAFE Equity 31.8%	Private Equity 15.7%	Private Equity 12.0%	Emerging Markets Debt 16.8%	Private Equity 18.1%	Real Estate 11.8%	US Equity 1.4 %	Commodities 11.8%	US Equity 21.8%
US Equity 28.7%	Private Equity 15.9%	Real Estate 20.1%	Real Estate 16.6%	Commodities 16.2%	Emerging Markets Debt -5.2%	US Equity 26.5%	Emerging Markets Debt 15.7%	Bonds 7.8%	US Equity 16.0%	Real Estate 11.0%	Bonds 6.0%	Bonds 0.5%	Emerging Equity 11.2%	Emerging Markets Debt 9.5%
Commodities 24.0%	Real Estate 14.5%	EAFE Equity 13.5%	US Equity 15.8%	Real Estate 15.8%	Real Estate -6.5%	Emerging Markets Debt 22.0%	High Yield 15.1%	High Yield 5.0%	High Yield 15.8%	Hedge Funds 8.7%	TIPS 3.6%	Cash 0.0%	Emerging Markets Debt 10.2%	Private Equity 8.9%
Hedge Funds 19.5%	High Yield 11.1%	Hedge Funds 9.3%	Emerging Markets Debt 15.2%	TIPS 11.6%	Private Equity -7.1%	Hedge Funds 20.0%	US Equity 15.1%	US Equity 2.1%	Private Equity 14.5%	High Yield 7.4%	Hedge Funds 3.3%	Hedge Funds -0.3%	Real Estate 8.0%	High Yield 7.5%
Emerging Markets Debt 6.9%	US Equity 10.8%	Emerging Markets Debt 6.3%	Hedge Funds 12.9%	EAFE Equity 11.2%	Hedge Funds -19.0%	Commodities 18.9%	Real Estate 13.1%	Cash 0.1%	Real Estate 10.5%	Cash 0.0%	High Yield 2.5%	EAFE Equity -0.8%	TIPS 4.7%	Hedge Funds 6.9%
Real Estate 8.9%	Commodities 9.2%	US Equity 4.9%	High Yield 11.9%	Hedge Funds 10.0%	High Yield -26.2%	TIPS 10.0%	Hedge Funds 10.2%	Emerging Markets Debt -1.8%	TIPS 7.3%	Bonds -2.0%	Emerging Markets Debt 0.9%	TIPS -1.4%	Bonds 2.7%	Real Estate 5.1%
TIPS 8.3%	Hedge Funds 9.0%	Cash 3.0%	Cash 4.6%	Bonds 7.0%	Commodities -35.6%	Bonds 5.9%	EAFE Equity 7.8%	Hedge Funds -5.2%	Hedge Funds 6.4%	Emerging Equity -2.6%	Cash 0.0%	High Yield -4.5%	Private Equity 1.8%	Bonds 3.5%
Private Equity 7.3%	TIPS 8.5%	TIPS 2.8%	Bonds 4.3%	US Equity 5.5%	US Equity -37.0%	Cash 0.1%	Bonds 6.5%	EAFE Equity -12.1%	Bonds 4.2%	Emerging Markets Debt -9.0%	Emerging Equity -2.2%	Emerging Markets Debt -6.3%	EAFE Equity 1.0%	TIPS 3.0%
Bonds 4.1%	Bonds 4.3%	High Yield 2.7%	Commodities 2.1%	Cash 4.7%	EAFE Equity -43.4%	Private Equity -6.6%	TIPS 6.3%	Commodities -13.4%	Cash 0.1%	TIPS -9.4%	EAFE Equity -4.9%	Emerging Equity -14.9%	Hedge Funds 0.7%	Commodities 1.7%
Cash 1.0%	Cash 1.2%	Bonds 2.4%	TIPS 0.5%	High Yield 1.9%	Emerging Equity -53.3%	Real Estate -16.9%	Cash 0.1%	Emerging Equity -18.4%	Commodities -1.1%	Commodities -9.5%	Commodities -17.0%	Commodities -24.7%	Cash 0.2%	Cash 0.8%

Non-Correlated Benefits (continued)

- Emerging markets debt offers diversification benefits relative to other global assets[1].
- By owning different investments around the world, investors can smooth out their return stream.

15 Year Correlation Matrix

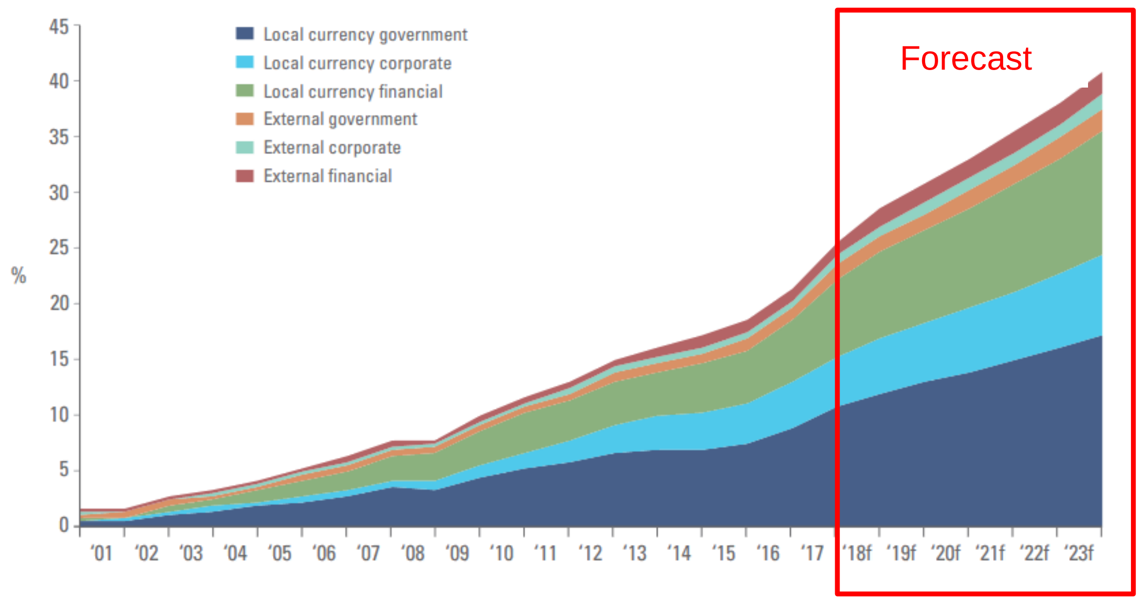
	U.S. High Yield	Barclays Agg	S&P 500
EM Sov Debt (USD)	0.79	0.32	0.53
EM Sov Debt (Local FX)	0.55	0.14	0.58
EM Corp Debt (USD)	0.79	0.24	0.55

1 Correlation of monthly returns: covers Jan 2003 through Aug 2018 for each index.

2. Growth Outside the U.S.

- The size and liquidity of the non-U.S. investable marketplace are both expected to continue to increase.
- Emerging markets comprise roughly 80% of the world's population and approximately 40% of global economic output[1].
- The size of the EMD universe is expected to grow from $24 trillion to nearly $40 trillion over the next five years[2].

EMD Market as Percentage of Total Fixed Income Universe

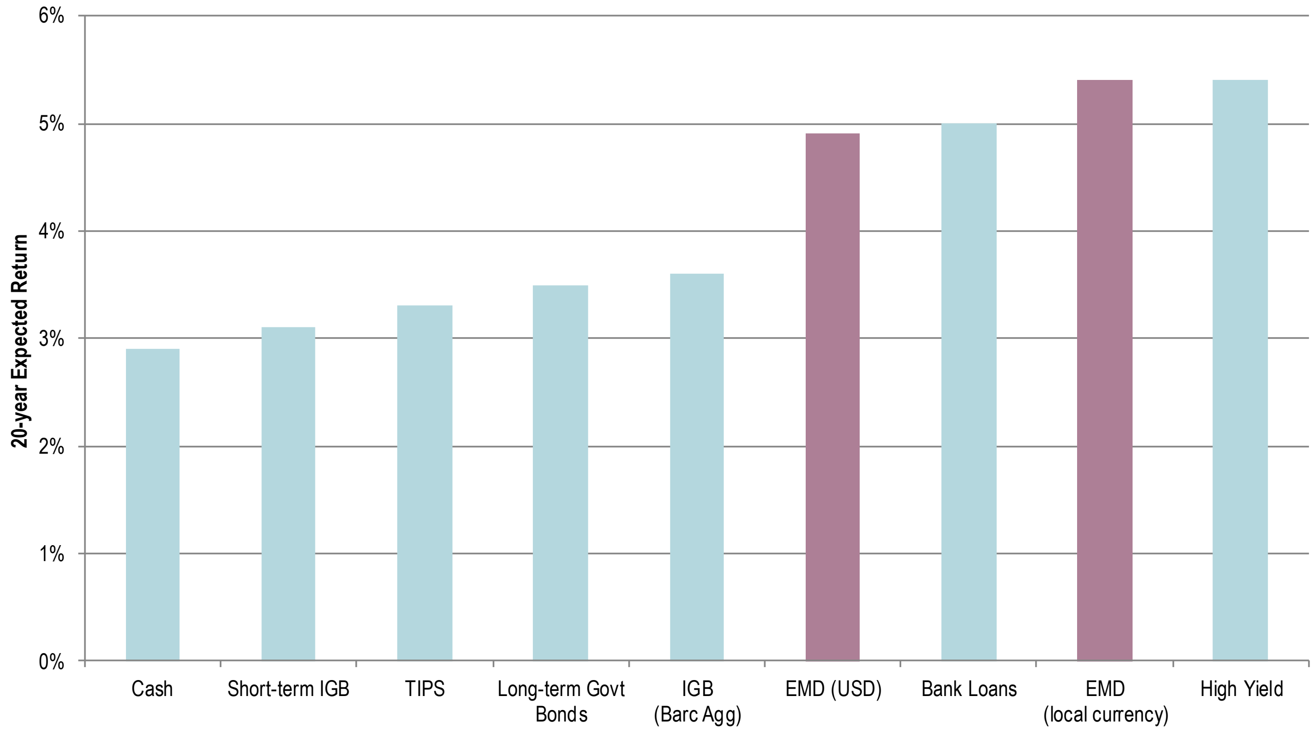


[1] Source: IMF, World Bank.
[2] Source: Ashmore, Bank of International Settlements, IMF data as of end of 2017, forecasts ("f") are Ashmore's projections.

2. Growth outside the U.S.

- Within fixed income, emerging market debt has one of the highest long-term return expectation in Meketa Investment Group's asset study.

Meketa Investment Group Long Term Return Projections[1]



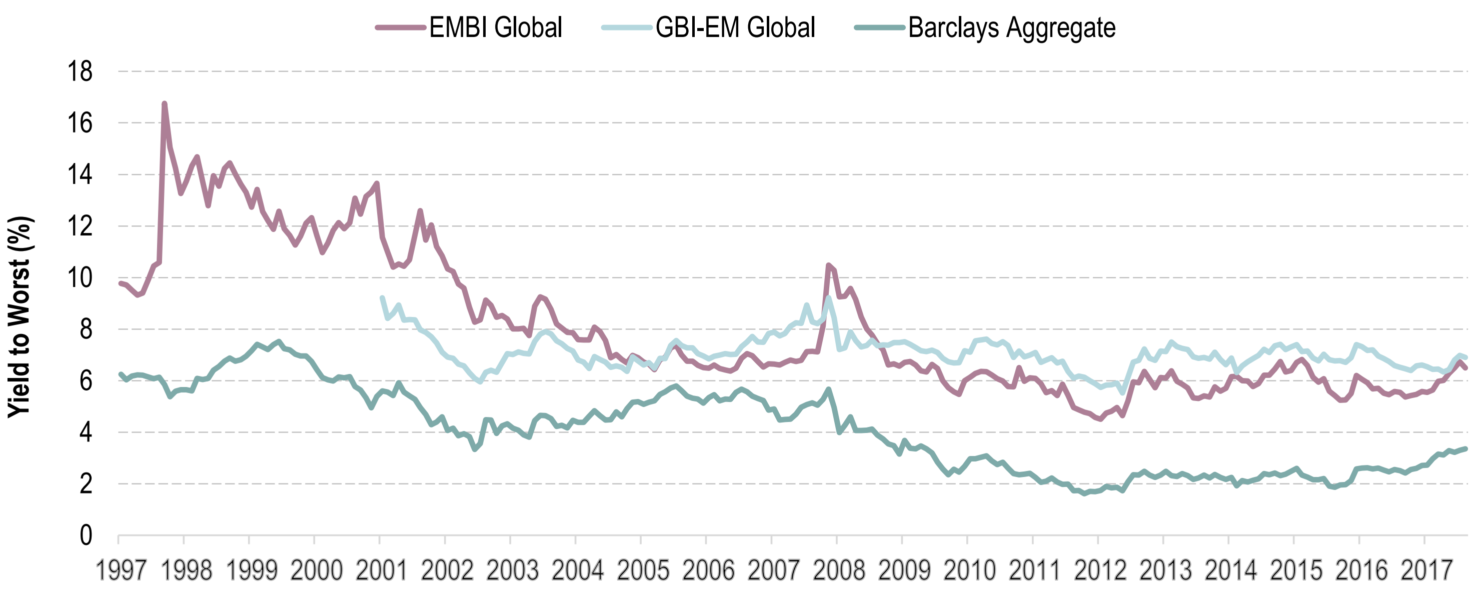
[1] Twenty-year expected returns based upon Meketa Investment Group's 2018 Annual Asset Study.

3. The Emerging Markets Debt Yield Advantage

- Both the local and external currency emerging markets debt indices offer a significant yield advantage over the Barclays Aggregate index
- The yield advantages for the J.P. Morgan EMBI Global and the GBI-EM Global indices have trended between 3.0% and 3.5% over the recent history, and been much higher historically.

Emerging Markets Debt vs. U.S. Core Bonds Yields[1]

December 1997 – July 2018



[1] The J.P. Morgan EMBI Global represents external currency EMD (denominated in USD) and the J.P. Morgan GBI-EM Global represents local currency EMD.

Risks and Considerations

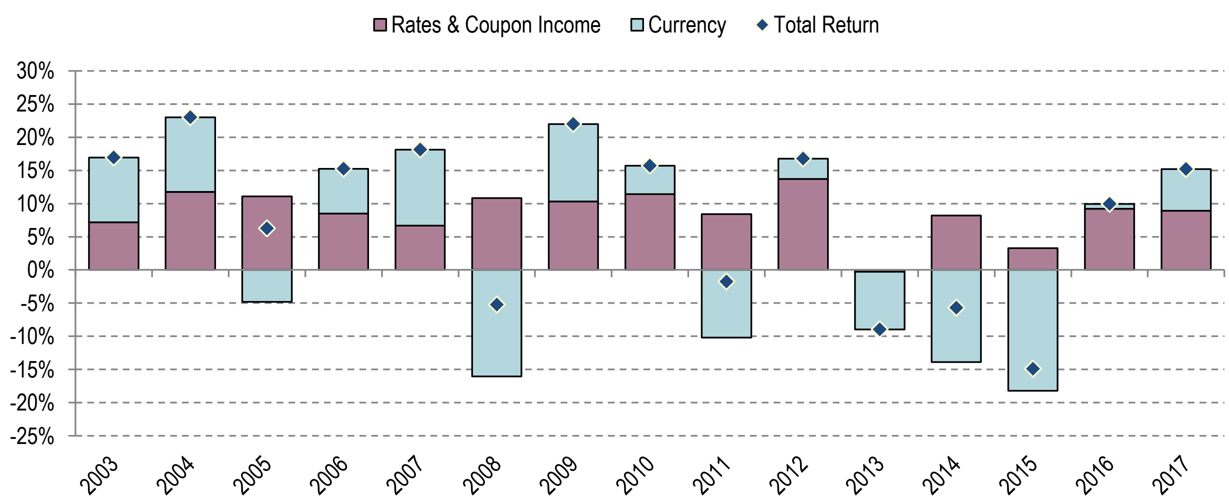
- Investing in emerging market bonds can entail higher risks than investing in developed market bonds.
- **Political and country risks** are greater in emerging markets, as government policies, court systems, and laws may be less likely to protect foreign investors.
- **Returns can be volatile** and can be significantly negative in the event of market crises, much like the return patterns of high yield bonds.
- **Transaction costs are generally higher** in emerging markets. As a result, it is more difficult for managers to closely track or to outperform an index, which does not reflect transaction costs.
- **Currency volatility can be meaningful**, as a strengthening U.S. dollar can weigh heavily on emerging markets bonds issued in local currencies
- Despite these risks, we still believe an appropriately sized emerging market bond portfolio is an important part of a well-diversified institutional portfolio for the reasons previously mentioned.

Currency Risk

- The effect of currency performance should be minimal over longer trailing periods, but it can exacerbate short term volatility. In 2015, for example, currency performance contributed -18.2% to the J.P. Morgan GBI-EM Global Diversified Index's total return of -14.9%. The table below shows the impact of currency on annual EMD total returns between 2003 and 2017.
- DPFP uses a "blended" currency strategy to access emerging market debt where the manager is afforded the discretion to invest across local currency and hard currency bonds.
- We agree with this approach and have recommended similar strategies to our clients historically.

Components of Total Return for Local Currency Emerging Markets Debt

J.P. Morgan GBI-EM Global Diversified Performance Decomposition



Summary

- DPFP's allocation (likely between 4 - 5% at full target weight) is in line with peers and reasonable going forward.
- Despite the recent macro headwinds, emerging markets debt is still an attractive asset class for long-term strategic investors.
- EMD yields still look relatively attractive in an otherwise low-yielding world.
- Emerging markets debt will continue to be a volatile asset class, especially in non-USD denominated bonds.
- We agree with the decision to use a blended currency EMD strategy.
- Given the long-term return expectations for the asset class, current yields, and the diversification benefits, we continue to have conviction in emerging markets debt as a strategic part of the portfolio.

Appendix A: Types of Emerging Market Debt

- EMD is issued in either external currencies (e.g., dollars or euros) or local currencies.
- The debt is issued by either governments or corporations.
  - Investors have traditionally focused on government debt, but the corporate bond markets are expanding and typically offer higher yields.
  - Corporate debt purchased by emerging markets debt managers is typically denominated in U.S. Dollars.
- Overall, there are five primary types of emerging markets debt. These are:
  - Hard currency, sovereign debt issued by the government of the emerging market country
  - Local currency, sovereign debt issued by the government of the emerging market country
  - Hard currency corporate debt
  - Local currency corporate debt
  - Hard currency quasi-sovereign debt issued by state-owned enterprises

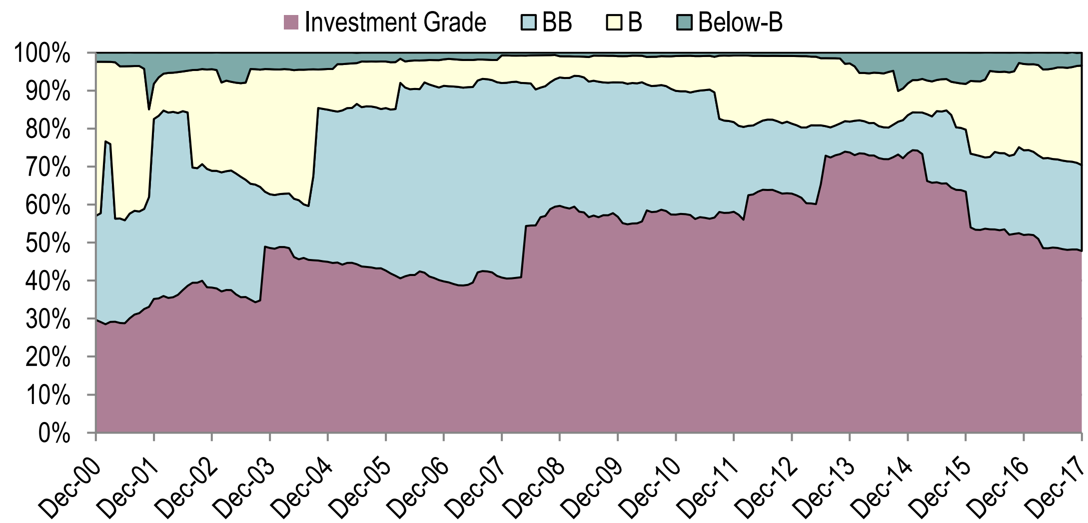
Appendix B: Emerging Markets Debt Index Comparison[1]

	J.P. Morgan Emerging Markets Bond Index Global Diversified (hard currency)	J.P. Morgan Global Bond Index Emerging Markets Global Diversified (local currency)	J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified (corporate, hard currency)
Inception Date	January 1994	January 2003	December 2001
Index Composition	U.S. Dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities.	Local currency-denominated debt instruments issued by emerging market sovereign entities.	U.S. Dollar-denominated debt instruments issued by emerging market companies.
Market Cap ($ billions)	$913	$1,203	$969
Number of Countries	67	18	52
Number of Issues	643	214	1,331
Country Scope	Emerging market countries that issue Dollar-denominated debt or Eurobonds.	Emerging market countries that issue local-currency denominated debt	Qualified Dollar-denominated corporate issuers in emerging markets

- The three most widely used benchmarks are:
  - U.S. dollar denominated debt (also known as Hard or External Currency): J.P. Morgan Emerging Markets Bond Index Global Diversified (J.P. Morgan EMBI Global Diversified).
  - Local currency denominated debt: J.P. Morgan Global Bond Index - Emerging Markets Global Diversified (J.P. Morgan GBI-EM Global Diversified).
  - U.S. dollar denominated corporate debt: J.P. Morgan Corporate Emerging Markets Bond Index Broad (J.P. Morgan CEMBI Broad).

[1] Source: J.P. Morgan as of December 31, 2017.

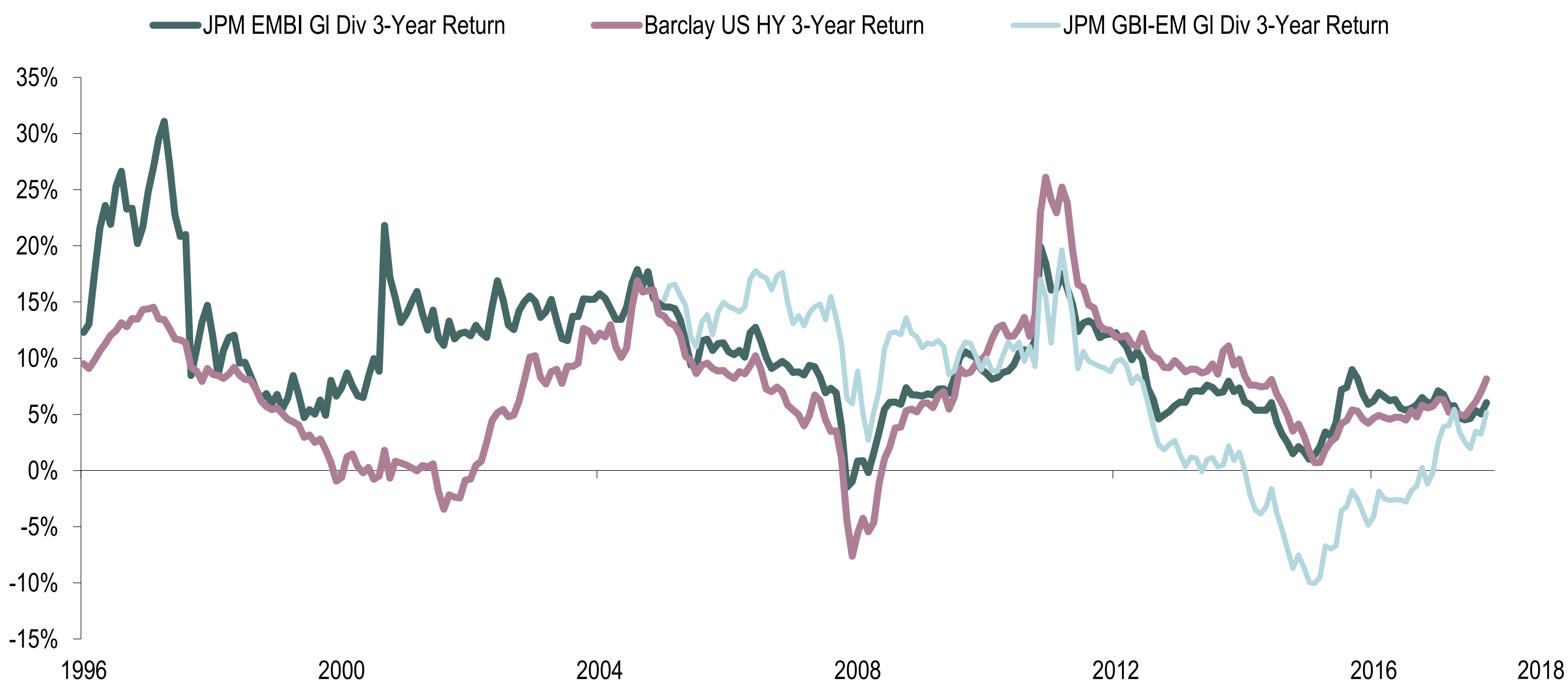
Appendix C: Emerging Market Debt Credit Quality[1]



- Credit quality has generally improved over the past 15+ years.

1 As of December 31, 2017, the breakdown is: 48% 'Investment Grade', 23% 'BB' Rated, 26% 'B' Rated, and 3% 'CCC & Below'. Source: J.P. Morgan EMBI Global Diversified Index.

Appendix D: Rolling Three-Year Return Comparison[1]



[1] Source: InvestorForce.

Appendix E: Historical Risk and Returns

- Over the long term, hard currency emerging markets debt has been a top performing asset class, especially when adjusted for volatility.[1]

15 Year Risk and Returns

	EM Sov Debt (USD)	EM Sov Debt (Local FX)	EM Corp Debt (USD)	U.S. High Yield	Barclays Agg	S&P 500
Annualized Return	8.1%	6.4%	6.7%	8.5%	3.9%	10.1%
Annualized Volatility	8.0%	11.8%	7.4%	8.8%	3.3%	13.2%
Sharpe Ratio	1.01	0.54	0.91	0.96	1.20	0.77

[1] Return and volatility covers Jan 2003 through Aug 2018 for each index.

Asset Allocation Implementation Position

DPFP Asset Allocation Implementation Plan

Asset Class Funding Priority		11/30/18	Target	Variance	11/30/18 ($ millions)	Target ($ millions)	Variance ($ millions)
1	Safety Reserve - Cash	2.0%	3.0%	-1.0%	41	60	-20
2	Safety Reserve - ST IG Bonds	12.4%	12.0%	0.4%	251	242	9
3	Minimum Global Equity	21.5%	22.0%	-0.5%	433	443	-10
4	Minimum Emerging Mkt Equity	2.2%	2.5%	-0.3%	44	50	-7
5	Investment Grade Bonds (to be established)	0.0%	4.0%	-4.0%	0	81	-81
6	Global Bonds	3.1%	4.0%	-0.9%	62	81	-18
7	High Yield Bonds	4.1%	4.0%	0.1%	82	81	1
8	Bank Loans	5.7%	4.0%	1.7%	114	81	34
9	Emerging Mkt Debt	0.9%	4.0%	-3.1%	19	81	-62
10	New Global Equity	0.0%	18.0%	-18.0%	0	362	-362
11	New Emerging Mkt Equity	0.0%	7.5%	-7.5%	0	151	-151
12	Real Estate	23.4%	5.0%	18.4%	471	101	370
13	Private Equity	12.5%	5.0%	7.5%	252	101	152
14	Natural Resources	8.7%	5.0%	3.7%	176	101	75
15	Infrastructure	2.9%	0.0%	2.9%	59	0	59
16	Private Debt	0.5%	0.0%	0.5%	10	0	10
	Total	100.0%	100.0%	0.0%	2,013	2,013	0

Source: JP Morgan Custodial Data, Staff Calculations

Ashmore




Ashmore Emerging Markets Blended Debt

Dallas Police & Fire Pension System

October 2018

www.ashmoregroup.com

Contents

Group overview

Section 1

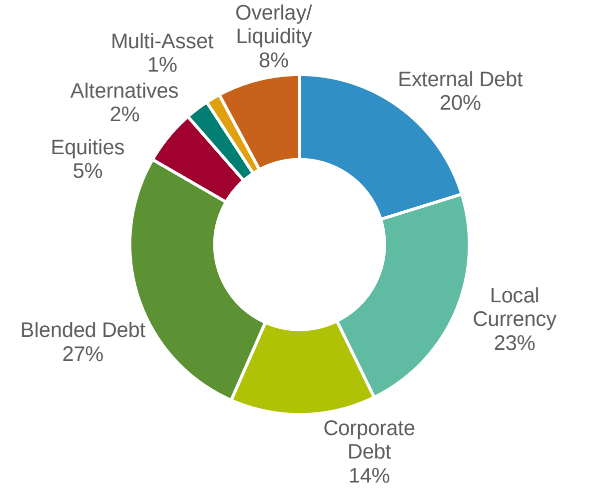
Ashmore: A leading Emerging Markets asset manager

Ashmore

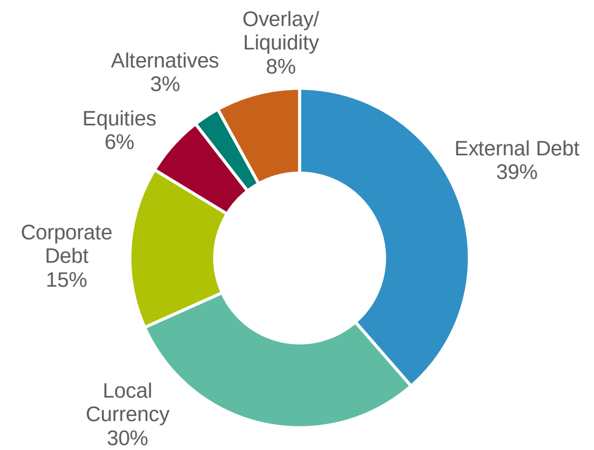
Emerging Markets specialist with long-term experience and a proven track record

- Ashmore's roots can be traced back to 1980s with a team of professionals working in Emerging Markets.
- In 1992 Ashmore was originally a division of the Australia and New Zealand Banking Group ("ANZ").
  - Management buyout in 1999
  - Ashmore Group listed on the London Stock Exchange in October 2006
  - FTSE-250 company
  - Strong employee equity ownership culture
- Headquartered in London with 299 employees globally
  - 92 investment professionals
  - Presence in China, Colombia, India, Indonesia, Japan, Peru, Saudi Arabia, Singapore, UAE, UK and USA
- AuM of USD 76.4bn[1] across eight investment themes

AuM theme split – by primary theme



AuM by theme as invested[2]



Source: Ashmore.
(1) Data as at 30-Sep-18.
(2) Some funds are permitted to invest into other themes and AuM shown is as invested (aggregate of investments made across all funds).

Investment themes & funds

Ashmore manages capital across eight different investment themes with dedicated strategies under each theme providing either global Emerging Markets exposure or specific regional or country exposure.

	External Debt (USD 29.5bn)	Local Currency (USD 22.7bn)	Corporate Debt (USD 11.8bn)	Equities (USD 4.5bn)	Alternatives (USD 1.9bn)	Overlay/ Liquidity (USD 6.0bn)
Global Emerging Markets Sub-themes	• Broad • Sovereign • Sovereign, investment grade • Short duration	• Bonds • Bonds (Broad) • FX+ • Investment grade	• Broad • High yield • Investment grade • Local currency • Private Debt • Short duration	• Global EM Equity • Active Equity • Global Small Cap • Global Frontier	• Private Equity • *Healthcare* • Infrastructure • Special Situations • Distressed Debt • Real Estate	• Overlay • Hedging • Cash Management
	Blended Debt (USD 20.4bn) • Blended • Investment grade • Absolute return					
Regional / Country focused Sub-themes	• Indonesia	• Indonesia	• Latin America • Asia	• Africa • Colombia • Latin America • Middle East • India • Indonesia • Saudi Arabia	• Andean • Middle East (GCC)	

Multi-Asset (USD 1.0bn)

• Global

NB. All data as at 30-Sep-18.

Some funds are permitted to invest into other themes and AuM shown is as invested (aggregate of investments made across all funds). Blended Debt and Multi-Asset AuM figures are therefore also included within the respective individual themes within which they invest. Double count is removed for purposes of Group reporting.

The Ashmore Advantage

Ashmore

Dedicated to EM	• Longstanding presence and dedication to Emerging Markets since 1980's across investment themes • Founder & co-Chair of Emerging Markets Trade Association (EMTA) • Ashmore Foundation[1] contributes sustainably to disadvantaged communities in EM
Extensive EM relationships	• Investees: a partner for policy makers, countries, companies and entrepreneurs through economic and business life cycles • Investors: institutional and intermediary clients diversified across regions including EM • Contacts: policy makers, financial institutions, international counterparties and corporates • Education: investor events for exchange of ideas and to enhance understanding of EM investing
Global resources & local expertise	• 92 investment professionals with offices in 11 countries worldwide, 8 of which are EM. • Experienced EM professionals with wide coverage and contact networks in more than 60 EM countries • Global operating model for compliance, legal, operations and risk
Time-tested philosophy & process	• Active portfolio management based on macro top down and bottom up research • Specialist teams, with a proven track record[2] of outperformance • ESG risk assessment addressed through research process and mandate-specific requirements • A focus on market participants' behaviour, liquidity conditions and local insight

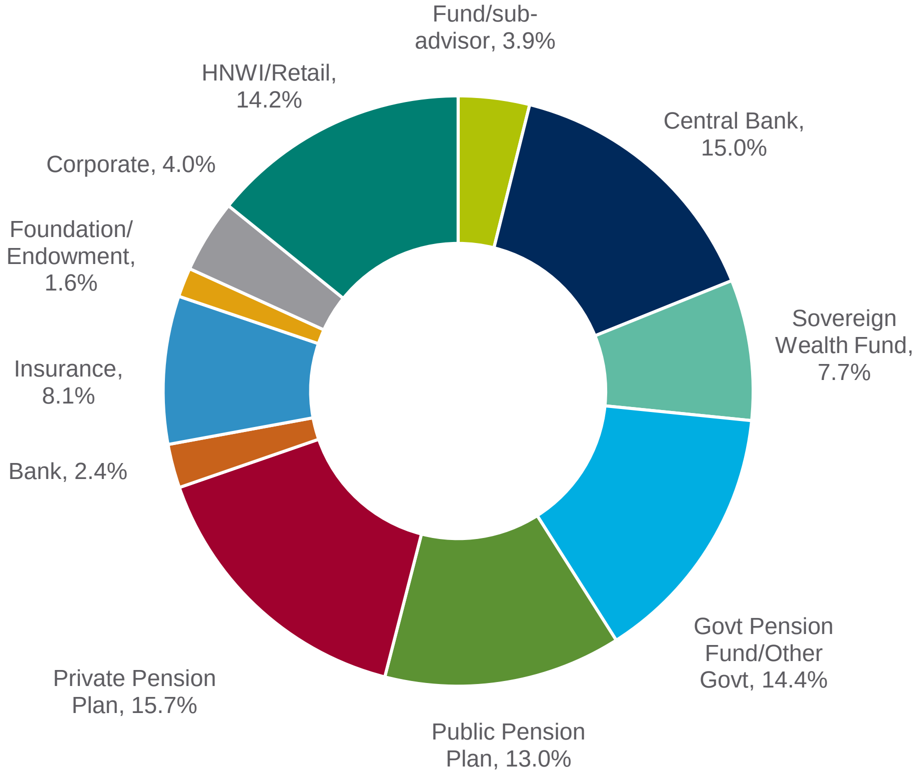
Source: Ashmore. Data as at 30-Sep-18.
1) The Ashmore Foundation is a company limited by guarantee, registered in England (6444943) and is a registered charity in England and Wales (1122351). The Ashmore Foundation is a separate and distinct legal entity from Ashmore Group. 2) Since the launch of our first EMD fund in 1992 and EM Equity fund in 1988, Ashmore (including subsidiary businesses) has established a track record (as a division of ANZ Banking Group prior to 1999 and Ashmore thereafter) of performance across themes and cycles.

Diversified investor base

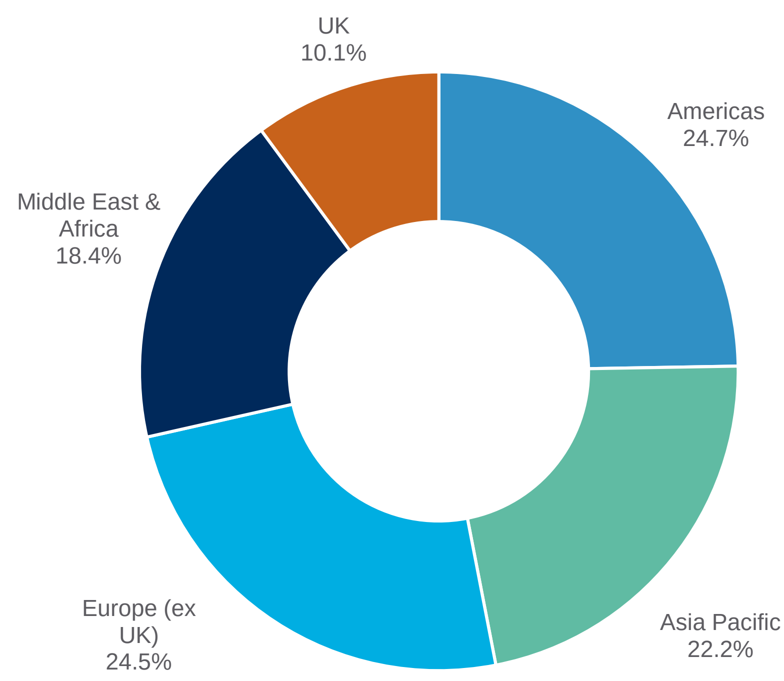
Ashmore

Institutional asset base represents 86% of AuM and is diversified across investor types and geographies

AuM breakdown by investor type



AuM breakdown by investor geographies



Source: Ashmore. Data as at 30-Sep-18. Estimates only; unaudited figures. The above may not sum to 100% due to rounding.

Local market presence

Ashmore

Ashmore has a global footprint, with local presence in some of the largest Emerging Markets

- Local knowledge in a global firm brings a competitive advantage as the value added is critical to understanding local markets
- Local offices benefit from the support and resources of a global firm
- Integration of local offices through Ashmore's global infrastructure facilitates efficient communication and dissemination of information throughout the firm

Source: Ashmore. As at 30-Sep-18.

Ashmore

The opportunity in Emerging Markets 'Blended' Fixed Income portfolios

Section 2

Emerging Markets Blended Debt: Key asset class characteristics

Ashmore

Size, growth & inflows	• Historically superior risk-adjusted returns to individual EM debt sub-asset classes • Largest opportunity set within EM debt at roughly USD 24.3 trillion[1] • Ashmore's blended debt AuM was USD 20.4 billion as at 30-Sep-18
Liquidity	• Liquidity is important even in this large market; Ashmore has particular focus and expertise in managing liquidity • Asymmetric market – pure quant or passive approaches that do not consider market liquidity are riskier
Structural change	• Change in investor base in Emerging Markets debt is structural (high local savings increasingly invested locally) • Structurally lower developed world growth accelerates trend of diversification away from developed world
Political and economic development	• Similar to the developed world, EM Central banks are largely independent and well managed • Macro policy improvements in Emerging Markets over the last decade have led to lower inflation, more stability and better creditworthiness • Deficits turn to surpluses through prudent policy mix
Spreads/returns	• Returns from asset allocation across sub-asset classes and alpha generated by yields, FX and credit • Superior growth rates compared to developed markets; carry and liquidity support higher prices • JPM EMBI GD index spreads are attractive (currently c.335bps[2]) compared to other credit products • US policy/base rates are likely to stay lower for longer
Risk	• Strong Emerging Markets economic fundamentals underpinning robust corporate earnings and cash flows • Expectations of greater alignment of risk premiums • In periods of global equity and expected USD weakness, investors benefit from reduced exposure to G7 currencies, in favour of appreciating Emerging Market currencies, i.e. a portfolio hedge • Risk of UST widening to more 'normal' levels, which could impact EM external debt prices in the short term
Diversification	• Emerging Markets debt provides strong diversification away from traditional asset classes • Returns are a function of multiple factors including top-down (primary), tactical and bottom-up • Broad exposure across different instruments and asset types in addition to allocations to more than 60 countries • Specialist themes include EM FX, hard currency bonds, local currency bonds, corporate credit, all in long or short duration and investment grade or high yield or a combination

(1) Source: Ashmore, BIS, data as at end-2017 (2) As of 30-Sep-18.

Ashmore's Blended Debt capabilities

Ashmore

Emerging Markets specialist	• First dedicated fund launched in 2003 • Invests across US dollar and local currency denominated debt instruments • Instruments used are primarily sovereign bonds, corporates and foreign exchange • Derivatives exposure can be used to gain access to local Emerging Markets
Key facts	• As at 30-Sep-18, Ashmore managed USD 20.4bn in dedicated blended debt products • 40 vehicles[1], including pooled funds and segregated accounts • A variety of blended indices utilised
Performance of composite: Blended Debt Total Return as at 30-Sep-18	• Annualised gross return of 9.15% since inception (Jun-03) • Sharpe ratio of 0.82 since inception (Jun-03) • 3 year return of 8.84% annualised

Source: Ashmore. See appendices for composite tables and "gross of fee" disclosure. (1) Including portfolios not part of composites overleaf (due to client restrictions).

Ashmore's EM Blended Debt sub-themes

Ashmore

Ashmore manages Blended Debt portfolios under two dedicated sub-themes for a total of USD 20.4bn

	Blended Debt Total Return	Blended Debt Investment Grade
Investment strategy	To achieve total return through a combination of income and capital appreciation by investing in a portfolio of external debt, local currency and rates, and corporate debt	To achieve total return through a combination of income and capital appreciation by investing in an investment grade portfolio of external debt, local currency and rates, and corporate debt
Composite benchmark	50% EMBI GD, 25% GBI-EM, 25% ELMI+	50% EMBI GD, 25% GBI-EM, 25% ELMI+ (IG)
Composite AuM (USD) bn[1]	10.2	1.0
# of portfolios in composite[1]	15	4
Launch of composite	Jun-03	Jul-12
Composite annualised gross performance since inception[2]	9.15%	2.06%
Composite benchmark annualised gross performance since inception[2]	6.24%	1.01%

Note: Composite figures may not add up to total AUM as some funds/accounts are excluded from composites due to different investment restrictions.
(1) AUM and performance data as at 30-Sep-18. Total NAV of all portfolios in composite, including pooled and segregated accounts. (2) Inception date is as at 'launch of composite'.

Tactical asset allocation

Returns per calendar year

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	YTD 2018
22.2%	23.0%	10.2%	15.2%	18.1%	-3.8%	34.9%	15.7%	7.4%	17.4%	-0.6%	7.4%	1.3%	10.2%	15.2%	-1.6%
16.9%	14.8%	6.3%	12.3%	16.0%	-5.2%	29.8%	13.1%	2.3%	16.8%	-2.%	5.0%	1.2%	9.9%	11.5%	-3.0%
16.2%	11.6%	6.1%	9.9%	6.2%	-12.0%	22.0%	12.2%	-1.8%	15.0%	-5.3%	-5.7%	-7.6%	9.7%	10.3%	-4.5%
15.8%	10.3%	3.2%	6.5%	3.9%	-15.9%	11.7%	5.7%	-5.2%	7.5%	-9.0%	-7.0%	-14.9%	3.5%	8.0%	-8.2%

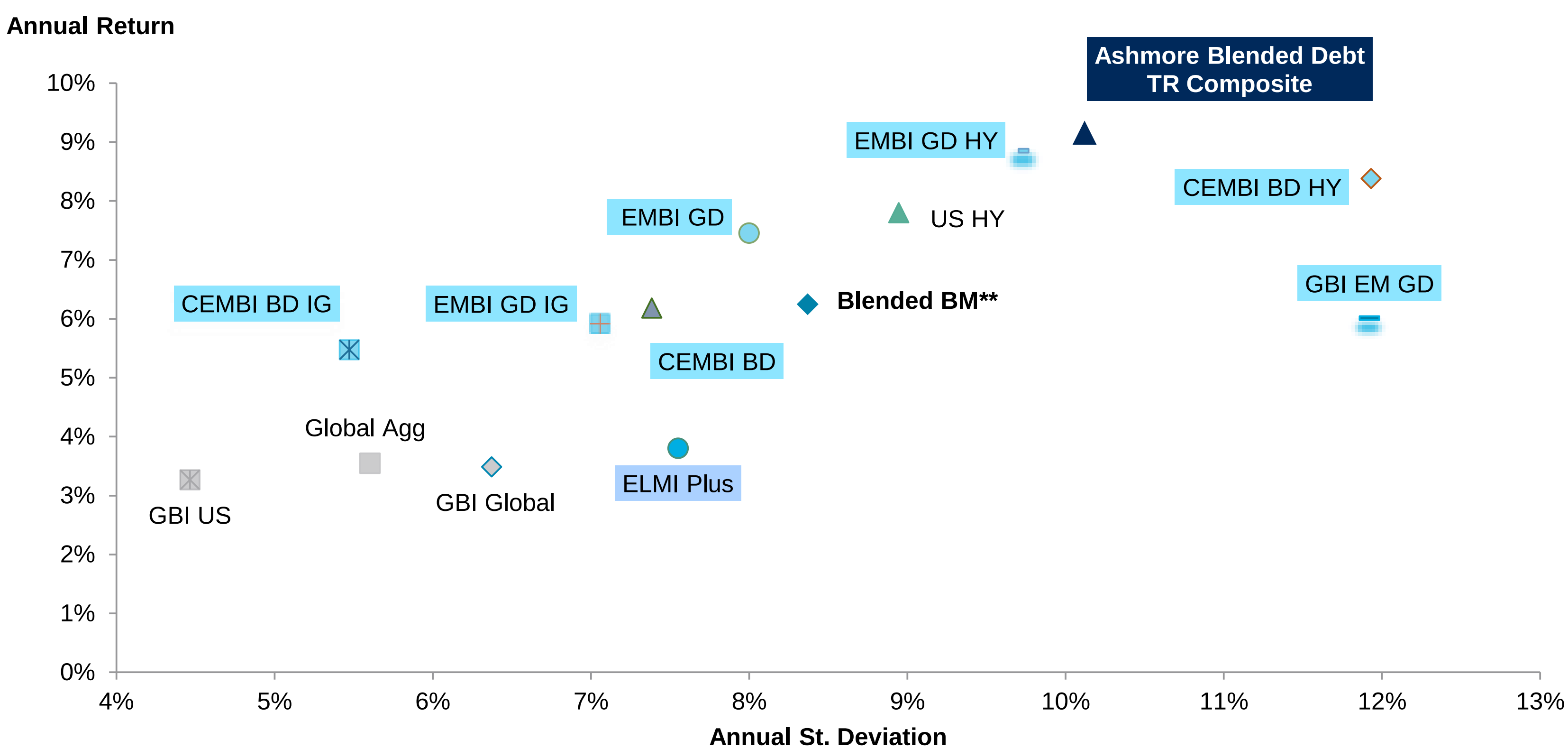
Key:

External Debt JPM EMBI GD	Local Currency Bonds JPM GBI-EM GD	EM Corporate Debt JPM CEMBI BD	FX JPM ELMI+

Source: JP Morgan. Data as at 30-Sep-18.

Ashmore's Blended Debt Total Return strategy has superior risk-adjusted returns relative to global and EM bond indices

Risk Adjusted Return (Jun 2003* – Sep 2018)



*Since composite inception (30-Jun-03).
**50% JPM EMBI GD; 25% JPM GBI-EM GD; 25% JPM ELMI+.
Source: JP Morgan, Bloomberg. Data estimated as at 30-Sep-18.

Ashmore

Ashmore's approach to managing 'Blended' Fixed Income funds

Section 3

Investment Philosophy:
Specialist, value-driven, macro top-down active manager

Ashmore

Macro top down

- Forward looking analysis of global and local macro-economics, politics, interest rate and currency dynamics
- Analysis of the drivers of market prices
- Scenario planning

Credit focus

- Analysis of credit risk of the assets:
  - Ability to pay - financial analysis and policy analysis
  - Willingness to pay - local politics
- ESG integration: use of Country ESG Performance scores
- Scenario planning: weighing political and policy outcomes

Value driven

- Look for divergence between market prices and credit risk
- Tolerance for mark-to-market volatility
- In-house research, integrated in portfolio management team

Active management

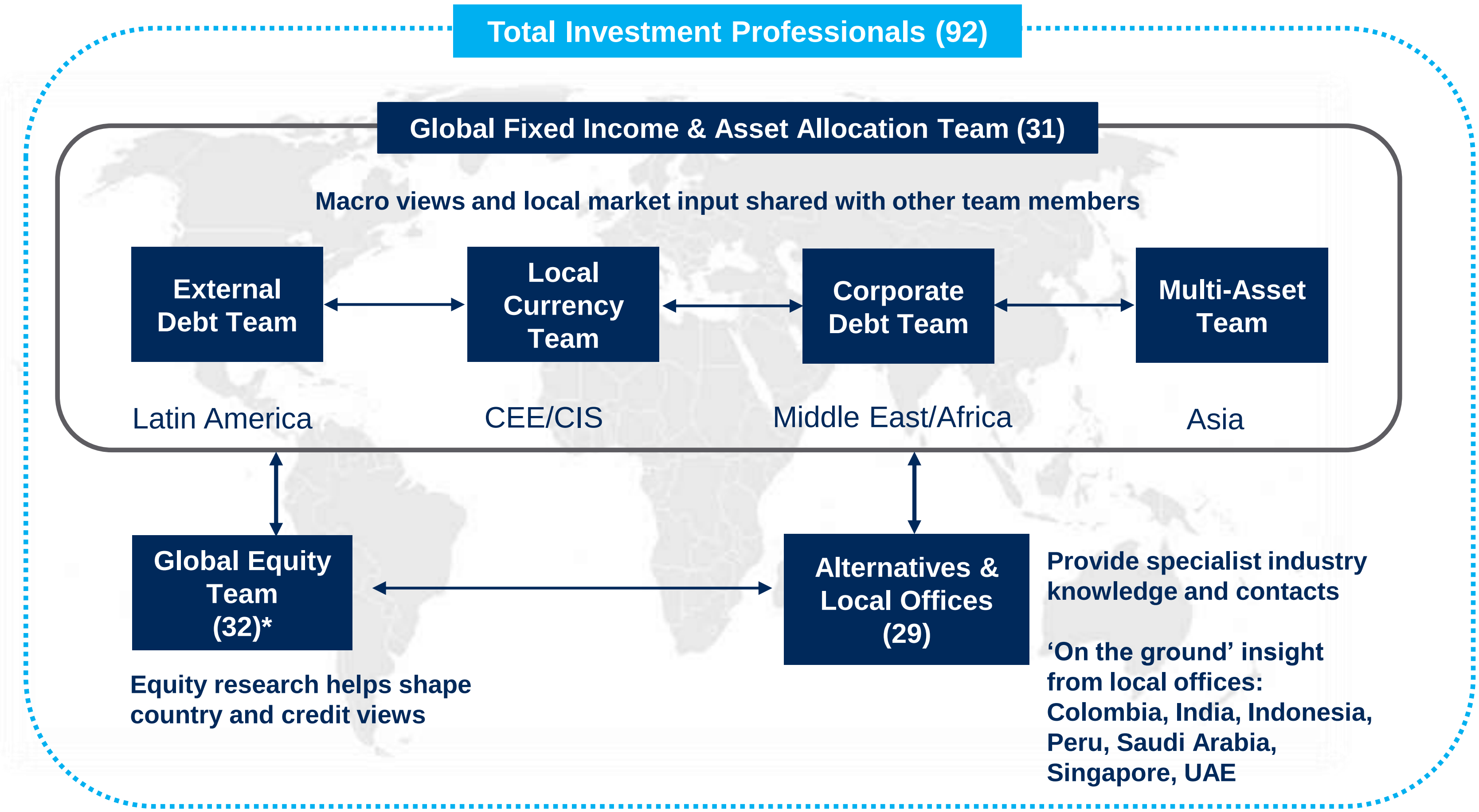
- Collective, team-based approach and institutionalised investment process, unchanged since 1992
- Focus on exploiting the structural changes in Emerging Market instruments
- Investment life cycle - analysis, execution, management and exit

Liquidity obsessed

- Robust risk management culture
- Liquidity integral to every investment decision
- Liquidity embedded in portfolio construction

Global Research Capabilities

All Ashmore portfolios are managed collectively by the Investment Team. Portfolio Managers have dual portfolio management and research responsibilities and also specialise by investment theme and geography



*Does not include Portfolio Managers with cross-asset responsibilities to avoid double counting.
Source Ashmore as at 30-Sep-18. (x) number of investment professionals.

Investment Committee Process

Ashmore

Investment Committee (IC)	**Global macro overview**	**Risk call** ▪ Market exposure — add vs. reduce ▪ Long-term and tactical views
	Country / corporate updates	**Updated credit views** ▪ Country and corporate credit review ▪ ESG integration: review of Country ESG Performance scores ▪ Impact on credit risk, FX and interest rates implications
	Theme relative value	**Theme allocation** Risks and opportunities across themes: ▪ External vs. Local Currency ▪ Corporate vs. Sovereign
Sub-committee meetings • Local Currency • External Debt • Corporate Debt • Blended Debt • Multi-Asset	**Portfolio construction (within theme)**	**Changes to model portfolios** ▪ Changes in target exposures (credits, FX, duration) across model portfolios ▪ Revision of theme allocation, cash and leverage where appropriate
	Instrument selection	**Investment decisions** ▪ Buy and sell decisions on specific assets ▪ Price targets where appropriate
Trading / execution	**Execution process**	**Execution** ▪ Timely execution (within 24 hours of IC meeting) ▪ Pre / Post trade compliance ▪ Trades reviewed with reference to IC minutes in the following IC meeting

Investment Committee Process: Macro Overview

Ashmore

Review macro outlook with a view to managing market exposure across Emerging Markets assets, both long term and tactically

Inputs

Review of:

- Macro data
- Policy events
- Political events
- Market performance (across markets)
- Market technicals (issuance, volatility, positioning)

Presentation
of recent and expected developments by Ashmore strategists

Discussion
by Investment Committee

Scenario planning

Medium term base case for:

- Global growth expectations
- Business cycle
- Global policy stance
- Medium-term market implications

Tactical
Weekly review of our base case and difference with market consensus and positioning

Outputs

Ashmore's 'Risk Call'

- Outlook for duration, credit and FX risks
- Cash / exposure levels in fixed income portfolios

Key competitive advantages

- Global business gathering global insights from contacts
- Deal flow
- Clients

Investment Committee Process: Country Analysis

Ashmore

Purpose: active assessment of country conditions to determine credit risk, prospective currency strength and local currency yield curve

INPUTS | **OUTPUT**

Fundamentals	Politics/ Policy	Valuation & Technicals	Updated Country View
Macro ▪ Growth, growth drivers ▪ Inflation, CPI components ▪ Economic sustainability ▪ Human capital and socio-political achievements **Debt analysis** ▪ Public sector debt ▪ Fiscal policy ▪ Debt sustainability analysis ▪ Funding sources and flexibility ▪ Domestic credit ▪ Environmental contingent liabilities **Balance of payments analysis** ▪ Current account dynamics ▪ Capital account composition ▪ Reserves management	**Political analysis** ▪ Election cycle, timeline to polls ▪ Base case and risk cases ▪ Institutional strength and stability **Policy Implications** ▪ Policy mix: trade-off between growth and inflation ▪ Monetary policy & FX regime ▪ Structural reforms agenda ▪ Governance, government effectiveness	**Valuation** ▪ Credit spread vs. comps and other credit markets ▪ FX levels (vs. PPP / REER, etc.) ▪ Policy rate & yield curve shape ▪ Nominal vs. Real rates **Technicals** ▪ Government bond issuance calendar / profile ▪ Liquidity conditions ▪ Cross border flows	▪ Updated Country ESG Performance ▪ Updated credit view ▪ Updated FX view ▪ Updated yield curve view

Key competitive advantages	
• Depth of resources • Network of contacts within EM	• Interests aligned with those of EM issuers • Extensive travel

Investment Committee Process: EM FX Analytical Framework

Ashmore

Review of the main analytical frameworks in FX markets

APPROACH

	Monetary	Balance of payments	Asset market approach	Policy analysis
Key Insight	Currencies return to long term inflation differentials over the long run	In the long term, currencies are driven by the Current Account; in the short term, they are driven by Capital Account flows	Currencies follow the same valuation principles as other assets (PV is the sum of the future cash flows), reflecting current and future fundamentals	Currencies are manipulated by policy makers to correct mis-alignments, reduce volatility, or build-up reserves
Relevance	Long term anchor	Important, but hard to predict	Impacts sentiment	Material impact

At Ashmore, we put particular emphasis on anticipating flows

In that regard, no single analytical model works well on its own; the frameworks shown above can inform judgment, not determine FX positioning independently

We look for countries that will attract net positive flows

Owing to a combination of fundamental factors (balance of payments and asset market approaches), we make sure to understand how the domestic policy framework may impact these flows (policy analysis framework)

Investment Committee Process: Corporate Credit Analysis

Ashmore

Purpose: assessing the outlook for individual Corporate Credits

INPUTS

Fundamentals

Macro Impact
- GDP Growth, Fiscal spending
- Inflation, Currency Strength
- Consumer Spending/Financing

Capital Adequacy
- Sources of Funding / Available lines
- Leverage / Debt maturity profile
- FX exposure in debt/revenues

Earnings / Cash Flow:
- Earnings Trend / Potential
- Cash Flow / Interest Coverage
- Discretionary / Maintenance Capex

Due Diligence:
- Meeting with Management
- Background Checks
- Company Visit

Documentation Overview

Deal Structure
- Public / Private Deal
- Senior / Sub, Secured or not
- Distribution Strategy / Lead(s)

Assessment of Collateral
- Quality / Value of Collateral
- Liquidity / Price Volatility
- LTV ratio for the loan/bond
- Margining Mechanism

Quality of Documentation
- Legal review of documentation
- Have final copies of all docs?
- Can we improve the structure or quality of documentation

Relative Value

- Sector Outlook
- Credit spread vs. comparables
  - Country / Region
  - EM vs. Non-EM
- Historical trend in valuation

Technicals

- Loans maturing ahead of bond
- Discount/premium to the Curve
- Expected Liquidity
- Type of Investors
- Seasoned / New Issue

OUTPUT

Credit View

- Updated outlook for the credit path for next 12 months

Valuation

- We assign a fair value spread
- Compare our estimate for spread with current market spreads
- Assess size of opportunity after cost of trading

Recommendation

- Buy / Sell / Hold decision
- How (if at all) we adjust the model portfolio

Key competitive advantages

- Size of Team, Depth of resources
- Network of contacts within EM
- Extensive track record in this space
- Long term partnership with many EM issuers

Investment Committee Process: Theme Allocation

Ashmore

The Theme Allocation decision depends on the expected behaviour (scenario planning) of each asset class in our base case global macro scenario

The decision is subject to Relative Value and Alpha Opportunities filters

1. Macro Top Down

Our Global Macro views (see 'Risk Call') determine our appetite for the following economic risks:

- G7 duration sensitivity
- Credit risk sensitivity
- FX risk sensitivity
- Liquidity

2. Theme Relative value

Our specialist teams (external debt, local debt, corporate debt) present the opportunities they see in their respective areas

- Valuations relative to credit fundamentals
- FX trends and valuations
- Liquidity
  - Supply/demand
  - Bid-offer spreads

The three themes are compared for relative value and alpha opportunities

3. Scenario Planning

We analyse how the respective themes are likely to respond in our base case macro outlook

Subject to good valuation and the availability of alpha opportunities, we increase the allocation to the theme that has the best upside/downside in our base case macro scenario

Outputs

Theme Allocation

- Percentage exposure to our model portfolios for External Debt, Local Currency (FX/Bonds) and Corporate Debt
- Credit risk sensitivity
- FX risk sensitivity
- Duration and curve sensitivity

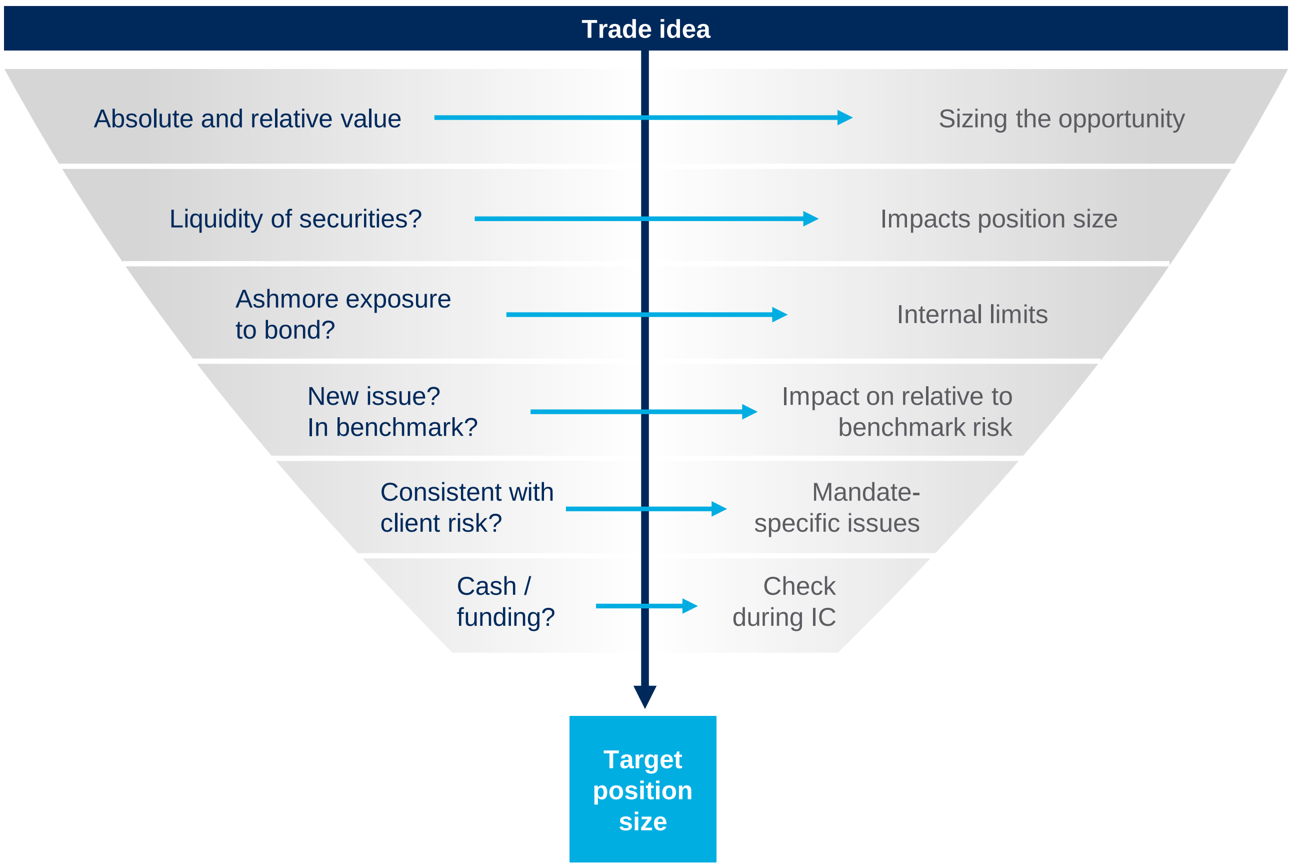
Cross check at Blended Fund level for

- Concentration risk
- Cash & Liquidity
- Covariance between asset classes

Investment Committee Process: Portfolio Construction

Ashmore

Position sizing considerations



Decision Making Process: Theme Allocation Changes Q1-2 2018

Ashmore

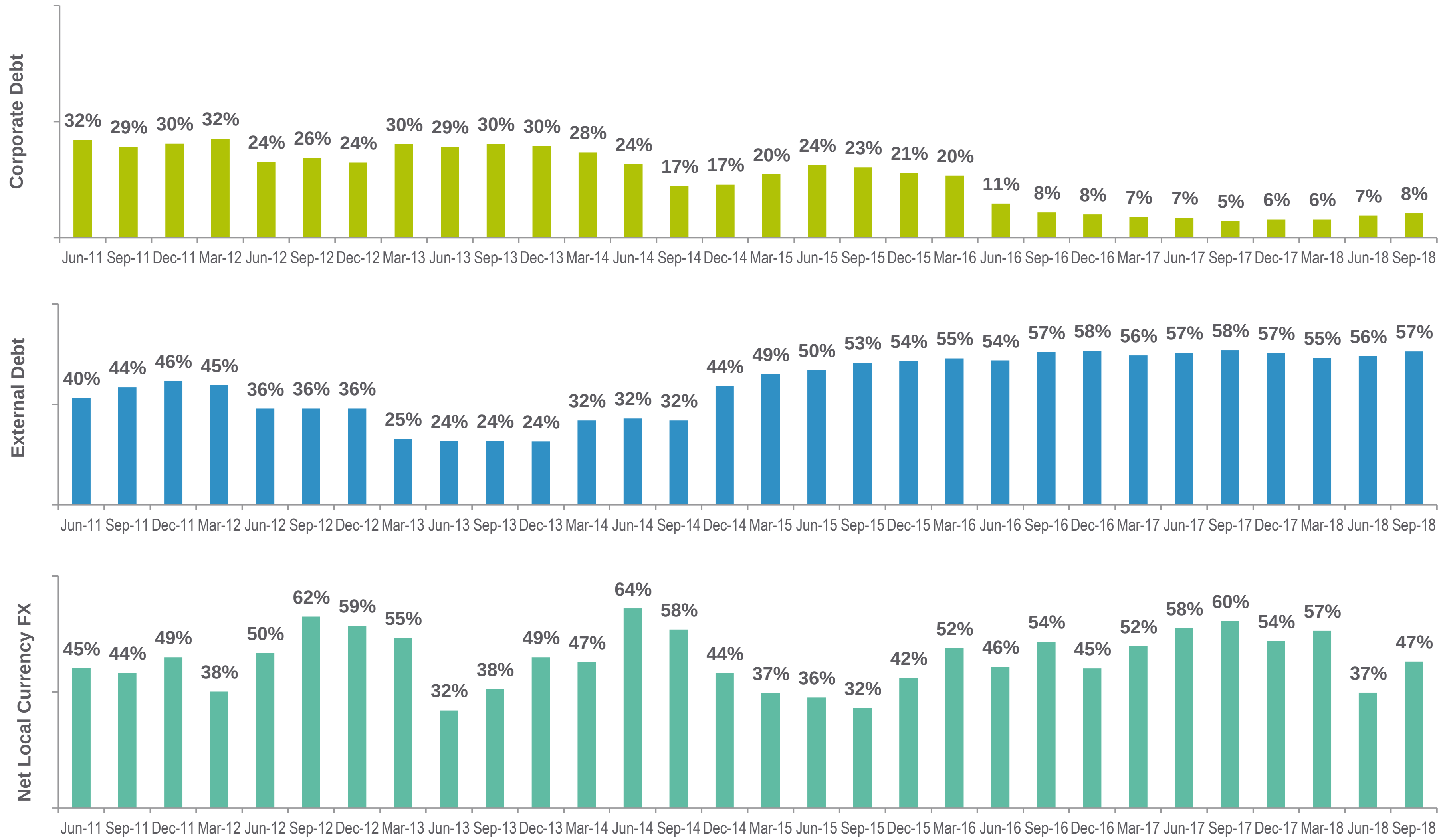
The Theme Allocation decision depends on the expected behaviour (scenario planning) of each asset class in our base case global macro scenario. The decision is subject to Relative Value and Alpha Opportunities filters

	1. Macro Top Down	2. Theme Relative value	3. Scenario Planning	Outputs
Process	**Our Global Macro views (see 'Risk Call') determine our appetite for the following economic risks:** • G7 duration sensitivity • Credit risk sensitivity • FX risk sensitivity • Liquidity	**Our specialist teams (external debt, local debt, corporate debt) present the opportunities they see in their respective areas** Valuations relative to credit fundamentals • FX trends and valuations • Liquidity - Supply/demand - Bid-offer spreads **The three themes are compared for relative value and alpha opportunities**	**We analyse how the respective themes are likely to respond in our base case macro outlook** Subject to good valuation and the availability of alpha opportunities, we increase the allocation to the theme that has the best upside/downside in our base case macro scenario	**Theme Allocation** • Percentage exposure to our model portfolios for External Debt, Local Currency (FX/Bonds) and Corporate Debt • Credit risk sensitivity • FX risk sensitivity • Duration and curve sensitivity **Cross check at Blended Fund level for** • Concentration risk • ash & Liquidity • Covariance between asset classes
Example Q1-2 2018	• Clouds over global growth outlook (trade war) • Growth and rates differential supports USD • BoP crisis (Arg, Turkey) and elections (Mexico, Brazil) cloud EM outlook	• **Local Currency**: valuations attractive (high real bond yields) but FX anchor weakening • **External Debt**: valuations are 'fair' but not in obvious value territory in view of global macro (strong technical keep spreads in check) • **Corp Debt**: valuations are fair to tight, but isolated opportunities in the HY space	• **Local Currency**: downside risk greater than upside in the short-term in absence of clear catalyst (US-China trade spat unresolved) • **External Debt**: too early to add • **Corp Debt**: too early to add, except stressed opportunities (e..g China and Turkey)	**Decisions** • Cut FX risk to reduce portfolio risk • No allocation changes to External and Corporate debt **FX hedges focused on** • Asia / China centric centric currencies • Countries leveraged on global growth (eg. ZAR) **Impact over Q1 and Q2 2018** • Mar 2018 ED/CD/FX exposures were 55% / 6% / 57% • Aug 2018 ED/CD/FX exposures were 56%/ 8% / 34%

Source: Ashmore, August 31, 2018

Investment Theme evolution Ashmore EM Total Return SICAV

Ashmore



Source: Ashmore.

Active management of EMFX Risk: example of Blended debt portfolios*

1: Added FX exposure on fading risks of a Euro breakdown and Draghi's "whatever it takes" in July 2012

2: Cut to U/W due to the lack of triggers for FX gains and expensive valuations. U/W on "taper tantrum" in May 2013

3: M/W and tentative O/W to capture EM FX rebound after fiscal & monetary adjustments in a number of EM countries

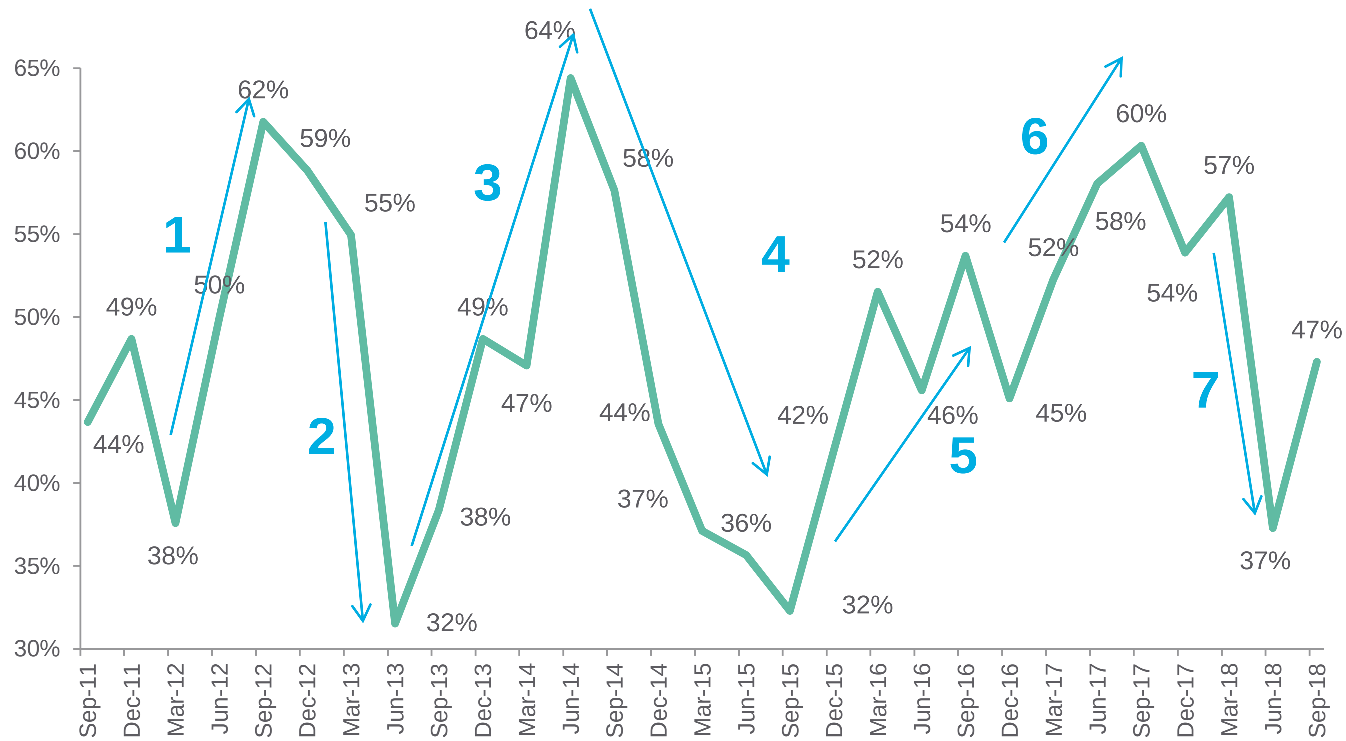
4: Cut back to U/W as US Dollar stronger versus G7 on the back of growth mismatch and oil rout

5: Covered the U/W around time of first Fed hike, as 'peak dollar' has been reached

6: Allocation is range-bound around M/W but portfolio builds significant RV positions in FX and local rates

7: Reduction of FX risk focused on Asia / China centric currencies and countries leveraged on global growth as trade war concerns loom large

Tactical: opportunistic allocation to EM Local Currency over time



Net EM FX Exposure

Source: Ashmore.

* Data for representative Blended Debt Fund launched in June 2011, where the benchmark EMFX exposure is 50% of NAV.

Hard Currency exposure: tactical and structural allocation decisions

Ashmore

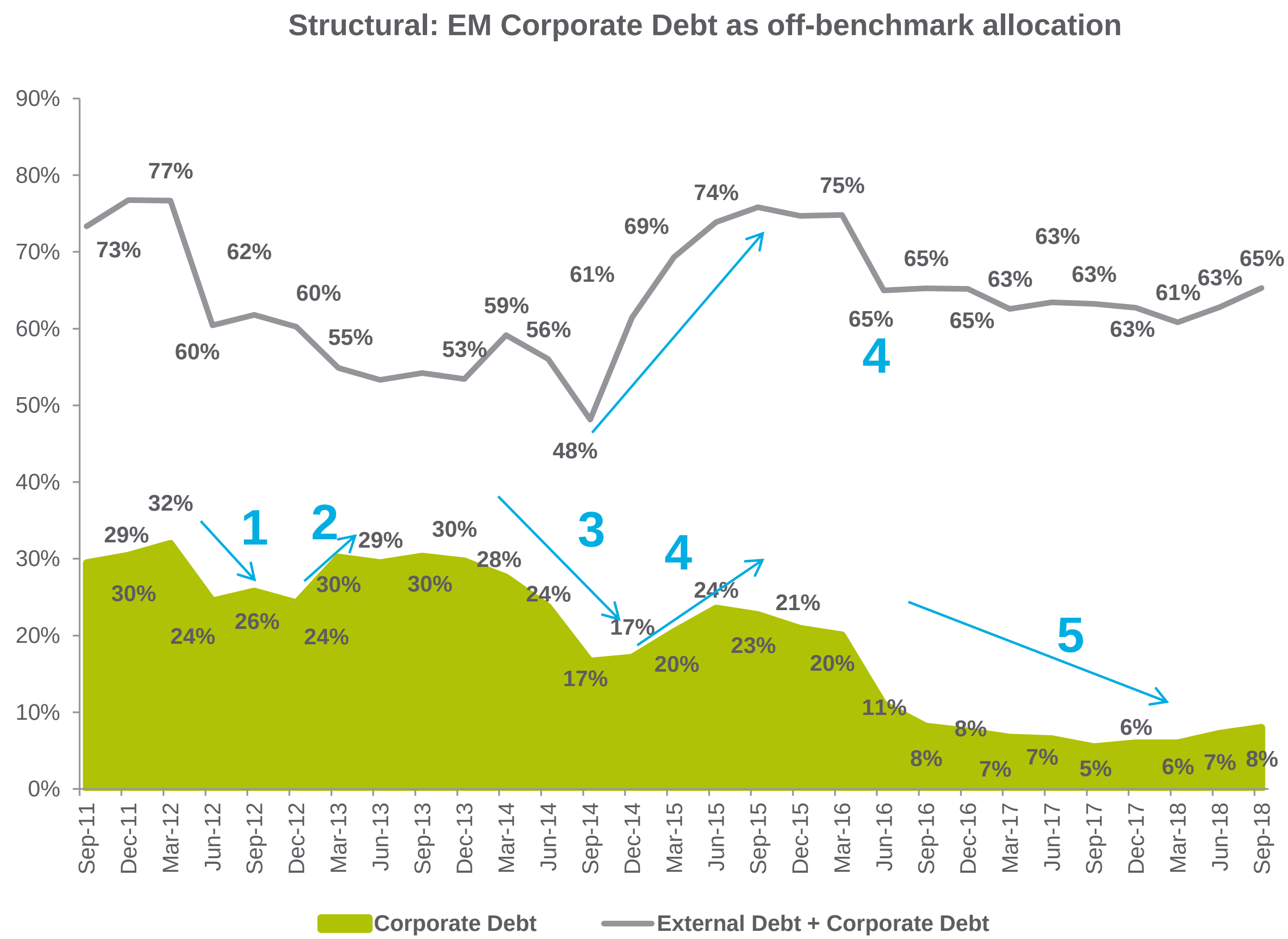
1: Reduced USD denominated debt to add EM FX exposure. Trimmed O/W in Corporate to take profits after strong 2H2011 run

2: Increased Corporate and reduced EM FX exposure which was more vulnerable to sell-off due to valuations

3: Reduced Corporate exposure by ~1/2 on the back of expensive valuations and potential downside. HY spreads troughed in July 2014

4: Added exposure to sovereign debt and 'stressed' corporate names when spreads blew up in late 2014 on commodity price rout notably and Russia BoP crisis

5: Booked profit on the rapid recovery of EM corporate credit once excess spread over sovereign tightened to fair value



Source: Ashmore. Data for representative Blended Debt Fund launched in June 2011.

Performance summary & portfolio characteristics

Section

Performance summary:
Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Mandate overview

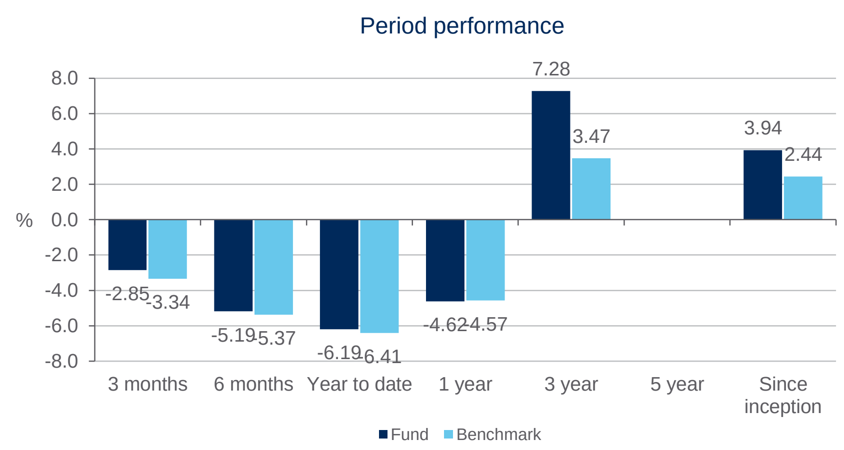
Mandate
Blended Debt

Fund size
USD 567 million

Benchmark
Blended benchmark*

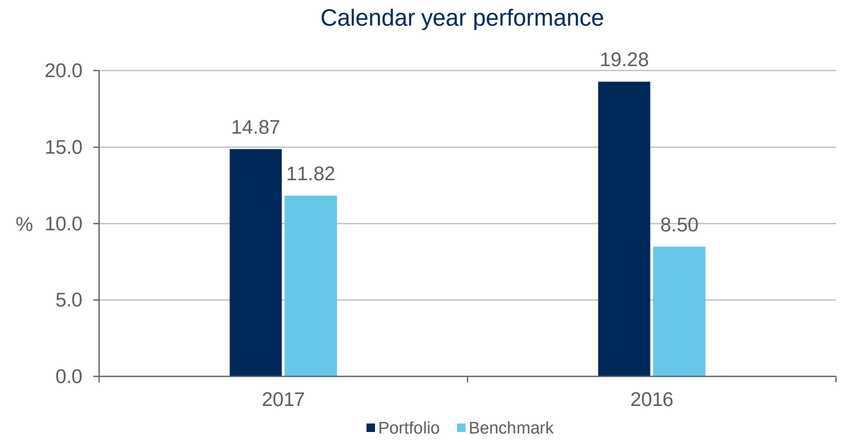
Inception date
30 June 2015

Fee basis
Gross



Fund statistics	Portfolio	Benchmark
Yield to maturity	6.85%	5.00%
Average coupon	5.55%	4.45%
Current yield	5.87%	4.53%
Modified duration	4.98	4.52
Average life	10.07	7.73
Total market exposure	112.05%	-

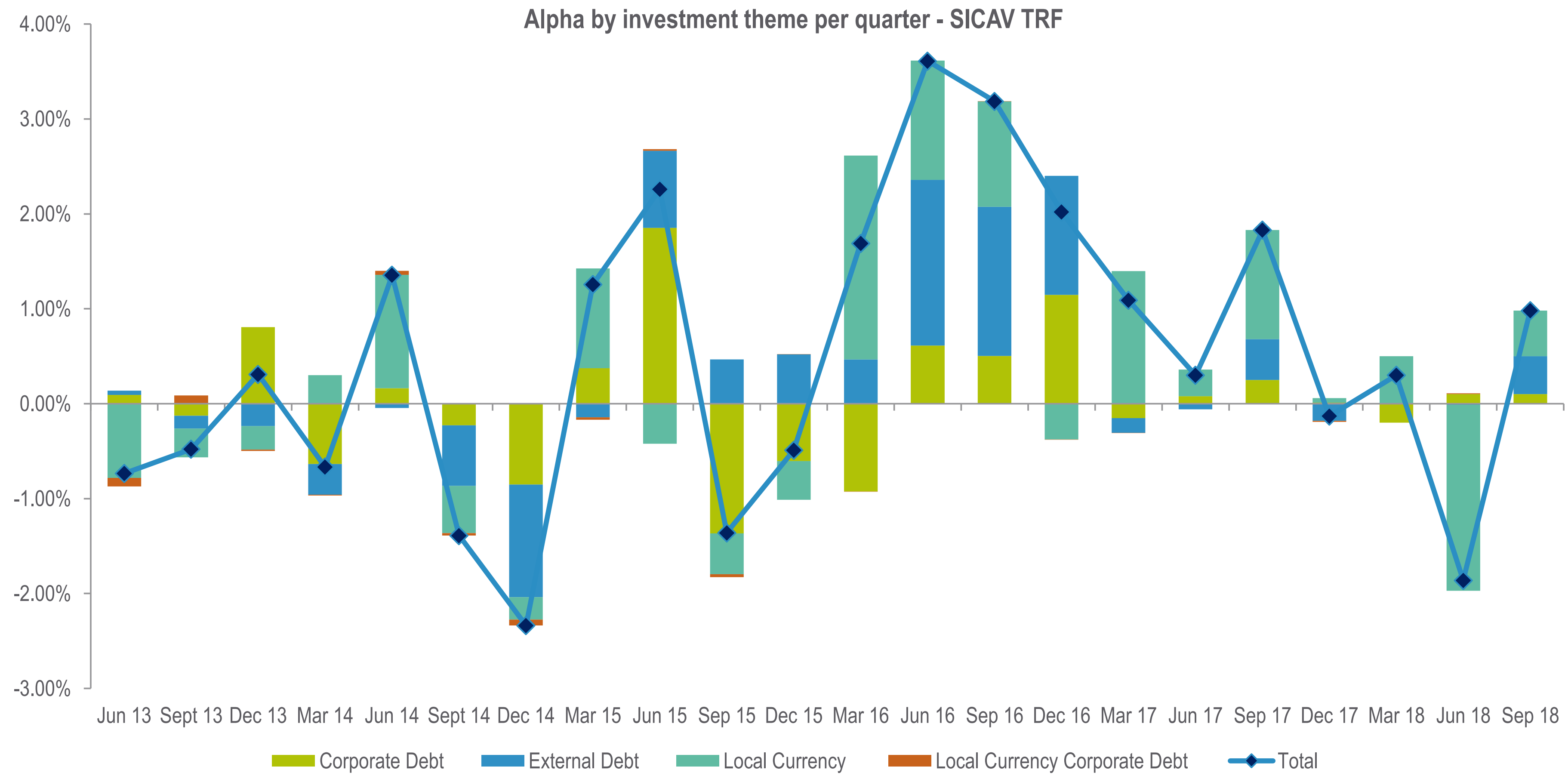
* Benchmark is comprised of 50% JP Morgan EMBI GD, 25% JP Morgan GBI-EM GD, 25% JP Morgan ELMI+.



Sources: Ashmore, Bloomberg. Data as at 31-Oct-18. Periods greater than one year are annualised.

Representative Blended strategy: Performance analysis

Sources of returns have varied over time across our main investment 'themes' (External Debt, Local Currency Bonds and FX, Corporate Debt).



Source: Ashmore. Data as at 30-Sep-18.

Portfolio attribution: YTD to 31-Oct-18
Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Theme contribution and attribution

	Fund and benchmark weights			Total return contribution analysis			Relative return attribution analysis			
YTD Theme	Fund weight	Benchmark weight	Active weight	Fund contribution	Benchmark contribution	Excess contribution	Asset allocation	Security selection	Currency effect	Total
External Debt	52.69%	50.00%	2.69%	-2.22%	-2.55%	0.33%	0.06%	0.53%	-	0.59%
Corporate Debt	7.48%	-	7.48%	-0.29%	-	-0.29%	0.11%	-	-	0.11%
Local Currency	51.89%	50.00%	1.89%	-3.73%	-3.87%	0.13%	0.37%	-1.64%	-	-1.27%
Cash/Cash Management	-5.43%	-	-5.43%	-0.02%	-	-0.02%	0.72%	-	-	0.72%
Macro Hedge	-	-	-	0.08%	-	0.08%	0.08%	-	-	0.08%
			Portfolio	-6.19%	-6.41%	0.22%	1.33%	-1.11%	-	0.22%

Source: Ashmore & JP Morgan. Gross of fees returns.

Portfolio attribution: YTD to 31-Oct-18
Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Country contribution and attribution

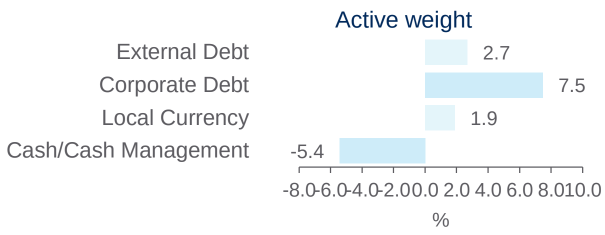
	Fund and benchmark weights			Total return contribution analysis			Relative return attribution analysis			
YTD Country	Fund weight	Benchmark weight	Active weight	Fund contribution	Benchmark contribution	Excess contribution	Asset allocation	Security selection	Currency effect	Total
Top 10 contributors										
Brazil	12.71%	5.25%	7.46%	0.45%	-0.13%	0.57%	0.42%	0.06%	0.19%	0.66%
Turkey	2.70%	4.09%	-1.38%	-0.46%	-1.09%	0.63%	0.10%	0.07%	0.46%	0.62%
Venezuela	3.13%	0.49%	2.65%	0.50%	-0.08%	0.57%	-0.50%	1.12%	-	0.62%
Sri Lanka	0.13%	0.96%	-0.83%	-0.02%	-0.10%	0.07%	0.07%	-0.01%	-	0.06%
United Arab Emirates	0.45%	-	0.45%	0.05%	-	0.05%	0.05%	-	-	0.05%
Lebanon	1.53%	1.17%	0.36%	-0.05%	-0.08%	0.03%	-0.01%	0.05%	-	0.04%
Nigeria	0.43%	0.74%	-0.31%	-0.02%	-0.06%	0.04%	0.02%	0.01%	-	0.04%
Uruguay	0.95%	1.29%	-0.34%	-0.06%	-0.09%	0.04%	0.02%	0.01%	0.01%	0.03%
Costa Rica	0.31%	0.50%	-0.19%	-0.03%	-0.06%	0.03%	0.01%	0.02%	-	0.03%
Pakistan	1.52%	0.58%	0.93%	0.01%	0.00%	0.01%	0.02%	0.00%	-	0.02%
Top 10 detractors										
Argentina	2.39%	2.03%	0.36%	-0.91%	-0.54%	-0.36%	-0.09%	0.18%	-0.44%	-0.35%
Jamaica	1.94%	0.54%	1.39%	-0.34%	0.00%	-0.34%	0.04%	-0.38%	-	-0.34%
Poland	3.24%	4.55%	-1.30%	-0.42%	-0.25%	-0.16%	-0.13%	-0.01%	-0.09%	-0.23%
Indonesia	5.90%	5.25%	0.65%	-0.79%	-0.57%	-0.22%	-0.02%	-0.20%	0.01%	-0.21%
Ecuador	6.86%	1.30%	5.56%	-0.39%	-0.11%	-0.28%	-0.29%	0.09%	-	-0.21%
China	4.16%	4.76%	-0.60%	-0.23%	-0.12%	-0.11%	-0.09%	-0.10%	0.03%	-0.16%
Colombia	3.40%	3.60%	-0.19%	-0.27%	-0.17%	-0.10%	-0.03%	-0.07%	-0.03%	-0.13%
Mexico	5.97%	7.20%	-1.22%	-0.23%	-0.13%	-0.10%	0.00%	-0.06%	-0.04%	-0.11%
Thailand	3.10%	3.34%	-0.24%	-0.09%	-0.05%	-0.04%	-0.05%	-0.03%	-0.01%	-0.09%
South Korea	2.32%	2.46%	-0.15%	-0.16%	-0.13%	-0.03%	-0.07%	-0.02%	0.01%	-0.07%
			Portfolio	-6.19%	-6.41%	0.22%	-0.37%	0.50%	0.09%	0.22%

Source: Ashmore & JP Morgan. Gross of fees returns.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Theme exposure

Theme	Portfolio	Benchmark	Active weight
External Debt	52.7%	50.0%	2.7%
Corporate Debt	7.5%	-	7.5%
Local Currency	51.9%	50.0%	1.9%
Cash/Cash Management	-5.4%	-	-5.4%

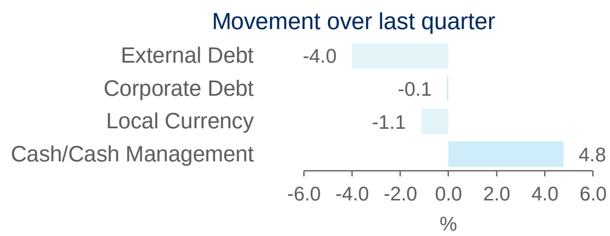


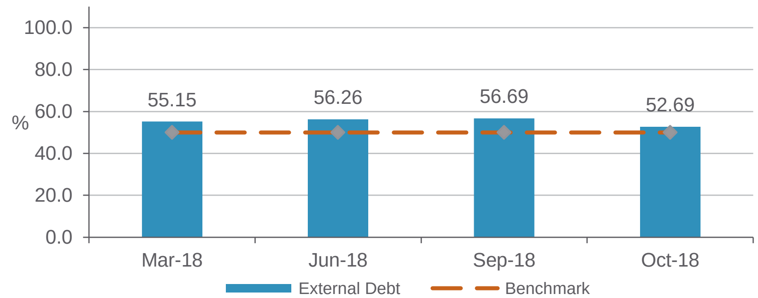
Source: Ashmore & JP Morgan.

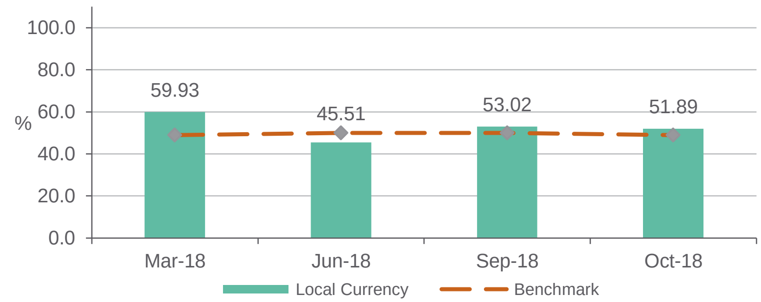
Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

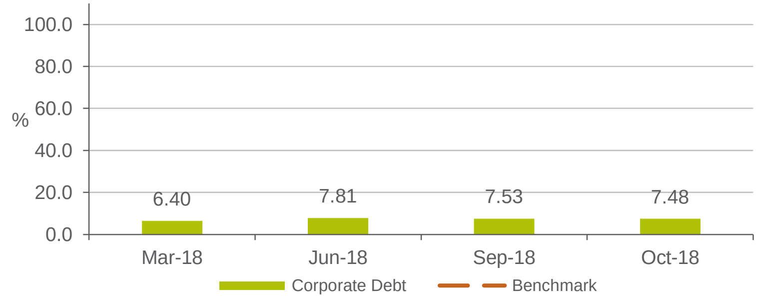
Historical theme deviation from benchmark

	Active weight			
Theme	Mar-18	Jun-18	Sep-18	Oct-18
External Debt	5.1%	6.3%	6.7%	2.7%
Corporate Debt	6.4%	7.8%	7.5%	7.5%
Local Currency	9.9%	-4.5%	3.0%	1.9%
Cash/Cash Management	-17.7%	-1.8%	-10.2%	-5.4%









Source: Ashmore & JP Morgan.

Portfolio contribution: YTD to 31-Oct-18
Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Total return contribution by country/theme

	External Debt			Corporate Debt			Local Currency			Alternatives			Total		
Country	Fund weight	Benchmark weight	Excess contribution	Fund weight	Benchmark weight	Excess contribution	Fund weight	Benchmark weight	Excess contribution	Fund weight	Benchmark weight	Excess contribution	Fund weight	Benchmark weight	Excess contribution
Top 10															
Turkey	1.23%	1.72%	0.07%	-	-	-	1.48%	2.37%	0.56%	-	-	-	2.70%	4.09%	0.63%
Brazil	1.45%	1.62%	-0.01%	3.28%	-	0.11%	7.98%	3.63%	0.52%	-	-	-	12.71%	5.25%	0.57%
Venezuela	3.13%	0.49%	0.56%	-	-	-	-	-	-	-	-	-	3.13%	0.49%	0.56%
Sri Lanka	0.13%	0.96%	0.07%	-	-	-	-	-	-	-	-	-	0.13%	0.96%	0.07%
United Arab Emirates	-	-	0.00%	0.45%	-	0.05%	-	-	-	-	-	-	0.45%	-	0.05%
Malaysia	0.28%	1.31%	0.03%	-	-	-	0.80%	2.50%	0.01%	-	-	-	1.08%	3.81%	0.04%
Nigeria	0.43%	0.74%	0.02%	-	-	0.02%	-	-	-	-	-	-	0.43%	0.74%	0.04%
Uruguay	0.89%	1.23%	0.03%	-	-	-	0.06%	0.06%	0.01%	-	-	-	0.95%	1.29%	0.04%
Lebanon	1.53%	1.17%	0.03%	-	-	-	-	-	-	-	-	-	1.53%	1.17%	0.03%
Costa Rica	0.31%	0.50%	0.03%	-	-	-	-	-	-	-	-	-	0.31%	0.50%	0.03%
Bottom 10															
Argentina	1.65%	1.45%	-0.03%	0.16%	-	-0.03%	0.57%	0.58%	-0.30%	-	-	-	2.39%	2.03%	-0.36%
Jamaica	0.20%	0.54%	0.00%	1.73%	-	-0.34%	-	-	-	-	-	-	1.94%	0.54%	-0.34%
Ecuador	6.86%	1.30%	-0.28%	-	-	-	-	-	-	-	-	-	6.86%	1.30%	-0.28%
Indonesia	2.38%	2.11%	-0.06%	-	-	-	3.52%	3.14%	-0.16%	-	-	-	5.91%	5.25%	-0.22%
Poland	-	1.07%	0.01%	-	-	-	3.24%	3.48%	-0.17%	-	-	-	3.24%	4.55%	-0.16%
South Africa	1.97%	1.37%	-0.07%	-	-	-	3.38%	2.56%	-0.06%	-	-	-	5.35%	3.93%	-0.11%
China	1.03%	2.25%	0.01%	0.78%	-	-0.10%	2.35%	2.50%	-0.02%	-	-	-	4.16%	4.76%	-0.11%
Mexico	1.83%	2.49%	0.01%	-	-	-	4.14%	4.70%	-0.12%	-	-	-	5.97%	7.20%	-0.10%
Colombia	1.32%	1.51%	-0.02%	0.11%	-	-0.03%	1.97%	2.09%	-0.05%	-	-	-	3.40%	3.60%	-0.10%
Zambia	0.30%	0.20%	-0.06%	-	-	-	-	-	-	-	-	-	0.30%	0.20%	-0.06%
Total	52.69%	50.00%	0.32%	7.48%	-	-0.29%	51.89%	50.00%	0.13%	-	-	-	106.63%	100.00%	0.21%

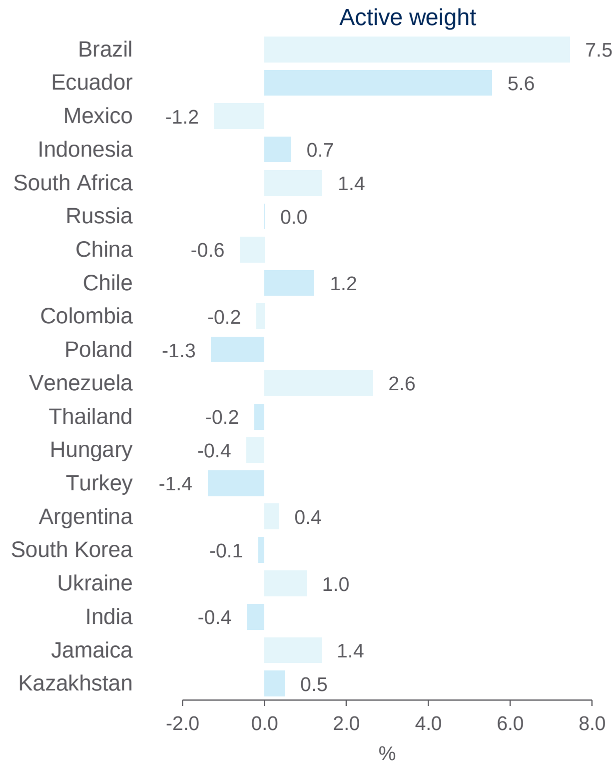
Source: Ashmore & JP Morgan. Gross of fees returns.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Largest country positions

Top 20 Countries	Portfolio	Benchmark	Active weight
Brazil	12.7%	5.3%	7.5%
Ecuador	6.9%	1.3%	5.6%
Mexico	6.0%	7.2%	-1.2%
Indonesia	5.9%	5.2%	0.7%
South Africa	5.3%	3.9%	1.4%
Russia	5.2%	5.2%	0.0%
China	4.2%	4.8%	-0.6%
Chile	3.6%	2.4%	1.2%
Colombia	3.4%	3.6%	-0.2%
Poland	3.2%	4.5%	-1.3%
Venezuela	3.1%	0.5%	2.6%
Thailand	3.1%	3.3%	-0.2%
Hungary	2.7%	3.2%	-0.4%
Turkey	2.7%	4.1%	-1.4%
Argentina	2.4%	2.0%	0.4%
South Korea	2.3%	2.5%	-0.1%
Ukraine	2.3%	1.3%	1.0%
India	2.0%	2.4%	-0.4%
Jamaica	1.9%	0.5%	1.4%
Kazakhstan	1.9%	1.4%	0.5%
Total number of countries	65	74	
Total number of countries (look-through)	65	74	



Source: Ashmore & JP Morgan.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Largest country deviation from benchmark

Country	Portfolio	Benchmark	Active weight
Top 10 overweight			
Brazil	12.7%	5.3%	7.5%
Ecuador	6.9%	1.3%	5.6%
Venezuela	3.1%	0.5%	2.6%
South Africa	5.3%	3.9%	1.4%
Jamaica	1.9%	0.5%	1.4%
Chile	3.6%	2.4%	1.2%
Ukraine	2.3%	1.3%	1.0%
Belarus	1.1%	0.2%	0.9%
Pakistan	1.5%	0.6%	0.9%
Indonesia	5.9%	5.2%	0.7%

Country	Portfolio	Benchmark	Active weight
Top 10 underweight			
Malaysia	1.1%	3.8%	-2.7%
Turkey	2.7%	4.1%	-1.4%
Poland	3.2%	4.5%	-1.3%
Mexico	6.0%	7.2%	-1.2%
Oman	0.5%	1.3%	-0.9%
Sri Lanka	0.1%	1.0%	-0.8%
Peru	1.6%	2.4%	-0.8%
Panama	0.8%	1.4%	-0.6%
China	4.2%	4.8%	-0.6%
Lithuania	-	0.5%	-0.5%

Source: Ashmore & JP Morgan.

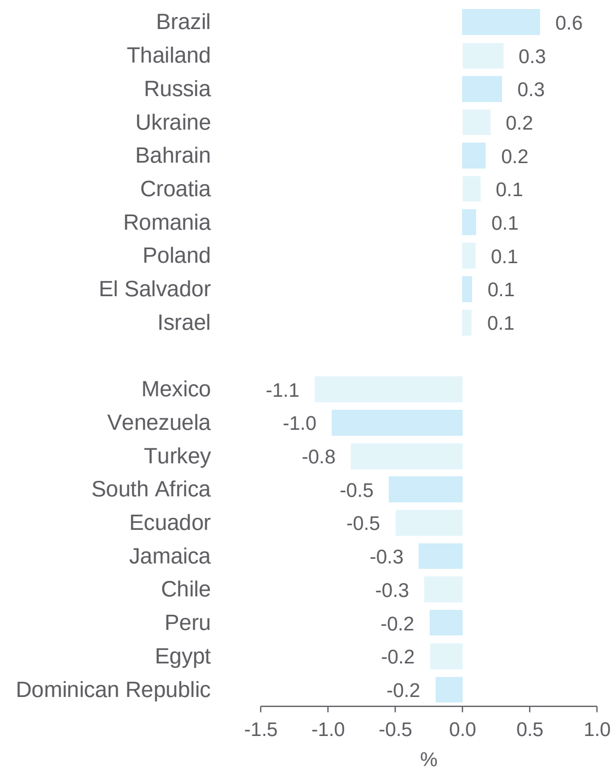
Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Historical country deviations from benchmark (list based on latest qoq changes)

	Active weight			
Top 20 Changes in Active weight	Mar-18	Jun-18	Sep-18	Oct-18
Top 10 changes in active weight				
Brazil	4.0%	6.4%	6.9%	7.5%
Thailand	0.0%	-0.9%	-0.5%	-0.2%
Russia	0.4%	-0.5%	-0.3%	0.0%
Ukraine	0.7%	0.4%	0.8%	1.0%
Bahrain	0.1%	0.0%	0.3%	0.5%
Croatia	0.3%	0.1%	0.1%	0.3%
Romania	0.0%	-0.5%	-0.4%	-0.3%
Poland	0.6%	-2.4%	-1.4%	-1.3%
El Salvador	0.3%	0.2%	0.3%	0.3%
Israel	0.0%	-0.1%	-0.1%	0.0%
Bottom 10 changes in active weight				
Mexico	0.4%	0.1%	-0.1%	-1.2%
Venezuela	3.7%	3.6%	3.6%	2.6%
Turkey	-1.2%	-2.0%	-0.6%	-1.4%
South Africa	2.8%	1.4%	2.0%	1.4%
Ecuador	4.7%	6.0%	6.1%	5.6%
Jamaica	1.2%	1.3%	1.7%	1.4%
Chile	-0.7%	0.7%	1.5%	1.2%
Peru	0.1%	-0.2%	-0.6%	-0.8%
Egypt	0.9%	0.1%	0.1%	-0.1%
Dominican Republic	0.8%	0.7%	0.7%	0.5%

Movement over last quarter



Source: Ashmore & JP Morgan.

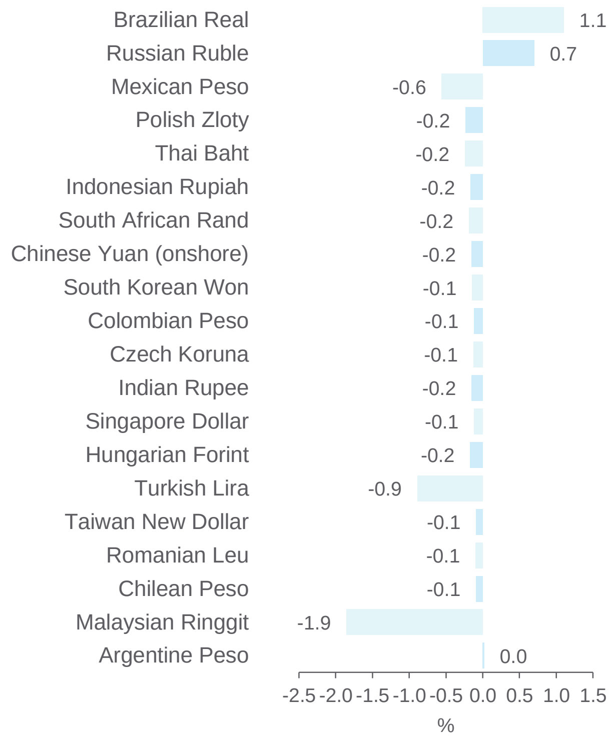
Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Largest local currency positions

Top 20 EM currency exposure	Portfolio	Benchmark	Active weight
Brazilian Real	4.7%	3.6%	1.1%
Russian Ruble	4.2%	3.5%	0.7%
Mexican Peso	4.1%	4.7%	-0.6%
Polish Zloty	3.2%	3.5%	-0.2%
Thai Baht	3.1%	3.3%	-0.2%
Indonesian Rupiah	3.0%	3.1%	-0.2%
South African Rand	2.4%	2.6%	-0.2%
Chinese Yuan (onshore)	2.3%	2.5%	-0.2%
South Korean Won	2.3%	2.5%	-0.1%
Colombian Peso	2.0%	2.1%	-0.1%
Czech Koruna	1.8%	1.9%	-0.1%
Indian Rupee	1.8%	1.9%	-0.2%
Singapore Dollar	1.8%	1.9%	-0.1%
Hungarian Forint	1.6%	1.8%	-0.2%
Turkish Lira	1.5%	2.4%	-0.9%
Taiwan New Dollar	1.4%	1.5%	-0.1%
Romanian Leu	1.1%	1.2%	-0.1%
Chilean Peso	0.9%	1.0%	-0.1%
Malaysian Ringgit	0.6%	2.5%	-1.9%
Argentine Peso	0.6%	0.6%	0.0%
Total number of currencies	25	25	
Total number of currencies (look-through)	25	25	

Active weight



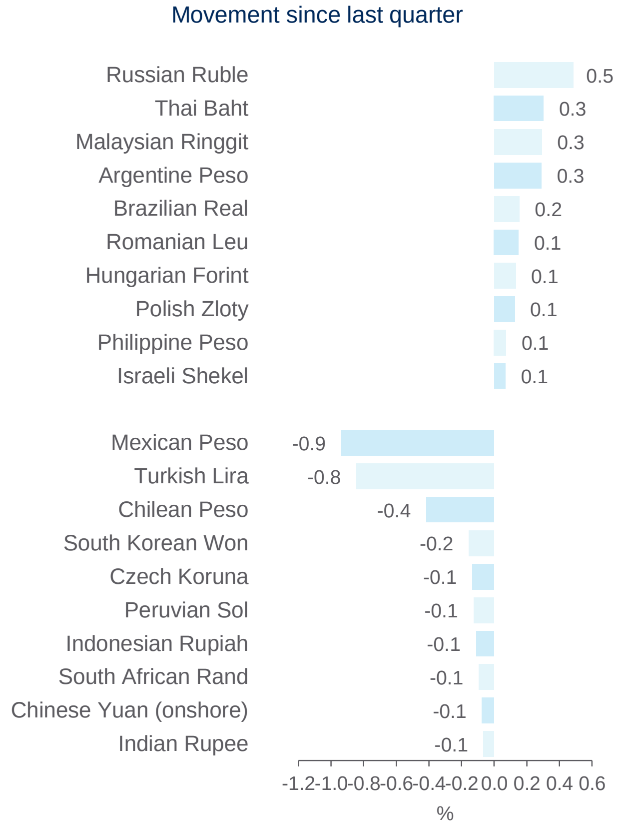
Source: Ashmore & JP Morgan.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Historical local currency deviations from benchmark (list based on latest qoq changes)

	Active weight			
Top 20 Changes in Active weight	**Mar-18**	**Jun-18**	**Sep-18**	**Oct-18**
Top 10 changes in active weight				
Russian Ruble	0.2%	-0.1%	0.2%	0.7%
Thai Baht	0.0%	-0.9%	-0.5%	-0.2%
Malaysian Ringgit	-0.7%	-1.1%	-2.1%	-1.9%
Argentine Peso	1.5%	0.0%	-0.3%	0.0%
Brazilian Real	0.1%	-1.3%	0.9%	1.1%
Romanian Leu	-0.1%	-0.5%	-0.2%	-0.1%
Hungarian Forint	0.0%	-0.4%	-0.3%	-0.2%
Polish Zloty	1.7%	-1.3%	-0.4%	-0.2%
Philippine Peso	0.0%	-0.1%	-0.1%	0.0%
Israeli Shekel	0.0%	-0.1%	-0.1%	0.0%
Bottom 10 changes in active weight				
Mexican Peso	0.4%	0.6%	0.4%	-0.6%
Turkish Lira	-0.9%	-1.7%	0.0%	-0.9%
Chilean Peso	-0.5%	-0.3%	0.3%	-0.1%
South Korean Won	0.0%	-0.6%	0.0%	-0.1%
Czech Koruna	1.2%	-0.5%	0.0%	-0.1%
Peruvian Sol	0.0%	-0.2%	-0.7%	-0.8%
Indonesian Rupiah	0.7%	0.1%	-0.1%	-0.2%
South African Rand	1.2%	-1.1%	-0.1%	-0.2%
Chinese Yuan (onshore)	0.1%	-0.6%	-0.1%	-0.2%
Indian Rupee	0.8%	-0.4%	-0.1%	-0.2%



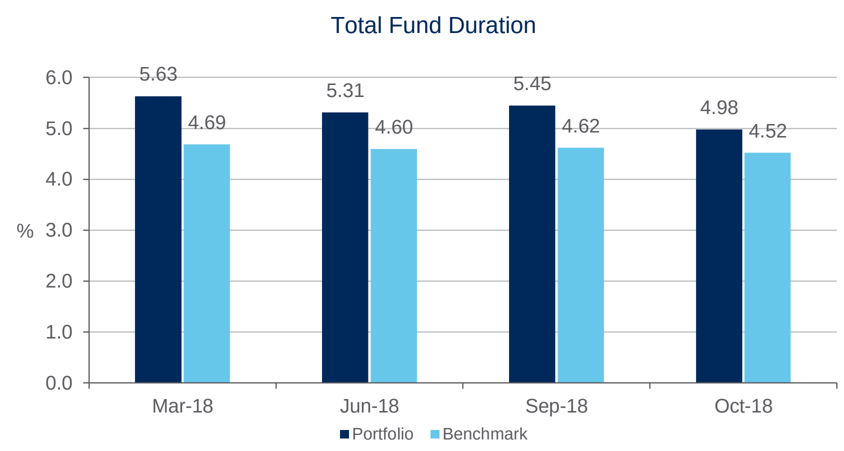
Source: Ashmore & JP Morgan.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Largest hard currency duration positions

Country	Portfolio	Benchmark	Active weight
Top 10 overweight			
Ecuador	0.24	0.05	0.19
Brazil	0.29	0.12	0.18
Venezuela	0.10	0.01	0.09
Indonesia	0.24	0.16	0.08
Ukraine	0.13	0.05	0.07
South Africa	0.15	0.09	0.06
Belarus	0.06	0.01	0.05
Argentina	0.13	0.09	0.04
Kazakhstan	0.15	0.12	0.03
Pakistan	0.05	0.02	0.03
Top 10 underweight			
Malaysia	0.01	0.08	-0.07
Philippines	0.09	0.14	-0.05
Poland	-	0.04	-0.04
Panama	0.08	0.12	-0.04
Oman	0.05	0.09	-0.04
Sri Lanka	0.01	0.04	-0.04
China	0.07	0.11	-0.04
Russia	0.09	0.12	-0.03
Turkey	0.09	0.11	-0.03
Romania	0.03	0.05	-0.02
Total Hard Currency	3.73	3.26	0.47
Total Local Currency	1.25	1.26	-0.02



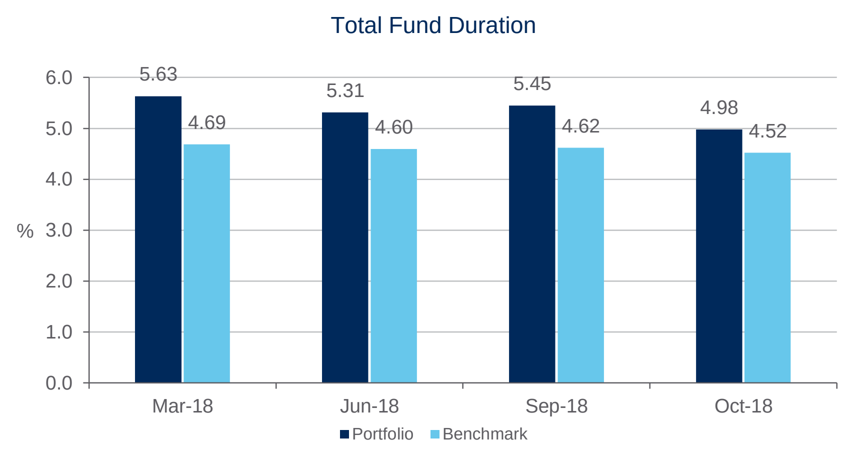
Source: Ashmore & JP Morgan.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Largest local currency duration positions

Country	Portfolio	Benchmark	Active weight
Top 10 overweight			
Brazil	0.23	0.07	0.16
South Africa	0.23	0.15	0.09
Indonesia	0.20	0.13	0.07
India	0.06	-	0.06
Chile	0.09	0.05	0.04
Mexico	0.15	0.12	0.03
Philippines	0.00	0.00	0.00
Uruguay	0.00	0.00	0.00
Taiwan	0.00	-	0.00
Singapore	0.00	-	0.00
Top 10 underweight			
Colombia	0.01	0.09	-0.09
Poland	0.01	0.10	-0.08
Czech Republic	0.00	0.06	-0.06
Hungary	0.00	0.05	-0.05
Peru	0.01	0.06	-0.05
Malaysia	0.03	0.07	-0.04
Turkey	0.01	0.04	-0.03
Romania	0.00	0.03	-0.03
Thailand	0.13	0.15	-0.02
Russia	0.08	0.09	-0.01
Total Local Currency	1.25	1.26	-0.02
Total Hard Currency	3.73	3.26	0.47



Source: Ashmore & JP Morgan.

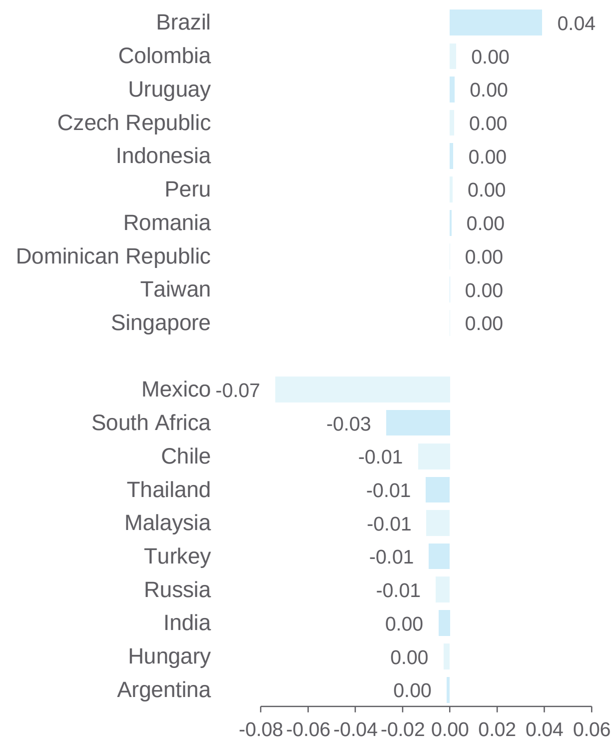
Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

Historical local currency duration deviations from benchmark (list based on latest qoq changes)

	Active weight			
Top 20 Changes in Active weight	Mar-18	Jun-18	Sep-18	Oct-18
Top 10 changes in active weight				
Brazil	0.15	0.17	0.12	0.16
Colombia	-0.07	-0.09	-0.09	-0.09
Uruguay	0.00	0.00	0.00	0.00
Czech Republic	-0.05	-0.06	-0.06	-0.06
Indonesia	0.09	0.03	0.07	0.07
Peru	-0.04	-0.05	-0.05	-0.05
Romania	-0.01	-0.02	-0.03	-0.03
Dominican Republic	0.00	0.00	0.00	0.00
Taiwan	0.00	0.00	0.00	0.00
Singapore	0.00	0.00	0.00	0.00
Bottom 10 changes in active weight				
Mexico	0.17	0.11	0.10	0.03
South Africa	0.21	0.07	0.11	0.09
Chile	-0.03	0.04	0.05	0.04
Thailand	-0.08	-0.07	-0.01	-0.02
Malaysia	-0.01	-0.02	-0.03	-0.04
Turkey	-0.03	-0.03	-0.02	-0.03
Russia	0.00	-0.01	-0.01	-0.01
India	0.12	0.04	0.07	0.06
Hungary	-0.04	-0.04	-0.05	-0.05
Argentina	0.00	-0.01	0.00	0.00

Movement over last quarter

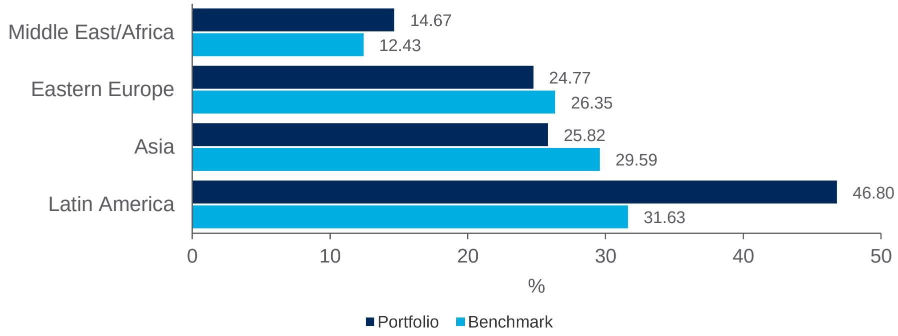


Source: Ashmore & JP Morgan.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

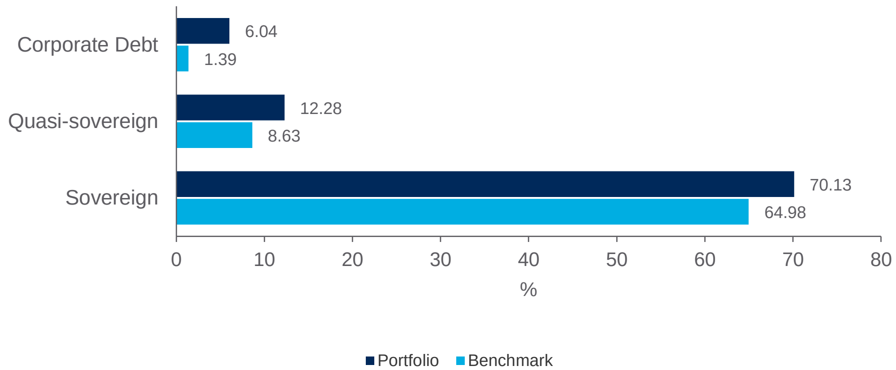
Region



Rating

Credit rating	Portfolio	Benchmark	Active weight
AAA	0.0%	0.0%	0.0%
AA	0.6%	2.1%	-1.5%
A	13.0%	22.6%	-9.5%
BBB	30.9%	39.0%	-8.2%
BB	21.0%	16.4%	4.6%
B	26.5%	18.7%	7.8%
<B	7.6%	0.7%	6.9%
Not rated	0.4%	0.5%	0.0%
Average credit rating	BB	BBB	

Issuer type



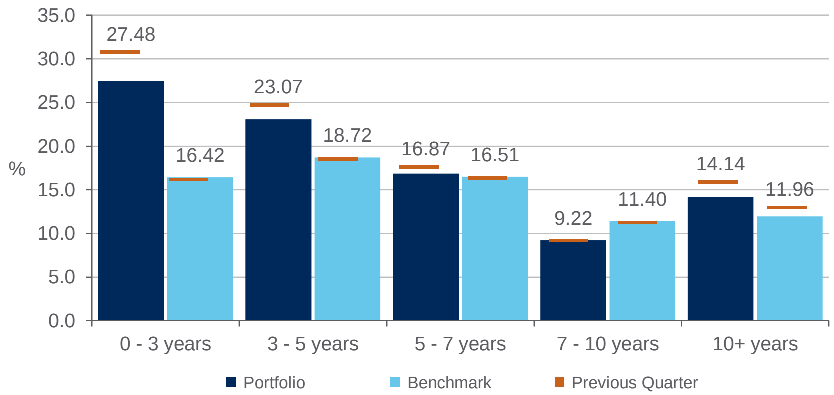
Credit rating	Portfolio	Benchmark	Active weight
Investment grade	44.5%	63.7%	-19.2%
High yield	55.0%	35.8%	19.2%

Source: Ashmore & JP Morgan.

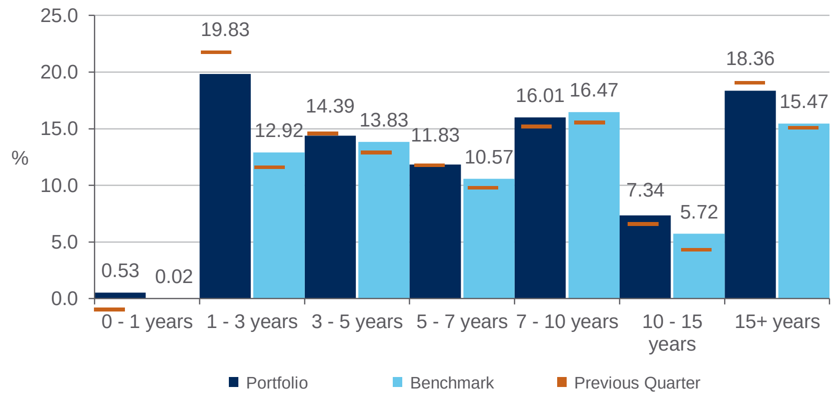
Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Duration positioning

Duration distribution



Maturity distribution



Source: Ashmore & JP Morgan.

Portfolio characteristics as at 31-Oct-18: Ashmore Emerging Markets Blended Debt Fund LP

Ashmore

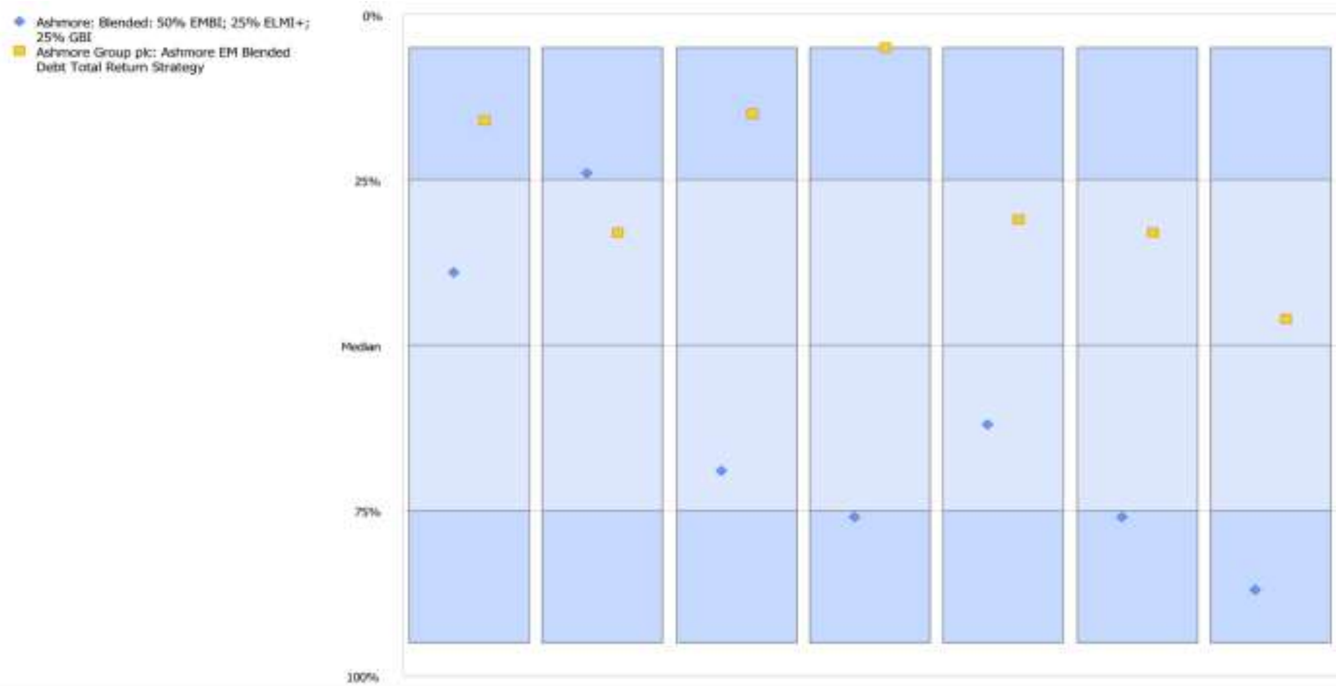
Instrument exposure by NAV

Top 10 holdings exposure	Portfolio	Benchmark	Active weight
Brazil Bltn 0% 01/01/2020	3.0%	0.2%	2.8%
Brazil Bltn 0% 01/07/2021	2.7%	0.2%	2.5%
Brazil Ntnf 10% 01/01/2027 - Lc	2.2%	0.2%	2.0%
Bonos Tesoreria Pesos 4.5% 01/03/2021	2.2%	0.1%	2.0%
Petroleos De Venezuela 8.5% 27/10/2020 (Reg	1.8%	0.1%	1.7%
Republic Of Ecuador 10.5% 24/03/2020 (Regs)	1.8%	0.2%	1.6%
Republic Of Ecuador 10.75% 28/03/2022 (Reg	1.6%	0.2%	1.4%
Mexican Bonos 10% 05/12/2024	1.5%	0.3%	1.3%
Mexican Bonos 6.5% 10/06/2021	1.4%	0.2%	1.1%
Digicel Group Limited 8.25% 30/09/2020 (Reg	1.1%	-	1.1%
Total number of holdings	381	903	
Off benchmark holdings	12.6%	-	

Source: Ashmore & JP Morgan.

Peer group comparison (as at 30-Sep-18): Ashmore EM Blended Debt Total Return Composite

Ashmore



Universe: eVestment Global Emerging Mkts Fixed Income - Blended Currency

	VT	RM	MRQ	Rk	1 Year	Rk	2 Years	Rk	3 Years	Rk	5 Years	Rk	7 Years	Rk	10 Years	Rk
5th percentile			1.72		0.07		4.06		8.78		5.01		6.71		9.62	
25th percentile			1.05		-3.48		2.61		7.37		4.01		5.26		8.03	
Median			-0.07		-4.55		1.79		6.26		2.46		3.78		6.52	
75th percentile			-0.40		-6.11		0.55		5.29		1.50		3.00		5.41	
95th percentile			-2.41		-8.77		-0.75		3.03		0.36		2.18		2.96	
# of Observations			77		77		74		69		58		44		25	
Ashmore	IX	IX	0.43	39	-3.41	24	0.95	69	5.18	76	2.00	62	2.90	76	4.58	87
Ashmore Group plc	SA	GF	1.40	16	-3.72	33	3.05	15	8.86	5	3.53	31	4.69	33	6.79	46

Results displayed in USD.

Source: evestment Alliance.

Appendices

Ashmore EM Blended Debt Total Return Composite

Ashmore

June 30, 2018 (please refer to 'Notes' on the next page)

Period	Composite Gross Return	Benchmark Return	Number of Portfolios	Annual Composite Dispersion	Total Assets at End of Period (USD million)	Firm Assets at End of Period (USD million)	Percentage of Firm's Assets	3 Year Std. Deviation Composite	3 Year Std. Deviation Benchmark
2003*	10.82%	6.19%	1	NA	277	4,920	5.63%	NA	NA
2004	22.09%	15.24%	1	NA	560	8,100	6.91%	NA	NA
2005	17.29%	7.49%	2	NA	827	16,800	4.92%	NA	NA
2006	16.29%	11.85%	2	NA	958	26,800	3.57%	7.79%	5.81%
2007	12.66%	11.53%	2	NA	1,508	36,400	4.14%	6.41%	5.19%
2008	-15.78%	-8.21%	2	NA	1,068	24,500	4.36%	13.01%	11.49%
2009	35.49%	23.24%	2	NA	1,670	31,300	5.34%	14.01%	12.29%
2010	17.72%	11.47%	2	NA	1,759	45,900	3.83%	14.77%	12.78%
2011	1.28%	1.87%	5	NA	2,497	52,600	4.75%	10.97%	8.89%
2012	19.76%	14.78%	7	1.78%	4,179	64,600	6.47%	10.09%	8.32%
2013	-5.71%	-5.37%	12	0.46%	6,671	74,500	8.95%	9.61%	8.59%
2014	-3.45%	0.35%	13	0.56%	5,766	63,100	9.14%	8.59%	7.80%
2015	-4.40%	-5.21%	13	0.71%	4,090	48,500	8.43%	8.11%	6.89%
2016	18.45%	8.50%	13	1.68%	4,680	50,700	9.23%	9.53%	7.31%
2017	14.23%	11.82%	16	0.93%	8,557	66,600	12.85%	8.43%	6.52%
YTD Jun 18	-5.94%	-5.04%	15	NA	9,833	70,800	13.89%	8.81%	6.83%

*partial period return since inception (1st Jul 03).

Prospective investors should obtain and review the offering documents relating to the units or shares of any Fund, including the description of risk factors/investment considerations contained in the offering documents, prior to making any decision to invest in such units or shares.

Ashmore EM Blended Debt Total Return Composite

Ashmore

Notes

1. The Firm is defined as all portfolios managed by Ashmore Group plc and its majority owned subsidiaries, or any entities that utilise the Ashmore Global Operating Model. ("Ashmore") The firm definition was changed in June 2017 to include entities on the Ashmore Global Operating Model. There was no change to reported AUM or returns prior to this date.
2. Ashmore claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. Ashmore has been independently verified from 1 January 2014 to 30 June 2017. Prior to 31 December 2013, Ashmore's separate investment advisory businesses Ashmore Investment Management Ltd ("AIML") and Ashmore Equities Investment Management (US) LLC ("AEIM") existed as two separate Firms which were compliant as separate entities to 31 December 2013 and were independently verified from 25 February 1999 until 31 December 2013 and from 1 January 1994 until 31 December 2013 respectively. The verification report(s) is/are available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.
3. The Blended Debt Total Return Composite includes all discretionary portfolios that invest primarily in Global Emerging Market hard and local currency denominated debt across sovereign, quasi-sovereign and corporate instruments. The composite only includes portfolios with reference benchmarks that have an equal weighted split of hard and local currency components.
4. This composite was created in January 2018.
5. The benchmark presented is a monthly rebalanced composite benchmark (50% JP Morgan Emerging Market Bond Index Global Diversified; 25% JP Morgan Emerging Local Markets Index Plus; 25% JP Morgan Government Bond Index Emerging Markets Global Diversified). Ashmore is benchmark-aware and the benchmark is shown for information purposes only.
6. Composite and benchmark performance presented is in USD.
7. Composite results for the full historical period are time-weighted and include reinvestment of dividends and other earnings.
8. Returns are presented gross of management (advisory) fees, performance fees (where relevant), custodial fees and other expenses but net of all trading expenses and non-reclaimable withholding taxes. Actual returns and performance for each investor will vary depending on the applicable fee schedule. For example, if $100,000 were invested and experienced a 10% annual return compounded quarterly for ten years, its ending dollar value without giving effect to the deduction of advisory fees would be $268,506 with an annualised compounded return of 10.38%. If an advisory fee of 1.50% of average net assets per year were deducted quarterly for the ten-year period, the annualised compounded return would be 8.77% and the ending dollar value would be $231,890. Additional information about advisory fees is found in Part II of AIML's Form ADV.
9. For the underlying funds/accounts, the highest applicable standard fixed management fee is 1.10% per annum (performance fees may apply).
10. The policies for valuing the underlying funds/accounts which are set out in each respective prospectus/scheme particulars/investment management agreement and the methodology for calculating performance and preparing compliant presentations are available upon request.
11. Composites may deal in certain derivative instruments and/or sell investments (including currencies) short for efficient portfolio management purposes or to hedge. Borrowing may be permitted within restrictions imposed by the component portfolios as set out in each fund's scheme particulars/account's investment management agreement. The use of repurchase arrangements in certain circumstances will constitute borrowing. Leverage may be employed by the strategy in a range from 100% to 200%. Since inception of the strategy the historical leverage employed has been between 100% to 150%. Leverage increases the sensitivity to market volatility and increases the potential or realised gains and/or losses.
12. The dispersion of the composite is measured using equal-weighted standard deviation and has only been calculated for periods where there are more than 5 portfolios in the composite with full-period annual returns.
13. The three-year annualised ex-post standard deviation measures the variability of the composite (gross) and the benchmark returns over the preceding 36-month period where available and the calculation assumes the composite and the benchmark time weighted return follows a log-normal distribution.
14. Additional information regarding the firm's full set of composites and their description is available upon request - please contact Ashmore Marketing Services (Tel: +44 20 3077 6000; Email: ashmail@ashmoregroup.com).

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DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C2

Topic: **Passive Investment Grade Bond Recommendation**

Attendees: Leandro Festino, Managing Principal - Meketa Investment Group
Aaron Lally, Executive Vice President - Meketa Investment Group

Discussion: The Strategic Asset Allocation approved by the Board on October 10, 2018 included a new 4% allocation to Investment Grade Bonds. When Staff and Consultant presented the Asset Allocation Implementation Plan at the November 8, 2018 meeting of the Board, Staff stated its intention to recommend an interim passive solution for investment grade bonds. The approval of the implementation plan included a provision that a search for an active manager for investment grade bonds be conducted within twelve months.

Meketa recommends using the Vanguard Total Bond Market Index Institutional Mutual Fund (ticker: VBTIX). This is the largest and lowest-cost investment grade bond index mutual fund available to institutional investors. Staff concurs with this recommendation.

Staff anticipates eventual purchases of approximately $62 million of VBTIX to be sourced from future private market distributions in accordance with the Asset Allocation Implementation Plan. Based on the characteristics outlined in Appendix D of the Investment Policy Statement, Alternative Investments, Staff and Consultant categorize VBTIX as a Traditional Investment.

Staff Recommendation: **Approve** the Vanguard Total Bond Market Index Institutional Mutual Fund as an interim solution for the Investment Grade Bond asset class.

Regular Board Meeting – Thursday, December 13, 2018

MEMORANDUM

To: Board of Trustees, Dallas Police & Fire Pension System

From: Leandro Festino, Aaron Lally, Alli Wallace, Shawn Bowen
Meketa Investment Group

Date: November 29, 2018

Re: Vanguard Investment Grade Bond Index Fund

OVERVIEW

DPFP adopted a new asset allocation on October 10, 2018 with a 4% target to investment grade bonds. At the November 8, 2018 Board meeting, the Trustees expressed a desire to conduct a search within the next twelve months for an active investment grade bond manager. We suggest hiring an index fund as a temporary placeholder.

Meketa Investment Group recommends using the Vanguard Total Bond Market Index Institutional Mutual Fund (ticker: VBTIX). This is the largest and lowest-cost investment grade bond index mutual fund available to institutional investors. Additionally, the mutual fund vehicle has a similar fee schedule to commingled funds of the large index fund providers (State Street Global Advisors, Northern Trust, Blackrock, etc.) but with the following advantages:

- As a mutual fund it has daily liquidity with no required pre-trade notice (most of the commingled fund index products require 24-48 hours advance notice before trading).
- No investment management agreement or subscription agreement needs to be executed. Shares in the fund can be purchased directly by DPFP's custodian bank.
- In the institutional share class, no trading costs are incurred.

For a point of reference, we have only identified one other similar mutual fund with the same fee schedule as Vanguard (0.04%). Charles Schwab launched a Barclays Aggregate mutual fund in 2017 (ticker: SWAGX) but we prefer the Vanguard strategy because it has a longer history to judge tracking error relative to the index.

FUND CHARACTERISTICS

Name	Vanguard Total Bond Market Index Fund
Ticker	VBTIX
Management Fee	0.04%
Liquidity	Daily
Purchase Fees/Redemption Fees/12b-1 Fees	None
Assets in Strategy/Share Class	$199.7 billion / $40.3 billion
Benchmark	BloomBarc U.S. Float Adjusted Index

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760 795 3450 fax 760 795 3445 www.meketagroup.com

Memorandum
November 29, 2018
Page 2 of 2

HISTORICAL PERFORMANCE[1]

	Vanguard (%)	*BloomBarc U.S. Flt Adj Idx (%)*
Trailing Period Returns:		
1 year	-2.0	*-2.1*
3 year	1.0	*1.1*
5 year	1.8	*1.8*
10 year	3.9	*4.0*
Calendar Year Returns:		
2017	3.6	*3.6*
2016	2.6	*2.7*
2015	0.4	*0.4*
2014	5.9	*5.9*
2013	-2.1	*-2.0*
2012	4.2	*4.3*
2011	7.7	*7.9*
2010	6.6	*6.6*
2009	6.1	*5.9*
2008	5.2	*5.2*
2007	7.1	*7.0*

PORTFOLIO CHARACTERISTICS[2]

	Vanguard	*BloomBarc U.S. Flt Adj Idx*
Yield to Maturity (%)	3.5	*3.5*
Average Duration (years)	6.2	*6.1*
Number of Holdings	8,000+	*10,000+*
Credit Quality (%):		
Average Quality	AA	*AA*
AAA	68	*69*
AA	5	*4*
A	12	*12*
BBB	15	*15*
Below BBB	0	*0*
Sector Weights:		
Government	48	*48*
Corporate	27	*27*
Securitized	24	*24*
Municipal	1	*1*

Please contact us at (760) 795-3450 with any questions.

LF/AL/AW/mps

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[1] As of October 31, 2018.
[2] As of September 30, 2018.

DALLAS POLICE & FIRE PENSION SYSTEM

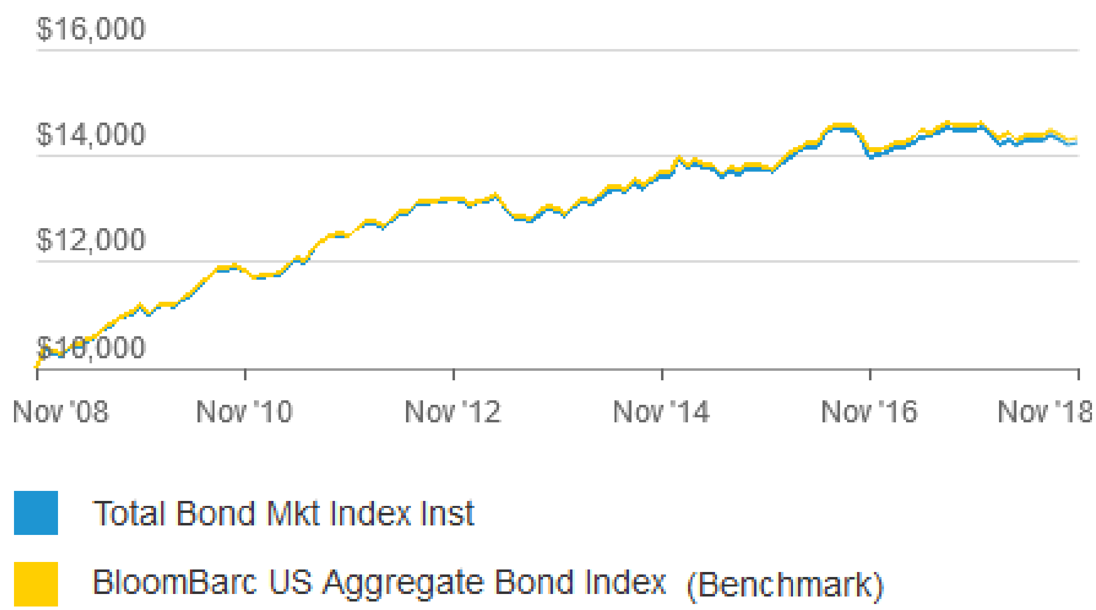
Vanguard Total Bond Market Index Fund Institutional Shares (VBTIX) Descriptive Information

December 13, 2018

VBTIX Annual Returns and Growth of $10,000

Average annual returns—updated monthly
as of 11/30/2018

	1-yr	3-yr	5-yr	10-yr	Since inception 09/18/1995
Total Bond Mkt Index Inst	-1.35%	1.31%	1.98%	3.60%	4.90%
Spliced BloomBarc USAgg Flt Adjlx* (Benchmark)	-1.41%	1.36%	2.01%	3.68%	4.99%



Source: https://investor.vanguard.com/mutual-funds/profile/performance/vbtix

DALLAS POLICE & FIRE PENSION SYSTEM

VBTIX Characteristics

Fixed income characteristics
as of 10/31/2018

	Total Bond Mkt Index Inst	BloomBarc US Agg Float Adj Index (Benchmark)
Number of bonds	8601	10133
Yield to maturity	3.6%	3.6%
Average coupon	3.1%	3.2%
Average effective maturity	8.3 years	8.4 years
Average duration	5.9 years	6.0 years
Short-term reserves	0.2%	—
Fund total net assets	$199.3 billion	—
Share class total net assets	$40.3 billion	—

Source: https://investor.vanguard.com/mutual-funds/profile/portfolio/vbtix

DALLAS POLICE & FIRE PENSION SYSTEM

VBTIX Portfolio Distribution

Distribution by issuer (% of fund)
as of 10/31/2018

	Total Bond Mkt Index Inst
Asset-Backed	0.5%
Commercial Mortgage-Backed	1.9%
Finance	8.8%
Foreign	5.2%
Government Mortgage-Backed	21.1%
Industrial	16.3%
Other	1.0%
Treasury/Agency	43.3%
Utilities	1.9%
Total	**100.0%**

Distribution by credit quality* (% of fund)
as of 10/31/2018

	Total Bond Mkt Index Inst
U.S. Government	64.2%
Aaa	6.2%
Aa	3.5%
A	11.6%
Baa	14.5%
Total	**100.0%**

Source: https://investor.vanguard.com/mutual-funds/profile/portfolio/vbtix

VBTIX Maturity Distribution and Volatility

Distribution by effective maturity (% of fund)
as of 10/31/2018

	Total Bond Mkt Index Inst
Under 1 Year	1.8%
1 - 3 Years	24.2%
3 - 5 Years	17.9%
5 - 10 Years	37.0%
10 - 20 Years	6.3%
20 - 30 Years	12.3%
Over 30 Years	0.5%
Total	**100.0%**

Historical volatility measures
as of 10/31/2018

Benchmark	R-squared**	Beta**
Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index†	0.99	1.01
Bloomberg Barclays U.S. Aggregate Bond Index	0.99	1.01

Source: https://investor.vanguard.com/mutual-funds/profile/portfolio/vbtix

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C3

Topic: **Investment Policy Statement**

Attendees: Leandro Festino, Managing Principal – Meketa Investment Group
Aaron Lally, Executive Vice President – Meketa Investment Group

Discussion: Investment Staff and Meketa have completed a comprehensive review of the Investment Policy Statement (IPS) and are proposing numerous changes to incorporate best practices and improve clarity and structure. Key recommendations are highlighted in a Staff memo. Smooth and redline IPS drafts are provided for reference. Meketa has provided a presentation discussing the proposed benchmark changes and identifying proposed rebalancing ranges.

Staff Recommendation: **Approve** recommended changes to the Investment Policy Statement including proposed benchmarks and rebalancing ranges.

Tuesday, December 4, 2018

From: DPFP Investment Staff

To: DPFP Board of Trustees

Subject: Overview of Recommended Revisions to the Investment Policy Statement

DPFP Investment Staff and Investment Consultant, Meketa Investment Group, have conducted a review of the Investment Policy Statement (IPS). The IPS review is required annually by the IPS and was identified as a high priority (level one) in the Initial Fund Review conducted by Meketa. Numerous changes are recommended to incorporate best practices and improve structure and clarity. This memo highlights key recommendations but does not address every change. Smooth and redline IPS drafts are provided for reference.

- New subsection 2.C added to address investment constraints
- Some language in Section 3, Ethics, Standards of Conduct, and Fiduciary Responsibility, replaced with references to the controlling policies (e.g. Ethics Policy).
- Significant changes in Section 4, Core Beliefs and Long-Term Acknowledgements, to incorporate best practices and views of Board, Consultant, and Investment Staff.
- Significant changes to Section 5.B, IAC.
  - Added flexibility to IAC composition so the committee can continue to operate during periods of membership transition.
  - Added specificity to IAC roles and responsibilities
- Added "primary responsibility for oversight and management of the investment portfolio" to Investment Staff role.
- Added new subsection specifying the role and responsibility of commingled funds
- Replaced old Section 6, Asset Classes and Investment Guidelines, with new Section 6, Strategic Asset Allocation and Rebalancing, addressing asset allocation, asset class structure, rebalancing, and private market limitations.
- Added new Appendix A, Asset Class Descriptions
- Replace old Section 7, Due Diligence and Monitoring, with new Section 7, Investment Manager Search, Selection, and Monitoring. Monitoring factors are now included in Section 7 so the old Appendix B, Due Diligence Criteria, was eliminated.
- Updated Appendix B, Strategic Asset Allocation and Rebalancing Ranges, to incorporate the approved long-term asset allocation and proposed changes to certain benchmarks and rebalancing ranges.
- Added Appendix B1, Asset Allocation Implementation Plan.

DALLAS POLICE & FIRE PENSION SYSTEM

INVESTMENT POLICY STATEMENT

Amended as of December ~~14, 2017~~13, 2018

~~INVESTMENT POLICY STATEMENT~~

~~Adopted April 14. 2016~~
~~Amended as~~

Table of ~~December 14, 2017~~Contents

~~TABLE OF CONTENTS~~

~~INVESTMENT POLICY STATEMENT~~

~~Adopted April 14. 2016~~
~~Amended as of December 14, 2017~~

Section 1 ~~Section 1~~ Introduction and Purpose

This policy statement shall guide investment of the assets of the Dallas Police and Fire Pension System (DPFP). This investment policy statement (IPS) is issued for the guidance of the Dallas Police and Fire Pension System Board of Trustees (Board), Investment Advisory Committee (IAC), Executive Director, Staff, Consultant(s), Custodian, and Investment Managers. This IPS is intended to set forth an appropriate set of goals and objectives for DPFP. It will define guidelines to assist fiduciaries and Staff in the supervision of the investments of DPFP. The investment program processes and procedures are defined in the various sections of the IPS by:

A. Stating in a written document DPFP's expectations, objectives and guidelines for the investment of assets;

B. Setting forth an investment structure for managing the portfolio. This structure includes assigning various asset classes, investment management styles, asset allocation and acceptable ranges that, in total, are expected to produce an appropriate level of overall diversification and total investment return over the investment time horizon;

C. Encouraging effective communications between the Board, IAC, Executive Director, Staff, Consultant(s), Investment Managers and Custodian(s);

D. ~~**Set**~~Setting forth policy that will consider various factors, including inflation, ~~**consumption,**~~ taxes, liquidity and ~~**administrative**~~ expenses, that will affect the portfolio's short and long~~-~~-term total expected returns and risk;

E. Establishing ~~**formal**~~ criteria to select~~,~~ and evaluate~~**, monitor, compare, and attribute the performance of**~~ Investment Managers ~~**on a regular basis**~~; and

F. Complying with ~~all~~ applicable fiduciary and due diligence requirements experienced investment professionals would utilize, and with ~~all applicable~~ laws, rules and regulations ~~from various local, state, federal, and international political entities that can impact~~applicable to DPFP.

Section 2 ~~Section 2 Design,~~ Goals, ~~and~~ Objectives, and Constraints

~~Staff and the Consultant(s) are expected to deliver excess return beyond the Policy Benchmark[1] through manager selection and asset allocation adjustments. By achieving allocation and performance objectives consistently, the long-term investment goals of DPFP are expected to be achieved.~~

A. ~~A.~~ Goals

1. Ensure funds are available to meet current and future obligations of the plan when due ~~while earning~~.

~~1.~~2. Earn a long-term, net of fees, investment return greater than the actuarial return assumption.

~~2.~~3. ~~To consistently rank~~Rank in the top half of the public fund universe over the rolling ~~three~~five-year period, net of fees.

B. ~~B.~~ Objectives

1. ~~To maintain~~Maintain a diversified asset allocation~~;~~.

2. ~~To provide for an appropriate~~ Accept the minimum level of risk ~~adjusted rate of~~ required to achieve the return~~;~~ objective.

~~1. To allow for both passive and active investment management;~~

~~[1] The Policy Benchmark represents the return of the investable and non-investable indices as defined in Appendix A, at the target allocation for each asset class.~~

~~2. To monitor quarterly manager performance;~~

~~3. To monitor monthly asset allocation changes;~~

3. ~~To outperform~~Outperform the Policy Benchmark[2] over rolling ~~three~~five-year periods~~;~~.

4. ~~To control~~Control and monitor the costs of administering and managing the investments~~;~~.

~~4. Establish guidelines and procedures for selecting, monitoring and replacing investment vehicles; and~~

~~5. Re-evaluate annually the policies defined in this IPS.~~

[2] The Policy Benchmark represents the return of the investable and non-investable indices as defined in Appendix B, at the target allocation for each asset class.

C. ~~Section 3~~ Constraints

1. DPFP will be managed on a going-concern basis. The assets of the Fund will be invested with a long-term time horizon, while being cognizant of the weak actuarial funded ratio and ongoing liquidity needs.

2. The Board intends to maintain sufficient liquidity in either cash equivalents or short-term investment grade bonds to meet two to three years of anticipated benefit payments and expenses (net of contributions).

3. DPFP is a tax-exempt entity. Therefore, investments and strategies will be evaluated on a basis that is generally indifferent to taxable status.

Section 3 Ethics, Standards of Conduct, and Fiduciary Responsibility

The following are standards of conduct for the Board, Investment Advisory Committee, Staff, Investment Managers, Consultant(s~~)~~), and all other investment related ~~other~~ service providers of DPFP~~:~~.[3]

A. Place the interest of DPFP above personal interests~~;~~.

B. Act with integrity, competence, diligence, respect, and in an ethical manner~~;~~ .

C. Use reasonable care, diligence, and exercise independent professional judgment when conducting analysis, making recommendations, and taking actions~~;~~.

D. Promote the integrity of and uphold the rules governing DPFP~~;~~.

E. Comply with all applicable laws, rules, and regulations of any government agency, regulatory organization, licensing agency, or professional association governing their professional activities~~;~~ .

[3] These are informed by the CFA Institute and the Center for Fiduciary Studies.

~~A. Not assist or knowingly participate in any violation of governing laws, rules, or regulations;~~

~~B. Not accept gifts, benefits, or compensation that could be expected~~Adhere to ~~compromise independence and objectivity;~~

~~C. Must not knowingly make any statement that misrepresents facts~~applicable policies relating to ~~investment analysis, recommendations, actions, or other professional activities;~~

F. **~~Not engage in~~** ethics, standard of conduct **~~involving dishonesty, fraud, deceit; and~~**and fiduciary responsibility including the:

~~D. Make full disclosure (annually) of all matters that could reasonably be expected to impair independence and objectivity with their respective duties to DPFP.~~

1. **~~Section 4~~** Board of Trustees and Employees Ethics and Code of Conduct Policy;
2. Board of Trustees Governance and Conduct Policy; and the
3. Contractor's Statement of Ethics.

Section 4 Core Beliefs and Long-~~Range~~Term Acknowledgements

This section outlines the core beliefs and long-~~range~~term acknowledgements for the overall governance of DPFP. These beliefs and acknowledgements will serve as guiding principles in the decision making and implementation of DPFP's investment mandate.

A. A well-defined governance structure with clearly delineated responsibilities is critical in achieving consistent, long-term performance objectives.

~~Section 4 Core Beliefs and Long-Range Acknowledgements (continued)~~

B. The strategic asset allocation determines the risk reward profile of the portfolio and thus drives overall portfolio performance and volatility.

1. Asset allocation has a greater effect on return variability than asset class investment structure or manager selection.
2. It is essential to account for liabilities in setting long-term investment strategy.
3. Rebalancing the portfolio is a key aspect of prudent long-term asset allocation policy.

C. Investment costs will be monitored and minimized within the context of maximizing net return. The goal is not low fees, but rather maximum returns, net of fees.

1. The opportunity for active manager risk-adjusted outperformance (alpha) is not uniformly distributed across asset classes or Investment Managers' strategies.

~~A. Portfolio rebalancing to the asset allocation will occur on a periodic basis.~~

2. ~~**Section 5**~~ Active strategies are preferred when there is strong conviction that they can be expected to add alpha, net of fees.
3. Passive strategies should be considered if alpha expectations are unattractive.

D. Risk is multifaceted and will be evaluated holistically, incorporating quantitative measures and qualitative assessments.

1. Global investment reduces risk through diversification.
2. Diversification across different risk factors reduces risk.
3. The pattern of returns matters because volatility levels and the sequence of gains and losses can impact funded status.
4. Risk that is not expected to be rewarded over the long-term, or mitigated through diversification, will be minimized.
5. Generating positive investment return requires recognizing and accepting non-diversifiable risk. Not taking enough risk is risky; therefore, DPFP will accept a prudent amount of risk to achieve its long-term target returns.

Section 5 Roles and Responsibilities

A. ~~A.~~ Board of Trustees

The Board ~~is made up~~ of ~~eleven (11)~~ Trustees~~. The~~ (Board) has a fiduciary ~~role as the representative of DPFP. The Board recognizes its fiduciary duty and acknowledges its~~ responsibility to ensure ~~that the~~prudent management of the plan and ~~DPFP's fund is in~~ compliance with all state and federal laws. Additionally, the Board:

1. Establishes investment objectives consistent with the needs of DPFP and approves the IPS of DPFP;

~~1. Prudently diversifies, selects, and maintains a general investment strategy consistent with allocation ranges and investment guidelines including an agreed upon risk/return profile;~~

2. Approves strategic asset allocation targets and ranges, and asset class structures;

3. Prudently hires, monitors, ~~&~~and terminates key investment service providers including: Consultant(s), Investment Managers and ~~other vendors~~Custodian;

4. Appoints members to the Investment Advisory Committee (IAC);

~~4.~~5. Reviews investment related expenses;

~~5.~~6. Approves Board travel related to ~~investment monitoring,~~investments; and ~~in exceptional cases due diligence;~~

~~2. Approves any use of direct portfolio leverage by DPFP;~~

~~**A. Board** (continued)~~

~~6.~~7. ~~Adopts~~Reviews the IPS ~~and~~ annually ~~reviews in the last quarter of each calendar year~~ and revises as needed~~; and~~.

~~3. Avoids prohibited transactions and conflicts of interest.~~

B. ~~B.~~ Investment Advisory Committee (IAC)

1. ~~1.~~ IAC Composition, Selection and Criteria

a. The requirement and general composition of the IAC is defined by statute.

~~a.~~b. The IAC serves at the discretion of the Board of Trustees~~;~~ .

c. IAC recommendations are not binding on the Board, provided however the Board may in the exercise of its fiduciary discretion grant decision-making authority to the IAC.

~~b.~~d. The IAC is composed of up to five members~~: three~~ including one or two current board members and a majority outside investment professionals~~ with broad portfolio management experience and two current Board members~~.

~~c.~~e. The current Board members will serve staggered two-year terms on the IAC. Non-Board members will serve ~~a~~ staggered ~~two~~three-year ~~term~~terms.

~~d.~~f. The Board will ~~vote on and approve all~~ appoint members of IAC members~~;~~ by vote.

~~e.~~g. IAC meetings ~~will not be open to the public and will~~ require a quorum of at least three IAC members~~;~~.

~~f.~~h. ~~f.~~ The IAC will select a chair from its members to serve as liaison to the Board and to preside over IAC meetings~~;~~.

~~g. Each outside investment professional member of the IAC will adhere to the DPFP Ethics Policy;~~

~~h. If the Executive Director learns that potential ground for removal of an IAC member exists, the Executive Director shall notify the Chair of the Board of the potential grounds for removal;~~

~~g.~~i. ~~i.~~ The Board of Trustees may elect to dismiss a member of the IAC for any reason.

2. ~~2.~~ IAC Roles and Responsibilities:

a. A key role of the IAC is to ensure that DPFP investments are prudently managed.

b. The IAC will ~~review all~~advise regarding the search and selection process for investment managers and other matters that the Board may request.

~~a.~~c. All investment~~-~~ related ~~items which are brought to the Board for action;~~ agenda materials for the Board will be made available to the IAC.

~~2. IAC Roles and Responsibilities: (continued)~~

~~a.~~ The IAC will ~~make non-binding recommendations to the Board;~~

~~b. The IAC chair will~~ meet as needed, but at least quarterly, to discuss the ~~IAC recommendation, or lack thereof, with the Board, as needed.~~

~~b.~~d. ~~If requested by the Board, IAC shall review~~ investment program and provide insight and recommendations to Staff and Consultant ~~recommendations on asset allocation targets and ranges, and provide an IAC recommendation to the Board; and~~.

e. ~~The~~ The IAC Chair will report to the Board regarding IAC activity as well as investment-related concerns and recommendations.

f. Any IAC member may address the Board to communicate investment related concerns.

~~c.~~g. IAC members are fiduciaries to DPFP.

~~**C. Staff**~~

~~1. Executive Director~~

C. Executive Director

~~3.~~1. The Executive Director is authorized to administer the operations and investment activities of DPFP under policy guidance from the Board;

~~4.~~2. Is authorized to manage investments approved by the Board including authority to enter into contract amendments including fund extensions, act with regard to investment governance issues and engagement of advisors as needed;

~~5.~~3. Manages the day to day operations of DPFP;

~~a. Reports to the Board when strategic asset allocation breaches target allocation bands;~~

~~6.~~4. Oversees and reports to the Board on investment and due diligence processes and procedures;

~~7.~~5. Approves/declines all Staff travel related to ~~all~~investment manager ~~pre-hire &~~ on-site due diligence; and

~~8.~~6. ~~Approval of~~Approves Investment Staff recommendations for presentation to the IAC and Board~~; and~~.

~~9.~~7. ~~Is~~ The Executive Director is a fiduciary to DPFP ~~when exercising discretion~~.

~~C.~~D. Investment ~~Policy Statement~~Staff

~~As amended through December 14, 2017~~
~~Page 7 of 14~~

~~2.~~ The Investment Staff

1. ~~The~~ (Staff) has primary responsibility for oversight and management of the investment portfolio. Staff is responsible for investment manager due diligence and recommendations, portfolio implementation consistent with the Board approved asset allocation, and ~~will assess the activities of the Consultant(s). The Staff helps the Board and the IAC to oversee Investment Managers, Consultant(s), Custodian(s), and vendors. Additionally, the Staff:~~assessment of the Consultant(s);

2. Helps the Board and the IAC to oversee Investment Managers, Consultant(s), Custodian, and vendors;

~~2.~~3. Reports to Executive Director ~~when portfolio asset classes exceed allowable strategic boundaries~~through the Chief Investment Officer;

4. Works closely with the Investment Consultant(s);

~~3.~~5. Notifies Consultant~~(s)~~ in writing of rebalancing needs and recommended implementation~~, so as to employ periodic cash flows to asset classes within target allocation ranges as well as to periodically rebalance the portfolio~~;

~~a. Instructs Investment Managers to implement Consultant approved re-balance instructions;~~

~~b. Submits to Executive Director for review, on annual basis, recommended asset allocation targets and ranges & oversees implementation of the approved asset allocation;~~

~~c. Monitors and reports portfolio asset class balances;~~

~~4.~~6. ~~Assists in~~Coordinates the preparation and annual review of the IPS;

~~d. Reviews Consultant(s)'s Investment Manager due diligence and recommendations;~~

~~5.~~7. Prepares Staff Investment Manager recommendations, submits Staff and Consultant(s) recommendations to Executive Director for review;

~~6.~~8. After Board approval of investment, Staff approves Investment Manager Strategy guidelines which will be outlined in the Investment Manager agreements, as applicable;

~~7.~~9. Monitors all investments, Investment Managers and investment-related vendors;

~~e. Monitors adherence to quantitative due diligence criteria;~~

~~8.~~10. Accounts for and reviews ~~annually~~ all external management fees and investment expenses;

~~2. Investment Staff (continued)~~

~~9.~~11. Ensures all fiduciaries to DPFP are aware of their fiduciary obligations annually~~;~~.[4] ~~and~~

~~f. Is not a fiduciary to DPFP.~~

~~D.~~E. Consultant(s)

1. The Consultant(s) ~~should monitor~~provides independent investment expertise to the Board, IAC, and Staff;

2. Reports to the Board and works closely with Staff;

~~1.~~3. Monitors and reports qualitative and quantitative criteria related to Investment Managers and aggregate portfolio activity and performance~~. The Consultant(s), through its continuous and comprehensive responsibilities to DPFP should acknowledge in its contract, its fiduciary responsibility to DPFP. Additionally, the Consultant(s):~~ ;

~~2.~~4. Recommends annually to ~~IAC and~~ Board strategic asset allocation targets, ranges, and benchmarks for asset classes;

~~3.~~5. Documents asset allocation recommendations with asset class performance expectations including standard deviation, expected return and correlations for each asset class used by DPFP;

6. Reviews asset class structures periodically as required by the IPS and recommends improvements to the Board.

~~4.~~7. Establishes and follows due diligence procedures for Investment Manager candidate searches;

[4] Verification of this may be through contract, agreement, or annual fiduciary acknowledgement letter.

~~5.~~8. Conducts screens and searches for Investment Manager candidates;

~~6.~~9. Assists in the selection process and monitoring of Investment Managers;~~[5]~~

~~7.~~10. Reviews and recommends Investment Managers and peer groups to IAC and Board;

~~8.~~11. Documents and delivers to Staff written recommendations on Investment Manager new hire, hold and termination reviews;

~~9.~~12. ~~Any new hire recommendation from the Consultant should include a recommended~~Recommends benchmark and ~~an assessment of~~ appropriate asset class and sub-allocation for investment managers;

[5] ~~*The specific screening criteria for investment managers can be found in Appendix B.*~~

~~D. Consultant(s) (continued)~~

~~10.~~13. Approves and verifies in writing each of Staff's rebalancing recommendations and implementation;~~[6]~~

~~1. Reviews whether rebalancing was done consistent with best practices;~~

~~11.~~14. Monitors the diversification, quality, duration, and risk of holdings as applicable;

~~12.~~15. Assists Staff in negotiation of terms of vendor contracts; and

~~13.~~16. Prepares quarterly investment reports, which include the information outlined in Appendix C~~; and~~ .

~~14.~~17. ~~Acts as~~Any Investment Consultant is a fiduciary to DPFP and this responsibility must be acknowledged in writing.

~~E.~~F. ~~E.~~ Investment Managers

1. Public Investment Managers

   a. Acknowledge in writing acceptance of the objectives, guidelines, and standards of performance;

   b. Invest the assets of DPFP in accordance with its objectives, guidelines and standards;

~~[6] *Evidence of approval may be in electronic format*~~

c. Exercise full discretionary authority as to all buy, hold and sell decisions for each security under management, subject to the guidelines ~~as defined in this Statement~~established in the Investment Management Agreement or applicable contract;

d. ~~If managing a separate account, send~~Send trade confirmations to the Custodian;

e. ~~For separately managed accounts, deliver~~Deliver monthly report to Consultant(s)/Staff describing portfolio asset class weights, investment performance, security positions, and transactions;

~~a. For commingled assets, this statement should show unit position and unit value;~~

~~1. Public Investment Managers (continued)~~

f. Adhere to best execution and valuation policies;

~~b. Prices and fair market valuations will be obtained from a third-party reporting service provider;~~

~~c. Communicate to Executive Director any material changes at firm;~~

g. Inform ~~DPFP~~Staff and Consultant, as soon as practical, in writing of any breach of investment guidelines, ~~ethic~~ethics violations or violations of self-dealing;

h. ~~Communicate~~Inform Staff and Consultant as soon as practical, in writing, of any significant changes in the ownership, organizational structure, financial condition, ~~or~~ personnel staffing, or other material changes at the firm; and

~~d. Acts as a fiduciary to DPFP.~~

i. ~~2.~~ Act as a fiduciary to DPFP. All separate account investment managers are fiduciaries to DPFP and this responsibility must be acknowledged in the contract for services.

2. Commingled Fund Investment Managers

a. Provide the objectives, guidelines, and standards of performance of the fund;

b. Provide a report detailing fund performance and holding on a monthly basis or as agreed by DPFP;

c. Prices and fair market valuations will be obtained from an independent service provider;

d. The investment manager of the commingled fund must act as a Fiduciary to the commingled fund.

~~2.~~3. Private Investment Managers

a. ~~Acknowledge in writing acceptance of the~~Provide objectives, strategy guidelines, and standards of performance as evidenced in investment manager, operating, or partnership agreement;

b. ~~Will ensure~~Ensure that financials statements undergo annual audits and that investments are reported at fair market value, as outlined in the Investment Management, Partnership, or Operating Agreement(s);

c. Communicate to ~~Executive Director~~Staff any material changes in the ownership or management of the firm, and or the stability of the organization;

d. Inform ~~DPFP~~Staff, as soon as practical, in writing of any breach of investment guidelines, ~~ethic~~ethics violations or violations of self-dealing~~; and~~.

~~a. Acts as fiduciary to DPFP, unless specified and acknowledged by Board at time of hire.~~

~~F.~~G. ~~F.~~ Custodian

1. Safe keep and hold all DPFP's assets in the appropriate domestic accounts and provide highly secure storage of physical stock certificates and bonds such that there is no risk of loss due to theft, fire, or accident;[7]

2. Maintain separate accounts by legal registration;

3. Arrange for timely execution and settlement of Investment Manager securities transactions made for DPFP;

4. Proactively reconcile transactions and reported values to Investment Manager statements;

~~4.~~5. Provide for receipt and prompt crediting of all dividend, interest and principal payments received as a result of DPFP portfolio holdings or securities lending activities;

~~5.~~6. Monitor income receipts to ensure that income is received when due and institute investigative process to track and correct late or insufficient payments, including reimbursement for any interest lost due to tardiness or shortfall;

~~6.~~7. At the direction of the Staff, expeditiously transfer funds into and out of specified accounts~~.~~;

8. ~~**Section 6 Authorized**~~ Timely collection of income, including tax reclaim;

9. Prompt and accurate administration of corporate actions, including proxy issues; and

10. Manage securities lending.

[7] Electronic transfer records at the Depository Trust Company ("DTC'') are preferred.

Section 6 Strategic Asset Allocation and Rebalancing

Note: The investment portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In October 2018, the Board approved a new long-term asset allocation, recognizing that implementation would be subject to the gradual unwinding of private market assets. In November 2018, the Board approved an asset allocation implementation plan to prioritize the reallocation of cash distributions from private market assets. Initial variances to long-term allocation targets may be quite large but are expected to gradually diminish. Rebalancing ranges have been established to accommodate current variances to target and will be tightened over time as appropriate.

A. Asset Allocation

1. The strategic asset allocation establishes target weights and rebalancing ranges for each asset class and is designed to maximize the long-term expected return of the Fund within an acceptable risk tolerance while providing liquidity to meet cash flow needs.
2. A formal asset allocation study will be conducted as directed by the Board, but at least every three years.
3. Asset allocation targets will be reviewed annually for reasonableness in relation to significant economic and market changes or to changes to the investment objectives.
4. Asset class descriptions are provided in Appendix A.
5. The approved asset allocation is included in Appendix B.

B. Asset Class Structure

1. The asset class structure establishes the investment manager roles that will be used to implement the asset allocation.
2. The asset class structure will emphasize simplicity and cost control and toward that end will employ the minimum number of managers necessary to assure appropriate diversification within each asset class.
3. Asset class structures will be reviewed periodically, approximately every two years.
4. Any changes to the asset class structure must be approved by the Board.

C. Rebalancing

1. In general, cash flows will be allocated to move asset classes toward target weights and shall be prioritized according the Asset Allocation Implementation Plan detailed in Appendix B1.
2. Staff shall submit a rebalancing recommendation to the Consultant at least annually based on consideration of the entire portfolio, and additionally as soon as practicable when an asset class breaches an established rebalancing range or when deemed prudent by Staff or Consultant.

3. The allocations to Cash and Short-Term Investment Grade bonds are designed to provide liquidity during periods of investment market stress and are not required to be rebalanced to target if deemed prudent by Staff and Consultant.

4. Rebalancing recommendations should consider expected future cash flows, investment liquidity, market volatility, and costs.

5. Transition management shall be used when prudent to minimize transition costs.

6. Staff is responsible for implementing the rebalancing plan following Consultant approval.

7. Rebalancing activity shall be reported to the Board.

D. Private Market Limitations

1. DPFP will not commit capital to any direct private market investments or co-investments that are tied to a single company. This restriction does not prevent DPFP from holding direct investments that result from the dissolution of a private market fund

2. DPFP will not commit capital to any private market fund if such commitment would likely result in DPFP holding greater than a 10% interest in the fund.

3. DPFP will not commit capital to any private market fund if such commitment exceeds 2% of the total market value of DPFP investment portfolio.

4. DPFP will not commit to any private market fund if total commitments to related funds (e.g. fund family) exceeds 4% of the total market value of DPFP investment portfolio.

Section 7 Investment Manager Search, Selection, and Monitoring

A. Investment Manager Search and Selection

1. The selection of investment managers will utilize a robust process to ensure an open and competitive universe, proper evaluation and due diligence, and selection of candidates that are best able to demonstrate the characteristics sought in a specific search.

2. Investment manager searches shall be based on one or more of the following reasons:

   a. Changes to the approved asset allocation;

   b. Changes to the approved asset class structure; or

   c. Replacement for terminated manager or manager of concern.

3. The IAC will advise regarding the search and selection process for investment managers

4. Staff and Consultant shall define and document the search process, including evaluation criteria, prior to initiating the search process.

5. Each investment manager hiring recommendation shall be supported by a rationale that is consistent with the pre-established evaluation criteria.

6. Each hiring recommendation will generally include the following information:

   a. A description of the organization and key people:

   b. A description of the investment process and philosophy;

   c. A description of return expectations;

   d. The risks inherent in the investment and the manager's approach;

   e. The proper time horizon for evaluation of results;

   f. Identification of relevant comparative measures such as benchmarks and/or peer samples;

   g. The suitability of the investment within the relevant asset class: and

   h. The expected cost of the investment.

~~Asset Classes & Investments Guidelines~~

~~A. Asset Class Guidelines~~

1. ~~Asset allocation is the primary driver of the volatility of portfolio return. To achieve the goals and objectives of DPFP, the fund's assets will be invested in the categories listed in Appendix A. The assets shall be diversified, in order to minimize the concentration risk, both by asset class and within an asset class.~~

2. ~~The strategic asset allocation shall be monitored on an ongoing basis and rebalanced when the lower and upper bounds on the ranges are breached, understanding the timing of the rebalancing may be delayed depending the liquidity of the asset class and costs of rebalancing, and otherwise at the discretion of Staff with concurrence of the Consultant.~~

3. ~~Securities lending is permissible for separately managed accounts and commingled vehicles.~~

~~B. Authorized Investments~~

1. ~~Equities: Equity represents residual ownership of public and private companies after obligations to debt holders have been satisfied.~~

2. ~~Fixed Income: Fixed-income instruments are securities or debt obligations issued by governments, government-related entities, structured debt facilities and public and private companies that contain contractual obligations from the issuer to make interest and/or principal repayments to investors over the duration of the negotiated term agreement.~~

3. ~~Real Assets (Liquid and Illiquid): Liquid real assets are investments in tradable tangible/physical assets or related claims that may display a positive correlation to the rate of inflation. Illiquid real assets (natural resources and infrastructure) represent ownership claim to an actual, finite asset or property.~~

4. ~~Global Asset Allocation: An investment strategy that actively invests in a variety of liquid assets including cash, equity, fixed income, credit, derivatives (interest rate, currency, index) and commodities.~~

5. ~~Private Equity: A non-financial asset that is relatively illiquid and non-transparent. Private equity funds make investments directly into private companies.~~

6. ~~Private Debt: Private debt funds typically provide capital to private sector borrowers.~~

7. ~~Real Estate: Real estate represents investment in a range of properties which provide income and/or appreciation potential. Investments in real estate can be structured as public or private debt and/or equity, and can be in the U.S. or foreign countries.~~

8. ~~Other Authorized Investments: Trade finance and reinsurance based strategies;~~

7. ~~C.~~ Alternative Investments

The Board has adopted the definition of "Alternative Investments" as outlined in Appendix D, which will be reviewed as part of the due diligence process for any new investment. Pursuant to Section 4.07 of Article 6243a-1, the vote of eight trustees is required to approve any Alternative Investment.

~~G.~~B. ~~Section 7 Investment Due Diligence &~~ Monitoring

~~A. Investment Due Diligence~~

1. Staff and Consultant(s) are responsible for ~~recommending external~~ongoing monitoring of all Investment Managers ~~to the IAC and Board for review for potential hiring. The following will be implemented:~~using qualitative and quantitative factors as appropriate.

~~1. Investment Manager candidate due diligence will be conducted by Staff & Consultant(s).~~

~~2. Due diligence criteria are defined in Appendix B.~~

~~3. Selected candidate(s) will be presented to the IAC.~~

~~4. IAC will communicate their recommendation, or lack thereof, on the candidate(s) for consideration and final approval by the Board.~~

~~B. Investment Monitoring~~

~~1. Staff and Consultant(s) are responsible for monitoring external public & private Investment Managers. Public and private Investment Managers will be monitored relative to peers and benchmarks monthly and quarterly, respectively. Additionally, each current manager is expected to satisfy the due diligence criteria outlined in Appendix B. If the following criteria are not met, an Investment Manager is to be considered an underperformer:~~

~~a. Investment Managers' 3 year rolling returns in excess of peer group average;~~

~~b. Investment Managers' 3 year rolling risk-adjusted returns in excess of peer group average;~~

~~c. Investment Managers' qualitative requirements must be satisfied at all time periods, as determined by Staff or Consultant;~~

~~2. Based on the criteria outlined above, the Consultant will highlight underperforming Investment Managers in their quarterly report to the Board. If an Investment Manager is considered an underperformer, Staff and Consultant will provide recommendations to IAC and the Board regarding whether to "hold" or "sell".~~

2. ~~**Section 8**~~ Qualitative factors may include:
   a. Consistent implementation of philosophy and process;
   b. Ownership changes or departure of key personnel;
   c. Assets under management at the firm and product level;
   d. Conflicts of interest;
   e. Material litigation or regulatory challenges involving the investment manager;
   f. Adequate reporting and transparency; and
   g. Material client-servicing problems.
3. Quantitative factors may include:
   a. Long-term (3-5 years) performance relative to assigned benchmarks;
   b. Unusually large short-term performance variance (over or under); and
   c. Risk metrics such as volatility, drawdown, and tracking error.
4. Staff and the Consultant will highlight Investment Manager concerns to the IAC and the Board and recommend an appropriate course of action.

~~Section 6~~Section 8 Risk Management

~~The~~ Staff will work within ~~these policies~~the parameters of this Investment Policy Statement to mitigate the risk of capital loss. By implementing ~~these policies~~this Policy, the Board has addressed:

A. Custodial Risk for both public and private holdings;[8]

B. Interest Rate Risk through fixed income duration and credit monitoring;[9]

[8] Please review Custodian responsibilities in Section 5.
[9] Please review Annual Review of IPS and Investment Manager strategy guidelines reviewed and approved by Staff.

C. Concentration and Credit Risk through asset allocation targets and ranges, rebalancing, and the monitoring of investment guidelines.

~~Through these policies~~Furthermore, through this Policy, Staff has established the necessary ~~monitoring~~ criteria ~~established for~~ to monitor the Custodian, Consultant(s~~)~~), and Investment Managers, such that DPFP ~~has in place policies that will mitigate~~controls and manages interest rate, custody, concentration, and credit risks.

~~**Section 9.**~~

~~Section 7~~Section 9 Approval and Effective Date

The Investment Policy Statement was originally adopted by the Board on April 14, 2016 and was subsequently amended and adopted on the following dates.

December 14, 2017
December 13, 2018

APPROVED on December ~~14, 2017~~13, 2018 by the Board of Trustees of the Dallas Police and Fire Pension System.

[signature]

William F. Quinn
Chairman

Attested:

[signature]

Kelly Gottschalk
Executive Director

~~APPENDICES~~

Appendix A – Asset Class Descriptions

DPFP investment assets are prudently diversified to optimize expected returns and control risks. Assets can generally be categorized into four functional categories of Growth, Income, Inflation Protection, and Risk Mitigation

A. Growth Assets

1. Role: Capital appreciation, primary driver of long-term total return
2. Investment Approach: Growth assets generally represent equity or equity-like interests in current and future income streams and capture long-term economic growth trends throughout the world.
3. Risk Factors: The cost of the high expected long-term returns is higher expected volatility. Growth assets are highly sensitive to economic conditions and are subject to potential loss during economic downturns, rising/unexpected inflation, and rising interest rates.
4. Asset Classes
   a. **Global Equity** represents publicly traded stock holdings of companies across the globe. Liquidity is a key benefit as stocks can be traded daily. Foreign currency volatility can be a source of risk and return.
   b. **Emerging Market Equity** represents publicly traded stock holdings of companies located in or highly dependent on developing (emerging) countries. Emerging market equity is expected to capture the higher economic growth of emerging economies and provide higher long-term returns than global equity coupled with higher volatility. Foreign currency volatility can be a source of risk and return.
   c. **Private Equity** refers to investments in private companies (direct investments) or funds that hold investments in private companies or securities that are not typically traded in the public markets. Frequently these investments need "patient" capital to allow time for growth potential to be realized through a combination of capital investment, management initiatives, or market development. Private equity is expected to provide higher long-term returns than global equity, but Illiquidity is a key risk as investment contributions may be locked up for several years.

B. Income Assets

1. Role: Current income and moderate long-term appreciation
2. Investment Approach: Income assets are generally fixed claims on assets or income streams of an issuer (e.g. government, corporation, asset-backed securities).

3. Risk Factors: The primary risk for Income assets is the failure of the borrower to make timely payments of interest and principal (credit risk) and the price volatility related to credit risk. Bonds with greater credit risk (i.e., bonds with lower credit ratings) are typically less liquid than higher quality bonds.

4. Asset Classes~~**Interim**~~

   a. **Global Bonds** includes sovereign and corporate debt issued by countries and companies located throughout the world in local currency and U.S. dollars. Expanding the investable universe beyond the U.S. provides a diversified source of returns.

   b. **Bank Loans** are like high yield bonds in that both represent debt issuers with higher credit risk. Compared to high-yield bonds, bank loans typically have higher seniority in the capital structure, which has historically resulted in much higher recovery following default.

   c. **High Yield Debt** refers to bonds with higher credit risk and lower credit ratings than investment-grade corporate bonds, Treasury bonds and municipal bonds. Because of the higher risk of default, these bonds pay a higher yield than investment grade bonds.

   d. **Emerging Market Debt** (EMD) refers to bonds issued by developing countries or corporations based in developing countries. EMD bonds can be denominated in U.S. Dollars or local currency. The primary risk factor is credit quality, but interest rates and foreign currency are also factors.

   e. **Private Debt** refers to non-bank direct lending arrangements. Features are similar to bank loans with somewhat higher credit risk and yields. Investments are typically structured in a private market vehicle with limited liquidity. Private debt may be included within the private equity asset class in the strategic asset allocation.

C. Inflation Protection (Real Assets)

1. Role: Current income, inflation protection, diversification

2. Investment Approach: Generally, ownership in physical assets.

3. Risk Factors: Real Assets may not provide the desired inflation protection. Loss of principal is also a risk. Foreign assets are also subject to currency movements against the U.S. dollar.

4. Asset Classes

   a. **Real Estate** includes investments in office buildings, apartments, retail, raw land, and development projects.

   b. **Natural Resources** broadly refers to anything mined or collected in raw form but may include assets subject to further processing. Typical assets include permanent and row crops, timber, minerals, and metals.

c. **Infrastructure** refers to investments in physical systems that support world economies. Typical investments include transportation, communication, utilities (electricity, gas, water, sewage).

D. Risk Mitigation

1. Role: Liquidity to fund benefit payments and other cash flow needs, capital preservation, modest current income, diversification to growth assets

2. Investment Approach: Cash equivalents or high-quality domestic bonds.

3. Risk Factors: Risks are substantially lower for risk mitigation assets, but may include modest exposure to credit or interest rates (duration)

4. Asset Classes

   a. **Cash Equivalents**

   b. **Short Term Investment Grade Bonds** have moderate interest rate risk.

   c. **Investment Grade Bonds** including bonds and notes issued by the U.S Treasury, U.S. Government Agencies, state and local municipalities, corporations, or other issuers with similar conservative risk profiles. Risk factors include duration and credit.

Appendix B – Strategic Asset Allocation and Rebalancing Ranges

~~STRATEGIC ASSET ALLOCATION TARGETS & RANGES~~

Asset Class	Policy Benchmark	Target Weight[1]	~~Range~~Minimum Weight	Maximum Weight
~~Cash~~	~~90-day T Bills~~	~~2.0%~~	~~0% – 5%~~	
~~Plan Level Leverage~~	~~(LIBOR + 300)~~	~~0%~~	~~0% - 15%~~	
Equity		~~30.0~~55%	~~20% – 40%~~	
Global Equity	MSCI ~~AC World (gross)~~ACWI IMI Net	~~20.0~~40%	~~10% – 23~~18%	48%
~~EM~~Emerging Markets Equity	MSCI ~~EM Equity (gross)~~Emerging Markets IMI Net	~~5.0~~10%	0% ~~– 8%~~	12%
Private Equity	~~R3000 +3% (Rolling 3 Mo.)~~Cambridge Associates US Private Equity Index 1Q Lag	5.~~0~~%	~~4% – 15%~~N/A[3]	N/A[3]
Fixed Income		~~33.0~~35%	~~15% – 38%~~	
Cash	91 Day T-Bills	3%	0%	5%
Short-Term ~~Core~~Investment Grade Bonds	Bloomberg Barclays ~~UST~~ US Treasury 1-3 Year	~~2.0~~12%	~~0% –~~ 5%	15%
~~Global Bonds~~Investment Grade Bonds[2]	Bloomberg Barclays ~~Global~~ Aggregate	~~3.0~~4%	2%[2]	~~0% –~~ 6%
High Yield Bonds	Bloomberg Barclays Global ~~HY~~High Yield	~~5.0~~4%	2% ~~– 8%~~	6%
Bank Loans	S&P/LSTA Leveraged Loan ~~Index~~	~~6.0~~4%	~~3% – 9~~2%	6%

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~~Structured Credit & Absolute Return~~Global Bonds	~~HFRI RV: FI (50/50-ABS/Corp)~~Bloomberg Barclays Global Aggregate	~~6.0~~4%	~~0% – 9~~2%	6%
~~EMD (50/50)~~Emerging Market Debt[2]	50% JPM EMBI/ 50% JPM GBI-EM	~~6.0~~4%	~~0% – 9%~~2%[2]	6%
Private Debt	Barclays Global HY + 2% (Rolling 3 Mo.)	~~5.~~0%	~~2% – 7%~~N/A[3]	N/A[3]
Real Assets		~~**25.0**~~10%	~~**20% – 45%**~~	
Real Estate	NCREIF Property Index 1Q Lag	5%	N/A[3]	N/A[3]
Natural Resources	~~S&P Global Nat Res (Rolling 3 Mo.)~~NCREIF Farmland Total Return Index 1Q Lag	5.~~0~~%	~~3% – 10%~~N/A[3]	N/A[3]
Infrastructure	S&P Global ~~Infra~~ Infrastructure (Rolling 3 Mo.)	~~5.~~0%	~~3% – 10%~~N/A[3]	N/A[3]
~~Real Estate~~	~~NCREIF~~	~~12.0%~~	~~10% – 25%~~	
~~Liquid Real Assets~~	~~CPI + 5.00%~~	~~3.0%~~	~~0% – 6%~~	
~~**Global Asset Allocation**~~		~~**10.0%**~~	~~**5% – 15%**~~	
~~Risk Parity~~	~~60% MSCI ACWI/40% Barclays Global Aggregate~~	~~5.0%~~	~~2% – 8%~~	
~~GTAA~~	~~60% MSCI ACWI/40% Barclays Global Aggregate~~	~~3.0%~~	~~0% – 6%~~	
~~Absolute Return~~	~~HFRX Abs Ret Index~~	~~2.0%~~	~~0% – 5%~~	
Total	~~TOTAL~~	100.~~0~~%		

~~Appendix B – Due Diligence Criteria~~

~~The public market Investment Manager screening criteria include:~~

~~1. Lead portfolio manager tenure/experience at least 5 years.~~

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~~2. Firm level assets under management: 75 million or more under management.~~
~~3. Investment style should consistently match what is approved and outlined in the Investment Manager's guidelines, and will be compared and analyzed against peers/sub-asset class category.~~
~~4. Sharpe ratio generally would exceed .3, which may not be possible following a prolonged bear market in that respective market, and must exceed 50% of its peer group over a three year rolling period.~~
~~5. Three year rolling total return, on a net of fee basis, must exceed 50% of its peer group.~~
~~6. On site due diligence meeting is recommended.~~
~~7. Fiduciary acceptance and acknowledgement.~~

~~The private Investment Manager screening will focus on the key areas of:~~

~~1. Alignment of Interests: management fees and expenses, carry/waterfall, term of fund, General Partner commitment.~~
~~2. Governance: team, investment strategy, fiduciary duty, Limited Partner Advisory Committee responsibilities and makeup, changes of the fund.~~
~~3. Transparency: risk management, financial information, disclosure related to the GP, management and other fees.~~
~~4. Track Record: the firm or lead portfolio manager should have a track record of at least 5 years.~~
~~5. Performance: a majority of previous funds should rank in the top 50% of their vintage year and strategy fund universe.~~

~~If any of the above due diligence criteria are not met, the Staff and Consultant will disclose this in their recommendations to the IAC and Board, along with an explanation of why the investment is still appropriate.~~

1 – The investment portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In October 2018, the Board approved a new long-term asset allocation, recognizing that implementation would be subject to the gradual unwinding of private market assets. In November 2018, the Board approved an asset allocation implementation plan to prioritize the reallocation of cash distributions from private market assets. Initial variances to long-term allocation targets may be quite large but are expected to gradually diminish. Rebalancing ranges have been established to accommodate current variances to target and will be tightened over time as appropriate.
2 – At the time of IPS adoption allocations to Investment Grade Bonds and Emerging Market Debt were below the minimum weight. The investment manager hiring for Investment Grade Bonds had not been completed and the Emerging Market Debt allocation was under review by the Board. These allocations will be funded in accordance with the asset allocation implementation plan in detailed in Appendix B1.
3 – Rebalancing Ranges are not established for illiquid asset classes.

Appendix B1 – Asset Allocation Implementation Plan

The investment portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In October 2018, the Board approved a new long-term asset allocation, recognizing that implementation would be subject to the gradual unwinding of private market assets. In November 2018, the Board approved the following implementation plan to prioritize the reallocation of cash distributions from private market assets.

Order of Reallocation

Allocate up to Target, then proceed to next asset class
1. Safety Reserve – Cash
2. Safety Reserve – Short-Term Investment Grade Bonds
3. Global Equity, only if current exposure is less than 22% of DPFP[1]
4. Emerging Market Equity, only if current exposure is less than 2.5% of DPFP[2]
5. Investment Grade Bonds
6. Global Bonds
7. Bank Loans
8. High Yield Bonds
9. Emerging Markets Debt
10. Global Equity
11. Emerging Markets Equity
12. Private Real Estate (aggregate illiquid exposure must be under 20%)

13. Private Equity (aggregate illiquid exposure must be under 15%)

1 – Global Equity target weight is 40%. If current exposure is more than 22% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.
2 – Emerging Market Equity Target weight is 10%. If current exposure is more than 2.5% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.

Appendix C – Investment Consultant Reporting Requirements

~~A.~~

~~Investment Consultant Reporting Requirements~~
The investment consultant is required to provide the Board with quarterly investment information for portfolio monitoring purposes. Generally, these are as follows:

Quarterly (due in advance of the meeting)

~~1. A review of the current investment market environment.~~

~~2.~~1. DPFP's actual asset allocation relative to its target asset allocation as defined in Appendix ~~A~~B.

~~3.~~2. DPFP's return relative to its Policy Benchmark return and other public pension funds.

~~4.~~3. DPFP's risk adjusted returns relative to the policy and other public pension funds.

~~5.~~4. Asset class performance relative to the benchmarks as defined in Appendix ~~A~~B.

~~6.~~5. Individual Investment Manager returns relative to their stated benchmark.

~~7.~~6. Report will specifically acknowledge any underperforming Investment Managers ~~based on the criteria outlined in Section 7 of the IPS~~.

~~8.~~7. Any reportable events affecting any of DPFP's Investment Managers.

~~9.~~8. Private Markets reports which covers Private Debt, Private Equity, Infrastructure, Real Assets and Real Estate.

Appendix D – Alternative Investments

Alternative Assets means any investment that is not a Traditional Asset.

Traditional Assets include:

1. Common Stocks: publicly traded securities representing ownership in a corporation; also known as publicly-traded equity. Examples include publicly traded equity shares of public companies, REITs, and ADRs. Regional examples include shares of companies domiciled in the US, non-US developed markets and emerging markets.

2. Bonds: publicly-traded securities, the holders of which serving as creditors to either governmental or corporate entities. Examples include government bonds and corporate bonds, including senior bank loans. Regional examples include US government issued bonds, non-US international developed market issued bonds, and emerging market issued bonds. Credit examples include investment grade bonds and non-investment grade bonds (e.g. high yield bonds and bank loans).

3. Cash Equivalents: short-term investments held in lieu of cash and readily convertible into cash within a short time span. Examples include CDs, commercial paper, and Treasury bills.

Though an exhaustive list is not included, some of the defining characteristics of Alternative Assets and their vehicles include:

1. Private ownership vehicles
2. Liquidity-constrained, and a lock-up of capital for extended time periods (one-year or longer)
3. Use of leverage
4. Ability to take short positions
5. Use of derivatives

The Board recognizes that certain investments may have characteristics and underlying securities that could be classified as both a Traditional and Alternative Investment. On any new investment recommendation, Staff and Consultant will categorize an investment as either Alternative or Traditional based on these criteria, with a focus ~~of~~on liquidity of the investment, for the Board's consideration.

DALLAS POLICE & FIRE PENSION SYSTEM

INVESTMENT POLICY STATEMENT

Amended as of December 13, 2018

Table of Contents

Section 1 Introduction and Purpose

This policy statement shall guide investment of the assets of the Dallas Police and Fire Pension System (DPFP). This investment policy statement (IPS) is issued for the guidance of the Dallas Police and Fire Pension System Board of Trustees (Board), Investment Advisory Committee (IAC), Executive Director, Staff, Consultant(s), Custodian, and Investment Managers. This IPS is intended to set forth an appropriate set of goals and objectives for DPFP. It will define guidelines to assist fiduciaries and Staff in the supervision of the investments of DPFP. The investment program processes and procedures are defined in the various sections of the IPS by:

A. Stating in a written document DPFP's expectations, objectives and guidelines for the investment of assets;

B. Setting forth an investment structure for managing the portfolio. This structure includes assigning various asset classes, investment management styles, asset allocation and acceptable ranges that, in total, are expected to produce an appropriate level of overall diversification and total investment return over the investment time horizon;

C. Encouraging effective communications between the Board, IAC, Executive Director, Staff, Consultant(s), Investment Managers and Custodian(s);

D. Setting forth policy that will consider various factors, including inflation, taxes, liquidity and expenses, that will affect the portfolio's short and long-term total expected returns and risk;

E. Establishing criteria to select and evaluate Investment Managers; and

F. Complying with applicable fiduciary and due diligence requirements experienced investment professionals would utilize, and with laws, rules and regulations applicable to DPFP.

Section 2 Goals, Objectives, and Constraints

A. Goals

1. Ensure funds are available to meet current and future obligations of the plan when due.
2. Earn a long-term, net of fees, investment return greater than the actuarial return assumption.
3. Rank in the top half of the public fund universe over the rolling five-year period, net of fees.

B. Objectives

1. Maintain a diversified asset allocation.
2. Accept the minimum level of risk required to achieve the return objective.
3. Outperform the Policy Benchmark[1] over rolling five-year periods.

[1] The Policy Benchmark represents the return of the investable and non-investable indices as defined in Appendix B, at the target allocation for each asset class.

4. Control and monitor the costs of administering and managing the investments.

C. Constraints

1. DPFP will be managed on a going-concern basis. The assets of the Fund will be invested with a long-term time horizon, while being cognizant of the weak actuarial funded ratio and ongoing liquidity needs.
2. The Board intends to maintain sufficient liquidity in either cash equivalents or short-term investment grade bonds to meet two to three years of anticipated benefit payments and expenses (net of contributions).
3. DPFP is a tax-exempt entity. Therefore, investments and strategies will be evaluated on a basis that is generally indifferent to taxable status.

Section 3 Ethics, Standards of Conduct, and Fiduciary Responsibility

The following are standards of conduct for the Board, Investment Advisory Committee, Staff, Investment Managers, Consultant(s), and all other investment related service providers of DPFP.[2]

A. Place the interest of DPFP above personal interests.

B. Act with integrity, competence, diligence, respect, and in an ethical manner.

C. Use reasonable care, diligence, and exercise independent professional judgment when conducting analysis, making recommendations, and taking actions.

D. Promote the integrity of and uphold the rules governing DPFP.

E. Comply with all applicable laws, rules, and regulations of any government agency, regulatory organization, licensing agency, or professional association governing their professional activities.

F. Adhere to applicable policies relating to ethics, standard of conduct and fiduciary responsibility including the:

1. Board of Trustees and Employees Ethics and Code of Conduct Policy;
2. Board of Trustees Governance and Conduct Policy; and the
3. Contractor's Statement of Ethics.

Section 4 Core Beliefs and Long-Term Acknowledgements

This section outlines the core beliefs and long-term acknowledgements for the overall governance of DPFP. These beliefs and acknowledgements will serve as guiding principles in the decision making and implementation of DPFP's investment mandate.

[2] These are informed by the CFA Institute and the Center for Fiduciary Studies.

A. A well-defined governance structure with clearly delineated responsibilities is critical in achieving consistent, long-term performance objectives.

B. The strategic asset allocation determines the risk reward profile of the portfolio and thus drives overall portfolio performance and volatility.

1. Asset allocation has a greater effect on return variability than asset class investment structure or manager selection.
2. It is essential to account for liabilities in setting long-term investment strategy.
3. Rebalancing the portfolio is a key aspect of prudent long-term asset allocation policy.

C. Investment costs will be monitored and minimized within the context of maximizing net return. The goal is not low fees, but rather maximum returns, net of fees.

1. The opportunity for active manager risk-adjusted outperformance (alpha) is not uniformly distributed across asset classes or Investment Managers' strategies.
2. Active strategies are preferred when there is strong conviction that they can be expected to add alpha, net of fees.
3. Passive strategies should be considered if alpha expectations are unattractive.

D. Risk is multifaceted and will be evaluated holistically, incorporating quantitative measures and qualitative assessments.

1. Global investment reduces risk through diversification.
2. Diversification across different risk factors reduces risk.
3. The pattern of returns matters because volatility levels and the sequence of gains and losses can impact funded status.
4. Risk that is not expected to be rewarded over the long-term, or mitigated through diversification, will be minimized.
5. Generating positive investment return requires recognizing and accepting non-diversifiable risk. Not taking enough risk is risky; therefore, DPFP will accept a prudent amount of risk to achieve its long-term target returns.

Section 5 Roles and Responsibilities

A. Board of Trustees

The Board of Trustees (Board) has a fiduciary responsibility to ensure prudent management of the plan and compliance with all state and federal laws. Additionally, the Board:

1. Establishes investment objectives consistent with the needs of DPFP and approves the IPS of DPFP;
2. Approves strategic asset allocation targets and ranges, and asset class structures;
3. Prudently hires, monitors, and terminates key investment service providers including: Consultant(s), Investment Managers and Custodian;

4. Appoints members to the Investment Advisory Committee (IAC);
5. Reviews investment related expenses;
6. Approves Board travel related to investments; and
7. Reviews the IPS annually and revises as needed.

B. Investment Advisory Committee (IAC)

1. IAC Composition, Selection and Criteria
   a. The requirement and general composition of the IAC is defined by statute.
   b. The IAC serves at the discretion of the Board of Trustees.
   c. IAC recommendations are not binding on the Board, provided however the Board may in the exercise of its fiduciary discretion grant decision-making authority to the IAC.
   d. The IAC is composed of up to five members including one or two current board members and a majority outside investment professionals.
   e. The current Board members will serve staggered two-year terms on the IAC. Non-Board members will serve staggered three-year terms.
   f. The Board will appoint members of IAC members by vote.
   g. IAC meetings require a quorum of at least three IAC members.
   h. The IAC will select a chair from its members to serve as liaison to the Board and to preside over IAC meetings.
   i. The Board of Trustees may elect to dismiss a member of the IAC for any reason.

2. IAC Roles and Responsibilities:
   a. A key role of the IAC is to ensure that DPFP investments are prudently managed.
   b. The IAC will advise regarding the search and selection process for investment managers and other matters that the Board may request.
   c. All investment related agenda materials for the Board will be made available to the IAC.
   d. The IAC will meet as needed, but at least quarterly, to discuss the investment program and provide insight and recommendations to Staff and Consultant.
   e. The IAC Chair will report to the Board regarding IAC activity as well as investment-related concerns and recommendations.
   f. Any IAC member may address the Board to communicate investment related concerns.
   g. IAC members are fiduciaries to DPFP.

C. Executive Director

1. The Executive Director is authorized to administer the operations and investment activities of DPFP under policy guidance from the Board;
2. Is authorized to manage investments approved by the Board including authority to enter into contract amendments including fund extensions, act with regard to investment governance issues and engagement of advisors as needed;
3. Manages the day to day operations of DPFP;
4. Oversees and reports to the Board on investment and due diligence processes and procedures;
5. Approves/declines all Staff travel related to investment manager on-site due diligence; and
6. Approves Investment Staff recommendations for presentation to the IAC and Board.
7. The Executive Director is a fiduciary to DPFP.

D. Investment Staff

1. The Investment Staff (Staff) has primary responsibility for oversight and management of the investment portfolio. Staff is responsible for investment manager due diligence and recommendations, portfolio implementation consistent with the Board approved asset allocation, and assessment of the Consultant(s);
2. Helps the Board and the IAC to oversee Investment Managers, Consultant(s), Custodian, and vendors;
3. Reports to Executive Director through the Chief Investment Officer;
4. Works closely with the Investment Consultant(s);
5. Notifies Consultant in writing of rebalancing needs and recommended implementation;
6. Coordinates the preparation and annual review of the IPS;
7. Prepares Staff Investment Manager recommendations, submits Staff and Consultant(s) recommendations to Executive Director for review;
8. After Board approval of investment, Staff approves Investment Manager Strategy guidelines which will be outlined in the Investment Manager agreements, as applicable;
9. Monitors all investments, Investment Managers and investment-related vendors;
10. Accounts for and reviews all external management fees and investment expenses;
11. Ensures all fiduciaries to DPFP are aware of their fiduciary obligations annually.[3]

[3] Verification of this may be through contract, agreement, or annual fiduciary acknowledgement letter.

E. Consultant(s)

1. The Consultant(s) provides independent investment expertise to the Board, IAC, and Staff;
2. Reports to the Board and works closely with Staff;
3. Monitors and reports qualitative and quantitative criteria related to Investment Managers and aggregate portfolio activity and performance;
4. Recommends annually to Board strategic asset allocation targets, ranges, and benchmarks for asset classes;
5. Documents asset allocation recommendations with asset class performance expectations including standard deviation, expected return and correlations for each asset class used by DPFP;
6. Reviews asset class structures periodically as required by the IPS and recommends improvements to the Board.
7. Establishes and follows due diligence procedures for Investment Manager candidate searches;
8. Conducts screens and searches for Investment Manager candidates;
9. Assists in the selection process and monitoring of Investment Managers;
10. Reviews and recommends Investment Managers and peer groups to IAC and Board;
11. Documents and delivers to Staff written recommendations on Investment Manager new hire, hold and termination reviews;
12. Recommends benchmark and appropriate asset class and sub-allocation for investment managers;
13. Approves and verifies in writing each of Staff's rebalancing recommendations and implementation;
14. Monitors the diversification, quality, duration, and risk of holdings as applicable;
15. Assists Staff in negotiation of terms of vendor contracts; and
16. Prepares quarterly investment reports, which include the information outlined in Appendix C.
17. Any Investment Consultant is a fiduciary to DPFP and this responsibility must be acknowledged in writing.

F. Investment Managers

1. <u>Public Investment Managers</u>
   a. Acknowledge in writing acceptance of the objectives, guidelines, and standards of performance;
   b. Invest the assets of DPFP in accordance with its objectives, guidelines and standards;

c. Exercise full discretionary authority as to all buy, hold and sell decisions for each security under management, subject to the guidelines established in the Investment Management Agreement or applicable contract;

d. Send trade confirmations to the Custodian;

e. Deliver monthly report to Consultant(s)/Staff describing portfolio asset class weights, investment performance, security positions, and transactions;

f. Adhere to best execution and valuation policies;

g. Inform Staff and Consultant, as soon as practical, in writing of any breach of investment guidelines, ethics violations or violations of self-dealing;

h. Inform Staff and Consultant as soon as practical, in writing, of any significant changes in the ownership, organizational structure, financial condition, personnel staffing, or other material changes at the firm; and

i. Act as a fiduciary to DPFP. All separate account investment managers are fiduciaries to DPFP and this responsibility must be acknowledged in the contract for services.

2. <u>Commingled Fund Investment Managers</u>

a. Provide the objectives, guidelines, and standards of performance of the fund;

b. Provide a report detailing fund performance and holding on a monthly basis or as agreed by DPFP;

c. Prices and fair market valuations will be obtained from an independent service provider;

d. The investment manager of the commingled fund must act as a Fiduciary to the commingled fund.

3. <u>Private Investment Managers</u>

a. Provide objectives, strategy guidelines, and standards of performance as evidenced in investment manager, operating, or partnership agreement;

b. Ensure that financials statements undergo annual audits and that investments are reported at fair market value, as outlined in the Investment Management, Partnership, or Operating Agreement(s);

c. Communicate to Staff any material changes in the ownership or management of the firm, and or the stability of the organization;

d. Inform Staff, as soon as practical, in writing of any breach of investment guidelines, ethics violations or violations of self-dealing.

G. Custodian

1. Safe keep and hold all DPFP's assets in the appropriate domestic accounts and provide highly secure storage of physical stock certificates and bonds such that there is no risk of loss due to theft, fire, or accident;[4]
2. Maintain separate accounts by legal registration;
3. Arrange for timely execution and settlement of Investment Manager securities transactions made for DPFP;
4. Proactively reconcile transactions and reported values to Investment Manager statements;
5. Provide for receipt and prompt crediting of all dividend, interest and principal payments received as a result of DPFP portfolio holdings or securities lending activities;
6. Monitor income receipts to ensure that income is received when due and institute investigative process to track and correct late or insufficient payments, including reimbursement for any interest lost due to tardiness or shortfall;
7. At the direction of the Staff, expeditiously transfer funds into and out of specified accounts;
8. Timely collection of income, including tax reclaim;
9. Prompt and accurate administration of corporate actions, including proxy issues; and
10. Manage securities lending.

Section 6 Strategic Asset Allocation and Rebalancing

Note: The investment portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In October 2018, the Board approved a new long-term asset allocation, recognizing that implementation would be subject to the gradual unwinding of private market assets. In November 2018, the Board approved an asset allocation implementation plan to prioritize the reallocation of cash distributions from private market assets. Initial variances to long-term allocation targets may be quite large but are expected to gradually diminish. Rebalancing ranges have been established to accommodate current variances to target and will be tightened over time as appropriate.

A. Asset Allocation

1. The strategic asset allocation establishes target weights and rebalancing ranges for each asset class and is designed to maximize the long-term expected return of the Fund within an acceptable risk tolerance while providing liquidity to meet cash flow needs.
2. A formal asset allocation study will be conducted as directed by the Board, but at least every three years.

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[4] Electronic transfer records at the Depository Trust Company ("DTC'') are preferred.

3. Asset allocation targets will be reviewed annually for reasonableness in relation to significant economic and market changes or to changes to the investment objectives.
4. Asset class descriptions are provided in Appendix A.
5. The approved asset allocation is included in Appendix B.

B. Asset Class Structure

1. The asset class structure establishes the investment manager roles that will be used to implement the asset allocation.
2. The asset class structure will emphasize simplicity and cost control and toward that end will employ the minimum number of managers necessary to assure appropriate diversification within each asset class.
3. Asset class structures will be reviewed periodically, approximately every two years.
4. Any changes to the asset class structure must be approved by the Board.

C. Rebalancing

1. In general, cash flows will be allocated to move asset classes toward target weights and shall be prioritized according the Asset Allocation Implementation Plan detailed in Appendix B1.
2. Staff shall submit a rebalancing recommendation to the Consultant at least annually based on consideration of the entire portfolio, and additionally as soon as practicable when an asset class breaches an established rebalancing range or when deemed prudent by Staff or Consultant.
3. The allocations to Cash and Short-Term Investment Grade bonds are designed to provide liquidity during periods of investment market stress and are not required to be rebalanced to target if deemed prudent by Staff and Consultant.
4. Rebalancing recommendations should consider expected future cash flows, investment liquidity, market volatility, and costs.
5. Transition management shall be used when prudent to minimize transition costs.
6. Staff is responsible for implementing the rebalancing plan following Consultant approval.
7. Rebalancing activity shall be reported to the Board.

D. Private Market Limitations

1. DPFP will not commit capital to any direct private market investments or co-investments that are tied to a single company. This restriction does not prevent DPFP from holding direct investments that result from the dissolution of a private market fund
2. DPFP will not commit capital to any private market fund if such commitment would likely result in DPFP holding greater than a 10% interest in the fund.

3. DPFP will not commit capital to any private market fund if such commitment exceeds 2% of the total market value of DPFP investment portfolio.
4. DPFP will not commit to any private market fund if total commitments to related funds (e.g. fund family) exceeds 4% of the total market value of DPFP investment portfolio.

Section 7 Investment Manager Search, Selection, and Monitoring

A. Investment Manager Search and Selection

1. The selection of investment managers will utilize a robust process to ensure an open and competitive universe, proper evaluation and due diligence, and selection of candidates that are best able to demonstrate the characteristics sought in a specific search.
2. Investment manager searches shall be based on one or more of the following reasons:
   a. Changes to the approved asset allocation;
   b. Changes to the approved asset class structure; or
   c. Replacement for terminated manager or manager of concern.
3. The IAC will advise regarding the search and selection process for investment managers
4. Staff and Consultant shall define and document the search process, including evaluation criteria, prior to initiating the search process.
5. Each investment manager hiring recommendation shall be supported by a rationale that is consistent with the pre-established evaluation criteria.
6. Each hiring recommendation will generally include the following information:
   a. A description of the organization and key people:
   b. A description of the investment process and philosophy;
   c. A description of return expectations;
   d. The risks inherent in the investment and the manager's approach;
   e. The proper time horizon for evaluation of results;
   f. Identification of relevant comparative measures such as benchmarks and/or peer samples;
   g. The suitability of the investment within the relevant asset class: and
   h. The expected cost of the investment.
7. Alternative Investments

The Board has adopted the definition of "Alternative Investments" as outlined in Appendix D, which will be reviewed as part of the due diligence process for any new investment. Pursuant to Section 4.07 of Article 6243a-1, the vote of eight trustees is required to approve any Alternative Investment.

B. Investment Monitoring

1. Staff and Consultant(s) are responsible for ongoing monitoring of all Investment Managers using qualitative and quantitative factors as appropriate.
2. Qualitative factors may include:
   a. Consistent implementation of philosophy and process;
   b. Ownership changes or departure of key personnel;
   c. Assets under management at the firm and product level;
   d. Conflicts of interest;
   e. Material litigation or regulatory challenges involving the investment manager;
   f. Adequate reporting and transparency; and
   g. Material client-servicing problems.
3. Quantitative factors may include:
   a. Long-term (3-5 years) performance relative to assigned benchmarks;
   b. Unusually large short-term performance variance (over or under); and
   c. Risk metrics such as volatility, drawdown, and tracking error.
4. Staff and the Consultant will highlight Investment Manager concerns to the IAC and the Board and recommend an appropriate course of action.

Section 8 Risk Management

Staff will work within the parameters of this Investment Policy Statement to mitigate the risk of capital loss. By implementing this Policy, the Board has addressed:

A. Custodial Risk for both public and private holdings;[5]

B. Interest Rate Risk through fixed income duration and credit monitoring;[6]

C. Concentration and Credit Risk through asset allocation targets and ranges, rebalancing, and the monitoring of investment guidelines.

Furthermore, through this Policy, Staff has established the necessary criteria to monitor the Custodian, Consultant(s), and Investment Managers, such that DPFP controls and manages interest rate, custody, concentration, and credit risks.

[5] Please review Custodian responsibilities in Section 5.
[6] Please review Annual Review of IPS and Investment Manager strategy guidelines reviewed and approved by Staff.

Section 9 Approval and Effective Date

The Investment Policy Statement was originally adopted by the Board on April 14, 2016 and was subsequently amended and adopted on the following dates.

December 14, 2017
December 13, 2018

APPROVED on December 13, 2018 by the Board of Trustees of the Dallas Police and Fire Pension System.

[signature]

William F. Quinn
Chairman

Attested:

[signature]

Kelly Gottschalk
Executive Director

Appendix A – Asset Class Descriptions

DPFP investment assets are prudently diversified to optimize expected returns and control risks. Assets can generally be categorized into four functional categories of Growth, Income, Inflation Protection, and Risk Mitigation

A. Growth Assets

1. Role: Capital appreciation, primary driver of long-term total return
2. Investment Approach: Growth assets generally represent equity or equity-like interests in current and future income streams and capture long-term economic growth trends throughout the world.
3. Risk Factors: The cost of the high expected long-term returns is higher expected volatility. Growth assets are highly sensitive to economic conditions and are subject to potential loss during economic downturns, rising/unexpected inflation, and rising interest rates.
4. Asset Classes
   a. **Global Equity** represents publicly traded stock holdings of companies across the globe. Liquidity is a key benefit as stocks can be traded daily. Foreign currency volatility can be a source of risk and return.
   b. **Emerging Market Equity** represents publicly traded stock holdings of companies located in or highly dependent on developing (emerging) countries. Emerging market equity is expected to capture the higher economic growth of emerging economies and provide higher long-term returns than global equity coupled with higher volatility. Foreign currency volatility can be a source of risk and return.
   c. **Private Equity** refers to investments in private companies (direct investments) or funds that hold investments in private companies or securities that are not typically traded in the public markets. Frequently these investments need "patient" capital to allow time for growth potential to be realized through a combination of capital investment, management initiatives, or market development. Private equity is expected to provide higher long-term returns than global equity, but Illiquidity is a key risk as investment contributions may be locked up for several years.

B. Income Assets

1. Role: Current income and moderate long-term appreciation
2. Investment Approach: Income assets are generally fixed claims on assets or income streams of an issuer (e.g. government, corporation, asset-backed securities).

3. Risk Factors: The primary risk for Income assets is the failure of the borrower to make timely payments of interest and principal (credit risk) and the price volatility related to credit risk. Bonds with greater credit risk (i.e., bonds with lower credit ratings) are typically less liquid than higher quality bonds.

4. Asset Classes

   a. **Global Bonds** includes sovereign and corporate debt issued by countries and companies located throughout the world in local currency and U.S. dollars. Expanding the investable universe beyond the U.S. provides a diversified source of returns.

   b. **Bank Loans** are like high yield bonds in that both represent debt issuers with higher credit risk. Compared to high-yield bonds, bank loans typically have higher seniority in the capital structure, which has historically resulted in much higher recovery following default.

   c. **High Yield Debt** refers to bonds with higher credit risk and lower credit ratings than investment-grade corporate bonds, Treasury bonds and municipal bonds. Because of the higher risk of default, these bonds pay a higher yield than investment grade bonds.

   d. **Emerging Market Debt** (EMD) refers to bonds issued by developing countries or corporations based in developing countries. EMD bonds can be denominated in U.S. Dollars or local currency. The primary risk factor is credit quality, but interest rates and foreign currency are also factors.

   e. **Private Debt** refers to non-bank direct lending arrangements. Features are similar to bank loans with somewhat higher credit risk and yields. Investments are typically structured in a private market vehicle with limited liquidity. Private debt may be included within the private equity asset class in the strategic asset allocation.

C. Inflation Protection (Real Assets)

1. Role: Current income, inflation protection, diversification

2. Investment Approach: Generally, ownership in physical assets.

3. Risk Factors: Real Assets may not provide the desired inflation protection. Loss of principal is also a risk. Foreign assets are also subject to currency movements against the U.S. dollar.

4. Asset Classes

   a. **Real Estate** includes investments in office buildings, apartments, retail, raw land, and development projects.

   b. **Natural Resources** broadly refers to anything mined or collected in raw form but may include assets subject to further processing. Typical assets include permanent and row crops, timber, minerals, and metals.

c. **Infrastructure** refers to investments in physical systems that support world economies. Typical investments include transportation, communication, utilities (electricity, gas, water, sewage).

D. Risk Mitigation

1. Role: Liquidity to fund benefit payments and other cash flow needs, capital preservation, modest current income, diversification to growth assets
2. Investment Approach: Cash equivalents or high-quality domestic bonds.
3. Risk Factors: Risks are substantially lower for risk mitigation assets, but may include modest exposure to credit or interest rates (duration)
4. Asset Classes
   a. **Cash Equivalents**
   b. **Short Term Investment Grade Bonds** have moderate interest rate risk.
   c. **Investment Grade Bonds** including bonds and notes issued by the U.S Treasury, U.S. Government Agencies, state and local municipalities, corporations, or other issuers with similar conservative risk profiles. Risk factors include duration and credit.

Appendix B – Strategic Asset Allocation and Rebalancing Ranges

Asset Class	Policy Benchmark	Target Weight[1]	Minimum Weight	Maximum Weight
Equity		55%		
Global Equity	MSCI ACWI IMI Net	40%	18%	48%
Emerging Markets Equity	MSCI Emerging Markets IMI Net	10%	0%	12%
Private Equity	Cambridge Associates US Private Equity Index 1Q Lag	5%	N/A[3]	N/A[3]
Fixed Income		35%		
Cash	91 Day T-Bills	3%	0%	5%
Short Term Investment Grade Bonds	Bloomberg Barclays US Treasury 1-3 Year	12%	5%	15%
Investment Grade Bonds[2]	Bloomberg Barclays Aggregate	4%	2%[2]	6%
High Yield Bonds	Bloomberg Barclays Global High Yield	4%	2%	6%
Bank Loans	S&P/LSTA Leveraged Loan	4%	2%	6%
Global Bonds	Bloomberg Barclays Global Aggregate	4%	2%	6%
Emerging Market Debt[2]	50% JPM EMBI/ 50% JPM GBI-EM	4%	2%[2]	6%
Private Debt	Barclays Global HY + 2% (Rolling 3 Mo.)	0%	N/A[3]	N/A[3]
Real Assets		10%		
Real Estate	NCREIF Property Index 1Q Lag	5%	N/A[3]	N/A[3]
Natural Resources	NCREIF Farmland Total Return Index 1Q Lag	5%	N/A[3]	N/A[3]
Infrastructure	S&P Global Infrastructure (Rolling 3 Mo.)	0%	N/A[3]	N/A[3]
Total		100%		

1 – The investment portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In October 2018, the Board approved a new long-term asset allocation, recognizing that implementation would be subject to the gradual unwinding of private market assets. In November 2018, the Board approved an asset allocation implementation plan to prioritize the reallocation of cash distributions from private market assets. Initial variances to long-term allocation targets may be quite large but are expected to gradually diminish. Rebalancing ranges have been established to accommodate current variances to target and will be tightened over time as appropriate.

2 – At the time of IPS adoption allocations to Investment Grade Bonds and Emerging Market Debt were below the minimum weight. The investment manager hiring for Investment Grade Bonds had not been completed and the Emerging Market Debt allocation was under review by the Board. These allocations will be funded in accordance with the asset allocation implementation plan in detailed in Appendix B1.

3 – Rebalancing Ranges are not established for illiquid asset classes.

Appendix B1 – Asset Allocation Implementation Plan

The investment portfolio is undergoing a transition from a legacy allocation with substantial exposure to illiquid private market assets to a more traditional allocation profile. In October 2018, the Board approved a new long-term asset allocation, recognizing that implementation would be subject to the gradual unwinding of private market assets. In November 2018, the Board approved the following implementation plan to prioritize the reallocation of cash distributions from private market assets.

Order of Reallocation

Allocate up to Target, then proceed to next asset class
1. Safety Reserve – Cash
2. Safety Reserve – Short-Term Investment Grade Bonds
3. Global Equity, only if current exposure is less than 22% of DPFP[1]
4. Emerging Market Equity, only if current exposure is less than 2.5% of DPFP[2]
5. Investment Grade Bonds
6. Global Bonds
7. Bank Loans
8. High Yield Bonds
9. Emerging Markets Debt
10. Global Equity
11. Emerging Markets Equity
12. Private Real Estate (aggregate illiquid exposure must be under 20%)
13. Private Equity (aggregate illiquid exposure must be under 15%)

1 – Global Equity target weight is 40%. If current exposure is more than 22% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.
2 – Emerging Market Equity Target weight is 10%. If current exposure is more than 2.5% proceed to next asset class in the matrix. The reallocation framework is designed to maintain at least the mid-2018 exposure to public equity, prior to increasing fixed-income exposure.

Appendix C – Investment Consultant Reporting Requirements

The investment consultant is required to provide the Board with quarterly investment information for portfolio monitoring purposes. Generally, these are as follows:

Quarterly (due in advance of the meeting)

1. DPFP's actual asset allocation relative to its target asset allocation as defined in Appendix B.
2. DPFP's return relative to its Policy Benchmark return and other public pension funds.
3. DPFP's risk adjusted returns relative to the policy and other public pension funds.
4. Asset class performance relative to the benchmarks as defined in Appendix B.
5. Individual Investment Manager returns relative to their stated benchmark.
6. Report will specifically acknowledge any underperforming Investment Managers.
7. Any reportable events affecting any of DPFP's Investment Managers.
8. Private Markets reports which covers Private Debt, Private Equity, Infrastructure, Real Assets and Real Estate.

Appendix D – Alternative Investments

Alternative Assets means any investment that is not a Traditional Asset.

Traditional Assets include:

1. Common Stocks: publicly traded securities representing ownership in a corporation; also known as publicly-traded equity. Examples include publicly traded equity shares of public companies, REITs, and ADRs. Regional examples include shares of companies domiciled in the US, non-US developed markets and emerging markets.

2. Bonds: publicly-traded securities, the holders of which serving as creditors to either governmental or corporate entities. Examples include government bonds and corporate bonds, including senior bank loans. Regional examples include US government issued bonds, non-US international developed market issued bonds, and emerging market issued bonds. Credit examples include investment grade bonds and non-investment grade bonds (e.g. high yield bonds and bank loans).

3. Cash Equivalents: short-term investments held in lieu of cash and readily convertible into cash within a short time span. Examples include CDs, commercial paper, and Treasury bills.

Though an exhaustive list is not included, some of the defining characteristics of Alternative Assets and their vehicles include:

1. Private ownership vehicles
2. Liquidity-constrained, and a lock-up of capital for extended time periods (one-year or longer)
3. Use of leverage
4. Ability to take short positions
5. Use of derivatives

The Board recognizes that certain investments may have characteristics and underlying securities that could be classified as both a Traditional and Alternative Investment. On any new investment recommendation, Staff and Consultant will categorize an investment as either Alternative or Traditional based on these criteria, with a focus on liquidity of the investment, for the Board's consideration.

Dallas Police and Fire Pension System

Benchmarks and Ranges Recommendations

M E K E T A   I N V E S T M E N T   G R O U P
5796 ARMADA DRIVE   SUITE 110   CARLSBAD CA 92008
760 795 3450   fax 760 795 3445   www.meketagroup.com

Current Policy Benchmark Components and Recommended Changes[1]

Asset Class	Current Policy Benchmark	Recommended Policy Benchmark Change
Global Equity	MSCI ACWI Gross	MSCI ACWI IMI Net
Emerging Market Equity	MSCI Emerging Markets Gross	MSCI Emerging Markets IMI Net
Private Equity	Russell 3000 + 3%	Cambridge Associates US Private Equity Index 1Q Lag
Cash Equivalents	91 Day T-Bills	No Change
Short-Term Investment Grade Bonds	Bloomberg Barclays US Treasury 1-3 Yr	No Change
Investment Grade Bonds	None	Bloomberg Barclays Aggregate
High Yield Bonds	BBgBarc Global High Yield	No Change
Bank Loans	S&P/LSTA Leveraged Loan	No Change
Global Bonds	Bloomberg Barclays Global Aggregate	No Change
Emerging Market Bonds (50/50)	50% JPM EMBI/50% JPM GBI-EM	No Change
Private Real Estate	NCREIF Property Index	NCREIF Property Index 1Q Lag
Private Natural Resources	S&P Global Natural Resources	NCREIF Farmland Total Return Index 1Q Lag

1 For asset classes with zero percent target allocations (Private Debt and Infrastructure) the existing benchmarks will continue to be used for performance measurement.

Summary of Recommendations

- Meketa Investment Group has reviewed the benchmarks currently used. Most of them are appropriate.
- We suggest changing the following:
- **Global Equity**
  - IMI version:
    - We recommend switching the benchmark to the IMI version (Investable Market Index) because it is more comprehensive and more representative of the full global investable universe than the traditional MSCI ACWI index.
    - The MSCI ACWI IMI Index captures the full market cap spectrum (including small cap securities) across nearly 50 countries (both developed markets and emerging markets) and consists of nearly 9,000 stocks. It covers approximately 99% of the global equity investment opportunity set, according to MSCI.
    - The traditional MSCI ACWI index has the same country representation but does not include small cap securities. It consists of less than 3,000 stocks and covers approximately 85% of the global investable equity opportunity set, according MSCI.
  - Net version:
    - Gross vs. net refers to how MSCI accounts for possible reinvestment of dividends. The industry standard best practice is to use the net version. The MSCI net indices calculate the reinvestment of dividends after deduction of withholding taxes by foreign governments. This is most representative of what portion of dividends U.S. investors actually receive (even tax-exempt U.S. investors). Custodian banks often offer clients “tax reclaim” services that seek to recoup those withholdings but the process typically takes multiple years for repayment.

- **Emerging Market Equity**
  - Same rationale on IMI version and conversion from gross to net.
- **Private Equity**
  - We recommend switching the benchmark approach from the public market equivalent to the largest private equity peer database, the Cambridge Associates private equity database.
  - There can be large gaps between the performance of public equity and private equity over short periods. The Cambridge benchmark allows for comparison versus a peer group. The Cambridge Peer Universe is the most widely used and most complete private equity peer universe.
  - See last section for additional details and rationale.
- **Private Natural Resources**
  - Similar to the private equity benchmark recommendation, we recommend switching the benchmark approach from the public market equivalent to a private market peer group. The exposure within the NCRIEF Farmland Total Return Index more closely matches DPFP's investments within private natural resources. The existing index consists of publicly traded stocks and has significant energy and metals/mining representation. This exposure is not reflective of the anticipated DPFP private natural resources allocation.
  - We recommend lagging the benchmark by one quarter to match the timing on how the manager NAVs are applied in the performance calculation for DPFP.

Benchmarks and Ranges Recommendations

- **Private Real Estate**
  - Same rationale for the one quarter lag approach.

- **Investment Grade Bonds**
  - The Bloomberg Barclays Aggregate Index is the industry standard benchmark for investment grade bonds.

Private Equity Benchmark Challenges

- Private equity is one of the most difficult asset classes to benchmark.
- Due to the idiosyncratic and illiquid nature of assets included in many "alternative" asset classes, as well as lack of transparency, a passive index fund "benchmark" for strategies is simply not possible.
- Many investors use a "public market equivalent plus spread" approach to benchmark private equity.
- There are challenges with such an approach as the illiquid and less frequent reporting of private equity often creates a timing mismatch. There are also challenges to determine what the correct "spread" should be.
- The other approach many investors have used for private equity benchmarking is peer group comparison.
- Performance results from a large group of private equity funds are compiled in peer composites such as the Cambridge Private Equity Composites.
- These benchmarks typically represent the best comparison available (i.e. other private equity funds).
- However they are not perfect either, as these peer group databases introduce a different set of biases because private equity funds self-report (and are not required to continue reporting if a fund fails).
- These benchmarks are also often slow to be released because they are at the mercy of the self-reporting funds.
- We typically recommend using a "one quarter lagged" version to account for the time lag and to match the application of the manager NAVs.

The Cambridge Associates Private Equity Benchmarks

- The Cambridge Associates dataset of private investments is one of the most comprehensive databases of private markets performance.
- At the end of 2017, it contained the historical performance records of over 2,000 fund managers and their over 7,100 funds across different private markets (private equity, private debt, private infrastructure, private natural resources).
- It provides investors with Internal Rate of Return (IRR), Multiple (X) for funds based on vintage year peer groups, as well as aggregated time weighted performance by vintage year or broad asset class type.
- As needed Cambridge Associates will add funds to the database (both newly-raised funds and backfill funds that previously did not report) and occasionally it will remove funds that cease reporting. Cambridge Associates states that this number has been less than 1% historically.
- Cambridge Associates continually strives to grow its private investments performance database and ensure that its benchmarks are as representative as possible of investors' institutional-quality opportunity set.
- The broadest grouping of private equity fund performance is the Cambridge Associates US Private Equity Index
- At the end of 2017 the Cambridge Associates US Private Equity Index contained data from nearly 1,400 private equity funds. Its track record dates back to 1986.

Recommended Asset Class Ranges

	Target (%)	Recommended Range (%)
Equities	**55**	
Global Equity	40	18 - 48
Emerging Market Equity	10	0 - 12
Private Equity	5	N/A[1]
Safety Reserve and Fixed Income	**35**	
Cash Equivalents	3	0 – 5
Short-Term Investment Grade Bonds	12	5 – 15
Investment Grade Bonds	4	2-6
High Yield Bonds	4	2-6
Bank Loans	4	2-6
Global Bonds	4	2-6
Emerging Market Bonds (50/50)	4	2-6
Real Assets	**10**	
Private Real Estate	5	N/A[1]
Private Natural Resources	5	N/A[1]

[1] Rebalancing ranges are not established for illiquid asset classes.

DISCUSSION SHEET

ITEM #C4

Topic: **Third Quarter 2018 Investment Performance Analysis and Second Quarter 2018 Private Markets & Real Assets Review**

Attendees: Leandro Festino, Managing Principal – Meketa Investment Group
Aaron Lally, Executive Vice President – Meketa Investment Group

Discussion: Meketa and Investment Staff will review investment performance.

FUND EVALUATION REPORT

Dallas Police & Fire Pension System

Quarterly Review
As of September 30, 2018

M E K E T A   I N V E S T M E N T   G R O U P

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DPFP 3Q18 Flash Summary

Category	Result	Notes
Total Fund Performance Return	**Positive**	+1.6%
Performance vs. Index	**Trailed**	1.6% vs. 2.0% Policy Index
Asset Allocation vs. Targets	**Additive**	Overweight global equity helped. Underweight EMD and EM equity helped.
Safety Reserve Exposure	**Sufficient**	$303 million (approximately 15%)
Performance vs. Peers	**Trailed**	85th percentile in peer group in 3Q18[1]
Active Management	**Hurt**	PE, Natural Resources and Infrastructure
Compliance with Targets	**No**	Under private debt minimum

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

DPFP Trailing One-Year Flash Summary

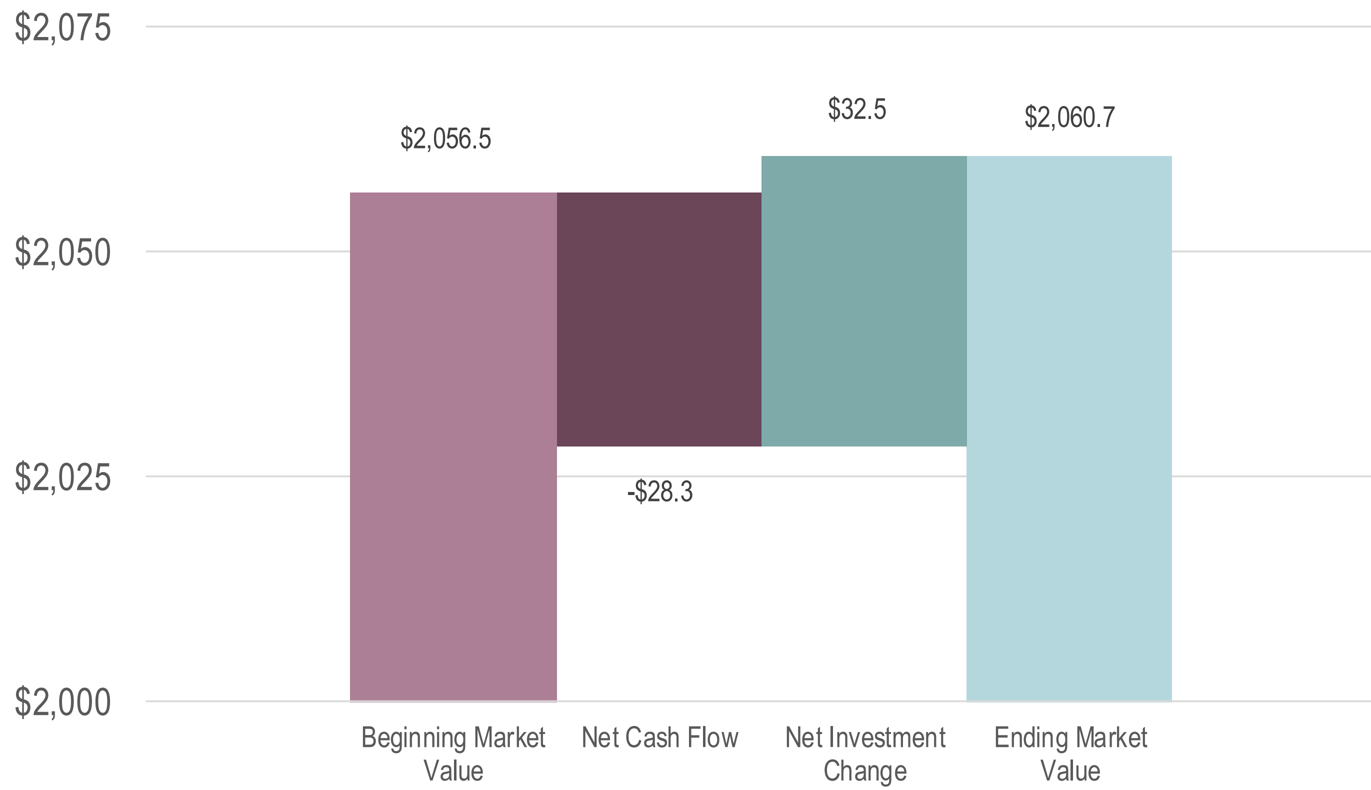
Category	Trailing 1 YR Result	1 YR Notes
Total Fund Performance Return	Positive	+3.3%
Asset Allocation vs. Targets	Additive	Underweight EMD helped
Performance vs. Index	Trailed	3.3% vs. 5.6% Policy Index
Performance vs. Peers	Trailed	99th percentile in peer group[1]
Active Management	Hurt	PE, NR and RE Negative Selection

DPFP Trailing Three-Year Flash Summary

Category	Trailing 3 YR Result	3 YR Notes
Total Fund Performance Return	Positive	+1.9%
Performance vs. Index	Trailed	1.9% vs. 9.9% Policy Index
Performance vs. Peers	Trailed	99th percentile in peer group[1]
Active Management	Hurt	PE, NR and RE Negative Selection

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

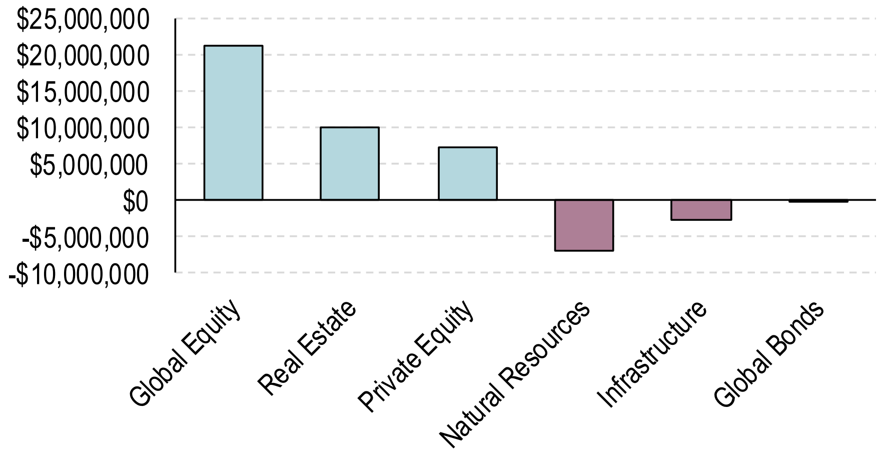
Quarterly Change in Market Value



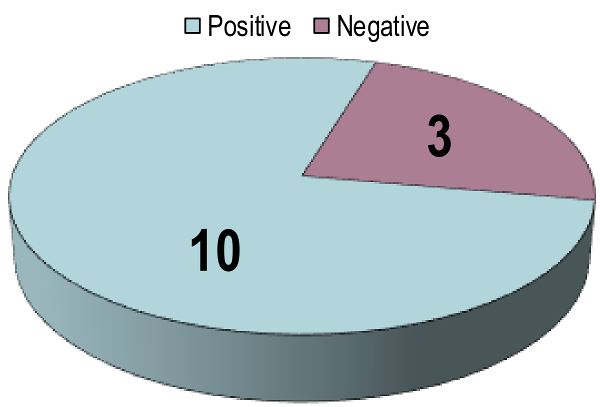
- Total market value increased due to positive investment performance.

Quarterly Absolute Performance

Asset Classes Dollar[1] Gain/Loss
Top Three and Bottom Three



Asset Class Absolute Performance

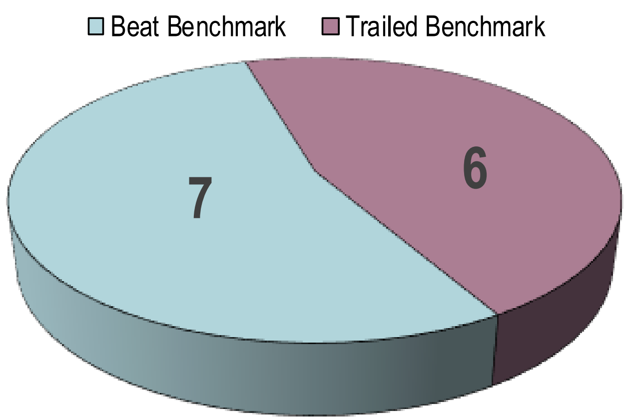


- In absolute terms, global equity appreciated the most during the quarter, adding over $21.2 million in market value to DPFP.
- Natural Resources declined the most, and lost $7.0 million in market value in the third quarter.
- In the quarter, ten out of thirteen asset classes generated positive absolute performance (approximately 77%).

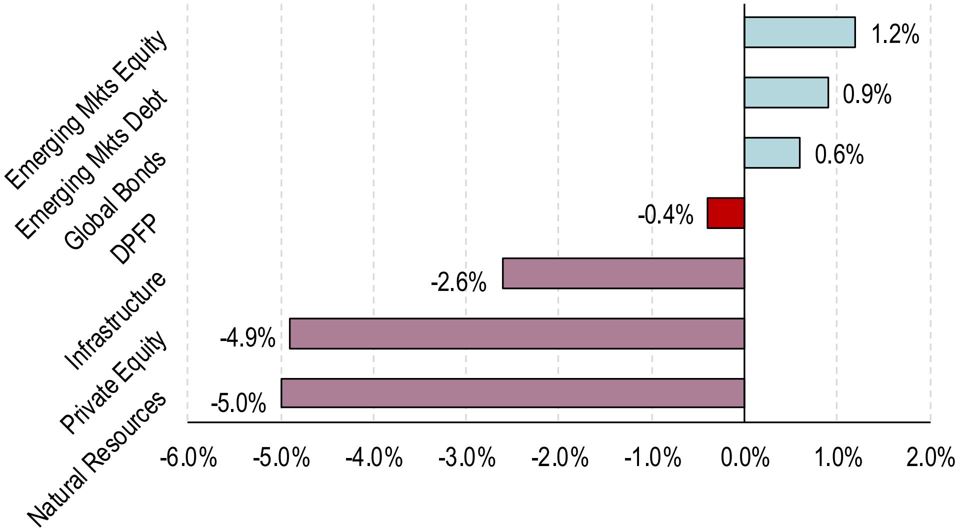
[1] Estimated gain calculated by multiplying beginning market value by quarterly performance.

Quarterly Relative Performance

Asset Classes vs. Benchmarks



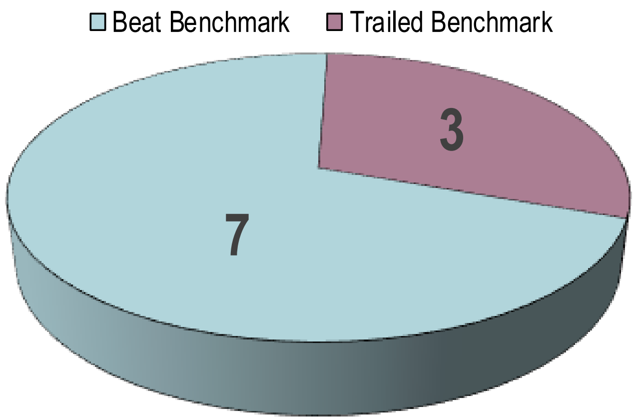
Top Three and Bottom Three Asset Classes vs. Benchmarks



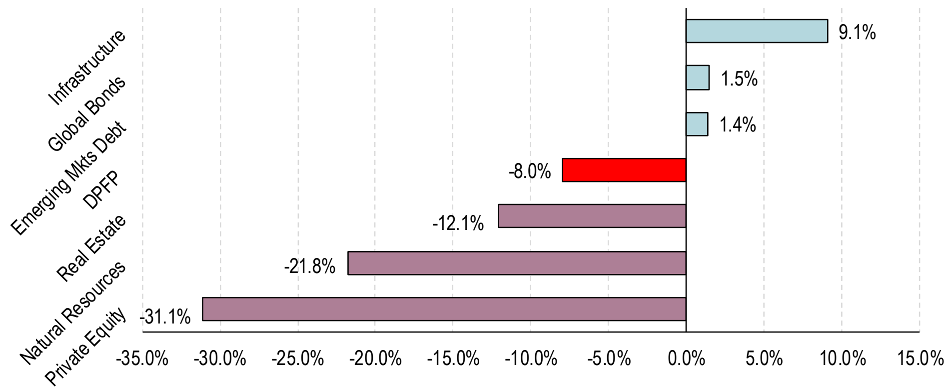
- In the quarter, the best relative performance came from emerging market equities, emerging market debt, and global bonds.
- Natural resources, private equity, and infrastructure had the worst relative performance in the quarter.
- Seven of the thirteen asset classes (approximately 54%) delivered positive relative performance versus respective benchmarks.

Trailing Three-Year Relative Performance

Asset Classes vs. Benchmarks



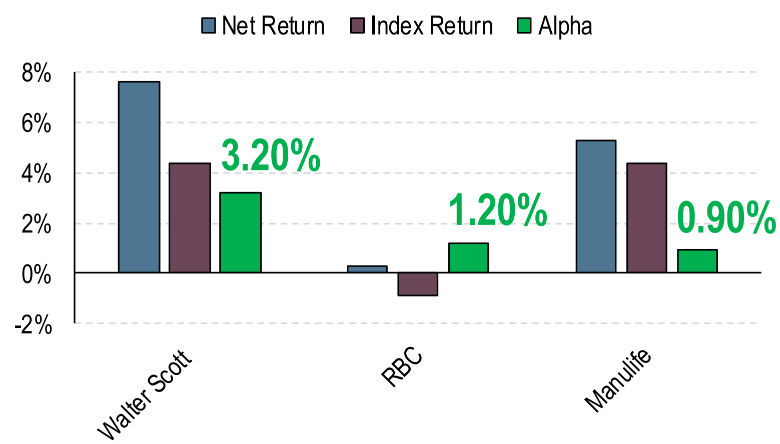
Top Three and Bottom Three Asset Classes vs. Benchmarks



- Seven of the ten asset classes with trailing three-year return history have delivered positive relative performance versus respective benchmarks.
- Over the trailing three-year period, the best relative performance came from the infrastructure and global bonds asset classes.
- Private equity, natural resources, and real estate had the worst relative performance in the trailing period and have historically accounted for approximately 40-50% of DPFP's asset allocation.

Public Manager Alpha

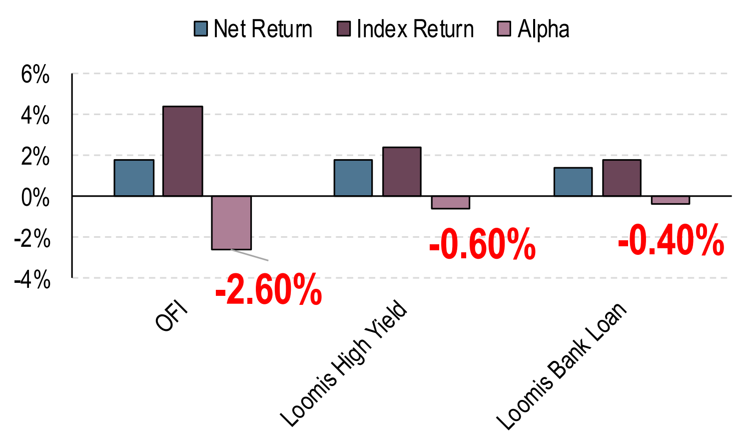
Top Three Outperformers in Quarter



$286 million

combined exposure

Bottom Three Underperformers in Quarter



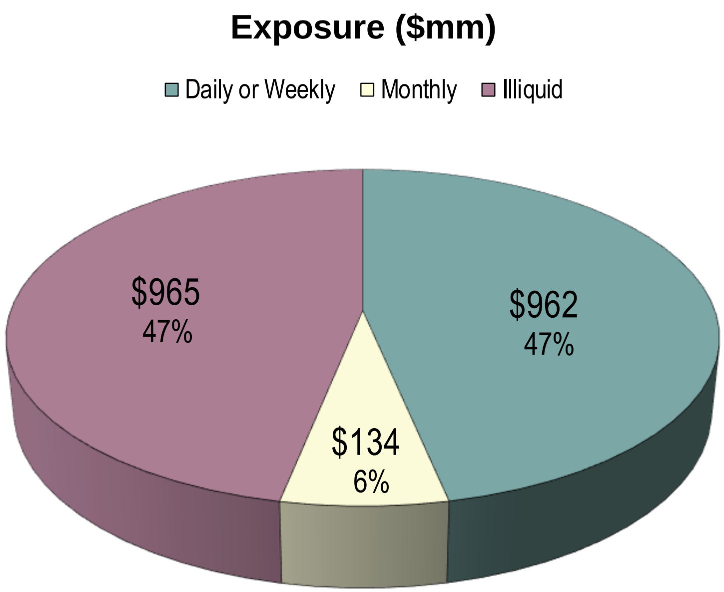
$259 million

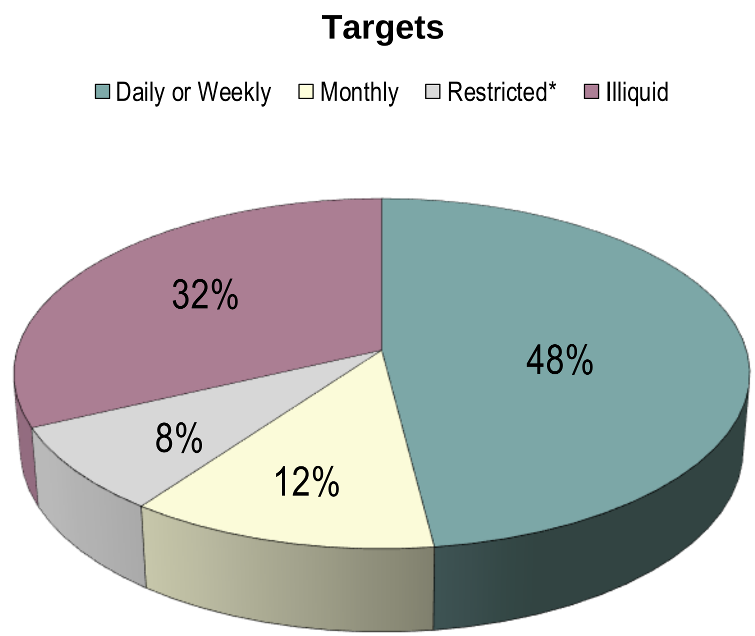
combined exposure

- 7 out of the 11 public markets managers matched or outperformed their respective benchmarks in the quarter.

Liquidity Exposure

as of September 30, 2018

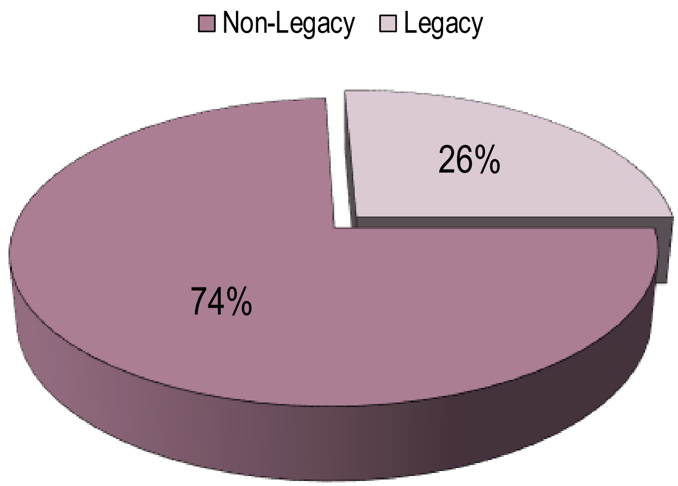


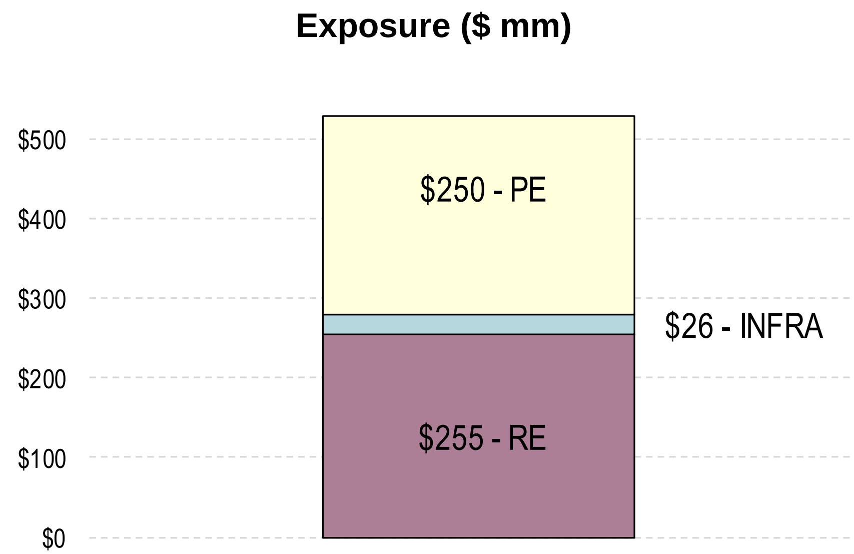


- Approximately 47% of the System's assets are illiquid versus 32% of the target allocation.

*Assets can be redeemed between monthly and annual basis often with gating, lock-ups or notice of more than 30 days required.

Legacy Assets

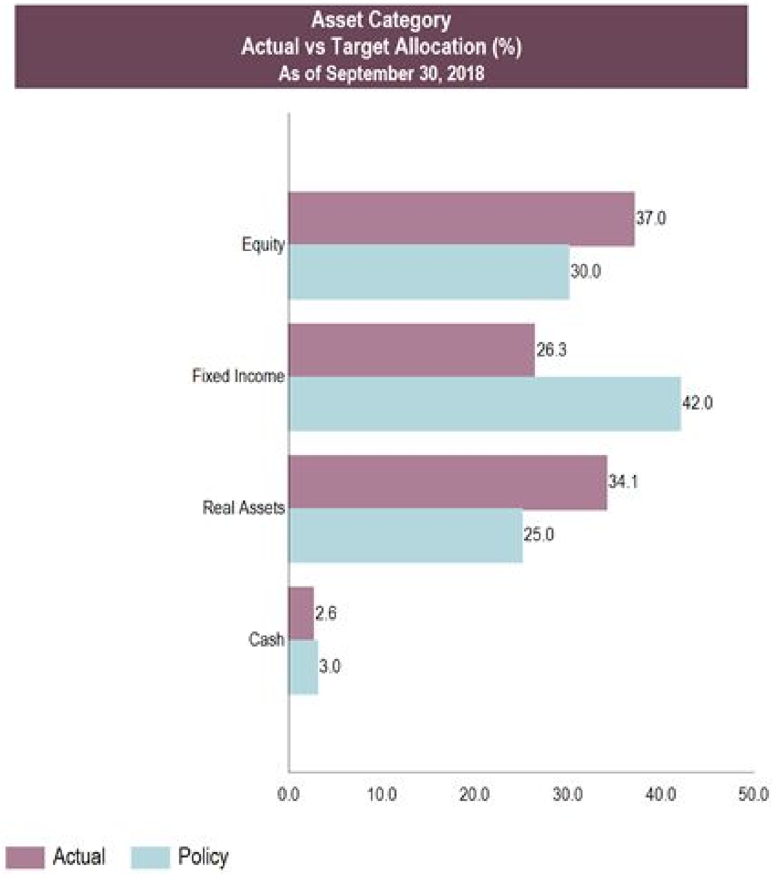


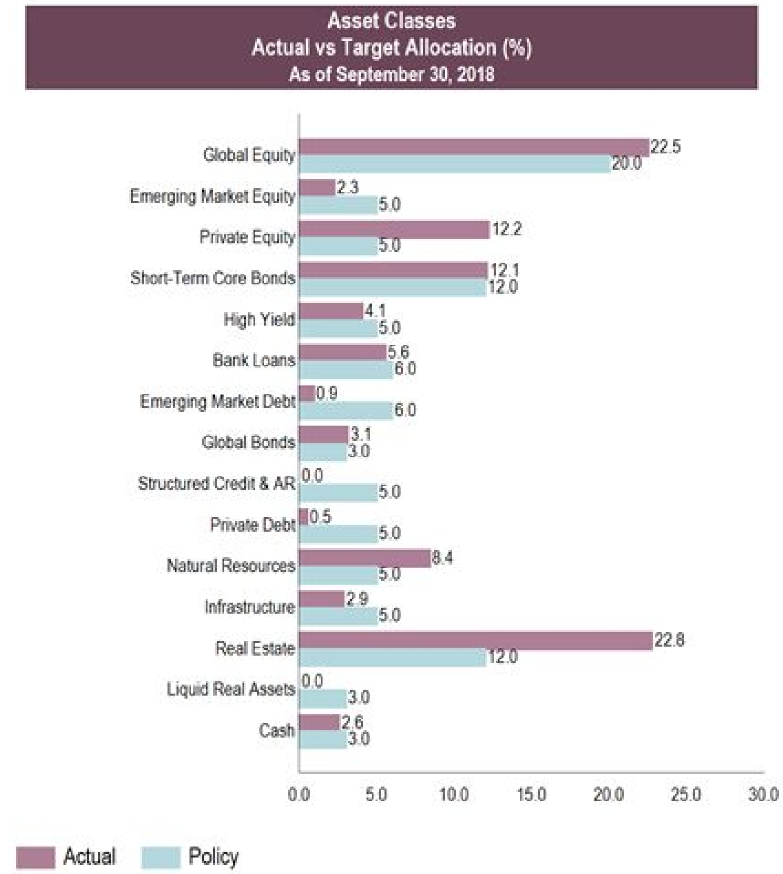


$531 million

Net Asset Value of Legacy Assets

3Q18 Review


Asset Category
Actual vs Target Allocation (%)
As of September 30, 2018
Equity
37.0
30.0
Fixed Income
26.3
42.0
Real Assets
34.1
25.0
Cash
2.6
3.0
0.0
10.0
20.0
30.0
40.0
50.0
Actual
Policy


Asset Classes
Actual vs Target Allocation (%)
As of September 30, 2018
Global Equity
22.5
20.0
Emerging Market Equity
2.3
5.0
Private Equity
12.2
5.0
Short-Term Core Bonds
12.1
12.0
High Yield
4.1
5.0
Bank Loans
5.6
6.0
Emerging Market Debt
0.9
6.0
Global Bonds
3.1
3.0
Structured Credit & AR
0.0
5.0
Private Debt
0.5
5.0
Natural Resources
8.4
5.0
Infrastructure
2.9
5.0
Real Estate
22.8
12.0
Liquid Real Assets
0.0
3.0
Cash
2.6
3.0
0.0
5.0
10.0
15.0
20.0
25.0
30.0
Actual
Policy

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Allocation vs. Targets and Policy

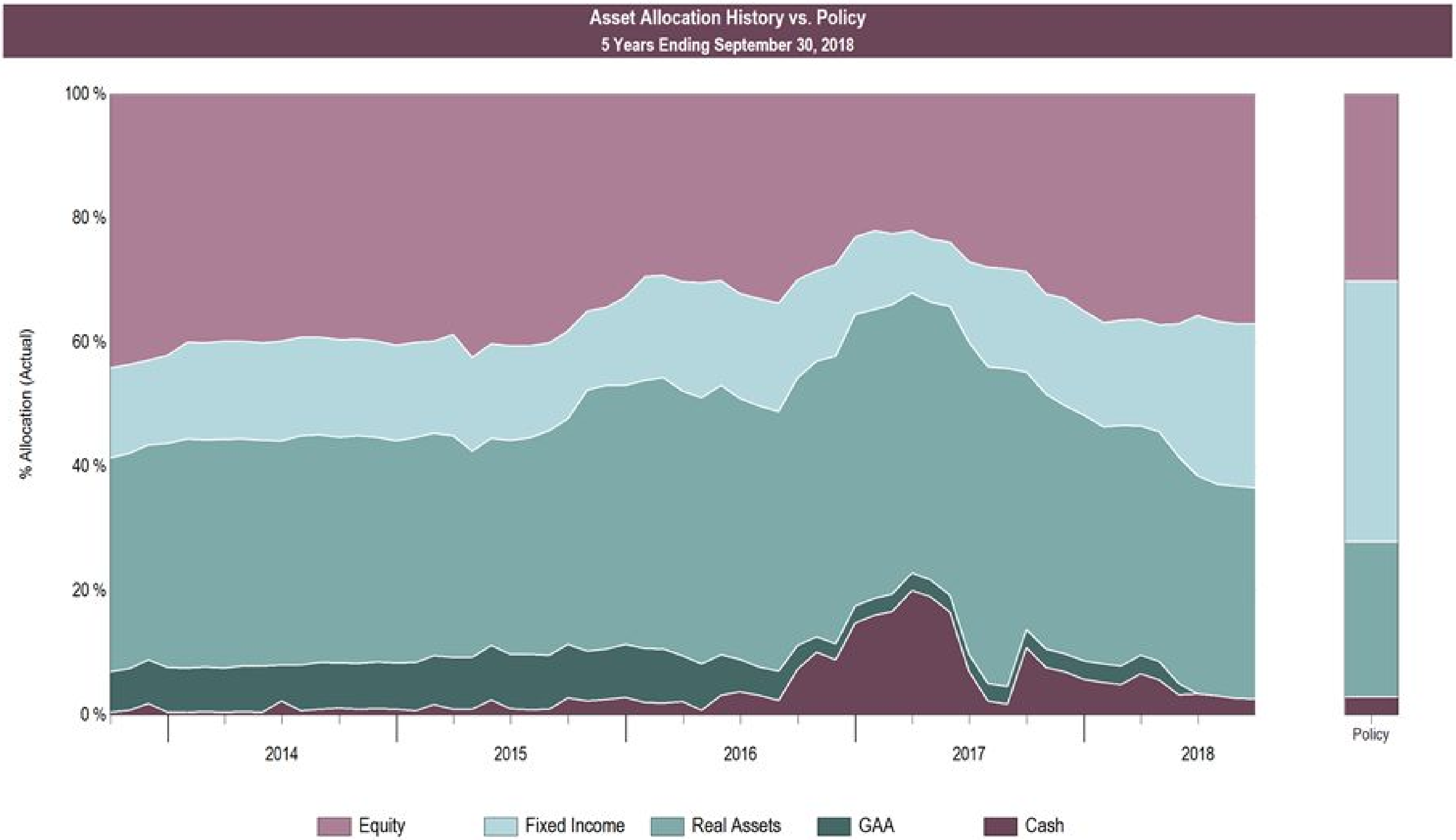
	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Equity	**$762,739,353**	**37%**	**30%**	**20% - 40%**	**Yes**
Global Equity	$463,799,950	23%	20%	10% - 23%	Yes
Emerging Market Equity	$46,782,723	2%	5%	0% - 8%	Yes
Private Equity	$252,156,680	12%	5%	4% - 15%	Yes
Fixed Income	**$542,929,844**	**26%**	**42%**	**25% - 48%**	**Yes**
Short-Term Core Bonds	$249,845,653	12%	12%	10% - 15%	Yes
High Yield	$84,127,820	4%	5%	2% - 8%	Yes
Bank Loans	$114,559,243	6%	6%	3% - 9%	Yes
Emerging Market Debt	$19,237,166	1%	6%	0% - 9%	Yes
Global Bonds	$64,521,684	3%	3%	0% - 6%	Yes
Private Debt	$10,638,279	1%	5%	2% - 7%	No
Structured Credit & AR	--	--	5%	0% - 9%	Yes
Real Assets	**$701,912,882**	**34%**	**25%**	**20% - 45%**	**Yes**
Real Estate	$468,980,285	23%	12%	10% - 25%	Yes
Natural Resources	$173,674,047	8%	5%	3% - 10%	Yes
Infrastructure	$59,258,551	3%	5%	3% - 10%	Yes
Liquid Real Assets	--	--	3%	0% - 6%	Yes
Cash	**$53,096,446**	**3%**	**3%**	**0% - 6%**	**Yes**
Cash	$53,096,446	3%	3%	0% - 6%	Yes
Total	**$2,060,678,525**	**100%**	**100%**		

[1] Current allocation column may not add up 100% due to rounding. Policy targets temporarily add to 101% because the approval of the Safety Reserve resulted in a 11% increase to Short-Term Core Bonds and Cash, offset by only a 10% reduction in GAA. Due to performance reporting software limitations, Fixed Income and Structured Credit & AR are showing policy targets of 42% and 5%, respectively. Actual Policy Targets are equal to 43% and 6%, respectively. Policy ranges for cash, short term core bonds, and fixed income were modified slightly to accommodate the safety reserve implementation. As of 9/30/2018, the Safety Reserve exposure was approximately $302.9 million (14.7%). New asset allocation targets and ranges were approved in October 2018 and will be reflected in the 4Q 2018 report.

Dallas Police & Fire Pension System

DPFP

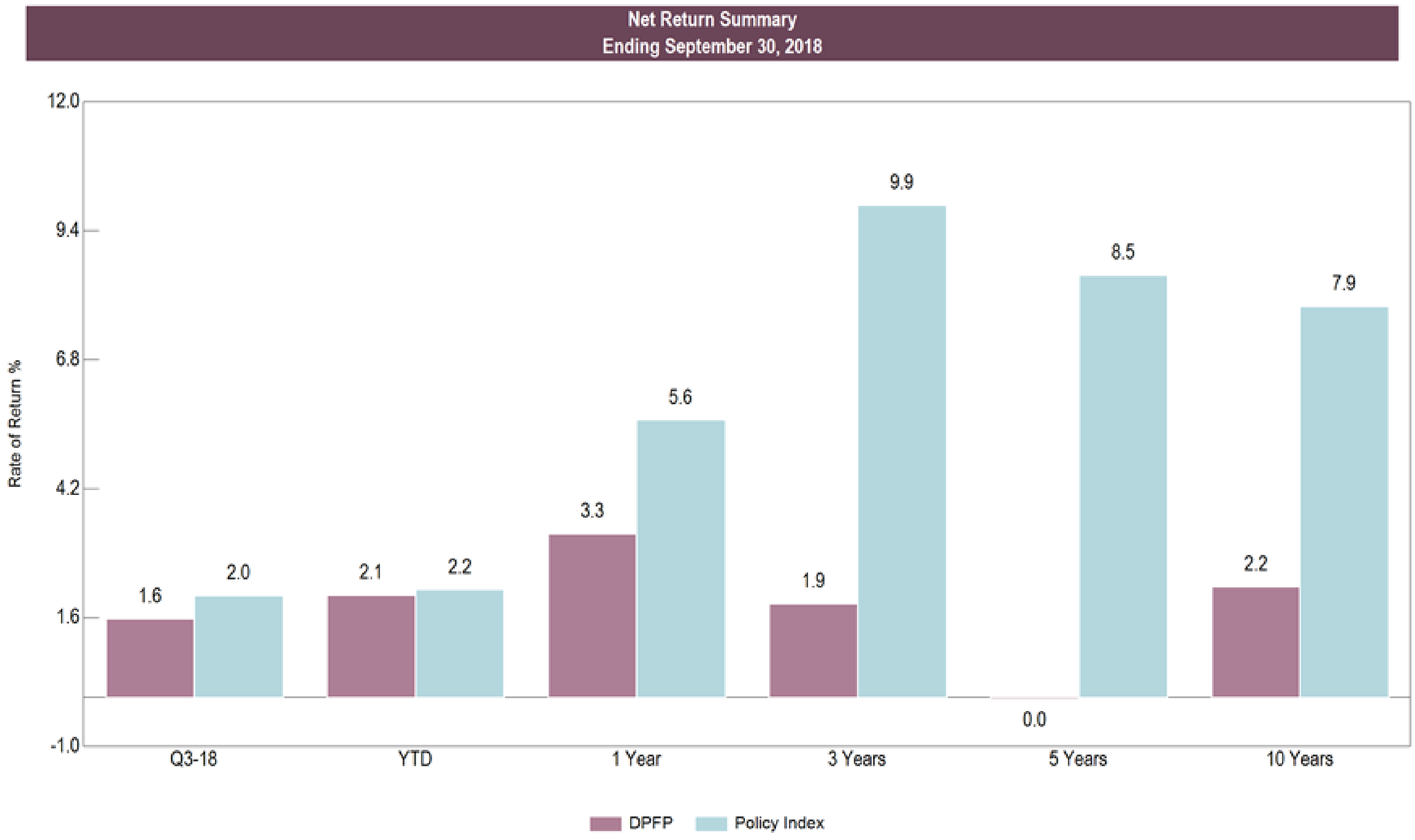
As of September 30, 2018



Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

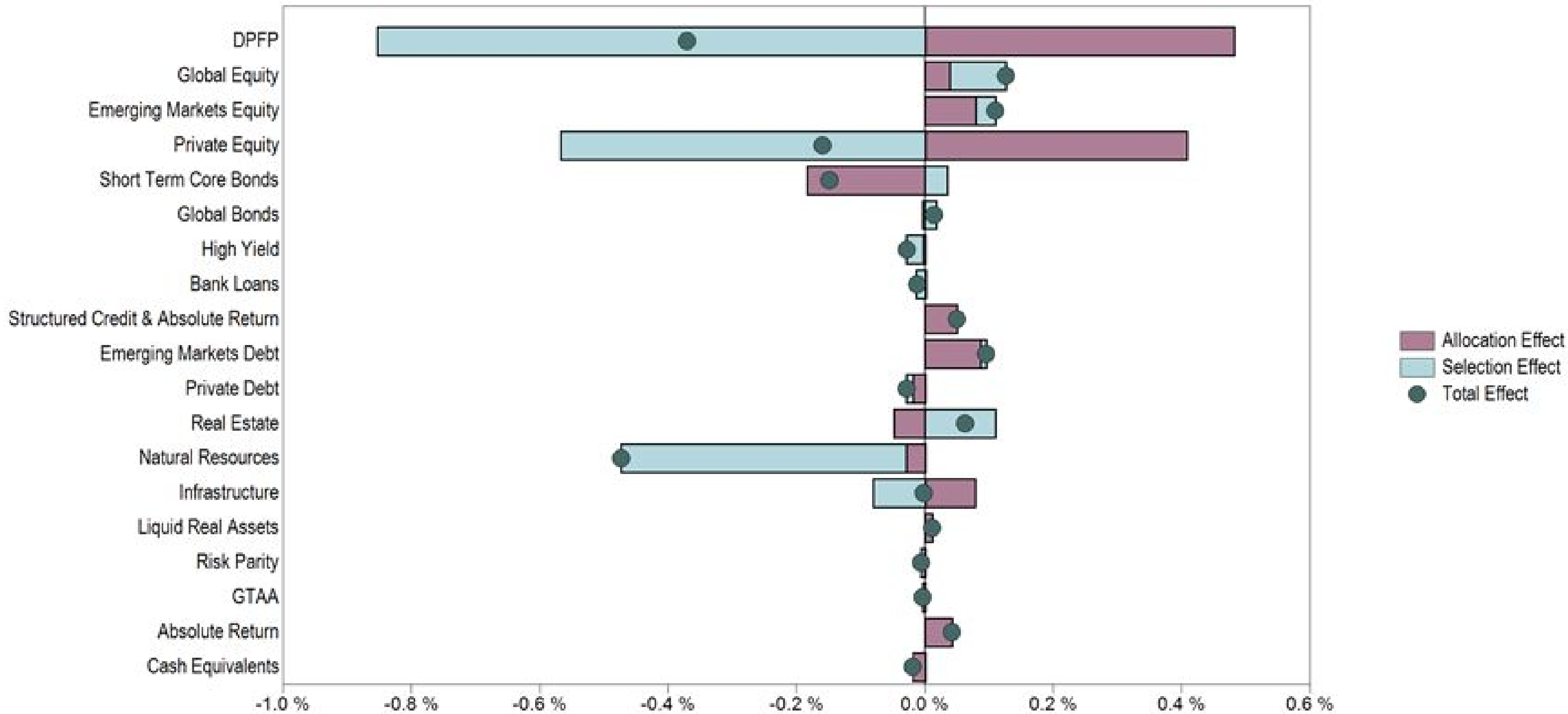


Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Attribution Effects vs. Policy Benchmark
3 Months Ending September 30, 2018



Attribution Summary
3 Months Ending September 30, 2018

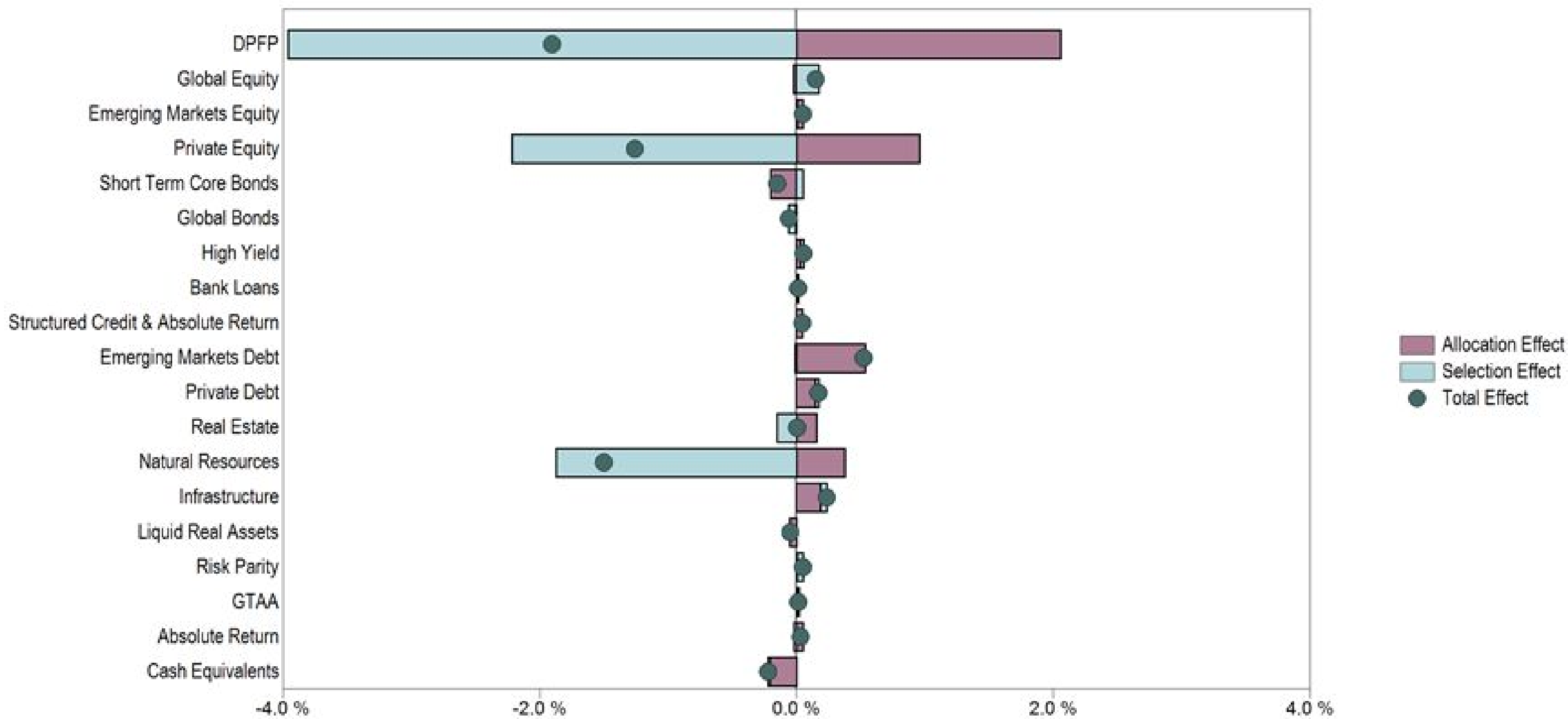
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**1.7%**	**2.1%**	**-0.4%**	**-0.9%**	**0.5%**	**-0.4%**

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Attribution Effects vs. Policy Benchmark
1 Year Ending September 30, 2018



Attribution Summary
1 Year Ending September 30, 2018

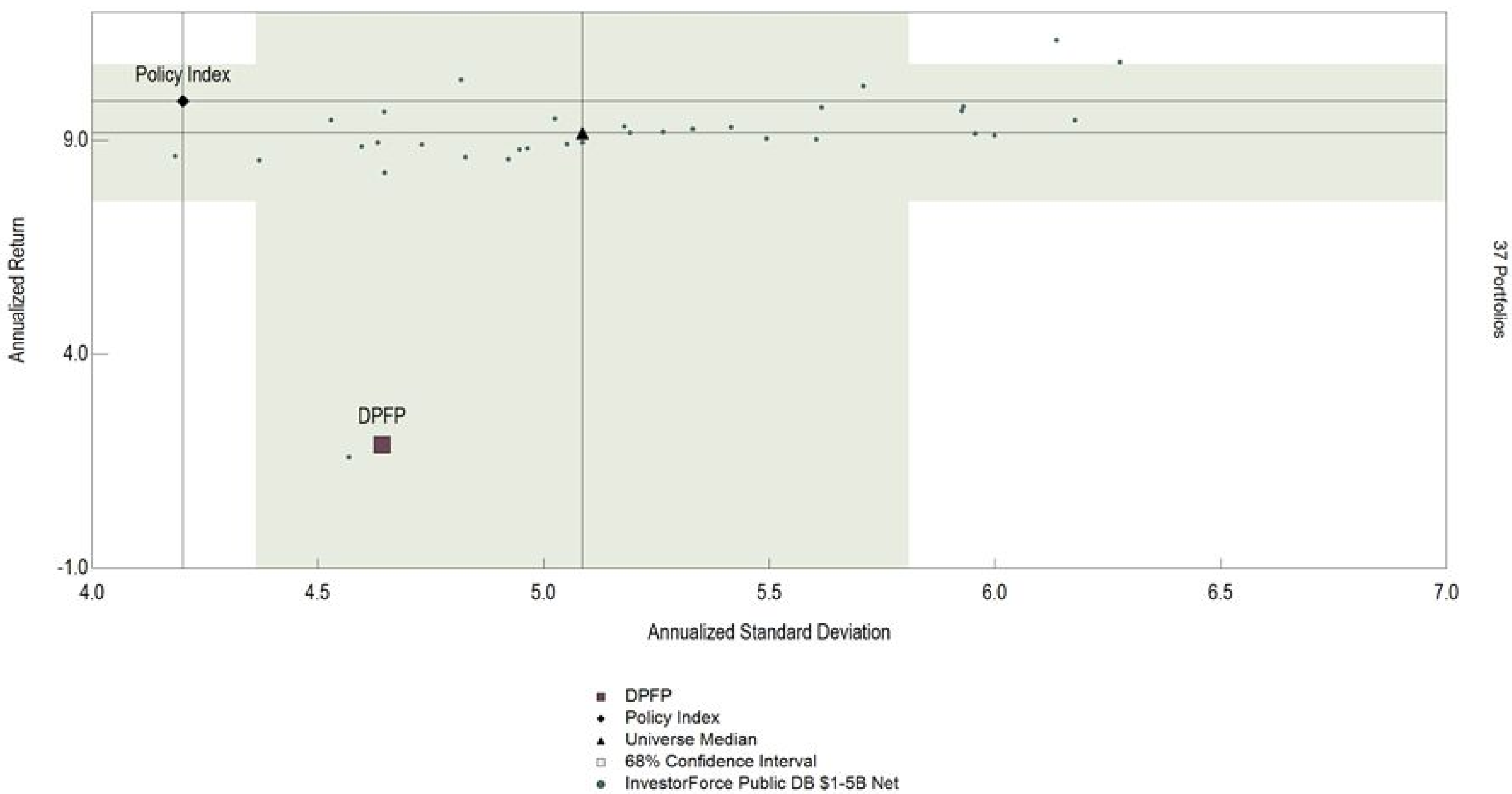
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**3.9%**	**5.7%**	**-1.9%**	**-3.9%**	**2.1%**	**-1.9%**

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Net Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2018

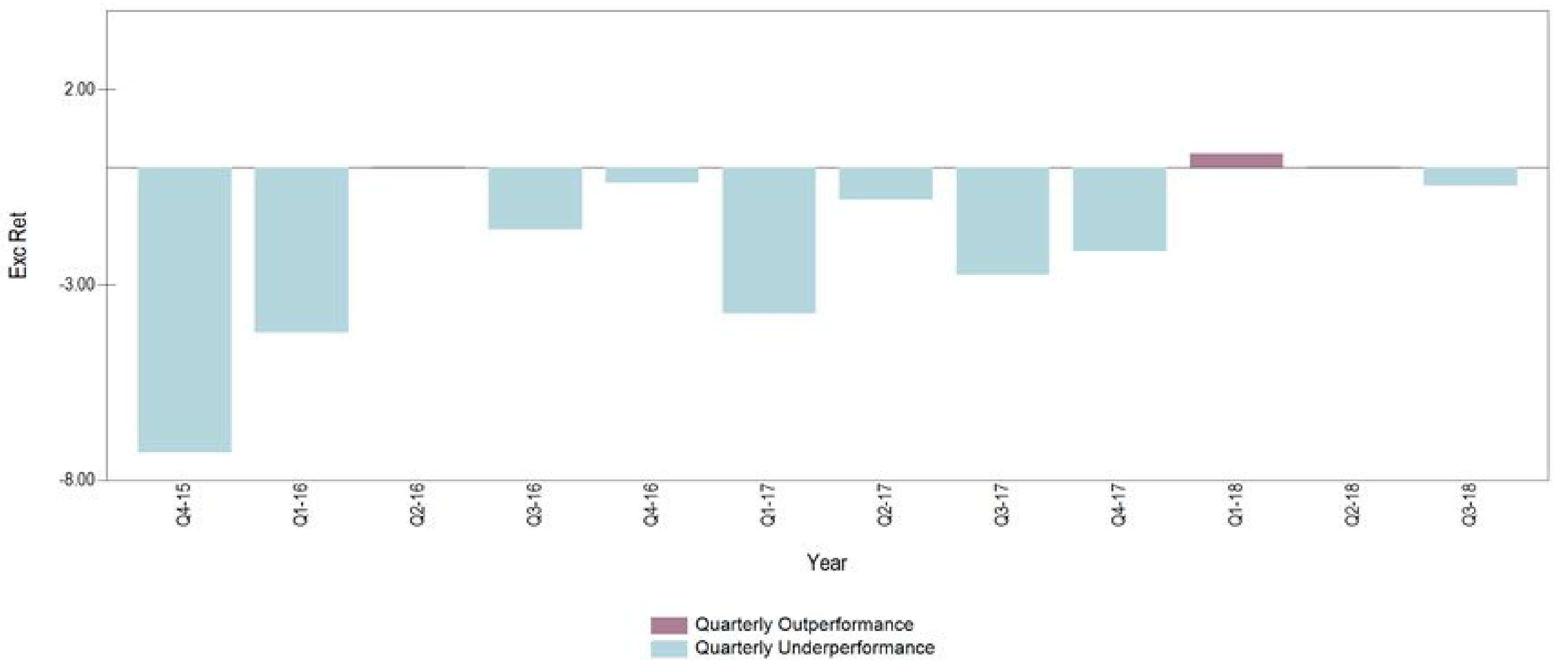


Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Quarterly Excess Performance vs. Policy Benchmark



Prepared by Meketa Investment Group

Total Fund Correlation Matrix
1 Year Ending September 30, 2018

	DPFP	Policy Index	60% MSCI ACWI/40% Barclays Global Agg
DPFP	1.00	--	--
Policy Index	0.95	1.00	--
60% MSCI ACWI/40% Barclays Global Agg	0.92	0.95	1.00

Total Fund Correlation Matrix
3 Years Ending September 30, 2018

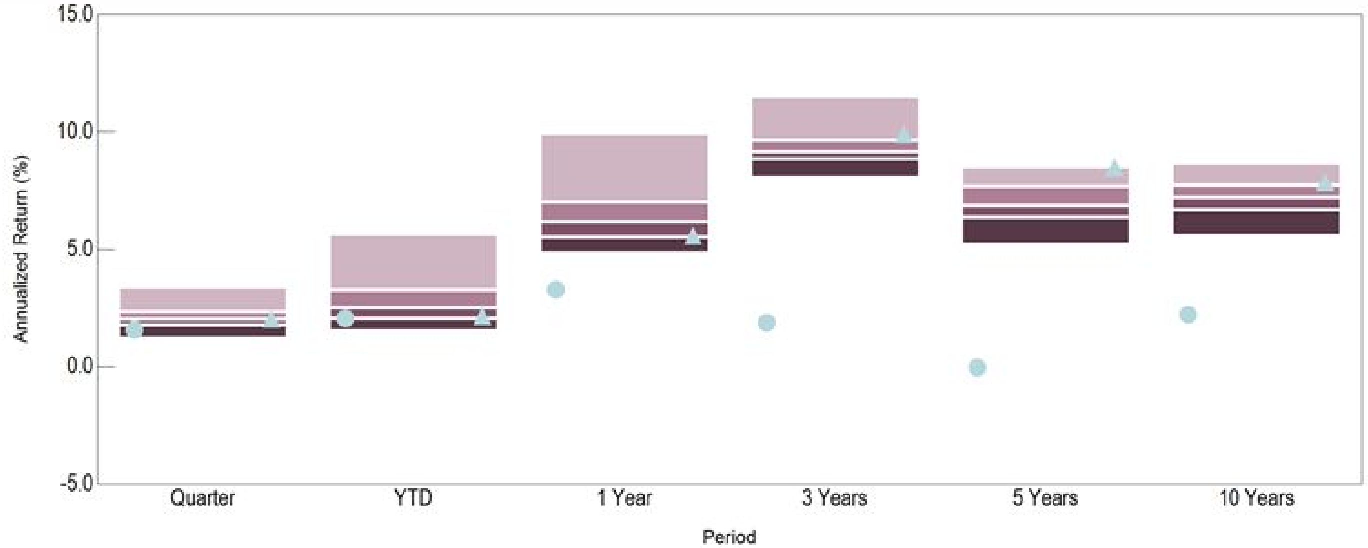
	DPFP	Policy Index	60% MSCI ACWI/40% Barclays Global Agg
DPFP	1.00	--	--
Policy Index	0.38	1.00	--
60% MSCI ACWI/40% Barclays Global Agg	0.45	0.95	1.00

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Total Plan Allocation vs. InvestorForce Public DB $1-5B Net Accounts
As of September 30, 2018



	Return (Rank)											
5th Percentile	3.4		5.7		9.9		11.5		8.5		8.7	
25th Percentile	2.4		3.3		7.0		9.7		7.7		7.8	
Median	2.0		2.5		6.2		9.2		6.9		7.2	
75th Percentile	1.8		2.1		5.5		8.9		6.4		6.7	
95th Percentile	1.3		1.5		4.9		8.1		5.2		5.6	
# of Portfolios	38		37		37		37		36		32	
DPFP	1.6	(85)	2.1	(78)	3.3	(99)	1.9	(99)	0.0	(99)	2.2	(99)
Policy Index	2.0	(53)	2.2	(65)	5.6	(75)	9.9	(16)	8.5	(6)	7.9	(19)

Dallas Police & Fire Pension System

As of September 30, 2018

Fund Watch List / Compliance
As of September 30, 2018

Name	Status	1 YR Return Above Benchmark	3 YR Return Above Benchmark	3 YR Sharpe Ratio Above Peers	3 YR Return Above Peers
Global Equity					
Boston Partners Global Equity Fund	Hold	No	--	--	--
Manulife Global Equity Strategy	Hold	No	--	--	--
OFI Global Equity Strategy	Hold	Yes	Yes	Yes	No
Walter Scott Global Equity Fund	Hold	Yes	Yes	No	Yes
Emerging Markets Equity					
RBC Emerging Markets Equity	Hold	--	--	--	--
Short Term Core Bonds					
IR&M 1-3 Year Strategy	Hold	Yes	--	--	--
Global Bonds					
Brandywine Global Fixed Income	Hold	No	Yes	Yes	Yes
High Yield					
Loomis Sayles High Yield Fund	Hold	Yes	Yes	Yes	Yes
Bank Loans					
Loomis Sayles Senior Rate and Fixed Income	Hold	Yes	Yes	Yes	Yes
Pacific Asset Management Corporate (Bank) Loan Strategy	Hold	No	--	--	--
Emerging Markets Debt					
Ashmore EM Blended Debt	Hold	--	--	--	--

1 YR Return Above Benchmark - 1 YR Return Above Benchmark
3 YR Return Above Benchmark - 3 YR Return Above Benchmark
3 YR Sharpe Ratio Above Peers - 3 YR Sharpe Ratio Above Peer Group Median
3 YR Return Above Peers - 3 YR Return Above Peer Group Median

Returns are net of fees.

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DPFP	**2,060,678,526**	**100.0**	**1.6**	**2.1**	**3.3**	**1.9**	**0.0**	**2.2**	**5.9**	**Jun-96**
Policy Index			*2.0*	*2.2*	*5.6*	*9.9*	*8.5*	*7.9*	*--*	*Jun-96*
Allocation Index			*2.5*	*4.2*	*7.0*	*10.1*	*8.7*	*7.0*	*7.4*	*Jun-96*
Global Equity	**463,799,950**	**22.5**	**4.8**	**5.2**	**11.2**	**14.5**	**9.8**	**8.9**	**6.7**	**Jul-06**
Global Equity Weighted Index			*4.4*	*4.3*	*10.3*	*14.4*	*9.0*	*8.6*	*6.6*	*Jul-06*
Emerging Markets Equity	**46,782,723**	**2.3**	**0.3**	**-7.2**	**--**	**--**	**--**	**--**	**-7.2**	**Jan-18**
MSCI Emerging Markets Gross			*-0.9*	*-7.4*	*-0.4*	*12.8*	*4.0*	*5.8*	*-7.4*	*Jan-18*
Private Equity	**252,156,680**	**12.2**	**3.0**	**0.1**	**0.8**	**-10.6**	**-11.3**	**-4.2**	**-0.6**	**Oct-05**
Private Equity Custom Benchmark			*7.9*	*13.0*	*21.1*	*20.5*	*16.8*	*15.3*	*12.4*	*Oct-05*
Short Term Core Bonds	**249,845,653**	**12.1**	**0.5**	**0.8**	**0.6**	**--**	**--**	**--**	**0.8**	**Jun-17**
BBgBarc US Treasury 1-3 Yr TR			*0.2*	*0.2*	*0.0*	*0.4*	*0.6*	*1.1*	*0.2*	*Jun-17*
Global Bonds	**64,521,684**	**3.1**	**-0.3**	**-2.7**	**-2.7**	**3.5**	**1.7**	**--**	**2.5**	**Dec-10**
BBgBarc Global Aggregate TR			*-0.9*	*-2.4*	*-1.3*	*2.0*	*0.7*	*2.9*	*1.5*	*Dec-10*
High Yield	**84,127,820**	**4.1**	**1.8**	**2.7**	**3.6**	**8.9**	**4.7**	**--**	**6.8**	**Dec-10**
BBgBarc US High Yield TR			*2.4*	*2.6*	*3.0*	*8.1*	*5.5*	*9.5*	*6.7*	*Dec-10*
Bank Loans	**114,559,243**	**5.6**	**1.6**	**3.8**	**5.4**	**5.8**	**--**	**--**	**4.4**	**Jan-14**
S&P/LSTA Leveraged Loan			*1.8*	*4.0*	*5.2*	*5.3*	*--*	*--*	*4.0*	*Jan-14*
Emerging Markets Debt	**19,237,166**	**0.9**	**1.1**	**-5.7**	**-5.6**	**7.2**	**2.6**	**--**	**3.1**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM			*0.2*	*-5.6*	*-4.6*	*5.8*	*1.6*	*--*	*2.6*	*Dec-10*
Private Debt	**10,638,279**	**0.5**	**0.8**	**8.2**	**7.6**	**--**	**--**	**--**	**-4.7**	**Jan-16**
Barclays Global High Yield +2%			*2.5*	*0.9*	*2.3*	*9.7*	*--*	*--*	*10.8*	*Jan-16*
Real Estate	**468,980,285**	**22.8**	**2.1**	**6.8**	**6.5**	**-4.3**	**-6.5**	**-4.7**	**3.8**	**Mar-85**
NCREIF Property Index			*1.7*	*5.3*	*7.2*	*7.8*	*9.6*	*6.4*	*8.0*	*Mar-85*
Natural Resources	**173,674,047**	**8.4**	**-3.8**	**-3.6**	**-5.7**	**-2.2**	**2.0**	**--**	**4.1**	**Dec-10**
Natural Resources Benchmark (Linked)			*1.2*	*4.6*	*13.5*	*19.6*	*16.3*	*--*	*13.4*	*Dec-10*
Infrastructure	**59,258,551**	**2.9**	**-4.2**	**-0.9**	**-1.0**	**17.1**	**10.6**	**--**	**9.4**	**Jul-12**
S&P Global Infrastructure TR USD			*-1.6*	*-4.6*	*-2.8*	*8.0*	*6.1*	*6.1*	*7.7*	*Jul-12*
Cash Equivalents	**53,096,446**	**2.6**	**0.6**	**1.3**	**1.6**	**1.2**	**--**	**--**	**1.2**	**Apr-15**
91 Day T-Bills			*0.5*	*1.3*	*1.6*	*0.9*	*0.5*	*0.3*	*0.7*	*Apr-15*

[1] Please see the Appendix for composition of the Custom Benchmarks. [2] As of 9/30/2018 the Safety Reserve exposure was approximately $302.9 million (14.7%).[3] All private market data is preliminary until valuations are finalized.

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Trailing Net Performance

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DPFP	**2,060,678,526**	**100.0**	**--**	**1.6**	**2.1**	**3.3**	**1.9**	**0.0**	**2.2**	**5.9**	**Jun-96**
Policy Index				*2.0*	*2.2*	*5.6*	*9.9*	*8.5*	*7.9*	*--*	*Jun-96*
Allocation Index				*2.5*	*4.2*	*7.0*	*10.1*	*8.7*	*7.0*	*7.4*	*Jun-96*
InvestorForce Public DB $1-5B Net Rank				*85*	*78*	*99*	*99*	*99*	*99*	*80*	*Jun-96*
Total Equity	**762,739,353**	**37.0**	**37.0**	**3.9**	**2.9**	**6.9**	**1.4**	**2.1**	**--**	**4.5**	**Dec-10**
Total Equity Policy Index				*4.1*	*3.7*	*10.2*	*--*	*--*	*--*	*--*	*Dec-10*
Public Equity	**510,582,673**	**24.8**	**66.9**	**4.4**	**4.0**	**9.9**	**14.1**	**9.5**	**8.8**	**6.6**	**Jul-06**
Public Equity Weighted Index				*3.9*	*3.1*	*9.1*	*14.0*	*8.7*	*8.5*	*6.5*	*Jul-06*
eV All Global Equity Net Rank				*36*	*47*	*43*	*27*	*37*	*44*	*43*	*Jul-06*
Global Equity	**463,799,950**	**22.5**	**90.8**	**4.8**	**5.2**	**11.2**	**14.5**	**9.8**	**8.9**	**6.7**	**Jul-06**
Global Equity Weighted Index				*4.4*	*4.3*	*10.3*	*14.4*	*9.0*	*8.6*	*6.6*	*Jul-06*
eV All Global Equity Net Rank				*28*	*36*	*34*	*22*	*32*	*43*	*42*	*Jul-06*
Boston Partners Global Equity Fund	111,313,268	5.4	24.0	4.5	2.2	8.5	--	--	--	9.9	Jul-17
MSCI ACWI Gross				*4.4*	*4.3*	*10.3*	*14.0*	*9.2*	*8.8*	*12.8*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*29*	*46*	*21*	*--*	*--*	*--*	*34*	*Jul-17*
Manulife Global Equity Strategy	116,567,584	5.7	25.1	5.3	1.6	5.6	--	--	--	6.2	Jul-17
MSCI ACWI Gross				*4.4*	*4.3*	*10.3*	*14.0*	*9.2*	*8.8*	*12.8*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*18*	*57*	*60*	*--*	*--*	*--*	*81*	*Jul-17*
OFI Global Equity Strategy	113,191,146	5.5	24.4	1.8	4.8	11.4	15.0	10.5	10.7	6.6	Oct-07
MSCI ACWI Gross				*4.4*	*4.3*	*10.3*	*14.0*	*9.2*	*8.8*	*5.0*	*Oct-07*
eV Global Large Cap Growth Eq Net Rank				*75*	*78*	*76*	*57*	*68*	*40*	*52*	*Oct-07*
Walter Scott Global Equity Fund	122,727,952	6.0	26.5	7.6	12.4	19.3	16.2	10.2	--	10.3	Dec-09
MSCI ACWI Gross				*4.4*	*4.3*	*10.3*	*14.0*	*9.2*	*8.8*	*9.6*	*Dec-09*
eV Global Large Cap Growth Eq Net Rank				*3*	*11*	*15*	*46*	*71*	*--*	*78*	*Dec-09*

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Emerging Markets Equity	**46,782,723**	**2.3**	**9.2**	**0.3**	**-7.2**	**--**	**--**	**--**	**--**	**-7.2**	**Jan-18**
MSCI Emerging Markets Gross				*-0.9*	*-7.4*	*-0.4*	*12.8*	*4.0*	*5.8*	*-7.4*	*Jan-18*
eV Emg Mkts Equity Net Rank				*18*	*21*	*--*	*--*	*--*	*--*	*21*	*Jan-18*
RBC Emerging Markets Equity	46,782,723	2.3	100.0	0.3	-7.2	--	--	--	--	-7.2	Jan-18
MSCI Emerging Markets Gross				*-0.9*	*-7.4*	*-0.4*	*12.8*	*4.0*	*5.8*	*-7.4*	*Jan-18*
eV Emg Mkts Equity Net Rank				*18*	*21*	*--*	*--*	*--*	*--*	*21*	*Jan-18*
Private Equity	**252,156,680**	**12.2**	**33.1**	**3.0**	**0.1**	**0.8**	**-10.6**	**-11.3**	**-4.2**	**-0.6**	**Oct-05**
Private Equity Custom Benchmark				*7.9*	*13.0*	*21.1*	*20.5*	*16.8*	*15.3*	*12.4*	*Oct-05*
Total Fixed Income	**542,929,845**	**26.3**	**26.3**	**0.8**	**1.2**	**1.9**	**4.4**	**2.8**	**6.3**	**5.4**	**Jul-06**
Total Fixed Income Policy Index				*1.2*	*0.2*	*1.3*	*6.0*	*--*	*--*	*--*	*Jul-06*
eV All Global Fixed Inc Net Rank				*41*	*20*	*22*	*37*	*49*	*26*	*33*	*Jul-06*
Public Fixed Income	**532,291,566**	**25.8**	**98.0**	**0.8**	**1.2**	**1.9**	**6.9**	**3.7**	**--**	**5.4**	**Dec-10**
Public Fixed Income Weighted Index				*0.7*	*0.3*	*1.1*	*5.8*	*3.9*	*--*	*4.9*	*Dec-10*
Short Term Core Bonds	**249,845,653**	**12.1**	**46.9**	**0.5**	**0.8**	**0.6**	**--**	**--**	**--**	**0.8**	**Jun-17**
BBgBarc US Treasury 1-3 Yr TR				*0.2*	*0.2*	*0.0*	*0.4*	*0.6*	*1.1*	*0.2*	*Jun-17*
IR&M 1-3 Year Strategy	249,845,653	12.1	100.0	0.5	0.8	0.6	--	--	--	0.8	Jul-17
BBgBarc US Treasury 1-3 Yr TR				*0.2*	*0.2*	*0.0*	*0.4*	*0.6*	*1.1*	*0.2*	*Jul-17*
eV US Short Duration Fixed Inc Net Rank				*41*	*28*	*39*	*--*	*--*	*--*	*47*	*Jul-17*
Global Bonds	**64,521,684**	**3.1**	**12.1**	**-0.3**	**-2.7**	**-2.7**	**3.5**	**1.7**	**--**	**2.5**	**Dec-10**
BBgBarc Global Aggregate TR				*-0.9*	*-2.4*	*-1.3*	*2.0*	*0.7*	*2.9*	*1.5*	*Dec-10*
eV All Global Fixed Inc Net Rank				*70*	*75*	*83*	*54*	*67*	*--*	*65*	*Dec-10*
Brandywine Global Fixed Income	64,521,684	3.1	100.0	-0.3	-2.7	-2.7	3.9	1.8	5.3	4.6	Oct-04
BBgBarc Global Aggregate TR				*-0.9*	*-2.4*	*-1.3*	*2.0*	*0.7*	*2.9*	*3.3*	*Oct-04*
eV All Global Fixed Inc Net Rank				*70*	*75*	*83*	*46*	*67*	*42*	*48*	*Oct-04*

[1] Please note, private market data is preliminary until valuations are finalized.

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
High Yield	**84,127,820**	**4.1**	**15.8**	**1.8**	**2.7**	**3.6**	**8.9**	**4.7**	**--**	**6.8**	**Dec-10**
BBgBarc US High Yield TR				*2.4*	*2.6*	*3.0*	*8.1*	*5.5*	*9.5*	*6.7*	*Dec-10*
eV US High Yield Fixed Inc Net Rank				*82*	*24*	*20*	*7*	*55*	*--*	*18*	*Dec-10*
Loomis Sayles High Yield Fund	84,127,820	4.1	100.0	1.8	2.7	3.6	9.2	5.6	10.1	9.6	Oct-98
BBgBarc US High Yield TR				*2.4*	*2.6*	*3.0*	*8.1*	*5.5*	*9.5*	*6.9*	*Oct-98*
eV US High Yield Fixed Inc Net Rank				*82*	*24*	*20*	*6*	*19*	*3*	*1*	*Oct-98*
Bank Loans	**114,559,243**	**5.6**	**21.5**	**1.6**	**3.8**	**5.4**	**5.8**	**--**	**--**	**4.4**	**Jan-14**
S&P/LSTA Leveraged Loan				*1.8*	*4.0*	*5.2*	*5.3*	*--*	*--*	*4.0*	*Jan-14*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*75*	*30*	*18*	*17*	*--*	*--*	*17*	*Jan-14*
Loomis Sayles Senior Rate and Fixed Income	61,548,678	3.0	53.7	1.4	3.8	5.4	5.8	--	--	4.4	Jan-14
S&P/LSTA Leveraged Loan				*1.8*	*4.0*	*5.2*	*5.3*	*--*	*--*	*4.0*	*Jan-14*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*97*	*37*	*17*	*17*	*--*	*--*	*17*	*Jan-14*
Pacific Asset Management Corporate (Bank) Loan Strategy	53,010,565	2.6	46.3	1.9	3.9	5.3	--	--	--	5.0	Aug-17
Credit Suisse Leveraged Loan				*1.9*	*4.4*	*5.6*	*5.4*	*--*	*--*	*5.0*	*Aug-17*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*27*	*25*	*20*	*--*	*--*	*--*	*12*	*Aug-17*
Emerging Markets Debt	**19,237,166**	**0.9**	**3.6**	**1.1**	**-5.7**	**-5.6**	**7.2**	**2.6**	**--**	**3.1**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM				*0.2*	*-5.6*	*-4.6*	*5.8*	*1.6*	*--*	*2.6*	*Dec-10*
eV All Emg Mkts Fixed Inc Net Rank				*48*	*57*	*65*	*17*	*56*	*--*	*56*	*Dec-10*
Ashmore EM Blended Debt	19,237,166	0.9	100.0	1.1	-5.7	--	--	--	--	-4.1	Dec-17
Ashmore Blended Debt Benchmark				*0.4*	*-4.6*	*-3.4*	*5.2*	*2.0*	*--*	*-3.6*	*Dec-17*
eV All Emg Mkts Fixed Inc Net Rank				*48*	*57*	*--*	*--*	*--*	*--*	*46*	*Dec-17*
Private Debt	**10,638,279**	**0.5**	**2.0**	**0.8**	**8.2**	**7.6**	**--**	**--**	**--**	**-4.7**	**Jan-16**
Barclays Global High Yield +2%				*2.5*	*0.9*	*2.3*	*9.7*	*--*	*--*	*10.8*	*Jan-16*

[1] Please note, private market data is preliminary until valuations are finalized.

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Real Assets	**701,912,883**	**34.1**	**34.1**	**0.1**	**0.6**	**1.4**	**-0.2**	**-3.0**	**--**	**-2.3**	**Dec-10**
Total Real Assets Policy Index				*0.9*	*3.2*	*6.5*	*--*	*--*	*--*	*--*	*Dec-10*
Real Estate	**468,980,285**	**22.8**	**66.8**	**2.1**	**6.8**	**6.5**	**-4.3**	**-6.5**	**-4.7**	**3.8**	**Mar-85**
NCREIF Property Index				*1.7*	*5.3*	*7.2*	*7.8*	*9.6*	*6.4*	*8.0*	*Mar-85*
Natural Resources	**173,674,047**	**8.4**	**24.7**	**-3.8**	**-3.6**	**-5.7**	**-2.2**	**2.0**	**--**	**4.1**	**Dec-10**
Natural Resources Benchmark (Linked)				*1.2*	*4.6*	*13.5*	*19.6*	*16.3*	*--*	*13.4*	*Dec-10*
Infrastructure	**59,258,551**	**2.9**	**8.4**	**-4.2**	**-0.9**	**-1.0**	**17.1**	**10.6**	**--**	**9.4**	**Jul-12**
S&P Global Infrastructure TR USD				*-1.6*	*-4.6*	*-2.8*	*8.0*	*6.1*	*6.1*	*7.7*	*Jul-12*
Cash Equivalents	**53,096,446**	**2.6**	**2.6**	**0.6**	**1.3**	**1.6**	**1.2**	**--**	**--**	**1.2**	**Apr-15**
91 Day T-Bills				*0.5*	*1.3*	*1.6*	*0.9*	*0.5*	*0.3*	*0.7*	*Apr-15*

[1] Please note, private market data is preliminary until valuations are finalized.

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Statistics Summary

5 Years Ending September 30, 2018

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DPFP	0.0%	5.8%	-1.5	0.6	-0.1	5.6%
Policy Index	8.5%	3.9%	--	1.0	2.1	0.0%
Public Equity	9.5%	9.8%	0.5	1.0	0.9	1.8%
Public Equity Weighted Index	8.7%	9.9%	--	1.0	0.8	0.0%
Global Equity	9.8%	9.8%	0.5	1.0	0.9	1.8%
Global Equity Weighted Index	9.0%	9.9%	--	1.0	0.9	0.0%
Private Equity	-10.5%	19.1%	-1.3	0.0	-0.6	21.3%
Private Equity Custom Benchmark	16.8%	9.7%	--	1.0	1.7	0.0%
Public Fixed Income	3.7%	4.8%	-0.1	1.1	0.7	1.5%
Public Fixed Income Weighted Index	3.9%	4.2%	--	1.0	0.8	0.0%
Global Bonds	1.7%	6.1%	0.3	1.1	0.2	3.7%
BBgBarc Global Aggregate TR	0.7%	4.4%	--	1.0	0.1	0.0%
High Yield	4.7%	6.2%	-0.4	1.2	0.7	2.3%
BBgBarc US High Yield TR	5.5%	5.0%	--	1.0	1.0	0.0%
Emerging Markets Debt	2.6%	8.3%	0.4	1.0	0.2	2.1%
50% JPM EMBI/50% JPM GBI-EM	1.6%	8.1%	--	1.0	0.1	0.0%
Real Estate	-6.9%	13.7%	-1.0	-1.4	-0.5	15.7%
NCREIF Property Index	9.6%	4.0%	--	1.0	2.3	0.0%
Natural Resources	2.0%	4.8%	-1.2	0.1	0.3	11.8%
Natural Resources Benchmark (Linked)	16.3%	11.5%	--	1.0	1.4	0.0%
Infrastructure	10.7%	29.2%	0.1	0.0	0.3	30.9%
S&P Global Infrastructure TR USD	6.1%	9.9%	--	1.0	0.6	0.0%

Benchmark History
As of September 30, 2018

DPFP		
4/1/2016	Present	20% MSCI ACWI Gross / 5% MSCI Emerging Markets Gross / 5% Private Equity Custom Benchmark / 2% BBgBarc US Treasury 1-3 Yr TR / 3% BBgBarc Global Aggregate TR / 5% BBgBarc 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% BBgBarc 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% BBgBarc Global Aggregate TR / 20% CPI + 5% (Seasonally Adjusted) / 10% Infrastructure / 15% Real Estate
Total Equity		
1/1/2016	Present	66.67% MSCI ACWI Gross / 16.67% MSCI Emerging Markets Gross / 16.66% Private Equity Custom Benchmark
Public Equity		
2/1/2018	Present	Weighted Average of MSCI ACWI Gross / MSCI Emerging Markets
1/1/2018	1/31/2018	Weighted Average of MSCI ACWI Gross / MSCI Emerging Markets / FTSE EPRA/NAREIT Linked 91 Day Tbill
12/1/2017	12/31/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill
7/1/2006	11/30/2017	100% Global Equity Weighted Index
Global Equity		
2/1/2018	Present	MSCI ACWI Gross
1/1/2018	1/31/2018	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Global
12/1/2017	12/31/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill
8/1/2017	11/30/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill / MSCI ACWI Gross Linked 91 Day TBill
7/1/2017	7/31/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill / MSCI ACWI Gross Linked 91 Day TBill
5/1/2017	6/30/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill / MSCI ACWI Gross Linked 91 Day TBill / MSCI ACWI Gross
4/1/2017	4/30/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill / MSCI ACWI Gross Linked 91 Day TBill / MSCI ACWI Gross / Russell 2000
12/1/2016	3/31/2017	Weighted Average of MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill / MSCI ACWI Gross Linked 91 Day TBill / MSCI ACWI Gross / Russell 2000 / Dow Jones Equal Wtd. Oil & Gas
11/1/2016	11/30/2016	Weighted Average of Russell 2000 / MSCI ACWI Gross Linked 91 Day TBill / MSCI ACWI Gross / FTSE EPRA/NAREIT Linked 91 Day Tbill / Dow Jones Equal Wtd. Oil & Gas / MSCI ACWI Gross
9/1/2016	10/31/2016	Weighted Average of Russell 2000 / MSCI ACWI Gross Linked 91 Day TBill / MSCI ACWI Gross / FTSE EPRA/NAREIT Global / Dow Jones Equal Wtd. Oil & Gas / MSCI ACWI Gross

Dallas Police & Fire Pension System

DPFP

As of September 30, 2018

Private Equity		
10/1/2005	Present	Russell 3000+3%
Total Fixed Income		
1/1/2016	Present	6.07% BBgBarc US Treasury 1-3 Yr TR / 9.09% BBgBarc Global Aggregate TR / 15.15% BBgBarc Global High Yield TR / 18.18% S&P/LSTA Leveraged Loan / 18.18% HFRI RV: FI (50/50-ABS/Corp) / 18.18% 50% JPM EMBI/50% JPM GBI-EM / 15.15% Barclays Global High Yield +2%
Public Fixed Income		
5/1/2018	Present	Weighted Average of BBgBarc US Treasury 1-3 Yr TR / BBgBarc Global Aggregate TR / BBgBarc Global High Yield TR / S&P/LSTA Leveraged Loan / Credit Suisse Leveraged Loan / Ashmore Blended Debt Benchmark
12/1/2017	4/30/2018	Weighted Average of BBgBarc US Treasury 1-3 Yr TR / BBgBarc Global Aggregate TR / BBgBarc Global High Yield TR / S&P/LSTA Leveraged Loan / Credit Suisse Leveraged Loan / Ashmore Blended Debt Benchmark / JP Morgan GBI EM Global Diversified TR USD
10/1/2017	11/30/2017	Weighted Average of BBgBarc US Treasury 1-3 Yr TR / BBgBarc Global Aggregate TR / BBgBarc Global High Yield TR / S&P/LSTA Leveraged Loan / Credit Suisse Leveraged Loan / JP Morgan GBI EM Global Diversified TR USD
9/1/2017	9/30/2017	Weighted Average of BBgBarc US Treasury 1-3 Yr TR / BBgBarc Global Aggregate TR / BBgBarc Global High Yield TR / S&P/LSTA Leveraged Loan / JP Morgan GBI EM Global Diversified TR USD / Credit Suisse Leveraged Loan
7/1/2017	8/31/2017	Weighted Average of BBgBarc US Treasury 1-3 Yr TR / BBgBarc Global Aggregate TR / BBgBarc Global High Yield TR / S&P/LSTA Leveraged Loan / JP Morgan GBI EM Global Diversified TR USD
4/1/2017	6/30/2017	Weighted Average of BBgBarc Global Aggregate TR / BBgBarc Global High Yield TR / S&P/LSTA Leveraged Loan / JP Morgan GBI EM Global Diversified TR USD / JP Morgan EMBI Global Diversified
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		
1/1/2016	Present	20% Natural Resources Benchmark (Linked) / 20% S&P Global Infrastructure TR USD / 48% NCREIF Property Index / 12% CPI + 5% (Seasonally Adjusted)
Natural Resources		
1/1/2016	Present	S&P Global Natural Resources Net USD
12/31/2010	12/31/2015	Total Global Natural Resources Custom Benchmark

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FUND EVALUATION REPORT

Dallas Police & Fire Pension System

Private Markets Review
As of June 30, 2018

MEKETA INVESTMENT GROUP

BOSTON MASSACHUSETTS | CHICAGO ILLINOIS | MIAMI FLORIDA | PORTLAND OREGON | SAN DIEGO CALIFORNIA | LONDON UNITED KINGDOM

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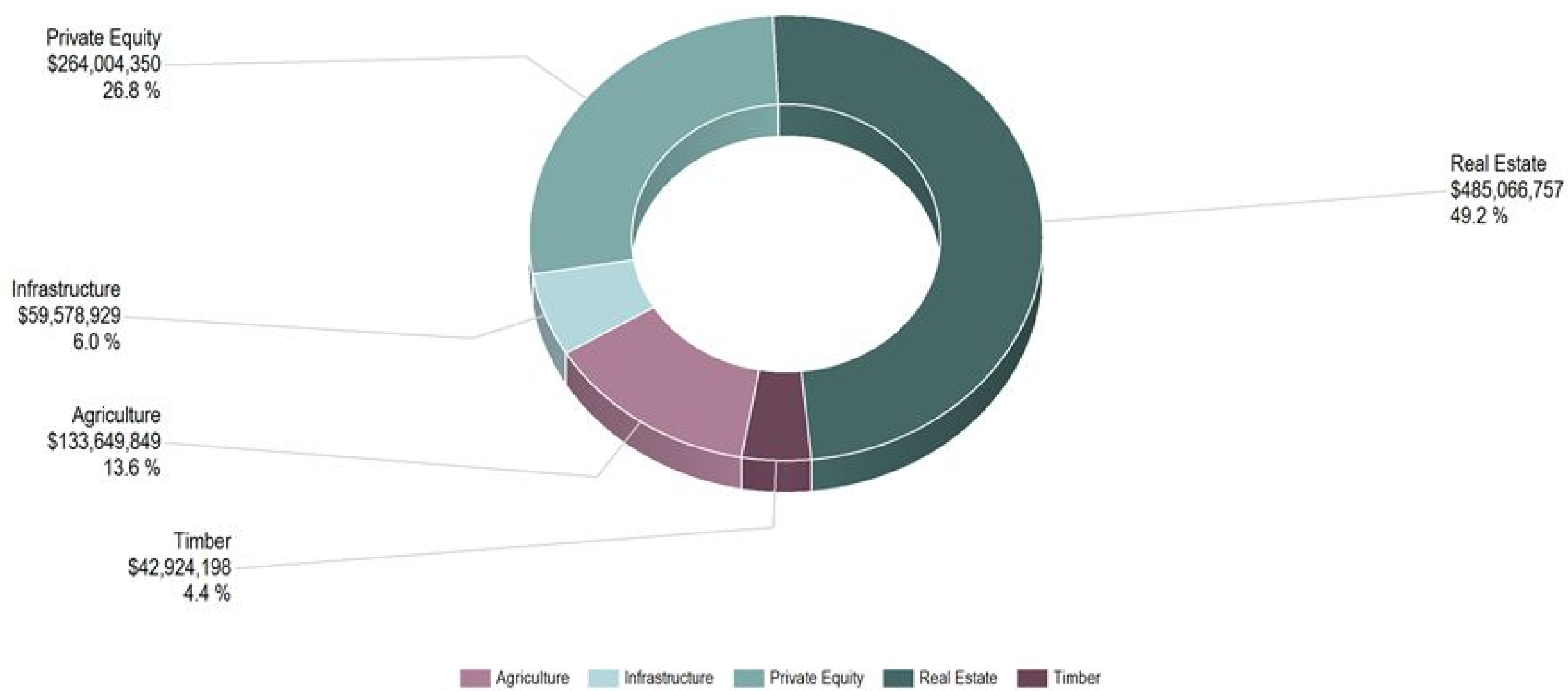
Dallas Police & Fire Pension System

Private Markets Review

As of June 30, 2018

Private Market Investments as of June 30, 2018
Market Value Allocation by Asset Class

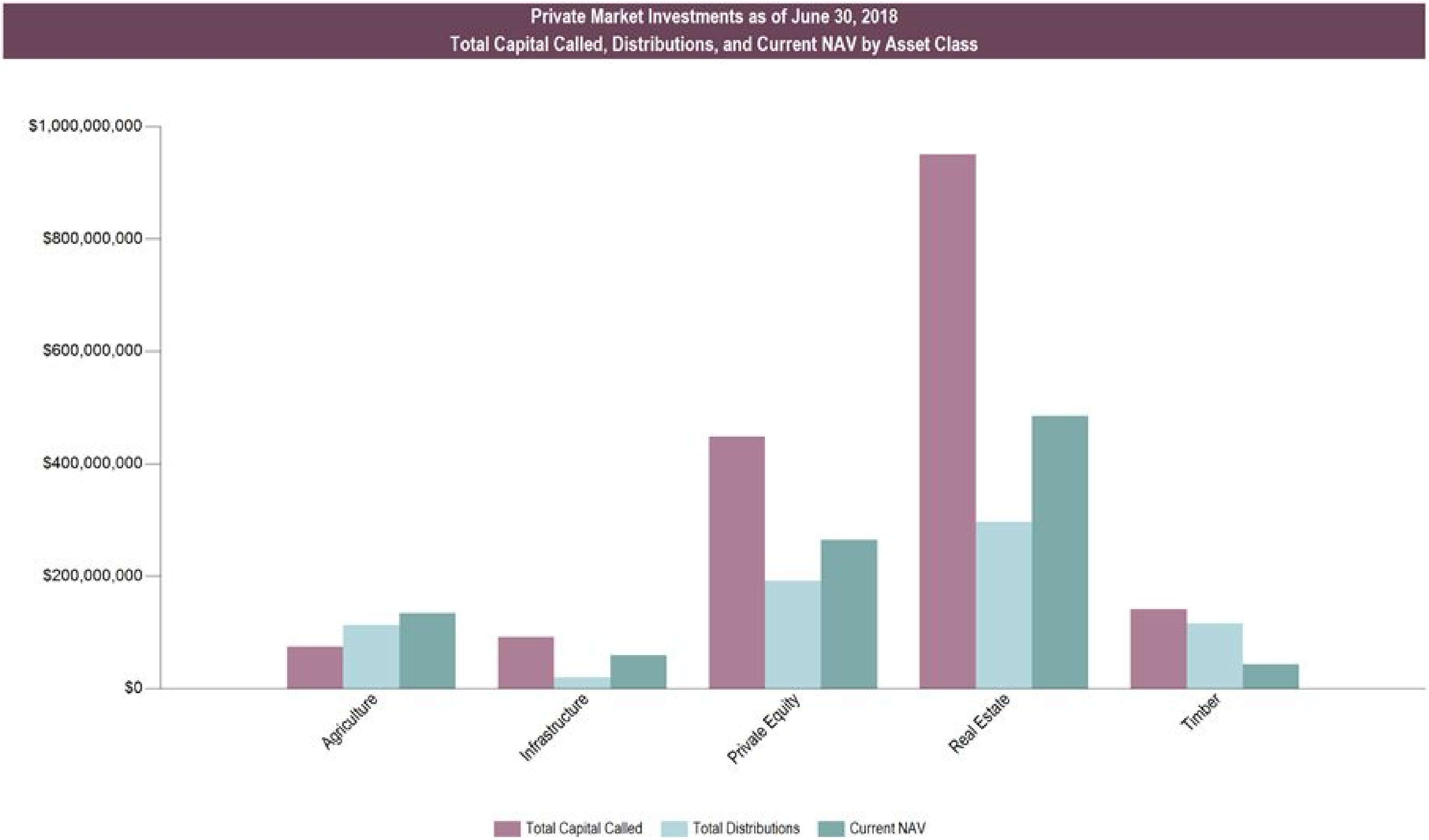


1. Private Equity is composed of Private Equity and Private Debt

Dallas Police & Fire Pension System

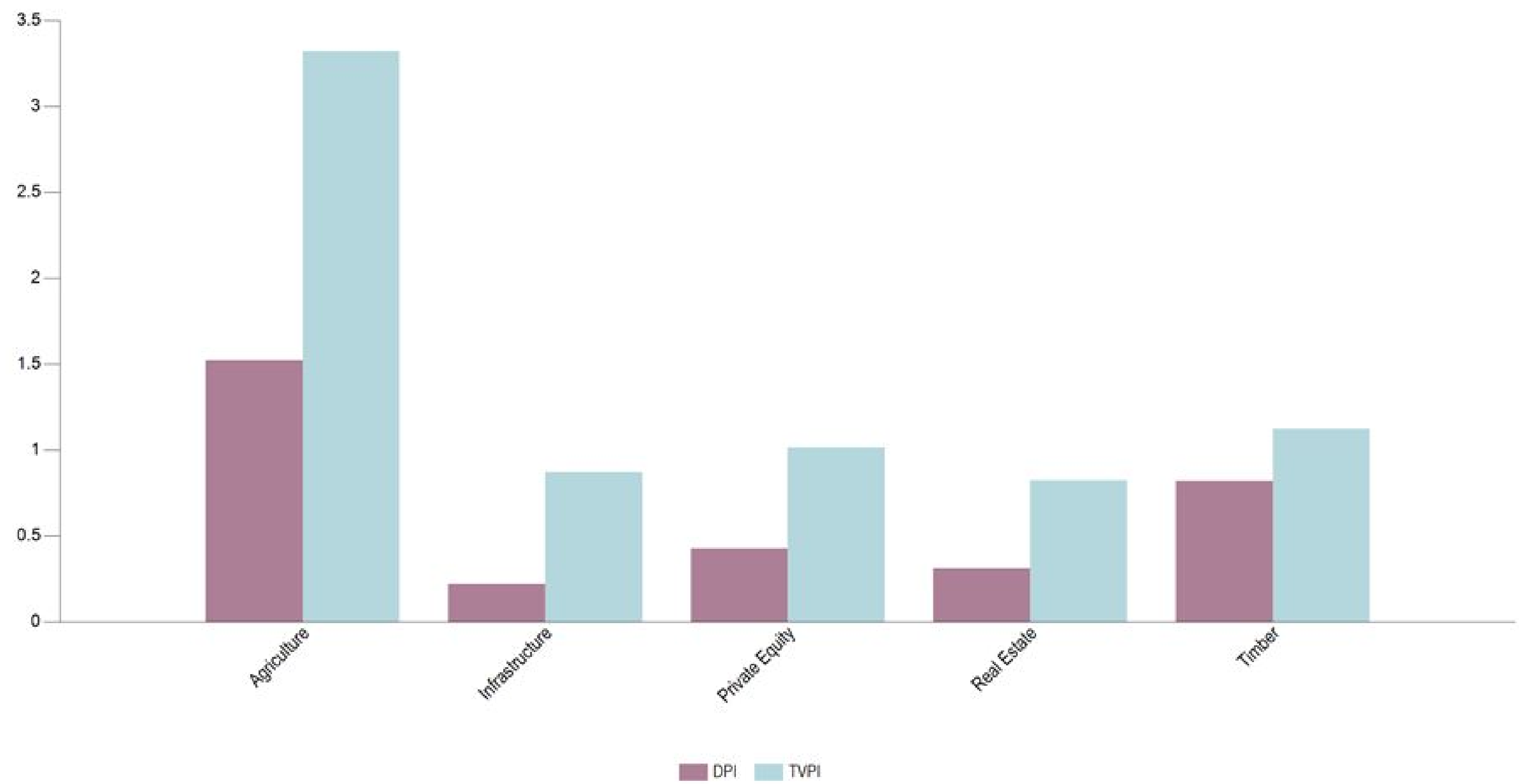
Private Markets Review

As of June 30, 2018



1. Private Equity is composed of Private Equity and Private Debt
2. Private markets performance reflected is composed of active investments only

Private Market Investments as of June 30, 2018
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

Dallas Police & Fire Pension System

Private Markets Review

As of June 30, 2018

Private Market Investments Overview

Active Funds	Commitments		Distributions & Valuations				Performance			
Asset Class	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Unrealized Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Agriculture	74,420,001	74,420,001	113,359,132	133,649,849	247,008,981	172,588,980	1.00	1.52	3.32	15.35
Total Infrastructure	97,000,000	92,070,029	20,643,821	59,578,929	80,222,750	-11,847,279	0.95	0.22	0.87	-3.10
Total Private Equity	434,220,208	459,464,882	191,798,877	264,004,350	455,803,227	-3,661,655	1.06	0.42	0.99	1.37
Total Real Estate	966,446,119	958,123,570	307,804,345	485,066,757	792,871,102	-165,252,469	0.99	0.32	0.83	-3.04
Total Timber	139,756,705	141,498,314	115,930,209	42,924,198	158,854,407	17,356,093	1.01	0.82	1.12	2.21
Total	1,711,843,033	1,725,576,796	749,536,384	985,224,083	1,734,760,467	9,183,670	1.01	0.43	1.01	0.45

1. Private Equity is composed of Private Equity and Private Debt
2. Private markets performance reflected is composed of active investments only

Dallas Police & Fire Pension System

Active Funds with Unfunded Commitments Overview

As of June 30, 2018

Active Funds with Unfunded Commitments				
Active Funds		Commitments		
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Unfunded Commitment ($)
Infrastructure				
JP Morgan Asian Infrastructure	2008	37,000,000	36,408,196	221,900
JP Morgan Asian Infrastructure & Related Resources II	2013	10,000,000	7,048,417	2,539,271
JP Morgan Maritime Fund, LP	2009	50,000,000	48,613,416	1,365,941
Total Infrastructure		**97,000,000**	**92,070,029**	**4,127,112**
Private Equity				
Huff Energy Fund LP	2006	100,000,000	98,932,684	119,985
Industry Ventures Partnership IV	2016	5,000,000	1,725,000	3,275,000
Lone Star Growth Capital	2006	16,000,000	26,560,000	2,240,000
Riverstone Credit Partners LP	2016	10,000,000	9,278,787	1,185,194
Yellowstone Capital	2008	5,283,254	5,112,307	170,947
Total Private Equity		**136,283,254**	**141,608,778**	**6,991,126**
Real Estate				
Hearthstone MS II Homebuilding Investors	1999	10,000,000	7,973,058	1,008,131
Hearthstone MS III Homebuilding Investors	2003	10,000,000	1,221,446	1,221,446
Total Real Estate		**20,000,000**	**9,194,504**	**2,229,577**
Total		**253,283,254**	**242,873,311**	**13,347,815**

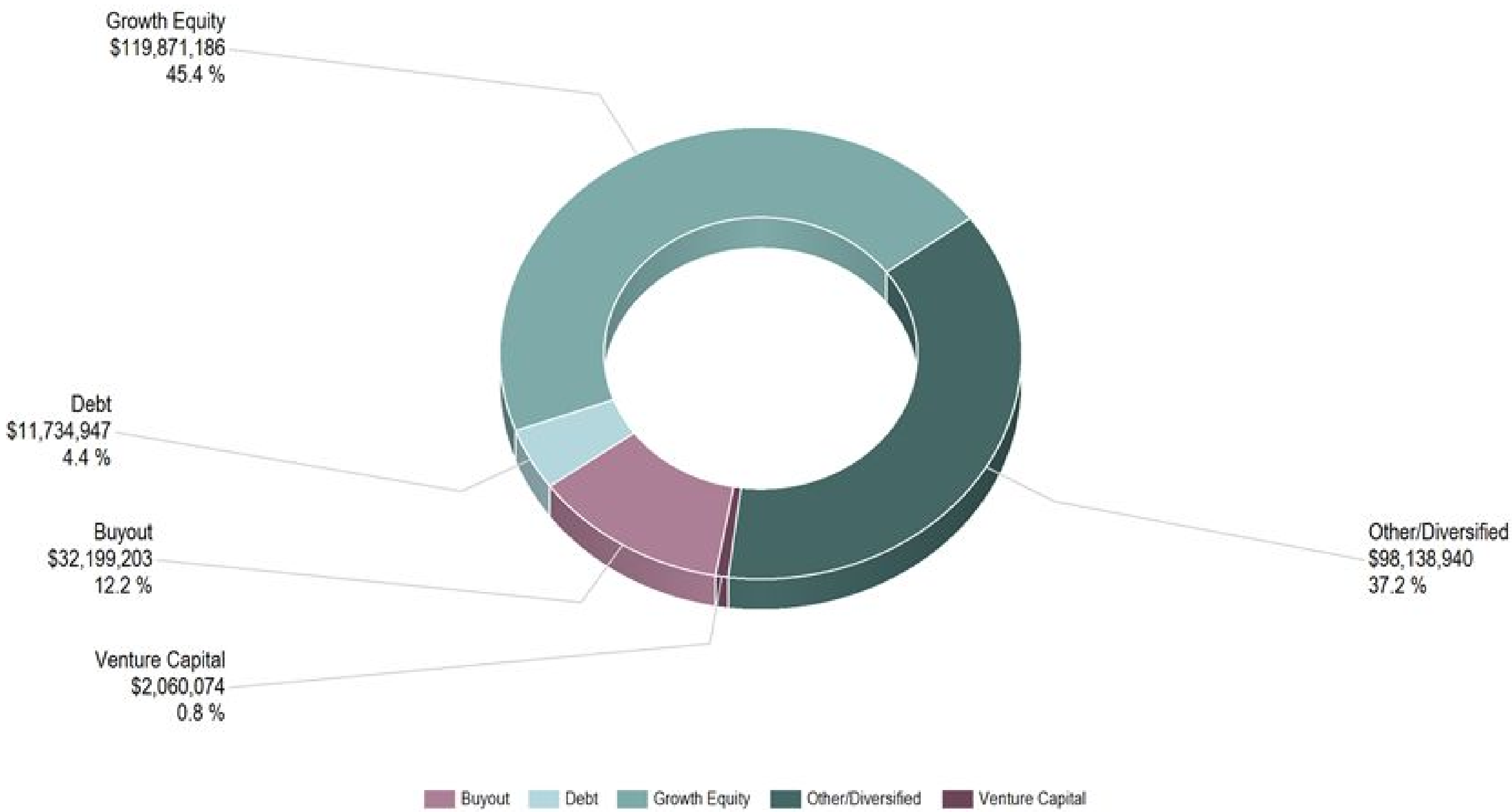
1. Private markets performance reflected is composed of active investments only
2. The funds and figures above represent investments with unfunded capital commitments
3. Lone Star valuations as directed by Dallas Police and Fire investment staff

Dallas Police & Fire Pension System

Private Equity and Debt

As of June 30, 2018

Private Equity and Debt Investments as of June 30, 2018
Market Value Allocation by Strategy

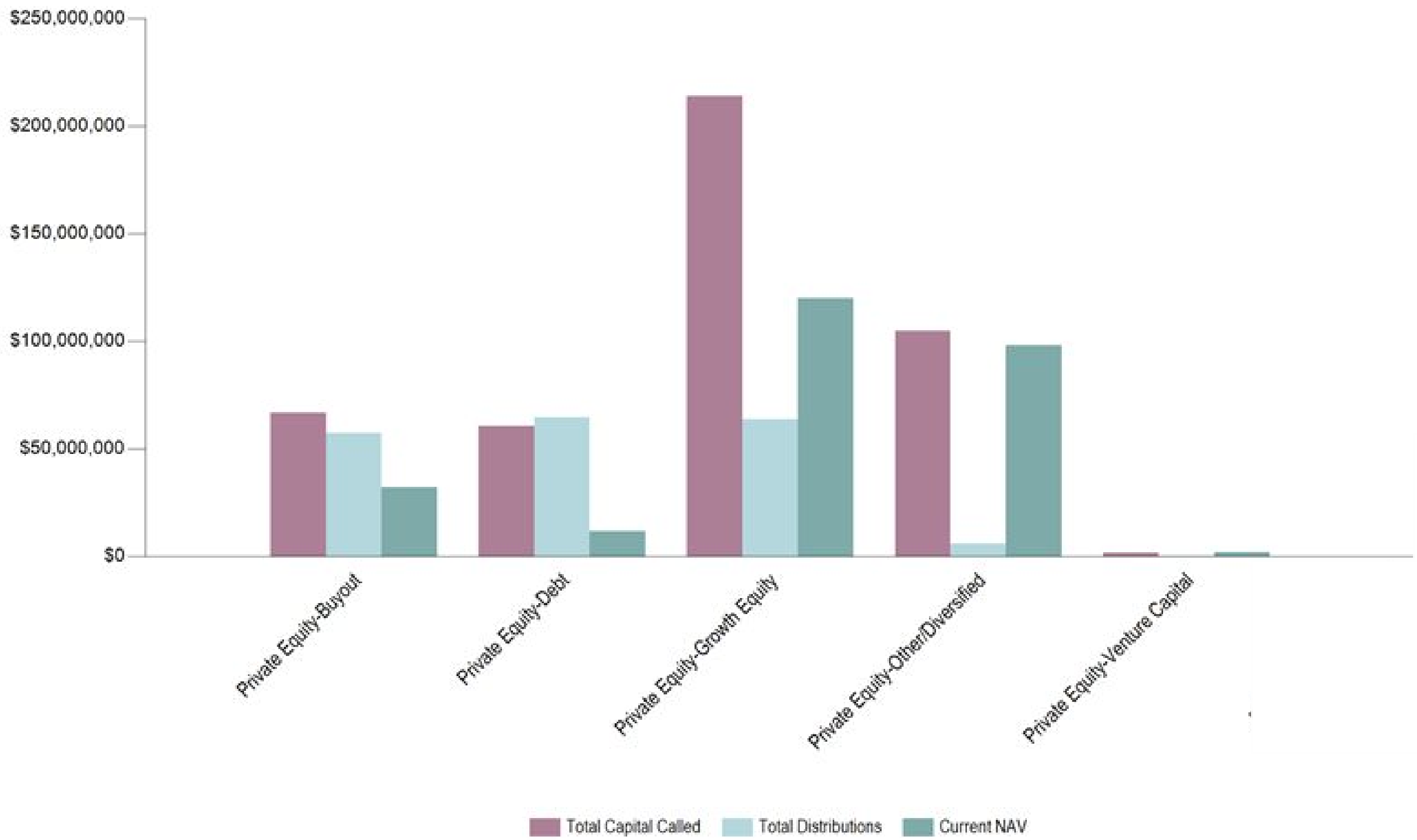


Dallas Police & Fire Pension System

Private Equity and Debt

As of June 30, 2018

Private Equity and Debt Investments as of June 30, 2018
Total Capital Called, Distributions, and Current NAV by Strategy



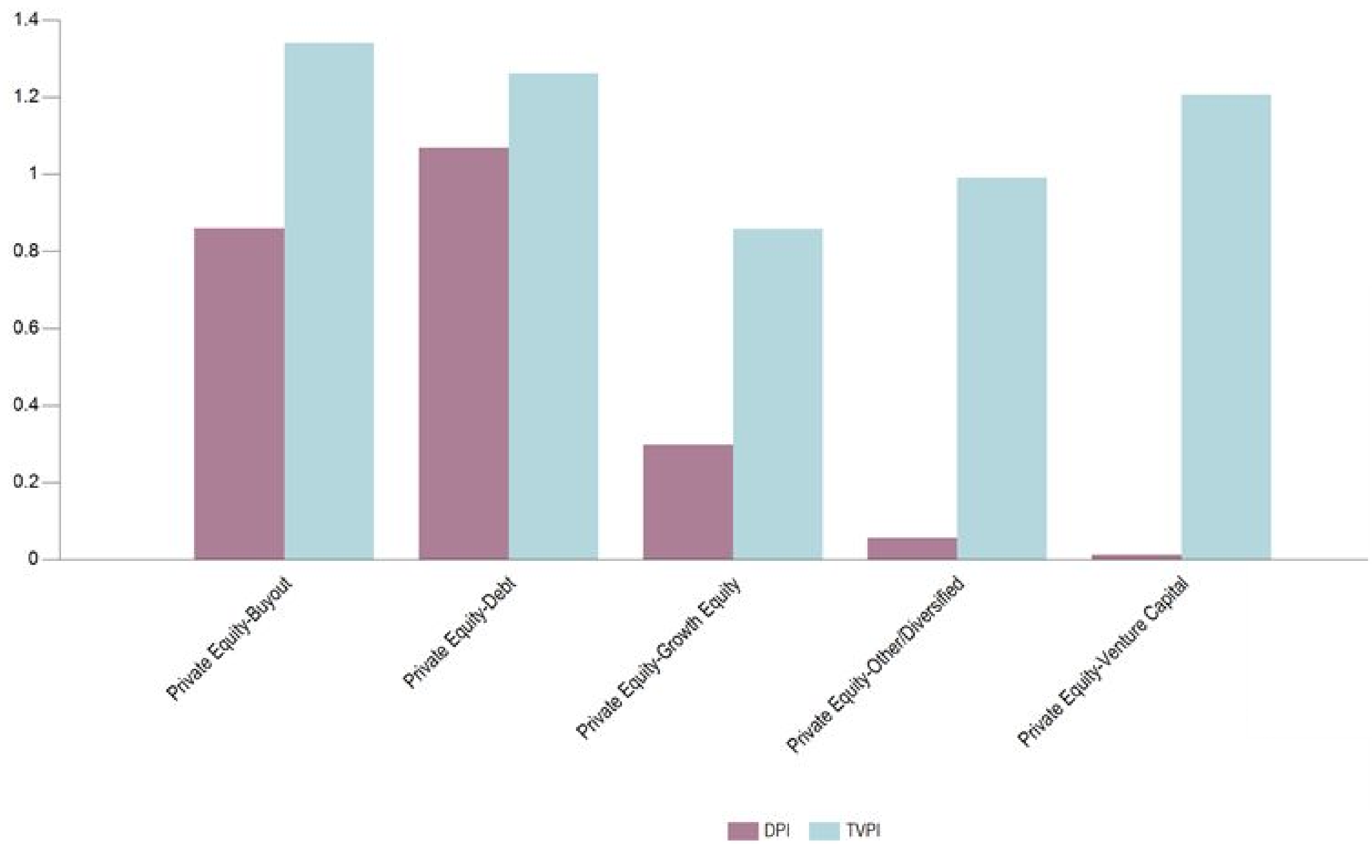
1. Private markets performance reflected is composed of active investments only

Dallas Police & Fire Pension System

Private Equity and Debt

As of June 30, 2018

Private Equity and Debt Investments as of June 30, 2018
DPI and TVPI by Strategy



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

Dallas Police & Fire Pension System

Private Equity and Debt

As of June 30, 2018

Private Equity and Debt Investments Overview

Active Funds		Commitments		Distributions & Valuations				Performance			
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Net Benefit ($)	Call Ratio	DPI	TVPI	IRR (%)
Buyout											
Huff Alternative Fund	2000	66,795,718	78,818,394	57,386,716	32,199,203	89,585,919	10,767,525	1.18	0.73	1.14	1.68
Total Buyout		**66,795,718**	**78,818,394**	**57,386,716**	**32,199,203**	**89,585,919**	**10,767,525**	**1.18**	**0.73**	**1.14**	**1.68**
Debt											
Highland Crusader Fund	2003	50,955,397	50,955,397	62,263,032	2,816,340	65,079,372	14,123,975	1.00	1.22	1.28	4.29
Riverstone Credit Partners LP	2016	10,000,000	9,661,741	2,388,454	8,918,607	11,307,061	1,645,320	0.97	0.25	1.17	12.30
Total Debt		**60,955,397**	**60,617,138**	**64,651,486**	**11,734,947**	**76,386,433**	**15,769,295**	**0.99**	**1.07**	**1.26**	**4.64**
Growth Equity											
BankCap Partners Fund I	2007	20,000,000	20,000,000	24,960,986	0	24,960,986	4,960,986	1.00	1.25	1.25	2.58
Hudson Clean Energy	2009	25,000,000	24,994,470	3,671,932	6,286,036	9,957,968	-15,036,502	1.00	0.15	0.40	-15.61
Lone Star CRA	2008	50,000,000	57,519,050	12,928,698	70,073,832	83,002,530	25,483,480	1.15	0.22	1.44	15.21
Lone Star Growth Capital	2006	16,000,000	26,560,000	12,800,000	15,359,684	28,159,684	1,599,684	1.66	0.48	1.06	1.88
Lone Star Opportunities V	2012	75,000,000	75,000,000	531,444	26,457,213	26,988,657	-48,011,343	1.00	0.01	0.36	-61.43
North Texas Opportunity Fund	2000	10,000,000	10,000,000	8,911,187	1,694,421	10,605,608	605,608	1.00	0.89	1.06	0.68
Total Growth Equity		**196,000,000**	**214,073,520**	**63,804,247**	**119,871,186**	**183,675,433**	**-30,398,087**	**1.09**	**0.30**	**0.86**	**-5.35**
Other/Diversified											
Huff Energy Fund LP	2006	100,000,000	98,932,684	4,477,394	98,032,208	102,509,602	3,576,918	1.00	0.05	1.04	0.43
Yellowstone Capital	2008	5,283,254	5,112,307	1,458,572	106,732	1,565,304	-3,547,003	0.97	0.29	0.31	-27.11
Total Other/Diversified		**105,283,254**	**104,044,991**	**5,935,966**	**98,138,940**	**104,074,906**	**29,915**	**1.00**	**0.06**	**1.00**	**0.00**
Venture Capital											
Industry Ventures Partnership IV	2016	5,000,000	1,725,000	20,462	2,060,074	2,080,536	355,536	0.35	0.01	1.21	17.17
Total Venture Capital		**5,000,000**	**1,725,000**	**20,462**	**2,060,074**	**2,080,536**	**355,536**	**0.35**	**0.01**	**1.21**	**17.17**
Unclassified											
Miscellaneous Private Equity Expenses	2016	185,839	185,839								
Total Unclassified		**185,839**	**185,839**								
Total		**434,220,208**	**459,464,882**	**191,798,877**	**264,004,350**	**455,803,227**	**-3,661,655**	**1.06**	**0.42**	**0.99**	**1.37**

1. Private markets performance reflected is composed of active investments only
2. Lone Star valuations as directed by Dallas Police and Fire Investment staff

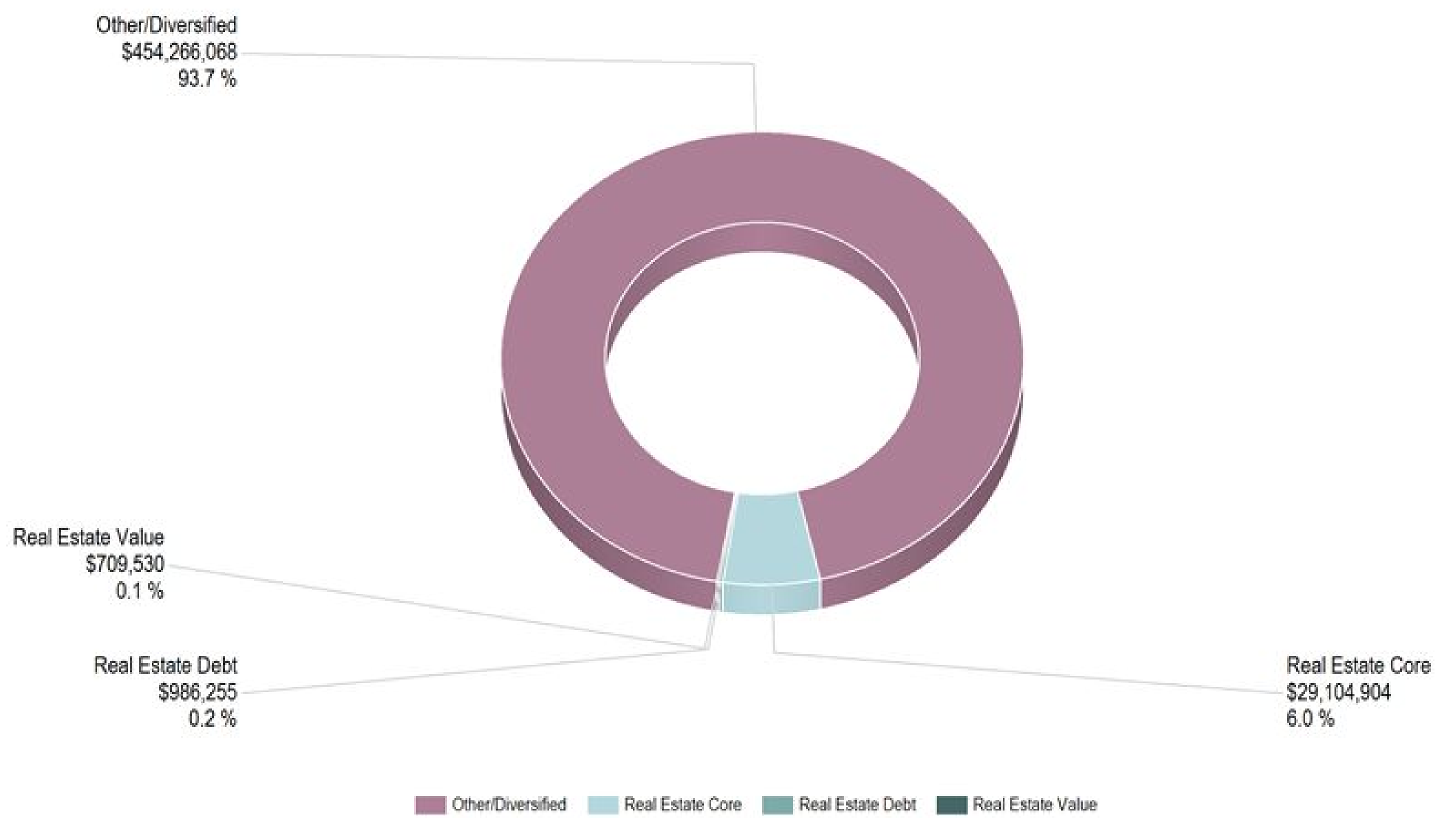
Prepared by Meketa Investment Group

Dallas Police & Fire Pension System

Real Estate

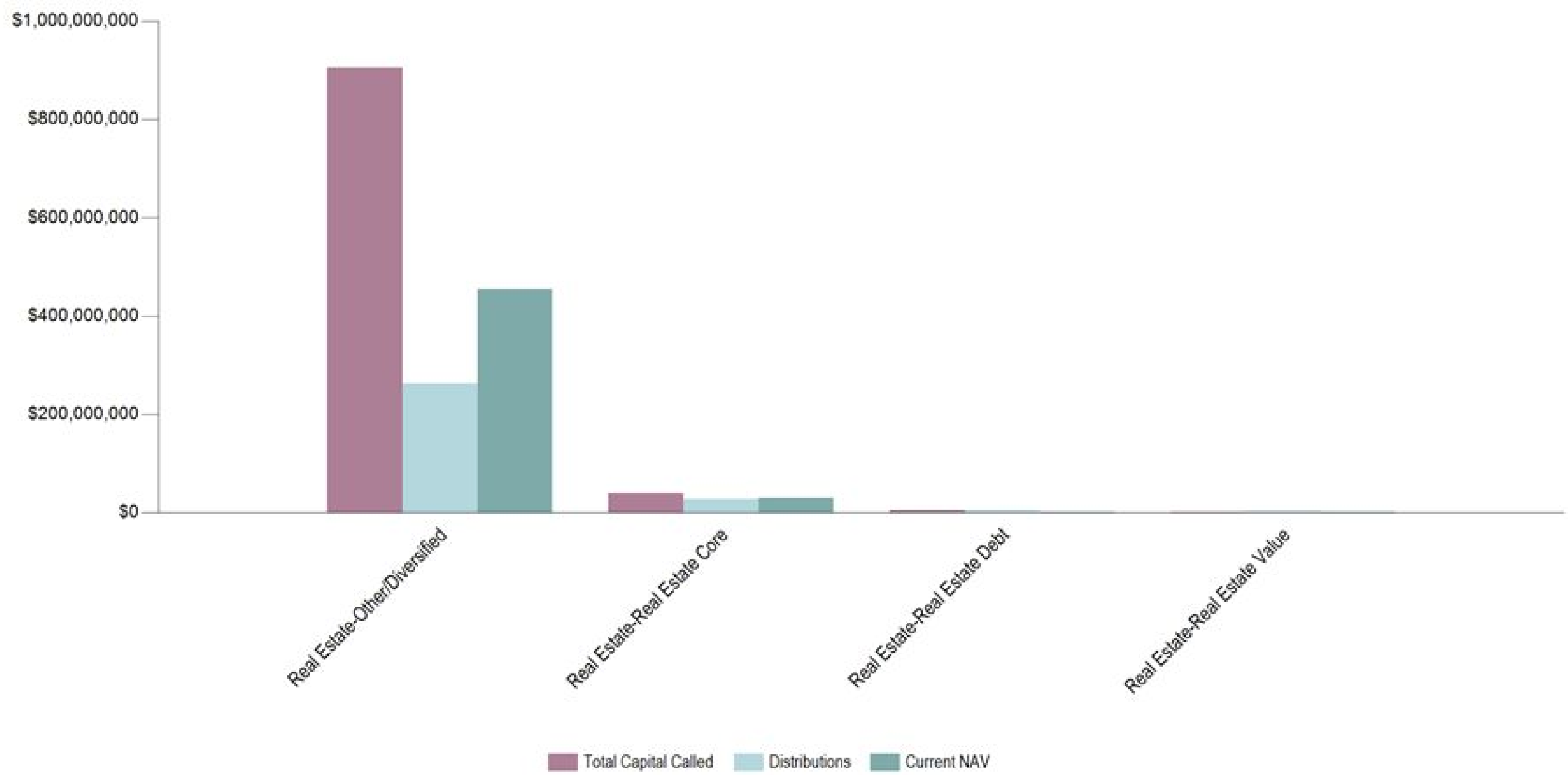
As of June 30, 2018

Real Estate Investments as of June 30, 2018
Market Value Allocation by Strategy



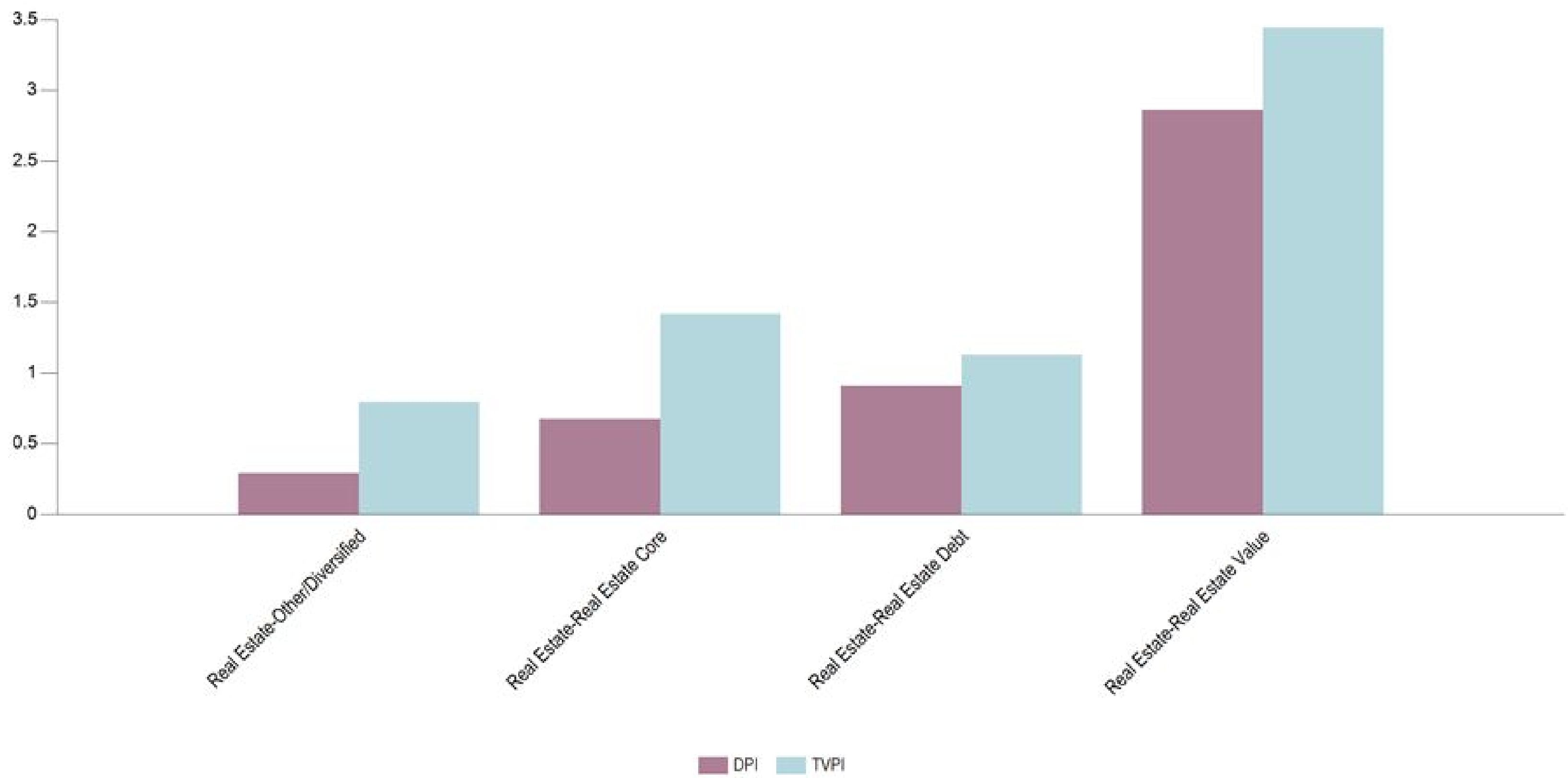
1. Other/Diversified is composed of direct real estate investments made by the fund

Real Estate Investments as of June 30, 2018
Total Capital Called, Distributions, and Current NAV by Strategy



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

Real Estate Investments as of June 30, 2018
DPI and TVPI Call Ratio by Strategy



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

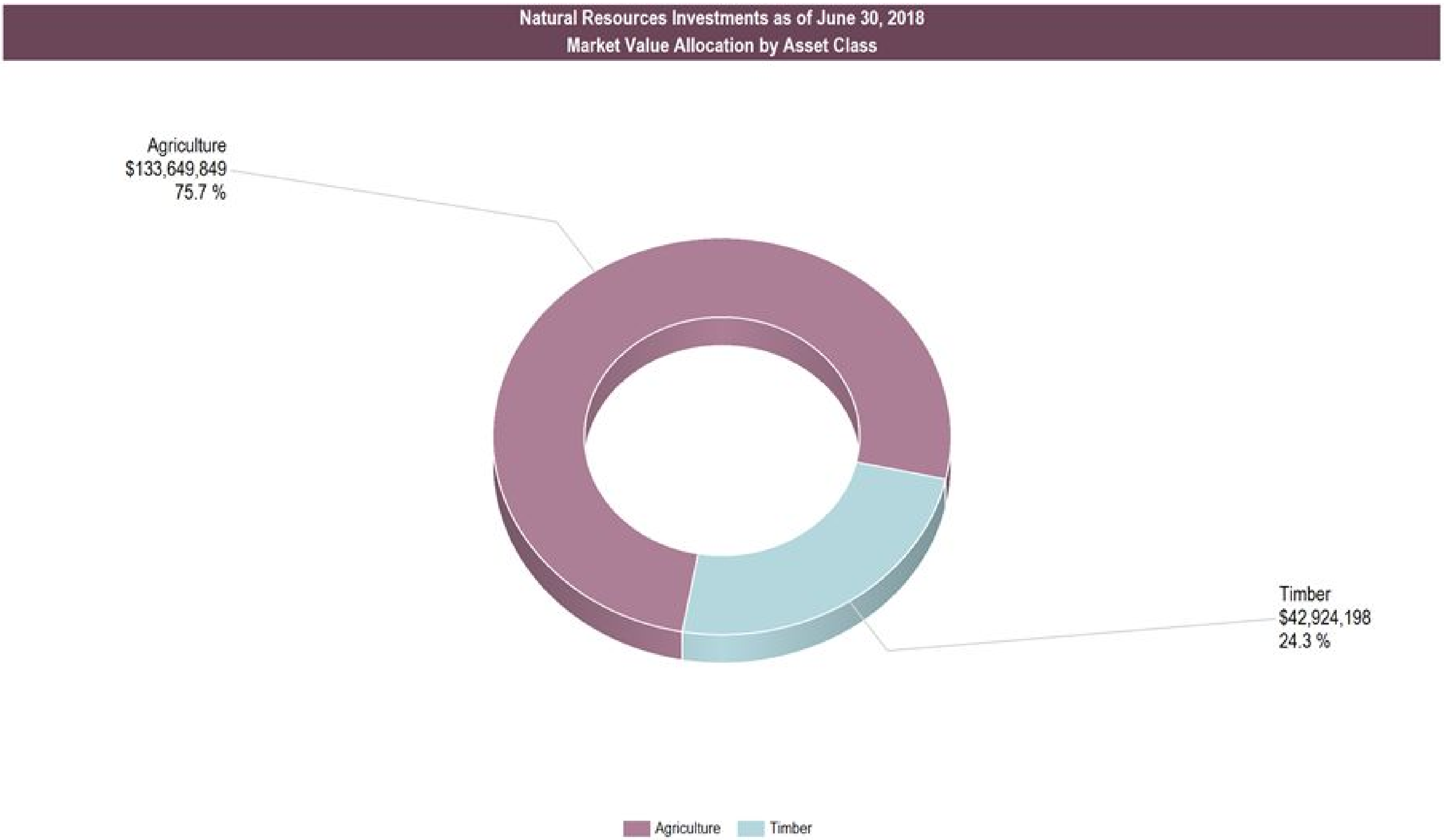
Dallas Police & Fire Pension System

Dallas Police & Fire Pension System

As of June 30, 2018

Real Estate Investments Overview

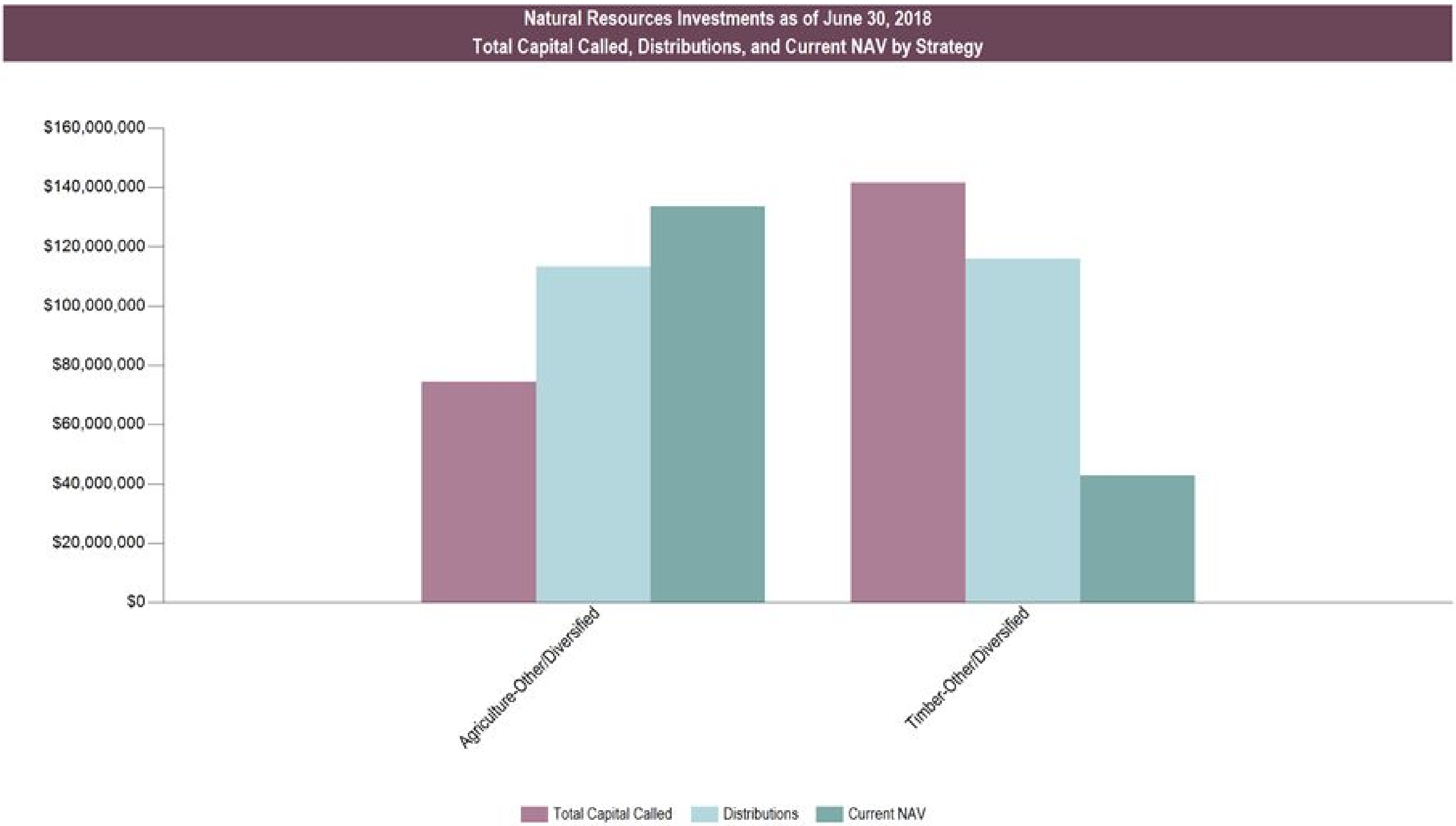
Active Funds	Commitments		Valuations				Performance			
Investment Name	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Unrealized Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Other/Diversified	902,740,801	905,165,622	262,703,795	454,266,068	716,969,863	-188,195,760	1.00	0.29	0.79	-3.64
Real Estate Core										
Total Real Estate Core	39,205,318	39,263,444	26,528,266	29,104,904	55,633,170	16,369,726	1.00	0.68	1.42	5.65
Real Estate Debt										
Total Real Estate Debt	4,500,000	4,500,000	4,084,829	986,255	5,071,084	571,084	1.00	0.91	1.13	5.75
Real Estate Value										
Total Real Estate Value	20,000,000	9,194,504	14,487,455	709,530	15,196,985	6,002,481	0.46	1.58	1.65	25.94
Total	966,446,119	958,123,570	307,804,345	485,066,757	792,871,102	-165,252,469	0.99	0.32	0.83	-3.04


Natural Resources Investments as of June 30, 2018
Market Value Allocation by Asset Class
Agriculture
$133,649,849
75.7 %
Timber
$42,924,198
24.3 %
Agriculture
Timber

Dallas Police & Fire Pension System

Natural Resources

As of June 30, 2018

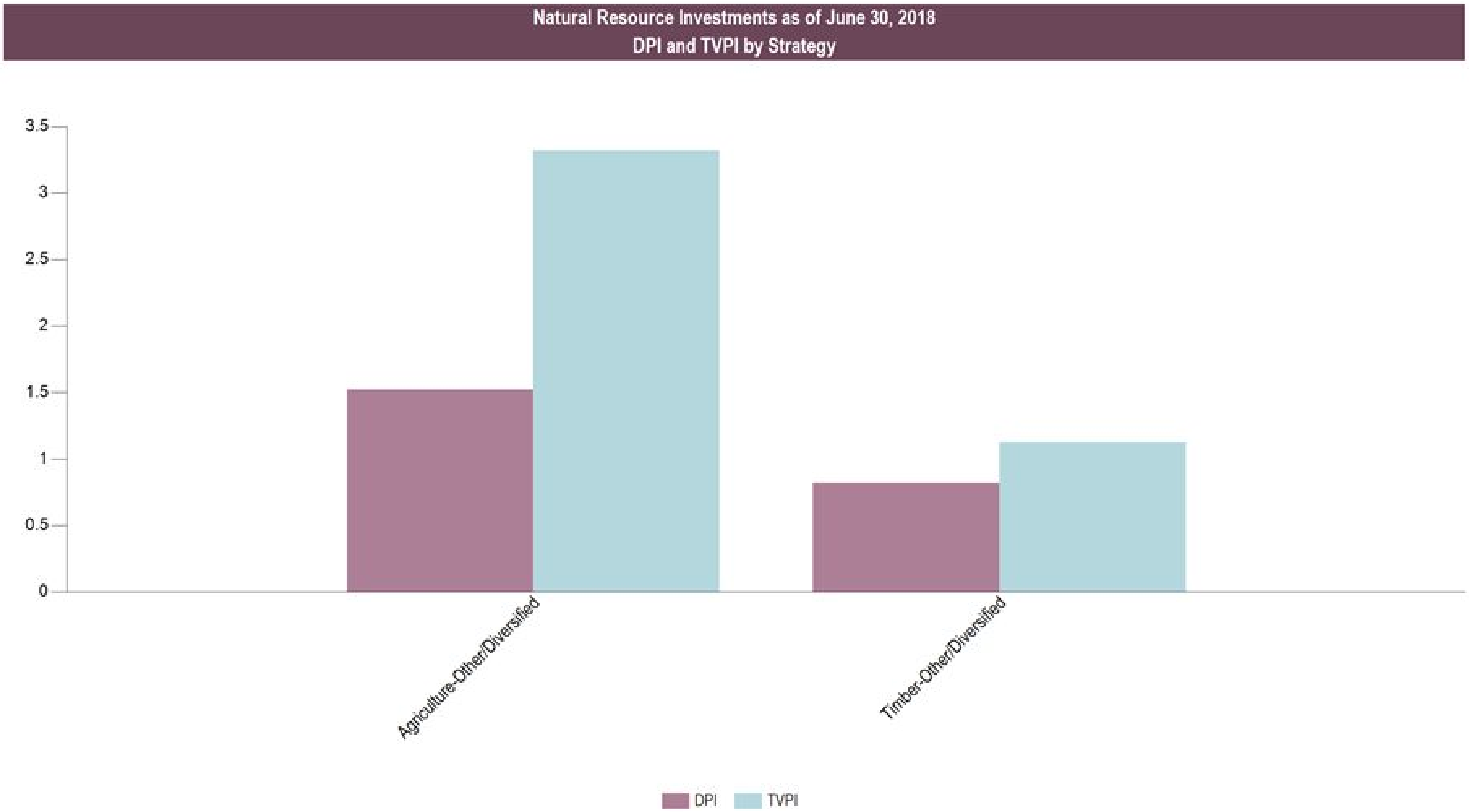


1. Timber 'Other/Diversified' is composed of domestic and global timber exposure.
2. Agriculture 'Other/Diversified' is composed of permanent and row crops exposure.
3. Private markets performance reflected is composed of active investments only

Dallas Police & Fire Pension System

Natural Resources

As of June 30, 2018



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

Natural Resources

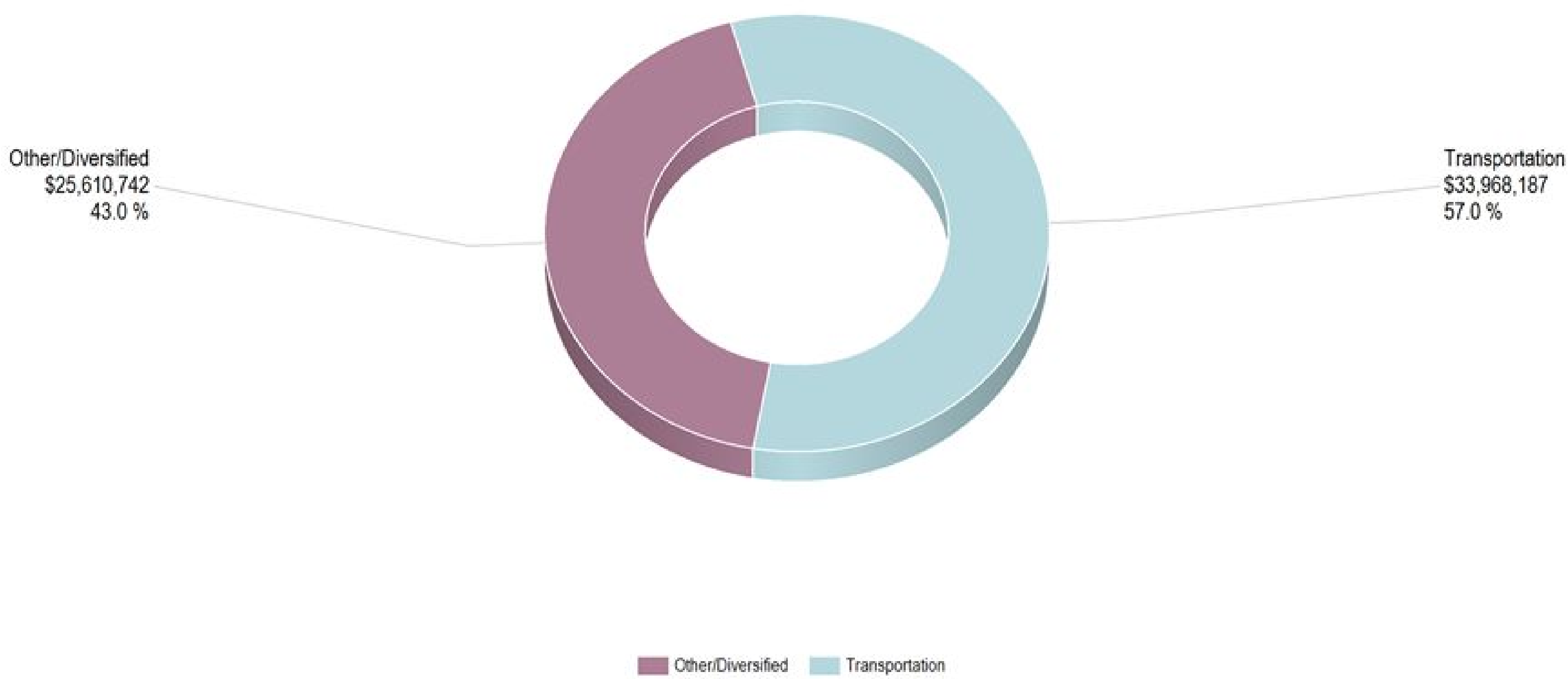
As of June 30, 2018

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	113,359,132	133,649,849	247,008,981	172,588,980	1.00	1.52	3.32	15.35
Total Agriculture		**74,420,001**	**74,420,001**	**113,359,132**	**133,649,849**	**247,008,981**	**172,588,980**	**1.00**	**1.52**	**3.32**	**15.35**
Timber											
BTG Pactual	2006	80,107,009	81,848,618	16,000,000	33,873,005	49,873,005	-31,975,613	1.02	0.20	0.61	-8.00
Forest Investment Associates	1992	59,649,696	59,649,696	99,930,209	9,051,193	108,981,402	49,331,706	1.00	1.68	1.83	7.73
Total Timber		**139,756,705**	**141,498,314**	**115,930,209**	**42,924,198**	**158,854,407**	**17,356,093**	**1.01**	**0.82**	**1.12**	**2.21**
Total		**214,176,706**	**215,918,315**	**229,289,341**	**176,574,047**	**405,863,388**	**189,945,073**	**1.01**	**1.06**	**1.88**	**9.18**

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

Infrastructure Investments as of June 30, 2018
Market Value Allocation by Strategy

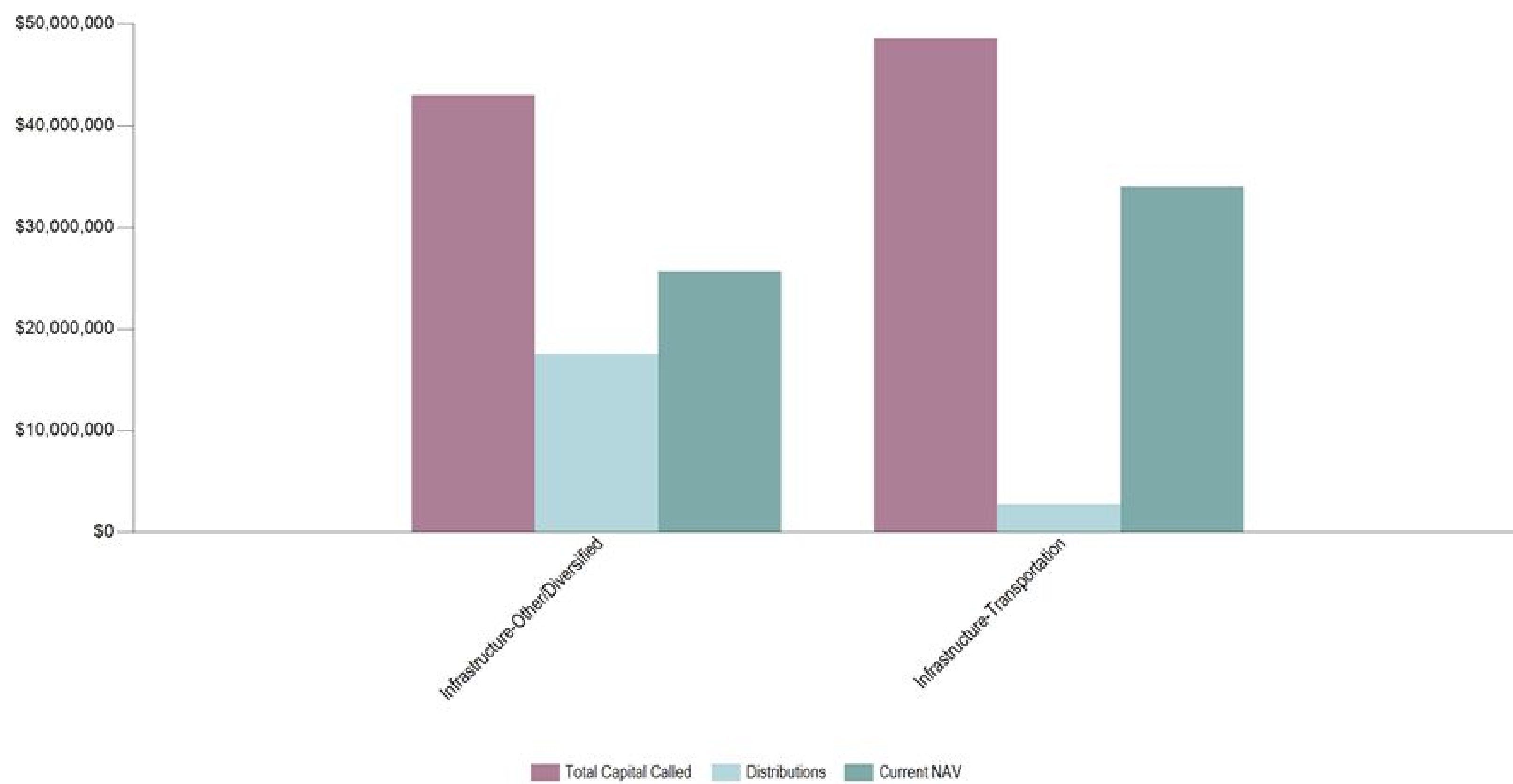


1'Other/Diversified' is composed of various operating and developing infrastructure project exposure

Infrastructure

As of June 30, 2018

Infrastructure Investments as of June 30, 2018
Total Capital Called, Distributions, and Current NAV by Strategy

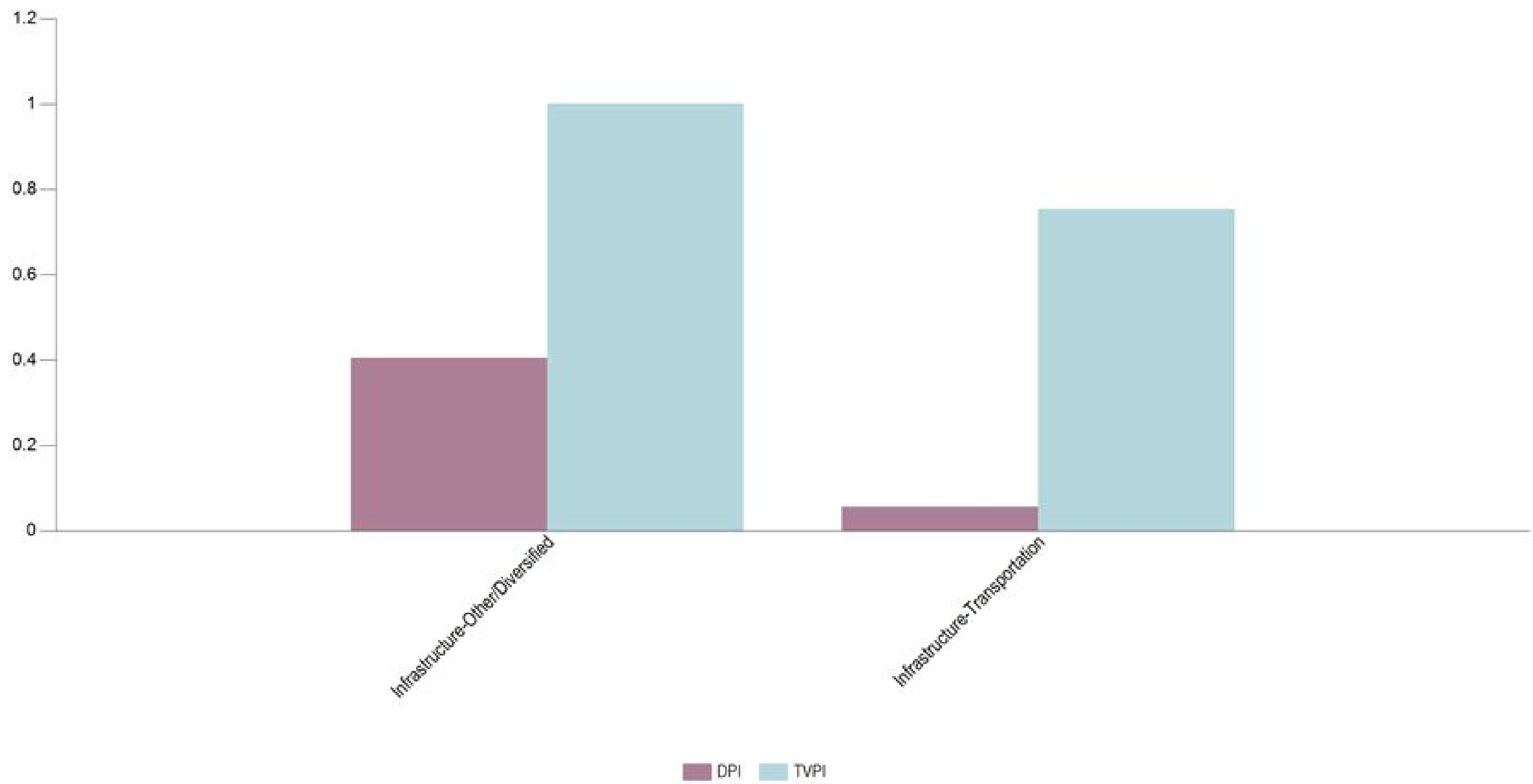


1'Other/Diversified' is composed of various operating and developing infrastructure project exposure
2. Private markets performance reflected is composed of active investments only

Infrastructure

As of June 30, 2018

Infrastructure Investments as of June 30, 2018
DPI and TVPI by Strategy



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

Dallas Police & Fire Pension System

Infrastructure

As of June 30, 2018

Infrastructure Investments Overview

Active Funds		Commitments		Distributions & Valuations				Performance			
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Unrealized Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Infrastructure											
JP Morgan Asian Infrastructure	2008	37,000,000	36,408,196	17,873,234	21,049,848	38,923,082	2,514,886	0.97	0.49	1.07	1.13
JP Morgan Asian Infrastructure & Related Resources II	2013	10,000,000	7,048,417	58,731	4,560,894	4,619,625	-2,428,792	0.70	0.01	0.66	-8.97
JP Morgan Maritime Fund, LP	2009	50,000,000	48,613,416	2,711,856	33,968,187	36,680,043	-11,933,373	0.97	0.06	0.75	-7.97
Total Infrastructure		**97,000,000**	**92,070,029**	**20,643,821**	**59,578,929**	**80,222,750**	**-11,847,279**	**0.95**	**0.22**	**0.87**	**-3.10**

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

Private Markets Review
List of Completed Funds

Dallas Police & Fire Pension System

Private Markets Review

As of June 30, 2018

Total Real Assets Program[1]

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Addtnl Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	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
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 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%
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	1.06	1.06	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	1.23	1.23	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%
Total Completed Funds		**789,985,087**	**728,079,272**	**0**	**840,631**	**782,675,556**	**0**	**782,675,556**	**53,755,653**	**1.07**	**1.07**	

[1] Data on Completed Funds as provided by former investment consultant.

Dallas Police & Fire Pension System

Private Markets Review

As of June 30, 2018

Private Equity & Debt Funds[1]

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	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 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%
Total Completed Funds		**844,150,757**	**761,363,200**	**0**	**14,917,109**	**881,032,889**	**0**	**881,032,889**	**104,752,580**	**1.16**	**1.16**	

1 Data on Completed Funds as provided by former investment consultant.

Disclaimer

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.

DALLAS POLICE & FIRE PENSION SYSTEM

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, December 13, 2018

DISCUSSION SHEET

ITEM #C6

Topic: **86th Legislative Session Preview**

Attendees: Neal T. "Buddy" Jones, Hillco Partners
R. Clint Smith, Hillco Partners

Discussion: Representatives from HillCo Partners, DPFP's legislative consultants, will be present to discuss the 2018 election results and a look forward to 2019 legislative issues.

Regular Board Meeting – Wednesday, December 13, 2018

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C7

Topic: **Monthly Contribution Report**

Discussion: At the Board's request, a monthly report has been developed to track City and Member contributions. Staff is seeking input from the Board on the content of the report.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C8

Topic: **Amendment to Deferred Retirement Option Plan (DROP) Policy**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.071 of the Texas Government Code.

Discussion: Staff is proposing a change to deal with DPFP's obligations to beneficiaries in the situation where a person receiving a DROP annuity passes away and DPFP is not notified of the occurrence.

Staff Recommendation: **Approve** the DROP Policy as amended.

DALLAS POLICE & FIRE PENSION SYSTEM

DEFERRED RETIREMENT OPTION PLAN POLICY

As Amended Through ~~June 14, 2018~~ December 13, 2018

DEFERRED RETIREMENT OPTION PLAN POLICY

Table of Contents

DEFERRED RETIREMENT OPTION PLAN POLICY

Adopted December 10, 1992
Amended through ~~June 14, 2018~~ December 13, 2018

A. PURPOSE

1. This policy provides rules governing the Deferred Retirement Option Plan of the Dallas Police and Fire Pension System ("DPFP"), as contemplated by Section 6.14 of Article 6243a-1 of Revised Statutes (the "Plan") and the Supplemental Pension Plan for the Police and Fire Departments of the City of Dallas, Texas (the "Supplemental Plan") where applicable. It is intended that DROP and the terms of this policy allow for the continued qualification of the Plan under Section 401 of the Internal Revenue Code ("Code").

2. Any reference in this policy to a provision of the Plan shall also be considered a reference to the comparable provision of the Supplemental Plan if the applicant is a member of the Supplemental Plan.

3. The Executive Director may, if necessary, develop written procedures to implement this policy.

4. This policy may be amended at any time by the Board of Trustees ("Board"), consistent with the terms of the Plan.

5. Any capitalized terms not defined in this policy shall have the meaning ascribed to them in the Plan.

B. DEFINITIONS

1. **DROP -** The program whereby a Member while still in Active Service may elect to have an amount equal to the pension benefit that the Member would otherwise be eligible to receive be credited to a notional account on the Member's behalf. A Member, as of his or her intended date of participation in DROP, must be eligible to retire and receive an immediate pension benefit. An election to enter DROP is irrevocable except for the one-time revocation window for certain Members that is described in Section D.

2. **DROP Account -** The notional account of a Member, retiree, beneficiary or Alternate Payee created pursuant to Section 6.14 of the Plan which existed or exists prior to any annuitization required under the Plan and in conformity with this policy.

B. DEFINITIONS (continued)

3. **DROP Annuitant** – The holder of a DROP Annuity.

4. **DROP Annuity** – The series of equal payments created when a DROP Account is annuitized as required under the Plan and in conformity with this policy.

C. ENTRY INTO DROP

1. The application of any Member applying for DROP participation will be placed on the agenda for a Board meeting as soon as administratively practicable following the date the application is received for consideration and approval.

2. If the Board approves a DROP application, the application will become effective on the first day of the month in which the Board approves the application.

3. At the time of entry into DROP, the Member must irrevocably select the Plan benefit he or she will receive at the time his or her pension benefit will commence upon retirement with the Member's pension benefit calculated as of the effective date of entering DROP. While on Active Service, these benefit amounts that the Member would have otherwise received if he or she would have retired on his or her effective date of DROP participation will be credited to the DROP Account.

4. Once a Member has elected to participate in DROP, that election is irrevocable except as further described in Section D.

5. A Group B Member who obtains a rank that is higher than the highest Civil Service Rank for the City of Dallas after the effective date of his or her participation in DROP will not participate in the Supplemental Plan.

6. As of the effective date of his or her participation in DROP, the Member will no longer be entitled to obtain additional Pension Service by repaying previously withdrawn contributions or paying for any Pension Service that could have been purchased under the Plan prior to DROP entry. However, a Member who is entitled, under Section 5.08 of the Plan, to purchase credit for Pension Service for any period he or she was on a military leave of absence may still purchase that Pension Service after entering DROP so long as the required contributions are made no later than the time provided by the Uniformed Services Employment and Reemployment Rights Act ("USERRA").

7. The Board shall interpret the Plan and this policy to ensure that Members' rights are fully protected as required by USERRA.

D. DROP REVOCATION

1. A Member who was a DROP participant on or before June 1, 2017, has a one-time opportunity to revoke his or her DROP election. The revocation must be made before the earlier of February 28, 2018, or the date that the Member terminates Active Service. The revocation must be made by filing with the Executive Director a completed DROP revocation election form that has been approved by the Executive Director.

2. A DROP revocation eliminates the balance in a Member's DROP Account. The Member's benefit will then be established at the earlier of when the Member either (a) reenters DROP or (b) retires with DPFP, and will be calculated at that time under the Plan based upon the Member's total Pension Service and historic Computation Pay (highest 36 consecutive months for Pension Service prior to September 1, 2017 and highest 60 consecutive months for Pension Service on or after September 1, 2017.)

3. Any revocation of DROP participation described in this Section shall be for the entire period that the Member participated in DROP. No partial revocation of DROP participation shall be accepted.

4. No Member shall be entitled to revoke his or her DROP participation if any amount has been transferred out of such Member's DROP Account, except for any transfers related to corrections to DROP Accounts.

5. A Member will be credited with Pension Service for all or a portion (one-half) of the period relating to the revoked DROP participation if the Member who revoked the DROP participation purchases such Pension Service in an amount equal to the sum of: (a) the Member contributions that would have been made if the Member had not been a DROP participant during such period of DROP participation and (b) interest on such Member contributions, calculated on the contributions for the period from the dates the contributions would have been made if the Member had not been a DROP participant through the date of purchase. Interest will be calculated (a) through February 28, 2018 at the monthly rate of change of the U.S. City Average All Items Consumer Price Index (unadjusted) for All Urban Wage Earners and Clerical Workers for the applicable periods and (b) after February 28, 2018 at the interest rate used from time to time in DPFP's actuarial rate of return assumptions, compounded annually. Periods where the monthly rate of change was negative shall be computed as zero interest for such periods. DPFP staff shall be authorized to establish procedures for implementing the interest calculation required in this Section.

D. DROP REVOCATION (continued)

6. A Member may purchase Pension Service relating to the period of revoked DROP participation in increments of one-half of his or her total Pension Service during DROP participation. If a Member elects to purchase one-half of his or her total Pension Service available to be purchased following the DROP revocation, (a) a Member may not elect to purchase Pension Service relating to specific time periods during his or her DROP participation and (b) the amount of the Member contributions for purposes of such purchase will be one-half of the total amount required to be paid pursuant to Section D.5. above.

7. If a Member elects to purchase one-half of his or her Pension Service available to be purchased following the DROP revocation, the Member may subsequently purchase the remaining one-half of the Pension Service available, but must complete such purchase prior to any election to reenter DROP or terminating Active Service. The amount to be paid for the remaining Pension Service to be purchased will be calculated pursuant to subsections 4 and 5 above, with interest continuing to accrue on the portion that has not yet been paid at the rate used from time to time in DPFP's actuarial rate of return assumptions, compounded annually, calculated from the date of the original Pension Service purchase through the date of the purchase of the remaining Pension Service.

8. Only full payment will be accepted for the amount of any Pension Service elected to be purchased under this Section. No partial payment will be accepted. Direct rollovers from other tax-qualified plans or similar employer plans, including governmental Section 401(k) (including the City of Dallas 401(k) Retirement Savings Plan) and 457(b) deferred compensation plans and Section 403(b) annuity arrangements will be accepted for payment to the extent such plans permit such rollovers. Payment is not permitted from the Member's DROP account.

9. For the purposes of calculating a Member's pension benefit in the case where a Member purchases only one-half of the total Pension Service available for the period relating to a DROP revocation, the purchased Pension Service attributable to time prior to September 1, 2017 shall be equal to the product of: (a) the amount of Pension Service purchased, multiplied by (b) a fraction of which the numerator equals the Pension Service available for purchase representing periods prior to September 1, 2017, and the denominator equals the total Pension Service available for purchase in connection with the DROP revocation.

10. All DROP revocation election forms must be received by DPFP in proper order by February 28, 2018 and will be considered effective as of September 6, 2017 after approval by DPFP staff that the form is in proper order. Approval of the Board shall not be required for a DROP revocation to become effective.

E. ANNUITIZATION OF DROP ACCOUNTS

1. **Methodology.**

   DPFP staff, with the assistance of DPFP's Qualified Actuary, shall determine the annuitization of all DROP Accounts as required by the Plan and consistent with this policy.

2. **Interest Rates.**

   To reflect the accrual of interest over the annuitization period of a DROP Annuity as required under the Plan, the accrual of interest for all DROP Annuities shall be calculated utilizing an interest rate based on the published United States Department of Commerce Daily Treasury Yield Curve Rates ("Treasury Rates") for durations between 5 and 30 years, rounded to two decimal places. If an annuitization period for a DROP Annuity is between the years for which Treasury Rates are established, then a straight-line linear interpolation shall be used to determine the interest rate. The interest rates for purposes of this subsection E.2. will be set on the first business day of each quarter (January, April, July and October) and will based upon the average of the Treasury Rates as published on the 15th day of the three prior months, or the next business day after the 15th day of a month if the 15th day falls upon a day when rates are not published. Based upon advice from DPFP's Qualified Actuary upon implementation of this policy, interest rates to be used in calculating DROP Annuities with an annuitization period that exceeds thirty years will be the Treasury Rate published for the 30-year duration as Treasury Rates beyond thirty years do not exist. The initial interest rates effective as of October 1, 2017, are attached to this policy as Exhibit 1.

3. **Mortality Table.**

   The Board shall, based upon the recommendation of DPFP's Qualified Actuary, adopt a mortality table to be utilized in determining life expectancy for purposes of calculating DROP Annuities. The mortality table shall be based on the healthy annuitant mortality tables used in the most current actuarial valuation and blended in a manner to approximate the male/female ratio of holders of DROP accounts and DROP annuities. The Board will review this table and male/female blended ratio upon the earlier of (i) the conclusion of any actuarial experience study performed by DPFP's Qualified Actuary or (ii) any change to mortality assumptions in DPFP's annual actuarial valuation. Actual ages used in calculating life expectancy will be rounded to two decimals. The life expectancy will be rounded to the nearest whole year. Life expectancy in whole years based on a 2017 annuitization date and the mortality table recommended by DPFP's Qualified Actuary is shown in Exhibit 2.

E. ANNUITIZATION OF DROP ACCOUNTS (continued)

4. **Initial Annuitization of Non-Member's DROP Accounts.**

   a. The first payment of DROP Annuities after annuitization of all DROP Accounts in existence on or after September 1, 2017, except those DROP Accounts of Members, shall commence the last business day of the month in which this policy is adopted, or as soon as practicable thereafter.

   b. The initial annuitization of all non-Member DROP Accounts existing on September 1, 2017 will be calculated and implemented on the basis of a monthly annuity. DPFP staff will send notices to the holders of such DROP Annuities to inform them that they have sixty (60) days from the date of such notice to make a one-time election to have the monthly DROP Annuity converted to an annual annuity. If a DROP Annuitant makes such an election, the monthly DROP Annuity payments will cease as soon as administratively practicable, and the first payment of the annual DROP Annuity will begin 12 months after the last monthly payment made to the DROP Annuitant.

   c. For purposes of the initial annuitization described in this subsection E.4., any DROP Account which is held by a non-Member at any time on or after September 1, 2017, but prior to the initial annuitization pursuant to subsection E.4.a. above, shall (i) be adjusted to reflect any distributions to such non-Member after September 1, 2017, but prior to the initial annuitization and (ii) accrue interest for the period from September 1, 2017 through the date of initial annuitization at the same rate as the interest rate applicable pursuant to subsection E.2. in the calculation of the initial DROP Annuity.

   d. Annuitization of any non-Member DROP Account under this subsection E.4. will be based on the age of the holder of such DROP Account as of the first day of the month when the annuitization of DROP Accounts under this subsection E.4. occurs. In the case of a DROP Account which is held by a trust, such DROP Account will be annuitized using the age of the oldest beneficiary of the trust.

5. **Annuitization of Member DROP Accounts**

   a. The DROP Annuity for a Member shall be calculated based upon the Member's age and DROP Account balance on the effective date of the Member's retirement. The interest rate applicable to the calculation of the Member's DROP Annuity will be the interest rate in effect under subsection E.2. during the month the Member terminates Active Service. Payment of the DROP Annuity shall commence effective as of the first day of the month in which the Member's retirement commences.

E. ANNUITIZATION OF DROP ACCOUNTS (continued)

5. Annuitization of Member DROP Accounts (continued)

b. Each Member as part of the retirement process shall be given the opportunity to elect either a monthly or annual DROP Annuity. If no election is made, the Member will be deemed to have elected a monthly DROP Annuity.

6. Annuitization of Alternate Payee's Account

The DROP Annuity for any Alternate Payee receiving a portion of a Member's DROP Account through a Qualified Domestic Relations Order after the date of this policy shall commence on the earlier of (i) the date the Member's DROP Annuity commences or (ii) the first day of the month the Alternate Payee reaches age 58. Calculation of the DROP Annuity of an Alternate Payee will be based on the age of the Alternate Payee and the interest rate in effect under subsection E.2 upon commencement of the DROP Annuity.

7. Annuitization and Payments to Beneficiaries

a. Upon the death of a Member, the DROP Account of such Member shall be transferred to the Member's beneficiary(ies) pursuant to Section F of this policy. Such transferred account shall be annuitized as promptly as administratively practicable utilizing the interest rate in effect under subsection E.2. and the age of the beneficiary at the time of the Member's death in calculating the beneficiary's DROP Annuity.

b. Upon the death of a DROP Annuitant, the remaining DROP Annuity shall be paid to the beneficiary designated by such DROP Annuitant~~,~~ and shall be divided if there are multiple beneficiaries as designated by the DROP Annuitant pursuant to Section F of this policy. DPFP shall only be responsible for payments to beneficiaries after DPFP has actual knowledge of the death of a DROP annuitant.

8. Revised Annuity in the Event of an Unforeseeable Financial Hardship Distribution

If any DROP Annuitant shall receive a distribution pursuant to Section G hereof, the DROP Annuity of such DROP Annuitant shall be re-annuitized through a calculation using (a) the interest rate utilized in the calculation of the original DROP Annuity, (b) the present value of the DROP Annuity on the date of the unforeseeable financial hardship distribution as calculated by DPFP's Qualified Actuary, and (c) the remaining number of months in the life expectancy utilized in the calculation of the original DROP Annuity.

F. DESIGNATION OF BENEFICIARIES

1. A DROP participant will have the opportunity to designate a primary beneficiary (or primary beneficiaries) and a contingent beneficiary (or contingent beneficiaries) of his or her DROP Account either when filing the application for DROP participation, or thereafter, on a beneficiary form provided by DPFP for this purpose. The named beneficiary must be a living person at the time of the filing of the beneficiary form. No trusts may be named as a beneficiary, except for a trust established for a child who is entitled to benefits pursuant to Section 6.06 (n)(1) of the Plan ("Special Needs Trust"). Existing trusts which have a DROP Account as of the date of this policy will be permitted and will be annuitized pursuant to Section E.4. and the age of the oldest beneficiary of the trust will be utilized for purposes of the annuitization. Special Needs Trusts will be annuitized based upon the age of the child.

2. In the case of a holder of DROP Annuity who dies where no living person is named as a beneficiary, the remaining DROP Annuity will be paid to the deceased DROP Annuitant's estate. In the case of a Member who dies with a DROP Account where no living person is named as a beneficiary, the DROP Account will be annuitized based upon the life of the youngest heir to the deceased Member's estate and the resulting DROP Annuity will be paid to the estate.

3. Beneficiaries of a Member's DROP Account or a DROP Annuitant's DROP Annuity are not limited to the Qualified Survivors. Upon request, DPFP will divide a deceased participant's DROP Account or DROP Annuity among the designated beneficiaries at the time of the DROP participant's death.

4. Upon the death of a DROP participant, the DROP participant's DROP Account or DROP Annuity shall become the property of the surviving spouse unless either (i) the surviving spouse has specifically waived his or her right to such funds or (ii) the surviving spouse's marriage to the DROP participant occurred after January 14, 2016 and the participant had already joined DROP and named a beneficiary other than the surviving spouse who was not the participant's spouse at the time of the beneficiary election, and will be transferred to the name of the surviving spouse or such other named beneficiary or beneficiaries. DROP Annuities shall be paid to the designated beneficiaries in accordance with the last beneficiary form on file in the DPFP administrative office upon that office's receipt of sufficient evidence of the DROP participant's death.

G. HARDSHIPS (continued)

1. Pursuant to the Plan, a DROP Annuitant who was a former Member of the Plan (a "Retiree Annuitant") may apply for a lump sum distribution relating to his or her DROP Annuity in the event that the Retiree Annuitant experiences a financial hardship that was not reasonably foreseeable. To qualify for an unforeseeable financial hardship distribution, a Retiree Annuitant (or the estate of a Retiree Annuitant in the case of subsection G.2.e.) must demonstrate that:

   a. a severe financial hardship exists at the time of the application (i.e., not one that may occur sometime in the future);

   b. the hardship cannot be relieved through any other financial means (i.e., compensation from insurance or other sources, monthly annuity benefits, or liquidation of personal assets) unless using those other sources would also cause a financial hardship; and

   c. the amount requested in the application is reasonably related to and no greater than necessary to relieve the financial hardship.

2. The Board shall only recognize the following circumstances as an unforeseeable financial hardship that is eligible for a lump sum distribution:

   a. the need to repair damage to a Retiree Annuitant's primary residence not covered by insurance as the result of a natural disaster or significant event (i.e., fire, flood, hurricane, earthquake, etc.);

   b. the need to make significant changes to a Retiree Annuitant's primary residence not covered by insurance because of medical necessity;

   c. the need to pay for medical expenses of the Retiree Annuitant, a Retiree Annuitant's spouse, or a dependent child or relative of the Retiree Annuitant as described under Code section 152(c) and (d), including non-refundable deductibles, as well as for the cost of prescription drug medication;

   d. the need to pay for the funeral expenses of a parent, child, grandchild or spouse of the Retiree Annuitant, including reasonable travel and housing costs for the Retiree Annuitant, their spouse, parent, child or grandchild;

   e. the need of the estate of a Retiree Annuitant to pay for the medical expenses or the funeral expenses of the Retiree Annuitant; or

   f. other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Retiree Annuitant.

G. HARDSHIPS (continued)

3. DPFP staff will develop procedures relating to the application for an unforeseeable financial hardship distribution, which will include, at a minimum, a notarized statement by the applicant relating to the requirements for eligibility and documentation sufficient to demonstrate such eligibility. Following submission of the required financial hardship distribution application, the notarized statement, and other required documentation as stated in the application form, DPFP staff shall review the materials and inform the Retiree Annuitant within thirty (30) days whether any additional information or documentation is required or requested. Once all required and/or requested documentation has been submitted, the Retiree Annuitant shall be informed within thirty (30) days if (i) the Retiree Annuitant is eligible for an unforeseeable financial hardship distribution or (ii) the matter has been referred to the Board for consideration at the next regular meeting. After an unforeseeable financial hardship distribution has been made to a Retiree Annuitant, a Retiree Annuitant may not request an additional unforeseeable financial hardship distribution for ninety (90) days from the date of distribution of any amount under this Section.

4. The Executive Director shall have the authority to approve an application for an unforeseeable financial hardship distribution. The Executive Director shall submit to the Board for final action by the Board any recommended denial, in whole or in part, of any request for an unforeseeable financial hardship distribution. Determinations of the Board and the Executive Director on applications for unforeseeable financial hardship distributions are final and binding. Once an unforeseeable financial hardship distribution has been approved by either the Executive Director or the Board, payment of the distribution shall be made to the Retiree Annuitant as soon as administratively practicable.

5. For the purposes of this Section G, the term "dependent" shall mean any person who is claimed by a Retiree Annuitant as a dependent on the Retiree Annuitant's federal income tax return in any year for which a distribution is sought under this Section G.

6. Distributions under this Section G shall only be available for persons who (a) entered DROP prior to June 1, 2017 and (b) who have not revoked a DROP election under Section D. of this policy.

7. No claims for hardship distributions will be accepted for any circumstances which give rise to the hardship where such circumstances occurred more than six months (nine months in the case of a filing by the estate of a Retiree Annuitant pursuant to subsection G.2.e.) prior to the date of filing of the application pursuant to subsection G.3.

H. 100% Joint and Survivor Benefit

1. Coterminous with entry into DROP, a Member shall have the right to make the election provided for under Section 6.063(a)(1) of the Plan and such an election will not be subject to the requirement set forth in Section 6.063(e) of the Plan.

2. Subsequent to a Member's entry into DROP, if the Member has not made the election provided for in Section H.1., the Member shall have the right to make the election provided for under Section 6.063(a)(1) and such an election will be subject to the requirement set forth in Section 6.063(e). If a Member shall die while on Active Service within one year after making the election under this Section H.2., then the Member's DROP Account shall be increased by the reduced benefit amount which is contemplated by Section 6.063(e) to be paid to the surviving spouse.

3. If a Member makes an election under either Section H.1. or H.2., the amount credited to the Member's DROP balance will be adjusted accordingly.

4. If a Member should remarry while on Active Service after making an election under Section H.1 or H.2, then the Member's benefit shall be recalculated and adjusted based upon the age of the new spouse, effective as of the date of marriage as if the Member had made a new election under Section 6.063(a)(1); provided however, that (i) if the Member had made the election pursuant to Section H.1., the Member shall not be subject to the requirement set forth in Section 6.063(e) for such remarriage and recalculation and (ii) if the Member had the election pursuant to Section H.2., the one year requirement under Section 6.063(e) shall be deemed to have commenced upon the original election.

5. Members who are in DROP as of the effective date of this Policy shall be afforded the opportunity through the first to occur of (i) their retirement date or (ii) October 31, 2018 to make the election provided for in Section H.1 and after October 31, 2018, such Members shall be entitled to make the election provided for in Section H.2.

6. Nothing in this DROP Policy shall affect or impair the right of a Member to make the election provided for in Section 6.063(a) upon or after the Member's retirement if the Member shall not make the election provided for in this Section H, provided, however, that any election made by a Member of Pensioner after their entry into DROP, notwithstanding any other provision of Section 6.063, shall be subject to the provisions of Section 6.063(e).

I. EFFECTIVE DATE

APPROVED on June 14, 2018 by the Board of Trustees of the Dallas Police and Fire Pension System.

____
William F. Quinn
Chairman

ATTEST:

____
Kelly Gottschalk
Secretary

Exhibit 1- Interest Rates

Published Rate	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
7/17/2017	1.86	2.12	2.31	2.65	2.89
8/15/2017	1.83	2.09	2.27	2.60	2.84
9/15/2017	1.81	2.04	2.20	2.52	2.77
Average	**1.83**	**2.08**	**2.26**	**2.59**	**2.83**

Exhibit 2 – Life Expectancies Based on a November 2017 DROP Annuity Commencement Date

Expected Lifetime in Years Based on a November 2017 Commencement of Annuitization

Age	Expected Lifetime (Years)	Age	Expected Lifetime (Years)
21	62	56	29
22	61	57	28
23	60	58	27
24	59	59	26
25	58	60	25
26	57	61	24
27	56	62	23
28	56	63	22
29	55	64	22
30	54	65	21
31	53	66	20
32	52	67	19
33	51	68	18
34	50	69	17
35	49	70	17
36	48	71	16
37	47	72	15
38	46	73	14
39	45	74	14
40	44	75	13
41	43	76	12
42	42	77	12
43	41	78	11
44	40	79	10
45	39	80	10
46	38	81	9
47	37	82	9
48	36	83	8
49	36	84	7
50	35	85	7
51	34	86	7
52	33	87	6
53	32	88	6
54	31	89	5
55	30	90	5

Note: The above factors are based on the sex-distinct RP-2014 Blue Collar Healthy Annuitant Mortality Tables, with the female table set forward two years, projected generationally using Scale MP-2015. The sex-distinct tables are blended 85% male and 15% female.

DALLAS POLICE & FIRE PENSION SYSTEM

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C9

Topic: **2019 Budget**

Discussion: The Board approved the 2019 budget at the November Board meeting. Comments from the City were received after the November meeting and are included with this agenda item for your information. The Board may amend the approved budget at any time.

Comments from Councilmember Kleinman:

- Board and employee travel and conferences budget is over $100,000. Unnecessary. These "conferences" are, for the most part, sales pitches.
    - Travel – Board $32,620.
    - Travel – Staff $37,500
    - Conference – Board $14,900
    - Conference – Staff $37,500

- Legislative consultants - unnecessary. The fund is State chartered and won't be touched by the legislature for at least 3 more sessions per the 7-year Band-Aid applied in the last session.

- Investment consultants - ineffective as proven by the terrible returns for the past several years. Recommend termination and moving all assets to passive management.

Comments from Elizabeth Reich, City CFO

The budget appeared reasonable to me – there were some areas you budgeted a significant increase over actual spending, but the total dollar amounts were low, or the reason was understandable. I do tend to agree with Mr. Kleinman on the legislative consultant fees – seems like a high number given that we should have no reason to be in Austin on this issue in 2019. I don't anticipate having any further comments.

DISCUSSION SHEET

ITEM #C10

Topic: **Trustee meeting with City**

Discussion: At the Board meeting on November 8, 2018, the Board authorized two member elected Trustees and two Trustees appointed by the Mayor to meet with DPFP and City staff to discuss concerns the Board has regarding future police and fire staffing levels affecting DPFP. The Chairman would like the Board to revise its previous motion.

Chairman's Recommendation: **Amend** the Board's motion of November 8, 2018 regarding a meeting of Trustees with DPFP and City staff and authorize the Chairman to appoint a subcommittee of Trustees for such meeting.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C11

Topic: **Professional Services Provider Report**

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 Service Committee is scheduled to meet with the investment consultant, Meketa Investment Group, prior to the December Board meeting.

Recommendation: The Professional Services Committee shall **report** to the Board any material comments and **recommend** to the Board any appropriate actions needed as a result of the meeting with Meketa.

DISCUSSION SHEET

ITEM #C12

Topic: **Open Records Requests**

Discussion: Staff will provide information related to open records requests, including the administrative process of handling the requests and open records request data for 2017 and 2018.

Regular Board Meeting – Thursday, December 13, 2018

DISCUSSION SHEET

ITEM #C13

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
Regular Board Meeting – December 13, 2018

ATTENDING **APPROVED**

1. **Conference:** **NCPERS Legislative Conference**
   Dates: January 27-29, 2019
   Location: Washington, DC
   Est. Cost: TBD

2. **Conference:** **TEXPERS Annual Conference** — **BD** (pending approval)
   Dates: April 7-10, 2019
   Location: Austin, TX
   Est. Cost: TBD

3. **Conference:** **NCPERS Accredited Fiduciary Program**
   Dates: May 18-19, 2019
   Location: Austin, TX
   Est. Cost: TBD

4. **Conference:** **NCPERS Annual Conference**
   Dates: May 19-22, 2019
   Location: Austin, TX
   Est. Cost: $1,500

5. **Conference:** **TEXPERS Summer Educational Forum**
   Dates: August 11-13, 2019
   Location: El Paso, TX
   Est. Cost: TBD

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C14

Topic: **Investment Advisory Committee**

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: One of the appointed Investment Advisory Committee (IAC) members is no longer able to serve on the committee. The Board may discuss possible candidates to serve on the Investment Advisory Committee and consider modifying the structure of the IAC to accommodate potential future vacancies.

Regular Board Meeting – Thursday, December 13, 2018

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C15

Topic: **Lone Star Investment Advisors Update**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.071 of the Texas Government Code.

Discussion: Investment Staff will update the Board on recent performance and operational developments with respect to DPFP investments in funds managed by Lone Star Investment Advisors and counsel will brief the Board on legal issues.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C16

Topic: **Hardship Request**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.078 of the Texas Government Code.

Discussion: Article 6243a-1 Section 6.14(e-3)(2) allows a lump-sum distribution from the DROP account in the event of a financial hardship that is not reasonably foreseeable. Section 6.14(e-4) requires the Board to adopt rules related to hardship distributions. The Board's rules are contained in Section G of the DROP Policy.

A Retiree DROP Annuitant submitted an application for a lump sum distribution from his DROP balance in accordance with the DROP policy. The hardship is a result of uninsured medical costs for the Retiree's spouse. The DROP Policy requires that:

a. a severe financial hardship exists at the time of the application (i.e., not one that may occur sometime in the future);
b. the hardship cannot be relieved through any other financial means (i.e., compensation from insurance or other sources, monthly annuity benefits, or liquidation of personal assets) unless using those other sources would also cause a financial hardship; and

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C16
(continued)

c. the amount requested in the application is reasonably related to and no greater than necessary to relieve the financial hardship.

The Executive Director will review the Hardship application and materials with the Board.

Staff Recommendation: To be provided at the meeting.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C17

Topic: **Consideration of Granting a Survivor Benefit under the Disabled Child Benefit Provisions**

Portions of the discussion under this topic may be closed to the public under the terms of Section 551.078 of the Texas Government Code.

Discussion: Only qualifying survivors are eligible to receive death benefit. Article 6243a-1 Section 2.01 (48)(B) defines a Qualified Survivor as "all surviving, unmarried children who are either under 19 years of age or have a disability, as determined by the board under Section 6.06(o-2) of this article, and who were (i) born or adopted before the primary party either voluntarily or involuntarily left active service or (ii) born after the primary party left active service if the mother was pregnant with the child before the primary party left active service…"

To grant the death benefit the disabling condition must have occurred prior to the age of 23 and the Board must find the following conditions (Section 6.06(o-2)):

1. The child's disability prevents the child from being self-supporting or from securing and holding gainful employment or pursuing an occupation;
2. The child is not married;

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C17
(continued)

3. The disability was not the result of an occupational injury;
4. The disability was not the result of an intentional self-inflicted injury or a chronic illness resulting from an addiction through a protracted course of non-coerced indulgence to alcohol, narcotics or other substance abuse; and
5. The disability did not occur as a result of participation in a commission of a felony.

A Retired Member died on April 30, 2018, leaving a child who became disabled prior to the age of 23. DPFP has received an application for survivor benefits. A medical examination and MMro review were completed. A trust has been established to receive death benefit payments. Medical documentation is included for the Board's consideration.

Staff Recommendation: **Grant** survivor benefits under the provisions of Plan Section 6.06(o-2).

DISCUSSION SHEET

ITEM #C18

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 #C19

Topic: **Executive Director Compensation**

Discussion: The Board reviewed the performance of the Executive Director at the November 8th Board meeting, at that time the Board did not take any action related to compensation. The Board will consider the Executive Director's compensation for 2019.

Regular Board Meeting – Thursday, December 13, 2018

DISCUSSION SHEET

ITEM #D1

Topic: **Reports and concerns of active members and pensioners of the Dallas Police and Fire Pension System**

Discussion: This is a Board-approved open forum for active members and pensioners to address their concerns to the Board and staff.

Regular Board Meeting – Thursday, December 13, 2018

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D2

Topic: **Executive Director's report**

a. Associations' newsletters
- NCPERS Monitor (November 2018)
- NCPERS Monitor (December 2018)

b. City of Dallas Actuarial Audit (Government Code, Sec. 802.1012)

c. Employee Service Award

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

Regular Board Meeting – Thursday, December 13, 2018

THE NCPERS

MONITOR

The Latest in Legislative News NOVEMBER 2018

In This Issue

Each winter, as NCPERS members gather in Washington for the annual Legislative Conference, our final day is devoted to personal visits to Capitol Hill by our members.

Photo Illustration © 2018, istockphoto

On September 27, House Ways and Means Committee Chairman Kevin Brady (R-TX) and Ranking Member Richie Neal (D-MA) introduced H.R. 6933, which would repeal the Social Security penalty known as the Windfall Elimination Provision (WEP).

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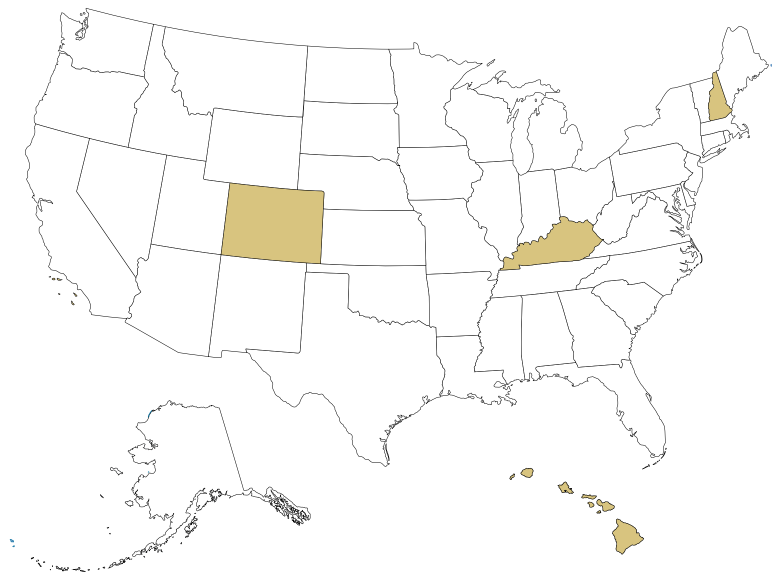
New Mexico's Retirement Income Security Task Force, charged with developing retirement solutions for private-sector workers who lack access to workplace plans, presented its options to the legislature in mid-October.

State Update



Since our March 2018 installment, we have had adverse pension legislation stall in committee. Previously reported pension reform bills in California, Oklahoma, Oregon, and South Carolina have all stalled in committee. However, we have seen pension reform legislation signed into law in Kentucky. Details on specific state legislation are as follows:

Colorado: On June 4, Governor John Hickenlooper (D) signed pension reform legislation, Senate Bill 18-200 into law. The bill includes automatic adjustment provisions to ensure that Colorado Public Employee Retirement Association (PERA) remains on the path to full funding in 30 years, by modifying the annual cost-of-living-adjustment (COLAs) for retirees. The current COLA for retirees that began receiving benefits prior to January 1, 2007 is 2%; the bill reduces the COLA to zero for 2018 and 2019. Each year after the COLA will change to 1.5%. The bill also increases employee contributions by 2% by July 1, 2021 and increases the retirement age to 65 for employees hired on or after January 1, 2020. In addition, new school district and local government employees will be able to choose between the PERA defined contribution plan and the hybrid defined benefit plan.

CONTINUED ON PAGE 3

NCPERS **Executive Directors Corner**

Policy Day on Capitol Hill Has a New Look

Each winter, as NCPERS members gather in Washington for the annual Legislative Conference, our final day is devoted to personal visits to Capitol Hill by our members. This year, that capstone event will have a new look and feel as we conduct our first Policy Day on Capitol Hill.

The 2019 Legislative Conference, which runs January 27-28, will set the stage for Policy Day, offering a detailed overview of the 2018 election results, the impact on key committees, and the emerging agendas in the House and Senate. But Policy Day is where the rubber meets the road.

Policy Day, scheduled for Tuesday, January 29, 2019, will be a full day of activities designed to deliver a powerful message to Capitol Hill from a unified public pension community. NCPERS will amplify our voices by schedule meetings with congressional committees whose oversight and activities affect all public pension systems, including the House Ways and Means Committee and the Senate Special Committee on Aging.

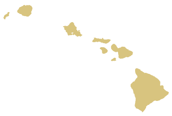
Members who register for Policy Day will spend the day on Capitol Hill, beginning with an 8 am breakfast. Throughout the day, they will attend meetings scheduled by NCPERS and participate in debriefing sessions. NCPERS' offices at 444 North Capitol Street, located near the Senate side of the Capitol, will be the hub for the day's activities, providing a lounge, a lunch session, debriefing space, and a post-meeting happy hour. Participants should be ready for a full day of programs. Registration for Policy Day is separate from Legislative Conference registration, and the fee is a modest $50 to cover administrative costs.

Participants will have the opportunity to prepare for the meetings even before they arrive in Washington, with a Policy Day webinar scheduled for Tuesday, November 27. This session will not only feature policies and positions; it will also focus on the most effective ways to communicate and meet with lawmakers and their staffs. For example, is your lawmaker suddenly pressed for time because of a floor vote? Saying "I'll walk and talk with you" can be a great way to preserve your opportunity to communicate about an important issue while being respectful of an elected official's time.

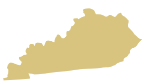
The timing of this year's Policy Day could not be more critical. The November 2018 election will decide control of both the Senate and the House. When the 116th Congress convenes in January 2019, significant leadership changes may be occurring. Your commitment of a day on Capitol Hill will help the public pension community show its strength, share its viewpoints, and demonstrate the urgency of the mission of ensuring a secure retirement for all. ◆

The timing of this year's Policy Day could not be more critical. The November 2018 election will decide control of both the Senate and the House. When the 116th Congress convenes in January 2019, significant leadership changes may be occurring.

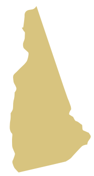
STATE UPDATE CONTINUED FROM PAGE 1



Hawaii: As previously reported, Senator Laura Thielen (D) introduced Senate Bill 2333, legislation that would create a state- run retirement savings fund, known as the Hawaii Retirement Savings Program. The bill was passed in the House on May 3 and signed by Governor David Ige (D) on June 13. The legislation requires a feasibility study, which must be reported to the legislature with its findings and proposals no later than 20 days before the convening regular session of 2019. Subject to positive findings in the feasibility study, the Hawaii retirement savings board must establish the program so that private sector employees may begin making contributions to the program no later than July 1, 2021.



Kentucky: As previously reported, SB 1 was introduced in February and would require new teachers into a hybrid cash balance plan. That bill did not leave committee, however, new, surprise legislation did pass. SB 151 was introduced by Sen. Joe Brown (R) on February 15, and passed the Senate on March 29 and was delivered to Gov. Matt Bevins (R) on the same day. Gov. Bevins signed the bill into law on April 10. The bill will place teachers hired after January 1, 2019 into a hybrid cash balance plan at Teachers' Retirement System of Kentucky rather than the traditional defined benefit pension. It will not reduce the annual 1.5 cost-of-living-adjustments for retired teachers (which SB 1 did). Retirement eligibility for future teachers will increase to age 65 with five years of service of the "rule of 87". Contribution rates will rise to 9.105% for teachers, with state contributions at 6% and school districts contributing 2%. No actuarial analysis was done for the bill, which is required by law. The teachers have continued to protest the law and vow to vote out all legislators that voted for the bill.



New Hampshire: As previously reported, House Bill 1756, introduced by Representative Stephen Shurtleff (D) will give a one-time $500 payment to retirees and beneficiaries receiving an annual benefit of $30,000 or less and who have been retired more than five years. This bill passed the House on April 25 and was signed by Gov. Chris Sununu (R) on June 26. In addition, H.B. 1754, which would establish a defined contribution plan for state employees, was deemed inexpedient to legislate on March 7. That means the committee agrees the bill will not pass in the current session.

Stay tuned and visit www.NCPERS.org for more information on upcoming state pension reform legislation. You can visit the legislation maps on www.NCPERS.org to view our latest membership feature. As always, if your state is facing pension reform efforts and you would like NCPERS' help, please let us know. ◆

Windfall Elimination Provision

By Tony Roda

Photo Illustration © 2018, istockphotos

On September 27, House Ways and Means Committee Chairman Kevin Brady (R-TX) and Ranking Member Richie Neal (D-MA) introduced H.R. 6933, which would repeal the Social Security penalty known as the Windfall Elimination Provision (WEP) beginning for those who first become eligible for Social Security (reach age 62) in 2025. Identical legislation, S. 3526, was introduced the following day by Sen. Ted Cruz (R-TX).

At the outset, let's talk about why the public pension community should care about this matter. The WEP penalty reduces your Social Security benefit if you earn a retirement benefit from non-Social Security employment. Roughly 25 percent of state and local government employees across the U.S. are not covered by Social Security. Many of these workers will also separately earn a Social Security-covered benefit.

WEP is a blunt instrument. Social Security benefits are based on tranches of average monthly earnings (AME) multiplied by specific percentages. For the first tranche of AME, which is up through $895, the standard Social Security benefit is calculated as $895 multiplied by 90 percent. Under WEP, however, that first tranche of income is multiplied by only 40 percent. Doing the math and carrying the numbers through on annual basis result in a reduction to your Social Security benefit of $5,370 per year. That's certainly a significant amount.

Legislation has been introduced since the 1980s to full repeal WEP and its sister penalty, the Government Pension Offset, which affects spousal and survivor benefits. In this current 115th Congress, the full repeal bills are H.R. 1205, by Rep. Rodney Davis (R-IL) and S. 915, by Sen. Sherrod Brown (D-OH).

Most observers do not believe full repeal legislation is viable.

Therefore, the WEP-only, middle path delineated in the Brady-Neal and Cruz legislation presents a potential solution. The core of this proposal is a proportional formula, which is referred to as the Public Servant Fairness formula (PSF), based on each worker's actual work history. The new formula would become effective for those first becoming eligible for Social Security (age 62) beginning in 2025. For current retirees, a flat-rate rebate of $100 per month ($50 per month for a spousal benefit) would begin in 2020. The rebate would be indexed each year. The legislation would also direct the Social Security Administration (SSA) to report uncovered years on the annual SSA statement and initiate a study to explore what information public pension plans have to help with the data challenge.

On October 4, SSA's Chief Actuary provided Chairman Brady with an analysis of the legislation. The study was based on the following assumptions:

- Provides estimates of the PSF on workers who will become eligible for Social Security starting in 2025;
- Uses all current beneficiaries in 2018 as the pool as if they were first eligible to receive Social Security benefits in 2025; and
- Assumes the PSF contained in the legislation is fully phased in and has applied to the pool since their initial eligibility.

The Chief Actuary looked at the universe of beneficiaries in three separate categories.

CONTINUED ON PAGE 5

WINDFALL ELIMINATION PROVISION CONTINUED FROM PAGE 4

The first category is comprised of those 1.6 million retired-worker and disabled-worker beneficiaries whose primary benefit is reduced under the current WEP. Of this group, 1.1 million or 69 percent would receive an increase in their average benefit of $888 per year. However, the remaining beneficiaries in this group, 500,000 or 31 percent, would receive a decrease in their average benefit of $660 per year.

The second category is made up of the 18 million retired-worker and disabled-worker beneficiaries with some non-covered earnings but who are not reduced under the current WEP. Of this group, 4.5 million or 25 percent would see no change to their primary benefit. Seventy five percent, roughly 13.5 million beneficiaries, would receive a lower average benefit. For the 50 percent of those who are least affected, the average monthly benefit under PSF would be less than $1 per month lower; for the 50 percent of those who are most affected, the average monthly benefit under PSF would be about $43 per month lower.

The final category is comprised of the 9 million beneficiaries, which is equal to 52 percent of the second category, who currently are exempt from WEP because of 30 years of substantial earnings. SSA's Chief Actuary concludes that their reduction under PSF would be relatively small because they have very few years of non-covered earnings.

The fate of this latest attempt to resolve the WEP issue will be determined during the upcoming lame-duck session. Depending on the feedback he receives from other Members of Congress and stakeholder groups, Chairman Brady may attempt to attach his proposal to must-pass legislation in the waning days of the Congress. Please be assured that NCPERS will continue to keep its members informed on the latest developments on this matter. ◆

__Tony Roda__ is a partner at the Washington, D.C. law and lobbying firm Williams & Jensen, where he specializes in legislative, regulatory and fiduciary matters affecting state and local pension plans. He represents the National Conference on Public Employee Retirement Systems and state-wide, county and municipal pension plans in California, 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.

New Mexico Considers Private-Sector Retirement Savings Options

Photo Illustration © 2018, istockphotos

New Mexico's Retirement Income Security Task Force, charged with developing retirement solutions for private-sector workers who lack access to workplace plans, presented its options to the legislature in mid-October.

The Task Force proposed creating a state-sponsored voluntary IRA program and forming a state-managed online marketplace for affordable retirement plans.

These recommendations stopped short of the auto-IRA model favored by most states that have developed retirement programs for private sector employees. But, the Task Force said, the auto-IRA option could be triggered if the voluntary IRA and online marketplace "do not meaningfully increase retirement plan participation."

The task force, which met seven times been June 2017 and June 2018, was created by the State Senate. It also recommended a state-wide educational initiative focusing on retirement planning and saving. ◆

National Conference on Public Employee Retirement Systems

ADVOCACY | RESEARCH | EDUCATION

2019 Legislative Conference

January 27 – 29, 2019

Capital Hilton | Washington, D.C.

Featuring the newly revamped Policy Day!

Visit www.ncpers.org/legislative for more information

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2019 Conferences

January

Legislative Conference
January 27 – 29
Washington, DC

May

NCPERS Accredited Fiduciary Program (All modules)
May 18 – 19
Austin, TX

Trustee Educational Seminar
May 18 – 19
Austin, TX

Annual Conference & Exhibition (ACE)
May 19 – 22
Austin, TX

June

Chief Officers Summit (COS)
June 13 – 14
Chicago, IL

September

Public Pension Funding Forum
September 11 – 13
New York, NY

October

NCPERS Accredited Fiduciary Program (All modules)
October 26 – 27
New Orleans, LA

Public Safety Conference
October 27 – 30
New Orleans, LA

The Voice for Public Pensions

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THE NCPERS

MONITOR

The Latest in Legislative News

DECEMBER 2018

In This Issue

One of our cornerstone activities at NCPERS is creating a rich body of research and analysis on public pensions. High-quality research serves many purposes. It supports our members by providing them with benchmarks and insights.

Photo Illustration © 2018, istockphoto

Over 113 million Americans voted in the midterm elections on November 6. This number of voters is the highest in any U.S. midterm election and approaches the turnout in a presidential year. The high turnout was clearly related to the highly-charged environment in U.S. politics today.

Support for Public Pensions Helped Push Three Governors-Elect Across Finish Line

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Across the country, 36 states elected Governors in November. One public pension issue that factored into these elections was the relentless push by pension foes to force workers into defined-contribution plans. Candidates who proposed a shift to defined-contribution plans in three states were sternly rebuked by voters. In Colorado, New Mexico, and Oregon, these anti-pension candidates were defeated.

The gubernatorial decisions came as voter turnout reached a 50-year high. “This result for our 2018 midterm elections delivers a hopeful message about the resilience of our democracy, and underscores the importance of participation in our elections,” said Hank H. Kim, NCPERS executive director and counsel.

According to the United States Election Project, 49.6 percent of eligible voters went to the polls for the general election, for a whopping 116.9 million votes cast. That includes 39.1 million Americans who cast their votes early. Voter turnout in Colorado and Oregon was well above average, with 62.9 percent and 61.5 percent of eligible voters coming to the polls, respectively. Turnout in New Mexico was 47.3 percent, closer to the national average.

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NCPERS **Executive Directors Corner**

Research Initiatives Coming in 2019 Will Help Members Analyze Challenges

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One of our cornerstone activities at NCPERS is creating a rich body of research and analysis on public pensions. High-quality research serves many purposes. It supports our members by providing them with benchmarks and insights. It supports our advocacy efforts by putting hard evidence behind our positions. And it adds meaningfully to the public's understanding of how pensions impact individuals and communities. Ultimately, research helps NCPERS members comprehend and analyze challenges, benchmark your practices, and find opportunities for steady improvement.

Research is such an important part of our work — along with education and advocacy — that in recent years, we have dug deep into a variety of timely issues. For example, numerous analyses conducted by NCPERS Director of Research Michael Kahn have helped to illuminate the hidden costs of the common approaches to pension reform.

Perhaps our most anticipated survey each year is our wide-ranging *Public Retirement Systems Study*, also known as PRS Study. In late November, we wrapped up the three-month data-gathering phase of our eighth annual study of pension trustees, managers, and administrators. The results of the 2018 edition of PERS are now being analyzed by Cobalt Community Research and will be published in January.

Research is such an important part of our work — along with education and advocacy — that in recent years, we have dug deep into a variety of timely issues.

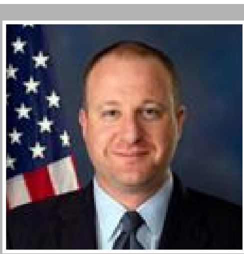
Last year, the PRS Study attracted responses from 164 state and local government pension funds with more than 15.5 million active and retired members and market assets totaling $1.8 billion. This scale along makes it a very significant study. The dashboard we created to accompany the annual study enables members to visualize the data and refine and customize it to answer their own questions. Users can select peer groups and see how their plans stack up according to different measures, such as investment experiences and assumptions, plan administration and operations, and trends, innovations, and best practices. Most importantly, the dashboard is free to members and will be available on the NCPERS website.

Also during the first quarter, we intend to publish a white paper examining health care for public sector retirees. We will also publish an independent analysis by Tom Sgouros of Brown University that examines how accounting rules currently in effect tend to distort the health of pension systems, with unintended consequences for policymakers. And in the second quarter, we will publish our latest research into state fiscal health and the implications for public pensions.

We will be offering webinars to accompany and explain the new research we unveil, and we encourage you to keep an eye out and plan to participate. Our pension-focused data and analysis is a unique NCPERS benefit, and members stand to get as much out of it as they put into it. ◆

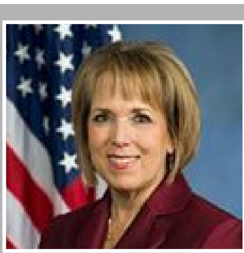
ACROSS FINISH LINE CONTINUED FROM PAGE 1

Here's how the candidates who spoke out on public pension issues fared in three key elections:



Colorado: U.S. Representative Jared Polis, a Democrat, defeated Republican Treasurer Walker Stapleton in the governor's race. Stapleton had advocated allowing all state employees to choose a 401(k) style plan, raising the retirement age, and sharply reducing the fund's assume rate of return from its current level of 7.25 percent, to between 5 percent and 5.5 percent. As state treasurer, Stapleton sat on the Colorado Public Employee Retirement Association (PERA) board--and came under criticism for missing 35 of 77 board meetings held between 2011 and 2016. (He did, however, send a deputy to all but five of the meetings he missed.)

Polis, who won with 52.3 percent of the vote, supported preserving PERA as a defined-benefit system. In a policy statement issued before the election, he pledged to do everything in his power "to honor the commitments we have made to workers."



New Mexico: U.S. Rep. Michelle Lujan Grisham, a Democrat, won the race for Governor with 57.1 percent of the vote. She defeated U.S. Rep. Steve Pearce, a Republican who had taken a hard line on reforming the state's two major pension funds, the New Mexico Public Employee Retirement Association and the New Mexico Educational Retirement Board. Pearce maintained that government pensions were too generous compared to the private sectors. "At a minimum, new employees coming into the government workforce are going to have a very different system," he told the Albuquerque Journal. "Employees many years away from retirement are going to have to see significant changes."

Lujan Grisham, meanwhile, opposed cuts to benefits, including any reduction in the annual inflation-related pension adjustments that retired state workers and teachers receive. At the candidates' final public debate on October 24, Lujan Grisham committed to shoring up the defined-benefits retirement system and highlighted the risks that would come with a switch to individual retirement accounts, according to an Associated Press report. She said she would create a pension task force to come up with "shared sacrifices between both the employees and the employers so that over time we get our pension system corrected."

Oregon: Democrat incumbent Kate Brown prevailed with 50 percent of the vote, defeating Republican State Rep. Knute Buehler. Buehler had campaigned on enrolling new employees in and moving currently employees to a 401(k)-type plan, capping the salary used to calculate benefits at $100,000, and requiring all state and local government employees to contribute toward their own retirement benefits.

Brown has defended the Oregon Public Employees Retirement System (OPERS) and worked to bring down its unfunded actuarial liability, which totaled $22.3 billion at the end of 2017. A task force she convened in 2017 put forth nearly two dozen potential new funding sources for OPERS. ◆

The Midterms and the 116th Congress

By Tony Roda

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Over 113 million Americans voted in the midterm elections on November 6. This number of voters is the highest in any U.S. midterm election and approaches the turnout in a presidential year. The high turnout was clearly related to the highly-charged environment in U.S. politics today, the closeness of many individual House and Senate races, and President Trump's strategy to make the election about his performance.

The midterms did not disappoint. There was enough for each party to claim victory. The President likes to talk about how Republicans were able to maintain control of the Senate and add two seats to their majority. The GOP edge going into the 116th Congress, which will be sworn in on January 3, will be 53-47. Meanwhile, Democrats are ecstatic about flipping the House of Representatives and winning almost all contested races in suburban districts. There is not one Republican Member left in the former bastion of conservatism, Orange County, California. With two House races left to be called, Democrats already have 233 seats in their column. Well more than the 218 needed for a House majority.

On the House Ways and Means Committee, which has jurisdiction over tax law and the criteria for the federal tax qualification of state and local governmental pension plans, the Democrats will be able to add at least 10 new Members. This is a plum position. The Committee has jurisdiction not only over tax law, but also over health care, Social Security and international trade. The new Chairman of the Committee will be Rep. Richie Neal (D-MA). Due to retirements and election losses, the Republicans are expected to be able to add two new Members. Rep. Kevin Brady (R-TX) will be the senior GOP Member of the Committee. Congressmen Neal and Brady, while certainly not in agreement on all policy matters, have a very good working relationship, which should carry over into the new Congress.

The Senate Finance Committee, the parallel to the Ways and Means Committee, will see fewer changes. Current Chairman Orrin Hatch (R-UT) is retiring and Sen. Dean Heller (R-NV) lost his re-election bid. The new Chairman will be Sen. Chuck Grassley (R-IA), who has two years left on his term limit clock for service as Chairman. It is not known at this time who will replace Senators Hatch or Heller. Likewise, the replacements for Committee Members Claire McCaskill (D-MO) and Bill Nelson (D-FL), who lost their seats in the midterms, have not be named.

On policy matters, over the past few years the public pension plan community has been resigned to playing more defense than offense. While proposals such as the Public Employee Pension Transparency Act (PEPTA) and the extension of the unrelated business income tax (UBIT) to certain investments of state and local plans will have a much lesser likelihood of gaining traction in a Democratic-controlled House, our opponents could easily shift their emphasis on these issues to the GOP-controlled Senate.

In the House, we hope to be able to play more offense. While Reps. Neal and Brady are changing roles at the top of the Ways and Means Committee, it's important to note that they are the leaders of the current effort to repeal Social Security's Windfall Elimination Provision. I expect that effort to continue under incoming Chairman Neal.

Regarding health care, Sen. Sherrod Brown (D-OH), who just won re-election to a new six-year term and may be interested in running for president in 2020, is developing legislation to allow retired first responders who have reached age 55 to opt into Medicare. Recognizing that public safety employees generally retire in their mid-fifties and that there is always a significant gap in time from retirement to the Medicare eligibility age of 65, Sen. Brown believes

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THE 116TH CONGRESS CONTINUED FROM PAGE 4

this group should be given a choice to enroll in Medicare at an earlier age. His staff is currently working with the public safety community to develop legislation.

In addition, we should make improvements to the current provision in tax law that allows public safety employees to exclude from their gross income up to $3,000 from pension distributions if the monies are used for health care premiums. First, the $3,000 cap has been unchanged since its inception in 2006. We believe the $3,000 limit should be increased and also indexed in future years. Second, this tax benefit should be extended to all public sector workers. Finally, the structure of the current benefit should be examined. Questions have been raised on whether the direct payment requirement is workable under more innovative retiree health initiatives and whether the exclusion should be changed to a deduction.

Finally, NCPERS has been a leader in the effort to extend retirement security to more of our nation's workers, specifically promoting state-run secure choice and other savings programs for private sector workers. We have begun to talk with key stakeholders to determine the parameters of federal legislation in this area.

Please be assured that NCPERS will keep you apprised of developments on these key areas and any other relevant matters that arise. We look forward to representing our members' interests in the 116th Congress. ◆

__Tony Roda__ is a partner at the Washington, D.C. law and lobbying firm Williams & Jensen, where he specializes in legislative and regulatory issues affecting state and local pension plans. He represents the National Conference on Public Employee Retirement Systems and state-wide, county and municipal pension plans in California, 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.

National Conference on Public Employee Retirement Systems

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2019 Conferences

January

Legislative Conference
January 27 – 29
Washington, DC

May

NCPERS Accredited Fiduciary Program (All modules)
May 18 – 19
Austin, TX

Trustee Educational Seminar
May 18 – 19
Austin, TX

Annual Conference & Exhibition (ACE)
May 19 – 22
Austin, TX

June

Chief Officers Summit (COS)
June 13 – 14
Chicago, IL

September

Public Pension Funding Forum
September 11 – 13
New York, NY

October

NCPERS Accredited Fiduciary Program (All modules)
October 26 – 27
New Orleans, LA

Public Safety Conference
October 27 – 30
New Orleans, LA

The Voice for Public Pensions

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Website: www.NCPERS.org • E-mail: legislative@NCPERS.org

November 9, 2018

Ms. Kelly Gottschalk
Dallas Police and Fire Pension System
4100 Harry Hines Blvd., Suite 100
Dallas, TX 75219

Re: City of Dallas oversight actuary, Texas Government Code 802.1012 requirement and other services

Ms. Gottschalk:

The City of Dallas (the "City") engaged Deloitte Consulting as the City's oversight actuary through June 30, 2024. During this time, Deloitte Consulting is engaged to perform the following services:

- Review the most recent reports issued in the Fiscal Year Ended September 30, 2018 for Dallas Police and Fire Pension System Combined Plan and Supplement Plan (the "Plan[s]") to satisfy the requirements of the Texas Government Code Section 802.1012.
- Prepare an evaluation tool for the Plan[s] that will allow the City to model various actuarial scenarios or changes in economic assumptions.
- Annually review the reports issued in Fiscal Years Ending September 30, 2019 through September 30, 2022.
- Review the most recent reports issued in the Fiscal Year Ended September 30, 2023 for the Plan[s] to satisfy the requirements of the Texas Government Code Section 802.1012.

Deloitte Consulting will be reaching out to you directly to request information necessary for their engagement and set up the necessary meetings/discussions/presentations per the requirements of Section 802.1012.

Thank you for all that you do to ensure retirement security for City of Dallas employees. I appreciate the working relationship we have and look forward to continued collaboration. Please reach out to me if you have any questions or concerns about Deloitte's work. Members of your staff may coordinate with Zaman Hemani, Senior Accountant, who may be reached at (214) 670-3407.

Sincerely,

M. Elizabeth Reich

M. Elizabeth Reich
Chief Financial Officer

cc: Sheri Kowalski, City Controller
Michael de Leon, Engagement Director, Deloitte Consulting

Texas Government Code:

Sec. 802.1012. AUDITS OF ACTUARIAL VALUATIONS, STUDIES, AND REPORTS. (a) In this section, "governmental entity" means a unit of government that is the employer of active members of a public retirement system.

(b) Except as provided by Subsection (k), this section applies only to a public retirement system with total assets the book value of which, as of the last day of the preceding fiscal year, is at least $100 million.

(c) Every five years, the actuarial valuations, studies, and reports of a public retirement system most recently prepared for the retirement system as required by Section 802.101 or other law under this title or under Title 109, Revised Statutes, must be audited by an independent actuary who:

(1) is engaged for the purpose of the audit by the governmental entity; and

(2) has the credentials required for an actuary under Section 802.101(d).

(d) Before beginning an audit under this section, the governmental entity and the independent actuary must agree in writing to maintain the confidentiality of any nonpublic information provided by the public retirement system for the audit.

(e) Before beginning an audit under this section, the independent actuary must meet with the manager of the pension fund for the public retirement system to discuss the appropriate assumptions to use in conducting the audit.

(f) Not later than the 30th day after completing the audit under Subsection (c), the independent actuary shall submit to the public retirement system for purposes of discussion and clarification a preliminary draft of the audit report that is substantially complete.

(g) The independent actuary shall:

(1) discuss the preliminary draft of the audit report with the governing body of the public retirement system; and

(2) request in writing that the retirement system, on or before the 30th day after the date of receiving the preliminary draft, submit to the independent actuary any response that the retirement system wants to accompany the final audit report.

(h) The independent actuary shall submit to the governmental entity the final audit report that includes the audit results and any response received from the public retirement system:

(1) not earlier than the 31st day after the date on which the preliminary draft is submitted to the retirement system; and

(2) not later than the 60th day after the date on which the preliminary draft is submitted to the retirement system.

(i) At the first regularly scheduled open meeting after receiving the final audit report, the governing body of the governmental entity shall:

(1) include on the posted agenda for the meeting the presentation of the audit results;

(2) present the final audit report and any response from the public retirement system; and

(3) provide printed copies of the final audit report and the response from the public retirement system for individuals attending the meeting.

(j) The governmental entity shall:

(1) maintain a copy of the final audit report at its main office for public inspection;

(2) submit a copy of the final audit report to the public retirement system and the State Pension Review Board not later than the 30th day after the date the final audit report is received by the governmental entity; and

(3) pay all costs associated with conducting the audit and preparing and distributing the report under this section.

(k) This section does not apply to the Employees Retirement System of Texas, the Teacher Retirement System of Texas, the Texas County and District Retirement System, the Texas Municipal Retirement System, or the Judicial Retirement System of Texas Plan Two.