

AGENDA



Date: August 3, 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, August 9, 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. WELCOME CHIEF FINANCIAL OFFICER

B. MOMENT OF SILENCE

C. CONSENT AGENDA

1. Approval of Minutes

Regular meeting of July 12, 2018

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

3. Approval of Estate Settlements

4. Approval of Survivor Benefits

5. Approval of Service Retirements

6. Approval of Alternate Payee Benefits

7. Approval of Payment of DROP Revocation Contributions

D. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. Meketa: Initial Fund Review

2. Lone Star Investment Advisors Extension Request and Update

3. Securities Lending Investment Guidelines

4. 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.

5. Portfolio Update

6. 2018 Mid-Year Budget Review

7. Second Quarter 2018 Financial Statements

8. 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 Eddington et al. v. DPFP et al., Degan et al. v. DPFP et al., Dan Lowe v. Michael Ebert et al. and potential claims against fiduciaries and other third party advisors, settlement offers, 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.

9. Closed Session - Board serving as Medical Committee

Discussion of the following will be closed to the public under the terms of Section 551.078 of the Texas Government Code:

Disability recall

10. Benefit Overpayment

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.

11. Board approval of Trustee education and travel

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

E. 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 PERSist (Summer 2018)
- b. Employee Service Awards
- c. Financial Audit Update

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.



DISCUSSION SHEET

ITEM #A

Topic: Welcome New Chief Financial Officer

Discussion: The Board welcomes Brenda Barnes, Chief Financial Officer.

Regular Board Meeting – Thursday, August 9, 2018



ITEM #B

MOMENT OF SILENCE

In memory of our Members and Pensioners who recently passed away

(July 4, 2018 – July 25, 2018)

NAME	ACTIVE/ RETIRED	DEPARTMENT	DATE OF DEATH
Richard L. Benton	Retired	Police	Jul. 4, 2018
Kenneth L. Parker	Retired	Fire	Jul. 9, 2018
Lawrence E. Sellers	Retired	Police	Jul. 11, 2018
Tyrone D. Andrews	Active	Police	Jul. 14, 2018
Earl J. Givens, III	Active	Police	Jul. 21, 2018
Dennis E. Page	Retired	Fire	Jul. 25, 2018

Regular Board Meeting – Thursday, August 9, 2018

**Dallas Police and Fire Pension System
Thursday, July 12, 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 8:30 a.m. William F. Quinn, Nicholas A. Merrick, Samuel L. Friar, Blaine Dickens (by phone), Ray Nixon, Gilbert A. Garcia, Frederick E. Rowe, Tina Hernandez Patterson, Robert C. Walters, Joseph P. Schutz, Kneeland Youngblood

Absent: None

Staff

Kelly Gottschalk, Josh Mond, Kent F. Custer, John Holt, Damion Hervey, Cynthia Thomas, Ryan Wagner, Milissa Romero, Greg Irlbeck, Linda Rickley, Aimee Crews, Patricia Wiley

Others

Chuck Campbell, Sheila Asher, Eileen Fortis (by phone), Leandro Festino, Ron Pastore, Alexandra Wallace, Aaron Lally, Janis Elliston, David Elliston, Rick Salinas, Darryl Wachsman, Zaman Hemani

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

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A. WELCOME CHIEF INVESTMENT OFFICER

The Board welcomed Kent F. Custer, Chief Investment Officer.

No motion was made.

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**Regular Board Meeting
Thursday, July 12, 2018**

B. MOMENT OF SILENCE

The Board observed a moment of silence in memory of retired police officers Claude T. Cook, Gerald W. Owen, and retired firefighters Hugh R. Craft, Fred Wallin.

No motion was made.

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C. CONSENT AGENDA

1. Approval of Minutes

Regular meeting of June 14, 2018

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

3. Approval of Estate Settlements

4. Approval of Survivor Benefits

5. Approval of Service Retirements

6. Approval of Alternate Payee Benefits

7. Approval of Earnings Test

8. Approval of Payment of DROP Revocation Contributions

After discussion, Mr. Garcia made a motion to approve the minutes of the meeting of June 14, 2018. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

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

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**Regular Board Meeting
Thursday, July 12, 2018**

D. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. Securities Lending

After a review of the securities lending program at the May 10, 2018 meeting, the Board requested the topic be placed on a future agenda item for further discussion and to address a few remaining questions. Staff and representatives from Meketa and JPMorgan facilitated discussion and provided a further review of certain aspects of the securities lending program per the Board's request.

Sheila Asher, Vice President - Custody and Fund Services, and Eileen Fortis, Vice President – Securities Lending, of JP Morgan, and Leandro Festino, of Meketa Investment Group, DPF's investment consultant, participated in the discussion.

No motion was made.

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2. Fiduciary Minimum Educational Training (MET)

Ms. Gottschalk stated that Section 801.2011 of the Texas Government Code requires trustees and pension administrators (Executive Director) of public pension systems to meet minimum educational training requirements.

Chuck Campbell, of Jackson Walker, DPF's outside attorney, conducted the fiduciary training from 8:51 a.m. to 9:51 a.m. The fiduciary training is counted as 1 credit hour toward the MET.

No motion was made.

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3. Camel Square proposed rezoning

Ron Pastore, Senior Portfolio Manager – AEW, was present.

The Board went into a closed executive session – real estate at 9:55 a.m.

The meeting was reopened at 10:47 a.m.

**Regular Board Meeting
Thursday, July 12, 2018**

3. Camel Square proposed rezoning (continued)

After discussion, Mr. Walters made a motion to authorize AEW to seek rezoning of Camel Square, subject to the approval of the Executive Director. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

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4. Meketa onboarding update

Meketa representatives Leandro Festino, Managing Principal, Alexandra Wallace, Principal, and Aaron Lally, Executive Vice President, provided an update on their onboarding progress to date, as well as discussed the expected timeline going forward to address their Initial Fund Review and asset allocation recommendations.

No motion was made.

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5. Investment Advisory Committee

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

The meeting was reopened at 11:09 a.m.

The Board discussed recommendations for the members of the Investment Advisory Committee.

No motion was made.

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6. 2017 Financial Audit Status

Ms. Gottschalk gave an update to the Board on the status of the 2017 financial statement audit.

No motion was made.

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**Regular Board Meeting
Thursday, July 12, 2018**

7. Board approval of Trustee education and travel

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

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8. Hardship Requests from DROP Members

No discussion was held, and no motion was made regarding hardship requests from DROP members.

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9. Legal issues

- a. Claims against fiduciaries and other third-party advisors
- b. Pay lawsuits settlement
- c. Eddington, et al. v. DFPF, et al.

The Board went into a closed executive session – legal at 11:19 a.m.

The meeting was reopened at 12:23 p.m.

Staff noted that the legal agenda item would change so that only items requiring action would be noted.

No motion was made.

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Mr. Dickens left the meeting at 11:25 a.m.

Mr. Rowe left the meeting at 11:30 a.m.

Mr. Garcia left the meeting at 12:05 p.m.

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**Regular Board Meeting
Thursday, July 12, 2018**

10. October 2018 Board Meeting

Ms. Gottschalk stated that the Supreme Court hearing date for the Eddington case has been set for October 11, 2018 at 9:00 a.m. in Austin. October 11, 2018 is a scheduled Board meeting date; the Executive Director and General Counsel will be attending the hearing in Austin.

The consensus of the Board was to change the October regular Board meeting date to Wednesday, October 10, 2018, with a start time of 8:30 a.m.

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E. BRIEFING ITEMS

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

The Board received a member comment during the open forum.

No motion was made.

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2. Executive Director's report

- Associations' newsletters
- NCPERS Monitor (July 2018)

The Executive Director's report was presented. No motion was made.

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**Regular Board Meeting
Thursday, July 12, 2018**

Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Nixon and a second by Mr. Merrick, the meeting was adjourned at 12:24 p.m.

William F. Quinn
Chairman

ATTEST:

Kelly Gottschalk
Secretary

DRAFT



DISCUSSION SHEET

ITEM #D1

Topic: **Meketa: Initial Fund Review**

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

Discussion: DPFP's new investment consultant, Meketa Investment Group, will present the results of their initial fund review. Major topics of this review include Investment Philosophy, Governance, Asset Allocation, and Operations. Action items are identified to address areas of potential improvement and are prioritized based on the expected implementation timeframe. Meketa is expected to highlight key observations and discuss the proposed action items. DPFP Staff concurs with the action plan.

Staff Recommendation: Staff seeks Board feedback and direction on the proposed action plan.

Regular Board Meeting – Thursday, August 9, 2018

Dallas Police and Fire Pension System
Initial Fund Review

1. Executive Summary

Introduction

Recommendations Summary

2. Overview

Meketa Investment Group's Investment Philosophy

3. Fund Governance

Investment Policy Statement

Investment Manager Guidelines

4. Asset Allocation & Portfolio Construction

Asset Allocation Policy

Equity

Fixed Income

Real Assets

Legacy Assets

5. Operations

Custody Services

Transition Management

Securities Lending

Expenses

Investment Manager Fees

Custodian Fees

6. Summary of Action Items



Executive Summary

Introduction

Meketa Investment Group's initial review of the Dallas Police and Fire Pension System ("DPFP") is designed to achieve the following objectives:

- Develop an action plan for the DPFP, including the priority level for each project.
- Identify the major components and characteristics essential to the long-term success of the DPFP;
- Describe these components and provide their present status for the DPFP;

With the initial review, we seek to identify areas of potential improvement for the DPFP's structure, efficiency, and performance. This document serves as a platform from which we plan to address and discuss these issues.

We have assigned each action item with a priority of *one* through *three*, as detailed in the table below. Priorities can be adjusted based on feedback provided by the Board.

Priority	Implementation Timeframe
One	Within 6 months
Two	Within 6 - 18 months
Three	Within 18 - 36 months

While we do not view these parameters as rigid, they do represent, based on our experience, a reasonable timeframe for the Board to make thoughtful decisions on the future course of the DPFP.

Priority One

	Category	Item	Observation and Recommended Action	Expected Timeframe
1.a	Portfolio Construction	Asset Allocation	<p>Observation: The current policy is prudent (in isolation) to theoretically deliver a long term 7.25% return but is not reflective of the current position DPFPP is in.</p> <p>Recommended Action: We plan to present a comprehensive asset allocation analysis at the next board meeting in September.</p>	Begin September 2018
1.b	Governance	Investment Policy Statement	<p>Observation: Existing version is comprehensive and reasonable.</p> <p>Recommended Action: We suggest incorporating revisions in a few sections to ensure it is in-line with industry best practices, as well as updating it with the new asset allocation, if approved by the Board later this year.</p>	Finalize prior to year-end, once the asset allocation study is concluded.
1.c	Fixed Income	Safety Reserve	<p>Observation: DPFPP recently approved a 15% target for a Safety Reserve® portfolio designed to support ongoing DPFPP expenses and benefit payments for the next 2.5 years (estimated at \$315 million) without needing to liquidate any other assets at potentially inopportune time/price during a market correction.</p> <p>Recommended Action: We recommend implementing formal rebalancing procedures that are structured but not too restrictive.</p>	Finalize prior to year-end
1.d	Real Estate	Non-Legacy Real Estate	<p>Observation: DPFPP's real estate portfolio is a compilation of individual properties and joint ventures purchased directly by the pension system over many years. DPFPP has no traditional "core" RE fund exposure with liquidity.</p> <p>Recommended Action: Continue to work with the external real estate managers/advisors to prudently exit the individual holdings.</p>	In process



Priority One (continued)

	Category	Item	Observation and Recommended Action	Expected Timeframe
1.e	Legacy Assets	Legacy Asset Exits	<p>Observation: There is no magic answer to exiting many of these investments. When seeking to sell illiquid, non-performing investments on the secondary market, sellers must frequently strive for a balance between exit speed and exit price.</p> <p>Recommended Action: Continue to find ways to exit the legacy portfolio at fair market values, with the help of secondary market brokers where appropriate.</p>	In process
1.f	Operations	Transition Management	<p>Observation: DFPF approved engaging with Russell to provide transition management services. The contract is still pending.</p> <p>Recommended Action: Execute the contract as soon as terms are agreed upon. Longer term (next 2-3 years) consider hiring a panel of firms to solicit bids from when a transition event occurs.</p>	3Q18
1.g	Operations	Securities Lending	<p>Observation: The collateral pool guidelines for the securities lending program have not been updated in 15 years.</p> <p>Recommended Action: The Board instructed Staff and Meketa to prepare amended guidelines for discussion at the next board meeting.</p>	In process
1.h	Operations	Manager Fees	<p>Observation: The fee schedules for most public markets managers are better than median; however, there are always opportunities for improvement.</p> <p>Recommended Action: Revisit fees and terms across all providers, seeking improvements and savings.</p>	In process

Priority Two

	Category	Item	Observation and Recommended Action	Expected Timeframe
2.a	Governance	Manager Guidelines	<p>Observation: DPFP has seven separately managed accounts. Each manager has customized investment guidelines</p> <p>Recommended Action: Broadly, the current guidelines are suitable but there could be more consistency across strategies. Most guidelines have not been updated since strategy inception. In the next twelve months, we recommend working with the managers to implement consistent (or more similar) guidelines across strategies with similar mandates (e.g. global equities).</p>	Before end of 2019
2.b	Equities	Global Public Equities	<p>Observation: DPFP is invested across four global equity mandates in roughly equal weights. Based on our preliminary analysis we are pleased with how the strategies complement one another. Correlations between the strategies and position overlap have both been generally low.</p> <p>Recommended Action: OFI Global equity has been one of the best performing strategies, but the portfolio manager is retiring in early 2019. We view this as a significant event requiring a reevaluation and new underwriting of the strategy.</p>	1H 2019
2.c	Equities/Fixed Income	Active vs. Passive	<p>Observation: DPFP does not have any passive (index) managers on its roster.</p> <p>Recommended Action: At a future meeting, we would like to discuss the pros and cons of adding passive exposure to the DPFP, particularly in efficient asset classes.</p>	2019 – After completion of Asset Allocation
2.d	Equities	Emerging Market Equities	<p>Observation: DPFP has one dedicated emerging markets strategy and current exposure is only half of target weight.</p> <p>Recommended Action: Depending on the outcome of the asset allocation review, it may be prudent to deploy additional capital to emerging markets. We typically recommend an overweight to emerging markets equities. This may trigger a manager search.</p>	2019 – After completion of Asset Allocation



Priority Two (continued)

	Category	Item	Observation and Recommended Action	Expected Timeframe
2.e	Fixed Income	Global Bonds	<p>Observation: DPFP has 3% weight to Brandywine Global Fixed Income. We have a high opinion of Brandywine, but we debate the merits of investing in foreign investment grade fixed income when most of the developed world (ex U.S.) is still in an environment of negative (or very low) real yields.</p> <p>Recommended Action: During the asset allocation review, determine if there is a role for a global bonds strategy in DPFP.</p>	2019 – After completion of Asset Allocation
2.f	Fixed Income	TIPS	<p>Observation: DPFP does not have a dedicated allocation to TIPS.</p> <p>Recommended Action: Meketa Investment Group recommends that most plans allocate a portion of their investment grade bond allocation to TIPS. This could be as part of the Safety Reserve portfolio, or outside of it.</p> <p>We will show asset allocation policies with (and without) dedicated allocations to TIPS as part of the asset allocation review process. If the Board approves a policy inclusive of TIPS, we typically recommend using an index fund.</p>	2019 – After completion of Asset Allocation
2.g	Natural Resources	Agriculture	<p>Observation: DPFP has a large SMA with Hancock that invests in variety of row crops and permanent crops. The exposure is larger than we typically recommend for our clients. We agree with the Board/Staff's decision to reduce the position. We also agree with the decision to eliminate the timber exposure.</p> <p>Recommended Action: During the asset, allocation review we will see what role agriculture could serve for DPFP. We view the possible exit from DPFP's minority interest in the Australian macadamia fund as a positive.</p>	2019 – After completion of Asset Allocation



Priority Three

	Category	Item	Observation and Recommended Action	Expected Timeframe
3.a	Infrastructure	Core-Infrastructure	<p>Observation: DPFP has no core infrastructure. Current exposure consists of two legacy Asian infrastructure funds, and one global maritime fund. The maritime fund should be entering distribution phase soon, and the Asia funds have been seeking liquidation options for the last year.</p> <p>Recommended Action: No additional exposure suggested at this time but if/when distributions come back it may be appropriate to look at core open-end funds with quarterly liquidity.</p>	2020-2021
3.b	Operations	Custody Services	<p>Observation: DPFP pays J.P. Morgan approximately \$250,000 per year for custody services. These fees are reasonable given the services provided and the size and complexity of DPFP.</p> <p>Recommended Action: Sometime in the next few years, we recommend a full review of the services provided by J.P. Morgan. There are only a few eligible providers for DPFP to consider if there was a desire to switch to a new custodian bank.</p>	2020-2021
3.c	Operations	Securities Lending	<p>Observation: Revenue from securities lending has decreased the past few years relative to historic levels.</p> <p>Recommended Action: If the Board decides to continue the securities lending program under the revised guidelines, we recommend revisiting the decision in two to three years to see how much income has been earned.</p>	2020-2021



No Action Needed

Category	Item	Observation and Comments
Private Equity	Non-Legacy Private Equity	Observation: Industry Ventures is an acceptable strategy. We have no objection to maintaining DPFP's investment in the fund but it may be worthwhile to seek to pair the investment with some of the legacy private equity funds and sell DPFP's interest as a package. We do not recommend making any new commitments until the majority of the illiquid legacy assets are liquidated.
Fixed Income	High Yield	Observation: Provided the outcome of the asset allocation results in a dedicated high yield target allocation, we see no need to hire/change the exposure within high yield. The Loomis Sayles High Yield strategy's long-term performance is quite strong in both relative and absolute terms, but has taken on more risk to achieve that track record.
Fixed Income	Bank Loans	Observation: DPFP has a 6% target to bank loans. Currently, DPFP has two bank loan managers, Loomis Sayles Senior Rate and Pacific Asset Management Corporate Bank Loan strategy. While they are highly correlated to one another (0.9), their excess return correlation has been quite low (-0.5), indicating complementary exposure.
Fixed Income	Emerging Market Debt	Observation: We agree with the decision to allocate to a blended currency mandate where the manager can allocate opportunistically between local and external currency debt. We believe EMD exposure is appropriate for long-term portfolios.
Private Debt	Non-Legacy Private Debt	Observation: DPFP has roughly \$10 million invested across two private debt funds. The majority of the exposure is in a relatively new investment (Riverstone). A small piece remains in the tail-end portion of a troubled pre-GFC fund (Highland). We do not recommend making any new commitments to private debt at this time.



Summary Observations

- **Overall:** We were pleased with our findings. Outside of known issues discussed in prior meetings (illiquidity, legacy assets, etc.) we did not find any material red flag items.
- DPFP has already taken many steps to rectify the mistakes of the past.
- The new Board and Staff are committed to turn DPFP back into a healthy pension plan. However, many factors along that journey are unknowable in advance and outside of the control of any of the individuals involved (e.g. capital markets, success/failure of exiting some legacy investments).
- Summary observations of the key plan components:
 - **Governance:** The IPS is comprehensive and well designed with only minor edits suggested.
 - **Asset Allocation:** Will be addressed in the immediate future.
 - **Public Markets Managers:** DPFP is invested with institutional quality firms. Some changes might be warranted depending on asset allocation, but no immediate action is necessary.
 - **Legacy Assets:** The exit process is underway but may be challenging. A balance between exit price and exit speed will need to be evaluated along the way.
 - **Fees:** DPFP pays reasonable fees for public markets, custodian, and consultant. Private market fees will come down as strategies are liquidated.
 - **Operations:** Nothing material with custodian, securities lending, or transition management, but a few housekeeping items to be addressed in the next few months.

Concluding thought: DPFP is headed in the right direction. The pain of mistakes from past administration will take many years to unwind, but the new leadership understands the challenges and is acting appropriately.



Overview

Meketa Investment Group's Investment Philosophy

- Focus on strategic advice (i.e., a long-term approach to investing)
- Treat asset allocation as the primary determinant of an investor's performance
- Diversify very broadly to protect against a wide variety of risks
- Avoid unnecessary risks
- Invest primarily in generative assets
- Be skeptical regarding new investment strategies or fads
- Create efficient, cost-effective portfolios
- Use best-in-class managers
- Minimize fees and other expenses



Fund Governance

Investment Policy Statement

An Investment Policy Statement (“IPS”) represents one of the most important governance tools for an investment plan. It serves to identify and formalize the objectives and constraints governing the funds and to establish guidelines for the implementation of investment strategy.

A well-developed IPS thoughtfully merges client-specific goals with the realities of the capital markets. The IPS should be long-term and stable in nature, and should focus on core fund-level policy issues.

Dallas Police and Fire Pension System Status:

The current Investment Policy Statement was most recently amended within the last year (December 14, 2017).

The IPS is comprehensive and contains eight sections plus appendices: 1) Introduction and Purpose; 2) Design, Goals, and Objectives; 3) Standards of Conduct and Fiduciary Responsibility; 4) Core Beliefs and Long-Range Acknowledgments; 5) Roles and Responsibilities; 6) Authorized Asset Classes and Investment Guidelines; 7) Investment Due Diligence and Monitoring; and 8) Risk Management.

At the May 10, 2018 Board Meeting, the Board approved changes to the asset allocation that are not yet included in the current IPS, including creation of a Safety Reserve portfolio and full liquidation of the Global Asset Allocation (“GAA”) asset class.

Recommendation:

While an Investment Policy Statement should be customized to the needs of an individual retirement system, certain key sections and areas of focus should be included in all Investment Policy Statements. We suggest incorporating minor revisions in a few sections to ensure it is in-line with industry best practices. Any changes to the asset allocation should be incorporated after the full review is completed in 2018.

Priority: One



Investment Policy Statement (Continued)

Initial assessment of the Investment Policy Statement amended on December 14, 2017:

Consistent with Industry Best Practices	Potential Areas for Improvement
Section 1 – Purpose of IPS is clear/concise	Section 2.A – Consider listing the actuarial target
Section 3 – Standards of conduct and Fiduciary Responsibility are clear/concise and applied to appropriate parties	Section 2 – Consider more explicitly listing the constraints that must be considered when seeking to meet the return goals. CFA guidance recommends acknowledging liquidity, time horizon, taxes, and any legal/regulatory limitations.
Section 4.b – Acknowledgment that long term strategic asset allocation drives return and risk	Section 5.A.7 – Direct portfolio leverage is not a commonly used tool by the majority of public pension plans and might not be appropriate for DPFP.
Section 4.c – Acknowledgment that potential alpha from active management is asset class dependent	Section 6.A.2 – The rebalancing policy language could be improved with more structure and explicit guidelines.
Section 5 – Roles/responsibilities are clear/explicit and consistent with industry norms	Section 6.B.8 – Trade finance and reinsurance based strategies may not be appropriate for DPFP at this time. We recommend updating the list of authorized investments by removing any investments not included in the asset allocation.
Section 5.a – Board of Trustees are fiduciaries	Section 7.B.1.a - Include language about asset class evaluation relative to benchmarks (not just peers) and consider lengthening the evaluation period from 3 to 5 years
Section 5.A.8 – Board reviews/approves IPS annually or more frequent	Appendix A – Recommend removing the ability to use plan level leverage (currently listed with allowable range up to 15%)
Section 5.C.2 – Staff does annual review of all external manager fees	Appendix A – Recommend more symmetrical bands around targets (e.g. global equity has a target of 20% but a range of 10%-23%)
Section 5.D – Requirement for consultant to be a fiduciary	Appendix A – Consider adding the actual expected return and expected standard deviation of the identified target allocation
Section 5.E – Requirement for managers to be fiduciaries	
Section 6.A.2 – Rebalancing policy is included with the acknowledgment of trading costs	
Appendix A – Asset class targets, ranges, and benchmarks are listed in appendix	



Investment Manager Guidelines

Investment Manager Guidelines (“Guidelines”) formally outline the roles, constraints, and objectives of the DPFP’s investment managers. They ensure that the Board and the managers understand the scopes of the assignments and the restrictions under which the managers are operating.

Investment Manager Guidelines should clearly define the role of each manager and the area(s) of the capital markets in which that manager is expected to operate. In addition, the Guidelines should provide a comprehensive list of constraints placed upon the portfolio, such as limitations on individual positions or industry sectors. The guidelines should state the performance benchmarks and time periods used for evaluation. Finally, the guidelines should include the required level of reporting and communication with the Board.

Dallas Police and Fire Pension System Status:

DPFP has seven strategies that are held in separately managed accounts. Three of the seven applicable accounts are fixed income strategies and four are global equity strategies. We are pleased to see each investment management agreement includes a customized, manager-specific set of guidelines.

All other strategies are in Fund structures that do not allow for customized investment guidelines.

Investment Manager Guidelines (Continued)

Manager	Asset Class	Approval Date
OFI Global Institutional	Equities	2007
Walter Scott	Equities	2009
Manulife	Equities	2016
Boston Partners	Equities	2016
Loomis Sayles High Yield	Fixed Income	2000
Brandywine	Fixed Income	2004
IR+M	Fixed Income	2016

Recommendation:

Broadly, the current guidelines are suitable and cover the majority of expected criteria, but there could be more consistency across strategies (specifically the global equity strategies). For example, OFI and Boston Partners' guidelines include a maximum allowed position size of 5% of market value, but Walter Scott and Manulife have a 10% maximum. OFI and Walter Scott have no country or region limitations, while Manulife has country weight maximums and Boston Partners has a requirement to invest at least 80% of the exposure in developed countries.

In the next twelve months, we recommend working with the managers to implement consistent (or more similar) guidelines across strategies with similar mandates (e.g. global equities).

Priority: Two



Asset Allocation & Portfolio Construction

Asset Allocation Policy

Asset Allocation Policy

The primary determinant of the long-term return and risk for an investment plan is its asset allocation. Various asset classes (e.g., equity, fixed income, real estate) exhibit unique risk and return behavior, with varying levels of correlation to each other. By appropriately combining asset classes, an investor can moderate risk and create a multi-asset portfolio tailored to a unique set of objectives.

The Asset Allocation Policy (“Policy”) should reflect the return and risk objectives of the plan, which is dictated by expectations for capital market behavior. An explicit Asset Allocation Policy ensures that the primary determinants of return and risk are identified and monitored at an aggregate level. The Policy is typically expressed as percentage allocation targets for each asset class, including the ranges around which the allocations may vary without requiring rebalancing.

Asset allocation should represent a coordinated approach between the DPFP, its consultant and investment managers. Typically, the Asset Allocation Policy is incorporated as an Appendix to an Investment Policy Statement.

Dallas Police and Fire Pension System Status:

The current Asset Allocation Policy is outlined in Appendix A of the IPS. The Policy has explicit target allocations, ranges, and benchmarks for each asset class. While the stated goal of the DPFP is to “earn a long-term, net of fees investment return greater than the actuarial return assumption,” neither the assumed actuarial return nor the expected return of the Asset Allocation Policy is included in the IPS.

The current policy is prudent (in isolation) to theoretically deliver a long term 7.25% return but is not reflective of the current position DPFP is in and is unlikely to be reached for several years until the vast majority of the legacy assets are exited.

DPFP has an explicit rebalancing strategy, but it is not strict (e.g., DPFP must reallocate back to target allocation upon breach of the upper or lower bounds on the ranges). The Policy gives Staff the flexibility to address required rebalancing in concert with other considerations.



Current Asset Allocation Policy¹

The following table displays the DFPF's current long-term Asset Allocation Policy, as defined in the DFPF's Investment Policy Statement, and the expected pro-forma portfolio exposure after the termination of the GAA portfolios.

	Pro-Forma Current Exposure ² (%)	Current Policy (%)
Equities	23	30
Global Public Equity	21	20
Emerging Market Equity	2	5
Private Equity	0	5
Fixed Income and Safety Reserve	29	35
Safety Reserve - Cash	3	2
Safety Reserve – Short Term Core Bonds	12	2
Global Bonds	3	3
High Yield Bonds	4	5
Bank Loans	5	6
Structured Credit and Absolute Return	0	6
Emerging Market Bonds	1	6
Private Debt	1	5

¹ Statistics are calculated using mean-variance optimization (MVO) software, and are based on Meketa Investment Group's 2018 Asset Study. For the legacy assets, we modeled an expected return of 0% but a standard deviation of 25% (our same standard deviation assumption for opportunistic real estate/private equity). Legacy assets were assumed to be uncorrelated to other asset classes for this analysis.

² As modeled for May 10th Board Meeting.



Current Asset Allocation Policy¹ (continued)

	Pro-Forma Current Exposure ² (%)	Current Policy (%)
Real Assets	23	25
Natural Resources	10	5
Infrastructure	2	5
Private Real Estate	11	12
Liquid Real Assets	0	3
Global Asset Allocation	0	10
Risk Parity	0	5
GTAA	0	3
Absolute Return	0	2
Legacy Assets	25	0
Expected Return (20 years)	5.2	7.3
Standard Deviation	10.7	12.7
Probability of Achieving 7.25% over 20 Years	19	51

Recommendation:

Meketa Investment Group plans to present a comprehensive asset allocation analysis at the next board meeting. We will show alternative asset mixes and conduct a thorough risk analysis on each.

Priority: One

¹ Statistics are calculated using mean-variance optimization (MVO) software, and are based on Meketa Investment Group's 2018 Asset Study. For the legacy assets, we modeled an expected return of 0% but a standard deviation of 25% (our same standard deviation assumption for opportunistic real estate/private equity). Legacy assets were assumed to be uncorrelated to other asset classes for this analysis.

² As modeled for May 10th Board Meeting.



Equity

Global Public Equity

Global equity mandates allow domestic and international companies to directly compete for investor capital, much like they do in the business world. The potential benefits of a global equity mandate can only be realized if managers can be identified who have the experience, the skill set and the resources necessary to analyze and compare companies across the globe. Fortunately, advancements in the availability and flow of information in recent years have made it less important to have investors “on the ground” in each individual country. This has made it more feasible for one manager or investment team to effectively cover a global universe. This has significantly expanded the number of firms that have the ability to execute a true global equity portfolio.

In addition to the risks inherent in international equity investing, global mandates introduce their own unique considerations. For example, DPFP cedes the asset allocation decision (the domestic/international equity weighting) within the global equity portfolio to the investment manager. Generally Meketa Investment Group recommends overweight to small cap equities and emerging market equities.

Dallas Police and Fire Pension System Status:

DPFP currently uses a global approach to public equities. The Pension System has approximately \$437 million¹ (21% of DPFP) invested across four global mandates. Position sizing is roughly equal across all four, presumably by design. Two strategies (Boston Partners and Manulife) have a value tilt and the other two (OFI and Walter Scott) have a growth tilt.

A summary of DPFP’s exposure and Meketa’s thoughts on each strategy is listed below and on the following pages.

¹ As of March 31, 2018.



Global Public Equity (continued)

Strategy	DPFP exposure	MIG clients in Same Strategy	Last Meeting	Summary
Boston Partners Global Equity	\$107.6 mm --- 5.2%	2 clients with total assets of \$131 mm	June 2017	Boston Partners utilizes a well-defined, systematic investment process predicated on managing portfolios of companies that have 1) strong fundamentals, 2) positive business momentum, and 3) cheap valuations.
Manulife Global Equity	\$111.1 mm --- 5.3%	Only DPFP	Upcoming: August 2018	Manulife's global equity team executes a bottom-up, quality-oriented investment approach and manages a concentrated portfolio of 40-80 stocks.
OFI Global Equity	\$108.6 mm --- 5.2%	Only DPFP	May 2018	OFI's global equity team, led by portfolio manager Rajeev Bhaman (who is retiring in early 2019), seeks to invest in companies with significant long-term structural growth opportunities. Mr. Bhaman's retirement may trigger the need for a replacement strategy.
Walter Scott Global Equity	\$110.1 mm --- 5.3%	6 clients with total assets of \$422 mm	March 2018	Walter Scott employs a deep, seasoned investment team that utilizes a consistent, long-term, absolute return-oriented investment approach.

Global Public Equity (continued)

Recommendation:

When making an allocation to global equities, it is important that the total exposure is allocated to a variety of regions, countries, and industries, to ensure appropriate diversification. We support the decision to use global mandates and specifically strategies that primarily focus on developed markets with separate strategy(ies) used for emerging markets.

Going forward the key determinate of the success of the program will be the weighting and composition of the individual mandates.

Based on our preliminary analysis we are pleased with how the strategies complement one another. Correlations between the strategies and position overlap have both been generally low. The total active share of the combined portfolio (proportion of exposure that is different from the benchmark) is approximately 71%, indicating reasonably good active positioning.

The following pages provide some analysis on the overlap, correlation among the four strategies, return history, market cap breakdown and regional breakdown.

At this point, the only potential changes we envision is possibly substituting a new strategy for OFI global once the lead portfolio manager retires in early 2019 and finding ways to increase small cap and emerging market exposure.

Priority: Two



Global Equity - Excess Return Correlation Matrix¹

Common Period (1/2010 – 6/2018)	Boston Partners	OFI	Manulife	Walter Scott
Boston Partners	1.00			
OFI	0.17	1.00		
Manulife	0.25	-0.18	1.00	
Walter Scott	-0.13	-0.12	0.38	1.00

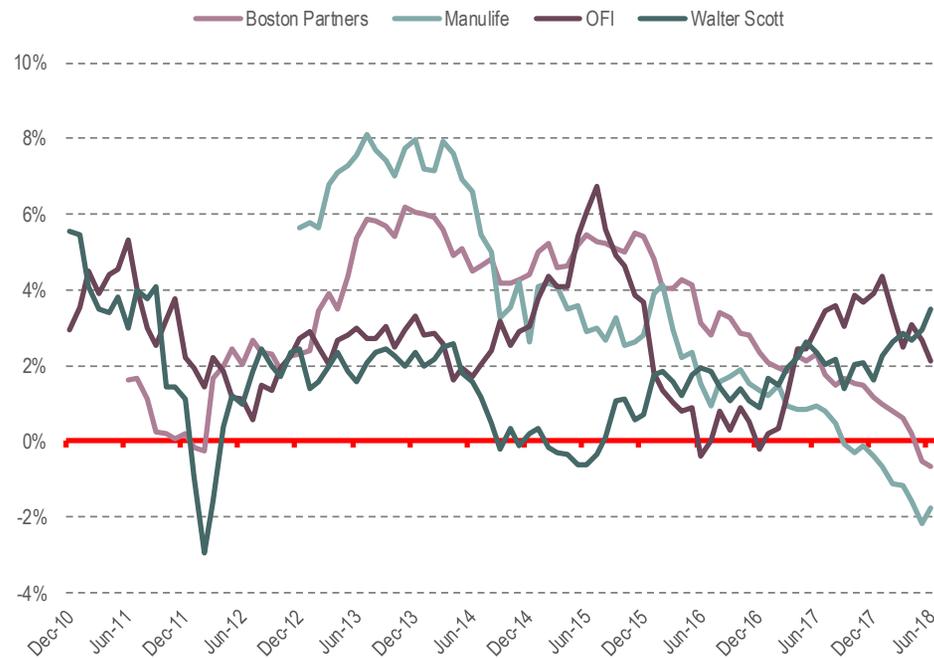
- The average monthly excess return correlation for the roster is 0.18.
- The largest degree of co-movement can be observed between Manulife and Walter Scott.
- The least correlated pair has been Manulife and OFI.

¹ Gross of fees vs MSCI ACWI IMI Index, strategy composite returns (eVestment)



Global Equity - Rolling Three Year Excess Returns¹

As of June 30, 2018



- Despite recent underperformance by Boston Partners and Manulife (on a rolling three year basis), all four strategies have consistently delivered excess returns above the MSCI ACWI IMI Index
- The benefit of non-correlated strategies is best observed by looking at the historical return comparison of Manulife and OFI over the 2014-2015 period.

¹ Gross of fees vs MSCI ACWI IMI Index, strategy composite returns (eVestment)



Global Equity - Quarterly Excess Returns

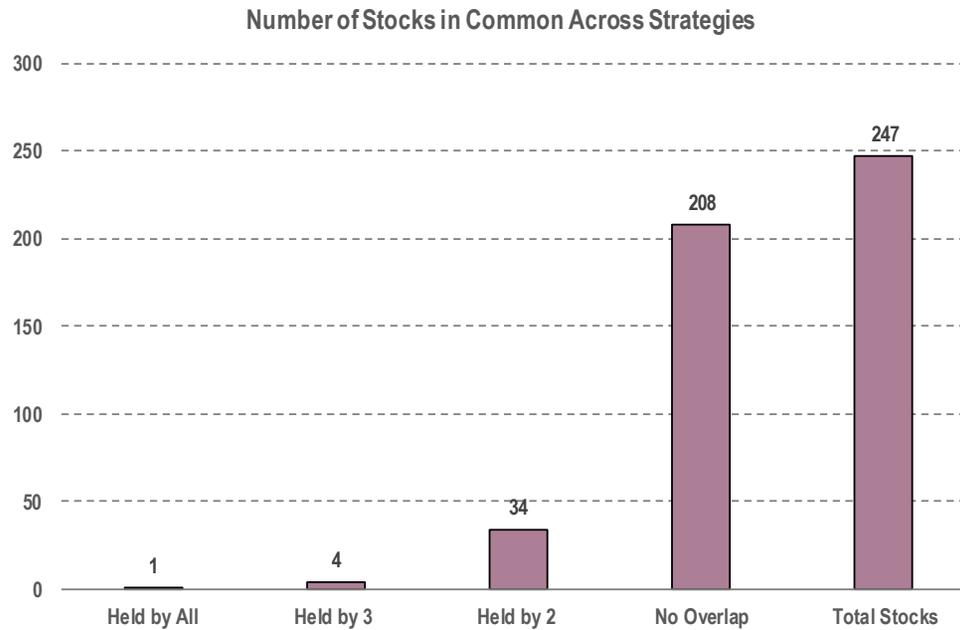
As of June 30, 2018



- In aggregate, the total global equity program has added value over the MSCI ACWI IMI Index over the past five years.



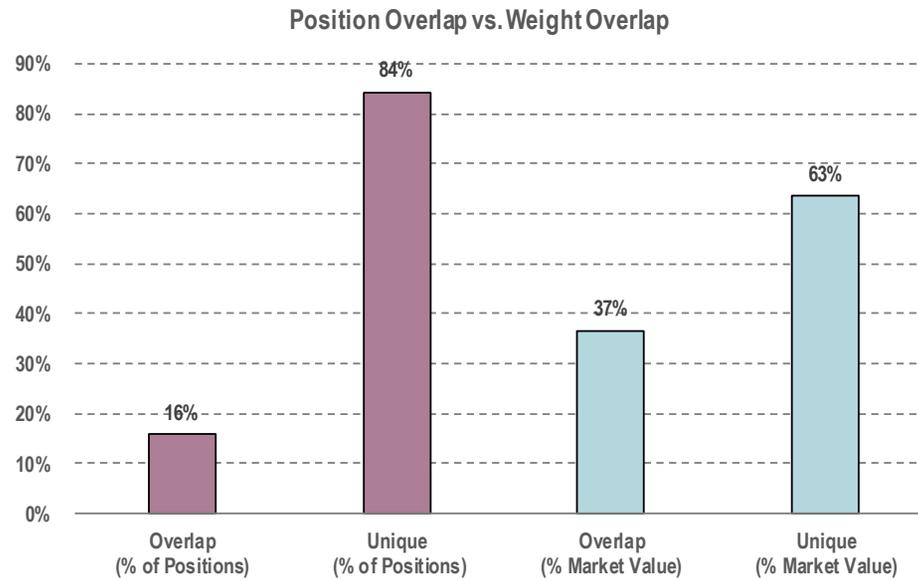
Global Equity – Holdings Overlap



- Only one position is held in common across all four global equity strategies (Roche Holding).
- Four positions are held in common across three strategies (Alphabet, Cisco, Microsoft, and Oracle).
- 208 of the total 247 positions are unique holdings to just a single manager.



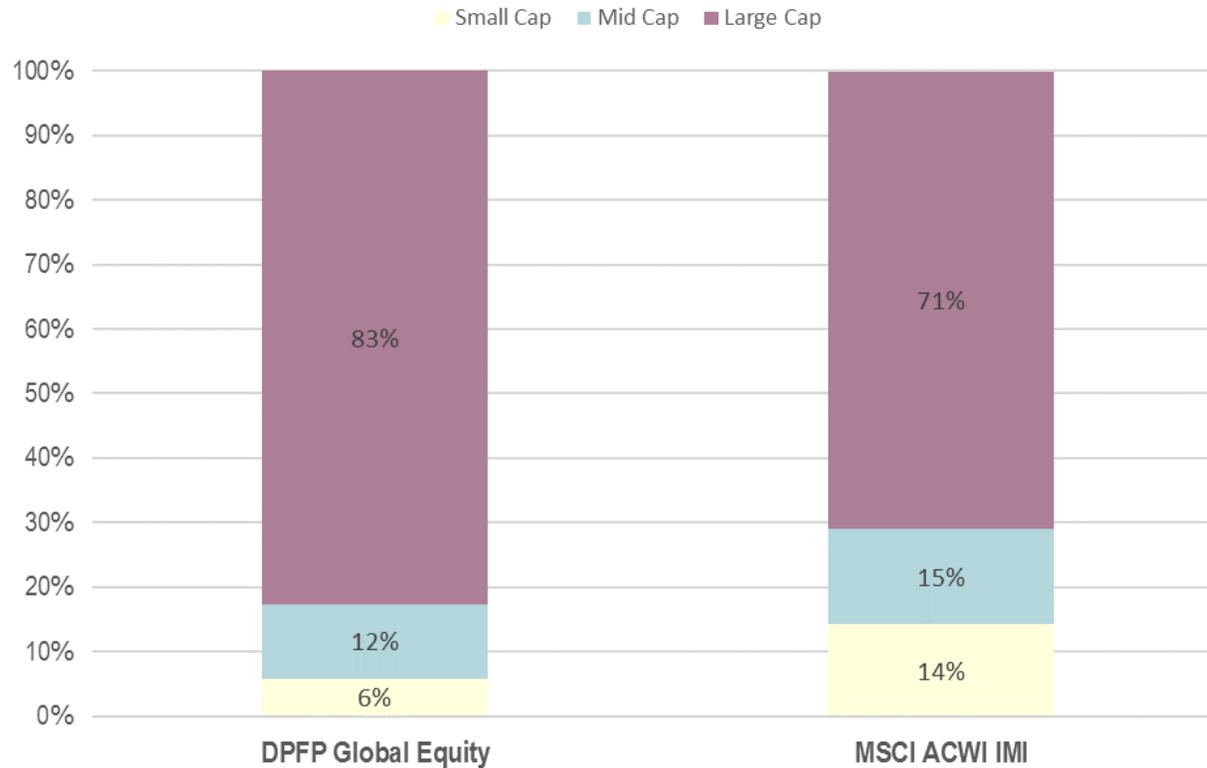
Global Equity – Holdings Overlap (continued)



- While just 16% of the total number of stocks overlap, those positions represent 37% of the total market value.



Global Equity – Market Cap Exposure

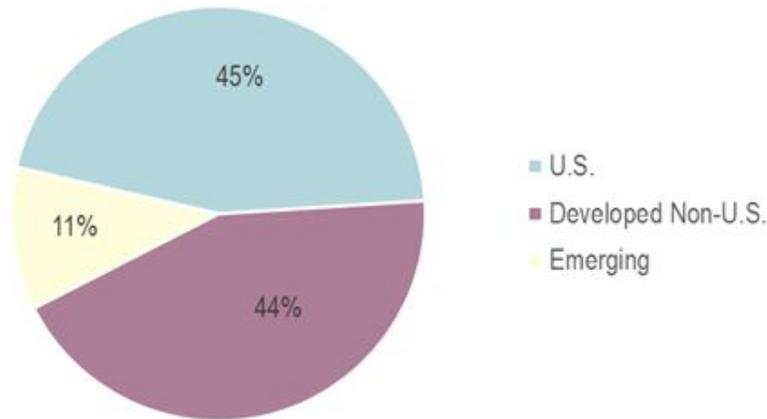


- Relative to the broad MSCI ACWI IMI Index, the global equity program has an overweight to large cap stocks, and underweight to small cap stocks. Meketa Investment Group typically prefers a slight overweight to small cap stocks.

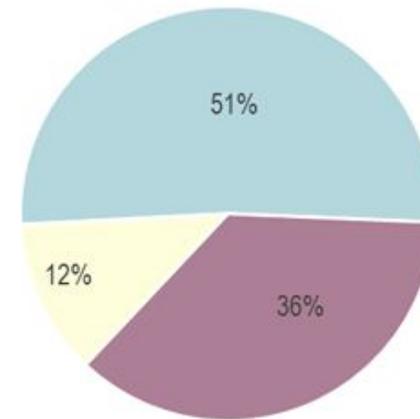


All Equity Managers (inclusive of RBC) – Regional Breakdown¹

DPFP: All Five Equity Managers



MSCI ACWI IMI



- The total global equity program (inclusive of RBC Emerging Market equity strategy) has similar emerging market exposure to the MSCI ACWI IMI Index and a slight underweight to U.S. equity.
- If you exclude RBC, the total emerging market exposure is quite low. Boston Partners has the highest weight at just 4%.
- As noted in the Emerging Market Equity section of this report, Meketa Investment Group typically recommends an overweight to emerging markets.

¹ As of March 31, 2018, inclusive of all five equity managers.



Boston Partners Global Equity

Description

- Boston Partners Global Investors was founded in 1995 and is headquartered in New York. Boston Partners is a wholly-owned subsidiary of ORIX Corporation, a Japanese financial services company. The firm had \$97 billion in assets as of March 2018, with \$7.7 billion in the Global Equity strategy.
- Co-CEO and Chief Investment Officer, Joseph Feeny, who has worked at Boston Partners since 1995 and has 33 years of investment experience, leads the investment team. Mr. Feeny is supported by co-portfolio managers, Christopher Hart and Joshua Jones, who are responsible for day-to-day management of the Global Equity strategy, and a deep analyst team.
- Boston Partners believes that low valuation stocks outperform high valuation stocks, companies with strong fundamentals outperform companies with weak fundamentals, and stocks with positive business momentum outperform stocks with negative business momentum. Boston Partners builds a global equity portfolio of 70 to 135 stocks diversified across sector, region, and market capitalization, with turnover around 75% per year.

Key Strengths

- Boston Partners employs a deep, seasoned global equity investment team.
- The investment team adheres to a disciplined, systematic investment approach that seeks to exploit well-defined, empirically proven market anomalies.
- Boston Partners has outperformed the MSCI ACWI index by a significant margin over longer trailing periods. The portfolio's risk-adjusted returns rank at or near the top quartile of the peer group since inception in July 2008.

Key Risks

- The ownership structure of the firm (indirect subsidiary of Orix through parent company Robeco) lends some uncertainty to the organizational status of Boston Partners.
- Investors in the strategy should be cognizant that the strategy's level of active risk can be greater than historical risk metrics (e.g. tracking error) alone would suggest. We view active risk as both a positive and a risk.



Manulife Global Equity

Description

- Manulife is a global investment firm headquartered in Boston, MA. The firm was created in 1968 as an asset management subsidiary of Manulife Financial, a publicly traded financial services company (NYSE: MFC). Manulife has \$358 billion under management as of March 2018. The firm manages \$5 billion in the Global Equity strategy, which was inceptioned in 2010.
- The investment team is led by portfolio manager Paul Boyne, who has 30 years of investment experience and joined Manulife with co-portfolio manager, Doug McGraw, in 2013 after they were lifted out of Invesco Perpetual. One additional portfolio manager and two analysts support Messrs. Boyne and McGraw.
- The investment team believes that long-term performance may be achieved by purchasing high quality, attractively valued companies with sustainable cash flows. They seek to invest in companies with solid franchises, strong management teams, stable balance sheets, and stable cash flows trading at attractive valuations. The portfolio typically holds 40-70 stocks with a maximum position size of 10%. Turnover averages 15-45% per annum.

Key Strengths

- The Manulife Global Equity team manages a concentrated portfolio relative to most peers, and utilizes a well-defined, quality-oriented investment approach.
- The strategy has protected capital well during market drawdowns. Manulife's standard deviation and downside deviation rank in the lowest quartile of the global equity peer group, and are significantly lower than the index.

Key Risks

- Portfolio tracking error is low, indicating that the Manulife team pays close attention to the benchmark in their portfolio construction process, which can limit the strategy's potential value-added over the longer-term.
- The product only dates back to January 2010; therefore, it is yet to be tested during a period of extreme market volatility, like the Great Financial Crisis in 2008/2009. However, the strategy has generally protected well in down markets – downside capture has been approximately 79% since inception.
- The portfolio has underperformed the MSCI World Index over the trailing three- and five-year periods as of March 2018, though the strategy has outperformed since inception (includes the team's tenure at Invesco Perpetual).



OFI Global Equity

Description

- OFI Global Asset Management, founded in 1959, is a global asset manager headquartered in New York. The firm is a subsidiary Oppenheimer Funds, which itself is a subsidiary of MassMutual, a privately held insurance company, which owns 82% of OFI. OFI had \$249 billion in global equity and fixed income assets under management as of March 2018. The firm's Global Equity strategy has \$21 billion in assets.
- OFI's Global Equity team is led by portfolio manager Rajeev Bhaman, who has managed the strategy since 2005 and has 29 years of investment experience. He is supported by eight portfolio managers and ten analysts. OFI recently announced that Mr. Bhaman intends to retire in March 2019. His replacement, John Delano, has worked at OFI for 11 years as an analyst, and has 20 years of investment experience.
- The Global Equity Investment team seeks to provide investors with long-term wealth appreciation by investing in long-term structural growth opportunities. They aim to purchase companies with significant revenue growth, pricing power as proxied by stable or rising margins, and global scalability. The portfolio typically contains 75 to 125 holdings with position sizes based upon level of conviction and performance potential, as well as overall country and sector exposures.

Key Strengths

- Execution has been strong. The portfolio has outperformed its benchmark over longer trailing periods by a significant margin.
- OFI's Global Equity research team is well resourced, with 20 investors.

Key Risks

- The impending retirement of portfolio manager, Rajeev Bhaman, is a material risk given Mr. Bhaman's position on the team. He has managed the portfolio for 13 years, and his successor, John Delano, was only recently promoted to a portfolio management role.
- A significant component of OFI's outperformance can be attributed to sector allocation, which is a residual of the team's growth bias, as opposed to stock selection.



Walter Scott Global Equity

Description

- Walter Scott is a global equity investment firm headquartered in Edinburgh, Scotland. The firm was founded in 1983 and is 100% owned by BNY Mellon. Walter Scott managed \$66 billion across global, international, and emerging markets equity strategies. The Global Equity strategy has \$34 billion in assets.
- The investment team comprises 21 portfolio managers. All investment decisions are made collectively, so no distinction is made between the roles of analyst and portfolio manager.
- Walter Scott seeks to identify companies that are capable of long-term sustainable wealth generation that are trading at attractive prices. The team applies a fundamental, bottom-up investment process predicated on investing in growing companies. The investment process begins with screens for quality and growth. The end portfolio is equal-weighted across 40-60 stocks. Turnover is low in line with the team's long-term investment horizon (~10% per annum).

Key Strengths

- Walter Scott's firm culture is a key strength. This is the type of firm that people join right out of school and never leave.
- Walter Scott is solely focused on long-term absolute returns and risk, which is in contrast to many of their peers whose decisions are dictated by short-term, benchmark-relative considerations. Walter Scott is benchmark-agnostic and defines risk as permanent loss of capital, not tracking error or volatility.
- Few managers can match Walter Scott's long-term success, and while the roles and responsibilities of some investment team members have shifted over time, the Walter Scott investment philosophy and process have remained consistent since inception in 1992.

Key Risks

- The ongoing transition of leadership responsibilities to firm's younger generation of investors who are replacing senior investment team members that have retired or stepped away from the day-to-day investment process is an ongoing risk.
- The decision-making process is entirely consensus-based amongst the 21 investment team members. While this ensures that every idea is thoroughly vetted before inclusion in portfolios, this approach can potentially create significant inertia.
- At \$34 billion in assets under management, strategy AUM is also a risk. This may prevent the team from executing more nimbly should they need to or want to. Walter Scott's low turnover and longer-term investment horizon somewhat mitigates this risk.



Active & Passive Investment Management

The goal of active management is to add value through enhanced returns or reduced risk relative to a particular market sector or combination of market sectors. A variety of risks accompany active management. Firms that manage assets actively may take on large risks unintentionally, encounter significant personnel problems, attract too many assets to manage effectively, or accept large risks to compensate for lagging performance. A sound investment strategy acknowledges the risks associated with active management.

The amount of value that an active manager can add relative to a benchmark (i.e., a market index) varies by asset class. If one defines the “efficiency” of a market by how much value an active manager has historically added (or detracted), then some markets are clearly more efficient than others. Moreover, superior manager selection can add value, no matter the asset class. However, it would be unrealistic for investors to presume that all of their managers will achieve top-quartile returns.

In areas of the capital markets that are particularly “efficient” (e.g., high quality bonds), passive management has a relatively high probability of success. Passive investment strategies (i.e., index funds) attempt to replicate the returns of a particular market segment. In addition, they incur very low fees, which improves overall performance. Therefore, passive management is most appropriate when the objective is to provide broad diversification with low costs.

Dallas Police and Fire Pension System Status:

DPFP does not have any passive (index) managers on its roster.

Recommendation:

At a future meeting, we would like to discuss the merits of potentially adding limited passive exposure to the DPFP in efficient asset classes. Allocations to index strategies in efficient areas would significantly reduce portfolio management fees while potentially produce equivalent (or better) net of fees returns than active management. Likely mandates include global equities and TIPS.

Priority: Two



International Emerging and Frontier Market Equity

While international developed markets have come to represent a material portion of institutional public equity portfolios in recent years, many plans remain underexposed to the faster-growing emerging markets. Today, emerging markets comprise roughly 80% of the world's population and close to 40% of global economic output.¹ Thus, even assuming no future growth, emerging markets equities should hold a place in any diversified public equity allocation.

The future growth argument for emerging market equities is strong. These countries start from a lower base of economic activity. Therefore, even modest improvements may result in large percentage increases. Emerging economies also benefit from increased globalization, favorable demographics, and lower debt levels compared to the developed world. Taken together, these factors make a strong case for higher future economic growth in emerging economies.

This added growth potential comes with increased volatility (risk). In addition, investing in emerging markets does introduce a heightened level of event risk (political, currency, etc.) to consider in assessing the risk/reward trade-off of investments in this asset class. However, while emerging markets have historically been more volatile than developed markets on a standalone basis, their relatively low correlation with developed markets can have a dampening effect on overall portfolio volatility. That said, it is important that this investment be allocated among a variety of regions, countries, and industries, to ensure appropriate diversification.

Many of today's emerging markets would have been considered yesterday's frontier markets. Frontier markets can be defined as developing economies with underdeveloped equity markets, in the sense that they suffer from illiquidity, low transparency, low levels of foreign investment, high corruption, and a weak regulatory framework. Frontier markets are considered less economically and financially developed than emerging markets. Of the more than 115 stock markets worldwide, roughly 60 may be characterized as frontier markets.

¹ Source: IFC, World Bank.



International Emerging and Frontier Market Equity (continued)**Dallas Police and Fire Pension System Status:**

DPFP funded a dedicated emerging markets strategy (RBC Emerging Markets Equity) in the beginning of 2018. We agree with the decision to use active management in this inefficient asset class. The current exposure (approximately 2.4%) is roughly only half of the long-term target weight.

Strategy	DPFP exposure	MIG clients Same Strategy	Last Meeting	Summary
RBC Emerging Markets Equity	\$49.8 mm --- 2.4%	Only DPFP	December 2017	RBC is an acceptable emerging markets equity manager with a well-resourced investment team that executes on a quality-focused investment approach.

Recommendation:

We typically recommend an overweight to emerging markets equities based on the factors listed on the prior page (favorable demographics, lower debt levels compared to the developed world, lower starting base of economic activity and strong beneficiary of increased globalization and economic growth). Depending on the outcome of the asset allocation review, it may be prudent to hire a complementary emerging markets strategy if significant assets will be rebalanced into the asset class. The RBC Emerging Markets strategy has a growth bias so a strategy with a value tilt may be appropriate.

Priority: Two

RBC Emerging Markets Equity

Description

- RBC Global Asset Management is the asset management arm of the Royal Bank of Canada (TSE: RY), a large diversified financial services company based in Toronto, Canada. The Emerging Markets Equity team is based in London and was formed in 2010. As of March 2018, the firm managed roughly \$330 billion in assets, with \$6.5 billion in the Emerging Markets Equity strategy. The Emerging Markets Equity strategy was launched in 2010.
- The team is led by RBC's Head of Emerging Market Equities, Philippe Langham. Mr. Langham joined RBC in November 2009, having previously worked at Societe Generale/GLG for nine years as the firm's Head of Global Emerging Markets. He is responsible for portfolio construction, security selection, and overall investment strategy. Mr. Langham is supported by seven portfolio managers and three traders.
- RBC believes that companies with high and sustainable cash flow return on investment produce superior returns. They believe that superior returns can be achieved by investing in high quality companies trading at reasonable valuation levels in industries with strong secular global growth trends. From there, the team uses a series of quantitative screens to identify firms with attractive valuations and high cash flow with low variability. The team then conducts fundamental research on names that pass their initial screens. The portfolio generally holds 50-60 stocks with fairly low turnover (~25% per annum).

Key Strengths

- The investment team is well-resourced and seasoned. The team consists of eight investors who average 15 years of investment experience.
- RBC executes an intuitive, quality-oriented investment approach focused on cash-flow-return-on-investment (CFROI). Their approach has delivered attractive returns on an absolute and risk-adjusted basis since inception.

Key Risks

- AUM growth has also coincided with a decline in rolling three-year excess returns. The strategy's AUM has more than doubled since March 2016, from \$2.0 billion to \$6.5 billion today.
- The same investment team also runs an emerging markets value product, which is in style conflict with this flagship (growth) Emerging Markets Equity strategy. RBC's lack of focus on a consistent investment style is a potential issue.



Private Equity

Private equity investments are investments in privately held companies. They are generally structured in the form of partnerships that typically consist of ten to twenty equity investments in individual companies. Historically, top-tier private equity investors have outperformed public equity indices, even after paying substantial management fees and carrying costs. Compounded over many years, this can lead to substantial increases in real wealth. However, dispersion of returns in private equity (between the top performers and bottom performers) has historically been quite wide.

Private equity investments come in many forms, including venture capital funds, leveraged buyout funds, growth equity funds, secondary interest funds, and international private equity funds.

Private equity partnerships are self-liquidating, usually over periods of eight to twelve years. Therefore, investors must continue to make new commitments over time in order to maintain their target allocations to the asset class. Typically, investors make new commitments at a steady pace each year in order to gain diversified exposure across business and market cycles.

Dallas Police and Fire Pension System Status:

DPFP currently has \$239 million invested across nine private equity funds (approximately 11.5% of the System), which is more than double its target exposure. All of the exposure, except for Industry Ventures, is classified as “legacy” with uncertain expected future returns or liquidity. All of the legacy exposure is addressed in the Legacy Assets section at the end of the presentation.

Industry Ventures Partnership Holdings Fund IV is a 2016 venture fund of funds. DPFP made a \$5 million commitment. To date it has called roughly one third of the capital and is marked well (nIRR of 30% and TVPI of 1.15x), albeit very early in the fund’s life.



Private Equity (continued)

Recommendation:

Industry Ventures appears to be an acceptable venture fund of funds provider. Given the binary outcome of many venture investments, we have been very focused on only investing with our highest conviction investment opportunities. We have backed some of Industry Venture's competitors, based upon our research and conviction. We have no objection to maintaining DPFP's investment in the Fund, but it may be worthwhile to seek to pair the investment with some of the legacy private equity funds and sell DPFP's interest as a package. Buyers may be willing to offer higher valuation for legacy investments if paired with younger healthier funds.

Typically, for well-funded pension plans Meketa Investment Group recommends that long-term investors allocate 5-15% of their assets to private equity investments. Given the funding and liquidity issues DPFP is faced with, we do not recommend making any new commitments until the majority of the illiquid legacy assets are liquidated.

Priority: N/A



Fixed Income

Safety Reserve®

Meketa Investment Group pioneered the use of Safety Reserve® portfolios over twenty years ago. A Safety Reserve® is a dedicated portfolio of high grade (i.e., U.S. Treasury) bonds and cash equivalents that assures the Board that benefits can be paid, even in worst-case market environments. A well-designed Safety Reserve® comprises a small portion of a pension plan’s assets, but can guarantee benefits for a stated period of time, and permits the comfortable investment of most other assets in long-term strategies.

Dallas Police and Fire Pension System Status:

DPFP recently approved a 15% target to a Safety Reserve® portfolio (12% short duration bonds and 3% cash equivalents). As discussed during the consultant search process and the May 10th Board meeting, DPFP cannot tolerate large drawdowns without a hit to its corpus (as assets go down and withdrawals take place, the corpus becomes much smaller, so any rebound may not be meaningful in dollar terms). The higher the net cash outflow projection and the lower the funded status, the greater the downside protection needed.

The size and composition of the Safety Reserve® portfolio was designed such that ongoing DPFP expenses and benefit payments could be met for the next 2.5 years (estimated \$315 million) without needing to liquidate any other assets at potentially inopportune time/price during a market correction.

Strategy	DPFP exposure	MIG clients Same Strategy	Last Meeting	Summary
IR&M 1-3 Year	Target of \$250 mm -- 12%	9 Clients with total assets of \$946 mm	4/12/2018	IR&M manages short duration fixed income with a deep, experienced team and a value-oriented approach.



Safety Reserve® (continued)**Recommendation:**

We recommend including the Safety Reserve® allocation within the fixed income allocation (i.e. not as its own dedicated asset allocation group). We envision a labeling/bucket framework similar to the following:

Sample Hypothetical Placement within the Asset Allocation Structure

Asset Class	Allocation ¹
Fixed Income and Safety Reserve	29
Safety Reserve - Cash	3
Safety Reserve – Short Term Core Bonds	12
Global Bonds	3
High Yield Bonds	4
Bank Loans	5
Emerging Market Bonds	1
Private Debt	1

We recommend implementing formal rebalancing procedures that are structured but not overly restrictive. If the rebalancing policy is too stringent, the benefits of the Safety Reserve allocation are negated. For example, if a severe market correction occurs and DFPF is capable of fully paying all benefits/expenses from the Safety Reserve, but is forced to liquidate other assets at depressed prices to replenish the Safety Reserve, the System ends up being a forced seller just as if the Safety Reserve had never existed.

Priority: One

¹ Example only, targets subject to change based on asset allocation review.



IR&M

Description

- Income Research & Management (“IR&M”) is an employee-owned investment management firm specializing in investment grade fixed income, ranging from cash and short duration to long duration and liability driven investing. The Boston-based firm had \$61.9 billion in assets under management as of March 31, 2018.
- The investment team of 14 portfolio managers and 23 analysts is divided by sector, with the ultimate portfolio decision responsibility lying with the team’s nine senior portfolio managers.
- The firm’s philosophy is value-oriented and emphasizes fundamental credit research, bottom-up portfolio construction, and security selection to create alpha.

Key Strengths

- IR&M has a deep, experienced team of portfolio managers and analysts with credit sector expertise.
- The firm implements a bottom-up driven, value-oriented investment process using a team-based approach and a risk conscious framework.

Key Risks

- IR&M’s approach to fixed income involves investing in small, secondary market issues, the effect of which may be diminished at higher AUM levels. However, the firm still manages a reasonable level of assets and this is not a current threat.
- John Sommers, founder and senior portfolio manager, is nearing retirement age, a risk that is mitigated by the firm’s broad employee ownership and succession planning.



Global Investment Grade Fixed Income

Investment grade fixed income provides stability of income, capital preservation, and a source of liquidity for short-term funding needs. Investment grade bonds reduce overall risk of a plan. While expected returns of intermediate-term investment grade bonds are lower than those of equities, bonds also exhibit lower price volatility. In addition, historical correlation between bonds and equities has been low. Therefore, fixed income securities are typically included in an optimal portfolio asset allocation structure. The fact that bonds have a set maturity, ensuring a return of principal on a known date, means that investment grade bonds can be viewed as a source of stability during periods of extended equity market weakness.

Active fixed income managers typically employ one or more of four basic strategies: 1) interest rate forecasts, 2) yield curve strategies, 3) sector rotation, and 4) security selection. “Top down” managers emphasize interest rate forecasting, while “bottom-up” managers emphasize security selection. When considering fixed income strategies, it is important to recognize that return distributions for fixed income securities are limited on the upside, compared to equities. This is due to the fact that interest rates, the primary determinant of investment grade bond returns, cannot decline below zero, capping price appreciation.

Global bond mandates introduce some risks that generally don't exist when investing in U.S. only fixed income: namely currency risk and sovereign risk. Global managers must not only assess a foreign government's ability to repay its debt but also its willingness. For a U.S. investor, foreign currency fluctuation can be a tailwind or headwind when converting back to U.S. dollars. Many global mandates will typically invest a small portion in emerging market debt as well.



Global Investment Grade Fixed Income (continued)**Dallas Police and Fire Pension System Status:**

DPFP is invested in one global bond strategy (Brandywine Global Fixed Income), which represents approximately 3.3% of the total System. The relationship with Brandywine dates back to 2004. Relative to the Bloomberg Barclays Global Aggregate Index and peers, the strategy has performed well for DPFP. As of March 31, 2018, the strategy ranks in the top third of the Global Fixed Income peer universe¹ and outperformed the index by close to 300 basis points per year during the trailing ten years, net of fees.

Strategy	DPFP exposure	MIG clients in Same Strategy	Last Meeting	Summary
Brandywine Global Fixed Income	\$68.9 mm -- 3.3%	3 clients with total assets of \$148 mm	10/10/2017	Brandywine Global takes a benchmark agnostic approach to global fixed income management with a focus on top-down, macro factors.

Recommendation:

While we have other clients invested with Brandywine and generally have a favorable opinion of the strategy, we debate the merits of investing in foreign investment grade fixed income when most of the developed world (ex-U.S.) is still in an environment of negative (or very low) real yields. We typically recommend a core-satellite approach to fixed income with a core U.S. investment grade mandate (Bloomberg Barclays U.S. Aggregate) supplemented with non-U.S. exposure from dedicated emerging markets debt strategies (like DPFP's allocation to Ashmore EM Blended Debt strategy).

Priority: Two

¹ Source: eVestment.



Brandywine Global Fixed Income

Description

- Brandywine Global Investment Management is a Philadelphia, PA-based investment management firm with \$76.5 billion in equity and fixed income assets under management as of March 31, 2018. The firm is wholly owned by Legg Mason.
- David Hoffman and Steven Smith co-lead the investment team of five portfolio managers, a Director of Global Macro Research, ten analysts, and six members of the trading team.
- Brandywine employs a top-down, benchmark agnostic approach to global fixed income management, with a focus on undervalued currencies and real yield.

Key Strengths

- Brandywine's is willing to take active risk in a calculated and defensible manner.

Key Risks

- Brandywine's ownership structure is not ideal; however, the parent subsidiary relationship has been long and seems to be stable.
- The investment team is in the process of developing a succession plan for leadership of the team, as Messrs. Hoffman and Smith are nearing retirement age.
- Brandywine's benchmark agnostic approach means that the strategy may exhibit high tracking error versus the index.



High Yield Bonds

High yield bonds are also known as “below investment grade” or “junk” bonds. As the name implies, these bonds are rated less than investment grade by the credit rating agencies (i.e., Moody's, Standard & Poor's, and Fitch). Because the companies issuing them are more likely to experience defaults than those issuing investment grade-rated bonds, investors demand a premium in the form of a higher yield. The high yield fixed income asset class covers a wide range of bonds, from just below investment grade, “BB”-rated issues to much riskier securities that have lost their credit ratings entirely.

Active managers have different characteristics (i.e., conservative versus aggressive, bond-only versus multi-sector, etc.). Some active managers will invest in other higher yielding securities, such as emerging market debt and convertible bonds.

Dallas Police and Fire Pension System Status:

DPFP has a 5% target to high yield bonds. Currently, DPFP has one high yield bond manager on its roster (Loomis Sayles High Yield Full Discretion), representing approximately 3.9% of the DPFP. The strategy is the longest tenured public markets relationship for DPFP dating back to October 1998. Long-term performance is quite strong in both relative and absolute terms.

Strategy	DPFP exposure	MIG clients Same Strategy	Last Meeting	Summary
Loomis Sayles High Yield	\$82.0 mm --- 3.9%	Over 25 clients across all Loomis HY strategies with over \$1 billion of assets	2/18/2018	Loomis' high yield strategy has achieved good historical performance but the absolute and relative risk profiles may not make sense for all investors.

Recommendation:

Provided the outcome of the asset allocation results in a dedicated high yield target allocation, we see no need to hire/change the exposure within high yield.

Priority: N/A



Loomis Sayles High Yield

Description

- Loomis Sayles (“Loomis”) is a large asset management firm based in Boston, MA with several offices globally. In total, the firm manages over \$250 billion, with approximately three-quarters of the assets in fixed income strategies. Loomis is wholly owned by Natixis, a large, publicly traded, French-based financial services company.
- Loomis has several high yield strategies that employ a multi-sector approach. These incorporate the input and research of the all Loomis fixed income teams.
- The strategy seeks to outperform the high yield index while also producing attractive risk-adjusted results. The team uses a relative value approach that will allocate to non-high yield credit sectors such as investment grade, securitized credit, bank loans, convertible bonds, preferred equity, emerging markets bonds, and other non-US debt, among other asset classes.

Key Strengths

- Loomis is a large firm with robust research and analytical resources to leverage when managing their strategies.
- The multi-sector approach has the flexibility to allocate to non-high yield credit sectors when they feel they offer better risk-adjusted return opportunities.
- Loomis has historically achieved very strong absolute returns.

Key Risks

- Very large investment team with flat structure that makes it challenging to determine who key individuals are and their influence on the strategies.
- Multi-sector strategies can at times exhibit high tracking error relative to the benchmark.
- Historically the performance track record has shown higher volatility and downside capture versus the peer group.



Bank Loans

Bank loans, also known as syndicated loans, are corporate loans that represent the most senior security in the corporate capital structure, and have floating interest rates. Bank loans are similar to high yield bonds but have a more senior claim on company assets and slightly lower interest rate risk. The bank loan market has existed for several decades, but has grown rapidly, due primarily to their popularity as a source of leveraged buy-outs financing.

The bank loan market is roughly the size of the high yield bond market. Further, there is a fair amount of company overlap (many companies have both bank loans and high yield bonds). Because of this, many high yield bond managers also started managing bank loans, either in high yield portfolios or as separate mandates, as the bank loan market evolved. Bank loan investment vehicles vary based on the level of liquidity and leverage. We recommend accessing the bank loan market in unlevered vehicles, where accounts and funds own the underlying loans.

Dallas Police and Fire Pension System Status:

DPPFP has a 6% target to bank loans. Currently, DPPFP has two bank loan managers, Loomis Sayles Senior Rate, and Pacific Asset Management Corporate Bank Loan strategy.

Strategy	DPPFP exposure	MIG clients Same Strategy	Last Meeting	Summary
Loomis Sayles Senior Rate and Fixed Income	\$60.2 mm --- 2.9%	13 clients with \$395 mm in assets	2/18/2018	Loomis' Bank Loan strategy is a strong option relative to the peer group but the specific strategy is untested during a period of increased defaults.
Pacific Asset Management Corporate Bank Loan Strategy	\$51.6 mm --- 2.5%	5 clients with \$120 mm in assets	1/30/2018	PAM's bank loan strategy has many favorable characteristics and we believe it has an above-average likelihood of future outperformance.



Bank Loans (continued)**Recommendation:**

No action needed. We believe that many pension plans benefit from a modest allocation to bank loans. Due to bank loans floating rate structure, bank loan mandates can help reduce a portfolio's sensitivity to rising interest rates.

We agree with the use of active management in bank loans, as investable bank loan indices are typically quite expensive or have significant tracking error from indices.

While long term correlation¹ between the strategies has been high (0.86), as has correlation of each strategy to the Credit Suisse Leveraged Loan Index (0.94 for each), the excess correlation between the two strategies has been quite low (-0.48) indicating they tend to outperform in different environments.

Loomis Correlation to PAM	Loomis Correlation to Index	PAM Correlation to Index	Excess Return Correlation Loomis to PAM
0.86	0.94	0.94	-0.48

Priority: N/A

¹ Correlation statistics from Loomis strategy inception (11/2011) to 6/2018



Loomis Sayles Senior Rate Fixed Income

Description

- Loomis Sayles (“Loomis”) is a large asset management firm based in Boston, MA with several offices globally. In total, the firm manages over \$250 billion, with approximately three-quarters of the assets in fixed income strategies. Loomis is wholly owned by Natixis, a large, publically traded, French-based financial services company.
- Kevin Perry and John Bell lead the bank loan team and co-manage all bank loan portfolios. They have a team of analysts and strategists that assist with credit analysis and portfolio management.
- The Senior Floating Rate strategy began in 2011 as an outgrowth of their original conservative bank loan strategy. It tends to have risk positioning in-line with the broad loan market, and has the flexibility to invest up to 35% in non-bank loan assets, though it is typically managed to have over 85% in bank loans.

Key Strengths

- The strategy is managed by a bank loan-focused team that has the ability to leverage the significant resources of the larger organization.
- The team has the ability invest in non-bank loan credit sectors to augment returns.
- The Floating Rate strategy has had a strong track record with good absolute returns since inception.

Key Risks

- While Loomis and the team have significant experience managing bank loan portfolios, they have not managed the Senior Floating Rate strategy through a full default cycle.
- Since inception, the strategy’s volatility and downside capture have been in the highest quartile of the peer group. This is likely driven by the strategy’s allocation to credit sectors such as high yield bonds that typically have a higher risk profile than bank loans.



Pacific Asset Management Corporate Bank Loan Strategy

Description

- Pacific Asset Management (“PAM”) is a subsidiary of Pacific Life, a large insurance and financial services company based in Newport Beach, CA. The firm operates as a small boutique, with one team that oversees approximately \$8 billion in bank loan, high yield, and investment grade bond strategies. The bank loan strategy has approximately \$3 billion in assets under management.
- The bank loan team is led by portfolio managers JP Leasure and Michael Marzouk, both of whom helped start the strategy in 2007. Ten sector-focused analysts support the portfolio managers. In addition to the bank loan strategy, they also support the high yield bond and investment grade strategies.
- The strategy seeks to outperform over both the short- and long-term periods through credit selection and sector rotation. Bottom-up credit analysis drives the strategy, but the team also incorporates a top-down assessment of the economy and loan market into the portfolio. The portfolio will opportunistically invest a small portion of the portfolio in high yield bonds in an effort to augment returns.

Key Strengths

- Pacific Asset Management is set up and managed as a boutique within the larger Pacific Life organization. The firm has a relatively low asset base allows the investment team to be flexible when investing. Further, the PAM investment team has direct equity interest in the business, which should act as a retention tool.
- The strategy has a long track record of strong and consistent absolute and risk-adjusted returns.

Key Risks

- PAM has recently added other investment strategies and vehicles that could reduce the investment team’s time allocation to the Corporate Bank Loan strategy.
- The team had a portfolio manager departure in 2016, though they have been stable since.



Emerging Market Debt

Emerging market debt refers to bonds issued by entities based in emerging market countries. Most commonly, these are sovereign bonds issued by the government of an emerging market country. Emerging markets debt can be divided into two broad categories based on the currency in which the bond is issued: external and local. External currency debt is issued in a currency other than the country's home currency (usually in U.S. dollars or euros). On the other hand, local currency debt is issued in the currency of the issuing country or company. Another way of segmenting emerging market debt is into sovereign debt (debt issued by governments) and corporate debt (issued by companies). Historically, sovereign debt has been the primary investment option for investors.

Over the past decade, emerging market country governments increasingly turned to local currency debt, motivated by a desire to alleviate the currency mismatch of borrowing in external debt markets and receiving tax revenues in local currency. Furthermore, emerging market debt has also been improving in credit quality. The majority of emerging markets debt is now rated as investment grade, indicating that on the basis of credit quality, emerging market debt should be less risky than high yield bonds.

Emerging markets debt appears to offer meaningful diversification benefits, as historical correlations between emerging markets debt — both in external and local currencies — and typical institutional asset classes have been moderate. Furthermore, emerging markets debt should continue to offer a higher yield, and hence command a long-term risk premium, relative to higher quality developed markets debt.

Dallas Police and Fire Pension System Status:

DPFP has a dedicated 6% target to emerging markets debt. During the fourth quarter of 2017, DPFP terminated the local currency emerging markets debt fund managed by Ashmore in favor of a blended currency emerging market debt strategy run by the same asset manager. The new strategy, Ashmore EM Blended Debt, is the lone emerging markets debt manager, representing just one percent of the DPFP as of March 31, 2018.



Emerging Market Debt (continued)

Strategy	DPFP exposure	MIG clients Same Strategy	Last Meeting	Summary
Ashmore EM Blended Debt	\$20.5 mm --- 0.5%	3 clients with total assets of \$845 mm	6/19/2018	Ashmore, one of the largest emerging markets debt managers, is a pioneer in the space and employs a top-down, macro driven approach. However, its high level of AUM could limit its ability to access certain areas of EMD universe.

Recommendation:

Meketa Investment Group believes that emerging market debt investing is appropriate for long-term portfolios as a tool for overall portfolio diversification. We recommend that plans with well-diversified portfolios make a dedicated allocation to emerging market debt.

We agree with the decision to allocate to a blended currency mandate where the manager can allocate opportunistically between local and external currency debt.

Priority: N/A



Ashmore EM Blended Debt

Description

- Based in London, UK, Ashmore Group is a majority publicly traded investment management firm specializing in emerging market debt and equity investing. Ashmore managed \$76.5 billion in assets as of March 31, 2018.
- The emerging market debt investment committee, led by Mark Coombs and composed of senior portfolio managers, sets top-down macro themes to be used across all portfolios.
- Ashmore implements a long-term, value oriented investment philosophy toward emerging market debt and a process driven primarily by macroeconomic analysis of global, regional, and country factors. Portfolio construction is benchmark agnostic and conscious of liquidity.

Key Strengths

- As one of the earliest players in the emerging markets space, Ashmore has a long and successful track record in emerging market debt.
- Ashmore has a large team of experienced professionals.

Key Risks

- Ashmore's high level of assets under management could limit the firm's ability to invest in certain areas of the emerging market debt universe.



Treasury Inflation Protected Securities (TIPS)

Unlike traditional bonds, inflation-linked bonds offer investors a guaranteed return over inflation if held to maturity. Investors receive an explicit annual coupon plus a variable adjustment based on the rate of inflation.

TIPS have risk and return patterns that differ from those of stocks or traditional bonds, and thus provide valuable diversification to both long- and short-term investment funds. An investment in TIPS would likely produce attractive gains in a rising inflation environment, offsetting losses in stocks and traditional bonds. Because the future is uncertain, owning an asset that may do well in an otherwise adverse environment could be valuable. In addition, TIPS are issued by the U.S. government, and provide protection in weak credit environments.

The main disadvantages of TIPS are that they may substantially underperform when inflation falls, and they will provide little protection against a rise in interest rates without a similar increase in inflation. However, the advantages of TIPS outweigh the disadvantages.

Most investors have at least a portion of their liabilities exposed to inflation. For investors with inflation-sensitive liabilities, TIPS represent the lowest risk asset available. Defined benefit plans that offer a COLA (cost of living adjustment) possess liabilities explicitly linked to inflation. By holding TIPS, plans can more closely match their assets to their liabilities.

Dallas Police and Fire Pension System Status:

DPFP does not have a dedicated allocation to TIPS.

Recommendation:

Meketa Investment Group recommends that most plans allocate a portion of their investment grade bond allocation to TIPS.

We will show asset allocation policies with (and without) dedicated allocations to TIPS as part of the asset allocation review process. If the Board approves a policy inclusive of TIPS, we typically recommend using an index fund.

Priority: Two



Private Debt

Private debt represents loans made primarily to privately held companies. It can take the form of mezzanine debt, distressed debt, direct loans, real estate debt, etc. These investments are generally structured as illiquid partnerships.

Private lending transactions typically take place with smaller or middle market borrowers. This lending will look very similar to that which occurs with larger companies in the bank loan and high yield markets, with the major difference being that the private loans will be bilateral and not freely traded. Further, traditional bank lending and private lending are not mutually exclusive, as many middle market companies utilize both sources of capital financing.

Dallas Police and Fire Pension System Status:

DPFP has roughly \$10 million invested across two private debt funds. The majority of the exposure is in a relatively new investment (Riverstone). A small portion remains in the tail-end portion of a troubled pre-GFC fund (Highland).

Private Debt (continued)

Recommendation:

The Highland Crusader Fund has been in wind-down mode since 2008 and is now on the 16th year of its fund life. Based on our understanding this is not considered “legacy” according to Staff’s matrix. We recommend continuing to be patient with the new GP, Alvarez and Marsal, as they liquidate the final assets. While the current exposure is over \$2 million, it represents only 10 basis points of total DPFP.

The Riverstone Credit Partners Fund is a 2016 vintage energy credit fund. DPFP made a \$10 million commitment, of which approximately 85% has been called. The majority of the fund’s investments have been relatively short duration direct loans to energy related companies. The fund is currently nearing the end of its investment period, and has an expected fund life of 4-5 more years. Meketa reviewed the Credit Partners Fund in 2015 but none of our clients invested in it because it did not match the desired exposure those clients were seeking (most were looking for private equity like returns from purer play natural resources exposure).

Meketa Investment Group typically recommends that long-term investors allocate a portion of their assets to private debt investments. Given the liquidity profile of DPFP and the desire to move toward a simpler, less expensive, more liquid portfolio allocation, we do not recommend making any new commitments to private debt at this time.

Priority: N/A



Real Assets

Real Estate

Real estate investments can be made in public or private vehicles and be structured as equity or debt and have varying degrees of liquidity options depending on the investment. In addition, real estate can offer various benefits to investors, including diversification, inflation hedging, current income, and asset appreciation. The expected returns from real estate will depend on the specific strategy being deployed and the degree of risk or leverage used. However, over long-term periods, real estate returns are expected to rank between the returns of stocks and bonds.

Real estate is not a liquid asset. Prices are set infrequently and often only through appraisal. Institutional investors have typically utilized commingled real estate pools that offer a limited degree of liquidity, depending upon the cash flows from underlying investments and other investors. However, this liquidity is not guaranteed, and investors may receive withdrawal funds only gradually. Much of the liquidity constraint stems from the absence of a public market for real estate. Real estate investment trusts (REITs), entities that trade publicly but invest in real estate, offer liquidity to investors seeking easily tradable, daily-priced real estate exposure.

Dallas Police and Fire Pension System Status:

DPFP is over-allocated to real estate (approximately 23% of the plan). Most of Meketa Investment Group clients invest 5%-15% in real estate, typically with an open-end core real estate anchor fund. None of DPFP's exposure is in traditional core real estate (defined as broadly diversified real estate funds of high-quality, income producing assets, with quarterly liquidity for investors). Furthermore, none of DPFP's real estate exposure is invested in traditional Limited Partnership closed end funds. DPFP's real estate portfolio is a compilation of individual properties and joint ventures purchased directly by the pension system over many years.



Real Estate (continued)

Recommendation:

Owning real estate directly is a challenging endeavor for a public pension plan and not something Meketa Investment Group recommends to the vast majority of its clients¹. It comes with a plethora of operational complexities, individual property idiosyncratic risks, valuation challenges, uncertain exit timelines, and headline risks.

We are pleased to see that DPFPP has engaged with institutional quality real estate managers (AEW, Clarion, Bentall Kennedy, etc.) to assist with the monitoring and disposition of the individual assets.

For a healthy pension plan with a long term focus and no liquidity concerns, Meketa Investment Group typically recommends clients access real estate through a combination of core real estate (core funds with quarterly liquidity and REITs) and non-core (value-added and opportunistic closed-end funds with 10-12 year lives). The appropriate split between core and non-core is dependent on what investors intend to gain from their real estate allocation (i.e., current income or enhanced returns).

We agree with Staff and Board's decision to reduce the real estate exposure and prudently exit the individual holdings. If/when the exposure is reduced to a more appropriate level, Meketa Investment Group is prepared to assist DPFPP with assessment of potential open-end core real estate funds that could serve as strong income producing and diversifying asset class for the pension system.

Priority: One

¹ Only exception would be very large sophisticated pension plans in the tens of billions of dollars with significant internal staff capabilities and experience.



Natural Resources

Natural resources investors target companies that engage in or support the activities that extract, harvest, and utilize the resources and energy of the earth. The inclusion of natural resources as an asset class can provide significant benefits to a portfolio. Natural resources investments have varying degrees of exposure to the underlying price of commodities, and this correlation generally increases as you move upstream (i.e., closer to the production or extraction of resources). As a result, natural resources have tended to perform well during periods of high inflation and may help portfolios hedge against future inflation. Additionally, natural resources investments can provide a portfolio with diversification benefits, reduced volatility, and outsized returns.

The major sub-strategies of natural resources include oil & gas, mining, farmland, and timberland. As with real estate, these assets are typically not liquid. However, investors can obtain exposure to natural resource assets via publicly traded companies that focus on these sectors. Private market vehicles have higher fees than public strategies but may provide additional alpha.

Dallas Police and Fire Pension System Status:

DPFP has a 5% target to natural resources. Current exposure is listed below. None of the investments are characterized as legacy assets.



Natural Resources (continued)

Strategy	Exposure ¹	Type	Status	Summary
Forest Investment Associates	\$14.7 mm	Timber (U.S.) – SMA	Liquidating	Forest Investments Associates (FIA) has been liquidating the entire portfolio successfully. While long term performance for the strategy is good – nIRR of nearly 8% and net multiple of 1.8x – we agree with the decision to liquidate. FIA predicts the portfolio (2 properties) will be fully liquidated by end of 2019.
BTG Pactual	\$39.9 mm	Timber (Brazil and South Africa) – SMA	Liquidating	BTG reports market conditions in Brazil and South Africa have been unfavorable. We agree with Staff's recommendation to push BTG to liquidate the portfolio. BTG believes they can execute full liquidation by end of 2019.
Hancock Agricultural	\$134.7 mm	Agriculture (U.S.) – SMA and LP Fund	Trimming Exposure	Despite very strong long-term performance (nIRR of ~16% and net multiple of 3.5X (over the course of 20 years) we agree with the decision to reduce the exposure to a more appropriate level (~\$85 mm). We understand Hancock's trepidation to move quickly on the row crop sales given pricing pressure from tariffs. During the asset allocation review, we will see what role and size agriculture could serve for DPFPP.

¹ Exposure as of 5/31/18.



Natural Resources (continued)

Recommendation:

We agree with the Board/Staff's decision to eliminate the timber exposure and reduce the Hancock agriculture exposure. During the asset allocation review, we will see what role and size agriculture could serve for DFPF.

In general, we prefer permanent crops vs. row crops (in-line with Hancock's recommended end exposure). However, we don't recommend forcing the sale of row crops too quickly given pricing pressure in the asset class from tariffs.

Priority: Two



Infrastructure

Infrastructure assets are organized to provide a stable, predictable, long-term cash flow stream to investors. Generally, infrastructure investments may take the form of a sale or lease of an asset by the public sector to the private sector, or between two private entities. “Core” infrastructure has traditionally included essential assets such as roads, tunnels and bridges; seaports and airports; railroads; water and wastewater treatment plants, waste collection and treatment facilities; gas pipelines, electrical transmission and generation facilities; broadcast and cell phone towers; schools and hospitals. In addition to core infrastructure, there are opportunities to invest in “value-added” strategies (those that provide opportunities for enhancing returns through operational improvement, business expansion, or other strategies) and “opportunistic” strategies (those which have exposure to developing markets, development and construction risks, or market and business risks).

Most of the current universe of infrastructure funds is structured similarly to private equity partnerships. They are closed-end private funds, with a pre-determined term and investment period, as well as management and incentive fees. Though most private equity funds have a ten year term, many infrastructure funds have terms as long as twelve or fifteen years, along with the customary extension periods (e.g., two one-year extensions). There is also a small number of open-ended infrastructure funds that offer a perpetual term, and that may offer a fit with investors seeking predictable, long-term cash flows over the long-term.



Infrastructure (continued)**Dallas Police and Fire Pension System Status:**

DPFP has a 5% target to infrastructure. Current exposure to infrastructure is listed below. Two of the funds (nearly half of the exposure) are characterized as legacy assets.

Strategy	Exposure	Type	Status	Summary
JP Morgan Asian Infrastructure	\$24.6 mm	Non-Core	Legacy asset	Best outcome would be bulk sale (across all LPs). Likely slow process for individual asset sales across all seven holdings. JPM was recently replaced by TRG. Will need to evaluate potential liquidity options that may arise.
JP Morgan Asian Infrastructure II	\$4.5 mm	Non-Core	Legacy asset	Failed fund. Investment period terminated early. Only one investment held. Co-owned with AIRRO Fund I. See above
JP Morgan Global Maritime	\$32.5 mm	Non-Core	Fully invested. Entering harvest/distribution phase.	JPM is likely motivated to liquidate the fund within contractual terms (2020 + 2 one-year extensions). Trade war rhetoric is a negative for this investment.

Recommendation:

Meketa Investment Group typically recommends healthy pension plans invest between 3% and 5% of total plan assets in infrastructure investments. Frequently a combination of “core” and “value-added” funds is used. None of the current funds are core funds. Depending on the outcome of the asset allocation review, it may be prudent to invest in an open-end core fund as liquidations are received from the current investments. We do not recommend any additional allocations to value-add funds in the near future.

Priority: Three

Legacy Assets

Legacy Assets

As discussed during the consultant search process, and well documented by Staff, DPFP has significant exposure to a portfolio of illiquid, non-performing investments (“legacy assets”).

We understand it is a priority of the new Board and Staff to liquidate these investments in a prudent fashion over the coming years and transition into a more traditional asset allocation.

Dallas Police and Fire Pension System Status:

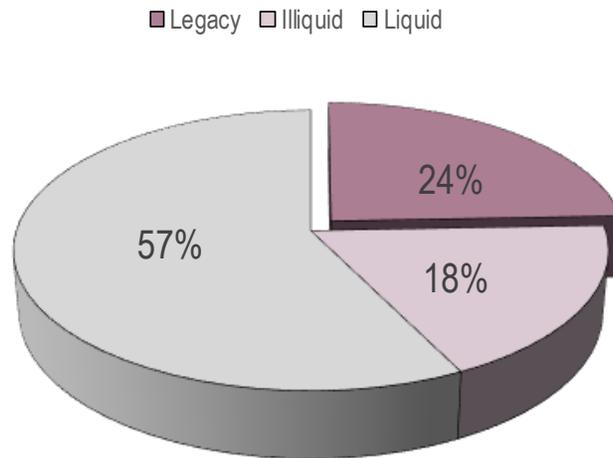
Below is a grid of all the legacy assets with total current exposure¹ by asset class and cumulative unrealized gain/loss.

Asset Class	Market Value	Unrealized Gain/Loss
Private Equity	\$248,797,235	\$(27,137,600)
Infrastructure	\$29,095,156	\$2,989,941
Real Estate	\$247,219,770	\$(59,616,152)
Total	\$525,112,161	\$(83,763,811)

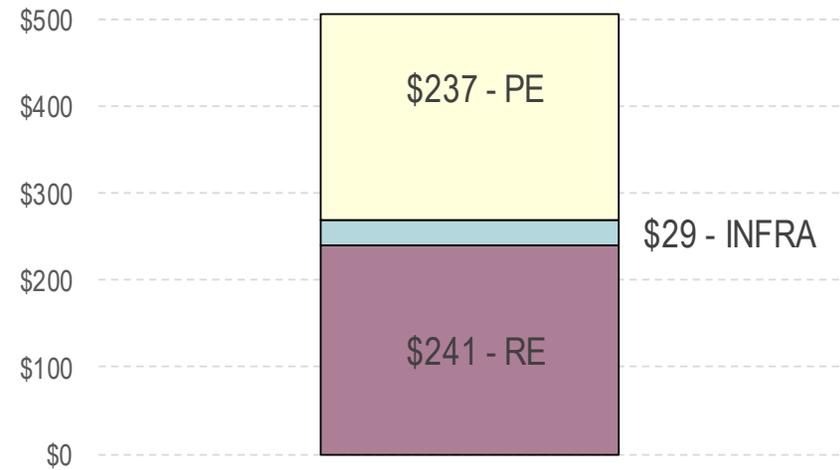
¹ As of March 31, 2018



Legacy Assets (continued)



Legacy Exposure¹



Recommendation:

As mentioned in previous meetings, there is no magic answer to exiting many of these investments. When seeking to sell illiquid, non-performing investments on the secondary market, sellers must frequently strive for a balance between exit speed and exit price.

¹ As of March 31, 2018



Legacy Assets (continued)

Legacy Assets: Estimated Year End Exposure (by Staff)
 (\$mm)



Staff has provided an expected disposition timeline, which predicts exposure will be significantly decreased by 2020 (at which point exposure is targeted to be less than 5% of DPFP). While this is desirable, we encourage the Board to temper expectations as we have previously encountered and observed challenges with other clients seeking to accomplish similar objectives. The most marketable assets are always sold first (executed in 2017 for DPFP) and often at the best price and most expeditiously. The last assets are often the hardest to exit and can (and likely will) get dragged out over many years.

An approach that was successful in the past for other clients looking to market and sell illiquid investments was packaging healthier young fund investments with less desirable investments. This may not be feasible for DPFP given the size of the legacy assets portfolio relative to healthier private market investments.



Legacy Assets (continued)

The Board should consider the following when evaluating potential offers to sell investments in the secondary market:

- Opportunity cost of holding the asset (both historical and prospective)
- Management fees on the investment(s)
- Probability of natural exit or distributions
- Idiosyncratic risks (of individual property or individual companies)
- General Partner risk
- Headline risk of continuing to hold legacy assets
- Legislative risk
- Magnitude of discount (to latest NAV) and the short-term impact on total DPFP performance

We recommend that Staff continues to monitor and track the cash flow projections timeline while working with secondary brokers to solicit offers to hopefully exit some investments faster. In our role as investment consultant, we will be prepared to assist staff with the evaluation of offers received on the secondary market and prepare analysis, as needed, pertaining to the benefits of accepting or rejecting such offers.

Priority: One



Operations

Custody Services

The primary role of a custodian bank is to provide accurate, reliable, efficient, and useful accounting and safekeeping services. It is crucial that the custody bank act as the independent confirmation of asset values and account activity, to protect investment assets, and to reduce the possibility of missed income, or manipulation or errors that could lead to financial loss. In addition, the custody bank should be able to provide its data in electronic form, and should offer up-to-date on-line access to information.

Because custodian banks track investment activity as part of their accounting responsibilities, it has become the industry standard to rely upon the custodian to calculate investment performance. Fees for this service are generally low as the custodian already performs much of the work entailed in calculating performance. By retaining the custodian bank to calculate performance, the DPFP improves the likelihood of accurate and impartial performance numbers.

In addition to accounting, safekeeping, and performance calculation services, custody banks often offer investment products that can serve client needs. For example, most custodians offer automatic overnight cash pools to allow clients to invest excess cash on a daily basis. Index fund products also are usually available from the custodian. The advantages of utilizing investment products of the custodian stem from the relationship pricing that can occur and the administrative ease of transitions to and from these products.

Custody fees should be monitored and negotiated, and always examined in the context of the entire fee stream to the custodian.

Dallas Police and Fire Pension System Status:

J.P. Morgan serves as the DPFP's custodian. The contract stipulates an annual flat fee of \$90,000 plus transaction fees, System administration fees, and other related fees. Over the last four quarters, the DPFP has paid approximately \$250,000 in total fees for the custodian. This total does not include fees and splits from any securities lending activity.



Custody Services (continued)

Recommendation:

Sometime in the next few years, we recommend a full review of accounting and other services provided by J.P. Morgan to ensure that the DPFPP receives all necessary services. Current total all-in pricing is relatively in-line with our expectations based on the size and complexity of DPFPP. At this point, we do not recommend a change to DPFPP's custody provider but Meketa Investment Group is capable and willing to conduct a custody RFP process for DPFPP at a later date if needed. At over \$2 billion in assets, including a variety of private market assets and direct holdings, the opportunity set of eligible providers is limited. Outside of J.P. Morgan, the three most eligible providers would be State Street Bank, BNY Mellon, and Northern Trust.

Priority: Three

Transition Management

When a plan sponsor adds a new asset class, changes its asset allocation targets, or replaces a manager, assets will need to be moved from one (or more than one) portfolio to another portfolio(s). These assets may stay within the same asset class (e.g., when one small cap stock manager is replaced with another) or they may move across asset classes (e.g., when a new allocation to TIPS is funded from equities).

Transition management often entails selling marketable securities from a legacy portfolio, where a manager has been terminated, to a target portfolio, where the new manager will take over. The outmoded model for handling this type of transition was to instruct the legacy manager to sell all the securities and give the new manager the resulting cash to invest. The main shortcomings of this method are that costs (commissions, opportunity costs, trade execution) may be high, as a firm with no incentive to maximize receipts is responsible for executing the trades.

Using a third-party transition manager can reduce or eliminate these costs. For example, the transition manager typically transfers as many assets “in-kind” as possible. Assets in the legacy portfolio which are needed by the new manager can be transferred directly to the new portfolio. Because they are not traded on the open market, commission costs are eliminated. Further, the transition manager seeks to maintain market exposure throughout the transition, thus ensuring that opportunity costs are minimized. Finally, a transition manager is measured on their performance, and therefore more likely to search for the best execution.

Dallas Police and Fire Pension System Status:

At the August 2016 board meeting, DPFP approved hiring Russell as a transition manager but a contract has not yet been executed. We understand a draft contract is in process.

DPFP used J.P. Morgan as transition manager in the past (more than five years ago) but J.P. Morgan exited the transition management business a few years ago.



Transition Management (continued)

Recommendation:

We support using Russell as the lone transition manager for the time being. We recommend executing the contract in the near future.

Longer term, Meketa Investment Group recommends that the DFPF retain a panel of transition managers (two to three) with contracts in place for each. When a transition is necessary, bids can be requested from the panel. Once bids are received, the most appropriate manager can be selected. Since the paperwork is already complete, the timeframe required before starting the transition is significantly reduced.

Priority:

One (executing the Russell contract)

Three (consider hiring a panel of transition managers)



Securities Lending

Securities lending programs have the ability to generate modest incremental revenue for investors. During most periods, risk of loss is minimal. However, during periods of severe market disruption, the potential for losses exists. Investors may find that controlled exposure to securities lending can provide added income with an acceptable risk level. The amount of income, and risk, in any securities lending program is determined largely by how the collateral is invested.

Individual programs vary according to several factors, including the degree of risk accepted and the percentage of gains accruing to the investor. The collateral requirements for loaned securities, the indemnification of investors, the likely volume of lending available, and the revenue split vary from one program to another and should be carefully reviewed before a decision to participate is finalized.

Dallas Police and Fire Pension System Status:

DPFP entered into the current securities lending agreement with J.P. Morgan in 2002. The agreement outlines the lending parameters and guidelines for the program, including objectives, permissible/non-permissible assets, quality restrictions, etc. DPFP receives 70% of revenue generated and J.P. Morgan receiving the remaining 30%. During the first quarter of 2018, DPFP earned approximately \$21,000 in income from securities lending. Over the 2015-2017 fiscal years, DPFP earned approximately \$1.1 million in additional revenue.

During the past few meetings, the Board, Consultant, and Staff have been discussing the pros and cons of maintaining the Securities Lending program. At the July Board meeting, Consultant and Staff were instructed by the Board to update and revisit the guidelines for the management of the collateral pool, and provide a written recommendation to the Board.



Securities Lending (continued)

Recommendation:

If well structured, a securities lending program can add incremental value to a pension plan. However, in an environment of low interest rates and tight credit spreads, the income that is earned from a securities lending program is reduced. The risks do not diminish, however. In addition, if the capital allocated to SMAs declines, the assets available to be loaned decrease, and so does the expected profit from participating in the program. On the positive side, as the illiquid assets are redeemed/exited and redeployed in liquid strategies, expected payout from securities lending would increase, provided again these assets were invested in SMAs.

Since the guidelines for the collateral have not been updated in a long time, it is prudent and appropriate to revise them soon. Meketa and Staff are working together on this, and will propose to the Board revised (more conservative) guidelines.

Priority: One



Expenses

One of the surest ways to increase the DFPF's return is to reduce its expenses. Expenses can be explicit (e.g., portfolio management, custody, and brokerage fees) or implicit (trading execution costs). In most cases, opportunities exist to reduce expenses outright.

Investment management fees typically represent the largest component of a plan's expenses, and should be negotiated aggressively and monitored closely. For example, while a manager's fees may be low when measured as a percentage of assets, the dollar fee may have increased substantially through market appreciation. Much of the accompanying fee appreciation does not represent additional management responsibility, and a fee re-negotiation is appropriate.

Trading costs consist of explicit costs (commissions) and implicit costs (execution and market impact), and can be difficult to monitor precisely. While influenced by an investment manager's particular strategy, trading costs indicate the care an investment manager takes in implementing strategy.

Dallas Police and Fire Pension System Status:

DFPF's public investment managers use asset based flat fees, tiered fees, and a combination of asset based and performance based fees to collect management expenses. With the exception of Walter Scott and Ashmore, all of DFPF's managers charge less than the median for their respective peer groups. In aggregate, DFPF pays approximately \$4.3 million in public investment management fees per year, which equates to an effective fee of 0.42%.

Public Investment Manager Fees

	Vehicle	Market Value (6/30/18) (\$ mm)	Peer Ranking Percentile ¹
Global Public Equities			
Boston Partners Global Equity Fund	Separate Account	106.5	27
Manulife Global Equity Strategy	Separate Account	110.7	25
OFI Global Equity Strategy	Separate Account	111.1	17
Walter Scott Global Equity Fund	Separate Account	113.6	80
Emerging Market Equity			
RBC Emerging Markets Equity Fund	Commingled Fund	46.6	20
Short-Term Core Fixed Income			
IR&M 1-3 Year Strategy	Separate Account	240.6	3
Global Fixed Income			
Brandywine Global Fixed Income	Separate Account	64.7	47
High Yield Bonds			
Loomis Sayles High Yield Fund	Separate Account	82.6	50
Bank Loans			
Loomis Sayles Senior Rate and Fixed Income	Commingled Fund	60.7	1
Pacific Asset Management Corporate (Bank) Loan Strategy	Commingled Fund	52.0	2
Emerging Market Debt			
Ashmore EM Blended Debt	Commingled Fund	19.0	59

¹ Source: eVestment. Peer ranking analysis uses the same vehicle type and similar asset sizes as DFPF's mandates.



Custodian Fees

Provider	Fee
J.P. Morgan	~\$250,000 annually ¹

Recommendation:

While fees are generally better than average, we recommend continuing to seek fee reductions through lower base fees, perhaps combined with performance incentives.

Priority: One

¹ Excluding securities lending fees/revenues.



Summary of Action Items

Dallas Police and Fire Pension System

Summary of Action Items

	Item	Recommended Action	Expected Timeframe
1.a	Asset Allocation	Recommended Action: We plan to present a comprehensive asset allocation analysis at the next board meeting in September.	Begin September 2018
1.b	Investment Policy Statement	Recommended Action: We suggest incorporating revisions in a few sections to ensure it is in-line with industry best practices, as well as updating it with the new asset allocation, if approved by the Board later this year.	Finalize prior to year-end, once the asset allocation study is concluded.
1.c	Safety Reserve	Recommended Action: We recommend implementing formal rebalancing procedures that are structured but not too restrictive.	Finalize prior to year-end
1.d	Non-Legacy Real Estate	Recommended Action: Continue to work with the external real estate managers/advisors to prudently exit the individual holdings.	In process
1.e	Legacy Assets	Recommended Action: Continue to find ways to exit the legacy portfolio at fair market values, with the help of secondary market brokers where appropriate.	In process
1.f	Transition Management	Recommended Action: Execute the contract as soon as terms are agreed upon. Longer term (next 2-3 years) consider hiring a panel of firms to solicit bids from when a transition event occurs.	3Q18
1.g	Securities Lending	Recommended Action: The Board instructed Staff and Meketa to prepare amended more restrictive guidelines for discussion at the next board meeting.	In process
1.h	Manager Fees	Recommended Action: Revisit fees and terms across all providers, seeking improvements and savings..	In process



Dallas Police and Fire Pension System

Summary of Action Items

	Item	Recommended Action	Expected Timeframe
2.a	Manager Guidelines	Recommended Action: Broadly, the current guidelines are suitable but there could be more consistency across strategies. Most guidelines have not been updated since strategy inception. In the next twelve months, we recommend working with the managers to implement consistent (or more similar) guidelines across strategies with similar mandates (e.g. global equities).	Before end of 2019
2.b	Global Public Equities	Recommended Action: OFI Global equity has been one of the best performing strategies, but the portfolio manager is retiring in early 2019. We view this as a significant event and may trigger the need for a replacement search.	1H 2019
2.c	Active vs. Passive	Recommended Action: At a future meeting, we would like to discuss the pros and cons of adding passive exposure to the DPFP, particularly in efficient asset classes.	2019 – After completion of Asset Allocation
2.d	Emerging Market Equities	Recommended Action: Depending on the outcome of the asset allocation review, it may be prudent to deploy additional capital to emerging markets. We typically recommend an overweight to emerging markets equities. This may trigger a manager search.	2019 – After completion of Asset Allocation
2.e	Global Bonds	Recommended Action: During the asset allocation review, determine if there is a role for a global bonds strategy in DPFP.	2019 – After completion of Asset Allocation
2.f	TIPS	Recommended Action: Meketa Investment Group recommends that most plans allocate a portion of their investment grade bond allocation to TIPS. This could be as part of the Safety Reserve portfolio, or outside of it.	2019 – After completion of Asset Allocation
2.g	Agriculture	Recommended Action: During the asset allocation review, we will see what role agriculture could serve for DPFP. We view the possible exit from DPFP's minority interest in the Australian macadamia fund as a positive.	2019 – After completion of Asset Allocation



Dallas Police and Fire Pension System
 Summary of Action Items

	Item	Recommended Action	Expected Timeframe
3.a	Core-Infrastructure	Recommended Action: No additional exposure suggested at this time but if/when distributions come back it may be appropriate to look at core open-end funds with quarterly liquidity.	2020-2021
3.b	Custody Services	Recommended Action: Sometime in the next few years, we recommend a full review of the services provided by J.P. Morgan. There are only a few eligible providers for DPFP to consider if there was a desire to switch to a new custodian bank.	2020-2021
3.c	Securities Lending	Recommended Action: If the Board decides to continue the securities lending program under the revised guidelines, we recommend revisiting the decision in two – three years to see how much income has been earned.	2020-2021





DISCUSSION SHEET

ITEM #D2

Topic: Lone Star Investment Advisors fund extension request and update

Discussion: The Lone Star Growth Capital fund term expires in October 2018. The General Partner has requested a one-year extension to the fund term. Staff will brief the Board on recommended course of action regarding the extension, as well as provide an update on two other funds managed by Lone Star Investment Advisors.

Staff

Recommendation: **Authorize** the Executive Director, as she deems it advisable, to either enter into an extension up to one year on the Lone Star Growth Capital fund or allow the fund to terminate.

Regular Board Meeting – Thursday, August 9, 2018



Lone Star Investment Advisors Extension Request & Update

August 9, 2018

LSIA Portfolio Overview

- DFPF has limited partner interests in four funds managed by Lone Star Investment Advisors, LLC (“LSIA”): the 3 listed below (“LSIA Portfolio”), and the North Texas Opportunity Fund, which only has one remaining asset.
- LSIA Portfolio focuses on lower-middle market investments located primarily in Texas and is heavily concentrated in oil & gas services companies.
- The LSIA Portfolio, which makes up approximately 5% of the DFPF portfolio, is classified as a Legacy asset with expectations that capital will be returned over the next 5 years, with the bulk of activity beginning in 2020.
- Lone Star Growth Capital’s fund term expires in October 2018. The fund term of Lone Star CRA will expire in April 2019. The fund term of Lone Star Opportunity Fund V will expire in December 2022.
- Detailed performance information and a review of valuation issues are included on slide 5.

LSIA Portfolio

Fund	Vintage	Fund Commitments	DFPF Commitment	Unfunded Commitment	Paid in Capital	Distributions	DFPF Carrying Value
Lone Star Growth Capital	2006	25,000	16,000	2,240	26,560	12,800	15,360
Lone Star CRA	2008	85,000	50,000	-	57,519	12,929	70,074
Lone Star Opportunities Fund V	2012	160,000	75,000	-	75,000	531	26,457
			\$141,000	\$2,240	\$159,079	\$26,260	\$111,891

Information above in thousands & based on values as of 12/31/17 plus any capital calls and/or distributions in 2018

Lone Star Growth Capital Extension Request

Issue: General Partner (“GP”) is seeking one-year extension on Lone Star Growth Capital fund, whose term expires in October 2018.

- Based on a motion at the January 2018 DPFPP Board meeting, any extension of the Lone Star Growth Capital fund term requires Board approval.
- The Lone Star Growth Capital fund term expires on October 3, 2018. The fund term cannot be extended without approval of a majority of the Limited Partners (DPFP is 64% of fund).
- The GP has requested a one-year extension to the fund term at a reduced fee of \$250,000, which is approximately half of the current fee.
- If the fund term is not extended, the fund will go into liquidation which requires the GP to either sell the companies, distribute portfolio holdings in-kind to the limited partners or a combination of both.
- Staff plans to evaluate the liquidation option as well as alternative extension terms, including developing a broader solution across the 3 funds in the LSIA Portfolio.

Lone Star Growth Capital Extension Request

Recommendation: Authorize the Executive Director, as she deems it advisable, to either enter into an extension up to one year on the Lone Star Growth Capital fund or allow the fund to terminate.

LSIA Portfolio Performance

- Due to performance concerns and feedback from the secondary market, DFPF has conducted outside independent valuations on LSIA portfolio companies the past two years. DFPF is carrying the funds at a lower NAV than what is reported by LSIA.
- The 3 funds collectively own 14 portfolio companies, several of which are owned across multiple LSIA funds. Lone Star Growth Capital co-owns one company with Lone Star Opportunity Fund V, while Lone Star CRA shares ownership of three companies with Lone Star Opportunity Fund V.

LSIA Portfolio Performance

Fund	Paid in Capital	Distributions	LSIA Reported Carrying Value	DFPF Carrying Value	Net IRR (Inception)	Total Value to Paid In (TVPI)	Distributed to Paid In (DPI)
Lone Star Growth Capital	26,560	12,800	24,132	15,360	1.9%	1.06	0.48
Lone Star CRA	57,519	12,929	87,739	70,074	15.2%	1.44	0.22
Lone Star Opportunities Fund V	75,000	531	72,339	26,457	-52.4%	0.36	0.01
	\$159,079	\$26,260	\$184,210	\$111,891		0.87	0.17

Information above in thousands & based on values as of 12/31/17 plus any capital calls and/or distributions in 2018



DISCUSSION SHEET

ITEM #D3

Topic: Securities Lending Investment Guidelines

Discussion: As part of the DPFPP securities lending review, staff examined the cash collateral investment guidelines, which were last updated in 2002. Staff compared DPFPP guidelines to the JPMorgan securities lending cash collateral money market fund and the JPMorgan standard collateral pool investment guidelines. Staff will review proposed changes with the Board.

Staff Recommendation: **Approve** the proposed changes to the collateral investment guidelines, and **authorize** the Executive Director to execute documentation and perform all necessary acts and exercise all appropriate discretion to facilitate these changes.

Regular Board Meeting – Thursday, August 9, 2018



INVESTMENT RECOMMENDATION

Date: August 9, 2018
To: DFPF Board
From: DFPF Investments Staff
Subject: Securities Lending Collateral Pool Investment Guidelines

Executive Summary

As part of the 2018 review of DFPF's securities lending program and at the request of the Board, staff examined DFPF's cash collateral investment guidelines. The cash collateral investment guidelines establish parameters on the types of investments made with cash collateral received from securities lending activities. The current guidelines had not been updated since 2002, so the objective was to bring them in line with current industry standards and reduce risk potential where appropriate.

Process

Staff reviewed the investment objectives and policies of the JPMorgan securities lending cash collateral fund, as well as JPMorgan's standard collateral investment guidelines. These policies were compared and contrasted with DFPF's existing investment guidelines. Furthermore, staff obtained input and suggestions from Meketa's review of the existing guidelines. Staff also conducted phone calls with JPMorgan's investment desk and securities lending group to discuss potential impacts on yield, current standards, etc. Through this process, staff drafted proposed changes to the investment guidelines that incorporated updated guideline documentation and reduced potential risk.

Summary of proposed changes

A summary of the proposed changes follows on pages 2 and 3, with the guidelines attached as Appendix 1. While current cash collateral investments are very conservative, Staff believes these changes will reduce the risk potential within the DFPF securities lending cash collateral investments account, while bringing the guidelines more in line with current standards.

Recommendation

Approve the proposed changes to the cash collateral investment guidelines, and authorize the Executive Director to execute documentation and perform all necessary acts and exercise all appropriate discretion to facilitate these changes.



Securities Lending Investment Guidelines

Summary of Changes

Permissible Investments (on a fixed and floating rate basis)	Current	Proposed
Asset Backed Securities (ABS)	Y	NO
Bank Notes	Y	Y
Banker's Acceptances	Y	Y
Certificates of Deposit (CD's)	Y	Y
Commercial Paper	Y	Y
Corporate Bonds	Y	Y
Corporate Notes	Y	Y
Deposit Notes	Y	Y
Derivatives	Y	NO
Guaranteed Investment Contracts (GICs)	Y	Y
Loan Participations	Y	Y
Master Notes	Y	Y
Medium Term Notes	Y	Y
Money Market Funds (SEC regulated)	Y	Y
Non-U.S. Sovereign Government Securities	Y	NO
Non-U.S. Sovereign Agency Securities	Y	NO
Non-US Dollar Denominated Securities	NO	NO
Promissory Notes	Y	Y
Repurchase Agreements (Repos)	Y	Y
Reverse Repurchase Agreements	Y	Y
Time Deposits	Y	Y
US Govt Securities	Y	Y
US Agency Securities	Y	Y
US TIPS	Y	Y

Concentration Guidelines	Current	Proposed
Issuer Concentration Limit	10%	5%

Maturity Guidelines	Current	Proposed
Fixed Rate Instruments	2 years	13 months
Floating Rate Instruments	2 years	13 months
US Government Floating Rate Securities	5 years	13 months
Weighted Average Maturity (WAM)	120 days	90 days



Quality Guidelines	Current	Proposed
Short-Term Rating		
S&P	A-1	A-1
Moody's	P-1	P-1
Fitch	F-1	F-1
number of agency ratings required	any 2 of 3	any 2 of 3
Long-Term Rating		
<i>(if no Short-Term Rating provided)</i>		
S&P	A-	A-
Moody's	A3	A3
Fitch	n/a	A-
number of agency ratings required	2 of 2	any 2 of 3

Appendix 1

J.P. Morgan Chase Bank, N.A. - Securities Lending Investment Guidelines
Separate Account For:

The Dallas Police and Fire Pension System

A. **PERMISSIBLE INVESTMENTS:** Both fixed-income securities and other instruments with debt-like characteristics on a fixed rate⁷ and floating rate⁸ basis are permitted, including:

1. **Instruments**(a) **U.S. Treasury Securities** ¹⁵

- U.S. Treasury Bills, Notes, and Bonds ^{15a}
- U.S. Treasury Inflation Protected Securities (TIPS) ^{15c}
- CATEGORY NOT APPROVED FOR INVESTMENT*

(b) **Non-U.S. Sovereign Government Securities** ¹¹

- Government Bills, Notes and Bonds
- CATEGORY NOT APPROVED FOR INVESTMENT*

(c) **U.S. Government Sponsored Securities or Obligations** ¹⁴

- U.S. Government Callable Debt ^{14a}
- U.S. Government Non-Callable Debt ^{14b}
- CATEGORY NOT APPROVED FOR INVESTMENT*

(d) **Non-US Sovereign Agency Securities or Obligations** ^{11a}

- Commercial Paper
- Certificates of Deposit and Promissory Notes
- Medium-Term Notes
- CATEGORY NOT APPROVED FOR INVESTMENT*

(e) **Corporate Securities or Obligations, not subordinated** ¹

- Commercial Paper
- Promissory Notes
- Corporate Bonds, Medium Term Notes, Investment Agreements, Funding Agreements and Guaranteed Investment Contracts issued by Corporations
- CATEGORY NOT APPROVED FOR INVESTMENT*

(f) **Debt Securities or Obligations issued by Financial Institutions** ²

- Commercial Paper
- Certificates of Deposit
- Time Deposits
- Notes, Banker's Acceptances, Bank Notes (Bank Bills), Deposit Notes, and Promissory Notes issued by Financial Institutions, not subordinated.
- Bonds and Medium Term Notes
- CATEGORY NOT APPROVED FOR INVESTMENT*

(g) **Structured Credit Securities issued by SPVs, Conduits or under similar structures backed by U.S. Government Agencies or U.S. Government-Sponsored Enterprises, not subordinated** ¹⁰

**(where approved, this asset class requires specific agreement from the clients' Chief Investment Officer or equivalent)*

- GNMA Mortgage Backed Securities (MBS) ^{10a}
- GNMA Collateralized Mortgage Obligations (CMOs) ^{10b}
- Mortgage Backed Securities (MBS), non-GNMA ^{10c}
- Collateralized Mortgage Obligations (CMOs), non-GNMA ^{10d}
- CATEGORY NOT APPROVED FOR INVESTMENT**

(h) **Structured Credit Securities issued by SPVs, Conduits or under similar structures, not subordinated** ¹²

**(where approved, this asset class requires specific agreement from the clients' Chief Investment Officer or equivalent)*

- Asset Backed Commercial Paper ^{12c}
- Asset Backed Securities (ABSs) ^{12b}
- Asset Backed Securities (ABSs) Home Equity loans ^{12a}
- Secured Master Notes ^{12d}
- Corporate Structured Notes ^{12e}
- CATEGORY NOT APPROVED FOR INVESTMENT**

(i) **Debt Securities issued by Supranational issuers, not subordinated** ³

- CATEGORY APPROVED FOR INVESTMENT*
- CATEGORY NOT APPROVED FOR INVESTMENT**

(j) **Reverse Repurchase Agreements (Reverse Repos)** ⁹ - See Appendix A

- CATEGORY APPROVED FOR INVESTMENT** *(where approved, acceptable collateral types MUST be selected in Appendix A)*
- CATEGORY NOT APPROVED FOR INVESTMENT*

(k) **Money Market Mutual Funds**

- Shares of a U.S. SEC-Regulated Money Market Fund** ¹⁶
(where approved, MUST select 2a-7 money market funds, non 2a-7 funds or both)
 - 2a-7 money market mutual funds
 - Non-2a-7 money market mutual funds
- Shares of a Short Term Money Market Fund as defined by the European Securities and Markets Authority ¹⁷
- Shares of a money market managed investment scheme registered by the Australian Securities and Investments Commission (ASIC) ¹⁸
- CATEGORY NOT APPROVED FOR INVESTMENT*

2. Currency**Reverse Repurchase Agreement Collateral Currency**

- Collateral must be denominated in the same currency as the investment
- Collateral may be denominated in a different currency to the investment
See Appendix A-XCCY for Cross Currency Reverse Repurchase Agreement Collateral Categories

Investment Currency

All investments must be denominated in the currency of the cash collateral received.

3. J.P. Morgan or any of its Affiliates

- Permissible investments are approved to be acquired through J.P. Morgan or any of its affiliates
- Shares of a Money Market Mutual Fund managed by J.P. Morgan or any of its affiliates are permissible
- Reverse Repurchase agreements with J.P. Morgan or any of its affiliates as a counterparty are permissible
- Securities issued by J.P. Morgan or any of its affiliates are not permissible
- J.P. Morgan or any of its affiliates are not permissible for any of the above options in A.3.

J.P Morgan or its Affiliates may earn fees and profits from any of the above-listed activities. Lender acknowledges that such fees and profits are separate from, and in addition to, the fees that J.P. Morgan earns under the Agreement and Lender hereby consents to the receipt by J.P. Morgan or its Affiliates of such fees and profits.

B. CONCENTRATION GUIDELINES

1. There shall be no concentration limitation on (a), (c), (j), and (k). See section A.1.
2. For the securities and instruments listed in (e), (f), and (h), as measured at the time of purchase, 5 % of the aggregate total cash collateral invested on behalf of Lender may be invested in instruments of a single issuer; provided that, where an investment in a given issuer is maturing during the period beginning with the trade date for a new investment in such issuer and ending on the settlement date for such new investment, the new investment shall not be included in the concentration calculation during such period.
3. For purposes of these guidelines, the term "issuer" means a given entity and its affiliates and an "affiliate" of an issuer means an entity controlling, controlled by, or under common control with, the issuer.

C. MATURITY GUIDELINES

WAM¹⁹ to Final Maturity of the portfolio will not exceed 90 days based upon a calculation done at time of purchase. The WAM to Reset²⁰ as measured by interest reset date may not exceed 60 days.

Fixed Rate Instruments and Floating Rate Instruments (including U.S. Government Securities) shall have a Final Maturity⁶ that is no more than 13 months following the settlement date.

For extendible securities, J.P. Morgan only regards these as acceptable in cases where the investing agent has control over the extension feature.

For Structured Products, such instruments can be considered for investment on an asset-class basis based upon specific agreement from the clients' Chief Investment Officer or equivalent. Where approved, structured products shall have an Expected Maturity⁵ date that is no more than 13 months following the settlement date.

D. RATINGS GUIDELINES - all ratings referred to in Section D refer to the rating defined at the time of purchase.

1. Ratings

Except with respect to permitted collateral for reverse repurchase agreements, U.S. Treasury Securities, U.S. Government Agency Debentures, U.S. Government Sponsored Securities or Obligations and as noted below, a permissible investment must have a minimum rating as provided by a Nationally Recognized Statistical Rating Organization (“NRSRO”) as follows:

Short Term Ratings designated below will be applied to investments maturing in 13 months or less from time of purchase.

In the event that an NRSRO, as designated below, does not provide a Short Term rating for an investment maturing in 13 months or less, a Tier One Long Term Credit Rating²¹ from that NRSRO will be deemed to have satisfied that NRSRO’s Short Term rating criteria.

- 2. An investment without its own rating shall be considered to be rated if the issuer thereof is rated with respect to: (i) a class of short-term debt obligations, in the case of short-term ratings, or (ii) a class of long-term debt obligations, in the case of long-term ratings and in that case shall be deemed to bear the rating of the corresponding rated obligation.
- 3. **Ratings Downgrades:** In the event that a rating is downgraded by an NRSRO below the minimum requirement as indicated in section D: Ratings Guidelines, JPMorgan shall notify the Lender and await instructions as to whether the affected security or instrument should be sold. In the absence of a contrary instruction, JPMorgan shall take no action with respect to the downgraded security or instrument. In no event shall JPMorgan be liable for any consequences of a rating downgrade, including, but not limited to, retention of the affected security or instrument in the absence of a sale instruction from the Lender.
- 4. Some ratings may contain an annotation alongside the rating (for example: AAAm (S&P), Aaa-mf (Moody's), or AAAmmf (Fitch) for Money Market Mutual Funds) to denote the relevant rating agency has assigned the rating according to its specific criteria for the instrument.

(a) U.S. Treasury Securities ¹⁵
 'CATEGORY NOT APPROVED FOR INVESTMENT'

(b) Non-US Sovereign Government Securities ¹¹
 'CATEGORY NOT APPROVED FOR INVESTMENT'

Minimum Short Term Ratings:

- S&P A-1 NA
 Moody's P-1 NA
 Fitch F-1 NA

Minimum Ratings Based On:

- Any one
 Any two of three
 All selected ratings

Minimum Long Term Ratings:

- S&P AAA AA- A- NA
 Moody's Aaa Aa3 A3 NA
 Fitch AAA AA- A- NA

Minimum Ratings Based On:

- Any one
 Any two of three
 All selected ratings

(c) U.S. Government Sponsored Securities or Obligations ¹⁴
 'CATEGORY NOT APPROVED FOR INVESTMENT'

(d) Non-US Sovereign Agency Securities or Obligations ^{11a}

'CATEGORY NOT APPROVED FOR INVESTMENT'

Minimum Short Term Ratings:

S&P A-1 NA
 Moody's P-1 NA
 Fitch F-1 NA

Minimum Ratings Based On:

Any one
 Any two of three
 All selected ratings

Minimum Long Term Ratings:

S&P AAA AA- A- NA
 Moody's Aaa Aa3 A3 NA
 Fitch AAA AA- A- NA

Minimum Ratings Based On:

Any one
 Any two of three
 All selected ratings

(e) Corporate Securities or Obligations, not subordinated ¹

'CATEGORY NOT APPROVED FOR INVESTMENT'

Minimum Short Term Ratings:

S&P A-1 NA
 Moody's P-1 NA
 Fitch F-1 NA

Minimum Ratings Based On:

Any one
 Any two of three
 All selected ratings

Minimum Long Term Ratings:

S&P AAA AA- A- NA
 Moody's Aaa Aa3 A3 NA
 Fitch AAA AA- A- NA

Minimum Ratings Based On:

Any one
 Any two of three
 All selected ratings

(f) Debt Securities issued by Financial Institutions or Obligations of Financial Institutions ²

'CATEGORY NOT APPROVED FOR INVESTMENT'

Minimum Short Term Ratings:

S&P A-1 NA
 Moody's P-1 NA
 Fitch F-1 NA

Minimum Ratings Based On:

Any one
 Any two of three
 All selected ratings

Minimum Long Term Ratings:

S&P AAA AA- A- NA
 Moody's Aaa Aa3 A3 NA
 Fitch AAA AA- A- NA

Minimum Ratings Based On:

Any one
 Any two of three
 All selected ratings

(g) Structured Credit Securities issued by SPVs, conduits or under similar structures backed by U.S. Government Agencies or U.S. Government-Sponsored Enterprises ¹⁰

Ratings Requirement: AAA for all available ratings provided by S&P, Moody's, and Fitch

'CATEGORY NOT APPROVED FOR INVESTMENT'

(h) Structured Credit Securities issued by SPVs, conduits or under similar structures, not subordinated ¹²

'CATEGORY NOT APPROVED FOR INVESTMENT'

Asset Backed Securities (ABSs) ^{12a}

Asset Backed Securities (ABSs) Home Equity loans ^{12b}

Corporate Structured Notes ^{12e}

Ratings Requirement: AAA for all available ratings provided by S&P, Moody's, and Fitch

Asset Backed Commercial Paper ^{12c} Secured Master Notes ^{12d}

Minimum Short Term Ratings:

S&P A-1 NA

Moody's P-1 NA

Fitch F-1 NA

Minimum Ratings Based On:

Any one

Any two of three

All selected ratings

Minimum Long Term Ratings:

S&P AAA AA- A- NA

Moody's Aaa Aa3 A3 NA

Fitch AAA AA- A- NA

Minimum Ratings Based On:

Any one

Any two of three

All selected ratings

(i) Debt Securities issued by Supranational Entities, not subordinated ³

'CATEGORY NOT APPROVED FOR INVESTMENT'

Minimum Short Term Ratings:

S&P A-1 NA

Moody's P-1 NA

Fitch F-1 NA

Minimum Ratings Based On:

Any one

Any two of three

All selected ratings

Minimum Long Term Ratings:

S&P AAA AA- A- NA

Moody's Aaa Aa3 A3 NA

Fitch AAA AA- A- NA

Minimum Ratings Based On:

Any one

Any two of three

All selected ratings

(j) Reverse Repurchase Agreements ⁹ (Reverse Repos)

'CATEGORY NOT APPROVED FOR INVESTMENT'

Reverse Repurchase Agreements ⁹ (Reverse Repos) are subject to the reverse repurchase agreement collateral schedule list in Appendix A. Refer to Appendix A for a specific description of collateral types.

(k) Money Market Mutual Funds

'CATEGORY NOT APPROVED FOR INVESTMENT'

Minimum Short Term Ratings:

S&P A-1 NA

Moody's P-1 NA

Fitch F-1 NA

Minimum Ratings Based On:

Any one

Any two of three

All selected ratings

Minimum Long Term Ratings:

S&P AAA AA- A- NA

Moody's Aaa Aa3 A3 NA

Fitch AAA AA- A- NA

Minimum Ratings Based On:

Any one

Any two of three

All selected ratings

J.P. Morgan aims to manage securities lending cash collateral in order to provide preservation of principal and maintain portfolio liquidity, while maximizing income in support of securities lending activities.

While J.P. Morgan's investment approach is a buy-and-hold strategy, under certain circumstances J.P. Morgan may sell out of a position. If J.P. Morgan were to sell out of a position, the client would receive 100% of any realized gain. Positions will not be sold before maturity at a loss unless specifically instructed to do so by the client or in the normal course of operating the securities lending portfolio. Investments are not guaranteed by J.P. Morgan, and involve risk, including possible loss of principal. Lender assumes all risk of loss resulting from an investment. In the event of conflict between these investment guidelines and the Securities Lending Agreement, these investment guidelines shall govern.

Lender should regularly analyze these guidelines to determine their continued appropriateness, recognizing that all investments bear risk and that return of principal is not assured. Please indicate your acceptance of these guidelines by signing in the space provided below.

By signing this document, the client representative certifies that he/she is authorized to do so.

J.P. Morgan Chase Bank, N.A.

Name:

Title:

Date:

Signed: _____

The Dallas Police and Fire Pension System

Name:

Title:

Date:

Signed: _____

APPENDIX A - USD: Reverse Repurchase Agreement Collateral Categories

Securities received as collateral must be denominated in the same currency as the investment.

Reverse Repo Collateral	Reverse Repo Collateral Type IMPORTANT NOTE: Includes ALL of the following -	Category Approved
1. U.S. Treasury Securities ¹⁵	<ul style="list-style-type: none"> • U.S. Treasury Bills, Notes and Bonds^{15a} • U.S. Treasury Strips^{15b} • U.S. Treasury Inflation Protected Issues (TIPS)^{15c} 	<input checked="" type="checkbox"/>
2. GNMA Mortgage Backed Securities (MBS) (also includes #1)	<ul style="list-style-type: none"> • GNMA Mortgage Backed Securities (MBS)^{10a} 	<input checked="" type="checkbox"/>
3. U.S. Government Sponsored Securities or Obligations ¹⁴ (also includes #1 & #2)	<ul style="list-style-type: none"> • Federal National Mortgage Association (FNMA) • Federal Home Loan Bank (FHLB) • Federal Home Loan Mortgage Corp. (FHLMC) • Federal Farm Credit System (FFCB) 	<input checked="" type="checkbox"/>
4. U.S. Government Sponsored MBS and Structured Credit Securities, including CMOs & REMICs, issued by SPVs, conduits or under similar structures backed by U.S. Government Agencies or U.S. Government-Sponsored Enterprises ¹⁰ (also includes #'s 1 - 3)	<ul style="list-style-type: none"> • U.S. Government Sponsored Security MBS and Structured Credit Securities, including CMOs & REMICs, issued by SPVs, conduits or under similar structures backed by U.S. Government Agencies or U.S. Government-Sponsored Enterprises, as defined within glossary 	<input checked="" type="checkbox"/>
5. Supranationals ³ / Non-US Agencies ^{11a} (also includes # 1-4)	<ul style="list-style-type: none"> • Domicile of agency is within the EU or OECD. • <i>Subject to a minimum rating of S&P AA- or Moody's Aa3 or Fitch AA-</i> 	<input type="checkbox"/>
6. Money Market Instruments (also includes #'s 1- 4)	<ul style="list-style-type: none"> • Underlying assets including, but not limited to: Commercial paper, promissory notes, CDs • <i>Subject to a minimum rating of S&P A1 and Moody's P1</i> 	<input checked="" type="checkbox"/>
7. Corporate Securities or Obligations ¹ (also includes #'s 1- 4)	<ul style="list-style-type: none"> • Corporate Bonds & Medium Term Notes • <i>Subject to a minimum rating of S&P AA- and Moody's Aa3</i> 	<input checked="" type="checkbox"/>
8. Corporate Securities or Obligations ¹ (also includes #'s 1- 4)	<ul style="list-style-type: none"> • Corporate Bonds & Medium Term Notes • <i>Subject to a minimum rating of S&P BBB- and Moody's Baa3</i> 	<input checked="" type="checkbox"/>
9. Structured Mortgage Backed Securities issued by SPVs, conduits or under similar structures ¹² (also includes #'s 1- 4)	<ul style="list-style-type: none"> • Private label Collateralized Mortgage Obligations (CMOs), Mortgage Backed Securities (MBS's) and Real Estate Mortgage Investment Conduits (REMIC's); assets may include: <ul style="list-style-type: none"> - Residential mortgage related and can be either senior or subordinated obligations • <i>Subject to a minimum rating of S&P AAA and Moody's Aaa</i> 	<input type="checkbox"/>
10. Structured Credit Securities issued by SPVs, conduits or under similar structures ¹² (also includes #'s 1- 4)	<ul style="list-style-type: none"> • Private label Collateralized Mortgage Obligations (CMOs), Mortgage Backed Securities (MBS's) and Real Estate Mortgage Investment Conduits (REMIC's); assets may include: <ul style="list-style-type: none"> - Aircraft equipment financing, Automobile financing, Credit card receivable, Student loans & Equipment leases • <i>Subject to a minimum rating of S&P AAA and Moody's Aaa</i> 	<input type="checkbox"/>
11. Municipal Securities (also includes #'s 1- 4)	<ul style="list-style-type: none"> • Municipal Bonds • <i>Subject to a minimum rating of S&P AA- or Moody's Aa3 or Fitch AA-</i> 	<input type="checkbox"/>
12. U. S. Equity ⁴ Securities (also includes #1)	<ul style="list-style-type: none"> • Equity shares participating in the following indices: <ul style="list-style-type: none"> - Russell 3000, including Russell 1000, 2000 and S&P 500 	<input type="checkbox"/>
13. Exchange Traded Funds (ETFs) ²² (also includes #1 & 12)	<ul style="list-style-type: none"> • USD denominated Exchange Traded Funds (ETFs) included within the following Markit ETF list: <ul style="list-style-type: none"> - Markit ETF Collateral Physical Equity²³ 	<input type="checkbox"/>

In the unlikely event where the repo counterparty is unable to supply and deliver securities described above as collateral, a deposit of cash, which is not to be invested, is required to be held overnight to meet the collateral value requirements as specified under the applicable repo agreement. Cash will be in the form of USD.

The Dallas Police and Fire Pension System	J.P. Morgan Chase Bank, N.A.
Name: _____	Name: _____
Title: _____	Title: _____
Date: _____	Date: _____
Signed: _____	Signed: _____

GLOSSARY

¹Corporate Securities or Obligations include: unsecured debt issued or guaranteed by a corporation defined as i) a legal personality used to conduct business that has legal independence from the people who create it and has legal rights and responsibilities and ii) an entity that has underlying operations, revenues, and cash flows that are expected to support the repayment of its debt.

- Short Term Unsecured Debt: Commercial Paper issued by Corporations, including both registered and exempt (pursuant to Sections 3(a)(3) or 4(2) of the Securities Act of 1933) with a maturity less than 270 days.
- Term Unsecured Debt: Corporate Bonds, Medium Term Notes (“MTNs”) and Promissory Notes (“PNs”) issued by Corporations.
- Term Unsecured Debt: Investment Agreements (“IAs”), Funding Agreements (“FAs”) and Guaranteed Investment Contracts (“GICs”) issued by Corporations.

²Debt Securities issued by Financial Institutions or Obligations of Financial Institutions include: unsecured debt issued or guaranteed by a financial institution defined as i) an entity that provides financial services for its clients or members or ii) an entity that is under financial regulation from a government authority or iii) an entity that operates as a bank or broker-dealer or iv) an insurance company.

- Short Term Unsecured Debt: Commercial Paper issued by Financial Institutions, including both registered and exempt (pursuant to Sections 3(a)(3) or 4(2) of the Securities Act of 1933).
- Term Unsecured Debt: Bonds, Notes, Banker’s Acceptances (“BAs”), Bank Notes (“BNs”), Certificates of Deposit (“CDs”), Deposit Notes (“DNs”) Medium Term Notes (“MTNs”), Promissory Notes (“PNs”) and Time Deposits (“TDs”) issued by Financial Institutions, not subordinated.

³Debt Securities issued by Supranational issuers include: Non-subordinated notes and bonds issued by specified Multilateral Development Banks (MDBs) that are institutions created by a group of countries that provide financing and professional advising for the purpose of development. MDBs have large memberships including both developed donor countries and developing borrower countries.

⁴Equity: Equity shares registered on an exchange or exchanges.

⁵Expected Maturity: The time period before which, based on the cash flows expected from assets transferred to the issuer, the particular security being acquired is expected to be fully paid off. The expected maturity is not the legal final maturity as the rating of the transaction is not based on repayment by the expected maturity. It should be noted that the actual maturity could be prior to or after the expected maturity noted at the time of purchase.

⁶Final Maturity: for instruments with a specific maturity and for purposes of these guidelines, “final maturity” means the earliest/earlier of: (i) the date noted on the face of the instrument as the date on which the principal amount must be paid or (ii) in the case of an instrument with an unconditional put or unconditional demand feature, the date on which the principal amount of the instrument can be recovered by demand.

⁷Fixed Rate Instruments: instruments (other than Structured Products) with an interest rate that will remain at a predetermined rate for the entire term of the loan.

⁸Floating Rate Instruments: instruments (other than Structured Products) with a variable interest rate. The adjustments to the interest rate are usually made no less frequently than three months and are tied to a certain money-market index. These instruments are also referred to as a “floater”.

⁹Reverse Repurchase Agreements (Reverse Repos) include: a transaction under which a lender (buyer / cash provider) agrees to purchase a security from a seller / cash receiver with a simultaneous agreement to resell the asset on a given date and at a pre-specified price. The result is simply a loan at a prescribed rate for a predetermined period while holding the asset as collateral. Reverse repos have their collateral defined either in Master Repo Agreements or in trade confirmations. Haircut levels are determined by the collateral type.

¹⁰Structured Credit Securities issued by SPVs, conduits or under similar structures backed by U.S. Government Agencies or U.S. Government-Sponsored Enterprises include:

^{10a} GNMA Mortgage Backed Securities (MBS) include pass-through certificates (GNMA Certificates) in book-entry form backed by residential mortgage loans, the full and timely payment of principal and interest of which is guaranteed by the Government National Mortgage Association. This category excludes Real Estate Mortgage Investment Conduit (REMIC), Collateralized Mortgage Obligations (CMOs), securities paying interest or principal only and similar derivative securities.

^{10b} GNMA Collateralized Mortgage Obligations (CMOs) and Real Estate Mortgage Investment Conduits (REMICs) may include Sequential-Pay Classes, Planned Amortization Classes (PACs), Targeted Amortization Classes (TACs), Support Classes (“Companions”), Z-Bonds, Very Accurately Defined Maturity (VADMs), Floaters, Inverse Floaters, Interest Only, Principal Only, and Accrued Classes.

^{10c} Mortgage Backed Securities (MBS) mortgage participation certificates (FNMA Certificates, FHLMC Certificates) in book-entry form backed residential mortgage loans, the full and timely payment of interest at the applicable certificate rate and the ultimate collection of principal of which are guaranteed by the Federal National Mortgage Association of the Federal Home Loan Mortgage Corporation. This category excludes Real Estate Mortgage Investment Conduit (REMIC), Collateralized Mortgage Obligations (CMOs), securities paying interest or principal only and similar derivative securities).

^{10d} Collateralized Mortgage Obligations (CMOs) and Real Estate Mortgage Investment Conduits (REMICs) issued by FNMA and FHLMC. Types include, sequential-Pay Classes, Planned Amortization Classes (PACs), Targeted Amortization Classes (TACs), Support Classes (“Companions”), Z-Bonds, Very Accurately Defined Maturity (VADMs), Floaters, Inverse Floaters, Interest Only, Principal Only and Accrued Classes.

¹¹Sovereign Government Securities include: full faith and credit Sovereign obligations of any country other than the U.S. that is a member of the Organization for Economic Co-operation and Development or any country that is a member of the European Union, which shall include securities issued or guaranteed as to principal and interest by such a sovereign, or by its agencies, instrumentalities, establishments or the like. This includes bills, notes, and bonds.

^{11a}Non-US Sovereign Agency Securities or Obligations include: Sovereign obligations of any country other than the U.S. that is a member of the Organization for Economic Co-operation and Development or any country that is a member of the European Union, which shall include securities issued by such a sovereign, or by its agencies, instrumentalities, establishments or the like. This includes Commercial Paper, Certificates of Deposit and Medium Term Notes that need to be defined by country.

¹²Structured Credit Securities issued by SPVs, conduits or under similar structures include: debt securities that result from asset securitizations and are either based on pools of assets or collateralized by the cash flows from a specified pool of underlying assets.

^{12a}Asset Backed Securities (ABSs) defined in Form S-3 of the U.S. Securities Exchange Commission (SEC) as a security that is primarily serviced by the cash flows of a discrete pool of receivables or other financial assets, either fixed or revolving, that by their terms convert into cash within a finite time period plus any rights or other assets designed to assure the servicing or timely distribution of proceeds to the security holders. Underlying assets must be: a) Aircraft equipment financing, b) Automobile financing, c) Credit card receivables, d) Student loans, e) Equipment leases.

^{12b}Asset Backed Securities (ABSs) Home Equity loans defined in Form S-3 of the U.S. Securities Exchange Commission (SEC) as a security that is primarily serviced by the cash flows of a discrete pool of receivables or other financial assets, which may be either stand-alone items or extensions under a line of credit, that by the terms of the receivable assets or other financial assets convert into cash within a finite time period plus any rights or other assets designed to assure the servicing or timely distribution of proceeds to the security holders. Underlying assets must be residential mortgage related and can be either senior or subordinated obligations.

12c Asset Backed Commercial Paper (ABCPs): include programs composed of a bankruptcy-remote special purpose vehicle (SPV), or conduit, that issues commercial paper (CP) and uses the proceeds of such issuance primarily to obtain interests in various types of assets, either through asset purchase or secured lending transactions. An ABCP program includes key parties that perform various services for the conduit, credit enhancement that provides loss protection, and liquidity facilities provided by banks that assist in the timely repayment of CP. The repayment of CP issued by a conduit depends primarily on the cash collections received from the conduit's underlying asset portfolio and a conduit's ability to issue new CP. ABCPs can be registered and exempt (pursuant to Sections 3(a)(3) or 4(2) of the Securities Act of 1933). Underlying assets can be but are not limited to a) Aircraft equipment financing, b) Automobile financing, c) Credit card receivables, d) Student loans, e) Equipment leases and f) Trade receivables.

12d Secured Master Notes represent debt issued by Corporations or Financial Institutions secured by assets. They may include put options that accelerate their repayment.

12e Corporate Structured Notes are hybrid securities that represent a corporate debt obligation, usually issued by a financial institution, but also contains embedded derivatives component with characteristics that adjust the security's risk/return profile. The return of a structured note is driven by underlying debt obligation and the derivatives embedded within it. Some structured notes are tailored to an investor's risk and return expectations. Embedded derivatives include futures, options and swaps. SEC Rule 434 (Reg. § 230.434.) covering prospectus delivery requirements defines structured securities as "securities whose cash flow characteristics depend upon one or more indices or that have embedded forwards or options or securities where an investor's investment return and the issuer's payment obligations are contingent on, or highly sensitive to, changes in the value of underlying assets, indices, interest rates or cash flows."

13 Structured Products are asset backed securities authorized for investment under these guidelines, including Structured Credit Securities issued by SPVs, conduits or similar structures backed by U.S. Government Agencies or U.S. Government-Sponsored Enterprises and Structured Credit Securities issued by SPVs, conduits or similar structures.

14 U.S. Government Sponsored Securities or Obligations include: fixed and floating rate senior debt securities issued by the Federal Home Loan Mortgage Corporation (FHLMC or Freddie Mac), the Federal National Mortgage Association (FNMA or Fannie Mae), Federal Farm Credit Banks (FFCB) or the Federal Home Loan Bank (FHLB) of the U.S. Government.

14a U.S. Government Callable Debt includes,

- (a) Non-amortizing U.S. Dollar-denominated senior debt securities of fixed maturity in book entry form
- (b) U.S. Dollar-denominated discount senior notes sold at a discount from their principal amount payable at maturity with an original maturity of 360 days or less in book entry form

14b U.S. Government Non-Callable Debt includes,

- (a) Non-amortizing U.S. Dollar-denominated senior debt securities of fixed maturity in book entry form
- (b) U.S. Dollar-denominated discount senior notes sold at a discount from their principal amount payable at maturity with an original maturity of 360 days or less in book entry form

15 U.S. Treasury Securities: include book-entry securities issued by the U.S. Treasury.

15a U.S. Treasury Bills, Notes, and Bonds include negotiable debt obligations issued pursuant to USC Title 31, Chapter 31, Section 3104 by the Department of the Treasury backed by the credit of the United States of America.

15b U.S. Treasury Strips include securities issued by the Department of the Treasury backed by the credit of the United States of America that represent either interest components or principal components stripped from underlying US treasury obligations under the program of the Department of the Treasury called "Separate Trading of Registered Interest and Principal Securities".

^{15c}U.S. Treasury Inflation Protected Securities (TIPS) issued by the Department of the Treasury backed by the credit of the United States of America where the principal is changed based on changes in the consumer price index.

¹⁶**U.S. SEC-Regulated Money Market Mutual Funds:** include money market funds registered with the U.S. Securities and Exchange Commission as an investment company regulated by the Investment Company Act of 1940, as amended.

A money market fund is a type of mutual fund that is required by law to invest in low-risk securities. These funds have relatively low risks compared to other mutual funds and pay dividends that generally reflect short-term interest rates. Unlike a "money market deposit account" at a bank, money market funds are not federally insured.

¹⁷**Short Term Money Market Mutual Funds:** include money market funds authorized and regulated as a UCITS, conforming to the European Securities and Markets Authority ("ESMA", previously known as the Committee of the European Securities Regulators) established definition of a Short Term Money Market Fund.

¹⁸**Australian-Regulated Money Market Mutual Funds:** include money market funds registered with Australian Securities and Investments Commission ("ASIC").

A money market fund is a type of mutual fund that is required by law to invest in low-risk securities. These funds have relatively low risks compared to other mutual funds and pay dividends that generally reflect short-term interest rates. Unlike a "money market deposit account" at a bank, money market funds are not insured.

All Money market mutual funds typically invest in government securities, certificates of deposits, commercial paper of companies, and other highly liquid and low-risk securities. They attempt to keep their net asset value (NAV) at a constant \$1.00 per share and expect only the yield to go up and down. But a money market's per share NAV may fall below \$1.00 if the investments perform poorly. While investor losses in money market funds have been rare, they are possible.

¹⁹**Weighted Average Maturity (WAM) to Final:** The average time it takes for securities in a portfolio to mature, weighted in proportion to the dollar amount that is invested in the portfolio. The calculation for Weighted Average Maturity to Final will be based on Final Maturity for both Fixed and Floating Rate Instruments except in the case of Structured Products, which will use Expected Maturity.

²⁰**Weighted Average Maturity (WAM) to Reset:** The average time it takes for securities in a portfolio to mature, weighted in proportion to the dollar amount that is invested in the portfolio. The calculation for Weighted Average Maturity by Reset will be based on Final Maturity for Fixed Rate Instruments or the Interest Reset date for Floating Rate Instruments.

²¹**Tier One Long Term Credit Rating:** A credit rating within the highest Long Term rating category of a Nationally Recognized Statistical Rating Organization ("NRSRO").

Tier One Long Term Ratings consist of the following:

S&P: AAA, AA+, AA, AA-, A+, A, A-;

Moody's: Aaa, Aa1, Aa2, Aa3, A1, A2, A3;

Fitch: AAA, AA+, AA, AA-, A+, A, A-;

ANNEX**J.P. Morgan Provides Diverse Financial Services and May Generate Profits as a Result**

Potential conflicts of interest may arise whenever J.P. Morgan has an actual or perceived economic or other incentive as securities lending agent to act in a way that benefits J.P. Morgan because of relationships that J.P. Morgan has with other clients or when J.P. Morgan acts for its own account. Potential conflicts may arise, for example (to the extent the following activities are permitted in Lender's account(s)) when: (1) J.P. Morgan enters into Loans or Authorized Investments in the form of repurchase agreement transactions where an Affiliate is the counterparty; (2) J.P. Morgan makes an Authorized Investment in an investment product, such as, without limitation, mutual fund, managed by J.P. Morgan or an Affiliate; (3) a J.P. Morgan entity obtains services, including trade execution and trade clearing, from an Affiliate such as, without limitation, J.P. Morgan Securities LLC, J.P. Morgan Securities plc or J.P. Morgan Clearing Corp; (4) J.P. Morgan receives payment as a result of purchasing an investment product for a client's account; or (5) J.P. Morgan receives payment for providing services (including shareholder servicing, recordkeeping or custody) with respect to investment products purchased or held as collateral for a client's portfolio. Other potential conflicts may arise because of relationships that J.P. Morgan has with other clients or when J.P. Morgan acts for its own account.

Lender hereby authorizes J.P. Morgan to act under the Agreement notwithstanding that J.P. Morgan or an Affiliate may have a potential conflict of duty or interest in a transaction. In addition to the potential conflicts described above, this includes the fact that J.P. Morgan may: (a) in its individual capacity or acting in a fiduciary capacity for other accounts, have transactions with the same institutions to which J.P. Morgan may be lending Securities, or in which J.P. Morgan may invest Cash Collateral, under this Agreement; (b) use EquiLend, a securities lending platform in which J.P. Morgan has an equity interest (and therefore a financial interest in its success), to transact certain Loans with Borrowers that are EquiLend participants (it being understood that EquiLend will neither act as principal in, nor guarantee, any such Loan); (c) when making Authorized Investments as agent for Lender, enter into repurchase agreement transactions under which collateral and/or margin posted by the repurchase transaction seller is held by J.P. Morgan, as custodian for such seller; (d) act as custodian for certain Borrowers, and hold Collateral in the form of Securities posted for Loans by such Borrower; and (e) act as a counterparty to Lender in currency exchange transactions. J.P. Morgan or its Affiliates may earn fees and profits from any of the above-listed activities. Lender acknowledges that such fees are separate from, and in addition to, the fees that J.P. Morgan earns under this Agreement and Lender hereby consents to the receipt by J.P. Morgan or its Affiliates of such fees. In connection with the foregoing, J.P. Morgan shall not be bound to: (i) account to Lender for any fee or other sum received or profit made by J.P. Morgan for its own account or the account of any other person or (ii) disclose any information concerning the specifics of any given transaction or arrangement listed above; provided that, as respects (i) above, J.P. Morgan shall, upon request, promptly inform Lender of the relevant facts as the same relate to J.P. Morgan's fees as securities lending agent for Lender hereunder.



DISCUSSION SHEET

ITEM #D4

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: Staff will discuss the proposed standards for members of the Investment Advisory Committee.

Staff

Recommendation: Advise prospective members of the Investment Advisory Committee that all IAC members will be expected to acknowledge the requirements of the Investment Policy Statement which provides that all IAC members will be considered fiduciaries of DPFP.

Regular Board Meeting – Thursday, August 9, 2018



DISCUSSION SHEET

ITEM #D5

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, August 9, 2018



MEMORANDUM

To: Board of Trustees, Dallas Police & Fire Pension System
From: Leandro Festino, Aaron Lally, Alli Wallace,
 Meketa Investment Group
Date: August 3, 2018
Re: OFI; Portfolio Manager Rajeev Bhaman

SUMMARY

The Portfolio Manager of the OFI Global Equity Strategy, Rajeev Bhaman, CFA, recently announced that he intends to retire at the end of the first quarter in 2019. Currently¹ DPFP has \$111.1 million invested with OFI, representing approximately 5.3% of the System's assets. Since inception in September 2007, OFI Global has generated 6.8% net of fees per year, on average, for DPFP vs. 4.5% for the MSCI ACWI Index.

Mr. Bhaman has been the lead Portfolio Manager ("PM") since 2005. OFI recently named Mr. John Delano as his successor. Mr. Delano has served as an analyst on the strategy since 2011, and has spent the last year and a half as a named co-portfolio manager on the strategy, below Mr. Bhaman. We view this as a significant event requiring a reevaluation and new underwriting of the strategy.

ANALYSIS

Mr. Bhaman has been the key decision maker and lead portfolio manager on the Global Equity team for more than ten years. While OFI's long-term track record is strong, that track record will become largely irrelevant once Mr. Bhaman's successor, John Delano, takes over the role. While OFI likely began grooming Mr. Delano for the lead PM role when they named him co-portfolio manager in 2017, he has limited experience as a decision maker and no experience as the lead decision maker.

Mr. Delano has worked at OFI for 11 years and has spent the past 7 years on the global equity team covering consumer names. Though Mr. Delano has 20 years of investment experience, this promotion is a significant increase in his responsibilities. While Mr. Delano is presumably a competent analyst, his skills as a portfolio manager are untested. He also enters the role with far less experience than Mr. Bhaman already had under his belt when he first took over as the lead PM on this strategy in 2005.

¹ As of June 30, 2018.

Memorandum
August 3, 2018
Page 2 of 2

CONCLUSION

Mr. Rajeev Bhaman's retirement at the end of first quarter 2019 will be a material negative development for the OFI Global team. We plan to meet with OFI in the coming months to determine if the strategy should be retained under new leadership or if a replacement search is recommended.

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

LF/AL/AW/mps



DISCUSSION SHEET

ITEM #D6

Topic: 2018 Mid-Year Budget Review

Discussion: Attached is a review of the 2018 Operating Expense Budget detailing expenses for the first six months of the calendar year.

Expense items which are greater than the prorated budget by more than 5% and \$10,000 as of June 30, 2018 are discussed in the attached review.

Supplemental Plan expenses are deducted from total expenses in arriving at total Regular Plan expenses. Expenses are allocated to the two plans on a pro-rata basis, according to the ratio of each plan's assets to the total Group Trust assets. The ratio is derived from the Unitization Report prepared by JPMorgan as of June 30, 2018. The ratio is 99.2% Regular Plan to .8% Supplemental Plan.

Regular Board Meeting – Thursday, August 9, 2018

**BUDGET
CALENDAR YEAR 2018**

Description	2017 6 mos Actual	2018 6 mos Budget	2018 6 mos Actual	YTD Variance \$ Over/(Under)	YTD Variance % Over/(Under)
1 Building expenses, incl depreciation	359,941	171,168	281,842	110,673	64.7%
2 Information technology projects	8,643	37,500	65,232	27,732	74.0%
3 Independent audit	120,000	76,250	100,000	23,750	31.1%
4 Employment expenses	298	75,563	93,236	17,673	23.4%
5 Pension administration software & WMS	112,061	145,500	158,992	13,492	9.3%
6 Liability insurance	217,367	255,000	260,957	5,957	2.3%
7 Communications (phone/internet)	27,990	24,550	27,380	2,830	11.5%
8 Memberships and dues	13,250	8,520	11,190	2,670	31.3%
9 Miscellaneous Expense	44	-	920	920	100.0%
10 Miscellaneous professional services	11,630	9,150	9,709	559	6.1%
11 Employee service recognition	208	-	399	399	100.0%
12 Business continuity	6,877	6,750	7,046	296	4.4%
13 Elections	8,089	-	-	-	0.0%
14 Accounting services	29,500	29,500	29,500	-	0.0%
15 Public relations	230,004	-	-	-	0.0%
16 Records storage	567	780	639	(141)	-18.1%
17 Bad Debt Expense - Members	(200)	-	(175)	(175)	100.0%
18 Leased equipment	12,026	12,250	12,025	(225)	-1.8%
19 Staff meetings	-	500	176	(324)	-64.7%
20 Subscriptions	817	1,010	297	(713)	-70.6%
21 Member educational programs	65	1,250	-	(1,250)	-100.0%
22 Printing	2,868	3,185	1,193	(1,992)	-62.6%
23 Bank/security custodian services	2,577	2,500	395	(2,105)	-84.2%
24 IT software/hardware	7,357	8,500	6,271	(2,229)	-26.2%
25 Mileage - Board	1,835	2,500	-	(2,500)	-100.0%
26 Office supplies	15,183	15,250	12,686	(2,564)	-16.8%
27 Board meetings	3,763	5,050	1,299	(3,751)	-74.3%
28 Conference registration/materials - Board	3,910	7,450	1,940	(5,510)	-74.0%
29 Postage	20,196	12,900	5,745	(7,155)	-55.5%
30 Actuarial services	328,565	75,000	67,006	(7,994)	-10.7%
31 Repairs and maintenance	48,127	55,046	43,725	(11,321)	-20.6%
32 Conference/training registration/materials - Staff	4,513	13,525	2,117	(11,408)	-84.3%
33 Travel - Board	11,848	13,800	-	(13,800)	-100.0%
34 Disability medical evaluations	635	15,000	-	(15,000)	-100.0%
35 Network security	8,109	16,500	1,205	(15,295)	-92.7%
36 Travel - Staff	20,500	23,500	6,682	(16,818)	-71.6%
37 IT subscriptions/services/licenses	28,223	73,550	53,319	(20,231)	-27.5%
38 Legislative consultants	175,085	145,500	63,000	(82,500)	-56.7%
39 Salaries and benefits	1,755,698	1,861,472	1,414,855	(446,617)	-24.0%
40 Legal fees	1,543,490	1,000,000	217,201	(782,799)	-78.3%
Gross Total	\$ 5,141,658	\$ 4,205,469	\$ 2,958,005	\$ (1,247,464)	-24.3%
Less: Allocation to Supplemental Plan Budget*	41,042	27,756	23,612	(4,145)	-14.9%
Total Regular Plan Budget	\$ 5,100,616	\$ 4,177,713	\$ 2,934,393	\$ (1,243,320)	-24.4%

* Unitization split to Supplemental is based on unitization

Budget Changes (>5% and \$10K)

		2018 6 mos	2018 6 mos	\$ Variance	% Variance	
Item	Budget	Actual	Over/(Under)	Over/(Under)	Explanation	
INCREASES:						
1	Building expenses, incl depreciation	171,168	281,842	110,673	64.7%	Variance due to building depreciation of \$113k not budgeted. Historically, only cash items have been budgeted.
2	Information technology projects	37,500	65,232	27,732	74.0%	Variance related to the timing of projects - several projects (hard drive array and new server) were completed during the second quarter of the year . We currently expect to be within budget for the year barring any unforeseen breakdowns.
3	Independent audit	76,250	100,000	23,750	31.1%	Variance due to budget /actual timing differences. Historically, \$100k in BDO fees have been paid in the first half of the year, while the budget is straight lined over the entire year. However, actual audit fees are expected to exceed the budgeted amount due to additional audit work required because of the LSIA valuation.
4	Employment expenses	75,563	93,236	17,673	23.4%	Expense is for search firms, advertising, relocation expenses, background checks and other employment related expenses. Variance due to budget /actual timing differences. The budget is straight lined over the entire year and the new employee search activity was primarily in the first half of the year.
5	Pension administration software & WMS	145,500	158,992	13,492	9.3%	Modifications to the software required from HB 3158 were completed during the first half of the year.
REDUCTIONS:						
6	Legal fees	1,000,000	217,201	(782,799)	-78.3%	Actual legal fees were expected to decline in 2018, but so far have come in even lower than expected. However, new and ongoing litigation will result in higher fees in the second half of the year.
7	Salaries and benefits	1,861,472	1,414,855	(446,617)	-24.0%	Lower than forecasted expenses due to vacant staff positions.
8	Legislative consultants	145,500	63,000	(82,500)	-56.7%	Actual expenses are less than forecasted due to the elimination of one legislative consulting firm.
9	IT subscriptions/services/licenses	73,550	53,319	(20,231)	-27.5%	Actual costs for some forecasted services and licensing fees (3T Pro and Diligent) were less than budgeted.
10	Travel - Staff	23,500	6,682	(16,818)	-71.6%	No due diligence travel and less other required staff travel than anticipated.
11	Network security	16,500	1,205	(15,295)	-92.7%	Variance related to timing of security related audits and services. Best practice review of firewall completed in July.
12	Disability medical evaluations	15,000	-	(15,000)	-100.0%	No completed disability evaluations in the first half of the year.
13	Travel - Board	13,800	-	(13,800)	-100.0%	No board travel year to date
14	Conference/training registration/materials - Staff	13,525	2,117	(11,408)	-84.3%	Limited staff training year to date.
15	Repairs and maintenance	55,046	43,725	(11,321)	-20.6%	Actual expenses were less than budget primarily due to the timing of billed services.



DISCUSSION SHEET

ITEM #D7

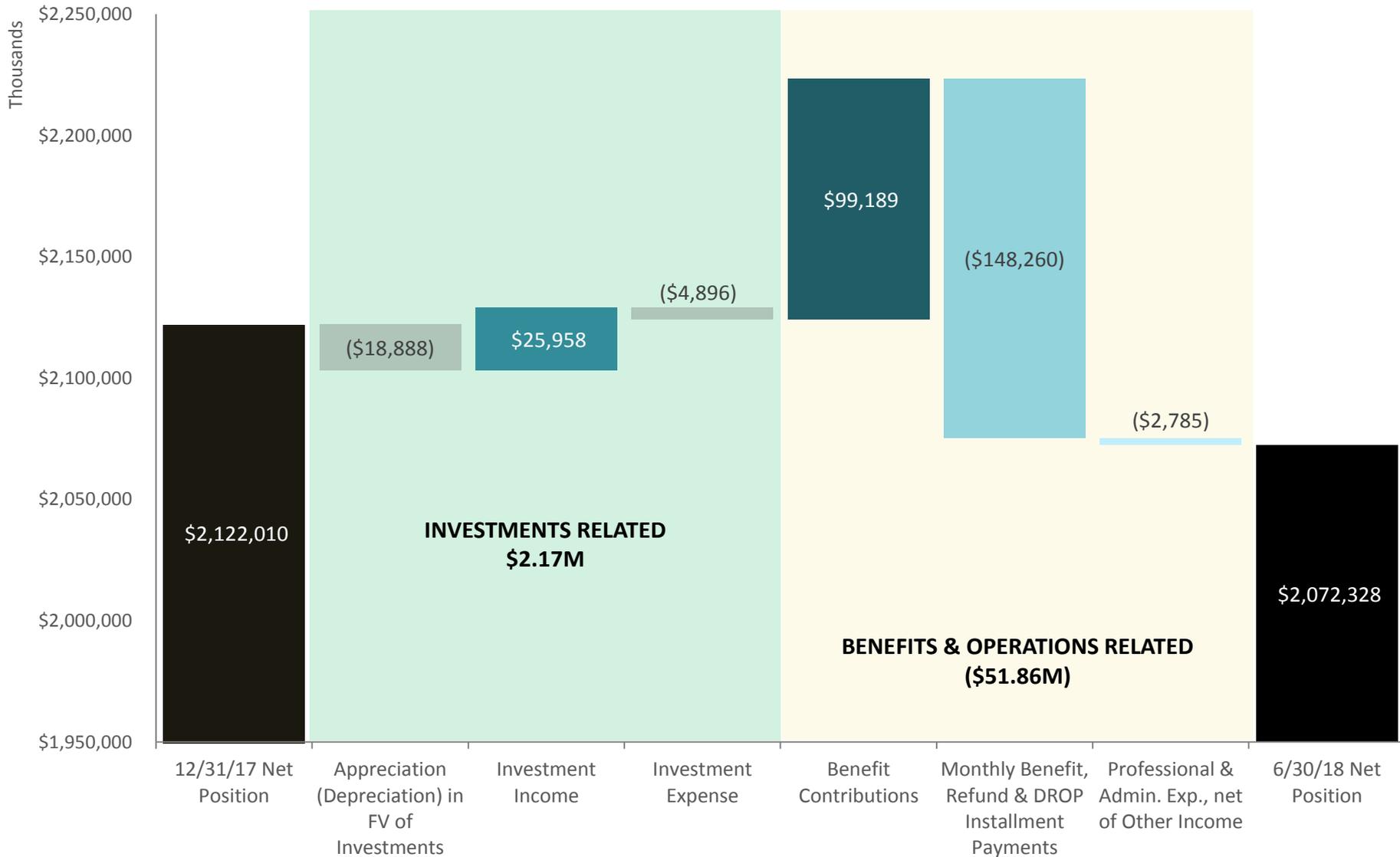
Topic: Second Quarter 2018 Financial Statements

Discussion: The Chief Financial Officer will present the second quarter 2018 financial statements.

Regular Board Meeting – Thursday, August 9, 2018

Change in Net Fiduciary Position

December 31, 2017 – June 30, 2018



DALLAS POLICE & FIRE PENSION SYSTEM
Combined Statements of Fiduciary Net Position

	6/30/2018 <i>(unaudited)</i>	12/31/17 <i>(unaudited)</i>
	<hr/>	<hr/>
Assets		
Investments, at fair value (NOTE 1)		
Short-term investments	\$ 23,446,469	\$ 24,132,673
Fixed income securities	516,531,300	328,013,649
Equity securities	477,306,954	470,081,008
Real assets	722,698,186	801,206,306
Private equity	245,294,747	222,106,207
Alternative investments	-	144,926,992
Forward currency contracts	(879,760)	135,273
Total investments	<hr/> 1,984,397,897	<hr/> 1,990,602,108
Invested securities lending collateral	12,781,508	12,152,708
Receivables		
City	1,669,289	2,026,827
Members	515,760	643,146
Interest and dividends	4,553,134	2,949,258
Investment sales proceeds	44,877,847	28,393,783
Other receivables	214,719	616,051
Total receivables	<hr/> 51,830,749	<hr/> 34,629,065
Cash and cash equivalents	73,222,708	118,586,970
Prepaid expenses	737,124	435,431
Capital assets, net	12,602,073	12,715,204
Total assets	<hr/> 2,135,572,059	<hr/> 2,169,121,486
Liabilities		
Payables		
Securities purchased	46,809,729	31,410,927
Securities lending obligations	12,781,508	12,152,708
Accounts payable and other accrued liabilities	3,653,186	3,547,738
Total liabilities	<hr/> 63,244,424	<hr/> 47,111,373
Net position		
Net investment in capital assets	12,602,073	12,715,204
Unrestricted	2,059,725,562	2,109,294,908
Net position held in trust - restricted for position benefits	<hr/> <u>\$ 2,072,327,635</u>	<hr/> <u>\$ 2,122,010,112</u>

Note 1: Private asset values have not been finalized for Q417. Values will be updated as reporting is received.

DALLAS POLICE & FIRE PENSION SYSTEM
Combined Statements of Changes in Fiduciary Net Position

	6 Months Ended 06/30/2018 <i>(unaudited)</i>	6 Months Ended 06/30/2017 <i>(unaudited)</i>
Contributions		
City	\$ 73,998,001	\$ 57,399,932
Members	25,190,844	12,876,689
Total contributions	99,188,845	70,276,621
Investment income		
Net appreciation (depreciation) in fair value of investments (NOTE 1)	(18,887,584)	39,804,094
Interest and dividends	25,923,861	14,653,862
Total gross investment income	7,036,277	54,457,956
less: investment expense	(4,896,338)	(4,151,128)
Net investment income	2,139,939	50,306,828
Securities lending income		
Securities lending income	133,028	99,877
Securities lending expense	(99,323)	(44,712)
Net securities lending income	33,705	55,165
Other income	173,496	1,774,474
Total additions	101,535,985	122,413,087
Deductions		
Benefits paid to members	147,179,703	148,168,895
Refunds to members	1,080,753	2,069,013
Interest expense	-	1,270,290
Professional and administrative expenses	2,958,005	5,141,658
Total deductions	151,218,462	156,649,855
Net decrease in net position	(49,682,476)	(34,236,768)
Net position		
Beginning of period (NOTE 2)	2,122,010,112	2,168,332,130
End of period	\$ 2,072,327,635	\$ 2,134,095,362

Notes:

1. Private asset values have not been finalized for Q417. Values will be updated as reporting is received.
2. The Beginning of Period balance does not tie to the DRAFT Q4 Financial Statements because an insurance reimbursement was received after the Draft Q4 report was prepared.



DISCUSSION SHEET

ITEM #D8

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, including Eddington et al. v. DPF et al., Degan et al. v. DPF et al., Dan Lowe v. Michael Ebert et al. and potential claims against fiduciaries and other third party advisors, settlement offers, or any other legal matter in which the duty of the attorneys to DPF 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 legal issues.

Regular Board Meeting – Thursday, August 9, 2018



DISCUSSION SHEET

ITEM #D9

Topic: Closed Session - Board serving as Medical Committee

Discussion of the following will be closed to the public under the terms of Section 551.078 of the Texas Government Code:

Disability recall

Discussion: Section 6.15 of Article 6243a-1 allows the Board to require pensioners under the age of 50, receiving a disability pension to undergo a medical examination to determine if the pensioner's disability continues or has been removed to the extent that the pensioner is able to resume duties within the department. At the initial approval of this Pensioner's disability pension the Board required a recall evaluation in two years. Staff will present findings from the disability recall evaluation in closed session. Specific information related to this pensioner is included in the materials for the closed portion of the agenda.

Regular Board Meeting – Thursday, August 9, 2018



DISCUSSION SHEET

ITEM #D10

Topic: **Benefit Overpayment**

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 will brief the Board on a benefits overpayment situation related to one member.

Regular Board Meeting – Thursday, August 9, 2018

Background information – concepts related to the Benefit Overpayment discussion. High-level Overview of the Death Pension Benefit Provisions.

- Member dies in Active Service, not in DROP:
 - Members that die while in active service are deemed to have a minimum of 20-years of service.
 - If the member has Qualifying Survivors a monthly pension benefit is paid to the Qualifying Survivors.
 - If the member does not have Qualifying Survivors a one time payment based on a 10-year certain benefit payment calculation is paid to the member's designee or heirs.
- Member dies in Active Service in DROP:
 - The Qualifying Survivors receive a monthly pension benefit based the monthly DROP deferral.
- Member dies after leaving Active Service and pension payments have started:
 - The Qualifying Survivors receive a monthly pension benefit based on the monthly retirement benefit being received by the pensioner.
- Deferred Vested (5+ years of service) members are those that have left active service, have not taken a refund of their contributions and have not retired with DFPF and started to draw a pension benefit.
 - Member dies in Deferred Vested status, Qualifying Survivors are eligible to receive 50% of the benefit the member would have received based on the member's actual pension service and their age at the date of death.
 - If the member is not eligible for a pension benefit based on their age at the date of death or there is no Qualifying Survivor, the member contributions are refunded to the designee or heirs.



DISCUSSION SHEET

ITEM #D11

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.

Regular Board Meeting – Thursday, August 9, 2018

**Future Education and Business Related Travel
Regular Board Meeting – August 9, 2018**

ATTENDING APPROVED

- 1. Conference: TEXPERS Summer Educational Forum**
Dates: August 12-14, 2018
Location: San Antonio, TX
Est. Cost: \$1,500

- 2. Conference: NCPERS Public Pension Funding Forum**
Dates: September 16-18, 2018
Location: Cambridge, MA
Est. Cost: TBD

- 3. Conference: NCPERS Public Safety Conference**
Dates: October 28-31, 2018
Location: Las Vegas, NV
Est. Cost: TBD



DISCUSSION SHEET

ITEM #E1

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, August 9, 2018



DISCUSSION SHEET

ITEM #E2

Topic:

Executive Director's report

- a. Associations' newsletters
 - NCPERS PERSist (Summer 2018)
- b. Employee Service Awards
- c. Financial Audit Update

Discussion:

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

Regular Board Meeting – Thursday, August 9, 2018



PERSIST

The Voice for Public Pensions

Summer 2018 | Volume 31 | Number 3



Message from the President



Daniel Fortuna
NCPERS President

NCPERS hosted our inaugural Chief Investment Officer (CIO) Summit June 14-15, 2018, in my hometown of Chicago, Illinois! This program, attended by 10 CIO's from around the country, focused on the distinct investment challenges and needs of mid-market plans.

The summit was organized into three distinctive categories. The first category, titled *“Leading and Managing Investment Teams”*, kicked off the CIO Summit with a presentation on public pension investment governance by Rich Funston from Funston Advisory Services. This session discussed the common missions and challenges mid-market plans face, along with solutions that are best for their system. The second session was a discussion on building a performance driven culture with Brad Kelly and Peter Landers from Global Governance Advisors. Kelly and Landers discussed positive performance management plans, determining merit salary increases, performance incentive plans, and justifying the need for incentives.

The second category titled *“Investment Markets”* began with a panel discussion on the return of inflation and volatility with Peter Kocubinski with J.P. Morgan Asset Management, Jai Jacob

with Lazard Asset Management, Gary Lenhoff with Great Lakes Advisors, and moderator Aoifinn Devitt, CIO of the Chicago Policemen's Annuity and Benefit Fund. A variety of inflation topics were discussed, including monetary policy, U.S. asset inflation, and the perils of printing money. Angela Miller-May, CIO at Chicago Teachers' Pension Fund joined Jennifer Choi with Institutional Limited Partners Association, for a discussion on what to talk about when discussing private equity costs. The final session of the day discussed how to build better portfolios by hedging risks and factor exposures. Michael Zehfuss with Mesirow Financial, Michael Hunstad, Ph.D with Northern Trust Asset Management, and moderator Doug Mosely with NEPC, discussed currency management, alternatives to address currency risk, factors and their risk premiums, and targeted risk exposures and minimizing unintentional risk.

The second day of the summit began with the final category titled *“Retirement Industry Trends and Perspectives”*. The first presentation, by Gerald Lam with IEX, discussed the evolution of the stock market. Alaina Anderson with William Blair and Robbie

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Complementing Retirement Benefits to Attract & Retain Younger Workers

By Don Heilman

Public employers are seeing unprecedented changes in their workforce as baby boomers retire. According to a study conducted by the Center for State & Local Government Excellence, 44% of employers report that retirements in the most recently completed plan year were higher than the prior year, and the share of retirement eligible employees postponing their retirement date has fallen by more than half since 2009.

At the same time, recruiting early career and mid-career hires is increasingly challenging, both due to an ever tightening labor market and governmental compensation levels that can tend to lag that of the private sector.

While the single largest differentiator among typical governmental entities, from a total rewards perspective, is the retirement benefit, this unfortunately may not be as compelling to individuals in the younger cohorts, given their increasing mobility. To illustrate, according to Job Applicator Center, 41% of millennials expect to be in their current job for two years or less.

As a result, public employers, along with their retirement systems, should be looking for better ways to communicate to all demographics, but in particular, the younger and (early career) cohorts, as to the significant value of their retirement benefits. In addition, employers should be looking to introduce



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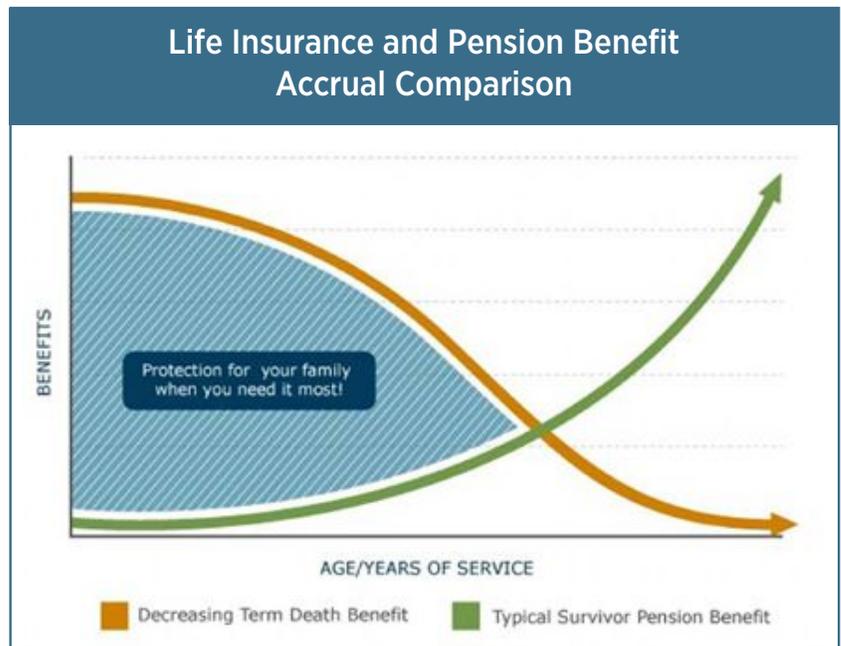
That said, a few other data points worth noting:

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- 94% of Millennials and 92% of Gen-Xers say non-traditional benefits make employers more attractive (ICIMS)
- 60% of Millennials would forgo some of their pay if it meant a more secure retirement (Willis Towers Watson)
- 60% of employees between 18-34 thought employers should be involved in financial health (Welltok)

Building on financial health, consider the following:

- According to a Federal Reserve Bulletin (Sept 2017), over ¾ of all families have debt, and more than 40% of households with the head of household under age 40 have outstanding student loans
- According to LendEDU, over \$1.5 trillion of student loans are outstanding (second only to mortgages and greater than credit card debt), with an average outstanding balance of \$28,000



Public Pension Plans: Expanding the Return Box to Positively Impact Communities

By Lesylleé White and Emily E. Johnstone

As public pension plans have become increasingly focused on ESG investments through proxy voting and risk screening, some plans are looking to have a more direct economic impact on their community and members. In particular, investing in affordable local housing and creating jobs across communities may be one strategy for public pension plans to improve returns while also serving the broader interests of their participants.

Effective impact investing might mean prioritizing investments that seek to meet return expectations, while creating jobs and economic activity that add to the state or local municipality’s tax base. This can help support the long-term health of members’ pensions. With cities and states under increasing pressure as the percentage of their budget attributed to pension costs continues to increase, local investments can help.



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“Economically Targeted investments bolster our pension system while adding social benefits for the men and women who built our city. Since inception, by investing with groups like AFL-CIO HIT, the pensions have been able, not only, to achieve competitive risk-adjusted returns, but also to finance more than 100,000 units of affordable housing and thousands of good jobs for New Yorkers in need.”

–Scott Stringer, Comptroller, City of New York

These investments can also increase and preserve the supply of affordable and workforce housing where it is needed most. Supply of rental units affordable to low- and moderate-income households has not kept pace with growth in demand.¹ Approximately one third of U.S. households live in rental housing, but despite recent declines, the number and share of cost-burdened renters (defined as those who pay over 30% of their income) remain well above levels a decade ago (at over 47% in 2016).² Revitalizing neighborhoods through preservation and rehabilitation of affordable housing can also return distressed properties to a locality’s tax rolls.

The five pension funds of New York City (NYCRS) have collectively invested in its community. NYCRS established an Economically Targeted Investment (ETI) program to address market inefficiencies by providing capital to underserved communities and populations. The NYCRS Trustees allocated 2% of pension assets toward ETIs, which are targeted towards affordable or workforce housing for low-, moderate- and middle-income populations.

Investments by one of NYCRS currently active ETI managers have had a significant impact on New York City since 2002. These investments have created or preserved 34,500 units of affordable

Impact of Investments in Affordable Rental Housing in NYC 2002 – Q1 2018	
Investments in 53 Projects	\$1.35 billion
Total Development Investment	\$3.27 billion
Affordable Units Created/Preserved	34,500
Wages Generated	\$991 million
Jobs Created	13,500
State & Local Tax Revenue Generated	\$150 million
Total Economic Benefit	\$2.32 billion

Source: IMPLAN, Pinnacle Economics, AFL-CIO Housing Investment Trust, in 2017 dollars.

CONTINUED ON PAGE 8

Better Portfolios with Macro Factors

By Michael Hunstad

Institutional investors often face the challenge of understanding the risks and bets that are buried within a portfolio. Assets may be diversified, but what about risks? This is why investors should look at asset allocation through the lens of underlying risks. Analyzing a portfolio using macro factors is an effective way to do so.

How factors help

Factors are the primary drivers of risk and return in asset classes. As everyday meals are a combination of ingredients, every asset class is a combination of underlying risk factors. This means they are useful in explaining how returns or risk vary.

We often talk about style factors that influence individual stocks: value, volatility, momentum, growth or quality. But here, we're talking about special types of factors that can influence multiple asset classes. These are "macro factors" that represent variables used to measure the state of the economy: inflation, currency, interest rates and others listed in Exhibit 1.

An important step in portfolio design is to understand the macroeconomic risks found within asset classes. As you combine asset classes in a portfolio, you then aggregate (or offset) those risks. For example, a high exposure to the unexpected inflation risk factor implies that your portfolio is more susceptible to unexpected changes in the consumer price index (CPI). Or a high exposure to the currency risk factor exposes your portfolio to fluctuations in exchange rates.

We want to measure a portfolio's sensitivity to various unexpected macroeconomic events. Through recognizing and understanding factor sensitivities, we can better allocate capital and manage portfolio risks.

AN EXAMPLE: Global Real Estate

Consider real estate, which we consider a hybrid asset class because it possesses equity and fixed income characteristics. One way that investors can access this asset class is through real estate investment trusts (REITs) which are publicly listed and found in many equity indices.

When we apply a traditional global equity factor model lens, we uncover a large sensitivity to the developed growth factor (global equities) because REIT values are market based and the securities are publicly traded. However, using our macro factor lens, we also find strong risk exposures to inflation, interest rates, emerging markets spreads and currency risk factors. Interest rates make sense because REITs, like bonds, distribute income. We also find

EXHIBIT 1: MACRO FACTORS THAT MOVE PORTFOLIOS

It's important to understand how sensitive your portfolios are to a range of macro factors.

Macro Factor	Portfolio Sensitivity to
Unexpected inflation	Unexpected changes in CPI
Real rate uncertainty	Changes in interest rates
Emerging markets growth	Changes in emerging market equities
Emerging markets spreads	Changes in emerging market credit
Developed markets growth	Changes in developed equities
Developed markets spreads	Changes in developed spreads
Currency	Currency fluctuations
Commodity risk	Changes in real asset prices

SOURCE: Northern Trust Asset Management

currency risk because this is a global asset class.

A 60/40 Portfolio

Capital diversification is not the same as risk diversification, and most institutional investors realize this. It's the magnitude of the difference in risk that catches investors by surprise. Take a simple global balanced portfolio with 60% equity and 40% bonds. Even

EXHIBIT 2: DIVERSIFYING THE PORTFOLIO FOR FACTOR RISK

We confront the heavy equity risk in a 60% stock/40% bond portfolio with a more diversified approach.

ASSET CLASS	WEIGHT
Cash	2%
US Core Bonds	40%
Global High Yield Bonds	5%
Developed Equity	27%
Emerging Market Equity	5%
Global Listed Real Estate	3%
Global Listed Infrastructure	3%
Natural Resources	5%
Hedge Funds	10%

SOURCE: Northern Trust Asset Management

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Wisconsin Supreme Court Overturns Reduction of Employee Membership on the Board of Trustees

By Robert D. Klausner, NCPERS General Counsel

In 2013, the Milwaukee Police Association and the Milwaukee Professional Firefighters appealed a trial court order granting summary judgment to the City of Milwaukee regarding changes made to the size, composition, and manner of election of the pension board on a prospective basis. The effect of the change was to increase the number of City appointees and substantially reduce the power of the member trustees. In their appeal, the Unions argued that they had a vested right in the size, composition, and manner of election of the pension board as it existed prior to 2013. On the other hand, the City argued that while the members may enjoy these privileges, they are certainly not vested rights and as a result can be taken away. Using the precedent established in *Stoker v. Milwaukee Country*, 359 Wis. 2d 347, the Court concluded that the City had a right to make those changes so long as the changes did not “operate to diminish or impair the annuities, benefits or other rights of any person who is a member of [such benefit fund] prior to the effective date of any such changes.”

The members sought discretionary review in the Supreme Court of Wisconsin. Review was granted in 2017 and more than seven months after oral argument, the Supreme Court reversed the decision of the court of appeals and invalidated the City Charter changes which substantially reduced the voting power of the members. The Supreme Court decision issued on July 6, 2018, found that like the trial court, the court of appeals ignored the rights of members to vote for their trustees and have a meaningful voice in the management of their retirement plan.

The Supreme Court focused its analysis of whether the composition of the board of trustees and the rights of members in determining that board fell within the statutory prohibition against diminishing the “annuities, benefits, or other rights of any persons” who were members of the System. The parties agreed during the oral argument that board composition was not an annuity or a benefit. The issue was focused on whether the composition of the pension board fell within the phrase “other rights” of members. After analyzing the law under the rules of statutory interpretation, the Supreme Court concluded that ability to select the trustees who will manage the affairs of their retirement fund was included within the phrase “other benefits.” The Supreme Court found that packing the Board with additional City appointees was a reduction of member rights and therefore in violation of state law.



Photo illustration © 2018 Shutterstock.com

Wisconsin is not the first state to address the importance of resisting unilateral changes in pension board composition. In 1982, a Michigan appeals court found that an employer’s unilateral alteration of the structure of the Detroit retirement system boards of trustees was an unfair labor practice because of the importance of the boards in shaping the administration and interpretation of the retirement benefits.

The Wisconsin Court was not unanimous. Three of seven justices dissented in the opinion and would have allowed the change in the structure of the board, limiting the diminution language solely to economic benefits. As the determination of rights in the structure of public pension boards is a state court function, the composition of state appellate courts continues to have significant importance in protecting the rights of NCPERS members.

Milwaukee Police Association v. City of Milwaukee, 2018 WL 3341721, (Wis. 7/6/2018). ♦

*This article is a regular feature of PERSIST. **Robert D. Klausner**, a well-known lawyer specializing in public pension law throughout the United States, is General Counsel of NCPERS as well as a lecturer and law professor. While all efforts have been made to insure the accuracy of this section, the materials presented here are for the education of NCPERS members and are not intended as specific legal advice. For more information go to www.robertdklausner.com.*

Investment Governance: Breaking down the silos

By John Pettit

If there's one thing I've learned during my two-decade career in technology, it's that technology isn't really about technology at all; it's about people.

Technology is pointless without application, and its best application is improving people's lives. This is true in every setting including business, where technology can create better outcomes for everyone, by helping people do their jobs better and creating efficiencies. But if applied improperly, it can create cybersecurity threats, confusion, and loss of money.

Just as technology is about people, so is business, and running a business can be compared to the workings of the human body itself. Each system, from front to middle to back office, from operations to compliance to execution teams, must function in tandem, leveraging tech-enabled communication systems to coordinate processes - like the body's nervous system. Using disparate systems to communicate is like shutting that nervous system down. Data becomes mismatched, goals become unclear and the processes break. Inefficiency takes hold; money is lost.

Today, CIOs are the stewards of that nervous system, responsible for applying technology effectively, responsibly, safely and efficiently. But the pension industry faces challenges that result from disparate, old technology systems that create inefficiency and prevent communication. By using technology to take action on the below, CIOs can make changes in their firms that improve outcomes for employees and investors alike:

Long-term investors are falling behind: Technology is improving faster than ever.

Technology improves at a breakneck pace, and so do our expectations. The next generation is arriving in the workplace with iPhones and Amazon Alexas, but firms are still operating with 1990s technology like Excel spreadsheets. Many legacy employees prefer their 40 familiar clicks to the new and 'improved' 2 clicks and are scared of change. But lagging behind in technology causes problems, and can even prevent firms from complying with fiduciary responsibilities. CIOs must lead the cultural charge to help employees at every level embrace new technology.

Long-term investors' processes need to improve: Knowledge-based processes win.

A CIO should be the steward of technology, but more often than not, old technology forces them to be traffic cops. The "Excel spreadsheet



Photo Illustration © 2018 iStockPhoto.com

ballet" begins the moment a report needs to be pulled for the CEO. Firms don't have a big data problem, they have a small data problem, as their legacy systems prevent them from getting a handle on their own investments. CIOs must have the tough conversations with their teams and leadership and sell in the idea that new technology is the future of efficiency.

CONTINUED ON PAGE 7

John Pettit is an accomplished technology executive with an impressive history of working with world-class engineering teams to deliver software that helps people achieve more. With more than 20 years of experience, John's extensive background includes noted accomplishments in financial software development. He previously led the technology teams at PerTrac in building the premier analysis, reporting, and portfolio tools used by institutional alternative asset allocators. John's primary focus is designing and building best-in-class commercial software solutions and enterprise applications.

Prior to Backstop, John led the IT transformation strategy to create a multi-tenant SaaS-based analytics platform for the automotive industry. John holds an MBA and BSIT from the University of Phoenix and has earned a Financial Risk Manager designation, as well as multiple Microsoft Certifications.

RETIREMENT BENEFITS CONTINUED FROM PAGE 2

additional benefit choices that focus on financial literacy, and correspondingly, financial protection and security.

Interestingly, a program long endorsed by NCPERS, and available exclusively to NCPERS members, provides a unique package of financial protection that is beneficial for all employees, but can be especially attractive for younger employees that public employers are seeking to recruit and retain.

The core benefit under the program provides decreasing term life insurance, which serves as an ideal complement to traditional defined benefit programs, as illustrated by the graph. The program also serves by default as a dynamic household financial protection program, in that it automatically expands coverage to spouses (and domestic partners) and dependent children as a household grows, with no action required and at no additional cost.

In addition, we are developing a new benefit enhancement for 2019. While subject to regulatory approval, the enhancement will may provide coverage for employees with outstanding student loans

in the event of permanent disability or death. This new student loan reimbursement feature, if approved, will be added to the life insurance plan at no additional cost to employees.

Programs such as these will become important components of a governmental entity's overall total rewards package, and serve as a way to build upon the valuable financial foundation provided by pensions. ♦

***Don R. Heilman** is an Area Senior Vice President with Gallagher, a national employee benefits and human capital consulting and actuarial firm. He has consulted for nearly 30 years, and specializes in working with governmental entities. Gallagher is a proud advisor to NCPERS, with Don serving as the managing consultant. Don can be reached at don_heilman@ajg.com. Additional information about the program available to NCPERS members can be found at www.ncpers.org/lifeinsurance.*

INVESTMENT GOVERNANCE CONTINUED FROM PAGE 6

Long-term investors need to collaborate: Resource shortage is severe.

Firms are managing billions of dollars on shoestring budgets, and often have to staff-up with less experienced employees. Pension

plans often end up allocating money to the same firms, so what if firms could use technology to pool resources, knowledge, and investments - and collaborate? In the end, more firms would survive, and everyone's goal - making sure people have enough money to retire - would be met with time and cost efficiency. ♦



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The banner features a night-time photograph of a large, illuminated building with a prominent dome, likely the State House in Cambridge, MA. The image is framed by diagonal white lines and a blue border.

PUBLIC PENSION PLANS CONTINUED FROM PAGE 3

and workforce housing, and have generated an estimated \$2.3 billion in total economic benefits, over \$990 million in personal income, and \$150 million in state and local tax revenue.

When a pension plan makes investments to address issues facing its local community, it can realize a competitive return while addressing some of the factors that can help its participants. It can quantify the number of affordable units preserved or constructed, the economic benefits for the community due to the effects of construction job creation rippling through their economy, and the increase in their tax base.

A number of investment options are available for making locally focused investments, including separate accounts and commingled funds. Public plans and their consultants should review investment managers for their ability to achieve measurable impact objectives for their community and for the health of their pension plan, together with financial returns. ♦

¹ America's Rental Housing 2017, Joint Center for Housing Studies of Harvard University page.13.
² Joint Center for Housing Studies of Harvard University; tabulation of US Census Bureau, 2016 American Community Survey.

Lesylleé White is an executive vice president and managing director of defined benefit marketing for the AFL-CIO Housing Investment Trust (HIT). She leads the overall marketing of the HIT to defined benefit plans and coordinates investor relations activities of the marketing division while also managing client relationships. Lesylleé also is involved in raising capital for the HIT Daily Valued Fund (HIT-DVF), a core fixed income fund for defined contribution plans, and is a member of the HIT portfolio management committee. She also serves as a commissioner for the District of Columbia Board of Zoning Adjustment. She earned a bachelor's degree and a J.D. degree from Howard University in Washington, D.C.

Emily E. Johnstone is an executive vice president and managing director of defined contribution marketing for the AFL-CIO Housing Investment Trust (HIT). Based at the HIT's San Francisco office, she handles relations with HIT investors and developers, including several public funds. She also leads the marketing team's national efforts to develop and execute a strategy for seeking investments into the HIT Daily Valued Fund (HIT-DVF). The HIT-DVF is a core fixed-income collective investment fund launched in 2016 by Hand Benefits & Trust, which enables participants in union 401(k) and other defined contribution plans to invest in the HIT. Emily is a member of San Francisco's Inclusionary Housing Advisory Committee and a Co-Founder of Emerge America. Johnstone holds a BA/MA in economics from the University of Chicago.

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October 27 – 28

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Las Vegas, NV

Early-Bird Deadline October 5

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MESSAGE FROM PRESIDENT THE CONTINUED FROM PAGE 1

Miles with Allianz Global Investors, discussed what CIOs should do about ESG. Moderated by NCPERS' Hank Kim, the adoption of ESG, its value, how funds define ESG, and ESG adoption rates in the US, were all discussed by the panel.

The educational program concluded with a presentation by Dr. Scott Brave from the Federal Reserve Bank of Chicago on the implications for institutional investors from the Chicago Fed's

National Financial Conditions Index and Adjusted National Financial Conditions Index.

CIOs participated in small group discussions throughout the day. The full presentations from the summit can be viewed at www.NCPERS.org/cio. The 2019 CIO Summit will be held on June 12-14, 2019, in a location that will be determined shortly. I encourage you to pass this message to your CIOs and investment staff for 2019! ♦

BETTER PORTFOLIOS CONTINUED FROM PAGE 4

though investors might believe this portfolio is diversified, the risk contribution is extremely one-sided in favor of equities. This is because the 60% allocation to equities actually drives more than 90% of total portfolio's risk.

You can confront this problem with a more diversified, multi-asset class portfolio with risk exposure top of mind. In Exhibit 2, we have added high yield fixed income, global real estate, global infrastructure, natural resources, and hedge funds to our portfolio allocation. By using our macro factor lens, we can see many risk contributors to our diversified portfolio in Exhibit 3, with dramatically different results from the 60/40 portfolio.

Further, the thoughtful addition of other asset classes has dramatically reduced the risk contribution of the developed growth factor and spread it among various other factors. We can also measure beta sensitivities to the various risk factors. For example, observing a beta of 0.1 to the emerging markets growth factor implies that the portfolio would capture 10% of the return of the MSCI Emerging Markets Equity Index.

A Critical Component

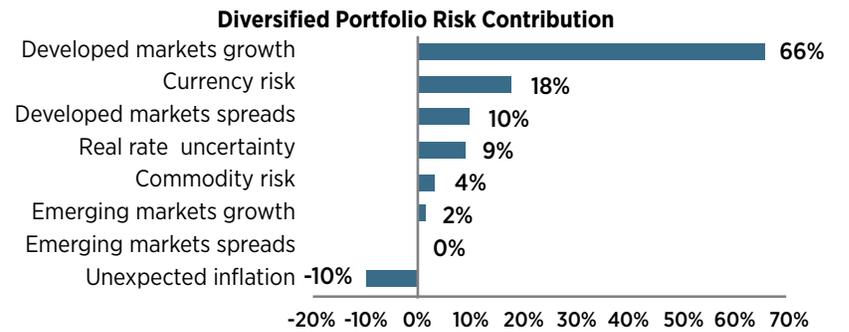
Macro factor analysis is a critical component of portfolio construction. We use macroeconomic factors to better understand the risks, drivers and sensitivities of complex portfolios. Investors can use this tool to make more informed decisions about asset allocation to meet their unique risk tolerances.

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All material has been obtained from sources believed to be reliable, but

EXHIBIT 3: RISK DIVERSIFIED

The diversified portfolio from Exhibit 2 does a better job of spreading risk versus a 60/40 stock and bond portfolio, where equities represent more than 90% of the risk contribution.



SOURCE: Northern Trust Asset Management

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Michael Hunstad is the head of Quantitative Strategies at Northern Trust Asset Management. Prior to joining Northern, Mike was head of research at Breakwater Capital, a proprietary trading firm and hedge fund. Other roles included head of quantitative asset allocation at Allstate Investments, LLC and quantitative analyst with a long-short equity hedge fund. Michael holds a PhD in mathematics, an MA in economics and an MBA in quantitative finance.



Calendar of Events 2018

September

Public Pension Funding Forum
September 16 - 18
Boston, MA

October

NCPERS Accredited Fiduciary Program (All modules)
October 27 - 28
Las Vegas, NV

Public Safety Conference
October 28 - 31
Las Vegas, NV

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