AGENDA

Date: June 5, 2020

The regular meeting of the Dallas Police and Fire Pension System Board of Trustees will be held at **8:30 a.m. on Thursday, June 11, 2020, via telephone conference for audio at 214-271-5080 access code 588694 or Toll-Free (US & CAN): 1-800-201-5203 and Zoom meeting for visual** https://us02web.zoom.us/j/83181038691?pwd=RXhTSHI1SEZ4dGg1ZTZMcDV1UXFFZz09**.** **Password: 866920.** Items of the following agenda will be presented to the Board:

A. MOMENT OF SILENCE

B. CONSENT AGENDA

1. Approval of Minutes

a. Required Public meeting of May 14, 2020
b. Regular meeting of May 14, 2020

2. Approval of Refunds of Contributions for the Month of May 2020

3. **Approval of Estate Settlements**
4. **Approval of Survivor Benefits**
5. **Approval of Service Retirements**
6. **Approval of Earnings Test**
7. **Approval of Payment of DROP Revocation Contributions**

C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. **January 1, 2020 Actuarial Valuation Assumptions**
2. **DROP Policy Amendment**
3. **Financial Audit Status**
4. **Monthly Contribution Report**

5. Board approval of Trustee education and travel

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

6. Portfolio Update

7. Report on Investment Advisory Committee

8. Investment Grade Core Bond Manager

9. First Quarter 2020 Investment Performance Analysis and Fourth Quarter 2019 Private Markets & Real Assets Review

10. Natural Resources: Hancock Presentation

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

11. Lone Star Investment Advisors Update

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

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

13. **Review Police Officer and Fire Fighter Trustee applicant qualifications**

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

D. BRIEFING ITEMS

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

2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (June 2020)
- NCPERS PERSist (Spring 2020)
- TEXPERS Pension Observer (May 2020)
  https://online.anyflip.com/mxfu/wsin/mobile/index.html

b. Open Records

c. Operational Response to COVID-19

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

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

DALLAS POLICE & FIRE PENSION SYSTEM

ITEM #A

MOMENT OF SILENCE

In memory of our Members and Pensioners who recently passed away

NAME	ACTIVE/ RETIRED	DEPARTMENT	DATE OF DEATH
Michael E. Epple	Retired	Police	May 12, 2020
T. J. Iwanski	Retired	Fire	May 12, 2020
Billy J. Smith	Retired	Fire	May 13, 2020
Lewis R. Mullins	Retired	Fire	May 15, 2020
Jerry D. Compton	Retired	Police	May 21, 2020
James K. Slemmons	Retired	Police	May 21, 2020
James H. Whiteley	Retired	Police	May 27, 2020
Paul K. Wilkins	Retired	Police	May 29, 2020

Regular Board Meeting – Thursday, June 11, 2020

Dallas Police and Fire Pension System
Thursday, May 14, 2020
8:30 a.m.
Via telephone conference.

Required Public Meeting, William F. Quinn, Chairman, presiding:

ROLL CALL

Board Members

Present at 8:30 a.m.	William F. Quinn, Nicholas A. Merrick, Joseph P. Schutz, Susan M. Byrne, Robert B. French, Steve Idoux, Gilbert A. Garcia, Mark Malveaux, Armando Garza, Allen R. Vaught, Tina Hernandez Patterson
Absent:	None
Staff	Kelly Gottschalk, Josh Mond, Kent Custer, Brenda Barnes, John Holt, Cynthia Thomas, Ryan Wagner, Greg Irlbeck, Michael Yan, Milissa Romero
Others	Jeff Williams, Caitlin Grice, Leandro Festino

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The first of two annual public meetings of the Dallas Police and Fire Pension System Board of Trustees as required by Section 3.01 (j-9) of Article 6243a-1 of Vernon's Revised Civil Statutes.

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

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1. **Report on the health and performance of the Pension System**

   a. Actuarial Review and Actuarial Valuation Assumptions
   - Actuarial Experience Study
   - January 1, 2020 Actuarial Valuation Assumptions

   b. Quarterly Financial Reports
   c. Monthly Contribution Report

Required Public Meeting
Thursday, May 14, 2020

1. Report on the health and performance of the Pension System (continued)

a. Jeff Williams and Caitlin Grice of Segal Consulting, DPFP's actuarial firm, were present to discuss results of the Actuarial Experience Study and the January 1, 2020 actuarial valuation assumptions.

b. The Chief Financial Officer presented the first quarter 2020 financial statements.

b. The Executive Director reviewed the Monthly Contribution Report and reported on the health and performance of DPFP as required by Section 3.01 (j-9) of Article 6243a-1 of Vernon's Revised Civil Statutes.

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2. Public Comment

The Chairman extended an opportunity for public comment. No one requested to speak to the Board.

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Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Garcia and a second by Mr. Garza, the meeting was adjourned at 10:31 a.m.

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William F. Quinn
Chairman

ATTEST:

____
Kelly Gottschalk
Secretary

Dallas Police and Fire Pension System
Thursday, May 14, 2020
8:30 a.m.
Via telephone conference.

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

ROLL CALL

Board Members

Present at 8:30 a.m.	William F. Quinn, Nicholas A. Merrick, Joseph P. Schutz, Susan M. Byrne, Robert B. French, Steve Idoux, Gilbert A. Garcia, Mark Malveaux, Armando Garza, Allen R. Vaught, Tina Hernandez Patterson
Absent:	None
Staff	Kelly Gottschalk, Josh Mond, Kent Custer, Brenda Barnes, John Holt, Cynthia Thomas, Ryan Wagner, Greg Irlbeck, Michael Yan, Milissa Romero
Others	Jeff Williams, Caitlin Grice, Leandro Festino, Mark Sales, Greg Taylor, David Harper, Jason Jordan, Ken Latz, Ken Garnett

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The meeting was called to order and recessed at 8:30 a.m. The meeting was reconvened at 10:31 a.m.

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A. MOMENT OF SILENCE

The Board observed a moment of silence in memory of retired police officers W. C. Moody, Teddy R. Garner, Calvin J. Howard, Fred T. Chance, Janet S. Taylor, James C. Swinney, and retired firefighters Jack D. Hughes, R. C. Wilson, Donald R. DeWees, Charles E. Fowler, Anthony J. Peck

No motion was made.

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Regular Board Meeting
Thursday, May 14, 2020

B. CONSENT AGENDA

1. Approval of Minutes

Regular meeting of April 9, 2020

2. Approval of Refunds of Contributions for the Month of April 2020

3. Approval of Activity in the Deferred Retirement Option Plan (DROP) for May 2020

4. Approval of Estate Settlements

5. Approval of Survivor Benefits

6. Approval of Service Retirements

7. Approval of Alternate Payee Benefits

After discussion, Mr. Garcia made a motion to approve the minutes of the regular meeting of April 9, 2020. Mr. Vaught 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. Byrne seconded the motion, which was unanimously approved by the Board.

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C. DISCUSSION AND POSSIBLE ACTION REGARDING ITEMS FOR INDIVIDUAL CONSIDERATION

1. Actuarial Review and Actuarial Valuation Assumptions

a. Actuarial Experience Study
b. January 1, 2020 Actuarial Valuation Assumptions

Jeff Williams, Vice President and Actuary, and Caitlin Grice, Consulting Actuary, of Segal Consulting presented the results of the Actuarial Experience Study and discussed the January 1, 2020 actuarial assumptions for the Board to determine the assumptions to be used in the actuarial valuation reports for the Regular Plan (Combined Plan) and the Supplemental Plan.

Regular Board Meeting
Thursday, May 14, 2020

1. Actuarial Review and Actuarial Valuation Assumptions (continued)

After discussion, Ms. Byrne made a motion to accept the Review of Actuarial Experience and submit the document to the Pension Review Board. Mr. Garcia seconded the motion, which was unanimously approved by the Board.

After discussion, the Board provided direction to Segal on the assumptions to be used in preparing the January 1, 2020 actuarial valuation reports for the Regular Plan (Combined Plan) and the Supplemental Plan with some exceptions which will be discussed further next month.

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2. Quarterly Financial Reports

The Chief Financial Officer presented the first quarter 2020 financial statements.

No motion was made.

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3. Monthly Contribution Report

The Executive Director reviewed the Monthly Contribution Report.

No motion was made.

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4. Chairman's Discussion Items

Media Report

The Chairman briefed the Board on a media report

No motion was made.

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Regular Board Meeting
Thursday, May 14, 2020

5. Report on Audit Committee

The Audit Committee met with representatives of BDO on April 9, 2020. The Committee Chair commented on BDO's observations and advice.

No motion was made.

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6. Pension Related CARES Act Provisions

The Federal Government passed the CARES Act to provide emergency assistance and health care response for individuals, families, and businesses affected by the 2020 coronavirus pandemic. The Executive Director discussed the CARES Act pension related provisions and their lack of application to DPFP.

No motion was made.

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7. Board approval of Trustee education and travel

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

The Board and staff discussed approval of future education and business-related travel. There was no future investment-related travel.

After discussion, Mr. Quinn made a motion to approve Mr. Garcia's request to attend NAF Virtual Program Modules 1-2. Mr. Garza seconded the motion, which was unanimously approved by the Board.

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8. Portfolio Update

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

No motion was made.

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Regular Board Meeting
Thursday, May 14, 2020

9. Real Assets Portfolio Review – Hearthstone, Forest Investment Associates and BTG Pactual

Staff provided an overview of the portfolio and the strategy for certain DPFP Real Asset holdings. In the Natural Resources portfolio, staff discussed the timber holdings managed by Forest Investment Associates and BTG Pactual. In the Real Estate portfolio, staff reviewed the land holdings near Boise, ID managed by Hearthstone.

The Board went into closed executive session – at 11:08 a.m.

The meeting was reopened at 1:24 p.m.

No motion was made.

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10. Lone Star Investment Advisors Update

Investment Staff updated the Board on recent performance, operational, and administrative developments with respect to DPFP investments in funds managed by Lone Star Investment Advisors.

The Board went into closed executive session – at 11:08 a.m.

The meeting was reopened at 1:24 p.m.

After discussion, Ms. Byrne made a motion to authorize the Executive Director to enter into six-month extensions with no management fee on the Lone Star Growth Capital and Lone Star CRA funds. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

After discussion, Mr. Garza made a motion to authorize the Executive Director to execute loan agreements for up to $4 million to the Lone Star Investment Advisors funds. Ms. Hernandez Patterson seconded the motion, which was unanimously approved by the Board.

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Regular Board Meeting
Thursday, May 14, 2020

11. **Legal issues - In accordance with Section 551.071 of the Texas Government Code, the Board will meet in executive session to seek and receive the advice of its attorneys about pending or contemplated litigation, including DPFP v. The Townsend Group, et. al. or any other legal matter in which the duty of the attorneys to DPFP and the Board under the Texas Disciplinary Rules of Professional Conduct clearly conflicts with Texas Open Meeting laws.**
The Board went into closed executive session – at 11:08 a.m.

    The meeting was reopened at 1:24 p.m.

    No motion was made.

D. BRIEFING ITEMS

1. Public Comment

Prior to commencing items for Board discussion and deliberation, the Chairman extended an opportunity for public comment. No one requested to speak to the Board.

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Regular Board Meeting
Thursday, May 14, 2020

2. Executive Director's report

a. Associations' newsletters
- NCPERS Monitor (April 2020)
- NCPERS Monitor (May 2020)
- TEXPERS Pension Observer (April 2020) https://online.anyflip.com/mxfu/apyu/mobile/index.html

b. Open Records
c. Operational Response to COVID-19
d. Member Comments – March 2020 Board Meeting

The Executive Director's report was presented.

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Ms. Gottschalk stated that there was no further business to come before the Board. On a motion by Mr. Garcia and a second by Mr. Merrick, the meeting was adjourned at 1:26 p.m.

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William F. Quinn
Chairman

ATTEST:

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Kelly Gottschalk
Secretary

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C1

Topic: **January 1, 2020 Actuarial Valuation Assumptions**

Attendees: Jeff Williams, Vice President and Actuary, Segal Consulting

Discussion: An actuarial valuation is performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and it is an important part of the annual financial audit. Segal Consulting is preparing the January 1, 2020 actuarial valuation reports for the Regular Plan (Combined Plan) and the Supplemental Plan. Many economic and demographic assumptions are required to prepare the valuation. Pursuant to Article 16, Section 67 (f)(3) of the Texas Constitution, the Board determines the assumptions used in the valuation.

Segal presented a five-year Review of Actuarial Experience at the May 2020 Board meeting and based on that study, Segal recommended modifications to certain economic and demographic assumptions. In addition, Segal provided an analysis of the impacts to the funding level and pension liability using a discount rate/assumed rate of return of 7.25% (current rate), 7.00% and 6.75%. Summary pages of the recommendations from the report are provided for convenience. The full report is available on the DPFP website under Financial Reports.

DISCUSSION SHEET

ITEM #C1
(continued)

Staff Recommendation: **Provide** direction to Segal on the assumptions to be used in preparing the January 1, 2020 actuarial valuation reports for the Regular Plan (Combined Plan) and the Supplemental Plan consistent and with the Actuary's recommendations and provide a discount rate to be used in preparing the January 1, 2020 actuarial valuation reports.

Summary of Proposed Assumption Changes

Assumption	Current Assumption	Proposed Assumption
Healthy Retiree & Dependent Spouse Mortality	RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females	Pub-2010 Public Safety Retiree Amount-weighted Mortality Table, set back one year for females
Contingent Beneficiary Mortality	RP-2014 Blue Collar Healthy Annuitant Mortality Table, set forward two years for females	Pub-2010 Public Safety Contingent Survivor Amount-weighted Mortality Table, set back one year for females
Disabled Life Mortality	RP-2014 Disabled Retiree Mortality Table, set back three years for males and females	Pub-2010 Public Safety Disabled Retiree Amount-weighted Mortality Table, set forward four years for males and females
Pre-Retirement Mortality	RP-2014 Employee Mortality Table, set back two years for males	Pub-2010 Public Safety Employee Amount-weighted Mortality Table, set forward five years for males
Mortality Improvement	Projected generationally with Scale M-2015	Projected generationally with Scale M-2019
Turnover	Separate service-based rates for Fire and Police; rates zero out after 37 years of service	Modify existing service-based rates for both Fire and Police; new rates zero out after 24 years of service
Disability	Age-based rates; rates zero out after age 54	No change
Service-Related Disability	100% of disabilities assumed service-related	No change
DROP Retirement	Separate age-based rates for Fire and Police, with 100% retirement at age 67 or after eight years in DROP	Increase existing age-based rates for most ages, move up 100% retirement to age 65 and move back 100% retirement to ten years in DROP
DROP Utilization	No members are assumed to elect to enter the DROP	No change

Segal

Summary of Proposed Assumption Changes

Assumption	Current Assumption	Proposed Assumption
DROP Annuitization Interest	3.00% on account balances as of September 1, 2017, payable upon retirement	2.75% on account balances as of September 1, 2017, payable upon retirement
Non-DROP Retirement	Three separate age-based rates based on hire date and service, with 100% retirement at age 62 or after benefit multiplier hits 90% maximum	Decrease the existing age-based rates for most ages; simplify rates from three separate rates to two
Terminated Vested Retirement	Age 50 if terminate pre-September 1, 2017; Age 58 if terminate on or after September 1, 2017	No change to retirement ages; in addition, an assumption has been added that 75% of those who terminate with a vested benefit prior to age 40 will take a cash out at age 40
Percent Married	75% for Males and Females	No change
Spousal Age Difference	Females three years younger than males	No change
Inflation	2.75%	2.50%
Investment Return	7.25%	Between 6.50% - 7.25%
Payroll Growth	2.75%	2.50%
Salary Scale	Separate service-based salary scales based on rank, with rates ranging from 0.00% to 5.00% with an ultimate rate of 2.00%	Separate salary scales based on rank as stated in the 2019 Meet and Confer agreement with an ultimate rate of 2.50%
Administrative Expenses	Greater of $8,500,000 per year or 1% of computation pay	No change
Cost-of-Living Adjustment (COLA)	2.00% per year beginning the year System is projected to be 70% funded on a market value basis (currently, October 1, 2050)	No change; Segal will revisit once financials are finalized and funding projections are updated

Segal

Impact of Proposed Assumption Changes

The following chart provides the estimated impact of the assumption and method changes, based on the preliminary January 1, 2020 valuation results; results will change once final assets are available.

	Description	January 1, 2019 Valuation Results	January 1,2020 Preliminary Valuation Results	Recommended Demographic and Salary Scale Changes	Recommended Demographic, Salary Scale, and Inflation/Payroll Growth Changes	Recommended Changes with Discount Rate Change to 7.00%	Recommended Changes with Discount Rate Change to 6.75%	Recommended Changes with Discount Rate Change to 6.50%
1	Actuarial Accrued Liability (AAL)	$4,494,822,503	$4,622,977,965	$4,700,999,452	$4,700,999,452	$4,825,477,065	$4,955,810,580	$5,092,348,320
2	Actuarial Value of Assets (AVA)	2,161,899,662	2,160,773,330	2,160,773,330	2,160,773,330	2,160,773,330	2,160,773,330	2,160,773,330
3	Unfunded Actuarial Accrued Liability (UAAL) [(1) - (2)]	$2,332,922,841	$2,462,204,635	$2,540,226,122	$2,540,226,122	$2,664,703,735	$2,795,037,250	$2,931,574,990
4	Employer Normal Cost	11,579,396	12,369,896	14,280,748	14,280,748	18,353,799	22,774,772	27,577,091
5	Payment on UAAL	135,274,585	142,770,993	147,295,070	151,402,406	154,692,797	157,971,527	161,238,556
6	**Total Recommended Contribution adjusted for Timing [(4) + (5) + Interest]**	**$152,084,297**	**$160,666,349**	**$167,330,464**	**$171,584,085**	**$179,000,791**	**$186,746,881**	**$194,855,552**
7	Recommended Contribution as a % of Projected Payroll	41.88%	40.73%	42.13%	43.20%	45.07%	47.02%	49.06%
8	Projected Payroll	$363,117,415	$394,431,301	$397,161,078	$397,161,078	$397,161,078	$397,161,078	$397,161,078
9	Funded Ratio – AVA Basis	48.10%	46.74%	45.96%	45.96%	44.78%	43.60%	42.43%
10	Funded Ratio – MVA Basis*	45.43%	44.58%	43.84%	43.84%	42.71%	41.59%	40.47%

*Based on market value of assets of $2,041,914,130 for 2019 and $2,060,965,120 for 2020

Segal

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C2

Topic: **DROP Policy Amendment**

Discussion: Segal Consulting, DPFP Actuary, presented the results of a five-year Review of Actuarial Experience at the May 2020 Board meeting. Based on new Public Safety Mortality Tables and the actual experience of DPFP, Segal recommended modifying the Mortality Tables used in the actuarial valuation. The Actuary's recommendation will modify the life expectancy tables used for future DROP annuity calculations as Section 6.14(e) of the plan provides that DROP annuitizations will be based upon the mortality tables recommended by DPFP's actuary. DROP annuities effective before July 1, 2020 will not be impacted by this change.

Three tables have been included for informational purposes, the 2017 table, the Actuary's recommended 2020 table and a table reflecting the differences between the two tables.

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

DALLAS POLICE & FIRE PENSION SYSTEM

DEFERRED RETIREMENT OPTION PLAN POLICY (DROP)

As Amended Through June~~April~~ 11~~9~~, 2020

DEFERRED RETIREMENT OPTION PLAN POLICY

Table of Contents

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DEFERRED RETIREMENT OPTION PLAN POLICY

Adopted December 10, 1992
Amended through June 11~~April 9~~, 2020

A. PURPOSE

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

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

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

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

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

B. DEFINITIONS

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

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

B. DEFINITIONS (continued)

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

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

C. ENTRY INTO DROP

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

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

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

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

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

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

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

D. DROP REVOCATION

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

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

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

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

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

D. DROP REVOCATION (continued)

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

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

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

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

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

E. ANNUITIZATION OF DROP ACCOUNTS

1. Methodology

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

2. Interest Rates

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

3. Mortality Table

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

E. ANNUITIZATION OF DROP ACCOUNTS (continued)

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

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

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

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

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

5. Annuitization of Member DROP Accounts

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

E. ANNUITIZATION OF DROP ACCOUNTS (continued)

5. Annuitization of Member DROP Accounts (continued)

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

6. Annuitization of Alternate Payee's Account

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

7. Annuitization and Payments to Beneficiaries

a. Upon the death of a Member, the DROP Account of such Member shall be transferred to the Member's beneficiary(ies) pursuant to Section F of this policy. Such transferred account shall be annuitized as promptly as administratively practicable utilizing the interest rate in effect under subsection E.2. and the age of the beneficiary at the time of the Member's death in calculating the beneficiary's DROP Annuity.

b. Upon the death of a DROP Annuitant, the remaining DROP Annuity shall be paid to the beneficiary designated by such DROP Annuitant and shall be divided if there are multiple beneficiaries as designated by the DROP Annuitant pursuant to Section F of this policy. DPFP shall only be responsible for payments to beneficiaries after DPFP has actual knowledge of the death of a DROP annuitant.

8. Revised Annuity in the Event of an Unforeseeable Financial Hardship Distribution

If any DROP Annuitant shall receive a distribution pursuant to Section G hereof, the DROP Annuity of such DROP Annuitant shall be re-annuitized through a calculation using (a) the interest rate utilized in the calculation of the original DROP Annuity, (b) the present value of the DROP Annuity on the date of the unforeseeable financial hardship distribution as calculated by DPFP's Qualified Actuary, and (c) the remaining number of months in the life expectancy utilized in the calculation of the original DROP Annuity.

E. ANNUITIZATION OF DROP ACCOUNTS (continued)

9. Annuitization Procedure in the Event of a Rehiring

If a DROP Annuitant is rehired and becomes a Member, such person's DROP Annuity will cease (the "Ceased DROP Annuity") effective upon the DROP Annuitant resuming Active Service. When the DROP Annuitant leaves Active Service, the Ceased DROP Annuity will be re-annuitized and recommence based upon the original interest rate and the remaining number of years in the existing DROP Annuity. If the DROP Annuitant shall be eligible under the Plan for additional credits to a DROP Account (the "Additional DROP Account") after recommencing Active Service, then upon the DROP Annuitant leaving Active Service, any amount in the Additional DROP Account shall be annuitized pursuant to subsection E.5.

F. DESIGNATION OF BENEFICIARIES

1. A DROP participant will have the opportunity to designate a primary beneficiary (or primary beneficiaries) and a contingent beneficiary (or contingent beneficiaries) of his or her DROP Account either when filing the application for DROP participation, or thereafter, on a beneficiary form provided by DPFP for this purpose. The named beneficiary must be a living person at the time of the filing of the beneficiary form. No trusts may be named as a beneficiary, except for a trust established for a child who is entitled to benefits pursuant to Section 6.06 (n)(1) of the Plan ("Special Needs Trust"). Existing trusts which have a DROP Account as of the date of this policy will be permitted and will be annuitized pursuant to Section E.4. and the age of the oldest beneficiary of the trust will be utilized for purposes of the annuitization. Special Needs Trusts will be annuitized based upon the age of the child.

2. In the case of a holder of DROP Annuity who dies where no living person is named as a beneficiary, the remaining DROP Annuity will be paid to the deceased DROP Annuitant's estate. In the case of a Member who dies with a DROP Account where no living person is named as a beneficiary, the DROP Account will be annuitized based upon the life of the youngest heir to the deceased Member's estate and the resulting DROP Annuity will be paid to the estate.

3. Beneficiaries of a Member's DROP Account or a DROP Annuitant's DROP Annuity are not limited to the Qualified Survivors. Upon request, DPFP will divide a deceased participant's DROP Account or DROP Annuity among the designated beneficiaries at the time of the DROP participant's death.

F. DESIGNATION OF BENEFICIARIES (continued)

4. Upon the death of a DROP participant, the DROP participant's DROP Account or DROP Annuity shall become the property of the surviving spouse unless either (i) the surviving spouse has specifically waived his or her right to such funds or (ii) the surviving spouse's marriage to the DROP participant occurred after January 14, 2016 and the participant had already joined DROP and named a beneficiary other than the surviving spouse who was not the participant's spouse at the time of the beneficiary election, and will be transferred to the name of the surviving spouse or such other named beneficiary or beneficiaries. DROP Annuities shall be paid to the designated beneficiaries in accordance with the last beneficiary form on file in the DPFP administrative office upon that office's receipt of sufficient evidence of the DROP participant's death.

G. HARDSHIPS

1. Pursuant to the Plan, a DROP Annuitant who was a former Member of the Plan (a "Retiree Annuitant") may apply for a lump sum distribution relating to his or her DROP Annuity in the event that the Retiree Annuitant experiences a financial hardship that was not reasonably foreseeable. To qualify for an unforeseeable financial hardship distribution, a Retiree Annuitant (or the estate of a Retiree Annuitant in the case of subsection G.2.e.) must demonstrate that:

   a. a severe financial hardship exists at the time of the application (i.e., not one that may occur sometime in the future);

   b. the hardship cannot be relieved through any other financial means (i.e., compensation from insurance or other sources, monthly annuity benefits, or liquidation of personal assets) unless using those other sources would also cause a financial hardship; and

   c. the amount requested in the application is reasonably related to and no greater than necessary to relieve the financial hardship.

2. The Board shall only recognize the following circumstances as an unforeseeable financial hardship that is eligible for a lump sum distribution:

   a. the need to repair damage to a Retiree Annuitant's primary residence not covered by insurance as the result of a natural disaster or significant event (i.e., fire, flood, hurricane, earthquake, etc.);

   b. the need to make significant changes to a Retiree Annuitant's primary residence not covered by insurance because of medical necessity;

G. HARDSHIPS (continued)

c. the need to pay for medical expenses of the Retiree Annuitant, a Retiree Annuitant's spouse, or a dependent child or relative of the Retiree Annuitant as described under Code section 152(c) and (d), including non-refundable deductibles, as well as for the cost of prescription drug medication;

d. the need to pay for the funeral expenses of a parent, child, grandchild or spouse of the Retiree Annuitant, including reasonable travel and housing costs for the Retiree Annuitant, their spouse, parent, child or grandchild;

e. the need of the estate of a Retiree Annuitant to pay for the medical expenses or the funeral expenses of the Retiree Annuitant; or

f. other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Retiree Annuitant.

3. DPFP staff will develop procedures relating to the application for an unforeseeable financial hardship distribution, which will include, at a minimum, a notarized statement by the applicant relating to the requirements for eligibility and documentation sufficient to demonstrate such eligibility. Following submission of the required financial hardship distribution application, the notarized statement, and other required documentation as stated in the application form, DPFP staff shall review the materials and inform the Retiree Annuitant within thirty (30) days whether any additional information or documentation is required or requested. Once all required and/or requested documentation has been submitted, the Retiree Annuitant shall be informed within thirty (30) days if (i) the Retiree Annuitant is eligible for an unforeseeable financial hardship distribution or (ii) the matter has been referred to the Board for consideration at the next regular meeting. After an unforeseeable financial hardship distribution has been made to a Retiree Annuitant, a Retiree Annuitant may not request an additional unforeseeable financial hardship distribution for ninety (90) days from the date of distribution of any amount under this Section.

4. The Executive Director shall have the authority to approve an application for an unforeseeable financial hardship distribution. The Executive Director shall submit to the Board for final action by the Board any recommended denial, in whole or in part, of any request for an unforeseeable financial hardship distribution. Determinations of the Board and the Executive Director on applications for unforeseeable financial hardship distributions are final and binding. Once an unforeseeable financial hardship distribution has been approved by either the Executive Director or the Board, payment of the distribution shall be made to the Retiree Annuitant as soon as administratively practicable.

G. HARDSHIPS (continued)

5. For the purposes of this Section G, the term "dependent" shall mean any person who is claimed by a Retiree Annuitant as a dependent on the Retiree Annuitant's federal income tax return in any year for which a distribution is sought under this Section G.

6. Distributions under this Section G shall only be available for persons who (a) entered DROP prior to June 1, 2017 and (b) who have not revoked a DROP election under Section D. of this policy.

7. No claims for hardship distributions will be accepted for any circumstances which give rise to the hardship where such circumstances occurred more than six months (nine months in the case of a filing by the estate of a Retiree Annuitant pursuant to subsection G.2.e.) prior to the date of filing of the application pursuant to subsection G.3.

H. 100% Joint and Survivor Benefit

1. Coterminous with entry into DROP, a Member shall have the right to make the election provided for under Section 6.063(a)(1) of the Plan and such an election will not be subject to the requirement set forth in Section 6.063(e) of the Plan.

2. Subsequent to a Member's entry into DROP, if the Member has not made the election provided for in Section H.1., the Member shall have the right to make the election provided for under Section 6.063(a)(1) and such an election will be subject to the requirement set forth in Section 6.063(e). If a Member shall die while on Active Service within one year after making the election under this Section H.2., then the Member's DROP Account shall be increased by the reduced benefit amount which is contemplated by Section 6.063(e) to be paid to the surviving spouse.

3. If a Member makes an election under either Section H.1. or H.2., the amount credited to the Member's DROP balance will be adjusted accordingly.

4. If a Member should remarry while on Active Service after making an election under Section H.1 or H.2, then the Member's benefit shall be recalculated and adjusted based upon the age of the new spouse, effective as of the date of marriage as if the Member had made a new election under Section 6.063(a)(1); provided however, that (i) if the Member had made the election pursuant to Section H.1., the Member shall not be subject to the requirement set forth in Section 6.063(e) for such remarriage and recalculation and (ii) if the Member had the election pursuant to Section H.2., the one year requirement under Section 6.063(e) shall be deemed to have commenced upon the original election.

H. 100% Joint and Survivor Benefit (continued)

5. Members who are in DROP as of the effective date of this Policy shall be afforded the opportunity through the first to occur of (i) their retirement date or (ii) October 31, 2018 to make the election provided for in Section H.1 and after October 31, 2018, such Members shall be entitled to make the election provided for in Section H.2.

6. Nothing in this DROP Policy shall affect or impair the right of a Member to make the election provided for in Section 6.063(a) upon or after the Member's retirement if the Member shall not make the election provided for in this Section H, provided, however, that any election made by a Member of Pensioner after their entry into DROP, notwithstanding any other provision of Section 6.063, shall be subject to the provisions of Section 6.063(e).

I. COMMENCEMENT OF RETIREMENT BENEFIT

For any Member retiring and commencing receipt of their monthly retirement benefit, other than Members who have participated in DROP for ten years or more and are subject to the limitation set forth in the last sentence of Section 6.14(c) (a "10 Year Limitation DROP participant"), such Member's retirement benefit shall commence on the first day of the month such Member's retirement becomes effective. For any 10 Year Limitation DROP participant, such Member's monthly retirement benefit shall commence on the effective date of such Member's retirement.

J. EFFECTIVE DATE

APPROVED on June 11~~April 9~~, 2020 by the Board of Trustees of the Dallas Police and Fire Pension System.

____
William F. Quinn
Chairman

ATTEST:

____
Kelly Gottschalk
Secretary

Exhibit 1- Interest Rates

Published Rate	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
7/17/2017	1.86	2.12	2.31	2.65	2.89
8/15/2017	1.83	2.09	2.27	2.60	2.84
9/15/2017	1.81	2.04	2.20	2.52	2.77
Average	**1.83**	**2.08**	**2.26**	**2.59**	**2.83**

Exhibit 2 – Life Expectancies Based on a January 1, 2020~~November 2017 DROP~~ Annuity Commencement Date

Table effective for annuitizations beginning on or after July 1, 2020

~~Expected Lifetime in Years Based on a November 2017 Commencement of Annuitization~~

~~Age~~	~~Expected Lifetime (Years)~~	~~Ag e~~	~~Expected Lifetime (Years)~~
~~21~~	~~62~~	~~56~~	~~29~~
~~22~~	~~61~~	~~57~~	~~28~~
~~23~~	~~60~~	~~58~~	~~27~~
~~24~~	~~59~~	~~59~~	~~26~~
~~25~~	~~58~~	~~60~~	~~25~~
~~26~~	~~57~~	~~61~~	~~24~~
~~27~~	~~56~~	~~62~~	~~23~~
~~28~~	~~56~~	~~63~~	~~22~~
~~29~~	~~55~~	~~64~~	~~22~~
~~30~~	~~54~~	~~65~~	~~21~~
~~31~~	~~53~~	~~66~~	~~20~~
~~32~~	~~52~~	~~67~~	~~19~~
~~33~~	~~51~~	~~68~~	~~18~~
~~34~~	~~50~~	~~69~~	~~17~~
~~35~~	~~49~~	~~70~~	~~17~~
~~36~~	~~48~~	~~71~~	~~16~~
~~37~~	~~47~~	~~72~~	~~15~~
~~38~~	~~46~~	~~73~~	~~14~~
~~39~~	~~45~~	~~74~~	~~14~~
~~40~~	~~44~~	~~75~~	~~13~~
~~41~~	~~43~~	~~76~~	~~12~~
~~42~~	~~42~~	~~77~~	~~12~~
~~43~~	~~41~~	~~78~~	~~11~~
~~44~~	~~40~~	~~79~~	~~10~~
~~45~~	~~39~~	~~80~~	~~10~~
~~46~~	~~38~~	~~81~~	~~9~~
~~47~~	~~37~~	~~82~~	~~9~~
~~48~~	~~36~~	~~83~~	~~8~~
~~49~~	~~36~~	~~84~~	~~7~~
~~50~~	~~35~~	~~85~~	~~7~~
~~51~~	~~34~~	~~86~~	~~7~~
~~52~~	~~33~~	~~87~~	~~6~~
~~53~~	~~32~~	~~88~~	~~6~~
~~54~~	~~31~~	~~89~~	~~5~~
~~55~~	~~30~~	~~90~~	~~5~~

~~Note: The above factors are based on the sex-distinct RP-2014 Blue Collar Healthy Annuitant Mortality Tables, with the female table set forward two years, projected generationally using Scale MP-2015. The sex-distinct tables are blended 85% male and 15% female.~~

DALLAS POLICE & FIRE PENSION SYSTEM

Expected Lifetime in Years Based on a January 1, 2020 Commencement Date

Age	Expected Lifetime (Years)	Age	Expected Lifetime (Years)
21	65	56	30
22	64	57	29
23	63	58	28
24	62	59	27
25	61	60	26
26	60	61	25
27	59	62	24
28	58	63	23
29	57	64	22
30	56	65	21
31	55	66	21
32	54	67	20
33	53	68	19
34	52	69	18
35	51	70	17
36	50	71	16
37	49	72	15
38	48	73	15
39	47	74	14
40	46	75	13
41	45	76	12
42	44	77	12
43	43	78	11
44	42	79	10
45	41	80	10
46	40	81	9
47	39	82	8
48	38	83	8
49	37	84	7
50	36	85	7
51	35	86	6
52	34	87	6
53	33	88	6
54	32	89	5
55	31	90	5

Mortality Table

Sex distinct Pub-2010 Public Safety Retiree Amount-Weighted Mortality Tables, with the female table set back one year; projected generationally using Scale MP-2019. The sex-distinct tables are blended 85% male and 15% female.

DALLAS POLICE & FIRE PENSION SYSTEM

Expected Lifetime in Years Based on a January 1, 2020 Commencement Date

Age	Expected Lifetime (Years)		Age	Expected Lifetime (Years)
21	65		56	30
22	64		57	29
23	63		58	28
24	62		59	27
25	61		60	26
26	60		61	25
27	59		62	24
28	58		63	23
29	57		64	22
30	56		65	21
31	55		66	21
32	54		67	20
33	53		68	19
34	52		69	18
35	51		70	17
36	50		71	16
37	49		72	15
38	48		73	15
39	47		74	14
40	46		75	13
41	45		76	12
42	44		77	12
43	43		78	11
44	42		79	10
45	41		80	10
46	40		81	9
47	39		82	8
48	38		83	8
49	37		84	7
50	36		85	7
51	35		86	6
52	34		87	6
53	33		88	6
54	32		89	5
55	31		90	5

Mortality Table

Sex distinct Pub-2010 Public Safety Retiree Amount-Weighted Mortality Tables,

with the female table set back one year; projected generationally using Scale MP-2019.

The sex-distinct tables are blended 85% male and 15% female.

Expected Lifetime in Years Based on a November 30, 2017 Commencement Date

Age	Expected Lifetime (Years)	Age	Expected Lifetime (Years)
21	62	56	29
22	61	57	28
23	60	58	27
24	59	59	26
25	58	60	25
26	57	61	24
27	56	62	23
28	56	63	22
29	55	64	22
30	54	65	21
31	53	66	20
32	52	67	19
33	51	68	18
34	50	69	17
35	49	70	17
36	48	71	16
37	47	72	15
38	46	73	14
39	45	74	14
40	44	75	13
41	43	76	12
42	42	77	12
43	41	78	11
44	40	79	10
45	39	80	10
46	38	81	9
47	37	82	9
48	36	83	8
49	36	84	7
50	35	85	7
51	34	86	7
52	33	87	6
53	32	88	6
54	31	89	5
55	30	90	5

Mortality Table

Sex distinct RP-2014 Blue Collar Healthy Annuitant Mortality Tables, with the female table set forward two years, projected generationally using Scale MP-2015. The sex-distinct tables are blended 85% male and 15% female.

2020 Expected Lifetime Compared to 2017

Age	Expected Lifetime Difference (Years)		Age	Expected Lifetime Difference (Years)
21	3		56	1
22	3		57	1
23	3		58	1
24	3		59	1
25	3		60	1
26	3		61	1
27	3		62	1
28	2		63	1
29	2		64	0
30	2		65	0
31	2		66	1
32	2		67	1
33	2		68	1
34	2		69	1
35	2		70	0
36	2		71	0
37	2		72	0
38	2		73	1
39	2		74	0
40	2		75	0
41	2		76	0
42	2		77	0
43	2		78	0
44	2		79	0
45	2		80	0
46	2		81	0
47	2		82	(1)
48	2		83	0
49	1		84	0
50	1		85	0
51	1		86	(1)
52	1		87	0
53	1		88	0
54	1		89	0
55	1		90	0

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C3

Topic: **Financial Audit Status**

Discussion: The Chief Financial Officer will provide a status update on the annual financial audit.

Regular Board Meeting – Thursday, June 11, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

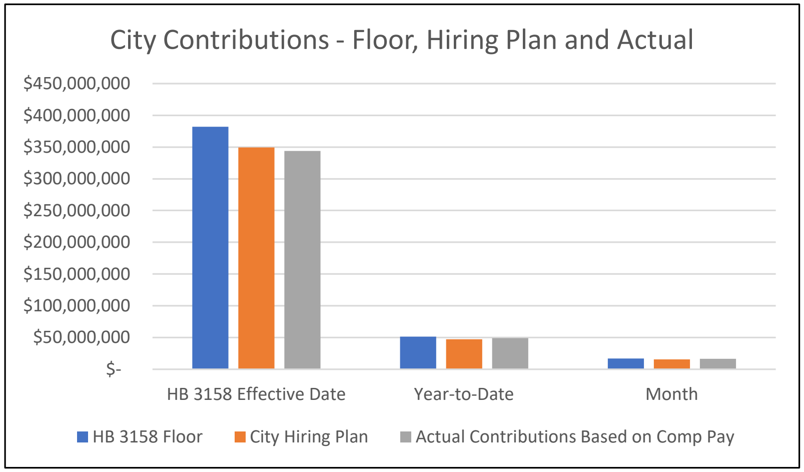
ITEM #C4

Topic: **Monthly Contribution Report**

Discussion: Staff will review the Monthly Contribution Report.

Regular Board Meeting – Thursday, June 11, 2020

Contribution Tracking Summary - June 2020 (April 2020 Data)



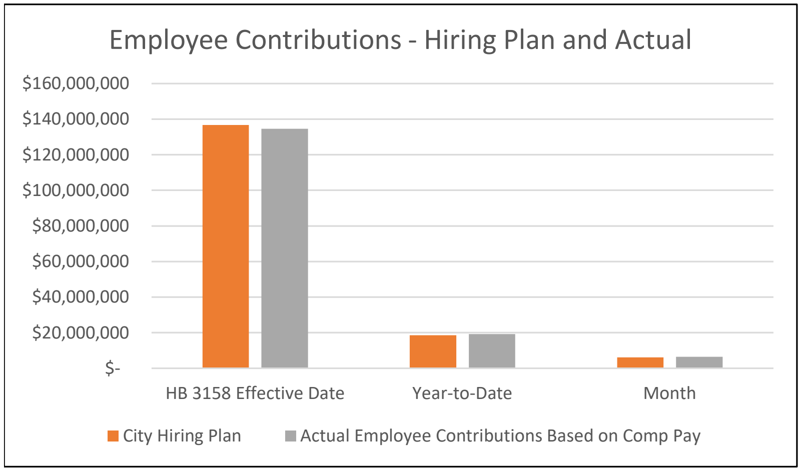
Actual Comp Pay was 98% of the Hiring Plan estimate since the effective date of HB 3158.

In the most recent month Actual Comp Pay was 105% of the Hiring Plan estimate and 96% of the floor amount.

The Hiring Plan Comp Pay estimate increased by 3.39% in 2020. The Floor increased by 2.75%.

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

The combined actual hiring was 62 higher than the Hiring Plan for the pay period ending March 31, 2020. Fire was over the estimate by 85 fire fighters and Police was short 23 officers.



Since the effective date of HB 3158 actual employee contributions have been $2.4 million less than the Hiring Plan estimate. Potential earnings loss due to the contribution shortfall is $467k at the Assumed Rate of Return.

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

There is no Floor on employee contributions.

Contribution Summary Data

City Contributions

Apr-20	Number of Pay Periods Beginning in the Month	HB 3158 Floor	City Hiring Plan	Actual Contributions Based on Comp Pay	Additional Contributions to Meet Floor Minimum	Comp Pay Contributions as a % of Floor Contributions	Comp Pay Contributions as a % of Hiring Plan Contributions
Month	3	$ 17,172,000	$ 15,763,846	$ 16,482,521	$ 689,480	96%	105%
Year-to-Date		$ 51,516,000	$ 47,291,538	$ 48,981,096	$ 2,534,903	95%	104%
HB 3158 Effective Date		$ 381,863,000	$ 349,431,923	$ 344,038,305	$ 37,824,696	90%	98%

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

Employee Contributions

Apr-20	Number of Pay Periods Beginning in the Month	City Hiring Plan	Actual Employee Contributions Based on Comp Pay	Actual Contribution Shortfall Compared to Hiring Plan	Actuarial Valuation Contribution Assumption	Actual Contributions as a % of Hiring Plan Contributions	Actual Contributions as a % of Actuarial Val Assumption
Month	3	$ 6,168,462	$ 6,452,042	$ 283,581	$ 6,168,462	105%	105%
Year-to-Date		$ 18,505,385	$ 19,175,656	$ 670,271	$ 18,505,386	104%	104%
HB 3158 Effective Date		$ 136,734,231	$ 134,644,736	$ (2,089,495)	$ 131,625,024	98%	102%

Potential Earnings Loss from the Shortfall based on Assumed Rate of Return $ (486,929)

Does not include Supplemental Plan Contributions.

Reference Information

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

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

The HB 3158 Bi-weekly Floor ends after 2024

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

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

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

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

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

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

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

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

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

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

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

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

Comp Pay by Month - 2020	Annual Divided by 26 Pay Periods	Actual	Difference	2020 Cumulative Difference	Number of Employees - EOM	Difference
January	$ 30,461,538	$ 31,291,360	$ 829,821	$ 829,821	5136	73
February	$ 30,461,538	$ 31,414,646	$ 953,108	$ 1,782,929	5114	51
March	$ 30,461,538	$ 31,492,765	$ 1,031,226	$ 2,814,156	5093	30
April	$ 45,692,308	$ 47,775,422	$ 2,083,114	$ 4,897,270	5125	62
May	$ 30,461,538					
June	$ 30,461,538					
July	$ 30,461,538					
August	$ 30,461,538					
September	$ 45,692,308					
October	$ 30,461,538					
November	$ 30,461,538					
December	$ 30,461,538					

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C5

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

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

Discussion:

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

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

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

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

Future Education and Business Related Travel
Regular Board Meeting – June 11, 2020

ATTENDING APPROVED

Conference:	**TEXPERS Summer Education Forum**
Dates:	August 16-18, 2020
Location:	San Antonio, TX
Est. Cost:	TBD

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C6

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, June 11, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

Portfolio Update

June 11, 2020

Asset Allocation

DPFP Asset Allocation	5/31/20		Target		Variance	
	$ mil.	%	$ mil.	%	$ mil.	%
Equity	**844**	**43.3%**	**1,072**	**55.0%**	**-227**	**-11.7%**
Global Equity	509	26.1%	779	40.0%	-270	-13.9%
Emerging Markets	43	2.2%	195	10.0%	-152	-7.8%
Private Equity*	292	15.0%	97	5.0%	195	10.0%
Fixed Income	**563**	**28.9%**	**682**	**35.0%**	**-119**	**-6.1%**
Safety Reserve - Cash	46	2.4%	58	3.0%	-12	-0.6%
Safety Reserve - ST IG Bonds	213	10.9%	234	12.0%	-21	-1.1%
Investment Grade Bonds	60	3.1%	78	4.0%	-18	-0.9%
Global Bonds	67	3.4%	78	4.0%	-11	-0.6%
Bank Loans	76	3.9%	78	4.0%	-2	-0.1%
High Yield Bonds	78	4.0%	78	4.0%	0	0.0%
Emerging Mkt Debt	17	0.9%	78	4.0%	-60	-3.1%
Private Debt*	6	0.3%	0	0.0%	6	0.3%
Real Assets*	**541**	**27.7%**	**195**	**10.0%**	**346**	**17.7%**
Real Estate*	370	19.0%	97	5.0%	273	14.0%
Natural Resources*	124	6.4%	97	5.0%	27	1.4%
Infrastructure*	46	2.4%	0	0.0%	46	2.4%
Total	**1,948**	**100.0%**	**1,948**	**100.0%**	**0**	**0.0%**
Safety Reserve	259	13.3%	292	15.0%	-33	-1.7%
*Private Market Assets	839	43.1%	292	15.0%	547	28.1%

Source: JP Morgan Custodial Data, Staff Estimates and Calculations

data is preliminary

DALLAS POLICE & FIRE PENSION SYSTEM

Adjusted Asset Allocation

In this view staff has adjusted private market values to roughly estimate the impact from lower oil prices and Covid-19.

DPFP Asset Allocation	5/31/20		Target		Variance	
	$ mil.	%	$ mil.	%	$ mil.	%
Equity	**694**	**40.2%**	**949**	**55.0%**	**-255**	**-14.8%**
Global Equity	509	29.5%	690	40.0%	-181	-10.5%
Emerging Markets	43	2.5%	172	10.0%	-129	-7.5%
Private Equity*	142	8.2%	86	5.0%	56	3.2%
Fixed Income	**563**	**32.7%**	**604**	**35.0%**	**-40**	**-2.3%**
Safety Reserve - Cash	46	2.7%	52	3.0%	-6	-0.3%
Safety Reserve - ST IG Bonds	213	12.3%	207	12.0%	6	0.3%
Investment Grade Bonds	60	3.5%	69	4.0%	-9	-0.5%
Global Bonds	67	3.9%	69	4.0%	-2	-0.1%
Bank Loans	76	4.4%	69	4.0%	7	0.4%
High Yield Bonds	78	4.5%	69	4.0%	9	0.5%
Emerging Mkt Debt	17	1.0%	69	4.0%	-51	-3.0%
Private Debt*	6	0.4%	0	0.0%	6	0.4%
Real Assets*	**467**	**27.1%**	**172**	**10.0%**	**295**	**17.1%**
Real Estate*	293	17.0%	86	5.0%	207	12.0%
Natural Resources*	128	7.4%	86	5.0%	42	2.4%
Infrastructure*	46	2.7%	0	0.0%	46	2.7%
Total	**1,725**	**100.0%**	**1,725**	**100.0%**	**0**	**0.0%**
Safety Reserve	259	15.0%	259	15.0%	0	0.0%
*Private Mkt. Assets w/NAV Discount	616	35.7%	259	15.0%	357	20.7%

Source: JP Morgan Custodial Data, Staff Estimates and Calculations

data is preliminary

DALLAS POLICE & FIRE PENSION SYSTEM

Public Market Performance Estimates

	1Q20				5/31/20 qtd				5/31/20 ytd		
Net of Fees	Manager	Index	Excess		Manager	Index	Excess		Manager	Index	Excess
Global Equity	-22.00%	-22.40%	0.40%		15.97%	16.12%	-0.15%		-9.31%	-9.94%	0.63%
Boston Partners	-28.00%	-21.10%	-6.90%		14.05%	16.28%	-2.23%		-17.05%	-8.20%	-8.85%
Boston Partners vs Value	-28.00%	-26.96%	-1.04%		14.05%	11.81%	2.24%		-17.05%	-18.34%	1.29%
Manulife	-22.90%	-21.40%	-1.50%		13.81%	15.53%	-1.72%		-12.15%	-9.15%	-3.00%
Invesco (fka OFI)	-20.70%	-21.40%	0.70%		20.63%	15.53%	5.10%		-4.05%	-9.15%	5.10%
Walter Scott	-16.80%	-21.40%	4.60%		15.33%	15.53%	-0.20%		-3.90%	-9.15%	5.25%
RBC, EM Equity	-23.20%	-24.40%	1.20%		9.86%	10.64%	-0.78%		-15.62%	-16.33%	0.71%

	1Q20				5/31/20 qtd				5/31/20 ytd		
Net of Fees	Manager	Index	Excess		Manager	Index	Excess		Manager	Index	Excess
Fixed income	-5.00%	-1.10%	-3.90%		2.52%	2.71%	-0.20%		-2.48%	1.57%	-4.05%
IR+M, short term debt	0.20%	1.70%	-1.50%		2.31%	0.96%	1.35%		2.60%	2.66%	-0.06%
Vanguard, Investment Grade	3.30%	3.20%	0.10%		2.06%	-	-		5.24%	-	-
Brandywine, global bonds	-10.60%	-0.30%	-10.30%		7.85%	2.41%	5.44%		-3.70%	2.08%	-5.78%
Loomis, High Yield	-14.60%	-15.00%	0.40%		9.78%	9.69%	0.09%		-6.38%	-6.79%	0.42%
Pacific Asset Mgt., Bank Loans	-9.50%	-13.20%	3.70%		6.91%	8.25%	-1.34%		-2.88%	-6.03%	3.15%
Ashmore, EMD	-21.60%	-12.60%	-9.00%		10.58%	-	-		-13.30%	-	-

Source: JPM Morgan custody data, manager reports, Investment Staff estimates and calculations

5/31/20 data reflects preliminary estimates

Investment Initiatives

- Liquidation of private market assets remains the top focus. $15M expected from real estate in June. Other opportunities are developing. Overall though, significant delays are expected due to COVID-19 market disruption.
- Investment Grade Bond Search
  - Staff completed evaluation of manager proposals in late April.
  - IAC interviews conducted on May 28.
  - Board recommendation today
- Completed survey of high yield products and evaluating options.
- Staff continuing evaluation of private equity funds.
- Working with Meketa on IPS language for safety reserve allocation. May separate the safety reserve allocation.
- Updated near-term return estimate for actuary following discussion with Meketa.
- Will review Boston Partners and Brandywine with IAC. No urgent concerns.
- On-deck: IMA reviews, public equity structure, securities lending review, Meketa reporting format.

2020 Investment Review Calendar*

January ✓	• Real Estate Reviews: Vista 7, King's Harbor, & Museum Twr.
March ✓	• Real Estate: Clarion Presentation
April ✓	• Real Estate: AEW Presentation
May ✓	• Timber: Staff Review of FIA & BTG • Real Estate: Staff Review of Hearthstone
June	• Natural Resources: Hancock Presentation
July	• Infrastructure: Staff review of AIRRO and JPM Maritime
August	• Staff review of Private Equity and Debt
September	• Global Equity Manager Reviews
October	• Fixed Income Manager Reviews

*Presentation schedule is subject to change.

DALLAS POLICE & FIRE PENSION SYSTEM

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C7

Topic: **Report on Investment Advisory Committee**

Discussion: Four members of the Investment Advisory Committee met by teleconference on May 28, 2020. One external member was unable to attend, preventing a quorum. Staff reviewed the agenda materials and received advice from the members present. The Committee Chair and Investment Staff will comment on committee member observations and advice.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C8

Topic: **Investment Grade Core Bond Manager**

Discussion: Working with Meketa, Staff has conducted a search for an active investment manager for Investment Grade Core Bonds. The Investment Advisory Committee provided advice regarding the search and interviewed finalist candidates. Staff and Meketa will discuss the search and the recommendation.

Staff Recommendation To be **provided** at the Board Meeting.

DALLAS POLICE & FIRE PENSION SYSTEM

Date: June 5, 2020

To: DPFP Board of Trustees

From: DPFP Investment Staff

Subject: Investment Grade Bond Active Manager Recommendation

Recommendation

Staff recommends hiring Longfellow Investment Management to actively manage the 4% allocation to Investment Grade Bonds. Based on recent valuations, the 4% allocation would equate to $78 million and would be funded from the interim allocation to the Vanguard Total Bond Fund (VBTIX), recently valued at $60 million and future cash flows from private market liquidations or rebalancing. Members of the Investment Advisory Committee and our Meketa consultants concur with the recommendation. Detailed reference information and analysis is attached.

Information required by section 7.A.6 of the Investment Policy.

The following is a summary of information required by section 7.A.6 of the Investment Policy. Expanded information is available in attached documentation.

a. A description of the organization and key people:

Longfellow is headquartered in Boston and was founded in 1986. The firm solely focuses on bonds and has $11.3B in assets and ~ 40 employees. They are 100% employee owned and 62% women owned. Additional information is available in attached documents.

b. A description of the investment process and philosophy;

The objective is to preserve capital, minimize volatility, and earn an attractive risk-adjusted return. This is accomplished with a top-down strategy for risk management coupled with bottom-up security selection. 75% of alpha is generated from sector/security selection and 25% from duration and yield curve position.

c. A description of historical performance and future expectations;

Consistent positive performance is a hallmark of Longfellow with consistently positive rolling three-year alpha. Longfellow has posted positive excess returns for every calendar year since the 2006 inception, except for modest underperformance in the strong upmarket of 2014 (+5.69% vs. 5.96%). Due to the lower risk profile of this product, cumulative excess returns may lag peers.

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

Due to higher exposure to credit sensitive sectors than the benchmark, the product is expected to suffer modest drawdowns and underperformance during periods of market stress. However, historically, this stress has been less than peers. For the month of March 2020 the product suffered a drawdown of -2.10% vs. -0.59% for the benchmark.

e. The proper time horizon for evaluation of results;

Staff views trailing 3-year and 5-year perspectives as the appropriate time horizon for evaluation.

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

The benchmark is the Bloomberg Barclays U.S. Aggregate Index. Staff believes this is an appropriate benchmark, noting recent trailing correlation of 0.96 to 0.99. Staff expects excess return to lag the broad peer group over time due to a relatively more conservative risk profile. However, we expect superior risk adjusted performance in terms of information ratio (excess returns divided by tracking error).

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

Longfellow is suitable for the investment grade bond allocation. They have modest tracking error relative to the Barclays US Agg. In fact, their tracking error was the lowest of the short-list.

h. The expected cost of the investment.

Staff expects the annual fees to be $180,000 to $200,000. Based on historical analysis fees have represented 30% or less of gross alpha. Thus, we would expect Longfellow to add value of approximately $400,000 annually, net of fees.

MEKETA
INVESTMENT GROUP

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MEMORANDUM

TO: Investment Staff, Dallas Police & Fire Pension System
FROM: Leandro Festino, Aaron Lally, Alli Wallace Stone, Meketa Investment Group
DATE: June 4, 2020
RE: Meketa Recommendation on Investment Grade Bond Manager Search

Background

The Dallas Police and Fire Pension System ("DPFP") currently has a 4% target allocation to Investment Grade bonds. In February 2020, DPFP initiated a search for an active, investment grade bond manager by requesting RFPs from a shortlist of managers provided by Meketa. This document describes the search process undertaken by staff and Meketa, as well as the recommendation.

Search Process

DPFP staff set initial parameters for the search that included criteria relating to minimum track-record length, minimum assets under management, and regulatory record. Staff then worked with Meketa to clearly define the search process and evaluation criteria, and provided this to the Investment Advisory Committee ("IAC") for review.

In January 2020, Meketa submitted to staff a shortlist of four managers receiving the highest ratings from Meketa's Fixed Income research team. Staff requested Meketa to expand the list of managers to be considered. In February 2020, Meketa submitted an expanded list of eleven managers meeting the initial parameters set by staff, and viewed favorably by Meketa. The initial parameters included minimum track-record length, assets under management (at firm and product level), and regulatory record.

Staff discussed the eleven managers with Meketa in March 2020. After further review against the evaluation criteria, staff, in consultation with Meketa, trimmed the shortlist down to five managers. Staff then sent requests for proposals (RFPs) to the five managers, which are listed below.

Manager	Headquarters	Strategy	Meketa Overall Rating
Baird Advisors	Milwaukee, WI	Core Bond	Highly Advantageous
BMO Global Asset Management	Miami, FL	Core Fixed Income	Advantageous
Longfellow Investment Management	Boston, MA	Core	Highly Advantageous
PGIM	Newark, NJ	Core Fixed Income	Advantageous
Western Asset Management	Pasadena, CA	US Core	Advantageous

June 4, 2020

All the managers responded to the RFP by April 13, 2020. Meketa and staff held another conference call in April 2020 to discuss the responses, during which staff raised several questions about the managers. Staff independently continued their review and arrived at two finalists to be interviewed further: Baird Advisors and Longfellow Investment Management. Meketa concurred with Staff.

Staff held calls with Baird Advisors and Longfellow Investment Management on May 12, 2020. Meketa participated on both calls, and concurred with staff's recommendation to bring both candidates in front of the IAC. Both managers participated on a call with the IAC on May 28th. Meketa participated in this call as well. Following this call, staff indicated their preference for Longfellow, which the IAC and Meketa supported.

Summary & Recommendation

During the first half of 2020, Meketa and the DPFP staff held multiple calls to discuss the investment grade bond active manager search, culminating in a recommendation to the Board to hire Longfellow. Recently, DPFP investment staff put together a memo recommending the hiring of Longfellow Investment Management to manage its investment grade bonds allocation. Longfellow Investment Management is a manager that has exhibited consistent historical outperformance relative to benchmark and peers, protection of capital during drawdowns, and has a favorable firm and investment grade product size. Overall, Meketa concurs with the recommendation submitted by DPFP's staff.

We would be pleased to elaborate on this subject when we attend the June Board of Trustees meeting. In the meantime, if we can be of assistance, please do not hesitate to contact us at (760) 795-3450.

LF/AL/AWS/sf

DALLAS POLICE & FIRE PENSION SYSTEM

Date: June 4, 2020

To: DPFP Board of Trustees

From: DPFP Investment Staff

Subject: Investment Grade Bond Active Manager Search Process

Background

- In conjunction with approval of the asset allocation implementation plan on 11/08/18, the Board directed staff to search for an active investment grade bond manager within twelve months.
- On 12/13/18, the Board approved the Vanguard Total Bond Market Index Institutional Mutual Fund as an interim solution for the Investment Grade Bond asset class.
- The search for an active manager was delayed due to staff resource constraints.
- On 12/16/19, the Investment Advisory Committee (IAC) voted to recommend to the Board that the search for an active investment grade bond manager be completed by June 30, 2020. This recommendation was communicated to the Board on 1/9/20.
- Staff initiated the manager search in January 2020.
- Based on recent Fund valuation the 4% allocation would equate to $78 million.

Timeline

- Staff worked with Meketa during January to define the search process. A draft of the process and evaluation criteria was emailed to the IAC on 1/30/20.
- On 2/28/20 Meketa provided a preliminary short list of eleven potential investment grade (IG) bond managers to the investment staff for review.
- On 3/6/20 Meketa and Staff held a conference call to discuss the relative merits of the short list candidates.
- On 3/10/20 staff recommended to Meketa that five candidates be eliminated, and that proposals should be requested from the remaining six firms. Meketa concurred with staff's recommendation and rationale.
- During February Staff developed a Request for Proposal (RFP) questionnaire. Meketa reviewed the questionnaire and concurred with the content.
- Staff reviewed the search process and short-list manager with the IAC on 3/23/20. members noted that the process was very thorough and well-documented and that they would like to interview the top 2-3 managers. They also noted that the short list managers were well-established and on-site due diligence was probably not needed, given COVID-19 risks and restrictions.
- RFP invitations were emailed on 3/25/20 and five proposals were received by the 4/13/20 deadline. One manager was removed from consideration prior to submitting a proposal due to high yield exposure that staff viewed as inconsistent with the mandate.
- Staff evaluated the five investment managers using the evaluation criteria set forth in the search process and conferenced on 4/21/20, to discuss the proposals and rankings.
- Staff summarized views and questions in a 4/24/20 memo to Meketa and a follow-up conference call was held on 4/29/20. Meketa concurred with Staff's finalist selection.
- On 5/4/20 Staff sent the IAC a detailed memo summarizing the evaluation and finalists.
- Staff conducted finalist teleconference interviews on 5/12/20.

- The IAC met via teleconference on 5/28/20 to interview the finalist and provide perspective to staff.

Manager evaluation and the selection recommendation is provided in a separate memo.

Section 7.A of the Investment Policy governs investment search and selection and an excerpt is attached for reference.

The manager search process and evaluation criteria are attached for reference.

Investment Policy Section 7.A Investment Manager Search and Selection

1. The selection of investment managers will utilize a robust process to ensure an open and competitive universe, proper evaluation and due diligence, and selection of candidates that are best able to demonstrate the characteristics sought in a specific search.
2. Investment manager searches shall be based on one or more of the following reasons:
    a. Changes to the approved asset allocation;
    b. Changes to the approved asset class structure; or
    c. Replacement for terminated manager or manager of concern.
3. The IAC will advise regarding the search and selection process for investment managers
4. Staff and Consultant shall define and document the search process, including evaluation criteria, prior to initiating the search process.
5. Each investment manager hiring recommendation shall be supported by a rationale that is consistent with the pre-established evaluation criteria.
6. Each hiring recommendation will generally include the following information:
    a. A description of the organization and key people:
    b. A description of the investment process and philosophy;
    c. A description of historical performance and future expectations;
    d. The risks inherent in the investment and the manager's approach;
    e. The proper time horizon for evaluation of results;
    f. Identification of relevant comparative measures such as benchmarks and/or peer samples;
    g. The suitability of the investment within the relevant asset class; and
    h. The expected cost of the investment.
7. Alternative Investments
   The Board has adopted the definition of "Alternative Investments" as outlined in Appendix D, which will be reviewed as part of the due diligence process for any new investment. Pursuant to Section 4.07 of Article 6243a-1, the vote of eight trustees is required to approve any Alternative Investment.

2020 Investment Grade Bond Manager Search Process

1) **Search Process Definition**
   a) Section 7.A of the Investment Policy Statement (IPS) establishes guidelines and requirements for investment manager search and selection.
   b) IPS section 7.A.4 states that Staff and Consultant shall define and document the search process, including evaluation criteria, prior to initiating the search process.
   c) IPS sections 5.B.2.b and 7.A.3 establishes a requirement that the Investment Advisory Committee (IAC) will advise regarding the search and selection process for investment managers.
2) **Initial Screening**
   a) Meketa will recommend a "short list" of 6-12 managers for consideration. The short list recommendation shall include a discussion of how managers were selected and supporting information (e.g. organization, philosophy, process, returns, volatility, tracking error).
   b) The short list may be refined following staff evaluation and discussions with Meketa. The rationale for any changes shall be documented.
3) **Due Diligence and Finalist Selection**
   a) Staff will run an invitation-only RFP process with managers on the Meketa short list.
   b) Staff will create the request documents with assistance from Meketa
   c) Staff will evaluate proposals
   d) Staff and Meketa will then collaborate to determine semi-finalists (likely 2-4 managers)
   e) Staff will interview semi-finalists at the DPFP office, preferably on one day with the same interview team.
   f) Staff and Meketa will then collaborate to recommend finalist(s) (likely 1 or 2 managers) for consideration by the Investment Advisory Committee (IAC).
   g) Staff shall conduct on-site due diligence prior to funding to confirm manager investment and compliance processes.
4) **Investment Advisory Committee (IAC) Evaluation**
   a) Meketa shall provide a search document that describes the criteria utilized for the search and a comprehensive review of each manager. The search document shall include the information required by section 7.A.6 of the Investment Policy.
   b) Staff shall provide a recommendation with supporting rationale.
   c) The IAC will evaluate the search document and recommendation.
   d) The IAC may request to interview the finalist(s).
   e) The IAC may vote to support or oppose the staff recommendation and may provide advice and to staff and the Board.
5) **Board Evaluation**
   a) The Board of Trustees shall be provided with the same documentation provided to the IAC (Meketa search document and Staff recommendation) along with IAC advice and voting results
   b) At the Board meeting, staff shall review the search process, the rationale for the recommendation, and key attributes of the recommended manager.
   c) The Board shall vote to approve or reject the staff recommendation.

2020 Investment Grade Bond Manager Search

Minimum Requirements:

1. Five-year product track record
2. Compliance with Global Investment Performance Standards (GIPS)
3. Product AUM > $2 billion
4. Firm AUM > $4 billion
5. Clean legal and regulatory track record for past five years
6. Separate account or commingled fund allowed

Evaluation Criteria:

1. Clearly defined investment philosophy and process that engenders DPFP staff conviction
2. Clearly defined risk controls
3. Organization strength and stability
    a. Qualifications and stability of key firm personnel.
    b. Firm AUM is stable or growing modestly.
    c. Organization structure is stable and appropriate.
    d. Succession planning is clear
    e. Ownership plans and trends are clear and support organization strength and stability
    f. No firm turmoil for past five years (E.g. Fisher Investments 2019, PIMCO 2014)
    g. Well-diversified client base across firm and product
4. Investment Team strength and stability
    a. Qualifications of key investment personnel for strategy
    b. Evaluation and compensation processes
5. Risk measures including volatility, tracking error, absolute drawdown, and relative drawdown vs. Bloomberg Barclays U.S. Aggregate Bond index
6. Risk-adjusted alpha vs. best-fit hybrid benchmark based on regression analysis vs. key indexes including BBA, high yield (credit proxy), long-term Treasuries (term proxy).
7. Risk and Performance evaluation shall include cumulative and rolling 3- and 5-year analysis.
8. Investment reporting appropriately explains positioning and key drivers of performance (absolute and relative)
9. Fees will be evaluated relative to the reporting universe and candidates under consideration. Fees shall also be evaluated as a percentage of projected risk-adjusted alpha.

BAIRD

Prepared for

Dallas Police and Fire Pension

June 11, 2020

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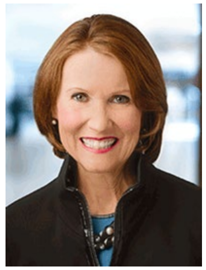
Appendix

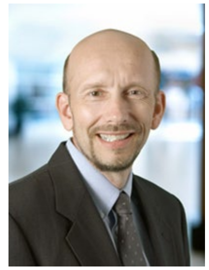
Baird Advisors

Portfolio Management Team

Strategic Leaders



Mary Ellen Stanek, CFA
Founder and Managing Director
Chief Investment Officer
President of Baird Funds

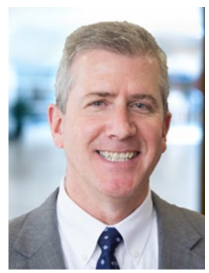


Gary A. Elfe, CFA
Founder and Managing Director
Research Director Emeritus
Senior Portfolio Manager

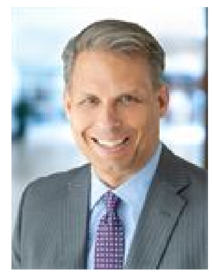
Charles B. Groeschell
Founder and Managing Director
Senior Portfolio Manager
Vice President of Baird Funds

Jay E. Schwister, CFA
Managing Director
Research Director
Senior Portfolio Manager

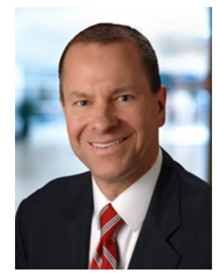
Warren D. Pierson, CFA
Managing Director
Deputy Chief
Investment Officer



Duane A. McAllister, CFA
Managing Director
Senior Portfolio Manager



Lyle J. Fitterer, CFA
Managing Director
Senior Portfolio Manager



Jeffrey E. Simmons, CFA
Managing Director
Senior Portfolio Manager

Portfolio Construction & Risk Monitoring

M. Sharon deGuzman
Managing Director
Senior Portfolio Manager

Patrick A. Mutsune, CFA
Managing Director
Senior Investment &
Systems Analyst

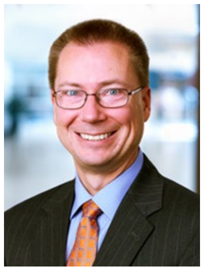
Alice M. Ambrowiak, CFA, CPA
Senior Vice President
Investment Analyst

Allison L. Parra, CFA
Vice President
Investment Analyst

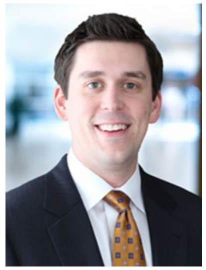
Baird Advisors

Portfolio Management Team

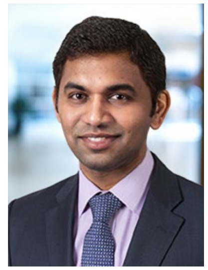
Credit



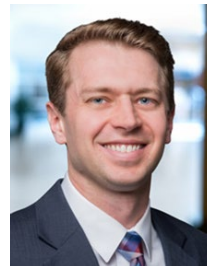
Jeffrey L. Schrom, CFA
Managing Director
Senior Portfolio Manager



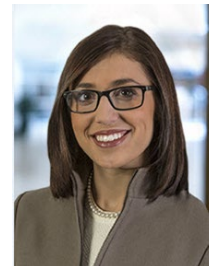
Andrew J. O'Connell, CFA
Senior Vice President
Senior Investment Analyst



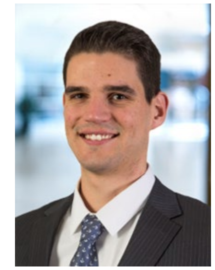
Abhishek Pulakanti, CFA
Senior Vice President
Senior Investment Analyst



John S. Cremer, CFA
Vice President
Investment Analyst



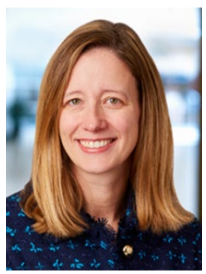
Jaclyn E. Godwin
Investment Analyst



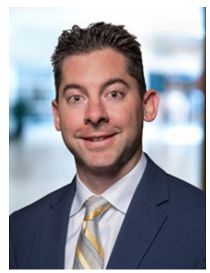
Kristiyan T. Trukov, CFA
Investment Analyst

Structured

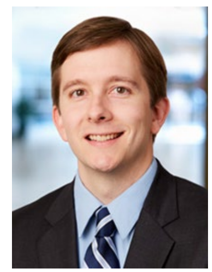
Daniel A. Tranchita, CFA
Managing Director
Senior Portfolio Manager



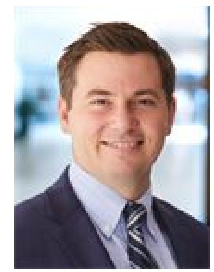
Meghan H. Dean, CFA
Managing Director
Senior Portfolio Manager



Patrick W. Brown, CFA
Managing Director
Senior Investment Analyst

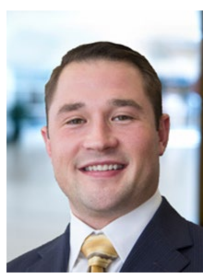


Ian D. Elfe, CFA
Senior Vice President
Senior Investment Analyst

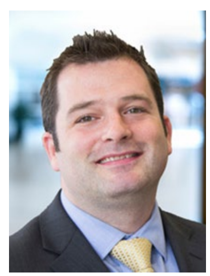


Donald A. Smiley, CFA
Vice President
Investment Analyst

Municipal



Joseph J. Czechowicz, CFA
Senior Vice President
Portfolio Manager

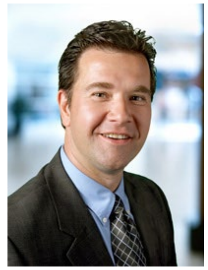


Erik R. Schleicher, CFA
Senior Vice President
Portfolio Manager

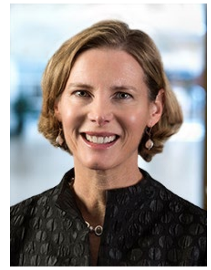
Lauren E. Vollrath, CFA
Vice President
Investment Analyst

Baird Advisors

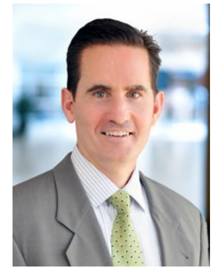
Richard A. Whittow, CEBS
Managing Director
Client Services



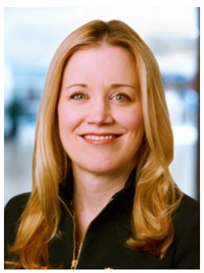
Randall P. North
Managing Director
Client Services



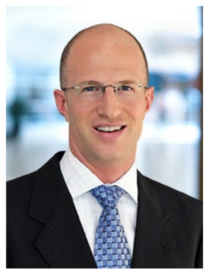
Mary F. Hoppa
Managing Director
Operations Manager



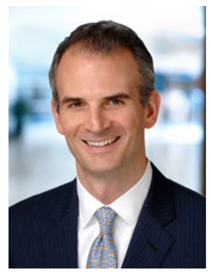
Peter J. Hammond
Managing Director
Client Services
Vice President of Baird Funds



Heidi L. Schneider, CFA, CPA
Managing Director
Client Services
Treasurer of Baird Funds



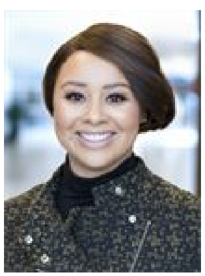
Dustin J. Hutter, CPA
Managing Director
Senior Business Analyst
Assistant Treasurer of Baird Funds



Michael H. Possley
Managing Director
Client Services

Mandy L. Hess, CPA
Senior Vice President
Senior Business Analyst

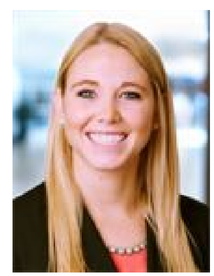
Adrianne C. Limjoco
Senior Vice President
Client Services



Devon P. Norwood
Senior Vice President
Client Services

Kathleen R. Ruidl
Vice President
Client Services

Caroline R. Murphy
Vice President
Client Services



Madelynn R. Wallen, CFA
Vice President
Client Services

Section 1

Firm/Team Overview

BAIRD

Firm Update

Focused on helping clients achieve their asset management, capital markets, investment banking and private equity goals for over 100 years.

1919 founded in Milwaukee

2004 Baird becomes employee-owned

4,500 Associates (More than two thirds are shareholders)

FORTUNE 100 BEST COMPANIES TO WORK FOR® 2020

MORNINGSTAR Gold

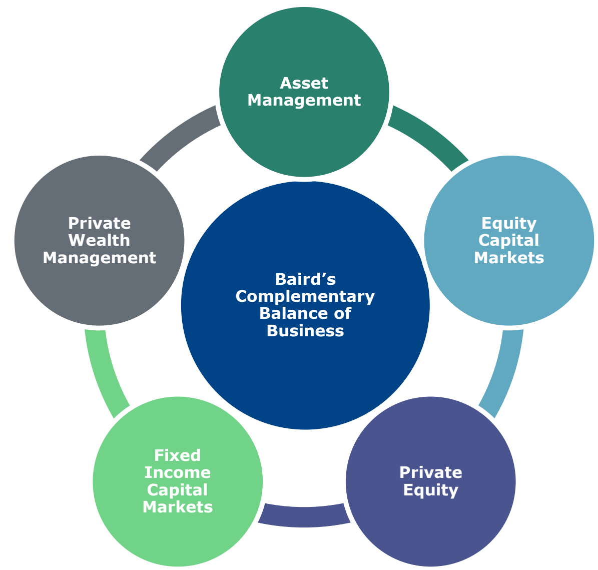
MORNINGSTAR'S THRILLING 34 FUNDS

Pensions&Investments BEST PLACES TO WORK IN MONEY MANAGEMENT 2019 MULTIYEAR WINNER 2012 2013 2014 2015 2016 2017 2018

MORNINGSTAR No. 2 of 150 Fund Families

REFINITIV LIPPER FUND AWARDS 2020 WINNER UNITED STATES

A Comprehensive Financial Services Firm

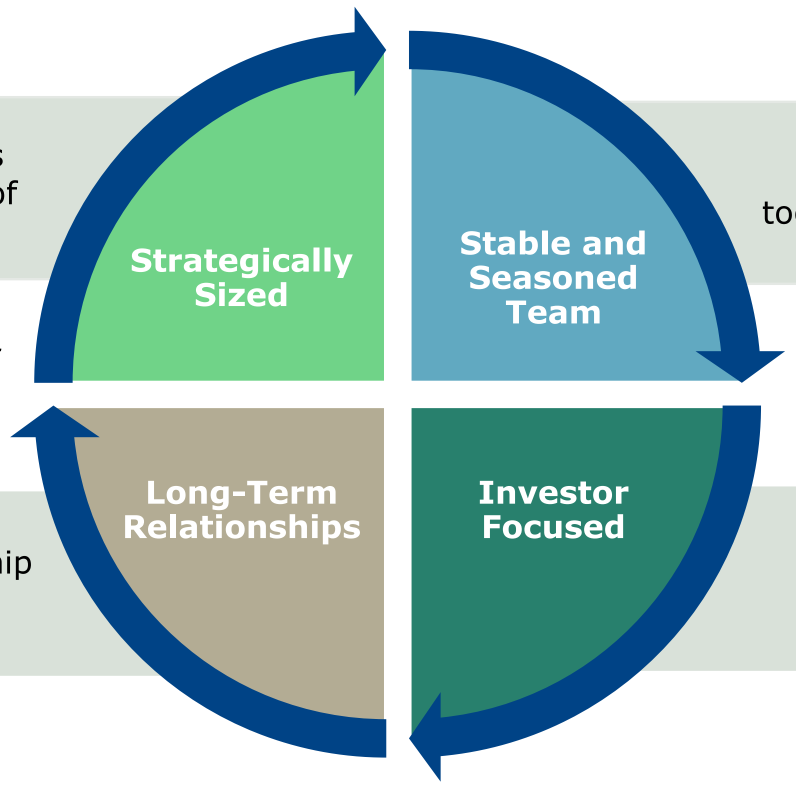


Baird Advisors Overview

Experienced Team with a Competitive Track Record in High-Quality Fixed Income Management

$94.2 billion of assets under management as of May 31, 2020

***$87.7 billion** of assets under management as of December 31, 2019*



Seasoned investment professionals working together for over **30 years,** 25 CFA Charterholders

Average client relationship exceeds **12 years**

Emphasize service and communication

Baird Advisors
Competitive Advantages

- Stable team of experienced investment professionals
- Risk-controlled discipline delivering over 30 years of competitive returns
- Consistency of returns versus peers
- Strategically sized, emphasizing bottom-up versus top-down approach
- All cash bonds, all U.S. dollar-denominated, no derivatives, no leverage
- Attractive expense ratio benefits future returns (30 bps Institutional Class)
- Employee-owned, strong financial services firm

Baird Advisors - Representative Clients

Average client relationship exceeds 12 years

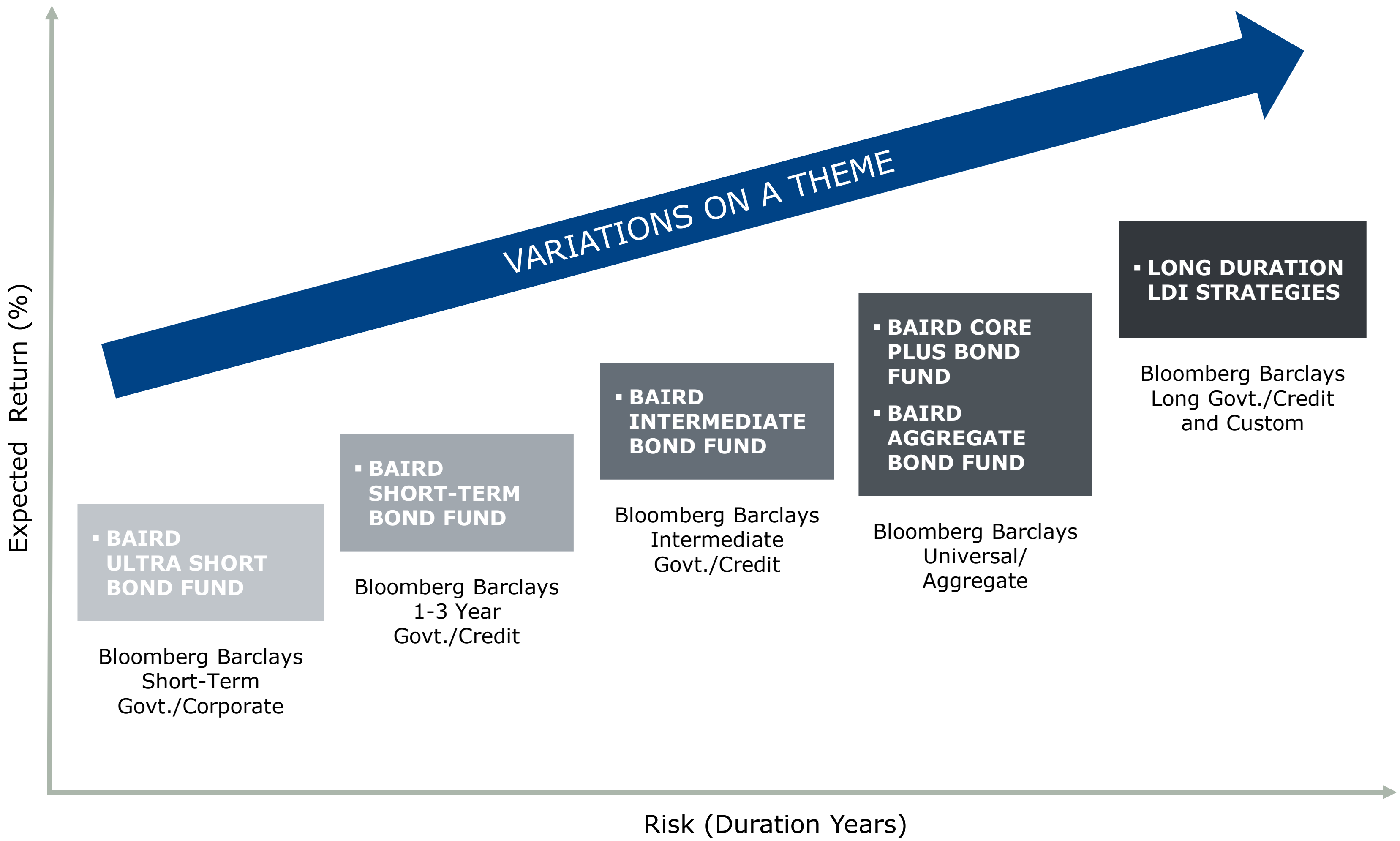
BAIRD

Note: The clients listed above represent various industry groups and geographic locations and were not selected based upon performance. Their appearance is not an indication of approval or disapproval of the investment management services provided.

BAIRD

Structured, Risk-Controlled Taxable Portfolio Management

Consistent Approach Applied Across Risk Spectrum



Baird Taxable Bond Funds

Total Net Returns as of May 31, 2020

			Annualized					
	QTD 2020	YTD 2020	1-Year	3-Year	5-Year	10-Year	Since Inception[1]	Since Inception Lipper Rank & Percentile[2]
Baird Core Plus Bond Fund – Institutional	**4.39%**	**4.44%**	**9.03%**	**5.16%**	**4.36%**	**4.88%**	**5.91%**	8 of 56
Bloomberg Barclays Universal Bond Index	2.96%	4.30%	8.50%	4.83%	4.02%	4.19%	5.23%	**15%**
Baird Aggregate Bond Fund – Institutional	**3.61%**	**5.16%**	**9.46%**	**5.18%**	**4.23%**	**4.73%**	**5.50%**	10 of 131
Bloomberg Barclays Aggregate Index	2.25%	5.47%	9.42%	5.07%	3.94%	3.92%	5.03%	**8%**
Baird Intermediate Bond Fund – Institutional	**3.42%**	**4.56%**	**7.59%**	**4.21%**	**3.40%**	**3.81%**	**4.89%**	3 of 46
Bloomberg Barclays Intermediate Govt/Credit Index	2.18%	4.63%	7.60%	4.15%	3.21%	3.20%	4.48%	**7%**
Baird Short-Term Bond Fund – Institutional	**2.64%**	**2.14%**	**4.32%**	**2.88%**	**2.38%**	**2.43%**	**2.86%**	27 of 122
Bloomberg Barclays 1-3 Year Govt/Credit Index	0.97%	2.67%	4.57%	2.79%	2.06%	1.67%	2.52%	**22%**
Baird Ultra Short Bond Fund – Institutional	**1.38%**	**0.86%**	**2.52%**	**2.23%**	**1.72%**	**n/a**	**1.60%**	6 of 87
Bloomberg Barclays Short-Term Govt/Corporate Index	0.30%	1.10%	2.57%	2.14%	1.53%	n/a	1.24%	**7%**

Performance data quoted represents past performance. Past performance does not guarantee future results. Investment return and principal value of an investment in the fund will fluctuate so that an investor's shares when redeemed may be worth more or less than their original cost. The funds' current performance may be lower or higher than the performance data quoted. For performance current to the most recent month-end, please visit www.bairdfunds.com.

Expense Ratio for the Institutional Share Classes is 0.30%; for the Investor Share Classes is 0.55%. The Advisor has contractually agreed to waive management fees for the Baird Ultra Short Bond Fund in an amount equal to an annual rate of 0.15% of the average daily net assets for the Fund until April 30, 2021. The agreement may only be terminated prior to the end of this term by or with the consent of the Board of Directors of Baird Funds, Inc.

Returns shown include the reinvestment of all dividends and capital gains.

[1] The Baird Core Plus, Aggregate and Intermediate Bond Funds Since Inception net returns are based on performance from September 30, 2000 through May 31, 2020. The Baird Short-Term Bond Fund Since Inception net return is based on performance from August 31, 2004 through May 31, 2020. The Baird Ultra Short Bond Fund Since Inception net return is based on performance from December 31, 2013 through May 31, 2020.

[2] Lipper Rank & Percentile as of April 30, 2020.

Baird Taxable Bond Funds
Lipper Rankings as of April 30, 2020

	YTD Lipper Rank & Percentile	1 Yr Lipper Rank & Percentile	3 Yr Lipper Rank & Percentile	5 Yr Lipper Rank & Percentile	10 Yr Lipper Rank & Percentile	Since Inception Lipper Rank & Percentile
Baird Core Plus Bond Fund – Institutional	113 of 301	84 of 296	29 of 252	14 of 198	22 of 147	8 of 56
(BCOIX) Fund Inception 9/29/00	**38%**	**29%**	**12%**	**8%**	**15%**	**15%**
Baird Aggregate Bond Fund – Institutional	136 of 504	97 of 498	42 of 459	16 of 396	15 of 292	10 of 131
(BAGIX) Fund Inception 9/29/00	**27%**	**20%**	**10%**	**5%**	**6%**	**8%**
Baird Intermediate Bond Fund – Institutional	47 of 167	10 of 166	2 of 148	2 of 138	5 of 87	3 of 46
(BIMIX) Fund Inception 9/29/00	**28%**	**6%**	**2%**	**2%**	**6%**	**7%**
Baird Short-Term Bond Fund – Institutional	57 of 364	34 of 353	22 of 324	29 of 269	28 of 177	27 of 122
(BSBIX) Fund Inception 8/31/04	**16%**	**10%**	**7%**	**11%**	**16%**	**22%**
Baird Ultra Short Bond Fund – Institutional	28 of 159	14 of 153	10 of 123	11 of 95	N/A	6 of 87
(BUBIX) Fund Inception 12/31/13	**18%**	**10%**	**9%**	**12%**		**7%**

Lipper rankings are based on average annual total returns for the 1, 3, 5, 10-year life periods for each respective Lipper category. Each fund is ranked based on average annual total returns assuming reinvestment of dividends and capital gains distributions, at net asset value and the deduction of all fund expenses. Since inception Lipper rankings are calculated from the month end following the fund's inception. Past performance is no guarantee of future returns.

Consistency is Key

Baird Taxable Bond Funds – Institutional Shares

Percentage of Time the Funds Outperform Their Morningstar Category Average				
Rolling Time Periods	Baird Ultra Short Bond	Baird Short-Term Bond	Baird Aggregate Bond	Baird Core Plus Bond
1 Year	77%	87%	90%	84%
2 Year	87%	92%	93%	92%
3 Year	100%	99%	100%	100%
5 Year	100%	100%	100%	100%

Source: Morningstar Direct as of May 31, 2020.

Performance numbers used are through each month end period from each fund's inception date.
The Baird Core Plus, Aggregate and Intermediate Bond Funds Since Inception net returns are based on performance from September 30, 2000 through May 31, 2020. The Baird Short-Term Bond Fund Since Inception net return is based on performance from August 31, 2004 through May 31, 2020. The Baird Ultra Short Bond Fund Since Inception net return is based on performance from December 31, 2013 through May 31, 2020.

All supporting information available upon request.
Past performance does not guarantee future results.

Baird Municipal Bond Funds

Total Net Returns as of May 31, 2020

			Annualized					Since Inception Lipper Rank & Percentile[2]
	QTD 2020	YTD 2020	1-Year	3-Year	5-Year	10-Year	Since Inception[1]	
Baird Short-Term Municipal Bond Fund – Institutional	**1.67%**	**1.28%**	**2.99%**	**2.51%**	**n/a**	**n/a**	**2.41%**	1 of 101
Bloomberg Barclays 1-5 Year Short Municipal Bond Index	1.98%	1.57%	3.21%	2.19%	n/a	n/a	1.90%	**1%**
Baird Core Intermediate Municipal Bond Fund – Institutional	**1.62%**	**1.67%**	**4.37%**	**3.82%**	**n/a**	**n/a**	**3.80%**	3 of 155
Bloomberg Barclays 1-15 Year Municipal Bond Index	2.10%	1.60%	4.01%	3.42%	n/a	n/a	3.31%	**2%**
Baird Quality Intermediate Muni Bond Fund – Institutional	**2.41%**	**2.75%**	**4.95%**	**3.17%**	**2.87%**	**2.95%**	**4.02%**	9 of 50
Bloomberg Barclays Quality Intermediate Municipal Bond Index	2.55%	2.20%	4.42%	3.19%	3.10%	3.34%	4.05%	**18%**
NEW **Baird Municipal Bond Fund – Institutional**	**1.78%**	**3.48%**	**n/a**	**n/a**	**n/a**	**n/a**	**4.72%**[3]	1 of 287
Bloomberg Barclays Municipal Bond Index	1.89%	1.24%	n/a	n/a	n/a	n/a	2.09%	**1%**
NEW **Baird Strategic Municipal Bond Fund – Institutional**	**2.33%**	**3.44%**	**n/a**	**n/a**	**n/a**	**n/a**	**4.36%**[3]	4 of 65
Bloomberg Barclays 1-10 Year Municipal Blend Index	2.25%	1.68%	n/a	n/a	n/a	n/a	2.34%	**7%**

Performance data quoted represents past performance. Past performance does not guarantee future results. Investment return and principal value of an investment in the fund will fluctuate so that an investor's shares when redeemed may be worth more or less than their original cost. The funds' current performance may be lower or higher than the performance data quoted. For performance current to the most recent month-end, please visit www.bairdfunds.com.

Expense Ratio for the Institutional Share Classes is 0.30%; for the Investor Share Classes is 0.55%
Returns shown include the reinvestment of all dividends and capital gains.

[1] The Baird Quality Intermediate Municipal Bond Fund Since Inception net return is based on performance from March 31, 2001 through May 31, 2020. The Baird Core Intermediate and Short-Term Municipal Bond Fund Since Inception net return is based on performance from August 31, 2015 through May 31, 2020. The Baird Municipal and Strategic Municipal Bond Fund Since Inception net return is based on performance from November 15, 2019 through May 31, 2020.
[2] Lipper Rank & Percentile as of April 30, 2020.
[3] The Baird Municipal and Strategic Municipal Bond Fund Since Inception net return is not annualized.

Baird Municipal Bond Funds

Lipper Rankings as of April 30, 2020

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	YTD Lipper Rank & Percentile	1 Yr Lipper Rank & Percentile	3 Yr Lipper Rank & Percentile	5 Yr Lipper Rank & Percentile	10 Yr Lipper Rank & Percentile	Since Inception Lipper Rank & Percentile
Baird Short-Term Municipal Bond Fund – Institutional (BTMIX) Fund Inception 8/31/15	54 of 132 **41%**	12 of 128 **10%**	1 of 110 **1%**	N/A	N/A	1 of 101 **1%**
Baird Core Intermediate Municipal Bond Fund – Institutional (BMNIX) Fund Inception 8/31/15	15 of 189 **8%**	10 of 183 **6%**	6 of 167 **4%**	N/A	N/A	3 of 155 **2%**
Baird Quality Intermediate Municipal Bond Fund – Institutional (BMBIX) Fund Inception 3/30/01	3 of 189 **2%**	5 of 183 **3%**	32 of 167 **20%**	43 of 152 **29%**	67 of 108 **62%**	9 of 50 **18%**
Baird Municipal Bond Fund – Institutional (BMQIX) Fund Inception 11/15/19	16 of 291 **6%**	N/A	N/A	N/A	N/A	1 of 287 **1%**
Baird Strategic Municipal Bond Fund – Institutional (BSNIX) Fund Inception 11/15/19	4 of 65 **7%**	N/A	N/A	N/A	N/A	4 of 65 **7%**

Lipper rankings are based on average annual total returns for the 1, 3, 5, 10-year life periods for each respective Lipper category. Each fund is ranked based on average annual total returns assuming reinvestment of dividends and capital gains distributions, at net asset value and the deduction of all fund expenses. Since inception Lipper rankings are calculated from the month end following the fund's inception. Past performance is no guarantee of future returns.

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Section 2

Philosophy/Process Overview

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Investment Philosophy & Process:
A Two-Fold Approach

Step 1: Structure Portfolio to Achieve Return of the Benchmark

Complete Understanding of the Benchmark	▪ Quantify duration, sector and subsector weightings ▪ Evaluate pricing, turnover and projected changes to benchmark ▪ Purchase only U.S. dollar-denominated securities
Remain *Duration Neutral* to Control Portfolio Risk	▪ Precisely match duration to index at all times ▪ Immediately adjust portfolio as contributions and withdrawals occur ▪ Rebalance at month-end to match benchmark changes
Maintain Strict Adherence to Portfolio Guidelines	▪ Continuously monitor risk-control measures ▪ Use scenario analysis ▪ Compliance systems for all portfolio trades
Emphasis on Security Structure/Credit Research	▪ Evaluate specific security covenants, cash flows and liquidity concerns ▪ Assess company financials and management ▪ Consider prospects for sector and position in industry

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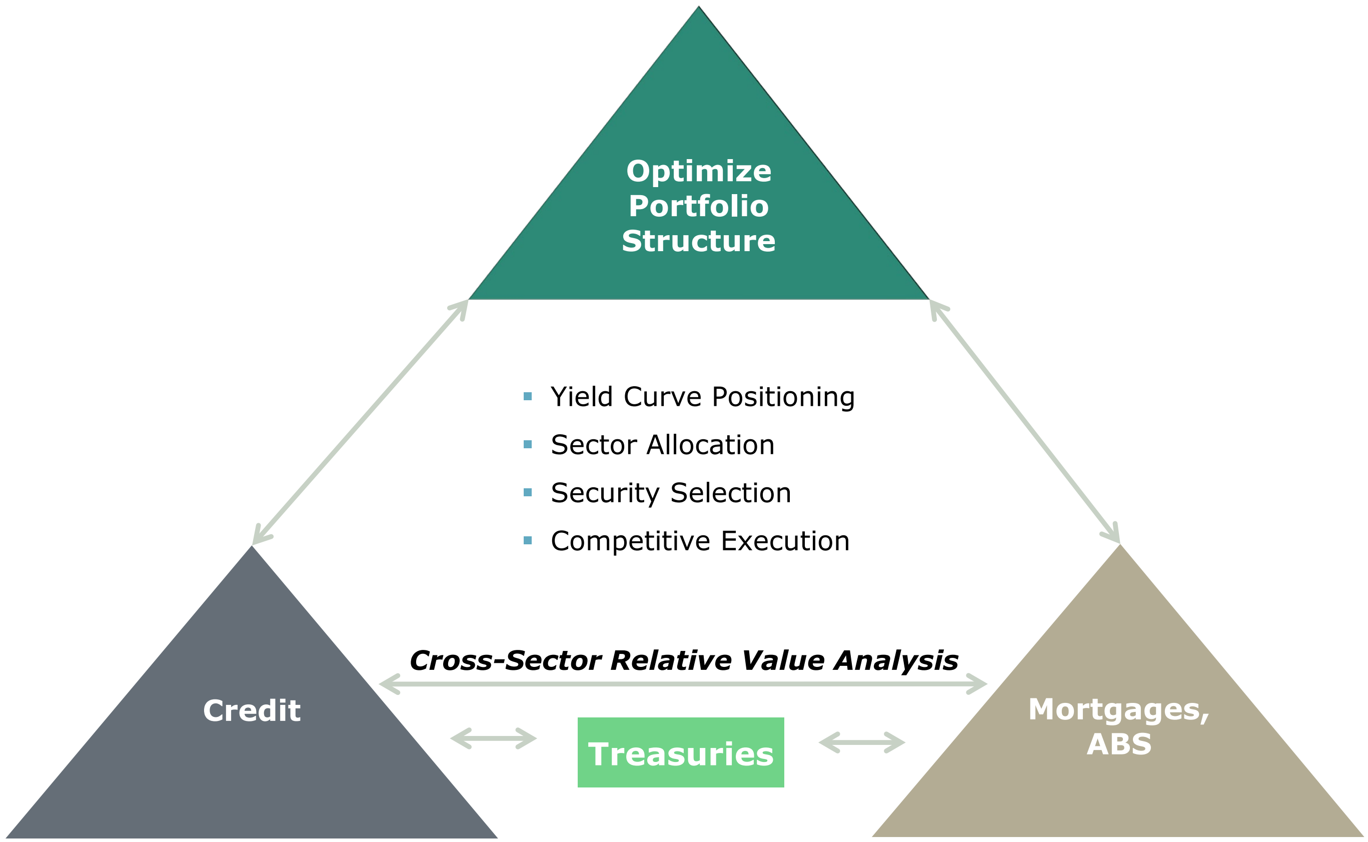
Investment Philosophy & Process:
A Two-Fold Approach

Step 2: Add Incremental Value through Bottom-Up, Risk-Controlled Process

Sources of Added Value:	
Yield Curve Positioning	▪ Optimize yield and "roll down" ▪ Analyze yield curve on a continual basis
Sector Allocation	▪ Evolve sector allocations around long-term biases ▪ Focus on relative value ▪ Yield spreads and underlying risks change constantly
Security Selection	▪ Structure ▪ Attributes ▪ Liquidity
Competitive Execution	▪ Capitalize on market inefficiencies ▪ Receive timely market information ▪ Utilize long-standing dealer relationships
We seek to consistently add 15-50 basis points of incremental return	

Consistent, Competitive Performance Over Complete Market Cycles

Implementation – A Holistic Approach



All cash bonds, no derivatives, 100% U.S. dollar-denominated, no leverage

Risk control is the foundation of our investment discipline

Research

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Internal Research Drives Our Investment Process

Internal Expertise: Identifying Value from the Bottom Up

Yield Curve Positioning

- Optimize yield
- Search for roll-down opportunities
- Maintain neutral duration

Mortgages/ ABS

- Analyze both structure and collateral
- Prefer senior secured with limited cash flow timing risk, lower LTV
- Top-tier originators and servicers

Credit

- Look at specific issues by structure
- Review issuers by fundamentals, management and benchmark weighting
- Consider sector trends, regulatory environment and benchmark weighting

External Tools:

- **Interactive Data BondEdge**: Portfolio and benchmark analysis, guideline compliance
- **Barclays Live:** Benchmark analysis
- **Bloomberg:** Benchmark analysis, Security analysis, company research
- **MarketAxess:** Corporate trading platform and TRACE data market monitor
- **TradeWeb:** Treasury and agency trading platform, historical curve information
- **Intex Solutions and Bond Studio:** Residential and commercial loan analysis
- **Yield Book:** Option-adjusted spread (OAS) and scenario analysis
- **CreditSights:** Independent credit research from a team of highly ranked analysts
- **Investor Tools Perform:** Municipal portfolio management and analytics system
- **Custom Index Manager:** Municipal portfolio risk and attribution system
- **Access to Baird equity and credit analysts and other Wall Street-leading fixed income and equity research**

Section 3

Baird Aggregate Bond Fund

Risk Controls in Taxable Portfolio Construction

DURATION NEUTRAL TO BENCHMARK

U.S. TREASURY AND GOVERNMENT AGENCY SECURITIES
- Emphasized for long duration exposures
- Used to match duration

CREDIT SECURITIES
- Overall credit positioning generally shorter on the yield curve versus respective benchmark
- Emphasize sectors and industries that give high priority to stable credit rating
- Broad issuer diversification overall; increases for lower credit quality

MORTGAGE-BACKED AND ASSET-BACKED SECURITIES
- Favor more prepayment protection than U.S. Government Agency MBS (positive convexity "tilt")
- Focus on most senior class in deal structure if Non-U.S. Government guaranteed

CASH BONDS
- No foreign currency
- No derivatives
- No leverage

ONGOING PORTFOLIO MONITORING
- Continuous review of portfolios for adherence to stated guidelines and objectives

RISK CONTROL IS THE FOUNDATION OF OUR INVESTMENT DISCIPLINE

Baird Advisors Mortgage and Asset-Backed Securities Strategy

Highly Selective Risk-Controlled Approach Emphasizing Quality in Structure and Collateral

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STRUCTURE

- Senior priority in structure, AAA-rated at issuance
- Significant credit enhancement to support strong loss coverage multiples
- Favorable liquidity enhanced by index and TALF eligibility and NAIC ratings
- Limit cash flow timing risk

COLLATERAL

- Well diversified collateral pools
- Specified Agency RMBS pools
  - Seasoned loans
  - Lower loan balances
- Top tier originators and servicers

Sectors/Structures/Collateral We AVOID

- Single Asset Single Borrower (SASB)
- Collateralized Loan Obligations (CLOs)
- To Be Announced RMBS (TBA)
- GSE Credit Risk Sharing Transaction (CRTs)
- Sub prime auto loans
- FFELP Student loan ABS
- Esoteric ABS receivables with elevated sponsor risk (e.g. containers, rail cars, aircraft, franchise, etc.)

Perform ongoing stress tests on specific issues we own and remain confident in our risk-controlled approach over a full market cycle

Quality on Sale

March, April and May were Top 3 Biggest Issuance Months Ever for Investment Grade Credit

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March Corporate New Issues						
Issuer	**Rating**	**Deal Size ($Billions)**	**Maturity**	**New Issue Spread in March vs. Treasuries**	**5/31/20 Spread vs. Treasuries**	**February Spread vs. Treasuries***
Exxon Mobil	Aa1/AA	8.50	5 year	+225	+64	+40
NextEra Energy	Aa2/A+	1.10	5 year	+237	+60	+45
Procter & Gamble	Aa3/AA-	5.00	10 year	+225	+75	+30
Nike	A1/AA-	6.00	7 year	+200	+76	+35
3M	A1/A+	1.75	5 year	+215	+65	+45
Pepsi	A1/A+	6.50	7 year	+180	+65	+40
State Street	A1/A	1.75	5 year	+245	+93	+55
Berkshire Hathaway Energy Co	A3/A-	3.25	5 year	+355	+90	+55
Sysco Corporation	Baa1/BBB-	4.00	5 year	+525	+215	+50
CVS Health	Baa2/BBB	4.00	7 year	+295	+150	+95

March Secondary ABS						
Issuer	**Rating**	**Sector**	**Weighted Avg Life**	**March Purchase Spread vs. Treasuries**	**5/31/20 Spread vs. Treasuries***	**February Spread vs. Treasuries***
American Express 2019-3 A	Aaa/AAA	Credit Card ABS	2.4 year	+141	+31	+25
Hyundai Auto 2020-A A3	Aaa/AAA	Auto ABS	1.7 year	+228	+40	+30

Credit Supply Through 5/31 ($Billions)			
	YTD 2020	**YTD 2019**	**YoY% Change**
Gross Supply	1,190.3	594.7	100%
Net Supply	782.4	180.3	334%

*Spread is an estimate
Source: Bloomberg, BVAL

Portfolio Positioning

Attractive portfolio yield advantage over benchmark

Maintain sufficient liquidity for uncertain environment

Portfolio positioned to benefit from spread sector outperformance

- Maintain nominal underweight to U.S. Treasury sector
- Opportunities across spread sectors more selective
- Maintaining overweight to spread sectors modestly on duration-weighted basis

Portfolio positioned fairly neutral to yield curve

- Duration neutral overall
- Anticipating potential steeping in the long end
- Maintain positive convexity tilt

Continued focus on risk control

- Importance of fundamental credit analysis
- Emphasize diversification
- Maintain coupon advantage

Experienced team and risk-controlled process key to long-term success

Baird Aggregate Bond Fund

Portfolio Characteristics as of May 31, 2020

Yield to Maturity	1.86%	1.34%	Portfolio Yield Advantage +0.52% to the Bloomberg Barclays Aggregate Index
Average Coupon	**3.37%**	3.07%	
Duration	**6.01 years**	6.01 years	
Average Maturity	**7.82 years**	8.04 years	

	Baird Aggregate Bond Fund	Bloomberg Barclays Aggregate Index	Baird Aggregate Bond Fund	Bloomberg Barclays Aggregate Index
	Nominal Weighted Composition		Duration Weighted Composition	
Quality Breakdown (%)				
U.S. Treasury	**19.6**	37.4	**35.4**	44.5
U.S. Agency	**25.9**	29.3	**14.0**	11.4
Aaa	**9.4**	3.8	**4.9**	3.1
Aa	**4.3**	3.1	**4.8**	4.3
A	**17.6**	12.3	**17.6**	17.2
Baa	**22.1**	14.1	**22.7**	19.5
Below Baa	**1.1**	0.0	**0.6**	0.0
	100.0%	100.0%	**100.0%**	100.0%
Sector Breakdown (%)				
U.S. Treasury	**19.6**	37.4	**35.4**	44.5
U.S. Agency (Non-MBS)	**0.0**	1.4	**0.0**	0.9
Other Govt. Related	**1.3**	4.6	**1.0**	5.0
Industrials	**22.5**	16.7	**26.1**	25.3
Utilities	**1.7**	2.1	**2.6**	3.8
Financials	**19.1**	8.2	**16.2**	8.8
U.S. Agency RMBS	**22.3**	27.0	**10.8**	9.6
Non-Agency RMBS	**2.2**	0.0	**0.9**	0.0
U.S. Agency CMBS	**3.6**	0.9	**3.2**	0.9
Non-Agency CMBS	**4.5**	1.3	**3.0**	1.1
ABS	**1.9**	0.4	**0.8**	0.1
Cash	**1.3**	0.0	**0.0**	0.0
	100.0%	100.0%	**100.0%**	100.0%
Number of Issues	**1,358**	11,609		
Market Value	**$25,882,404,760**			

The Yield to Maturity represents the weighted average Yield to Worst of each individual holding in the portfolio. Yield to Worst is the lower of: 1) Yield to Maturity or 2) Yield to Call, if applicable.
SEC 30-day Yields Institutional Class = 1.97%, Investor Class = 1.73% as of 5/31/20
Below Baa category includes non-rated bonds.

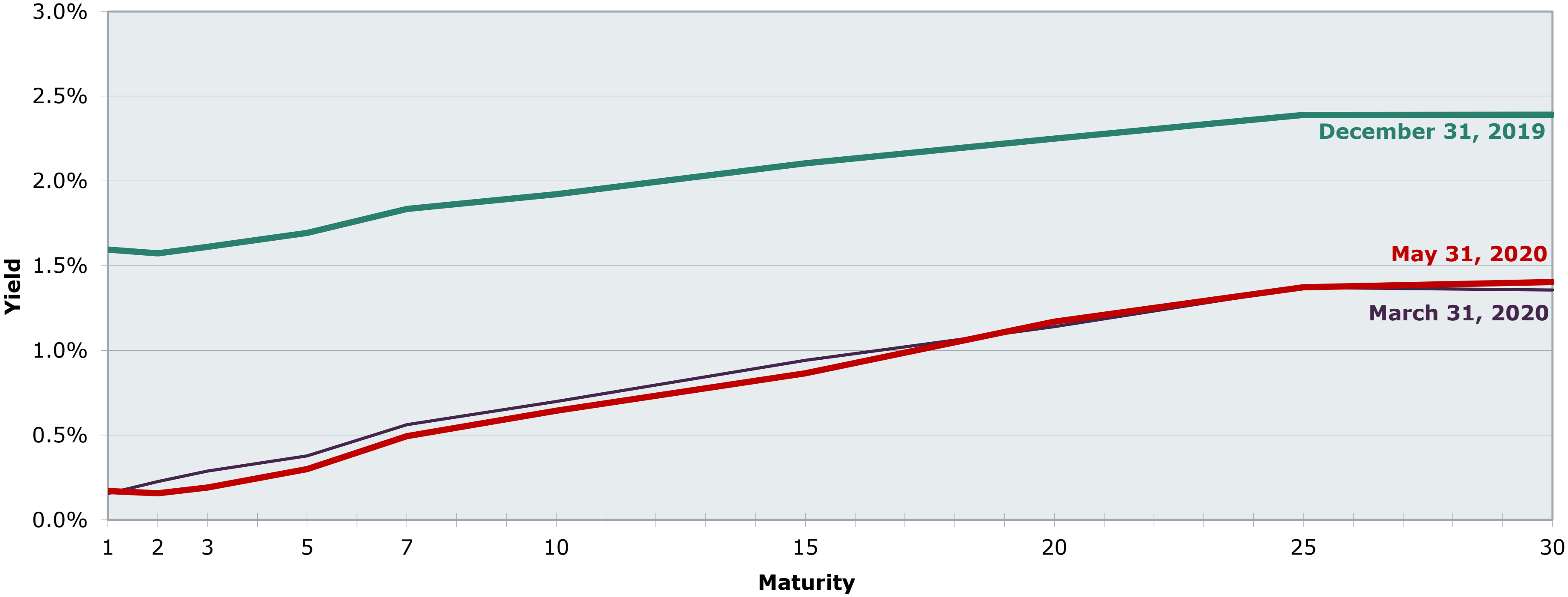
Section 4

Current Market Review

Outlook Uncertain

- "Flattening curve" of COVID-19 required self-imposed recession to protect public health
- Economic "sudden stop" spiked unemployment from record lows to record highs
- Unprecedented scale and speed of fiscal and monetary responses helping to stabilize markets
- Severity and duration of contraction uncertain, U-shaped recovery more likely
- "Restart" of global economy will be a process; in phases and gradual
- Material long-term changes to business and economy on other side of crisis
- Short-term market dislocation giving way to long-term delineation of sector risks and valuations
- Consumer, banks and much of corporate America were in good shape coming into crisis

U.S. Treasury Yields Calm Down So Far in Q2



Maturity	December 31, 2019	March 31, 2020	May 31, 2020	Q1 Change	QTD Change	YTD Change
1	1.60%	0.16%	0.17%	-1.44%	0.01%	-1.43%
2	1.57%	0.23%	0.16%	-1.34%	-0.07%	-1.41%
3	1.61%	0.29%	0.19%	-1.32%	-0.10%	-1.42%
5	1.69%	0.38%	0.30%	-1.31%	-0.08%	-1.39%
7	1.83%	0.56%	0.49%	-1.27%	-0.07%	-1.34%
10	1.92%	0.70%	0.64%	-1.22%	-0.06%	-1.28%
20	2.25%	1.14%	1.17%	-1.11%	0.03%	-1.08%
30	2.39%	1.36%	1.40%	-1.03%	0.04%	-0.99%

Source: Bloomberg
Data as of: 5/31/20

Domestic Fixed Income Flows Flip Dramatically in March

2020 Now Negative After 6 Years of Positive Flows

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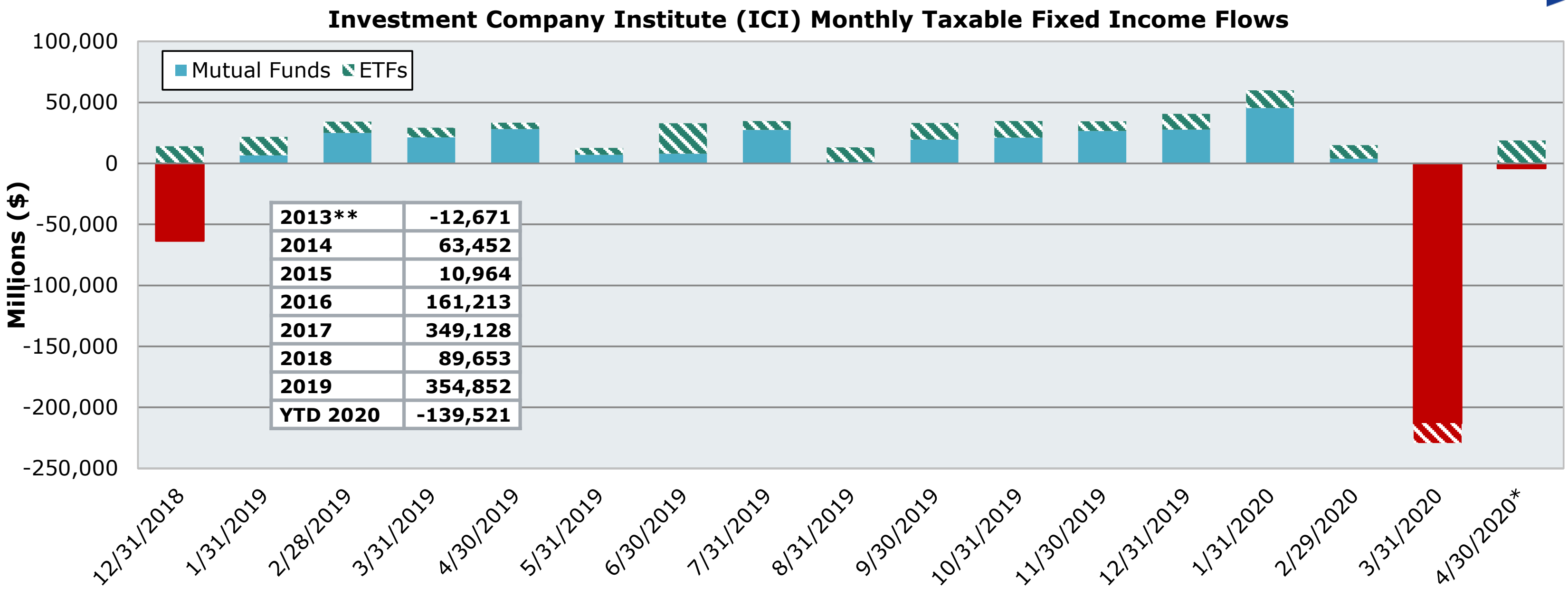
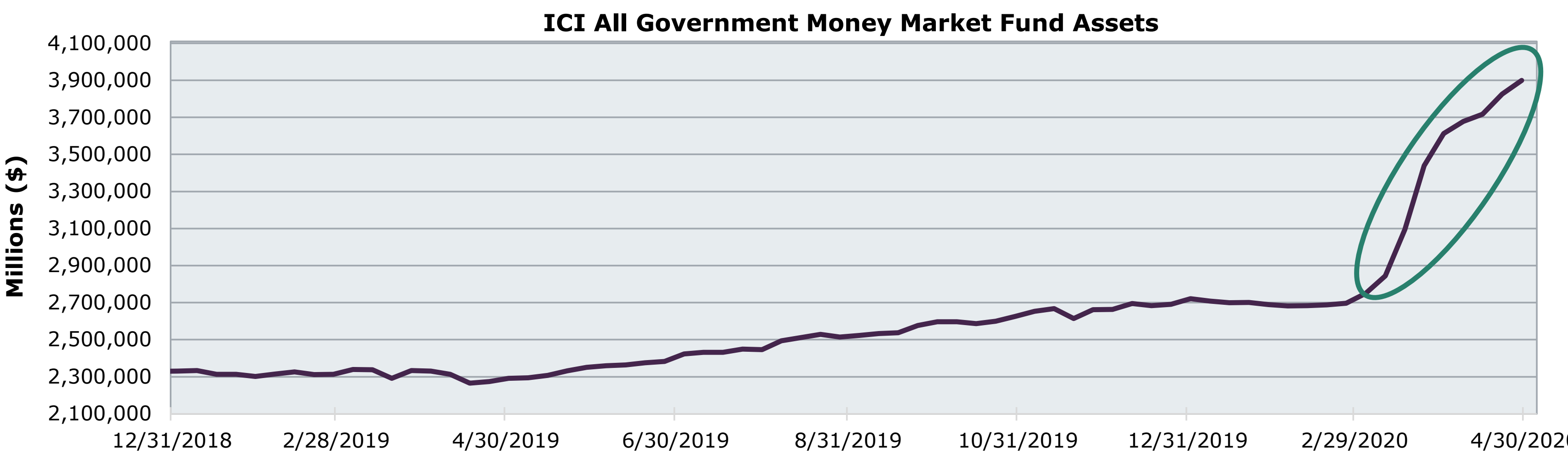


2013**	-12,671
2014	63,452
2015	10,964
2016	161,213
2017	349,128
2018	89,653
2019	354,852
YTD 2020	-139,521



*Weekly data ending 4/29/20 (April 2020 numbers are estimated)
** 2013 Flows are only Mutual Fund flows, ETF Flows are not available
Source: Investment Company Institute, Bloomberg
Data as of: 4/30/20

Yield Spreads Tighten Further in May

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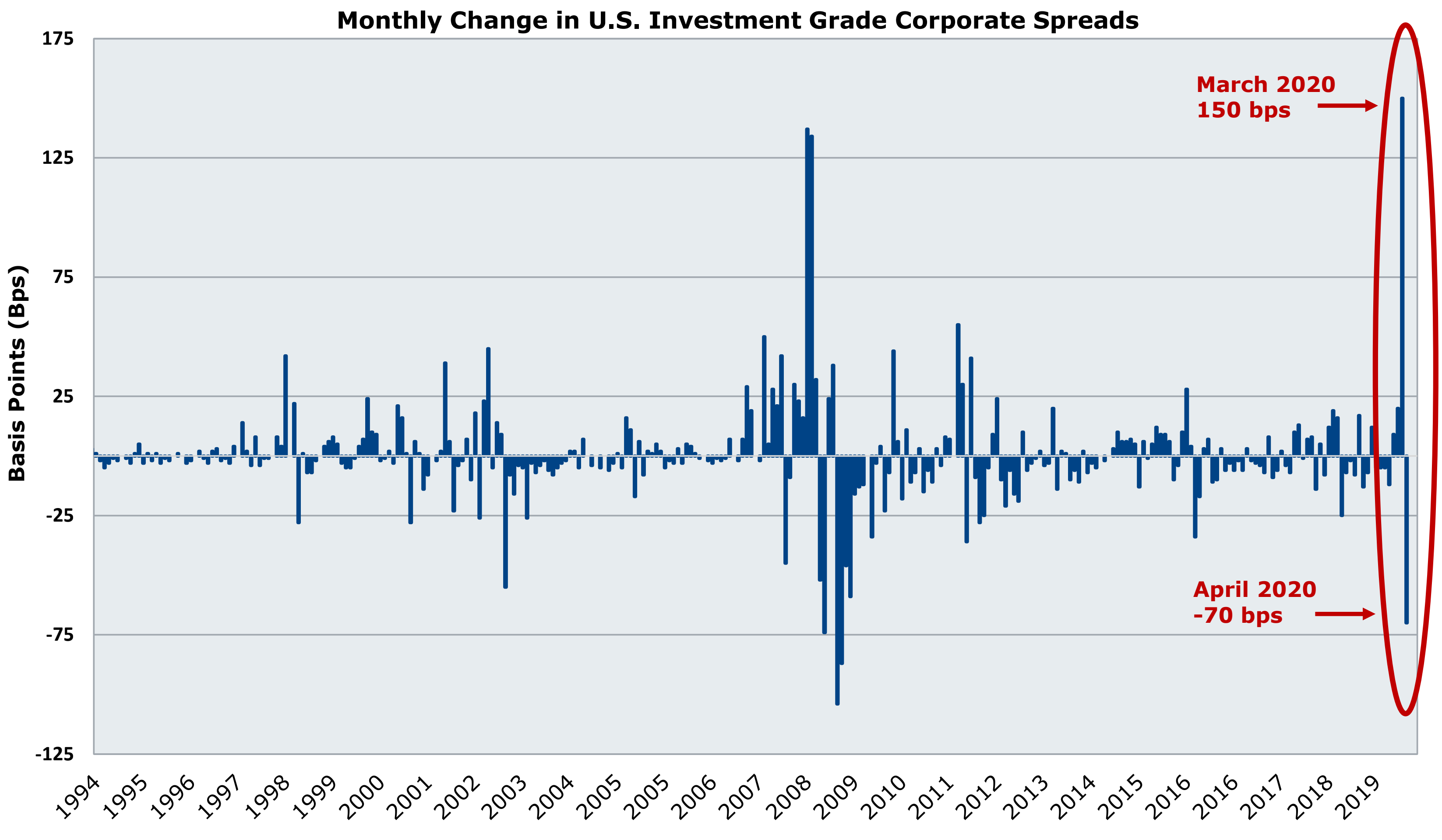
Option-Adjusted Spreads (bps)	11/30/08	2/11/16	12/31/19	3/31/20	4/30/20	5/31/20	March Wides	May Change	QTD Change	YTD Change	Q1 Change	Post Crisis Avg.[2]
U.S. Aggregate Index	239	68	39	95	74	76	127 (3/20)	2	-19	37	56	54
U.S. Agency Sector (Non-MBS)	154	21	10	49	32	23	53 (3/25)	-9	-26	13	39	19
MBS and ABS Sectors												
U.S. Agency Pass-Throughs	157	21	39	60	39	73	132 (3/19)	34	13	34	21	37
U.S. Agency CMBS	N/A	56	53	116	89	81	144 (3/23)	-8	-35	28	63	N/A
Non-Agency CMBS	1298	178	85	238	231	213	348 (3/25)	-18	-25	128	153	175
Consumer ABS	935	68	44	213	159	111	325 (3/26)	-48	-102	67	169	65
Investment Grade Credit Sectors												
U.S. Corporates	607	214	93	272	202	174	373 (3/23)	-28	-98	81	179	146
Industrials	546	235	99	276	207	176	383 (3/23)	-31	-100	77	177	139
Utilities	545	165	97	254	168	161	298 (3/24)	-7	-93	64	157	137
Financials	697	185	80	268	203	174	378 (3/23)	-29	-94	94	188	158
Other Govt. Related	218	135	72	164	126	106	180 (3/23)	-20	-58	34	92	97
High Yield Credit Sectors												
U.S. High Yield Corporates	1833	839	336	880	744	637	1100 (3/23)	-107	-243	301	544	500
Emerging Market Debt[1]	1229	846	573	1254	1217	822	1370 (3/23)	-395	-432	249	681	580

[1] Emerging Market Debt is a subindex of the Bloomberg Barclays U.S. Universal Index and is primarily rated below Investment Grade.
[2] Average since 6/30/09.
Source: Bloomberg Barclays
Data as of: 5/31/20

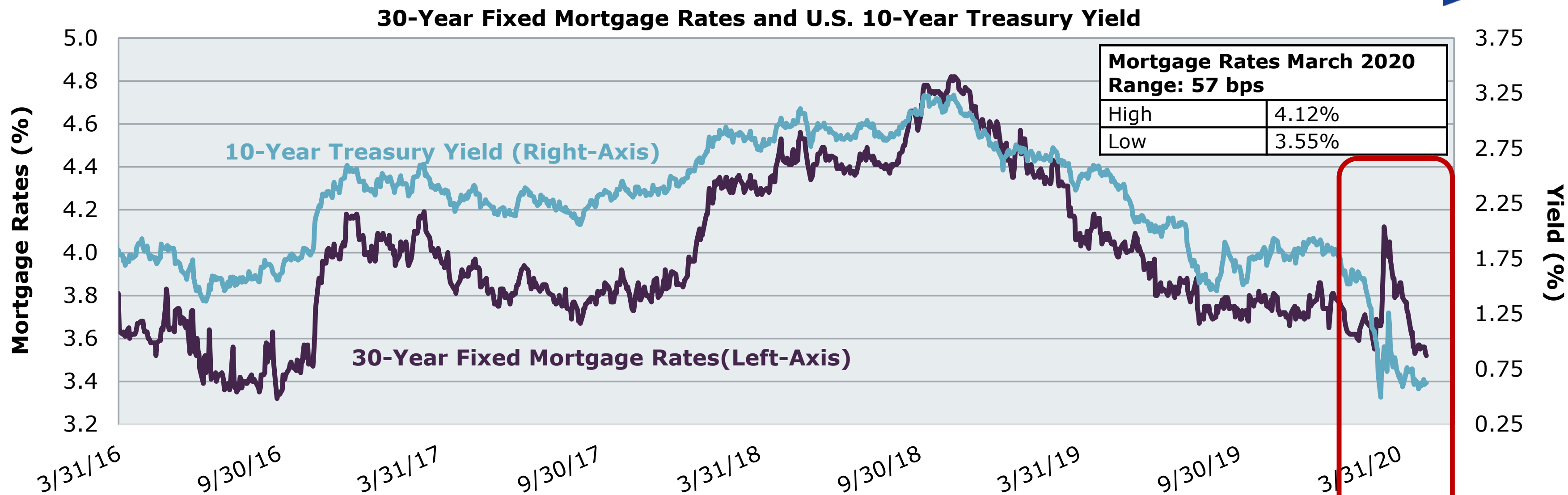
Biggest Monthly Move in IG Credit Spreads Ever

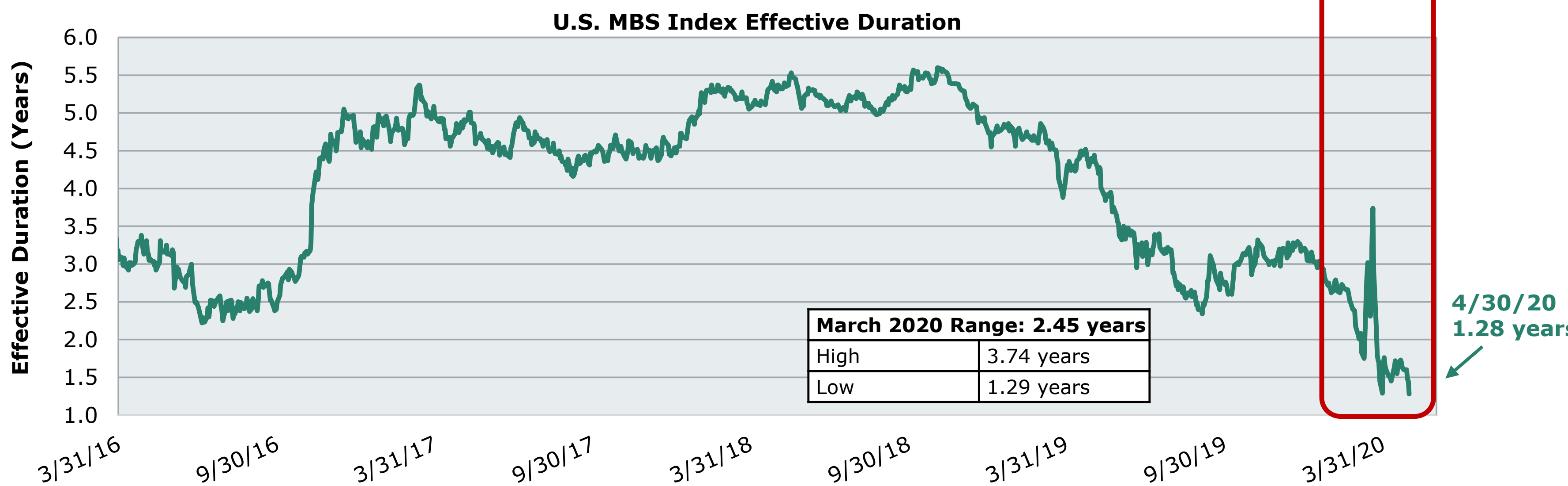


Source: Bloomberg
Data as of: 4/30/20

Mortgage Rates Decouple from Treasuries in March Prior to Fed Action

Mortgage Index Duration Takes Wild Ride



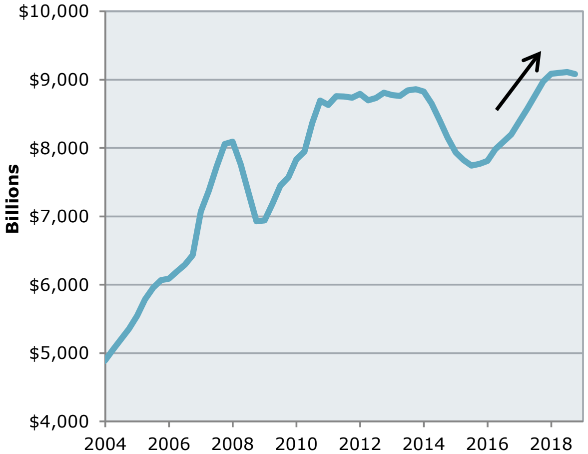


Source: Bloomberg
Data as of: 4/30/20

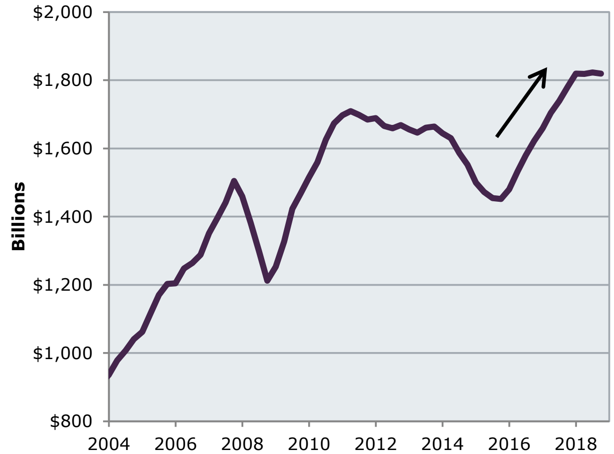
Corporate Credit Fundamentals Solid Prior to Downturn

Revenue, Profits and Free Cash Flow at or Near Cycle Highs

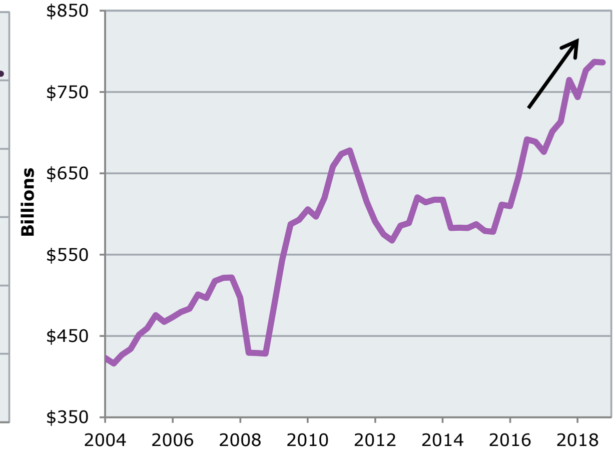
Revenue



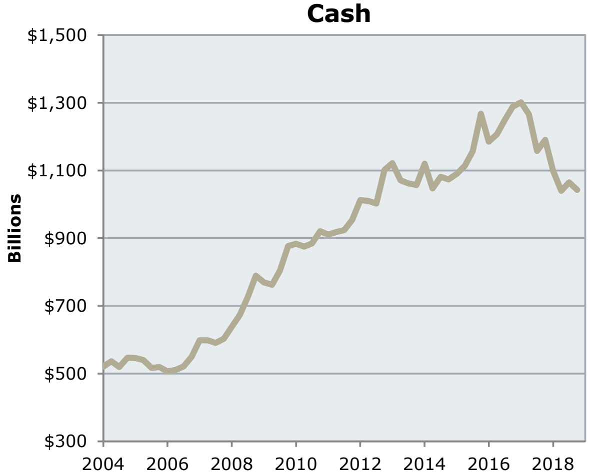
Profits (EBITDA)



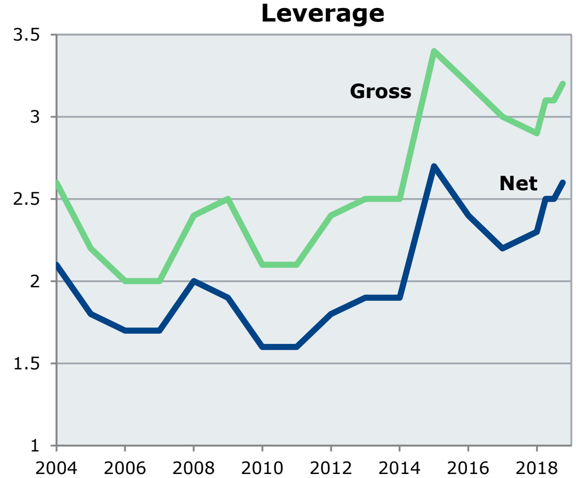
Free Cash Flow



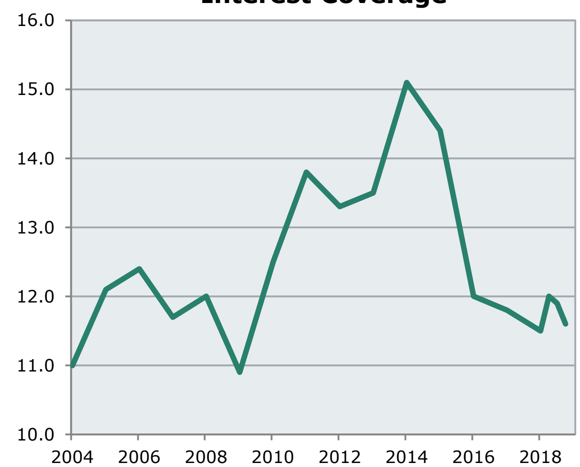
Cash



Leverage



Interest Coverage



Source: J.P. Morgan, Barclays
Data as of: 9/30/19 (Q4 Data Delayed)

Issuers Targeted BBB Rating

And Extended Duration of Debt

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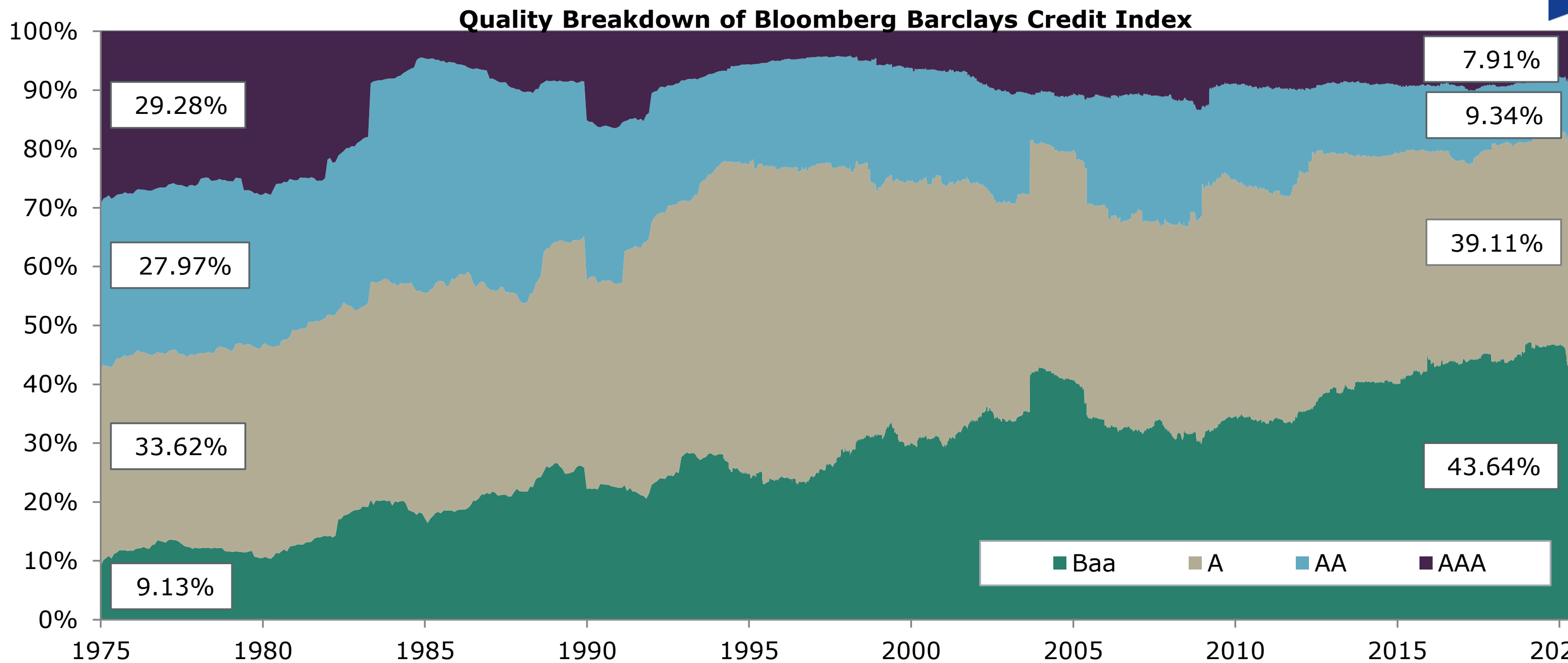

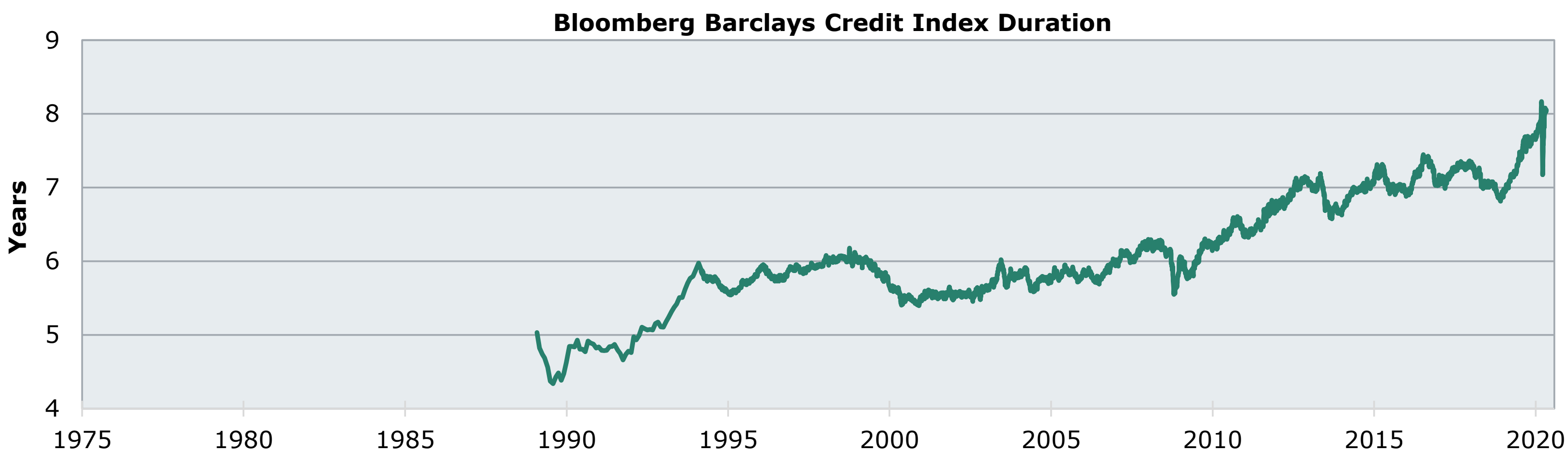

Source: Bloomberg Barclays
Data as of: 4/30/20

Central Bank Balance Sheets Expanding to New Records

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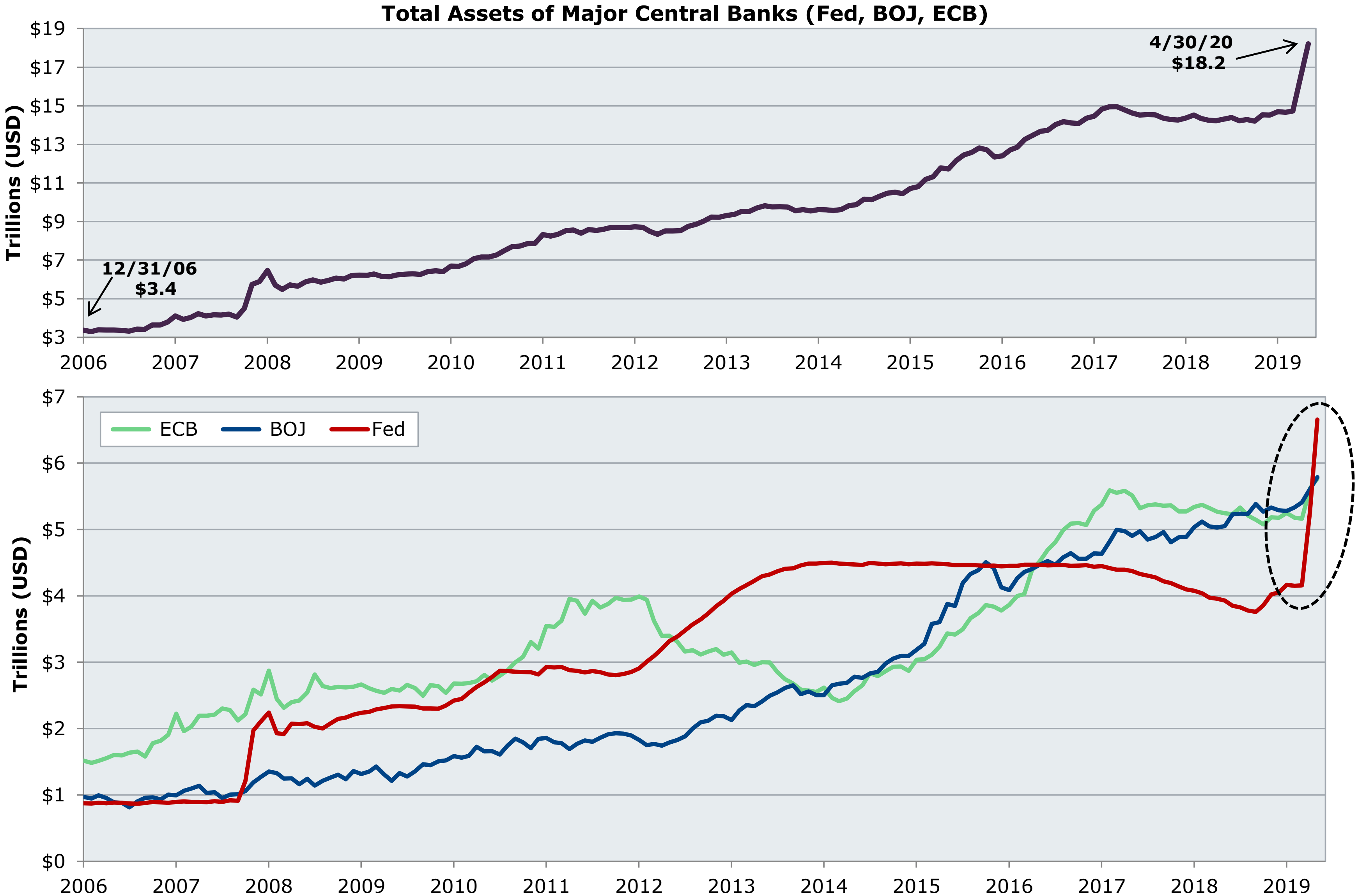
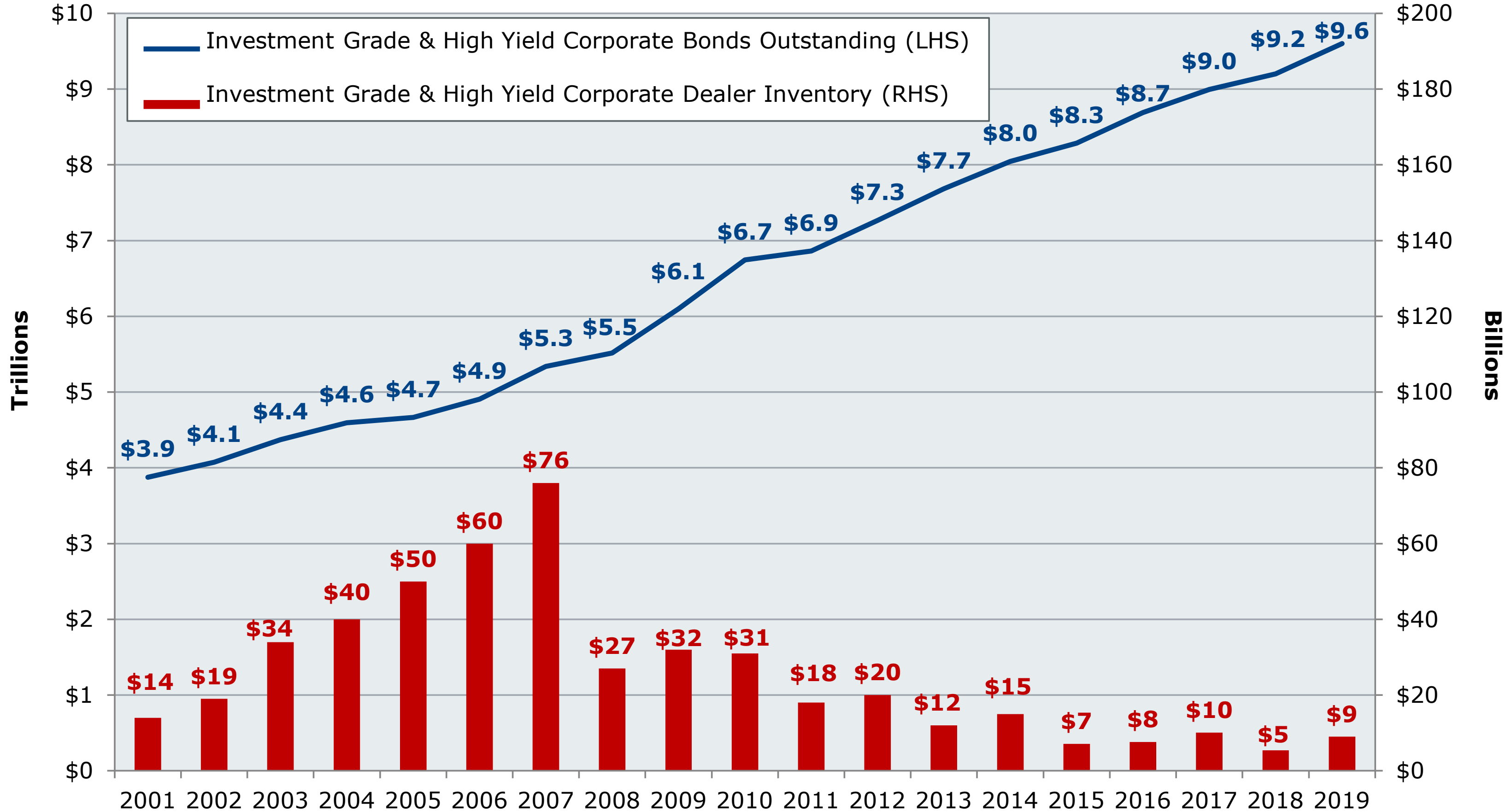


Source: Fed, ECB, BoJ, Bloomberg
Data as of: 4/30/20

When Liquidity Declines, Volatility Rises

Bond Dealers No Longer "Shock Absorber" for Bond Market

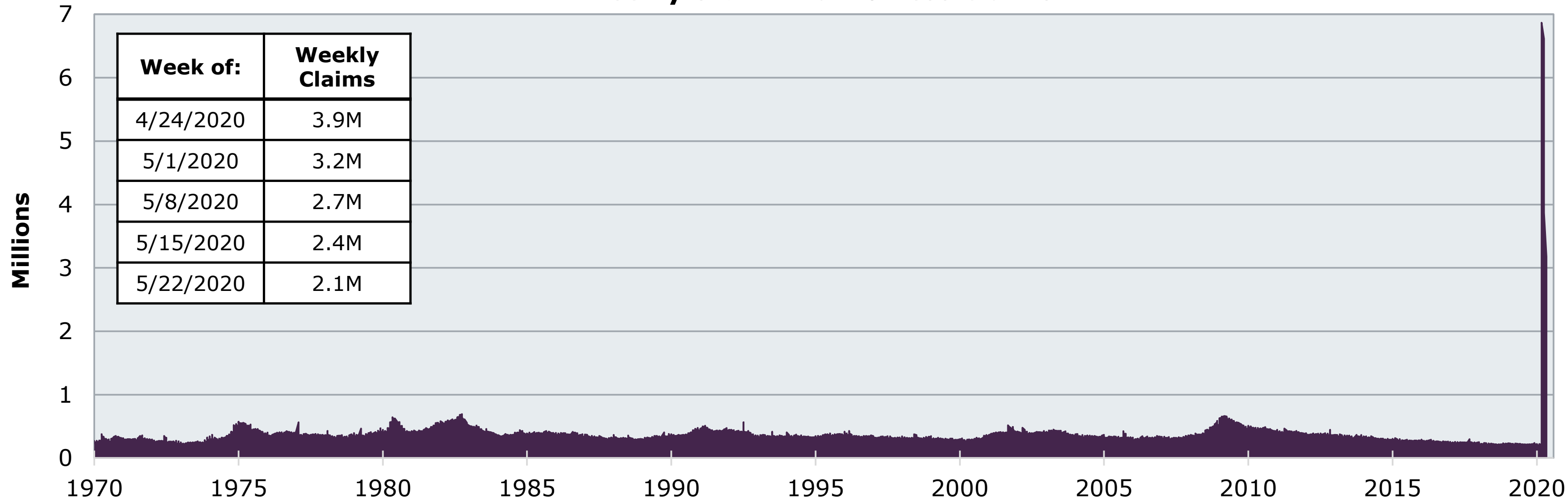


Source: FINRA, SIFMA, Federal Reserve, Credit Suisse
Data as of: 12/31/19 (Next Release: 6/30/20)

Economic "Sudden Stop" Truly Unprecedented

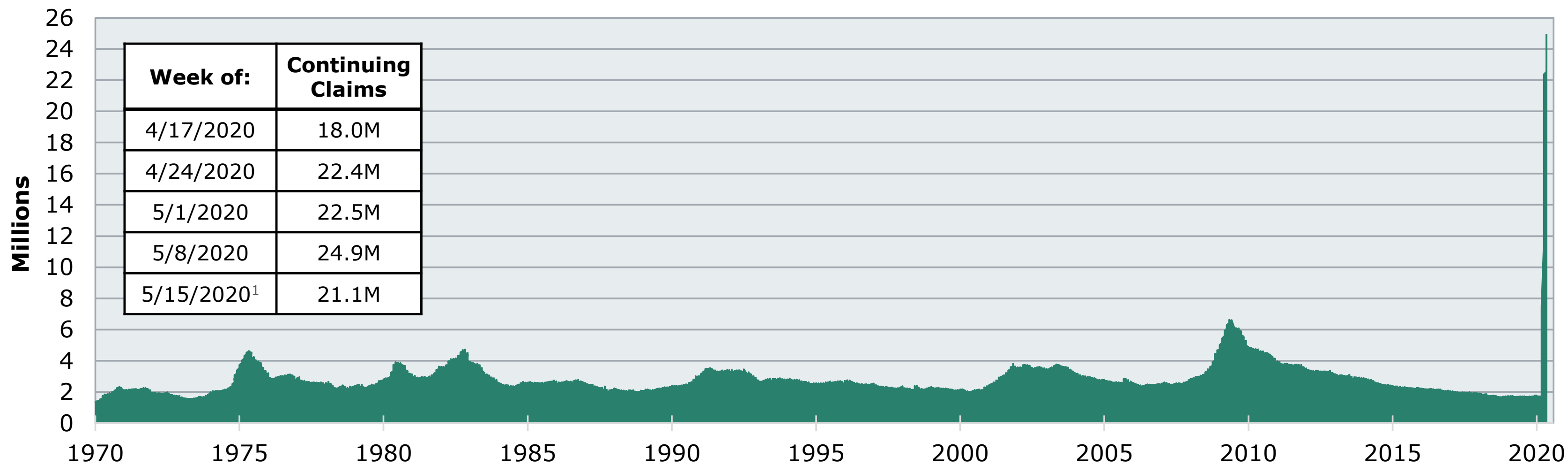
40.8 Million People File for Unemployment Benefits in 10 Week Period

Weekly U.S. Initial Jobless Claims



Week of:	Weekly Claims
4/24/2020	3.9M
5/1/2020	3.2M
5/8/2020	2.7M
5/15/2020	2.4M
5/22/2020	2.1M

Weekly U.S. Continuing Jobless Claims



Week of:	Continuing Claims
4/17/2020	18.0M
4/24/2020	22.4M
5/1/2020	22.5M
5/8/2020	24.9M
5/15/2020[1]	21.1M

[1]Next Release: 6/4/20

Source: Bloomberg
Data as of: 5/31/20

Unprecedented Stimulus in Scale and Speed

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Fed Response

- Unlimited QE purchases of Treasuries and MBS
- Expanded TALF (Term Asset-Backed Securities Loan Facility)
- Expanded MMLF (Money Market Mutual Fund Liquidity Facility)
- Expanded CPFF (Commercial Paper Funding Facility)
- Created PMCCF (Primary Market Corporate Credit Facility)
- Created SMCCF (Secondary Market Corporate Credit Facility)
- Created MSBLP (Main Street Business Lending Program)
- Created MLF (Municipal Liquidity Facility)
- Created PPPLF (Paycheck Protection Program Liquidity Facility)
- Reintroduced PDCF (Primary Dealer Credit Facility)
- Expanded global central bank liquidity swap lines
- Enhanced availability for borrowing at the discount window
- Elimination of reserve requirements

CARES (Coronavirus Aid, Relief and Economic Security) Act - $2.2 Trillion

■ Payments to individuals	$ 577B
Tax cuts and grants to business	$ 704B
Loans to business	$ 500B
Aid to States and other	$ 465B
Total	**$2,246B**
Tax Deferrals	$ 352B

Appendix

Baird Advisors

Portfolio Management Team

Mary Ellen Stanek, CFA
MD, Chief Investment Officer
41 Years of Investment Experience

Gary Elfe, CFA
MD, Research Director Emeritus
41 Years of Investment Experience

Charles Groeschell
MD, Senior Portfolio Manager
40 Years of Investment Experience

Jay Schwister, CFA
MD, Research Director
35 Years of Investment Experience

Warren Pierson, CFA
MD, Deputy Chief Investment Officer
34 Years of Investment Experience

Duane McAllister, CFA
MD, Senior Portfolio Manager
33 Years of Investment Experience

Lyle Fitterer, CFA
MD, Senior Portfolio Manager
31 Years of Investment Experience

Jeffrey Simmons, CFA
MD, Senior Portfolio Manager
32 Years of Investment Experience

Daniel Tranchita, CFA
MD, Senior Portfolio Manager
30 Years of Investment Experience

Sharon deGuzman
MD, Senior Portfolio Manager
29 Years of Investment Experience

Jeffrey Schrom, CFA
MD, Senior Portfolio Manager
25 Years of Investment Experience

Patrick Mutsune, CFA
MD, Senior Investment & Systems Analyst
22 Years of Investment Experience

Meghan Dean, CFA
MD, Senior Portfolio Manager
20 Years of Investment Experience

Patrick Brown, CFA
MD, Senior Investment Analyst
16 Years of Investment Experience

Andrew O'Connell, CFA
SVP, Senior Investment Analyst
12 Years of Investment Experience

Abhishek Pulakanti, CFA, FRM
SVP, Senior Investment Analyst
12 Years of Investment Experience

Ian Elfe, CFA
SVP, Senior Investment Analyst
12 Years of Investment Experience

Alice Ambrowiak, CFA, CPA
SVP, Investment Analyst
18 Years of Investment Experience

Erik Schleicher, CFA
SVP, Portfolio Manager
16 Years of Investment Experience

Joseph Czechowicz, CFA
SVP, Portfolio Manager
13 Years of Investment Experience

John Cremer, CFA
VP, Investment Analyst
8 Years of Investment Experience

Donald Smiley, CFA
VP, Investment Analyst
7 Years of Investment Experience

Lauren Vollrath, CFA
VP, Investment Analyst
5 Years of Investment Experience

Allison Parra, CFA
VP, Investment Analyst
4 Years of Investment Experience

Kristiyan Trukov, CFA
Investment Analyst
3 Years of Investment Experience

Jaclyn Godwin
Investment Analyst
3 Years of Investment Experience

Baird Resource Partners

Legal & Compliance	Information Technology	Human Resources	Finance	Research (Equity & Credit)
(68)	(198)	(52)	(64)	(124)

Baird Advisors

Other Investment Professional Staff

Portfolio Management Support Team

Mary Hoppa
MD, Operations Manager
33 Years of Investment Related Experience

Amy Johnson
MD, Portfolio Analyst
18 Years of Investment Related Experience

Tara Haley
SVP, Portfolio Analyst
21 Years of Investment Related Experience

Janna Goihl
SVP, Portfolio Analyst
17 Years of Investment Related Experience

Janet Kube
VP, Portfolio Analyst
41 Years of Investment Related Experience

Monica Augustine
VP, Portfolio Manager Specialist
40 Years of Investment Related Experience

Mary Walters
VP, Portfolio Manager Specialist
33 Years of Investment Related Experience

Erika Haska
VP, Portfolio Manager Specialist
26 Years of Investment Related Experience

Carisa Oppermann
VP, Portfolio Analyst
17 Years of Investment Related Experience

Bridget Kempf
VP, Portfolio Analyst
12 Years of Investment Related Experience

Alyssa Dahms
VP, Portfolio Analyst
9 Years of Investment Related Experience

Alvin Nevels
AVP, Portfolio Manager Specialist
36 Years of Investment Related Experience

Margaret Lynn
AVP, Portfolio Manager Specialist
14 Years of Investment Related Experience

Nate Robertstad
AVP, Data Analyst
10 Years of Investment Related Experience

Carla Teat
Portfolio Manager Specialist
36 Years of Other Industry Experience

Elaine Skenadore
Portfolio Analyst
28 Years of Other Industry Experience

Adela Ortiz
Portfolio Analyst
17 Years of Investment Related Experience

Candace Watson
Portfolio Manager Specialist
8 Years of Investment Related Experience

Allison Mayer
Portfolio Analyst
6 Years of Investment Related Experience

Client Service Team

Richard Whittow, CEBS
Managing Director
40 Years of Investment Related Experience

Randall North
Managing Director
31 Years of Investment Related Experience

Peter Hammond
Managing Director
27 Years of Investment Related Experience

Heidi Schneider, CFA, CPA
Managing Director
25 Years of Investment Related Experience

Dustin Hutter, CPA
Managing Director
21 Years of Investment Related Experience

Michael Possley
Managing Director
20 Years of Investment Related Experience

Mandy Hess, CPA
Senior Vice President
27 Years of Investment Related Experience

Adrianne Limjoco
Senior Vice President
19 Years of Investment Related Experience

Devon Norwood
Senior Vice President
14 Years of Investment Related Experience

Kathleen Ruidl
Vice President
15 Years of Investment Related Experience

Caroline Murphy
Vice President
8 Years of Investment Related Experience

Madelynn Wallen, CFA
Vice President
5 Years of Investment Related Experience

Tiaira Johnson
Client Service Specialist
10 Years of Investment Related Experience

Kayla Hollenbeck
Portfolio Analyst
9 Years of Investment Related Experience

Brett Dawsey
Client Service Specialist
3 Years of Investment Related Experience

Brian Jacobs, CPA
Business Analyst
3 Years of Investment Related Experience

Baird Resource Partners

Legal & Compliance	Information Technology	Human Resources	Finance	Research (Equity & Credit)
(68)	(198)	(52)	(64)	(124)

Baird Advisors

BAIRD

Portfolio Management Team

Formulation of Investment Outlook & Portfolio Strategy

Mary Ellen Stanek, CFA	MD, Chief Investment Officer	41 years
Gary Elfe, CFA	MD, Research Director Emeritus	41 years
Charles Groeschell	MD, Senior Portfolio Manager	40 years
Jay Schwister, CFA	MD, Research Director	35 years
Warren Pierson, CFA	MD, Deputy Chief Investment Officer	34 years
Duane McAllister, CFA	MD, Senior Portfolio Manager-Muni	33 years
Lyle Fitterer, CFA	MD, Senior Portfolio Manager-Muni	31 years
Jeffrey Simmons, CFA	MD, Senior Portfolio Manager	32 years
Daniel Tranchita, CFA	MD, Senior Portfolio Manager	30 years
Sharon deGuzman	MD, Senior Portfolio Manager	29 years
Jeffrey Schrom, CFA	MD, Senior Portfolio Manager	25 years
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Meghan Dean, CFA	MD, Senior Portfolio Manager	20 years
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Andrew O'Connell, CFA	SVP, Senior Investment Analyst	12 years
Abhishek Pulakanti, CFA, FRM	SVP, Senior Investment Analyst	12 years
Ian Elfe, CFA	SVP, Senior Investment Analyst	12 years
Alice Ambrowiak, CFA, CPA	SVP, Investment Analyst	18 years
Erik Schleicher, CFA	SVP, Portfolio Manager-Muni	16 years
Joseph Czechowicz, CFA	SVP, Portfolio Manager-Muni	13 years
John Cremer, CFA	VP, Investment Analyst	8 years
Donald Smiley, CFA	VP, Investment Analyst	7 years
Lauren Vollrath, CFA	VP, Investment Analyst	5 years
Allison Parra, CFA	VP, Investment Analyst	4 years
Kristiyan Trukov, CFA	Investment Analyst	3 years
Jaclyn Godwin	Investment Analyst	3 years

Key Areas of Focus:

- Portfolio Construction & Risk Monitoring
- Credit
- MBS/ABS

Baird Resource Partners

Legal & Compliance	Information Technology	Human Resources	Finance	Research (Equity & Credit)
(68)	(198)	(52)	(64)	(124)

Baird Advisors

Portfolio Management Support Team

Mary Hoppa	MD, Operations Manager	33 years
Amy Johnson	MD, Portfolio Analyst	18 years
Tara Haley	SVP, Portfolio Analyst	21 years
Janna Goihl	SVP, Portfolio Analyst	17 years
Janet Kube	VP, Portfolio Analyst	41 years
Monica Augustine	VP, Portfolio Manager Specialist	40 years
Mary Walters	VP, Portfolio Manager Specialist	33 years
Erika Haska	VP, Portfolio Manager Specialist	26 years
Carisa Oppermann	VP, Portfolio Analyst	17 years
Bridget Kempf	VP, Portfolio Analyst	12 years
Alyssa Dahms	VP, Portfolio Analyst	9 years
Alvin Nevels	AVP, Portfolio Manager Specialist	36 years
Margaret Lynn	AVP, Portfolio Manager Specialist	14 years
Nate Robertstad	AVP, Data Analyst	10 years
Carla Teat	Portfolio Manager Specialist	36 years
Elaine Skenadore	Portfolio Analyst	28 years
Adela Ortiz	Portfolio Analyst	17 years
Candace Watson	Portfolio Manager Specialist	8 years
Allison Mayer	Portfolio Analyst	6 years

Client Service Team

Richard Whittow, CEBS	Managing Director	40 years
Randall North	Managing Director	31 years
Peter Hammond	Managing Director	27 years
Heidi Schneider, CFA, CPA	Managing Director	25 years
Dustin Hutter, CPA	Managing Director	21 Years
Michael Possley	Managing Director	20 years
Mandy Hess, CPA	Senior Vice President	27 years
Adrianne Limjoco	Senior Vice President	19 years
Devon Norwood	Senior Vice President	14 years
Kathleen Ruidl	Vice President	15 years
Caroline Murphy	Vice President	8 years
Madelynn Wallen, CFA	Vice President	5 years
Tiaira Johnson	Client Service Specialist	10 years
Kayla Hollenbeck	Portfolio Analyst	9 years
Brett Dawsey	Client Service Specialist	3 years
Brian Jacobs, CPA	Business Analyst	3 years

Baird Resource Partners

Legal & Compliance	Information Technology	Human Resources	Finance	Research (Equity & Credit)
(68)	(198)	(52)	(64)	(124)

Benefits

- Long-term relationships focused on client and direct communication
- Experienced management team implementing proven investment discipline
  - Structured, risk-controlled process
  - No derivatives, no non-$ currency exposure, no leverage
  - Focus on ***bottom-up*** added value from sector allocation and security selection
- Total focus on fixed income management
- Culture and resources key to future success
- Importance of the relationship to Baird Advisors

Important Disclosures

Investors should consider the investment objectives, risks, charges and expenses of the fund carefully before investing. This, and other information can be found in the prospectus or summary prospectus. A prospectus or summary prospectus may be obtained by visiting www.bairdfunds.com. Please read the prospectus or summary prospectus carefully before you invest or send money.

Performance data quoted represents past performance. Past performance does not guarantee future results. Investment return and principal value of an investment in the fund will fluctuate so that an investor's shares when redeemed, may be worth more or less than their original cost. The funds' current performance may be lower or higher than the performance data quoted. For performance current to the most recent month-end, please visit www.bairdfunds.com.

Funds may invest in U.S. dollar denominated foreign securities which involve additional risks such as the potential for political and economic instability and less strict regulation. The Fund may also invest in mortgage and asset-backed securities which include interest rate and prepayment risks more pronounced than those of other fixed income securities.

Baird Funds are offered through Robert W. Baird & Co., a registered broker/dealer, member NYSE and SIPC. Robert W. Baird & Co. also serves as investment advisor for the Fund and receives compensation for these services as disclosed in the current prospectus.

Lipper rankings are based on average annual total returns for the 1, 3, 5, 10-year/life periods for each respective Lipper category. Baird Core Plus Bond Fund is ranked among the Core Plus Bond Funds, Baird Aggregate Bond Fund is ranked among the Core Bond Funds, Baird Intermediate Bond Fund is ranked among Short-Intermediate Investment Grade Debt Funds, Baird Short-Term Bond Fund is ranked among the Short Investment Grade Debt Funds, Baird Ultra Short Bond Fund is ranked among the Ultra-Short Obligations Funds, Baird Quality Intermediate Municipal and Baird Core Intermediate Municipal Bond Funds are ranked among the Intermediate Municipal Debt Funds, Baird Municipal Bond Fund is ranked among the General & Insured Municipal Debt Funds, Baird Strategic Municipal Bond Fund is ranked among the Short-Intermediate Municipal Debt Funds and Baird Short-Term Municipal Bond Fund is ranked among the Short Municipal Debt Funds. Each fund is ranked based on average annual total returns assuming reinvestment of dividends and capital gains, distributions, at net asset value and the deduction of all fund expenses. Past performance is no guarantee of future results.

Morningstar categories: Baird Core Plus Bond Fund is ranked within the Intermediate Core-Plus Bond Fund category (Overall: 533 funds, 3-year period: 533, 5-year period: 449, 10-year period: 333). Baird Aggregate and Baird Intermediate Bond Funds are ranked within the Intermediate Core Bond Fund category (Overall: 386 funds, 3-year period: 386, 5-year period: 331, 10-year period: 252). Baird Short-Term Bond Fund is ranked within the Short-Term Bond Fund category (Overall: 512 funds, 3-year period: 512, 5-year period: 444, 10-year period: 284). Baird Ultra Short Bond Fund is ranked within the Ultrashort Bond Fund category (Overall: 164 funds, 3-year period: 164, 5-year period:127). Baird Quality Intermediate, Baird Core Intermediate, and Baird Strategic Municipal Bond Funds are ranked within the Municipal National Intermediate Bond Fund category (Overall: 247 funds, 3-year period: 247, 5-year period: 216, 10-year period: 157). Baird Short-Term Municipal Bond Fund is ranked within the Municipal National Short Bond Fund category (Overall: 182 funds, 3-year period: 182). Baird Municipal Bond Fund is ranked within the Municipal National Long Bond Fund category.

The quality profile is calculated on a market value-weighted basis using the highest credit quality rating given by S&P, Moody's or Fitch for each security in the fund.

DALLAS POLICE & FIRE PENSION SYSTEM

Core Fixed Income Review

June 4, 2020

Presented by:

Akshay Anand, CFA

Corinne Larson, CTP

Barbara McKenna, CFA

Longfellow Investment Management Co., LLC
20 WINTHROP SQUARE, BOSTON, MA 02110
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One-on-one Presentation

LONGFELLOW Investment Management

Table of Contents

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3	Market Review	12
4	Core Strategy Review	15
5	Fixed Income Composite Statistics	20
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Firm Overview

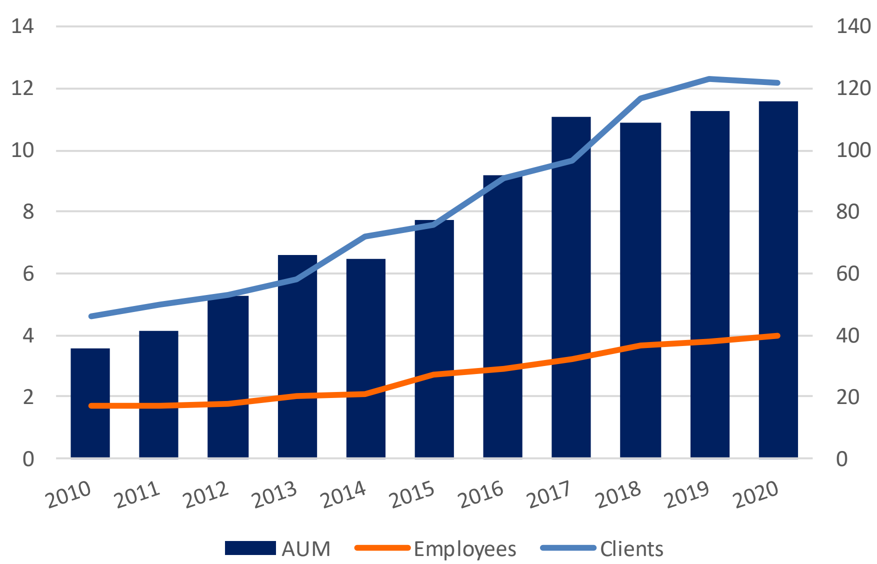
Boutique investment management firm

- SEC registered advisor since inception in 1986
- $11.6 billion in assets under management (3/31/2020)

100% employee owned – client and employee interests aligned

- 40 employees; including 14 principals
  - 2 new principals added as of 3/31/2020
- Long-term continuity and succession plans in place
- Certified Women's Business Enterprise since 2010

Asset Flows – average annual growth of 11% for the past 5 years



Customized, proactive approach to asset management

- All accounts separately managed to each client's unique investment guidelines
- Strive to achieve strong, consistent risk-adjusted returns
- Focus on developing lasting client relationships
  - Experience managing a wide variety of clients and portfolios
  - Still retain first two institutional clients

Industry recognition*

- PSN Top Guns Manager of the Decade – based on risk return profile over 10-year period
  - Intermediate Duration: 2014, 2015, 2016, 2017, 2018, and 2019 Manager of the Decade within PSN's Intermediate Maturity Universe
  - Core: 2016, 2017, and 2018 Manager of the Decade within PSN's Core Fixed Income and U.S. Fixed Income Universes
  - Core Plus: 2019 Manager of the Decade within PSN's Core Plus Fixed Income Universe
- PSN Top Guns 6 Stars – based on risk return profile over 5-year period
  - Short Duration: December 31, 2019 within PSN's Short Maturity Universe

**See award disclosures in appendix for more information*

Firm Profile

Firm Facts	
Assets Under Management	$11.6 Billion
Clients	122
5 Year Avg Annual Growth	11%

New Portfolio Fundings Year-to-Date*	
Intermediate	$21mm
Muni/Gov't Only	$4mm

LIM Strategies March 31, 2020	Duration	Assets ($ Millions)	% of Firm Assets	Managed Since
Fixed Income	Strategy Specific	11,286	97%	7/1/2005
Enhanced Cash	1.62	2,349	20%	7/1/2005
Short Duration	1.90	2,102	18%	7/1/1986
Intermediate Duration	3.89	1,354	12%	9/1/1997
Core	5.95	3,039	26%	10/1/2006
Core Plus	6.07	807	7%	7/1/2009
Government Only	2.09	631	5%	7/1/2005
Crossover	Client Specific	696	6%	2/1/2010
Opportunistic Bond	2.88	291	3%	7/1/2013
Absolute Return	Strategy Specific	335	3%	7/1/1986

**All data as of March 31, 2020*

Portfolios can be customized, including:

- Fixed income
  - SRI, ESG, LDI mandates
  - Blended benchmarks
  - "Crossover" for taxable clients
  - Credit – restricted to high quality or addition of high yield
  - Liquidity needs
- Absolute return
  - Risk tolerance
  - Asset allocation
  - Leverage

LIM

Representative Client List

Bank (1)
Dedham Institution For Savings

Corporate (13)
Amazon.com
E.T. Horn
Public Service Enterprise Group, Inc.
Square, Inc.
Tauck, Inc.

Endowments and Foundations (28)
American Diabetes Association
Avalon Capital Group II, LLC
Children's Fund of Connecticut
City University of New York
East Bay Community Foundation
Jessie Ball duPont Fund
Loma Linda University
Michigan Health Endowment Fund
Saint Paul & Minnesota Community
Servants of Relief for Incurable Cancer
Samford University
Starr Commonwealth
Tiger Athletic Foundation
University of West Florida
University System of New Hampshire
Union Theological Seminary
Utah State University

Healthcare (18)
Beaumont Health
Care New England Health System
Charleston Area Medical Center
CoxHealth
Greater Fairbanks Community Hospital Foundation
Health Research, Inc.
Lehigh Valley Health Network
MelroseWakefield Healthcare, Inc.
Nicklaus Children's Hospital
Passport Health Plan
Rady Children's Hospital
Reliant Medical Group
Spartanburg Regional Health System
The University of VT Medical Center
University of MD Medical System
Woman's Hospital

Insurance (5)
Augusta Mutual Insurance Company
Depositors Insurance Fund
Hospital Mutual Insurance Group
Tecumseh Health Reciprocal Risk Retention Group
Texas Council Risk Management Fund
University of Missouri Medical Professional Liability Plan Trust

Non-Profit/Other (5)
American College of Surgeons
Burns and Roe Personal Injury Settlement Trust
Professional Contract Services, Inc.
U.S. Pharmacopeial Convention, Inc.

Platform (5)
Capital Prospects
Goldman Sachs AIMS Platform
PNC Platform
Progress Manager of Managers
Northern Trust Global Advisors, Inc.

Public (19)
California Earthquake Authority
City of Boston Trust Office
City of New Britain, CT
City of Phoenix Employees Retirement
MA Housing Finance Agency Retirement System
Maryland Retirement Agency
NC School Board Pension & Trust
Orange County Employee Retirement
Philadelphia Public Employees
Transit Employees' Retirement Plan

Religious (12)
NC Baptist Foundation, Inc.
National Christian Foundation
Roman Catholic Bishop of Worcester
Sinsinawa Dominicans
Sisters of St. Francis of Mary Immaculate
Sisters of St. Francis of the Neumann Communities
Sisters of St. Joseph

Sub-Advised (6)
Christian Brothers Investment Services, Inc.
MetLife Inc.
Northern Trust Investments

Taft-Hartley (8)
Asbestos Workers Local Union 24
Michigan Upper Peninsula IBEW
Minnesota Laborers
Roofers Local #20 Pension Fund
Twin City Iron Workers #512

Client for < 5 years	Client for > 15 years
Client for > 5 years	Client for > 20 years
Client for > 10 years	Client for > 30 years

(#) = total clients by type

The above list consists of all clients who have consented to Longfellow's use of their name in marketing materials. This list was not generated based on performance nor does it include all of Longfellow' clients. Longfellow follows a policy of confidentiality regarding information pertaining to its client relationships. The above listing should not be construed as endorsements of Longfellow, its products or services. It is not known whether the listed clients approve or disapprove of Longfellow or the services provided. Prospective clients may not have the same experience as those identified on this list.

Investment Team Matrix

Portfolio Strategies

Core
Core Plus

Barbara McKenna, CFA
Akshay Anand, CFA

Intermediate
Duration

Raymond Kubiak, CFA
Kathleen Barton, CFA

Short Duration
Enhanced Cash

John Villela, CFA
Sarah Scranton, CFA

Municipals
Crossover

Raymond Kubiak, CFA
Ryan Nelson, CFA

Absolute
Return

David Stuehr, CFA
Andrew Bail
Craig Carlozzi, CFA

Sector Specialties

Securitized

Akshay Anand, CFA
Kathleen Barton, CFA
Gaurav Jagani, CFA
Petr Soustal
Scott Supple, CAIA
Adriano Taylor-Escribano

Credit

Samir Agarwal
Andrew Bail
Aileen Barbiellini Amidei, CFA
Craig Carlozzi, CFA
Mark Duffy, CFA
Derek McCarthy
Barbara McKenna, CFA
Heather Meehan, CFA
Sarah Scranton, CFA
David Stuehr, CFA
John Villela, CFA
Brendan Whittington

Municipal

Raymond Kubiak, CFA
Ryan Nelson, CFA

Asset Allocation

George Noyes, CFA

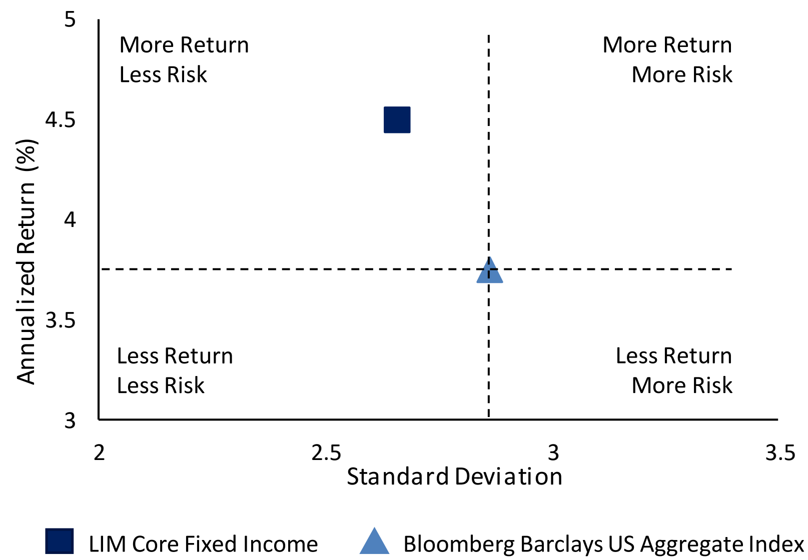
Consistent Outperformance with Low Volatility: Core

LIM Core Fixed Income - Total Annual Returns

	Gross Composite	BB US Aggregate	Difference
2019	8.86%	8.72%	0.14%
2018	0.30%	0.01%	0.29%
2017	4.16%	3.54%	0.62%
2016	3.02%	2.65%	0.37%
2015	1.69%	0.55%	1.14%
2014	5.69%	5.96%	-0.27%
2013	-0.69%	-2.02%	1.33%
2012	6.61%	4.21%	2.40%
2011	7.85%	7.84%	0.01%
2010	7.88%	6.54%	1.34%
2009	8.09%	5.93%	2.16%
2008	5.52%	5.24%	0.28%
2007	7.85%	6.96%	0.89%
2006 (3 mos)	1.58%	1.24%	0.34%

Core Fixed Income Risk Reward

March 31, 2010 to March 31, 2020



The supplemental information on this page complements the full Core Composite presentation at the conclusion of this presentation. Please see the Core Composite presentation for further information.

Investment Philosophy

Risk management is our focus

- Top-down strategy for risk management coupled with bottom-up security selection
- Diversification by both percent and duration contribution
- Focus on identifying stable-to-improving credits and avoiding adverse outcomes
- Established buy and sell disciplines

Investment decision making foundation is built on independent and proprietary analysis

- Detailed independent research combined with regular monitoring to proactively respond to changing situations
  - This process enabled us to avoid post-2004 home equity, as well as consumer, mortgage, and finance exposure in 2007-08
- Recommendations reviewed regularly, with quarterly formal assessments

Over a cycle, avoiding problems generally results in superior relative performance

- Our analysis and monitoring process seeks to provide early warning signals and opportunities
- Our risk management insulates clients from the impact of event risk

Historical Value Added – Relative Return over a Cycle

Strategy	Allocation of Excess Return
Sector Allocation	30-40%
Security/Issuer Selection	30-40%
Duration	10-20%
Yield Curve Placement	10-20%

**See Performance Composite and Disclosures for additional information*

Portfolio Investment Process

Client Objectives and Guidelines

- Liquidity needs
- Gain/loss tolerance
- Attractive risk-adjusted returns

Broad Market Themes

- Fed policy
- Macroeconomic outlook
- Market sentiment, risk appetite, and technicals

Sector and Security Analysis

- Industry and issuer evaluation
  - Fundamentals
  - Technicals
  - Valuations
- Volatility and correlation assessment
- Security specific considerations
- Yield curve/roll opportunities

Daily Portfolio Construction

- Sector over/underweights
- Issuer exposure
- Duration and yield curve positions
- Liquidity

Ongoing

- Constant review and monitoring
- Monthly and quarterly performance dispersion and attribution

Performance Factors

Take advantage of market inefficiencies

- Buy securities that trade cheap for non-economic factors
  - Supply/demand imbalances
  - Analytical/administrative complexity
  - Liquidity
  - Overlooked or not closely followed by other fixed income participants

Identify relative value by analyzing spread relative to risks

- Research, including internal research reports, CreditSights, dealer research, rating agencies, and other resources
- Analysis using proprietary models, BondEdge Solutions, Bloomberg, and other tools

Maximize trading efficiency

- Survey over 20 dealer inventories
- Minimize turnover/transaction costs by investing in strategic positions
- Block trades across similar portfolios when appropriate

Limit interest rate volatility

- Constrain portfolio duration within a narrow range around benchmark, or to reflect client's cashflow considerations
- Duration management is a strategic decision versus short-term market timing

Maintain well-diversified portfolio

- Limit event risk through sector, industry, and issuer diversification
- Issuer constraints based on credit quality, maturity, and spread volatility

LIM's Approach to ESG Integration

Comprehensive analysis

- ESG performance analyzed with the same rigor and diligence as traditional financial performance, leading to a more complete risk assessment

Sector-specific weightings

- E, S, or G evaluations can be broadly applied yet differentiated, with sector-specific emphasis placed on each sustainability dimension

Quantitative focus

- Data aggregated from diversified sources to analyze industry-level performance from a relative and, when applicable, absolute perspective (e.g., greenhouse gas emissions under a cap)

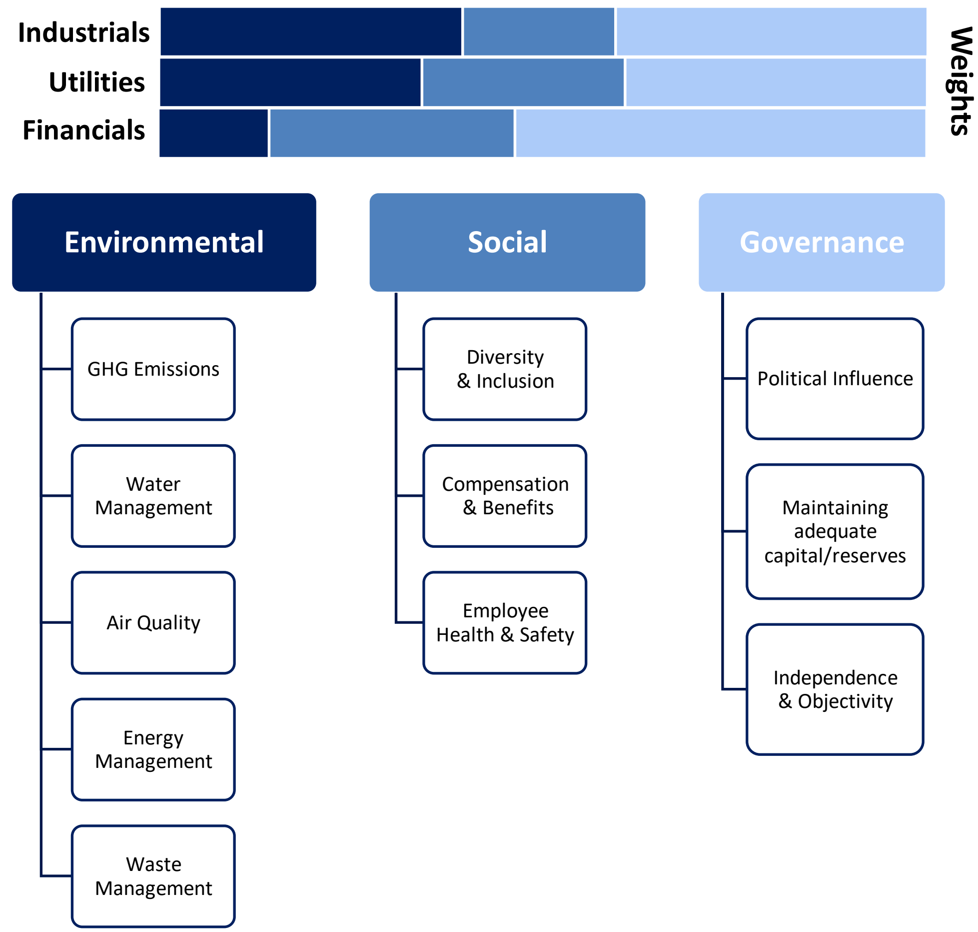
Context is everything

- Assess risk by considering emerging regulation and management approach to mitigating identified weaknesses

Firm engagement

- Signatory to the U.N. Principles of Responsible Investing
- Supporter of the Task Force on Climate-Related Financial Disclosures

LIM's ESG Integration*—Corporate Credit



**Not all topics are material to each industry, and this is not an all inclusive list of material issues*

Economic Data

Economic Activity/Growth	Latest Release Date	Current	Prior
GDP (Annualized)%	Mar-20	-5.0	2.1
Retail Sales MoM%	Apr-20	-16.4	-8.3
Retail Sales Ex Autos MoM%	Apr-20	-17.2	-4.0
U. Michigan Consumer Confidence	May-20	72.3	71.8
Industrial Production MoM%	Apr-20	-11.3	-4.5
Capacity Utilization MoM%	Apr-20	64.9	73.2
Durables Goods MoM%	Apr-20	-17.2	-16.6
Durable Goods Ex Transports MoM%	Apr-20	-7.4	-1.7

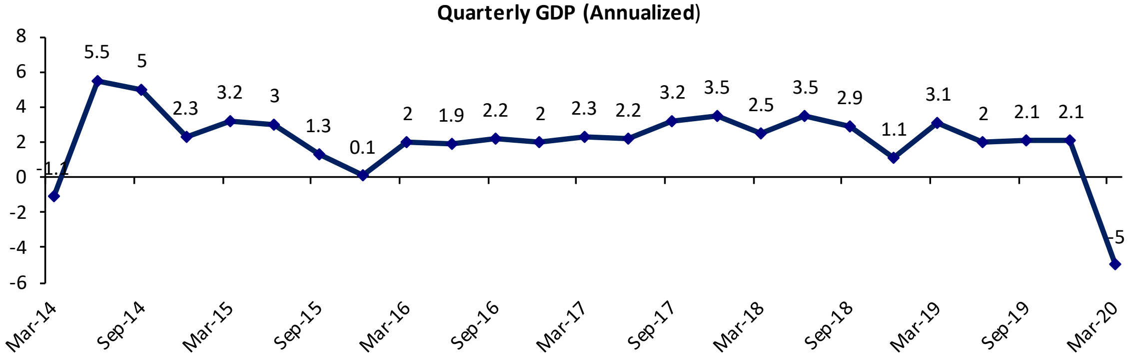
Inflation	Latest Release Date	Current	Prior
PPI MoM%	Apr-20	-3.5	-1.1
PPI Ex Food/Energy MoM%	Apr-20	0.0	0.3
PPI YoY%	Apr-20	-5.1	-0.9
PPI Ex Food/Energy YoY%	Apr-20	1.1	1.2
CPI MoM%	Apr-20	-0.8	-0.4
CPI Ex Food/Energy MoM%	Apr-20	-0.4	-0.1
CPI YoY%	Apr-20	0.3	1.5
CPI Ex Food/Energy YoY%	Apr-20	1.4	2.1
GDP - PCE Core YoY%	Apr-20	1.0	1.7

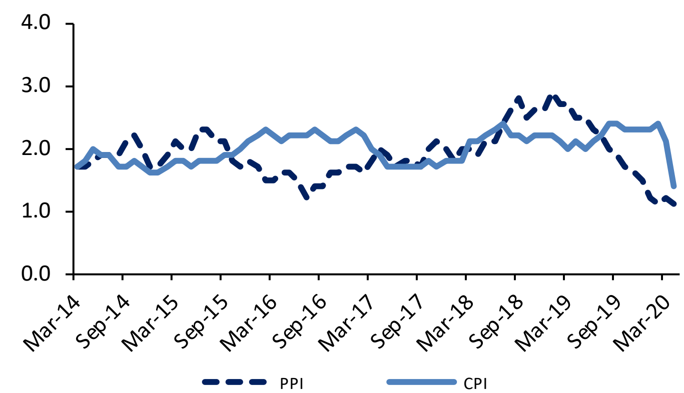
Equity Indices	Month End	Quarter End	1 Yr Ago
Dow Jones Industrial	25,383	21,917	24,815
NASDAQ	9,490	7,700	7,453
S&P 500	3,044	2,585	2,752

Currency & Commodities	Month End	Quarter End	1 Yr Ago
USD / EUR	1.11	1.10	1.12
USD / GBP	1.24	1.24	1.26
JPY / USD	107.83	107.54	108.29
Crude Oil	35.49	27.69	52.41
Gasoline	108	72	169
Gold	1,730	1,577	1,306

Employment	Date	Current	Prior
Initial Jobless Claims	May-20	2123	3867
Continuing Claims	May-20	21052	22377
Chg in Nonfarm Payrolls	Apr-20	-20537	-881
Unemployment Rate %	Apr-20	14.7	4.4

Real Estate	Date	Current	Prior
FHFA House Price Index MoM%	Mar-20	0.1	0.8
Existing Home Sales MoM %	Apr-20	-17.8	-8.5
New Home Sales MoM %	Apr-20	0.6	-13.7
Pending Homes Sales MoM %	Apr-20	-21.8	-20.8



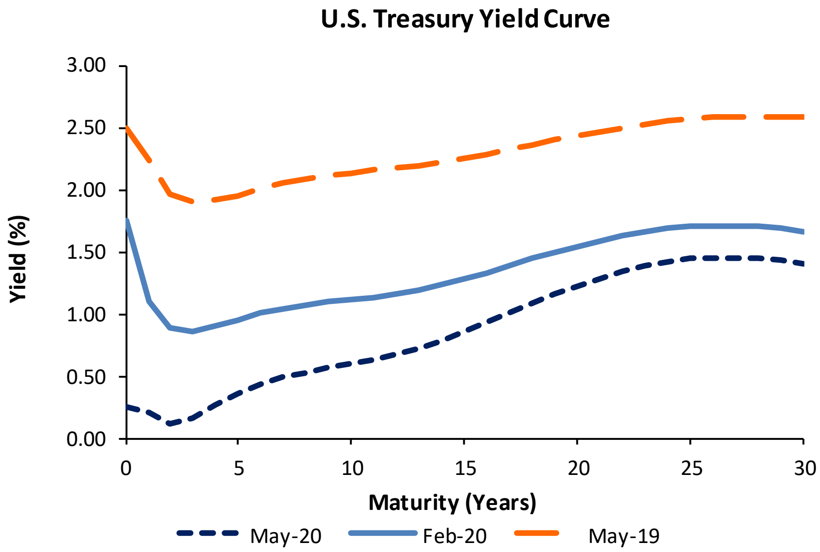


Source: Bloomberg Barclays Index Services Limited ("BISL"), BofA Merrill Lynch, and LIM. Data provided is for informational use only.

As of May 29, 2020

Market Review: Rates

- As the public health and economic fallout from Covid-19 continued, U.S. Treasury yields traded in a reasonably tight range during May. Ten-year yields stayed within a 12-basis point (bp) band, while 30-year yields kept to a 20 bp range. Twenty-year notes were issued by the federal government for the first time in many years, and the market gave the new paper a warm reception. Ultimately, the 2- to 30-year yield curve slope steepened by 16 bps, as the short-end of the curve remained firmly anchored.
- Markets were again dominated by technical factors. The Federal Reserve liquidity/quantitative easing programs and Congressional fiscal stimulus programs gave investors confidence that the economy was being, in a sense, underwritten by the government. With the intervention, the markets were able to look past economic data that would ordinarily have been interpreted as an economy in severe distress. The result was significant outperformance of many risk sectors relative to government bonds.
- Fed officials continued to use their "bully pulpit" to calm investors, and discussion about yield curve control measures has picked up steam among bond buyers.
- TIPS break-evens remained steady, with the 10-year closing the month at 114 bps. There is considerable debate over the longer-term outlook on inflation, given the unique nature of the current crisis. Likewise, the dollar was little changed month over month.



Index	Yields (%)					Total Return (%)			
	May-20	Apr-20	Feb-20	Dec-19	May-19	1-Mo.	3-Mo.	YTD	1-Yr.
U.S. Treasury									
3 Month Bill	0.14	0.10	1.26	1.51	2.28	0.00	0.30	0.58	1.84
6 Month Bill	0.17	0.10	1.14	1.55	2.31	(0.02)	0.50	0.92	2.37
1 Year	0.20	0.17	1.10	1.65	2.23	(0.02)	0.92	1.65	3.23
2 Year	0.12	0.15	0.90	1.57	1.97	0.07	1.42	2.92	4.49
3 Year	0.17	0.23	0.86	1.60	1.90	0.18	2.10	4.39	6.19
5 Year	0.36	0.41	0.96	1.72	1.96	0.20	3.02	7.07	9.35
10 Year	0.60	0.58	1.12	1.91	2.13	(0.02)	4.87	12.70	15.87
30 Year	1.41	1.28	1.67	2.36	2.58	(2.68)	6.74	24.88	31.41

Source: Bloomberg Barclays Index Services Limited ("BISL"), BofA Merrill Lynch, and LIM. Data provided is for informational use only. As of May 29, 2020

Sector Summary

Sector	Yield %	Spread bps	Total Return YTD	Excess Return YTD
Government	**0.52**	**0**	**8.50**	**(0.02)**
Treasuries	**0.51**		**8.61**	
1-3 Yr	0.18		2.98	
1-10 Yr	**0.29**		**5.73**	
10+ Yr	**1.32**		**21.05**	
TIPS	0.74		4.84	
Agencies	**0.87**	**41**	**1.65**	**(4.64)**
U.S. Agency	**0.79**	**23**	**4.86**	**(0.74)**
U.S. Credit	**2.31**	**164**	**2.94**	**(7.13)**
AAA (1-10 Yr)	0.46	17	4.56	(0.21)
AA (1-10 Yr)	0.91	57	4.33	(1.03)
A (1-10 Yr)	1.44	105	4.20	(2.01)
BBB (1-10 Yr)	2.49	205	0.73	(5.87)
Corporates	**2.43**	**174**	**3.00**	**(7.35)**
1-3 Yr	1.30	103	1.78	(1.08)
1-3 Yr x-BBB	0.87	61	2.64	(0.19)
1-10 Yr	1.90	149	2.56	(3.75)
10+	3.32	217	3.72	(14.11)
Industrial	2.50	176	2.89	(8.16)
Financial	2.29	174	2.53	(5.75)
High Yield	**7.27**	**667**	**(4.73)**	**(9.53)**
Securitized	**1.45**	**80**	**3.57**	**(0.60)**
U.S. MBS	**1.40**	**73**	**3.60**	**(0.31)**
CMBS	**1.99**	**158**	**3.51**	**(4.21)**
1-5 Yr	1.63	139	2.76	(1.86)
ABS AAA	**1.10**	**91**	**2.48**	**(0.79)**
Credit Cds	0.98	76	2.96	(0.72)
Autos	1.52	135	1.69	(1.20)
Muni 1-10 Yr Blend (1-12)			**1.68**	**(4.05)**
1-3 Yr			1.46	**(1.52)**
1-5 Yr			1.57	

Bond Market Summary

- With the intervention by the Fed, the markets were able to look past economic data that would ordinarily have been interpreted as an economy in severe distress. The result was significant outperformance of many risk sectors relative to government bonds excluding high yield.
- Investment grade spreads narrowed and excess returns were positive across industry groups, ratings, and all maturities, the polar opposite of March and an exact match of April.
- All securitized sectors outperformed Treasuries. The 30-year mortgage rate ended May at a new record low 3.15%. In the ABS market, retracement of spreads from March widening is largely a function of technicals, as dealer inventories have drawn down and new issue volumes are 33% lower than 2019.

May 29, 2020

Source: LIM, Barclays

Current Portfolio Positioning vs. Normal

Duration/Yield Curve **Neutral**

Duration remains neutral to benchmarks, with strategies tactically adding duration in short-term sell-offs in Treasury rates. Curve positioning reflects a neutral to flattening bias at the shorter end of the curve and steeper at the longer end. The global economy will struggle near-term as individual countries, specific industries, as well as the general consumer grapple with the economic fallout of the Covid-19 pandemic. Longer-term, Covid-19 vaccination timeline, deficit funding, negative/low global rates, dollar flows, and the Fed's balance sheet direction remain key factors to positioning.

Governments **Overweight Agencies/Underweight USTs**

The agency allocation is concentrated in federal agencies backed by the full faith and credit of the United States, such as Small Business Administration and Export-Import Bank. Valuations remain attractive over bullet GSEs and other high-quality asset classes (ABS, CMOs). Prefer issues with a diverse collateral base and limited operational complexities with stable cash flows to limit average life variability. Tactically seek to increase exposure to the SBA program, concentrating on 10-year and 25-year structures at par or discount (avoid premiums). Portfolios target longer holdings in Treasuries while underweight shorter Treasuries in favor of higher yielding securities.

Corporates **Neutral/Underweight**

With the market now immersed in an investment environment that has been shaken by the economic impact of Covid-19, our comprehensive, pre-purchase assessment of a firm's liquidity position in any credit environment has been validated. While valuations have been completely re-set across all segments of the corporate bond market, investment caution rules our day. We continue to conduct ongoing liquidity assessments of issuers held, as well as are take advantage of intermittent market liquidity to further enhance portfolio investment flexibility. We are generally seeking to invest in less economically sensitive, well-valued industrial credits.

Mortgages **Neutral**

RMBS underperformed Treasuries in the first quarter while significantly outperforming other spread product. In March, mortgage rates briefly touched an all-time low of 3.29% driving prepayment expectations higher. The Fed issued an unlimited agency MBS purchasing target, resulting in a retrenchment of spreads to normal valuations. Prepayment risk will likely slow, as social distancing programs and economic uncertainty increase timelines for purchasing and refinancing a house. CMBS excess returns were negative for the quarter, with most of the underperformance occurring in March. Uncertainty, around long-term implications for Covid-19 and the economy will continue to put pressure on CRE. We believe higher in capital structure CMBS, backed by higher quality assets will continue to outperform higher beta CMBS. We remain cautious on spreads and risk product despite Fed supporting markets. As these markets evolve and find stability, we could look to add opportunistically down in credit in high quality names that will survive an economic downturn.

Asset Backed Securities **Overweight**

Even high quality ABS spreads were not immune to the broad-based market dislocations in March and spreads remain at relatively wide levels partially attributable to liquidity issues in the funding markets as well as signs of weakening fundamentals. We remain focused on staying high in the capital structure amid the deterioration that is to be expected in the coming months. In the whole business securitization space, the emphasis is on quick service restaurants that will be able to weather the current environment over the casual dining segment that has seen revenues fall precipitously. At this time, there are historical bargains in the secondary market for certain esoteric ABS like containers that offer excellent relative value and robust structural protections if we can source the opportunity amid the disorder.

Municipals **Neutral**

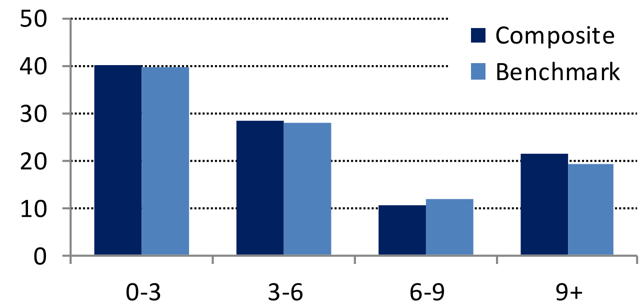
Municipals underperformed in the quarter driven by large selling pressure from ETFs and mutual funds as investors sought to raise cash and to reallocate assets. Tax-exempt municipals, especially shorter maturities, rebounded on support from the Fed programs, yet still offer an attractive "crossover" opportunity relative to taxable bonds. Taxable municipals offer the same quality as tax-exempts and offer diversification from corporates.

Core Composite – May 29, 2020

CHARACTERISTICS

	Composite	Benchmark
Effective Duration	5.91	6.01
Average Maturity	7.83	8.15
Average Quality	Aa3	Aa2
Yield to Worst (%)	2.05	1.34
Market Value ($000)	2,819,613	

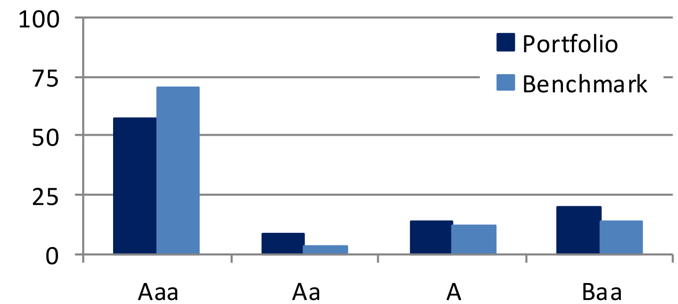
DURATION (%)



SECTOR ALLOCATION (%)

	Composite	Benchmark
Cash	0.5	
Government	**27.9**	**42.6**
U.S. Treasury	16.4	37.3
Agency/Sovereigns	11.5	5.3
Credit	**40.0**	**27.5**
Corporate	33.1	26.8
Industrial	*19.5*	*16.9*
Finance	*10.5*	*7.9*
Utility	*3.1*	*2.1*
Municipals	6.8	0.7
Securitized	**31.8**	**29.9**
RMBS	12.8	27.3
CMO	1.4	
ABS	9.1	0.4
CMBS	8.5	2.3

QUALITY (%)



BENCHMARK

Bloomberg Barclays U.S. Aggregate Bond Index

TRAILING PERIOD PERFORMANCE as of March 31, 2020

			Annualized				Since Inception
	QTR	YTD	1 Yr	3 Yr	5 Yr	10 Yr	1-Oct-06
Composite (gross)	1.57%	1.57%	7.40%	4.57%	3.52%	4.38%	5.12%
Composite (net)	1.51%	1.51%	7.12%	4.28%	3.23%	4.07%	4.82%
Benchmark	*3.15%*	*3.15%*	*8.93%*	*4.82%*	*3.36%*	*3.88%*	*4.29%*

CALENDAR-YEAR PERFORMANCE

	2019	2018	2017	2016	2015	2014	2013
Composite (gross)	8.86%	0.30%	4.16%	3.02%	1.69%	5.69%	-0.69%
Composite (net)	8.56%	0.02%	3.87%	2.75%	1.40%	5.35%	-1.03%
Benchmark	*8.72%*	*0.01%*	*3.54%*	*2.65%*	*0.55%*	*5.96%*	*-2.02%*

LIM

Core Composite: Year-to-Date Changes

Year-to-Date Changes

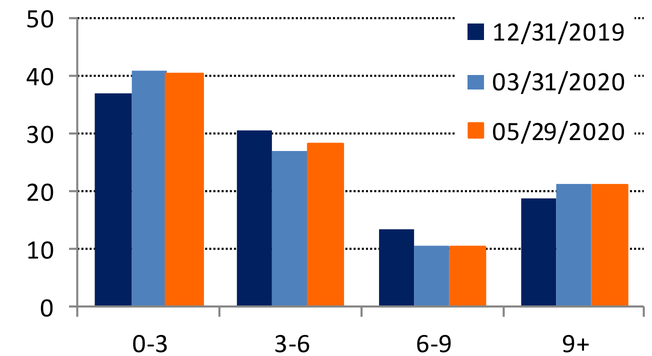
CHARACTERISTICS

	12/31/2019	03/31/2020	05/29/2020
Effective Duration	5.68	5.95	5.91
Average Maturity	7.50	7.95	7.83
Average Quality	Aa2	Aa2	Aa3
Yield to Worst (%)	2.55	2.49	2.05
Market Value ($000)	2,966,456	2,917,656	2,819,613

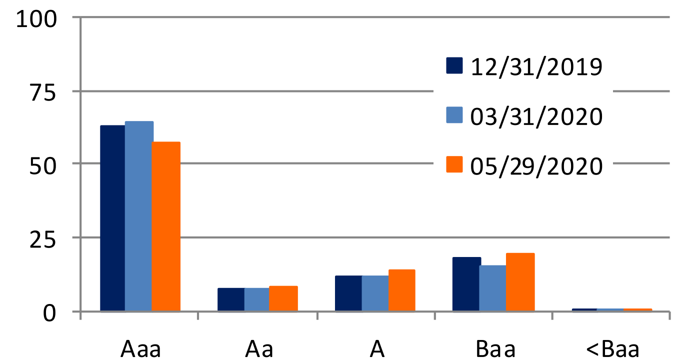
SECTOR ALLOCATION (%)

	12/31/2019	03/31/2020	05/29/2020
Cash	2.2	1.8	0.5
Government	**33.6**	**30.4**	**27.9**
U.S. Treasury	21.5	18.9	16.4
Agency/Sovereigns	12.2	11.5	11.5
Credit	**33.5**	**32.7**	**40.0**
Corporate	27.4	26.3	33.1
Industrial	*14.8*	*13.7*	*19.5*
Finance	*11.0*	*10.3*	*10.5*
Utility	*1.5*	*2.3*	*3.1*
Municipals	6.1	6.4	6.8
Securitized	**30.7**	**35.1**	**31.8**
RMBS	9.8	15.0	12.8
CMO	1.9	1.6	1.4
ABS	9.8	9.5	9.1
CMBS	9.3	9.0	8.5

DURATION (%)



QUALITY (%)



PORTFOLIO

LIM Core Composite

BENCHMARK

Bloomberg Barclays U.S. Aggregate Bond Index

Composite information (10/1/2010 - 12/31/2019)

Year	Gross-of-Fees Return (%)	Net-of-Fees Return (%)	Benchmark Return (%)	3-Year Annualized Std. Dev. (Composite)	3-Year Annualized Std. Dev. (Benchmark)	Total Composite Assets (USD 000s)	Total Firm Assets (USD 000s)	Average Credit Rating	Modified Duration
2019	8.86	8.56	8.72	2.71	2.87	2,979,469	11,310,846	AA	6.01
2018	0.30	0.02	0.01	2.53	2.84	2,091,925	10,886,474	AA-	5.58
2017	4.16	3.87	3.54	2.50	2.77	1,472,594	11,125,311	AA	5.50
2016	3.02	2.75	2.65	2.64	2.98	1,200,632	9,192,326	AA-	5.73
2015	1.69	1.40	0.55	2.53	2.88	1,024,041	7,746,998	AA	5.20
2014	5.69	5.35	5.96	2.33	2.63	384,964	6,457,921	AA	5.11
2013	-0.69	-1.03	-2.02	2.39	2.71	240,210	6,581,242	AA	4.64
2012	6.61	6.25	4.21	2.33	2.38	199,785	5,290,475	AA	4.75
2011	7.85	7.53	7.84	3.05	2.78	179,578	4,131,202	AA	5.04
2010	7.88	7.54	6.54	4.31	4.16	134,809	3,584,719	AA	4.63

Notes and Disclosures

Longfellow Investment Management Co., LLC ("LIM") is an independent registered investment advisor that manages a variety of fixed income and alternative investment strategies, primarily for institutional clients in the United States. LIM claims compliance with the Global Investment Performance Standards (GIPS®). To receive a complete list and description of LIM's composites, please contact LIM Marketing at (617) 695-3504, write to Longfellow Investment Management Co., LLC, 20 Winthrop Square, Boston, MA 02110, or email Info@LongfellowIM.com.

The Core Bond Composite includes all fee-paying, discretionary portfolios with comparable objectives and strategies (including accounts no longer with the firm). The Core Bond Composite is limited to U.S. dollar denominated, investment grade bonds. The overall portfolio durations are +/- 0.5 of the benchmark duration, typically between 4.0 to 5.0. Past performance is not an indication of future results. Investment in the strategy involves the possible loss of principal.

Gross of fees performance returns are presented before management and custodial fees but after all trading expenses. Net of fees performance returns reflect the standard strategy fee applied to each portfolio in the composite. The gross and net of fee performance of the composite as well as the total return of the benchmark, includes the reinvestment of income generated by the securities held in the strategy and benchmark. Beginning January 1, 2012 the management fee schedule is: assets >$25 million: 0.35% on the first $50 million, 0.25% on the next $50 million, 0.20% on the next $25 million and 0.15% on the balance. Fees are further detailed in LIM's Form ADV Part II.

The benchmark is the Bloomberg Barclays U.S. Aggregate Index[1] which does not incur management fees, transaction costs or other expenses associated with a managed account.

[1]Formerly known as Barclays U.S. Aggregate Index

Outlook – 2nd Quarter 2020

Monetary and fiscal policy update

- On March 15, the Fed reduced rates for the second time in March in an attempt to bolster the markets
  - Rates cut by 100 bps to a target range of 0 – 0.25%, levels last seen from Q4 2008 to Q3 2015
  - Announced Quantitative Easing (QE) measures and a host of additional programs to facilitate the flow of capital, to support general liquidity, and bank lending.
- Approved the $2.2tn CARES Act, the largest U.S. fiscal stimulus package ever approved to provide aid to individuals, families, small businesses, and several of the most directly impacted industries

Market environment

- Both equity and bond markets had historic episodes of volatility. Stocks declined at a record rate before partially recovering. Treasury bond yields hit record lows, while corporate bond credit spreads widened to levels not seen since the financial crisis. For a brief period, liquidity all but disappeared.
- A battle over oil production led to opening of the taps by the Saudis, driving prices down and further exacerbating the risk sell-off as the U.S. oil patch hit the skids.

Opportunities and risks

- A recession is no doubt in the cards. Unemployment is rising rapidly, consumer spending dropping, and confidence will suffer across the board.
  - Ultimately, the length and severity of the downturn will be influenced by several variables, the most important being the resolution of the pandemic itself.
- The Fed has acted boldly and swiftly to support the markets and the financial system. An alphabet soup of liquidity and credit support programs have been put into place, and some estimate that the Fed's balance sheet will expand to as much as $5 trillion by year-end.

Summary positioning moving forward

- Our judgment is that although a recovery may not get underway until 2021, credit valuations have approached levels where investors in quality paper will be rewarded.
  - This will require a longer-term perspective, however, as we will no doubt continue to experience heavy volatility in the short run.
- As investors who have long sought to achieve excess returns through extensive but judicious use of "spread sectors," current returns are of course very disappointing. We do believe, though, that the correct approach is to stay the course.

Fixed Income Composite Statistics—as of 3/31/2020

Portfolio Statistics as of March 31, 2020

LIM Strategies		Duration (Yrs)	Avg Life (Yrs)	YTM (%)	Avg Qlty	12 Mo Turnover	Inception
Enhanced Cash	**LIM**	**1.62**	**1.77**	**2.32**	**Aa3**	**30**	**7/1/2005**
	ICE BofAML 0-3 Yr UST	*1.40*	*1.43*	*0.20*	*Aaa*	*N/A*	
Short Duration	**LIM**	**1.90**	**2.11**	**1.98**	**Aa2**	**35**	**7/1/1986**
	ICE BofAML 1-3 Yr UST	*1.83*	*1.86*	*0.23*	*Aaa*	*N/A*	
Intermediate Duration	**LIM**	**3.89**	**4.45**	**2.10**	**Aa2**	**37**	**9/1/1997**
	BC Int Gov/Credit	*3.93*	*4.27*	*1.36*	*Aa2*	*N/A*	
Core	**LIM**	**5.95**	**7.95**	**2.49**	**Aa2**	**53**	**10/1/2006**
	BB US Agg	*5.92*	*8.03*	*1.76*	*Aa2*	*N/A*	
Core Plus	**LIM**	**6.07**	**8.13**	**2.72**	**Aa3**	**47**	**7/1/2009**
	BB US Agg	*5.92*	*8.03*	*1.76*	*Aa2*	*N/A*	

Total Return (%) as of March 31, 2020

LIM Strategies		3 mos	YTD	1 yr	3 yrs	5 yrs	10 yrs	Inception	5 Yr Std Dev
Enhanced Cash	**Gross**	**0.30%**	**0.30%**	**2.87%**	**2.17%**	**1.74%**	**1.53%**	**2.56%**	**0.65**
	Net	*0.25%*	*0.25%*	*2.75%*	*2.06%*	*1.62%*	*1.40%*	*2.42%*	
	ICE BofAML 0-3 Yr UST	2.26%	2.26%	4.65%	2.52%	1.71%	1.25%	2.09%	0.87
Short Duration	**Gross**	**0.64%**	**0.64%**	**3.54%**	**2.56%**	**2.06%**	**1.99%**	**5.22%**	**0.98**
	Net	*0.60%*	*0.60%*	*3.38%*	*2.39%*	*1.87%*	*1.81%*	*4.94%*	
	ICE BofAML 1-3 Yr UST	2.81%	2.81%	5.42%	2.70%	1.85%	1.43%	4.51%	1.16
Intermediate Duration	**Gross**	**1.26%**	**1.26%**	**5.72%**	**3.74%**	**2.93%**	**3.58%**	**5.12%**	**2.17**
	Net	*1.21%*	*1.21%*	*5.51%*	*3.52%*	*2.71%*	*3.36%*	*4.86%*	
	BB Int Gov/Credit	2.40%	2.40%	6.88%	3.79%	2.76%	3.14%	4.61%	2.33
Core	**Gross**	**1.57%**	**1.57%**	**7.40%**	**4.57%**	**3.52%**	**4.38%**	**5.12%**	**3.07**
	Net	*1.51%*	*1.51%*	*7.12%*	*4.28%*	*3.23%*	*4.07%*	*4.82%*	
	BB US Agg	3.15%	3.15%	8.93%	4.82%	3.36%	3.88%	4.29%	3.07
Core Plus	**Gross**	**1.01%**	**1.01%**	**6.97%**	**4.53%**	**3.61%**	**4.46%**	**4.96%**	**3.08**
	Net	*0.93%*	*0.93%*	*6.63%*	*4.20%*	*3.27%*	*4.09%*	*4.58%*	
	BB US Agg	3.15%	3.15%	8.93%	4.82%	3.36%	3.88%	4.29%	3.07

Longfellow Investment Management Co., LLC (LIM) is an independent investment management firm established in 1986. LIM manages a variety of fixed income mandates and merger arbitrage hedge fund strategies, primarily for U.S. based institutional clients. The supplemental information on this page compliments the full GIPS compliant presentation for each strategy. Additional information regarding the firm, its policies and the procedures for calculating and reporting performance returns, and a complete listing and description of all composites are available upon request. To receive this information, contact Marketing at 617.695.3504 or write to Longfellow Investment Management Co., LLC 20 Winthrop Square, Boston, MA 02110 or info@longfellowinvestment.com.

Gross composite returns reflect the deduction of trading expenses but do not reflect the deduction of LIM's management fees. Realized, or net, returns would be gross returns less all fees and expenses incurred by the client. The management fee schedules are described in part II of Form ADV and is based on the size of the account. As an example, a $25 million account that produced a 5-year annualized gross return of 5.25% would have produced a net return of 5.00% over the same period. Monthly, time weighted gross returns are calculated for each portfolio and include re-investment of income. Beginning 1/93, all portfolios are beginning of period asset value weighted to form the monthly composite return. Prior to that, the composite was equal weighted. Any terminated accounts remain in the composite. The performance data represents past performance. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic and political conditions.

LIM

Historical Composite Performance

Longfellow Fixed Income Composites - Total Returns (%)

LIM Strategies		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Enhanced Cash	**Gross**	**3.61**	**1.81**	**1.14**	**1.35**	**0.87**	**0.98**	**0.71**	**1.68**	**1.08**	**2.56**
	Net	*3.51*	*1.70*	*1.04*	*1.22*	*0.73*	*0.83*	*0.57*	*1.54*	*0.94*	*2.42*
	% of Firm Assets	*20*	*26*	*15*	*9*	*8*	*9*	*10*	*9*	*10*	*8*
Short Duration	**Gross**	**4.15**	**1.91**	**1.47**	**1.65**	**1.06**	**1.27**	**0.83**	**2.28**	**2.34**	**3.69**
	Net	*4.00*	*1.74*	*1.27*	*1.44*	*0.86*	*1.07*	*0.64*	*2.09*	*2.16*	*3.50*
	% of Firm Assets	*17*	*18*	*6*	*9*	*13*	*10*	*11*	*16*	*23*	*25*
Intermediate Duration	**Gross**	**6.77**	**1.28**	**2.87**	**2.37**	**1.57**	**3.60**	**-0.11**	**5.80**	**5.70**	**7.17**
	Net	*6.55*	*1.06*	*2.65*	*2.15*	*1.32*	*3.36*	*-0.33*	*5.57*	*5.48*	*6.93*
	% of Firm Assets	*12*	*11*	*6*	*7*	*6*	*7*	*8*	*10*	*14*	*15*
Core	**Gross**	**8.86**	**0.30**	**4.16**	**3.02**	**1.69**	**5.69**	**-0.69**	**6.61**	**7.85**	**7.88**
	Net	*8.56*	*0.02*	*3.87*	*2.75*	*1.40*	*5.35*	*-1.03*	*6.25*	*7.53*	*7.54*
	% of Firm Assets	*27*	*22*	*13*	*13*	*13*	*6*	*4*	*4*	*4*	*4*
Core Plus	**Gross**	**9.25**	**0.14**	**4.48**	**3.59**	**1.85**	**5.61**	**-0.31**	**6.74**	**7.04**	**8.29**
	Net	*8.91*	*-0.18*	*4.14*	*3.24*	*1.50*	*5.22*	*-0.70*	*6.32*	*6.63*	*7.86*
	% of Firm Assets	*7*	*8*	*8*	*8*	*4*	*3*	*1*	*2*	*2*	*1*
Total Firm Assets ($mm)		**$11,311**	**$10,886**	**$11,124**	**$9,192**	**$7,747**	**$6,458**	**$6,581**	**$5,290**	**$4,131**	**$3,585**
Indices - Total Return (%)											
BAML 0-3 Year U.S. Treasury		*3.25*	*1.70*	*0.55*	*0.78*	*0.43*	*0.46*	*0.30*	*0.35*	*1.17*	*1.83*
BAML 1-3 Year U.S. Treasury		*3.55*	*1.58*	*-0.25*	*0.88*	*0.54*	*0.62*	*0.36*	*0.43*	*1.55*	*2.35*
BC Int Gov/Credit		*6.8*	*0.88*	*-0.2*	*2.08*	*1.07*	*3.13*	*-0.86*	*3.89*	*5.80*	*5.89*
BC U.S. Aggregate		*8.72*	*0.01*	*0.39*	*2.65*	*0.55*	*5.96*	*-2.02*	*4.21*	*7.84*	*6.54*

Longfellow Investment Management Co., LLC is an independent investment management firm established in 1986. Longfellow manages a variety of fixed income mandates and merger arbitrage hedge fund strategies, primarily for U.S. based institutional clients. The supplemental information on this page compliments the full GIPS compliant presentation for each strategy. Additional information regarding the firm, its policies and the procedures for calculating and reporting performance returns, and a complete listing and description of all composites are available upon request. To receive this information, contact Marketing at 617.695.3504 or write to Longfellow Investment Management Co., LLC 20 Winthrop Square, Boston, MA 02110 or info@longfellowinvestment.com. Gross composite returns reflect the deduction of trading expenses but do not reflect the deduction of Longfellow's management fees. Realized, or net, returns would be gross returns less all fees and expenses incurred by the client. The management fee schedules are described in part II of Form ADV and is based on the size of the account. As an example, a $25 million account that produced a 5 year annualized gross return of 5.25% would have produced a net return of 5.00% over the same period. Monthly, time weighted gross returns are calculated for each portfolio and include re-investment of income. Beginning 1/93, all portfolios are beginning of period asset value weighted to form the monthly composite return. Prior to that, the composite was equal weighted. Any terminated accounts remain in the composite. The performance data represents past performance. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic and political conditions.

Presenter Biographies

Akshay Anand, CFA
Principal, Portfolio Manager
AA@LongfellowIM.com

Mr. Anand serves as a portfolio manager on LIM's Core and Core Plus strategies and leads the firm's structured securities team. Prior to joining LIM in 2008, Akshay worked at Babson Capital as an associate director on the Core and High Yield Teams where he was responsible for fixed income portfolio analytics. He previously worked at The Mentor Network as a senior treasury analyst responsible for debt and liquidity management. Akshay also has two years of public accounting experience. He holds a Master of Business Administration from Rochester Institute of Technology and a Bachelor of Commerce (Honors) in accounting from the University of Delhi. Akshay is a CFA charterholder, a member of the CFA Institute, and a member of the CFA Society Boston.

Corinne Larson, CTP
Principal, Director of Marketing and Client Service
CL@LongfellowIM.com

Ms. Larson serves as the Director of Marketing and Client Service. Her responsibilities include managing new and existing client activity and consultant relationships. Corinne joined LIM in 2013 with over 30 years of professional experience. Most recently, she was a Vice President and Senior Relationship Manager at State Street Global Advisors where she was responsible for institutional clients across asset classes. Previous roles also include Associate Director at Bear, Stearns & Co., Vice President at MBIA Asset Management, and Assistant Director at the Government Finance Officers Association (GFOA). Corinne is the chair of the board for Economic Mobility Pathways (EMPath) and a former advisor to GFOA's Standing Committee on Retirement and Benefits Administration. She holds the designation of Certified Treasury Professional through the Association for Financial Professionals and has more than 10 years of experience in corporate treasury management. She received her Bachelor of Arts from Indiana University and her Master of Business Administration from the University of Notre Dame.

Barbara J. McKenna, CFA
Managing Principal, Portfolio Manager
BJM@LongfellowIM.com

Ms. McKenna serves as a managing principal and oversees LIM's investment process. Barbara leads longer strategies, including Core and Core Plus and several U.S. government mandates. From 2005-2015, she also led Intermediate Fixed Income. Prior to joining LIM in 2005, she was a director and senior portfolio manager at State Street Research (SSR), responsible for $14 billion of institutional fixed income accounts. As director of corporate bond strategy, Barbara was responsible for the development and implementation of corporate bond strategy across all fixed income mandates. Prior to joining SSR, she was a director and portfolio manager at Standish, Ayer & Wood. Barbara has also held portfolio management and investment banking positions at BayBank and Massachusetts Capital Resource Company, a private capital firm. She has over 30 years of experience and holds a Master of Science and Bachelor of Science in finance from Boston College. Barbara is a CFA charterholder, a member of the CFA Institute, and a member of the CFA Society Boston. She is also a board trustee of the American Beacon Funds and a member of the N.E. Financial Services CEO Roundtable and the Federal Reserve Bank of Boston's External Diversity Advisory Council.

Team: Summary Biographies

Key Investment Team Members

Name (Principals in bold)	Title	Focus	Education	Prior Experience	Experience Industry	Experience LIM
Samir Agarwal	Analyst	Credit	MBA, Boston College BBA, New Delhi Institute of Management	WNS Global Service ARC Financial Services	2008	2015
Akshay Anand, CFA	Principal Portfolio Manager	Securitized	MBA, Rochester Institute of Technology B. Com, (H) University of Delhi	Babson Capital The Mentor Network	2004	2008
Andrew Bail	Principal Portfolio Manager/Senior Analyst	Absolute Return	MBA, MSF, Boston College BA, Johns Hopkins University	JP Morgan Babson Capital Flatley Company	2006	2016
Aileen Barbiellini Amidei, CFA	Analyst	Credit	PGC, Helsinki University of Technology BA, Ateneo de Manila University	State Street Global Advisors State Street Bank and Trust Co. Federal Home Loan Bank of Boston	2000	2018
Kathleen Barton, CFA	Analyst	Intermediate Duration	BA, Mount Holyoke College	The Fournier Law Firm (intern)	2010	2010
Craig Carlozzi, CFA	Portfolio Manager	Absolute Return Credit	BS, Miami University	BulwarkBay Investment Group, LLC MAST Capital Management, LLC Bank of America Merrill Lynch	2000	2019
Mark Duffy, CFA	Analyst	Credit	MSF, Bentley University BA, University of Connecticut	Green Century Capital Management Inc. Bentley University	2012	2016
Gaurav Jagani, CFA	Analyst	Securitized	BA, University of Virginia	Morgan Stanley Ellington Management Group	2013	2018
Raymond Kubiak, CFA	Portfolio Manager Senior Analyst	Municipals	MSF, Boston College MPA, University of Pittsburgh BA, Canisius College	Standish Mellon/SA&W Lee Munder Capital Moody's Investor Services	1984	2010
Barbara J. McKenna, CFA	Managing Principal Portfolio Manager	Credit	MSF, BS, Boston College	State Street Research Standish, Ayer & Wood (SA&W) BayBank Investment Management	1985	2005
Heather Meehan, CFA	Trader	Credit/High Yield	MBA, University of New Hampshire BS, Pennsylvania State University	Fidelity Investments JP Morgan	2005	2017
Ryan Nelson, CFA	Principal Portfolio Manager	Municipals	BA, Franklin & Marshall College	Columbia Management Eaton Vance	2007	2016
George Noyes, CFA	Chairman Emeritus Portfolio Manager	Generalist/HNW	MBA, Babson College BA, University of Vermont	Hanover Strategic Management Standish Mellon/SA&W	1970	2009
Sarah Scranton, CFA	Portfolio Manager	Credit	BBA, University of Michigan	Chittenden & Co., Inc. Freedom Capital Management, LLC	1988	2018
David C. Stuehr, CFA	Principal Portfolio Manager/Senior Analyst	Credit/High Yield	MSF, Boston College MA, BS, Bowling Green University	Hanover Strategic Management Seneca Capital Standish Mellon/ SA&W	1982	2009
Scott Supple, CAIA	Principal Trader	Securitized	BS, Westfield State University	Charter Oak Insurance Teradyne Inc. Rice McVaney Comm.	2014	2014

Team: Summary Biographies

Key Investment Team Members (Continued)

Name (Principals in bold)	Title	Focus	Education	Prior Experience	Experience Industry	Experience LIM
Adriano Taylor-Escribano	Analyst/Trader	Securitized	MSc, University of St. Andrews	Loomis, Sayles & Company L.P.	2012	2017
John E. Villela, CFA	Managing Principal Portfolio Manager	Credit	MBA, BA, Boston College	State Street Research Standish Mellon/SA&W Lehman Brothers HSBC	1995	2005
Brendan Whittington	Portfolio Manager	Absolute Return/Credit	BS, University of Virginia	BulwarkBay Investment Group, LLC Lazard Frères & Co Freeman & Co	2010	2019

Non-Investment Team Managers

Name (Principals in bold)	Title	Focus	Education	Prior Experience	Experience Industry	Experience LIM
Anuja Batra	Principal Finance & Human Resources Officer	Finance and HR	MBA, Babson College B. Com, Rajasthan University	Endowment Solutions, LLC Engineering Principles, LLC National Patient Safety Foundation	1997	2015
Conner Brown	Client Service Manager	Client Service	MBA, BS, Drexel University	Mercer Investments	2010	2017
Corinne Larson, CTP	Principal Director of Marketing and Client Service	Marketing and Client Service	MBA, University of Notre Dame BA, Indiana University	State Street Global Advisors Bear, Stearns & Co. MBIA Asset Management Government Finance Officers Association	1985	2013
Michelle L. Martin	Principal Chief Compliance Officer	Compliance	BS, Northeastern University	State Street Bank & Trust Co. IBM	1986	1988
Allison Morse	Relationship Manager	Marketing and Client Service	MBA, Boston College BS, University of Vermont	State Street Global Advisors State Street Global Markets	2012	2019
Kevin Papadopoulos	Investment Technology Manager	Investment Technology	BS, Northeastern University	GMO LLC State Street Global Advisors	2011	2017
Mike Timmermans	Principal General Counsel Assistant Chief Compliance Officer	Compliance	JD, New England School of Law BA, Muhlenberg College	State Street Global Advisors Atlantis Technology Corporation Intrepid Legal Strategies	2010	2015
Mary Van Mameren	Principal Director of Portfolio Operations	Operations	MBA, MSF Northeastern Unviersity BA, Wellesley College	JP Morgan International Fund Services	1999	2011
Mariusz Zielinski, CAIA	Portfolio Operations Manager	Operations	MSLA, Harvard University BS, Pennsylvania State University	Harvard Management Company State Street Global Advisors	1997	2018

LIM

Disclosures

Records of all investment analyses performed by Longfellow Investment Management Co., LLC in the management of clients' accounts are available at the firm's office. Past performance is no indication of future results. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic, and political conditions.

The preceding presentation is being used in a one-on-one setting and should not be used for any other purposes. The information contained in this presentation is accurate as of the date of the presentation but is subject to change based at LIM's discretion.

The PRI is an investor initiative in partnership with UNEP Finance Initiative and the United Nations Global Compact. In order to become an investment management signatory, need to commit to six initiatives which include: incorporating ESG issues into investment analysis and decision-making processes; to be active owners and to incorporate ESG issues into ownership policies and practices; to seek appropriate disclosure on ESG issues by the entities in which the firm invests client assets; to promote acceptance and implementation of the Principles within the investment industry; to work with the PRI Secretariat and other signatories to enhance their effectiveness in implementing the Principles; and to report on the firm's activities and progress towards implementing the Principles. These principles are voluntary and aspirational. For most signatories, the commitments are a work-in-progress and provide direction for their responsible investment efforts rather than a checklist with which to comply. The only mandatory requirements are paying an annual membership fee and committing to completing the PRI Reporting Framework on an annual basis. PRI signatory status does not imply any level of skill or investment acumen nor does it imply a rating, favorable or unfavorable, of the signatories or of signatory status. It does not constitute investment advice, is not a recommendation, offer or solicitation to buy or sell any securities, or to adopt any investment strategy and should not be relied upon as such. LIM's status as a PRI signatory is year to year and LIM is currently a PRI signatory.

The Task Force on Climate-Related Financial Disclosures (TCFD) was set up in 2015 by the Financial Stability Board (FSB) to develop voluntary, consistent climate-related financial risk disclosures for use by companies, banks, and investors in providing information to stakeholders. Longfellow is a supporter of this initiative and its broad goals. The Financial Stability Board is an international body that monitors and makes recommendations about the global financial system. It promotes international financial stability through coordinating national financial authorities and international standard-setting bodies as they work towards developing a strong regulatory, supervisory and other financial sector policies. The FSB's charter was endorsed by members of the G20. In order to become a TCFD supporter, a firm needs to notify the TCFD that it is a supporter. There are no fees or other commitments. Being a TCFD supporter does not imply any level of skill or investment acumen nor does it imply a rating, favorable or unfavorable, of the TCFD. It does not constitute investment advice, is not a recommendation, offer or solicitation to buy or sell any securities, or to adopt any investment strategy and should not be relied upon as such. LIM's status as a TCFD supporter is subject to change. LIM is currently a TCFD supporter.

Award Disclosures

PSN Top Guns:

LIM was awarded Top Guns Manager of the Decade Status by PSN for 2014, 2015, 2016, 2017, 2018, and 2019 for the PSN Intermediate Fixed Income Universe. In addition, LIM was awarded Top Guns Manager of the Decade Status for 2016, 2017, and 2018 for both the PSN Core Fixed Income Universe and the PSN U.S. Fixed Income Universe, and in 2019 for PSN Core Plus Fixed Income Universe.

All of the PSN universes were created using the information collected through the PSN investment manager questionnaire and use only gross of fee returns. Mutual fund and commingled fund products are not included in the universe. PSN Top Guns investment managers must claim that they are GIPS compliant. Each additional criteria listed below was applied for the respective 10-year period ending December 31. Products must have an R-Squared of 0.80 or greater relative to the style benchmark. LIM's Intermediate Duration Composite returns were used in this analysis. Moreover, products must have returns greater than the style benchmark and standard deviation less than the style benchmark. At this point, the top ten performers for the respective 10-year period ending December 31 become the PSN Top Guns Manager of the Decade.

The PSN Intermediate Fixed Income Universe was comprised of 266 firms and 610 products for 2014, 265 firms and 608 products for 2015, 267 firms and 622 products for 2016, 262 firms and 624 products for 2017, 257 firms and 624 products for 2018, and 246 firms and 603 products for 2019. In all three years, 1.6% these products were named "Top Guns Manager of the Decade." The PSN Core Fixed Income Universe was comprised of 197 firms and 407 products for 2016, 196 firms and 392 products for 2017, and 193 firms and 391 products for 2018. Of these products, 2.5% were named "Top Guns Manager of the Decade." The PSN U.S. Fixed Income Universe was comprised of 384 firms and 1,615 products, 368 firms and 1,649 products for 2017, and 362 firms and 1656 products for 2018. Of these products, 0.6% were named "Top Guns Manager of the Decade." The PSN Core Plus Fixed Income Universe was comprised of 106 firms and 144 products for 2019. Of these products, 6.9% were named "Top Guns Manager of the Decade."

PSN Top Guns 6 Stars:

The PSN universes were created using the information collected through the PSN Top Guns investment managers must claim that they are GIPs compliant. Products must have an R-Squared of 0.80 or greater relative to the style benchmark for the recent five year period. LIM's Short Duration Composite returns were used in this analysis. Moreover, products must have returns greater than the style benchmark for the three latest three-year rolling periods. After that, only the products with a five-year standard deviation equal or less than the median standard deviation for the peer group are included. The Products with top ten information ratios for the latest five-year period ending December 31, 2018 then become the 6 Star Top Guns.

These ratings may not be representative of any one client's experience, since the ratings are based on composite performance and statistics. Past performance is no indication of future results. It should not be assumed that future investments will be profitable or that future results will equal historical performance. Performance will fluctuate based on varying market, economic and political conditions.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C9

Topic: **First Quarter 2020 Investment Performance Analysis and Fourth Quarter 2019 Private Markets & Real Assets Review**

Attendees: Leandro Festino, Managing Principal - Meketa Investment Group
Aaron Lally, Principal - Meketa Investment Group
Sidney Kawanguzi, Associate – Meketa Investment Group

Discussion: Meketa and Investment Staff will review investment performance.

MEKETA INVESTMENT GROUP

Dallas Police & Fire Pension System

March 31, 2020

Quarterly Review

MEKETA

Agenda

1. Executive Summary
2. 1Q20 Review
3. Disclaimer, Glossary, and Notes

Executive Summary
As of March 31, 2020

MEKETA

Dallas Police and Fire Pension System

Executive Summary

DPFP 1Q20 Flash Summary

Category	Results	Notes
Total Fund Performance Return	Negative	-6.9%
Performance vs. Policy Index	Outperformed	-6.9% vs. -12.6%
Performance vs. Peers[1]	Outperformed	-6.9% vs. -13.1% median (1st percentile in peer group)
Asset Allocation vs. Targets	Additive	Overweight real estate and underweight public equities helped the most
Safety Reserve Exposure	Sufficient	$270 million (approximately 14%)
Active Management	Mixed	5/10 beat benchmarks
DPFP Public Markets vs. 60/40[2]	Outperformed	-12.6% vs. -14.0%
DPFP Public Markets vs. Peers	Outperformed	-12.6% vs. -13.5% median (40th percentile in peer group)
Compliance with Targets	No	Below minimums in EM Equity

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

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

DPFP Trailing One-Year Flash Summary

Category	Results	Notes
Total Fund Performance Return	Negative	-0.8%
Performance vs. Policy Index	Outperformed	-0.8% vs. -5.5%
Performance vs. Peers[1]	Outperformed	-0.8% vs. -5.8% median (2nd percentile in peer group)
Asset Allocation vs. Targets	Additive	Overweight private equity and real estate, and underweight public equities helped
Active Management	Detractive	4/10 beat benchmarks
DPFP Public Markets vs. 60/40[2]	Underperformed	-6.1% vs. -5.9%
DPFP Public Markets vs. Peers	Underperformed	-6.1% vs. -5.8% median (54th percentile in peer group)

[1] InvestorForce Public DB $1-5 billion net.
[2] Performance of Total Fund excluding private market investments relative to a 60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index.

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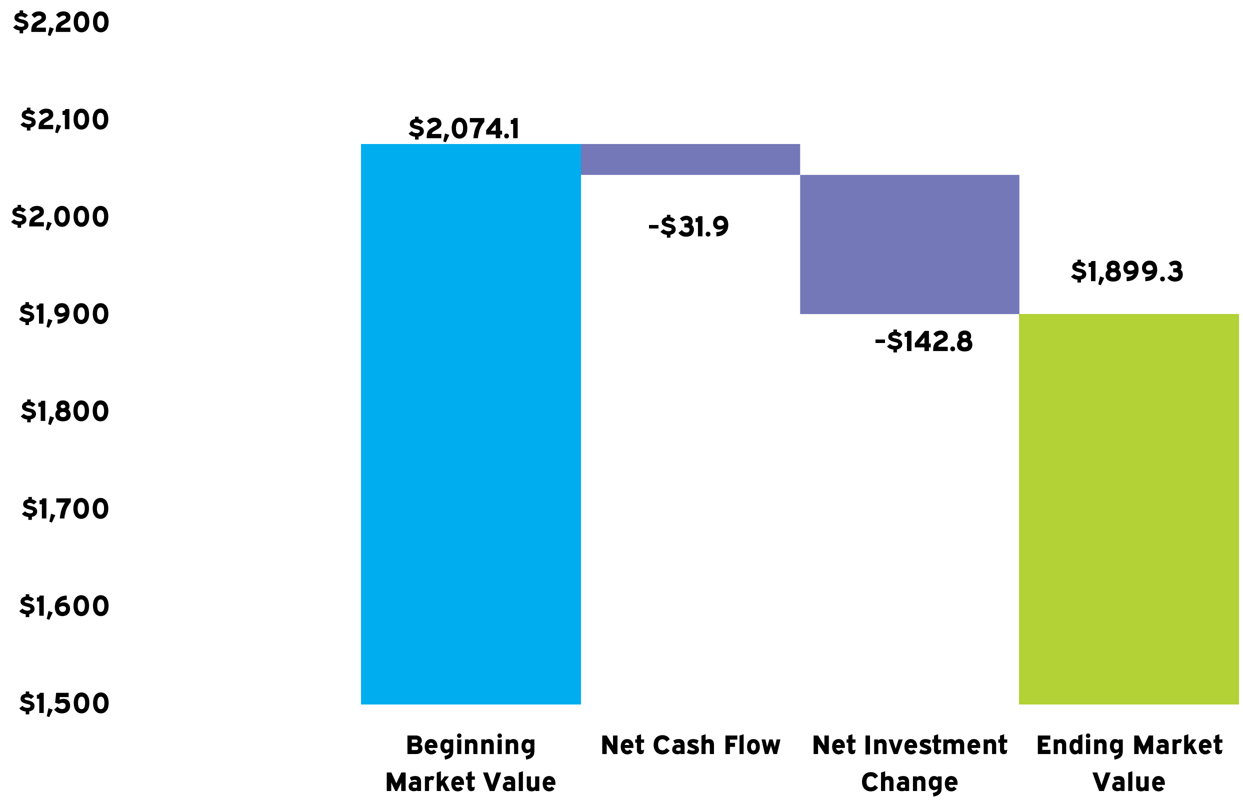
DPFP Trailing Three-Year Flash Summary

Category	Results	Notes
Total Fund Performance Return	Positive	2.2%
Performance vs. Policy Index	Outperformed	2.2% vs. 1.8%
Performance vs. Peers[1]	Outperformed	2.2% vs. 2.1% median (49th percentile in peer group)
Active Management	Mixed	Favorable in public equity, private debt and infrastructure detractive in fixed income, private equity, natural resources and real estate
DPFP Public Markets vs. 60/40[2]	Underperformed	1.4% vs. 2.1%
DPFP Public Markets vs. Peers	Underperformed	1.4% vs. 2.1% median (78th percentile in peer group)

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

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

Quarterly Change in Market Value



- Total market value decreased due to withdrawals for benefits and negative investment performance.

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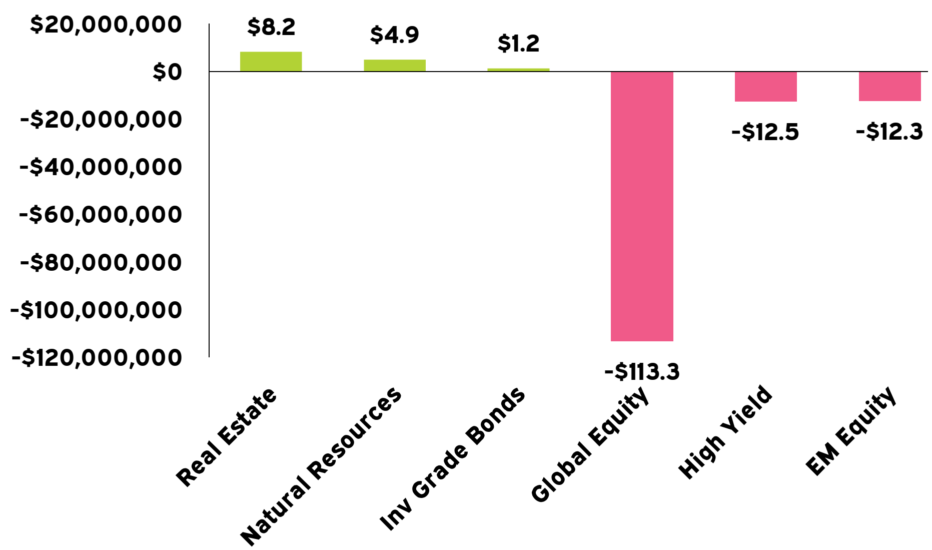
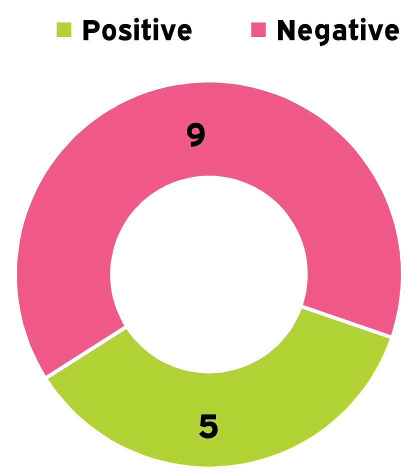
Dallas Police and Fire Pension System

Executive Summary

Quarterly Absolute Performance

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





- Asset class performance was mostly negative during the quarter.
- In absolute terms, Real Estate appreciated the most, gaining approximately $8.2 million in market value.
- Global equity depreciated the most, losing approximately $113.3 million in value.

[1] Estimated Gain/ Loss calculated by multiplying beginning market value by quarterly performance.

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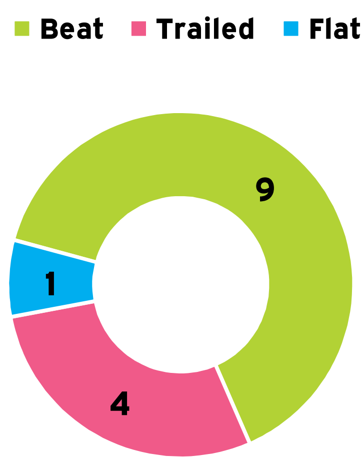
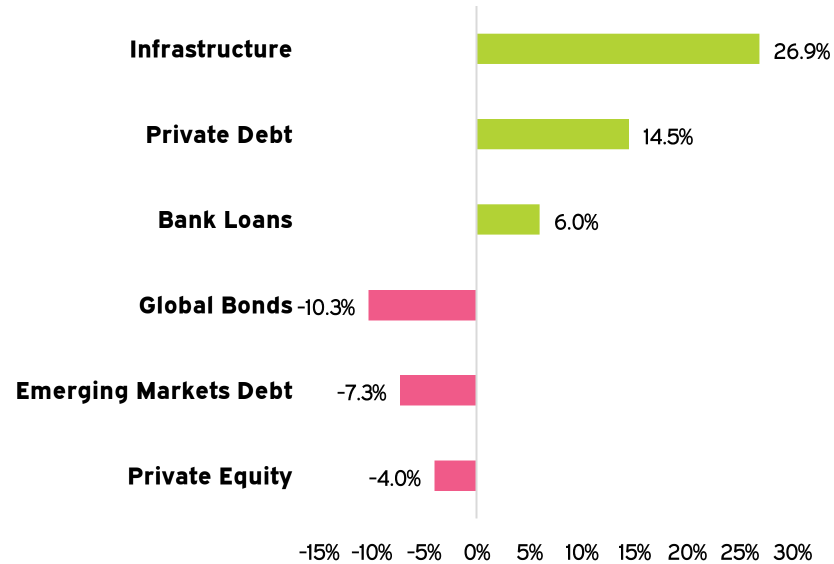
Dallas Police and Fire Pension System

Executive Summary

Quarterly Relative Performance

Asset Classes vs Benchmarks	Asset Classes vs Benchmarks Top Three and Bottom Three





- Over the quarter, Infrastructure, Private Debt and Bank Loans had the best relative performance.
- Global Bonds, Emerging Markets Debt and Private Equity had the worst relative performance in the quarter.
- Nine of fourteen asset classes delivered positive relative performance versus respective benchmarks.

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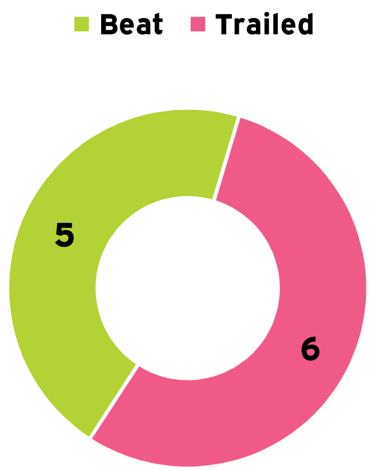
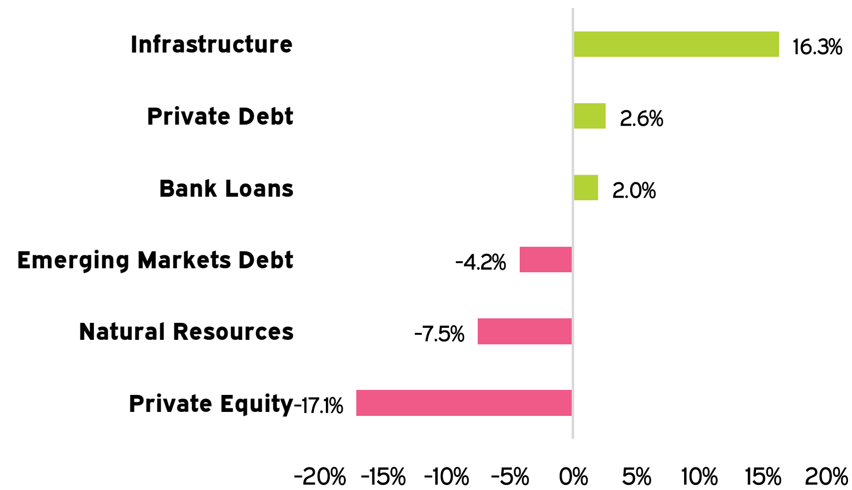
Dallas Police and Fire Pension System

Executive Summary

Trailing 3 Year Relative Performance

Asset Classes vs Benchmarks[1]	Asset Classes vs Benchmarks Top Three and Bottom Three





- Five of the eleven asset classes with trailing three-year return history delivered positive relative performance versus respective benchmarks.
- Over the trailing three-year period, the best relative performance came from Infrastructure, Private Debt and Bank Loans.
- Private equity, Natural Resources and Emerging Markets Debt had the worst relative performance over the trailing three-year period.

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[1] Analysis excludes asset classes with a performance history of less than three years.

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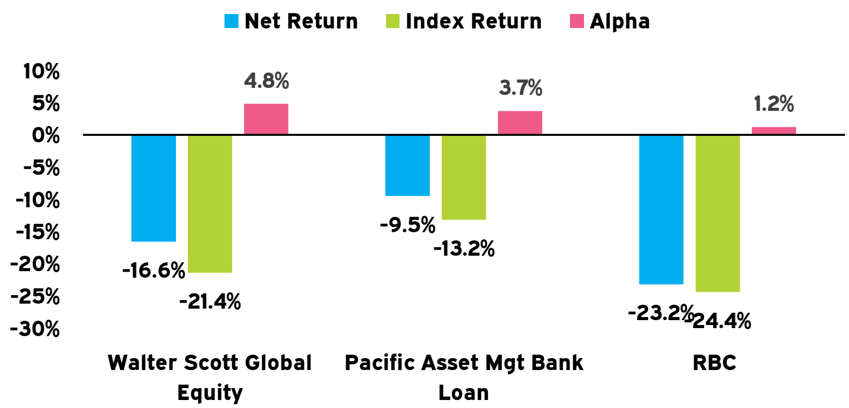
Dallas Police and Fire Pension System

Executive Summary

Public Manager Alpha

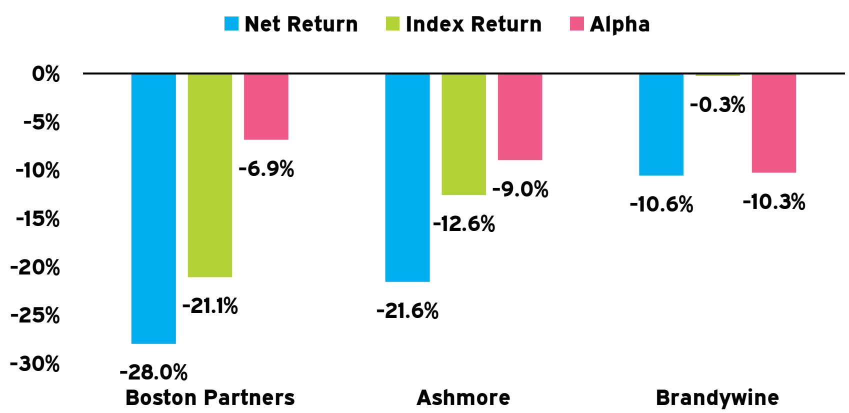
Top Three Outperformers in Quarter



$223 million

Combined exposure

Bottom Three Underperformers in Quarter



$188 million

Combined exposure

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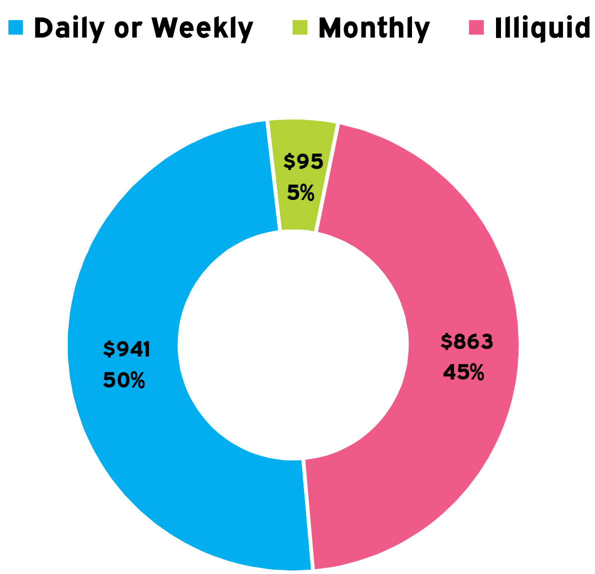
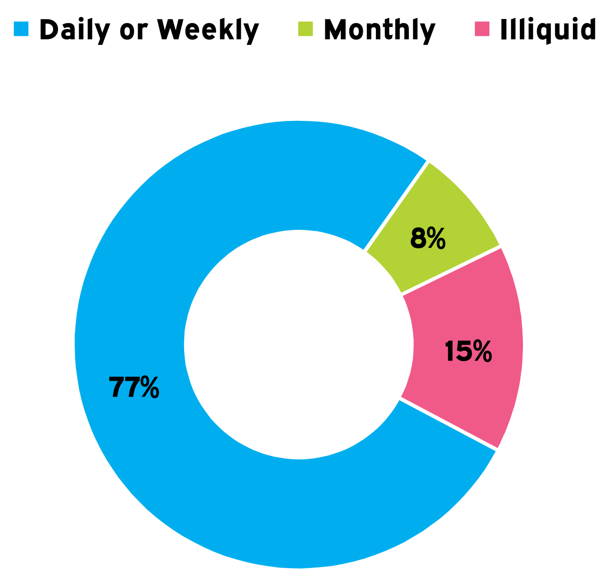
Dallas Police and Fire Pension System

Executive Summary

Liquidity Exposure
As of March 31, 2020

Exposure ($ mm)	Targets





- Approximately 45% of the System's assets are illiquid versus 15% of the target allocation.

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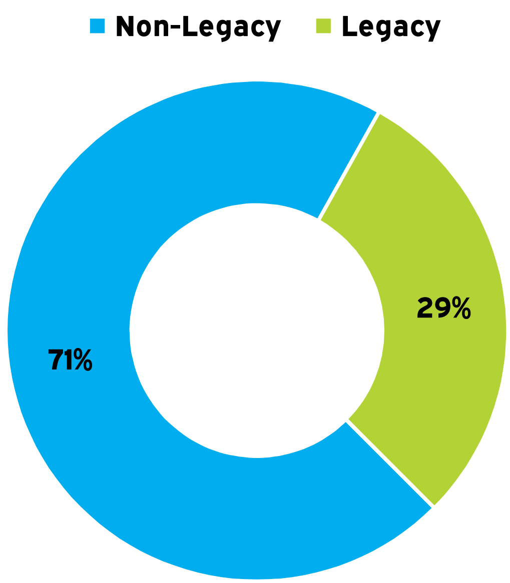
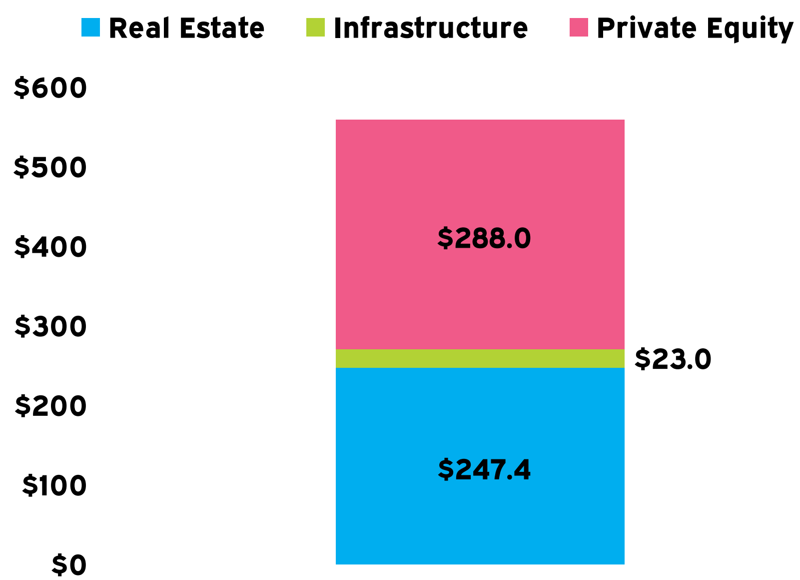
Dallas Police and Fire Pension System

Executive Summary

Legacy Assets





$558 million

Net Asset Value of Legacy Assets

1Q20 Review

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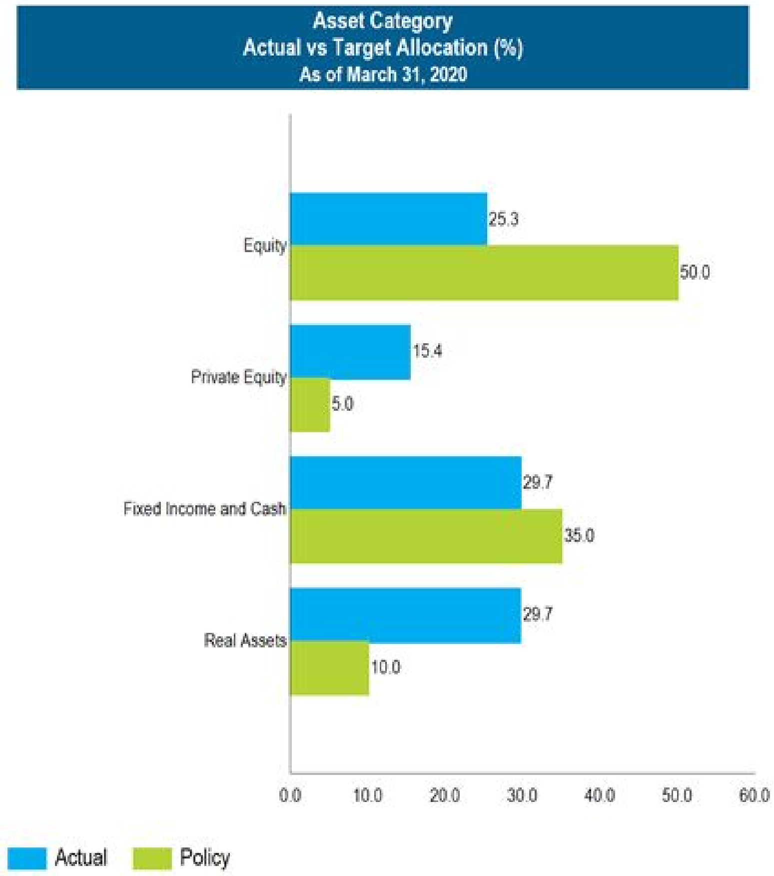
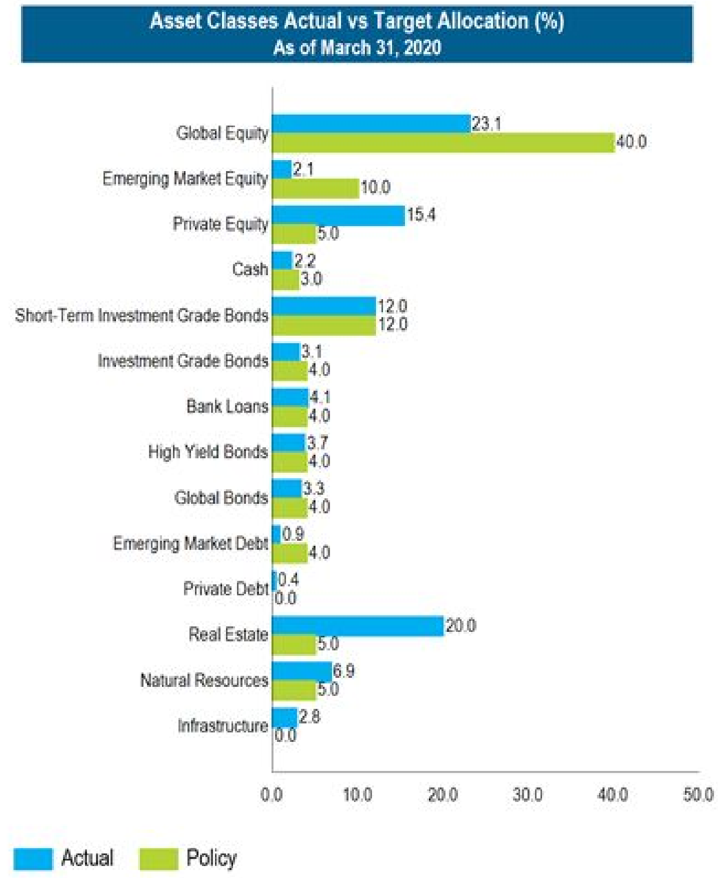
Dallas Police & Fire Pension System

DPFP | As of March 31, 2020





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Dallas Police & Fire Pension System

DPFP | As of March 31, 2020

Allocation vs. Targets and Policy	Current Balance	Current Allocation	Policy	Policy Range	Within IPS Range?
Equity	**$479,665,907**	**25%**	**55%**		
Global Equity	$438,835,171	23%	40%	22% - 48%	Yes
Emerging Market Equity	$40,830,736	2%	10%	3% - 12%	No
Private Equity	$292,167,281	15%	5%		
Fixed Income and Cash	**$564,082,566**	**30%**	**35%**		
Cash	$42,597,027	2%	3%	0% - 5%	Yes
Short-Term Investment Grade Bonds	$227,522,743	12%	12%	5% - 15%	Yes
Investment Grade Bonds	$58,484,014	3%	4%	2% - 6%	Yes
Global Bonds	$62,262,169	3%	4%	2% - 6%	Yes
Bank Loans	$78,561,436	4%	4%	2% - 6%	Yes
High Yield Bond	$70,871,338	4%	4%	2% - 6%	Yes
Emerging Market Debt	$16,609,937	1%	4%	0% - 6%	Yes
Private Debt	$7,173,901	0%	0%		
Real Assets	**$563,430,206**	**30%**	**10%**		
Real Estate	$379,764,195	20%	5%		
Natural Resources	$130,335,348	7%	5%		
Infrastructure	$53,330,663	3%	0%		
Total	**$1,899,345,960**	**100%**	**100%**		

As of 3/31/2020 the Safety Reserve exposure was approximately $270.1 million (14%).
Rebalancing ranges are not established for illiquid assets (Private Equity, Private Debt, Natural Resources, Infrastructure and Real Estate)

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Dallas Police & Fire Pension System

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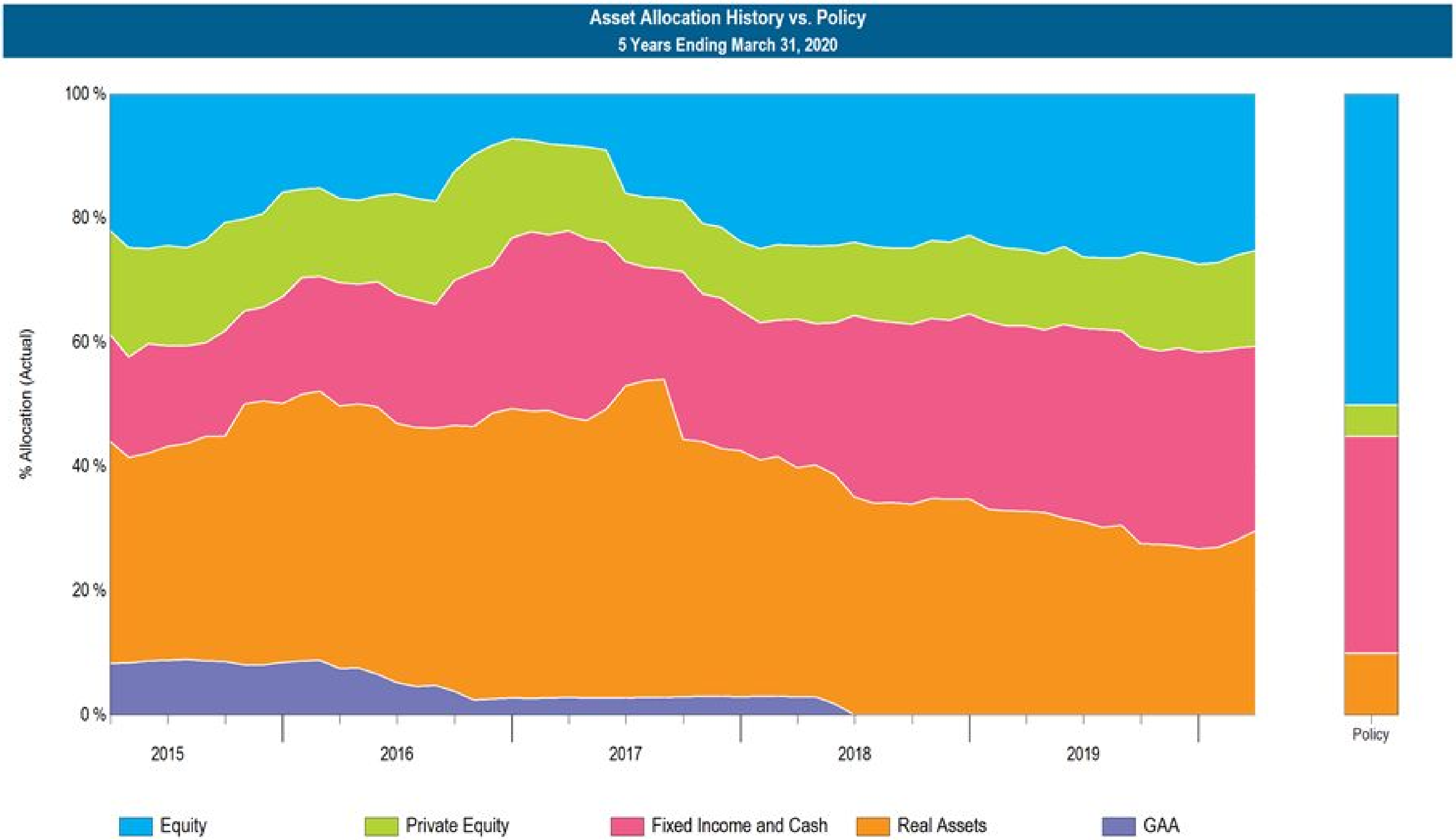

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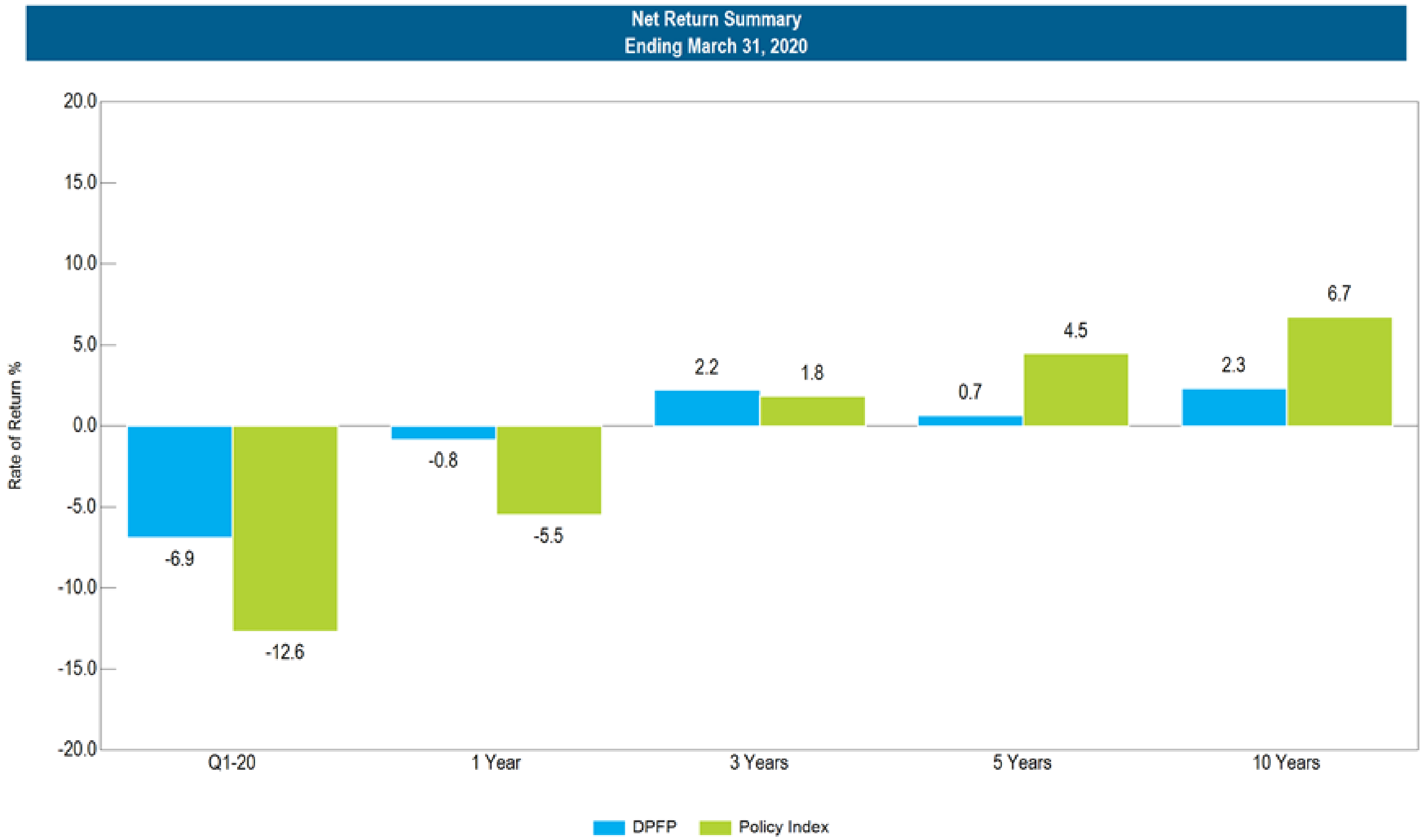
Dallas Police & Fire Pension System

DPFP | As of March 31, 2020



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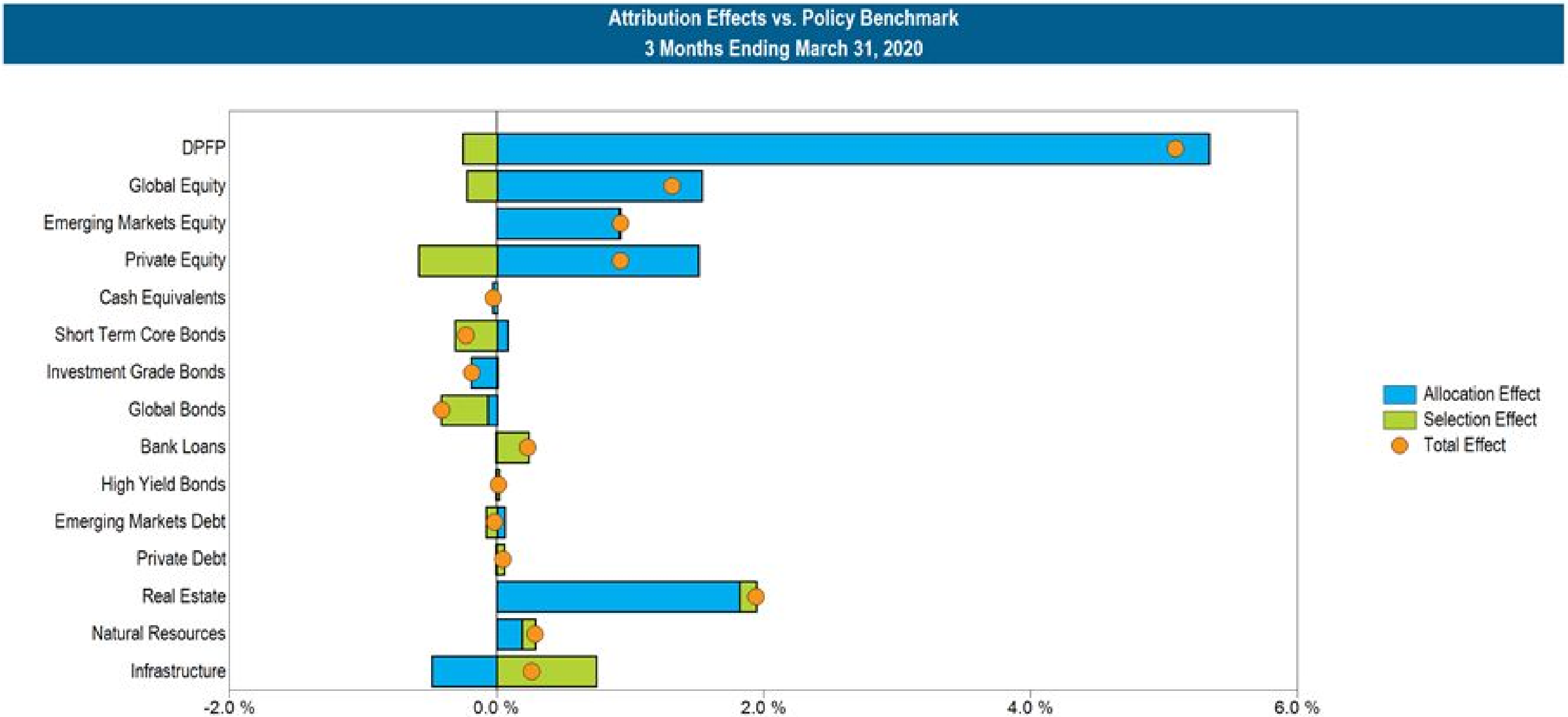
Dallas Police & Fire Pension System

DPFP | As of March 31, 2020



Attribution Summary 3 Months Ending March 31, 2020	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**-7.0%**	**-12.1%**	**5.1%**	**-0.2%**	**5.3%**	**5.1%**

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

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Dallas Police & Fire Pension System

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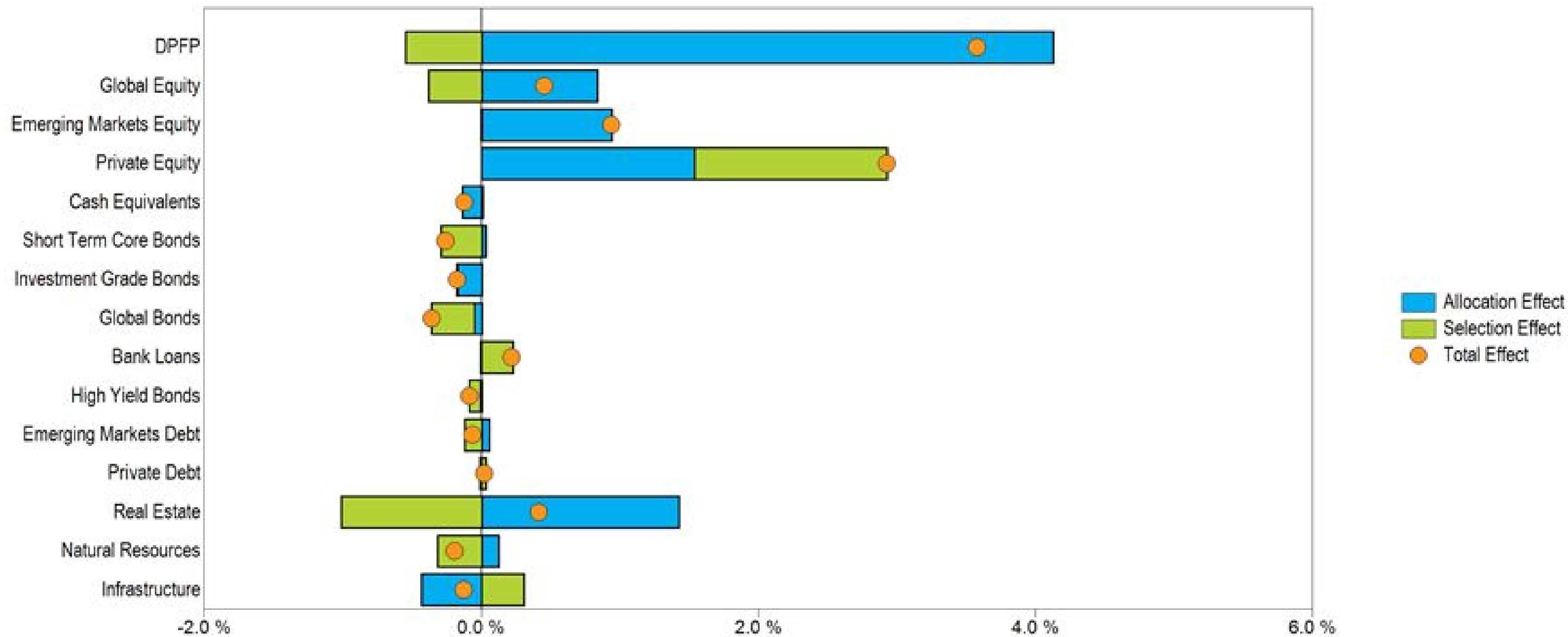
Attribution Effects vs. Policy Benchmark
1 Year Ending March 31, 2020



Attribution Summary
1 Year Ending March 31, 2020

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
Total	**-0.9%**	**-4.5%**	**3.6%**	**-0.5%**	**4.1%**	**3.6%**

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

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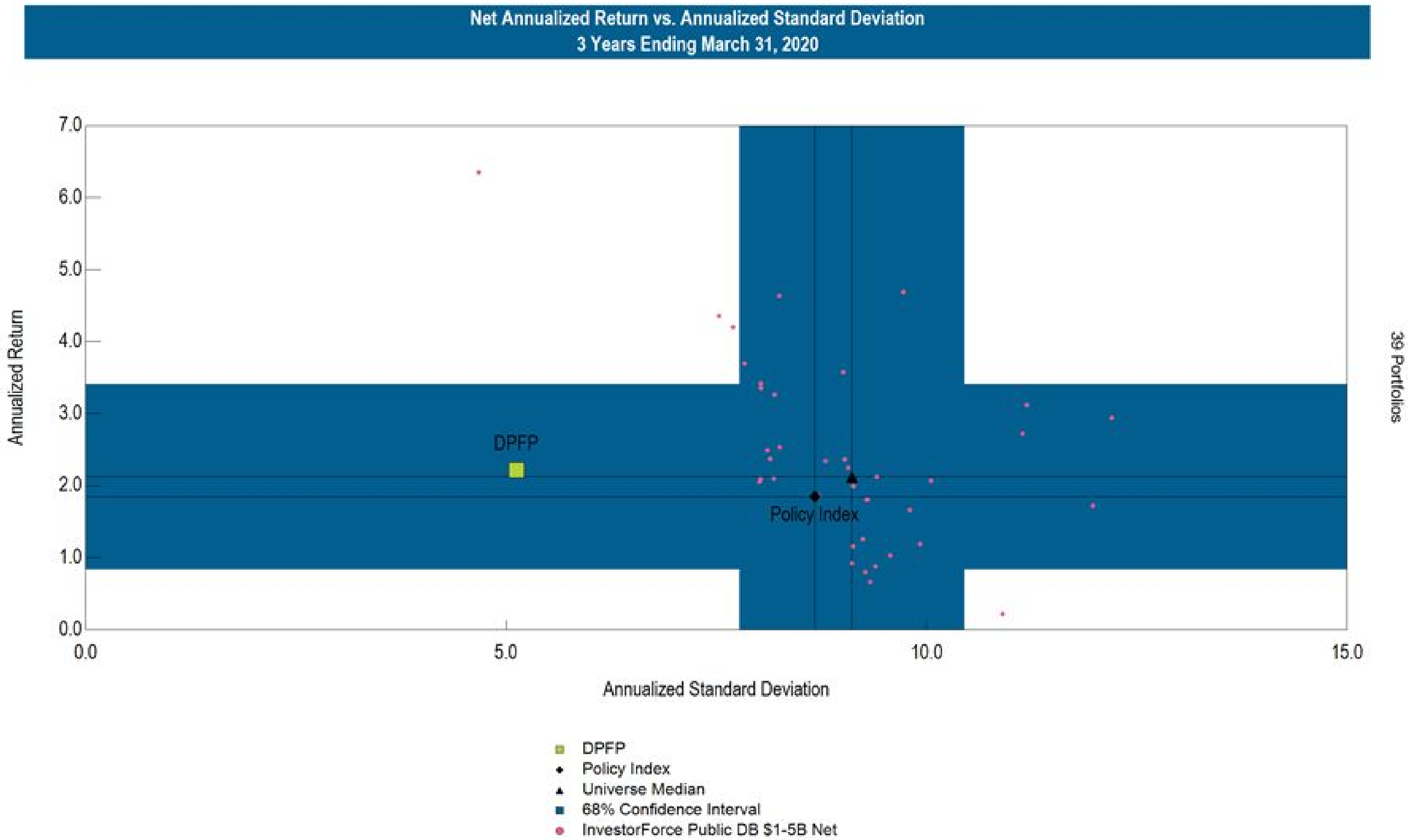

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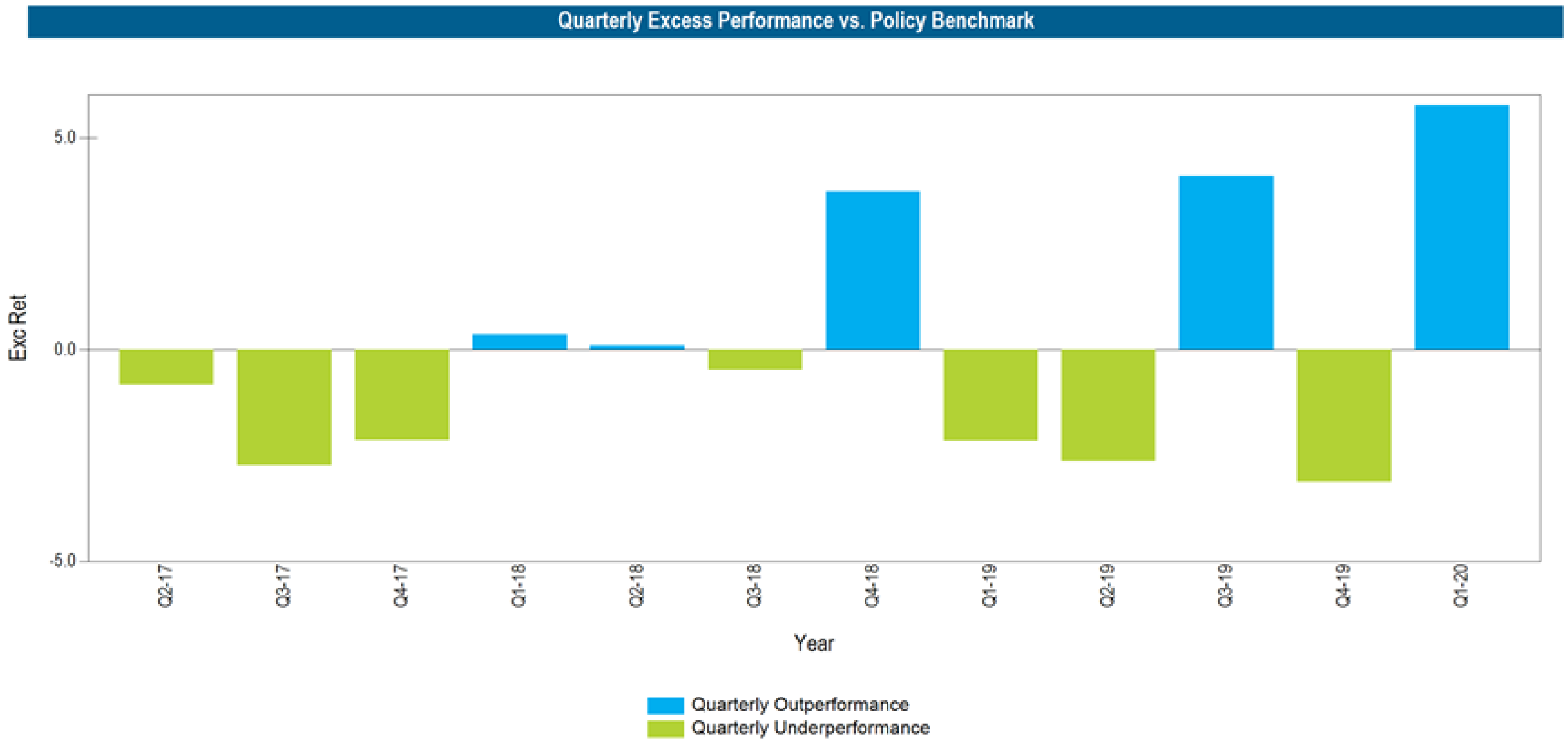
Dallas Police & Fire Pension System

DPFP | As of March 31, 2020



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DPFP | As of March 31, 2020

Total Fund Correlation Matrix
1 Year Ending March 31, 2020

	DPFP	Policy Index	60% MSCI ACWI/40% Barclays Global Agg
DPFP	1.00	--	--
Policy Index	0.79	1.00	--
60% MSCI ACWI/40% Barclays Global Agg	0.75	0.99	1.00

Total Fund Correlation Matrix
3 Years Ending March 31, 2020

	DPFP	Policy Index	60% MSCI ACWI/40% Barclays Global Agg
DPFP	1.00	--	--
Policy Index	0.83	1.00	--
60% MSCI ACWI/40% Barclays Global Agg	0.80	0.99	1.00

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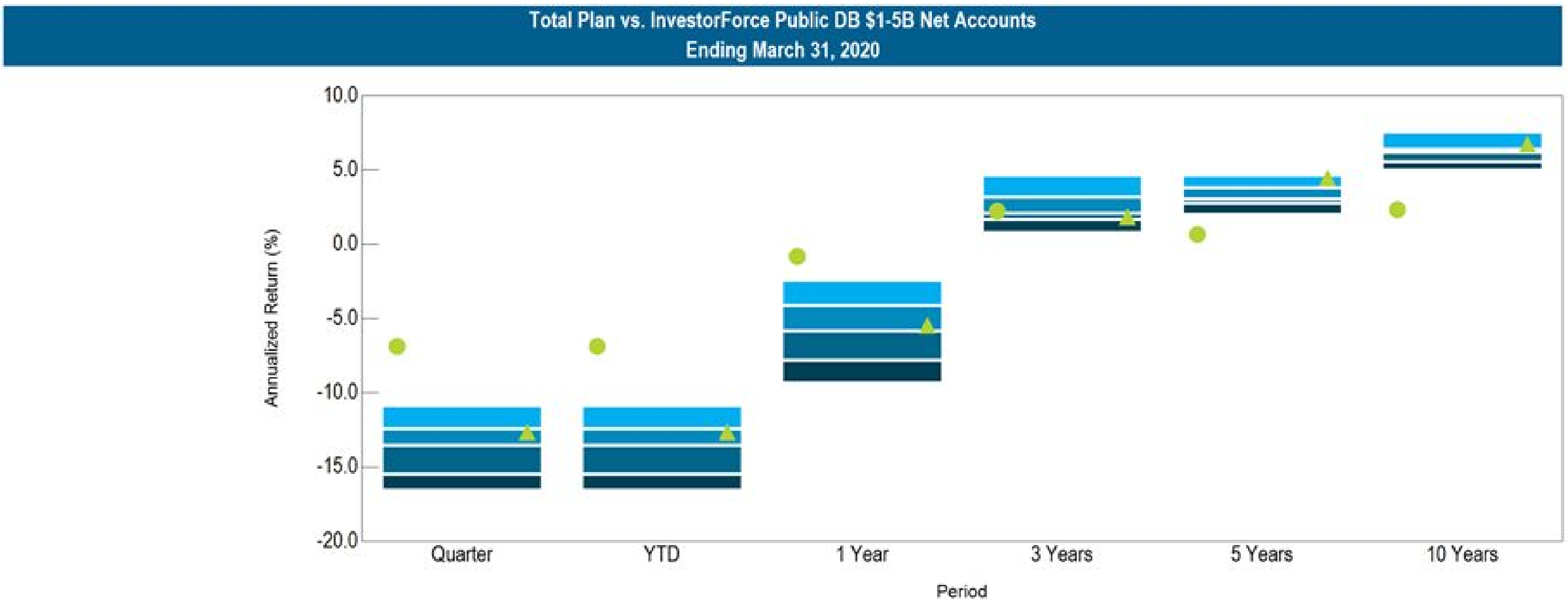
Dallas Police & Fire Pension System

DPFP | As of March 31, 2020



	Return (Rank)											
5th Percentile	-10.9		-10.9		-2.4		4.6		4.6		7.5	
25th Percentile	-12.4		-12.4		-4.1		3.2		3.8		6.4	
Median	-13.5		-13.5		-5.8		2.1		3.1		6.2	
75th Percentile	-15.5		-15.5		-7.8		1.7		2.8		5.6	
95th Percentile	-16.5		-16.5		-9.3		0.8		2.0		5.0	
# of Portfolios	39		39		39		39		38		34	
DPFP	-6.9	(1)	-6.9	(1)	-0.8	(2)	2.2	(49)	0.7	(99)	2.3	(99)
Policy Index	-12.6	(40)	-12.6	(40)	-5.5	(43)	1.8	(67)	4.5	(10)	6.7	(17)

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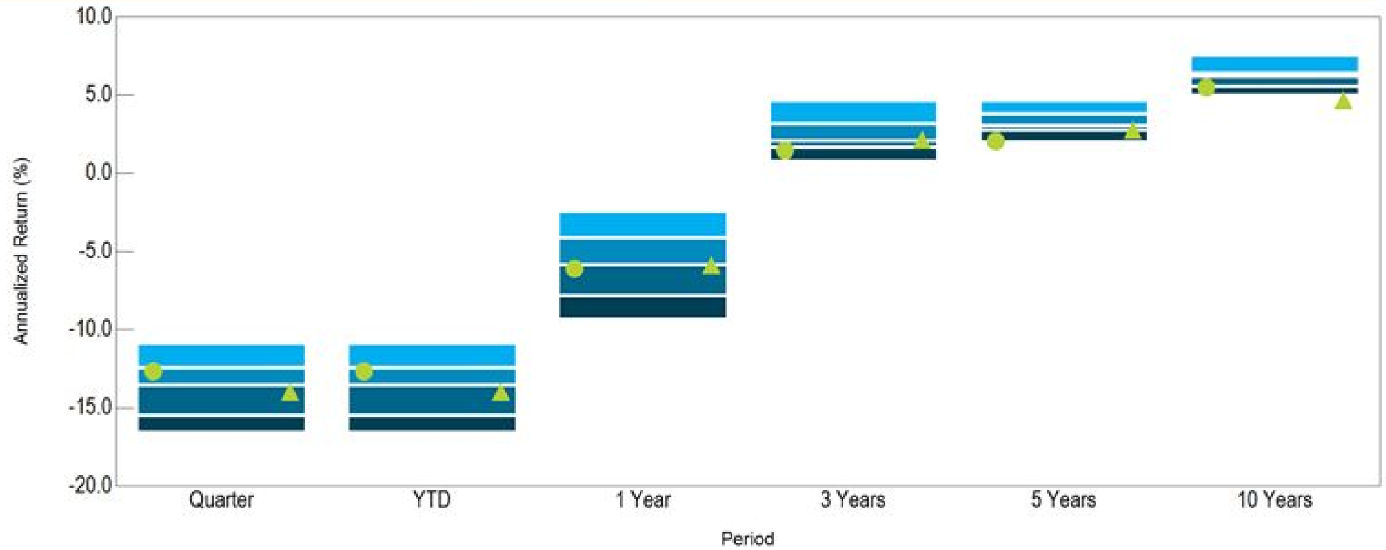
Dallas Police & Fire Pension System

DPFP | As of March 31, 2020



	Return (Rank)											
	Quarter		YTD		1 Year		3 Years		5 Years		10 Years	
5th Percentile	-10.9		-10.9		-2.4		4.6		4.6		7.5	
25th Percentile	-12.4		-12.4		-4.1		3.2		3.8		6.4	
Median	-13.5		-13.5		-5.8		2.1		3.1		6.2	
75th Percentile	-15.5		-15.5		-7.8		1.7		2.8		5.6	
95th Percentile	-16.5		-16.5		-9.3		0.8		2.0		5.0	
# of Portfolios	39		39		39		39		38		34	
● Total Fund ex Privates	-12.7	(41)	-12.7	(41)	-6.1	(54)	1.5	(78)	2.0	(94)	5.5	(80)
▲ 60% MSCI ACWI IMI Net/40% Barclays Global	-14.0	(57)	-14.0	(57)	-5.9	(51)	2.1	(50)	2.8	(77)	4.7	(97)

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Dallas Police & Fire Pension System

DPFP | As of March 31, 2020

Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DPFP	**1,899,345,960**	**100.0**	**-6.9**	**-0.8**	**2.2**	**0.7**	**2.3**	**5.6**	**Jun-96**
Policy Index			*-12.6*	*-5.5*	*1.8*	*4.5*	*6.7*	*--*	*Jun-96*
Allocation Index			*-7.0*	*-0.5*	*3.7*	*5.3*	*6.7*	*6.9*	*Jun-96*
Total Fund Ex Private Markets			*-12.7*	*-6.1*	*1.5*	*2.0*	*5.5*	*4.9*	*Jun-96*
60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index			*-14.0*	*-5.9*	*2.1*	*2.8*	*4.7*	*5.4*	*Jun-96*
Global Equity	**438,835,171**	**23.1**	**-22.0**	**-12.2**	**2.4**	**3.5**	**6.9**	**4.9**	**Jul-06**
MSCI ACWI IMI Net USD			*-22.4*	*-12.7*	*0.8*	*2.4*	*5.8*	*4.4*	*Jul-06*
Emerging Markets Equity	**40,830,736**	**2.1**	**-23.2**	**-17.1**	**--**	**--**	**--**	**-8.8**	**Jan-18**
MSCI Emerging Market IMI Net			*-24.4*	*-18.9*	*-2.5*	*-0.9*	*0.5*	*-11.7*	*Jan-18*
Private Equity	**292,167,281**	**15.4**	**-0.2**	**23.3**	**-3.2**	**-2.3**	**-1.1**	**0.8**	**Oct-05**
Cambridge Associates US All PE (1 Qtr Lag)			*3.8*	*14.0*	*13.9*	*12.0*	*13.8*	*12.7*	*Oct-05*
Cash Equivalents	**42,597,027**	**2.2**	**0.4**	**2.1**	**1.8**	**1.5**	**--**	**1.5**	**Apr-15**
91 Day T-Bills			*0.4*	*1.9*	*1.7*	*1.1*	*0.6*	*1.1*	*Apr-15*
Short Term Core Bonds	**227,522,743**	**12.0**	**0.2**	**3.0**	**--**	**--**	**--**	**2.3**	**Jun-17**
BBgBarc US Treasury 1-3 Yr TR			*2.8*	*5.4*	*2.7*	*1.8*	*1.4*	*2.9*	*Jun-17*
Investment Grade Bonds	**58,484,014**	**3.1**	**3.3**	**--**	**--**	**--**	**--**	**3.3**	**Oct-19**
BBgBarc US Aggregate TR			*3.1*	*8.9*	*4.8*	*3.4*	*3.9*	*3.3*	*Oct-19*
Global Bonds	**62,262,169**	**3.3**	**-10.6**	**-5.1**	**0.1**	**0.6**	**--**	**1.7**	**Dec-10**
BBgBarc Global Aggregate TR			*-0.3*	*4.2*	*3.5*	*2.6*	*2.5*	*2.0*	*Dec-10*
Bank Loans	**78,561,436**	**4.1**	**-7.2**	**-3.9**	**1.3**	**2.5**	**--**	**2.7**	**Jan-14**
Credit Suisse Leveraged Loan			*-13.2*	*-9.5*	*-0.7*	*1.2*	*--*	*1.6*	*Jan-14*
High Yield Bonds	**70,871,338**	**3.7**	**-14.6**	**-11.7**	**-1.6**	**1.1**	**--**	**4.2**	**Dec-10**
BBgBarc Global High Yield TR			*-15.0*	*-10.0*	*-0.6*	*2.3*	*5.1*	*4.4*	*Dec-10*
Emerging Markets Debt	**16,609,937**	**0.9**	**-21.6**	**-17.9**	**-4.3**	**0.2**	**--**	**1.0**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM			*-14.3*	*-6.6*	*-0.1*	*1.6*	*--*	*2.0*	*Dec-10*
Private Debt	**7,173,901**	**0.4**	**-0.1**	**1.7**	**4.0**	**--**	**--**	**-1.8**	**Jan-16**
Barclays Global High Yield +2%			*-14.6*	*-8.2*	*1.4*	*4.3*	*--*	*5.6*	*Jan-16*

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Asset Class Performance Summary (Net)

	Market Value ($)	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Real Estate	**379,764,195**	**20.0**	**2.2**	**1.2**	**4.2**	**-0.8**	**-3.2**	**3.7**	**Mar-85**
NCREIF Property (1-quarter lagged)			*1.6*	*6.4*	*6.7*	*8.2*	*10.2*	*8.0*	*Mar-85*
Natural Resources	**130,335,348**	**6.9**	**3.9**	**-0.2**	**-1.6**	**0.6**	**--**	**4.1**	**Dec-10**
NCREIF Farmland Total Return Index 1Q Lag			*2.3*	*4.8*	*5.9*	*7.0*	*11.0*	*11.6*	*Dec-10*
Infrastructure	**53,330,663**	**2.8**	**-2.3**	**-8.6**	**13.1**	**6.5**	**--**	**5.6**	**Jul-12**
S&P Global Infrastructure TR USD			*-29.2*	*-21.1*	*-3.2*	*-0.4*	*4.2*	*4.0*	*Jul-12*

[1] Please see the Appendix for composition of the Custom Benchmarks. [2] As of 3/31/2020, the Safety Reserve exposure was approximately $270.1 million (14%). [3] All private market data is one quarter lagged, unless otherwise noted. [4] Lone Star Funds 9/30/2019 valuation used and Huff Alternative Fund 6/30/2019 valuation used.

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Trailing Net Performance

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
DPFP	**1,899,345,960**	**100.0**	**--**	**-6.9**	**-0.8**	**2.2**	**0.7**	**2.3**	**5.6**	**Jun-96**
Policy Index				*-12.6*	*-5.5*	*1.8*	*4.5*	*6.7*	*--*	*Jun-96*
Allocation Index				*-7.0*	*-0.5*	*3.7*	*5.3*	*6.7*	*6.9*	*Jun-96*
Total Fund Ex Private Markets				*-12.7*	*-6.1*	*1.5*	*2.0*	*5.5*	*4.9*	*Jun-96*
60% MSCI ACWI IMI Net/40% Barclays Global Aggregate Index				*-14.0*	*-5.9*	*2.1*	*2.8*	*4.7*	*5.4*	*Jun-96*
InvestorForce Public DB $1-5B Net Rank				*1*	*2*	*49*	*99*	*99*	*75*	*Jun-96*
Total Equity	**771,833,188**	**40.6**	**40.6**	**-14.4**	**-0.6**	**-1.6**	**-1.3**	**--**	**3.6**	**Dec-10**
MSCI ACWI IMI Net USD				*-22.4*	*-12.7*	*0.8*	*2.4*	*5.8*	*5.2*	*Dec-10*
Public Equity	**479,665,907**	**25.3**	**62.1**	**-21.5**	**-12.0**	**2.2**	**3.4**	**6.9**	**4.9**	**Jul-06**
MSCI ACWI IMI Net USD				*-22.4*	*-12.7*	*0.8*	*2.4*	*5.8*	*4.4*	*Jul-06*
eV All Global Equity Net Rank				*52*	*51*	*38*	*38*	*38*	*39*	*Jul-06*
Global Equity	**438,835,171**	**23.1**	**91.5**	**-22.0**	**-12.2**	**2.4**	**3.5**	**6.9**	**4.9**	**Jul-06**
MSCI ACWI IMI Net USD				*-22.4*	*-12.7*	*0.8*	*2.4*	*5.8*	*4.4*	*Jul-06*
eV All Global Equity Net Rank				*55*	*52*	*37*	*37*	*38*	*39*	*Jul-06*
Boston Partners Global Equity Fund	109,073,406	5.7	24.9	-28.0	-21.1	--	--	--	-6.8	Jul-17
MSCI World Net				*-21.1*	*-10.4*	*1.9*	*3.2*	*6.6*	*0.6*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*57*	*56*	*--*	*--*	*--*	*71*	*Jul-17*
Manulife Global Equity Strategy	108,808,968	5.7	24.8	-22.9	-12.3	--	--	--	-1.4	Jul-17
MSCI ACWI Net				*-21.4*	*-11.3*	*1.5*	*2.8*	*5.9*	*0.1*	*Jul-17*
eV Global Large Cap Value Eq Net Rank				*30*	*20*	*--*	*--*	*--*	*24*	*Jul-17*

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

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Invesco (fka OFI) Global Equity	110,321,965	5.8	25.1	-20.7	-10.3	4.2	4.1	7.7	4.7	Oct-07
MSCI ACWI Net				*-21.4*	*-11.3*	*1.5*	*2.8*	*5.9*	*2.7*	*Oct-07*
eV Global Large Cap Growth Eq Net Rank				*93*	*94*	*92*	*88*	*64*	*50*	*Oct-07*
Walter Scott Global Equity Fund	110,630,833	5.8	25.2	-16.8	-5.9	7.8	7.4	8.2	8.3	Dec-09
MSCI ACWI Net				*-21.4*	*-11.3*	*1.5*	*2.8*	*5.9*	*6.2*	*Dec-09*
eV Global Large Cap Growth Eq Net Rank				*54*	*79*	*51*	*42*	*56*	*58*	*Dec-09*
Emerging Markets Equity	**40,830,736**	**2.1**	**8.5**	**-23.2**	**-17.1**	**--**	**--**	**--**	**-8.8**	**Jan-18**
MSCI Emerging Market IMI Net				*-24.4*	*-18.9*	*-2.5*	*-0.9*	*0.5*	*-11.7*	*Jan-18*
eV Emg Mkts Equity Net Rank				*29*	*37*	*--*	*--*	*--*	*14*	*Jan-18*
RBC Emerging Markets Equity	40,830,736	2.1	100.0	-23.2	-17.1	--	--	--	-8.8	Jan-18
MSCI Emerging Market IMI Net				*-24.4*	*-18.9*	*-2.5*	*-0.9*	*0.5*	*-11.7*	*Jan-18*
eV Emg Mkts Equity Net Rank				*29*	*37*	*--*	*--*	*--*	*14*	*Jan-18*
Private Equity	**292,167,281**	**15.4**	**37.9**	**-0.2**	**23.3**	**-3.2**	**-2.3**	**-1.1**	**0.8**	**Oct-05**
Cambridge Associates US All PE (1 Qtr Lag)				*3.8*	*14.0*	*13.9*	*12.0*	*13.8*	*12.7*	*Oct-05*
Total Fixed Income and Cash	**564,082,566**	**29.7**	**29.7**	**-4.6**	**-1.5**	**1.9**	**1.5**	**5.0**	**4.8**	**Jul-06**
BBgBarc Multiverse TR				*-1.1*	*3.5*	*3.4*	*2.7*	*2.6*	*3.7*	*Jul-06*
eV All Global Fixed Inc Net Rank				*33*	*48*	*46*	*70*	*15*	*36*	*Jul-06*
Cash Equivalents	**42,597,027**	**2.2**	**7.6**	**0.4**	**2.1**	**1.8**	**1.5**	**--**	**1.5**	**Apr-15**
91 Day T-Bills				*0.4*	*1.9*	*1.7*	*1.1*	*0.6*	*1.1*	*Apr-15*

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

[2] Lone Star Funds 9/30/2019 valuation used and Huff Alternative Fund 6/30/2019 valuation used.

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	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Public Fixed Income	**514,311,637**	**27.1**	**91.2**	**-5.0**	**-1.8**	**2.0**	**2.9**	**--**	**4.5**	**Dec-10**
BBgBarc Multiverse TR				*-1.1*	*3.5*	*3.4*	*2.7*	*2.6*	*2.1*	*Dec-10*
eV All Global Fixed Inc Net Rank				*37*	*48*	*44*	*19*	*--*	*17*	*Dec-10*
Short Term Core Bonds	**227,522,743**	**12.0**	**44.2**	**0.2**	**3.0**	**--**	**--**	**--**	**2.3**	**Jun-17**
BBgBarc US Treasury 1-3 Yr TR				*2.8*	*5.4*	*2.7*	*1.8*	*1.4*	*2.9*	*Jun-17*
IR&M 1-3 Year Strategy	227,522,743	12.0	100.0	0.2	3.0	--	--	--	2.3	Jul-17
BBgBarc US Govt/Credit 1-3 Yr. TR				*1.7*	*4.5*	*2.6*	*1.9*	*1.6*	*2.7*	*Jul-17*
eV US Short Duration Fixed Inc Net Rank				*53*	*53*	*--*	*--*	*--*	*47*	*Jul-17*
Investment Grade Bonds	**58,484,014**	**3.1**	**11.4**	**3.3**	**--**	**--**	**--**	**--**	**3.3**	**Oct-19**
BBgBarc US Aggregate TR				*3.1*	*8.9*	*4.8*	*3.4*	*3.9*	*3.3*	*Oct-19*
Vanguard Total Bond Market Index Inst	58,484,014	3.1	100.0	3.3	--	--	--	--	3.3	Oct-19
BBgBarc US Aggregate Float Adjusted TR				*3.2*	*9.1*	*4.9*	*3.4*	*3.9*	*3.3*	*Oct-19*
Global Bonds	**62,262,169**	**3.3**	**12.1**	**-10.6**	**-5.1**	**0.1**	**0.6**	**--**	**1.7**	**Dec-10**
BBgBarc Global Aggregate TR				*-0.3*	*4.2*	*3.5*	*2.6*	*2.5*	*2.0*	*Dec-10*
eV All Global Fixed Inc Net Rank				*64*	*63*	*74*	*82*	*--*	*78*	*Dec-10*
Brandywine Global Fixed Income	62,262,169	3.3	100.0	-10.6	-5.1	0.1	0.2	3.3	3.9	Oct-04
BBgBarc Global Aggregate TR				*-0.3*	*4.2*	*3.5*	*2.6*	*2.5*	*3.5*	*Oct-04*
eV All Global Fixed Inc Net Rank				*64*	*63*	*74*	*88*	*50*	*67*	*Oct-04*

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Dallas Police & Fire Pension System

DPFP | As of March 31, 2020

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Bank Loans	**78,561,436**	**4.1**	**15.3**	**-7.2**	**-3.9**	**1.3**	**2.5**	**--**	**2.7**	**Jan-14**
Credit Suisse Leveraged Loan				*-13.2*	*-9.5*	*-0.7*	*1.2*	*--*	*1.6*	*Jan-14*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*3*	*4*	*1*	*1*	*--*	*1*	*Jan-14*
Pacific Asset Management Corporate (Bank) Loans	71,962,935	3.8	91.6	-9.5	-5.2	--	--	--	0.3	Aug-17
Credit Suisse Leveraged Loan				*-13.2*	*-9.5*	*-0.7*	*1.2*	*--*	*-1.4*	*Aug-17*
eV US Float-Rate Bank Loan Fixed Inc Net Rank				*8*	*9*	*--*	*--*	*--*	*4*	*Aug-17*
Loomis Sayles Senior Rate and Fixed Income	6,598,501	0.3	8.4							
High Yield Bonds	**70,871,338**	**3.7**	**13.8**	**-14.6**	**-11.7**	**-1.6**	**1.1**	**--**	**4.2**	**Dec-10**
BBgBarc Global High Yield TR				*-15.0*	*-10.0*	*-0.6*	*2.3*	*5.1*	*4.4*	*Dec-10*
eV Global High Yield Fixed Inc Net Rank				*62*	*85*	*86*	*88*	*--*	*69*	*Dec-10*
Loomis Sayles High Yield Fund	70,871,338	3.7	100.0	-14.6	-11.7	-1.5	1.4	5.2	8.1	Oct-98
BBgBarc Global High Yield TR				*-15.0*	*-10.0*	*-0.6*	*2.3*	*5.1*	*7.3*	*Oct-98*
eV Global High Yield Fixed Inc Net Rank				*62*	*85*	*86*	*81*	*45*	*--*	*Oct-98*
Emerging Markets Debt	**16,609,937**	**0.9**	**3.2**	**-21.6**	**-17.9**	**-4.3**	**0.2**	**--**	**1.0**	**Dec-10**
50% JPM EMBI/50% JPM GBI-EM				*-14.3*	*-6.6*	*-0.1*	*1.6*	*--*	*2.0*	*Dec-10*
eV All Emg Mkts Fixed Inc Net Rank				*98*	*98*	*98*	*72*	*--*	*65*	*Dec-10*
Ashmore EM Blended Debt	16,609,937	0.9	100.0	-21.6	-17.9	--	--	--	-7.6	Dec-17
Ashmore Blended Debt Benchmark				*-12.6*	*-6.2*	*0.0*	*1.6*	*2.5*	*-2.3*	*Dec-17*
eV All Emg Mkts Fixed Inc Net Rank				*98*	*98*	*--*	*--*	*--*	*98*	*Dec-17*
Private Debt	**7,173,901**	**0.4**	**1.3**	**-0.1**	**1.7**	**4.0**	**--**	**--**	**-1.8**	**Jan-16**
Barclays Global High Yield +2%				*-14.6*	*-8.2*	*1.4*	*4.3*	*--*	*5.6*	*Jan-16*

[1] The Loomis Sayles Senior Rate and Fixed Income market value represents a residual balance.

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Dallas Police & Fire Pension System

DPFP | As of March 31, 2020

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	S.I. (%)	S.I. Date
Total Real Assets	**563,430,206**	**29.7**	**29.7**	**2.1**	**-0.1**	**5.2**	**1.2**	**--**	**-1.6**	**Dec-10**
Total Real Assets Policy Index				*1.9*	*5.6*	*6.3*	*7.6*	*10.6*	*10.9*	*Dec-10*
Real Estate	**379,764,195**	**20.0**	**67.4**	**2.2**	**1.2**	**4.2**	**-0.8**	**-3.2**	**3.7**	**Mar-85**
NCREIF Property (1-quarter lagged)				*1.6*	*6.4*	*6.7*	*8.2*	*10.2*	*8.0*	*Mar-85*
Natural Resources	**130,335,348**	**6.9**	**23.1**	**3.9**	**-0.2**	**-1.6**	**0.6**	**--**	**4.1**	**Dec-10**
NCREIF Farmland Total Return Index 1Q Lag				*2.3*	*4.8*	*5.9*	*7.0*	*11.0*	*11.6*	*Dec-10*
Infrastructure	**53,330,663**	**2.8**	**9.5**	**-2.3**	**-8.6**	**13.1**	**6.5**	**--**	**5.6**	**Jul-12**
S&P Global Infrastructure TR USD				*-29.2*	*-21.1*	*-3.2*	*-0.4*	*4.2*	*4.0*	*Jul-12*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Dallas Police & Fire Pension System

As of December 31, 2019

Private Markets Review

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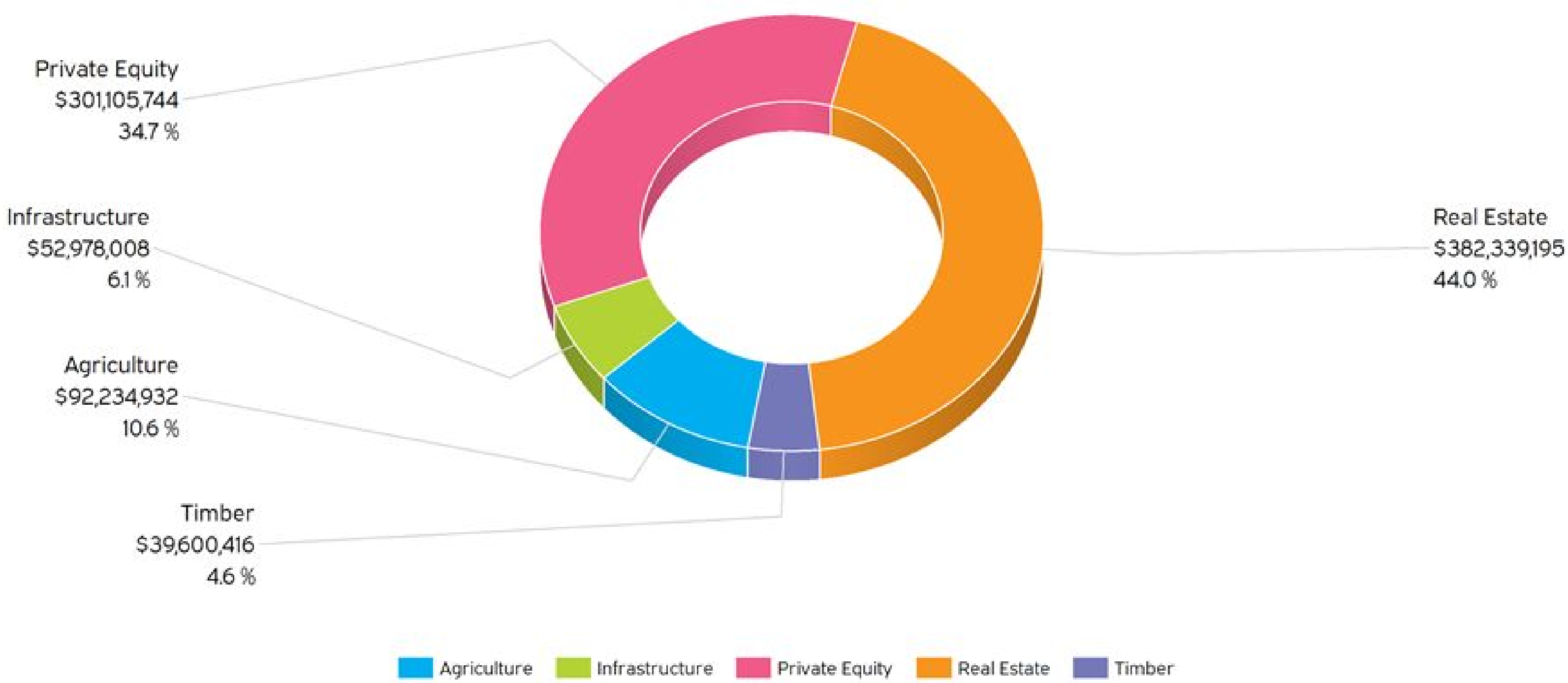
Dallas Police & Fire Pension System

Private Markets Review | As of December 31, 2019

Private Market Investments as of December 31, 2019
Market Value Allocation by Asset Class



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

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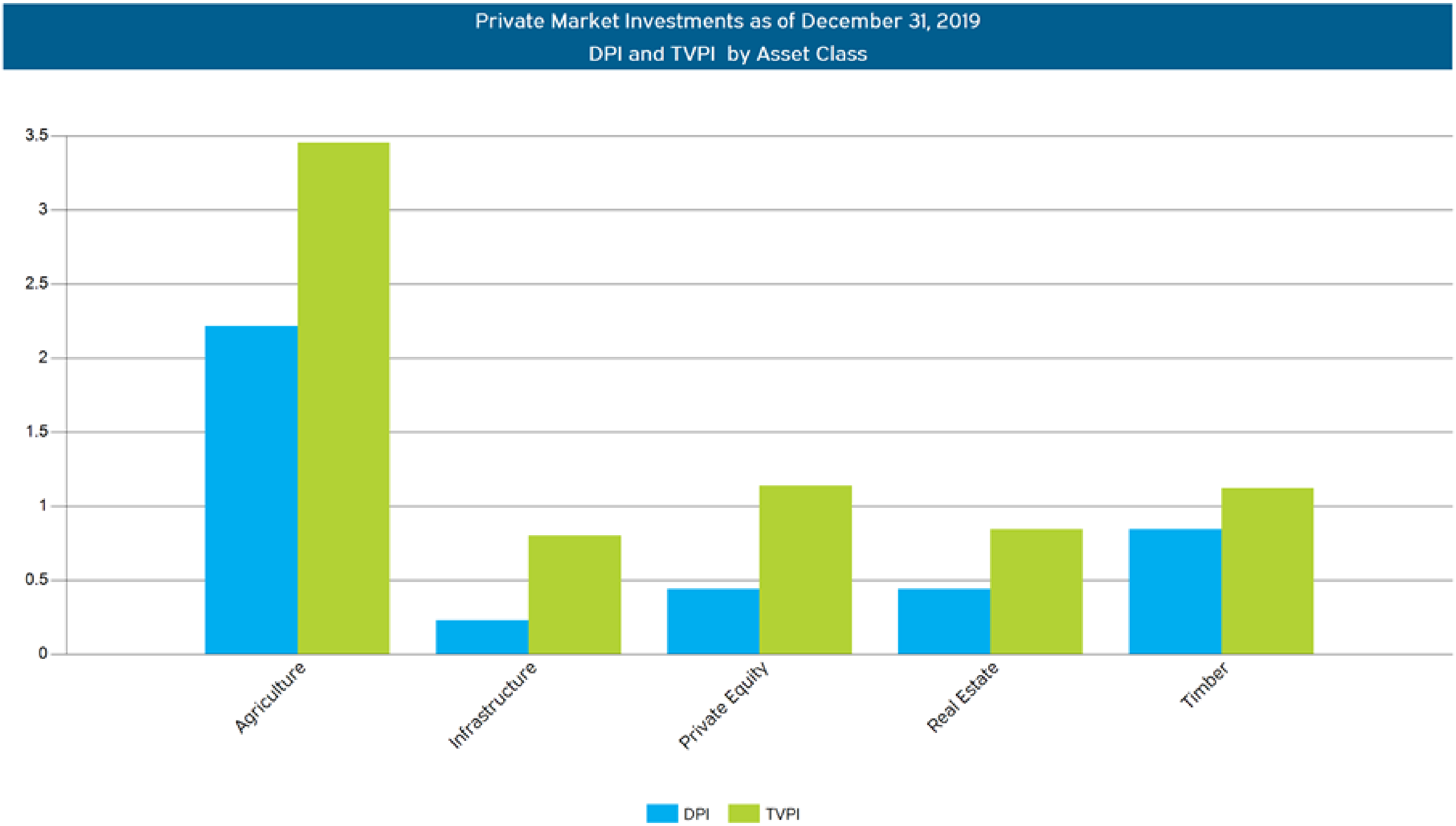
Dallas Police & Fire Pension System

Private Markets Review | As of December 31, 2019



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

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Dallas Police & Fire Pension System

Private Markets Review | As of December 31, 2019

Private Market Investments Overview											
Active Funds	Commitments		Distributions & Valuations				Performance				
Asset Class	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Agriculture	74,420,001	74,420,001	164,842,840	92,234,932	257,077,772	182,657,771	1.00	2.22	3.45	14.96
Total Infrastructure	97,000,000	92,851,580	21,669,031	52,978,008	74,647,038	-18,204,542	0.96	0.23	0.80	-3.98
Total Private Equity	414,034,369	444,587,777	190,716,602	301,105,744	491,822,346	47,234,568	1.07	0.43	1.11	1.68
Total Real Estate	964,944,350	954,294,829	421,121,307	382,339,195	803,460,502	-150,834,328	0.99	0.44	0.84	-2.43
Total Timber	141,886,372	141,886,372	119,330,209	39,600,416	158,930,625	17,044,253	1.00	0.84	1.12	2.04
Total	**1,692,285,092**	**1,708,040,560**	**917,679,989**	**868,258,294**	**1,785,938,283**	**77,897,723**	**1.01**	**0.54**	**1.05**	**0.70**

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

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Dallas Police & Fire Pension System

Active Funds with Unfunded Commitments Overview | As of December 31, 2019

Active Funds with Unfunded Commitments				
Active Funds		Commitments		
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Unfunded Commitment ($)
Infrastructure				
TRG AIRRO	2008	37,000,000	37,132,859	3,194,573
TRG AIRRO II	2013	10,000,000	7,133,745	2,453,943
JPM Maritime Fund, LP	2009	50,000,000	48,584,975	1,365,941
Total Infrastructure		**97,000,000**	**92,851,580**	**7,014,457**
Private Equity				
Huff Energy Fund LP	2006	100,000,000	98,942,837	119,979
Industry Ventures Partnership IV	2016	5,000,000	3,528,911	1,465,000
Lone Star Growth Capital	2006	16,000,000	26,560,000	2,240,000
Riverstone Credit Partners LP	2016	10,000,000	12,242,390	639,444
Yellowstone Capital	2008	5,283,254	5,112,307	170,947
Total Private Equity		**136,283,254**	**146,386,445**	**4,635,370**
Real Estate				
Hearthstone MS II Homebuilding Investors	1999	10,000,000	7,973,058	1,008,131
Hearthstone MS III Homebuilding Investors	2003	10,000,000	1,221,446	1,997,675
Total Real Estate		**20,000,000**	**9,194,504**	**3,005,806**
Total		**253,283,254**	**248,432,530**	**14,655,633**

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

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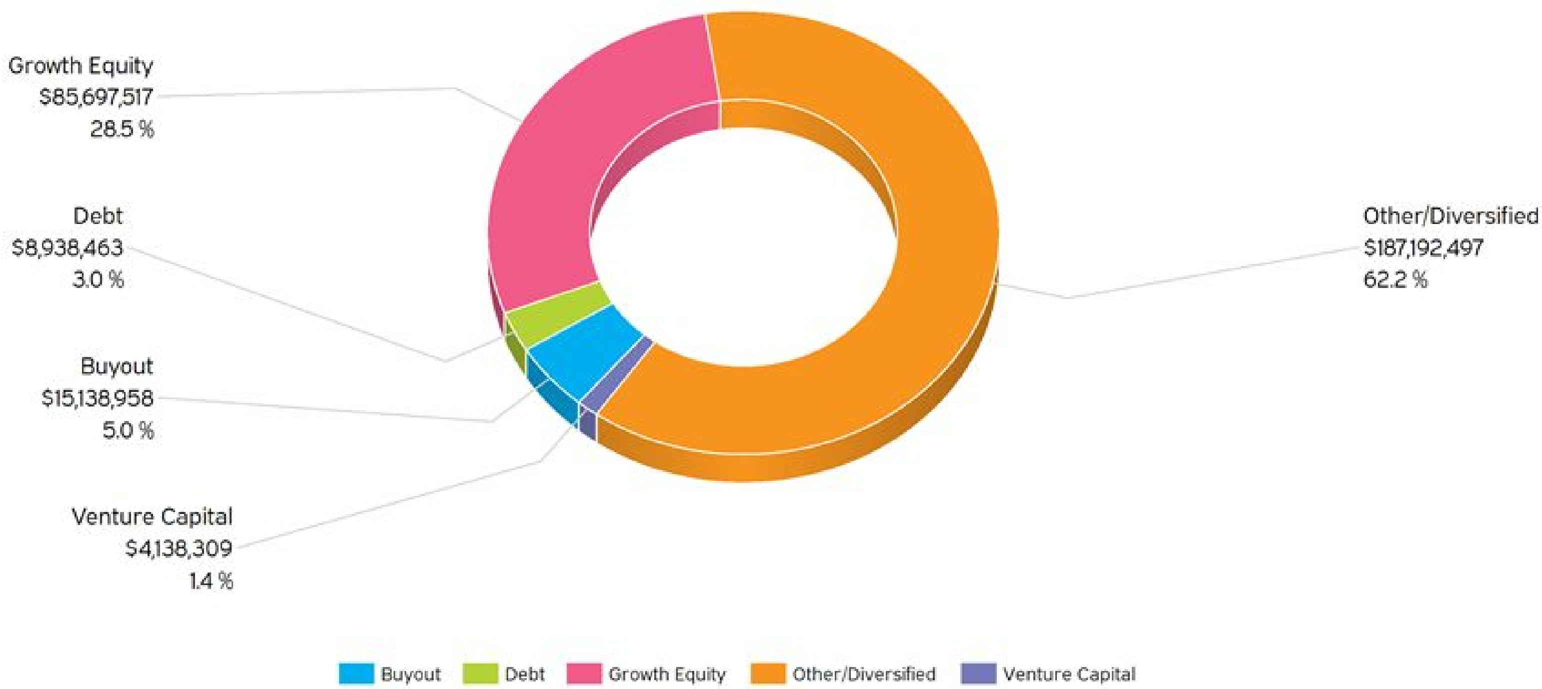
Dallas Police & Fire Pension System

Private Equity and Debt | As of December 31, 2019

Private Equity and Debt Investments as of December 31, 2019
Market Value Allocation by Strategy



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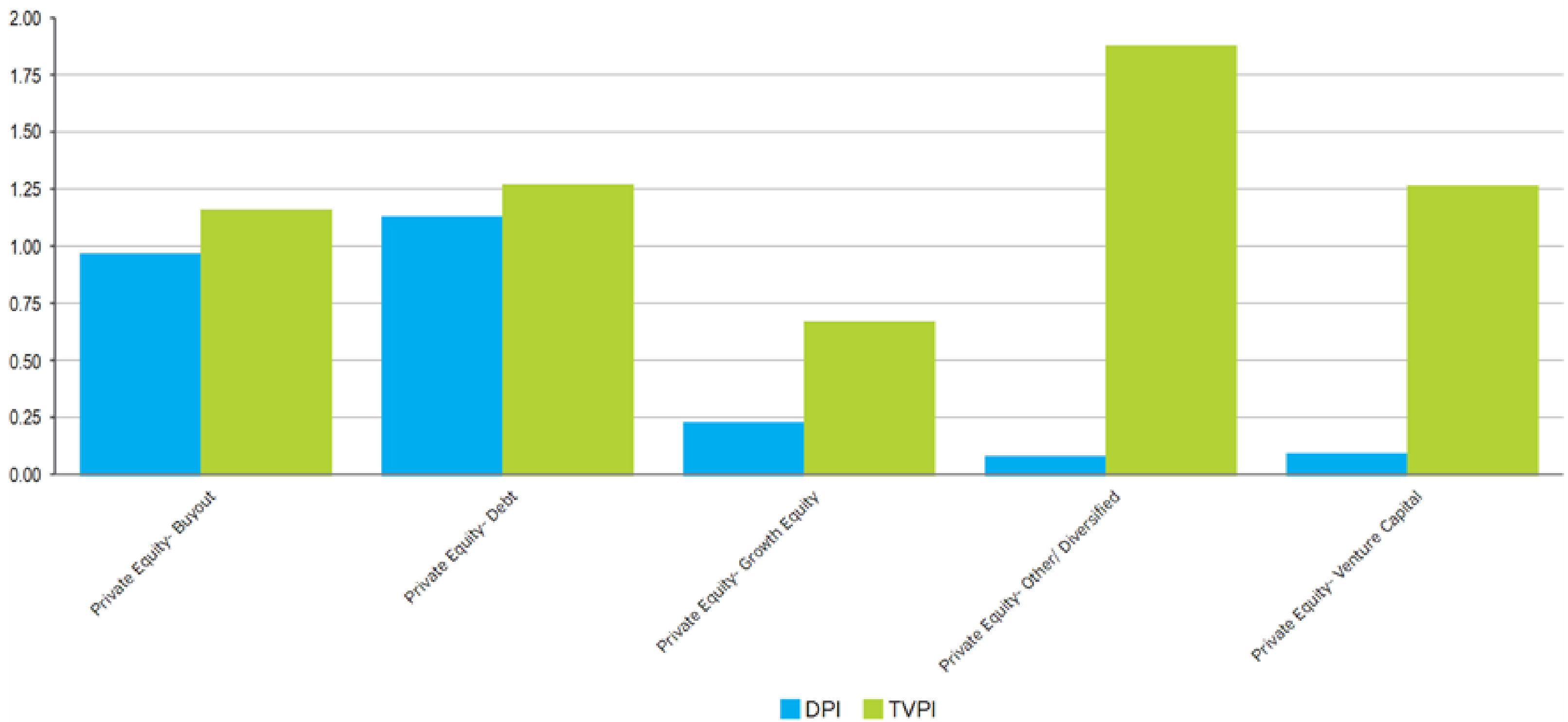
Dallas Police & Fire Pension System

Private Equity and Debt | As of December 31, 2019

Private Equity and Debt Investments as of December 31, 2019
DPI and TVPI by Strategy



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

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Dallas Police & Fire Pension System

Private Equity and Debt | As of December 31, 2019

Private Equity and Debt Investments Overview												
Active Funds		Commitments		Distributions & Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Buyout											
Huff Alternative Fund	2000	66,795,718	78,826,594	74,493,789	15,138,958	89,632,747	10,806,153	1.18	0.95	1.14	1.58
Total Buyout		**66,795,718**	**78,826,594**	**74,493,789**	**15,138,958**	**89,632,747**	**10,806,153**	**1.18**	**0.95**	**1.14**	**1.58**
Debt											
Highland Crusader Fund	2003	50,955,397	50,955,397	63,168,765	1,568,296	64,737,061	13,781,664	1.00	1.24	1.27	4.19
Riverstone Credit Partners LP	2016	10,000,000	12,242,390	6,753,428	7,370,167	14,123,595	1,881,205	1.22	0.55	1.15	8.44
Total Debt		**60,955,397**	**63,197,787**	**69,922,193**	**8,938,463**	**78,860,656**	**15,662,869**	**1.04**	**1.11**	**1.25**	**4.39**
Growth Equity											
Hudson Clean Energy	2009	25,000,000	24,994,470	4,732,352	2,073,363	6,805,715	-18,188,755	1.00	0.19	0.27	-19.35
Lone Star CRA	2008	50,000,000	58,224,398	12,928,698	59,026,786	71,955,484	13,731,086	1.16	0.22	1.24	6.97
Lone Star Growth Capital	2006	16,000,000	26,560,000	12,800,000	8,937,751	21,737,751	-4,822,249	1.66	0.48	0.82	-9.32
Lone Star Opportunities V	2012	75,000,000	75,000,000	531,444	14,148,181	14,679,625	-60,320,375	1.00	0.01	0.20	-42.67
North Texas Opportunity Fund	2000	10,000,000	10,000,000	9,127,239	1,511,436	10,638,675	638,675	1.00	0.91	1.06	0.70
Total Growth Equity		**176,000,000**	**194,778,868**	**40,119,733**	**85,697,517**	**125,817,250**	**-68,961,618**	**1.11**	**0.21**	**0.65**	**-13.88**
Other/Diversified											
Huff Energy Fund LP	2006	100,000,000	98,942,837	4,477,394	187,192,497	191,669,891	92,727,054	0.99	0.05	1.94	6.88
Yellowstone Capital	2008	5,283,254	5,112,307	1,458,572	0	1,458,572	-3,653,735	0.97	0.29	0.29	-32.45
Total Other/Diversified		**105,283,254**	**104,055,144**	**5,935,966**	**187,192,497**	**193,128,463**	**89,073,319**	**0.99**	**0.06**	**1.86**	**6.48**
Venture Capital											
Industry Ventures Partnership IV	2016	5,000,000	3,528,911	244,921	4,138,309	4,383,230	854,318	0.71	0.07	1.24	14.06
Total Venture Capital		**5,000,000**	**3,528,911**	**244,921**	**4,138,309**	**4,383,230**	**854,318**	**0.71**	**0.07**	**1.24**	**14.06**
Unclassified											
Miscellaneous Private Equity Expenses	2016		200,473								
Total Unclassified			**200,473**								
Total		**414,034,369**	**444,587,777**	**190,716,602**	**301,105,744**	**491,822,346**	**47,234,568**	**1.07**	**0.43**	**1.11**	**1.68**

1. Private Markets performance reflected is composed of active investments only.
2. Lone Star valuations directed by Dallas Police and Fire investment staff.
3. Huff Alternative Fund valuation shown represents 6/30/19 NAV adjusted for Q3 and Q4 cash flows.

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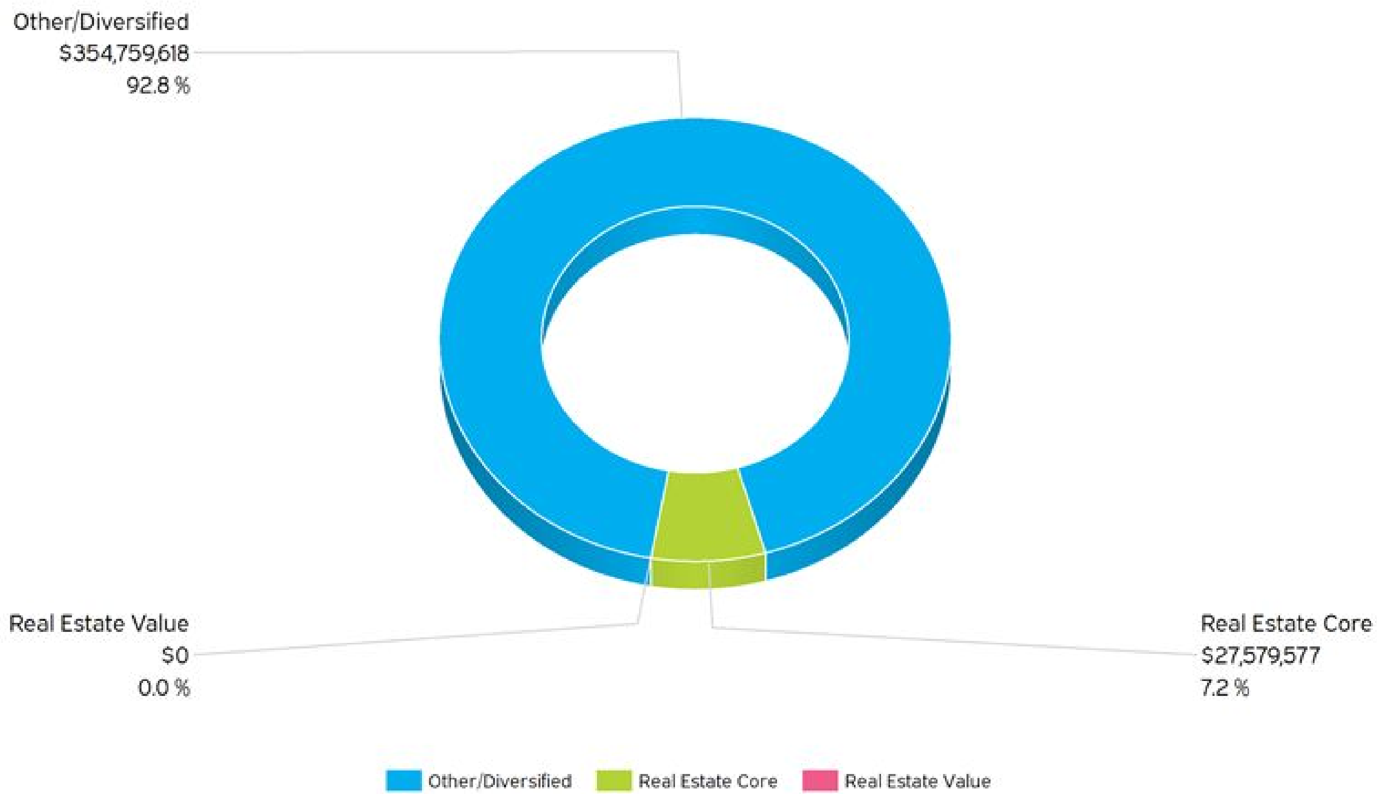
Dallas Police & Fire Pension System

Real Estate | As of December 31, 2019

Real Estate Investments as of December 31, 2019
Market Value Allocation by Strategy



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

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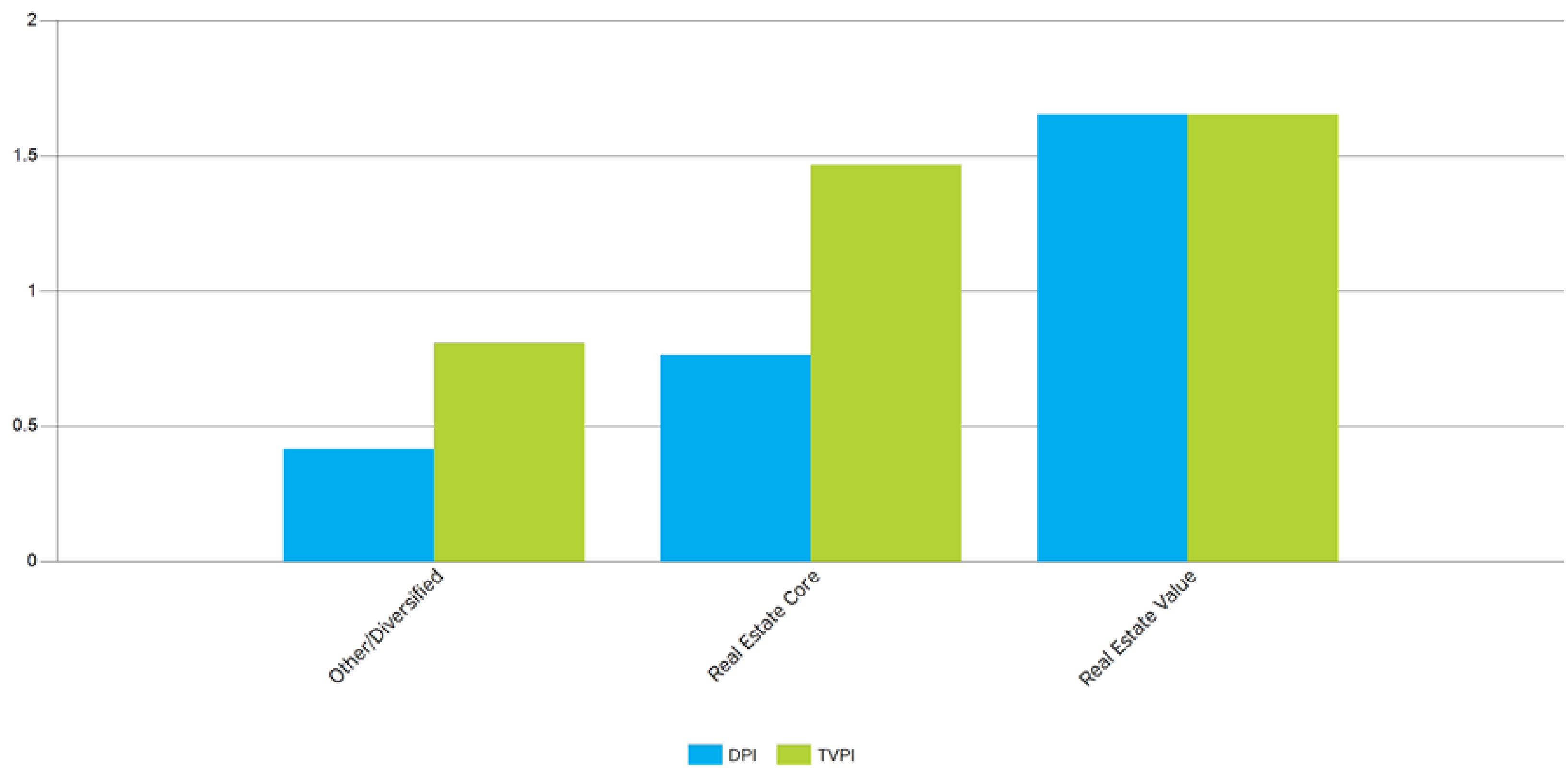
Dallas Police & Fire Pension System

Real Estate | As of December 31, 2019

Real Estate Investments as of December 31, 2019
DPI and TVPI by Strategy



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

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Dallas Police & Fire Pension System

Real Estate | As of December 31, 2019

Real Estate Investments Overview

Active Funds	Commitments		Valuations				Performance			
Investment Name	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Total Other/Diversified	905,526,778	905,526,778	375,111,509	354,759,618	729,871,127	-175,655,651	1.00	0.41	0.81	-2.96
Real Estate Core										
Total Real Estate Core	39,417,572	39,417,572	30,123,535	27,579,577	57,703,112	18,285,540	1.00	0.76	1.46	5.55
Real Estate Value										
Total Real Estate Value	20,000,000	9,194,504	15,206,576	0	15,206,576	6,012,072	0.46	1.65	1.65	25.93
Total	**964,944,350**	**954,294,829**	**421,121,307**	**382,339,195**	**803,460,502**	**-150,834,328**	**0.99**	**0.44**	**0.84**	**-2.43**

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

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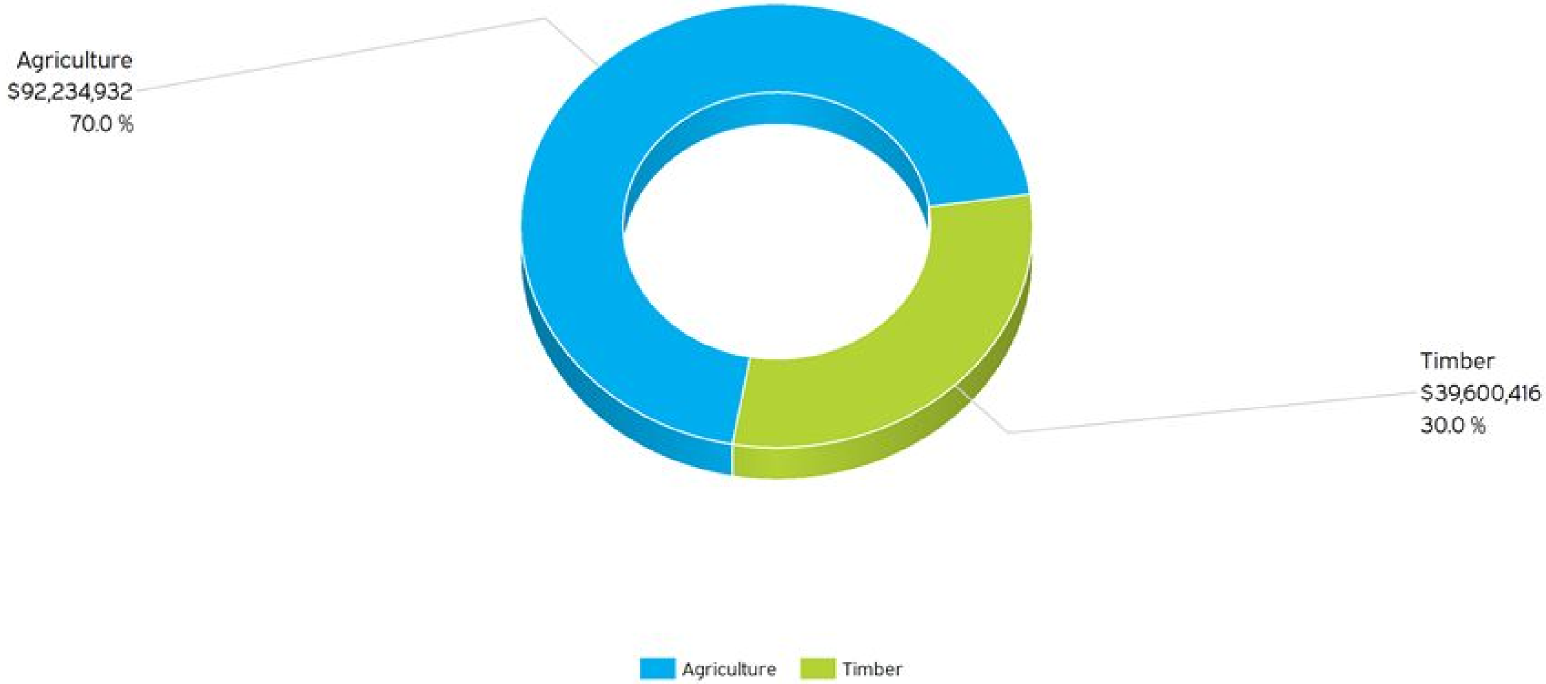
Dallas Police & Fire Pension System

Natural Resources | As of December 31, 2019

Natural Resources Investments as of December 31, 2019
Market Value Allocation by Asset Class



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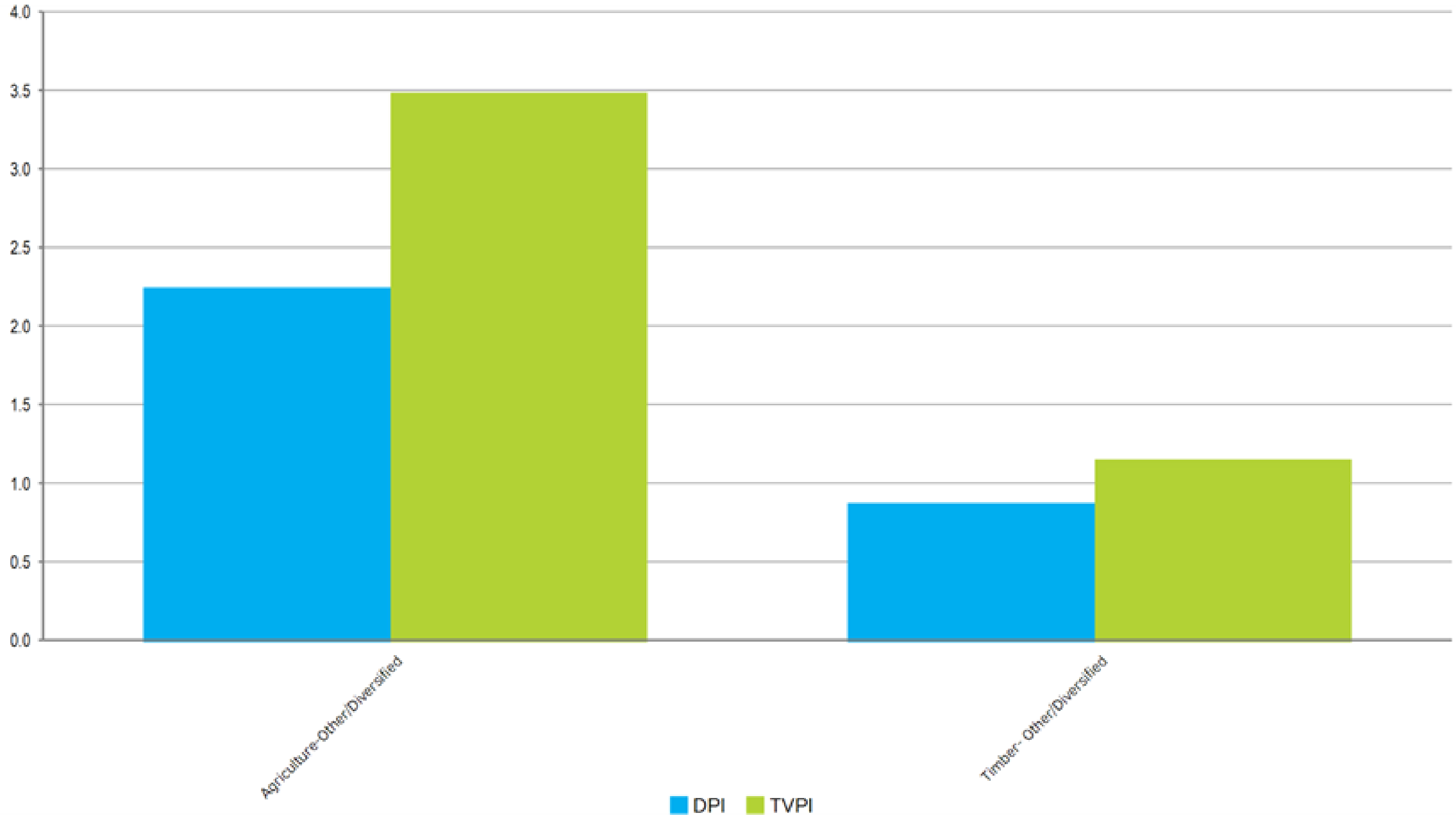
Dallas Police & Fire Pension System

Natural Resources | As of December 31, 2019

Natural Resource Investments as of December 31, 2019
DPI and TVPI by Strategy



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

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Dallas Police & Fire Pension System

Natural Resources | As of December 31, 2019

Natural Resource Investments Overview												
Active Funds		Commitments		Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Unrealized Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Agriculture											
Hancock Agricultural	1998	74,420,001	74,420,001	164,842,840	92,234,932	257,077,772	182,657,771	1.00	2.22	3.45	14.96
Total Agriculture		**74,420,001**	**74,420,001**	**164,842,840**	**92,234,932**	**257,077,772**	**182,657,771**	**1.00**	**2.22**	**3.45**	**14.96**
Timber											
BTG Pactual	2006	82,236,676	82,236,676	18,300,000	30,829,069	49,129,069	-33,107,606	1.00	0.22	0.60	-7.14
Forest Investment Associates	1992	59,649,696	59,649,696	101,030,209	8,771,347	109,801,556	50,151,860	1.00	1.69	1.84	7.72
Total Timber		**141,886,372**	**141,886,372**	**119,330,209**	**39,600,416**	**158,930,625**	**17,044,254**	**1.00**	**0.84**	**1.12**	**2.04**
Total		**216,306,373**	**216,306,373**	**284,173,049**	**131,835,348**	**416,008,397**	**199,702,025**	**1.00**	**1.32**	**1.93**	**8.96**

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

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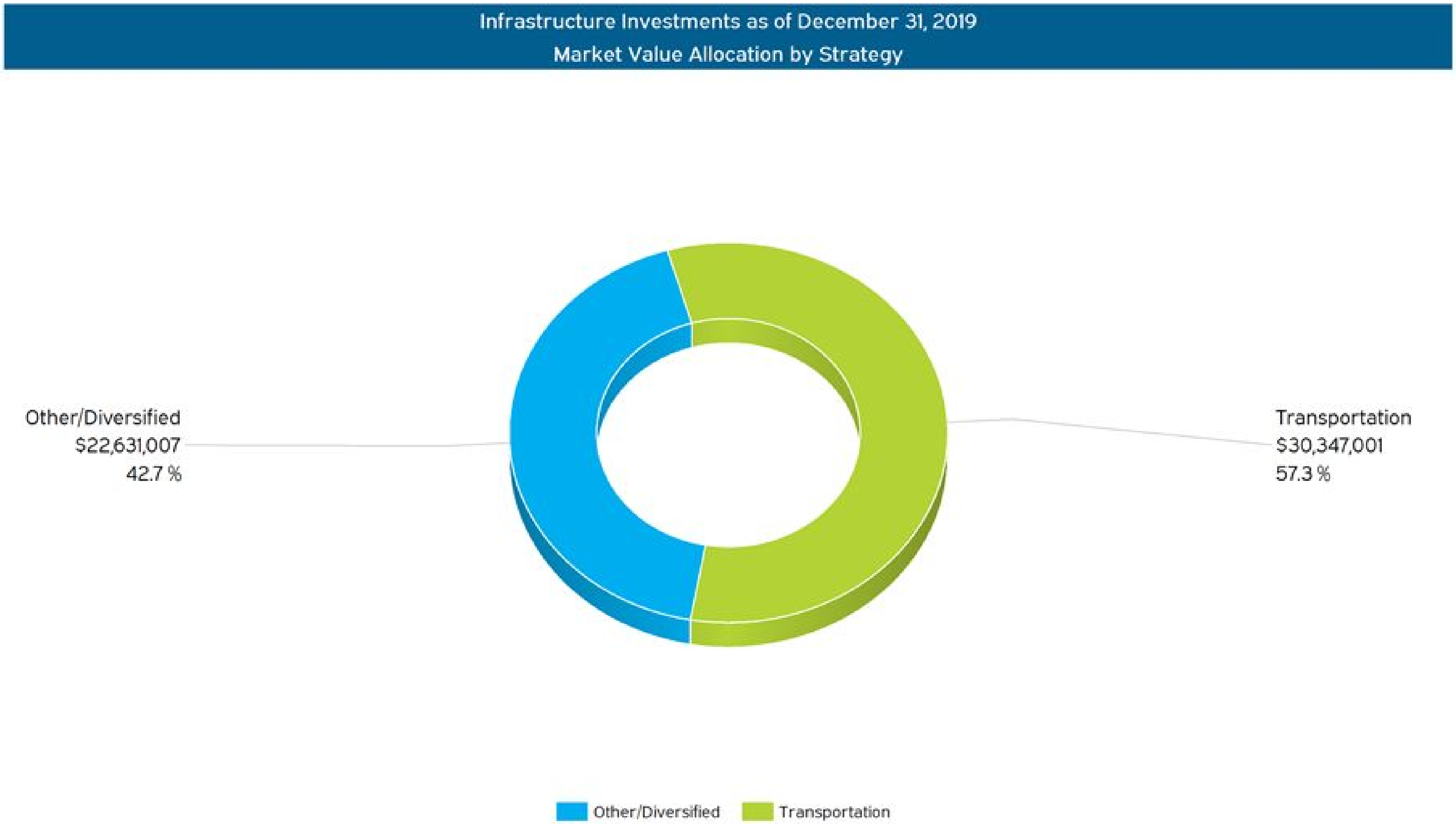
Dallas Police & Fire Pension System

Infrastructure | As of December 31, 2019



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

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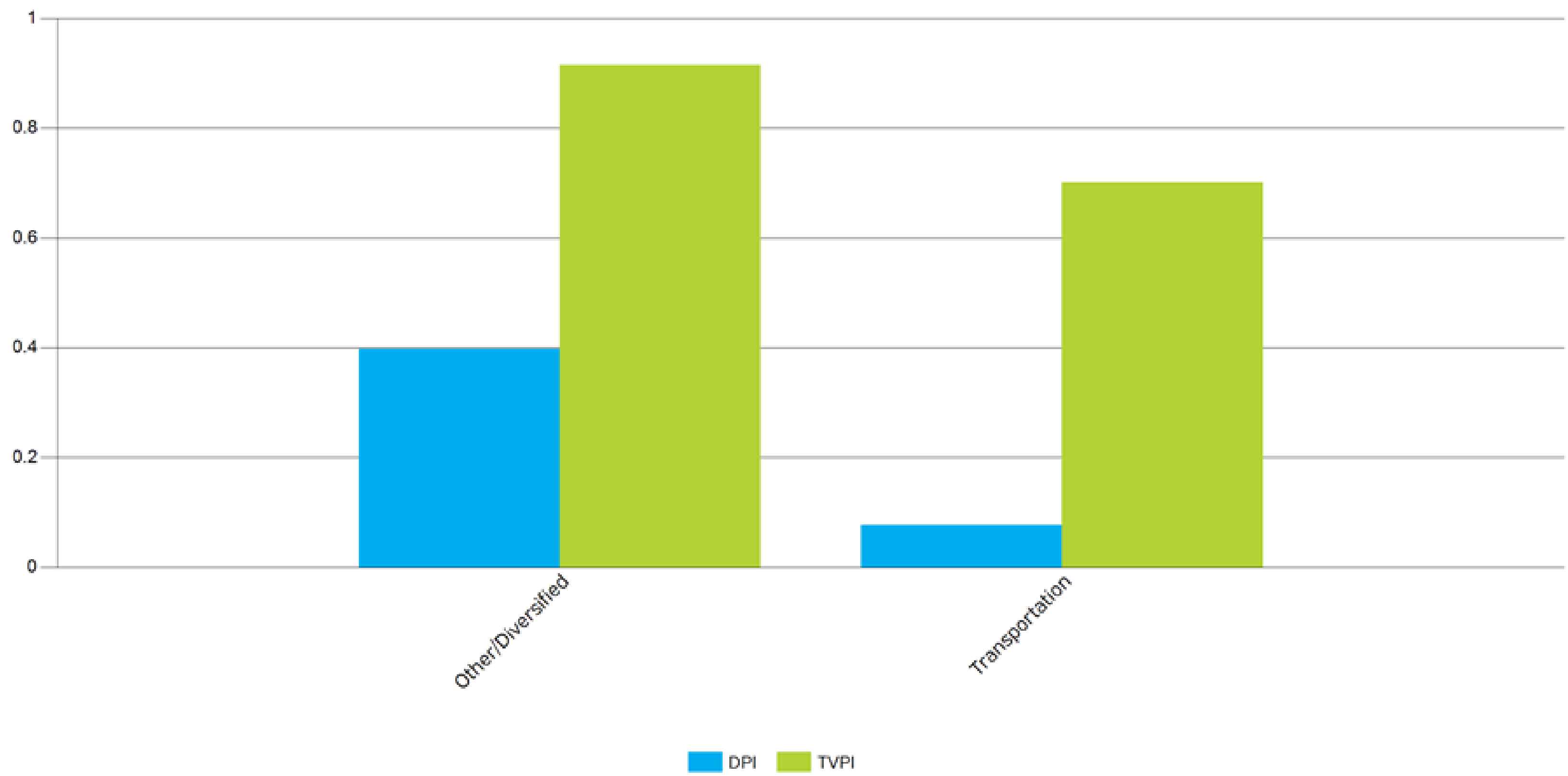
Dallas Police & Fire Pension System

Infrastructure | As of December 31, 2019

Infrastructure Investments as of December 31, 2019
DPI and TVPI by Strategy



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

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Dallas Police & Fire Pension System

Infrastructure | As of December 31, 2019

Infrastructure Investments Overview												
Active Funds		Commitments		Distributions & Valuations				Performance				
Investment Name	Vintage Year	Commitment ($)	Paid In Capital ($)	Distributions ($)	Valuation ($)	Total Value ($)	Gain/Loss ($)	Call Ratio	DPI	TVPI	IRR (%)
Infrastructure											
TRG AIRRO	2008	37,000,000	37,132,859	17,873,234	18,837,806	36,711,040	-421,819	1.00	0.48	0.99	-0.18
TRG AIRRO II	2013	10,000,000	7,133,745	58,731	3,793,201	3,851,932	-3,281,814	0.71	0.01	0.54	-9.93
JPM Maritime Fund, LP	2009	50,000,000	48,584,975	3,737,066	30,347,001	34,084,067	-14,500,909	0.97	0.08	0.70	-7.16
Total Infrastructure		**97,000,000**	**92,851,580**	**21,669,031**	**52,978,008**	**74,647,038**	**-18,204,542**	**0.96**	**0.23**	**0.80**	**-3.98**

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

Private Markets Review
List of Completed Funds

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Dallas Police & Fire Pension System

Private Markets Review | As of December 31, 2019

Total Real Assets Program

Completed Funds	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Addtnl Fees	Cummulative Distributions	Valuation	Total Value	Gain/Loss	DPI Ratio	TVPI Ratio	IRR
AEW Creative Holdings	2007	13,035,849	13,035,849	0	0	0	0	0	-13,035,849	0.00	0.00	N/A
BTG U.S. Timberland	2007	22,230,000	22,230,000	0	0	33,065,920	0	33,065,920	10,835,920	1.49	1.49	4.82%
CDK Multifamily I	2014	10,559,876	10,617,376	0	0	10,025,434	0	10,025,434	-591,942	0.94	0.94	-1.99%
Clarion 1210 South Lamar	2014	10,500,000	10,201,489	0	0	13,214,065	0	13,214,065	3,012,576	1.30	1.30	12.85%
Clarion 4100 Harry Hines Land	2006	3,088,810	3,092,788	0	0	3,641,946	0	3,641,946	549,158	1.18	1.18	1.69%
Clarion Beat Lofts	2005	8,729,783	8,730,183	0	0	1,137,817	0	1,137,817	-7,592,366	0.13	0.13	-30.76%
Clarion Bryan Street Lofts	2005	5,112,048	5,112,048	0	0	4,163,659	0	4,163,659	-948,389	0.81	0.81	-2.23%
Clarion Four Leaf	2005	16,892,767	16,892,767	0	0	3,733,148	0	3,733,148	-13,159,619	0.22	0.22	-39.69%
Hearthstone Dry Creek	2005	52,303,043	52,303,043	0	0	8,973,059	0	8,973,059	-43,329,984	0.17	0.17	-38.78%
Hearthstone Nampa	2006	11,666,284	11,666,284	0	0	2,562,654	0	2,562,654	-9,103,630	0.22	0.22	-31.90%
JP Morgan Infrastructure Investments Fund	2007	37,000,000	37,000,000	0	-5,658	44,302,131	0	44,302,131	7,307,789	1.20	1.20	2.48%
L&B Realty Advsiors Beach Walk	2006	33,013,796	33,013,796	0	0	36,752,690	0	36,752,690	3,738,894	1.11	1.11	2.19%
L&B Realty Advisors KO Olina	2008	28,609,658	28,609,658	0	0	30,529,136	0	30,529,136	1,919,478	1.07	1.07	1.11%
L&B Realty Advisors West Bay Villas	2007	8,712,411	8,712,411	0	0	3,785,480	0	3,785,480	-4,926,931	0.43	0.43	-8.29%
LBJ Infrastructure Group Holdings, LLC (LBJ)	2009	50,000,000	44,346,229	0	0	77,892,000	0	77,892,000	33,545,771	1.76	1.76	12.77%
Lone Star Fund III (U.S.), L.P.	2000	20,000,000	19,827,576	0	0	40,701,250	0	40,701,250	20,873,674	2.05	2.05	31.88%
Lone Star Fund IV (U.S.), L.P.	2001	20,000,000	19,045,866	0	0	43,898,442	0	43,898,442	24,852,576	2.30	2.30	30.15%
Lone Star Fund V (U.S.), L.P.	2005	22,500,000	22,275,229	0	0	20,605,895	0	20,605,895	-1,669,334	0.93	0.93	-1.41%
Lone Star Fund VI (U.S.), L.P.	2008	25,000,000	20,034,018	0	0	31,712,968	0	31,712,968	11,678,950	1.58	1.58	21.76%
Lone Star Real Estate Fund (U.S.), L.P.	2008	25,000,000	20,743,769	0	0	25,403,707	0	25,403,707	4,659,938	1.22	1.22	5.15%
Lone Star Real Estate Fund II	2011	25,000,000	22,169,907	0	0	32,789,371	0	32,789,371	10,619,464	1.48	1.48	24.73%
Lone Star Real Estate Fund III	2014	25,000,000	23,490,784	0	0	26,638,028	0	26,638,028	3,147,244	1.13	1.13	8.20%
M&G Real Estate Debt Fund II	2013	29,808,841	21,523,663	0	0	17,088,107	0	17,088,107	-4,435,556	0.79	0.79	-15.04%
NTE 3a-3b	2012	50,000,000	23,794,565	0	0	28,186,978	0	28,186,978	4,392,413	1.18	1.18	16.03%
NTE Mobility Partners Holding, LLC (NTE)	2009	50,000,000	43,397,054	0	0	105,890,000	0	105,890,000	62,492,946	2.44	2.44	19.33%
Olympus II-Hyphen Solutions	2007	836,511	836,511	0	0	1,418,149	0	1,418,149	581,638	1.70	1.70	5.96%
P&F Housing IV	2006	134,015,889	134,015,889	0	0	83,179,802	0	83,179,802	-50,836,087	0.62	0.62	-8.44%
RREEF North American Infrastructure Fund	2007	50,000,000	50,000,000	0	846,289	55,238,755	0	55,238,755	4,392,466	1.09	1.09	12.59%
Sungate	2005	6,481,568	6,481,568	0	0	308,624	0	308,624	-6,172,944	0.05	0.05	-22.30%
Tucson Loan	2014	4,500,000	4,500,000	0	0	5,082,785	0	5,082,785	582,785	1.13	1.13	5.75%
Total Completed Funds		**799,597,134**	**737,700,320**	**0**	**840,631**	**791,922,000**	**0**	**791,922,000**	**53,381,049**	**1.07**	**1.07**	

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Dallas Police & Fire Pension System

Private Markets Review | As of December 31, 2019

Private Equity & Debt Funds												
Completed Funds	**Vintage Year**	**Commitment Amount**	**Paid in Capital**	**Capital to be Funded**	**Addtnl Fees**	**Cummulative Distributions**	**Valuation**	**Total Value**	**Gain/Loss**	**DPI Ratio**	**TVPI Ratio**	**IRR**
Ashmore Global Special Situations Fund IV	2007	70,000,000	70,012,300	0	0	39,652,711	0	39,652,711	-30,359,589	0.57	0.57	-10.12%
BankCap Partners Fund I	2007	20,000,000	20,000,000	0	0	24,960,986	0	24,960,986	4,960,986	1.25	1.25	2.58%
BankCap Partners Opportunity Fund, LP	2013	20,000,000	19,587,052	0	0	18,266,454	0	18,266,454	-1,320,598	0.93	0.93	-5.69%
CDK Southern Cross	2008	1,535,316	1,535,316	0	0	0	0	0	-1,535,316	0.00	0.00	-20.08%
Highland Credit Ops	2006	35,348,165	35,348,165	0	0	29,994,190	0	29,994,190	-5,353,975	0.85	0.85	-2.06%
HM Capital Sector Performance Fund	2008	47,300,000	44,354,248	0	1,933,378	39,792,545	0	39,792,545	-6,495,081	0.86	0.86	-4.01%
Huff Alternative Income Fund	1994	40,000,000	40,000,000	0	2,018,676	66,940,198	0	66,940,198	24,921,522	1.59	1.59	17.82%
Kainos Capital Partners, L.P.	2013	35,000,000	30,316,015	0	0	43,263,688	0	43,263,688	12,947,673	1.43	1.43	24.76%
Levine Leichtman Capital Partners IV	2008	50,000,000	38,009,085	0	0	78,916,788	0	78,916,788	40,907,703	2.08	2.08	20.12%
Levine Leichtman Capital Partners V, L.P.	2013	25,000,000	19,181,272	0	-4,405	24,506,336	0	24,506,336	5,329,469	1.28	1.28	15.26%
Levine Leichtman Deep Value Fund	2006	75,000,000	75,000,000	0	11,025,662	88,688,224	0	88,688,224	2,662,562	1.03	1.03	0.73%
Levin Leichtman Private Capital Solutions II, L.P.	2012	25,000,000	17,961,807	0	-175	18,691,764	0	18,691,764	730,132	1.04	1.04	1.30%
Lone Star Fund IX (U.S.), L.P.	2014	35,000,000	24,241,467	0	0	23,459,730	0	23,459,730	-781,737	0.97	0.97	-3.28%
Lone Star Fund VII (U.S.), L.P.	2011	25,000,000	23,469,024	0	0	41,624,566	0	41,624,566	18,155,542	1.77	1.77	47.54%
Lone Star Fund VIII (U.S.), L.P.	2013	25,000,000	22,564,537	0	0	28,017,551	0	28,017,551	5,453,014	1.24	1.24	16.26%
Merit Energy Partners E-I	2004	7,018,930	7,031,052	0	-1,741	14,975,776	0	14,975,776	7,946,465	2.13	2.13	14.48%
Merit Energy Partners F-I	2005	8,748,346	8,749,275	0	0	3,801,206	0	3,801,206	-4,948,069	0.43	0.43	-17.19%
Merit Energy Partners G, LP	2008	39,200,000	39,320,050	0	0	26,756,651	0	26,756,651	-12,563,399	0.68	0.68	-9.96%
Merit Energy Partners H, LP	2010	10,000,000	10,033,415	0	0	6,870,451	0	6,870,451	-3,162,964	0.68	0.68	-13.78%
Oaktree Fund IV	2001	50,000,000	50,000,000	0	0	82,516,590	0	82,516,590	32,516,590	1.65	1.65	28.36%
Oaktree Loan Fund 2X	2007	60,000,000	60,004,628	0	0	65,066,951	0	65,066,951	5,062,323	1.08	1.08	2.24%
Oaktree Power Fund III	2011	30,000,000	16,167,147	0	0	23,839,959	0	23,839,959	7,672,812	1.47	1.47	12.35%
Pharos Capital Co-Investment, LLC	2007	20,000,000	20,000,000	0	0	10,019,157	0	10,019,157	-9,980,843	0.50	0.50	-9.92%
Pharos Capital Co-Investment, LP	2008	40,000,000	40,000,000	0	0	67,459,271	0	67,459,271	27,459,271	1.69	1.69	8.42%
Pharos Capital Partners IIA, L.P.	2005	20,000,000	20,080,306	0	0	17,715,199	0	17,715,199	-2,365,107	0.88	0.88	-2.39%
Pharos Capital Partners III, LP	2012	50,000,000	28,397,038	0	-54,286	20,196,932	0	20,196,932	-8,145,820	0.71	0.71	-19.95%
Total Completed Funds		**864,150,757**	**781,363,199**	**0**	**14,917,109**	**905,993,874**	**0**	**905,993,874**	**109,713,566**	**1.14**	**1.14**	

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Disclaimer

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

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

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

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

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

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C10

Topic: **Natural Resources: Hancock Presentation**

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

Attendees:
Rick Bodio, CFA – Director
Carl Evers, III – Vice President, Water Resources NA
Dan Serna – Associate Director & Senior Agricultural Economist
Skeet Ponder – Portfolio Analyst

Discussion: Representatives of Hancock Natural Resource Group will update the Board on the status and plans for DPFP's agricultural portfolio, as well as provide a market update on the major crops in the DPFP portfolio. Hancock has managed DPFP's direct farmland investments since 1998.

Hancock Introduction

- Hancock manages a portfolio of wholly-owned agricultural investments ("TMPC") for DPFP valued at $91 million*, representing 73% of the Natural Resources portfolio and 5% of the total fund. (*Value as of 5/31/19)
  - Hancock has been a discretionary agriculture manager for DPFP since 1998. The portfolio has an inception IRR of 15% with a total value to paid-in capital multiple of 3.45x.
  - Since developing a hold-sell plan with DPFP staff in 2016, Hancock has sold 16 properties resulting in $70.3 million in proceeds to DPFP.
  - Go-forward target portfolio:
    - *Approx. $85 million of NAV based on current carrying values*
    - *Concentrated in almonds and pistachios located in California, along with apple property in Washington*
    - *Expected returns of ~ 10% with a high income component*

DALLAS POLICE & FIRE PENSION SYSTEM

Hancock Natural Resource Group®

A Manulife Investment Management Company

Texas Municipal Plans Consortium - Public

Prepared for Dallas Police and Fire Pension System Board Meeting

June 11, 2020

Hancock Natural Resource Group®

A Manulife Investment Management Company

Presenters

Richard Bodio, Jr., CFA
Director Farmland Plus
Rick is responsible for leading the Farmland Plus strategy, which includes originating and managing transactions, oversight of portfolio company operations, as well as investment strategy. In his previous role with HNRG, Rick was a portfolio manager responsible for developing and implementing investment strategies, evaluating acquisition and disposition opportunities, evaluating portfolio performance and managing all aspects of the client relationship. Prior to joining HNRG in 2011, Rick worked in Financial Strategy for Forest Systems Management Company. Rick holds a B.A. in English and Philosophy from Providence College and a MBA in Finance and Real Estate from the University of Connecticut, where he managed a portion of the University's endowment. Rick is a CFA charterholder and a member of the CFA Society Boston.

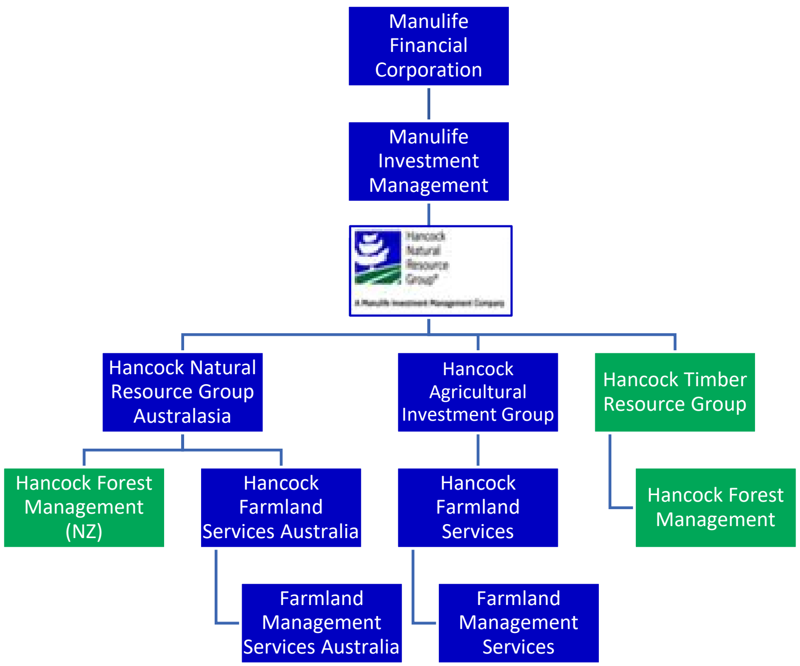
Skeet Ponder
Portfolio Analyst
Skeet is responsible for supporting portfolio managers in all aspects of the management of client portfolios for both timberland and farmland. This includes monitoring global markets, hold/sell analyses, reviewing property budgets, and construction of long-term management plans. Prior to joining HNRG, Skeet worked as a fiber supply analyst with WestRock, as well as an analyst for a family office investment firm that specialized in timber and farmland properties. He holds an M.F.R. in Forest Business from the University of Georgia as well as a B.A. in Natural Resources from Sewanee: The University of the South.

Carl Evers, III
Vice President, Water Resources North America
Carl is responsible for the management of water resources as it pertains to HNRG's Agriculture investments in the western United States. In this role, Carl is responsible for coordination and engagement of state and national-level water policy activities while providing support to direct farm operations, acquisitions, dispositions, and client reporting as it pertains to water-related policy strategies, decision-making, and stakeholder engagement for over 100,000 acres of farmland across the western United States. Prior to his Vice President of Water Policy position, Carl was a Regional Manager with Farmland Management Services where he oversaw the farming operations for 38,000 acres of HNRG's directly farmed Permanent Crop Properties, and project manager for Farmland Management Services Australia, where he oversaw several large permanent crop developments in NSW, VIC, and SA. Carl holds a Bachelor's Degree in Agribusiness from California Polytechnic University, San Luis Obispo, along with a minor degree in Sustainable Agriculture.

Dan Serna
Associate Director & Senior Agricultural Economist
Dan is responsible for leading global economic market research for the farmland investment business. In addition, he is directly involved with investment strategy and communicating farmland investment characteristics to current and prospective investors. In this role, he produces market outlooks and price forecasts for major crops produced on client properties. Prior to his current position, Daniel was an Associate Director with MetLife Agricultural Finance, where he originated farm and ranch real estate loans, including business development, credit analysis and farmland valuations. Before joining MetLife and attending business school, Daniel was a Business Analyst with Agri-Mark/Cabot, a vertically integrated dairy farmer cooperative, where he was directly involved in commodities futures and options. Daniel holds a BA in Economics from Yale University and an MBA from Harvard Business School.

Introduction to HNRG

HNRG is a Global, Integrated and Sustainable manager of farmland and timberland with over 30 years of experience in the industry



- **A Leader in Stewardship of Timber and Agriculture**
- **HNRG's Investment Approach has Delivered Strong Performance**
- **Integrated Property Management Specializing in Direct Operation of Permanent Crops**
- **Capitalize on our Global Size and Scale**
- **Unparalleled In-house Global Economic Research Capability**

North American	Australasia	South America

3

Texas Municipal Plans Consortium (TMPC)

Investment Policy and Guidelines

- Account established with allocation of $25 million in July 1998 for permanent crops
  - $6 million added for FARM Australia in September 2000 & $10 million added for Ironbark Australia in May 2005
  - Investment strategy: Higher risk/higher return approach for investment and management of the portfolio, where leverage, developmental strategies, and other opportunistic arrangements will be considered
- $20 million added for US row crops in July 2009
  - Investment strategy: 100% leased US row crop investment portfolio with target return of 7-10%
  - Construction completed October 2014
- In November of 2015 DPFP stated their desire to reduce exposure to farmland as part of the broader asset allocation strategy with a renewed focus on higher returning permanent crop assets.
  - Target exposure of +/- $80 million of farmland assets with 8%+ nominal income return
  - No diversification objective going forward but avoid large capital outlays if possible
- HAIG has sold 16 properties and the Australian portfolio to date since sale process was initiated, generated approximately $70.3 million of net proceeds

2016	2017	2018	2019	2020
• 1 Property • $1.7 million	• 3 Properties • $5.4 million	• 7 Properties • $33.7 million	• 4 Properties • $36.2 million	• 1 Property • $1.9 million

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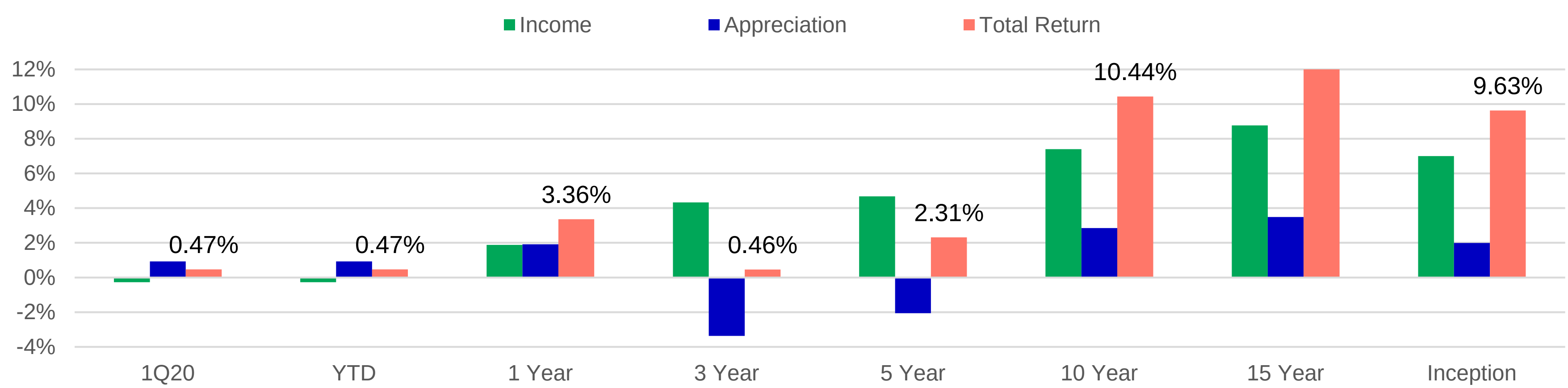
Portfolio Overview

The TMPC portfolio has performed well, with almost 2x distributions made to date

Since Inception Performance (as of March 31, 2020)	
Contributions, Since Inception	$79.9 million
Distributions, Since Inception	$164.8 million
Distributions to Paid-In	2.22
Total Value to Paid-In	3.45

- Annualized since inception return after fee for the portfolio as of Q1 2020 is 9.6%, primarily driven by income
- The total Distributions to Paid-In to date is 2.22
- Since inception IRR is 15.0%*
- Redevelopment and sales activity have lowered short term returns, driven by appreciation

TMPC Historical Performance as of March 31, 2020



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*Returns are annualized, after fee, since-inception as of 3/31/2020

*IRR based on actual dates of contributions and distributions made to the portfolio since inception in 1998 and includes a hypothetical sale at Net Asset Value.

Current Portfolio

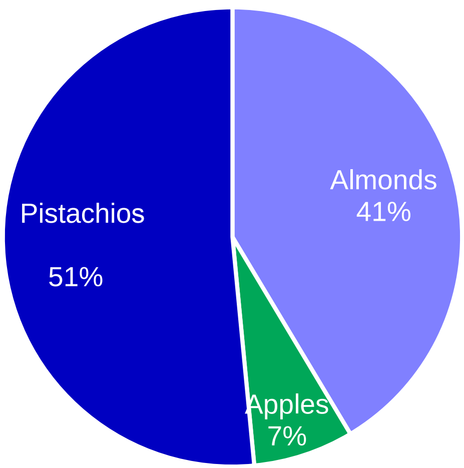
The remaining portfolio consists of some of the strongest performing farmland but is now highly concentrated in California

Current Portfolio (as of March 31, 2020)	
Net Asset Value	$91.1 million
Number of Properties	8
Market Value of Farmland	$78.7 million
Book Value of Farmland	$43.9 million

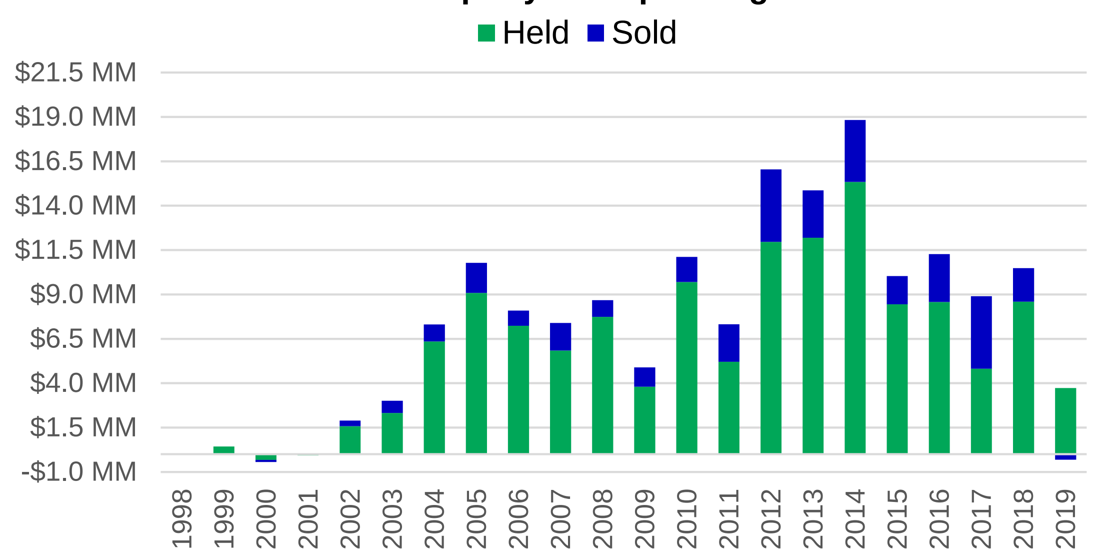
- The remaining properties have contributed 79% of NOI annually on average for the past five years
- These properties alone have generated DPI of 2.9x with a since inception IRR of 23.6%*
- Overall, these are strong properties, however the portfolio is now over 90% in California tree nuts

Market Value Diversification (3/31/2020)

Blue – California **Green** - Washington



Annual US Property Net Operating Income



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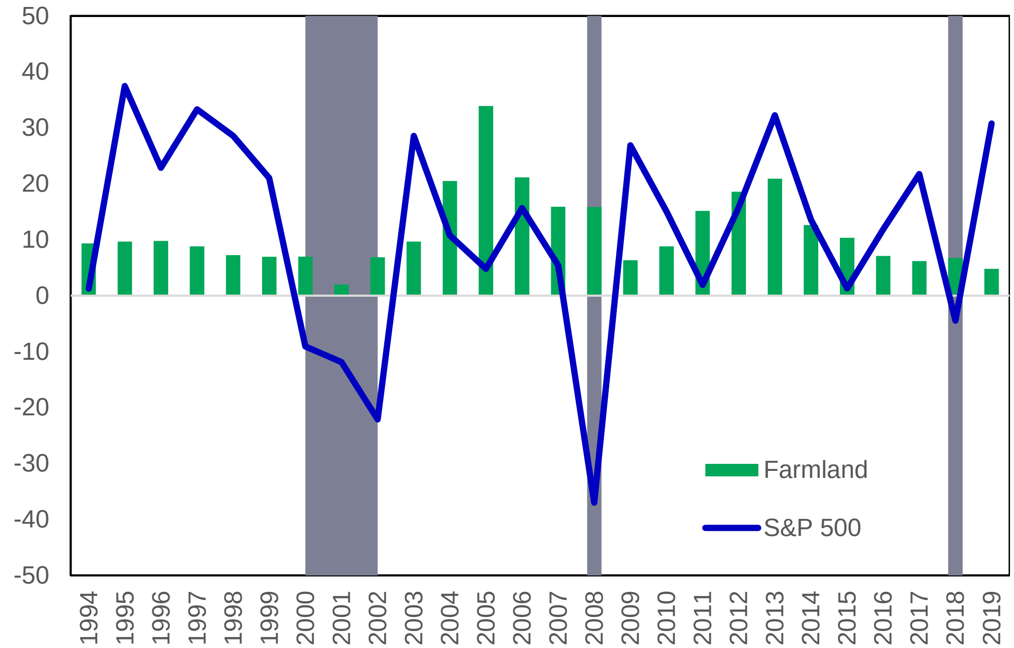
*IRR based on quarterly dates. Distributable cash and contributions are estimated on a property basis for the currently held assets historically, including a hypothetical sale at 3/31/2020 market value, less 5% assumed closing costs.

Why Invest in Farmland?

Investments in agriculture may increase returns and reduce risk in a well-diversified investment portfolio

- Provide diversification benefits
  - Low to negative correlation with major asset classes
  - Inflation hedge
- Favorable market fundamentals
  - Global population and income growth drives improved and more sophisticated, healthy focused diets (i.e. rice-based to meat, nuts, milk)
  - Arable land is finite and suitable water increasingly scarce
- Attractive risk/return characteristics
  - May provide relatively stable total returns with annual cash yields at relatively low risk levels
- Farmland can contribute to broader sustainability goals
- Farmland has historically demonstrated resiliency in periods of exogenous shocks to the economy
  - In comparison to the S&P 500 since 1995 farmland has demonstrated consistent and resilient performance

Annual Percent Returns for S&P 500 and Farmland (1994-2019)



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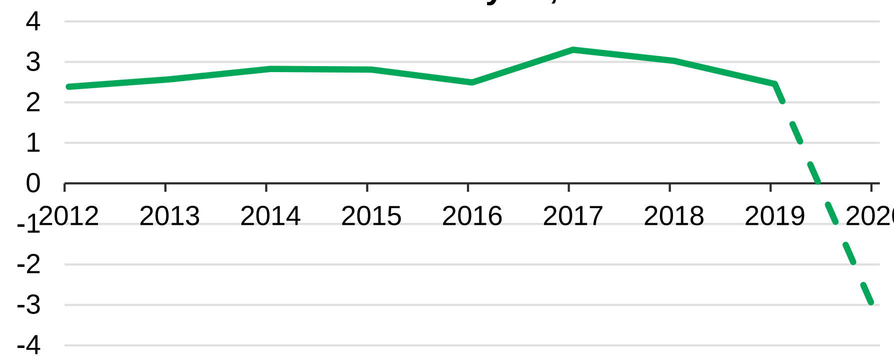
Source: Macrobond, February 2020, NCREIF Farmland Index January 2020, HNRG Research February 2020.

Sluggish Global Economic Growth and a Strong USD Shape 2020 Outlook

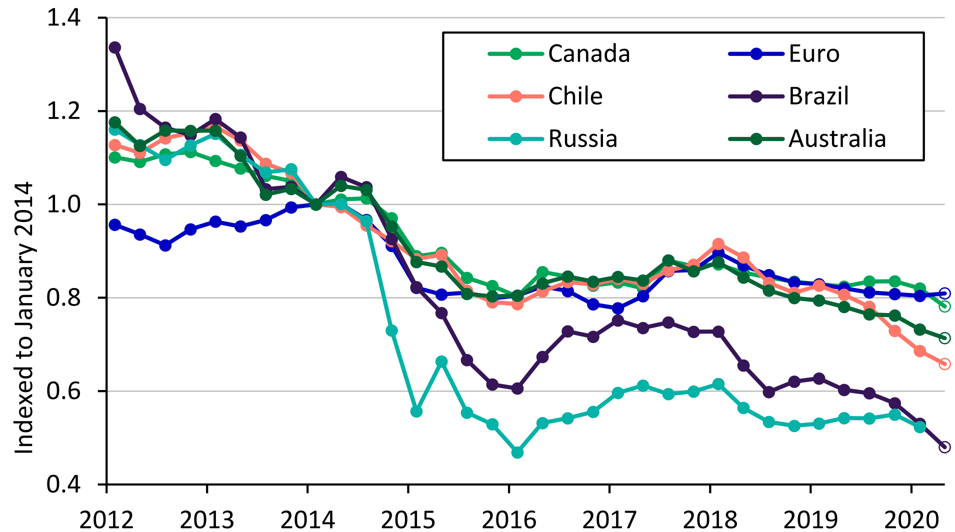
COVID-19 crisis, containment and recovery measures have far-reaching implications

- Social distancing, business shutdowns, and disrupted supply chains are pushing global growth to near record lows
- Reduced global GDP, income and consumer confidence likely to modestly erode near-term demand for agricultural products
- Pandemic shocks more complex and potentially longer lasting than a typical market correction
- Agricultural market outlook drivers:
  - Strong USD boosting non-U.S. producers
  - Marketing year timing of cash flows
  - Low interest rates help ease cash flow crunch and support farmland values
  - Trade relationships may shift
  - Crop insurance pricing levels established early in 2020 more favorable than current pricing

% Change Global GDP, inflation-adjusted and 2020 UN Forecast May 13, 2020



Exchange Rates of Key Agriculture Exporters USD per Base Currency – Jan. 2014 = 1.0



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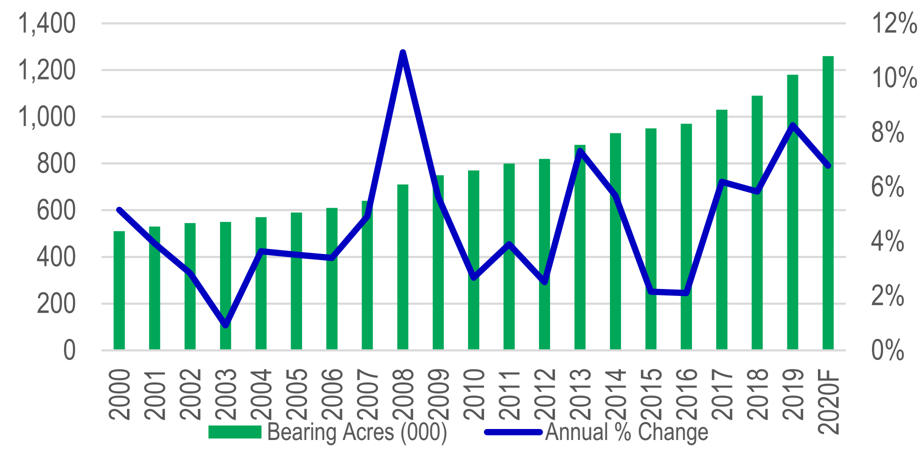
Source: Macrobond, World Bank, UN as of May 2020

Permanent Crop Demand Remains Solid; Labor and Trade Risks Increase

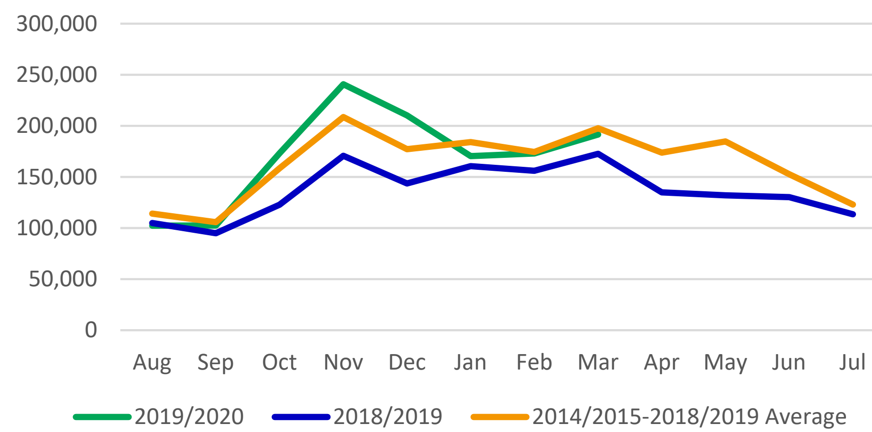
Demand for storable food crops expected more stable than crops for other uses

- Almonds: In April, strong U.S. shipments domestically +14% more than offset a 5% slide in exports. For the 2019 marketing year to April, domestic +6% and exports +5%
  - Prices moving lower near-term due to expectations of a record-large crop in 2020
- Apples: Fresh apple demand remains strong and exports regain momentum, up 21% through first 9 months of the 2019 crop marketing year
  - Fresh apple prices for the 2019 crop trended lower due to the ample supplies, and are expected to recover in 2020 on average yields and domestic market demand
- Pistachios: prices have held up better than almonds following the 2019 harvest, as the pistachio crop was an “off” year with production 19% smaller than 2018’s
  - China trade relations key: China and Hong Kong account for nearly of 50% of U.S. exports

U.S. Almond Bearing Acres and Growth Rate



U.S. Fresh Apple Exports (1,000 lbs.)



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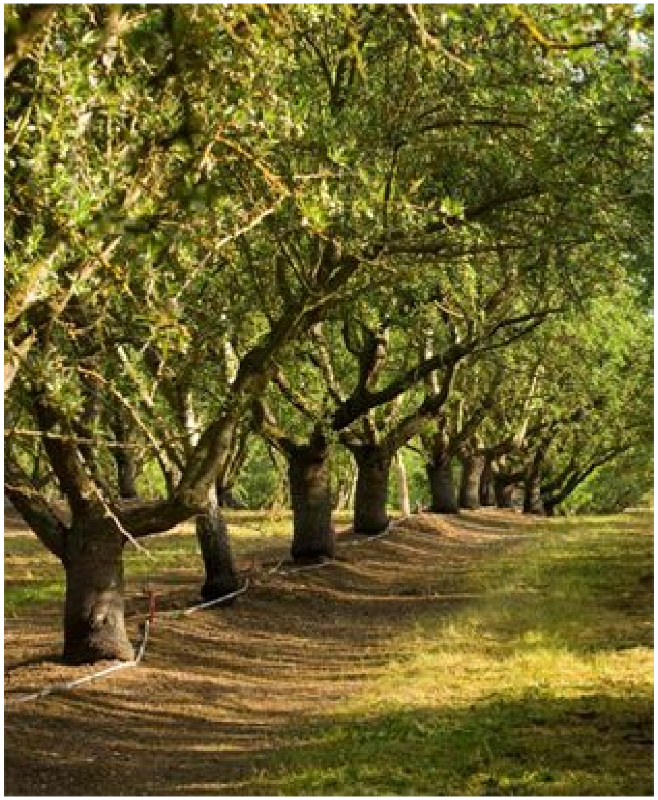
Source: USDA NASS May 2020, Almond Board of California as of May 2020

2020 is Forecast to Meet Budget Expectations

The TMPC portfolio is positioned to achieve strong income in 2020 despite COVID-19

- There was positive momentum entering 2020 with the Phase One Trade Deal with China
- COVID-19 has introduced uncertainty into the global economy and farmland sector
- To date, no impact on valuations has been observed or major changes to income projected and farmland looks to be continuing to play a stabilizing role in the larger portfolio
- 2020 is a pistachio “on” year with double digit income returns are projected
- However, there remain risks and we continue to monitor trade relations and the global economic recovery as well as the availability of labor and potential impacts to the supply chain.



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TMPC's Portfolio Is Projected to Continue to Perform

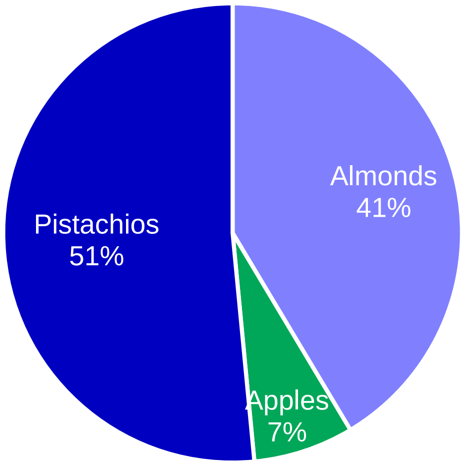
The portfolio is positioned to continue to generate income over the longer term

- The portfolio on a go-forward basis is well positioned to generate both near term and long term cash flows
- The projected go-forward IRR exceeds 10% with average annual distributions of $9.3 million
- In the medium term, some further redevelopment is expected to be completed, funded by portfolio cash flows
- However, the portfolio is significantly concentrated in California and tree nuts
- This creates potential for more volatility annually and risk:
  - Pistachios have a natural alternate bearing tendency which may vary annual cash flow
  - California water policy is evolving
- The portfolio is still positioned to provide the diversification and income benefits of a farmland portfolio and strong future returns
- HNRG continues to monitor for opportunities to maximize total return on the properties

Projected Return Metrics	
Projected Go-Forward IRR	10.2%
Projected Go-Forward Income Return	10.6%
Projected Avg. Annual Distributions (10 years)	$5.4 million
Projected Avg. Annual Distributions (25 years)	$9.3 million
Since Inception Go-Forward IRR	17.0%

Market Value Diversification (3/31/2020)

Blue – California **Green** - Washington



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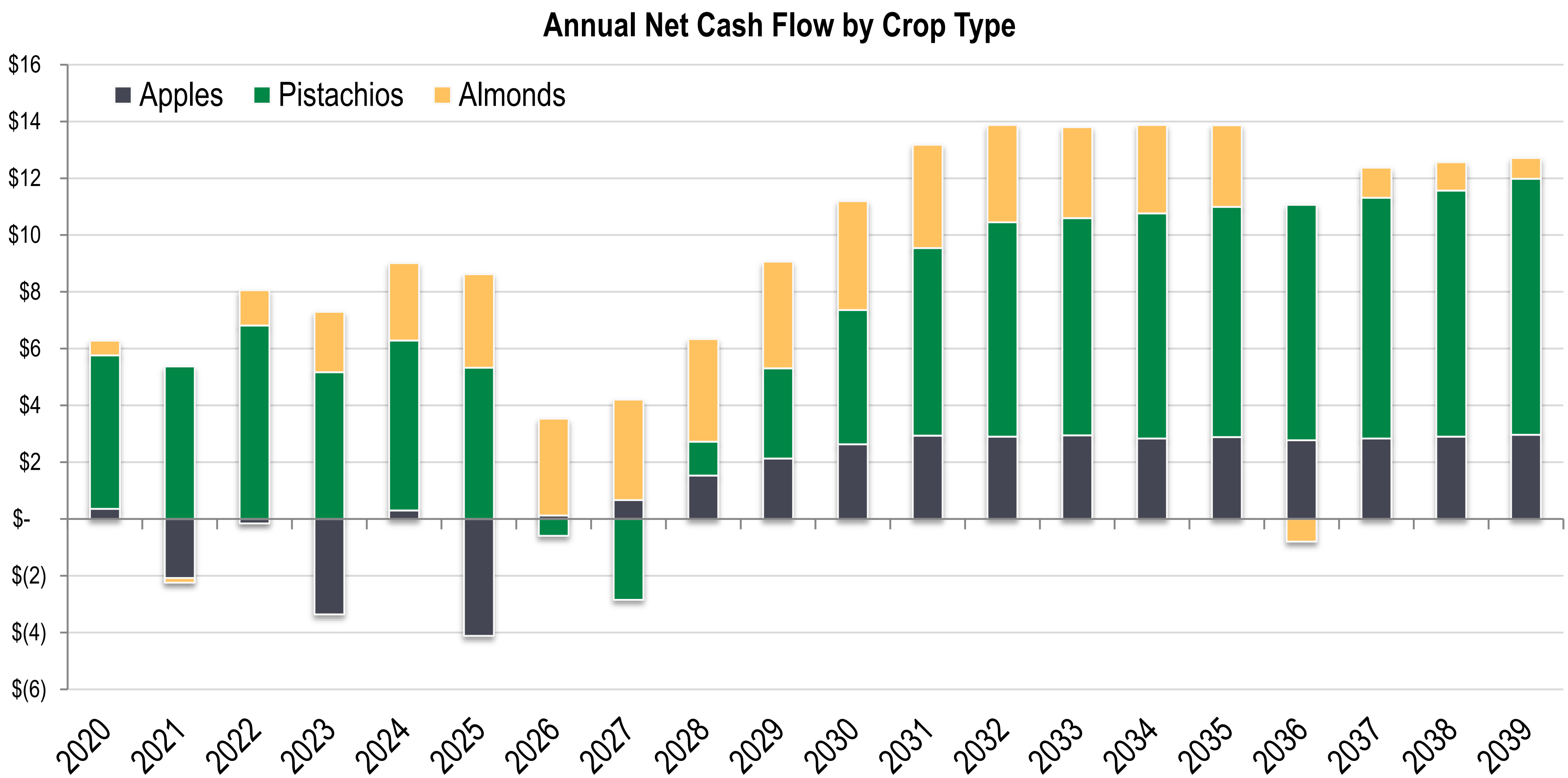
Projected go-forward returns assume a repurchase of the properties at 12/31/2019 and sale in 2044. All returns are before fees. Income return is annualized over the 25 year hold period. Since inception go-forward IRR includes the historic US net cash flows of the portfolio.

Annual Cash Projections are Driven by Tree Nuts

The TMPC portfolio is projected to distribute an average of $9.3 million annually over the next 20 years, for a total projected additional distribution of $232.8 million (excluding sales)



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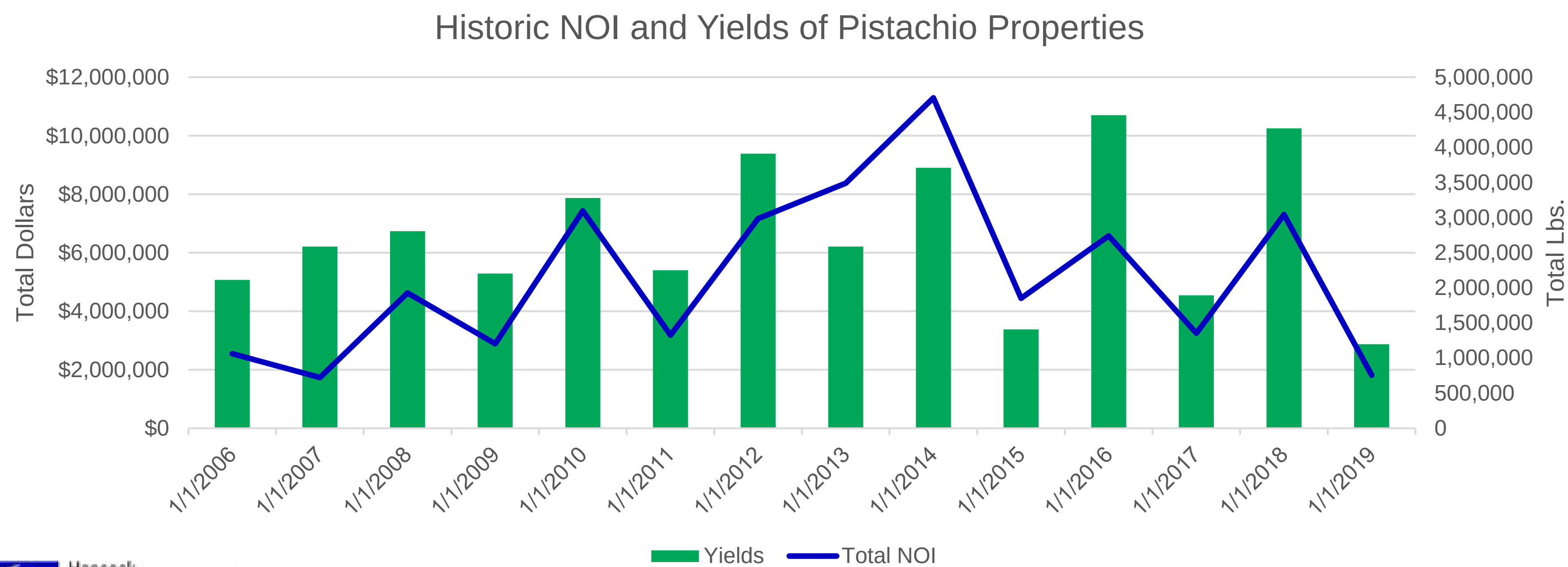
Annual net cash flows are at a property level only and exclude any assumed proceeds from property dispositions. Chart ends at 2039 for presentation, forecast cash flows continue through 2044. Redevelopment timing in 2026/2027 is subject to change and may be smoothed over a longer period of time

Pistachio Crop Yield May Drive Yearly Income Variation

Pistachios have a natural alternate bearing tendency, so income is expected to be variable year-to-year based on crop yield

- Pistachios have a natural behavior where crop yield varies significantly year to year which can cause net income to vary. This has been observed historically on the pistachio portfolio (chart below).

- Going forward, this behavior may cause significant annual volatility, with an "on" year almost doubling portfolio net income.



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*Graph above is of data from Tulare 144, Tulare 192, and Tulare 20 properties

California Water Management is Evolving

While SGMA is expected to have a substantial impact on farming in California, the potential impact varies widely and has a 20 year glidepath

- The California Sustainable Groundwater Management Act (SGMA) was passed into law in California in 2014 to sustainably manage the groundwater of CA. Sustainable management is defined as the absence of undesirable results, such as groundwater depletion, water quality degradation, and land subsidence.
- Terms:
  - Groundwater Sustainability Agency (GSA) – public agency formed to develop and manage the GSP
  - Groundwater Sustainability Plan (GSP) – The plan as to how a basin will achieve sustainability overtime
- Each sub-basin has a specific level of sustainable pumping based on hydrologic and geopolitical conditions. Each GSA within a sub-basin manages its unique hydrology to meet the overall sustainable yield of the sub-basin, with some GSA's already in balance
- Each sub-basin has a specific level of sustainable pumping based on hydrological conditions, with some GSA's already in balance
- The "How" to reach sustainability was left to the GSA to decide – employing tools such as groundwater recharge, sourcing additional surface water for their management area use, buying land to fallow or enforcing groundwater pumping restrictions.
- Each GSA in a critically overdrafted basin had to submit their draft GSP to the Department of Water Resources in January 2020 with medium priority basin plans slated for 2022

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HNRG Takes a Proactive Approach to Management

HNRG has extensive experience managing water resources, adapting over time to new policies and technologies

- Retained New Current Land and Water LLC in 2016 – consultants experienced in California water policy
- Hired three dedicated staff for the management of water resources
- Attend regular GSA and district meetings to engage in policy discussions


Groundwater recharge area developed on a HNRG managed property

- Actively engaged in developing and employing water management tools on farm
  - Groundwater recharge
  - Groundwater credit trading systems
  - Surface water development
  - Alternative land uses to offset fallow cost

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TMPC's Portfolio is Positioned to Weather SGMA

Minor impact is expected on majority of TMPC properties given the districts they are located within and access to surface water

- Looking at TMPC's portfolio, it is expected to be insulated from negative impacts of groundwater curtailment:
  - The majority of TMPC properties have access to surface water projects
  - Properties are within GSA's that do not call for significant groundwater restrictions in their plan
- **Risk** may be that water cost becomes more expensive and some properties may be more impacted than others
- **Upside** that there may be crop price benefits as SGMA rolls out and less water secure lands are fallowed
- HNRG is continuing to monitor SGMA as policy and options continue to evolve to manage for the best outcome for TMPC

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The TMPC Farmland Portfolio

While concentrated, the portfolio is poised to continue to provide strong cash flows and meet the portfolio objectives

- Already to-date the TMPC portfolio returned almost 2x DPFP contributions
- Looking towards the next 25 years, the portfolio is projected to continue to provide cash back to DPFP, averaging $9.6 million a year and projecting an IRR of +10%
- No performance is guaranteed and with the concentrated portfolio, there is more potential volatility from pistachio yield variation, US trade relationships, as well as California water policies
- HNRG will continue to actively manage the account, looking for opportunities to maximize the total return and mitigate risks

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DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C11

Topic: **Lone Star Investment Advisors Update**

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

Discussion: Investment Staff will update the Board on recent performance, operational, and administrative developments with respect to DPFP investments in funds managed by Lone Star Investment Advisors.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C12

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

Discussion: Counsel will brief the Board on these issues.

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #C13

Topic: **Review Police Officer and Fire Fighter Trustee applicant qualifications**

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

Discussion: Section 3.01(b-3) requires the Board to make a determination as to whether any potential candidates for the police officer and fire fighter trustee positions meet the qualifications of Section 3.01(b-1) to serve as a trustee. Section 3.01 (b-1) requires that a trustee not be an elected official of the city and that a trustee have demonstrated financial, accounting, business, investment, budgeting, real estate or actuarial experience.

Staff Recommendation: **Evaluate** the potential Trustee candidates and determine if the qualifications of Section 3.01(b-1) are met.

Regular Board Meeting – Thursday, June 11, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D1

Topic: **Public Comment**

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

Regular Board Meeting – Thursday, June 11, 2020

DALLAS POLICE & FIRE PENSION SYSTEM

DISCUSSION SHEET

ITEM #D2

Topic: **Executive Director's report**

a. Associations' newsletters
- NCPERS Monitor (June 2020)
- NCPERS PERSist (Spring 2020)
- TEXPERS Pension Observer (May 2020)
  https://online.anyflip.com/mxfu/wsin/mobile/index.html

b. Open Records

c. Operational Response to COVID-19

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

Regular Board Meeting – Thursday, June 11, 2020

THE NCPERS
MONITOR
The Latest in Legislative News
June 2020

In This Issue

2 Next Round of Covid-19 Legislation

Photo Illustration © 2020, adobestock.com

Whatever we choose to call it – the HEROES Act, Covid 4.0, CARES Act 2.0 – Congress and the President are likely to soon agree on another major piece of legislation to address the coronavirus pandemic.

3 Executive Directors Corner

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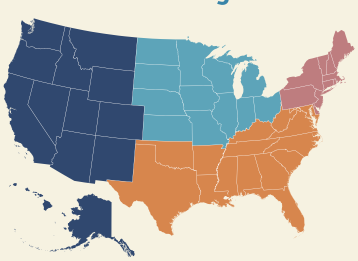
Public pensions work, and not just for the hardworking public servants who receive deferred compensation benefits upon retirement or the survivors who receive payments because of a loved one's sacrifice. Public pensions work by putting revenues back into state and local government coffers.

4 Around the Regions



This month, we will highlight New York, Wisconsin, South Carolina and California.

State and Local Governments Have Solid Capacity to Sustain Pensions, Report Finds

Illustration by: Lael Henderson ©2020 Illustration Source

Producing compelling and timely research that illuminates practices, trends and the outlook for public pensions has always been a cornerstone of our mission at NCPERS. And in the current environment, when the Covid-19 health crisis is stirring up concern about the fiscal health of states and municipalities, this mission is particularly urgent.

Our newest Research Series report, "[In Tranquility or Turmoil, Public Pensions Keep Calm and Carry On](#)," adds to the growing body of knowledge about the capacity of state and local governments to handle their pension obligations.

The report found that even if stock market indexes declined as much as 40 percent this year, it would cost a maximum of $3.86 billion per year—only 0.02 percent sliver of annual gross domestic product—for public pensions to rebound. (In fact, markets have recovered more than two-thirds of the losses they experienced this spring in response to the Covid-19 outbreak. As of May 26, the S&P 500 index stood at 2991, down 8.2 percent from its January 2nd high of 3257.)

CONTINUED ON PAGE 5

Next Round of Covid-19 Legislation

By Tony Roda


Photo illustration © 2020, Adobestock.com

Whatever we choose to call it – the HEROES Act, Covid 4.0, CARES Act 2.0 – Congress and the President are likely to soon agree on another major piece of legislation to address the coronavirus pandemic. In recent days we have heard from Congressional sources that President Trump wants to sign the new legislation on July 4. Depending on the situation in the fall with Covid-19 and the strength of the economic recovery, additional legislation could be enacted then as well.

This next round of federal legislation began with House passage of the HEROES Act on May 15. The bill, H.R. 6800, would total $3 trillion in new relief. However, Senate Majority Leader Mitch McConnell (R-KY) said that the next piece of legislation must include liability protections for businesses and must not contain an extension of enhanced unemployment insurance ($600 per week through July 31). The HEROES Act does not include liability protections and contains an extension of the unemployment benefits. As a result of those and other provisions, McConnell said that the HEROES Act was dead on arrival in the Senate and took the position that, before any new relief is provided, Congress and the Trump Administration must first evaluate the implementation of the first three pieces of Covid-19 legislation and decide whether further aid is needed.

That position has proved to be unsustainable. In fact, within days we began to see Senate Republicans fragment. Some vulnerable Republican Senators publicly called for more federal aid to state and local governments, particularly for frontline health care workers and first responders. In addition, Senators Bill Cassidy (R-LA) and Bob Menendez (D-NJ) proposed an additional $500 billion in federal assistance for states and localities. That amount would be on top of the $150 billion that was included in the CARES Act. Finally, on May 21, McConnell himself said that the next legislation "…was not too far off."

A couple of major issues have arisen since enactment of the CARES Act regarding assistance to states and localities. First, governors and local leaders want greater flexibility on the use of the funds. Specifically, they would like to be able to use the funds to replace lost revenues from the pandemic. Second, local leaders in many states are complaining that governors are holding the federal funds and not sending the dollars to counties, cities, and other localities that are suffering significant revenue shortfalls.

The HEROES Act would address both of these criticisms. Of the new $500 billion in federal assistance to states and localities, $375 billion would be provided to local governments, and some of these funds will be provided directly. Also, under the HEROES Act, the new assistance and retroactively the monies in the CARES Act would be available to replace lost revenues.

For our community it is important to note that in a response to the requests by the State Senate Presidents of New Jersey and Illinois for the federal government to provide direct aid to their state pension funds, U.S. Senator John Kennedy (R-LA) introduced S. 3608. The bill would allow the funds in the CARES Act to be used to replace lost revenues, but would prohibit any of the federal funds from being used for a state pension fund. It is possible that this type of prohibition will be included in subsequent proposals by Senate Republicans and the White House. The Cassidy-Menendez proposal already includes this prohibition.

Finally, there are two retirement-related provisions in the HEROES Act that are of interest to public plans. First, as you will recall, the CARES Act modified retirement plan Minimum Required

CONTINUED ON PAGE 5

Public Pensions Work by Returning Revenues into States and Localities

Photo illustration © 2020, istock.com

Public pensions work, and not just for the hardworking public servants who receive deferred compensation benefits upon retirement or the survivors who receive payments because of a loved one's sacrifice. Public pensions work by putting revenues back into state and local government coffers.

In fact, public pensions in 2018 generated $179.4 billion more in state and local government revenues than taxpayers put into pension systems, according to NCPERS' 2020 update of its landmark study, "Unintended Consequences: How Scaling Back Public Pensions Puts Government Revenues at Risk." I hope you'll check it out and contact us with your observations and questions.

> *Public pensions work by putting revenues back into state and local government coffers.*

As the title of the 2020 update makes clear, our research demonstrates that governments are throwing the dice when they fail to recognize the contributions public pensions make. Public pensions' positive financial impact rose 30.6 percent from the $137.3 billion level notched in 2016. Both editions of the Unintended Consequences study showed in detail how investment and spending connected to pension funds impact state and local economies and revenues.

The analysis draws on historical data from public sources including the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. While pension fund assets are invested globally, the economic impact of these investments can be traced down to individual states based on the NCPERS study methodology.

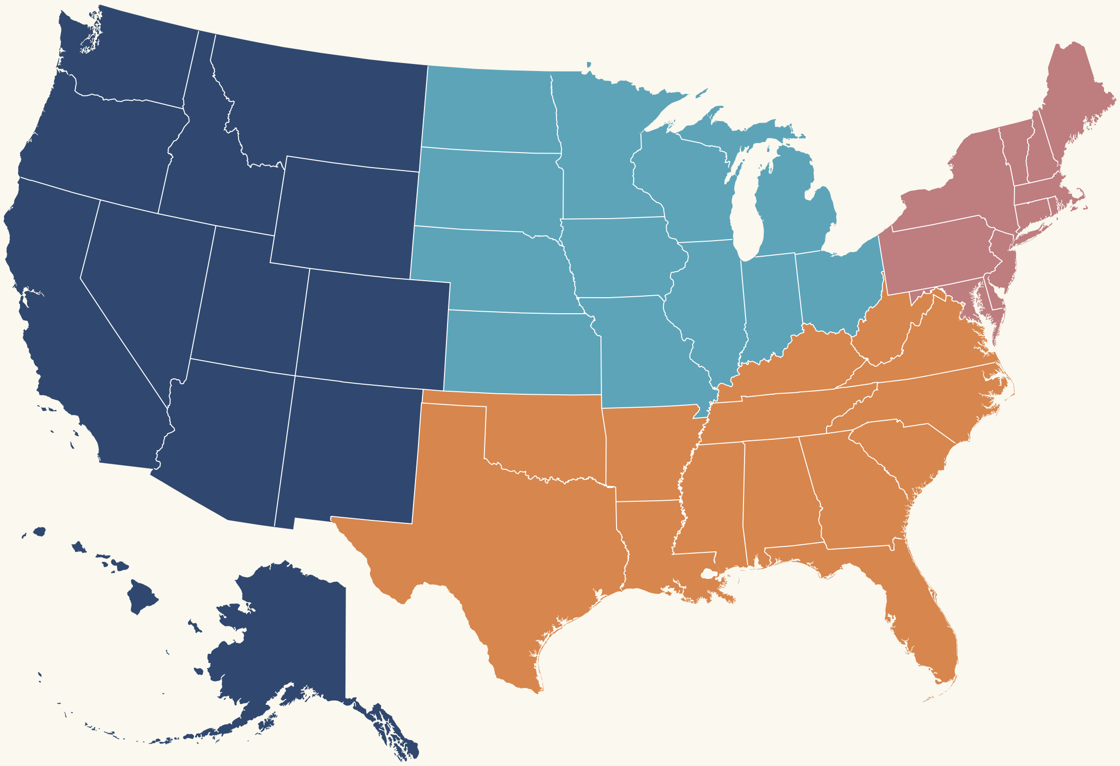
The study features thorough research into national and international studies as well as the application of NCPERS's unique methodology. Our methodology, it is worth noting, has been vetted with experts from Brown University, the Center for American Progress, the National Association of State Retirement Administrators, the National Education Association, The New School, the University of California, Berkeley, and University of Massachusetts, Boston, as well as former U.S. Labor Secretary Robert Reich.

As the study demonstrates, decade after decade, public pension funds have always worked and continue to work by accumulating assets over a worker's lifetime. There are no instant pensions; it takes

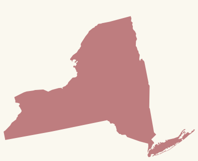
CONTINUED ON PAGE 6

NCPERS Around the Regions

This month, we will highlight New York, Wisconsin, South Carolina and California.



NORTHEAST: New York



Legislation is progressing through the New York State Senate to allow volunteer firefighters and ambulance workers to continue earning length of service points during the Covid-19 pandemic. A bill to accomplish this, SB2851, was approved by the Local Government Committee on May 26. At press time, it was awaiting action by the Rules Committee.

The law would enable local governments to credit active volunteer firefighters and ambulance workers with up to five additional points per month until as late as the end of 2022. The temporary measure would allow volunteer workers to continue amassing credits toward pension benefits. In many jurisdictions, government restrictions have reduced the role of volunteer firefighters and ambulance drivers while a state of emergency is in place.

The volunteers have argued that the quarantine and state disaster emergency in New York are making it impractical for them to earn the 50 points per year that is required to be eligible for benefits, according to a report on LIHerald.com.

The bill gives local governments until April 30, 2021, to adopt resolutions determining any additional points to be credited each month.

CONTINUED ON PAGE 8

SUSTAIN PENSIONS CONTINUED FROM PAGE 1

The underlying message is that public pensions have the economic capacity to keep paying benefits in difficult times, notwithstanding short-term setbacks.

As our research director, Michael Kahn, put in, "the debate over public pension sustainability tends to take an obstructed view of the balance sheet that focuses on pension plans' debt, but ignores their income capacity." Critics of public pensions constantly overlook the fact that "state and local governments have ongoing sources of income that provide the economic resources to handle their pension obligations," he said.

The NCPERS analysis shows economic growth, as measured by GDP, greatly exceeds the growth in pension liabilities when they are compared correctly, using a 30-year timeframe. Critics frequently make the mistake of comparing 30-year pension liabilities with the economic resources available in a single year, with the result that much criticism of public pensions' funding status relies on a flawed comparisons.

Bad arithmetic leads to bad policy decisions. It's as if pension critics believe pension liabilities have to be paid immediately rather than over a long period of years. Most of us would be jolted if we had to figure out how to pay off our entire mortgage balance next month rather than make the monthly principal and interest payments. But we don't have to do that, and we have monthly income to help us pay the balance over the long haul. The same is true of state and local governments.

Our research show that they have the economic capacity over the long haul to honor their pension obligations, and that is what counts.

Markets, meanwhile, will do what markets do, especially in volatile times. They'll go up and they'll go down. Sometimes the gyrations will be nerve-wracking. The stewards of public pensions will also do what they do in good times and bad. They'll diversify and re-balance their portfolios to during market swings and economic ups and downs. ◆

COVID-19 LEGISLATION CONTINUED FROM PAGE 2

Distribution (RMD) rules, and last December the Setting Every Community Up for Retirement Enhancement Act (SECURE Act) raised the age trigger for receiving RMDs from 70 ½ to 72. That change applies to individuals turning 70 ½ on or after January 1, 2020. For individuals under the previous age trigger the CARES Act waived RMDs for 2019 that would have been made by April 1, 2020, and any RMD required to be paid in 2020. It is a one-year delay and applies to defined contribution 401(a) plans, governmental 457(b) plans, 403(b) plans, 401(k) plans, as well as IRAs. It is a mandatory provision. Following up on these changes, the HEROES Act would allow any RMDs that were made in 2019 or in 2020 to be rolled over into an eligible retirement account or an IRA without penalty, provided the rollover is made before December 1, 2020.

The second key retirement-related provision of the HEROES Act would amend the participant loan sections of the CARES Act (i.e., higher loan limits and delayed repayments) to allow plan administrators to rely on the self-certification of plan participants that they are eligible for the special relief under the new law. Self-certification was left ambiguous under the language of the loan provisions of the CARES Act.

As this fourth major phase of Covid-19 legislation takes shape, please be assured that NCPERS will closely monitor it for any provisions affecting state and local governmental pension plans. ◆

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

EXECUTIVE DIRECTOR'S CORNER CONTINUED FROM PAGE 3

steady contributions by employers and employees plus investment returns over the long haul to consistently produce the results that deliver modest but reliable retirement income to career public servants.

Politics, of course, is a short-attention-span pursuit. So it's not shocking that pensions, as the ultimate long-term investment, can be misunderstood and mischaracterized in political dramas that tend to focused on finding quick fixes to the latest short-term spending crises. What we hope policymakers can take away from this study is that the impatient act of breaking faith with public pensions is a costly and unwise strategy for state and local governments. In the long-term, impulsive moves backfire, while patience pays dividends.

The numbers tell a compelling story. The positive economic effects of public pensions increased significantly over the course of two years, from 2016 to 2018. Additionally, in 40 states, pensions were net contributors to revenue in 2018, an increase from 38 states in 2016. If public pensions didn't exist, those funds would have to come from somewhere else in order to sustain the current level of public services. And that somewhere else would be increased taxes on constituents.

NCPERS's analysis of the data also showed:

- The economy grows by $1,372 for each $1,000 of pension fund assets. While the figure sounds small on the surface, the size of pension fund assets—$4.3 trillion in 2018—means that the impact of this growth is greatly magnified, the study found.
- Investment of public pension fund assets and spending of pension checks by retirees in their local communities contributed $1.7 trillion to the U.S. economy.
- Economic growth attributable to public pensions in turn generated approximately $341.4 billion in state and local revenues. Adjusting this figure for plan sponsors (taxpayer) contribution of $162 billion yields pensions' net positive impact of $179.4 billion. ◆

NCPERS Center for Online Learning

June 2, 2020:

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Covid-19 and Municipal Bond Market Volatility,
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2020 Webinar Series

NCPERS Around the Regions

AROUND THE REGIONS CONTINUED FROM PAGE 4

MIDWEST: Wisconsin

Forty-three Republican members of the Wisconsin legislature are urging the state's Congressional delegation to withhold federal Covid-19 relief funds to any state with a history of "reckless budgeting," and took direct aim at Illinois's pension shortfall.

The lawmakers also bashed New York and California in an extraordinary letter sent May 8 to the Wisconsin's two U.S. senators and seven House members. The letter, first reported by the *Milwaukee Journal Sentinel*, reserved its harshest, most pointed criticism for Illinois.

"After years of failing to fund their overly generous pension system, Illinois is already asking for the federal government to bail them out of these series of poor financial decisions," the lawmakers said in the letter. "The State Senate in Illinois has requested $44 billion – and that's just for one state. Wisconsinites can't afford to bailout reckless budgeting from other states."

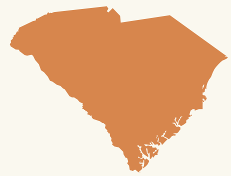
The letter acknowledged that United States faces "unprecedented challenges" from Covid-19, but argued that Wisconsin has been fiscally responsible and therefore should not be responsible for assisting other states.

"These responses to the disease have led to drastic changes in budget projections for states around the country: sales tax collections are down, income tax deadlines have been extended, unemployment rates are at historic levels and more businesses are permanently closing every day," the letter said.

"That being said, Wisconsin has spent eight years making the tough choices to get our fiscal house in order," the letter said. "We do know that our neighbors to the south have spent decades spending and borrowing recklessly."

The House of Representatives on May 15 voted to provide $500 billion in aid to state governments and $375 billion to local governments and they grapple with the impact of Covid-19. At press time, the House bill, H.R. 6800, the Health and Economic Recovery Omnibus Emergency Solutions (HEROES) Act, faced an uncertain future in the Senate.

SOUTH: South Carolina



The South Carolina General Assembly's decision last to approve a 35.8 percent salary increase for judges and solicitors is drawing a spotlight to one of the state's three smallest pension plans.

The cost of living adjustment that took effect July 1, 2019, was accompanied by a 35.8 percent increase in the monthly retirement benefits for retirees, according to financial reports published by the South Carolina Public Employee Benefit Authority (PEBA). The salary and annuity increases pushed the employer contribution rate to 62.94 percent effective July 1, from 52.49 percent.

A report in the Charleston, S.C., *Post and Courier* said the increase drove up annual pension payments for retired judges and solicitors by an average of $37,000, had more than a $100 million impact on funding, and transformed the plan from PEBA's second best funded to its worst funded. The fund, known as the Judges and Solicitors Retirement System (JSRS), is one of five plans managed by PEBA and had a net position of $165.8 million as of July 1, with 160 active members and 213 retirees and beneficiaries.

JSRS is dwarfed by the South Carolina Retirement System and the Police Officers Retirement System, with net positions of $27.2 billion and $4.8 billion respectively. It is larger than the General Assembly Retirement System, with $34.7 million, and the South Carolina National Guard Supplemental Retirement System, with $30.7 million. However, it pays the highest benefit—an average of $83,675—of any PEBA plan, commensurate with the relatively high salaries of judges.

The *Post and Courier* article cited a PEBA statement that the raises were approved to attract and retain judges and other JSRS members.

Only the pension plans for judges and solicitors — and for state lawmakers — had the feature linking pay raises to pension benefit increases, and the lawmakers plan closed to new participants in 2012, the article said.

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AROUND THE REGIONS CONTINUED FROM PAGE 8

WEST: California

The California Supreme Court heard oral arguments May 5 on whether to uphold a state law that would eliminate from pension calculations some of the pay that public sector workers receive in their last few years of service.

The court is considering a challenge by the Alameda County Deputy Sheriffs' Association to a 2012 state law that prohibited what California termed "pension spiking" for all government employees. Lawyers for the deputy sheriffs argued that the state impermissibly reduced the definition of what compensation may be included in the pension formula, and thereby impaired public servants' vested rights in violation of contracts clause of both the U.S. and California constitutions.

David E. Mastagni, representing the deputy sheriffs, argued that the term pension spiking is "an inherently subjective political term." He stressed that employees were recruited and told they could depend on the pension rules in place, which included deferred compensation based on various "key inducements" offered and advertised by the employer.

Because pension payments are calculated based on a worker's highest year of earnings, spiking can produce a more lucrative retirement than what the employee earned on the job. At least 1 million public employees in California will be affected by the court's decision.

A lawyer for the state, Rei Onishi, argued that "the question presented by this case is whether on top of legitimate pension liability, should taxpayers along with their children and even grandchildren, be forced to also shoulder the burden of financing abusive practices to artificially and unlawfully inflate pensions." He said practices that could inflate pensions by $1 million over an employee's lifetime were never lawful in the first place and thus could not give rise to any right.

The California Supreme Court has indicated when it will hand down a ruling. ◆

2020 Conferences

July

Chief Officers Summit (COS)
August 25 – 27
Chicago, IL

August

Public Pension Funding Forum
August 23 - 25
Chicago, IL

October

NCPERS Accredited Fiduciary Program (All modules)
October 24 – 25, 2020
Sheraton Grand Nashville Downtown
Nashville, TN

Public Safety Conference
October 25 - 28, 2020
Sheraton Grand Nashville Downtown
Nashville, TN

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The Voice for Public Pensions

Spring 2020 | Volume 33 | Number 2

Message from the President

Daniel Fortuna
NCPERS President

During these extraordinary times, when we can no longer operate business as usual, it is essential for NCPERS to find new ways to maintain our connection and relevance to the public pension community. That's why NCPERS has developed and enhanced our online educational content. I'm delighted to announce that this month we will host our first Virtual NCPERS Accredited Fiduciary (NAF) Program. Additionally, NCPERS has enhanced our Center for Online Learning schedule and we have created closed, private Facebook groups for our members to connect and socialize.

On May 19 – 22, 2020, we will host NAF modules 1 (Governance & the Board's Role) and 2 (Investment, Finance, & Accounting) through videoconferencing, and on May 26 – 29, 2020, we will host NAF modules 3 (Legal, Risk Management, & Communication) and 4 (Human Capital) with the same format. With three-hour videoconference sessions, we can keep the momentum going for trustees who want to continue or begin their NAF training.

Since the beginning of the COVID-19 global pandemic, NCPERS has acted swiftly to move as much of our education online as possible. As of printing, NCPERS has hosted six webinars concerning the COVID-19 pandemic: *Navigating through a Crisis: A Conversation with CalPERS CEO with Marcie Frost*, *The Anatomy of a Recession: What to Look for & Where We're Headed*, *The SECURE & CARES Acts: Provisions Impacting Public Pensions, Participants, & Sponsors*, *Portfolio Positioning During Covid-19 Market Volatility: Insights from 3 Distinct Vantage Points*, *Do Public Sector Employees Really Live Longer? Exploring the Date for Normal Times & in the Age of COVID*, and *Balancing Headline Risks with Investment Opportunities in China*. I encourage you to watch these informative webinars and to register for our upcoming webinars below.

Lastly, while we cannot network face-to-face, we can certainly do it online! NCPERS has created two closed, private Facebook groups for our members. The first group, NCPERS Public Pension Trustees, is specifically for trustees of public pension plans. The second group, NCPERS Public Pension Staff Members, is specifically for the staff members of public pension plans. Each of these groups is private and not available to outsiders. To join, you must answer three questions and be approved by NCPERS staff. This security step is to verify that each Facebook NCPERS Group participant is a staff member or trustee of a pension plan. The Facebook NCPERS Group is a safe place where fund staff members or trustees can connect with each other and share information amongst friends.

To view or register for any of our webinars for conferences, please click on the links inside the article We look forward to "seeing you" at our online events and hopefully at in-person events soon! Stay safe and healthy! ◆

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5 Custodian Bank: COVID-19: A New Chapter in ESG and Fixed Income?

6 Healthcare: Use of Individual Medicare Marketplaces for Public Sector Retiree Health Care: A Guide for Elected Officials

Take the PERSist Quiz on pages 6, 9 and 10

Submit Completed Quiz Here

NCPERS Actuary

TAKE THE QUIZ

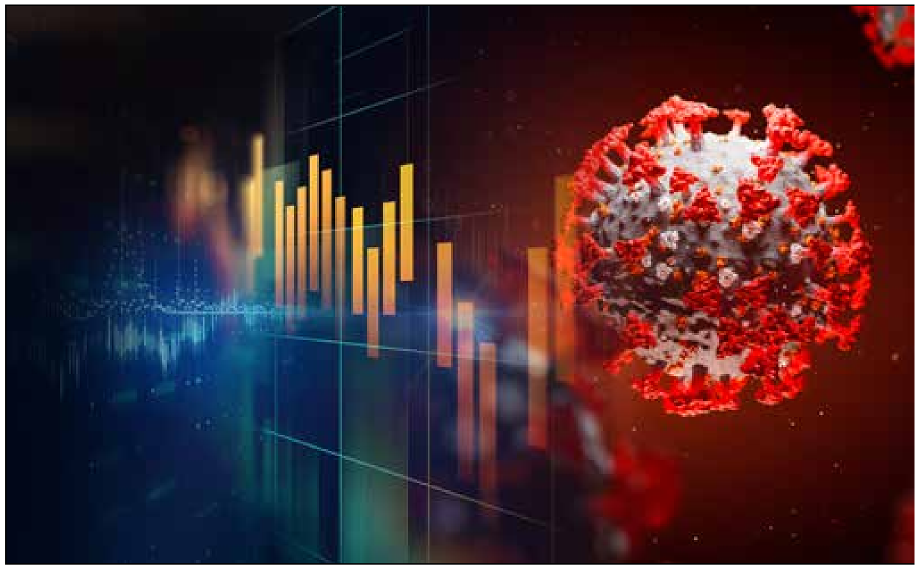
Metric Spotlights Ability of Public Plans to Endure Pandemic

By Bill Hallmark

The disruption of the U.S. economy by the novel COVID-19 pandemic has created challenges for public pension plans.

They may suffer significant investment losses, and at the same time revenues for state and local governments have dropped precipitously while their spending needs have increased. However, that does not mean that public pension plans will collapse.

Retirees of public pension plans are continuing to receive pensions, helping to stabilize the economy. Plans may be asked to do more and should be prepared for requests from their sponsors to defer contributions. In theory, those plans may be able to act as a shock absorber for their local economies by reducing contributions during the crisis. However, a good shock absorber must be able to both absorb the shock and spring back to its original position.



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EVALUATING SHORT-TERM FLEXIBILITY

A fundamental indicator of a plan's ability to tolerate deferred contributions is the Outflow Rate—benefit payments and expenses as a percentage of assets. This shows how much of its assets the plan would need to sell to pay benefits if it doesn't receive any contributions for a year.

This table shows the five plans in the Public Plan Tool reporting the highest Outflow Rate for the 2018 fiscal year. The second column shows the Net Cash Flow Rate—Outflow Rate net of contributions. This represents how much of a plan's assets would need to be sold to pay benefits if contributions remain the same.

Highest Outflow Rates
2018 Fiscal Year

Plan	Outflow Rate	Net Cash Flow Rate
Kentucky ERS	-39%	-7%
Providence ERS	-29%	-4%
Chicago Police	-26%	-3%
Chicago Municipal	-23%	-10%
New Jersey Teachers	-19%	-9%

These plans would be hit particularly hard by a significant drop in contributions. For some, even maintaining the current contribution levels may be insufficient. In comparison, the median plan reported an Outflow Rate of -8 percent and Net Cash Flow Rate of -3 percent.

LONG-TERM RECOVERY

An effective shock absorber must also spring back to its original position, which will require increased contributions at a later date. We don't know how quickly revenues will rebound, but when they do, public plans need to get their share, particularly if they have yielded to requests to defer contributions.

Governance and history are critical factors to this assessment. Plans that can compel governments to contribute an Actuarially Determined Contribution are well-positioned to demand the funds needed for long-term recovery later. In fact, asset smoothing techniques may already provide the needed deferral of costs. However, plans that do not have this authority

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NCPERS Asset Manager

TAKE THE QUIZ

The key tenets of global row crop farmland values and their evolution over time

By Jonathan Griffiths and Skye Macpherson

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ROW CROP FARMLAND: REVIEWING AN IMPLIED PRICING MODEL

The implied value of farmland can be modelled using the cash flows an owner expects to receive from farming the land and the owner's cost of capital. Farmland cash flows are determined by calculating revenues (crop yield multiplied by crop sales price) less expenses (cost of production, both direct and indirect). In some countries, revenues also include government subsidies and other support provided to the farmer. Each landowner or farmer will have their own cost of capital dependent on their financial situation, in this analysis the owner's cost of capital is represented by either industry farm lending rates or the long-term risk free rate in the country of operation. These provide a proxy for broad changes in the cost of financing in each country.

For row crop farmland there is a clear link between crop yield, crop price, cost of production, interest rates and land values. An implied price can be formulated as a result of income from crop production and the interest rates, as follows:

$$F = \frac{(C * Y + S - P)}{I}$$

Where;

- F is freehold land price
- C is the farm gate price of crops sold by the farmer, weighted according to the typical crop rotation on the farmland
- S is any subsidy due to a crop grower
- Y is the crop yield, weighted according to the typical crop rotation
- P is the cost of crop production per unit of area, weighted by typical crop rotation
- I is the farm lending rates or long-term risk-free rate (longest available local government bond yield)

CONCLUSION

Overall, the analysis demonstrates that the key drivers of row crop farmland values globally are a function of farm income and cost of capital. There are nuances to investing in different regions, which highlights the importance of having investment professionals that are located and experienced in each region to be able to invest with confidence.

The magnitude of each variables influence on farmland values has changed over time. In order to forecast future farmland values, investors need to form a view on the direction of commodity prices, cost of capital and productivity improvements. Productivity has been one of the key variables that has influenced global row crop farmland values over time. Developing countries such as Poland and

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NCPERS Corporate Governance

2020 Executive Compensation Amid Market Uncertainty

By Paul Gryglewicz, Arden Dalik and Peter Landers

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With a global pandemic upon us, the world is a very different place, at least right now. However, just like there is no need to hoard cans of tuna and cases of toilet paper, we at GGA believe that it is not advisable at this juncture, to call off your organization's executive compensation program plans for 2020. In fact, it is times like these that corporate governance, risk management, technology and innovation and board oversight are imperative to preserving shareholder value, while also and most importantly ensuring the health and safety of our employees.

What we know from other market crises, is that corporate governance and executive retention are high on the list when navigating black-swan events. If there ever was a black-swan event, COVID-19 may have now assumed the definition.

We suggest that as long as the Board and/or the CEO maintains the ability to use their judgment on implementation timing, eligibility, etc., for example, then plans should proceed. There are obvious exceptions to this where an organization may not have the available cash flow due to this 'black swan' event (e.g. airlines, tourism companies, etc.).

In the interest of brevity, this piece is meant to cover only high level corporate governance and retaining key talent, but we understand that there are broader considerations when factoring in an organization's complete workforce as many companies may have to layoff some of their staff due to decreased demand for their products/services and the corresponding decrease in cash flow for the business (as we write this a number of immediate family members and friends have already been impacted directly). While we cannot predict the future, we at GGA can share our observations within the marketplace and areas for consideration as boards make decisions over the next few months relating to corporate governance and executive compensation. So far, within the mining and broader commodity businesses, we have seen some proposed delays in work or a cautious movement forward, as planned.

Areas for consideration during these difficult times include:

- **Board Oversight** - Businesses are continuing to try to make the best of a bad situation and effective corporate governance needs to continue, within reason, in the same spirit, to ensure effective oversight of the organization. How easily is your board able to meet remotely as opposed to in-person? What decisions can be made via consent resolutions versus requiring a full meeting? Have you stress tested the impact of black swan events on your company's operations? What plan do you have in place to deal with black swan events in a crisis and who is responsible for what?

- **Retention of Key Talent** - Strategies for attraction and retention of executive talent are critical as even in immediately affected companies, the demands on executive teams are typically extremely high, more so than in normal market conditions, to chart out a path forward. If your board has observed a gap to market from a pay perspective, how are you going to let your executive team know that you recognize this gap, but also are taking into account the current market conditions? Some organizations will choose to "stay the course" and implement any compensation adjustments that were determined at the past meeting. Others may choose a more conservative route and announce salary freezes or even

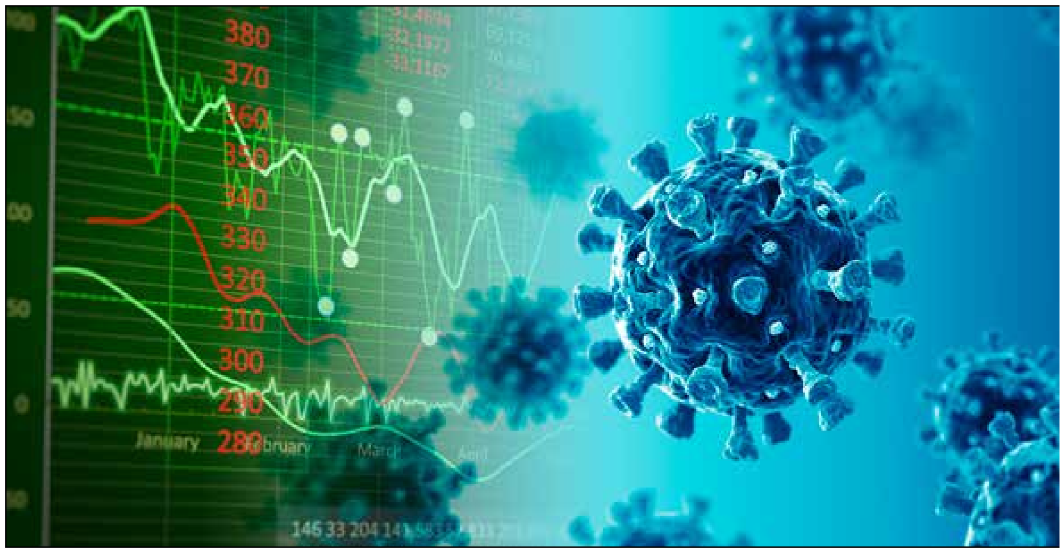
CONTINUED ON PAGE 11

TAKE THE QUIZ

COVID-19: A New Chapter in ESG and Fixed Income?

By Frances Barney

Historically, equities have been the focus of environmental, social and governance (ESG) integration. However, ESG considerations in fixed income have gained considerable traction in recent years, and could receive even more attention as the COVID-19 pandemic unfolds.



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In a 2017 CFA Institute member survey, 76% of respondents said they used ESG analysis in listed equity selection. Fixed income came in second at 45%. That gap is narrowing as data to support ESG tracking and analysis in fixed income expands. Increasingly, large institutional investors seeking new sustainable investment opportunities have been turning to fixed income as the next area of focus for achieving their ESG portfolio objectives. COVID-19 could also accelerate that progression, as access to debt markets will be critical to cushioning the economic and societal impact of the disease.

The rapid expansion of the green bond market provides historical context for what the growth of a COVID-19 social bonds market might look like. About a decade ago, the World Bank launched its first green bond issuance in concert with Scandinavian pension demand for investments that also addressed climate change. According to a 2020 report by the Climate Bonds Initiative, global green bond and loan issuance hit a record high of $255 billion in 2019.

Since March, the International Finance Corporation and African Development Bank have raised a total of $4B in social bond issuance to support countries and businesses impacted by COVID-19. Supra-nationals, together with institutional investors, may well pave the way for the scaling of social bonds to meet the challenges of COVID-19 as they did with green bonds. The potential for impact is profound, as capital can be used to address supply chain gaps, development and scaling of vaccine treatment, infrastructure resiliency and economic and societal recovery in general.

Pre-COVID-19, approximately 35% of public sector plans incorporated ESG integration, screening and engagement into their processes. ESG opportunities generally require time to materialise and the expertise and resources to analyse. While ESG integration has gained momentum in fixed income, we are hearing that a greater body of research, better data and more consistent disclosure practices are needed to help investment staff identify ESG opportunities and

CONTINUED ON PAGE 9

Frances Barney, CFA
Head of Global Risk Solutions, BNY Mellon

Frances has over twenty years of investment industry experience, most of it in performance and risk analytics services. Prior to joining BNY Mellon in 2006, Frances worked at State Street Corporation, where she oversaw one of three regional offices supporting the delivery of performance analytics for its U.S. custody clients and managed the U.S. performance outsourcing service for investment managers and consultants. Prior to that, she worked at Deutsche Bank Trust Company Americas, where she was head of performance analytics. Frances started her career at Bankers Trust, where she held a variety of product and risk management roles in the global markets and investor services divisions. Frances received a B.A. from Yale University, an M.B.A. from The Wharton School of the University of Pennsylvania and is a Chartered Financial Analyst. Frances is an active volunteer with the CFA Institute for the Certificate in Investment Performance Measurement ("CIPM") program.

TAKE THE QUIZ

Use of Individual Medicare Marketplaces for Public Sector Retiree Health Care: A Guide for Elected Officials

By Rivka Liss-Levinson

Photo illustration © 2020 istock.com

Many state and local governments are facing challenges funding retiree health care as the public workforce changes. This is particularly concerning as retiree health care is a key lever in recruiting and retaining talent in the public sector workforce.

[*Use of Individual Medicare Marketplaces for Public Sector Retiree Health Care: A Guide For Elected Officials*](https://www.slge.org/resources/medicare-marketplaces-for-public-sector-retiree-health-care) is a report prepared by Rivka Liss-Levinson, PhD, director of research at the Center for State and Local Government Excellence. This report explains individual Medicare marketplaces and how public employers and retirement systems are using them to provide value for retirees while containing health care costs. The report covers what individual Medicare marketplaces are, why state and local government plan sponsors are using them to deliver retiree health care, and what elected and appointed officials should know about them.

Utilizing the data and information provided in this report can be a useful tool for officials to make informed decisions about how best to contain rising health care costs while meeting the health care needs of their retirees.

"We hope this research serves as an important tool for policymakers across the nation to successfully navigate retiree health care challenges. This research is a key resource for policymakers to understand if individual Medicare marketplaces can be a part of their benefits strategy", Dr. Liss-Levinson explained. ◆

You can view the report here- https://www.slge.org/resources/medicare-marketplaces-for-public-sector-retiree-health-care

__Rivka Liss-Levinson, Ph.D.__ is Director of Research for the Center for State and Local Government Excellence (SLGE), a non-profit, non-partisan organization that helps local and state governments become knowledgeable and competitive employers so they can attract and retain a talented and committed workforce. SLGE identifies leading practices and conducts research on public retirement plans, health and wellness benefits, workforce demographics and skill set needs, and labor force development. As Director of Research, Rivka develops and oversees SLGE's research agenda, leads research concept development, and engages with external audiences on SLGE research.

PERSist Quiz Healthcare

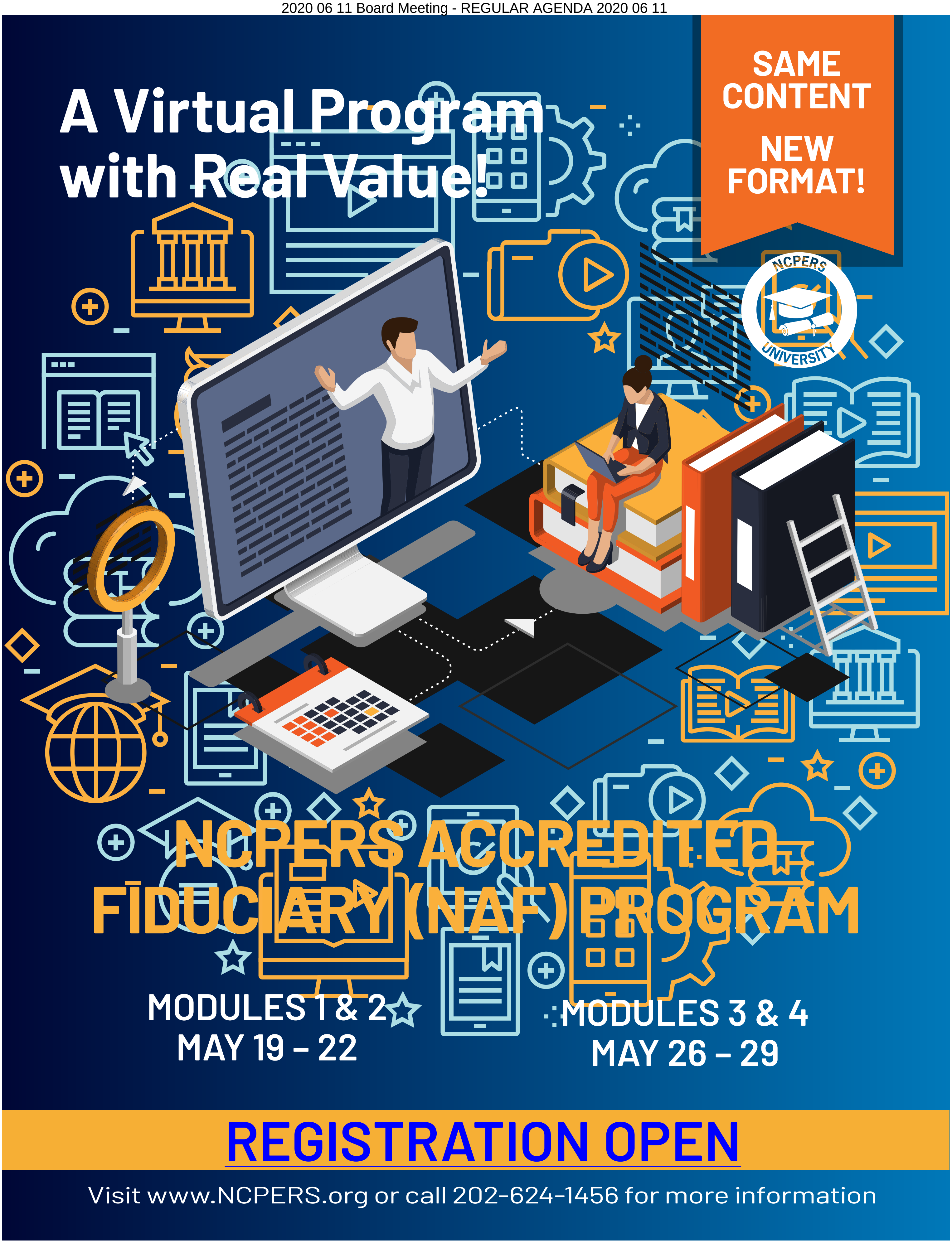
When an employer/plan sponsor moves to an individual marketplace, what is the name of the channel used to reimburse retirees for premiums and other qualified medical expenses?

❍ **A.** Health Savings Account

❍ **B.** Health Reimbursement Arrangement

❍ **C.** Flexible Savings Account

Answer: B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COVID-19: Financial and emotional wellbeing opportunities for your members,

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June 23, 2020:
Covid-19 and Municipal Bond Market Volatility,
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2020 Webinar Series

ACTUARY CONTINUED FROM PAGE 2

need to proceed with more caution and may need to negotiate additional controls before yielding to requests to defer contributions.

The COVID-19 pandemic has created many challenges. Efforts to stop the spread, care for the infected, and mitigate the impact on vulnerable populations are the current priorities. Plan sponsors may seek to defer part of their pension contributions in order to pay for other priorities. For some plans, the need for contributions is immediate and ongoing while other plans may have some short-term flexibility as long as they can be confident of replacing any foregone contributions at a later date. ◆

__Bill Hallmark__ is a nationally respected retirement consultant with more than three decades of experience advising pension plans. He is a frequent speaker at industry conferences on public pension topics including principles of funding, risk metrics, disclosures, and financial reporting. He has held various positions with professional organizations, including serving as Vice President of Pensions for the American Academy of Actuaries. Bill is an Associate of the Society of Actuaries, an Enrolled Actuary under ERISA, a Fellow of the Conference of Consulting Actuaries, and a member of the American Academy of Actuaries. He joined Cheiron in September 2009.

PERSist Quiz — Actuary

Based on its outflow rate, which plan can best tolerate a temporary suspension of contributions?

❍ **A.** Plan with an outflow rate of -5%

❍ **B.** Plan with an outflow rate of -20%

❍ **C.** Pension plans are long-term entities, and both plans can tolerate a temporary suspension of contributions equally well.

Answer: A

CUSTODIAN BANK CONTINUED FROM PAGE 5

risks. COVID-19 is an example of an unfortunate once-in-a-lifetime event that, hypothetically, might be better weathered by those issuers who have more robust ESG frameworks in place. In time, the data will either validate or disprove this hypothesis.

As a servicer of assets, BNY Mellon is developing tools to support ESG investor analysis. BNY Mellon has incorporated corporate fixed income data into our ESG Analytics capability, which allows institutional investors to score their equity and fixed income portfolios against ESG factors and other sustainability criteria. We see cross-industry collaboration as fundamental to laying the additional foundation needed to support investor interests and further maturity of ESG investment analysis. ◆

Disclosure

Sources:

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PERSist Quiz — Custodian Bank

How might COVID-19 influence the trajectory of ESG and fixed income?

❍ **A.** Stimulate issuer growth of social bonds market to address COVID-19 impacts

❍ **B.** Create new opportunities for institutional investors to invest in a new type of fixed income instrument that achieves positive societal impact

❍ **C.** Catalyze supranationals and the industry at large to develop further frameworks to support social bond issuance and ESG analysis

❍ **D.** All of the above

Answer: D

ASSET MANAGER CONTINUED FROM PAGE 3

Brazil, have benefited from the introduction of farming practises that have rapidly improved productivity. Even in the US, which is a more mature producing region, productivity continues to play an important role in lifting farmland values. Given the plethora of new technology being introduced to farming operations, it is rational to expect the trend to continue. ◆

Jonathan Griffiths

Investment Analyst, Westchester Group of Europe

Prior to his role as Investment Analyst with Westchester, Jonathan worked for Spearhead International, a pan-European farming company, where he was a mechanisation analyst and operational improvement project manager. Whilst at Spearhead he lived and worked on farms in Poland and Romania and had close involvement with projects in the Czech Republic, Slovakia and Serbia. He has practical agricultural experience on farms in the UK and has recently completed his MSc thesis with an econometric analysis of drivers of farmland prices in Europe. He is a member of the Institute of Agricultural Management and the Central Association of Agricultural Valuers and is a graduate of Cambridge University.

Skye Macpherson, CAIA

Executive Vice President and Global Head of Portfolio Management, Westchester Group Investment Management

From a rural background in Australia, Skye joined Westchester from Blackrock in London, where she was Director and Portfolio Manager in the Natural Resources Equity team, managing three strategies across eight portfolios with US$2.9bn of assets under management of which US$900m was agricultural exposure. Prior to Blackrock, Skye spent 15 years at Colonial First State Asset Management, working for the firm in Sydney and London, during which time she was involved in the establishment and management of their global agribusiness equity product. Skye is a graduate of the University of New England, Armidale, NSW, where she gained a Bachelor of Agricultural Economics, specializing in Agribusiness. Skye also holds a Graduate Diploma in Applied Finance and Investment from the Securities Institute Australia and is a Chartered Alternative Investment Analyst ("CAIA") charter holder.

PERSist Quiz | Asset Manager

What two drivers of farmland value does the analysis in this paper conclude are the main forces in creating value in this asset class?

❍ **A.** Farm income and cost of capital

❍ **B.** Commodity prices and productivity improvements

❍ **C.** Geographical diversity and productivity improvements

Answer: A

CORPORATE GOVERNANCE CONTINUED FROM PAGE 4

rollbacks, depending on the cash flow concerns of the business. A good middle ground might be to approve compensation adjustments in principle but hold off on formally enacting the adjustments for a few months until market conditions have stabilized and better financial projections can be made. In terms of Long-Term Incentive (LTIP) grants, previous grants may have been made at significantly higher share prices so you must also consider what value, if any, executives still have within their LTIP and what the prospects are for this value to rise over the next few months or even years. If you are only granting Stock Options, is there a chance for underwater options to get back in-the-money or is the probability low? If the probability is low, then executives are a flight risk as competitors will be able to offer them new LTIP grants at significantly lower exercise prices than if they stay with your organization. This may necessitate discussion on the need for new retention grants which can be made at a lower share price and increase the likelihood of long-term value to executives, thus acting as a retention device during this period.

- **Retention Strategy** - While retention LTIP awards seem like a good idea in the current environment, these awards must be balanced with the equity dilution level of the organization under its existing equity compensation plans. At lower share prices, the level of equity dilution can increase dramatically and use up much needed room for LTIP grants in the future. In a time like this, stress testing of the impact on equity dilution levels of proposed grants is an important step that boards must conduct before approving regular or retention-based LTIP grants. If proposed grants are too dilutive then consideration of a fixed number of options or units to be granted, that will allow an organization to retain room for future grants, is something that should be considered in the interim until market conditions stabilize. For many organizations, dilution will also not support additional retention awards, so a board may need to consider a performance cash based award, that is granted outside of the shareholder approved equity plan. At all costs, while option surrender programs continue to be allowed by the regulator, categorically shareholder advisory firms consider this an option re-pricing problematic pay practice.

- If performance expectations under the Annual Balanced Scorecard have already been approved, the Board should evaluate the performance expectations set and determine whether those expectations are still reasonable in the ever-evolving environment. If expectations are now deemed to be unreasonable in the Board's view, consideration of revised performance targets based on the new reality should be discussed to ensure executives are still motivated to achieve important objectives over the remainder of the year.

Remember that while retaining key talent is imperative and in shareholders long-term interests, the board must also consider the shareholders who have potentially lost material amounts of their portfolio. These executives are tasked with not only mitigating the financial blow in the downward market, but also to generate value when markets return. Ensure your board is not making compensation decisions in a vacuum during these challenging times. Seek the independent support necessary to give appropriate back testing and scenario analysis prior to making any potential retention decisions. ◆

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