

ARKANSAS TEACHER RETIREMENT SYSTEM

June 7, 2021

1400 West Third Street

BOARD ROOM

Little Rock, AR 72201

Board of Trustees Meeting

11:30 a.m.

Trustees

Danny Knight, Chair

Anita Bell

Lloyd Black

Kathy Clayton

Kelly Davis

Dr. Mike Hernandez

Shawn Higginbotham

Michael Johnson

Bobby G. Lester

Chip Martin

Robin Nichols

Ex Officio Trustees

Susannah Marshall, State Bank Commissioner

Johnny Key, Education Commissioner

Honorable Andrea Lea, State Auditor

Honorable Dennis Milligan, State Treasurer

AGENDA
ARKANSAS TEACHER RETIREMENT SYSTEM
BOARD OF TRUSTEES

June 7, 2021

11:30 a.m.

1400 West Third Street

Little Rock, AR 72201

- I. ***Call to Order/Roll Call.** page 1.
- II. ***Motion for Excused Absences.**
- III. ***Adoption of Agenda.** page 2.
- IV. Executive Summary. (Attachment No. 1) page 6.
- V. Approval of Prior Meeting Minutes.
 - A. ***April 6, 2020 - Corrected Minutes.** (Attachment No. 2) page 11.
 - B. ***April 5, 2021 Minutes.** (Attachment No. 3) page 17.
 - C. ***May 3, 2021 Minutes.** (Attachment No. 4) page 24.
- VI. Report of Member Interest Amount Waived Under A.C.A. Sec. 24-7-205. (Attachment No. 5) page 27.
- VII. Report of Employer Interest and Penalties Waived Under A.C.A. Sec. 24-7-411. (Attachment No. 6) page 28.
- VIII. ***Manifest Injustice Board Review.**
 - A. ***In the Matter of MI Claim #2021-05.**
- IX. Manifest Injustice Report. (Attachment No. 7) page 29.
- X. ***GASB Report After Legislative Audit Review.** *Curtis Carter, Chief Fiscal Officer* (Attachment No. 8) page 31.

* Action Item

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- XI. ***Legislative Audit Report.** *Clint Rhoden, Executive Director* (Attachment No. 9) page 131.

- XII. Discussion of ATRS Audit Findings for Fiscal Year 2020.

- XIII. Discussion of Retirement Applications Waived in 2020.

- XIV. Audit Committee Report. *Danny Knight, Vice Chair Audit Committee*
 - A. Internal Audit: Application of IRS 415 Limit Testing. (Attachment No. 10) page 165.
 - B. Special Project: Cyber Security Training. (Attachment No. 11) page 174.
 - C. ***2021-2022 Audit Plant.**
 - 1. ***Audit Plan for FY2022.** (Attachment No. 12) page 176.
 - 2. FY2021 Summary of "Work Completed". (Attachment No. 13) page 182.
 - 3. Conflict of Interest Statements. (Attachment No. 14) page 188.
 - 4. Code of Ethics Statements. (Attachment No. 15) page 190.

- XV. Investment Committee Report. *Robin Nichols, Investment Committee Chair*
 - A. Arkansas Related and Investment Update.
 - 1. List of Fund Closings.
 - a. Assignment of Interest in Riverside Fund V, L.P., to Riverside Fund V SQ-A, L.P., a Continuation of an Existing Private Equity Buyout Fund Specializing in Small Companies in the Healthcare and Technology Sectors, with Imminent Need, the Board Authorized Assignment was Accepted and Closed on March 18, 2021.
 - B. General Investment Consultant Report.
 - 1. Preliminary Performance Report for the Quarter Ended March 31, 2021. (Attachment No. 16) page 192.
 - 2. Preliminary Performance Report for the Month Ended April 30, 2021. (Attachment No. 17) page 338.
 - 3. Opportunistic/Alternative Portfolio Review. (Attachment No. 18) page 362.
 - C. Real Asset Investment Consultant Report.
 - 1. Performance Report for the Quarter Ending December 31, 2020. (Attachment No. 19) page 411.
 - 2. ATRS Farmland Portfolio Discussion.

* Action Item

3. ***Recommendation to Commit up to \$50 Million Dollars to KKR Diversified Core Infrastructure Fund L.P., an Open End Infrastructure Fund Focused on Existing Projects with Imminent Need.** (Attachment No. 20) page 464.
 - a. ***Resolution 2021-23.** (Attachment No. 21) page 507.
4. ***Recommendation to Commit up to \$50 Million Dollars to Carlyle Realty Partners IX, L.P., a Value Add Closed End Real Estate Fund that Seeks to Identify and Capitalize on Real Estate Trends with Imminent Need.** (Attachment No. 22) page 509.
 - a. ***Resolution 2021-24.** (Attachment No. 23) page 538.
5. ***Recommendation to Commit up to \$50 Million Dollars to GLP Capital Partners IV L.P., a Value Add Open End Real Estate Fund Specializing in Distribution and Logistic Companies with Imminent Need.** (Attachment No. 24) page 540.
 - a. ***Resolution 2021-25.** (Attachment No. 25) page 561.

D. Private Equity Consultant Report.

1. Private Equity Portfolio Review for the Quarter Ending December 31, 2021. (Attachment No. 26) page 563.
2. ***Recommendation to Commit up to \$30 Million Dollars in Kerberos Capital Fund III, L.P., a Debt Fund that will Focus on the Litigation Finance Market with Imminent Need.** (Attachment No. 27) page 617.
 - a. ***Resolution 2021-26.** (Attachment No. 28) page 620.

XVI. Operations Committee Report. *Bobby Lester, Operations Committee Chair*

- A. Open Forum for Potential Rule or Law Changes by Committee Members and Board Members Present.
 1. Open Forum.
- B. Discussion of Codified Arkansas Rules (CAR) Project. (Attachment No. 29) page 622.
- C. Potential Rule Change.
 1. Rule 10: T-DROP and Return to Service. (Attachment No. 30) page 629.
 2. Rule 9: Retirement Benefits. (Attachment No. 31) page 637.
 3. Rule 4: Election of Board of Trustees. (Attachment No. 32) page 650.

XVII. ***Board of Trustees Disability Review.** *Clint Rhoden, Executive Director*

- A. ***Group Order - Approved.** (Attachment No. 33) page 657.
- B. ***Group Order - Denied.** (Attachment No. 34) page 659.

* Action Item

XVIII. ***Staff Reports.**

- A. ***Medical Committee Report. A total of 16 Disability Applications were approved.** *Willie Kincade, Director of Operations* (Attachment No. 35) page 661.

XIX. Other Business.

XX. ***Adjourn.**

EXECUTIVE SUMMARY

TO: Board of Trustees
FROM: ATRS Staff
RE: Executive Summary
DATE: June 7, 2021

- VI. Report of Member Interest Amount Waived Under A.C.A. Sec. 24-7-205.** ATRS waives interest for members when there is a dispute between ATRS and the member as to whether ATRS made a mistake or otherwise did not do all that was required on the member's account. Since ATRS has implemented the actuarial cost method for the purchase of service credit, interest waived is slowly disappearing, as well as the number of members who purchase service credit. Three (3) member interest amounts were waived for this reporting period in the amount of \$134.25. This is a standard report for information and is not an action item.
- VII. Report of Employer Penalties and Interest Waived Under A.C.A. Sec. 24-7-411.** ATRS may also waive employer interest and penalties when reports or payments are late or have issues due to a new bookkeeper, inclement weather, sickness and other situations that justify a waiver. Three (3) employer penalties and interest amounts were waived for this reporting period in the amount of \$1,366.20. This is a standard report for information and is not an action item.
- VIII. Manifest Injustice Board Review.**
- A. In the Matter of MI Claim #2021-05.** When an active member dies, survivor benefits may be payable to eligible spouses and dependents as outlined in A.C.A. § 24-7-710. Once an application is made, the applicant must complete the application process within six months. A.C.A. § 24-7-710(a)(2)(B) further states that “the application shall be void unless an extension is granted by the system.” Clearly, executive staff has authority to grant an extension of the six-month process *before* the expiration of period, but whether the executive staff has authority to grant an extension *after* the expiration of the six-month period is questionable. It is the opinion of the executive staff that the facts in this case warrant an extension to be granted. It would have been granted had the ATRS requested it within the six-month period. However, the authority to waive a deadline is an exclusive remedy of the Board of Trustees. In the matter of MI Claim #2021-05, executive staff recommends the Board find a manifest injustice exists in this case and grant a three (3) month extension retroactively. **This is an action item.**

- IX. Manifest Injustice Report.** The rule on Manifest Injustice requires reports on Manifest Injustice resolutions to the Board at least two times per year. This Manifest Injustice report is the first report for this calendar year. This report is for informational purposes only and is not an action item.
- X. GASB Report After Legislative Audit Review.** The Division of Legislative Audit and GRS Actuaries have completed their annual report required by the Governmental Accounting Standards Board (GASB) Statement No. 68 "Accounting and Financial Reporting for Pensions." This report allocates certain pension amounts to participating employers based on the employers' proportionate share of contributions received for the previous fiscal year. Employers use this information as a footnote in their financial statements as required by GASB 68. ATRS would like a motion from the Board to review and file the reports. **This is an action item.**
- XI. Legislative Audit Report, June 30, 2020 Official Review.** The Division of Legislative Audit has provided ATRS staff with the 2020 fiscal year audit report for the fiscal year that ended on June 30, 2020. The audit report has been shared with the Board in the Board documents for this meeting. The law requires that the ATRS Board have the Legislative Audit report on the ATRS Board agenda and that the ATRS Board pass a motion reflecting that the audit report was received and reviewed by the Board in the event issues arise in the future related to the audit. **This is an action item.**
- XII. Discussion of ATRS Audit Findings for Fiscal Year 2020.** Director Rhoden will give the Board a report on the Audit Findings for FY2020.
- XIII. Discussion on Retirement Applications Waived in 2020.** Director Rhoden will give the Board a report on the Retirement Applications that had a deadline waived at the discretion of the Director in 2020.
- XIV. Audit Committee Report. *Danny Knight, Vice Chair.***
- A.** Internal Audit: Application of IRS 415 Limit Testing
 - B.** Special Project: Cyber Security Training
 - C. 2021-2022 Audit Plan.**
 - 1. Audit Plan for FY 2022.**
 - 2. FY2021 Summary of "Work Completed"**
 - 3. Conflict of Interest Statements.**

4. Code of Ethics Statements.

XV. Investment Committee Report. *Robin Nichols, Chair.*

A. Arkansas Related and Investment Update.

1. List of Fund Closings.

- a. **Assignment of Interest in Riverside Fund V, L.P., to Riverside Fund V SQ-A, L.P., a Continuation of an Existing Private Equity Buyout Fund Specializing in Small Companies in the Healthcare and Technology Sectors, with Imminent Need, the Board Authorized Assignment was Accepted and Closed on March 18, 2021.**

B. General Investment Consultant Report.

1. **Preliminary Performance Report for the Quarter Ended March 31, 2021.**
2. **Preliminary Performance Report for the Month Ended April 30, 2021.**
3. **Opportunistic/Alternative Portfolio Review.**

C. Real Asset Investment Consultant Report.

1. **Performance Report for the Quarter Ending December 31, 2020.**
2. **ATRS Farmland Portfolio Discussion.**
3. **Recommendation to Commit up to \$50 Million Dollars to KKR Diversified Core Infrastructure Fund L.P., an Open End Infrastructure Fund Focused on Existing Projects with Imminent Need.**
 - a. **Resolution 2021-23.**

4. **Recommendation to Commit up to \$50 Million Dollars to Carlyle Realty Partners IX, L.P., a Value Add Closed End Real Estate Fund that Seeks to Identify and Capitalize on Real Estate Trends with Imminent Need.**
 - a. ***Resolution 2021-24.**
5. **Recommendation to Commit up to \$50 Million Dollars to GLP Capital Partners IV L.P., a Value Add Open End Real Estate Fund Specializing in Distribution and Logistic Companies with Imminent Need.**
 - a. **Resolution 2021-25.**

D. Private Equity Consultant Report.

1. **Private Equity Portfolio Review for the Quarter Ending December 31, 2021.**
2. **Recommendation to Commit up to \$30 Million Dollars in Kerberos Capital Fund III, L.P., a Debt Fund that will Focus on the Litigation Finance Market with Imminent Need.**
 - a. **Resolution 2021-26.**

XVI. Operations Committee Report. *Bobby Lester, Chair.*

- A. **Open Forum for Potential Rule or Law Changes by Committee Members and Board Members Present.**
- B. **Discussion of Codified Arkansas Rules (CAR) Project.**
- C. **Potential Rule Changes.**
 1. **Rule 10: T-DROP and Return to Service.**
 2. **Rule 9: Retirement Benefits.**
 3. **Rule 4: Election of Board of Trustees.**

XVII. Board of Trustees Disability Review. Under the Disability Review procedure described in A.C.A. §24-7-704(b)(3)(D) the Board shall approve the recommendations of the Medical Committee. The following are proposed orders for Board approval regarding Disability Review recommendations.

A. Group Order - Approved. The proposed order is for the acceptance of **five (5) approved** disability reviews from March 2021 to May 2021. **This is an action item.**

B. Group Order - Denied. The proposed order is for the acceptance of **one (1) denied** disability reviews from March 2021 to May 2021. **This is an action item.**

XVIII. Staff Reports.

A. Medical Committee Reports. A Total of 16 Disability Retirement Applications Approved.

The Medical Committee Report is a standard report made by staff on behalf of the Medical Committee approving disability cases. A total of 34 disability applications were received, 16 were approved, 9 were denied, and 9 needed more information. **This is an action item.**

XIX. Other Business.

XX. Adjourn.

**CORRECTED MINUTES
ARKANSAS TEACHER RETIREMENT SYSTEM
BOARD OF TRUSTEES**

Monday, April 6, 2020

10:00 a.m.

**1400 West Third Street
Little Rock, AR 72201**

ATTENDEES

Board Members Present

Danny Knight, Chair
Dr. Richard Abernathy, Vice Chair*
Anita Bell*
Lloyd Black*
Kathy Clayton*
Kelly Davis*
Shawn Higginbotham *
Bobby Lester*
Chip Martin *
Robin Nichols*
Janet Watson*
Candace Franks, Bank Commissioner*
Hon Andrea Lea, State Auditor*
Jason Brady, designee for Hon. Dennis Milligan*

Board Members Absent

Johnny Key, Cabinet Secretary of Department of Education

Reporters Present

Mike Wickline, Ark. Democrat Gazette

ATRS Staff Present

Clint Rhoden, Executive Director
Rod Graves, Deputy Director*
Tammy Porter, Ex. Assistant/Board Secretary
Curtis Carter, Chief Financial Officer
Willie Kincade, Assoc. Director of Operations
Mike Lauro, Information System Manager
Manju, Director of Information Technology*
Martha Miller, General Counsel*
Kevin Odum, Attorney Specialist*
Brenda West, Internal Audit/Risk Mgmt.*

Guest Present

PJ Kelly, AHIC (Aon Hewitt)*
Katie Comstock, AHIC (Aon Hewitt)*
Michael Bacine, Franklin Park*
Donna Morey, ARTA*

- I. **Call to Order/Roll Call.** Mr. Danny Knight, Chair, called the Board of Trustees meeting to order at 10:01 a.m. Roll call was taken. Mr. Johnny Key was absent

- II. **Adoption of Agenda.**

Ms. Nichols moved for adoption of the Agenda. Mr. Brady seconded the motion, and the Board unanimously approved the motion.

III. Executive Summary. The Executive Summary was provided for reference with no questions or expansions on the written summary.

IV. Approval of Prior Meeting Minutes.

A. February 3, 2020 Minutes

Ms. Bell moved for approval of the Minutes of the Board of Trustees meeting of February 3, 2020. Ms. Watson seconded the motion, and the Board unanimously approved the motion.

B. March 9, 2020 Minutes.

Mr. Martin moved for approval of the Minutes of the Board of Trustees meeting of March 9, 2020. Dr. Abernathy seconded the motion, and the Board unanimously approved the motion.

V. Report of Member Interest Waived Under A. C. A. Section 24-7-205. Mr. Rhoden presented the member interest amount waived report. ATRS waives interest for members when there is a dispute between ATRS and the member as to whether ATRS made a mistake or otherwise did not do all that was required on the member's account. No member interest was waived this reporting period.

VI. Report of Employer Interest and Penalties Waived Under A. C. A. Sec. 24-7-411. Mr. Rhoden presented the employer interest and penalties waived report. ATRS may also waive employer interest and penalties when reports or payments are late or have issues due to a new bookkeeper, inclement weather, sickness and other situations that justify a waiver. Two (2) employer penalties and interest were waived for this reporting period in the amount of \$48.90. This is a standard report for information and is not an action item.

VII. Legislative Audit Report June 30, 2019 Official Review. Mr. Clint Rhoden, Executive Director, presented the Board with the Legislative Audit Report for June 30, 2019-Official Review for review and approval by the Board.

Mr. Lester moved for approval of the Legislative Audit Report, June 30, 2019-Official Review. Dr. Abernathy seconded the motion, and the Board unanimously approved the motion.

VIII. GASB Report after Legislative Audit Review. Mr. Curtis Carter, Chief Financial Officer, presenting the Board with the GASB Report after Legislative Audit Review for review and approval by the Board.

Mr. Lester moved for approval of the GASB Report after Legislative Audit Review. Ms. Nichols seconded the motion, and the Board unanimously approved the motion.

- IX. Adoption of Number of Years for Calculating Final Average Salary pursuant to A.C.A. 24-7-736(c)(1).** Director Rhoden presented the Board with a proposal for Adoption of Number of Years for Calculating Final Average Salary.

Mr. Higginbotham moved for adoption of Resolution 2020-10, Adoption of Number of Years for Calculating Final Average Salary pursuant to A.C.A. 24-7-736(c)(1). Dr. Abernathy seconded the motion, and the Board unanimously adopted the Resolution.

- X. Investment Committee Report.** Robin Nichols, Chair, gave a report on the Investment Committee meeting.

A. Arkansas Related and Investment Update. Rod Graves, Deputy Director, gave the Committee a report on Arkansas Related and Investment Update

B. General Investment Consultant Report.

- 1. Preliminary Performance Report for the Month Ending February 29, 2020.** PJ Kelly and Katie Comstock of Aon Hewitt Investment Consulting provided the Committee with a preliminary performance report for the month ending February 29, 2020.
- 2. Market Update March 2020.** P.J. Kelly and Katie Comstock of Aon Hewitt Investment Consulting provided the Committee with a market update for March 2020.
- 3. Recommendation to Redeem in Full the ATRS Investments in the Three Allianz Structured Alpha Funds.** P.J. Kelly of Aon Hewitt Investment Consulting presented the Committee with the recommendation to redeem in full the ATRS Investments in the Three Allianz Structured Alpha Funds.

ATRS staff concurs with the recommendation.

Ms. Nichols moved to adopt Resolution 2020-14, to Redeem ATRS assets in the AllianzGI Structured

Alpha U.S. Equity 250, LLC. The Board *unanimously adopted the Resolution.*

Ms. Nichols *moved to adopt* Resolution 2020-16, to Redeem ATRS assets in the AllianzGI Structured Alpha U.S. Equity 500, LLC The Board *unanimously adopted the Resolution.*

Ms. Nichols *moved to adopt* Resolution 2020-15, to Redeem ATRS assets in the AllianzGI Structured Alpha U.S. Equity 350, LLC. The Board *unanimously adopted the Resolution.*

C. Private Equity Consultant Report.

1. **Recommendation to Commit up to \$35 Million Dollars in GCG Investors V, L.P., a Mezzanine Fund Focused on Investments in both Debt and Equity Securities in the Small and Lower Middle Market with Imminent Need.** Michael Bacine provided the Committee with the recommendation to Commit up to \$35 Million Dollars in GCG Investors V, L.P., a Mezzanine Fund Focused on Investments in both Debt and Equity Securities in the Small and Lower Middle Market with Imminent Need.

ATRS staff concurs with the recommendation.

Ms. Nichols *moved to adopt* Resolution 2020-11, to Commit up to \$35 Million Dollars in GCG Investors V, L.P., a Mezzanine Fund Focused on Investments in both Debt and Equity Securities in the Small and Lower Middle Market with Imminent Need. The Board *unanimously adopted the Resolution.*

2. **Recommendation to Commit up to \$20 Million Dollars in Thoma Bravo Discover Fund III, L.P., a Buyout Fund Focused on U.S. Investments with a Specialization in Software Companies with Imminent Need.** Michael Bacine provided the Committee with the recommendation to commit up to \$20 Million Dollars in Thoma Bravo Discover Fund III, L.P., a Buyout Fund Focused on U.S. Investments with a Specialization in Software Companies with Imminent Need.

ATRS staff concurs with the recommendation.

Ms. Nichols moved to adopt Resolution 2020-12, to Commit up to \$20 Million Dollars in Thoma Bravo Discover Fund III, L.P., a Buyout Fund Focused on U.S. Investments with a Specialization in Software Companies with Imminent Need. The Board unanimously adopted the Resolution.

3. **Recommendation to Commit up to \$20 Million Dollars in Thoma Bravo Fund XIV, L.P., a Private Equity Buyout Fund that Invests in Larger Market Software Companies with Imminent Need.** Michael Bacine provided the Committee with the recommendation to commit up to \$20 Million Dollars in Thoma Bravo Fund XIV, L.P., a Private Equity Buyout Fund that Invests in Larger Market Software Companies with Imminent Need.

ATRS staff concurs with the recommendation.

Ms. Nichols moved to adopt Resolution 2020-13, to Commit up to \$20 Million Dollars in Thoma Bravo Fund XIV, L.P., a Private Equity Buyout Fund that Invests in Larger Market Software Companies with Imminent Need. The Board unanimously adopted the Resolution.

XI. Staff Reports.

- A. **Medical Committee Report.** Mr. Kincade reported that a total of Eight (8) Disability Retirement Applications were approved.

Ms. Nichols moved to approve the Medical Committee Report. Mr. Lester seconded the motion and the Board unanimously approved the Motion.

- XII. **Other Business:** Chairman Knight discussed giving Director Rhoden authority to waive some minor discrepancies this year in the deadline for retirement applications for the months of March, April and May if people miss the deadline because of COVID-19. Director Rhoden will take them up on an individual basis. He will also provide the Board with a full report of the waiver deadlines.

Dr. Abernathy *moved for approval* to allow the Executive Director discretion in waiving minor discrepancies this year in the deadline for retirement applications, let him take them up on an individual basis and deal with them on an individual basis, and have him provide the Board with a full report of the waivers of deadlines. Mr. Black *seconded the motion*, and the Board *unanimously approved the motion*.

XIII. Adjourn.

Mr. Lester *moved to adjourn* the Board Meeting. Dr. Abernathy *seconded the motion*, and the Board *unanimously approved the motion*.

Meeting adjourned at 10:38 a.m.

Clint Rhoden,
Executive Director

Mr. Danny Knight, Chair
Board of Trustees

Tammy Porter,
Recorder

Date Approved

**MINUTES
ARKANSAS TEACHER RETIREMENT SYSTEM
BOARD OF TRUSTEES**

**Monday, April 5, 2021
11:00 a.m.
1400 West Third Street
Little Rock, AR 72201**

ATTENDEES

Board Members Present

Danny Knight, Chair
Lloyd Black, Vice Chair*
Anita Bell*
Kathy Clayton*
Kelly Davis*
Dr. Mike Hernandez*
Michael Johnson*
Bobby Lester*
Chip Martin*
Robin Nichols*
Susannah Marshall, Bank Commissioner*
Hon. Andrea Lea, State Auditor*
Jason Brady, designee for Dennis Milligan,
State Treasurer*

Board Members Absent.

Shawn Higginbotham.
Johnny Key, Secretary, Dept. of Ed.

ATRS Staff Present

Clint Rhoden, Executive Director
Rod Graves, Deputy Director*
Tammy Porter, Ex. Assistant/Board Secretary
Curtis Carter, Chief Financial Officer*
Dena Dixson, Int. Audit/Risk Mgmt.*
Vicky Fowler, Directory, Human Resources
Willie Kincade, Director of Operations*
Jerry Meyer, Manager, Real Assets*
Martha Miller, General Counsel*
Joe Sithong, Information Systems Coordinator
Brenda West, Int. Audit/Risk Mgmt.*
Misty Yant

Guest Present

Duncan Baird, APERS*
Katie Comstock, Aon Hewitt (AHIC)*
PJ Kelly, Aon Hewitt (AHIC)*
Donna Morey, ARTA*

*via Zoom**

- I. **Call to Order/Roll Call.** Mr. Danny Knight, Chair, called the Board of Trustees meeting to order at 10:54 a.m. Roll call was taken. Mr. Shawn Higginbotham and Mr. Johnny Key were absent.

- II. **Motion for Excused Absences.**

Mr. Black *moved to excuse* Mr. Shawn Higginbotham and Mr. Johnny Key from the April 5, 2021 Board of Trustees Meeting. Mr. Lester *seconded the motion*, and the Board *unanimously approved the motion*.

III. Adoption of Agenda.

Ms. Nichols moved for adoption of the Agenda. Ms. Bell seconded the motion, and the Board unanimously approved the motion.

IV. Executive Summary. The Executive Summary was provided for reference with no questions or expansions on the written summary.

V. Approval of Prior Meeting Minutes.

A. February 1, 2021, Minutes.

Ms. Clayton moved for approval of the Minutes of the Board of Trustees meeting of February 1, 2021. Ms. Davis seconded the motion, and the Board unanimously approved the motion.

B. March 3, 2021, Minutes.

Ms. Davis moved for approval of the Minutes of the Board of Trustees meeting of March 3, 2021. Ms. Nichols seconded the motion, and the Board unanimously approved the motion.

VI. Report of Member Interest Amount Waived Under A.C.A. Sec. 24-7-205. ATRS waives interest for members when there is a dispute between ATRS and the member as to whether ATRS made a mistake or otherwise did not do all that was required on the member's account. Since ATRS has implemented the actuarial cost method for the purchase of service credit, interest waived is slowly disappearing, as well as the number of members who purchase service credit. No member interest was waived for this reporting period. This is a standard report for information and is not an action item

VII. Report of Employer Penalties and Interest Waived Under A.C.A. Sec. 24-7-411. ATRS may also waive employer interest and penalties when reports or payments are late or have issues due to a new bookkeeper, inclement weather, sickness and other situations that justify a waiver. Fifteen (15) employer penalties and interest amounts were waived for this reporting period in the amount of \$4,390.29. This is a standard report for information and is not an action item.

VII. Adoption of Number of Years for Calculating Final Average Salary pursuant to A.C.A. 24-7-736(c)(1). A.C.A. § 24-7-736 authorizes the Board to adjust the final average salary calculation annually. One method to adjust the final average salary calculation is to adjust the number of years used in the calculation of the final average salary between three (3) and five (5) years of service. ATRS staff recommends maintaining the five (5) year final average salary as adopted by the Board on November 13, 2017.

A. Resolution 2021-18

Mr. Lester *moved to adopt* Resolution 2021-18, Adoption of Number of Years for Calculating Final Average Salary pursuant to A.C.A. 24-7-736(c)(1). Mr. Johnson *seconded the motion*, and the Board *unanimously adopted the resolution*.

IX. Manifest Injustice Board Review.

A. In the Matter of MI Claim #2021-03. Director Rhoden presented the Board with MI Claim #2021-03. Executive Staff recommended the Board find a manifest injustice exists in this case and grant a three (3) month extension retroactively

B. Mr. Lester *moved to approve* the Recommendation to find a manifest injustice exists and grant a three (3) month extension retroactively. Ms. Nichols *seconded the motion*, and the Board *unanimously approved the motion*.

C. In the Matter of MI Claim #2020-07. Director Rhoden presented the Board with MI Claim #2020-07. Executive Staff recommended the Board find a manifest injustice exists in this case and grant a ten (10) month extension retroactively

D. Ms. Clayton *moved to approve* the Recommendation to find a manifest injustice exists and grant a ten (10) month extension retroactively. Mr. Black *seconded the motion*, and the Board *unanimously approved the motion*.

X. Investment Committee Report. Robin Nichols, Chair, gave a report on the Investment Committee meeting.

A. Arkansas Related and Investment Update.

1. **List of Fund Closings.** Rod Graves, Deputy Director, gave an update on recent Investment activity.
2. **Discussion of US Agriculture Investment Queue.** Rod Graves, Deputy Director, gave the Committee an update on the US Agriculture Queue.

B. General Investment Consultant Report.

1. **Preliminary Performance Report for the Month Ending February 28, 2021.** PJ Kelly and Katie Comstock of Aon Hewitt Investment Consulting provided the Committee with a preliminary portfolio update for the month ending February 28, 2021.
2. **Total Equity Review.** Katie Comstock of Aon Hewitt Investment Consulting provided the Committee with a Total Equity Review.

XI. Operations Committee Report. Bobby Lester, Chair, gave a report on the Operations Committee meeting.

A. Open Forum for Potential Rule or Law Changes by Committee Members and Board Members in Attendance.

1. Open Forum. None.

B. Legislative Package. Mr. Rhoden gave the Committee an update on the 2021 Legislative Package.

C. Potential Rule Change. Mr. Rhoden gave the Committee a report on potential rule changes based on the 2021 Legislative session.

1. **Rule 9: 160 Days at Retirement Exceptions.** The passage of Act 279 of 2021 allows for rules promulgation regarding the 160 day law. Staff suggests a modification to Rule 9 to allow for some exceptions to the 160 day law.
2. **Rule 9: Board of Trustees Disability Review.** The passage of Act 223 of 2021 clarified the ATRS law for disability eligibility. Staff suggests a modification to Rule 9 to clarify the process performed by the Board after a disability review denial.
3. **Rule 9: Current Draft.** All of the ATRS Rules will need to be reviewed and edited to account for the recent legislative session. This is just the first draft of Rule 9.

XII. Board of Trustees Disability Review. Under the Disability Review procedure described in A.C.A. §24-7-704(b)(3)(D) the Board shall approve the recommendations of the Medical Committee. Mr. Rhoden presented the Board with the following are proposed orders for Board approval regarding Disability Review recommendations.

A. Group Order - Approved. The proposed order is for the acceptance of 12 **approved** disability reviews from June 2018 to February 2021. Staff concurs with the recommendation.

Dr. Abernathy moved to approve the Group Order – Approved for the acceptance of 12 approved disability reviews from June 2018 to February 2021. Auditor Lea seconded the motion and the Board unanimously approved the Motion.

B. Group Order - Denied. The proposed order is for the acceptance of 4 **denied** disability reviews from June 2018 to February 2021. Staff concurs with the recommendation.

Ms. Davis moved to approve the Group Order – Denied for the acceptance of 4 denied disability reviews from June 2018 to February 2021. Mr. Brady seconded the motion and the Board unanimously approved the Motion.

C. Member Order - ATRS ID #293902. The proposed order is for the acceptance of an **approved** disability review for member ATRS ID #293902 after a second review conducted on September 4, 2019. Staff concurs with the recommendation.

Mr. Black moved to approve the Member Order – ATRS ID# 293902 – acceptance of an approved disability review after a second review conducted on September 4, 2019. Ms. Bell seconded the motion and the Board unanimously approved the Motion.

D. Member Order - ATRS ID #498094. The proposed order is to return the matter to the medical committee with a request that it reconsider the matter in light of the additional information available in the Social Security Decision for member ATRS ID #498094. Staff concurs with the recommendation.

Ms. Nichols *moved to approve* the Member Order – ATRS ID# #498094 – return the matter to the medical committee with a request that it reconsider the matter in light of the additional information available in the Social Security Decision. Ms. Clayton *seconded the motion* and the Board *unanimously approved the Motion*.

- E. Member Order - ATRS ID #368231.** The proposed order is to return the matter to the medical committee with a request that it reconsider the matter to confirm that the standard of review is based upon the ATRS standard established in A.C.A.§24-7-704(a)(1)(D) for member ATRS ID #368231. Staff concurs with the recommendation.

Ms. Marshall *moved to approve* the Member Order – ATRS ID# #368231 – return the matter to the medical committee with a request that it reconsider the matter to confirm that the standard of review is based upon the ATRS standard established in A.C.A.§24-7-704(a)(1)(D). Ms. Davis *seconded the motion* and the Board *unanimously approved the Motion*.

XIII Staff Reports.

- A. Medical Committee Report.** Mr. Kincade reported that a total of Eleven (11) Disability Retirement Applications were approved.

Ms. Davis *moved to approve* the Medical Committee Report. Mr. Martin *seconded the motion* and the Board *unanimously approved the Motion*.

- XIV. Other Business:** Mr. Rod Graves gave the Board an update on the American Center.

XV. Adjourn.

Mr. Bobby Lester *moved to adjourn* the Board of Trustees meeting. Ms. Davis *seconded the motion*, and the Board *unanimously approved the motion*.

Meeting adjourned at 11:45 a.m.

Mr. Clint Rhoden,
Executive Director

Mr. Danny Knight, Chair
Board of Trustees

Tammy Porter,
Recorder

Date Approved

**ARKANSAS TEACHER RETIREMENT SYSTEM
BOARD OF TRUSTEE MEETING – CALLED MEETING**

Wednesday, May 3, 2021

4:15 p.m.

1400 West Third Street

Little Rock, AR 72201

ATTENDEES

Board Members Present

Danny Knight, Chair
Lloyd Black, Vice Chair*
June Barron*
Anita Bell *
Kathy Clayton*
Kelly Davis*
Dr. Mike Hernandez*
Shawn Higginbotham*
Michael Johnson*
Hon. Andrea Lea, State Auditor*
Bobby Lester*
Susannah Marshall, Bank Commissioner*
Chip Martin*
Jason Brady, designee for Hon. Dennis Milligan*
Robin Nichols*

ATRS Staff Present

Clint Rhoden, Executive Director
Rod Graves, Deputy Director
Tammy Porter, Ex. Asst/Board Secretary
Vicky Fowler, Manager, Human Resources*
Willie Kincade, Director of Operations*
Martha Miller, General Counsel*
Manju, Director, Information Services*
Brenda West, Internal Audit/Risk Mgmt.*

Board Members Absent

Johnny Key, Secretary, Dept. of Education

* *via ZOOM*

- I. **Call to Order/Roll Call.** Mr. Danny Knight, called the Board of Trustees meeting to order at 4:26 p.m. Roll call was taken. Mr. Johnny Key was absent. Mr. Bobby Lester joined the meeting at 4:28.

- II. **Adoption of Agenda.**

Mr. Higginbotham *moved* for *adoption* of the Agenda. Ms. Clayton *seconded* the *motion*, and the Committee *unanimously approved the motion*.

- III. **Executive Summary.** The Executive Summary was provided for reference with no questions or expansions on the written summary.

- IV. Audit Committee Report.** Ms. Kelly Davis, Chair, gave a report on the Audit Committee Meeting.
- A. Evaluation of Internal Auditor Brenda West.** The Audit Committee went into executive session to discuss the evaluation of Ms. Brenda West. The Committee moved to submit the evaluation of Ms. West to the Executive Director to be sent to the appropriate agency for approval.
- V. 2021 Board of Trustee Election Results.** Director Rhoden presented the Committee with the official Election Results regarding the 2021 Board election. A total of 5 positions were up for reelection.

Of the five positions, 2 were contested: Position #2, Member Trustee – 2nd Congressional District and Position #7 – Member Trustee, Non Certified. The winners of the contested positions were Mr. Michael Johnson, Position #2 and Ms. Kelly Davis, Position #7.

Ms. Anita Bell moved for adoption of Resolutions 2021-19, certifying Mr. Michael Johnson as winner of Position #2, and Ms. Kelly Davis, winner of Position #7 in the 2021 ATRS Board of Trustees Election. Ms. Clayton seconded the motion, and the Committee unanimously approved the motion.

The remaining 3 positions were unopposed: Position #5 – Administrator Trustee, Position #6 – Administrator Trustee, and Position #8 – Minority Trustee. The winners of the uncontested positions were Dr. Michael Hernandez, Position #5, Mr. Shawn Higginbotham, Position #6, and Ms. Anita Bell, Position #8

Hon. Auditor Lea moved for adoption of Resolutions 2021-20, 2021-21, and 2021-22, certifying Dr. Michael Hernandez, Position #5, Mr. Shawn Higginbotham, Position #6, and Ms. Anita Bell, Position #8 as unopposed candidates in the 2021 ATRS Board of Trustees Election. Mr. Lester seconded the motion, and the Committee unanimously approved the motion.

- VI. Executive Session to Discuss Executive Director's Performance Evaluation.**

Mr. Lester moved to convene the Board into Executive Session. Mr. Martin seconded the motion, and the Board unanimously approved the motion.

Mr. Knight, chair, called the Executive Session of the Board of Trustees to order at 4:31 p.m.

Mr. Lester *moved to reconvene* the Board from Executive Session. Ms. Davis *seconded* the *motion*, and the Board *unanimously approved* the *motion*.

Mr. Knight, chair, reconvened the Board of Trustees at 4:48 p.m.

The Board expressed their satisfaction and appreciation to Director Rhoden for his hard work and service to ATRS. The Board was very pleased with the work he has done and looks forward to continue working with Director Rhoden. The Board will pass the evaluation to HR for processing.

VII. Other Business. Ms. Robin Nichols announced that she would be retiring after the June 7, 2021 meeting.

VIII. Adjourn.

Mr. Lloyd Black *moved to adjourn* the Board meeting. Ms. Nichols *seconded the motion* and the Board *unanimously approved the motion*.

Meeting adjourned at 4:58 p.m.

Clint Rhoden
Executive Director

Mr. Danny Knight Chair
Board of Trustees

Tammy Porter,
Board Secretary

Date Approved

Waiver of Member Interest 2021

June 7, 2021, Board Meeting

A.C.A. Sec. 24-7-205

<u>Amount</u>	<u>Reason to Waive Interest</u>
\$14.24	Contributions were withheld from Member's check, but employer failed to remit.
\$83.92	Contributions were withheld from Member's check, but employer failed to remit.
\$36.09	Contributions were withheld from Member's check, but employer failed to remit.
Total: \$134.25	

Waiver of Employer Report Penalties 2021

June 7, 2021, Board Meeting

A.C.A. Sec. 24-7-411

These are typical reports of employer penalties and interest waived by ATRS during a reporting period. 150+450+450+300+450+5.03+

Employer Penalties Waived	
Arkansas Virtual Academy Charter	\$300.00
TOTAL PENALTIES WAIVED	\$300.00
Employer Interest Waived	
Charleston Public Schools Charleston, AR	\$108.06
Paragould School District Paragould, AR	\$958.14
TOTAL INTEREST WAIVED	\$1,066.20
TOTAL PENALTIES AND INTEREST WAIVED	\$1,366.20

MIC Claim #	Claimant Type	Facts and Circumstances	Findings and Recommendations of Committee	Executive Director Remedy
2021-001	Retirement Date	Member worked and received a full year of service credit from July 1, 2020 through June. Act 595 of 2019 states that benefits cannot come effective any earlier than July 1st after the fiscal year.	The MI Committee recommends that you find that a Manifest Injustice exists in this case and allow member to retire effective March 1.	Concurs with MI Committee Recommendation
2021-002	Retirement Date	Member worked and received a full year of service credit from July 1, 2020 through June, 2021. Act 595 of 2019 states that benefits cannot come effective any earlier than July 1st after the fiscal year.	The MI Committee recommends that you find that a Manifest Injustice exists in this case and allow member to retire effective March 1.	Concurs with MI Committee Recommendation
2021-003	Survivor Benefits	Requested information taking longer than the 6 month period allowed.	The MI Committee recommends that you find that a Manifest Injustice exists in this case and allow a 3 month extension to complete the application process.	Concurs with the MI Committee finding. Recommendation to the Board for approval of MI Committee remedy. Board approved 04/05/2021.
2021-004	Survivor Benefits	Requested information taking longer than the 6 month period allowed.	The MI Committee recommends that you find that a Manifest Injustice exists in this case and allow a 10 month extension to complete the application process.	Concurs with the MI Committee finding. Recommendation to the Board for approval of MI Committee remedy. Board approved 04/05/2021.

Arkansas Teacher Retirement System

GASB Statement Nos. 67 and 68 Accounting and
Financial Reporting for Pension

June 30, 2020





December 18, 2020

Board of Trustees
Arkansas Teacher Retirement System
Little Rock, Arkansas

Dear Board Members:

This report provides accounting and financial reporting information that is intended to comply with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the Arkansas Teacher Retirement System (ATRS). These calculations have been made on a basis that is consistent with our understanding of these Statements.

GASB Statement No. 67 is the accounting standard that applies to the stand-alone financial reports issued by retirement systems. GASB Statement No. 68 establishes accounting and financial reporting for state and local government employers who provide their employees (including former employees) pension benefits through a trust.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

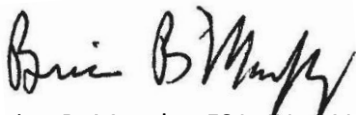
This report is based upon information provided by the System's administrative staff. Preparation of this data requires considerable staff time. The helpful cooperation of the Arkansas Teacher Retirement System staff in furnishing the data is acknowledged with appreciation. We checked for internal and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the data provided by ATRS.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Arkansas Teacher Retirement System for GASB reporting purposes. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Brian B. Murphy, Judith A. Kermans and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

This information is intended to assist in preparation of the financial statements of the System for GASB reporting purposes. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Respectfully submitted,



Brian B. Murphy, FSA, EA, MAAA, FCA, PhD



Judith A. Kermans, EA, MAAA, FCA



Heidi G. Barry, ASA, MAAA, FCA

BBM/JAK/HGB:sc

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SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2020

	2020	2019		
Actuarial Valuation Date	June 30, 2020	June 30, 2019		
Measurement Date of the Net Pension Liability	June 30, 2020	June 30, 2019		
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2020	June 30, 2019		
Membership				
Number of				
- Retirees and Beneficiaries ⁽¹⁾	50,133	48,677		
- Inactive, Nonretired Members	13,338	13,033		
- T-DROP Members	3,639	3,707		
- Active Members	66,900	68,457		
- Total	134,010	133,874		
Covered Payroll ⁽²⁾	\$ 3,077,558,814	\$ 3,027,154,131		
Net Pension Liability				
Total Pension Liability	\$ 22,562,958,162	\$ 21,912,986,823		
Plan Fiduciary Net Position	16,902,076,224	17,741,621,773		
Net Pension Liability	\$ 5,660,881,938	\$ 4,171,365,050		
Plan Fiduciary Net Position as a Percentage				
of Total Pension Liability	74.91%	80.96%		
Net Pension Liability as a Percentage				
of Covered Payroll	183.94%	137.80%		
Development of the Single Discount Rate				
Single Discount Rate	7.50%	7.50%		
Long-Term Expected Rate of Investment Return	7.50%	7.50%		
Long-Term Municipal Bond Rate ⁽³⁾	2.45%	3.13%		
Last year ending June 30 in the 2021 to 2120 projection period for which projected benefit payments are fully funded	2120	2119		
Total Pension Expense	\$ 1,001,945,189	\$ 779,898,660		
Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses				
	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Difference	Net Deferred Outflows/(Inflows)
Difference between expected and actual experience	\$ 75,044,585	\$ 45,656,773	\$ 29,387,812	\$ 68,341,536
Changes in assumptions	368,342,995	-	368,342,995	619,994,971
Net difference between projected and actual earnings on pension plan investments	1,410,423,162	479,872,948	930,550,214	(293,855,313)
Total	\$ 1,853,810,742	\$ 525,529,721	\$ 1,328,281,021	\$ 394,481,194

(1) Includes retirees who returned to work.

(2) Covered payroll includes the pay of T-DROP participants and retirees who returned to work.

(3) Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 26, 2020 and June 28, 2019. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.



Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

The following discussion provides a summary of the information that is required to be disclosed under these accounting standards. A number of these disclosure items are provided in this report. However, certain information, such as notes regarding accounting policies and investments, is not included in this report and the retirement system and/or plan sponsor will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state or local governments to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Paragraph 57 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to ATRS subsequent to the measurement date of June 30, 2020.

The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of the liability and investment experience.

Pension plans that prepare their own stand-alone financial statements are required to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position in accordance with GASB Statement No. 67. The *statement of fiduciary net position* presents the assets and liabilities of the pension plan at the end of the pension plan's reporting period. The *statement of changes in fiduciary net position* presents the additions, such as contributions and investment income, and deductions, such as benefit payments and expenses, and net increase or decrease in the fiduciary net position.

Notes to Financial Statements

GASB Statement No. 68 requires the notes of the employer's financial statements to disclose the total pension expense, the pension plan's liabilities and assets, and deferred outflows and inflows of resources related to pensions.

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans, to include certain additional information. The list of disclosure items should include:

- A description of the types of benefits provided by the plan, as well as automatic or ad hoc colas;
- The number and classes of employees covered by the benefit terms;
- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- A description of how fair value is determined;
- Concentrations of investments greater than or equal to 5%;
- Annual money-weighted rate of return on pension plan investments;
- The portion of the present value of benefits to be provided through the pension plan to current active and inactive plan members;
- The pension plan's fiduciary net position;
- The net pension liability;
- The pension plan's fiduciary net position as a percentage of the total pension liability;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

Required Supplementary Information

The financial statements of employers also include required supplementary information showing the 10-year fiscal history of:

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- Comparison of actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement).

Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2020 and a measurement date of June 30, 2020.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 2.45% (based on the weekly rate closest to but not later than the measurement date of the "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 7.50%.

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 7.50% on the actuarial value of assets), it is expected that:

- (1) The unfunded actuarial accrued liabilities will be fully amortized during the lifetime of current members.
- (2) The funded status of the plan will increase gradually towards a 100% funded ratio.
- (3) The unfunded accrued liability will increase for an extended period before beginning to decline.

This funding policy results in the projected plan fiduciary net position being sufficient to pay benefits for all future years and a discount rate of 7.50% (see Section G). The projections in this report are strictly for the purposes of determining the GASB discount rate and are different from a funding projection for the ongoing plan.

Limitations of Assets as a Percent of Total Pension Liability Measurements

This report includes a measure of the plan fiduciary net position as a percent of total pension liability (74.9%). Unless otherwise indicated, with regard to any such measurements presented in this report:

- (1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.
- (2) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

Limitation of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

SECTION B

FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Arkansas Teacher Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Statement of Pension Expense Under GASB Statement No. 68

Fiscal Years Ended June 30, 2020 and June 30, 2019

	2020	2019
A. Expense		
1. Service Cost	\$ 331,035,218	\$ 325,464,537
2. Interest on the Total Pension Liability	1,608,463,162	1,551,511,422
3. Current-Period Benefit Changes	-	-
4. Employee Contributions (made negative for addition here)	(153,105,134)	(141,885,632)
5. Projected Earnings on Plan Investments (made negative for addition here)	(1,305,354,918)	(1,287,594,924)
6. Pension Plan Administrative Expense	8,454,436	7,134,784
7. Other Changes in Plan Fiduciary Net Position	-	-
8. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability <i>Arising from Current Reporting Period</i>	(4,699,387)	22,191,379
9. Recognition of Outflow (Inflow) of Resources due to assumption changes <i>Arising from Current Reporting Period</i>	-	-
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.50%) and actual earnings on Pension Plan Investments <i>Arising from Current Reporting Period</i>	294,224,282	77,842,011
11. Increases/(Decreases) from Experience in the Current Reporting Period	\$ 779,017,659	\$ 554,663,577
12. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability <i>Arising from Prior Reporting Periods</i>	18,783,954	(8,711,579)
13. Recognition of Outflow (Inflow) of Resources due to assumption changes <i>Arising from Prior Reporting Periods</i>	251,651,976	251,651,976
14. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments <i>Arising from Prior Reporting Periods</i>	(47,508,400)	(17,705,314)
15. Total Pension Expense/(Income)	\$ 1,001,945,189	\$ 779,898,660

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2020

A. Outflows (Inflows) of Resources Due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (24,869,157)
2. Assumption Changes (gains) or losses	\$ -
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	5.2920
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$ (4,699,387)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ -
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ (4,699,387)
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$ (20,169,770)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ -
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ (20,169,770)

B. Outflows (Inflows) of Resources Due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 1,471,121,409
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 294,224,282
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 1,176,897,127

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2020

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to liabilities	\$ 288,596,380	\$ 22,859,837	\$ 265,736,543
2. Due to assets	601,419,948	354,704,066	246,715,882
3. Total	\$ 890,016,328	\$ 377,563,903	\$ 512,452,425

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 36,944,404	\$ 22,859,837	\$ 14,084,567
2. Assumption changes	251,651,976	-	251,651,976
3. Net difference between projected and actual earnings on pension plan investments	601,419,948	354,704,066	246,715,882
4. Total	\$ 890,016,328	\$ 377,563,903	\$ 512,452,425

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 75,044,585	\$ 45,656,773	\$ 29,387,812
2. Assumption changes	368,342,995	-	368,342,995
3. Net difference between projected and actual earnings on pension plan investments	1,410,423,162	479,872,948	930,550,214
4. Total	\$ 1,853,810,742	\$ 525,529,721	\$ 1,328,281,021

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows of Resources
2021	\$ 269,483,960
2022	373,206,327
2023	388,967,614
2024	297,995,342
2025	(1,372,222)
Thereafter	-
Total	\$ 1,328,281,021



Recognition of Deferred Outflows and Inflows of Resources

Measurement Date – June 30, 2020

Reporting Date – June 30, 2020

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities					
2015	\$ 123,519,055	5.6782	\$ 14,753,025	\$ -	0.0000
2016	(15,341,738)	5.5856	(2,746,659)	(1,608,443)	0.5856
2017	(76,812,667)	5.4637	(14,058,727)	(20,577,759)	1.4637
2018	(7,365,993)	5.4359	(1,355,064)	(3,300,801)	2.4359
2019	119,427,343	5.3817	22,191,379	75,044,585	3.3817
2020	(24,869,157)	5.2920	(4,699,387)	(20,169,770)	4.2920
Total			\$ 14,084,567	\$ 29,387,812	
Deferred Outflow (Inflow) due to Assumption Changes					
2015	\$ -	5.6782	\$ -	\$ -	0.0000
2016	-	5.5856	-	-	0.5856
2017	1,374,950,899	5.4637	251,651,976	368,342,995	1.4637
2018	-	5.4359	-	-	2.4359
2019	-	5.3817	-	-	3.3817
2020	-	5.2920	-	-	4.2920
Total			\$ 251,651,976	\$ 368,342,995	
Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments					
2016	\$ 1,146,768,279	5.0000	\$ 229,353,655	\$ -	0.0000
2017	(1,147,675,936)	5.0000	(229,535,187)	(229,535,188)	1.0000
2018	(625,844,397)	5.0000	(125,168,879)	(250,337,760)	2.0000
2019	389,210,057	5.0000	77,842,011	233,526,035	3.0000
2020	1,471,121,409	5.0000	294,224,282	1,176,897,127	4.0000
Total			\$ 246,715,882	\$ 930,550,214	

According to Paragraph 33 of GASB Statement No. 68, *differences between expected and actual experience and changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the measurement period, the expected remaining service lives of all actively working members was 708,466 years. Additionally, the combined plan membership (active employees and inactive employees) was 133,874. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the measurement period is 5.292 years.

Additionally, *differences between projected and actual earnings on pension plan investments* should be recognized in pension expense using a systematic and rational method over a closed five-year period. For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.



Statement of Fiduciary Net Position as of June 30, 2020

	2020
Assets	
Cash and Deposits	\$ 348,737,178
Receivables	
Unsettled Trades and Accrued Return	\$ 35,276,529
Member Contributions	8,758,853
Employer Contributions	28,268,436
Other	607,309
Total Receivables	\$ 72,911,127
Investments	
Government Securities	\$ 28,245,622
Domestic Equities	2,517,950,607
International Equities	1,165,199,715
Commingled Funds	5,929,317,712
Corporate Bonds	925,185,002
Asset and Mortgage-backed Securities	23,104,762
Mortgages (CMO's)	-
Promissory Notes (BRS / Highland)	257,463,572
Alternative Investments	5,431,816,034
Limited Partnerships	28,276,070
Real Estate	52,674,001
Other Investments	176,000,000
Investment Derivative Instruments	(41,081)
Total Investments	\$ 16,535,192,016
Invested Securities Lending	\$ 315,851,510
Net Equipment	\$ 186,820
Deferred Outflows Related to OPEB	\$ 1,310,404
Total Assets	\$ 17,274,189,055
Liabilities	
Payables	
Securities Related Payables	\$ 45,253,144
Securities Lending Collateral	\$ 315,851,510
Other Payables	10,032,955
Survivor Benefits for Minors	256,126
Deferred Inflows Related to OPEB	719,096
Total Liabilities	\$ 372,112,831
Net Position Restricted for Pensions	\$ 16,902,076,224

Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2020

	2020
Additions	
Contributions	
Employer	\$ 446,228,128
Employee	153,105,134
Other	-
Total Contributions	\$ 599,333,262
Investment Income	
Net Appreciation in Fair Value of Investments	\$ (269,255,966)
Interest	34,095,691
Dividends	101,648,812
Real Estate	7,545,561
Other	1,662,896
Securities Lending Activity	3,072,879
Less Investment Expense	(44,536,364)
Net Investment Income	\$ (165,766,491)
Other	\$ -
Total Additions	\$ 433,566,771
 Deductions	
Benefit payments, including refunds of employee contributions	\$ 1,264,657,884
Pension Plan Administrative Expense	8,454,436
Other	-
Total Deductions	\$ 1,273,112,320
Net Increase in Net Position	\$ (839,545,549)
 Net Position Restricted for Pensions	
Beginning of Year	\$ 17,741,621,773
End of Year	\$ 16,902,076,224

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Arkansas Teacher Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Schedule of Changes in Net Pension Liability and Related Ratios

Current Period

Fiscal Year Ended June 30, 2020

A. Total Pension Liability	
1. Service Cost	\$ 331,035,218
2. Interest on the Total Pension Liability	1,608,463,162
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	(24,869,157)
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(1,264,657,884)
7. Net change in Total Pension Liability	\$ 649,971,339
8. Total Pension Liability – Beginning	21,912,986,823
9. Total Pension Liability – Ending	<u><u>\$ 22,562,958,162</u></u>
B. Plan Fiduciary Net Position	
1. Contributions – employer	\$ 446,228,128
2. Contributions – employee	153,105,134
3. Net investment income	(165,766,491)
4. Benefit payments, including refunds of employee contributions	(1,264,657,884)
5. Pension Plan Administrative Expense	(8,454,436)
6. Other	-
7. Net change in Plan Fiduciary Net Position	\$ (839,545,549)
8. Plan Fiduciary Net Position – Beginning	17,741,621,773
9. Plan Fiduciary Net Position – Ending	<u><u>\$ 16,902,076,224</u></u>
C. Net Pension Liability	<u><u>\$ 5,660,881,938</u></u>
D. Plan Fiduciary Net Position as a percentage of the Total Pension liability	74.91%
E. Covered-Employee Payroll⁽¹⁾	\$ 3,077,558,814
F. Net Pension Liability as a Percentage of Covered-Employee Payroll	183.94%

(1) Covered payroll includes the pay of T-DROP participants and retirees who returned to work.

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

Ultimately 10 Fiscal Years Will Be Displayed

Fiscal year ending June 30,	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability							
Service Cost	\$ 331,035,218	\$ 325,464,537	\$ 315,864,317	\$ 307,786,505	\$ 305,086,337	\$ 298,134,477	\$ 326,999,276
Interest on the Total Pension Liability	1,608,463,162	1,551,511,422	1,504,613,059	1,485,759,965	1,433,768,168	1,371,168,271	1,326,709,192
Benefit Changes	-	-	-	(469,205,711)	-	-	(27,405,705)
Difference between Expected and Actual Experience	(24,869,157)	119,427,343	(7,365,993)	(76,812,667)	(15,341,738)	123,519,055	(103,017,525)
Assumption Changes	-	-	-	1,374,950,899	-	-	-
Benefit Payments	(1,255,065,793)	(1,205,326,555)	(1,160,738,238)	(1,092,952,357)	(1,035,958,951)	(970,719,485)	(914,250,015)
Refunds	(9,592,091)	(9,679,783)	(9,455,405)	(10,874,003)	(10,145,471)	(10,774,122)	(10,485,103)
Net Change in Total Pension Liability	649,971,339	781,396,964	642,917,740	1,518,652,631	677,408,345	811,328,196	598,550,120
Total Pension Liability - Beginning	21,912,986,823	21,131,589,859	20,488,672,119	18,970,019,488	18,292,611,143	17,481,282,947	16,882,732,827
Total Pension Liability - Ending (a)	\$ 22,562,958,162	\$ 21,912,986,823	\$ 21,131,589,859	\$ 20,488,672,119	\$ 18,970,019,488	\$ 18,292,611,143	\$ 17,481,282,947
Plan Fiduciary Net Position							
Employer Contributions	\$ 446,228,128	\$ 430,864,656	\$ 424,488,126	\$ 414,954,939	\$ 410,461,299	\$ 408,281,905	\$ 404,920,441
Employee Contributions	153,105,134	141,885,632	138,766,747	133,109,940	130,997,913	128,504,251	125,225,906
Pension Plan Net Investment Income	(165,766,491)	898,384,867	1,824,094,695	2,289,818,591	35,579,656	632,166,953	2,429,334,097
Benefit Payments	(1,255,065,793)	(1,205,326,555)	(1,160,738,238)	(1,092,952,357)	(1,035,958,951)	(970,719,485)	(914,250,015)
Refunds	(9,592,091)	(9,679,783)	(9,455,405)	(10,874,003)	(10,145,471)	(10,774,122)	(10,485,103)
Pension Plan Administrative Expense	(8,454,436)	(7,134,784)	(9,336,430)	(7,825,594)	(8,059,030)	(8,034,857)	(8,034,236)
Other	-	-	-	-	-	-	-
Net Change in Plan Fiduciary Net Position	(839,545,549)	248,994,033	1,207,819,495	1,726,231,516	(477,124,584)	179,424,645	2,026,711,090
Plan Fiduciary Net Position - Beginning	17,741,621,773	17,492,627,740	16,284,808,245	14,558,576,729	15,035,701,313	14,856,276,668	12,829,565,578
Plan Fiduciary Net Position - Ending (b)	\$ 16,902,076,224	\$ 17,741,621,773	\$ 17,492,627,740	\$ 16,284,808,245	\$ 14,558,576,729	\$ 15,035,701,313	\$ 14,856,276,668
Net Pension Liability - Ending (a) - (b)	5,660,881,938	4,171,365,050	3,638,962,119	4,203,863,874	4,411,442,759	3,256,909,830	2,625,006,279
Plan Fiduciary Net Position as a Percentage							
of Total Pension Liability	74.91 %	80.96 %	82.78 %	79.48 %	76.75 %	82.20 %	84.98 %
Covered-Employee Payroll⁽¹⁾	\$ 3,077,558,814	\$ 3,027,154,131	\$ 2,986,026,715	\$ 2,921,965,125	\$ 2,888,392,668	\$ 2,873,988,053	\$ 2,850,860,174
Net Pension Liability as a Percentage							
of Covered-Employee Payroll	183.94 %	137.80 %	121.87 %	143.87 %	152.73 %	113.32 %	92.08 %

Notes to Schedule:

N/A

(1) Covered payroll includes the pay of T-DROP participants and retirees who returned to work.

Schedules of Required Supplementary Information

Schedule of the Net Pension Liability Multiyear

FY Ending June 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Employee Payroll	Net Pension Liability as a % of Covered Payroll
2014	\$ 17,481,282,947	\$ 14,856,276,668	\$ 2,625,006,279	84.98%	\$ 2,850,860,174	92.08%
2015	18,292,611,143	15,035,701,313	3,256,909,830	82.20%	2,873,988,053	113.32%
2016	18,970,019,488	14,558,576,729	4,411,442,759	76.75%	2,888,392,668	152.73%
2017	20,488,672,119	16,284,808,245	4,203,863,874	79.48%	2,921,965,125	143.87%
2018	21,131,589,859	17,492,627,740	3,638,962,119	82.78%	2,986,026,715	121.87%
2019	21,912,986,823	17,741,621,773	4,171,365,050	80.96%	3,027,154,131	137.80%
2020	22,562,958,162	16,902,076,224	5,660,881,938	74.91%	3,077,558,814	183.94%

Schedule of Contributions Multiyear

FY Ending June 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll*	Actual Contribution % of Covered Payroll*
2014	\$ 485,904,529	\$ 404,920,441	\$ 80,984,088	\$ 2,850,860,174	14.20%
2015	474,773,530	408,281,905	66,491,625	2,873,988,053	14.21%
2016	437,434,470	410,461,299	26,973,171	2,888,392,668	14.21%
2017	423,846,831	414,954,939	8,891,892	2,921,965,125	14.20%
2018	422,365,685	424,488,126	(2,122,441)	2,986,026,715	14.22%
2019	447,791,482	430,864,656	16,926,826	3,027,154,131	14.23%
2020	450,612,124	446,228,128	4,383,996	3,077,558,814	14.50%

* Covered Employee payroll shown is the annual payroll of active, T-DROP and return to work employees as of June 30. Statutory contributions were based on 14% (14.25% in 2020) of the pay actually paid throughout the year which may be different from the payroll reported above.

Notes to Schedule of Contributions

Valuation Date:	June 30, 2018
Notes	Actuarially determined contribution rates are calculated as of June 30 in the year which is one year prior to the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Calculate the FY 2020 Actuarially Determined Contribution Rate:

Actuarial Cost Method	Entry Age Normal; funding to retirement
Amortization Method	Level Percentage of Payroll
Amortization Period	30 years
Asset Valuation Method	4-year smoothed market for funding purposes; 20% corridor
Payroll Growth	2.75%
Salary Increases	2.75% to 7.75% including inflation
Investment Rate of Return	7.5%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2017 valuation pursuant to an experience study of the period 2010 - 2015
Healthy Post-Retirement Mortality	RP-2014 Healthy Annuitant Mortality Table for males and females and adjusted for mortality improvements using projection scale MP-2017 from 2006 (scaled by 101% for men & 91% for women)
Disabled Post-Retirement Mortality	RP-2014 Disabled Annuitant Mortality Table for males and females and adjusted for mortality improvements using projection scale MP-2017 from 2006 (scaled by 99% for men & 107% for women)
Pre-Retirement Mortality	RP-2014 Employee Mortality Table for males and females and adjusted for mortality improvements using projection scale MP-2017 from 2006 (scaled by 94% for men & 84% for women)

Schedule of Investment Returns Multiyear

Ultimately 10 Fiscal Years Will Be Displayed

<u>FY Ending June 30,</u>	<u>Annual Return¹</u>
2011	
2012	
2013	
2014	
2015	
2016	
2017	
2018	
2019	
2020	

1 Annual money-weighted rate of return, net of investment expenses.

The figures in the above table are provided by your investment consultant. Gabriel, Roeder, Smith & Company does not provide investment advice.

SECTION D

NOTES TO FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Arkansas Teacher Retirement System. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

Single Discount Rate

A Single Discount Rate of 7.50% was used to measure the total pension liability. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.50%. The current employer and member contribution rates are 14.25% and 6.25% of active member payroll, respectively. Although not all members contribute, the employer and member rates are scheduled to increase by 0.25% increments ending in Fiscal Year 2023. The ultimate employer and member contribution rates will be 15% and 7%, respectively. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions and employer contributions will follow this schedule. This includes payroll for current T-DROP participants and Return to Work retirees. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 7.50%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

	1% Decrease 6.50%	Current Single Rate Assumption 7.50%	1% Increase 8.50%
Total Pension Liability	\$25,325,197,125	\$22,562,958,162	\$20,272,127,282
Plan Fiduciary Net Position	16,902,076,224	16,902,076,224	16,902,076,224
Net Pension Liability	\$ 8,423,120,901	\$ 5,660,881,938	\$ 3,370,051,058

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	50,133
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	13,338
T-DROP Plan Members	3,639
Active Plan Members	<u>66,900</u>
Total Plan Members	134,010

DROP Plan

This pension plan includes a DROP which is referred to as “T-DROP.” Please see pages 22 and 23 for specifics. The balance of the amounts held by the pension plan pursuant to the DROP is \$397,923,824.

SECTION E

SUMMARY OF BENEFITS

Summary of Provisions

June 30, 2020

1. **Voluntary Retirement – A.C.A. § 24-7-701.** A member may retire at age 60 with 5 or more years of credited service, or after 28 years of credited service regardless of age.
2. **Early Retirement – A.C.A. § 24-7-702.** A member who has more than 25 but less than 28 years of credited service and has not attained age 60 years may retire and receive an immediate early retirement annuity. The early annuity is an age & service annuity reduced by the lesser of (i) and (ii) below:
 - (i) 10/12 of 1% multiplied by the number of months by which early retirement precedes completion of 28 years of service, or
 - (ii) 10/12 of 1% multiplied by the number of months by which early retirement precedes the attainment of age 60 years.

Act 750 of 2017 allows the ATRS Board to set by resolution the early annuity reduction at a rate between 5% and 15% per year, to be prorated monthly if the System's actuary certifies that the amortization period to pay the unfunded liabilities exceeds 18 years. The Board adjusted the reduction to 10% per year beginning August 1, 2017 by Resolution 2017-14 on April 17, 2017.

3. **Deferred Retirement – A.C.A. § 24-7-707.** An inactive member who has 5 or more years of credited ATRS service will be entitled to an age & service annuity beginning at age 60, provided accumulated contributions are on deposit with the retirement system.
4. **Disability Retirement – A.C.A. § 24-7-704.** An active member with 5 or more years of actual and reciprocal service, who becomes totally and permanently disabled may be retired and receive a disability annuity computed in the same manner as an age & service annuity. In order to qualify for disability retirement, the member must exhibit symptoms of physical or mental incapacitation while the member is an active member (Act 973 of 2011). A member who is eligible for age and service retirement (age 60 and 5 years of service or 28 years of service at any age) is no longer eligible to apply for disability retirement. Act 219 of 2015 requires an ATRS disability retiree to obtain a Social Security Administration determination letter finding that the retiree is disabled within 36 months of the effective date of disability retirement. If a member cannot provide the SSA determination letter within the 36-month period, benefits will be terminated, the member will be returned to active service, and all member history will be restored. The requirement to qualify for SSA disability shall not apply to a disability retiree who was age 57 or older before July 1, 2015, because that member would qualify for age & service benefits prior to requiring the SSA determination of disability. Additionally, the retiree may apply for an extension of the 36-month deadline if the retiree can demonstrate the SSA determination is in progress. Act 549 of 2017 allows a disabled retiree to return to work for an ATRS covered employer as a part-time employee or in a lesser position than held previously and not be disqualified from disability retirement.

Summary of Provisions

June 30, 2020

4. **Disability Retirement – A.C.A. § 24-7-704 (Cont.)** If a retiree tries to return to full time employment, and fails, the suspended disability benefit will be restored to what it would have been had they not tried to return to work, or a recomputed benefit using the additional service, whichever is higher. Additionally, this act allows a retiree who was unable to secure a fully favorable Social Security disability determination letter to seek the ATRS medical committee's review of the case and its findings, which may find that the member is still disabled according to the ATRS definition of “disabled”, shall be ruled as a final disposition in the matter.

5. **Final Average Salary (FAS) – A.C.A. § 24-7-736.** The ATRS Board made changes to the final average salary by Resolution 2017-33 on November 13, 2017. Effective in Fiscal Year 2019, a member’s final average salary is the average of the annual salaries paid during the period of 5 years of credited service producing the highest annual average. A benchmark 3-year FAS as of 6/30/2018 is established as a minimum FAS. Beginning July 1, 2009, no salary paid in any year which is utilized in the computation of the members’ final average salary, shall exceed the percentage increase of the base year, unless the difference in value between the next-highest year and the base year is within the amount of the salary differential (defined below). (Act 611 of 2017). If a member has a break in covered employment for eight years or more between any of the member's highest salary years used in the calculation of final average salary, then anti-spiking checking does not apply to the next highest year in the formula (Act 225 of 2011 – effective date of law July 27, 2011). There will no longer be any stacking of part-time college/teaching work for school district employees (Act 513 of 2011). Act 555 of 2013 limits the use of a reciprocal system's calculation of FAS if the ATRS member's reciprocal service credit is less than the number of years used to calculate the FAS for ATRS. Beginning July 1, 2014, if a member has less than three years of reciprocal service (the number of years used to calculate ATRS' FAS), then ATRS will obtain the salary and service credit from the reciprocal system, and use that salary and service as if it had all been earned in ATRS to calculate a FAS for retirement. Act 720 of 2013 made a minor change to final average salary for members who stop work during their last year of employment immediately before retirement. The Board may adjust the final average salary calculation by board resolution provided that the percentage range is no lower than 105% nor higher than 120% per year; and the salary differential is no lower than \$1,250 nor higher than \$5,000. Act 611 of 2017. The ATRS Board adjusted the percentage lower to 110% and salary differential allowance to \$5,000 by Resolution 2017-13 on April 17, 2017.

6. **Age & Service Annuity and Disability Annuity – A.C.A. §§ 24-7-705, 24-7-727 (stipend).** The annuity payable will not be less than the total of: years of contributory service times 2.15% of FAS; plus years of noncontributory service times 1.39% of FAS (1.25% for service earned after 2019); plus stipend for all members with 10 or more years of ATRS actual service. Act 966 of 2013 allows the ATRS Board to set the contributory multiplier for service credit earned after June 30, 2013, within a range of 1.75% to 2.15%. The noncontributory multiplier for service credit earned after June 30, 2013, may be set within a range of 0.5% and 1.39%. In addition, this act would allow the Board to set special multiplier rates for the first 10 years of ATRS service earned after June 30, 2013, for both contributory and noncontributory service. This act is dependent upon the actuary's certification that the amortization period is in excess of 18 (Act 551 of 2017) years to pay unfunded liabilities prior to any reduction to the multipliers.

Summary of Provisions June 30, 2019

6. **Age & Service Annuity and Disability Annuity – A.C.A. §§ 24-7-705, 24-7-727 (stipend) Cont.** By Board Resolution 2017-31 on November 13, 2017, the noncontributory multiplier will become 1.25% beginning in FY 2020. By Board Resolution 2017-32 on November 13, 2017, the contributory multiplier and noncontributory multiplier for the first 10 years of service has been reduced to 1.75% and 1.0% respectively beginning July 1, 2018. Once a member accrues 10 years of service, all service including the first 10 years is then credited at the standard rate in place at the time the service was earned.
7. **T-DROP – A.C.A. §§ 24-7-1301–1316.** A member with 28 or more years of service may participate in the Teacher Deferred Retirement Option Plan (T-DROP, Act 1096 of 1995). T-DROP participants do not make member contributions. A T-DROP deposit is made monthly to the participant's T-DROP account. The T-DROP deposit is the amount that would have been paid had the member retired, reduced by 1% for each year of contributory, noncontributory, and reciprocal service (Act 605 of 2013). Members who enter T-DROP with less than 30 years of service are subject to an additional 6% reduction for each year less than 30 years. Act 750 of 2017 allows the Board to adjust the additional T-DROP reduction factor between ½% and 1% of the plan benefit for each month the member begins participating in the plan prior to having 30 years of credited service. T-DROP deposits are increased each year by 3% of the member's initial T-DROP deposit. T-DROP deposits cease at the earlier of 10 years of T-DROP participation or separation from service. T-DROP participants may continue in covered employment after 10 years of T-DROP participation, but do not accumulate additional T-DROP deposits. T-DROP participants receive interest annually on the balance of the T-DROP account. Regular T-DROP interest is credited for 10 or less years of participation. Post 10-year T-DROP interest is credited for more than 10 years of participation.

Regular T-DROP interest is a combination of a fixed interest rate and an incentive interest rate. An incentive rate may be approved by the Board to encourage continued participation in T-DROP, if the estimated ATRS rate of return is 2% greater than the ATRS actuarial assumed rate of return in the preceding calendar year. Beginning in fiscal year 2019, the Board has set the Regular T-DROP fixed interest rate at 3% and the maximum incentive rate at 3% by Resolution 2017-35 on November 13, 2017. The fixed and incentive interest rates may be adopted by board resolution prior to the beginning of the fiscal year and would apply to subsequent fiscal years unless modified by the Board. For fiscal year 2020, the Board set the Regular T-DROP fixed interest rate at 3% and the incentive interest rate at 0%, resulting in a total interest rate of 3%, by Resolution 2019-09 on February 4, 2019.

Post 10-year T-DROP interest has been in effect since July 1, 2010. Act 1049 of 2017 allows the Post 10-year T-DROP interest rate (24-7-1307) to be determined as appropriate by the Board and adopted by the resolution prior to the beginning of the fiscal year in which the interest rate shall apply. Post 10-year T-DROP interest is a combination of a variable interest rate and an incentive interest rate, to encourage continued participation in T-DROP. The Post 10-year T-DROP variable interest rate formula is based on investment returns and other factors. On November 13, 2017, the ATRS Board by Resolution 2017-36 set the formula for the variable interest rate and the maximum combined variable and incentive interest rate for fiscal year 2019 and beyond. The Post 10-year T-DROP variable interest rate is calculated as 2% less than the system's rate of return, but not less than 4%, nor greater than 6%. The maximum Post 10-year T-DROP combined interest rate including the incentive interest rate is 7.5%. The Post 10-year T-DROP incentive interest rate can be awarded if the estimated ATRS rate of

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T-DROP – A.C.A. § 24-7-1301-1316 (Cont). return is 2% greater than the ATRS actuarial assumed rate of return in the preceding calendar year. For fiscal year 2020, the Board set the Post 10-year T-DROP variable interest rate at 4% and the incentive interest rate at 0%, resulting in a combined interest rate of 4%, by Resolution 2019-10 on February 4, 2019.

Upon actual retirement, the member may receive the T-DROP account balance in the form of a lump sum, a Cash Balance Account (CBA), or as an additional annuity. The T-DROP distribution may be a combination of lump sum, CBA, and additional annuity.

8. **Post-Retirement Increases – A.C.A. §§ 24-7-713, 24-7-727 (compound COLA).** Each July 1, annuities are adjusted to be equal to the base annuity times 100% plus 3% for each full year in the period from the effective date of the base annuity to the current July 1. The base annuity is the amount of the member's annuity on the later of July 1, 2001 or the effective date of retirement, as re-determined by Acts 396 of 1999 and 992 of 1997. The July 1, 2009 cost of living adjustment for retirees was compounded. The annuity was set to 103% of the June 30, 2009 retirement benefit amount. After it was calculated on July 1, 2009, the base amount was reset to be the July 1, 2009 benefit amount. Future cost of living raises will be established by the new updated base amount. Future cost of living adjustments will be evaluated on an annual basis to determine if a simple or compound cost of living increase will be given, depending on the financial condition of the System. Act 967 of 2013 gives the ATRS Board authority to reverse the compounding of a benefit and reset the base amount to the pre-compounding amount. If this reversal were to occur, it would include participants in the T-DROP plan. The future benefits of a member would not be reduced to recover any benefits paid to a member as a result of the compounding. In addition, the member's benefit on the date of the reversal would not be impacted, but future COLA's would be based upon the reset base amount. This act is dependent upon the actuary's certification that the amortization period is in excess of 30 years to pay unfunded liabilities prior to any reversal of the compounding of the COLA. Act 780 of 2017 allows the right to reverse the 2009 compound COLA when unfunded liabilities exceed an 18 year amortization. The act also allows a phase in of the change during months in which a COLA raise is given to prevent any retiree or option beneficiary from having an actual reduction in monthly benefit payments.
9. **Survivor Benefits – A.C.A. § 24-7-710.** Upon the death of an active member, who has 5 or more years of actual and reciprocal service, the following annuities are payable:
 - (a) The surviving spouse receives an annuity computed in the same manner as if the member had (i) retired the date of his death with entitlement to an annuity, (ii) elected Option A - 100% Survivor Annuity, and (iii) nominated the spouse as joint beneficiary. If the member has attained age 60 and has acquired 5 years of credited service or has acquired 25 years of credited service regardless of age, the annuity begins immediately; otherwise the annuity begins the month following the date the member would have attained age 60. Under certain circumstances, a lump sum distribution may be made to the beneficiary(ies) of the deceased member.

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Survivor Benefits – A.C.A. § 24-7-710. Cont.

(b) A surviving child's benefit is prorated to an amount equal to 1% of the member's highest salary year for each quarter of a year credited as actual service in the system, up to 20% or up to a maximum of \$20,000 per year. If there is more than 1 surviving dependent, the benefits are capped to the lesser of 60% of the member highest salary or \$60,000 per year to be divided equally among the dependents. Act 505 of 2017. A child is dependent until the child's death, marriage, or attainment of age 18 (age 23 if the child is a full-time student).

10. **Lump Sum Death Benefit – A.C.A. § 24-7-720.** Beneficiaries of deceased active members or retirees with 10 or more years of ATRS credited service are eligible to receive a lump sum death benefit of up to \$10,000 (\$6,667 for noncontributory service-benefit). The amount will be prorated for members who have both contributory service and noncontributory service. Members with 15 or more years of contributory service will receive the full \$10,000 (Act 977 of 2011).
11. **Member Contributions – A.C.A. § 24-7-406.** Through FY 2019, contributory members contribute 6% of their salaries. Members that are participating in the T-DROP program or are working retirees do not make member contributions. If a member leaves service prior to becoming eligible to retire, the accumulated member contributions are returned upon request. No interest is credited to a member's contributions for the first year of membership; after 1 year, interest is credited. The ATRS Board set the interest rate on refunded contributions to 0.08% for fiscal year 2017 and beyond by Resolution 2017-17 on April 17, 2017. Act 550 of 2017 allows the ATRS Board to increase the employee contribution rate beyond 6% if the amortization period to pay the unfunded liabilities of the system exceeds 18 years. The Board set the member contribution rate to 6.25%, 6.50%, 6.75%, and 7.00% for FY 2020, FY 2021, FY2022, and FY 2023 and thereafter, respectively, by Resolution 2017-30 on November 13, 2017.

Effective July 1, 1986, a noncontributory plan was created. Effective July 1, 1999 the default choice for new members is contributory. Effective July 1, 1997, all future member contributions are tax-deferred in accordance with §414(h) of the Internal Revenue Code of the United States. Effective July 1, 2005, all noncontributory members whose status changes from support to teacher (contracted for more than 181 days), will become contributory. Each July 1, members who previously elected to be noncontributory may elect to change to contributory status under Act 385 of 2005. The election is irrevocable.

12. **Act 808 Retirement – A.C.A. § 24-4-732.** Any employee of a state agency who was an active member of the Arkansas Teacher Retirement System on April 8, 1987, and who qualified for retirement before January 1, 1988, could become a member of the Arkansas Public Employees Retirement System and retire from that system. All credited service was transferred to that system but the member's contributions were retained by the Arkansas Teacher Retirement System and the benefit amount is transferred monthly to the Arkansas Public Employees Retirement System. Each July 1, annuities are adjusted by 3% (compound escalator).

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13. **Act 793 Retirement – A.C.A. § 24-4-522.** Any employee who was a member of the rehabilitation services in 1977 was permitted to become a member of the Arkansas Public Employees Retirement System. Liabilities associated with prior service earned through June 30, 1978 remain in the Arkansas Teacher Retirement System. Future service is allocated to the Arkansas Public Employees Retirement System. Each July 1, annuities are adjusted by 3% (compound escalator).
14. **Retiree Benefit Stipend – A.C.A. § 24-7-713.** Each retired member as of June 30, 2008, with 5 or more years of ATRS credited service receives a \$75 per month stipend. Members in T-DROP do not receive the \$75 per month stipend until actual retirement. For all members retiring on or after July 1, 2008, a minimum of 10 years of ATRS credited service is required to receive the \$75 per month stipend. Act 603 of 2013 allows the ATRS Board to increase or decrease the stipend to a minimum of \$1 per month and a maximum of \$75 per month. This act is dependent upon the actuary's certification that the amortization period is in excess of 18 years to pay unfunded liabilities prior to any reduction in the current stipend. The stipend for fiscal year 2018 remains at \$75 per month. **By Board Resolution 2017-34 on November 13, 2017 the benefit stipend is removed from the base amount for all retirees and beneficiaries beginning in fiscal year 2019 and the benefit stipend will be reduced to \$50.00 for fiscal year 2020 and beyond. The Resolution contains a “hold harmless” provision that prevents the lowering of the stipend if it would actually reduce the total monthly benefit. This would only affect retirees when the COLA is less than \$25 per month.**
15. **Optional Forms of Benefits – A.C.A. § 24-7-706:**
- Option 1 (Straight Life Annuity)**
- A member will receive the maximum monthly benefit for which he/she qualifies, throughout his/her lifetime. No monthly benefits will be paid to his/her beneficiary after the member's death. Should a member die before he/she has drawn in benefits an amount equal to his/her contributions plus earned interest, the balance will be paid to a designated beneficiary. The designated beneficiary may be anyone chosen by the member.
- Option A (100% Survivor Annuity)**
- Under this option a member will receive a reduced annuity throughout his/her lifetime. Upon the member's death, the designated beneficiary will receive the same annuity for the balance of his/her lifetime.
- Option B (50% Survivor Annuity)**
- Under this option a member will receive a reduced annuity throughout his/her lifetime. Upon the member's death, the designated beneficiary will receive one-half (1/2) of this annuity for the balance of his/her lifetime.
- Option C (Annuity for Ten Years Certain and Life Thereafter)**
- A reduced monthly benefit payable for 120 months. After that time, a member's monthly allowance will revert to the amount he/she would have received under the regular plan and continue for life. If the member dies before receiving 120 payments, the designated beneficiary will receive a monthly benefit in the same amount until monthly benefits to both the member and the beneficiary equal 120 monthly payments. No further benefits are then payable to the beneficiary.

Summary of Provisions

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Pop-Up Election

Following the death of or a divorce from the member's designated beneficiary, his or her benefit reverts (pops-up) to the straight life annuity amount from the elected optional annuity amount. The member may then elect new beneficiaries in accordance with Arkansas Code and rules adopted by the ATRS board.

Option Factors are based upon a 5.0% interest rate and the RP-2014/MP2017 tables (static projection to 2022) adjusted with a 50% unisex mix.

16. **Refund of Member Contributions – A.C.A. § 24-7-711.** Any termination refund made to a member or a lump sum payout made to a surviving spouse after July 1, 2011, cancels all service credit, including noncontributory service credit (Act 976 of 2011); any repurchase of refunded service will be as contributory years at actuarial cost (Act 69 of 2011). Act 140 of 2013 specifies that all membership rights (including noncontributory service credit) and beneficiary designations to the ATRS are cancelled when a member gets a refund of his or her contributions.
17. **Contract Buyout – A.C.A. § 24-7-735.** During periods of contract buyout/litigation/termination, members will not receive service credit if no on-call service or on-site work is performed. ATRS will not allow the purchase of the time between actual work and the settlement (Act 163 of 2011) unless the settlement was made to resolve a claim of wrongful termination (Act 436 of 2017).
18. **Actuarial Cost of Service – A.C.A. §§ 24-1-107, 24-2-502, 24-7-202, 24-7-406, 24-7-501, 24-7-502, 24-7-612, 24-7-602, 24-7-603, 24-7-604, 24-7-606, 24-7-607, 24-7-610, 24-7-611.** Effective July 1, 2011, all service purchases will be at actuarial cost (Act 69 of 2011).
19. **Deceased Member Refund of Contributions – § 24-7-711.** Effective July 1, 2011, if a beneficiary is not eligible for survivor benefits, or if a surviving spouse is eligible and chooses a contribution refund, the interest on the refund stops the July 1 following the member's death (Act 136 of 2011).
20. **Limit Lookback to Five Years – A.C.A. §§ 24-7-202, 24-7-205.** Effective July 1, 2011, absent intentional nondisclosure, fraud, misrepresentation, criminal act, or obvious/documented error by an employer of ATRS members can no longer establish old service previously unreported unless such service is acquired by purchase at actuarial cost (Act 138 of 2011). Act 241 of 2017 allows ATRS to correct an understated service credit error upon which all required contributions have been paid, even if beyond the 5-year look-back period.
21. **Service Credit Requirements – A.C.A. §§ 24-7-501, 24-7-502, 24-7-601, 24-7-603, 24-7-604, 24-7-606, 24-7-607, 24-7-611.** Effective July 1, 2011, members must receive 160 days of service to be credited with a year of service credit (Act 974 of 2011).
22. **T-DROP Cash Balance Account.** Effective July 1, 2012, a T-DROP cash balance account was established that allows members exiting (retiring) from T-DROP to place all or a portion of their T-DROP proceeds into a Cash Balance Account (CBA) at ATRS. On November 13, 2017, by Resolution 2017-38 the Board set the CBA interest rate schedule based on years of participation as follows: 2.50% for year one, 2.75% for year two, 3.00% for year three, 3.25% for year four, 3.50% for year five, and 4.00% for year

Summary of Provisions June 30, 2020

six and beyond. Each fiscal year, the Board can grant an incentive interest rate to encourage continued participation in the CBA program. For fiscal year 2020, the Board did not grant CBA participants an incentive rate.

23. **Delinquent Member Contributions – A.C.A. § 24-7-205.** Act 336 of 2013 allows members to forfeit service credit for any contributory fiscal year for which there is a balance due to the system.
24. **Purchase of “Air Time” as a Result of Wrongful Termination – A.C.A. §§ 24-7-702, 24-7-735, 6-17-413.** Act 521 of 2013 allows a member to purchase service credit under a settlement agreement or court order to resolve a claim of wrong termination if the service credit is purchased from the date of termination by an ATRS employer to the date of the resolution of the dispute. This service credit would be purchased at actuarial cost.
25. **Buyout of Inactive Members—A.C.A. § 24-7-505.** Act 606 of 2013 allows the ATRS Board to create a voluntary "buyout plan" for inactive vested members. The System will make a one-time lump sum payment to a member, a surviving spouse, or an alternate payee in exchange for a member, surviving spouse, or alternate payee's cancellation of membership and retirement benefit rights. The buyout plan will be established by Board rules. The rule is 16-1 Cash and Savings Help Program for Members (CASH). This particular plan offering ended June 30, 2015. Depending upon the success of the plan, it may be extended by the Board. Act 647 of 2017 allows the buyout plan to be extended, modified, or expanded by board resolution. The ATRS Board expanded the CASH program to include all inactive vested members, regardless of service type by Resolution 2017-18 on May 10, 2017. The ATRS Board offered the FY 2020 CASH program for all inactive vested members to end on June 30, 2020 by Resolution 2019-30 on June 3, 2019.
26. **Private School Service—A.C.A. § 24-7-607.** Prior to Act 90 of 2015, private school service had to be recognized by the Arkansas Department of Education as positions that required the issuance of teaching licenses. The certification of this service credit was performed by one employee of the Arkansas Department of Education, and that one employee retired. Upon that employee's retirement, the Arkansas Department of Education no longer certified private school service credit. No certifications occurred for approximately a year until legislation could be passed to allow ATRS to make this determination. In addition, a distinction was made between certified and noncertified private school service credit. Certified private school service (basically administrative and teaching) could be purchased at actuarial cost, up to 15 years. Noncertified private school service could be purchased at actuarial cost, up to 5 years.
27. **Military Service Credit—A.C.A. § 24-7-602.** Act 301 of 2015 made technical corrections to the ATRS laws. In the military service credit section, ATRS was not in compliance with a state law that was passed in 2009, Act 295, which repealed the requirement for free military service credit to be granted only if the service was not credited under any other plan except Social Security and the requirement that receipt of a pension from the federal military retirement system paid solely for disability shall not be considered as having service with another retirement plan. The military technical corrections bill raised questions by some of the legislators, and Act 558 of 2015 was passed to further clarify military service credit. Compulsory military service was changed throughout the law to read: "federal military

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draft". The word "honorable" was inserted before discharge in order for the member to obtain free military service credit throughout the law.

28. **Lump-Sum Payment of Reserve Value of Small Annuity—A.C.A. 24-7-716.** Prior to passage of Act 225 of 2015, ATRS would pay out a reserve value to a member whose monthly benefit was less than \$20 per month. This was optional for the member. The reserve value was calculated by multiplying the annual annuity by the reserve factor for the member's age. Act 225 of 2015 repealed this law.
29. **Pension Advance Prohibition – A.C.A. § 24-7-715.** Prohibits a pension advance company from obtaining a retiree's benefit to repay a loan. Act 199 of 2017.
30. **Accrued Sick Leave – A.C.A. § 24-7-601.** Allows unused accrued sick leave, whether paid or unpaid, to count as service credit to determine retirement eligibility for survivor benefits and lump sum death benefits. One day of service shall be added to the service credit for the fiscal year of the member's death for each day of unused sick leave. This does not include catastrophic leave and other unused donated leave. Act 200 of 2017.
31. **Spousal Survivor Benefit – A.C.A. § 24-7-710.** Members may direct an alternative residual beneficiary to receive a lump sum payment of the member's residue amount or T-DROP balance. No spousal survivor benefits will be payable if an alternative beneficiary who is not the surviving spouse is designated by the member. Act 243 of 2017.
32. **Settlement Agreements – A.C.A. § 24-7-202, § 24-7-735.** Salary or service credit may be purchased as part of a settlement agreement between a member and his/her employer. Salary will be added to the salary at the time of purchase and will be determined using the same factors used to calculate an additional monthly benefit in the annuitization of a T-DROP distribution. It is assumed the member would have retired immediately at the time of the purchase. Act 436 of 2017.
33. **Outsourcing – A.C.A. § 24-7-506.** This Act defines outsourcing to mean employment for an ATRS covered employer through a third party, private employer, independent contractor, or other contractual relationship. This Act defines that a person who performs services that are necessary for the normal daily operation for an ATRS covered employer is considered an Embedded Employee. This Act gives the ATRS covered employer a one-time decision to choose between two options for handling their Embedded Employees. The decision must be made within 60 days after the effective date of this Act or that first outsourcing. The first option for the ATRS covered employer is to become a participating employer and make embedded employees participating members of ATRS. The second option for the ATRS covered employer is to become a Surcharge Employer and opt to pay a surcharge on the Embedded Employee's salary to ATRS to help cover the actuarial cost. The surcharge starts at ½% the first year and slowly rises to 3% over 4 years with a hard cap of 4%. The Embedded Employees of a Surcharge Employer will not be members of ATRS. The services necessary for normal daily operations include: substitute teaching, teacher's aides, food service, transportation service, custodial service, security services, and school nursing. Only those working on the premises are subject to the surcharge. The surcharge is ONLY on SALARY of embedded employees. All salary is reported in the aggregate with the contractor's salary amount being the final word unless it is clearly in error. The Division of Youth Services shall be a participating Employer and may designate any or all

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Embedded Employees as members of ATRS. The law shall not apply to post-secondary higher education institutions. Act 575 of 2017.

34. **Concurrent Reciprocal Service Credit – A.C.A. § 24-7-601.** This act allows ATRS members with the option of waiving their ATRS service in the event the member had concurrent service in two (2) state-supported retirement systems. This Act gives the member the option to surrender either ATRS service or the reciprocal plan service. If a member worked full time under a reciprocal retirement system and only part-time under ATRS, this Act will allow the member to waive the ATRS service to obtain a higher benefit based upon the full-time service in the other system. This act will allow concurrent reciprocal members the option to voluntarily elect to waive service in ATRS. The member's employer-accrued contributions and employee-accrued contributions in the system remain with the system. Act 612 of 2017.
35. **Employer Contribution Rate – A.C.A. § 24-7-401.** Employer contributions are collected on active members, T-DROP participants (even those who work beyond the 10-year participation period), and working retirees (Act 743 of 2009). Through fiscal year 2019, the employer contribution rate is 14%. For the fiscal year beginning July 1, 2018, the Board may modify the employer contribution rate for future fiscal years above 14% in increments of 0.25% per fiscal year provided the system has a greater than 18-year amortization period to pay unfunded liabilities without an employer contribution rate of more than 14% limited to a maximum employer contribution rate of 15%. Act 821 of 2017. The Board set the employer contribution rate to 14.25%, 14.50%, 14.75%, and 15.00% for FY 2020, FY 2021, FY2022, and FY 2023 and thereafter, respectively, by Resolution 2017-40 on November 13, 2017.
36. **Forfeiture of Benefits by Certain Persons – A.C.A. §§ 24-1-301, 302, 303, 304, 305.** Act 756 of 2017 provides for a beneficiary's forfeiture of benefits under a public retirement system when the beneficiary unlawfully kills a member or retiree.
37. **Socially responsible investments – A.C.A. § 24-7-105.** Act 767 of 2017 provides that a decision on whether to invest, not invest, or withdraw from investment the funds of the Arkansas Teacher Retirement System or an alternate retirement plan of the system shall not be based on a consideration that the location of the investment, fund, company, or any other type of investment vehicle is in the State of Israel.

SECTION F

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

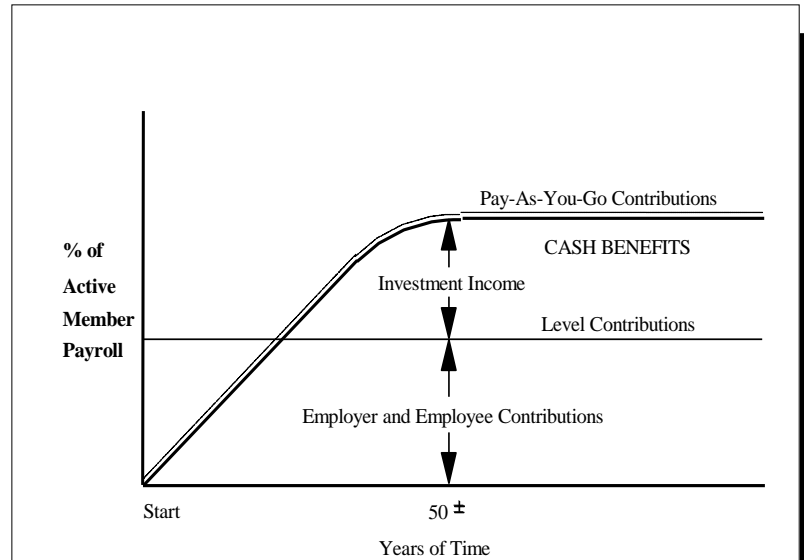
Selection of Assumptions Used in Actuarial Valuations

Economic Assumptions

Investment return
Pay increases to individual employees:
the portion for economic changes
Active member group size and
total payroll growth

Demographic Assumptions

Actual ages at service retirement
Pay increases to individual members:
the portion for merit & seniority
Disability while actively employed
Separations before retirement
Mortality after retirement
Mortality before retirement



Relationship Between Plan Governing Body and the Actuary

The actuary should have the primary responsibility for choosing the **demographic** assumptions used in the actuarial valuation, making use of specialized training and experience.

The actuary and other professionals can provide guidance concerning the choice of suitable economic assumptions.

Guidance regarding the selection of economic assumptions for measuring pension obligations is provided by Actuarial Standards of Practice (ASOP) No. 27. The standard requires that the selected economic assumptions be consistent with each other. That is, the selection of the investment return assumption should be consistent with the selection of the payroll growth and inflation assumptions.

ASOP No. 27 defines a reasonable economic assumption as an assumption that has the following characteristics: (a) It is appropriate for the purpose of the measurement; (b) It reflects the actuary's professional judgment; (c) It takes into account historical and current economic data that is relevant as of the valuation date; (d) It reflects the actuary's estimate of future experience, the actuary's observation of the estimates inherent in market data, or a combination thereof; and (e) It has no significant bias (i.e., it is not significantly optimistic or pessimistic), except when provisions for adverse deviation or plan provisions that are difficult to measure are included and disclosed under Section 3.5.1, or when alternative assumptions are used for the assessment of risk.

Summary of Assumptions Used in Actuarial/GASB Valuations for the Arkansas Teacher Retirement System Assumptions Adopted by Board of Trustees After Consulting with Actuary

The actuarial assumptions used in the valuation are shown in this section. Assumptions were established based upon an Experience Study covering the period July 1, 2010 through June 30, 2015. The Board of Trustees adopts the actuarial assumptions used for actuarial valuation purposes after consulting with the actuary. The actuarial assumptions represent estimates of future experience.

Economic Assumptions

The **price inflation** assumption is 2.50% although no specific Price Inflation is needed for this valuation. It is assumed that the 3% COLA will always be paid.

The **wage inflation** assumption is 2.75%. This consists of 2.50% related to pure price inflation and 0.25% related to general economic improvements.

The investment return rate used in the valuation was 7.50% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return over wage inflation in this valuation is defined to be the portion of investment return which is more than the wage inflation rate. Considering wage inflation recognition of 2.75%, the 7.50% rate translates to an assumed real rate of return over wage inflation of 4.75%. This rate was first used for the **June 30, 2017** valuation. The assumed real rate of return over price inflation is 5%.

Pay increase assumptions for individual active members are shown on pages 36 and 37. Part of the assumption for each age is for a merit and/or seniority increase, and the other 2.75% recognizes wage inflation. These rates were first used for the **June 30, 2017** valuation.

The Active Member Group size is assumed to remain constant at its present level.

Total active member payroll is assumed to increase 2.75% per year, which is the portion of the individual pay increase assumptions attributable to wage inflation. This rate was first used for the **June 30, 2017** valuation.

Non-Economic Assumptions

The mortality tables used were the RP-2014 Healthy Annuitant, Disabled Annuitant and Employee Mortality headcount weighted tables for males and females. Mortality rates were adjusted for future mortality improvements using projection scale MP-2017 from 2006. Related values are shown on page 33. These tables were first used for the **June 30, 2017** valuation.

A limited fluctuation credibility procedure was used to determine the appropriate scaling factor of each gender and each member classification (see the 2010-2015 Experience Study), and are shown below:

	Scaling Factor
Healthy Male Retirees	101%
Healthy Female Retirees	91%
Disabled Male Retirees	99%
Disabled Female Retirees	107%
Male Active Members	94%
Female Active Members	84%

The probabilities of retirement for members eligible to retire are shown on pages 34 and 35. The rates for full retirement and reduced retirement were first used in the **June 30, 2017** valuation.

The probabilities of withdrawal from service, death-in-service and disability are shown for sample ages on pages 36 and 37. These rates were first used in the **June 30, 2017** valuation.

The entry age actuarial cost method of valuation was used in determining accrued liabilities and service cost. Service cost is attributed through all assumed exit ages through retirement where the date of entry into TDROP is considered to be the date of retirement.

Differences in the past between assumed experience and actual experience (“actuarial gains and losses”) become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (the total of principal & interest) which are level percents of payroll contributions.

These cost methods were first used in the June 30, 2014 GASB calculations.

The data about persons now covered and about present assets was furnished by the System’s administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary. Members whose dates of birth were not supplied were assumed to be 40 years old on the valuation date. Members whose salaries were not supplied and that entered T-DROP were assumed to have the group average pay of those with salary data as of the valuation date that entered T-DROP.

Single Life Retirement Values

Sample Attained Ages in 2020	Present Value of \$1.00 Monthly for Life		Present Value of \$1 Monthly for Life Increasing 3.0% Annually		Future Life Expectancy (Years)		Percent Dying within Next Year	
	Male	Female	Male	Female	Male	Female	Male	Female
40	\$150.86	\$154.28	\$198.83	\$205.26	42.75	47.01	0.33 %	0.29 %
45	146.93	151.53	191.45	199.63	37.96	42.19	0.41 %	0.32 %
50	141.81	147.68	182.25	192.21	33.25	37.38	0.53 %	0.36 %
55	135.20	142.30	170.95	182.48	28.67	32.58	0.70 %	0.44 %
60	126.90	135.25	157.44	170.40	24.25	27.89	0.97 %	0.60 %
65	116.81	126.22	141.80	155.77	20.07	23.36	1.36 %	0.82 %
70	104.59	114.70	123.92	138.24	16.15	19.02	1.96 %	1.23 %
75	90.13	100.68	103.98	118.20	12.52	14.95	3.05 %	2.03 %
80	74.03	84.67	83.07	96.67	9.29	11.30	5.05 %	3.45 %
85	57.74	67.75	63.07	75.22	6.61	8.19	8.67 %	6.07 %
Base	2635 x 1.01	2636 x 0.91	2635 x 1.01	2636 x 0.91				
Projection	939	940	939	940				

* Applicable to calendar year 2020. Rates and life expectancies in future years are determined by the MP-2017 projection scale.

Sample Attained Ages in 2020	Benefit Increasing 3.0% Yearly	Portion of Age 60 Lives Still Alive	
		Male	Female
60	\$100.00	100%	100%
65	115.00	95%	97%
70	130.00	88%	92%
75	145.00	79%	86%
80	160.00	67%	77%
Ref		2635 x 1.01	2636 x 0.91

Probabilities of Retirement for Members

Retirement Ages	% of Active Participants Retiring with Unreduced Benefits			
	Education		Support	
	Male	Female	Male	Female
48	8%	7%	8%	6%
49	8%	7%	8%	6%
50	8%	7%	8%	6%
51	8%	7%	8%	6%
52	8%	7%	8%	6%
53	8%	7%	8%	6%
54	8%	7%	8%	6%
55	8%	9%	8%	6%
56	8%	9%	8%	6%
57	8%	11%	8%	11%
58	8%	11%	8%	11%
59	17%	14%	8%	15%
60	17%	17%	13%	13%
61	24%	17%	13%	15%
62	24%	29%	28%	23%
63	27%	26%	25%	19%
64	27%	24%	25%	23%
65	54%	50%	47%	50%
66	54%	53%	47%	44%
67	54%	39%	47%	38%
68	54%	39%	47%	38%
69	54%	39%	47%	38%
70	54%	39%	47%	38%
71	54%	39%	47%	38%
72	54%	39%	47%	38%
73	54%	39%	47%	38%
74	54%	39%	47%	38%
75	100%	100%	100%	100%
Ref	2634	2635	2636	2637

These rates are based upon data presented in the 2010-2015 experience study and were first used in the 2017 valuation.

Probabilities of Reduced Retirement for Members

Retirement Ages	% of Active Participants Retiring with Reduced Benefits			
	Education		Support	
	Male	Female	Male	Female
50	1.5%	1.0%	0.5%	1.5%
51	1.5%	1.0%	1.0%	1.5%
52	1.5%	1.5%	1.5%	2.0%
53	1.5%	2.0%	2.0%	2.0%
54	2.0%	2.0%	2.5%	2.0%
55	2.5%	2.5%	3.0%	2.0%
56	3.0%	2.5%	3.5%	2.0%
57	5.0%	2.5%	4.5%	2.5%
58	5.0%	2.5%	4.5%	2.5%
59	3.5%	2.5%	4.5%	2.5%
Ref	2640	2638	2641	2639

These are 50% of the rates presented in the 2010-2015 experience study and were first used in the 2017 valuation. These rates anticipate reduced election of early retirement due to the increase in the early retirement reduction from 5% to 10%.

Duration of T-DROP for Members

Present T-DROP members are assumed to remain in T-DROP according to the following table:

Entry Age	Assumed Duration Years
50-56	7
57	6
58	5
59+	4

Teachers

Separations From Active Employment Before Age and Service Retirement & Individual Pay Increases

Sample Ages in 2020	Percent of Active Members Separating within the Next Year						
	Years of Service	Death *		Disability		Other	
		Male	Female	Male	Female	Male	Female
	0					17.80%	12.60%
	1					13.10%	11.10%
	2					12.10%	10.10%
	3					8.60%	8.70%
	4					5.70%	6.50%
25	5 & Up	0.06%	0.02%	0.03%	0.03%	4.50%	5.40%
30		0.06%	0.02%	0.03%	0.03%	3.60%	4.30%
35		0.07%	0.03%	0.03%	0.04%	2.70%	2.90%
40		0.08%	0.05%	0.05%	0.09%	2.00%	2.00%
45		0.12%	0.07%	0.16%	0.19%	1.60%	1.60%
50		0.19%	0.11%	0.40%	0.43%	1.30%	1.40%
55		0.32%	0.18%	0.86%	0.73%	1.10%	1.20%
60	0.55%	0.28%	1.15%	1.00%	0.90%	1.00%	
65	0.97%	0.39%	1.15%	1.00%	0.70%	0.80%	
Ref:		2633 x 0.94	2634 x 0.84	747 x 1	748 x 1	1029	1030
						1381	1382

* Applicable to calendar year 2020. Rates and life expectancies in future years are determined by the MP-2017 projection scale.

Age	Pay Increase Assumptions for an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
20	5.00%	2.75%	7.75%
25	2.90%	2.75%	5.65%
30	2.40%	2.75%	5.15%
35	1.90%	2.75%	4.65%
40	1.40%	2.75%	4.15%
45	0.70%	2.75%	3.45%
50	0.30%	2.75%	3.05%
55	0.00%	2.75%	2.75%
60	0.00%	2.75%	2.75%
65	0.00%	2.75%	2.75%
Ref:	472		

Support Employees Separations From Active Employment Before Age and Service Retirement & Individual Pay Increases

Sample Ages in 2020	Years of Service	Percent of Active Members Separating within the Next Year					
		Death *		Disability		Other	
		Male	Female	Male	Female	Male	Female
	0					49.90%	47.50%
	1					30.10%	28.30%
	2					19.40%	19.10%
	3					15.30%	14.90%
	4					11.80%	12.10%
25	5 & Up	0.06%	0.02%	0.03%	0.02%	9.20%	9.70%
30		0.06%	0.02%	0.09%	0.04%	7.30%	6.90%
35		0.07%	0.03%	0.09%	0.05%	5.60%	5.00%
40		0.08%	0.05%	0.10%	0.07%	4.50%	4.40%
45		0.12%	0.07%	0.22%	0.16%	3.70%	4.00%
50		0.19%	0.11%	0.51%	0.34%	3.30%	3.60%
55		0.32%	0.18%	0.86%	0.59%	3.30%	3.30%
60		0.55%	0.28%	1.11%	0.76%	3.30%	2.80%
65	0.97%	0.39%	1.11%	0.80%	2.80%	2.10%	
Ref:						1031	1032
		2633 x 0.94	2634 x 0.84	749 x 1	750 x 1	1383	1384

* Applicable to calendar year 2020. Rates and life expectancies in future years are determined by the MP-2017 projection scale.

Age	Pay Increase Assumptions for an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
20	5.00%	2.75%	7.75%
25	3.75%	2.75%	6.50%
30	2.60%	2.75%	5.35%
35	2.40%	2.75%	5.15%
40	2.10%	2.75%	4.85%
45	1.00%	2.75%	3.75%
50	0.50%	2.75%	3.25%
55	0.00%	2.75%	2.75%
60	0.00%	2.75%	2.75%
65	0.00%	2.75%	2.75%
Ref:	473		

Miscellaneous and Technical Assumptions

June 30, 2020

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.
Decrement Timing:	Decrements are assumed to occur mid-year, with the exception of normal and early retirement, which are assumed to occur at the beginning of the year. This implies that people who worked the entire school year are reported as active members even if they retired at the end of the year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and the service nearest whole year on the date of the valuation.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability does not operate during the first 5 years of service. Disability and turnover do not operate during retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. The payroll used for this purpose is payroll for all active members plus payroll for members in the T-DROP and retirees who returned to work.
Liability Adjustments:	The liability calculations assume that the non-contributory and contributory multipliers for the first ten years of service are at the standard rate at the time the service is earned.
Data Adjustments:	Members whose dates of birth were not supplied were assumed to be 40 years old on the valuation date. Members whose salaries were not supplied and that entered the T-DROP were assumed to have the group average pay of those with salary data as of the valuation that entered the T-DROP.

SECTION G

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.50%; the municipal bond rate is 2.45%; and the resulting Single Discount Rate is 7.50%.

The tables in this section provide background for the development of the Single Discount Rate.

The **Projection of Contributions** table shows the development of expected contributions in future years. Normal Cost contributions for future hires are not included (nor are their liabilities).

The **Projection of Plan Fiduciary Net Position** table shows the development of expected asset levels in future years.

The **Present Values of Projected Benefit Payments** table shows the development of the Single Discount Rate. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Single Discount Rate Development

Projection of Contributions Ending June 30, 2120

Year	Payroll for Current Employees*	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
2020	\$ 3,077,558,814				
2021	2,994,088,053	\$ 164,274,083	\$ 193,277,116	\$ 265,321,842	\$ 622,873,040
2022	2,815,622,881	162,577,634	174,789,773	278,422,799	615,790,206
2023	2,702,169,426	163,563,728	161,279,224	292,078,815	616,921,767
2024	2,603,700,507	159,170,081	154,889,562	297,913,739	611,973,382
2025	2,515,014,816	155,195,632	149,225,879	303,959,793	608,381,304
2026	2,428,639,663	151,249,643	143,866,578	310,222,784	605,339,004
2027	2,345,480,381	147,404,677	138,774,141	316,708,678	602,887,495
2028	2,272,772,039	144,034,198	134,327,653	323,423,603	601,785,454
2029	2,196,485,717	140,384,041	129,755,354	330,373,859	600,513,255
2030	2,115,977,365	136,419,623	125,000,178	337,565,919	598,985,720
2031	2,044,057,447	132,168,816	120,093,948	346,848,981	599,111,746
2032	1,967,763,748	127,584,508	114,942,009	356,387,329	598,913,846
2033	1,887,124,920	122,669,300	109,628,924	366,187,980	598,486,204
2034	1,803,284,215	117,489,033	104,196,352	376,258,150	597,943,535
2035	1,717,086,248	112,112,274	98,700,644	386,605,248	597,418,166
2036	1,629,029,460	106,567,313	93,156,261	397,236,893	596,960,467
2037	1,539,744,668	100,880,780	87,616,211	408,160,908	596,657,899
2038	1,451,532,153	95,223,763	82,211,179	419,385,332	596,820,274
2039	1,363,206,270	89,508,855	76,870,669	430,918,429	597,297,953
2040	1,275,213,096	83,783,146	71,602,016	442,768,686	598,153,848
2041	1,186,528,547	77,984,197	66,341,953	454,944,825	599,270,975
2042	1,097,600,806	72,146,987	61,128,629	467,455,807	600,731,424
2043	1,007,935,579	66,242,707	55,913,807	480,310,842	602,467,356
2044	918,792,757	60,361,207	50,777,309	493,519,391	604,657,907
2045	829,779,806	54,490,174	45,694,731	507,091,174	607,276,079
2046	741,502,926	48,663,922	40,694,960	521,036,180	610,395,063
2047	654,379,848	42,915,746	35,797,936	535,364,676	614,078,358
2048	569,600,731	37,339,805	31,065,358	550,087,204	618,492,367
2049	491,786,722	32,224,090	26,742,330	565,214,602	624,181,022
2050	420,129,766	27,509,980	22,777,221	580,758,004	631,045,206
2051	354,621,625	23,197,547	19,175,026	596,728,849	639,101,422
2052	295,454,694	19,306,621	15,928,630	613,138,893	648,374,144
2053	241,973,148	15,783,477	13,013,309	630,000,212	658,796,998
2054	194,407,658	12,652,619	10,423,743	647,325,218	670,401,580
2055	152,728,603	9,911,126	8,166,085	665,126,661	683,203,872
2056	116,713,109	7,543,529	6,223,952	683,417,645	697,185,126
2057	86,430,055	5,557,539	4,590,614	702,211,630	712,359,783
2058	61,893,799	3,952,914	3,270,942	721,522,450	728,746,306
2059	42,651,142	2,700,091	2,245,435	741,364,317	746,309,843
2060	28,106,730	1,758,237	1,470,063	761,751,836	764,980,135
2061	17,638,619	1,084,439	914,374	782,700,011	784,698,824
2062	10,481,506	630,389	539,148	804,224,262	805,393,798
2063	6,034,172	352,821	307,362	826,340,429	827,000,612
2064	3,561,441	203,276	179,997	849,064,791	849,448,064
2065	2,138,269	120,144	106,587	872,414,073	872,640,803
2066	1,272,376	70,622	62,224	896,405,460	896,538,305
2067	747,981	41,145	36,274	921,056,610	921,134,029
2068	428,717	23,371	20,326	946,385,666	946,429,364
2069	237,721	12,748	10,805	972,411,272	972,434,826
2070	121,706	6,303	5,338	999,152,582	999,164,223

* Includes T-DROP participants and retirees who returned to work.



Single Discount Rate Development

Projection of Contributions Ending June 30, 2120 (Concluded)

Year	Payroll for Current Employees*	Projected Contributions from Current Employees	Projected Service Cost and Expense Contributions	Projected UAL Contributions	Projected Total Contributions
2071	\$ 56,066	\$ 2,671	\$ 2,339	\$ 1,026,629,279	\$ 1,026,634,288
2072	21,392	837	773	1,054,861,583	1,054,863,193
2073	6,867	137	150	1,083,870,277	1,083,870,565
2074	3,067	41	25	1,113,676,710	1,113,676,776
2075	1,153	6	3	1,144,302,819	1,144,302,827
2076	419	0	1	1,175,771,146	1,175,771,147
2077	141	-	-	1,208,104,854	1,208,104,854
2078	36	-	-	1,241,327,737	1,241,327,737
2079	7	-	-	1,275,464,249	1,275,464,249
2080	-	-	-	1,310,539,517	1,310,539,517
2081	-	-	-	1,346,579,353	1,346,579,353
2082	-	-	-	-	-
2083	-	-	-	-	-
2084	-	-	-	-	-
2085	-	-	-	-	-
2086	-	-	-	-	-
2087	-	-	-	-	-
2088	-	-	-	-	-
2089	-	-	-	-	-
2090	-	-	-	-	-
2091	-	-	-	-	-
2092	-	-	-	-	-
2093	-	-	-	-	-
2094	-	-	-	-	-
2095	-	-	-	-	-
2096	-	-	-	-	-
2097	-	-	-	-	-
2098	-	-	-	-	-
2099	-	-	-	-	-
2100	-	-	-	-	-
2101	-	-	-	-	-
2102	-	-	-	-	-
2103	-	-	-	-	-
2104	-	-	-	-	-
2105	-	-	-	-	-
2106	-	-	-	-	-
2107	-	-	-	-	-
2108	-	-	-	-	-
2109	-	-	-	-	-
2110	-	-	-	-	-
2111	-	-	-	-	-
2112	-	-	-	-	-
2113	-	-	-	-	-
2114	-	-	-	-	-
2115	-	-	-	-	-
2116	-	-	-	-	-
2117	-	-	-	-	-
2118	-	-	-	-	-
2119	-	-	-	-	-
2120	-	-	-	-	-

* Includes T-DROP participants and retirees who returned to work.



Single Discount Rate Development

Projection of Plan Fiduciary Net Position Ending June 30, 2120

Year	Projected Beginning	Projected Total	Projected Benefit	Projected	Projected Ending Plan
	Plan Net Position	Contributions	Payments	Investment Earnings at 7.50%	Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
2021	\$ 16,902,076,224	\$ 622,873,040	\$ 1,409,003,046	\$ 1,238,708,785	\$ 17,354,655,002
2022	17,354,655,002	615,790,206	1,579,221,038	1,266,123,610	17,657,347,780
2023	17,657,347,780	616,921,767	1,477,936,120	1,292,596,755	18,088,930,181
2024	18,088,930,181	611,973,382	1,522,812,714	1,323,130,776	18,501,221,625
2025	18,501,221,625	608,381,304	1,563,291,405	1,352,429,858	18,898,741,382
2026	18,898,741,382	605,339,004	1,620,650,389	1,380,019,739	19,263,449,736
2027	19,263,449,736	602,887,495	1,657,167,192	1,405,937,972	19,615,108,012
2028	19,615,108,012	601,785,454	1,663,996,690	1,432,020,287	19,984,917,062
2029	19,984,917,062	600,513,255	1,713,991,262	1,457,868,217	20,329,307,271
2030	20,329,307,271	598,985,720	1,765,335,229	1,481,750,645	20,644,708,406
2031	20,644,708,406	599,111,746	1,817,254,471	1,503,498,597	20,930,064,278
2032	20,930,064,278	598,913,846	1,870,232,416	1,522,942,242	21,181,687,950
2033	21,181,687,950	598,486,204	1,924,101,095	1,539,814,715	21,395,887,774
2034	21,395,887,774	597,943,535	1,977,857,918	1,553,880,282	21,569,853,673
2035	21,569,853,673	597,418,166	2,030,044,233	1,564,986,771	21,702,214,376
2036	21,702,214,376	596,960,467	2,082,162,612	1,572,977,864	21,789,990,096
2037	21,789,990,096	596,657,899	2,132,407,323	1,577,699,788	21,831,940,459
2038	21,831,940,459	596,820,274	2,177,557,607	1,579,189,517	21,830,392,642
2039	21,830,392,642	597,297,953	2,221,371,048	1,577,477,719	21,783,797,266
2040	21,783,797,266	598,153,848	2,264,211,506	1,572,437,107	21,690,176,715
2041	21,690,176,715	599,270,975	2,305,643,509	1,563,931,089	21,547,735,269
2042	21,547,735,269	600,731,424	2,346,496,542	1,551,797,464	21,353,767,615
2043	21,353,767,615	602,467,356	2,387,566,129	1,535,801,543	21,104,470,386
2044	21,104,470,386	604,657,907	2,424,532,557	1,515,823,731	20,800,419,468
2045	20,800,419,468	607,276,079	2,461,992,822	1,491,736,955	20,437,439,680
2046	20,437,439,680	610,395,063	2,496,273,733	1,463,366,024	20,014,927,034
2047	20,014,927,034	614,078,358	2,528,151,669	1,430,639,391	19,531,493,113
2048	19,531,493,113	618,492,367	2,557,362,468	1,393,468,777	18,986,091,789
2049	18,986,091,789	624,181,022	2,579,495,052	1,351,958,179	18,382,735,937
2050	18,382,735,937	631,045,206	2,594,548,660	1,306,404,938	17,725,637,421
2051	17,725,637,421	639,101,422	2,600,777,431	1,257,189,840	17,021,151,251
2052	17,021,151,251	648,374,144	2,597,937,289	1,204,799,398	16,276,387,504
2053	16,276,387,504	658,796,998	2,590,642,518	1,149,594,516	15,494,136,500
2054	15,494,136,500	670,401,580	2,574,330,632	1,091,953,633	14,682,161,081
2055	14,682,161,081	683,203,872	2,552,571,738	1,032,328,091	13,845,121,306
2056	13,845,121,306	697,185,126	2,522,559,644	971,170,034	12,990,916,822
2057	12,990,916,822	712,359,783	2,484,164,878	909,077,235	12,128,188,962
2058	12,128,188,962	728,746,306	2,436,535,402	846,729,846	11,267,129,712
2059	11,267,129,712	746,309,843	2,384,355,689	784,718,493	10,413,802,360
2060	10,413,802,360	764,980,135	2,329,711,834	723,418,520	9,572,489,181
2061	9,572,489,181	784,698,824	2,273,344,114	663,121,691	8,746,965,583
2062	8,746,965,583	805,393,798	2,215,459,172	604,100,896	7,941,001,106
2063	7,941,001,106	827,000,612	2,154,638,103	546,688,725	7,160,052,341
2064	7,160,052,341	849,448,064	2,091,530,498	491,267,882	6,409,237,789
2065	6,409,237,789	872,640,803	2,027,150,097	438,181,415	5,692,909,910
2066	5,692,909,910	896,538,305	1,961,162,043	387,766,596	5,016,052,767
2067	5,016,052,767	921,134,029	1,893,321,978	340,405,987	4,384,270,805
2068	4,384,270,805	946,429,364	1,823,697,320	296,517,490	3,803,520,339
2069	3,803,520,339	972,434,826	1,752,379,275	256,544,858	3,280,120,747
2070	3,280,120,747	999,164,223	1,679,534,570	220,956,413	2,820,706,813

Single Discount Rate Development

Projection of Plan Fiduciary Net Position Ending June 30, 2120 (Concluded)

Year	Projected Beginning	Projected Total	Projected Benefit	Projected	Projected Ending Plan
	Plan Net Position	Contributions	Payments	Investment Earnings at 7.50%	Net Position
	(a)	(b)	(c)	(d)	(e)=(a)+(b)-(c)+(d)
2071	\$ 2,820,706,813	\$ 1,026,634,288	\$ 1,605,331,663	\$ 190,244,177	\$ 2,432,253,616
2072	2,432,253,616	1,054,863,193	1,530,000,470	164,923,484	2,122,039,823
2073	2,122,039,823	1,083,870,565	1,453,787,427	145,531,883	1,897,654,843
2074	1,897,654,843	1,113,676,776	1,376,965,921	132,629,262	1,766,994,960
2075	1,766,994,960	1,144,302,827	1,299,828,430	126,797,848	1,738,267,205
2076	1,738,267,205	1,175,771,147	1,222,656,555	128,643,623	1,820,025,419
2077	1,820,025,419	1,208,104,854	1,145,746,610	138,798,066	2,021,181,729
2078	2,021,181,729	1,241,327,737	1,069,393,881	157,919,590	2,351,035,175
2079	2,351,035,175	1,275,464,249	993,896,165	186,695,557	2,819,298,816
2080	2,819,298,816	1,310,539,517	919,554,647	225,844,283	3,436,127,968
2081	3,436,127,968	1,346,579,353	846,672,970	276,117,184	4,212,151,535
2082	4,212,151,535	-	775,555,356	287,353,813	3,723,949,993
2083	3,723,949,993	-	706,509,410	253,281,112	3,270,721,694
2084	3,270,721,694	-	639,840,482	221,743,878	2,852,625,090
2085	2,852,625,090	-	575,841,003	192,743,225	2,469,527,312
2086	2,469,527,312	-	514,788,759	166,258,962	2,120,997,515
2087	2,120,997,515	-	456,930,591	142,249,684	1,806,316,608
2088	1,806,316,608	-	402,482,244	120,653,517	1,524,487,881
2089	1,524,487,881	-	351,625,736	101,389,004	1,274,251,150
2090	1,274,251,150	-	304,498,491	84,356,572	1,054,109,231
2091	1,054,109,231	-	261,188,936	69,440,676	862,360,970
2092	862,360,970	-	221,737,178	56,512,251	697,136,043
2093	697,136,043	-	186,141,370	45,431,093	556,425,766
2094	556,425,766	-	154,362,639	36,047,981	438,111,108
2095	438,111,108	-	126,331,005	28,206,564	339,986,667
2096	339,986,667	-	101,933,310	21,745,605	259,798,962
2097	259,798,962	-	81,005,363	16,502,137	195,295,737
2098	195,295,737	-	63,333,064	12,315,126	144,277,798
2099	144,277,798	-	48,660,735	9,029,046	104,646,109
2100	104,646,109	-	36,699,848	6,497,094	74,443,354
2101	74,443,354	-	27,138,798	4,583,945	51,888,501
2102	51,888,501	-	19,653,725	3,167,947	35,402,723
2103	35,402,723	-	13,921,921	2,142,570	23,623,372
2104	23,623,372	-	9,635,501	1,416,954	15,404,825
2105	15,404,825	-	6,509,268	915,677	9,811,234
2106	9,811,234	-	4,288,557	577,929	6,100,606
2107	6,100,606	-	2,753,715	356,148	3,703,038
2108	3,703,038	-	1,722,484	214,302	2,194,857
2109	2,194,857	-	1,050,394	125,937	1,270,399
2110	1,270,399	-	625,877	72,234	716,756
2111	716,756	-	364,401	40,339	392,694
2112	392,694	-	207,576	21,809	206,927
2113	206,927	-	114,818	11,292	103,401
2114	103,401	-	61,070	5,506	47,837
2115	47,837	-	30,266	2,473	20,045
2116	20,045	-	13,593	1,003	7,454
2117	7,454	-	5,188	368	2,634
2118	2,634	-	1,689	135	1,080
2119	1,080	-	716	55	419
2120	419	-	435	15	-



Single Discount Rate Development

Present Values of Projected Benefits Ending June 30, 2120

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^a ((a)-.5)	(g)=(e)*vf ^a ((a)-.5)	(h)=(c)/(1+sdr) ^a ((a)-.5)
2021	\$ 16,902,076,224	\$ 1,409,003,046	\$ 1,409,003,046	\$ -	\$ 1,358,963,211	\$ -	\$ 1,358,963,211
2022	17,354,655,002	1,579,221,038	1,579,221,038	-	1,416,870,717	-	1,416,870,717
2023	17,657,347,780	1,477,936,120	1,477,936,120	-	1,233,486,789	-	1,233,486,789
2024	18,088,930,181	1,522,812,714	1,522,812,714	-	1,182,270,543	-	1,182,270,543
2025	18,501,221,625	1,563,291,405	1,563,291,405	-	1,129,020,561	-	1,129,020,561
2026	18,898,741,382	1,620,650,389	1,620,650,389	-	1,088,786,643	-	1,088,786,643
2027	19,263,449,736	1,657,167,192	1,657,167,192	-	1,035,645,945	-	1,035,645,945
2028	19,615,108,012	1,663,996,690	1,663,996,690	-	967,361,895	-	967,361,895
2029	19,984,917,062	1,713,991,262	1,713,991,262	-	926,908,058	-	926,908,058
2030	20,329,307,271	1,765,335,229	1,765,335,229	-	888,069,138	-	888,069,138
2031	20,644,708,406	1,817,254,471	1,817,254,471	-	850,407,088	-	850,407,088
2032	20,930,064,278	1,870,232,416	1,870,232,416	-	814,138,404	-	814,138,404
2033	21,181,687,950	1,924,101,095	1,924,101,095	-	779,151,810	-	779,151,810
2034	21,395,887,774	1,977,857,918	1,977,857,918	-	745,042,115	-	745,042,115
2035	21,569,853,673	2,030,044,233	2,030,044,233	-	711,349,072	-	711,349,072
2036	21,702,214,376	2,082,162,612	2,082,162,612	-	678,708,750	-	678,708,750
2037	21,789,990,096	2,132,407,323	2,132,407,323	-	646,592,265	-	646,592,265
2038	21,831,940,459	2,177,557,607	2,177,557,607	-	614,216,570	-	614,216,570
2039	21,830,392,642	2,221,371,048	2,221,371,048	-	582,860,358	-	582,860,358
2040	21,783,797,266	2,264,211,506	2,264,211,506	-	552,652,247	-	552,652,247
2041	21,690,176,715	2,305,643,509	2,305,643,509	-	523,502,358	-	523,502,358
2042	21,547,735,269	2,346,496,542	2,346,496,542	-	495,607,577	-	495,607,577
2043	21,353,767,615	2,387,566,129	2,387,566,129	-	469,099,493	-	469,099,493
2044	21,104,470,386	2,424,532,557	2,424,532,557	-	443,127,916	-	443,127,916
2045	20,800,419,468	2,461,992,822	2,461,992,822	-	418,580,901	-	418,580,901
2046	20,437,439,680	2,496,273,733	2,496,273,733	-	394,799,295	-	394,799,295
2047	20,014,927,034	2,528,151,669	2,528,151,669	-	371,945,083	-	371,945,083
2048	19,531,493,113	2,557,362,468	2,557,362,468	-	349,993,130	-	349,993,130
2049	18,986,091,789	2,579,495,052	2,579,495,052	-	328,392,680	-	328,392,680
2050	18,382,735,937	2,594,548,660	2,594,548,660	-	307,264,315	-	307,264,315
2051	17,725,637,421	2,600,777,431	2,600,777,431	-	286,513,459	-	286,513,459
2052	17,021,151,251	2,597,937,289	2,597,937,289	-	266,233,094	-	266,233,094
2053	16,276,387,504	2,590,642,518	2,590,642,518	-	246,963,289	-	246,963,289
2054	15,494,136,500	2,574,330,632	2,574,330,632	-	228,286,785	-	228,286,785
2055	14,682,161,081	2,552,571,738	2,552,571,738	-	210,564,881	-	210,564,881
2056	13,845,121,306	2,522,559,644	2,522,559,644	-	193,571,298	-	193,571,298
2057	12,990,916,822	2,484,164,878	2,484,164,878	-	177,325,614	-	177,325,614
2058	12,128,188,962	2,436,535,402	2,436,535,402	-	161,791,357	-	161,791,357
2059	11,267,129,712	2,384,355,689	2,384,355,689	-	147,280,472	-	147,280,472
2060	10,413,802,360	2,329,711,834	2,329,711,834	-	133,865,254	-	133,865,254
2061	9,572,489,181	2,273,344,114	2,273,344,114	-	121,512,898	-	121,512,898
2062	8,746,965,583	2,215,459,172	2,215,459,172	-	110,157,098	-	110,157,098
2063	7,941,001,106	2,154,638,103	2,154,638,103	-	99,658,559	-	99,658,559
2064	7,160,052,341	2,091,530,498	2,091,530,498	-	89,990,364	-	89,990,364
2065	6,409,237,789	2,027,150,097	2,027,150,097	-	81,135,188	-	81,135,188
2066	5,692,909,910	1,961,162,043	1,961,162,043	-	73,017,735	-	73,017,735
2067	5,016,052,767	1,893,321,978	1,893,321,978	-	65,573,881	-	65,573,881
2068	4,384,270,805	1,823,697,320	1,823,697,320	-	58,755,795	-	58,755,795
2069	3,803,520,339	1,752,379,275	1,752,379,275	-	52,519,138	-	52,519,138
2070	3,280,120,747	1,679,534,570	1,679,534,570	-	46,824,157	-	46,824,157



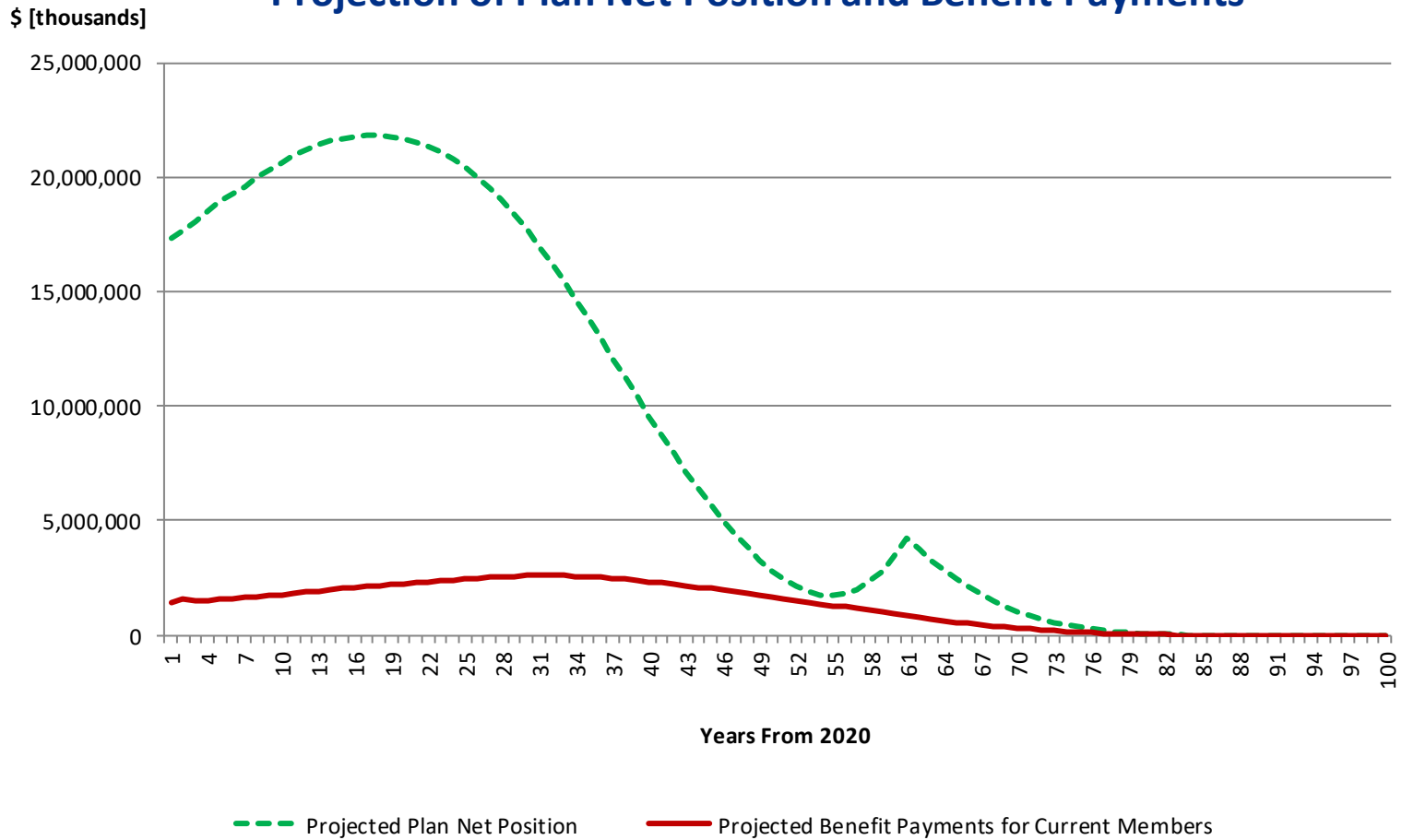
Single Discount Rate Development

Present Values of Projected Benefits Ending June 30, 2120 (Concluded)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments using Expected Return Rate (v)	Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf)	Present Value of Benefit Payments using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^a ((a)-.5)	(g)=(e)*vf ^a ((a)-.5)	(h)=(c)/(1+sdr) ^a ((a)-.5)
2071	\$ 2,820,706,813	\$ 1,605,331,663	\$ 1,605,331,663	\$ -	\$ 41,632,964	\$ -	\$ 41,632,964
2072	2,432,253,616	1,530,000,470	1,530,000,470	-	36,910,987	-	36,910,987
2073	2,122,039,823	1,453,787,427	1,453,787,427	-	32,625,452	-	32,625,452
2074	1,897,654,843	1,376,965,921	1,376,965,921	-	28,745,532	-	28,745,532
2075	1,766,994,960	1,299,828,430	1,299,828,430	-	25,242,056	-	25,242,056
2076	1,738,267,205	1,222,656,555	1,222,656,555	-	22,086,897	-	22,086,897
2077	1,820,025,419	1,145,746,610	1,145,746,610	-	19,253,529	-	19,253,529
2078	2,021,181,729	1,069,393,881	1,069,393,881	-	16,716,717	-	16,716,717
2079	2,351,035,175	993,896,165	993,896,165	-	14,452,596	-	14,452,596
2080	2,819,298,816	919,554,647	919,554,647	-	12,438,669	-	12,438,669
2081	3,436,127,968	846,672,970	846,672,970	-	10,653,777	-	10,653,777
2082	4,212,151,535	775,555,356	775,555,356	-	9,078,043	-	9,078,043
2083	3,723,949,993	706,509,410	706,509,410	-	7,692,880	-	7,692,880
2084	3,270,721,694	639,840,482	639,840,482	-	6,480,884	-	6,480,884
2085	2,852,625,090	575,841,003	575,841,003	-	5,425,711	-	5,425,711
2086	2,469,527,312	514,788,759	514,788,759	-	4,512,058	-	4,512,058
2087	2,120,997,515	456,930,591	456,930,591	-	3,725,524	-	3,725,524
2088	1,806,316,608	402,482,244	402,482,244	-	3,052,639	-	3,052,639
2089	1,524,487,881	351,625,736	351,625,736	-	2,480,852	-	2,480,852
2090	1,274,251,150	304,498,491	304,498,491	-	1,998,467	-	1,998,467
2091	1,054,109,231	261,188,936	261,188,936	-	1,594,623	-	1,594,623
2092	862,360,970	221,737,178	221,737,178	-	1,259,312	-	1,259,312
2093	697,136,043	186,141,370	186,141,370	-	983,398	-	983,398
2094	556,425,766	154,362,639	154,362,639	-	758,613	-	758,613
2095	438,111,108	126,331,005	126,331,005	-	577,536	-	577,536
2096	339,986,667	101,933,310	101,933,310	-	433,488	-	433,488
2097	259,798,962	81,005,363	81,005,363	-	320,454	-	320,454
2098	195,295,737	63,333,064	63,333,064	-	233,064	-	233,064
2099	144,277,798	48,660,735	48,660,735	-	166,577	-	166,577
2100	104,646,109	36,699,848	36,699,848	-	116,867	-	116,867
2101	74,443,354	27,138,798	27,138,798	-	80,391	-	80,391
2102	51,888,501	19,653,725	19,653,725	-	54,157	-	54,157
2103	35,402,723	13,921,921	13,921,921	-	35,686	-	35,686
2104	23,623,372	9,635,501	9,635,501	-	22,976	-	22,976
2105	15,404,825	6,509,268	6,509,268	-	14,438	-	14,438
2106	9,811,234	4,288,557	4,288,557	-	8,849	-	8,849
2107	6,100,606	2,753,715	2,753,715	-	5,286	-	5,286
2108	3,703,038	1,722,484	1,722,484	-	3,075	-	3,075
2109	2,194,857	1,050,394	1,050,394	-	1,745	-	1,745
2110	1,270,399	625,877	625,877	-	967	-	967
2111	716,756	364,401	364,401	-	524	-	524
2112	392,694	207,576	207,576	-	278	-	278
2113	206,927	114,818	114,818	-	143	-	143
2114	103,401	61,070	61,070	-	71	-	71
2115	47,837	30,266	30,266	-	33	-	33
2116	20,045	13,593	13,593	-	14	-	14
2117	7,454	5,188	5,188	-	5	-	5
2118	2,634	1,689	1,689	-	1	-	1
2119	1,080	716	716	-	1	-	1
2120	419	435	435	-	0	-	0
Totals					\$ 25,468,234,046	\$ -	\$ 25,468,234,046



Projection of Plan Net Position and Benefit Payments



SECTION H

GLOSSARY OF TERMS

Glossary of Terms

<i>Actuarial Accrued Liability (AAL)</i>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<i>Actuarial Assumptions</i>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Equivalent</i>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<i>Actuarial Cost Method</i>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.
<i>Actuarial Gain (Loss)</i>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<i>Actuarial Present Value (APV)</i>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<i>Actuarial Valuation</i>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

Glossary of Terms

<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Amortization Method</i>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
<i>Covered-Employee Payroll</i>	The payroll of employees that are provided with pensions through the pension plan.
<i>Deferred Retirement Option Program (DROP)</i>	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.
<i>Deferred Inflows and Outflows</i>	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
<i>Discount Rate</i>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none">1. The benefit payments to be made while the pension plans’ fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

Glossary of Terms

Entry Age Actuarial Cost Method (EAN)

The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

GASB

The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities.

Fiduciary Net Position

The fiduciary net position is the market value of the assets of the trust dedicated to the defined benefit provisions.

Long-Term Expected Rate of Return

The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.

Money-Weighted Rate of Return

The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

Multiple-Employer Defined Benefit Pension Plan

A multiple-employer plan is a defined benefit pension plan that is used to provide pensions to the employees of more than one employer.

Municipal Bond Rate

The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.

Net Pension Liability (NPL)

The NPL is the liability of employers and non-employer contributing entities to plan members for benefits provided through a defined benefit pension plan.

Non-Employer Contributing Entities

Non-employer contributing entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB accounting statements, plan members are not considered non-employer contributing entities.

Normal Cost

The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.

Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year: <ol style="list-style-type: none">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.



December 18, 2020

Mr. Clint Rhoden, Executive Director
Arkansas Teacher Retirement System
1400 West Third Street
Little Rock, Arkansas 72201

Dear Mr. Rhoden:

Please find enclosed copies of the GASB Statement No. 67 and No. 68 Accounting and Financial Reporting for the Pension report for the Arkansas Teacher Retirement System.

We will be happy to meet with the Board to discuss the results of this report.

Sincerely,

A handwritten signature in black ink that reads "Judith A. Kermans". The signature is fluid and cursive.

Judith A. Kermans, EA, FCA, MAAA

JAK:sc
Enclosures

Arkansas Teacher Retirement System

GASB Statement No. 68 – Employer Level Reporting
June 30, 2020





December 18, 2020

Board of Trustees
Arkansas Teacher Retirement System
Little Rock, Arkansas

Ladies and Gentlemen:

This report provides information required by the Arkansas Teacher Retirement System (ATRS) at the employer level in connection with the Governmental Accounting Standards Board (GASB) Statement No. 68 "Accounting and Financial Reporting for Pensions." This report is intended to complement the GASB Statement Nos. 67 & 68 report dated December 18, 2020.

Our actuarial calculations for this report were prepared for the purpose of complying with the requirements of GASB Statement No. 68. In accordance with the auditor's request, these calculations are made for all members of ATRS as if ATRS is one cost-sharing plan. We have performed calculations at both the Plan and employer level; however, there may be additional required calculations at the employer level that are beyond the scope of this report.

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB Statement No. 68. The calculation of the plan's liability for this report may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement No. 68 may produce significantly different results. This report may be provided to parties other than the System only in its entirety and only with the permission of the Retirement Board. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by the Retirement System staff, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. If your understanding of this information is different, please let us know. In particular, for GASB Statement No. 68 purposes, ATRS provided the individual employer required and actual employer contribution amounts for the fiscal year ended June 30, 2020. This information was checked for internal consistency, but it was not audited by us.

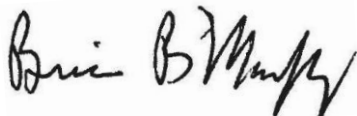
This information is presented in draft form for review by the plan's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the plan's financial statements.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Please see the actuarial valuation report as of June 30, 2020 for additional discussions of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, this report is complete, accurate, and in accordance with generally recognized actuarial methods. The actuarial assumptions used for this report produce results which, individually and in the aggregate, are reasonable. Brian B. Murphy, Judith A. Kermans and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.

Respectfully submitted,



Brian B. Murphy, FSA, EA, FCA, MAAA, PhD



Judith A. Kermans, EA, FCA, MAAA



Heidi G. Barry, ASA, FCA, MAAA

BBM/JAK/HGB:sc

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SECTION A

SYSTEM WIDE RESULTS

Executive Summary as of June 30, 2020

	2020	2019		
Actuarial Valuation Date	June 30, 2020	June 30, 2019		
Measurement Date of the Net Pension Liability	June 30, 2020	June 30, 2019		
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2020	June 30, 2019		
Membership				
Number of				
- Retirees and Beneficiaries ⁽¹⁾	50,133	48,677		
- Inactive, Nonretired Members	13,338	13,033		
- T-DROP Members	3,639	3,707		
- Active Members	66,900	68,457		
- Total	134,010	133,874		
Covered Payroll ⁽²⁾	\$ 3,077,558,814	\$ 3,027,154,131		
Net Pension Liability				
Total Pension Liability	\$ 22,562,958,162	\$ 21,912,986,823		
Plan Fiduciary Net Position	16,902,076,224	17,741,621,773		
Net Pension Liability	\$ 5,660,881,938	\$ 4,171,365,050		
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	74.91%	80.96%		
Net Pension Liability as a Percentage of Covered Payroll	183.94%	137.80%		
Development of the Single Discount Rate				
Single Discount Rate	7.50%	7.50%		
Long-Term Expected Rate of Investment Return	7.50%	7.50%		
Long-Term Municipal Bond Rate ⁽³⁾	2.45%	3.13%		
Last year ending June 30 in the 2021 to 2120 projection period for which projected benefit payments are fully funded	2120	2119		
Total Pension Expense	\$ 1,001,945,189	\$ 779,898,660		
Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses				
	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Difference	Net Deferred Outflows/(Inflows)
Difference between expected and actual experience	\$ 75,044,585	\$ 45,656,773	\$ 29,387,812	\$ 68,341,536
Changes in assumptions	368,342,995	-	368,342,995	619,994,971
Net difference between projected and actual earnings on pension plan investments	1,410,423,162	479,872,948	930,550,214	(293,855,313)
Total	\$ 1,853,810,742	\$ 525,529,721	\$ 1,328,281,021	\$ 394,481,194

(1) Includes retirees who returned to work.

(2) Covered payroll includes the pay of T-DROP participants and retirees who returned to work.

(3) Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 26, 2020 and June 28, 2019. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax-exempt securities.



Statement of Pension Expense Under GASB Statement No. 68

Fiscal Years Ended June 30, 2020 and June 30, 2019

	2020	2019
A. Expense		
1. Service Cost	\$ 331,035,218	\$ 325,464,537
2. Interest on the Total Pension Liability	1,608,463,162	1,551,511,422
3. Current-Period Benefit Changes	-	-
4. Employee Contributions (made negative for addition here)	(153,105,134)	(141,885,632)
5. Projected Earnings on Plan Investments (made negative for addition here)	(1,305,354,918)	(1,287,594,924)
6. Pension Plan Administrative Expense	8,454,436	7,134,784
7. Other Changes in Plan Fiduciary Net Position	-	-
8. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability <i>Arising from Current Reporting Period</i>	(4,699,387)	22,191,379
9. Recognition of Outflow (Inflow) of Resources due to assumption changes <i>Arising from Current Reporting Period</i>	-	-
10. Recognition of Outflow (Inflow) of Resources due to the difference between projected (7.50%) and actual earnings on Pension Plan Investments <i>Arising from Current Reporting Period</i>	294,224,282	77,842,011
11. Increases/(Decreases) from Experience in the Current Reporting Period	\$ 779,017,659	\$ 554,663,577
12. Recognition of Outflow (Inflow) of Resources due to differences between expected and actual experience in the measurement of the Total Pension Liability <i>Arising from Prior Reporting Periods</i>	18,783,954	(8,711,579)
13. Recognition of Outflow (Inflow) of Resources due to assumption changes <i>Arising from Prior Reporting Periods</i>	251,651,976	251,651,976
14. Recognition of Outflow (Inflow) of Resources due to the difference between projected and actual earnings on Pension Plan Investments <i>Arising from Prior Reporting Periods</i>	(47,508,400)	(17,705,314)
15. Total Pension Expense/(Income)	\$ 1,001,945,189	\$ 779,898,660

Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2020

A. Outflows (Inflows) of Resources Due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ (24,869,157)
2. Assumption Changes (gains) or losses	\$ -
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	5.2920
4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability	\$ (4,699,387)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ -
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ (4,699,387)
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$ (20,169,770)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ -
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ (20,169,770)

B. Outflows (Inflows) of Resources Due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 1,471,121,409
2. Recognition period for Assets {in years}	5.0000
3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets	\$ 294,224,282
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 1,176,897,127

Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended June 30, 2020

A. Outflows and Inflows of Resources due to Liabilities and Assets to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Due to liabilities	\$ 288,596,380	\$ 22,859,837	\$ 265,736,543
2. Due to assets	601,419,948	354,704,066	246,715,882
3. Total	\$ 890,016,328	\$ 377,563,903	\$ 512,452,425

B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 36,944,404	\$ 22,859,837	\$ 14,084,567
2. Assumption changes	251,651,976	-	251,651,976
3. Net difference between projected and actual earnings on pension plan investments	601,419,948	354,704,066	246,715,882
4. Total	\$ 890,016,328	\$ 377,563,903	\$ 512,452,425

C. Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 75,044,585	\$ 45,656,773	\$ 29,387,812
2. Assumption changes	368,342,995	-	368,342,995
3. Net difference between projected and actual earnings on pension plan investments	1,410,423,162	479,872,948	930,550,214
4. Total	\$ 1,853,810,742	\$ 525,529,721	\$ 1,328,281,021

D. Deferred Outflows and Deferred Inflows of Resources by Year to be Recognized in Future Pension Expenses

Year Ending June 30	Net Deferred Outflows of Resources
2021	\$ 269,483,960
2022	373,206,327
2023	388,967,614
2024	297,995,342
2025	(1,372,222)
Thereafter	-
Total	\$ 1,328,281,021

Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios

Current Period

Fiscal Year Ended June 30, 2020

A. Total Pension Liability	
1. Service Cost	\$ 331,035,218
2. Interest on the Total Pension Liability	1,608,463,162
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	(24,869,157)
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(1,264,657,884)
7. Net change in Total Pension Liability	<u>\$ 649,971,339</u>
8. Total Pension Liability – Beginning	<u>21,912,986,823</u>
9. Total Pension Liability – Ending	<u><u>\$ 22,562,958,162</u></u>
B. Plan Fiduciary Net Position	
1. Contributions – employer	\$ 446,228,128
2. Contributions – employee	153,105,134
3. Net investment income	(165,766,491)
4. Benefit payments, including refunds of employee contributions	(1,264,657,884)
5. Pension Plan Administrative Expense	(8,454,436)
6. Other	-
7. Net change in Plan Fiduciary Net Position	<u>\$ (839,545,549)</u>
8. Plan Fiduciary Net Position – Beginning	<u>17,741,621,773</u>
9. Plan Fiduciary Net Position – Ending	<u><u>\$ 16,902,076,224</u></u>
C. Net Pension Liability	<u><u>\$ 5,660,881,938</u></u>
D. Plan Fiduciary Net Position as a percentage of the Total Pension liability	74.91%
E. Covered-Employee Payroll⁽¹⁾	\$ 3,077,558,814
F. Net Pension Liability as a Percentage of Covered-Employee Payroll	183.94%

(1) Covered payroll includes the pay of T-DROP participants and retirees who returned to work.

SECTION B

SCHEDULE OF EMPLOYER ALLOCATIONS OF NET PENSION LIABILITY (INCLUDING SENSITIVITY ANALYSIS)

Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis) as of June 30, 2020

Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease 6.50%	Current Single Discount Rate 7.50%	1% Increase 8.50%
106	COTTER PUBLIC SCHOOLS	\$ 553,605	0.124063%	\$ 10,449,989	\$ 7,023,068	\$ 4,180,991
108	ROGERS PUBLIC SCHOOLS	13,746,802	3.080667%	259,488,291	174,392,912	103,820,045
109	GRAVETTE SCHOOL DISTRICT	1,634,169	0.366218%	30,847,014	20,731,188	12,341,745
110	SILOAM SPRINGS SCHOOL DISTRICT	3,641,086	0.815970%	68,730,115	46,191,082	27,498,596
111	HERMITAGE PUBLIC SCHOOL DISTRICT	399,197	0.089460%	7,535,354	5,064,245	3,014,860
113	WARREN SCHOOL DISTRICT	1,197,504	0.268361%	22,604,396	15,191,616	9,043,912
115	BERRYVILLE PUBLIC SCHOOLS	1,550,518	0.347472%	29,267,997	19,669,986	11,709,988
116	LAKESIDE SCHOOL DISTRICT	939,769	0.210603%	17,739,321	11,921,971	7,097,419
117	GURDON PUBLIC SCHOOLS	646,653	0.144915%	12,206,397	8,203,488	4,883,722
119	ARKADELPHIA PUBLIC SCHOOLS	1,517,064	0.339975%	28,636,497	19,245,578	11,457,328
121	WOODLAWN SCHOOL DISTRICT	412,864	0.092523%	7,793,326	5,237,619	3,118,073
123	MAGNOLIA SCHOOL DISTRICT	2,409,459	0.539961%	45,481,588	30,566,568	18,196,970
125	ALMA SCHOOL DISTRICT	2,711,212	0.607584%	51,177,551	34,394,623	20,475,897
126	MOUNTAINBURG PUBLIC SCHOOLS	558,368	0.125131%	10,539,901	7,083,495	4,216,965
129	GREENBRIER PUBLIC SCHOOLS	2,844,086	0.637361%	53,685,718	36,080,274	21,479,403
130	OZARK PUBLIC SCHOOLS	1,451,358	0.325250%	27,396,217	18,412,030	10,961,098
131	CUTTER MORNING STAR PUBLIC SCHOOLS	405,777	0.090935%	7,659,554	5,147,715	3,064,551
132	LAKESIDE SCHOOL DISTRICT	2,755,688	0.617551%	52,017,109	34,958,861	20,811,801
133	FOUNTAIN LAKE SCHOOL DISTRICT	1,138,735	0.255191%	21,495,069	14,446,076	8,600,076
134	HOT SPRINGS SCHOOL DISTRICT	3,136,848	0.702970%	59,211,983	39,794,282	23,690,436
135	JESSIEVILLE PUBLIC SCHOOL DISTRICT	671,133	0.150401%	12,668,494	8,514,047	5,068,605
136	LAKE HAMILTON SCHOOL DISTRICT	3,518,375	0.788470%	66,413,781	44,634,355	26,571,841
139	SHERIDAN SCHOOL DISTRICT	3,157,723	0.707648%	59,606,021	40,059,101	23,848,089
141	HOPE PUBLIC SCHOOLS	1,836,598	0.411583%	34,668,109	23,299,211	13,870,547
143	SPRING HILL SCHOOL DISTRICT	443,667	0.099426%	8,374,775	5,628,391	3,350,708
144	BISMARCK SCHOOL DISTRICT	768,655	0.172256%	14,509,331	9,751,209	5,805,115
145	MINERAL SPRINGS SCHOOL DISTRICT	579,636	0.129897%	10,941,369	7,353,307	4,377,590
150	JACKSON COUNTY SCHOOL DISTRICT	702,532	0.157438%	13,261,172	8,912,365	5,305,733
153	WHITE HALL SCHOOL DISTRICT	2,142,948	0.480236%	40,450,863	27,185,596	16,184,200
154	WATSON CHAPEL SCHOOL DISTRICT	1,867,128	0.418425%	35,244,403	23,686,518	14,101,120
159	DOLLARWAY SCHOOL DISTRICT	1,085,577	0.243278%	20,491,638	13,771,706	8,198,608
161	CLARKSVILLE SCHOOL DISTRICT	2,215,608	0.496519%	41,822,415	28,107,367	16,732,952
163	LAMAR SCHOOL DISTRICT	990,582	0.221990%	18,698,482	12,566,589	7,481,175
165	HOXIE PUBLIC SCHOOLS	650,945	0.145877%	12,287,413	8,257,936	4,916,136
172	LEE COUNTY SCHOOL DISTRICT	640,114	0.143450%	12,082,966	8,120,534	4,834,338
178	ASHDOWN SCHOOL DISTRICT	1,147,513	0.257158%	21,660,754	14,557,428	8,666,366
180	BOONEVILLE SCHOOL DISTRICT	994,835	0.222943%	18,778,772	12,620,549	7,513,299
181	MAGAZINE SCHOOL DISTRICT	455,813	0.102148%	8,604,043	5,782,473	3,442,437
182	FLIPPIN SCHOOL DISTRICT	700,499	0.156982%	13,222,814	8,886,586	5,290,386
184	TEXARKANA SCHOOL DISTRICT	3,608,240	0.808609%	68,110,093	45,774,387	27,250,528
185	OSCEOLA SCHOOL DISTRICT	1,024,844	0.229668%	19,345,231	13,001,246	7,739,936
186	MOUNT IDA PUBLIC SCHOOLS	416,496	0.093337%	7,861,885	5,283,695	3,145,503
188	PRESCOTT PUBLIC SCHOOLS	745,917	0.167160%	14,080,128	9,462,757	5,633,393
192	PERRYVILLE SCHOOL DISTRICT	712,556	0.159684%	13,450,388	9,039,530	5,381,437
195	MARVELL - ELAINE SCHOOL DISTRICT	385,414	0.086371%	7,275,173	4,889,387	2,910,763
196	HELENA-WEST HELENA SCHOOLS	1,168,292	0.261815%	22,052,985	14,821,032	8,823,296
197	KIRBY SCHOOL DISTRICT	296,221	0.066383%	5,591,543	3,757,878	2,237,150
203	MARKED TREE SCHOOL DISTRICT	379,610	0.085071%	7,165,615	4,815,757	2,866,929
208	MENA PUBLIC SCHOOLS	1,259,447	0.282243%	23,773,653	15,977,432	9,511,727
209	RUSSELLVILLE SCHOOL DISTRICT	4,934,243	1.105767%	93,140,081	62,596,157	37,264,908



Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis) as of June 30, 2020

Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease 6.50%	Current Single Discount Rate 7.50%	1% Increase 8.50%
210	LITTLE ROCK SCHOOL DISTRICT	\$ 24,295,024	5.444530%	\$ 458,599,335	\$ 308,208,409	\$ 183,483,437
211	PULASKI COUNTY SPECIAL SCHOOL DISTRICT	12,833,050	2.875894%	242,240,059	162,800,984	96,919,108
212	NORTH LITTLE ROCK SCHOOL DISTRICT	8,325,183	1.865679%	157,148,370	105,613,867	62,874,324
213	FORREST CITY SCHOOL DISTRICT	1,978,926	0.443479%	37,354,740	25,104,801	14,945,456
214	BAUXITE SCHOOL DISTRICT	1,169,705	0.262132%	22,079,670	14,838,966	8,833,972
215	BENTON SCHOOL DISTRICT	3,822,386	0.856599%	72,152,375	48,491,062	28,867,826
216	BRYANT PUBLIC SCHOOLS	7,824,711	1.753523%	147,701,336	99,264,849	59,094,610
219	LAVACA PUBLIC SCHOOLS	669,257	0.149981%	12,633,070	8,490,240	5,054,432
220	HARTFORD SCHOOL DISTRICT	-	0.000000%	-	-	-
221	GREENWOOD SCHOOL DISTRICT	3,126,927	0.700746%	59,024,704	39,668,418	23,615,506
222	MANSFIELD SCHOOL DISTRICT	695,575	0.155879%	13,129,850	8,824,108	5,253,191
224	DEQUEEN PUBLIC SCHOOLS	2,036,766	0.456441%	38,446,536	25,838,559	15,382,278
227	STRONG-HUTTIG SCHOOL DISTRICT	322,911	0.072364%	6,095,348	4,096,468	2,438,720
228	JUNCTION CITY SCHOOL DISTRICT	535,958	0.120109%	10,116,885	6,799,201	4,047,718
230	SHIRLEY SCHOOL DISTRICT	323,395	0.072473%	6,104,485	4,102,609	2,442,376
232	PRAIRIE GROVE SCHOOL DISTRICT	1,474,461	0.330428%	27,832,314	18,705,114	11,135,578
233	FAYETTEVILLE PUBLIC SCHOOLS	10,695,577	2.396885%	201,892,549	135,684,849	80,776,259
234	FARMINGTON PUBLIC SCHOOLS	1,881,883	0.421731%	35,522,918	23,873,698	14,212,553
235	ELKINS SCHOOL DISTRICT	944,244	0.211606%	17,823,807	11,978,751	7,131,221
237	LINCOLN CONSOLIDATED SCHOOL DISTRICT	867,135	0.194325%	16,368,267	11,000,534	6,548,867
238	GREENLAND SCHOOL DISTRICT	732,630	0.164183%	13,829,325	9,294,200	5,533,048
239	SPRINGDALE PUBLIC SCHOOLS	21,314,340	4.776557%	402,335,157	270,395,243	160,972,404
240	WEST FORK SCHOOL DISTRICT	776,893	0.174102%	14,664,841	9,855,722	5,867,334
242	MC CRORY SCHOOL DISTRICT	543,532	0.121806%	10,259,860	6,895,289	4,104,922
245	DANVILLE PUBLIC SCHOOLS	709,667	0.159037%	13,395,872	9,002,892	5,359,625
246	DARDANELLE PUBLIC SCHOOLS	1,742,971	0.390601%	32,900,788	22,111,457	13,163,451
250	COSSATOT RIVER SCHOOL DISTRICT	855,302	0.191674%	16,144,902	10,850,418	6,459,499
251	SOUTH PIKE COUNTY SCHOOL DISTRICT	639,252	0.143257%	12,066,691	8,109,596	4,827,826
330	MONTICELLO SCHOOL DISTRICT	1,514,681	0.339441%	28,591,520	19,215,350	11,439,333
331	MAMMOTH SPRING SCHOOL DISTRICT	400,533	0.089760%	7,560,569	5,081,191	3,024,948
333	BATESVILLE SCHOOL DISTRICT	2,703,321	0.605816%	51,028,605	34,294,523	20,416,305
335	HACKETT SCHOOL DISTRICT	626,237	0.140340%	11,821,017	7,944,488	4,729,533
336	BEEBE PUBLIC SCHOOL DISTRICT	2,582,961	0.578843%	48,756,668	32,767,634	19,507,313
337	BALD KNOB PUBLIC SCHOOLS	913,180	0.204644%	17,237,437	11,584,672	6,896,617
350	FORT SMITH PUBLIC SCHOOLS	14,042,471	3.146927%	265,069,426	178,143,795	106,053,031
351	EL DORADO PUBLIC SCHOOLS	3,283,965	0.735939%	61,988,992	41,660,611	24,801,504
360	HEBER SPRINGS SCHOOL DISTRICT	1,298,314	0.290953%	24,507,312	16,470,498	9,805,260
365	BARTON-LEXA SCHOOL DISTRICT	634,974	0.142298%	11,985,944	8,055,330	4,795,520
375	EARLE SCHOOL DISTRICT	491,511	0.110148%	9,277,887	6,235,340	3,712,039
376	WEST MEMPHIS SCHOOL DISTRICT	4,365,940	0.978410%	82,412,649	55,386,630	32,972,913
384	HAMBURG SCHOOL DISTRICT	1,426,932	0.319776%	26,935,148	18,102,161	10,776,626
385	BENTONVILLE PUBLIC SCHOOLS	16,216,117	3.634042%	306,099,739	205,718,819	122,469,066
386	PARIS SCHOOL DISTRICT	940,957	0.210869%	17,761,763	11,937,054	7,106,398
393	CORNING SCHOOL DISTRICT	649,538	0.145562%	12,260,847	8,240,082	4,905,507
394	JONESBORO PUBLIC SCHOOLS	5,687,281	1.274523%	107,354,631	72,149,254	42,952,083
395	SLOAN-HENDRIX SCHOOL DISTRICT	532,214	0.119270%	10,046,220	6,751,710	4,019,446
396	CAMDEN-FAIRVIEW SCHOOL DISTRICT	2,098,566	0.470290%	39,613,087	26,622,556	15,849,010
404	LONOKE SCHOOL DISTRICT	1,417,667	0.317700%	26,760,256	17,984,623	10,706,653
416	CROSSETT SCHOOL DISTRICT	1,284,050	0.287756%	24,238,074	16,289,553	9,697,540
434	RIVERVIEW SCHOOL DISTRICT	1,119,893	0.250969%	21,139,400	14,207,044	8,457,775



Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis) as of June 30, 2020

Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease 6.50%	Current Single Discount Rate 7.50%	1% Increase 8.50%
443	SEARCY SCHOOL DISTRICT	\$ 3,220,839	0.721792%	\$ 60,797,423	\$ 40,859,800	\$ 24,324,763
451	HARRISON SCHOOL DISTRICT	2,244,619	0.503020%	42,370,024	28,475,396	16,952,047
453	HARRISBURG SCHOOL DISTRICT	1,117,819	0.250504%	21,100,248	14,180,731	8,442,110
458	HARMONY GROVE SCHOOL DISTRICT	795,441	0.178259%	15,014,955	10,091,021	6,007,413
463	CLARENDON SCHOOL DISTRICT	499,592	0.111959%	9,430,432	6,337,860	3,773,071
471	NORFORK SCHOOL DISTRICT	372,645	0.083510%	7,034,151	4,727,404	2,814,331
479	CONWAY PUBLIC SCHOOLS	8,536,623	1.913063%	161,139,573	108,296,214	64,471,185
480	CHARLESTON PUBLIC SCHOOLS	754,718	0.169133%	14,246,259	9,574,407	5,699,861
484	HARMONY GROVE SCHOOL DISTRICT	917,226	0.205551%	17,313,793	11,635,989	6,927,167
486	PALESTINE-WHEATLEY SCHOOL DISTRICT	519,085	0.116327%	9,798,390	6,585,152	3,920,290
493	HAZEN SCHOOL DISTRICT	461,293	0.103376%	8,707,491	5,851,997	3,483,826
501	MAYNARD SCHOOL DISTRICT	400,024	0.089646%	7,550,954	5,074,729	3,021,101
502	WEST SIDE SCHOOL DISTRICT	520,830	0.116718%	9,831,318	6,607,281	3,933,464
503	MALVERN SCHOOL DISTRICT	1,671,340	0.374548%	31,548,666	21,202,744	12,622,473
512	GLEN ROSE SCHOOL DISTRICT	796,718	0.178545%	15,039,052	10,107,216	6,017,054
513	WALDRON PUBLIC SCHOOLS	1,301,527	0.291673%	24,567,970	16,511,265	9,829,529
515	NASHVILLE SCHOOL DISTRICT	1,554,704	0.348410%	29,347,016	19,723,092	11,741,603
521	HAMPTON SCHOOL DISTRICT	539,061	0.120804%	10,175,467	6,838,572	4,071,156
530	MOUNTAIN VIEW SCHOOL DISTRICT	1,496,310	0.335324%	28,244,750	18,982,298	11,300,592
531	DREW CENTRAL SCHOOL DISTRICT	863,615	0.193537%	16,301,817	10,955,875	6,522,280
535	MAYFLOWER SCHOOL DISTRICT	900,373	0.201774%	16,995,688	11,422,202	6,799,895
536	SOUTHSIDE BEE BRANCH SCHOOL DISTRICT	549,333	0.123106%	10,369,355	6,968,877	4,148,730
538	GENTRY PUBLIC SCHOOLS	1,281,541	0.287194%	24,190,709	16,257,721	9,678,589
539	FORDYCE PUBLIC SCHOOLS	630,876	0.141380%	11,908,586	8,003,340	4,764,569
545	NEWPORT SPECIAL SCHOOL DISTRICT	926,539	0.207638%	17,489,603	11,754,144	6,997,508
547	DECATUR PUBLIC SCHOOLS	506,998	0.113619%	9,570,229	6,431,812	3,829,003
548	SCRANTON SCHOOL DISTRICT	331,519	0.074294%	6,257,848	4,205,678	2,503,735
552	CEDARVILLE PUBLIC SCHOOL DISTRICT	705,452	0.158092%	13,316,303	8,949,417	5,327,790
555	CONCORD SCHOOL DISTRICT	480,173	0.107607%	9,063,871	6,091,508	3,626,412
558	POCAHONTAS PUBLIC SCHOOLS	1,520,443	0.340732%	28,700,295	19,288,454	11,482,853
560	VAN BUREN SCHOOL DISTRICT	4,819,319	1.080012%	90,970,741	61,138,221	36,396,966
564	COUNTY LINE PUBLIC SCHOOLS	378,921	0.084917%	7,152,622	4,807,024	2,861,730
565	SALEM SCHOOL DISTRICT	611,961	0.137141%	11,551,544	7,763,385	4,621,718
566	DIERKS PUBLIC SCHOOLS	463,715	0.103919%	8,753,199	5,882,716	3,502,114
568	STEPHENS SCHOOL DIST	-	0.000000%	-	-	-
569	POTTSVILLE SCHOOL DISTRICT	1,360,718	0.304938%	25,685,282	17,262,170	10,276,560
571	PIGGOTT SCHOOL DISTRICT	670,497	0.150259%	12,656,472	8,505,968	5,063,795
583	HECTOR SCHOOL DISTRICT	464,229	0.104034%	8,762,905	5,889,239	3,505,997
586	BLYTHEVILLE PUBLIC SCHOOLS	1,793,754	0.401981%	33,859,373	22,755,688	13,546,976
592	BEARDEN SCHOOL DISTRICT	452,475	0.101400%	8,541,038	5,740,130	3,417,229
593	PINE BLUFF SCHOOL DISTRICT	2,843,222	0.637168%	53,669,418	36,069,319	21,472,882
597	MARMADUKE SCHOOL DISTRICT	594,856	0.133308%	11,228,655	7,546,382	4,492,532
601	FOUKE SCHOOL DISTRICT	957,479	0.214572%	18,073,620	12,146,642	7,231,171
602	HORATIO SCHOOL DISTRICT	680,361	0.152469%	12,842,672	8,631,106	5,138,293
606	ENGLAND PUBLIC SCHOOL DISTRICT	619,027	0.138724%	11,684,927	7,853,026	4,675,084
607	JASPER SCHOOL DISTRICT	879,458	0.197087%	16,600,875	11,156,862	6,641,932
608	TRUMANN SCHOOL DISTRICT	1,079,354	0.241884%	20,374,180	13,692,766	8,151,613
622	CARLISLE SCHOOL DISTRICT	530,220	0.118823%	10,008,565	6,726,403	4,004,380
623	BRADFORD SCHOOL DISTRICT	384,470	0.086160%	7,257,359	4,877,414	2,903,635
625	HUNTSVILLE SCHOOL DISTRICT	2,013,913	0.451319%	38,015,150	25,548,639	15,209,683



Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis) as of June 30, 2020

Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease 6.50%	Current Single Discount Rate 7.50%	1% Increase 8.50%
626	YELLVILLE-SUMMIT PUBLIC SCHOOL	\$ 632,246	0.141687%	\$ 11,934,443	\$ 8,020,718	\$ 4,774,915
629	BROOKLAND PUBLIC SCHOOLS	1,897,772	0.425292%	35,822,858	24,075,277	14,332,557
630	BRINKLEY PUBLIC SCHOOLS	420,948	0.094335%	7,945,928	5,340,177	3,179,128
637	BAY SCHOOL DISTRICT	465,274	0.104268%	8,782,640	5,902,502	3,513,893
645	FOREMAN PUBLIC SCHOOLS	372,506	0.083479%	7,031,513	4,725,632	2,813,275
651	QUITMAN PUBLIC SCHOOLS	530,559	0.118899%	10,014,970	6,730,708	4,006,942
656	WYNNE PUBLIC SCHOOLS	2,236,397	0.501178%	42,214,824	28,371,092	16,889,953
657	DUMAS PUBLIC SCHOOLS	1,213,727	0.271997%	22,910,633	15,397,427	9,166,437
658	MANILA PUBLIC SCHOOLS	916,025	0.205282%	17,291,130	11,620,757	6,918,100
662	CLINTON PUBLIC SCHOOLS	1,147,182	0.257084%	21,654,507	14,553,229	8,663,866
667	GREENE COUNTY TECH SCHOOL DISTRICT	2,972,233	0.666079%	56,104,670	37,705,966	22,447,215
674	AUGUSTA PUBLIC SCHOOLS	421,717	0.094507%	7,960,436	5,349,928	3,184,933
675	GREEN FOREST PUBLIC SCHOOLS	1,166,130	0.261330%	22,012,177	14,793,607	8,806,969
676	EAST END SCHOOL DISTRICT	531,687	0.119151%	10,036,269	6,745,022	4,015,464
677	DOVER SCHOOL DISTRICT	1,075,301	0.240976%	20,297,663	13,641,342	8,120,999
682	MOUNTAIN HOME PUBLIC SCHOOLS	2,997,514	0.671745%	56,581,864	38,026,672	22,638,138
687	STAR CITY SCHOOL DISTRICT	1,174,497	0.263205%	22,170,114	14,899,750	8,870,158
693	ATKINS PUBLIC SCHOOLS	813,009	0.182196%	15,346,571	10,313,888	6,140,091
696	DES ARC SCHOOL DISTRICT	441,397	0.098917%	8,331,932	5,599,597	3,333,567
698	VILONIA SCHOOL DISTRICT	2,643,127	0.592326%	49,892,359	33,530,892	19,961,698
702	NETTLETON PUBLIC SCHOOLS	3,211,616	0.719725%	60,623,328	40,742,796	24,255,108
704	OMAHA SCHOOL DISTRICT	383,427	0.085926%	7,237,663	4,864,178	2,895,755
705	CABOT PUBLIC SCHOOLS	8,691,880	1.947856%	164,070,236	110,265,808	65,643,730
714	MARION SCHOOL DISTRICT	3,272,885	0.733456%	61,779,847	41,520,053	24,717,826
715	MCGEEHEE PUBLIC SCHOOLS	1,033,171	0.231534%	19,502,417	13,106,885	7,802,825
719	CAVE CITY SCHOOL DISTRICT	965,703	0.216415%	18,228,873	12,250,981	7,293,286
724	PANGBURN SCHOOL DISTRICT	661,938	0.148341%	12,494,915	8,397,391	4,999,157
727	CALICO ROCK SCHOOL DISTRICT	355,695	0.079711%	6,714,193	4,512,372	2,686,317
731	DEWITT SCHOOL DISTRICT	1,031,327	0.231121%	19,467,597	13,083,484	7,788,894
732	HUGHES SCHOOL DISTRICT	-	0.000000%	-	-	-
735	ALPENA SCHOOL DISTRICT	408,318	0.091504%	7,707,517	5,179,950	3,083,741
736	MAGNET COVE SCHOOL DISTRICT	540,278	0.121077%	10,198,432	6,854,006	4,080,345
746	STUTT GART SCHOOL DISTRICT	1,298,657	0.291030%	24,513,792	16,474,854	9,807,853
747	VALLEY SPRINGS PUBLIC SCHOOLS	680,085	0.152407%	12,837,458	8,627,602	5,136,207
750	OUACHITA PUBLIC SCHOOLS	368,727	0.082632%	6,960,187	4,677,696	2,784,738
753	GOSNELL PUBLIC SCHOOLS	1,014,396	0.227327%	19,148,007	12,868,699	7,661,028
756	MULBERRY-PLEASANT VIEW BI-COUNTY PUBLIC SCHOOLS	412,941	0.092540%	7,794,776	5,238,593	3,118,653
757	POYEN SCHOOL DISTRICT	428,857	0.096107%	8,095,227	5,440,516	3,238,862
765	EUREKA SPRINGS PUBLIC SCHOOLS	664,411	0.148895%	12,541,606	8,428,771	5,017,838
771	SOUTHSIDE SCHOOL DISTRICT	1,479,297	0.331511%	27,923,613	18,766,473	11,172,106
779	MELBOURNE PUBLIC SCHOOL DISTRICT	712,106	0.159583%	13,441,899	9,033,825	5,378,041
780	WONDERVIEW SCHOOL DISTRICT	390,613	0.087537%	7,373,309	4,955,340	2,950,026
794	VIOLA SCHOOL DISTRICT	373,232	0.083641%	7,045,221	4,734,844	2,818,760
795	NEMO VISTA SCHOOL DISTRICT	457,112	0.102439%	8,628,561	5,798,951	3,452,247
813	BLEVINS SCHOOL DISTRICT	411,098	0.092127%	7,760,000	5,215,222	3,104,739
820	PARKERS CHAPEL SCHOOL DISTRICT	611,834	0.137112%	11,549,139	7,761,768	4,620,756
847	ROSE BUD SCHOOL DISTRICT	744,375	0.166815%	14,051,013	9,443,189	5,621,744
863	VALLEY VIEW PUBLIC SCHOOLS	2,131,311	0.477628%	40,231,192	27,037,962	16,096,311
872	SMACKOVER-NORPHLET SCHOOL DISTRICT	952,590	0.213476%	17,981,335	12,084,620	7,194,248
873	GENOA CENTRAL SCHOOL DISTRICT	892,443	0.199997%	16,845,986	11,321,592	6,740,000



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Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease 6.50%	Current Single Discount Rate 7.50%	1% Increase 8.50%
876	NORPHLET SCHOOL DIST	\$ -	0.000000%	\$ -	\$ -	\$ -
956	BERGMAN PUBLIC SCHOOLS	854,920	0.191588%	16,137,691	10,845,572	6,456,614
957	LEAD HILL SCHOOL DISTRICT	272,676	0.061107%	5,147,105	3,459,187	2,059,333
958	DERMOTT SCHOOL DISTRICT	363,954	0.081562%	6,870,085	4,617,142	2,748,689
963	GUY-PERKINS SCHOOL DISTRICT	298,221	0.066832%	5,629,305	3,783,257	2,252,258
964	MT. VERNON-ENOLA SCHOOL DISTRI	412,867	0.092524%	7,793,388	5,237,661	3,118,098
965	MOUNTAIN PINE SCHOOL DISTRICT	539,860	0.120983%	10,190,541	6,848,702	4,077,187
973	ARMOREL SCHOOL DISTRICT	448,004	0.100398%	8,456,646	5,683,413	3,383,464
987	WHITE COUNTY CENTRAL SCHOOLS	606,469	0.135910%	11,447,862	7,693,704	4,580,236
990	CRAIGHEAD COUNTY SD EXECUTIVE	-	0.000000%	-	-	-
1000	LAFAYETTE COUNTY SCHOOL DISTRICT	586,535	0.131443%	11,071,598	7,440,830	4,429,694
1001	CEDAR RIDGE SCHOOL DISTRICT	725,670	0.162623%	13,697,935	9,205,898	5,480,479
1002	CLEVELAND COUNTY SCHOOL DISTRICT	790,326	0.177113%	14,918,408	10,026,135	5,968,785
1003	DEER/ MT. JUDEA SCHOOL DISTRICT	350,325	0.078508%	6,612,835	4,444,252	2,645,764
1004	EMERSON-TAYLOR-BRADLEY SCHOOL	946,483	0.212107%	17,866,060	12,007,147	7,148,126
1005	HILLCREST SCHOOL DISTRICT	399,614	0.089554%	7,543,221	5,069,533	3,018,007
1006	OUACHITA RIVER SCHOOL DISTRICT	606,434	0.135902%	11,447,204	7,693,261	4,579,972
1008	OZARK MOUNTAIN SCHOOL DISTRICT	573,314	0.128480%	10,822,037	7,273,109	4,329,846
1009	TWO RIVERS SCHOOL DISTRICT	703,531	0.157662%	13,280,045	8,925,049	5,313,283
1010	SEARCY COUNTY SCHOOL DISTRICT	775,254	0.173735%	14,633,909	9,834,933	5,854,958
1011	LAWRENCE COUNTY SCHOOL DISTRICT	721,819	0.161760%	13,625,257	9,157,054	5,451,401
1045	HIGHLAND PUBLIC SCHOOL DISTRICT	1,310,305	0.293640%	24,733,668	16,622,624	9,895,824
1074	CROSS COUNTY SCHOOL DISTRICT	520,765	0.116704%	9,830,089	6,606,456	3,932,972
1091	WESTSIDE CONSOLIDATED SCHOOL DISTRICT	1,364,369	0.305756%	25,754,193	17,308,483	10,304,131
1092	PEA RIDGE SCHOOL DISTRICT	1,761,141	0.394673%	33,243,772	22,341,965	13,300,677
1093	JACKSONVILLE NORTH PULASKI SCHOOL DISTRICT	3,374,749	0.756283%	63,702,652	42,812,301	25,487,131
1114	RIVERCREST SCHOOL DISTRICT	976,613	0.218860%	18,434,810	12,389,384	7,375,681
1165	CADDO HILLS SCHOOL DISTRICT	468,975	0.105098%	8,852,497	5,949,450	3,541,842
1293	SOUTH CONWAY COUNTY SCHOOL DISTRICT	1,827,504	0.409545%	34,496,457	23,183,850	13,801,870
1307	SOUTHWEST ARKANSAS EDUCATION CO-OP	390,917	0.087605%	7,379,054	4,959,201	2,952,325
1308	SOUTHEAST ARKANSAS EDUCATION SERVICE CO-OP	1,161,010	0.260183%	21,915,542	14,728,661	8,768,305
1321	WESTSIDE SCHOOL DISTRICT	519,661	0.116456%	9,809,267	6,592,461	3,924,641
1330	GUY FENTER EDUCATION SERVICE CO-OP	471,091	0.105572%	8,892,431	5,976,289	3,557,820
1332	NORTHCENTRAL ARKANSAS EDUCATION SERVICE CO-OP	441,787	0.099005%	8,339,290	5,604,542	3,336,511
1333	BUFFALO ISLAND CENTRAL SCHOOL DISTRICT	608,340	0.136329%	11,483,183	7,717,442	4,594,368
1335	RECTOR SCHOOL DISTRICT	484,892	0.108665%	9,152,956	6,151,378	3,662,055
1336	OZARKS UNLIMITED RESOURCE EDUCATIONAL SERVICE CO-OP	576,697	0.129238%	10,885,889	7,316,021	4,355,393
1337	NORTHEAST ARKANSAS EDUCATION CO-OP	462,170	0.103573%	8,724,041	5,863,120	3,490,448
1338	DAWSON EDUCATION SERVICE CO-OP	1,293,715	0.289922%	24,420,503	16,412,157	9,770,529
1339	ARCH FORD EDUCATION SERVICE CO-OP	2,518,559	0.564411%	47,540,991	31,950,620	19,020,927
1342	WESTERN YELL COUNTY SCHOOL DISTRICT	333,254	0.074682%	6,290,589	4,227,683	2,516,835
1343	NEVADA SCHOOL DISTRICT	388,001	0.086951%	7,324,003	4,922,204	2,930,299
1344	PARAGOULD SCHOOL DISTRICT	2,567,288	0.575331%	48,460,819	32,568,804	19,388,946
1345	WILBUR D MILLS EDUCATION SERVICE CO-OP	499,802	0.112006%	9,434,398	6,340,525	3,774,658
1346	IZARD COUNTY CONSOLIDATED SCHOOL DISTRICT	435,162	0.097520%	8,214,243	5,520,502	3,286,480
1347	MIDLAND SCHOOL DISTRICT	478,208	0.107167%	9,026,782	6,066,582	3,611,573
1348	RIVERSIDE SCHOOL DISTRICT	633,497	0.141967%	11,958,049	8,036,582	4,784,359
1349	ARKANSAS RIVER EDUCATION SERVICE CO-OP	752,068	0.168539%	14,196,233	9,540,787	5,679,846
1350	GREAT RIVERS EDUCATION SERVICE CO-OP	440,360	0.098685%	8,312,346	5,586,434	3,325,731
1351	NORTHWEST ARKANSAS EDUCATION SERVICE CO-OP	631,738	0.141573%	11,924,863	8,014,279	4,771,082



Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis) as of June 30, 2020

Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease	Current Single Discount Rate	1% Increase
				6.50%	7.50%	8.50%
1353	DEQUEEN-MENA EDUCATION SERVICE	\$ 780,353	0.174878%	\$ 14,730,150	\$ 9,899,614	\$ 5,893,464
1354	CROWLEY'S RIDGE EDUCATIONAL SERVICE CO-OP	758,020	0.169873%	14,308,589	9,616,297	5,724,799
1355	SOUTH CENTRAL SERVICE CO-OP	354,113	0.079357%	6,684,325	4,492,299	2,674,367
1359	CONWAY VOCATIONAL CENTER	214,795	0.048136%	4,054,528	2,724,905	1,622,198
1362	JONESBORO VOCATIONAL CENTER	160,652	0.036002%	3,032,509	2,038,042	1,213,293
1363	MONTICELLO VOCATIONAL CENTER	73,879	0.016556%	1,394,568	937,240	557,960
1364	EAST POINSETT COUNTY SCHOOL DISTRICT	562,527	0.126063%	10,618,403	7,136,254	4,248,373
1365	NORTH CENTRAL CAREER CENTER	22,022	0.004935%	415,687	279,368	166,314
1366	RIVER VALLEY CAREER ACADEMY	43,398	0.009726%	819,199	550,554	327,758
1371	METROPOLITAN VOCATIONAL CENTER	221,658	0.049674%	4,184,072	2,811,967	1,674,028
1372	TEXARKANA CAREER AND TECHNOLOGICAL CENTER	-	0.000000%	-	-	-
1373	WARREN VOCATIONAL CENTER	78,671	0.017630%	1,485,008	998,021	594,145
1991	CENTERPOINT SCHOOL DISTRICT	835,480	0.187232%	15,770,748	10,598,963	6,309,802
2000	ARKANSAS ARTS ACADEMY CHARTER	718,692	0.161059%	13,566,215	9,117,374	5,427,779
2001	ACADEMICS PLUS CHARTER SCHOOL	897,159	0.201054%	16,935,013	11,381,424	6,775,619
2002	KIPP DELTA COLLEGE PREPARATORY CHARTER	1,293,464	0.289866%	24,415,764	16,408,972	9,768,632
2003	IMBODEN AREA CHARTER SCHOOL	47,273	0.010594%	892,338	599,709	357,020
2006	HAAS HALL ACADEMY CHARTER - FAYETTEVILLE	581,103	0.130225%	10,969,048	7,371,910	4,388,665
2007	LISA ACADEMY CHARTER	1,901,025	0.426021%	35,884,250	24,116,537	14,357,120
2008	ARKANSAS VIRTUAL ACADEMY CHARTER	774,530	0.173573%	14,620,229	9,825,740	5,849,485
2012	COVENANT KEEPERS CHARTER SCHOOL	-	0.000000%	-	-	-
2016	E-STEM PUBLIC CHARTER SCHOOL	2,010,963	0.450658%	37,959,466	25,511,216	15,187,404
2017	LISA ACADEMY-NORTH LITTLE ROCK	-	0.000000%	-	-	-
2019	LITTLE ROCK PREPARATORY ACADEMY	182,061	0.040800%	3,436,630	2,309,638	1,374,980
2020	JACKSONVILLE LIGHTHOUSE CHARTER SCHOOL	534,535	0.119790%	10,090,022	6,781,147	4,036,970
2022	PINE BLUFF LIGHTHOUSE CHARTER SCHOOL	189,035	0.042363%	3,568,269	2,398,108	1,427,648
2023	SIA TECH LITTLE ROCK CHARTER	66,111	0.014815%	1,247,923	838,685	499,288
2024	NORTHWEST ARKANSAS CLASSICAL ACADEMY CHARTER	565,813	0.126799%	10,680,444	7,177,949	4,273,195
2025	PREMIER HIGH SCHOOL OF LITTLE ROCK CHARTER	67,657	0.015162%	1,277,112	858,302	510,966
2026	QUEST MIDDLE CHARTER SCHOOL - PINE BLUFF	-	0.000000%	-	-	-
2027	EXALT ACADEMY CHARTER SCHOOL	262,272	0.058775%	4,950,720	3,327,204	1,980,760
2028	QUEST MIDDLE CHARTER SCHOOL - WEST LITTLE ROCK	-	0.000000%	-	-	-
2029	CAPITAL CITY LIGHTHOUSE CHARTER SCHOOL	145,267	0.032554%	2,742,096	1,842,866	1,097,100
2030	OZARK MONTESSORI ACADEMY CHARTER - SPRINGDALE	-	0.000000%	-	-	-
2031	ROCKBRIDGE MONTESSORI CHARTER SCHOOL	-	0.000000%	-	-	-
2032	HAAS HALL ACADEMY - BENTONVILLE CHARTER	193,399	0.043341%	3,650,643	2,453,468	1,460,605
2033	FUTURE SCHOOL OF FT. SMITH CHARTER	160,024	0.035861%	3,020,654	2,030,075	1,208,550
2034	ARKANSAS CONNECTIONS ACADEMY CHARTER	426,384	0.095553%	8,048,546	5,409,143	3,220,185
2035	THE EXCEL CENTER CHARTER AT GOODWILL	89,189	0.019987%	1,683,560	1,131,461	673,584
2036	FRIENDSHIP ASPIRE ACADEMY - PINE BLUFF	169,364	0.037955%	3,196,968	2,148,569	1,279,092
2037	SOUTHEAST ARKANSAS PREPARTORY HIGH SCHOOL	57,901	0.012976%	1,092,955	734,536	437,286
2038	SCHOLARMADE ACHIEVEMENT PLACE	236,938	0.053098%	4,472,507	3,005,814	1,789,429
2039	FRIENDSHIP ASPIRE ACADEMY - LITTLE ROCK	177,844	0.039855%	3,357,036	2,256,145	1,343,134
2040	PREMIER HIGH SCHOOL OF NORTH LITTLE ROCK CHARTER	27,419	0.006145%	517,573	347,843	207,079
4857	ARKANSAS ACTIVITIES ASSOCIATION	155,697	0.034892%	2,938,986	1,975,188	1,175,874
6864	ARKANSAS EASTER SEALS	2,110	0.000473%	39,828	26,767	15,935
6870	ARKANSAS SCHOOL BOARDS ASSOCIATION	7,350	0.001647%	138,745	93,246	55,511
6873	FIRST STUDENT	8,416	0.001886%	158,872	106,772	63,564
6875	ARKANSAS ASSOCIATION EDUCATIONAL ADMINISTRATORS	51,290	0.011494%	968,164	650,668	387,358
9492	BOSTON MOUNTAIN EDUCATIONAL CO-OP	88,473	0.019827%	1,670,042	1,122,376	668,176



Schedule of Employer Allocations of Net Pension Liability (Including Sensitivity Analysis) as of June 30, 2020

Employer ID	Employer Name	Employer Contributions	Employer Allocation Percentage	Net Pension Liability		
				1% Decrease	Current Single Discount Rate	1% Increase
				6.50%	7.50%	8.50%
1-005	UNIVERSITY OF ARKANSAS - MONTICELLO	\$ 90,286	0.020233%	\$ 1,704,265	\$ 1,145,376	\$ 681,868
1-006	UNIVERSITY OF ARKANSAS - PINE BLUFF	11,803	0.002645%	222,794	149,732	89,139
1-008	ARKANSAS SCHOOL FOR THE BLIND	573,635	0.128552%	10,828,087	7,277,174	4,332,266
1-016	ARKANSAS SCHOOL FOR THE DEAF	899,266	0.201526%	16,974,781	11,408,151	6,791,530
1-017	ARKANSAS DEPARTMENT OF EDUCATION	2,990,398	0.670150%	56,447,542	37,936,398	22,584,396
1-025	HENDERSON STATE UNIVERSITY	89,398	0.020034%	1,687,494	1,134,105	675,158
1-028	ARKANSAS STATE UNIVERSITY- BEEBE	172,266	0.038605%	3,251,741	2,185,380	1,301,006
1-029	ARKANSAS STATE UNIVERSITY- NEWPORT	98,650	0.022107%	1,862,136	1,251,476	745,032
1-045	ARKANSAS TECH UNIVERSITY	491,697	0.110190%	9,281,399	6,237,701	3,713,444
1-051	SOUTHERN ARKANSAS UNIVERSITY	343,342	0.076943%	6,481,016	4,355,662	2,593,024
1-052	ARKANSAS STATE UNIVERSITY- MT. HOME	8,188	0.001835%	154,563	103,876	61,840
1-053	ARKANSAS STATE UNIVERSITY	540,929	0.121223%	10,210,719	6,862,263	4,085,261
1-054	UNIVERSITY OF CENTRAL ARKANSAS	1,162,736	0.260570%	21,948,109	14,750,548	8,781,335
1-115	ARKANSAS DEPARTMENT OF CAREER EDUCATION (REHAB)	1,244,093	0.278802%	23,483,823	15,782,648	9,395,767
1-197	SOUTHEAST ARKANSAS COLLEGE	274,957	0.061618%	5,190,170	3,488,130	2,076,563
1-202	ARKANSAS TEACHER RETIREMENT SYSTEM	637,605	0.142888%	12,035,604	8,088,704	4,815,388
1-220	U OF A COMMUNITY COLLEGE - MORRILTON	158,711	0.035567%	2,995,862	2,013,413	1,198,630
1-224	ARKANSAS EDUCATIONAL TV NETWORK	626,827	0.140472%	11,832,161	7,951,977	4,733,992
1-249	U OF A COMMUNITY COLLEGE - HOPE	78,964	0.017696%	1,490,537	1,001,737	596,357
1-254	PHILLIPS COMMUNITY COLLEGE - U OF A	10,924	0.002448%	206,197	138,578	82,499
1-256	UNIVERSITY OF ARKANSAS - FORT SMITH	51,178	0.011469%	966,054	649,251	386,514
1-268	SOUTHERN ARKANSAS UNIVERSITY TECH	174,556	0.039118%	3,294,971	2,214,433	1,318,302
1-274	CROWLEYS RIDGE TECHNICAL INSTITUTE	-	0.000000%	-	-	-
1-290	PULASKI TECHNICAL COLLEGE	467,568	0.104782%	8,825,934	5,931,598	3,531,215
1-291	COLLEGE OF THE OUACHITAS	192,041	0.043037%	3,625,025	2,436,251	1,450,355
1-294	ARKANSAS DEPARTMENT OF CAREER EDUCATION (WORKFORCE)	239,927	0.053768%	4,528,935	3,043,737	1,812,006
1-295	BLACK RIVER TECHNICAL COLLEGE	188,992	0.042353%	3,567,456	2,397,561	1,427,322
1-314	OZARKA COLLEGE	76,764	0.017203%	1,449,010	973,828	579,742
1-315	RICH MOUNTAIN COMMUNITY COLLEGE	92,543	0.020739%	1,746,872	1,174,011	698,915
1-318	U OF A COMMUNITY COLLEGE - BATESVILLE	115,735	0.025936%	2,184,635	1,468,216	874,062
1-320	PHILLIPS COMMUNITY COLLEGE - DEWITT	10,748	0.002409%	202,890	136,355	81,175
1-321	NORTHWEST TECHNICAL INSTITUTE	257,476	0.057701%	4,860,188	3,266,360	1,944,538
1-327	COSSATOT COMMUNITY COLLEGE - U OF A	107,583	0.024109%	2,030,772	1,364,810	812,502
1-328	ARKANSAS CORRECTIONAL SCHOOL	721,278	0.161639%	13,615,040	9,150,188	5,447,314
1-329	NORTH ARKANSAS COLLEGE	469,433	0.105200%	8,861,133	5,955,254	3,545,298
1-330	NATIONAL PARK COMMUNITY COLLEGE	239,023	0.053565%	4,511,869	3,032,268	1,805,178
1-331	EAST ARKANSAS COMMUNITY COLLEGE	159,573	0.035760%	3,012,135	2,024,349	1,205,141
1-335	ARKANSAS NORTHEASTERN COLLEGE	350,356	0.078515%	6,613,409	4,444,639	2,645,994
1-344	SOUTH ARKANSAS COMMUNITY COLLEGE	227,257	0.050928%	4,289,762	2,882,997	1,716,313
1-364	ARKANSAS STATE UNIVERSITY- MID SOUTH CC	38,304	0.008584%	723,045	485,933	289,287
1-386	RIVERSIDE VOCATIONAL TECHNICAL SCHOOL	105,710	0.023690%	1,995,402	1,341,039	798,351
1-388	NORTHWEST ARKANSAS COMMUNITY COLLEGE	403,584	0.090443%	7,618,153	5,119,891	3,047,987
1-389	UNIVERSITY OF ARKANSAS - FAYETTEVILLE	87,588	0.019628%	1,653,330	1,111,144	661,489
1-390	UNIVERSITY OF ARKANSAS - LITTLE ROCK	14,105	0.003161%	266,250	178,937	106,525
1-391	ARKANSAS DEPARTMENT OF HIGHER EDUCATION	101,979	0.022854%	1,924,990	1,293,718	770,179
1-392	SOUTH ARKANSAS DEVELOPMENTAL CENTER	355,940	0.079766%	6,718,809	4,515,474	2,688,164
1-399	ARKANSAS SCHOOL FOR MATH, SCIENCES & ARTS	78,005	0.017481%	1,472,441	989,575	589,117
1-400	UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES	14,940	0.003348%	282,019	189,535	112,834
1-401	ARKANSAS ECONOMIC DEVELOPMENT COMMISSION	1,858	0.000416%	35,065	23,566	14,029
1-402	UNIVERSITY OF ARKANSAS COOPERATIVE EXTENSION	34,490	0.007729%	651,035	437,538	260,476
1-403	DHS-DIVISION OF YOUTH SERVICES	4,048	0.000907%	76,412	51,354	30,572
1-404	APARTMENT DEPARTMENT OF WORKFORCE SERVICES	124,157	0.027824%	2,343,615	1,575,061	937,669
1-405	ARKANSAS DEPARTMENT OF COMMERCE	80,111	0.017953%	1,512,188	1,016,288	605,019
1-406	ARKANSAS DEPARTMENT OF EDUCATION	69,453	0.015564%	1,311,007	881,081	524,528
1-407	ARKANSAS DEPARTMENT OF PUBLIC SAFETY	7,954	0.001782%	150,133	100,899	60,067
1-409	ARKANSAS DEPARTMENT OF HEALTH	10,282	0.002304%	194,082	130,436	77,651
		<u>446,228,128</u>	<u>100.000000%</u>	<u>8,423,120,901</u>	<u>5,660,881,938</u>	<u>3,370,051,058</u>

Note: Total may not add to ATRS collective amounts due to rounding.



SECTION C

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense			Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Total Employer Pension Expense
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Proportionate Share of Contributions	
106	Cotter Public Schools	\$ 93,103	\$ 1,154,470	\$ 456,978	\$ 132,315	\$ 1,836,865	\$ 56,643	\$ -	\$ 40,745	\$ 97,388	\$ 1,243,045	\$ 22,934	\$ 1,265,978
108	Rogers Public Schools	2,311,874	28,667,152	11,347,420	3,835,578	46,162,024	1,406,533	-	1,061,523	2,468,056	30,866,593	991,201	31,857,794
109	Gravette School District	274,827	3,407,846	1,348,940	358,553	5,390,165	167,203	-	7,558	174,762	3,669,307	200,984	3,870,291
110	Siloam Springs School District	612,341	7,593,008	3,005,567	1,068,686	12,279,602	372,545	-	508,612	881,157	8,175,569	395,428	8,570,998
111	Hermitage Public School District	67,135	832,474	329,521	92,512	1,321,642	40,845	-	160,325	201,170	896,344	(2,047)	894,297
113	Warren School District	201,391	2,497,237	988,490	120,535	3,807,652	122,525	-	598,266	720,791	2,688,833	(190,161)	2,498,672
115	Berryville Public Schools	260,759	3,233,403	1,279,889	198,536	4,972,587	158,645	-	296,690	455,335	3,481,480	3,763	3,485,243
116	Lakeside School District	158,046	1,959,764	775,740	52,225	2,945,775	96,154	-	396,733	492,887	2,110,124	(278,285)	1,831,839
117	Gurdon Public Schools	108,751	1,348,510	533,786	89,936	2,080,983	66,164	-	265,338	331,501	1,451,973	(76,159)	1,375,814
119	Arkadelphia Public Schools	255,133	3,163,637	1,252,274	222,672	4,893,715	155,222	-	1,641,993	1,797,215	3,406,362	(307,710)	3,098,652
121	Woodlawn School District	69,434	860,973	340,802	55,911	1,327,120	42,243	-	57,173	99,416	927,030	6,814	933,844
123	Magnolia School District	405,212	5,024,610	1,988,909	153,363	7,572,094	246,529	-	501,994	748,523	5,410,116	(56,538)	5,353,577
125	Alma School District	455,959	5,653,876	2,237,994	718,183	9,066,012	277,403	-	16,584	293,987	6,087,661	204,572	6,292,232
126	Mountainburg Public Schools	93,904	1,164,403	460,910	30,097	1,749,314	57,131	-	188,615	245,745	1,253,740	(48,519)	1,205,221
129	Greenbrier Public Schools	478,305	5,930,968	2,347,676	407,846	9,164,795	290,999	-	43,827	334,826	6,386,012	258,557	6,644,569
130	Ozark Public Schools	244,083	3,026,616	1,198,036	-	4,468,735	148,499	-	247,870	396,369	3,258,829	(94,536)	3,164,293
131	Cutter Morning Star Public Schools	68,242	846,195	334,952	106,095	1,355,483	41,518	-	163,043	204,561	911,117	(37,052)	874,066
132	Lakeside School District	463,439	5,746,627	2,274,708	907,254	9,392,027	281,954	-	-	281,954	6,187,527	502,253	6,689,781
133	Fountain Lake School District	191,507	2,374,683	939,979	34,385	3,540,554	116,512	-	446,860	563,373	2,556,877	(74,244)	2,482,633
134	Hot Springs School District	527,541	6,541,486	2,589,339	1,218,204	10,876,569	320,953	-	2,439,963	2,760,916	7,043,371	(1,112,249)	5,931,122
135	Jessieville Public School District	112,868	1,399,561	553,993	35,689	2,102,111	68,668	-	456,505	525,174	1,506,940	(82,429)	1,424,511
136	Lake Hamilton School District	591,704	7,337,109	2,904,274	799,442	11,632,529	359,990	-	266,861	626,851	7,900,037	180,117	8,080,154
139	Sheridan School District	531,051	6,585,017	2,606,571	762,191	10,484,831	323,089	-	189,149	512,238	7,090,242	178,988	7,269,230
141	Hope Public Schools	308,871	3,829,984	1,516,036	55,214	5,710,104	187,915	-	1,519,954	1,707,869	4,123,833	(453,232)	3,670,602
143	Spring Hill School District	74,614	925,209	366,229	294,355	1,660,407	45,395	-	67,310	112,705	996,194	39,256	1,035,450
144	Bismarck School District	129,269	1,602,929	634,493	23,436	2,390,126	78,647	-	67,710	146,356	1,725,911	(14,147)	1,711,764
145	Mineral Springs School District	97,481	1,208,755	478,466	175,303	1,960,004	59,307	-	124,160	183,466	1,301,495	180,739	1,482,234
150	Jackson County School District	118,149	1,465,037	579,911	77,919	2,241,015	71,881	-	97,242	169,123	1,577,440	49,410	1,626,850
153	White Hall School District	360,391	4,468,838	1,768,916	18,258	6,616,402	219,260	-	1,043,944	1,263,205	4,811,702	(313,121)	4,498,581
154	Watson Chapel School District	314,005	3,893,650	1,541,237	271,300	6,020,193	191,039	-	2,184,326	2,375,365	4,192,384	(496,938)	3,695,446
159	Dollarway School District	182,567	2,263,828	896,099	168,681	3,511,176	111,073	-	571,519	682,593	2,437,517	(305,908)	2,131,608
161	Clarksville School District	372,611	4,620,361	1,828,894	300,362	7,122,228	226,695	-	253,467	480,162	4,974,851	42,112	5,016,963
163	Lamar School District	166,591	2,065,728	817,684	257,628	3,307,632	101,353	-	-	101,353	2,224,218	127,469	2,351,687
165	Hoxie Public Schools	109,473	1,357,461	537,328	19,066	2,023,328	66,603	-	611,722	678,325	1,461,610	(116,795)	1,344,815
172	Lee County School District	107,651	1,334,874	528,388	8,624	1,979,538	65,495	-	966,617	1,032,112	1,437,290	(458,554)	978,736
178	Ashdown School District	192,983	2,392,987	947,225	39,550	3,572,745	117,410	-	157,775	275,185	2,576,585	(121,981)	2,454,604
180	Booneville School District	167,307	2,074,598	821,196	32,808	3,095,908	101,789	-	305,941	407,730	2,233,768	(145,196)	2,088,572
181	Magazine School District	76,656	950,538	376,255	63,103	1,466,552	46,637	-	234,397	281,035	1,023,466	(2,455)	1,021,012
182	Flippin School District	117,807	1,460,800	578,234	59,223	2,216,063	71,673	-	181,815	253,488	1,572,877	(31,322)	1,541,556
184	Texarkana School District	606,817	7,524,510	2,978,454	41,974	11,151,755	369,185	-	1,597,586	1,966,771	8,101,816	(626,079)	7,475,737



Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense			Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Total Pension Expense	
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Resources	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Resources	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense		Proportionate Share of Contributions
185	Osceola School District	\$ 172,354	\$ 2,137,178	\$ 845,967	\$ 42,341	\$ 3,197,840	\$ 104,859	\$ -	\$ -	\$ 629,141	\$ 734,000	\$ 2,301,150	\$ (164,103)	\$ 2,137,047
186	Mount Ida Public Schools	70,044	868,547	343,800	96,716	1,379,108	42,615	-	-	19,737	62,352	935,185	32,731	967,917
188	Prescott Public Schools	125,445	1,555,512	615,724	108,143	2,404,824	76,320	-	-	297,017	373,337	1,674,856	(46,911)	1,627,945
192	Perryville School District	119,834	1,485,941	588,185	31,864	2,225,825	72,907	-	-	254,001	326,907	1,599,948	(69,221)	1,530,727
195	Marvell - Elaine School District	64,817	803,730	318,143	45,293	1,231,983	39,434	-	-	749,357	788,791	865,395	(360,849)	504,546
196	Helena-West Helena Schools	196,478	2,436,319	964,377	-	3,597,174	119,536	-	-	1,597,767	1,717,304	2,623,242	(739,589)	1,883,653
197	Kirby School District	49,817	617,730	244,518	80,130	992,195	30,308	-	-	35,984	66,292	665,124	(7,285)	657,839
203	Marked Tree School District	63,841	791,626	313,352	91,934	1,260,753	38,841	-	-	535,175	574,015	852,363	(132,962)	719,401
208	Mena Public Schools	211,808	2,626,411	1,039,622	60,354	3,938,194	128,863	-	-	627,799	756,662	2,827,918	(253,465)	2,574,453
209	Russellville School District	829,818	10,289,716	4,073,015	1,126,041	16,318,590	504,857	-	-	133,695	638,553	11,079,178	177,783	11,256,961
210	Little Rock School District	4,085,825	50,664,084	20,054,544	-	74,804,454	2,485,797	-	-	13,903,975	16,389,771	54,551,205	(7,389,548)	47,161,657
211	Pulaski County Special School District	2,158,203	26,761,641	10,593,155	835,053	40,348,053	1,313,041	-	-	10,316,450	11,629,490	28,814,885	(6,785,563)	22,029,322
212	North Little Rock School District	1,400,091	17,361,077	6,872,097	2,025,467	27,658,731	851,809	-	-	615,139	1,466,948	18,693,078	108,958	18,802,036
213	Forrest City School District	332,807	4,126,791	1,633,522	-	6,093,120	202,478	-	-	3,278,506	3,480,984	4,443,413	(1,250,347)	3,193,066
214	Bauxite School District	196,716	2,439,267	965,544	440,041	4,041,568	119,681	-	-	176,672	296,352	2,626,416	146,558	2,772,974
215	Benton School District	642,831	7,971,084	3,155,223	759,734	12,528,872	391,095	-	-	257,829	648,924	8,582,653	297,412	8,880,065
216	Bryant Public Schools	1,315,924	16,317,409	6,458,978	4,782,910	28,875,220	800,602	-	-	-	800,602	17,569,336	1,974,137	19,543,473
219	Lavaca Public Schools	112,553	1,395,647	552,444	15,242	2,075,886	68,476	-	-	150,841	219,317	1,502,726	(63,794)	1,438,932
220	Hartford School District	-	-	-	-	-	-	-	-	258,045	258,045	-	(444,251)	(444,251)
221	Greenwood School District	525,872	6,520,796	2,581,150	342,083	9,969,901	319,938	-	-	50,276	370,215	7,021,093	257,113	7,278,207
222	Mansfield School District	116,979	1,450,529	574,168	171,512	2,313,188	71,169	-	-	234,705	305,874	1,561,819	(39,164)	1,522,655
224	Dequeen Public Schools	342,534	4,247,408	1,681,267	270,552	6,541,761	208,396	-	-	175,489	383,885	4,573,284	(9,279)	4,564,005
227	Strong-Huttig School District	54,306	673,388	266,549	35,990	1,030,233	33,039	-	-	133,686	166,725	725,052	(77,188)	647,864
228	Junction City School District	90,135	1,117,670	442,411	83,958	1,734,174	54,838	-	-	16,679	71,516	1,203,421	7,370	1,210,791
230	Shirley School District	54,387	674,397	266,949	23,422	1,019,156	33,089	-	-	358,287	391,376	726,139	(117,436)	608,704
232	Prairie Grove School District	247,968	3,074,794	1,217,107	298,781	4,838,650	150,863	-	-	320	151,182	3,310,703	98,314	3,409,017
233	Fayetteville Public Schools	1,798,733	22,304,222	8,828,759	6,075,118	39,006,831	1,094,340	-	-	60,569	1,154,909	24,015,477	1,701,555	25,717,032
234	Farmington Public Schools	316,486	3,924,419	1,553,417	390,085	6,184,407	192,549	-	-	241,760	434,309	4,225,514	271,598	4,497,113
235	Elkins School District	158,799	1,969,098	779,435	315,491	3,222,822	96,612	-	-	125,710	222,322	2,120,173	8,555	2,128,728
237	Lincoln Consolidated School District	145,831	1,808,296	715,784	-	2,669,911	88,723	-	-	404,568	493,290	1,947,034	(260,036)	1,686,999
238	Greenland School District	123,210	1,527,804	604,756	45,385	2,301,156	74,961	-	-	110,151	185,111	1,645,023	(5,253)	1,639,770
239	Springdale Public Schools	3,584,547	44,448,260	17,594,112	4,498,867	70,125,787	2,180,822	-	-	-	2,180,822	47,858,481	2,939,215	50,797,697
240	West Fork School District	130,654	1,620,109	641,293	-	2,392,056	79,489	-	-	412,930	492,420	1,744,409	(215,373)	1,529,035
242	Mc Crory School District	91,409	1,133,465	448,664	46,954	1,720,491	55,613	-	-	64,588	120,200	1,220,429	(3,492)	1,216,936
245	Danville Public Schools	119,349	1,479,918	585,801	85,604	2,270,672	72,611	-	-	377,130	449,741	1,593,463	(38,791)	1,554,672
246	Dardanelle Public Schools	293,125	3,634,738	1,438,751	81,395	5,448,009	178,336	-	-	140,950	319,286	3,913,607	87,916	4,001,523
250	Cossatot River School District	143,841	1,783,619	706,016	18,320	2,651,797	87,512	-	-	395,572	483,084	1,920,465	(102,166)	1,818,299
251	South Pike County School District	107,506	1,333,076	527,676	77,289	2,045,548	65,406	-	-	2,970	68,377	1,435,354	43,775	1,479,129
330	Monticello School District	254,732	3,158,668	1,250,307	72,554	4,736,261	154,978	-	-	1,336,568	1,491,545	3,401,012	(498,846)	2,902,166
331	Mammoth Spring School District	67,360	835,259	330,624	74,612	1,307,855	40,981	-	-	79,976	120,957	899,343	12,248	911,591

Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense	
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense			Proportionate Share of Contributions
333	Batesville School District	\$ 454,632	\$ 5,637,421	\$ 2,231,480	\$ 89,081	\$ 8,412,615	\$ 276,596	\$ -	\$ -	\$ 245,542	\$ 522,138	\$ 6,069,943	\$ 76,677	\$ 6,146,620
335	Hackett School District	105,318	1,305,935	516,933	369,792	2,297,978	64,075	-	-	768,583	832,658	1,406,131	201,650	1,607,781
336	Beebe Public School District	434,391	5,386,427	2,132,129	338,538	8,291,484	264,281	-	-	1,211,929	1,476,210	5,799,692	(123,115)	5,676,578
337	Bald Knob Public Schools	153,574	1,904,318	753,793	47,534	2,859,219	93,434	-	-	945,514	1,038,948	2,050,424	(245,714)	1,804,710
350	Fort Smith Public Schools	2,361,598	29,283,732	11,591,483	685,192	43,922,005	1,436,785	-	-	966,704	2,403,489	31,530,479	505,605	32,036,084
351	El Dorado Public Schools	552,282	6,848,278	2,710,778	704,547	10,815,885	336,006	-	-	793,065	1,129,071	7,373,701	32,230	7,405,930
360	Heber Springs School District	218,344	2,707,463	1,071,705	180,955	4,178,466	132,840	-	-	748,502	881,341	2,915,188	(94,982)	2,820,207
365	Barton-Lexa School District	106,787	1,324,156	524,145	15,988	1,971,076	64,969	-	-	321,290	386,259	1,425,749	(53,662)	1,372,087
375	Earle School District	82,660	1,024,981	405,722	110,653	1,624,017	50,290	-	-	843,939	894,229	1,103,621	(290,477)	813,144
376	West Memphis School District	734,244	9,104,595	3,603,904	169,013	13,611,756	446,710	-	-	2,055,100	2,501,811	9,803,131	(584,360)	9,218,771
384	Hamburg School District	239,975	2,975,679	1,177,874	-	4,393,528	146,000	-	-	745,215	891,215	3,203,984	(270,577)	2,933,407
385	Bentonville Public Schools	2,727,152	33,816,584	13,385,739	9,849,582	59,779,056	1,659,186	-	-	-	1,659,186	36,411,107	4,176,592	40,587,699
386	Paris School District	158,246	1,962,243	776,722	118,653	3,015,864	96,276	-	-	124,372	220,648	2,112,793	(15,454)	2,097,339
393	Corning School District	109,236	1,354,526	536,167	3,092	2,003,020	66,459	-	-	417,346	483,805	1,458,449	(138,670)	1,319,779
394	Jonesboro Public Schools	956,461	11,860,078	4,694,617	3,779,120	21,290,276	581,906	-	-	-	581,906	12,770,024	1,645,650	14,415,674
395	Sloan-Hendrix School District	89,505	1,109,863	439,321	157,796	1,796,486	54,455	-	-	115,292	169,747	1,195,016	6,315	1,201,331
396	Camden-Fairview School District	352,927	4,376,284	1,732,280	23,853	6,485,343	214,719	-	-	647,592	862,311	4,712,047	(123,991)	4,588,056
404	Lonoke School District	238,417	2,956,358	1,170,226	461,066	4,826,066	145,052	-	-	403,999	549,051	3,183,180	(19,136)	3,164,044
416	Crossett School District	215,946	2,677,718	1,059,931	31,235	3,984,830	131,380	-	-	451,277	582,658	2,883,162	(182,923)	2,700,239
434	Riverview School District	188,338	2,335,390	924,426	-	3,448,154	114,584	-	-	648,336	762,920	2,514,569	(288,370)	2,226,200
443	Searcy School District	541,666	6,716,638	2,658,671	193,908	10,110,882	329,547	-	-	360,548	690,095	7,231,961	63,306	7,295,267
451	Harrison School District	377,490	4,680,858	1,852,841	636,935	7,548,124	229,663	-	-	579,865	809,528	5,039,990	(80,267)	4,959,723
453	Harrisburg School District	187,990	2,331,065	922,714	43,642	3,485,410	114,372	-	-	581,703	696,075	2,509,912	(102,547)	2,407,365
458	Harmony Grove School District	133,774	1,658,788	656,604	6,941	2,456,106	81,387	-	-	192,231	273,618	1,786,056	(96,551)	1,689,505
463	Clarendon School District	84,019	1,041,834	412,393	48,271	1,586,517	51,117	-	-	355,927	407,044	1,121,767	(55,264)	1,066,503
471	Norfolk School District	62,670	777,103	307,603	-	1,147,376	38,128	-	-	303,177	341,305	836,725	(73,663)	763,062
479	Conway Public Schools	1,435,650	17,802,008	7,046,632	552,637	26,836,926	873,443	-	-	533,317	1,406,760	19,167,838	43,175	19,211,014
480	Charleston Public Schools	126,925	1,573,866	622,989	205,799	2,529,578	77,221	-	-	10,851	88,072	1,694,618	106,779	1,801,397
484	Harmony Grove School District	154,255	1,912,754	757,132	214,720	3,038,860	93,848	-	-	147,812	241,660	2,059,506	117,091	2,176,597
486	Palestine-Wheatley School District	87,297	1,082,484	428,483	92,992	1,691,257	53,111	-	-	104,831	157,942	1,165,536	53,006	1,218,542
493	Hazen School District	77,578	961,966	380,779	27,420	1,447,743	47,198	-	-	293,796	340,994	1,035,772	(129,698)	906,073
501	Maynard School District	67,274	834,197	330,203	109,361	1,341,036	40,929	-	-	16,968	57,897	898,199	(5,560)	892,639
502	West Side School District	87,591	1,086,122	429,923	497,977	2,101,613	53,290	-	-	11,786	65,076	1,169,453	186,162	1,355,615
503	Malvern School District	281,078	3,485,361	1,379,623	94,656	5,240,718	171,007	-	-	599,773	770,780	3,752,770	(100,383)	3,652,387
512	Glen Rose School District	133,988	1,661,450	657,658	207,646	2,660,741	81,518	-	-	32,128	113,646	1,788,922	16,028	1,804,950
513	Waldron Public Schools	218,885	2,714,164	1,074,357	46,322	4,053,728	133,168	-	-	535,694	668,863	2,922,404	(125,536)	2,796,867
515	Nashville School District	261,463	3,242,132	1,283,345	1,375,788	6,162,728	159,073	-	-	1,217,078	1,376,151	3,490,880	(95,586)	3,395,294
521	Hampton School District	90,657	1,124,142	444,973	181,847	1,841,619	55,155	-	-	34,289	89,444	1,210,390	15,601	1,225,991
530	Mountain View School District	251,643	3,120,359	1,235,143	404,857	5,012,001	153,098	-	-	22,220	175,318	3,359,763	76,493	3,436,256
531	Drew Central School District	145,239	1,800,955	712,878	298,905	2,957,977	88,363	-	-	21,317	109,680	1,939,130	170,663	2,109,793

Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

		Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense							
Employer ID	Employer	Differences Between Expected and Actual Experience		Net Difference Between Projected and Actual Earnings on Pension Plan Investments		Changes in Proportion and Differences Between Employer Contributions and Share of Contributions		Total Deferred Outflows of Resources		Differences Between Expected and Actual Experience		Net Difference Between Projected and Actual Earnings on Pension Plan Investments		Changes in Proportion and Differences Between Employer Contributions and Share of Contributions		Total Employer Pension Expense	
		Expected and Actual Experience	Actual Earnings on Pension Plan Investments	Changes of Assumptions	Contributions and Share of Contributions	Total Deferred Outflows of Resources	Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Contributions and Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Pension Expense	Proportionate Share of Contributions	Total Employer Pension Expense			
535	Mayflower School District	\$ 151,421	\$ 1,877,611	\$ 743,221	\$ 101,053	\$ 2,873,305	\$ 92,124	\$ -	\$ -	\$ 221,490	\$ 313,613	\$ 2,021,667	\$ (26,314)	\$ 1,995,353			
536	Southside Bee Branch School District	92,384	1,145,562	453,452	177,125	1,868,523	56,206	-	-	294,894	351,100	1,233,453	33,600	1,267,053			
538	Gentry Public Schools	215,524	2,672,486	1,057,859	102,289	4,048,158	131,124	-	-	137,445	268,569	2,877,528	(1,282)	2,876,246			
539	Fordyce Public Schools	106,098	1,315,609	520,762	221,780	2,164,249	64,549	-	-	623,788	688,337	1,416,547	(33,681)	1,382,866			
545	Newport Special School District	155,821	1,932,176	764,820	-	2,852,818	94,801	-	-	749,217	844,018	2,080,419	(402,073)	1,678,346			
547	Decatur Public Schools	85,265	1,057,278	418,506	133,778	1,694,826	51,875	-	-	206,816	258,691	1,138,396	24,168	1,162,563			
548	Scranton School District	55,753	691,340	273,656	21,303	1,042,052	33,920	-	-	99,240	133,160	744,382	(4,738)	739,644			
552	Cedarville Public School District	118,640	1,471,128	582,322	201,940	2,374,030	72,180	-	-	163,716	235,896	1,583,998	(2,647)	1,581,351			
555	Concord School District	80,753	1,001,338	396,363	94,077	1,572,530	49,130	-	-	68,549	117,678	1,078,164	17,856	1,096,020			
558	Pocahontas Public Schools	255,701	3,170,685	1,255,064	447,117	5,128,567	155,567	-	-	-	155,567	3,413,951	204,785	3,618,736			
560	Van Buren School District	810,491	10,050,057	3,978,150	255,929	15,094,626	493,099	-	-	519,842	1,012,941	10,821,131	(178,175)	10,642,956			
564	County Line Public Schools	63,725	790,191	312,784	125,659	1,292,359	38,770	-	-	89,525	128,295	850,817	15,809	866,626			
565	Salem School District	102,917	1,276,165	505,149	82,352	1,966,583	62,614	-	-	96,632	159,246	1,374,077	29,926	1,404,003			
566	Dierks Public Schools	77,985	967,016	382,777	61,190	1,488,969	47,446	-	-	117,358	164,804	1,041,209	29,321	1,070,529			
568	Stephens School Dist	-	-	-	-	-	-	-	-	-	-	-	(311,090)	(311,090)			
569	Pottsville School District	228,839	2,837,600	1,123,217	199,895	4,389,551	139,225	-	-	167,817	307,042	3,055,310	76,040	3,131,350			
571	Piggott School District	112,761	1,398,233	553,467	265,400	2,329,861	68,603	-	-	57,739	126,343	1,505,510	68,675	1,574,185			
583	Hector School District	78,072	968,088	383,202	55,693	1,485,054	47,499	-	-	62,297	109,795	1,042,363	(46,941)	995,422			
586	Blytheville Public Schools	301,665	3,740,638	1,480,670	35,002	5,557,976	183,532	-	-	2,432,602	2,616,133	4,027,633	(739,263)	3,288,369			
592	Bearden School District	76,095	943,577	373,500	291,746	1,684,918	46,296	-	-	116,669	162,965	1,015,972	36,325	1,052,297			
593	Pine Bluff School District	478,160	5,929,167	2,346,963	-	8,754,290	290,910	-	-	5,198,262	5,489,173	6,384,073	(2,087,272)	4,296,800			
597	Marmaduke School District	100,040	1,240,494	491,029	155,340	1,986,903	60,864	-	-	234,679	295,543	1,335,668	(5,774)	1,329,895			
601	Fouke School District	161,024	1,996,696	790,359	734,173	3,682,252	97,966	-	-	333,556	431,523	2,149,889	129,785	2,279,674			
602	Horatio School District	114,420	1,418,803	561,610	39,295	2,134,128	69,613	-	-	105,985	175,597	1,527,659	(7,207)	1,520,452			
606	England Public School District	104,105	1,290,901	510,982	180,056	2,086,044	63,337	-	-	81,221	144,558	1,389,943	3,148	1,393,090			
607	Jasper School District	147,903	1,833,993	725,956	40,363	2,748,215	89,984	-	-	90,076	180,060	1,974,704	(42,819)	1,931,885			
608	Trumann School District	181,521	2,250,852	890,963	266	3,323,602	110,436	-	-	807,244	917,681	2,423,545	(213,223)	2,210,322			
622	Carlisle School District	89,170	1,105,703	437,674	59,027	1,691,575	54,251	-	-	124,376	178,626	1,190,537	(19,866)	1,170,671			
623	Bradford School District	64,658	801,762	317,364	27,187	1,210,972	39,338	-	-	170,511	209,849	863,276	(36,579)	826,697			
625	Huntsville School District	338,691	4,199,750	1,662,402	375,729	6,576,573	206,058	-	-	112,223	318,281	4,521,970	64,894	4,586,863			
626	Yellville-Summit Public School	106,328	1,318,466	521,893	279,592	2,226,279	64,690	-	-	116,601	181,290	1,419,623	(85,480)	1,334,143			
629	Brookland Public Schools	319,159	3,957,555	1,566,533	1,286,896	7,130,143	194,175	-	-	-	194,175	4,261,193	510,614	4,771,807			
630	Brinkley Public Schools	70,793	877,832	347,475	134,968	1,431,069	43,070	-	-	605,433	648,503	945,182	(122,170)	823,012			
637	Bay School District	78,248	970,268	384,065	74,039	1,506,620	47,606	-	-	164,786	212,392	1,044,711	5,556	1,050,266			
645	Foreman Public Schools	62,646	776,811	307,488	11,376	1,158,321	38,114	-	-	161,707	199,821	836,411	(57,078)	779,333			
651	Quitman Public Schools	89,227	1,106,411	437,955	179,769	1,813,362	54,285	-	-	88,854	143,140	1,191,298	(2,078)	1,189,220			
656	Wynne Public Schools	376,107	4,663,712	1,846,054	-	6,885,873	228,822	-	-	518,399	747,221	5,021,528	(162,338)	4,859,191			
657	Dumas Public Schools	204,119	2,531,068	1,001,882	104,194	3,841,263	124,185	-	-	333,496	457,681	2,725,260	(109,097)	2,616,164			
658	Manila Public Schools	154,053	1,910,250	756,141	71,462	2,891,905	93,725	-	-	182,035	275,760	2,056,811	17,242	2,074,053			
662	Clinton Public Schools	192,928	2,392,297	946,951	80,075	3,612,251	117,376	-	-	800,995	918,371	2,575,842	(237,754)	2,338,088			

Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Inflows of Resources		
667	Greene County Tech School District	\$ 499,856	\$ 6,198,203	\$ 2,453,457	\$ 204,836	\$ 9,356,353	\$ 304,110	\$ -	\$ 603,485	\$ 907,595	\$ 6,673,750	\$ (7,398)	\$ 6,666,352
674	Augusta Public Schools	70,922	879,435	348,110	95,232	1,393,699	43,149	-	233,335	276,484	946,908	(182,127)	764,781
675	Green Forest Public Schools	196,114	2,431,811	962,592	512,713	4,103,231	119,315	-	4,826	124,141	2,618,388	175,920	2,794,307
676	East End School District	89,417	1,108,764	438,886	237,089	1,874,156	54,401	-	65,710	120,111	1,193,832	87,991	1,281,823
677	Dover School District	180,839	2,242,399	887,617	120,029	3,430,884	110,022	-	319,804	429,826	2,414,443	(59,048)	2,355,395
682	Mountain Home Public Schools	504,108	6,250,921	2,474,324	604,691	9,834,044	306,697	-	399,078	705,775	6,730,513	47,546	6,778,059
687	Star City School District	197,521	2,449,259	969,499	12,825	3,629,104	120,171	-	478,072	598,243	2,637,174	(211,911)	2,425,263
693	Atkins Public Schools	136,728	1,695,423	671,105	31,260	2,534,517	83,185	-	214,167	297,351	1,825,502	(52,429)	1,773,073
696	Des Arc School District	74,232	920,476	364,355	52,138	1,411,201	45,162	-	86,964	132,127	991,098	(20,348)	970,750
698	Vilonia School District	444,509	5,511,894	2,181,792	147,529	8,285,724	270,437	-	826,810	1,097,247	5,934,785	(32,518)	5,902,267
702	Nettleton Public Schools	540,115	6,697,405	2,651,058	1,612,612	11,501,189	328,603	-	300,455	629,059	7,211,252	313,157	7,524,409
704	Omaha School District	64,483	799,586	316,503	78,552	1,259,123	39,231	-	54,674	93,905	860,933	12,005	872,938
705	Cabot Public Schools	1,461,760	18,125,775	7,174,790	1,111,751	27,874,076	889,328	-	157,384	1,046,712	19,516,446	557,542	20,073,987
714	Marion School District	550,419	6,825,172	2,701,632	2,227,566	12,304,789	334,872	-	1,498,366	1,833,238	7,348,823	(4,503)	7,344,320
715	McGehee Public Schools	173,754	2,154,543	852,841	274,215	3,455,352	105,711	-	573,597	679,308	2,319,847	(35,430)	2,284,417
719	Cave City School District	162,408	2,013,848	797,148	103,913	3,077,316	98,808	-	242,508	341,316	2,168,357	(69,270)	2,099,087
724	Pangburn School District	111,322	1,380,385	546,403	19,577	2,057,685	67,728	-	299,058	366,785	1,486,292	(57,354)	1,428,939
727	Calico Rock School District	59,819	741,755	293,612	178,887	1,274,073	36,394	-	74,898	111,292	798,665	19,274	817,939
731	Dewitt School District	173,444	2,150,696	851,318	67,387	3,242,845	105,522	-	78,559	184,081	2,315,705	(21,935)	2,293,771
732	Hughes School District	-	-	-	-	-	-	-	298,985	298,985	-	(504,448)	(504,448)
735	Alpena School District	68,669	851,493	337,050	141,295	1,398,507	41,778	-	114,022	155,800	916,823	18,338	935,161
736	Magnet Cove School District	90,861	1,126,679	445,977	190,727	1,854,245	55,280	-	47,105	102,385	1,213,122	64,569	1,277,691
746	Stuttgart School District	218,402	2,708,178	1,071,988	26,407	4,024,975	132,875	-	485,047	617,922	2,915,959	(201,845)	2,714,114
747	Valley Springs Public Schools	114,373	1,418,227	561,382	48,579	2,142,562	69,584	-	150,502	220,086	1,527,038	(73,641)	1,453,398
750	Ouachita Public Schools	62,011	768,932	304,369	217,995	1,353,306	37,727	-	138,638	176,365	827,927	3,767	831,694
753	Gosnell Public Schools	170,596	2,115,390	837,342	76,256	3,199,585	103,790	-	224,212	328,002	2,277,689	(82,130)	2,195,559
756	Mulberry-Pleasant View Bi-County Public Schools	69,446	861,133	340,865	279,387	1,550,832	42,251	-	-	42,251	927,202	95,581	1,022,783
757	Poyen School District	72,123	894,326	354,004	36,068	1,356,522	43,879	-	61,446	105,325	962,942	15,380	978,322
765	Eureka Springs Public Schools	111,738	1,385,543	548,444	82,136	2,127,861	67,981	-	19,149	87,130	1,491,846	4,405	1,496,251
771	Southside School District	248,781	3,084,881	1,221,099	596,795	5,151,556	151,357	-	-	151,357	3,321,563	253,370	3,574,934
779	Melbourne Public School District	119,759	1,485,003	587,814	172,969	2,365,545	72,861	-	54,276	127,136	1,598,938	62,940	1,661,877
780	Wonderview School District	65,691	814,571	322,435	324,770	1,527,468	39,966	-	404,863	444,829	877,068	51,004	928,072
794	Viola School District	62,768	778,326	308,087	52,254	1,201,435	38,188	-	58,029	96,217	838,042	8,615	846,657
795	Nemo Vista School District	76,875	953,246	377,327	56,867	1,464,315	46,770	-	171,799	218,569	1,026,383	3,635	1,030,017
813	Blevins School District	69,137	857,291	339,345	20,046	1,285,819	42,062	-	208,869	250,931	923,066	(63,151)	859,915
820	Parkers Chapel School District	102,895	1,275,899	505,044	211,574	2,095,413	62,601	-	42,707	105,308	1,373,791	116,466	1,490,257
847	Rose Bud School District	125,185	1,552,296	614,451	571,053	2,862,985	76,162	-	143,535	219,698	1,671,393	108,619	1,780,012
863	Valley View Public Schools	358,434	4,444,569	1,759,310	383,286	6,945,599	218,070	-	457,965	676,035	4,785,572	57,346	4,842,918
872	Smackover-Norphlet School District	160,202	1,986,501	786,324	105,721	3,038,747	97,466	-	463,363	560,829	2,138,912	267,546	2,406,458
873	Genoa Central School District	150,087	1,861,072	736,675	317,615	3,065,449	91,312	-	65,627	156,939	2,003,860	146,928	2,150,788

Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Plan	Total Employer Pension Expense
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Contributions and Share of Contributions	Total Deferred Inflows of Resources		
876	Norphlet School Dist	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (365,213)	\$ (365,213)
956	Bergman Public Schools	143,776	1,782,823	705,701	243,817	2,876,117	87,473	-	27,746	115,219	1,919,607	98,904	2,018,511
957	Lead Hill School District	45,857	568,630	225,083	435	840,006	27,899	-	153,712	181,612	612,257	(42,458)	569,799
958	Dermott School District	61,208	758,978	300,429	26,321	1,146,936	37,239	-	388,741	425,980	817,209	(145,222)	671,986
963	Guy-Perkins School District	50,153	621,901	246,169	-	918,224	30,513	-	313,771	344,284	669,616	(129,028)	540,588
964	Mt. Vernon-Enola School Distri	69,434	860,980	340,805	65,420	1,336,639	42,243	-	111,479	153,722	927,037	11,102	938,139
965	Mountain Pine School District	90,791	1,125,807	445,632	571,585	2,233,816	55,237	-	-	55,237	1,212,183	194,140	1,406,323
973	Armored School District	75,343	934,254	369,809	224,839	1,604,245	45,838	-	26,644	72,482	1,005,933	89,906	1,095,839
987	White County Central Schools	101,993	1,264,711	500,615	235,550	2,102,868	62,052	-	129,678	191,730	1,361,744	44,469	1,406,213
990	Craighead County Sd Executive	-	-	-	-	-	-	-	5,927	5,927	-	(8,986)	(8,986)
1000	Lafayette County School District	98,641	1,223,143	484,161	49,903	1,855,847	60,013	-	110,114	170,127	1,316,986	(58,125)	1,258,862
1001	Cedar Ridge School District	122,040	1,513,289	599,011	-	2,234,339	74,248	-	480,089	554,337	1,629,394	(167,646)	1,461,748
1002	Cleveland County School District	132,913	1,648,122	652,382	418,330	2,851,747	80,864	-	468,772	549,636	1,774,571	48,054	1,822,625
1003	Deer/ Mt. Judea School District	58,916	730,558	289,179	222,910	1,301,562	35,844	-	416,888	452,732	786,608	(119,233)	667,376
1004	Emerson-Taylor-Bradley School	159,175	1,973,766	781,283	148,962	3,063,185	96,841	-	212,605	309,446	2,125,200	62,267	2,187,467
1005	Hillcrest School District	67,205	833,343	329,865	215,157	1,445,570	40,887	-	46,439	87,327	897,280	82,478	979,758
1006	Ouachita River School District	101,987	1,264,638	500,586	187,203	2,054,414	62,049	-	62,049	62,049	1,361,665	52,491	1,414,157
1008	Ozark Mountain School District	96,417	1,195,572	473,248	113,768	1,879,006	58,660	-	712,497	771,157	1,287,301	(151,483)	1,135,818
1009	Two Rivers School District	118,317	1,467,122	580,736	150,816	2,316,991	71,983	-	215,444	287,427	1,579,685	(3,557)	1,576,128
1010	Searcy County School District	130,379	1,616,691	639,941	95,132	2,482,143	79,322	-	170,958	250,280	1,740,729	(47,619)	1,693,111
1011	Lawrence County School District	121,392	1,505,260	595,832	31,297	2,253,782	73,854	-	21,544	95,398	1,620,748	(162,614)	1,458,134
1045	Highland Public School District	220,361	2,732,469	1,081,603	405,951	4,440,385	134,067	-	8,771	142,837	2,942,114	186,287	3,128,400
1074	Cross County School District	87,580	1,085,986	429,870	98,128	1,701,564	53,283	-	314,460	367,743	1,169,307	(68,953)	1,100,353
1091	Westside Consolidated School District	229,453	2,845,213	1,126,231	177,898	4,378,795	139,598	-	118,438	258,036	3,063,507	14,586	3,078,093
1092	Pea Ridge School District	296,181	3,672,629	1,453,750	850,482	6,273,041	180,195	-	-	180,195	3,954,406	583,120	4,537,526
1093	Jacksonville North Pulaski School District	567,550	7,037,595	2,785,716	8,137,887	18,528,748	345,295	-	-	345,295	7,577,544	5,123,723	12,701,267
1114	Rivercrest School District	164,242	2,036,599	806,154	133,715	3,140,710	99,924	-	74,055	173,979	2,192,853	(4,630)	2,188,223
1165	Caddo Hills School District	78,870	977,986	387,120	210,629	1,654,605	47,984	-	218,131	266,115	1,053,020	(42,630)	1,010,390
1293	South Conway County School District	307,341	3,811,020	1,508,530	540,102	6,166,993	186,985	-	129,539	316,524	4,103,415	155,578	4,258,993
1307	Southwest Arkansas Education Co-Op	65,743	815,206	322,686	388,585	1,592,220	39,997	-	-	39,997	877,752	137,207	1,014,958
1308	Southeast Arkansas Education Service Co-Op	195,253	2,421,135	958,366	1,114,169	4,688,924	118,791	-	210,742	329,533	2,606,893	246,942	2,853,835
1321	Westside School District	87,394	1,083,686	428,959	-	1,600,039	53,170	-	112,127	165,297	1,166,830	(69,356)	1,097,474
1330	Guy Fenter Education Service Co-Op	79,226	982,398	388,866	728,807	2,179,297	48,201	-	31,901	80,102	1,057,770	161,715	1,219,486
1332	Northcentral Arkansas Education Service Co-Op	74,298	921,289	364,677	419,035	1,779,299	45,202	-	148,768	193,970	991,973	51,330	1,043,304
1333	Buffalo Island Central School District	102,308	1,268,613	502,159	58,940	1,932,020	62,244	-	180,191	242,435	1,365,945	(87,654)	1,278,291
1335	Rector School District	81,547	1,011,179	400,259	68,401	1,561,385	49,613	-	57,364	106,977	1,088,760	17,046	1,105,807
1336	Ozarks Unlimited Resource Educational Service Co-Op	96,986	1,202,626	476,040	230,409	2,006,062	59,006	-	56,739	115,745	1,294,896	18,856	1,313,752
1337	Northeast Arkansas Education Co-Op	77,726	963,795	381,502	173,206	1,596,229	47,288	-	115,835	163,123	1,037,740	(4,032)	1,033,708
1338	Dawson Education Service Co-Op	217,571	2,697,872	1,067,908	1,177,591	5,160,942	132,369	-	10,074	142,443	2,904,862	389,956	3,294,818
1339	Arch Ford Education Service Co-Op	423,560	5,252,124	2,078,967	5,042,162	12,796,813	257,692	-	-	257,692	5,655,085	1,918,858	7,573,943



Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Plan Contributions	Total Employer Pension Expense
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense		
1342	Western Yell County School District	\$ 56,045	\$ 694,957	\$ 275,087	\$ 38,436	\$ 1,064,526	\$ 34,098	\$ -	\$ 279,227	\$ 313,325	\$ 748,277	\$ (57,267)	\$ 691,010
1343	Nevada School District	65,252	809,124	320,279	69,851	1,264,506	39,699	-	26,739	66,438	871,203	40,761	911,964
1344	Paragould School District	431,755	5,353,743	2,119,191	289,156	8,193,845	262,678	-	63,122	325,800	5,764,501	272,321	6,036,822
1345	Wilbur D Mills Education Service Co-Op	84,054	1,042,272	412,566	368,568	1,907,460	51,138	-	13,231	64,369	1,122,238	120,125	1,242,363
1346	Izard County Consolidated School District	73,184	907,474	359,209	103,737	1,443,604	44,525	-	210,383	254,908	977,099	(39,574)	937,525
1347	Midland School District	80,423	997,240	394,741	100,761	1,573,165	48,929	-	31,413	80,342	1,073,752	26,082	1,099,834
1348	Riverside School District	106,539	1,321,074	522,925	27,610	1,978,148	64,818	-	173,623	238,441	1,422,431	(74,852)	1,347,579
1349	Arkansas River Education Service Co-Op	126,479	1,568,339	620,801	1,255,160	3,570,779	76,949	-	5,105	82,054	1,688,667	371,250	2,059,917
1350	Great Rivers Education Service Co-Op	74,058	918,312	363,499	326,121	1,681,990	45,056	-	5,039	50,095	988,768	39,299	1,028,067
1351	Northwest Arkansas Education Service Co-Op	106,243	1,317,408	521,474	1,006,477	2,951,602	64,638	-	-	64,638	1,418,484	352,312	1,770,796
1353	Dequeen-Mena Education Service	131,236	1,627,324	644,149	427,604	2,830,313	79,843	-	367,441	447,284	1,752,178	39,460	1,791,638
1354	Crowley'S Ridge Educational Service Co-Op	127,480	1,580,751	625,714	1,382,948	3,716,895	77,558	-	-	77,558	1,702,032	483,724	2,185,756
1355	South Central Service Co-Op	59,553	738,456	292,305	184,586	1,274,900	36,232	-	167,838	204,070	795,112	29,242	824,359
1359	Conway Vocational Center	36,123	447,927	177,304	9,477	670,831	21,977	-	215,806	237,783	482,293	(45,913)	436,380
1362	Jonesboro Vocational Center	27,018	335,019	132,612	77,187	571,835	16,437	-	-	16,437	360,722	30,327	391,049
1363	Monticello Vocational Center	12,425	154,066	60,984	6,600	234,075	7,559	-	32,137	39,696	165,886	(746)	165,141
1364	East Poinsett County School District	94,603	1,173,076	464,343	29,407	1,761,428	57,556	-	136,821	194,377	1,263,078	(73,784)	1,189,294
1365	North Central Career Center	3,704	45,923	18,178	29,651	97,455	2,253	-	65,259	67,513	49,447	(33,066)	16,381
1366	River Valley Career Academy	7,299	90,502	35,824	10,272	143,896	4,440	-	39,874	44,314	97,445	(4,449)	92,996
1371	Metropolitan Vocational Center	37,277	462,238	182,969	386,227	1,068,712	22,679	-	400,513	423,193	497,703	47,536	545,238
1372	Texarkana Career And Technological Center	-	-	-	-	-	-	-	461,926	461,926	-	(121,553)	(121,553)
1373	Warren Vocational Center	13,230	164,057	64,939	-	242,227	8,049	-	133,714	141,764	176,644	(66,024)	110,620
1991	Centerpoint School District	140,507	1,742,285	689,655	371,584	2,944,030	85,484	-	-	85,484	1,875,959	126,594	2,002,553
2000	Arkansas Arts Academy Charter	120,866	1,498,737	593,250	1,203,814	3,416,668	73,534	-	-	73,534	1,613,725	384,179	1,997,904
2001	Academics Plus Charter School	150,880	1,870,908	740,568	1,713,103	4,475,459	91,795	-	-	91,795	2,014,450	734,617	2,749,067
2002	Kipp Delta College Preparatory Charter	217,529	2,697,349	1,067,701	236,141	4,218,720	132,343	-	528,269	660,612	2,904,298	250,049	3,154,348
2003	Imboden Area Charter School	7,950	98,582	39,022	12,035	157,588	4,837	-	8,520	13,357	106,145	1,559	107,705
2006	Haas Hall Academy Charter - Fayetteville	97,727	1,211,813	479,676	1,589,856	3,379,073	59,457	-	992	60,449	1,304,788	607,734	1,912,522
2007	Lisa Academy Charter	319,706	3,964,338	1,569,218	5,074,287	10,927,548	194,507	-	-	194,507	4,268,495	2,057,640	6,326,135
2008	Arkansas Virtual Academy Charter	130,257	1,615,180	639,342	2,037,652	4,422,431	79,248	-	79,248	1,739,102	867,964	1,803,766	2,607,066
2012	Covenant Keepers Charter School	-	-	6,337	-	6,337	-	-	583,779	583,779	-	(180,376)	(180,376)
2016	E-Stem Public Charter School	338,194	4,193,599	1,659,967	5,368,743	11,560,503	205,756	-	-	205,756	4,515,346	1,665,932	6,181,278
2017	Lisa Academy-North Little Rock	-	-	-	-	-	-	-	-	-	-	(352,094)	(352,094)
2019	Little Rock Preparatory Academy	30,618	379,664	150,284	175,993	736,559	18,628	-	392,716	411,344	408,793	(56,374)	352,420
2020	Jacksonville Lighthouse Charter School	89,896	1,114,702	441,237	193,473	1,839,308	54,692	-	516,397	571,089	1,200,226	18,546	1,218,772
2022	Pine Bluff Lighthouse Charter School	31,791	394,207	156,040	245,864	827,902	19,341	-	378,128	397,469	424,452	43,462	467,914
2023	Sia Tech Little Rock Charter	11,118	137,865	54,572	39,249	242,804	6,764	-	89,295	96,059	148,443	(2,802)	145,641
2024	Northwest Arkansas Classical Academy Charter	95,156	1,179,930	467,056	1,543,284	3,285,426	57,892	-	20,424	78,316	1,270,458	498,551	1,769,009
2025	Premier High School Of Little Rock Charter	11,378	141,090	55,848	106,476	314,792	6,922	-	124,971	131,893	151,915	6,510	158,425
2026	Quest Middle Charter School - Pine Bluff	-	-	-	42,055	42,055	-	-	405,352	405,352	-	(77,195)	(77,195)

Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense		Net Amortization of Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense	
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Inflows of Resources			Proportionate Share of Pension Expense
2027	Exalt Academy Charter School	\$ 44,108	\$ 546,934	\$ 216,495	\$ 825,249	\$ 1,632,786	\$ 26,835	\$ -	\$ -	\$ -	\$ 26,835	\$ 588,897	\$ 363,016	\$ 951,913
2028	Quest Middle Charter School - West Little Rock	-	-	-	30,360	30,360	-	-	758,009	758,009	-	-	(50,050)	(50,050)
2029	Capital City Lighthouse Charter School	24,430	302,935	119,912	249,910	697,187	14,863	-	177,508	192,372	-	326,177	213,938	540,115
2030	Ozark Montessori Academy Charter - Springdale	-	-	-	287,868	287,868	-	-	1,011,550	1,011,550	-	-	(14,983)	(14,983)
2031	Rockbridge Montessori Charter School	-	-	-	123,630	123,630	-	-	448,576	448,576	-	-	5,304	5,304
2032	Haas Hall Academy - Bentonville Charter	32,525	403,307	159,643	331,071	926,546	19,788	-	15,855	35,643	-	434,250	285,563	719,814
2033	Future School Of Ft. Smith Charter	26,912	333,709	132,093	573,640	1,066,354	16,373	-	-	16,373	-	359,312	237,332	596,644
2034	Arkansas Connections Academy Charter	71,707	889,169	351,963	1,958,687	3,271,526	43,626	-	-	43,626	-	957,389	636,880	1,594,269
2035	The Excel Center Charter At Goodwill	14,999	185,992	73,622	344,331	618,945	9,126	-	20,232	29,358	-	200,262	125,608	325,871
2036	Friendship Aspire Academy - Pine Bluff	28,483	353,187	139,803	948,842	1,470,316	17,329	-	-	17,329	-	380,285	252,835	633,120
2037	Southeast Arkansas Preparatory High School	9,738	120,745	47,795	368,795	547,072	5,924	-	127,002	132,926	-	130,009	79,466	209,475
2038	Scholarmade Achievement Place	39,847	494,103	195,583	1,220,257	1,949,790	24,243	-	-	24,243	-	532,013	344,667	876,680
2039	Friendship Aspire Academy - Little Rock	29,909	370,871	146,803	1,154,318	1,701,901	18,197	-	-	18,197	-	399,325	278,829	678,155
2040	Premier High School Of North Little Rock Charter	4,611	57,179	22,633	188,223	272,647	2,805	-	-	2,805	-	61,566	43,854	105,421
4857	Arkansas Activities Association	26,184	324,686	128,522	58,187	537,580	15,931	-	40,221	56,152	-	349,598	24,607	374,204
6864	Arkansas Easter Seals	355	4,400	1,742	-	6,497	216	-	153,855	154,070	-	4,738	(70,402)	(65,664)
6870	Arkansas School Boards Association	1,236	15,328	6,067	1,605	24,236	752	-	1,671	2,423	-	16,504	711	17,215
6873	First Student	1,415	17,551	6,947	11,768	37,682	861	-	13,366	14,227	-	18,898	8,850	27,748
6875	Arkansas Association Educational Administrators	8,626	106,959	42,338	4,359	162,281	5,248	-	10,454	15,702	-	115,165	14,485	129,649
9492	Boston Mountain Educational Co-Op	14,879	184,499	73,031	90,695	363,104	9,052	-	1,207,393	1,216,445	-	198,654	(281,519)	(82,864)
1-005	University Of Arkansas - Monticello	15,184	188,280	74,527	-	277,991	9,238	-	404,087	413,325	-	202,725	(191,817)	10,908
1-006	University Of Arkansas - Pine Bluff	1,985	24,613	9,743	2,017	38,359	1,208	-	26,255	27,462	-	26,502	(31,379)	(4,877)
1-008	Arkansas School For The Blind	96,471	1,196,240	473,512	177,348	1,943,572	58,693	-	118,644	177,337	-	1,288,020	67,826	1,355,846
1-016	Arkansas School For The Deaf	151,234	1,875,301	742,307	516,023	3,284,866	92,010	-	544,315	636,325	-	2,019,180	(62,126)	1,957,054
1-017	Arkansas Department Of Education	502,911	6,236,082	2,468,450	23,709	9,231,152	305,969	-	1,265,949	1,571,918	-	6,714,535	(490,811)	6,223,724
1-025	Henderson State University	15,034	186,427	73,794	-	275,256	9,147	-	468,647	477,794	-	200,730	(323,409)	(122,679)
1-028	Arkansas State University- Beebe	28,971	359,238	142,199	-	530,408	17,626	-	541,096	558,722	-	386,800	(273,526)	113,274
1-029	Arkansas State University- Newport	16,590	205,721	81,431	22,049	325,791	10,094	-	401,031	411,124	-	221,504	(113,562)	107,942
1-045	Arkansas Tech University	82,691	1,025,369	405,876	65,825	1,579,761	50,309	-	587,663	637,972	-	1,104,039	(195,308)	908,731
1-051	Southern Arkansas University	57,742	715,995	283,415	68,404	1,125,555	35,130	-	581,681	616,811	-	770,928	(138,402)	632,526
1-052	Arkansas State University- Mt. Home	1,377	17,075	6,759	1,815	27,026	838	-	96,429	97,267	-	18,386	(67,810)	(49,424)
1-053	Arkansas State University	90,971	1,128,036	446,515	-	1,665,522	55,346	-	1,316,838	1,372,185	-	1,214,583	(611,239)	603,344
1-054	University Of Central Arkansas	195,544	2,424,733	959,791	-	3,580,067	118,968	-	1,191,672	1,310,640	-	2,610,766	(645,802)	1,964,965
1-115	Arkansas Department Of Career Education (Rehab)	209,226	2,594,392	1,026,947	225,443	4,056,008	127,292	-	1,475,309	1,602,601	-	2,793,442	(38,063)	2,755,380
1-197	Southeast Arkansas College	46,241	573,388	226,966	5,791	852,386	28,133	-	360,252	388,385	-	617,380	(72,611)	544,769
1-202	Arkansas Teacher Retirement System	107,229	1,329,642	526,317	68,702	2,031,890	65,238	-	67,296	132,533	-	1,431,656	70,601	1,502,258
1-220	U Of A Community College - Morrilton	26,691	330,970	131,009	-	488,670	16,239	-	593,629	609,868	-	356,363	(191,038)	165,325
1-224	Arkansas Educational Tv Network	105,417	1,307,166	517,420	326,677	2,256,680	64,135	-	213,016	277,151	-	1,407,457	16,207	1,423,663
1-249	U Of A Community College - Hope	13,280	164,668	65,181	-	243,129	8,079	-	220,627	228,707	-	177,302	(123,016)	54,286
1-254	Phillips Community College -U Of A	1,837	22,780	9,017	-	33,634	1,118	-	148,993	150,110	-	24,528	(110,612)	(86,085)



Schedule of Pension Amounts by Employer as of and for the Year Ended June 30, 2020

Employer ID	Employer	Deferred Outflows of Resources				Deferred Inflows of Resources				Pension Expense				
		Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Proportionate Share of Contributions	Total Employer Pension Expense
1-256	University Of Arkansas - Fort Smith	\$ 8,607	\$ 106,726	\$ 42,246	\$ -	\$ 157,578	\$ 5,236	\$ -	\$ -	\$ 253,537	\$ 258,774	\$ 114,914	\$ (146,397)	\$ (31,483)
1-268	Southern Arkansas University Tech	29,356	364,014	144,089	-	537,459	17,860	-	-	505,259	523,119	391,943	(260,739)	131,204
1-274	Crowleys Ridge Technical Institute	-	-	-	-	-	-	-	-	277,525	277,525	-	(133,355)	(133,355)
1-290	Pulaski Technical College	78,633	975,051	385,958	-	1,439,643	47,840	-	-	1,954,184	2,002,024	1,049,861	(696,792)	353,068
1-291	College Of The Ouachitas	32,297	400,477	158,522	89,304	680,600	19,649	-	-	385,126	404,775	431,203	(125,895)	305,308
1-294	Arkansas Department Of Career Education (Workforce)	40,350	500,337	198,050	292,100	1,030,837	24,549	-	-	2,001,353	2,025,901	538,725	(481,457)	57,268
1-295	Black River Technical College	31,784	394,117	156,005	72,973	654,879	19,337	-	-	51,527	70,864	424,355	(11,698)	412,657
1-314	Ozarka College	12,910	160,080	63,365	71,791	308,146	7,854	-	-	176,557	184,411	172,362	(95,183)	77,180
1-315	Rich Mountain Community College	15,564	192,987	76,391	-	284,941	9,469	-	-	320,393	329,862	207,793	(154,367)	53,427
1-318	U Of A Community College - Batesville	19,464	241,349	95,534	-	356,347	11,842	-	-	287,720	299,561	259,866	(132,384)	127,483
1-320	Phillips Community College - Dewitt	1,808	22,414	8,872	16,275	49,369	1,100	-	-	45,626	46,725	24,134	(8,115)	16,019
1-321	Northwest Technical Institute	43,301	536,933	212,536	471,093	1,263,863	26,344	-	-	2,133	28,477	578,128	160,540	738,668
1-327	Cossatot Community College - U Of A	18,093	224,351	88,806	-	331,250	11,008	-	-	295,716	306,723	241,564	(146,303)	95,261
1-328	Arkansas Correctional School	121,301	1,504,131	595,386	83,927	2,304,745	73,799	-	-	522,950	596,749	1,619,533	(42,655)	1,576,878
1-329	North Arkansas College	78,947	978,940	387,497	-	1,445,384	48,031	-	-	380,851	428,882	1,054,048	(229,617)	824,431
1-330	National Park Community College	40,198	498,452	197,304	61,871	797,824	24,456	-	-	346,490	370,946	536,695	(178,258)	358,437
1-331	East Arkansas Community College	26,836	332,768	131,721	117,509	608,834	16,327	-	-	319,599	335,926	358,299	(41,287)	317,011
1-335	Arkansas Northeastern College	58,921	730,621	289,204	260,204	1,338,951	35,847	-	-	154,444	190,291	786,677	41,896	828,573
1-344	South Arkansas Community College	38,219	473,914	187,591	22,493	722,217	23,252	-	-	164,048	187,300	510,275	(161,451)	348,824
1-364	Arkansas State University- Mid South Cc	6,442	79,879	31,619	-	117,940	3,919	-	-	245,391	249,310	86,008	(133,780)	(47,772)
1-386	Riverside Vocational Technical School	17,778	220,443	87,259	147,749	473,229	10,816	-	-	40,943	51,759	237,357	42,062	279,418
1-388	Northwest Arkansas Community College	67,873	841,621	333,142	-	1,242,635	41,294	-	-	341,891	383,185	906,193	(179,385)	726,808
1-389	University Of Arkansas - Fayetteville	14,730	182,653	72,300	-	269,683	8,962	-	-	268,453	277,414	196,667	(173,234)	23,433
1-390	University Of Arkansas - Little Rock	2,372	29,414	11,643	-	43,429	1,443	-	-	238,863	240,307	31,671	(79,269)	(47,598)
1-391	Arkansas Department Of Higher Education	17,150	212,665	84,180	260,653	574,648	10,434	-	-	19,789	30,224	228,981	85,080	314,061
1-392	South Arkansas Developmental Center	59,860	742,265	293,813	22,390	1,118,329	36,419	-	-	908,501	944,919	799,214	(194,886)	604,329
1-399	Arkansas School For Math, Sciences & Arts	13,119	162,669	64,390	11,154	251,331	7,981	-	-	199,278	207,259	175,149	(117,180)	57,969
1-400	University Of Arkansas For Medical Sciences	2,513	31,156	12,333	1,406	47,407	1,529	-	-	111,329	112,858	33,547	(41,068)	(7,521)
1-401	Arkansas Economic Development Commission	312	3,874	1,533	1,156	6,876	190	-	-	60,453	60,643	4,171	(25,899)	(21,728)
1-402	University Of Arkansas Cooperative Extension	5,800	71,924	28,470	-	106,194	3,529	-	-	12,679	16,207	77,442	(22,584)	54,857
1-403	Dhs -Division Of Youth Services	681	8,442	3,342	-	12,464	414	-	-	166,864	167,278	9,089	(67,745)	(58,656)
1-404	Apartment Department Of Workforce Services	20,880	258,913	102,486	852,289	1,234,568	12,703	-	-	-	12,703	278,777	198,576	477,353
1-405	Arkansas Department Of Commerce	13,473	167,060	66,128	549,928	796,589	8,197	-	-	-	8,197	179,877	128,129	308,006
1-406	Arkansas Department Of Education	11,680	144,834	57,330	476,766	690,611	7,106	-	-	-	7,106	155,947	111,082	267,029
1-407	Arkansas Department Of Public Safety	1,338	16,586	6,565	54,598	79,087	814	-	-	-	814	17,859	12,721	30,579
1-409	Arkansas Department Of Health	1,729	21,441	8,487	70,581	102,239	1,052	-	-	-	1,052	23,086	16,445	39,531
	TOTAL	\$ 75,044,585	\$930,550,214	\$368,342,995	\$140,875,430	\$ 1,514,813,224	\$ 45,656,773	\$ -	\$ -	\$140,875,430	\$ 186,532,203	\$ 1,001,945,189	\$ (0)	\$ 1,001,945,189

Note: Total may not add to ATRS collective amounts due to rounding.

SECTION D

SCHEDULE OF DEFERRED RESOURCES BY EMPLOYER BY YEAR

Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows						
			2021	2022	2023	2024	2025	Thereafter	Total
106	Cotter Public Schools	0.124063%	\$ 352,047	\$ 477,777	\$ 507,841	\$ 396,380	\$ 5,432	\$ -	\$ 1,739,477
108	Rogers Public Schools	3.080667%	8,970,046	12,262,118	12,571,435	9,741,034	149,334	-	43,693,968
109	Gravette School District	0.366218%	1,115,661	1,453,221	1,488,493	1,146,647	11,381	-	5,215,403
110	Siloam Springs School District	0.815970%	2,494,910	3,268,886	3,301,189	2,379,260	(45,800)	-	11,398,444
111	Hermitage Public School District	0.089460%	237,661	330,723	327,083	236,131	(11,127)	-	1,120,472
113	Warren School District	0.268361%	598,735	878,307	918,635	716,592	(25,409)	-	3,086,861
115	Berryville Public Schools	0.347472%	907,329	1,237,533	1,314,189	1,051,915	6,285	-	4,517,252
116	Lakeside School District	0.210603%	371,222	707,902	790,879	596,556	(13,672)	-	2,452,888
117	Gurdon Public Schools	0.144915%	285,043	459,266	551,232	450,470	3,471	-	1,749,482
119	Arkadelphia Public Schools	0.339975%	625,742	920,546	935,015	701,549	(86,351)	-	3,096,501
121	Woodlawn School District	0.092523%	264,801	349,006	348,942	267,323	(2,368)	-	1,227,704
123	Magnolia School District	0.539961%	1,422,582	1,938,691	2,005,546	1,498,314	(41,562)	-	6,823,571
125	Alma School District	0.607584%	1,841,953	2,462,141	2,531,602	1,921,946	14,383	-	8,772,024
126	Mountainburg Public Schools	0.125131%	301,013	415,229	437,731	353,184	(3,589)	-	1,503,568
129	Greenbrier Public Schools	0.637361%	1,929,146	2,498,796	2,499,068	1,907,785	(4,826)	-	8,829,969
130	Ozark Public Schools	0.325250%	802,075	1,143,840	1,208,341	931,497	(13,386)	-	4,072,367
131	Cutter Morning Star Public Schools	0.090935%	227,781	328,058	349,972	254,578	(9,467)	-	1,150,922
132	Lakeside School District	0.617551%	2,090,553	2,561,583	2,529,363	1,917,172	11,401	-	9,110,073
133	Fountain Lake School District	0.255191%	565,569	843,800	882,684	697,458	(12,329)	-	2,977,182
134	Hot Springs School District	0.702970%	1,081,908	2,263,692	2,554,685	2,156,599	58,770	-	8,115,653
135	Jessieville Public School District	0.150401%	318,535	440,240	482,695	362,160	(26,692)	-	1,576,938
136	Lake Hamilton School District	0.788470%	2,254,151	3,082,943	3,219,102	2,436,556	12,927	-	11,005,679
139	Sheridan School District	0.707648%	2,027,395	2,775,352	2,876,898	2,254,498	38,449	-	9,972,592
141	Hope Public Schools	0.411583%	726,267	1,139,492	1,252,261	961,344	(77,128)	-	4,002,235
143	Spring Hill School District	0.099426%	316,481	459,089	436,394	328,736	7,002	-	1,547,701
144	Bismarck School District	0.172256%	451,257	630,028	661,209	505,338	(4,062)	-	2,243,770
145	Mineral Springs School District	0.129897%	428,762	491,795	477,642	378,528	(189)	-	1,776,538
150	Jackson County School District	0.157438%	447,440	574,197	598,157	456,564	(4,466)	-	2,071,892
153	White Hall School District	0.480236%	954,539	1,487,652	1,636,134	1,303,602	(28,729)	-	5,353,198
154	Watson Chapel School District	0.418425%	745,278	1,085,030	1,074,057	838,095	(97,632)	-	3,644,828
159	Dollarway School District	0.243278%	311,313	806,638	979,761	736,421	(5,551)	-	2,828,583
161	Clarksville School District	0.496519%	1,326,272	1,822,380	1,948,242	1,536,395	8,776	-	6,642,066
163	Lamar School District	0.221990%	692,663	909,859	922,339	682,588	(1,171)	-	3,206,278
165	Hoxie Public Schools	0.145877%	255,585	400,699	418,736	305,857	(35,874)	-	1,345,004
172	Lee County School District	0.143450%	86,067	315,549	348,228	248,192	(50,611)	-	947,426
178	Ashdown School District	0.257158%	620,837	932,739	979,210	765,681	(908)	-	3,297,559
180	Booneville School District	0.222943%	504,544	778,296	817,112	608,638	(20,412)	-	2,688,179
181	Magazine School District	0.102148%	255,086	334,397	335,404	267,783	(7,154)	-	1,185,517
182	Flippin School District	0.156982%	379,719	543,096	593,724	453,822	(7,787)	-	1,962,574
184	Texarkana School District	0.808609%	1,684,256	2,662,354	2,808,737	2,116,942	(87,305)	-	9,184,984
185	Osceola School District	0.229668%	471,420	674,644	746,746	594,384	(23,355)	-	2,463,839
186	Mount Ida Public Schools	0.093337%	281,621	371,970	382,411	283,210	(2,456)	-	1,316,756
188	Prescott Public Schools	0.167160%	411,828	594,741	605,813	438,238	(19,134)	-	2,031,487
192	Perryville School District	0.159684%	345,302	536,520	582,047	444,256	(9,207)	-	1,898,918
195	Marvell - Elaine School District	0.086371%	1,016	146,956	158,192	155,807	(18,779)	-	443,192
196	Helena-West Helena Schools	0.261815%	103,318	593,193	724,055	534,274	(74,970)	-	1,879,870
197	Kirby School District	0.066383%	176,058	265,307	276,501	206,949	1,087	-	925,903
203	Marked Tree School District	0.085071%	112,320	195,264	222,656	179,235	(22,736)	-	686,738
208	Mena Public Schools	0.282243%	536,401	880,896	1,015,433	773,722	(24,921)	-	3,181,532
209	Russellville School District	1.105767%	3,158,658	4,390,518	4,584,428	3,511,210	35,222	-	15,680,037



Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows						
			2021	2022	2023	2024	2025	Thereafter	Total
210	Little Rock School District	5.444530%	\$ 8,615,881	\$ 16,281,708	\$ 18,735,820	\$ 15,063,850	\$ (282,577)	\$ -	\$ 58,414,682
211	Pulaski County Special School District	2.875894%	1,963,515	7,617,940	10,588,456	8,531,303	17,348	-	28,718,562
212	North Little Rock School District	1.865679%	5,488,836	7,429,260	7,461,319	5,764,300	48,068	-	26,191,783
213	Forrest City School District	0.443479%	114,382	879,045	1,045,488	736,704	(163,482)	-	2,612,137
214	Bauxite School District	0.262132%	768,415	1,016,491	1,101,350	849,643	9,316	-	3,745,215
215	Benton School District	0.856599%	2,396,192	3,277,643	3,493,262	2,689,473	23,379	-	11,879,948
216	Bryant Public Schools	1.753523%	6,482,728	8,003,481	7,867,794	5,681,822	38,793	-	28,074,619
219	Lavaca Public Schools	0.149981%	370,554	529,623	549,421	416,777	(9,806)	-	1,856,569
220	Hartford School District	0.000000%	(258,045)	-	-	-	-	-	(258,045)
221	Greenwood School District	0.700746%	2,058,419	2,717,272	2,744,770	2,087,412	(8,186)	-	9,599,686
222	Mansfield School District	0.155879%	426,774	589,121	589,513	419,571	(17,666)	-	2,007,314
224	Dequeen Public Schools	0.456441%	1,312,558	1,731,067	1,783,622	1,346,211	(15,581)	-	6,157,876
227	Strong-Huttig School District	0.072364%	164,037	237,129	258,990	204,837	(1,485)	-	863,508
228	Junction City School District	0.120109%	341,506	472,362	482,184	366,764	(158)	-	1,662,658
230	Shirley School District	0.072473%	65,216	161,516	231,006	181,067	(11,025)	-	627,780
232	Prairie Grove School District	0.330428%	989,132	1,319,270	1,358,573	1,019,837	656	-	4,687,468
233	Fayetteville Public Schools	2.396885%	8,528,583	10,996,813	10,624,795	7,639,573	62,158	-	37,851,922
234	Farmington Public Schools	0.421731%	1,309,167	1,635,877	1,614,707	1,208,181	(17,834)	-	5,750,098
235	Elkins School District	0.211606%	538,921	856,541	901,371	691,968	11,699	-	3,000,500
237	Lincoln Consolidated School District	0.194325%	318,670	605,776	706,859	553,208	(7,893)	-	2,176,620
238	Greenland School District	0.164183%	410,202	585,090	629,717	493,104	(2,069)	-	2,116,044
239	Springdale Public Schools	4.776557%	14,712,376	19,055,646	19,491,433	14,692,181	(6,671)	-	67,944,965
240	West Fork School District	0.174102%	289,023	523,436	612,131	485,932	(10,886)	-	1,899,636
242	Mc Crory School District	0.121806%	325,134	459,628	468,604	352,060	(5,135)	-	1,600,291
245	Danville Public Schools	0.159037%	369,773	513,931	550,321	409,599	(22,692)	-	1,820,931
246	Dardanelle Public Schools	0.390601%	1,073,815	1,432,731	1,486,419	1,145,340	(9,583)	-	5,128,723
250	Cossatot River School District	0.191674%	396,778	596,878	650,846	530,111	(5,901)	-	2,168,712
251	South Pike County School District	0.143257%	430,121	558,106	564,901	426,212	(2,168)	-	1,977,171
330	Monticello School District	0.339441%	422,790	889,871	1,123,897	859,302	(51,144)	-	3,244,716
331	Mammoth Spring School District	0.089760%	252,282	340,875	344,983	255,013	(6,255)	-	1,186,898
333	Batesville School District	0.605816%	1,626,598	2,213,694	2,290,778	1,771,289	(11,881)	-	7,890,477
335	Hackett School District	0.140340%	408,179	310,051	366,840	374,276	5,974	-	1,465,320
336	Beebe Public School District	0.578843%	1,369,319	1,950,506	2,074,942	1,500,484	(79,977)	-	6,815,274
337	Bald Knob Public Schools	0.204644%	308,163	499,390	569,185	475,819	(32,286)	-	1,820,271
350	Fort Smith Public Schools	3.146927%	8,517,455	11,586,665	12,060,481	9,373,560	(19,646)	-	41,518,516
351	El Dorado Public Schools	0.735939%	2,047,433	2,713,812	2,865,806	2,113,199	(53,435)	-	9,686,814
360	Heber Springs School District	0.290953%	615,125	938,992	1,028,449	756,723	(42,165)	-	3,297,125
365	Barton-Lexa School District	0.142298%	297,069	441,049	478,619	378,610	(10,530)	-	1,584,816
375	Earle School District	0.110148%	74,552	220,577	285,772	193,413	(44,527)	-	729,787
376	West Memphis School District	0.978410%	2,074,314	2,939,836	3,350,749	2,775,852	(30,805)	-	11,109,946
384	Hamburg School District	0.319776%	568,200	974,839	1,099,827	879,547	(20,100)	-	3,502,313
385	Bentonville Public Schools	3.634042%	13,523,447	16,389,470	15,918,399	12,027,469	261,086	-	58,119,870
386	Paris School District	0.210869%	564,624	789,145	824,974	623,813	(7,339)	-	2,795,216
393	Corning School District	0.145562%	287,137	435,721	467,899	352,379	(23,919)	-	1,519,216
394	Jonesboro Public Schools	1.274523%	4,738,186	5,791,693	5,856,200	4,263,309	58,981	-	20,708,370
395	Sloan-Hendrix School District	0.119270%	329,761	441,210	484,027	372,605	(863)	-	1,626,740
396	Camden-Fairview School District	0.470290%	1,109,429	1,615,704	1,688,330	1,258,337	(48,767)	-	5,623,032
404	Lonoke School District	0.317700%	841,654	1,190,792	1,228,067	994,523	21,980	-	4,277,015
416	Crossett School District	0.287756%	634,251	960,248	1,030,937	794,000	(17,263)	-	3,402,173
434	Riverview School District	0.250969%	431,124	747,840	855,139	674,349	(23,218)	-	2,685,234



Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows						
			2021	2022	2023	2024	2025	Thereafter	Total
443	Searcy School District	0.721792%	\$ 1,979,889	\$ 2,667,505	\$ 2,736,712	\$ 2,071,116	\$ (34,434)	\$ -	\$ 9,420,788
451	Harrison School District	0.503020%	1,353,854	1,830,119	1,940,504	1,586,908	27,210	-	6,738,596
453	Harrisburg School District	0.250504%	543,052	777,685	846,068	650,143	(27,613)	-	2,789,335
458	Harmony Grove School District	0.178259%	401,387	596,779	660,324	526,176	(2,177)	-	2,182,488
463	Clarendon School District	0.111959%	234,790	350,588	364,815	254,948	(25,668)	-	1,179,472
471	Norfolk School District	0.083510%	140,290	233,001	252,174	194,752	(14,145)	-	806,071
479	Conway Public Schools	1.913063%	5,226,692	7,105,327	7,459,241	5,684,325	(45,419)	-	25,430,167
480	Charleston Public Schools	0.169133%	657,980	675,384	692,923	531,313	3,906	-	2,441,506
484	Harmony Grove School District	0.205551%	616,714	771,289	805,199	611,181	(7,182)	-	2,797,200
486	Palestine-Wheatley School District	0.116327%	334,489	435,667	443,965	327,923	(8,728)	-	1,533,315
493	Hazen School District	0.103376%	176,494	304,888	342,959	287,240	(4,832)	-	1,106,749
501	Maynard School District	0.089646%	259,689	364,654	374,187	282,935	1,673	-	1,283,139
502	West Side School District	0.116718%	474,792	558,840	557,442	428,152	17,311	-	2,036,537
503	Malvern School District	0.374548%	880,942	1,262,367	1,319,022	1,031,645	(24,039)	-	4,469,938
512	Glen Rose School District	0.178545%	519,694	717,854	751,983	557,747	(182)	-	2,547,095
513	Waldron Public Schools	0.291673%	655,899	938,778	1,010,001	796,412	(16,225)	-	3,384,865
515	Nashville School District	0.348410%	866,783	1,451,300	1,425,713	1,029,031	13,750	-	4,786,577
521	Hampton School District	0.120804%	363,747	508,177	507,587	371,766	898	-	1,752,175
530	Mountain View School District	0.335324%	1,046,350	1,379,466	1,382,358	1,030,098	(1,590)	-	4,836,683
531	Drew Central School District	0.193537%	635,668	795,189	813,342	602,728	1,369	-	2,848,297
535	Mayflower School District	0.201774%	503,870	715,573	772,229	579,840	(11,820)	-	2,559,692
536	Southside Bee Branch School District	0.123106%	328,394	434,263	424,411	333,275	(2,921)	-	1,517,422
538	Gentry Public Schools	0.287194%	785,448	1,041,748	1,102,676	855,127	(5,410)	-	3,779,589
539	Fordyce Public Schools	0.141380%	343,201	447,232	420,599	297,221	(32,341)	-	1,475,912
545	Newport Special School District	0.207638%	224,074	572,116	703,187	535,820	(26,397)	-	2,008,800
547	Decatur Public Schools	0.113619%	315,035	375,458	405,766	339,596	281	-	1,436,136
548	Scranton School District	0.074294%	185,799	254,031	270,712	204,663	(6,314)	-	908,892
552	Cedarville Public School District	0.158092%	398,559	584,174	644,180	502,908	8,312	-	2,138,133
555	Concord School District	0.107607%	292,735	396,593	424,186	337,151	4,186	-	1,454,852
558	Pocahontas Public Schools	0.340732%	1,077,300	1,391,685	1,435,057	1,068,329	629	-	4,973,000
560	Van Buren School District	1.080012%	2,772,798	3,935,068	4,145,437	3,227,974	410	-	14,081,686
564	County Line Public Schools	0.084917%	249,596	338,082	338,922	243,980	(6,516)	-	1,164,064
565	Salem School District	0.137141%	391,245	511,603	517,376	392,167	(5,053)	-	1,807,337
566	Dierks Public Schools	0.103919%	280,348	379,505	388,304	284,868	(8,861)	-	1,324,165
568	Stephens School Dist	0.000000%	-	-	-	-	-	-	-
569	Pottsville School District	0.304938%	872,984	1,175,213	1,169,211	877,479	(12,377)	-	4,082,509
571	Piggott School District	0.150259%	490,104	609,139	616,979	478,491	8,805	-	2,203,519
583	Hector School District	0.104034%	282,943	382,018	403,436	309,628	(2,766)	-	1,375,259
586	Blytheville Public Schools	0.401981%	416,107	827,413	984,599	808,362	(94,639)	-	2,941,842
592	Bearden School District	0.101400%	295,663	402,712	449,163	360,557	13,857	-	1,521,952
593	Pine Bluff School District	0.637168%	(169,616)	928,111	1,339,576	1,282,089	(115,042)	-	3,265,117
597	Marmaduke School District	0.133308%	333,806	464,878	482,837	403,397	6,441	-	1,691,360
601	Fouke School District	0.214572%	719,341	948,520	966,528	641,015	(24,674)	-	3,250,729
602	Horatio School District	0.152469%	396,344	561,854	574,611	433,767	(8,044)	-	1,958,531
606	England Public School District	0.138724%	384,776	533,031	574,988	444,444	4,246	-	1,941,486
607	Jasper School District	0.197087%	498,629	713,136	760,754	595,595	42	-	2,568,156
608	Trumann School District	0.241884%	402,279	669,364	766,681	601,924	(34,328)	-	2,405,921
622	Carlisle School District	0.118823%	309,042	433,423	439,758	335,294	(4,568)	-	1,512,948
623	Bradford School District	0.086160%	195,552	284,591	291,693	233,032	(3,746)	-	1,001,122
625	Huntsville School District	0.451319%	1,311,557	1,795,204	1,817,056	1,346,183	(11,708)	-	6,258,292



Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows							Total
			2021	2022	2023	2024	2025	Thereafter		
626	Yellville-Summit Public School	0.141687%	\$ 360,815	\$ 609,165	\$ 622,409	\$ 451,326	\$ 1,275	\$ -	\$ 2,044,989	
629	Brookland Public Schools	0.425292%	1,570,502	1,934,618	1,949,228	1,451,466	30,154	-	6,935,968	
630	Brinkley Public Schools	0.094335%	164,953	236,087	223,825	182,124	(24,423)	-	782,566	
637	Bay School District	0.104268%	254,627	361,530	391,792	294,747	(8,468)	-	1,294,228	
645	Foreman Public Schools	0.083479%	179,793	276,156	288,386	221,345	(7,180)	-	958,500	
651	Quitman Public Schools	0.118899%	332,832	480,748	477,671	373,500	5,471	-	1,670,222	
656	Wynne Public Schools	0.501178%	1,165,092	1,723,446	1,840,688	1,429,617	(20,191)	-	6,138,653	
657	Dumas Public Schools	0.271997%	686,980	965,102	983,808	762,142	(14,450)	-	3,383,582	
658	Manila Public Schools	0.205282%	551,986	732,166	755,506	585,422	(8,936)	-	2,616,145	
662	Clinton Public Schools	0.257084%	365,072	809,740	861,474	676,083	(18,490)	-	2,693,879	
667	Greene County Tech School District	0.666079%	1,683,481	2,307,212	2,516,098	1,962,087	(20,120)	-	8,448,758	
674	Augusta Public Schools	0.094507%	196,302	342,757	343,482	247,538	(12,865)	-	1,117,215	
675	Green Forest Public Schools	0.261330%	878,923	1,130,108	1,123,204	837,981	8,873	-	3,979,090	
676	East End School District	0.119151%	383,184	479,722	488,235	391,831	11,073	-	1,754,044	
677	Dover School District	0.240976%	621,410	834,283	879,845	680,758	(15,239)	-	3,001,058	
682	Mountain Home Public Schools	0.671745%	1,793,218	2,490,666	2,701,981	2,119,860	22,545	-	9,128,270	
687	Star City School District	0.263205%	490,021	813,659	956,274	774,184	(3,276)	-	3,030,861	
693	Atkins Public Schools	0.182196%	421,963	625,318	664,554	526,925	(1,594)	-	2,237,166	
696	Des Arc School District	0.098917%	247,427	358,671	375,867	295,882	1,227	-	1,279,075	
698	Vilonia School District	0.592326%	1,469,407	2,011,917	2,107,215	1,638,114	(38,176)	-	7,188,476	
702	Nettleton Public Schools	0.719725%	2,162,502	2,997,697	3,189,480	2,454,159	68,293	-	10,872,131	
704	Omaha School District	0.085926%	245,234	336,713	340,151	247,797	(4,676)	-	1,165,219	
705	Cabot Public Schools	1.947856%	5,546,255	7,529,429	7,783,579	5,961,441	6,661	-	26,827,364	
714	Marion School District	0.733456%	2,038,246	2,758,848	2,970,850	2,572,383	131,224	-	10,471,550	
715	McGehee Public Schools	0.231534%	557,822	776,576	852,374	620,662	(31,390)	-	2,776,044	
719	Cave City School District	0.216415%	569,216	778,662	785,660	609,808	(7,345)	-	2,736,000	
724	Pangburn School District	0.148341%	330,446	469,678	497,666	401,147	(8,037)	-	1,690,900	
727	Calico Rock School District	0.079711%	238,165	317,606	327,869	268,847	10,294	-	1,162,782	
731	Dewitt School District	0.231121%	618,283	863,236	901,714	681,187	(5,655)	-	3,058,764	
732	Hughes School District	0.000000%	(298,985)	-	-	-	-	-	(298,985)	
735	Alpena School District	0.091504%	253,170	348,212	373,815	273,252	(5,742)	-	1,242,708	
736	Magnet Cove School District	0.121077%	393,036	507,406	498,391	357,894	(4,866)	-	1,751,860	
746	Stuttgart School District	0.291030%	670,551	953,385	1,019,837	786,954	(23,674)	-	3,407,053	
747	Valley Springs Public Schools	0.152407%	381,416	539,790	563,598	442,242	(4,570)	-	1,922,475	
750	Ouachita Public Schools	0.082632%	235,298	330,788	331,899	269,235	9,721	-	1,176,941	
753	Gosnell Public Schools	0.227327%	594,396	809,679	838,299	642,636	(13,428)	-	2,871,583	
756	Mulberry-Pleasant View Bi-County Public Schools	0.092540%	353,405	421,063	406,753	316,867	10,493	-	1,508,581	
757	Poyen School District	0.096107%	253,639	351,890	365,125	281,663	(1,122)	-	1,251,196	
765	Eureka Springs Public Schools	0.148895%	405,368	575,246	599,594	458,925	1,598	-	2,040,731	
771	Southside School District	0.331511%	1,094,859	1,405,712	1,427,298	1,063,137	9,192	-	5,000,199	
779	Melbourne Public School District	0.159583%	450,003	629,836	663,835	494,557	178	-	2,238,409	
780	Wonderview School District	0.087537%	273,837	278,257	264,804	258,670	7,071	-	1,082,638	
794	Viola School District	0.083641%	219,475	303,950	323,942	255,938	1,914	-	1,105,218	
795	Nemo Vista School District	0.102439%	264,679	346,330	350,084	286,016	(1,364)	-	1,245,746	
813	Blevins School District	0.092127%	189,322	286,164	312,710	250,765	(4,075)	-	1,034,888	
820	Parkers Chapel School District	0.137112%	444,814	543,066	559,467	437,212	5,546	-	1,990,105	
847	Rose Bud School District	0.166815%	529,139	705,292	751,176	621,452	36,229	-	2,643,287	
863	Valley View Public Schools	0.477628%	1,250,783	1,762,447	1,884,326	1,398,097	(26,088)	-	6,269,564	
872	Smackover-Norphlet School District	0.213476%	498,659	691,254	747,686	565,812	(25,493)	-	2,477,918	
873	Genoa Central School District	0.199997%	669,653	807,347	814,417	618,091	(998)	-	2,908,510	



Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows							Total
			2021	2022	2023	2024	2025	Thereafter		
876	Norphlet School Dist	0.000000%	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
956	Bergman Public Schools	0.191588%	588,327	761,165	789,843	613,177	8,386	-	-	2,760,898
957	Lead Hill School District	0.061107%	121,387	185,318	202,440	156,667	(7,419)	-	-	658,394
958	Dermott School District	0.081562%	90,531	224,475	253,072	174,158	(21,280)	-	-	720,956
963	Guy-Perkins School District	0.066832%	60,989	161,204	199,082	162,668	(10,003)	-	-	573,940
964	Mt. Vernon-Enola School Distri	0.092524%	253,918	342,407	338,161	254,898	(6,467)	-	-	1,182,917
965	Mountain Pine School District	0.120983%	526,259	604,337	585,364	444,258	18,360	-	-	2,178,579
973	Armored School District	0.100398%	351,003	418,838	419,913	332,716	9,292	-	-	1,531,763
987	White County Central Schools	0.135910%	403,818	518,318	539,329	439,176	10,497	-	-	1,911,138
990	Craighead County Sd Executive	0.000000%	(5,927)	-	-	-	-	-	-	(5,927)
1000	Lafayette County School District	0.131443%	316,694	464,016	505,713	398,061	1,236	-	-	1,685,720
1001	Cedar Ridge School District	0.162623%	226,506	465,942	563,696	438,105	(14,246)	-	-	1,680,002
1002	Cleveland County School District	0.177113%	522,925	695,075	674,296	444,011	(34,195)	-	-	2,302,111
1003	Deer/ Mt. Judea School District	0.078508%	80,481	246,031	324,346	212,229	(14,257)	-	-	848,830
1004	Emerson-Taylor-Bradley School	0.212107%	584,194	777,700	806,907	600,423	(15,485)	-	-	2,753,739
1005	Hillcrest School District	0.089554%	314,726	389,383	386,710	271,813	(4,388)	-	-	1,358,243
1006	Ouachita River School District	0.135902%	457,261	557,945	555,597	420,369	1,194	-	-	1,992,365
1008	Ozark Mountain School District	0.128480%	191,561	317,435	370,434	267,055	(38,636)	-	-	1,107,848
1009	Two Rivers School District	0.157662%	387,142	576,170	622,004	453,758	(9,510)	-	-	2,029,564
1010	Searcy County School District	0.173735%	449,726	612,245	658,896	515,704	(4,708)	-	-	2,231,863
1011	Lawrence County School District	0.161760%	444,903	603,385	629,878	482,114	(1,897)	-	-	2,158,383
1045	Highland Public School District	0.293640%	936,053	1,198,252	1,246,893	918,764	(2,415)	-	-	4,297,547
1074	Cross County School District	0.116704%	275,311	396,935	384,880	291,962	(15,268)	-	-	1,333,820
1091	Westside Consolidated School District	0.305756%	886,677	1,164,532	1,168,792	905,603	(4,846)	-	-	4,120,759
1092	Pea Ridge School District	0.394673%	1,474,250	1,730,784	1,667,621	1,221,201	(1,010)	-	-	6,092,847
1093	Jacksonville North Pulaski School District	0.756283%	7,161,785	5,423,121	3,209,512	2,371,148	17,887	-	-	18,183,454
1114	Rivercrest School District	0.218860%	609,490	817,658	862,168	674,318	3,097	-	-	2,966,731
1165	Caddo Hills School District	0.105098%	284,849	387,947	388,108	319,883	7,703	-	-	1,388,489
1293	South Conway County School District	0.409545%	1,220,046	1,641,734	1,703,679	1,277,533	7,478	-	-	5,850,469
1307	Southwest Arkansas Education Co-Op	0.087605%	354,807	424,911	428,447	328,879	15,178	-	-	1,552,223
1308	Southeast Arkansas Education Service Co-Op	0.260183%	873,989	1,155,130	1,246,784	1,019,816	63,673	-	-	4,359,391
1321	Westside School District	0.116456%	253,931	403,744	439,892	340,115	(2,940)	-	-	1,434,742
1330	Guy Fenter Education Service Co-Op	0.105572%	473,362	602,399	567,875	426,749	28,810	-	-	2,099,195
1332	Northcentral Arkansas Education Service Co-Op	0.099005%	296,497	420,362	475,792	375,260	17,418	-	-	1,585,328
1333	Buffalo Island Central School District	0.136329%	290,781	461,905	518,686	416,074	2,139	-	-	1,689,585
1335	Rector School District	0.108665%	298,188	398,392	429,643	329,683	(1,498)	-	-	1,454,408
1336	Ozarks Unlimited Resource Educational Service Co-Op	0.129238%	381,207	526,025	556,545	420,312	6,227	-	-	1,890,316
1337	Northeast Arkansas Education Co-Op	0.103573%	276,687	387,033	431,826	332,075	5,485	-	-	1,433,106
1338	Dawson Education Service Co-Op	0.289922%	1,239,073	1,390,352	1,305,465	1,037,763	45,845	-	-	5,018,499
1339	Arch Ford Education Service Co-Op	0.564411%	3,159,358	3,460,007	3,329,831	2,431,783	158,142	-	-	12,539,121
1342	Western Yell County School District	0.074682%	140,547	200,823	232,738	188,178	(11,084)	-	-	751,201
1343	Nevada School District	0.086951%	265,654	330,154	337,980	263,713	567	-	-	1,198,068
1344	Paragould School District	0.575331%	1,718,094	2,205,333	2,249,377	1,704,654	(9,413)	-	-	7,868,045
1345	Wilbur D Mills Education Service Co-Op	0.112006%	405,992	500,432	508,245	408,282	20,141	-	-	1,843,091
1346	Izard County Consolidated School District	0.097520%	221,474	314,931	348,937	298,350	5,005	-	-	1,188,696
1347	Midland School District	0.107167%	322,266	420,479	433,402	320,107	(3,432)	-	-	1,492,823
1348	Riverside School District	0.141967%	319,065	476,490	534,106	414,912	(4,867)	-	-	1,739,708
1349	Arkansas River Education Service Co-Op	0.168539%	813,534	981,413	945,515	701,492	46,770	-	-	3,488,725
1350	Great Rivers Education Service Co-Op	0.098685%	359,795	460,863	460,602	341,831	8,804	-	-	1,631,895
1351	Northwest Arkansas Education Service Co-Op	0.141573%	724,153	825,253	779,462	539,252	18,843	-	-	2,886,964



Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Schedule of Deferred Inflows and Outflows

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows						Total
			2021	2022	2023	2024	2025	Thereafter	
1353	Dequeen-Mena Education Service	0.174878%	\$ 508,963	\$ 672,237	\$ 712,240	\$ 508,081	\$ (18,491)	\$ -	\$ 2,383,029
1354	Crowley'S Ridge Educational Service Co-Op	0.169873%	859,026	970,279	959,786	776,652	73,592	-	3,639,336
1355	South Central Service Co-Op	0.079357%	236,000	299,014	292,202	238,563	5,051	-	1,070,830
1359	Conway Vocational Center	0.048136%	73,076	122,933	136,819	109,241	(9,021)	-	433,048
1362	Jonesboro Vocational Center	0.036002%	126,518	158,619	157,548	112,962	(249)	-	555,398
1363	Monticello Vocational Center	0.016556%	36,069	54,493	60,144	45,292	(1,619)	-	194,379
1364	East Pointett County School District	0.126063%	301,679	446,679	466,995	357,057	(5,359)	-	1,567,051
1365	North Central Career Center	0.004935%	8,667	13,315	7,016	3,318	(2,373)	-	29,943
1366	River Valley Career Academy	0.009726%	15,583	29,483	30,993	24,302	(780)	-	99,581
1371	Metropolitan Vocational Center	0.049674%	164,038	237,678	161,501	91,502	(9,200)	-	645,520
1372	Texarkana Career And Technological Center	0.000000%	(124,109)	(123,055)	(112,232)	(82,374)	(20,155)	-	(461,926)
1373	Warren Vocational Center	0.017630%	(5,430)	33,366	43,369	34,154	(4,995)	-	100,463
1991	Centerpoint School District	0.187232%	646,231	808,726	811,664	591,170	755	-	2,858,546
2000	Arkansas Arts Academy Charter	0.161059%	777,878	929,467	926,688	672,110	36,992	-	3,343,133
2001	Academics Plus Charter School	0.201054%	1,192,820	1,246,198	1,109,244	795,375	40,028	-	4,383,664
2002	Kipp Delta College Preparatory Charter	0.289866%	810,403	925,909	996,546	828,658	(3,408)	-	3,558,108
2003	Imboden Area Charter School	0.010594%	30,315	41,344	42,418	30,736	(581)	-	144,232
2006	Haas Hall Academy Charter - Fayetteville	0.130225%	933,878	1,032,223	822,341	502,647	27,536	-	3,318,624
2007	Lisa Academy Charter	0.426021%	2,763,663	2,965,298	2,704,225	2,088,531	211,323	-	10,733,041
2008	Arkansas Virtual Academy Charter	0.173573%	1,173,254	1,215,510	1,104,337	788,901	61,180	-	4,343,183
2012	Covenant Keepers Charter School	0.000000%	(155,818)	(154,604)	(147,888)	(98,199)	(20,932)	-	(577,442)
2016	E-Stem Public Charter School	0.450658%	2,864,216	3,279,923	3,142,406	1,991,811	76,391	-	11,354,747
2017	Lisa Academy-North Little Rock	0.000000%	-	-	-	-	-	-	-
2019	Little Rock Preparatory Academy	0.040800%	37,651	105,026	134,265	68,015	(19,743)	-	325,215
2020	Jacksonville Lighthouse Charter School	0.119790%	243,124	366,290	409,071	279,971	(30,236)	-	1,268,219
2022	Pine Bluff Lighthouse Charter School	0.042363%	123,091	140,620	131,223	61,115	(25,616)	-	430,433
2023	Sia Tech Little Rock Charter	0.014815%	34,033	46,929	45,606	26,425	(6,248)	-	146,745
2024	Northwest Arkansas Classical Academy Charter	0.126799%	760,087	853,862	847,805	672,517	72,838	-	3,207,109
2025	Premier High School Of Little Rock Charter	0.015162%	47,038	38,813	54,500	45,001	(2,453)	-	182,899
2026	Quest Middle Charter School - Pine Bluff	0.000000%	(89,965)	(109,745)	(118,833)	(44,754)	-	-	(363,297)
2027	Exalt Academy Charter School	0.058775%	429,847	434,705	417,377	298,521	25,501	-	1,605,951
2028	Quest Middle Charter School - West Little Rock	0.000000%	(154,304)	(181,994)	(174,808)	(167,680)	(48,864)	-	(727,649)
2029	Capital City Lighthouse Charter School	0.032554%	214,816	99,540	107,645	87,782	(4,966)	-	504,816
2030	Ozark Montessori Academy Charter - Springdale	0.000000%	(71,682)	(169,984)	(222,321)	(207,077)	(52,618)	-	(723,682)
2031	Rockbridge Montessori Charter School	0.000000%	(36,359)	(118,960)	(125,707)	(43,922)	-	-	(324,947)
2032	Haas Hall Academy - Bentonville Charter	0.043341%	309,530	212,031	201,527	159,134	8,682	-	890,903
2033	Future School Of Ft. Smith Charter	0.035861%	333,973	312,667	243,469	153,639	6,234	-	1,049,981
2034	Arkansas Connections Academy Charter	0.095553%	894,380	921,386	804,824	551,209	56,099	-	3,227,900
2035	The Excel Center Charter At Goodwill	0.019987%	179,471	200,202	145,869	65,695	(1,651)	-	589,587
2036	Friendship Aspire Academy - Pine Bluff	0.037955%	355,117	394,485	400,467	273,342	29,577	-	1,452,987
2037	Southeast Arkansas Preparatory High School	0.012976%	114,433	127,892	129,937	50,703	(8,818)	-	414,146
2038	Scholarmade Achievement Place	0.053098%	487,757	542,832	551,201	326,941	16,817	-	1,925,548
2039	Friendship Aspire Academy - Little Rock	0.039855%	386,232	427,571	433,852	368,784	67,265	-	1,683,704
2040	Premier High School Of North Little Rock Charter	0.006145%	60,413	66,787	67,755	62,165	12,721	-	269,841
4857	Arkansas Activities Association	0.034892%	112,362	132,995	129,719	105,308	1,043	-	481,428
6864	Arkansas Easter Seals	0.000473%	(49,826)	(41,856)	(32,304)	(19,204)	(4,385)	-	(147,574)
6870	Arkansas School Boards Association	0.001647%	4,893	6,053	6,292	4,691	(115)	-	21,813
6873	First Student	0.001886%	5,673	6,642	7,551	4,343	(754)	-	23,455
6875	Arkansas Association Educational Administrators	0.011494%	30,579	41,684	42,278	32,516	(477)	-	146,579
9492	Boston Mountain Educational Co-Op	0.019827%	(238,568)	(258,447)	(223,619)	(102,447)	(30,261)	-	(853,342)



Schedule of Deferred Resources by Employer by Year as of June 30, 2020

Schedule of Deferred Inflows and Outflows

Employer ID	Employer	Employer Allocation Percentage	Schedule of Deferred Inflows and Outflows							Total
			2021	2022	2023	2024	2025	Thereafter		
1-005	University Of Arkansas - Monticello	0.020233%	\$ (94,584)	\$ (43,762)	\$ (3,179)	\$ 15,987	\$ (9,795)	\$ -	\$ (135,333)	
1-006	University Of Arkansas - Pine Bluff	0.002645%	(10,350)	4,221	10,012	7,289	(276)	-	10,896	
1-008	Arkansas School For The Blind	0.128552%	368,821	467,694	510,530	411,684	7,506	-	1,766,235	
1-016	Arkansas School For The Deaf	0.201526%	555,923	811,066	789,490	526,750	(34,687)	-	2,648,541	
1-017	Arkansas Department Of Education	0.670150%	1,301,497	2,205,607	2,376,711	1,824,073	(48,653)	-	7,659,234	
1-025	Henderson State University	0.020034%	(136,953)	(49,928)	(7,157)	4,224	(12,723)	-	(202,539)	
1-028	Arkansas State University- Beebe	0.038605%	(137,182)	(28,961)	68,871	77,961	(9,003)	-	(28,314)	
1-029	Arkansas State University- Newport	0.022107%	(49,998)	(28,266)	(6,852)	12,180	(12,398)	-	(85,333)	
1-045	Arkansas Tech University	0.110190%	112,009	257,855	337,593	258,432	(24,101)	-	941,789	
1-051	Southern Arkansas University	0.076943%	89,126	156,246	153,587	129,929	(20,144)	-	508,744	
1-052	Arkansas State University- Mt. Home	0.001835%	(33,994)	(25,562)	(12,632)	1,885	62	-	(70,241)	
1-053	Arkansas State University	0.121223%	(139,644)	86,063	184,275	196,770	(34,126)	-	293,337	
1-054	University Of Central Arkansas	0.260570%	185,512	624,181	832,102	662,383	(34,751)	-	2,269,427	
1-115	Arkansas Department Of Career Education (Rehab)	0.278802%	530,617	752,547	755,467	507,442	(92,665)	-	2,453,408	
1-197	Southeast Arkansas College	0.061618%	49,599	115,733	159,491	146,756	(7,578)	-	464,001	
1-202	Arkansas Teacher Retirement System	0.142888%	415,614	530,046	547,378	412,858	(6,539)	-	1,899,357	
1-220	U Of A Community College - Morrilton	0.035567%	(94,706)	(34,111)	(4,459)	26,687	(14,610)	-	(121,198)	
1-224	Arkansas Educational Tv Network	0.140472%	366,759	517,314	593,591	485,676	16,189	-	1,979,529	
1-249	U Of A Community College - Hope	0.017696%	(38,803)	407	26,734	30,887	(4,803)	-	14,422	
1-254	Phillips Community College -U Of A	0.002448%	(83,010)	(22,535)	(8,223)	(825)	(1,883)	-	(116,477)	
1-256	University Of Arkansas - Fort Smith	0.011469%	(78,222)	(29,842)	1,164	11,432	(5,728)	-	(101,196)	
1-268	Southern Arkansas University Tech	0.039118%	(90,015)	9,746	51,473	56,329	(13,193)	-	14,340	
1-274	Crowleys Ridge Technical Institute	0.000000%	(113,419)	(87,892)	(59,098)	(17,116)	-	-	(277,525)	
1-290	Pulaski Technical College	0.104782%	(361,120)	(211,435)	(43,801)	95,655	(41,681)	-	(562,382)	
1-291	College Of The Ouachitas	0.043037%	43,385	82,885	76,499	81,462	(8,406)	-	275,825	
1-294	Arkansas Department Of Career Education (Workforce)	0.053768%	(263,209)	(166,805)	(165,464)	(267,422)	(132,164)	-	(995,064)	
1-295	Black River Technical College	0.042353%	110,951	156,610	171,310	141,240	3,904	-	584,015	
1-314	Ozarka College	0.017203%	(35,418)	28,320	62,727	63,458	4,648	-	123,735	
1-315	Rich Mountain Community College	0.020739%	(86,406)	(23,599)	33,071	37,803	(5,790)	-	(44,921)	
1-318	U Of A Community College - Batesville	0.025936%	(50,507)	3,033	48,764	58,856	(3,360)	-	56,786	
1-320	Phillips Community College - Dewitt	0.002409%	(1,608)	1,994	(347)	2,570	35	-	2,644	
1-321	Northwest Technical Institute	0.057701%	306,523	349,833	331,657	235,790	11,582	-	1,235,386	
1-327	Cossatot Community College - U Of A	0.024109%	(58,648)	(1,281)	40,132	48,580	(4,257)	-	24,526	
1-328	Arkansas Correctional School	0.161639%	370,567	484,793	497,173	381,553	(26,089)	-	1,707,996	
1-329	North Arkansas College	0.105200%	121,918	284,288	345,537	275,481	(10,722)	-	1,016,502	
1-330	National Park Community College	0.053565%	45,707	138,889	150,656	105,516	(13,891)	-	426,878	
1-331	East Arkansas Community College	0.035760%	50,739	92,343	102,055	48,957	(21,185)	-	272,908	
1-335	Arkansas Northeastern College	0.078515%	224,625	289,003	331,896	288,137	14,999	-	1,148,660	
1-344	South Arkansas Community College	0.050928%	36,688	163,529	192,420	144,610	(2,329)	-	534,917	
1-364	Arkansas State University- Mid South Cc	0.008584%	(80,297)	(25,760)	(8,121)	(7,494)	(9,700)	-	(131,371)	
1-386	Riverside Vocational Technical School	0.023690%	102,629	108,323	108,454	94,359	7,705	-	421,470	
1-388	Northwest Arkansas Community College	0.090443%	122,590	240,676	281,617	225,075	(10,506)	-	859,450	
1-389	University Of Arkansas - Fayetteville	0.019628%	(57,253)	(14,561)	22,830	43,081	(1,827)	-	(7,731)	
1-390	University Of Arkansas - Little Rock	0.003161%	(67,042)	(54,373)	(40,055)	(26,590)	(8,817)	-	(196,877)	
1-391	Arkansas Department Of Higher Education	0.022854%	145,320	142,872	130,477	113,000	12,756	-	544,425	
1-392	South Arkansas Developmental Center	0.079766%	(8,143)	68,204	87,241	67,271	(41,162)	-	173,409	
1-399	Arkansas School For Math, Sciences & Arts	0.017481%	(15,960)	22,841	33,042	15,455	(11,306)	-	44,072	
1-400	University Of Arkansas For Medical Sciences	0.003348%	(33,974)	(25,111)	(9,536)	3,491	(320)	-	(65,450)	
1-401	Arkansas Economic Development Commission	0.000416%	(17,161)	(10,725)	(10,846)	(11,338)	(3,697)	-	(53,767)	
1-402	University Of Arkansas Cooperative Extension	0.007729%	11,832	26,306	29,105	22,880	(136)	-	89,986	
1-403	Dhs-Divison Of Youth Services	0.000907%	(56,390)	(43,144)	(32,274)	(18,774)	(4,232)	-	(154,814)	
1-404	Apartment Department Of Workforce Services	0.027824%	273,556	302,416	306,801	281,489	57,602	-	1,221,864	
1-405	Arkansas Department Of Commerce	0.017953%	176,509	195,130	197,959	181,627	37,167	-	788,392	
1-406	Arkansas Department Of Education	0.015564%	153,026	169,170	171,623	157,464	32,223	-	683,505	
1-407	Arkansas Department Of Public Safety	0.001782%	17,524	19,373	19,654	18,032	3,690	-	78,273	
1-409	Arkansas Department Of Health	0.002304%	22,654	25,044	25,407	23,311	4,770	-	101,187	
TOTAL		100.000000%	\$ 269,483,960	\$ 373,206,327	\$ 388,967,614	\$ 297,995,342	\$ (1,372,222)	\$ -	\$ 1,328,281,021	

Note: Total may not add to ATRS collective amounts due to rounding.





December 18, 2020

Mr. Clint Rhoden, Executive Director
Arkansas Teacher Retirement System
1400 West Third Street
Little Rock, Arkansas 72201

Dear Mr. Rhoden:

Please find the enclosed copies of the June 30, 2020 GASB Statement No. 68 – Employer Level Reporting report of the Arkansas Teacher Retirement System. This report is intended to complement the GASB Statement Nos. 67 & 68 report dated December 18, 2020.

Sincerely,

A handwritten signature in black ink that reads "Judith A. Kermans". The signature is written in a cursive, flowing style.

Judith A. Kermans, EA, FCA, MAAA

JAK:sc
Enclosures

ATRS
MAR 12 2021

ARKANSAS TEACHER RETIREMENT SYSTEM

Annual Financial Report

June 30, 2020

LEGISLATIVE JOINT AUDITING COMMITTEE



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MAR 12 2021

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Arkansas



Sen. Ronald Caldwell
Senate Chair
Sen. Gary Stubblefield
Senate Vice Chair

Rep. Richard Womack
House Chair
Rep. Nelda Speaks
House Vice Chair

Roger A. Norman, JD, CPA, CFE, CFF
Legislative Auditor

LEGISLATIVE JOINT AUDITING COMMITTEE ARKANSAS LEGISLATIVE AUDIT

ATRS
MAR 12 2021

INDEPENDENT AUDITOR'S REPORT

Arkansas Teacher Retirement System
Legislative Joint Auditing Committee

Report on the Financial Statements

We have audited the accompanying financial statements of the Fiduciary Pension Trust Fund of the Arkansas Teacher Retirement System, an office of Arkansas state government, as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Arkansas Teacher Retirement System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Fiduciary Pension Trust Fund of the Arkansas Teacher Retirement System as of June 30, 2020, and the changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As indicated above, the financial statements of the Arkansas Teacher Retirement System are intended to present the financial position and the changes in financial position of only that portion of the Fiduciary Pension Trust Fund of the State that is attributable to the transactions of the Arkansas Teacher Retirement System. They do not purport to, and do not, present fairly the financial position of the State as of June 30, 2020, or the changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the required supplementary information, listed in the accompanying table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

The Governmental Accounting Standards Board requires that a Management's Discussion and Analysis be presented to supplement government-wide financial statements. However, as discussed in the "Emphasis of Matter" paragraph above, the financial statements of the Arkansas Teacher Retirement System are only for the specific transactions and activity of the Agency and not for the State as a whole. Therefore, the Management's Discussion and Analysis is not required to be presented for the Arkansas Teacher Retirement System individually. Our opinion on the basic financial statements is not affected by the omission of this information.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Arkansas Teacher Retirement System's basic financial statements. The Schedule of Selected Information is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The Schedule of Selected Information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on this information.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated January 7, 2021, on our consideration of the Arkansas Teacher Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the effectiveness of the Arkansas Teacher Retirement System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Arkansas Teacher Retirement System's internal control over financial reporting and compliance.

ARKANSAS LEGISLATIVE AUDIT



Roger A. Norman, JD, CPA, CFE, CFF
Legislative Auditor

Little Rock, Arkansas
January 7, 2021
SA1037520

Arkansas

Sen. Ronald Caldwell
Senate Chair
Sen. Gary Stubblefield
Senate Vice Chair



Rep. Richard Womack
House Chair
Rep. Nelda Speaks
House Vice Chair

Roger A. Norman, JD, CPA, CFE, CFF
Legislative Auditor

LEGISLATIVE JOINT AUDITING COMMITTEE ARKANSAS LEGISLATIVE AUDIT

REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

INDEPENDENT AUDITOR'S REPORT

Arkansas Teacher Retirement System
Legislative Joint Auditing Committee

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Fiduciary Pension Trust Fund of the Arkansas Teacher Retirement System (the "Agency"), an office of Arkansas state government, as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Arkansas Teacher Retirement System's basic financial statements, and have issued our report thereon dated January 7, 2021.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Agency's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements but not for the purpose of expressing an opinion on the effectiveness of the Agency's internal control. Accordingly, we do not express an opinion on the effectiveness of the Agency's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that have not been identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. We did identify certain deficiencies in internal control, described in the Schedule of Findings and Responses below as items 2020-1 that we consider to be significant deficiencies.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Agency's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under Government Auditing Standards.

SCHEDULE OF FINDINGS AND RESPONSES

2020-1

The Agency's investment policy indicates the Board is responsible for prudently investing funds and maintaining proper allocation of the Agency's investment assets. For assets that will not be managed by an investment manager, the policy does not permit the Agency to make an investment without a review and recommendation from the investment consultant. In May 2019, the Agency invested \$58,000,000, in conjunction with multiple other parties, to execute a promissory note to Big River Steel totaling \$290,000,000. The Agency did not obtain a review and recommendation from the investment consultant or Board approval for this investment. Additionally, in June 2020, loans of \$48,000,000 to Highland Pellets were recapitalized to purchase 45,000 Class B units. The newly converted Highland Pellet Class B units were combined with the existing 155,000 Class B units and recharacterized as Class A units. The Agency did not receive a review and recommendation from the investment consultant or Board approval for the conversion of the loans to equity.

We recommend the Agency ensure all significant changes in investments are properly reviewed by the investment consultants, with a recommendation presented to and approved by the Board.

Management personnel responded as follows:

ATRS Policy 4 states in part "The System shall manage those assets not specifically allocated to investment managers. No investment shall be made without an investment consultant's recommendation." The ATRS Board addressed the processes in question at its regular meeting on February 1, 2021 and passed Resolution 2021-13, Clarification and Reaffirmation of Investment Management Process under ATRS Policy 4. Board involvement through notice to the Board Chair is also addressed in Resolution 2021-02. This Resolution is also attached and is a long standing Resolution that the Board reviews and renews on an annual basis.

As outlined in the attached Resolutions and the Board's discussion, the Board has historically approved initial investments only after receiving and reviewing the recommendation of an investment consultant. Further, the Board distinguishes between approval of initial investments, which requires the recommendation of an investment advisor, and the management by ATRS staff of an ongoing investment, which does not require the recommendation of an investment advisor.

The Board continues to monitor the management of any particular investment through affirmative advice of the Board Chair. These are ongoing established processes that have been in place for several years, and are consistent with Board policy. These processes parallel other investments in the ATRS portfolio where assigned investment managers may invest in equity, debt, a combination of both debt and equity, or other opportunities. These investment managers also have the ability to manage the investments in their portfolios by converting debt to equity, changing terms of investments and deciding when to unwind or liquidate investments they manage. Many of these investments also allow for the use of callable distributions to be called by the specified investment manager and in most cases do not require an additional recommendation from an investment consultant. Some investments including Franklin Park, US Agriculture, and BTG Pactual are assigned to a specific manager and have similar processes that allow ATRS input in the use of callable distributions. ATRS input for investments assigned to a specific manager varies based on recognized Board authority, the legal documents for each investment assigned to the specific manager, and the level of confidentiality required at the time.

In other words, similar types of ATRS investments are assigned a specific investment manager that typically performs these functions. In the case of direct investments or investments not assigned to an investment manager, ATRS staff has managed these ongoing investments according to Policy 4 and followed the established processes mentioned in the Resolutions to monitor and adjust to changing conditions that may arise from the direct investments.

Agency's Response to Findings

The Agency's response to the finding identified in our audit is described above. The Agency's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose. However, pursuant to Ark. Code Ann § 10-4-417, all reports presented to the Legislative Joint Auditing Committee are matters of public record, and distribution is not limited.

ARKANSAS LEGISLATIVE AUDIT



Tom Bullington, CPA
Deputy Legislative Auditor

Little Rock, Arkansas
January 7, 2021

ARKANSAS TEACHER RETIREMENT SYSTEM
STATEMENT OF FIDUCIARY NET POSITION
JUNE 30, 2020

Exhibit A

	Totals
ASSETS	
Cash and cash equivalents	\$ 348,739,106
Receivables:	
Member contributions	9,378,658
Employer contributions	24,093,069
Investment trades pending	21,871,383
Accrued investment income	12,922,708
Due from other funds	3,555,563
Other receivables	1,083,234
Total Receivables	72,904,615
Investments, at fair value:	
Domestic equities	2,071,795,588
International equities	961,079,504
Pooled equity funds	1,052,044,721
U.S. Government obligations	28,245,622
Corporate obligations	925,233,362
Asset- and mortgage-backed securities	23,104,762
Pooled fixed income funds	1,607,759,109
Promissory notes	257,463,572
Limited partnerships	28,276,070
Real estate	52,674,001
Alternative investments	9,351,605,145
State recycling tax credits	176,000,000
Investment derivatives	(13,433)
Total Investments	16,535,268,023
Securities lending collateral	315,801,222
Capital assets, net of accumulated depreciation	113,544
Other assets	74,552
TOTAL ASSETS	17,272,901,062
DEFERRED OUTFLOWS OF RESOURCES	
Deferred outflows related to OPEB	1,310,404
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	17,274,211,466
LIABILITIES	
Accrued expenses and other liabilities	889,241
Compensated absences	530,170
Post-employment benefit liability	6,585,411
Investment trades pending payable	35,049,671
Accrued investment expenses	10,225,884
Securities lending liability	315,851,510
Due to other funds	2,284,259
TOTAL LIABILITIES	371,416,146
DEFERRED INFLOWS OF RESOURCES	
Deferred inflows of resources related to OPEB	719,096
TOTAL LIABILITIES AND DEFERRED INFLOWS OF RESOURCES	372,135,242
NET POSITION RESTRICTED FOR PENSION BENEFITS	\$ 16,902,076,224

The accompanying notes are an integral part of these financial statements.

ARKANSAS TEACHER RETIREMENT SYSTEM
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
JUNE 30, 2020

Exhibit B

	Totals
ADDITIONS	
Contributions:	
Member	\$ 153,105,134
Employer	446,228,128
Total contributions	599,333,262
Investment income	
From investing activities:	
Net appreciation (depreciation) in fair value of investments	(267,694,438)
Interest and dividends	130,592,889
Real estate operating income	7,545,561
Total investment income (loss)	(129,555,988)
Less investment expense	39,381,324
Net investment income (loss)	(168,937,312)
From securities lending activities:	
Securities lending gross income	8,224,492
Less: securities lending expense	5,151,614
Net securities lending income (loss)	3,072,878
Other income	101,370
TOTAL ADDITIONS (LOSSES)	433,570,198
DEDUCTIONS	
Benefits	1,255,065,794
Refunds of contributions	9,592,091
Administrative expenses	8,457,862
TOTAL DEDUCTIONS	1,273,115,747
NET CHANGE IN NET POSITION	(839,545,549)
NET POSITION - BEGINNING OF YEAR	17,741,621,773
NET POSITION - END OF YEAR	\$ 16,902,076,224

The accompanying notes are an integral part of these financial statements.

ARKANSAS TEACHER RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies

A. Reporting Entity/History

Act 266 of 1937, as amended, established the Arkansas Teacher Retirement System (ATRS) as an office of Arkansas state government for the purpose of providing retirement benefits for employees of any school or other educational agency participating in ATRS. Act 427 of 1973, as amended, provided that the general administration of ATRS, responsibility for its proper operation, and responsibility for making effective the provisions of the Teacher Retirement law are vested in a 15-member Board of Trustees. The State Bank Commissioner, Treasurer of State, Auditor of State, and Commissioner of Education are ex-officio trustees. The remaining 11 trustees are elected and consist of seven active members of ATRS with at least five years of actual service, three retired members receiving an annuity from ATRS, and one active or retired member from a minority racial ethnic group. The seven active trustees consist of one member from each of the four congressional districts; two employed in positions requiring an administrator's license, of which one must be an administrator; and one member employed in a position that does not require state licensure. The trustees are elected in accordance with rules adopted by the Board. Board members serve as trustees without compensation but are reimbursed for any necessary expenses incurred to attend Board meetings or perform other duties authorized by the Board.

B. Plan Description

ATRS is a cost-sharing, multiple-employer defined benefit pension plan that covers employees of schools and education-related agencies, including Arkansas School for the Blind, Arkansas School for the Deaf, Arkansas Activities Association, State Board of Education, regional education service cooperatives, ATRS, Arkansas Educational Television Commission, area vocational-technical schools, Arkansas Rehabilitation Services, enterprises privatized by a public school district, and educational nonprofit organizations licensed and regulated by Division of Developmental Disabilities Services of the Department of Human Services..

On June 30, 2020, the number of participating employers was as follows:

Public schools	262
State colleges and universities	39
State agencies	17
Other/privatized	<u>28</u>
Total	<u>346</u>

On June 30, 2020, ATRS's membership consisted of the following:

Retirees or beneficiaries currently receiving benefits	50,133
T-DROP participants	3,639
Inactive plan members (not receiving benefits)	13,338
Active members	
Fully vested	45,209
Non-vested	<u>21,691</u>
Total	<u>134,010</u>

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

B. Plan Description (Continued)

Members are eligible for full retirement benefits at age 60 with five or more years of actual or reciprocal service or at any age with 28 or more years of credited service. Members with 25 years of actual or reciprocal service who have not attained age 60 may receive an annuity reduced by 10/12 of 1% multiplied by the number of months by which the early retirement precedes the earlier of (1) completion of 28 years of credited service or (2) attainment of age 60. The normal retirement benefit, paid monthly, is determined based on (1) the member's final average salary (FAS; effective July 1, 2018, computed using the average of the annual salaries paid during the period of five years of credited service producing the highest annual average) and (2) the number of years of service. For active members as of June 30, 2018, a benchmark three-year FAS was established as a minimum FAS.

ATRS has contributory and noncontributory plans. The contributory plan has been in effect since the beginning of ATRS. The noncontributory plan became available July 1, 1986. Acts 81 and 907 of 1999, effective July 1, 1999, require all new members under contract for 181 or more days to be contributory. Act 93 of 2007 allows an active noncontributory member to make an irrevocable election to become contributory on July 1 of each fiscal year.

A cost of living adjustment (COLA) is payable on July 1 of each year to retirees, certain survivors, and annuity beneficiaries who received monthly benefits for the previous 12 months. The COLA is calculated by multiplying 100% of the member's base retirement annuity plus 3%. Act 780 of 2017 allows the Board of Trustees to evaluate any future COLA adjustments on an annual basis to determine if a simple or compound COLA increase will be given based on the financial condition of the system.

Act 1096 of 1995 created a teacher deferred retirement option plan (T-DROP) for members with 30 or more years of service credit. Effective September 1, 2003, Act 992 of 2003 requires employers to make contributions on behalf of all members participating in T-DROP at rates established by the Board of Trustees. Member contributions and accumulation of service credit will cease once a member enters T-DROP. During participation in T-DROP, ATRS will credit the member account with plan deposits and interest. The plan deposits will be calculated beginning with the member's plan benefit reduced by 1% for each year of credited service. The Board of Trustees may authorize early participation in T-DROP for members with at least 28 years but less than 30 years of credited service. The plan deposit for early participation will be calculated the same as the regular T-DROP deposit with a further reduction of at least .5% but not more than 1% for each month of credited service under 30 years. The T-DROP account accrues interest at a variable rate that is set annually by the ATRS Board of Trustees. T-DROP deposits into member accounts cease at the completion of 10 years of participation in the program; however, a member may continue employment and will continue to receive interest on the account balance at the 10-year plus interest rate that is also set annually by the Board of Trustees. When T-DROP participation ceases, the member may receive the T-DROP distribution as a lump-sum cash payment or an annuity or may roll it over into another tax-deferred account. A member may also elect to defer all or part of the distribution into a T-DROP cash balance account held by ATRS.

Disability retirement benefits are payable to members who are vested and demonstrate total and permanent incapacity to perform the duties of their position while in active employment. The disability annuity is computed in the same manner as the age and service annuity.

Survivor benefits are payable to qualified survivors upon the death of an active, vested member. Eligible spouse survivors receive a survivor annuity that is based on the member's years of service credit prior to their death, and minor child survivors receive a percentage of the member's highest salary earned. ATRS also provides a lump sum death benefit for active and retired members with 10 or more years of credited service. The amount for contributory members will be up to \$10,000 and up to \$6,667 for noncontributory members. The amount will be prorated for members who have both contributory and non-contributory service; however, members with 15 or more years of contributory service will receive the full \$10,000.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

C. Basis of Presentation – Fund Accounting

The accounting system is organized and operated on a fund basis. A fund is defined as a fiscal and accounting entity with a self-balancing set of accounts recording cash and other financial resources, together with all related liabilities and residual equities or balances and changes therein, which are segregated for purposes of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions, or limitations. The following types of funds, if applicable to this Agency, are recognized in the accompanying financial statements.

Fiduciary Funds

Trust and Agency Funds – Trust and Agency Funds are used to report resources held by the Agency in a trustee capacity or as an agent for individuals, other governmental units, and other funds. These include Pension Trust Funds, Employee Health Trust Funds, Investment Trust Funds, Private-Purpose Trust Funds, and Agency Funds. The specific activity accounted for at this Agency includes the following:

Arkansas Teacher Retirement System Fiduciary Pension Trust Fund

D. Basis of Accounting

Basis of accounting refers to when revenues and expenditures or expenses are recognized and reported in the financial statements. The economic resources measurement focus and accrual basis of accounting are used in the Fiduciary Fund financial statements. Under the accrual basis, contributions and other revenues are recognized when earned, and benefits, refunds, and other expenses are recorded when incurred.

E. Federal Income Tax Status

During the year ended June 30, 2020, ATRS was a qualified plan under 26 USC § 401(a) and was exempt from federal income taxes under 26 USC § 501(a).

F. Cash and Cash Equivalents

Cash and cash equivalents include demand accounts, imprest accounts, cash on hand, cash in State Treasury, all short-term investments with maturities at purchase of 90 days or less, and all deposits in the Short-Term Investment Fund (STIF). The STIF is created through daily sweeps of excess cash by the custodial bank into bank-sponsored commingled funds that are invested in U.S. Government and agency securities and other short-term investments.

G. Deposits and Investments

Deposits

Deposits are carried at cost and consist of cash in bank, cash in State Treasury, cash on deposit with investment managers, and cash in Short-Term Investment Funds. At June 30, 2020, these totals were \$24,922,043, \$853,111, \$105,877,308, and \$217,086,569, respectively. State Treasury Management Law governs the management of funds held in the State Treasury, and the Treasurer of State is responsible for ensuring these funds are adequately insured and collateralized.

Custodial Credit Risk – Custodial credit risk for deposits is the risk that, in the event of the failure of a depository institution, the Agency will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. The Agency has adopted the State Board of Finance Policy requiring the use of depository insurance and collateralization procedures to manage the risk that deposits may not be returned. As of June 30, 2020, none of the Agency's bank balance of \$24,932,035 was exposed to custodial credit risk as it was fully insured by the FDIC.

ARKANSAS TEACHER RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Deposits (Continued)

As of June 30, 2020, none of the cash in the Short-Term Investment Fund was exposed to custodial credit risk as it was collateralized with securities held by the custodial agent in the name of ATRS. As of June 30, 2020, \$1,002,127 of \$106,080,937 in cash held by investment managers was exposed to custodial credit risk as it was uninsured and uncollateralized.

Investments

Ark. Code Ann. §§ 24-2-601 — 24-2-619 authorizes the ATRS Board of Trustees to have full power to invest and reinvest monies of ATRS and to hold, purchase, sell, assign, transfer or dispose of any of the investments, or investment proceeds in accordance with the prudent investor rule.

Each investment manager is required to invest within the specific guidelines and parameters set by the Board of Trustees. Asset allocation guidelines have been established as follows:

<u>Asset Allocation</u>	<u>Minimum</u>	<u>Target</u>	<u>Maximum</u>
Total equity	48.0%	53.0%	58.0%
Fixed income	13.0%	15.0%	17.0%
Alternatives	N/A*	5.0%	N/A*
Real assets***	N/A*	15.0%	N/A*
Private equity	N/A*	12.0%	N/A*
Cash equivalents	0.0%	0.0%	5.0%

*Due to the illiquid nature of alternatives, real assets, and private equity, it is not prudent to set rebalancing ranges for these asset classes.

**Additional allocations to total equity may be made beyond the maximum range to serve as a placeholder for unfunded and uncommitted alternatives, real assets, and private equity.

***Real assets include real estate, timber, agriculture, and infrastructure.

The fair value measurement of investments is categorized within the hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. In instances where inputs used to measure fair value fall into different levels, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation.

The hierarchy of inputs is defined as follows:

Level 1: Unadjusted quoted prices for identical instruments in active markets.

Level 2: Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3: Valuations derived from valuation techniques in which significant inputs are unobservable.

For investments that do not have a readily determinable fair value and fall outside of the fair value hierarchy, the system establishes the value by utilizing the Net Asset Value (NAV) or its equivalent as a practical expedient.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

The fair value measurement of plan investments and securities lending collateral as of June 30, 2020, was as follows:

<u>Investments measured at fair value</u>	<u>Total</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Equity investments:				
Domestic equities	\$ 2,071,795,588	\$ 2,071,795,588		
International equities	961,079,504	961,079,504		
Pooled equity investments	1,052,044,721	1,052,044,721		
Fixed income investments:				
U.S. Government obligations	28,245,622		\$ 28,245,622	
Corporate obligations	925,233,362		925,233,362	
Asset- and mortgage-backed securities	23,104,762		23,104,762	
Pooled fixed income funds	1,607,759,109		1,607,759,109	
Promissory notes	257,463,572			\$ 257,463,572
Real estate investments:				
Limited partnerships	28,276,070			28,276,070
Real estate	52,674,001			52,674,001
State recycling tax credits:	176,000,000		176,000,000	
Derivative investments:				
Forward contracts	(13,433)		(13,433)	
Total plan investments at fair value	7,183,662,878	\$ 4,084,919,813	\$ 2,760,329,422	\$ 338,413,643

Investments measured at net asset value (NAV)

Alternative investments:	
Commingled funds	3,221,564,400
Private equity funds	2,418,195,701
Real estate funds	1,233,979,683
Timberland funds	292,958,655
Farmland funds	204,544,403
Infrastructure funds	279,610,477
Re-insurance funds	265,564,463
Hedge funds	1,397,222,277
Opportunistic funds	37,965,086
Total plan investments at net asset value	9,351,605,145

Total plan investments **\$ 16,535,268,023**

Securities Lending Collateral:
Quality D short term investment pool* **\$ 315,801,222**

*Cash collateral received totaled \$315,851,510. The amount reported in the GASB 40 footnote above is the market value of the collateral received at June 30, 2020.

Cash equivalents invested in the Short-Term Investment Fund are valued at amortized cost, which approximates fair value. The fund may issue and redeem shares at any time.

Equity investments are classified as Level 1 are exchange-traded securities whose values are based on published market prices and quotations from either national security exchanges or active markets for those securities.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Fixed income investments are classified as Level 2 and include publicly traded securities in inactive markets. Investments in this category are sourced from reputable pricing vendors using price matrix models and techniques. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Fair value is defined as the quoted market value on the last trading day of the period.

Real estate and partnerships are classified as Level 3 and are comprised mostly of owned properties leased to commercial enterprises. These investments are valued using professional property valuations or appraisals, net of debt borrowed against the related assets. Appraisals and valuations are updated every 3 years.

Derivative investments include forward contracts and rights and are classified as Level 2 and valued using observable exchange, dealer or broker market pricing.

Alternative Investments generally do not have readily obtainable market values and are valued using the net asset value (NAV) per share (or its equivalent). These values are based on the capital account balance of the general partner reports at the end of each reporting period, adjusted by subsequent contributions, distributions, management fees, and changes in values of foreign currency. There are inherent uncertainties in estimating fair values for these types of investments, and it is possible that the estimates will change in the near-term or the subsequent sale of assets will be different from the reported net asset value. Generally, the investments cannot be redeemed or have certain redemption restrictions and distributions are from the liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

The unfunded commitments and redemption terms for investments measured at the net asset value (NAV) per share (or its equivalent) is presented in the following table:

<u>Investments measured at net asset value (NAV)</u>	<u>Total</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency</u>	<u>Redemption Notice Period</u>
Alternative investments:				
Commingled funds	\$ 3,221,564,400		Daily - Quarterly	1-30 days
Private equity funds	2,418,195,701	\$ 1,190,898,503	N/A	N/A
Real estate funds	1,233,979,683	396,836,280	Quarterly	45-90 days
Timberland funds	292,958,655		Quarterly	90 days
Farmland funds	204,544,403	15,463,892	Daily - Quarterly	30-60 days
Infrastructure funds	279,610,477	46,114,685	Quarterly	90 days
Re-insurance funds	265,564,463		Semiannually - Annually	60-90 days
Hedge funds	1,397,222,277	18,287,776	Weekly - Annually	3-90 days
Opportunistic funds	37,965,086	73,800,000	Quarterly	60 days
Total plan investments at net asset value	<u>\$ 9,351,605,145</u>	<u>\$ 1,741,401,136</u>		

Commingled Funds – Commingled funds consist of assets from several accounts that are blended together to lower trading costs per dollar of investment. The System has funds invested in domestic and international equities. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed with proper notification to the fund manager. Distributions are received through liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Private equity funds – Private equity includes 54 buyout funds, 3 distressed debt funds, 2 growth equity funds, 13 hard asset funds, 4 mezzanine funds, 5 multi-strategy funds, 8 turnaround funds, 13 venture capital funds and 3 structured capital funds that invest mostly in private companies across a variety of industries. The value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. The nature of private equity investments is that distributions are received through the liquidation of the underlying assets of the fund. The expected holding period of a private equity portfolio company is 2 to 10 years.

Real estate funds – Real estate funds include 6 core funds, 18 value added funds, and 20 opportunistic funds that invest primarily in the United States, Europe, and Asia. Fund investments can be made in the debt, equity, or a combination of both in real estate property ventures. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed with proper notification to the fund manager. Distributions from each fund may be received as cash flows from operations or return of capital from sales of assets. The expected holding period of underlying assets in the real estate funds is 2 to 10 years.

Timberland funds – The System has 2 timberland funds that invest in acquisition, growth, and disposition of timber and associated properties. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from the fund may be received as cash flows from operations or return of capital from sales of assets. The holding period for these assets is at the discretion of the fund manager based on the fund's purchase or sale of the underlying assets.

Farmland funds – The System has 2 farmland funds. One fund is an open-ended fund comprised of units that represent the System's ownership of underlying agricultural related assets. This fund may be redeemed quarterly with proper notification to the fund manager. The other fund holds the System's direct investments in farmland and related assets. These investments cannot be easily redeemed. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. Distributions from the fund may be received in cash flows from operations or return of capital from sales of assets. The holding period is at the discretion of the fund manager based on the fund's purchase or sale of the underlying assets in the portfolio.

Infrastructure funds – Infrastructure funds include 7 funds that primarily invest in physical, operational systems and in monopolistic opportunities such as governmental functions (transmission lines and toll roads). The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from each fund may be received as cash flows from operations or return of capital from sales of assets. The expected holding period of underlying assets in the real estate funds is 2 to 10 years.

Re-insurance funds – Re-insurance funds invest in insurance products designed to collect premiums from an insurance company for taking a specific type and level of risk associated with natural disasters. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed annually. Distributions from each fund may be received as cash flows from operations or return of capital from sales of assets. The expected holding period of underlying assets is 6 months to 1 year.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Hedge funds – Hedge funds consist of 3 risk premia funds that target absolute returns through long-short positions across various factors and classes, 2 long/short equity funds that seek to profit from securities identified as both undervalued and overvalued, 2 global macro funds that profit from broad market swings caused by political or economic events, 2 credit funds that invest primarily in debt instruments of other companies, and 1 event-driven fund and 1 co-investment fund that acquire enough shares of a company to gain a controlling interest in order to make corrections to potentially increase a stock's value. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. Redemption ranges from monthly to annually depending on the manager (with the exception of one fund that currently has a 1 year hold). Distributions are received through liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

Opportunistic funds – Opportunistic funds utilize operational experience of the fund managers in the fields of information technology, telecommunications, and business services industries to seek quality returns. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed quarterly with proper notification to the fund manager. Distributions are received through liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

Securities lending collateral - Cash collateral received from borrowers in the securities lending program is invested in a Quality D short-term investment fund that consists of a liquidating account with a liquidity pool and a duration pool. The value of this fund has been determined by the fund administrator using the NAV per share (or its equivalent).

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. For the year ended June 30, 2020, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was -.96%.

Interest Rate Risk – Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Agency does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates. The summary shown below indicates that 87% of the Agency's investment maturities are one year or longer.

Investment Type	Fair Value	Investment Maturities (In Years)			
		Less than 1	1 - 5	6 - 10	More than 10
U.S. Government obligations	\$ 28,245,622		\$ 14,504,761		\$ 13,740,861
Corporate obligations	925,233,362	\$ 21,291,768	433,509,823	\$ 363,003,387	107,428,384
Asset- and mortgage-backed securities	23,104,762		7,095,419	1,227,164	14,782,179
Pooled fixed income funds	1,607,759,109	347,511,514	30,526,705	1,229,720,890	
Promissory notes	257,463,572		102,298,022		155,165,550
State recycling tax credits	176,000,000	16,000,000	64,000,000	80,000,000	16,000,000
Total	\$ 3,017,806,427	\$ 384,803,282	\$ 651,934,730	\$ 1,673,951,441	\$ 307,116,974
<u>Securities Lending Collateral</u>					
Quality D short term investment pool	\$ 315,801,222	\$ 314,876,043		\$ 925,179	

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Asset-Backed Securities – As of June 30, 2020, ATRS held asset-backed securities with a fair value of \$18,217,762. These securities represent interests in various trusts consisting of pooled financial assets other than mortgage loans conveyed by the issuing parties. ATRS's ability to recover the amount of principal invested in these securities depends on the performance and quality of the trust assets.

Mortgage-Backed Securities – As of June 30, 2020, mortgage-backed securities had a fair value of \$1,232,391. The yields and maturities of mortgage-backed securities generally depend on when the underlying mortgage loan principal and interest are repaid. Although the full amount of principal will be received if prepaid, the interest income that would have been collected during the remaining period to maturity, net of any market adjustment, is lost.

Corporate Bonds – As of June 30, 2020, ATRS held corporate bonds with a fair value of \$325,664,164. Corporate bonds are debt instruments that are issued by private corporations. These bonds have a term maturity and can have either a fixed or variable interest rate. Variable interest rate bonds have adjustments that are made periodically and vary directly with movements in interest rates.

Convertible Corporate Bonds – As of June 30, 2020, ATRS held convertible bonds with a fair value of \$599,569,199. Convertible bonds convey an option to the bondholder to exchange each bond for a specified number of shares of common stock of the corporation. Convertible bonds generally offer lower coupon rates and promised yields to maturity in exchange for the value of the option to trade the bond into stock.

Promissory Notes – ATRS also held 4 promissory notes with a fair value of \$257,463,572 at June 30, 2020. Promissory notes are form of debt that companies use to raise money in exchange for payment of a fixed amount of periodic income at a specified date or on demand. Three unsecured promissory notes were issued to Big River Steel Holdings, LLC, and one secured note was issued to Highland Pellets, LLC.

Credit Risk – Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The risk is measured by the credit quality of investments in debt securities as described by nationally-recognized statistical rating organizations. A formal investment policy that limits investment in debt based on their statistical rating as a means of managing exposure to credit risk has not been adopted by the Agency.

As of June 30, 2020, the Agency's exposure to credit risk as rated by Standard and Poor's and Moody's Investors Service is as follows:

Standard and Poor's		Moody's Investors Service	
Rating	Fair Value	Rating	Fair Value
AAA	\$ 4,414,675	Aaa	\$ 27,906,261
AA	30,870,068	Aa	207,024
A	18,229,377	A	24,639,866
BBB	231,729,951	Baa	196,209,728
BB	89,402,445	Ba	81,455,122
B	69,618,539	B	37,436,921
CCC or below	17,780,446	Caa or below	3,382,874
Unrated	2,555,760,926	Unrated	2,646,568,631
Total	<u>\$ 3,017,806,427</u>	Total	<u>\$ 3,017,806,427</u>
<u>Securities Lending Collateral</u>			
Unrated	<u>\$ 315,801,222</u>	Unrated	<u>\$ 315,801,222</u>

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Custodial Credit Risk – Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the Agency will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the Agency, and are held by either the counterparty or the counterparty's trust department or agent but not in the Agency's name. The Agency has adopted the State Board of Finance Policy requiring the use of depository insurance and collateralization procedures to manage custodial credit risk for all investments other than loaned securities. As of June 30, 2020, none of the Agency's investments were exposed to custodial credit risk.

Concentration of Credit Risk – Concentration of credit risk is the risk of loss attributed to the magnitude of the Agency's investment in a single issuer (not including investments issued or explicitly guaranteed by the U.S. Government, investments in mutual funds, external investment pools, or other pooled investments). The Agency has not adopted a formal investment policy to limit the amount it may invest in any one issuer to manage the concentration of credit risk. As of June 30, 2020, none of the Agency's investments in any one issuer represent more than 5% of total investments.

Foreign Currency Risk – Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Agency does not have an investment policy that limits investment in foreign currency.

The Agency's exposure to foreign currency risk in U.S. dollars for investments and deposits at June 30, 2020, was as follows:

Currency		Fair Value	Investments			Cash Deposits
			Fixed Income	Equities	Forward Contracts	
Argentine Peso	ARS	\$ 985,858	\$ 609,284		\$ (9,897)	\$ 386,471
Australian Dollar	AUD	2,284,572		\$ 2,284,572		
Brazilian Real	BRL	22,134,760		22,134,759		1
British Pound Sterling	GBP	323,323,814		321,935,813	1,376,404	11,597
Canadian Dollar	CAD	12,025,276		12,025,193		83
Chinese Yuan Renminbi	CNH	26,082,132		26,082,184	(57,490)	57,438
Danish Krone	DKK	388				388
Euro	EUR	293,299,451		292,738,193	569,390	(8,132)
Hong Kong Dollar	HKD	37,206,465		36,234,390	972,073	2
Indian Rupee	INR	430,924				430,924
Indonesian Rupiah	IDR	17,097,376		17,097,359		17
Japanese Yen	JPY	156,341,019		156,383,342	(165,149)	122,826
Mexican Peso	MXN	2,244,163		2,244,163		
New Taiwan Dollar	TWD	22,271,689		22,271,687		2
New Zealand Dollar	NZD	3,767,789		3,767,789		
South African Rand	ZAR	44,390,039		44,390,039		
South Korean Won	KRW	57,546,379		57,546,379		
Swedish Krona	SEK	73,503,772		73,492,263	11,483	26
Swiss Franc	CHF	65,421,341		72,539,929	(7,119,071)	483
Thailand Baht	THB	2,031,662		2,031,662		
Totals		\$ 1,162,388,869	\$ 609,284	\$ 1,165,199,716	\$ (4,422,257)	\$ 1,002,126

For Forward Currency Contracts in the schedule above, a positive number represents the market value of contracts to purchase that currency in excess of the market value of contracts to sell that currency. A negative number, therefore, represents the market value of contracts to sell foreign currency in excess of contracts to purchase that currency.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Derivatives – Derivative instruments are financial contracts or agreements whose values depend on the values of one or more underlying assets, reference rates, and/or financial indexes. Derivative instruments include futures contracts, forward contracts, swap contracts, options contracts, forward foreign currency exchange and rights. ATRS investment guidelines state that derivatives may be used to reduce the risk in a portfolio but should not be used to create a position of leverage or substantially increase the risk of the overall portfolio. Futures and options should be matched by cash or cash equivalent securities, and all short futures positions should be matched by equivalent long security positions. Each investment manager's derivative usage is specified in the investment management agreement or specific guidelines.

At June 30, 2020, the fair value balance of derivative instruments and the changes in fair value for the year then ended, were as follows:

Type	Changes in Fair Value		Fair Value at June 30, 2020	
	Classification	Amount	Classification	Amount
Foreign currency forwards	Investment income	\$ 81,640	Investments	\$ (13,434)

Foreign Currency Forwards – ATRS enters into various currency contracts to manage exposure of foreign portfolio holdings to changes in foreign currency exchange rates. A forward exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. Risks associated with such contracts include movement in the value of the foreign currency relative to the U.S. dollar and the ability of the counterparty to perform. The contracts are valued at forward exchange rates, and the changes in value of open contracts are recognized as unrealized appreciation (depreciation) in fair value of investments, a component of investment income, in the statement of changes in plan net position. The realized gain or loss on closed forward currency contracts represents the difference between the value of the original contracts and the closing value of such contracts and is included in net appreciation (depreciation) in fair value of investments, a component of investment income, in the statement of changes in plan net position. At June 30, 2020, ATRS had outstanding forward exchange currency contracts to purchase foreign currencies with contract amounts of \$3,681,897 and market values of \$3,684,353, resulting in a net gain of \$2,456. Outstanding forward exchange currency contracts to sell foreign currencies with contract amounts of \$8,090,720 had market values of \$8,106,610, resulting in a net loss of \$15,890.

The net fair value and net notional amounts of foreign currency forwards as of June 30, 2020, were as follows:

Foreign Currency Forward	Fair Value	Net Notional
Argentine Peso	\$ 394	ARS 697,253
British Pound Sterling	7	GBP 9,062
Chinese Yuan Renminbi	(70)	CNH 406,323
Japanese Yen	1,210	JPY 17,817,065
Swedish Krona	440	SEK 5,895,026
Swiss Franc	(17,871)	CHF 6,710,986
United States Dollar	2,456	USD 3,681,897
Totals	<u>\$ (13,434)</u>	

ARKANSAS TEACHER RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Investments (Continued)

Securities Lending Transactions – Arkansas Code Annotated and Board policy permit ATRS to participate in a securities lending program administrated by State Street Bank (the “Custodian”). The Custodian enters into agreements with broker-dealers or other entities to loan securities for collateral with a simultaneous agreement to return the collateral for the same securities in the future. There were no restrictions on the dollar amount of securities loaned by ATRS. Securities on loan to participating brokers at year-end include U.S. Government securities, corporate securities, and international securities. Brokers who borrow the securities provide cash or other collateral, including securities issued or guaranteed by the U.S. Government. Collateral must be provided in the amount of at least 100% of the market value of the loaned securities. ATRS cannot pledge or sell collateral securities received unless the borrower defaults. The cash collateral received on each loan is invested in a collective investment fund comprised of a liquidity pool and a duration pool.

As of June 30, 2020, the liquidity pool had an average duration of 26.81 days and an average weighted final maturity of 70.20 days for USD collateral. The duration pool had an average duration of 18.22 days and an average weighted final maturity of 1,602.55 days for USD collateral. Because the loans are terminable at will, their duration generally will not match the duration of the investments made with cash collateral.

At year-end, ATRS had no credit risk exposure to borrowers due to the custodian’s indemnification agreement to purchase replacement securities, or return cash collateral in the event a borrower fails to return a loaned security or fails to pay the Agency for income of the securities while on loan. No borrowers failed to return loaned securities or pay distributions during the year. Investments made with cash collateral appear as an asset on the Statement of Plan Net Position. Corresponding liabilities are recorded, as ATRS must return the cash collateral to the borrower upon expiration of the loan.

ATRS is exposed to investment risk, including the possible loss of principal value in the cash collateral pool, due to fluctuation in the market value of the assets held by the cash collateral pool. As of June 30, 2020, the fair value of the securities lending liabilities exceeded the securities lending assets by \$50,288.

H. Capital Assets

Capital assets purchased and in the custody of this Agency were recorded as expenditures at the time of purchase. Assets with costs exceeding \$5,000 and an estimated useful life exceeding one year are reported at historical cost, including ancillary costs (such as professional fees and costs, freight costs, preparation or setup costs, and installation costs). Gifts or contributions are generally recorded in the accounts at acquisition value at the time received. Acquisition value is the market value if the Agency would have purchased the item. Depreciation is reported based on a straight-line method, with no salvage value. Estimated useful lives generally assigned are as follows:

Assets:	Years
Equipment	5-20

Capital assets activity for the year ended June 30, 2020, was as follows:

	Beginning Balance	Additions	Retirements	Ending Balance
Fiduciary activities:				
Equipment	\$ 1,064,259	\$ 244,439	\$ 332,766	\$ 975,932
Less: Accumulated depreciation	914,489	148,050	200,151	862,388
Fiduciary activities, net	\$ 149,770	\$ 96,389	\$ 132,615	\$ 113,544

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

I. Compensated Absences – Employee Leave

Annual leave is earned by all full-time employees. Upon termination, employees are entitled to receive compensation for their unused accrued annual leave up to 30 days. Liabilities for compensated absences are determined at the end of the year based on current salary rates.

Sick leave is earned by all full-time employees and may be accrued up to 120 days. Compensation up to a maximum of \$7,500 for unused sick leave is payable to employees upon retirement.

Compensated absences are reported in the State's "Government-Wide" financial statements but are not reported as liabilities or expenditures in the governmental funds. However, the compensated absences payable attributable to this Agency's employee annual and sick leave as of June 30, 2020 and 2019, amounted to \$530,170 and \$445,890, respectively. The net changes to compensated absences payable during the year ended June 30, 2020, amounted to \$84,280.

J. Post-Employment Benefits Other Than Pensions

Arkansas State Employee Health Insurance Plan (Plan)

Plan Description – The Department of Finance and Administration – Employee Benefits Division (DFA-EBD) provides medical and prescription drug benefits for eligible state employees and retirees. Policies for DFA-EBD related to medical and prescription drug plans are established by the State and Public School Life and Health Insurance Board (Board) and may include ad hoc benefit changes or annual cost redeterminations. For the current year, no ad hoc or cost redetermination changes occurred. The Constitution of Arkansas, Article 5, vests the General Assembly with legislative power to enact and amend duties of and benefit provisions of the Board and DFA-EBD, respectively, as published in Subchapter 4, Chapter 5 of Title 21 of the Arkansas Code Annotated. DFA-EBD is included in the State of Arkansas's Comprehensive Annual Financial Report (CAFR), which includes all applicable financial information, notes, and required supplementary information. That report may be obtained by writing to Department of Finance and Administration, 1509 West Seventh Street, Suite 403, Little Rock, Arkansas 72201 or by calling 501-682-1675.

The Agency contributes to the Plan, to a single employer defined benefit OPEB plan administered by the DFA-EBD, on a monthly basis. The Board establishes medical and prescription drug benefits for three classes of individuals covered as follows: active employees, terminated employees with accumulated benefits, and retirees and beneficiaries. The Plan is established on the basis of a pay-as-you-go financing requirement and no assets are accumulated in a trust as defined by Governmental Accounting Standards Board (GASB) Statement No. 75. The State's annual OPEB cost for the Plan is based on an actuarially determine calculated amount made in accordance with GASB Statement No. 75.

Funding Policy – Employer contribution for the Plan are established by Ark. Code Ann. § 21-5-414 not to exceed \$450 per budgeted position. Employees, retirees, and beneficiaries contribute varying amounts based on the type of coverage and inclusion of family members. Benefits for Medicare-eligible retirees are coordinated with Medicare Part A and B and the Plan is the secondary payer. The portion of the State's annual OPEB liability attributable to ATRS as of June 30, 2020, is \$6,585,411.

K. Deferred Inflows and Outflows of Resources

Deferred outflows of resources represent a decrease of net position that applies to future periods. Thus, these items will not be recognized as an outflow of resources (an expense or expenditure) until a future period.

Deferred inflows of resources represent an increase of net position that applies to future periods. These items will not be recognized as an inflow of resources (revenue) until a future period.

ARKANSAS TEACHER RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 JUNE 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

L. Contributions

The Agency's funding policy provides for periodic employer contributions at statutorily-established rates based on annual actuarial valuations. The employer contribution rate was 14.25% for the fiscal year ending June 30, 2020. Contributory members are required to contribute 6.25% of gross wages to ATRS. Employee contributions are refundable if ATRS-covered employment terminates before a monthly benefit is payable. Employee contributions remaining on deposit with ATRS for a period of one or more years earn interest credits, which are included in the refund.

M. Reserves

In accordance with the provisions of Ark. Code Ann. § 24-7-405, ATRS must maintain reserve accounts showing net assets available for benefits. At June 30, 2020, the reserve accounts were funded at a level that complied with the Code provisions.

	Total
Members' deposit account reserve	\$ 10,195,620,369
Employers' accumulation account reserve	(6,237,129,203)
Retirement reserve	12,389,040,912
Teacher deferred retirement option plan account reserve	442,391,622
Survivor benefit account reserve	102,904,404
Income - expense account reserve	9,248,120
Total	\$ 16,902,076,224

The Code provisions define each of the reserve accounts as follows:

Members' Deposit Account Reserve – The account in which members' contributions shall be accumulated with regular interest and from which shall be made transfers and refunds of contributions.

Employers' Accumulation Account Reserve – The account in which shall be accumulated the employer's contributions to ATRS and from which shall be made transfers as provided in the code.

Retirement Reserve – The account from which shall be paid all annuities and benefits in lieu of annuities payable as provided in this act to retirants who retired on account of superannuation or disability and to beneficiaries of such retirants.

Teacher Deferred Retirement Option Plan Account Reserve – The account in which shall be accumulated plan deposits made on behalf of the member with plan interest.

Survivor Benefit Account Reserve – The account from which shall be paid survivor benefits payable as provided in this act.

Income - Expense Account Reserve – The account to which shall be credited all investment income from invested assets of ATRS. It shall also be the account in which shall be accumulated the contributions made by employers for the administrative expenses of ATRS, from which shall be made annual transfers of interest credits and excess amounts to the other accounts of ATRS, and from which shall be paid all the expenses of the Board necessary for the administration and operation of ATRS.

ARKANSAS TEACHER RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
JUNE 30, 2020

NOTE 2: Net Pension Liability

The components of the net pension liability of the participating employers at June 30, 2020, were as follows:

Total pension liability	\$ 22,562,958,162
Plan net position	<u>(16,902,076,224)</u>
Net pension liability	<u>\$ 5,660,881,938</u>
Plan net position as a percentage of the total pension liability	74.91%

Actuarial Assumptions – The total liability was determined by an actuarial valuation as of June 30, 2020, using the following actuarial assumptions, applied to all prior periods included in the measurement:

Wage inflation rate	2.75%
Salary increases	2.75 - 7.75%
Investment rate of return	7.50%

Mortality rates were based on the RP-2014 Healthy Annuitant, Disabled Annuitant, and Employee Mortality headcount weighted tables for males and females adjusted for future mortality improvements using projection scale MP-2017 Table from 2006.

The actuarial assumptions used in the June 30, 2020, valuation were based on the results of an actuarial experience study for the period July 1, 2010 through June 30, 2015.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return were adopted by the plan's trustees after considering input from the plan's investment consultant and actuary.

For each major asset class that is included in the pension plan's target asset allocation as of June 30, 2020, these best estimates are summarized in the following table:

<u>Asset Allocation</u>	<u>Target</u>	<u>Long-Term Expected Real Rate of Return</u>
Total equity	53.0%	5.2%
Fixed income	15.0%	-0.1%
Alternatives	5.0%	3.5%
Real assets	15.0%	5.1%
Private equity	12.0%	7.2%
Cash equivalents	<u>0.0%</u>	<u>-1.0%</u>
	100.0%	

ARKANSAS TEACHER RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 JUNE 30, 2020

NOTE 2: Net Pension Liability (Continued)

Single Discount Rate - A single discount rate of 7.50% was used to measure the total pension liability based on the expected rate of return on pension plan investments. The current member and employer contribution rates are 6.25% and 14.25% of active member payroll, respectively. Although not all members contribute, the member and employer rates are scheduled to increase by 0.25% increments ending in Fiscal Year 2023. The ultimate member and employer rates will be 7% and 15%, respectively. The projection of cash flows used to determine this single discount rate assumed that member and employer contributions will be made in accordance with this schedule. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 7.50%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1% lower or 1% higher:

	<u>Sensitivity of the Net Pension Liability to the Single Discount</u>		
	1% Decrease	Current Rate	1% Increase
	6.50%	7.50%	8.50%
Net pension liability	\$ 8,423,120,901	\$ 5,660,881,938	\$ 3,370,051,058

NOTE 3: Required Supplementary Schedules

Detailed historical information about the pension liabilities for which the pension plan's assets are being held and managed and the significant assumptions used to measure these liabilities are required supplementary information. This required supplementary information, prepared in accordance with the parameters of GASB Statement No. 67, is included immediately following the notes to the financial statements.

**ARKANSAS TEACHER RETIREMENT SYSTEM
SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
FOR THE TEN-YEAR PERIOD ENDED JUNE 30, 2020**

	2020	2019	2018	2017	2016	2015	2014	2013*	2012*	2011*
TOTAL PENSION LIABILITY										
Service cost	\$ 331,035,218	\$ 325,464,537	\$ 315,864,318	\$ 307,786,503	\$ 305,086,337	\$ 296,134,477	\$ 326,999,276			
Interest	1,608,463,162	1,551,511,422	1,504,613,059	1,485,759,965	1,433,768,167	1,371,168,271	1,326,709,192			
Changes in benefit terms	(24,869,157)	119,427,343	(7,365,993)	(76,812,667)	(15,341,738)	123,519,055	(27,405,705)			
Difference between actual and expected experience	(1,255,065,793)	(1,205,326,555)	(1,160,738,238)	(1,092,952,357)	(1,035,958,950)	(970,719,484)	(103,017,525)			
Changes in assumptions	(9,592,091)	(9,679,783)	(9,455,405)	(10,874,003)	(10,145,471)	(10,774,122)	(10,485,103)			
Benefit payments										
Refunds										
NET CHANGE IN TOTAL PENSION LIABILITY	649,971,339	781,396,964	642,917,741	1,518,652,629	677,408,345	811,328,197	598,550,120			
TOTAL PENSION LIABILITY - BEGINNING OF YEAR	21,912,986,823	21,131,589,859	20,488,672,118	18,970,019,489	18,292,611,144	17,481,282,947	16,862,732,827			
TOTAL PENSION LIABILITY - END OF YEAR (A)	\$ 22,562,958,162	\$ 21,912,986,823	\$ 21,131,589,859	\$ 20,488,672,118	\$ 18,970,019,489	\$ 18,292,611,144	\$ 17,481,282,947			
PLAN NET POSITION										
Contributions - employer	\$ 446,228,128	\$ 430,864,656	\$ 424,486,126	\$ 414,954,939	\$ 410,358,229	\$ 408,230,472	\$ 404,920,440			
Contributions - member	153,105,134	141,865,632	138,766,747	133,109,939	131,100,983	128,555,684	125,225,906			
Net investment income	(165,766,491)	898,384,867	1,824,094,695	2,289,818,591	35,579,657	632,166,951	2,429,334,097			
Benefit payments	(1,255,065,793)	(1,205,326,555)	(1,160,738,237)	(1,092,952,357)	(1,035,958,950)	(970,719,484)	(914,250,015)			
Refunds	(9,592,091)	(9,679,783)	(9,455,405)	(10,874,003)	(10,145,471)	(10,774,122)	(10,485,103)			
Administrative expense	(8,454,436)	(7,134,784)	(9,336,430)	(7,825,595)	(8,059,030)	(8,034,857)	(8,034,236)			
NET CHANGE IN PLAN NET POSITION	(839,545,549)	248,994,033	1,207,819,496	1,726,231,514	(477,124,582)	179,424,644	2,026,711,089			
PLAN NET POSITION - BEGINNING OF YEAR	17,741,621,773	17,492,627,740	16,284,808,244	14,558,576,730	15,035,701,312	14,856,276,668	12,829,565,579			
PLAN NET POSITION - END OF YEAR (B)	\$ 16,902,076,224	\$ 17,741,621,773	\$ 17,492,627,740	\$ 16,284,808,244	\$ 14,558,576,730	\$ 15,035,701,312	\$ 14,856,276,668			
NET PENSION LIABILITY - END OF YEAR (A) - (B)	\$ 5,660,881,938	\$ 4,171,365,050	\$ 3,638,962,119	\$ 4,203,863,874	\$ 4,411,442,759	\$ 3,256,909,832	\$ 2,625,006,279			
Plan net position as a percentage of total pension liability	74.91%	80.96%	82.78%	79.48%	76.75%	82.20%	84.98%			
Covered employee payroll	\$ 3,077,559,814	\$ 3,027,154,131	\$ 2,986,026,715	\$ 2,921,965,125	\$ 2,888,392,668	\$ 2,873,988,053	\$ 2,850,660,174			
Net pension liability as a percentage of covered employee payroll	183.94%	137.80%	121.87%	143.87%	152.73%	113.32%	92.08%			

* ATRS is only required to present those years for which information is available until the full 10-year trend is completed.

ARKANSAS TEACHER RETIREMENT SYSTEM
 SCHEDULE OF CONTRIBUTIONS
 FOR THE TEN-YEAR PERIOD ENDED JUNE 30, 2020

	2020	2019	2018	2017	2016	2015	2014	2013*	2012*	2011*
Actuarially-determined contribution	\$ 450,612,124	\$ 447,791,482	\$ 422,365,685	\$ 423,846,831	\$ 437,434,470	\$ 474,773,530	\$ 485,904,529			
Actual contribution	446,228,128	430,864,656	424,488,126	414,954,939	410,358,229	408,230,472	404,920,440			
Contribution deficiency (excess)	\$ 4,383,996	\$ 16,926,826	\$ (2,122,441)	\$ 8,891,892	\$ 27,076,241	\$ 66,543,058	\$ 80,984,089			
Covered employee payroll	\$ 3,077,558,814	\$ 3,027,154,131	\$ 2,986,026,715	\$ 2,921,965,125	\$ 2,888,392,668	\$ 2,873,988,053	\$ 2,850,860,174			
Actual contribution as a percentage of covered employee payroll	14.50%	14.23%	14.22%	14.20%	14.21%	14.20%	14.20%			

* ATRS is only required to present those years for which information is available until the full 10-year trend is completed.

ARKANSAS TEACHER RETIREMENT SYSTEM
 SCHEDULE OF INVESTMENT RETURNS
 FOR THE TEN-YEAR PERIOD ENDED JUNE 30, 2020

	2020	2019	2018	2017	2016	2015	2014	2013*	2012*	2011*
Annual money-weighted rate of return	-0.96%	5.25%	11.46%	16.09%	0.24%	4.34%	19.27%			

* ATRS is only required to present those years for which information is available until the full 10-year trend is completed.

ARKANSAS TEACHER RETIREMENT SYSTEM
 NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
 JUNE 30, 2020

NOTE 1: Summary of Significant Information Related to Required Supplementary Schedules

A. Changes in Benefit Terms

There were no significant changes in benefit terms for the year ended June 30, 2020.

B. Changes in Assumptions

There were no significant changes in assumptions for the year ended June 30, 2020.

C. Methods and Assumptions Used in Calculations of Actuarially-Determined Contributions

Valuation date: June 30, 2018

Actuarially determined contribution rates are calculated as of June 30 in the year which is one year prior to the beginning of the fiscal year in which contributions are reported.

The following actuarial methods and assumptions were used to determine contribution rates reported in the schedule of contributions:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Amortization period	30 years
Asset valuation method	4-year smoothed market for funding purposes ; 20% corridor
Payroll growth	2.75%
Salary increases	2.75 to 7.75% including inflation
Investment rate of return	7.50%
Mortality table	RP-2014 Healthy Annuitant, Disabled Annuitant, and Employee Mortality headcount weighted tables were used for males and females. Mortality rates were adjusted for future mortality improvements using projection scale MP-2017 from 2006.

Table	Scaling Factor	
	Males	Females
Healthy Annuitant	101%	91%
Disabled Annuitant	99%	107%
Employee Mortality	94%	84%

ARKANSAS TEACHER RETIREMENT SYSTEM
 SCHEDULE OF SELECTED INFORMATION
 FOR THE FIVE-YEAR PERIOD ENDED JUNE 30, 2020
 (UNAUDITED)

Schedule 4

	For the Year Ended June 30,				
	2020	2019	2018	2017	2016
Total Assets	\$ 17,272,901,062	\$ 18,281,516,802	\$ 18,088,381,003	\$ 16,792,590,856	\$ 15,236,170,821
Total Deferred Outflows of Resources	1,310,404				
Total Liabilities	371,416,146	539,895,029	595,753,263	507,782,612	677,591,091
Total Deferred Inflows of Resources	719,096				
Net Position Restricted for Pension Benefits	16,902,076,224	17,741,621,773	17,492,627,740	16,284,808,244	14,558,576,730
Total Additions (Losses)	433,570,198	1,471,135,154	2,387,349,568	2,837,883,469	577,038,869
Total Deductions	1,273,115,747	1,222,141,121	1,179,530,072	1,111,651,955	1,054,163,451



INTERNAL AUDIT DEPARTMENT

INTERNAL AUDIT REPORT:

Application of IRS 415 Limit

July 1, 2019 – March 31, 2021

June 7, 2021

Introduction

Employee Retirement Income Security Act (ERISA) of 1974 added IRC §415 to the Internal Revenue Code (Code). Section 415(b) sets limits on the maximum dollar benefit that can be paid from a retirement plan that is qualified under Code §401(a). A trust is not a qualified trust under Code §401(a) if the plan provides benefits that exceed the IRC 415 limits. IRS could disqualify a non-compliant plan. The last comprehensive regulations issued by the Treasury were issued on April 5, 2007.

ACA 24-7-733 requires benefits paid under the Arkansas Teacher Retirement System shall not exceed the limitations of Section 415 of the federal Internal Revenue Code that are applicable to governmental retirement plans, including without limitation the dollar limitations in the Internal Revenue Code, 26 U.S.C. 415(b)(1)(A).

IRC §415(b)(1)(A) provides a defined benefit dollar limit (limit) that is adjusted annually for a cost-of-living increase. The adjusted limit is effective as of January 1 of a calendar year and applies to limitation years that end with or within that calendar year. The limit for 2020 and 2021 is \$230,000 for members that retired between the ages of 62 and 65. The limit is adjusted for members retiring prior to age 62 or after age 65. If the member retires prior to age 62, the limit is reduced to being equivalent to the member drawing the benefit at age 62. If the member retires after age 65, the limit is increased to being equivalent to the member drawing the benefit at age 65. The limit is not reduced for survivors and disability benefits made prior to age 62.

The limit applies to employer-provided straight life annuity benefits. Employer-provided benefits include mandatory employee contributions that are “pick up” by a governmental employer under §414(h)(2). ATRS member contributions began being “picked up” under §414 July 1, 1997. Repayment of refunded service is considered employer-provided benefit. Only the original contribution of refunded service is considered employee-provided benefit. Employee-provided benefits are after-tax member contributions and purchased service credit including purchases made with rollover contributions.

Benefits paid in a form other than straight life annuity must be converted to the equivalent of a straight life annuity. This includes option benefits and lump sum distributions from the Teacher Deferred Retirement Option Plan (T-Drop). Treasury regulations 26 CFR §1.415(a)-1(f)(6) provides that benefits paid to an alternate payee are treated as benefits of the participant for purpose of applying the IRC §415(b) limits.

Code §415(m) allows governmental plans defined in Code §414(d) to pay benefits in excess of the limit through a qualified excess benefit arrangement. ATRS Board of Trustees approved Board Rule 15 in Board Resolution 2013-31 on July 26, 2013. Board Rule 15 established Benefit Restoration Plan and Trust. ATRS pays member benefits in excess of the limit through the Benefit Restoration Plan and Trust. The payments are made through a third-party vendor, Complete Payroll.

ATRS runs a conservative test on member data every month for members who retired over the last year. Any member whose benefit exceeds the limit is sent to Gabriel, Roeder, Smith and Company (GRS) for testing. GRS also runs a conservative test of

ATRS membership data for those whose benefit may exceed the limit. Those members whose benefit exceed their limit in the conservative test are fully tested by GRS. They determine the member's defined benefit annual dollar limit, member's annual straight life employer-provided benefit and how much of the member's benefit needs to be paid through the Benefit Restoration Plan and Trust.

Objectives

Our objectives in conducting this audit were as follows:

1. Verify that the application of IRS §415 limit testing is done in accordance with IRS Code §415.
2. Evaluate the internal controls surrounding the application of IRS 415 Limit Testing.

Scope and Methodology

Our audit covered July 1, 2019 through March 31, 2021. To accomplish the objective of verifying the application of IRS §415 limit is done in accordance with IRS Code, Internal Audit (IA) reviewed ATRS testing procedures and results. IA reviewed the members who were sent to GRS for testing in calendar year 2020 and 2021. Seventeen members were tested by GRS in 2020 and twelve in 2021. IA reviewed members who are receiving a monthly annuity of \$10,000 or more or who have received a T-Drop distribution of \$500,000 or more. This was obtained by a query run by Information Technology and only included members drawing benefits in February 2021. There were 25 members who received monthly benefits of \$10,000 or more and two members who receive a T-Drop lump sum distribution of \$500,000 or more. IA reviewed members with alternate payees from a qualified domestic relations order (QDRO). IA obtained a population from Report R7273, QDRO distribution, generated from the Arkansas Teacher Retirement Member Information System (ATRMIS). IA reviewed eleven members with alternate payees whose combined annual benefit was \$74,000 or more. IA reviewed the accuracy of the testing, the accuracy of data sent to GRS, and the accuracy of the benefits paid to members through the Benefit Restoration Plan and Trust.

In order to evaluate internal controls over the application of IRS 415 limit testing, IA conducted interviews with ATRS staff, performed a walkthrough of procedures, and reviewed ATRS risk assessment. In order to evaluate controls over the payment of benefits through the Benefit Restoration Plan and trust, IA reviewed procedures, ATRS financial records and bank account transactions.

Findings and Recommendations

Finding 1: Arkansas Teacher Retirement System (ATRS) failed to pay benefits through excess benefit arrangement for member whose benefits exceed the §415(b) limits. December 2017, Legislative Audit requested ATRS test all members. The member's benefit exceeded the member's §415(b) limit. GRS has sent ATRS notification of the amount to be paid through the excess benefit arrangement for this member each year since 2018. ATRS interpreted the grandfather clause of Treasury Regulations §1.415(a)-1 issued April 5, 2007 as all participants receiving benefits prior to April 5, 2007 were not subject to the §415(b) limits. The grandfather clause actually allows plans to apply their plan provisions that were adopted and in effect prior to December 31, 2006 to participants receiving benefits prior to April 5, 2007. There is no indication that ATRS was testing member benefits for exceeding the §415 limits or had an established system for testing prior to 2007.

Recommendation: ATRS pay the member's benefit in excess of the member's annual dollar limit established in §415 through an excess benefit arrangement.

Management Response: As mentioned above, ATRS management acted in accordance with the belief that the member in question had met grandfathering criteria based upon guidance from outside legal counsel. However, in accordance with internal audit's recommendation, ATRS will pay the member's excess benefits through the qualified excess benefit arrangement.

Finding 2: ATRS did not send a member who failed the ATRS conservative §415(b) limits test to Gabriel, Roeder, Smith and Company (GRS) for further testing for calendar year 2021.

Recommendation: ATRS send the member to GRS for further testing. ATRS has already fulfilled this recommendation and has sent the member to GRS for further testing.

Management Response: This member's information was sent on May 3, 2021 to GRS for further testing. In the future, DP department will keep an eye on such cases and report them to GRS immediately.

Finding 3: ATRS application of §415(b) limits failed to accurately test members who have alternate payees from a qualified domestic relations order. Treasury regulations establish that benefits provided to an alternate payee are treated as benefits of the member for purposes of applying the §415 limit. ATRS test does not include the alternate payee's benefit. Review of benefits revealed one member with an alternate payee who needs to be tested by GRS.

ATRS application of §415(b) limits failed to accurately test benefits of members retiring out of Teacher Deferred Retirement Option Plan. ATRS is testing the members benefit when they entered the T-Drop program instead of the benefit at retirement.

Recommendation: ATRS send the member to GRS for further testing. ATRS has already fulfilled this recommendation and has sent the member to GRS for further testing.

ATRS §415(b) limit testing be done on member's current benefit and a combined member and alternate payee's benefit.

Management Response: This member's information was sent on May 4, 2021 to GRS for further testing. Also, the computer program will be suitably modified to include alternate payee's benefit to apply against the member's 415 limit. Also, member's current benefit will be used instead of starting benefit in all calculations.

Finding 4: Lack of internal controls over safeguarding cash funds associated with paying benefits from an excess benefit arrangement. ATRS lacks controls over the timeliness of bank deposits, bank reconciliations, check numbers and segregation of duties.

Bank deposits and reconciliations are not done in a timely manner. ATRS has taken six to forty-one days to deposits warrants used to fund the excess benefit arrangement into the Benefit Restoration Plan and Trust bank account. Bank reconciliations have not been done since August 2020. From July 2019 through July 2020, ATRS took from thirty-three (33) to one hundred and six days (106) to perform bank reconciliations. ATRS lacks segregation of duties over bank accounts. ATRS cannot account for two of the check numbers issued by Complete Payroll. The staff who makes deposits and transfer funds, also reconciles bank statements.

The untimeliness of the deposits, bank reconciliations, and lack of segregation of duties provides an atmosphere where fraud can be committed. ATRS should investigate the two unaccounted for check numbers. ATRS should establish procedures for monitoring benefits issued through Complete Payroll.

Recommendation: Timely deposits, reconciliations and segregation of duties provide control over cash assets and help prevent fraud. ATRS should follow the guidelines established by DF&A's Financial Management Guide Subsection 8 Management of Cash or establish Board rules for time requirements in making deposits and performing bank reconciliations. Duties should be segregated with one person responsible for deposits and transfers and another staff member performing bank reconciliations.

Management Response: ATRS management recognizes the need for strong internal controls and appreciates the input of Internal Audit. Internal controls can always be improved and management will take the steps necessary to achieve this result. That being said, management would like to provide some context and clarification to the above finding and recommendation.

With respect to bank deposits, based upon the dates checks were actually received by ATRS the timing of deposits ranges from 1 to 35 days with an average of 10 days. All checks are kept securely in a safe with limited access. Aside from the 35 day delay, most checks were deposited within a week of receipt. Going forward checks should be deposited sooner due to increased presence of staff in the building.

With regards to bank reconciliations, ATRS has always abided by an internal standard of completing reconciliations within 90 days of receipt of bank statements. This standard has commonly been used by external auditors when evaluating the timeliness of reconciliations. ATRS management will ensure this standard is placed with the ATRS risk assessment as a guide. When applying this standard, it appears only two bank reconciliations were performed outside of this timeframe. Management will strive to continue to meet this standard. Also, changes will be made regarding either the individual assigned to perform the reconciliations for these accounts or a level of review will be added to ensure proper oversight.

ATRS has contacted the outside vendor responsible for the issuance of checks. The checks appear to be voids in their system. While it is not believed to be an issue of concern in this instance, management will monitor check number sequences and follow up on any check numbers not used.

It should be noted that these accounts are subject to outside audit and are reviewed annually. While auditing in and of itself is not, nor should be, considered an internal control the auditing of these accounts has provided a level of assurance that these accounts have been properly used and accounted for.

Finding 5: ATRS lacks controls over financial accounts associated with paying benefits from an excess benefit arrangement. Journal entries are not made timely and employee contributions are misclassified. Current accounting records are not complete or accurate.

ATRS journal entries for bank transactions associated with Benefit Restoration Plan and Trust have not been recorded since September 2020. This includes all benefit payments made through the Benefit Restoration Plan and Trust for calendar year 2020.

There were ninety-two bank transactions for processing payments through Benefit Restoration Plan and Trust from July 1, 2019 through March 31, 2021. Of these ninety-two transactions: seven were done in less than ten days, thirty-two have not been done, and the remaining fifty took from twelve to two hundred eighty-five days to record.

Employee contributions of \$34,154.11 used to fund the excess benefit arrangement have been reclassified as employer contributions in ATRS financial records.

Recommendation: ATRS should follow the guidelines established by DF&A's Financial Management Guide Subsection 8 Management of Cash or establish Board rules for time requirements for posting journal entries associated with cash funds.

Management Response: As of the date of this response, all journal entries are up to date (entries through April 2021). Journal entries, particularly in these accounts, have been delayed due to the prioritization of work during office COVID restrictions. The majority of the ninety-two referenced transactions are of low dollar amounts (typically \$16 a month) for fees associated with the handing of tax remittances to the Department of Finance and Administration. Payments to individuals are made during the months of August through December in a typical year with November and December having the largest payouts. Management will monitor the timeliness of these journal entries going forward with particular attention to the months involving payments to individuals.

Management is in the process of reviewing the appropriateness of the classification of contributions mentioned above.

Finding 6: Excess Benefit Arrangements are not funded according to ATRS legal counsel guidance and Board Rule 15. The only guidance IRS provides for excess benefit arrangements are in IRS Private Letter Rulings. ATRS tax attorney interpretation of the Private Letter Rulings is that the assets to fund the excess benefit must come from employer contributions and those contributions must be subject to the claims of the employer's creditors prior to the distribution to the plan's participants. ATRS Board Rule 15 states that ATRS will use employer contributions to fund the excess benefit arrangement. ATRS is using both employee and employer contributions to fund the benefits paid through the Benefit Restoration Plan and Trust.

Recommendation: ATRS needs to seek legal counsel on whether they are funding the excess benefit arrangement according to IRS Code.

Management Response: ATRS began conversations with outside legal counsel before commencement of this audit concerning the funding mechanism for the ATRS benefit restoration program. Recent legislation to transition all employers to EFT payment necessitated a review of funding. Legal counsel is in the process of researching IRS code and IRS private letter rulings pertaining to Qualified Excess Benefit Arrangements.

Finding 7: ATRS Risk Assessment does not address all aspects of the application of §415(b) limits testing. All state agencies are required under Financial Management Guide R1-19-4-505 to submit a risk assessment to the Department of Finance and Administration Internal Audit every two years. A risk assessment is a critical tool that helps an organization determine risk they may face in meeting their objectives or safeguarding their assets. It is important to know where assets are and to fully understand all controls in place to protect those assets. Risk assessments will help an organization obtain a clear picture of any potential threats to their assets or their ability to perform their objectives.

ATRS risk assessment does not fully cover or address risk associated with benefits being paid in excess of IRC §415(b) limits; benefits being paid through an excess benefit arrangement; and deposits, recording deposits, fees and benefits paid through an excess benefit arrangement.

Recommendation: ATRS address all risk and determine ways to address those risk associated with applying the §415(b) limit to member's benefits and paying benefits from an excess benefit arrangement.

Management Response: Management will review the risk assessment for inclusion of appropriate risks and controls.

Finding 8: There are no established written procedures for applying the §415 limits to member benefits. There are no established written procedures for paying member benefits over the §415 limits from an excess benefit arrangement. No staff member has full knowledge of procedures. ATRS lacks internal control procedures over funds.

Recommendation: Develop written procedures to cover all aspects of testing and applying §415 (b) limit test to member benefits. Develop written procedures for funding, accounting for, and paying benefits that exceed from an excess benefit arrangement. Develop written procedures for maintaining cash funds, giving timeliness of deposits, bank reconciliations, and journal entries. Procedures should be detailed and contain examples. Procedures should give clear guidelines on who is to perform each task, how often the task is to be performed and who is to review the work.

Management Response: Basic written procedures were developed by the former CFO upon implementation of the program. However, these procedures did not encompass all aspects of testing and administering the program. Management will work to further develop comprehensive written procedures.

Conclusion

ATRS failed to apply the §415(b) limit accurately and pay the member's benefit in excess of the member's annual dollar limit through the Benefit Restoration Plan and Trust. ATRS failed to send a member who failed ATRS conservative §415(b) testing to GRS for further testing. The information ATRS provided GRS on member's being tested was accurate. The benefits paid through the Benefit Restoration Plan and Trust was accurate.

Paying just one member in excess of their annual dollar limit can cause ATRS to lose their §401(a) tax status. This would make all ATRS investment earnings taxable income and affect member's favorable tax treatment of member contributions. Potential threat and possible fraud over ATRS assets associated with the excess benefit arrangement have not been addressed nor has a method of handling or discouraging the threat been determined. ATRS has not taken measures to ensure their assets are safeguarded. Fully addressing the assets associated with an excess benefit arrangement, the threats to those assets and how the agency is mitigating those threats will help the agency to protect their assets.

Management Response: ATRS continues to be in discussion with outside legal counsel concerning the administration of this program. ATRS continues to act with a good faith effort to comply with all IRS guidelines with the help of qualified expert tax counsel.



INTERNAL AUDIT DEPARTMENT

INTERNAL AUDIT SPECIAL PROJECT:

Cyber Security Training

July 1, 2020 – April 30, 2021

June 7, 2021

Introduction

Protecting member data is a priority of ATRS. As an effective line of defense against cyber-attacks, ATRS is providing regular updated security training to staff. In response to an ATRS staff member falling victim to a phishing scam in January of 2020, the ATRS Board of Trustees has requested that Internal Audit (IA) review the cyber security training provided to staff.

Arkansas Department of Information Systems implemented a cybersecurity awareness training program (CATP) for state employees in July 2018. The training is provided online by Security Mentor. The topics cover Introduction to Security Awareness, Office Security, Computer Security, Email Security, Web Security and Passwords. ATRS has been participating in the Security Mentor classes since July 2018. All ATRS staff are required to complete all of the Security Mentor classes. There are six classes each fiscal year.

ATRS Department of Information Technology (IT), utilizes various technologies and techniques monitors emails for phishing scams. IT will notify staff of specious emails giving detail about the email and how the scam is activated. IT request ATRS staff send any suspicious email to IT for review before opening.

For fiscal year 2021, Security Mentor training has included topics: Internet of Things, Privacy, Cloud Security, Social Networking, Email Security, and Public WiFi. The training on email security included a description of threats that can be received by email and tips on how to deduce the safety of email messages. The interactive lessons taught trainees how to look for clues that an email is malicious.

Objectives

Our objectives in conducting this audit were as follows:

1. Evaluate staff cyber security training.

Scope and Methodology

Our audit covered July 1, 2020 through April 30, 2021. To accomplish the objective of evaluating staff cyber security training, IA conducted interviews with ATRS staff, took the Security Mentor classes, and reviewed agency procedures.

Conclusion

ATRS staff is being adequately educated on cyber security. The classes are informative and give detail on how to identify cyber-attacks. IT monitors ATRS emails and keeps staff informed of any suspicious activity. Classes will be continued in the future.

Internal Audit Department

INTERNAL AUDIT PLAN

FOR THE PERIOD JULY 1, 2021 TO JUNE 30, 2022

PREPARED BY:

BRENDA WEST, INTERNAL AUDITOR

DENA DIXSON, ASSISTANT INTERNAL AUDITOR

Internal Audit Department

Audit Plan FY 2022

Introduction

As required by the International Standards for the Professional Practice of Internal Auditing issued by the Institute of Internal Auditors (IIA), and by Arkansas Teacher Retirement System's (ATRS) Internal Audit Charter, we submit the following Internal Audit Plan for Fiscal Year 2022.

In selecting areas for review, Internal Audit gives priority to processes where failure of the system to adequately perform could have serious consequences for ATRS, its members, stakeholders, and the Board. Therefore, projects were identified for this audit plan by using the 2020 ATRS risk assessment. Also, as ATRS continues to grow in terms of responsibilities, assets, and membership, there are areas that require regular reviews to ascertain whether the system continues to operate in an effective and efficient risk-controlled manner.

The Internal Audit Department will work with department managers to schedule a convenient time to perform audits. Audit projects will have an informal time budget associated with them. If audits require more time than planned, more hours will be used to ensure a high-quality, useful audit is conducted. If audits require less hours than originally planned, more topics will be chosen and presented to the Audit Committee for approval. This technique ensures audit flexibility and that the highest priority areas are covered first.

Scope

This plan covers the period July 1, 2021 through June 30, 2022.

Objective

The Internal Audit Department's objective is to assist the Board of Trustees and all levels of management in the effective discharge of their responsibilities by furnishing analysis, appraisals, and recommendations concerning the activities of the agency. This objective is accomplished by ensuring:

- Compliance with applicable laws and regulations
- Reliability and integrity of financial and operational information
- Safeguarding of assets
- Effectiveness and efficiency of operations

Internal Audit Department

Audit Plan FY 2022

Risk Assessment

Risk assessment is defined as a "systematic process for assessing and integrating professional judgments about probable adverse conditions and/or events." The risk assessment process provides a means of organizing and integrating professional judgments for development of the annual audit work schedule.

Risk is defined as the probability that an event or action could possibly occur that may adversely affect the organization and the activity being audited. Risk is a measure of uncertainty. Control Risk is the risk that established internal controls lose effectiveness over time. Custodial Risk is the risk associated with owning and safeguarding of assets. Operation Risk is the risk of direct or indirect loss resulting from inadequate or failed internal processes, people, systems, or external events. Business Risk is the risk associated with the probable material effects of an uncertain environment or achieving established objectives. Residual Risk is the amount of risk that management is willing to assume or the amount of risk that will not be addressed by applicable controls.

The risk assessment process begins with identification of auditable areas. The risks are assessed according to the guidelines provided by the Arkansas Department of Finance and Administration Internal Audit Section.

Acceptable Level of Risk

Although this plan contemplates a wide-ranging scope of audit effort, it does not provide coverage for all ATRS's components and systems. We have tried to maximize the limited resources to provide reasonable coverage to the projects we believe require the most attention.

It is important for the Board and management to understand the limitations of the audit coverage and the risks they assume in areas not audited. We believe that this plan allocates resources of the Internal Audit Department to the highest risk areas of the system and includes audit effort to address other areas requiring periodic review. We have also scheduled time for special projects to address areas identified during the year that do not appear to warrant a full audit but should be reviewed during the upcoming fiscal year.

Reporting

All audit reports are reviewed by the audit client and the ATRS Director prior to being released as the official audit report. This procedure helps ensure the audit report is factual, accurate, and free of bias. In addition, a self-review checklist is used by the Internal Audit Department to ensure the audit reports are properly supported by sufficient audit evidence. All audit reports will be provided to the Audit Committee and the Board of Trustees for their review.

Internal Audit Department

Audit Plan FY 2022

Planning and Administrative Projects

Internal Audit Department's responsibilities include the completion of numerous administrative and planning projects each year. Some of these projects include, but are not limited to, the following:

- Development of annual audit plan;
- Development of internal risk assessment;
- Establishment and maintenance of the internal audit manual;
- Maintenance of the Internal Auditor recommendation follow-up process; and
- Development and maintenance of Disaster Recovery Plan.

Questions

If you have any questions regarding this audit plan, please contact Brenda at brendaw@artrs.gov or Dena at denad@artrs.gov.

Internal Audit Department

**FY 2022 Annual Audit Plan
Available Audit Hours**

Total Hours (2 employees * 2080 hrs)	4,160
Less: Holidays	216 (A)
Annual Leave	360 (B)
Sick Leave	194 (C)
General Administration & Board Meetings	1000 (D)
Continuing Professional Education	100 (E)
	<u>1,870</u>
Available Audit Hours	<u>2,290</u>

Calculations

(A) (12 holidays * 9 hrs) * 2 employees	216
(B) 2 Employees (annual leave)	360
(C) 2 Employees (sick leave)	194
(D) General Administration and Board Meetings	1,000
(E) Continuing Professional Education (1 Professionals require CPE, plus additional training)	<u>100</u>
	<u>1,870</u>

Internal Audit Department

**FY 2022 Annual Audit Plan
Scheduled Audits**

<u>Name of Audit</u>	<u>Estimated Hours</u>
1. Outsourcing (Requested by Legislative Audit)	400
2. Implementation of Legislation Enacted by the 92 nd General Assembly	100
3. Qualified Domestic Relations Orders (QDRO)	400
4. Accounts Receivable	400
5. Review of Legislative Audit Findings and Other Concerns	300
6. Follow-up Reports	400
7. Arkansas Continuity of Operations Program (ACOOOP)/Disaster Recovery	40
8. ATRS Risk Assessment	250
Total Estimated Hours	<u>2,290</u>

ATRS Internal Audit Department FY2021 Summary of Work

Internal Audit Reports

History Adjustments

Arkansas Teacher Retirement System (ATRS) maintains a history of each member's salary, service, and contributions on the Arkansas Teacher Retirement Member Information System (ATRMIS). A member's history is established through salary, service and contributions reported by covered employers. Current salary, service, and contributions is reported and updated quarterly. Adding purchased service credit, free military service, reestablishing purchased refunded service, and corrections to salary, service, or member contributions are done by staff or program adjusting member's history.

The objectives of the audit were to verify that history adjustments were made according to ATRS laws, rules and procedures; verify that the history adjustments were accurate, properly approved and made in a timely manner to the member's history, and evaluate the internal controls surrounding history adjustments including review procedures.

The audit contained five findings and recommendations.

Issued: September 28, 2020

Status: Follow-up in FY2022

Teacher Deferred Retirement Option Plan (T-Drop)

T-Drop incentivizes members with 28-30 years of service credit to continue to work in the public schools by allowing the member to build a savings account for when they are ready to leave the workforce. T-Drop participation begins on the first day of each fiscal year, July 1. T-Drop deposits are a percentage of a member's full retirement benefit. Annual interest is paid on the T-Drop mean balance each June 30th. A member may accrue deposits in their T-Drop account for ten (10) consecutive years. At the completion of a ten-year plan, a T-Drop participant may continue to work and accrue post 10-year interest. T-Drop participant may retiree at any time. At retirement, their T-Drop account can be received in a lump sum payment, rolled into another qualified retirement plan, annuitized with their regular retirement benefit, rolled into ATRS Cash Balance Account (CBA), or combined distribution of annuity and lump sum payment.

The objectives of the audit were to determine T-Drop deposits and interest paid were calculated accurately and consistently in accordance with ATRS laws, rules and procedures; determine benefits paid member retiring out of T-Drop were calculated accurately and consistently in accordance with ATRS laws, rules and procedures; determine Cash Balance Account deposit, interest and withdrawals are made according to ATRS laws, rules and procedures; evaluate the adequacy of staff training to calculate T-Drop deposits, interest and benefits; evaluate the adequacy of staff training to calculate Cash Balance Account deposits, interest and withdrawals; and evaluate internal controls surrounding the calculation of T-Drop, including review procedures.

The audit contained seven findings and recommendations.

Issued: February 1, 2021
Status: Follow-up in FY2022

Application of IRS 415 Limit Testing

Internal Revenue Code (IRC) Section 415(b) sets limits on the maximum dollar benefit that can be paid from a retirement plan that is qualified under Code §401(a). The limit for 2020 and 2021 is \$230,000. The limit applies to employer-provided straight life annuity benefits. Code §415(m) allows governmental plans defined in Code §414(d) to pay benefits in excess of the limit through a qualified excess benefit arrangement. ACA 24-7-733 requires benefits paid under the Arkansas Teacher Retirement System shall not exceed the limitations of Section 415 of the federal Internal Revenue Code that are applicable to governmental retirement plans, including without limitation the dollar limitations in the Internal Revenue Code, 26 U.S.C. 415(b)(1)(A).

The objectives of the audit were to verify that the application of IRS §415 limit testing is done in accordance with IRS Code §415; and evaluate the internal controls surrounding the application of IRS 415 Limit Testing.

The audit contained eight findings and recommendations.

Issued: June 7, 2021
Status: Follow-up in FY2022

Implementation of Legislation Enacted by the 92nd General Assembly

The 92nd General Assembly met from January 14, 2019, through sine die adjournment on April 10, 2019. There were ten acts affecting ATRS that passed and were signed by the Governor that included ATRS appropriation. Of the ten acts, four were for clarification or technical corrections. The remaining five acts will be reviewed for this audit.

The following acts are being reviewed:

1. Act 85 of 2019 allows a member who owes contributions on any given year to cancel the contributory service for that year. ATRS will refund any contributions received for that year.
2. Act 209 of 2019 allows a disability retiree to work for a covered employer for less than 80 days of actual service and continue to receive their disability benefit.
3. Act 210 of 2019 changes the definition of dependent child who is eligible for a survivor annuity to not older than 23 years of age. A child 18 but not older than 23 must be a full-time student in an accredited secondary school, college, or university.
4. Act 474 of 2019 allows the purchase of national guard service while on active state duty.
5. Act 595 of 2019 changed how ATRS calculates service credit. It is no longer based on quarters but days.

ATRS staff is responsible for developing and implementing policies and procedures for enacting new legislation.

The objective of this audit is to verify the proper implementation of legislation enacted by the 92nd General Assembly. To accomplish our objective, we will review changes in policies, procedures, forms, form letters, and computer programming.

Started Audit: March 2020

Status: 90% completed

Special Projects

Cyber Security Training

Protecting member data is a priority of ATRS. As an effective line of defense against cyber-attacks, ATRS is providing regular updated security training to staff. Arkansas Department of Information Systems implemented a cybersecurity awareness training program (CATP) for state employees in July 2018. The training is provided online by Security Mentor. All ATRS staff are required to complete all of the Security Mentor classes. There are six classes each fiscal year.

Issued: June 7, 2021

Status: Complete

Follow-Up Reports

Reciprocal Service Benefits

Reciprocal service allows employees to move from one employer that participates in an Arkansas public retirement system to another employer participating in a different public retirement system without losing the retirement benefit accrued in their previous public service. Arkansas participating systems are Arkansas Teacher Retirement System, Arkansas Public Employees Retirement System, Arkansas State Highway Employees' Retirement System, State Police Retirement System, Arkansas Judicial Retirement System, an alternate plan for higher education institutions, and Arkansas Local Police and Fire Retirement System.

Each system determines the member's final average salary (FAS) by their own rules. The highest FAS will be used by all reciprocal systems to determine the member's benefit. Compensation in the Arkansas Judicial Retirement System shall not be used to determine a member's FAS. Act 555 of 2013 changed the ATRS method of calculating FAS for those reciprocal members with less than 3 years of service in a reciprocal system. Under 555, ATRS is to obtain the salary and service credit information from the reciprocal system and use that information to calculate the member's final average salary as if the salary and service credit had all been earned in ATRS.

The objectives of this audit were to determine the benefits received by reciprocal members were paid accurately and consistently as prescribed by laws, rules and procedures; procedures followed in processing reciprocal benefits were efficient; and ATRS staff was properly trained to calculate reciprocal benefits.

The audit contained five findings and recommendations.

Current status on findings:

Internal audit recommended staff training in removing overlapping reciprocal service; written procedures cover all aspects of reciprocal service; and service records to be requested from reciprocal system before calculating member's FAS. **Administration has held meetings with ATRS Staff, such as managers of B&C, Call Center, Pre-Retirement, and the point of contact counselor for reciprocity pertaining to ACT 555 of 2013. Due to our latest legislation regarding reciprocity, we thought it would be best to allow HB 1319 which is now ACT 221 to pass first. By doing so, this will allow experience staff to recondition their thinking concerning ACT 555 of 2013. Willie Kincade has personally met with each membership manager via zoom and presented this legislation and they have met with their staff and provided the same data.**

Internal audit recommended the history screen be redesigned to reflect member's service credit, contributions, and status in an intuitive and easy to use format. **Information Technology is working on developing a new user-friendly screen to display history events for a member. Progress on developing the new screen was slowed due to Information Technology primary focus since March 2020 has been enabling ATRS staff to work mobile. The new screen should be in production by December 31, 2021.**

Submitted: February 4, 2019

Status: 80% completed

Disability Benefits

Disability retirement provides benefits for members who demonstrate total and permanent physical or mental incapacity to perform the duties of his or her position while employed by an Arkansas Teacher Retirement System (ATRS) employer. To be eligible for disability benefits, a member must be active and have 5 or more years of actual and reciprocal service. Actual service does not include purchased or free military service. Applications for disability retirement are reviewed and approved by the ATRS Medical Committee. For a member to begin receiving disability benefits, the member shall not be employed directly or indirectly by an ATRS covered employer.

Act 219 of 2015 requires a disability retiree under age 57 at the time of retirement to provide ATRS with a Social Security Administration determination letter or official documentation indicating they have been approved by the Social Security Administration for disability benefits. ATRS must receive this documentation within thirty-six months from the member's effective date of benefits.

The objectives of this audit were to determine the eligibility for disability benefits, effective date of benefits and the benefit paid were accurately and consistently calculated as prescribed by laws, rules and procedures; procedures followed in processing disability benefits and the Social Security determination were efficient.

The audit contained six findings and recommendations.

Current status on findings:

Internal audit recommended the application for determining disability effective date of benefits be applied consistently. **Member Services reviewed disability effective dates for disability members retiring July 2014 through June 2018. Letters were sent to both under and overpayment disability retirees resulting from an incorrect effective date. Ninety-three (93) underpayment retirees and eighty-five (85) overpayment retirees. Additional benefits due have been paid and overpayment of benefits have been collected.**

Internal Audit recommended staff training on disability benefits, written procedures updated to reflect current policy, and a method of safeguarding member's vital medical records. **Staff has been trained on disability**

benefits. Procedures are updated to include all aspects of disability benefits. Disability counselor has a safe to secure all disability documents.

Internal audit recommended a field be added to ATRMIS for tracking whether the member has submitted their required social security determination letter. **Information Technology is working with the department to determine specifications. The new field should be in production by December 31, 2021.**

Submitted: June 3, 2019

Status: Follow-up audit FY 2022

Membership

Member name, address, beneficiary, date of birth, and other identifying information is maintained in the Arkansas Teacher Retirement Membership Information System (ATRMIS). New members are entered into the ATRMIS using a Membership Data Form (MDF). Members are also required to complete a MDF anytime they change employers or positions. Employers contact ATRS for the member's election status through the ATRS Termination and Membership Status Sheet (Status Sheet).

The objectives of this audit were to determine if the procedures followed in adding new members and maintaining information on existing members was efficient and the ATRMIS system was updated accurately and in a timely manner.

The audit contained six findings and recommendations.

Current status on findings:

Internal audit recommended membership staff re-evaluate the prioritization of documents in the work queue to determine if the priorities need to be reset to coincide with current needs and work processes; automation of contributory/non-contributory status determination process; phone numbers and email addresses captured on the MDF be updated and kept on ATRMIS; and members have the ability to update their addresses using our website. **Information Technology is working through the security issues relating to members ability to update ATRMIS through ATRS website. There is no set time period for implementing this recommendation.**

Submitted: September 25, 2017

Follow-up Audit Submitted: April 1, 2019

Status: Follow-up audit FY 2022

Lump Sum Death Benefit

Act 1022 of 1997 created a lump sum death benefit to be paid by the Arkansas Teacher Retirement System (ATRS) to the beneficiaries of active and retired members with five or more years of actual service with an ATRS covered employer. The Act provided for the payment of up to \$7,500 to the beneficiaries of contributory members and up to \$5,000 to the beneficiaries of non-contributory members, with mixed service being prorated according to credited service. The exact amount of the benefit was to be determined by the Board of Trustees as actuarially appropriate.

Over the years the law was amended to provide for different maximum amounts and eligibility requirements. ATRS Rule 11-2 currently sets the maximum lump sum death benefit at \$10,000 for those with 10 or more years of contributory service only and at \$6,667 for those with 10 or more years of non-contributory service only, with

mixed service prorated at a 3:2 ratio. Per Act 977 of 2011, members with 15 years of contributory service credit are eligible for the maximum contributory only amount of \$10,000 without consideration of any non-contributory service.

The objectives of the audit were to determine lump sum death benefits disbursed to beneficiaries were paid accurately as prescribed by the laws, rules and procedures; procedures followed in processing lump sum death benefits were efficient; and procedures used to identify deceased members are sufficient.

The audit contained three findings and recommendations.

Current status on findings:

Internal audit recommended programming changes be made to ATRMIS Financial/Member Refund Screen to ensure the correct lump sum death benefit calculation is displayed. It was also recommended that Information Technology develop a code list into a centralized screen in ATRMIS. **Information Technology provided a lump sum death benefit projection screen that actually calculates the member’s death benefit.**

Submitted: February 4, 2019

Status: Follow-up audit FY 2022

IA Schedule of Budget/Actual Audit Time for FY2021

	Date		Date						
Audit	Date	Exit	Date	Number	IA Meet	Size of	Budget	Total	Months to
Audit	Started	Interview	to Audit	of Emails	With	Sample	Hours	Audit	Complete
			Committee		Staff	Tested		Hours	Audit
History Adjustments	1/30/2019	8/26/2020	9/28/2020	171	17	45	300	1116*	19
T-Drop	8/24/2020	12/17/2020	2/1/2021	122	1	263	300	406	4
Application of IRS 415 Limit Testing	3/1/2021	5/5/2021	6/7/2021	86	6	58	300	392	2
Cyber Security Training	2/8/2021	5/11/2021	6/7/2021	9	0	0		15	0.5
Reciprocal Follow-Up	3/23/2020			47	0	84		278	
2019 Legislation	9/10/2019			70	0	107	300	370**	

*Audit time from FY2019, FY2020, FY2021 ** Audit time from FY2020, FY2021

ANNUAL CONFLICT OF INTEREST STATEMENT

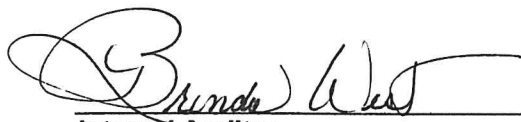
International Standards for the Professional Practice of Internal Auditing (Standards) require internal auditors to have an impartial, unbiased attitude and avoid any conflict of interest in fact and appearance. The Standards state:

- Internal auditors must have an impartial, unbiased attitude and avoid any conflict of interest.
- If independence or objectivity is impaired in fact or appearance, the details of the impairment must be disclosed to appropriate parties. The nature of the disclosure will depend upon the impairment.
- Internal auditors must refrain from assessing specific operations for which they were previously responsible. Objectivity is presumed to be impaired if an internal auditor provides assurance services for an activity for which the internal auditor had responsibility within the previous year.
- Assurance engagements for functions over which the chief audit executive has responsibility must be overseen by a party outside the internal audit activity.
- Internal auditors may provide consulting services relating to operations for which they had previous responsibilities.
- If internal auditors have potential impairments to independence or objectivity relating to proposed consulting services, disclosure must be made to the engagement client prior to accepting engagement.

Disclosure of impairments to independence: (Please list or indicate "None".)

None

I certify that I have disclosed any information of which I am aware that might be viewed as impairment to my objectivity in conducting FY____ Internal Audit activities. Any future impairment to my independence or objectivity that arises during the fiscal year will be immediately reported to the Internal Audit Director and the Audit Committee.



Internal Auditor

5/17/21
Date

II-a

ANNUAL CONFLICT OF INTEREST STATEMENT

International Standards for the Professional Practice of Internal Auditing (Standards) require internal auditors to have an impartial, unbiased attitude and avoid any conflict of interest in fact and appearance. The Standards state:

- Internal auditors must have an impartial, unbiased attitude and avoid any conflict of interest.
- If independence or objectivity is impaired in fact or appearance, the details of the impairment must be disclosed to appropriate parties. The nature of the disclosure will depend upon the impairment.
- Internal auditors must refrain from assessing specific operations for which they were previously responsible. Objectivity is presumed to be impaired if an internal auditor provides assurance services for an activity for which the internal auditor had responsibility within the previous year.
- Assurance engagements for functions over which the chief audit executive has responsibility must be overseen by a party outside the internal audit activity.
- Internal auditors may provide consulting services relating to operations for which they had previous responsibilities.
- If internal auditors have potential impairments to independence or objectivity relating to proposed consulting services, disclosure must be made to the engagement client prior to accepting engagement.

Disclosure of impairments to independence: (Please list or indicate "None".)

None

I certify that I have disclosed any information of which I am aware that might be viewed as impairment to my objectivity in conducting FY_____ Internal Audit activities. Any future impairment to my independence or objectivity that arises during the fiscal year will be immediately reported to the Internal Audit Director and the Audit Committee.

Dena Diksa
Internal Auditor

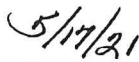
5/17/21
Date

CODE OF ETHICS ACKNOWLEDGMENT

I certify that I have read and understand the Code of Ethics of the Institute of Internal Auditors. I agree to abide by the principles of the Code, which are Integrity, Objectivity, Confidentiality, and Competency. I further agree to act in accordance with the behavior expectations of internal auditors as stated in the Code.



Internal Auditor



Date

CODE OF ETHICS ACKNOWLEDGMENT

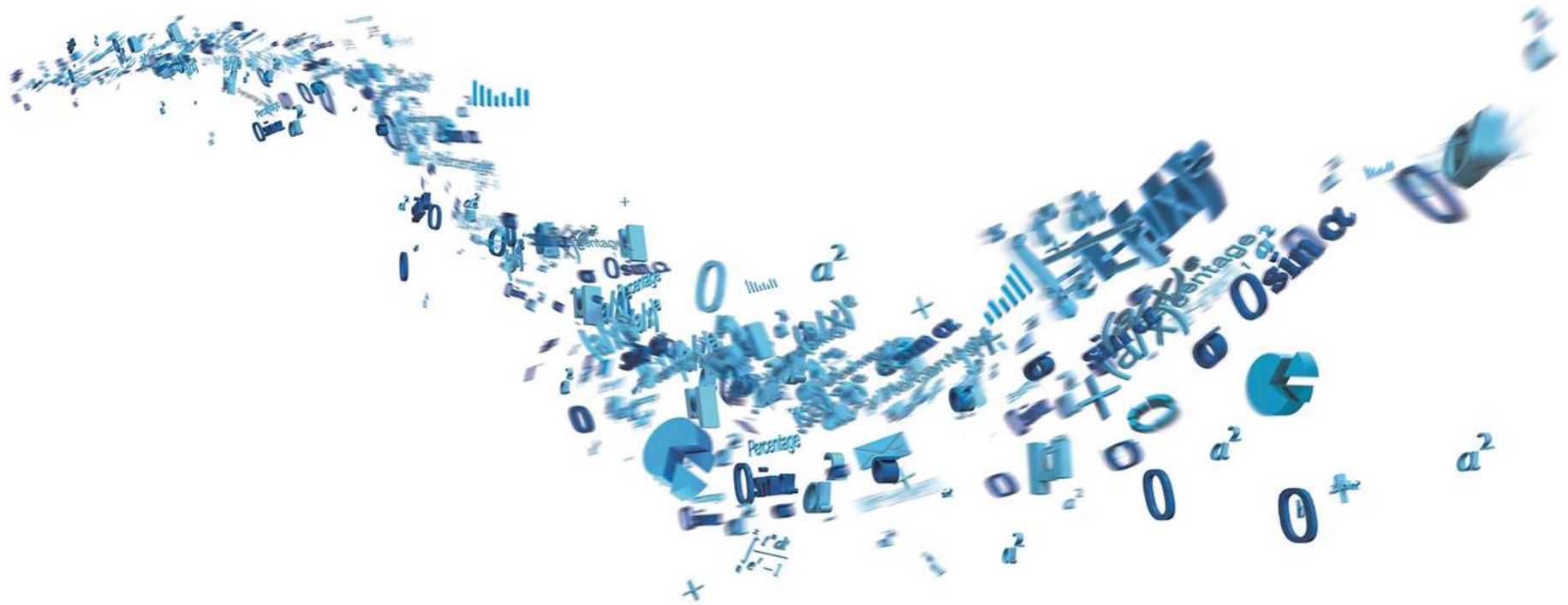
I certify that I have read and understand the Code of Ethics of the Institute of Internal Auditors. I agree to abide by the principles of the Code, which are Integrity, Objectivity, Confidentiality, and Competency. I further agree to act in accordance with the behavior expectations of internal auditors as stated in the Code.

Dana Drisa

Internal Auditor

5/17/21

Date



Arkansas Teacher Retirement System | First Quarter 2021

Quarterly Investment Review

Visit the *Investments Thought Leadership Site* (<https://insights-north-america.aon.com/investment>); sharing our best thinking.

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(<https://site-494121.bcvp0rtal.com/category/videos/key-topics-by-investor-type>)

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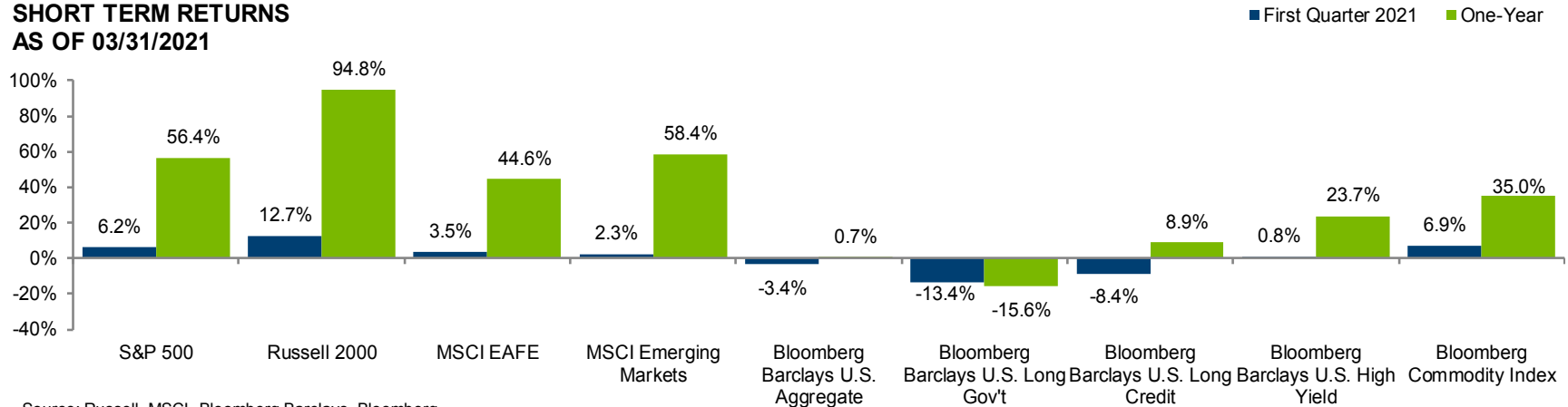
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Executive Summary

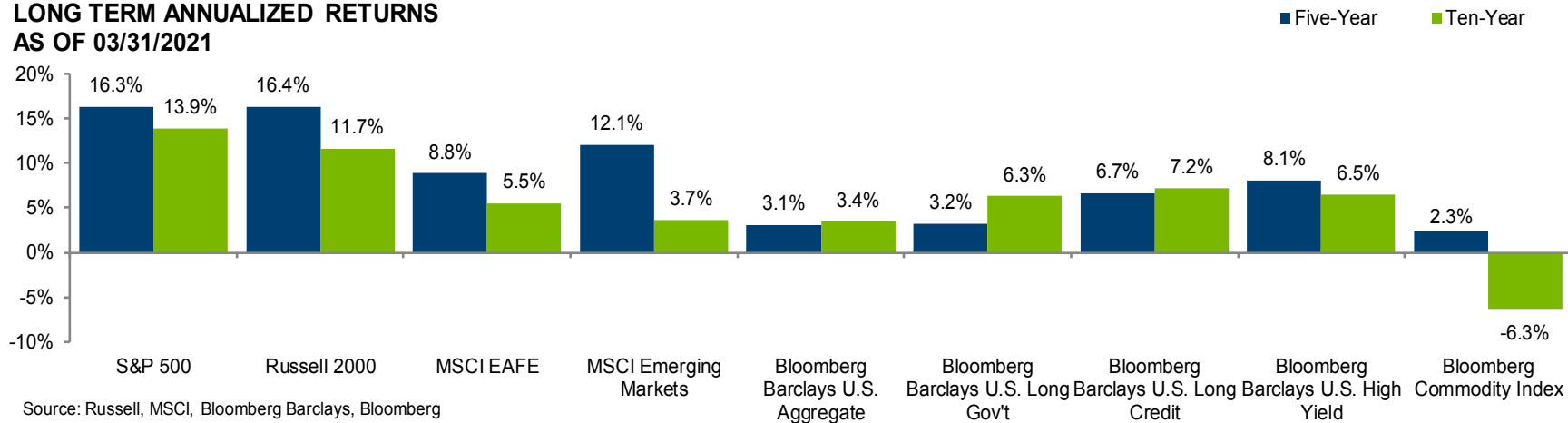
Market Highlights

SHORT TERM RETURNS AS OF 03/31/2021



Source: Russell, MSCI, Bloomberg Barclays, Bloomberg (MSCI Indices show net total returns throughout this report. All other indices show gross total returns.).

LONG TERM ANNUALIZED RETURNS AS OF 03/31/2021



Source: Russell, MSCI, Bloomberg Barclays, Bloomberg

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Market Highlights

Capital Markets Returns

Period Ending 03/31/2021

	First Quarter	1-Year	3-Year ¹	5-Year ¹	10-Year ¹
Equity					
MSCI All Country World IMI	5.14%	57.58%	11.90%	13.21%	9.15%
MSCI All Country World	4.57%	54.60%	12.07%	13.21%	9.14%
Dow Jones U.S. Total Stock Market	6.45%	62.68%	17.05%	16.60%	13.75%
Russell 3000	6.35%	62.53%	17.12%	16.64%	13.79%
S&P 500	6.17%	56.35%	16.78%	16.29%	13.91%
Russell 2000	12.70%	94.85%	14.76%	16.35%	11.68%
MSCI All Country World ex-U.S. IMI	3.77%	51.94%	6.51%	9.84%	5.11%
MSCI All Country World ex-U.S.	3.49%	49.41%	6.51%	9.76%	4.93%
MSCI EAFE	3.48%	44.57%	6.02%	8.85%	5.52%
MSCI EAFE (Local Currency)	7.59%	36.56%	7.07%	8.82%	7.50%
MSCI Emerging Markets	2.29%	58.39%	6.48%	12.07%	3.65%
Fixed Income					
Bloomberg Barclays Global Aggregate	-4.46%	4.67%	2.80%	2.66%	2.23%
Bloomberg Barclays U.S. Aggregate	-3.37%	0.71%	4.65%	3.10%	3.44%
Bloomberg Barclays U.S. Long Gov't	-13.39%	-15.60%	5.84%	3.17%	6.30%
Bloomberg Barclays U.S. Long Credit	-8.39%	8.87%	7.48%	6.69%	7.23%
Bloomberg Barclays U.S. Long Gov't/Credit	-10.41%	-2.05%	7.14%	5.47%	6.98%
Bloomberg Barclays U.S. TIPS	-1.47%	7.54%	5.68%	3.86%	3.44%
Bloomberg Barclays U.S. High Yield	0.85%	23.72%	6.84%	8.06%	6.48%
Bloomberg Barclays Global Treasury ex U.S.	-5.93%	4.65%	0.89%	1.87%	1.10%
JP Morgan EMBI Global (Emerging Markets)	-4.74%	14.29%	3.87%	4.74%	5.35%
Commodities					
Bloomberg Commodity Index	6.92%	35.04%	-0.20%	2.31%	-6.28%
Goldman Sachs Commodity Index	13.55%	50.22%	-4.93%	1.18%	-8.60%
Hedge Funds					
HFRI Fund-Weighted Composite ²	6.08%	34.11%	7.68%	7.53%	4.64%
HFRI Fund of Funds ²	2.47%	24.56%	5.64%	5.74%	3.48%
Real Estate					
NAREIT U.S. Equity REITS	8.87%	37.78%	9.45%	5.33%	8.56%
FTSE Global Core Infrastructure Index	5.43%	27.55%	10.85%	9.81%	9.63%
Private Equity					
Burgiss Private iQ Global Private Equity ³		6.20%	11.83%	10.92%	12.93%

MSCI Indices show net total returns throughout this report. All other indices show gross total returns.

¹ Periods are annualized.

² Latest 5 months of HFR data are estimated by HFR and may change in the future.

³ Burgiss Private iQ Global Private Equity data is as at June 30, 2020

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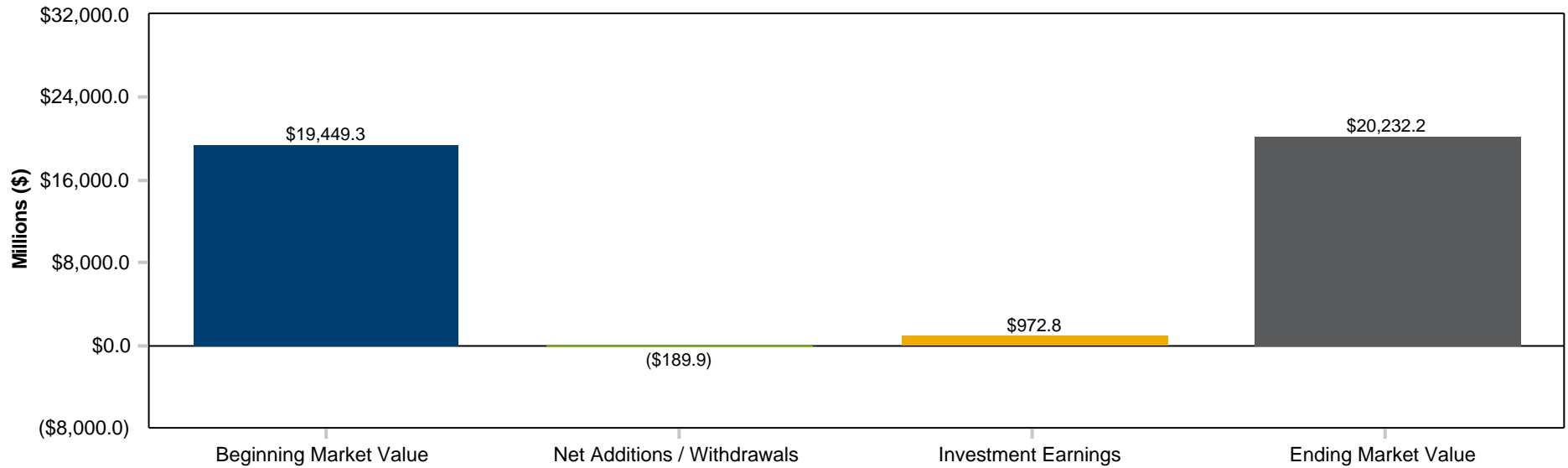
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Total Fund

Total Plan Asset Summary

**Change in Market Value
From January 1, 2021 to March 31, 2021**

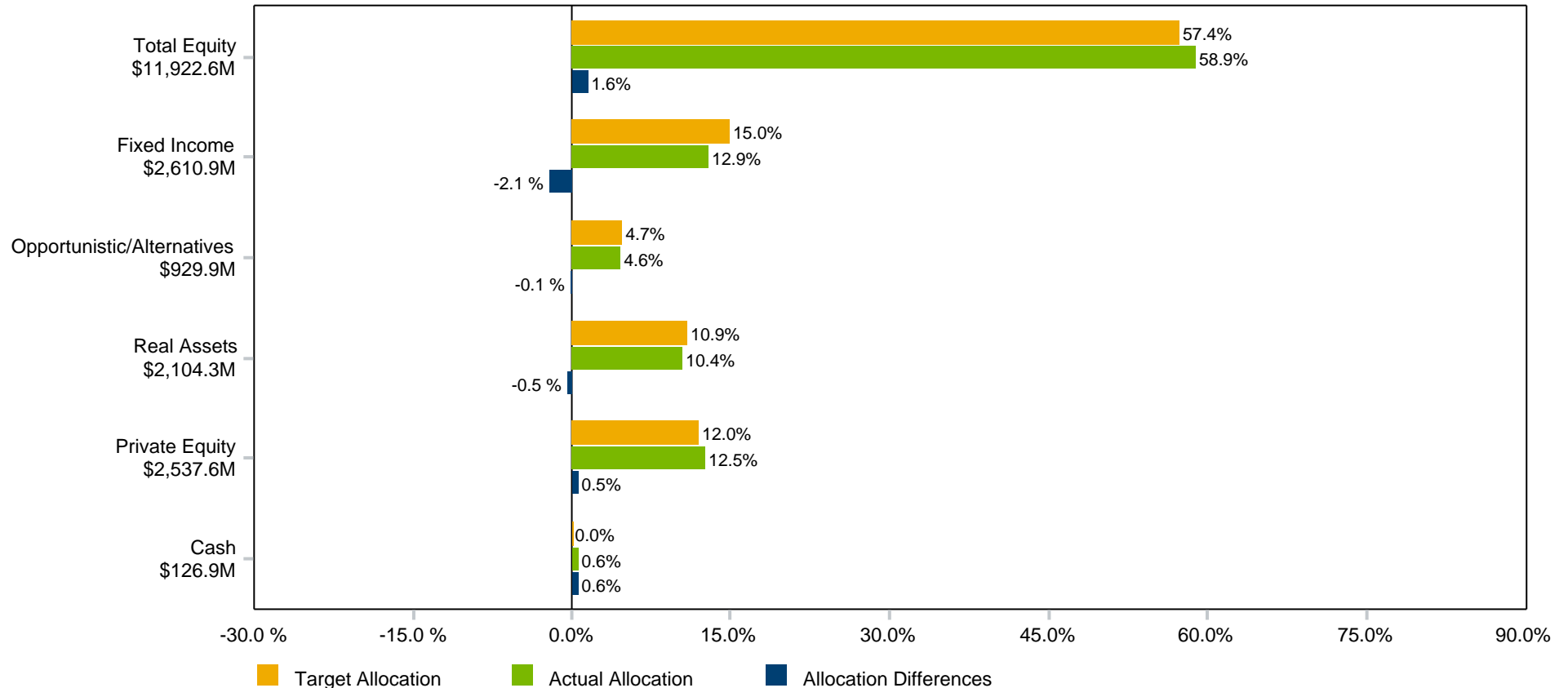


Summary of Cash Flow

	1 Quarter	Fiscal YTD	1 Year
Beginning Market Value	19,449,264,888	16,663,156,052	15,172,859,602
+ Additions / Withdrawals	-189,897,713	-625,037,117	-753,332,837
+ Investment Earnings	972,839,852	4,194,088,092	5,812,680,263
= Ending Market Value	20,232,207,027	20,232,207,027	20,232,207,027

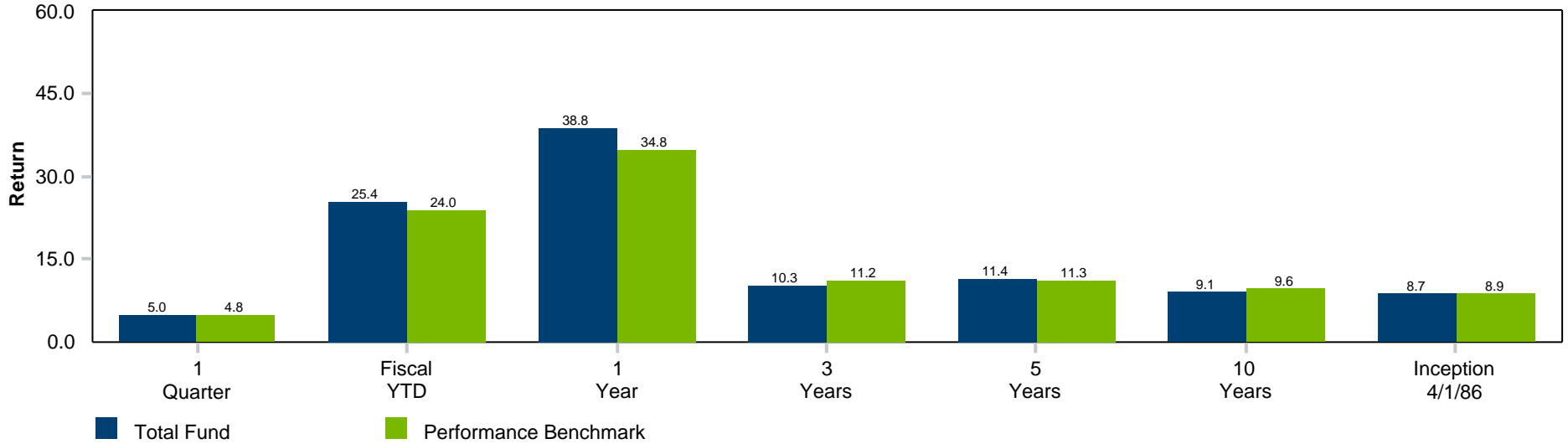
Asset Allocation Compliance

	Market Value (\$M)	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund	20,232.2	100.00	100.00	N/A	N/A
Total Equity	11,922.6	58.93	57.37	50.00	60.00
Fixed Income	2,610.9	12.90	15.00	13.00	17.00
Opportunistic/Alternatives	929.9	4.60	4.73	0.00	7.00
Real Assets	2,104.3	10.40	10.90	10.00	15.00
Private Equity	2,537.6	12.54	12.00	9.50	14.50
Cash	126.9	0.63	0.00	0.00	5.00

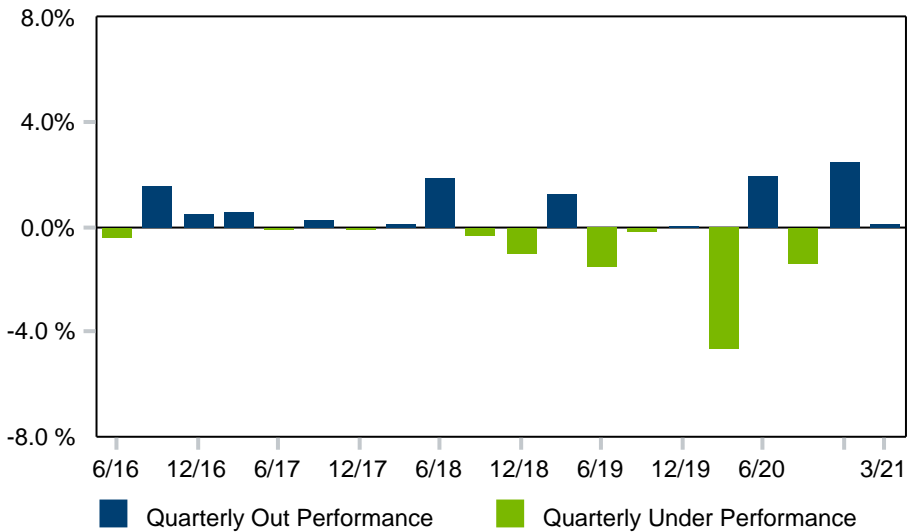


Total Plan Performance Summary

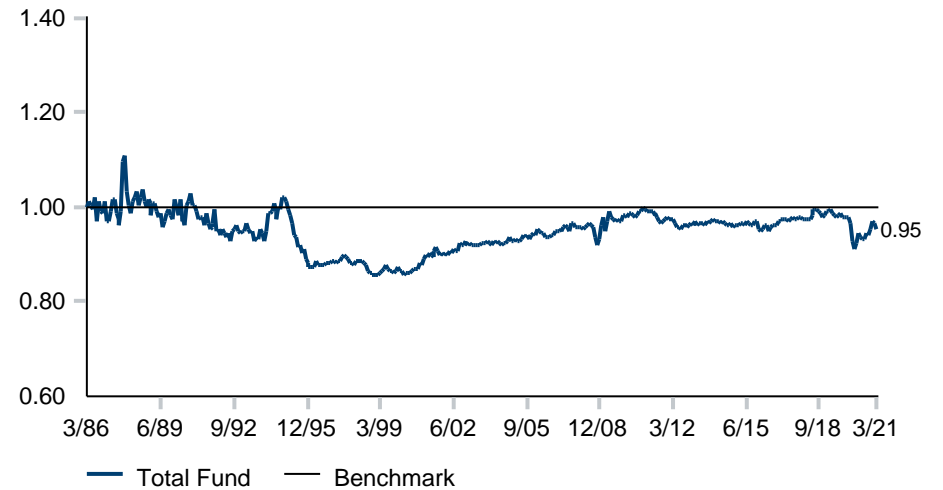
Return Summary



Quarterly Excess Performance

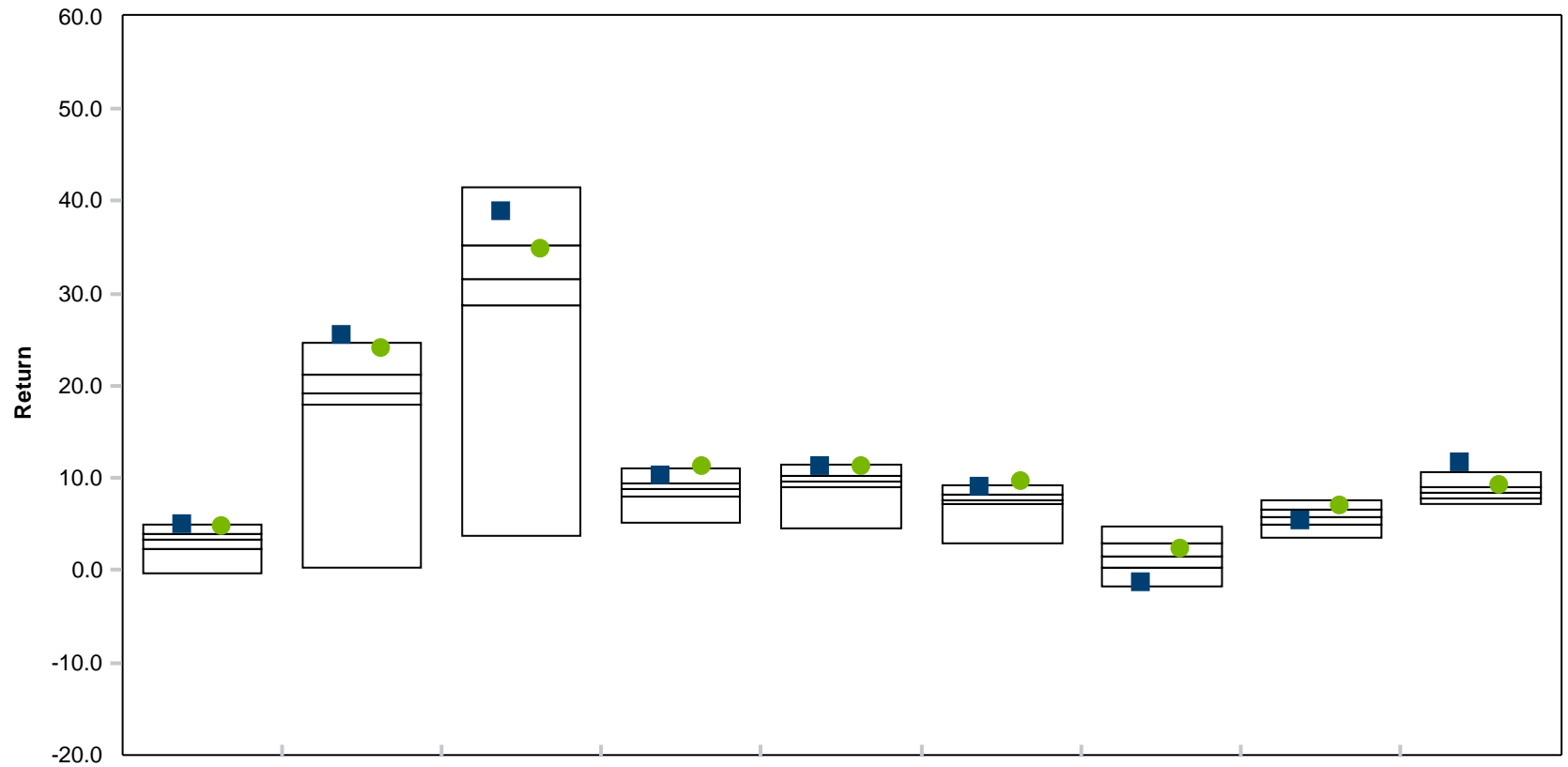


Ratio of Cumulative Wealth - Since Inception



Plan Sponsor Peer Group Analysis

All Public Plans > \$1B-Total Fund



	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Fiscal Year 2020	Fiscal Year 2019	Fiscal Year 2018
■ Total Fund	5.0 (5)	25.4 (1)	38.8 (13)	10.3 (14)	11.4 (6)	9.1 (6)	-1.4 (94)	5.3 (64)	11.7 (4)
● Performance Benchmark	4.8 (8)	24.0 (11)	34.8 (30)	11.2 (5)	11.3 (6)	9.6 (3)	2.3 (37)	7.0 (10)	9.2 (23)
5th Percentile	4.9	24.7	41.6	11.1	11.5	9.2	4.7	7.7	10.7
1st Quartile	3.9	21.1	35.3	9.4	10.2	8.3	3.0	6.5	9.1
Median	3.3	19.2	31.5	8.8	9.7	7.7	1.5	5.7	8.3
3rd Quartile	2.4	17.9	28.8	7.9	8.9	7.1	0.3	5.0	7.8
95th Percentile	-0.3	0.2	3.7	5.2	4.7	3.0	-1.7	3.5	7.2
Population	72	72	72	68	68	60	100	60	35

2022 Parentheses contain percentile rankings.

As of March 31, 2021

Asset Allocation & Performance

	Allocation			Performance(%)							
	Market Value (\$)	%	Policy(%)	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	20,232,207,027	100.0	100.0	5.0	25.4	38.8	10.3	11.4	9.1	8.7	04/01/1986
<i>Performance Benchmark</i>				4.8	24.0	34.8	11.2	11.3	9.6	8.9	
Total Equity	11,922,641,763	58.9	57.4	6.3	39.2	70.7	11.6	13.7	10.0	10.6	07/01/2015
<i>Total Equity Performance Benchmark</i>				5.5	32.0	59.2	13.5	14.3	11.0	11.7	
Fixed Income	2,610,943,425	12.9	15.0	-1.4	2.0	6.8	5.0	4.7	4.2	5.4	07/01/1992
<i>Performance Benchmark</i>				-3.1	-0.8	3.0	4.9	3.6	3.8	5.5	
Opportunistic/Alternatives	929,859,296	4.6	4.7	2.3	6.8	8.3	0.6	1.9		3.1	05/01/2011
<i>Custom Alternatives Benchmark</i>				3.1	8.8	12.2	3.0	3.1		2.0	
Real Assets	2,104,325,094	10.4	10.9	2.2	2.2	1.8	4.5	6.1		7.6	07/01/2013
<i>Total Real Assets Benchmark</i>				1.0	0.6	1.4	4.1	5.0		7.2	
Real Estate	1,327,713,112	6.6		1.5	-0.8	-1.2	3.0	5.3	8.6	8.4	12/01/1998
<i>NFI-ODCE (Net)</i>				1.1	-0.4	0.3	4.0	5.3	8.9	8.6	
Timber	296,419,634	1.5		3.3	2.8	3.5	5.0	4.9	3.1	7.0	06/01/1998
<i>Timberland Property Benchmark</i>				0.6	0.8	1.3	1.6	2.1	3.5		
Agriculture	206,748,267	1.0		0.5	2.9	2.2	3.2	3.4		5.2	09/01/2011
<i>Agriculture Benchmark</i>				1.6	3.2	3.6	4.3	4.4			
Infrastructure	273,444,080	1.4		5.9	16.2	15.3				13.8	07/01/2018
<i>CPI + 5%</i>				2.9	6.6	7.7				6.9	
Private Equity	2,537,573,361	12.5	12.0	7.5	24.9	19.3	18.4	16.3	15.3	12.7	03/01/1997
<i>Private Equity Policy</i>				15.3	55.1	23.2	16.7	17.7	16.0	11.3	
Cash	126,864,089	0.6	0.0								

*The Real Assets and Private Equity market values, returns and their benchmark returns are shown on a one-quarter lag. Market values have been adjusted for current quarter cash flows.

*The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns.

For historical performance of the U.S. Equity and Global Equity asset classes please see page 151 of this report.

The inception date above for infrastructure reflects the inception date for the calculation and reporting of time-weighted returns. The Infrastructure program began in July 2014 and the full history of Infrastructure returns are included in Total Real Assets and Total Fund performance.

*Market values and allocation percentages may not add to the sum total due to rounding.

As of March 31, 2021

Asset Allocation & Performance

	Allocation		Performance(%)								
	Market Value (\$)	%	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	
Total Fund	20,232,207,027	100.0	5.0 (5)	25.4 (1)	38.8 (13)	10.3 (14)	11.4 (6)	9.1 (6)	8.7	04/01/1986	
Performance Benchmark			4.8 (8)	24.0 (11)	34.8 (30)	11.2 (5)	11.3 (6)	9.6 (3)	8.9		
Total Equity	11,922,641,763	58.9	6.3 (33)	39.2 (21)	70.7 (21)	11.6 (53)	13.7 (40)	10.0 (45)	10.6 (43)	07/01/2015	
Total Equity Performance Benchmark			5.5 (40)	32.0 (41)	59.2 (44)	13.5 (38)	14.3 (34)	11.0 (31)	11.7 (33)		
Jacobs Levy 130/30	870,553,432	4.3	12.8 (31)	40.2 (44)	66.3 (55)	15.5 (44)	18.0 (27)	15.8 (10)	11.5 (24)	01/01/2008	
Russell 3000 Index			6.3 (63)	33.2 (61)	62.5 (63)	17.1 (35)	16.6 (36)	13.8 (30)	10.2 (43)		
Kennedy Capital Management	734,706,456	3.6	20.2 (37)	63.6 (32)	96.2 (40)	9.9 (60)	12.7 (44)	10.5 (41)	12.6 (8)	01/01/1994	
Russell 2000 Value Index			21.2 (28)	65.7 (26)	97.1 (39)	11.6 (32)	13.6 (33)	10.1 (57)	10.2 (89)		
Stephens	616,768,625	3.0	2.9 (70)	31.5 (93)	79.6 (83)	19.3 (65)	20.1 (60)	13.1 (84)	11.6 (70)	08/01/2006	
Russell 2000 Growth Index			4.9 (55)	45.7 (50)	90.2 (57)	17.2 (79)	18.6 (70)	13.0 (84)	11.3 (77)		
Voya Absolute Return	728,134,923	3.6	4.4 (51)	32.9 (36)	62.5 (33)	11.4 (54)	13.2 (46)	12.5 (19)	11.3 (26)	10/01/2008	
Performance Benchmark			4.6 (49)	29.7 (51)	54.6 (56)	12.1 (49)	13.2 (46)	12.2 (21)	11.3 (27)		
Allianz (Nicholas Applegate)	1,020,596,656	5.0	1.6 (86)	41.9 (40)	79.2 (36)	26.1 (6)	21.3 (13)	13.2 (37)	11.7 (19)	12/01/1998	
Performance Benchmark			2.9 (81)	40.2 (44)	74.1 (42)	21.9 (16)	18.8 (23)	12.3 (49)	9.4 (59)		
Pershing Square International	24,768,029	0.1	4.9 (71)	29.0 (75)	52.0 (87)	34.2 (2)	20.3 (17)	10.6 (74)	12.2 (32)	07/01/2008	
Dow Jones U.S. Total Stock Market Index			6.4 (62)	33.2 (61)	62.7 (62)	17.0 (35)	16.6 (36)	13.7 (31)	11.7 (40)		
Pershing Square Holdings	253,508,802	1.3	1.7 (85)	52.5 (21)	98.0 (16)	45.0 (1)	21.7 (12)		9.8 (92)	01/01/2013	
Dow Jones U.S. Total Stock Market Index			6.4 (62)	33.2 (61)	62.7 (62)	17.0 (35)	16.6 (36)		15.5 (31)		
Trian Partners	81,619,908	0.4	3.4	24.9	44.6	12.4	10.2		9.5	11/01/2015	
S&P 500 Index			6.2	29.7	56.4	16.8	16.3		15.0		
Trian Co-Investments	100,469,054	0.5	2.1	29.5	46.4	14.9			7.2	01/01/2017	
S&P 500 Index			6.2	29.7	56.4	16.8			16.7		
SSgA Global Index	1,188,463,791	5.9	5.2 (43)	31.8 (42)	58.1 (49)	12.3 (48)	13.6 (42)	9.5 (52)	7.6 (49)	04/01/2008	
MSCI AC World IMI (Net)			5.1 (44)	31.5 (43)	57.6 (50)	11.9 (51)	13.2 (46)	9.2 (60)	7.3 (61)		

As of March 31, 2021

Asset Allocation & Performance

	Allocation		Performance(%)								Inception Date
	Market Value (\$)	%	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Since Inception		
BlackRock MSCI ACWI IMI Fund	1,130,888,584	5.6	5.2 (42)	31.8 (42)	58.0 (49)	12.2 (48)	13.4 (43)			9.7 (52)	07/01/2011
<i>MSCI AC World IMI (Net)</i>			5.1 (44)	31.5 (43)	57.6 (50)	11.9 (51)	13.2 (46)			9.4 (60)	
Wellington Global Perspectives	722,556,330	3.6	10.1 (16)	52.2 (6)	84.6 (8)	9.1 (69)	13.4 (44)	11.2 (29)	14.5 (19)		07/01/2009
<i>Performance Benchmark</i>			9.2 (18)	45.8 (11)	82.0 (10)	10.9 (58)	13.2 (46)	9.3 (56)	12.5 (38)		
T. Rowe Price Global Equity	1,584,505,847	7.8	3.8 (57)	43.0 (15)	86.3 (8)	25.2 (3)	24.7 (3)	16.1 (4)	16.4 (6)		09/01/2009
<i>MSCI AC World Index (Net)</i>			4.6 (49)	29.7 (51)	54.6 (56)	12.1 (49)	13.2 (46)	9.1 (60)	10.2 (65)		
<i>MSCI AC World Index Growth (net)</i>			0.3 (90)	27.0 (64)	59.0 (45)	17.5 (17)	17.1 (19)	11.7 (26)	12.8 (28)		
Lazard	816,139,794	4.0	4.4 (51)	42.3 (16)	74.8 (16)	13.4 (39)	15.5 (28)	9.6 (51)	11.2 (46)		09/01/2009
<i>MSCI AC World Index (Net)</i>			4.6 (49)	29.7 (51)	54.6 (56)	12.1 (49)	13.2 (46)	9.1 (60)	10.2 (65)		
D.E. Shaw	894,939,354	4.4	2.9 (67)	29.5 (52)	53.1 (60)	10.8 (59)	13.3 (45)	11.2 (29)	11.7 (38)		09/01/2009
<i>MSCI World Index (Net)</i>			4.9 (46)	29.1 (55)	54.0 (58)	12.8 (44)	13.4 (45)	9.9 (47)	10.7 (54)		
GMO Global All Country Equity	540,517,244	2.7	9.1 (18)	34.5 (28)	57.6 (50)	9.4 (67)	11.8 (59)		6.8 (74)		07/01/2014
<i>MSCI AC World Index (Net)</i>			4.6 (49)	29.7 (51)	54.6 (56)	12.1 (49)	13.2 (46)		9.0 (49)		
<i>MSCI AC World Index Value (Net)</i>			8.9 (20)	32.0 (41)	48.8 (69)	6.2 (86)	9.0 (79)		5.1 (88)		
Harris Global Equity	613,430,663	3.0	11.1 (13)	47.8 (9)	81.8 (11)	10.1 (63)	13.3 (45)		8.4 (56)		06/01/2014
<i>MSCI World Index (Net)</i>			4.9 (46)	29.1 (55)	54.0 (58)	12.8 (44)	13.4 (45)		9.5 (42)		
<i>MSCI World Value (Net)</i>			9.6 (17)	31.7 (42)	48.3 (70)	6.7 (84)	9.1 (79)		5.6 (87)		
Fixed Income	2,610,943,425	12.9	-1.4	2.0	6.8	5.0	4.7	4.2	5.4		07/01/1992
<i>Performance Benchmark</i>			-3.1	-0.8	3.0	4.9	3.6	3.8	5.5		
BlackRock	275,451,282	1.4	-3.4 (85)	-1.1 (85)	3.5 (64)	5.1 (39)	3.6 (52)	3.9 (44)	4.6 (38)		10/01/2003
<i>Performance Benchmark</i>			-3.1 (80)	-0.8 (82)	3.0 (69)	4.9 (46)	3.6 (51)	3.8 (48)	4.3 (43)		
Loomis Sayles	487,262,566	2.4	-1.6 (60)	6.3 (22)	15.7 (19)	6.9 (13)	7.1 (11)	6.3 (12)	8.3 (7)		09/01/2008
<i>Performance Benchmark</i>			-2.5 (72)	2.3 (34)	8.4 (36)	5.7 (28)	5.1 (27)	4.7 (30)	5.7 (26)		
Putnam	390,750,000	1.9	1.2 (59)	5.6 (70)	9.5 (74)	3.4 (59)	4.4 (48)	2.4 (54)	3.1		08/01/2008
<i>LIBOR</i>			0.1 (72)	0.2 (87)	0.6 (87)	1.8 (79)	1.5 (81)	0.9 (78)	0.9		
SSgA Aggregate Bond Index	460,364,191	2.3	-3.4 (85)	-2.1 (93)	0.8 (91)	4.7 (51)	3.1 (61)	3.4 (56)	3.5 (58)		06/01/2010
<i>Barclays Aggregate Index</i>			-3.4 (85)	-2.1 (93)	0.7 (91)	4.7 (51)	3.1 (61)	3.4 (56)	3.5 (58)		
Wellington Global Total Return	355,665,292	1.8	1.8 (44)	2.1 (85)	3.4 (83)	4.0 (46)	2.8 (76)		2.2 (68)		05/01/2014
<i>BofA Merrill Lynch 3 Month US T-Bill</i>			0.0 (72)	0.1 (87)	0.1 (87)	1.5 (83)	1.2 (82)		0.9 (77)		
Reams Core Plus Bond Fund	388,418,486	1.9	-3.9 (90)	0.0 (72)	9.1 (33)	7.7 (8)	5.1 (26)		4.4 (24)		05/01/2014
<i>Barclays Aggregate Index</i>			-3.4 (85)	-2.1 (93)	0.7 (91)	4.7 (51)	3.1 (61)		3.2 (53)		
BRS Recycling Tax Credit	176,000,000	0.9									
BRS Recycling Tax Credit Phase 2	77,031,608	0.4									

As of March 31, 2021

Asset Allocation & Performance

	Allocation		Performance(%)							Inception Date
	Market Value (\$)	%	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
Opportunistic/Alternatives	929,859,296	4.6	2.3	6.8	8.3	0.6	1.9		3.1	05/01/2011
<i>Custom Alternatives Benchmark</i>			3.1	8.8	12.2	3.0	3.1		2.0	
Anchorage	82,133,662	0.4	6.3	12.1	20.2	2.9	4.2		5.2	05/01/2011
<i>Credit Suisse Event Driven</i>			6.3	20.6	32.5	5.1	5.8		3.0	
York	23,274,699	0.1	5.2	-9.0	-22.3	-21.8	-9.5		-3.7	05/01/2011
<i>Credit Suisse Event Driven</i>			6.3	20.6	32.5	5.1	5.8		3.0	
Capula	91,305,533	0.5	1.2	2.6	4.8	6.4	6.2		6.2	05/01/2011
<i>HFR1 Macro (Total) Index</i>			4.3	10.7	11.7	4.5	2.7		1.3	
Graham	72,633,554	0.4	8.9	27.3	37.8	7.2	5.0		3.7	05/01/2011
<i>HFR1 Macro (Total) Index</i>			4.3	10.7	11.7	4.5	2.7		1.3	
Circumference Group Core Value	36,187,404	0.2	9.4	21.6	34.0	13.2	12.6		10.8	08/01/2015
<i>Russell 2000 Index</i>			12.7	55.4	94.8	14.8	16.4		12.4	
Aeolus Keystone Fund	224,149,096	1.1	-4.1	-0.9	-2.1	-0.8	-1.8		-1.4	12/01/2015
<i>Citigroup 3 Month T-Bill</i>			0.0	0.1	0.2	1.5	1.2		1.1	
<i>Eurekahedge ILS Advisers Index</i>			-0.5	2.1	2.8	-0.2	-0.4		-0.1	
Nephila Rubik Holdings	40,910,573	0.2	-2.5	-9.7	-7.8	-4.3			-4.1	06/01/2016
<i>Citigroup 3 Month T-Bill</i>			0.0	0.1	0.2	1.5			1.2	
<i>Eurekahedge ILS Advisers Index</i>			-0.5	2.1	2.8	-0.2	-0.4		-0.5	
Parametric Global Defensive Equity Fund	186,992,830	0.9	4.1	17.8	28.8	5.9			5.8	05/01/2017
<i>Performance Benchmark</i>			2.3	14.3	25.1	7.1			6.9	
<i>MSCI AC World Index</i>			4.7	30.1	55.3	12.7			13.2	
Man Alternative Risk Premia	89,316,008	0.4	1.1	-1.9	-4.7				-3.7	06/01/2018
<i>SG Multi Alternative Risk Premia Index</i>			3.7	1.0	-3.4				-4.0	
CFM ISD Fund 1.5x	82,955,937	0.4	9.2	10.8	4.5				-6.1	07/01/2018
<i>SG Multi Alternative Risk Premia Index</i>			3.7	1.0	-3.4				-3.9	

As of March 31, 2021

Asset Allocation & Performance

	Allocation		Performance(%)							Inception Date
	Market Value (\$)	%	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
Real Assets	2,104,325,094	10.4	2.2	2.2	1.8	4.5	6.1		7.6	07/01/2013
<i>Total Real Assets Benchmark</i>			1.0	0.6	1.4	4.1	5.0		7.2	
Real Estate	1,327,713,112	6.6	1.5	-0.8	-1.2	3.0	5.3	8.6	8.4	12/01/1998
<i>NFI-ODCE (Net)</i>			1.1	-0.4	0.3	4.0	5.3	8.9	8.6	
Timber	296,419,634	1.5	3.3	2.8	3.5	5.0	4.9	3.1	7.0	06/01/1998
<i>Timberland Property Benchmark</i>			0.6	0.8	1.3	1.6	2.1	3.5		
BTG Timber Separate Account	110,869,797	0.5								
BTG U.S. Timberland Fund, L.P.	185,549,837	0.9								
Agriculture	206,748,267	1.0	0.5	2.9	2.2	3.2	3.4		5.2	09/01/2011
<i>Agriculture Benchmark</i>			1.6	3.2	3.6	4.3	4.4			
HFMS Farmland	151,886,320	0.8	0.3	2.9	1.6	3.1	3.1		5.2	09/01/2011
<i>HFMS custom NCREIF Farmland Index</i>			1.6	3.5	5.1	4.5	4.1			
UBS Agrivest Core Farmland Fund	54,861,948	0.3	0.9	2.8	3.8	3.7	4.2		4.5	07/01/2015
<i>UBS Agrivest custom NCREIF Farmland Index</i>			1.6	3.3	4.9	5.3	5.5		5.7	
Infrastructure	273,444,080	1.4	5.9	16.2	15.3				13.8	07/01/2018
<i>CPI + 5%</i>			2.9	6.6	7.7				6.9	
Private Equity	2,537,573,361	12.5	7.5	24.9	19.3	18.4	16.3	15.3	12.8	04/01/1997
<i>Private Equity Policy</i>			15.3	55.1	23.2	16.7	17.7	16.0	11.4	
Cash	126,864,089	0.6								

*The Real Assets and Private Equity market values, returns and their benchmark returns are shown on a one-quarter lag. Market values have been adjusted for current quarter cash flows.

*The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 151 of this report.

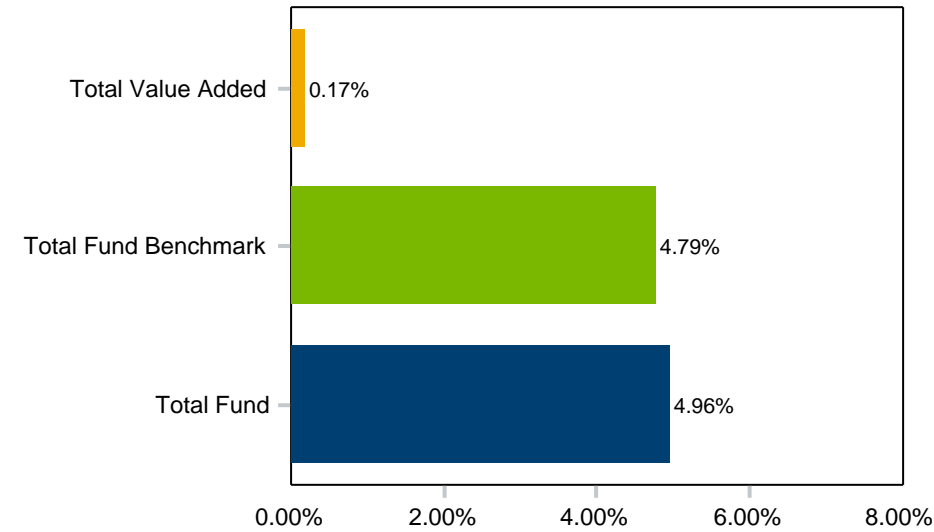
*The inception date above for infrastructure reflects the inception date for the calculation and reporting of time-weighted returns. The Infrastructure program began in July 2014 and the full history of Infrastructure returns are included in Total Real Assets and Total Fund performance.

*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. This represents an approximate 9.9% yield for the 2017 fiscal year. The value shown above represents the year-end market value in accordance with GASB Statement 72, representing the 14 years of annual income, and has been incorporated into Total Fixed Income and Total Fund performance.

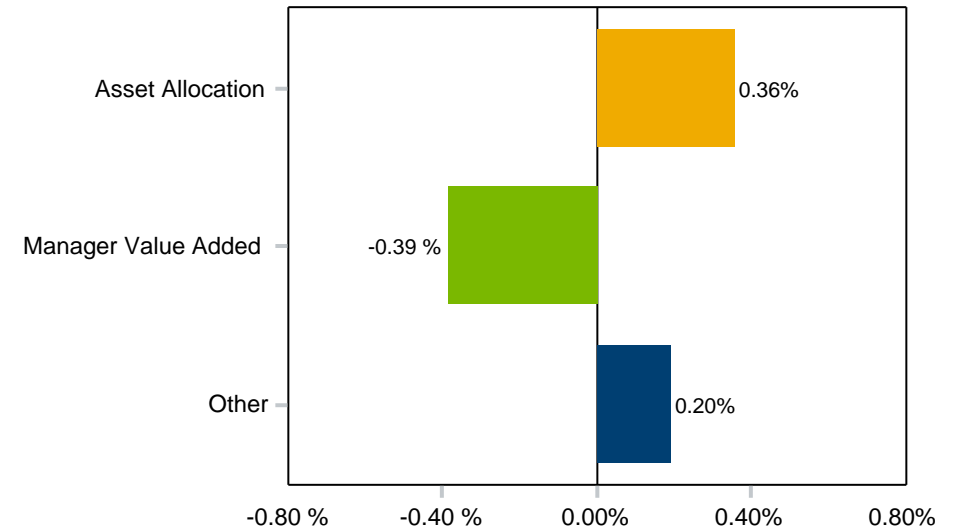
*ATRS made a total commitment of \$100 million to the Triam Co-Investments Fund. As of 3/31/2021, there was an unfunded commitment value equal to \$18,287,776.

Total Fund Attribution

Total Fund Performance

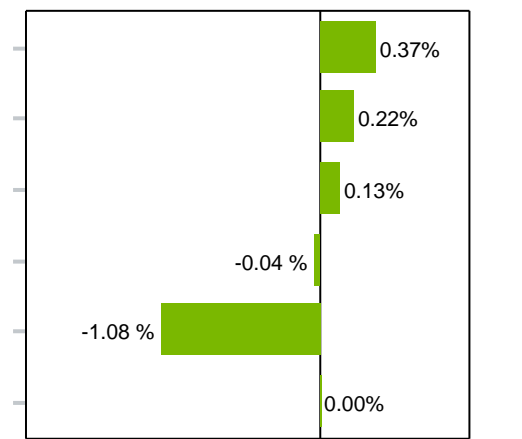
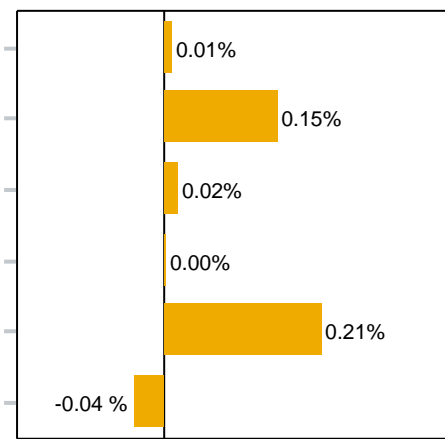
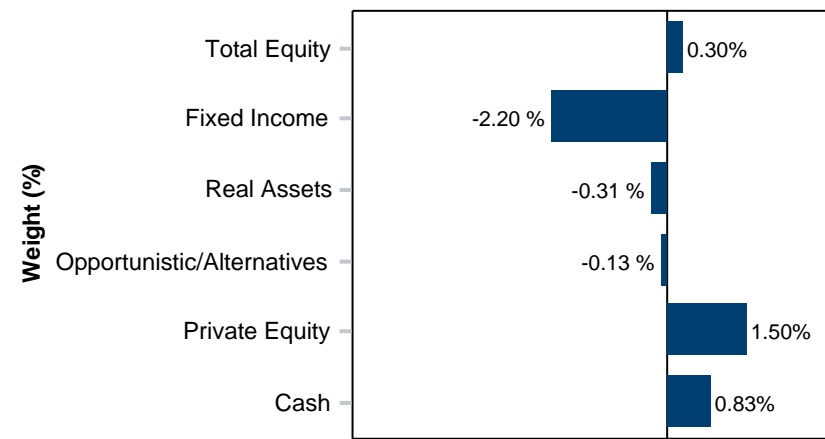


Total Value Added:0.17%



Total Asset Allocation:0.36%

Total Manager Value Added:-0.39%



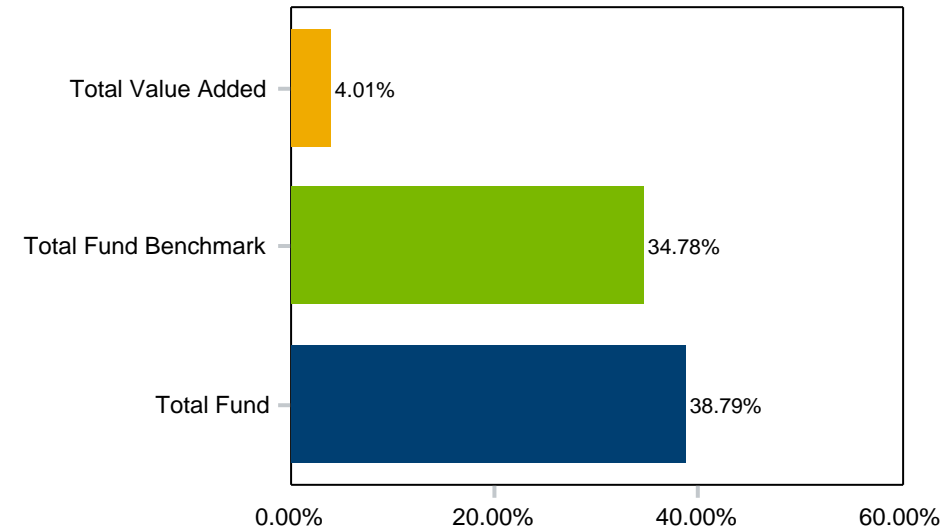
Average Active Weight

Asset Allocation Value Added

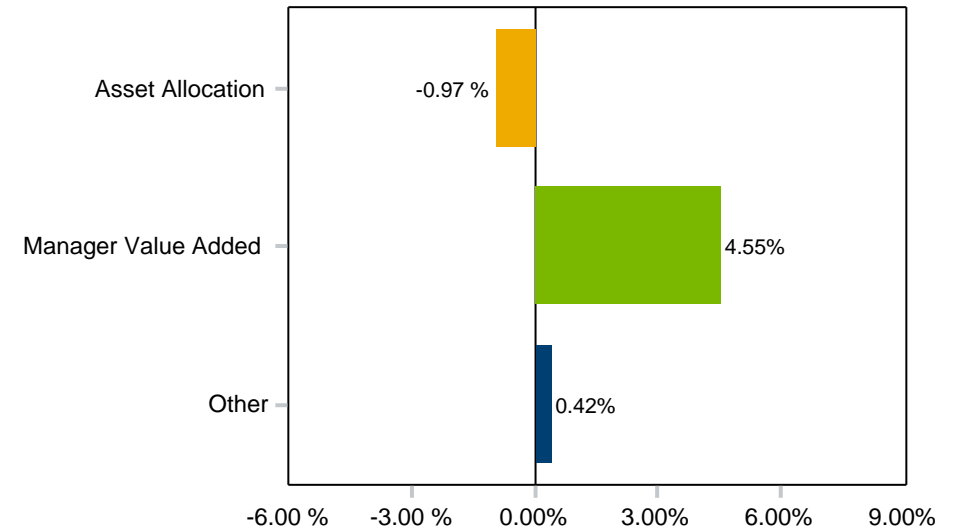
Manager Value Added

Total Fund Attribution

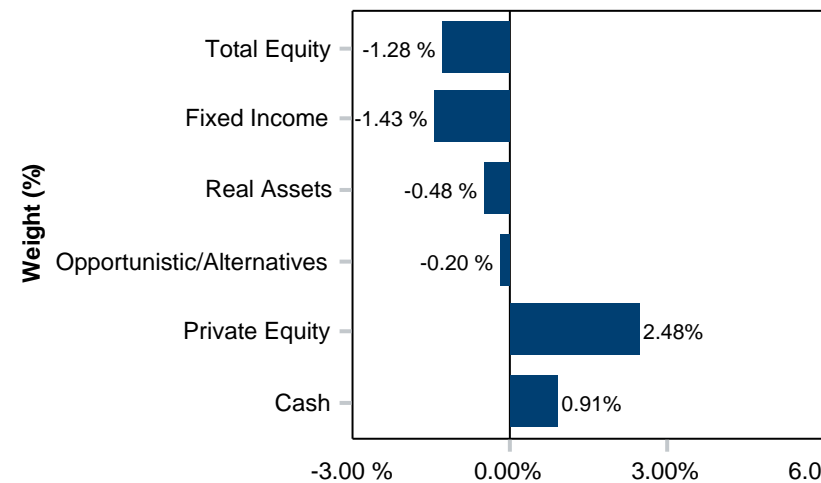
Total Fund Performance



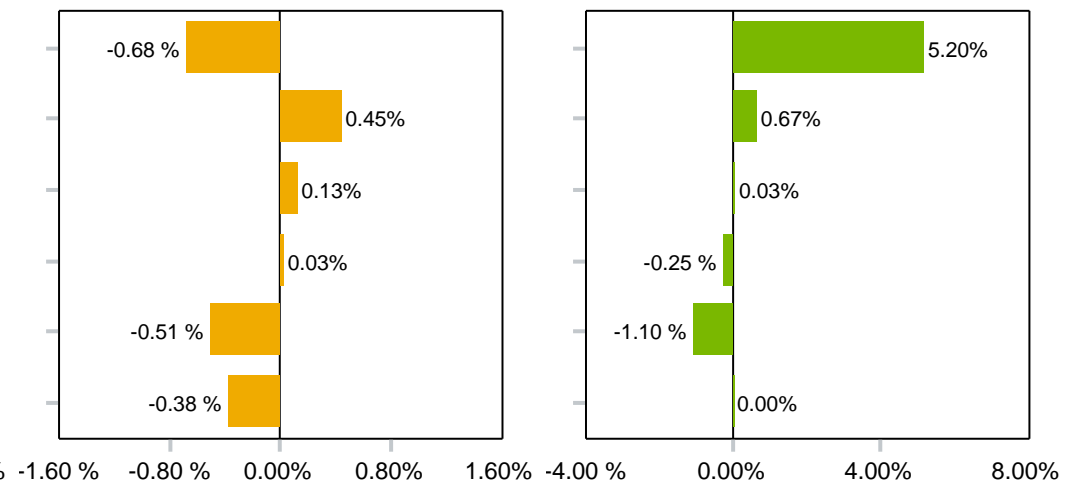
Total Value Added: 4.01%



Total Asset Allocation: -0.97%



Total Manager Value Added: 4.55%



Average Active Weight

Asset Allocation Value Added

Manager Value Added

As of March 31, 2021

Calendar Year Performance

	Performance(%)									
	Fiscal Year 2020	Fiscal Year 2019	Fiscal Year 2018	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Fiscal Year 2013	Fiscal Year 2012	Fiscal Year 2011
Total Fund	-1.4 (94)	5.3 (64)	11.7 (4)	16.1 (1)	-0.5 (82)	5.2 (8)	19.0 (6)	14.3 (11)	-1.0 (97)	22.4 (39)
<i>Performance Benchmark</i>	2.3 (37)	7.0 (10)	9.2 (23)	13.2 (28)	1.8 (3)	5.2 (8)	18.3 (13)	13.5 (20)	2.1 (12)	21.9 (51)
Total Equity	-6.4 (77)	4.1 (58)	13.4 (31)	22.1 (29)	-4.8 (57)	4.1 (32)	25.5 (34)	20.3 (32)	-6.3 (58)	31.5 (47)
<i>Total Equity Performance Benchmark</i>	2.7 (45)	5.9 (48)	12.2 (37)	19.0 (47)	-1.5 (38)	3.6 (35)	23.9 (48)	18.9 (42)	-1.8 (28)	31.2 (49)
Jacobs Levy 130/30	0.2 (46)	5.5 (50)	19.9 (23)	24.6 (18)	8.3 (4)	14.2 (7)	24.3 (53)	22.4 (49)	1.4 (41)	43.2 (16)
<i>Russell 3000 Index</i>	6.5 (31)	9.0 (32)	14.8 (45)	18.5 (56)	2.1 (22)	7.3 (43)	25.2 (44)	21.5 (56)	3.8 (25)	32.4 (57)
Kennedy Capital Management	-16.2 (52)	-7.8 (67)	12.2 (51)	24.2 (35)	-4.9 (61)	2.7 (52)	29.4 (9)	34.4 (6)	-4.2 (69)	33.9 (55)
<i>Russell 2000 Value Index</i>	-17.5 (61)	-6.2 (57)	13.1 (43)	24.9 (29)	-2.6 (39)	0.8 (66)	22.5 (72)	24.8 (62)	-1.4 (35)	31.4 (72)
Stephens	7.8 (50)	8.4 (32)	29.5 (27)	18.3 (83)	-7.8 (44)	5.1 (88)	18.4 (78)	18.7 (88)	3.0 (10)	46.7 (36)
<i>Russell 2000 Growth Index</i>	3.5 (58)	-0.5 (79)	21.9 (64)	24.4 (45)	-10.8 (61)	12.3 (38)	24.7 (37)	23.7 (57)	-2.7 (41)	43.5 (56)
Voya Absolute Return	0.1 (56)	4.0 (58)	9.9 (96)	20.3 (38)	1.9 (21)	7.8 (11)	26.9 (24)	19.7 (81)	6.0 (8)	30.5 (55)
<i>Performance Benchmark</i>	2.1 (48)	5.7 (49)	10.7 (95)	18.8 (49)	1.1 (24)	7.4 (11)	24.6 (40)	20.6 (76)	5.4 (8)	30.7 (54)
Allianz (Nicholas Applegate)	20.1 (11)	12.5 (15)	16.4 (36)	15.9 (39)	-7.1 (77)	4.4 (67)	23.1 (64)	19.4 (70)	-2.4 (62)	29.7 (74)
<i>Performance Benchmark</i>	15.3 (16)	7.8 (38)	12.0 (63)	16.8 (32)	-4.7 (64)	3.5 (73)	24.4 (52)	18.6 (76)	-3.2 (68)	22.5 (96)
Pershing Square International	28.0 (4)	30.7 (1)	2.8 (97)	8.2 (95)	-33.2 (100)	12.9 (11)	29.1 (16)	17.3 (80)	0.8 (44)	26.8 (87)
<i>Dow Jones U.S. Total Stock Market Index</i>	6.4 (32)	8.9 (33)	14.8 (45)	18.5 (56)	2.0 (22)	7.2 (45)	25.0 (46)	21.5 (56)	4.0 (24)	32.4 (56)
Pershing Square Holdings	36.5 (2)	21.7 (2)	-2.7 (100)	8.3 (95)	-49.1 (100)	15.2 (5)	30.4 (11)			
<i>Dow Jones U.S. Total Stock Market Index</i>	6.4 (32)	8.9 (33)	14.8 (45)	18.5 (56)	2.0 (22)	7.2 (45)	25.0 (46)			
Trian Partners	-2.3	13.1	2.8	9.5						
<i>S&P 500 Index</i>	7.5	10.4	14.4	17.9						
SSgA Global Index	1.6 (49)	4.8 (54)	11.4 (44)	19.4 (43)	-3.4 (48)	1.2 (55)	23.8 (49)	17.5 (52)	-6.6 (100)	31.4 (47)
<i>MSCI AC World IMI (Net)</i>	1.2 (51)	4.6 (56)	11.1 (46)	19.0 (47)	-3.9 (50)	0.8 (58)	23.4 (52)	17.1 (56)	-6.9 (100)	31.0 (51)

As of March 31, 2021

Calendar Year Performance

	Performance(%)									
	Fiscal Year 2020	Fiscal Year 2019	Fiscal Year 2018	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Fiscal Year 2013	Fiscal Year 2012	Fiscal Year 2011
BlackRock MSCI ACWI IMI Fund	1.5 (50)	4.5 (43)	11.4 (44)	19.1 (46)	-3.4 (48)	1.2 (55)	23.9 (48)	17.7 (51)	-6.6 (59)	
<i>MSCI AC World IMI (Net)</i>	1.2 (51)	4.6 (43)	11.1 (46)	19.0 (47)	-3.9 (50)	0.8 (58)	23.4 (52)	17.1 (56)	-6.9 (61)	
Wellington Global Perspectives	-11.7 (89)	-3.8 (90)	15.7 (20)	24.8 (16)	-4.2 (52)	-1.4 (72)	33.1 (4)	30.7 (5)	-9.1 (74)	45.8 (3)
<i>Performance Benchmark</i>	-5.5 (75)	-3.0 (87)	13.8 (28)	20.5 (37)	-4.7 (56)	1.5 (53)	26.0 (31)	20.6 (30)	-9.9 (78)	35.8 (21)
T. Rowe Price Global Equity	22.8 (6)	8.0 (35)	21.3 (8)	28.8 (8)	-0.6 (33)	7.5 (11)	32.0 (6)	18.2 (47)	-7.7 (63)	28.2 (71)
<i>MSCI AC World Index (Net)</i>	2.1 (48)	5.7 (49)	10.7 (50)	18.8 (49)	-3.7 (49)	0.7 (59)	22.9 (54)	16.6 (61)	-6.5 (59)	30.1 (57)
<i>MSCI AC World Index Growth (net)</i>	16.6 (11)	7.2 (41)	16.1 (19)	18.6 (50)	-2.7 (44)	4.9 (25)	23.1 (53)	15.4 (68)	-5.3 (51)	32.0 (43)
Lazard	1.6 (49)	2.7 (67)	9.8 (56)	26.2 (13)	-10.7 (88)	7.3 (11)	23.3 (52)	15.8 (66)	-11.4 (84)	29.6 (60)
<i>MSCI AC World Index (Net)</i>	2.1 (48)	5.7 (49)	10.7 (50)	18.8 (49)	-3.7 (49)	0.7 (59)	22.9 (54)	16.6 (61)	-6.5 (59)	30.1 (57)
D.E. Shaw	0.1 (56)	2.6 (68)	15.8 (20)	19.2 (46)	0.0 (28)	3.9 (33)	25.6 (33)	19.3 (41)	-1.9 (29)	31.1 (50)
<i>MSCI World Index (Net)</i>	2.8 (45)	6.3 (45)	11.1 (47)	18.2 (52)	-2.8 (45)	1.4 (53)	24.0 (47)	18.6 (45)	-5.0 (48)	30.5 (55)
GMO Global All Country Equity	-2.3	3.5	6.8	20.0	-6.5	-4.5				
<i>MSCI AC World Index (Net)</i>	2.1	5.7	10.7	18.8	-3.7	0.7				
<i>MSCI AC World Index Value (Net)</i>	-11.8	4.3	5.4	19.0	-4.8	-3.4				
Harris Global Equity	-6.6	-2.0	5.0	38.9	-12.8	0.7				
<i>MSCI World Index (Net)</i>	2.8	6.3	11.1	18.2	-2.8	1.4				
<i>MSCI World Value (Net)</i>	-11.3	4.2	5.6	18.7	-3.7	-2.9				
Fixed Income	6.4	6.4	1.3	5.2	3.5	1.0	6.1	3.8	5.2	7.3
<i>Performance Benchmark</i>	7.9	8.1	-0.3	0.9	5.8	1.6	5.2	0.2	7.4	4.8
BlackRock	9.0 (17)	8.0 (25)	-0.3 (77)	0.3 (69)	6.0 (1)	2.4 (15)	5.2 (50)	0.3 (63)	8.0 (28)	6.3 (37)
<i>Performance Benchmark</i>	7.9 (27)	8.1 (23)	-0.3 (74)	0.9 (55)	5.8 (1)	1.6 (36)	5.2 (49)	0.2 (67)	7.4 (37)	4.8 (51)
Loomis Sayles	7.6 (30)	7.4 (36)	1.8 (26)	8.1 (16)	1.9 (68)	1.1 (55)	12.0 (9)	10.7 (7)	4.4 (70)	15.7 (15)
<i>Performance Benchmark</i>	6.6 (38)	8.2 (20)	0.5 (48)	4.0 (26)	5.0 (35)	1.0 (60)	6.8 (34)	2.8 (30)	8.4 (23)	7.8 (27)
Putnam	0.1 (55)	3.7 (32)	4.1 (36)	7.9 (29)	-3.6 (70)	-0.7 (53)	3.7 (71)	5.5 (29)	-1.8 (62)	4.6 (55)
LIBOR	2.1 (35)	2.6 (41)	1.5 (59)	0.8 (83)	0.4 (42)	0.2 (42)	0.3 (85)	0.4 (83)	0.4 (49)	0.4 (88)
SSgA Aggregate Bond Index	8.7 (20)	7.9 (26)	-0.4 (78)	-0.3 (82)	6.0 (22)	1.9 (27)	4.3 (60)	-0.6 (84)	7.4 (36)	3.9 (65)
<i>Barclays Aggregate Index</i>	8.7 (20)	7.9 (26)	-0.4 (78)	-0.3 (83)	6.0 (22)	1.9 (28)	4.4 (59)	-0.7 (86)	7.5 (35)	3.9 (64)
Wellington Global Total Return	2.1 (36)	5.3 (14)	5.1 (32)	-0.7 (85)	1.3 (32)	0.5 (38)				
<i>BoFA Merrill Lynch 3 Month US T-Bill</i>	1.6 (41)	2.3 (45)	1.4 (60)	0.5 (83)	0.2 (42)	0.0 (45)				
Reams Core Plus Bond Fund	15.3	8.6	0.0	0.0	6.1	1.5				
<i>Barclays Aggregate Index</i>	8.7	7.9	-0.4	-0.3	6.0	1.9				
BRS Recycling Tax Credit										
BRS Recycling Tax Credit Phase 2										

As of March 31, 2021

Calendar Year Performance

	Performance(%)									
	Fiscal Year 2020	Fiscal Year 2019	Fiscal Year 2018	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Fiscal Year 2013	Fiscal Year 2012	Fiscal Year 2011
Opportunistic/Alternatives	-5.3	-0.2	0.6	6.8	-1.7	5.8	10.2	12.9	-1.0	
<i>Custom Alternatives Benchmark</i>	-2.5	2.1	3.4	2.8	-3.7	1.7	6.3	7.1	-3.9	
Anchorage	-5.4	1.4	6.2	5.9	-3.9	3.8	18.9	19.4	-1.0	
<i>Credit Suisse Event Driven</i>	-6.9	1.9	3.8	9.3	-10.4	-2.0	14.1	14.5	-7.2	
York	-45.2	-5.9	12.2	14.3	-12.9	-7.2	22.4	19.4	-0.8	
<i>Credit Suisse Event Driven</i>	-6.9	1.9	3.8	9.3	-10.4	-2.0	14.1	14.5	-7.2	
Capula	9.8	6.3	3.8	7.8	6.1	8.9	7.9	4.0	3.4	
<i>HFR1 Macro (Total) Index</i>	0.8	2.4	1.1	-2.4	1.8	4.2	1.5	-0.1	-2.8	
Graham	-5.6	2.1	6.5	-3.2	-1.0	23.9	2.7	5.9	-8.3	
<i>HFR1 Macro (Total) Index</i>	0.8	2.4	1.1	-2.4	1.8	4.2	1.5	-0.1	-2.8	
Circumference Group Core Value	5.0	2.7	15.9	14.0						
<i>Russell 2000 Index</i>	-6.6	-3.3	17.6	24.6						
Aeolus Keystone Fund	5.1	-5.8	-17.9	11.2						
<i>Citigroup 3 Month T-Bill</i>	1.6	2.3	1.3	0.5						
<i>Eurekahedge ILS Advisers Index</i>	2.9	-5.5	-6.6	5.0						
Nephila Rubik Holdings	3.1	-6.9	-7.7	2.2						
<i>Citigroup 3 Month T-Bill</i>	1.6	2.3	1.3	0.5						
<i>Eurekahedge ILS Advisers Index</i>	2.9	-5.5	-6.6	5.0						
Parametric Global Defensive Equity Fund	-4.2	3.9	5.8							
<i>Performance Benchmark</i>	2.4	4.4	6.0							
<i>MSCI AC World Index</i>	2.6	6.3	11.3							
Man Alternative Risk Premia	-7.9	1.8								
<i>SG Multi Alternative Risk Premia Index</i>	-11.6	0.4								
CFM ISD Fund 1.5x	-26.1	2.8								
<i>SG Multi Alternative Risk Premia Index</i>	-11.6	0.4								

As of March 31, 2021

Calendar Year Performance

	Performance(%)									
	Fiscal Year 2020	Fiscal Year 2019	Fiscal Year 2018	Fiscal Year 2017	Fiscal Year 2016	Fiscal Year 2015	Fiscal Year 2014	Fiscal Year 2013	Fiscal Year 2012	Fiscal Year 2011
Real Assets	3.9	5.6	9.4	7.5	9.5	11.7	9.0			
<i>Total Real Assets Benchmark</i>	4.1	5.7	6.2	6.6	10.0	11.5	11.4			
Real Estate	2.0	5.7	11.1	6.9	12.0	13.4	12.1	7.9	9.8	17.7
<i>NFI-ODCE (Net)</i>	3.9	6.5	7.1	7.4	12.6	12.4	12.7	10.5	13.4	16.0
Timber	12.2	-0.3	1.2	8.0	0.4	9.4	-1.1	6.8	-5.3	4.8
<i>Timberland Property Benchmark</i>	3.1	0.1	2.6	3.7	2.5	10.5	7.7	6.9	-2.9	-0.4
BTG Timber Separate Account										
BTG U.S. Timberland Fund, L.P.										
Agriculture	1.8	3.5	3.3	4.3	9.8	2.5	11.0	11.5		
<i>Agriculture Benchmark</i>	3.3	5.4	3.5	4.5	5.6	6.5	12.8	20.9		
HFMS Farmland	1.4	3.4	2.9	3.9	10.7	2.5	11.0	11.5		
<i>HFMS custom NCREIF Farmland Index</i>	4.6	4.9	2.0	4.0	4.8	6.5	12.8	20.9		
UBS Agrivest Core Farmland Fund	3.1	4.0	4.5	5.0	6.2					
<i>UBS Agrivest custom NCREIF Farmland Index</i>	4.7	6.2	5.0	5.5	8.4					
Infrastructure	7.2	14.6								
<i>CPI + 5%</i>	5.7	6.7								
Private Equity	4.9	12.8	22.3	16.7	7.7	11.9	20.6	12.5	12.5	16.0
<i>Private Equity Policy</i>	-7.5	10.8	16.1	20.4	1.6	14.5	25.0	16.8	9.4	20.1
Cash	3.8	6.5	1.2	5.0	3.2					

*The Real Assets and Private Equity returns and their benchmark returns are shown on a one-quarter lag.

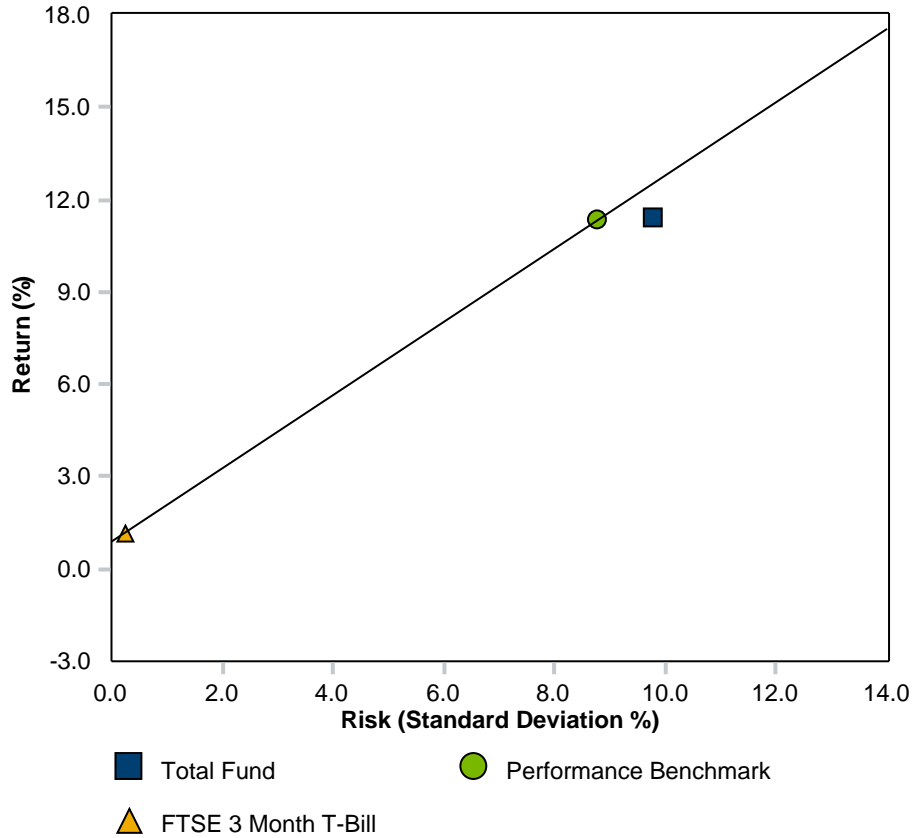
*The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 151 of this report.

*The inception date above for infrastructure reflects the inception date for the calculation and reporting of time-weighted returns. The Infrastructure program began in July 2014 and the full history of Infrastructure returns are included in Total Real Assets and Total Fund performance.

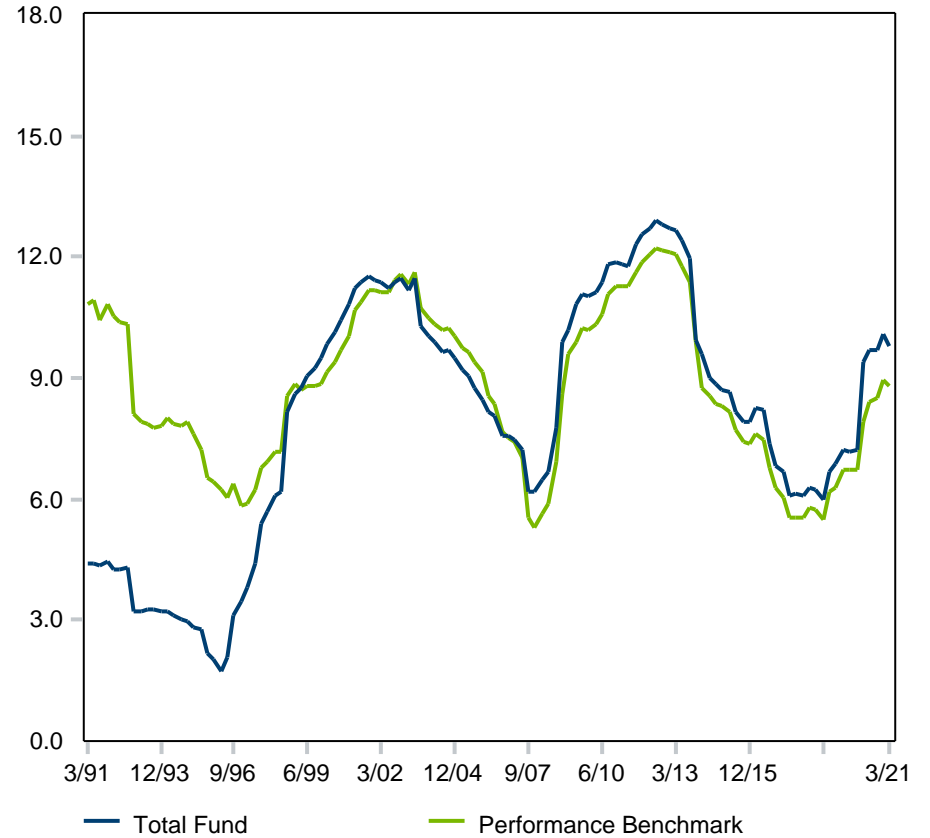
*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. This represents an approximate 9.9% yield for the 2017 fiscal year. The value shown above represents the year-end market value in accordance with GASB Statement 72, representing the 14 years of annual income, and has been incorporated into Total Fixed Income and Total Fund performance.

Total Fund Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation

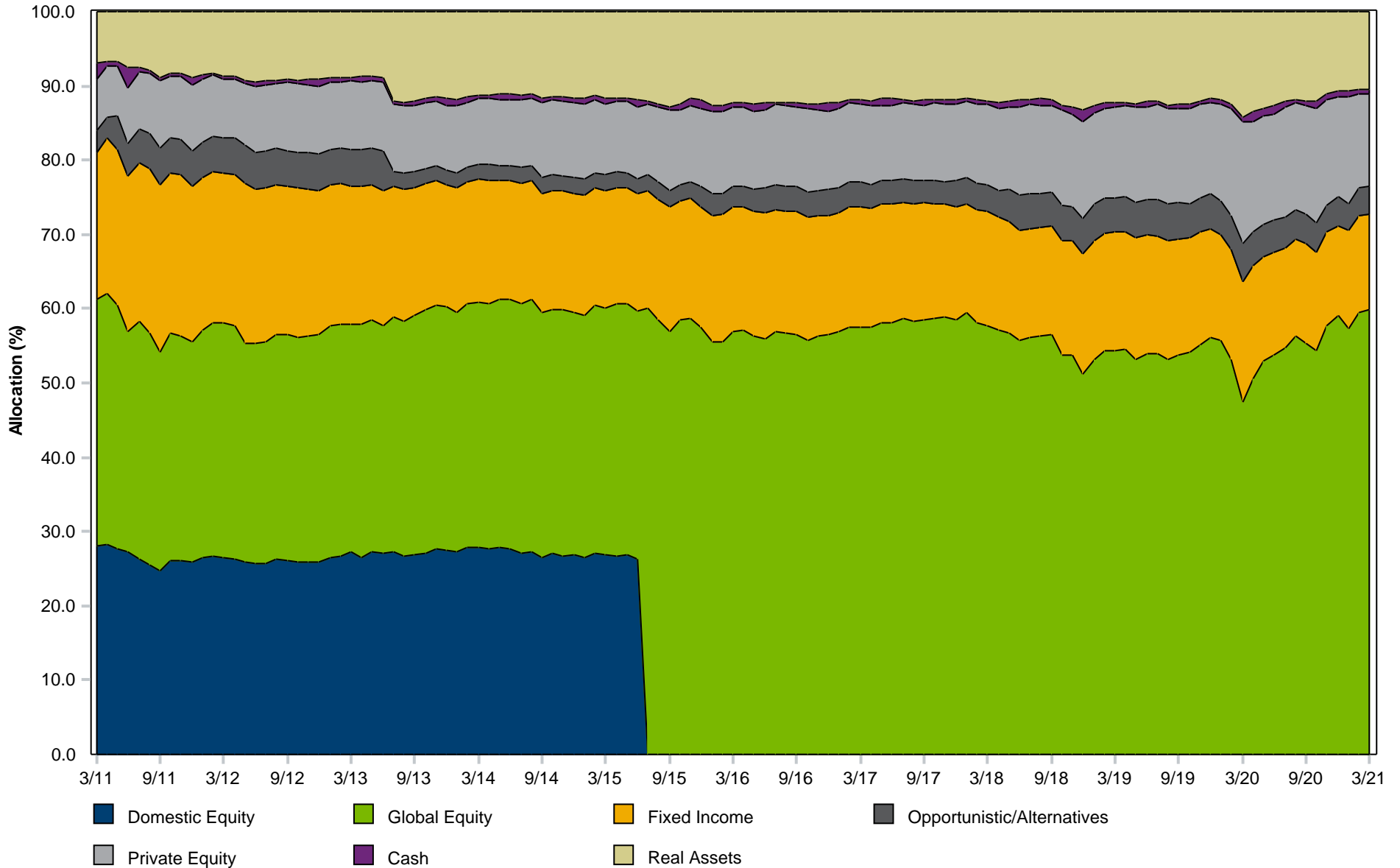


5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Fund	0.13	3.09	0.04	0.90	1.03	-0.52	1.06	11.36	9.79	0.95
Performance Benchmark	0.00	0.00	N/A	1.00	1.13	0.00	1.00	11.33	8.79	1.00
FTSE 3 Month T-Bill	-10.01	8.85	-1.13	0.05	N/A	1.22	-0.01	1.15	0.25	-0.21

Historical Asset Allocation by Segment

Total Fund



Asset Allocation as of 3/31/2021	Values in \$1,000								
	Total Equity	U.S. Bond	Real Estate	Private Equity	Cash	Total	Percent of Total	Interim Policy	Long-Term Target
Jacobs Levy 130/30	\$870,553.4	--	--	--	--	\$870,553.4	4.30%		
Kennedy Capital Management	\$734,706.5	--	--	--	--	\$734,706.5	3.63%		
Stephens	\$616,768.6	--	--	--	--	\$616,768.6	3.05%		
Voya Absolute Return	\$728,134.9	--	--	--	--	\$728,134.9	3.60%		
Allianz (Nicholas Applegate)	\$1,020,596.7	--	--	--	--	\$1,020,596.7	5.04%		
Pershing Square International	\$24,768.0	--	--	--	--	\$24,768.0	0.12%		
Pershing Square Holdings	\$253,508.8	--	--	--	--	\$253,508.8	1.25%		
SSgA Global Index	\$1,188,463.8	--	--	--	--	\$1,188,463.8	5.87%		
BlackRock MSCI ACWI IMI Fund	\$1,130,888.6	--	--	--	--	\$1,130,888.6	5.59%		
Wellington Global Perspectives	\$722,556.3	--	--	--	--	\$722,556.3	3.57%		
T. Rowe Price Global Equity	\$1,584,505.8	--	--	--	--	\$1,584,505.8	7.83%		
Lazard	\$816,139.8	--	--	--	--	\$816,139.8	4.03%		
D.E. Shaw	\$894,939.4	--	--	--	--	\$894,939.4	4.42%		
GMO Global All Country Equity	\$540,517.2	--	--	--	--	\$540,517.2	2.67%		
Harris Global Equity	\$613,430.7	--	--	--	--	\$613,430.7	3.03%		
Triam Partners	\$81,619.9	--	--	--	--	\$81,619.9	0.40%		
Triam Partners Co-Investments	\$100,469.1	--	--	--	--	\$100,469.1	0.50%		
Capital Guardian & Knight Vinke	\$74.3	--	--	--	--	\$74.3	0.00%		
Total Equity						\$11,922,641.8	58.93%	57.37%	53.00%
BlackRock	--	\$275,451.3	--	--	--	\$275,451.3	1.36%		
Loomis Sayles	--	\$487,262.6	--	--	--	\$487,262.6	2.41%		
Putnam	--	\$390,750.0	--	--	--	\$390,750.0	1.93%		
SSgA Aggregate Bond Index	--	\$460,364.2	--	--	--	\$460,364.2	2.28%		
Wellington Global Total Return	--	\$355,665.3	--	--	--	\$355,665.3	1.76%		
Reams Core Plus Bond Fund	--	\$388,418.5	--	--	--	\$388,418.5	1.92%		
BRS Recycling Tax Credit	--	\$176,000.0	--	--	--	\$176,000.0	0.87%		
BRS Recycling Tax Credit Phase 2	--	\$77,031.6	--	--	--	\$77,031.6	0.38%		
Total Fixed Income						\$2,610,943.4	12.90%	15.00%	15.00%
Anchorage	--	--	--	\$82,133.7	--	\$82,133.7	0.41%		
Capula	--	--	--	\$91,305.5	--	\$91,305.5	0.45%		
Graham	--	--	--	\$72,633.6	--	\$72,633.6	0.36%		
York	--	--	--	\$23,274.7	--	\$23,274.7	0.12%		
Circumference Group Core Value	--	--	--	\$36,187.4	--	\$36,187.4	0.18%		
Aeolus Keystone Fund	--	--	--	\$224,149.1	--	\$224,149.1	1.11%		
Nephila Rubik Holdings	--	--	--	\$40,910.6	--	\$40,910.6	0.20%		
Parametric Global Defensive Equity	--	--	--	\$186,992.8	--	\$186,992.8	0.92%		
Man Alternative Risk Premia	--	--	--	\$89,316.0	--	\$89,316.0	0.44%		
CFM ISD Fund 1.5x	--	--	--	\$82,955.9	--	\$82,955.9	0.41%		
Total Opportunistic/Alternatives						\$929,859.3	4.60%	4.73%	5.00%
Real Estate			\$1,327,713.1			\$1,327,713.1	6.56%		
Timber			\$296,419.6			\$296,419.6	1.47%		
Agriculture			\$206,748.3			\$206,748.3	1.02%		
Infrastructure			\$273,444.1			\$273,444.1	1.35%		
Total Real Assets						\$2,104,325.1	10.40%	10.90%	15.00%
Total Private Equity				\$2,537,573.4		\$2,537,573.4	12.54%	12.00%	12.00%
Total Cash					\$126,864.1	\$126,864.1	0.63%	0.00%	0.00%
Total Fund	\$11,922,641.8	\$2,610,943.4	\$2,104,325.1	\$3,467,432.7	\$126,864.1	\$20,232,207.0	100.00%	100.00%	100.00%

*Note: The market values for the Real Assets and Private Equity investments shown above are lagged one quarter and adjusted for the current quarter's cash flows. Market values and allocation percentages may not add to the sum total due to rounding.

Asset Allocation as of 3/31/2021				Values in \$1,000			
	Real Estate	Percent of Real Estate	Percent of Total Fund		Real Estate	Percent of Real Estate	Percent of Total Fund
Almanac Realty Securities Fund V	\$99.0	0.01%	0.00%	LaSalle Income & Growth Fund VI	\$6,040.7	0.45%	0.03%
Almanac Realty Securities Fund VI	\$3,574.8	0.27%	0.02%	LaSalle Income & Growth Fund VII	\$15,265.3	1.15%	0.08%
Almanac Realty Securities Fund VII	\$14,734.0	1.11%	0.07%	LaSalle Income & Growth Fund VIII	\$10,857.7	0.82%	0.05%
Almanac Realty Securities Fund VIII	\$7,225.8	0.54%	0.04%	Lone Star Real Estate Fund IV	\$6,996.6	0.53%	0.03%
American Center	\$27,691.9	2.09%	0.14%	Long Wharf Real Estate Partners V	\$21,163.2	1.59%	0.10%
AR Insurance	\$2,236.7	0.17%	0.01%	Long Wharf Real Estate Partners VI	\$6,982.2	0.53%	0.03%
AR Teachers Retirement Building	\$5,376.0	0.40%	0.03%	Metropolitan RE Co-Investments	\$10,628.3	0.80%	0.05%
Blackstone Real Estate Partners VII	\$19,323.0	1.46%	0.10%	Met Life Commercial Mtg Inc Fund	\$48,607.2	3.66%	0.24%
Blackstone RE Europe VI	\$16,047.9	1.21%	0.08%	New Boston Fund VII	\$0.0	0.00%	0.00%
Carlyle Realty Partners VII	\$10,773.1	0.81%	0.05%	O'Connor NAPP II	\$8,482.4	0.64%	0.04%
Carlyle Realty VIII	\$9,179.8	0.69%	0.05%	PRISA	\$267,176.6	20.12%	1.32%
CBREI SP U.S. Opportunity V	\$960.3	0.07%	0.00%	Recoveries Land	\$70.0	0.01%	0.00%
CBREI SP VIII	\$21,403.1	1.61%	0.11%	Rockwood Capital RE Partners IX	\$5,609.0	0.42%	0.03%
CBREI SP IX	\$10,279.2	0.77%	0.05%	Rockwood Capital RE XI	\$14,158.2	1.07%	0.07%
Cerberus Institutional RE Partners III	\$10,954.7	0.83%	0.05%	Rose Law Firm	\$4,295.0	0.32%	0.02%
Chenal Retirement Village	\$0.0	0.00%	0.00%	Texarkana DHS	\$1,627.7	0.12%	0.01%
Calmwater	\$22,804.9	1.72%	0.11%	Torchlight Debt Opportunity Fund IV	\$4,766.6	0.36%	0.02%
Fletcher Properties	\$1,162.2	0.09%	0.01%	Torchlight Debt Opportunity Fund V	\$6,742.1	0.51%	0.03%
FPA Core Plus IV	\$19,041.1	1.43%	0.09%	Torchlight Debt Opportunity Fund VI	\$25,731.8	1.94%	0.13%
Harbert European Real Estate	\$20,936.7	1.58%	0.10%	Torchlight Debt Opportunity Fund VII	\$4,992.3	0.38%	0.02%
Heitman European Property IV	\$1,584.6	0.12%	0.01%	UBS Trumbull Property Fund	\$187,017.1	14.09%	0.92%
JP Morgan Strategic Property Fund	\$278,414.8	20.97%	1.38%	UBS Trumbull Property Income Fund	\$51,438.0	3.87%	0.25%
Kayne Anderson V	\$25,082.5	1.89%	0.12%	Victory	\$32,775.7	2.47%	0.16%
Landmark Fund VI	\$1,825.2	0.14%	0.01%	Walton Street Real Estate Debt II	\$6,926.5	0.52%	0.03%
Landmark Real Estate VIII	\$8,698.0	0.66%	0.04%	West Mphs. DHS	\$2,330.4	0.18%	0.01%
LaSalle Asia Opportunity Fund IV	\$2,379.8	0.18%	0.01%	Westbrook IX	\$9,969.1	0.75%	0.05%
LaSalle Asia Opportunity Fund V	\$11,919.2	0.90%	0.06%	Westbrook Real Estate Fund X	\$13,355.0	1.01%	0.07%
Total Real Estate					\$1,327,713.1	100.00%	6.56%

*Note: The market values for the real estate investments shown above are lagged one quarter and adjusted for the current quarter's cash flows. Market values and allocation percentages may not add to the sum total due to rounding.

Asset Allocation as of 3/31/2021				Values in \$1,000			
	Private Equity	Percent of Private Equity	Percent of Total Fund		Private Equity	Percent of Private Equity	Percent of Total Fund
Arlington Capital IV	\$31,450.5	1.24%	0.16%	JF Lehman III	\$13,423.2	0.53%	0.07%
Arlington Capital V	\$6,359.8	0.25%	0.03%	JF Lehman IV	\$33,773.6	1.33%	0.17%
Advent GPE VI	\$5,111.8	0.20%	0.03%	JF Lehman V	\$7,454.6	0.29%	0.04%
Altus Capital II	\$6,433.0	0.25%	0.03%	KPS III	\$188.9	0.01%	0.00%
American Industrial Partners VI	\$21,734.1	0.86%	0.11%	KPS IV	\$23,906.5	0.94%	0.12%
American Industrial Partners VII	\$9,819.7	0.39%	0.05%	KPS X	\$5,646.6	0.22%	0.03%
Altaris Constellation Partners	\$28,057.8	1.11%	0.14%	KPS Mid-Cap	\$4,385.2	0.17%	0.02%
Altaris Health Partners IV	\$20,371.7	0.80%	0.10%	Levine Leichtman V	\$22,558.9	0.89%	0.11%
Atlas Capital II	\$12,774.6	0.50%	0.06%	Lime Rock III	\$10,373.3	0.41%	0.05%
Audax Mezzanine III	\$3,248.2	0.13%	0.02%	LLR III	\$11,866.0	0.47%	0.06%
Big River - Equity	\$100,507.2	3.96%	0.50%	LLR VI	-\$164.0	-0.01%	0.00%
Big River - Holdings Note 2023	\$13,965.9	0.55%	0.07%	Mason Wells III	\$6,279.1	0.25%	0.03%
Big River - Holdings Note 3/16/23	\$5,899.3	0.23%	0.03%	NGP IX	\$1,429.4	0.06%	0.01%
Bison V	\$29,205.8	1.15%	0.14%	NGP X	\$4,624.8	0.18%	0.02%
Boston Ventures VII	\$5,526.9	0.22%	0.03%	NGP XI	\$19,712.5	0.78%	0.10%
Boston Ventures IX	\$29,796.4	1.17%	0.15%	NGP XII	\$16,073.3	0.63%	0.08%
Boston Ventures X	\$484.3	0.02%	0.00%	One Rock Capital Partners II	\$32,024.6	1.26%	0.16%
BV VIII	\$20,680.4	0.81%	0.10%	PineBridge	\$6,174.0	0.24%	0.03%
Castlelake II	\$17,727.8	0.70%	0.09%	Riverside IV	\$236.6	0.01%	0.00%
Castlelake III	\$18,262.7	0.72%	0.09%	Riverside V	\$24,546.9	0.97%	0.12%
Clearlake V	\$44,401.4	1.75%	0.22%	Riverside VI	\$12,681.2	0.50%	0.06%
Clearlake VI	\$15,169.1	0.60%	0.07%	Siris III	\$24,061.6	0.95%	0.12%
Court Square III	\$37,308.0	1.47%	0.18%	Siris IV	\$16,332.9	0.64%	0.08%
CSFB-ATRS 2005-1 Series	\$34,215.4	1.35%	0.17%	SK Capital V	\$20,773.7	0.82%	0.10%
CSFB-ATRS 2006-1 Series	\$65,062.0	2.56%	0.32%	Sycamore Partners II	\$10,310.4	0.41%	0.05%
Diamond State Ventures II	\$2,774.4	0.11%	0.01%	Sycamore Partners III	\$7,122.6	0.28%	0.04%
Doughty Hanson Tech I	\$439.9	0.02%	0.00%	TA XI	\$37,490.8	1.48%	0.19%
DW Healthcare III	\$14,621.9	0.58%	0.07%	Tennenbaum VI	\$12,433.9	0.49%	0.06%
DW Healthcare IV	\$33,767.4	1.33%	0.17%	Thoma Bravo Discover	\$18,544.9	0.73%	0.09%
DW Healthcare V	\$8,500.5	0.33%	0.04%	Thoma Bravo Discover II	\$20,380.5	0.80%	0.10%
EnCap IX	\$8,119.3	0.32%	0.04%	Thoma Bravo Discover III	-\$33.0	0.00%	0.00%
EnCap VIII	\$10,518.4	0.41%	0.05%	Thoma Bravo Explore I	\$4,016.6	0.16%	0.02%
EnCap X	\$20,332.9	0.80%	0.10%	Thoma Bravo XI	\$30,403.5	1.20%	0.15%
EnCap XI	\$8,211.1	0.32%	0.04%	Thoma Bravo XII	\$46,428.3	1.83%	0.23%
Franklin Park Series	\$843,184.3	33.23%	4.17%	Thoma Bravo XIII	\$34,253.9	1.35%	0.17%
GCG IV	\$25,006.5	0.99%	0.12%	Vista Equity III	\$4,150.1	0.16%	0.02%
GCG V	\$2,352.9	0.09%	0.01%	Vista Foundation II	\$15,558.3	0.61%	0.08%
GTLA Holdings	\$40,000.0	1.58%	0.20%	Vista Foundation III	\$28,364.3	1.12%	0.14%
Highland	\$282,749.2	11.14%	1.40%	Wellspring V	\$12,981.3	0.51%	0.06%
Insight Equity II	\$20,391.4	0.80%	0.10%	Wicks IV	\$24,297.9	0.96%	0.12%
Insight Mezzanine I	\$1,666.5	0.07%	0.01%	WNG II	\$6,295.2	0.25%	0.03%
Total Private Equity					\$2,537,573.4	100.00%	12.54%

*Note: The market values for the private equity investments shown above are lagged one quarter and adjusted for the current quarter's cash flows. Market values and allocation percentages may not add to the sum total due to rounding.

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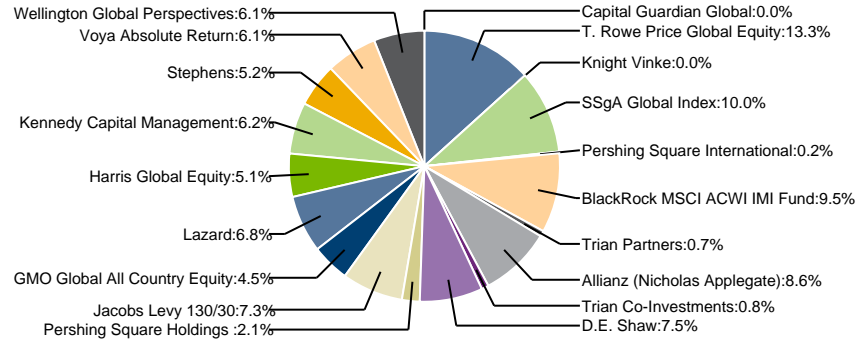


Total Equity

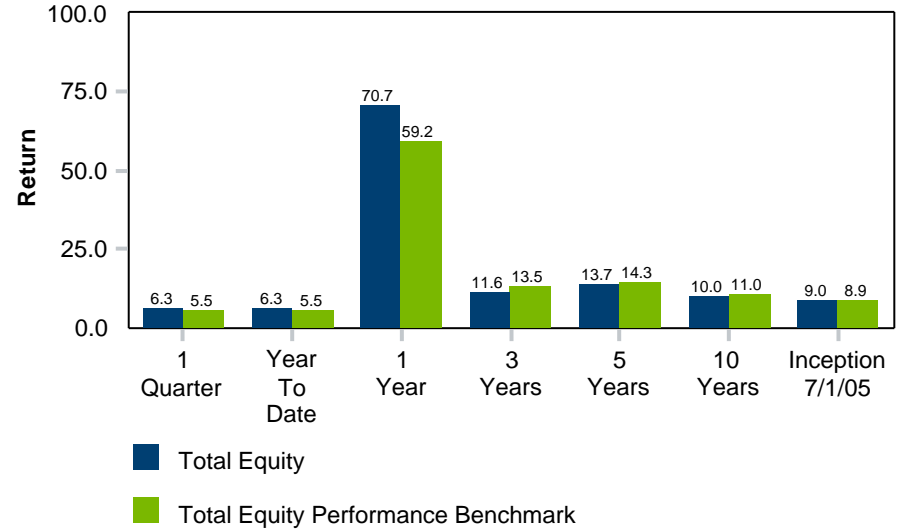
Total Equity Portfolio Overview

Current Allocation

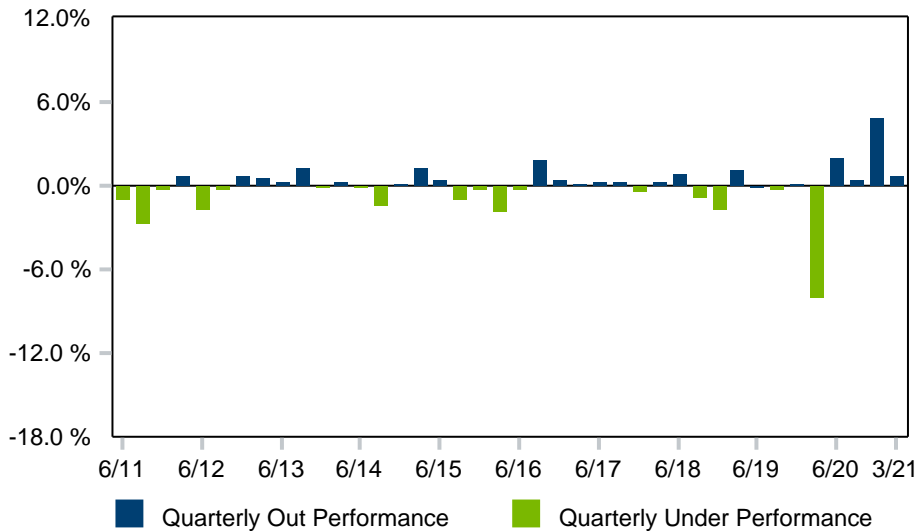
March 31, 2021 : \$11,923M



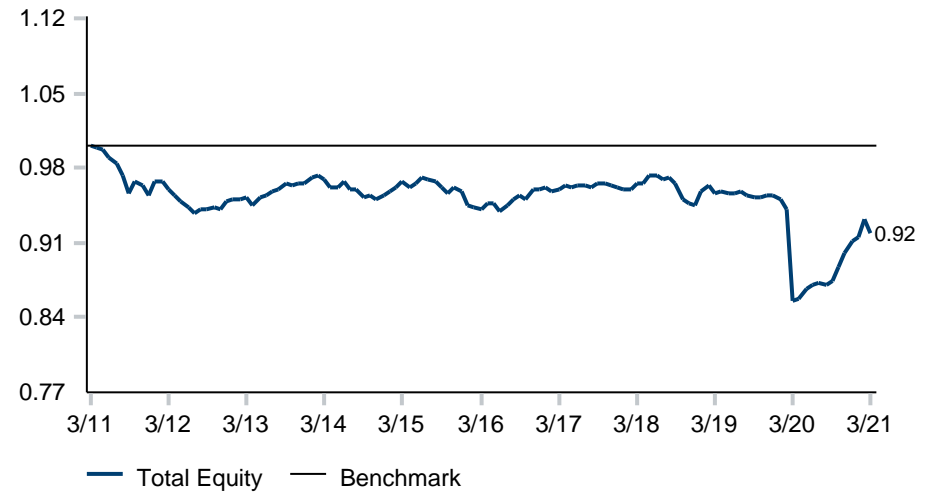
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - 10 Years

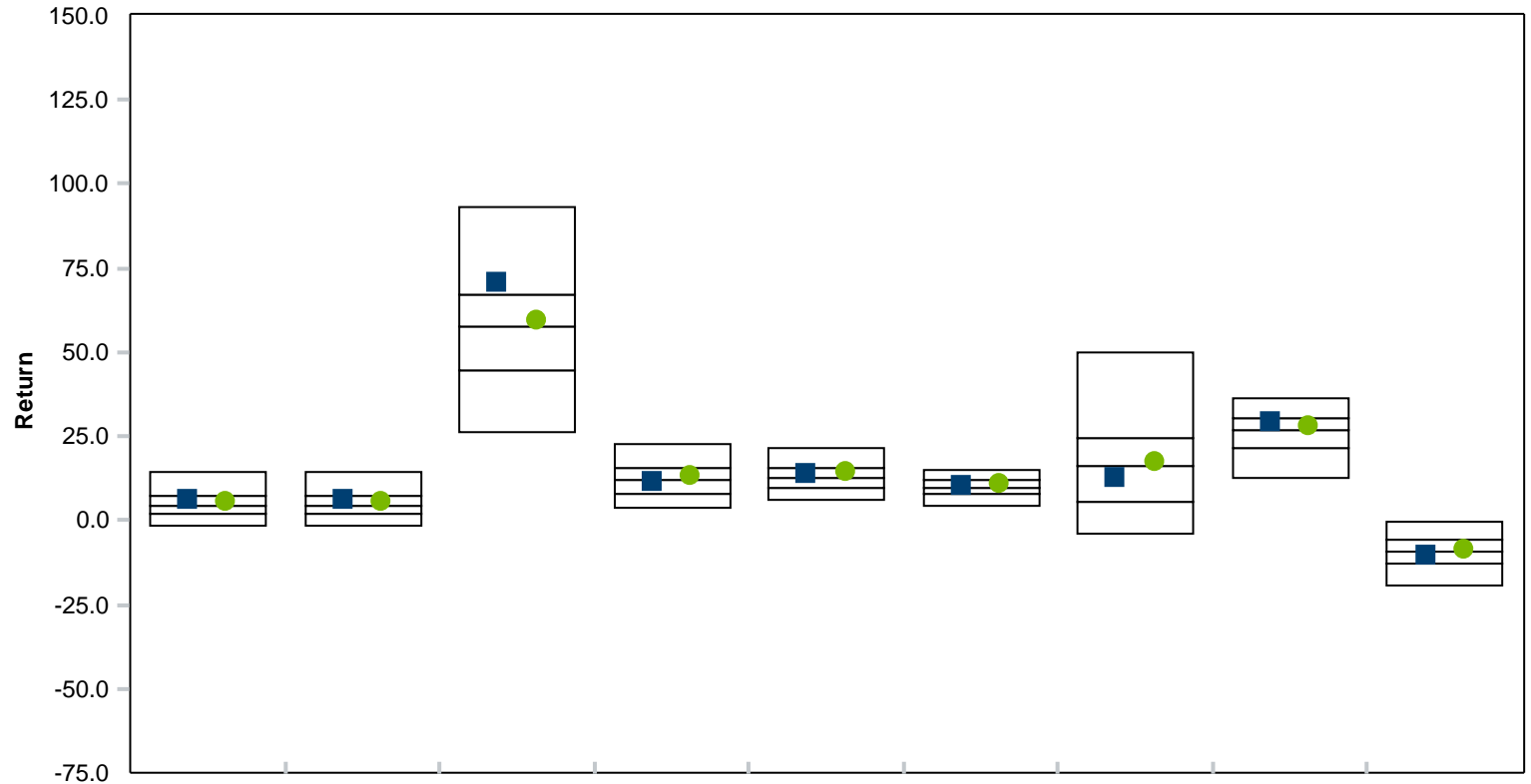


The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 151 of this report.

As of March 31, 2021

Peer Group Analysis

IM Global Equity (SA+CF)

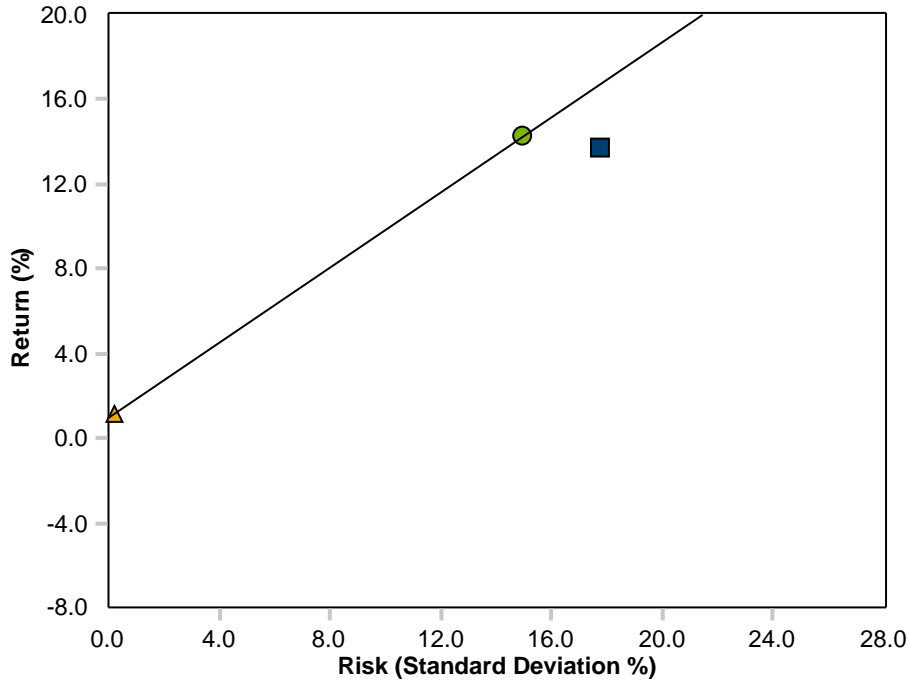


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Total Equity	6.3 (32)	6.3 (32)	70.7 (22)	11.6 (53)	13.7 (40)	10.0 (45)	12.4 (61)	29.0 (37)	-10.2 (57)
● Total Equity Performance Benchmark	5.5 (40)	5.5 (40)	59.2 (45)	13.5 (38)	14.3 (34)	11.0 (31)	17.6 (43)	27.8 (44)	-8.7 (45)
5th Percentile	14.2	14.2	93.4	22.6	21.6	15.0	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	11.8	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	9.6	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	8.1	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	4.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	182	360	392	403

parentheses contain percentile rankings.

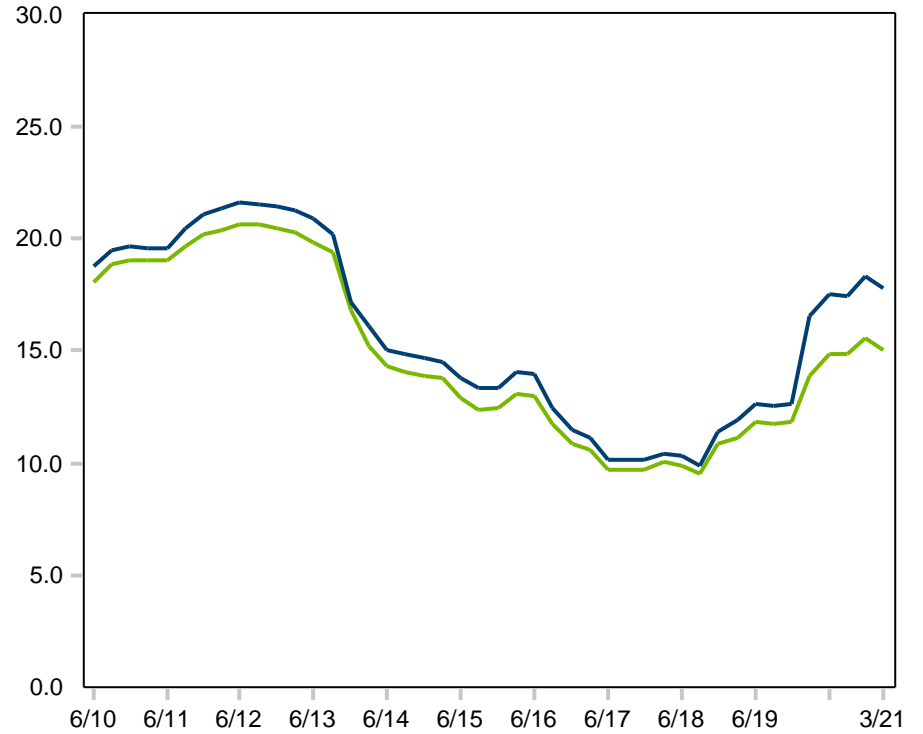
Total Equity Risk Profile

**Annualized Return vs. Annualized Standard Deviation
5 Years**



- Total Equity
- Total Equity Performance Benchmark
- ▲ FTSE 3 Month T-Bill

Rolling 5 Years Standard Deviation



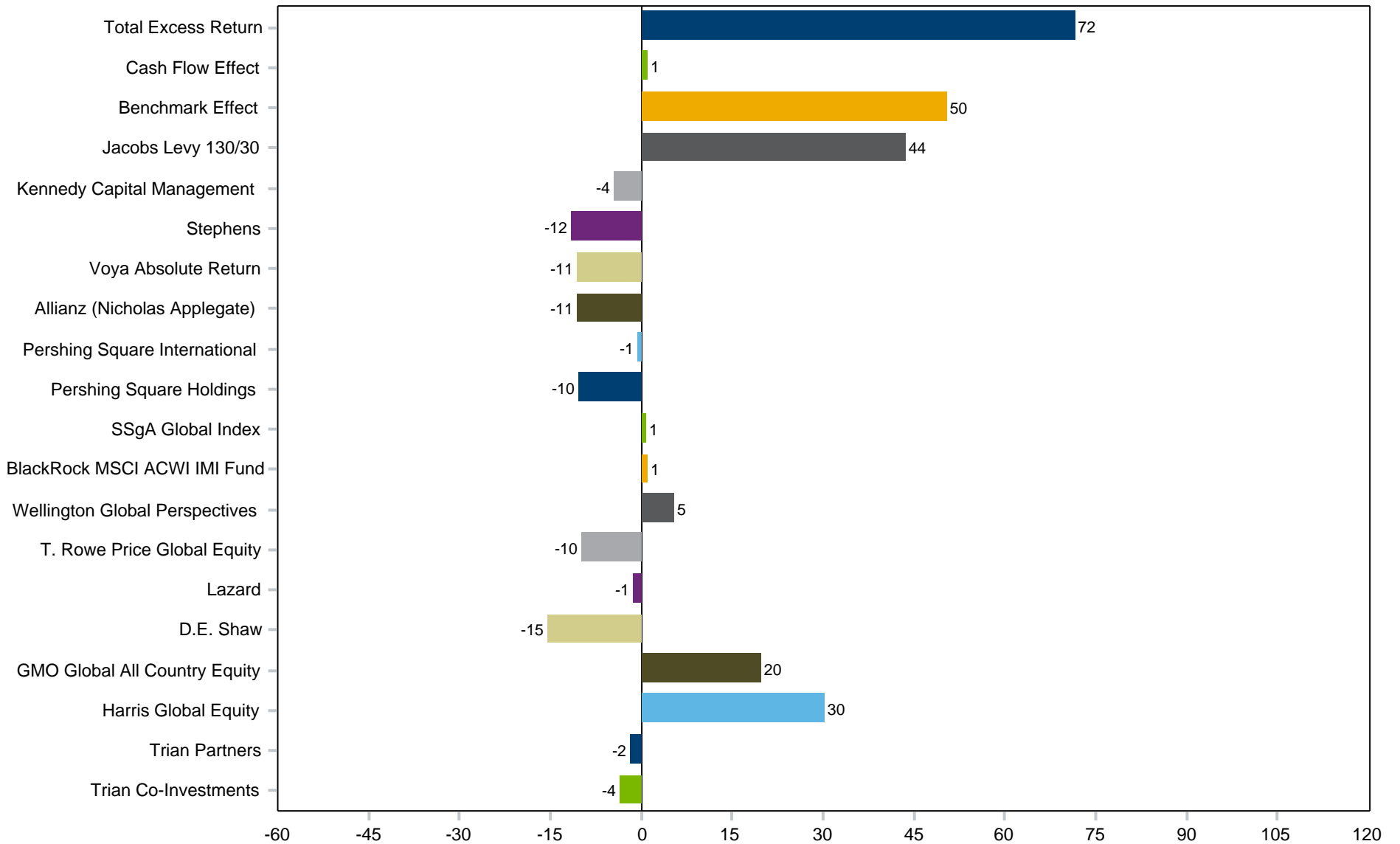
- Total Equity
- Total Equity Performance Benchmark

5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Equity	0.02	4.17	0.00	0.96	0.75	-2.38	1.17	13.72	17.81	0.98
Total Equity Performance Benchmark	0.00	0.00	N/A	1.00	0.89	0.00	1.00	14.28	15.00	1.00
FTSE 3 Month T-Bill	-13.40	15.06	-0.89	0.05	N/A	1.20	0.00	1.15	0.25	-0.22

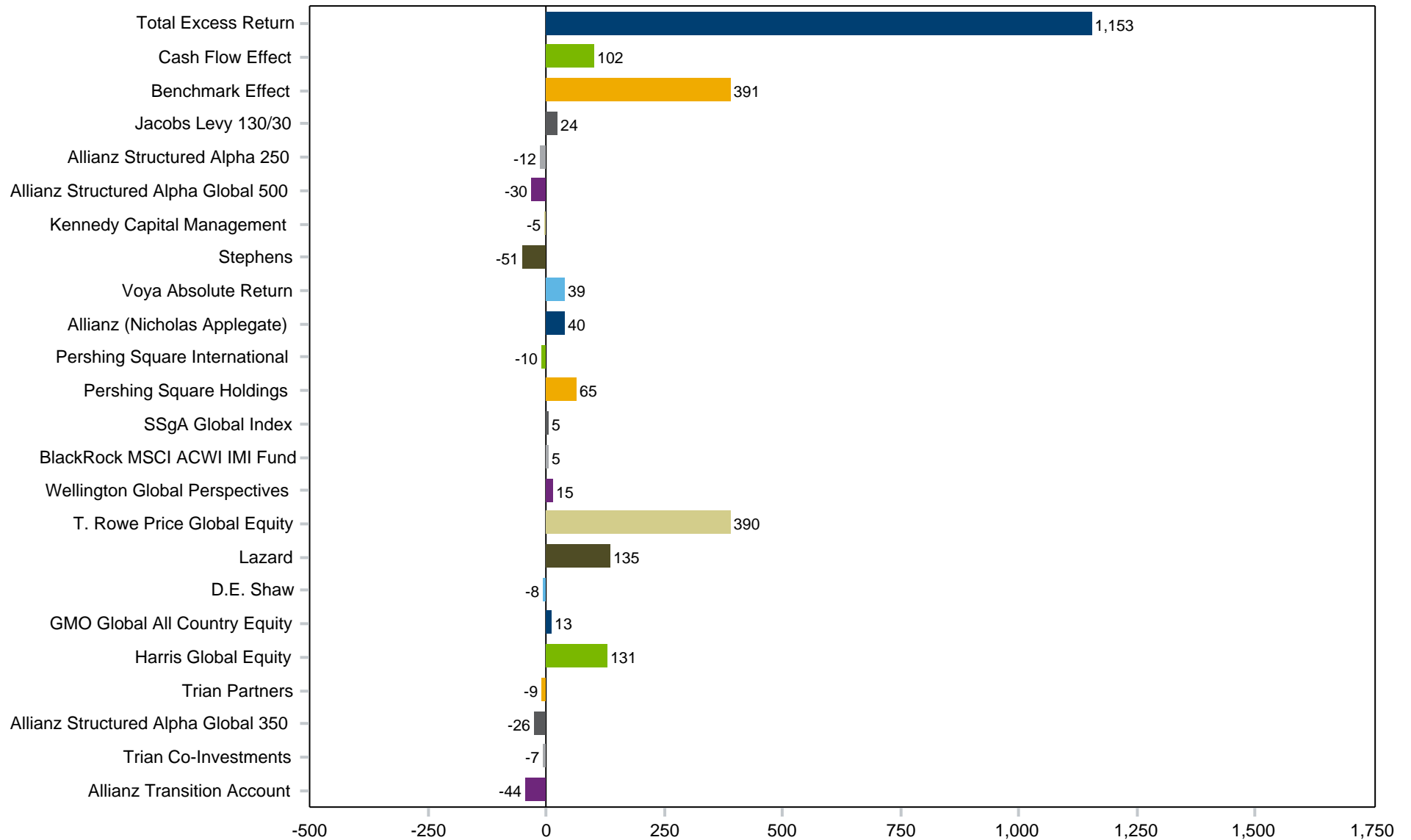
Asset Class Attribution

1 Quarter



Asset Class Attribution

1 Year

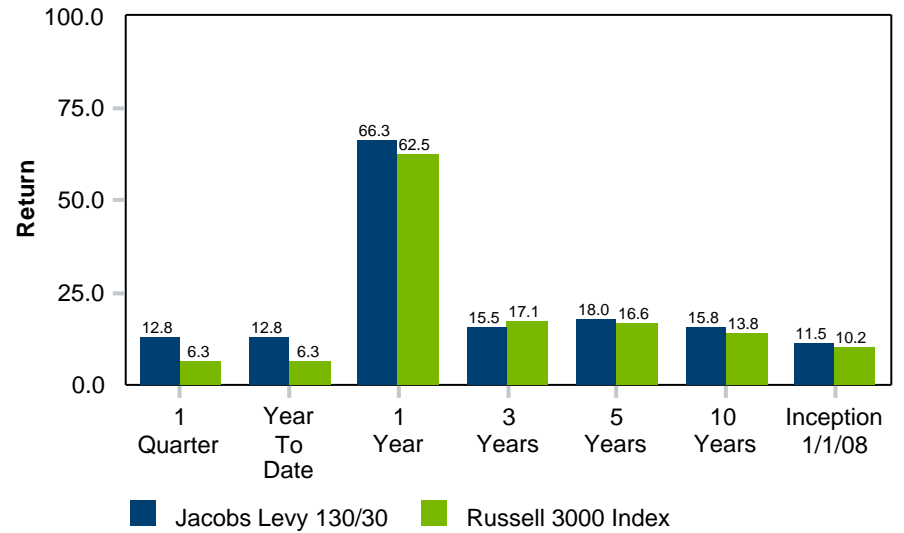


Jacobs Levy 130/30 Performance Summary

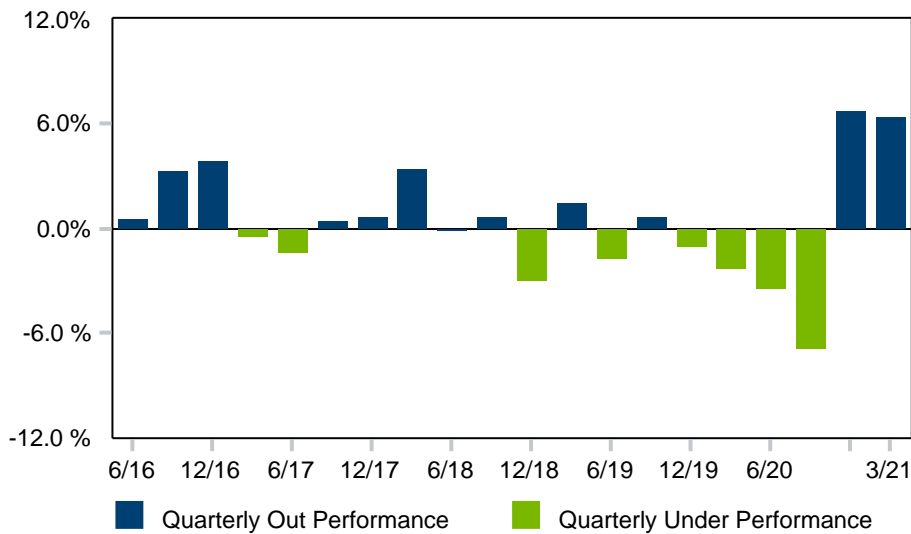
Account Information

Account Name: Jacobs Levy 130/30
 Inception Date: 12/31/2007
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: Russell 3000 Index
 Peer Group: IM U.S. Equity (SA+CF)

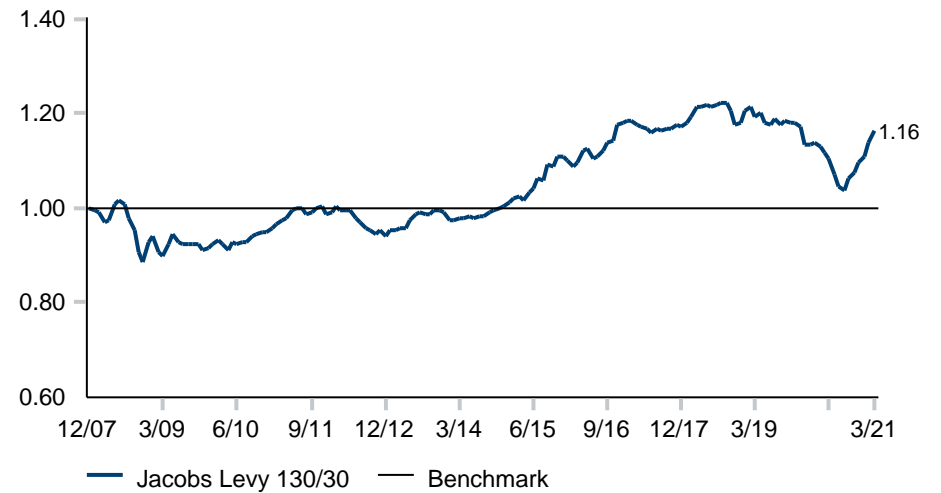
Return Summary



Quarterly Excess Performance

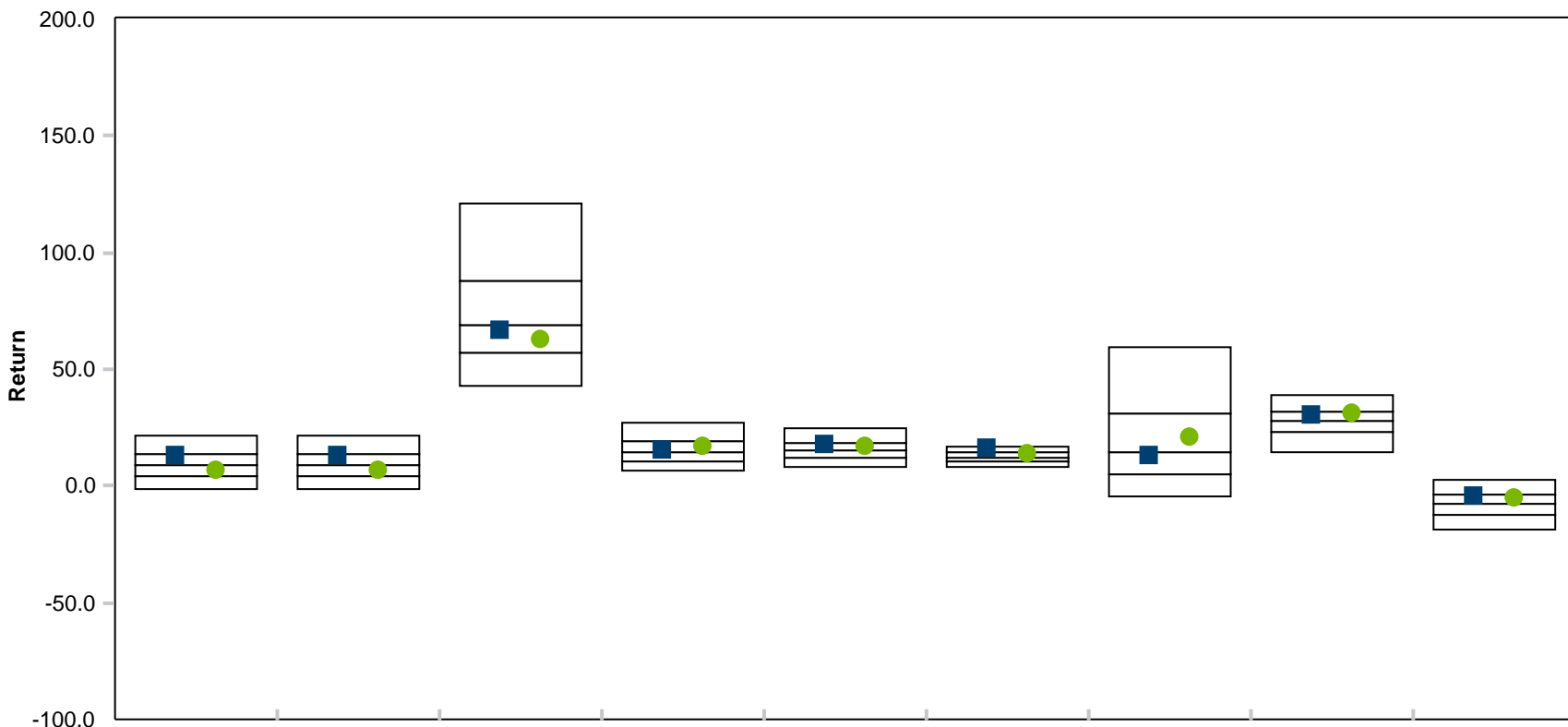


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

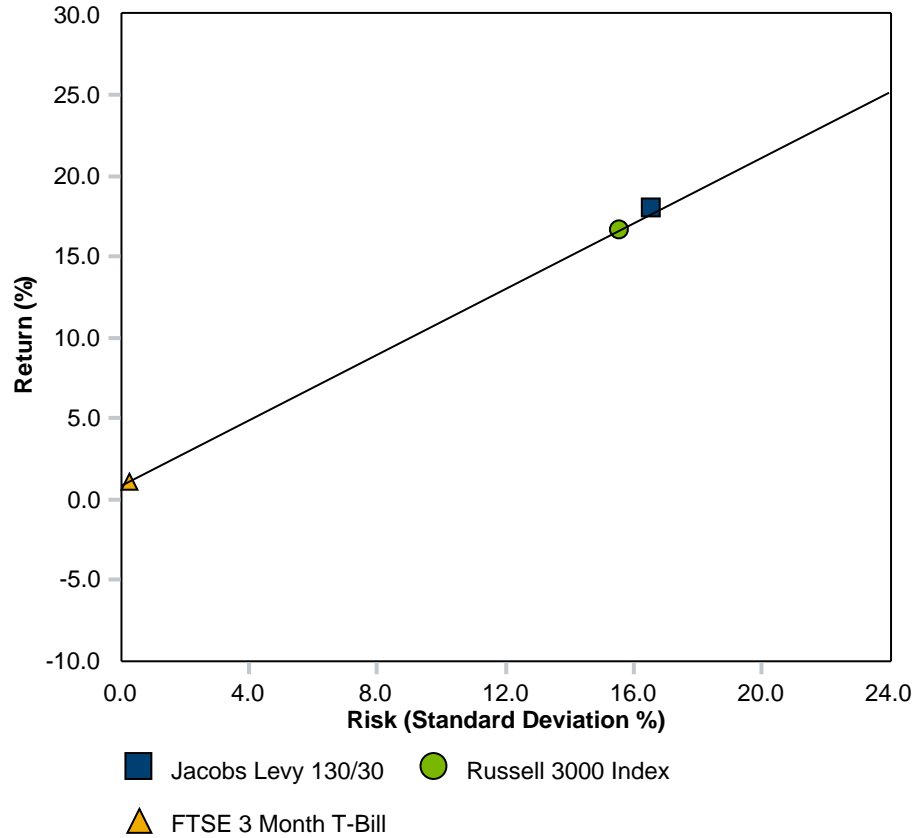


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Jacobs Levy 130/30	12.8 (31)	12.8 (31)	66.3 (55)	15.5 (44)	18.0 (27)	15.8 (10)	13.2 (54)	30.2 (35)	-4.7 (31)
● Russell 3000 Index	6.3 (63)	6.3 (63)	62.5 (63)	17.1 (35)	16.6 (36)	13.8 (30)	20.9 (37)	31.0 (30)	-5.2 (35)
5th Percentile	21.8	21.8	121.3	26.9	25.1	17.1	59.4	38.9	2.7
1st Quartile	14.1	14.1	87.8	18.8	18.3	14.2	30.8	31.8	-3.8
Median	9.0	9.0	68.7	14.5	14.9	12.2	14.8	27.9	-7.8
3rd Quartile	4.0	4.0	56.9	10.4	12.0	10.5	4.6	23.4	-12.6
95th Percentile	-1.0	-1.0	43.3	6.3	8.4	7.9	-4.4	14.3	-18.9
Population	1,584	1,584	1,574	1,506	1,375	1,133	1,671	1,798	1,881

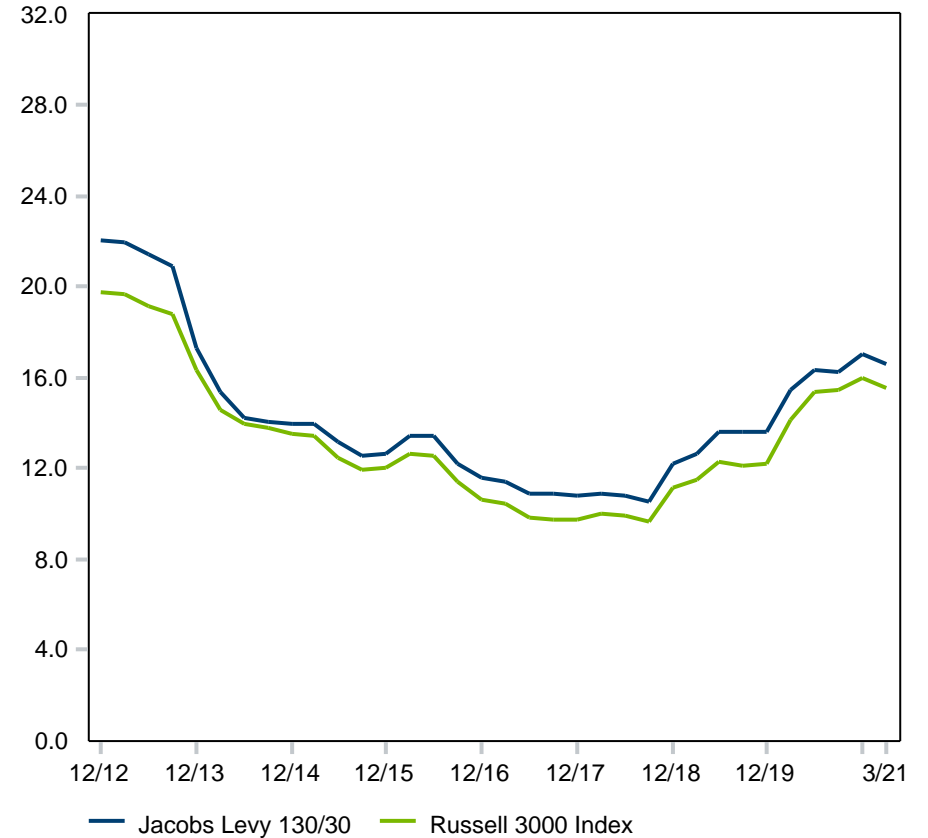
parentheses contain percentile rankings.

Jacobs Levy 130/30 Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

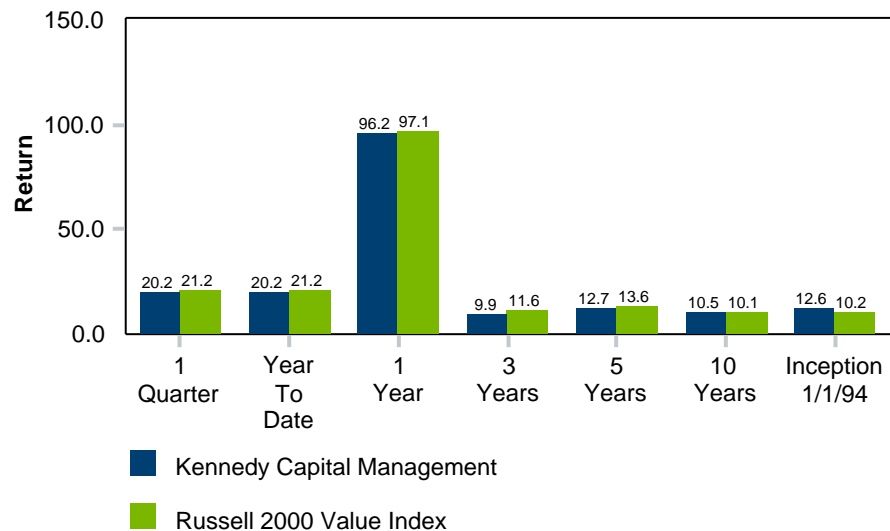
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Jacobs Levy 130/30	1.34	4.72	0.28	0.92	1.01	0.96	1.02	18.00	16.60	0.96
Russell 3000 Index	0.00	0.00	N/A	1.00	1.00	0.00	1.00	16.64	15.56	1.00
FTSE 3 Month T-Bill	-15.54	15.61	-1.00	0.04	N/A	1.20	0.00	1.15	0.25	-0.19

Kennedy Capital Management Performance Summary

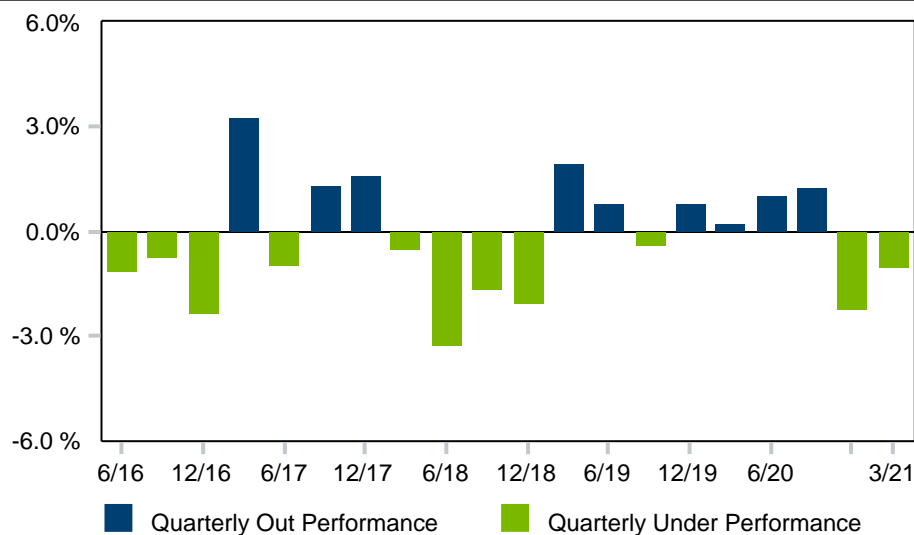
Account Information

Account Name: Kennedy Capital Management
 Inception Date: 12/31/1993
 Account Structure: Separate Account
 Asset Class: US Equity
 Benchmark: Russell 2000 Value Index
 Peer Group: IM U.S. Small Cap Value Equity (SA+CF)

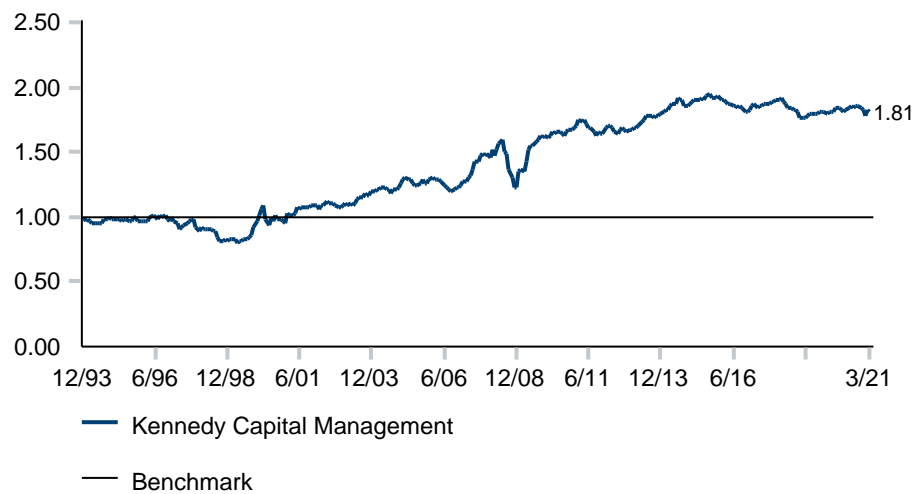
Return Summary



Quarterly Excess Performance

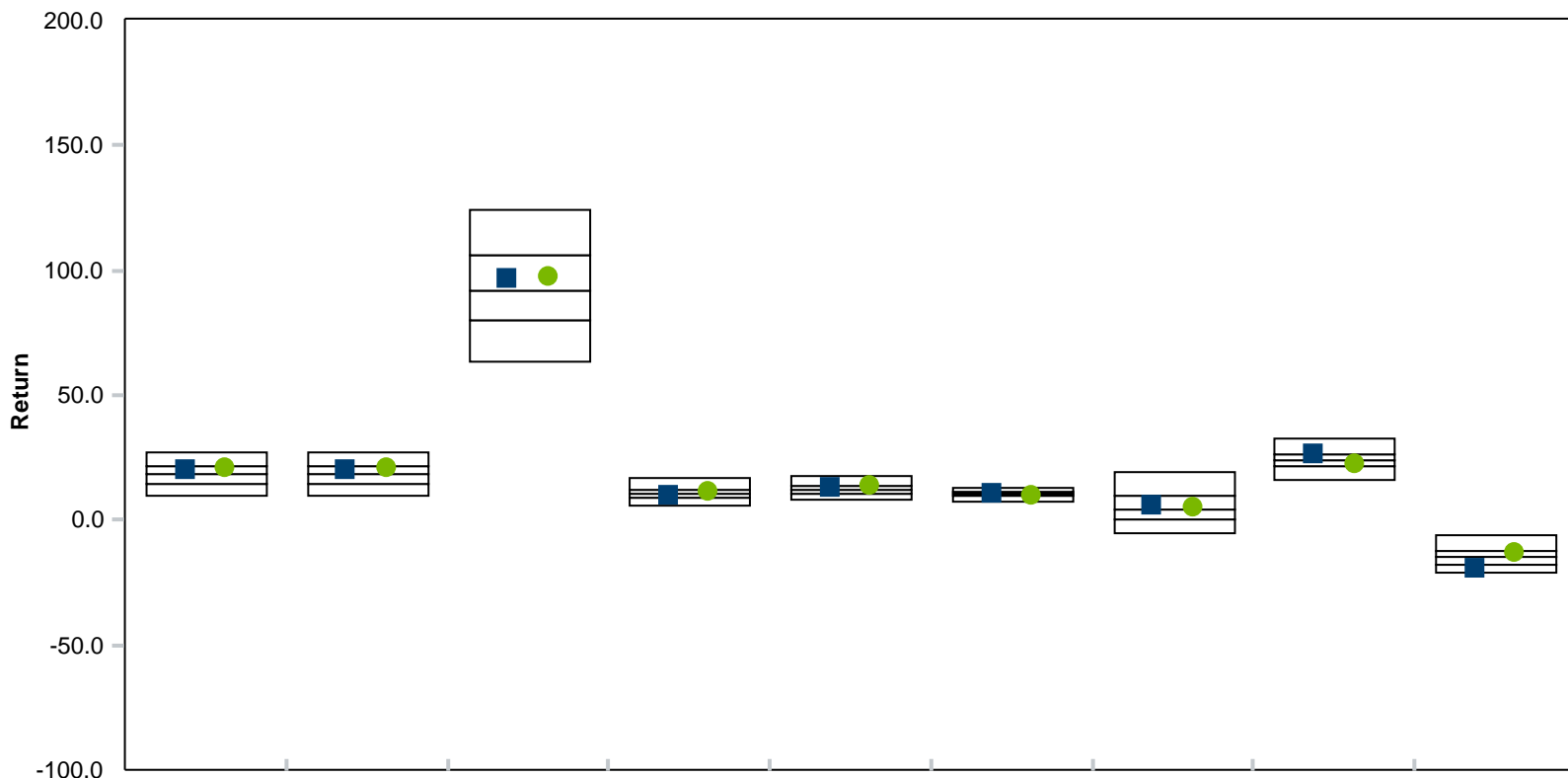


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Small Cap Value Equity (SA+CF)

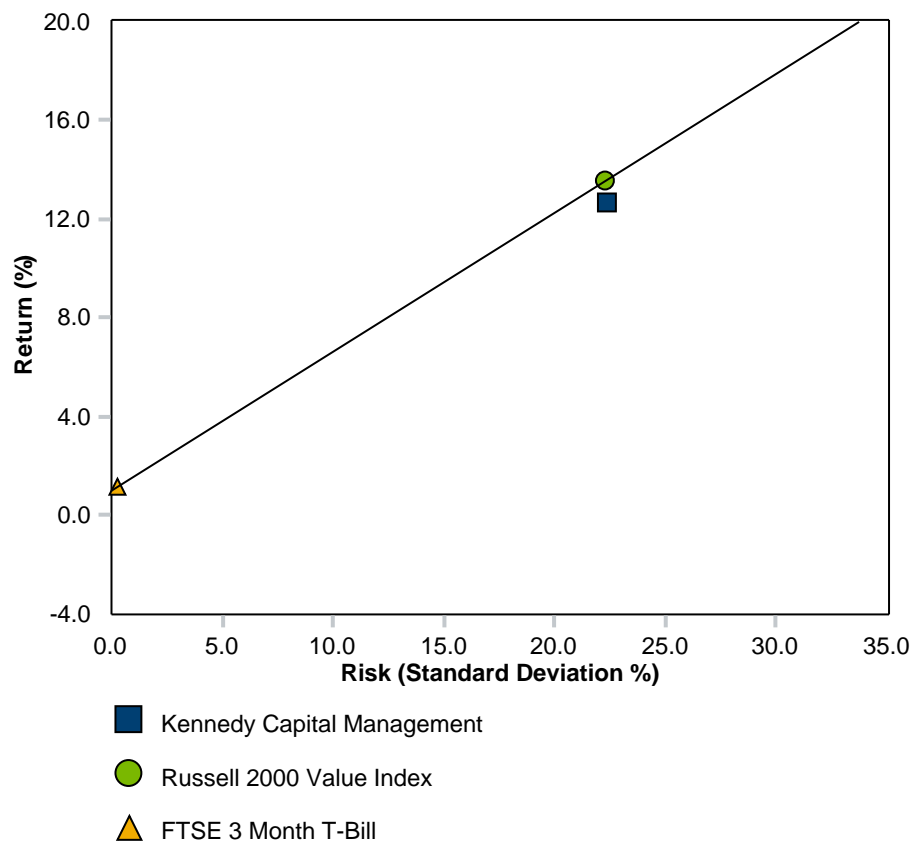


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Kennedy Capital Management	20.2 (37)	20.2 (37)	96.2 (40)	9.9 (60)	12.7 (44)	10.5 (41)	5.4 (43)	25.9 (30)	-19.4 (84)
● Russell 2000 Value Index	21.2 (28)	21.2 (28)	97.1 (39)	11.6 (32)	13.6 (33)	10.1 (57)	4.6 (47)	22.4 (65)	-12.9 (32)
5th Percentile	26.8	26.8	124.3	16.8	17.4	12.8	19.2	32.8	-6.4
1st Quartile	21.4	21.4	106.4	12.3	14.0	11.3	10.0	26.2	-12.2
Median	18.6	18.6	91.5	10.2	12.2	10.3	4.0	24.0	-14.9
3rd Quartile	14.4	14.4	80.0	8.7	10.5	9.4	0.0	21.4	-17.8
95th Percentile	9.8	9.8	63.3	5.6	8.4	7.1	-5.3	15.8	-21.4
Population	162	162	159	153	147	121	170	177	193

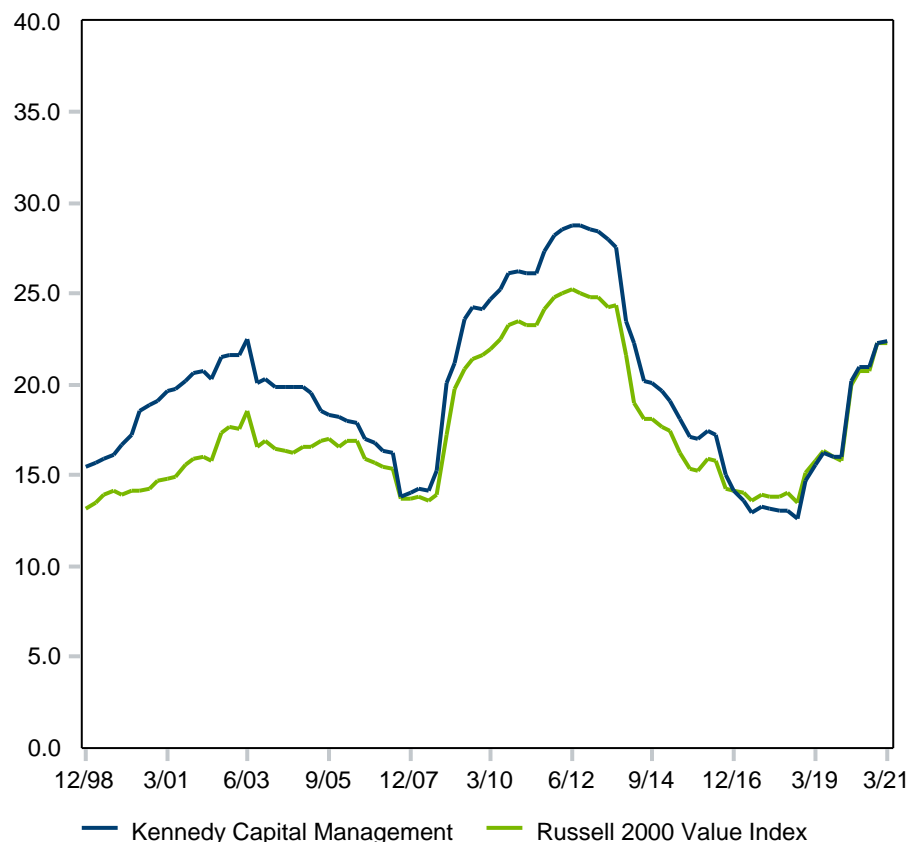
parentheses contain percentile rankings.

Kennedy Capital Management Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

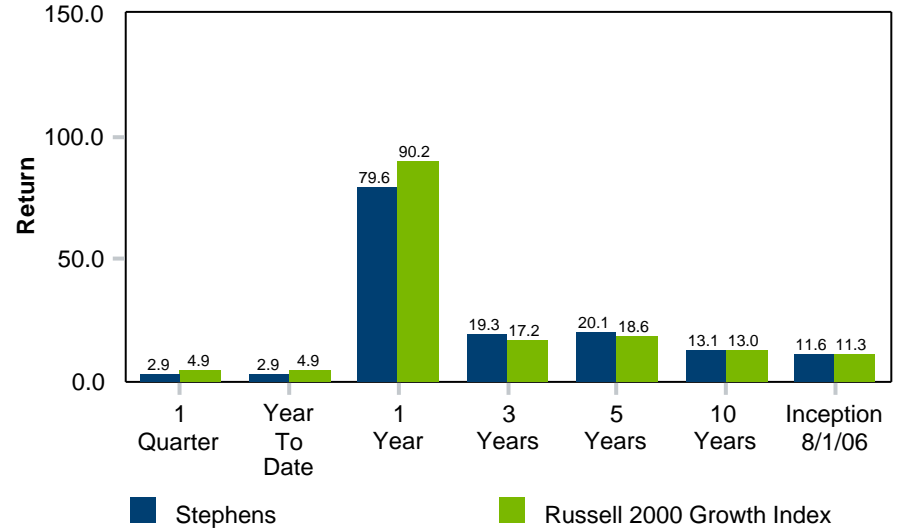
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Kennedy Capital Management	-0.74	3.23	-0.23	0.98	0.60	-0.63	0.99	12.68	22.37	0.99
Russell 2000 Value Index	0.00	0.00	N/A	1.00	0.63	0.00	1.00	13.56	22.29	1.00
FTSE 3 Month T-Bill	-14.17	22.37	-0.63	0.09	N/A	1.20	0.00	1.15	0.25	-0.30

Stephens Performance Summary

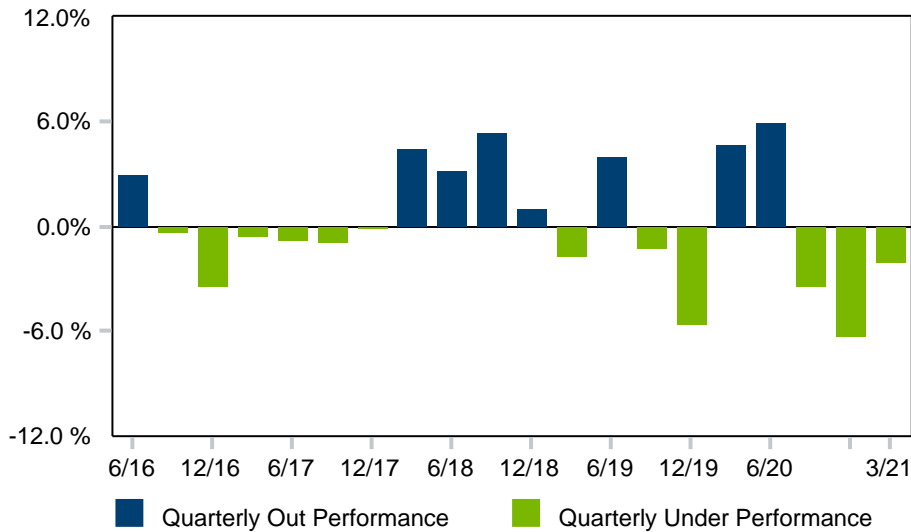
Account Information

Account Name: Stephens
 Inception Date: 07/31/2006
 Account Structure: Separate Account
 Asset Class: US Equity
 Benchmark: Russell 2000 Growth Index
 Peer Group: IM U.S. Small Cap Growth Equity (SA+CF)

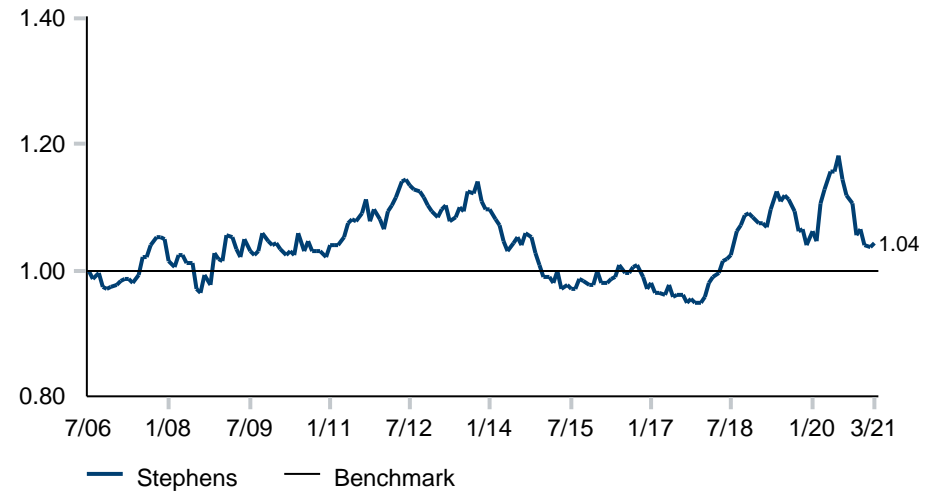
Return Summary



Quarterly Excess Performance

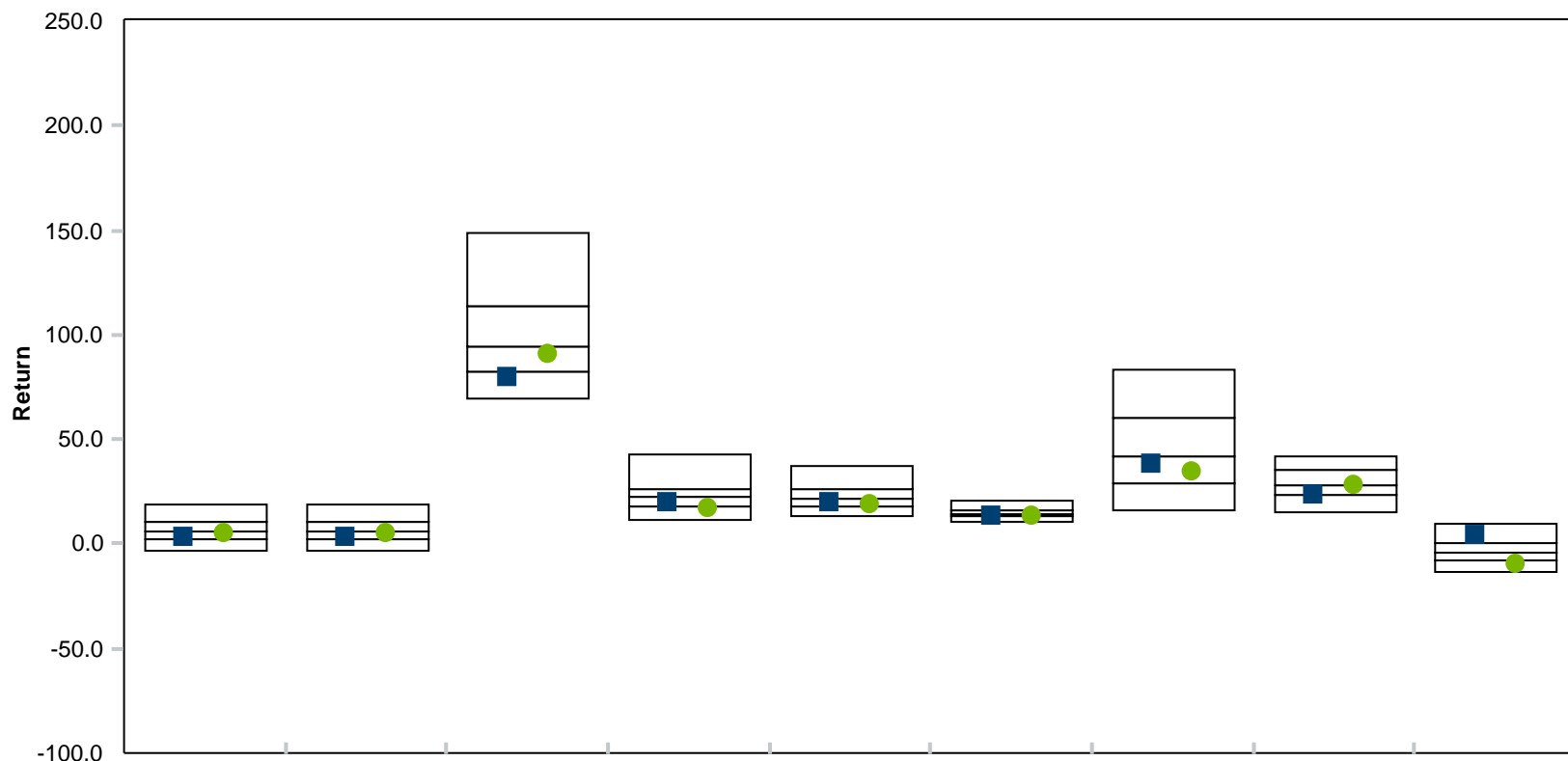


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Small Cap Growth Equity (SA+CF)

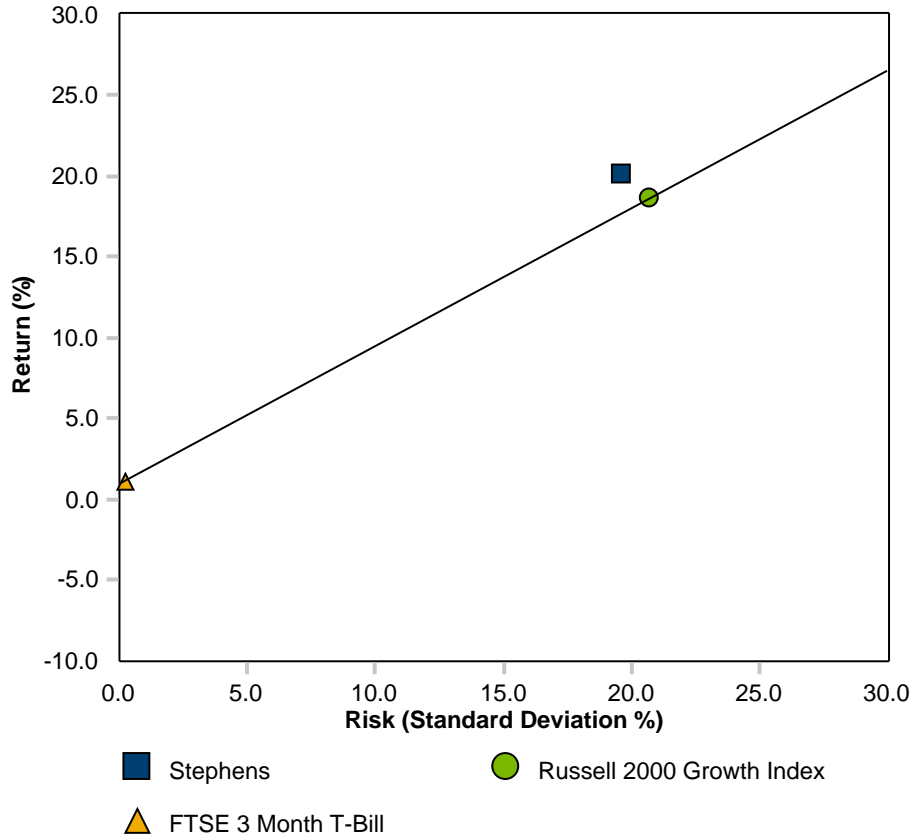


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Stephens	2.9 (70)	2.9 (70)	79.6 (83)	19.3 (65)	20.1 (60)	13.1 (84)	37.8 (59)	23.2 (77)	3.7 (13)
● Russell 2000 Growth Index	4.9 (55)	4.9 (55)	90.2 (57)	17.2 (79)	18.6 (70)	13.0 (84)	34.6 (65)	28.5 (49)	-9.3 (80)
5th Percentile	19.2	19.2	148.4	42.4	37.1	20.4	83.0	41.5	9.4
1st Quartile	10.1	10.1	113.6	26.6	26.0	16.0	60.0	35.1	0.4
Median	5.5	5.5	94.5	22.7	21.6	14.6	41.5	28.1	-4.0
3rd Quartile	2.3	2.3	82.8	17.5	17.8	13.6	29.2	23.6	-7.7
95th Percentile	-3.4	-3.4	69.3	11.0	13.7	10.4	16.0	15.1	-13.6
Population	130	130	128	124	117	100	132	139	146

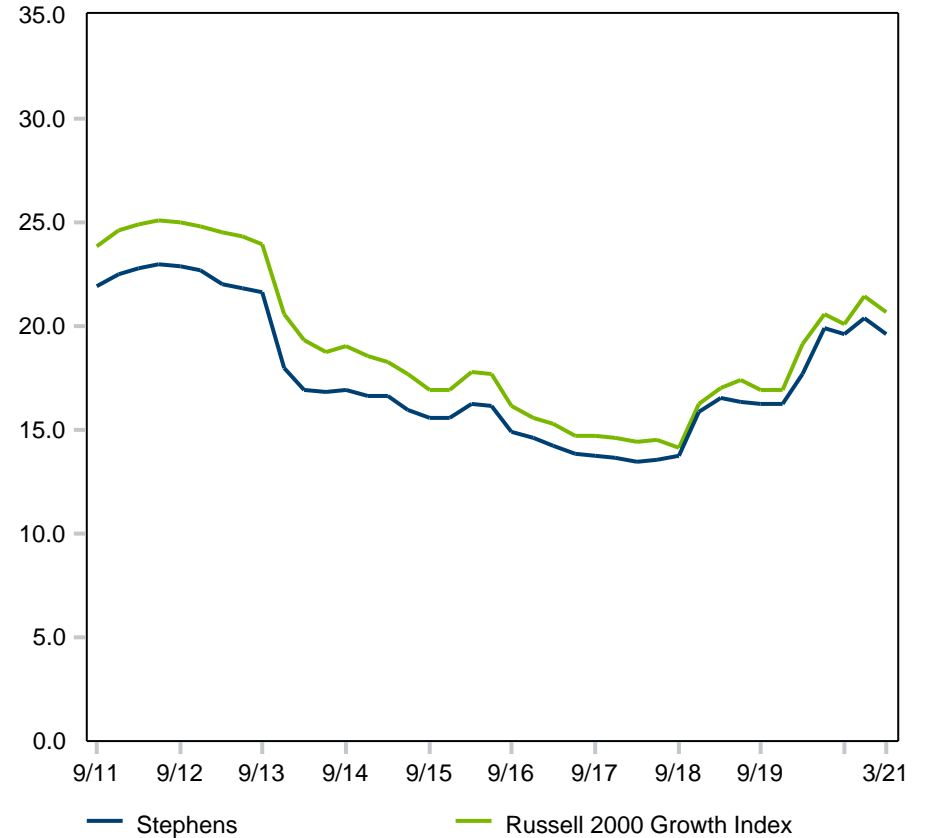
Parenteses contain percentile rankings.

Stephens Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

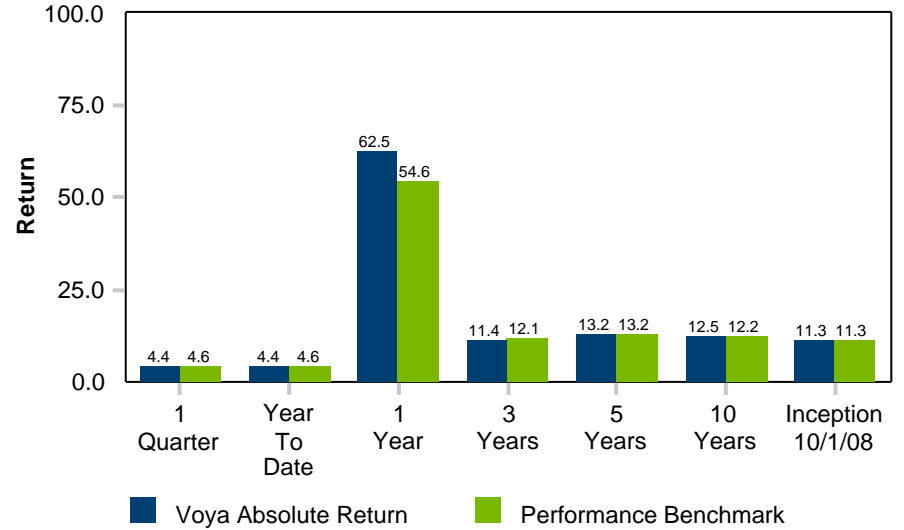
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Stephens	1.05	6.25	0.17	0.91	0.98	2.92	0.91	20.13	19.65	0.95
Russell 2000 Growth Index	0.00	0.00	N/A	1.00	0.88	0.00	1.00	18.61	20.69	1.00
FTSE 3 Month T-Bill	-18.18	20.75	-0.88	0.06	N/A	1.21	0.00	1.15	0.25	-0.24

Voya Absolute Return Performance Summary

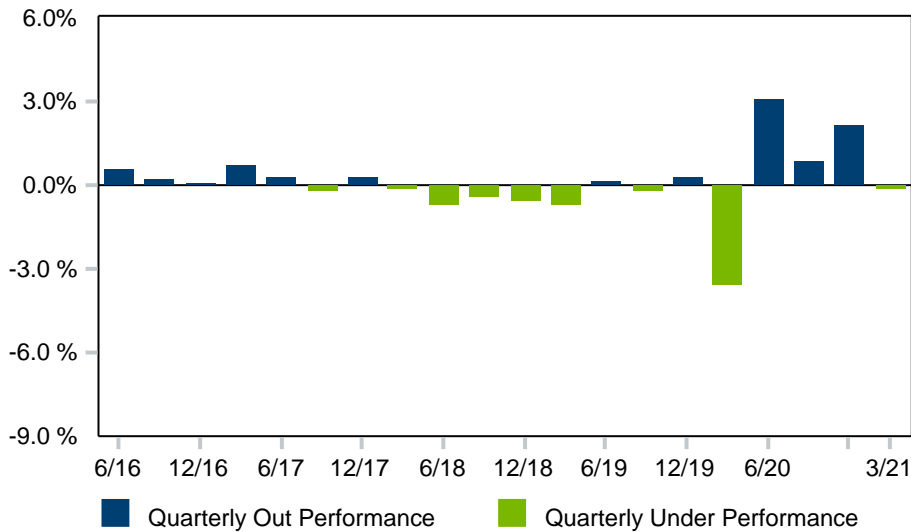
Account Information

Account Name: Voya Absolute Return
 Inception Date: 09/30/2008
 Account Structure: Commingled Fund
 Asset Class: Global Equity
 Benchmark: Performance Benchmark
 Peer Group: IM Global Equity (MF)

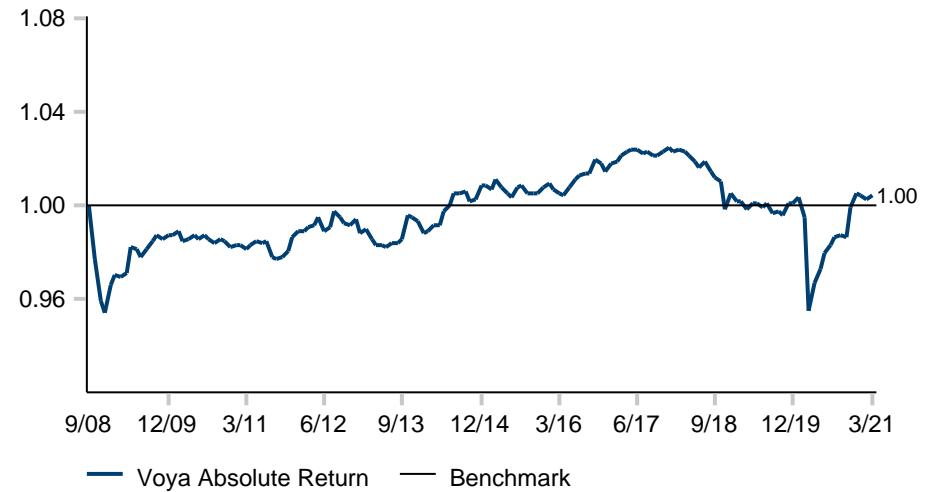
Return Summary



Quarterly Excess Performance

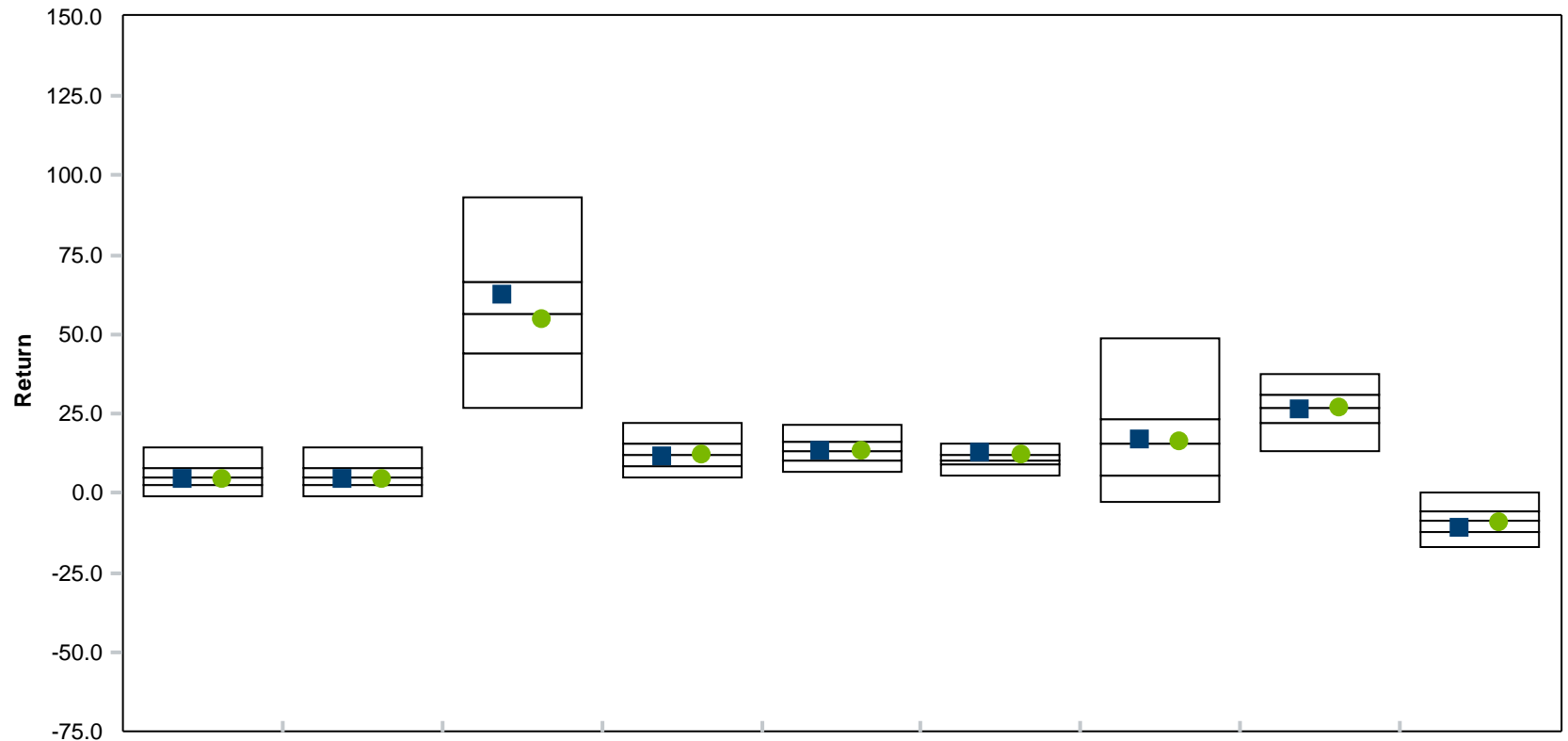


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

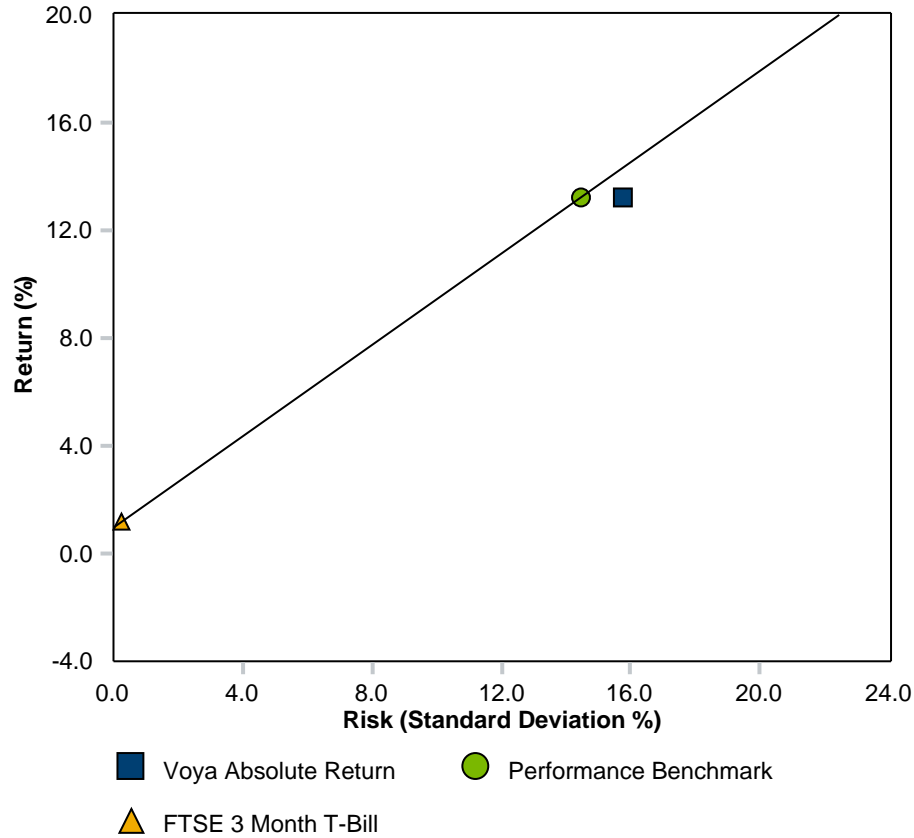


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Voya Absolute Return	4.4 (56)	4.4 (56)	62.5 (34)	11.4 (56)	13.2 (51)	12.5 (21)	16.8 (45)	26.0 (57)	-11.1 (69)
● Performance Benchmark	4.6 (54)	4.6 (54)	54.6 (55)	12.1 (52)	13.2 (51)	12.2 (23)	16.3 (47)	26.6 (52)	-9.4 (57)
5th Percentile	14.5	14.5	93.4	22.4	21.6	15.6	48.7	37.3	-0.1
1st Quartile	7.7	7.7	66.4	15.5	16.0	12.0	23.0	31.0	-5.6
Median	5.0	5.0	56.6	12.1	13.3	10.3	15.4	26.7	-8.7
3rd Quartile	2.7	2.7	44.2	8.4	10.1	8.9	5.5	22.3	-12.2
95th Percentile	-0.9	-0.9	26.7	4.8	6.8	5.6	-2.9	13.2	-17.1
Population	453	453	451	441	408	269	484	534	561

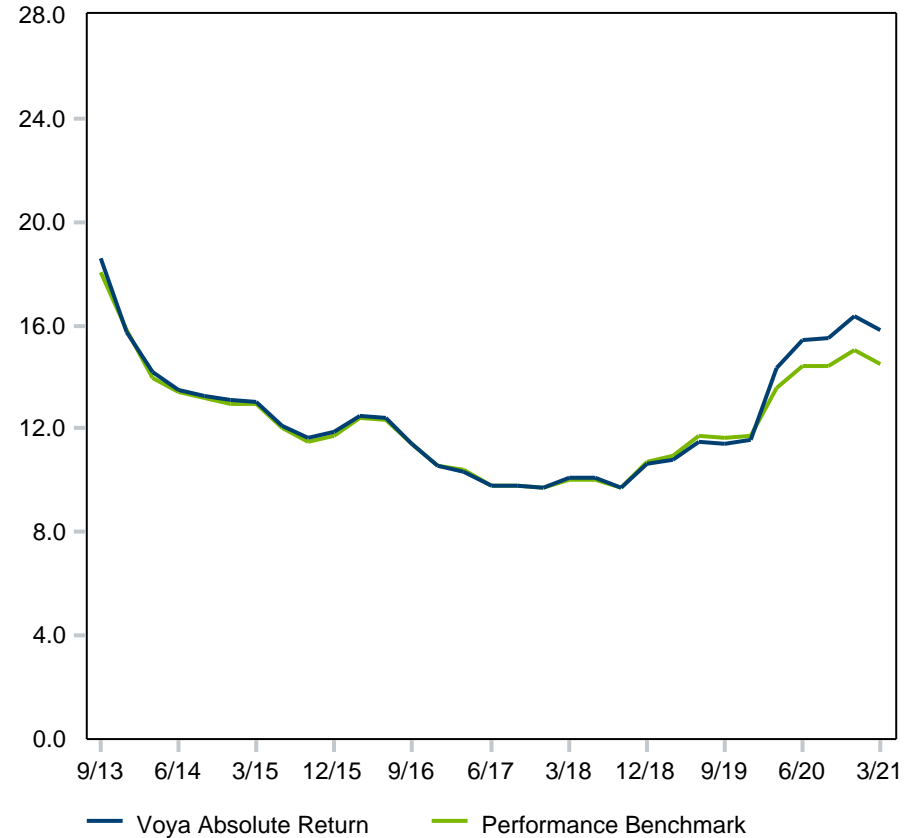
parentheses contain percentile rankings.

Voya Absolute Return Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

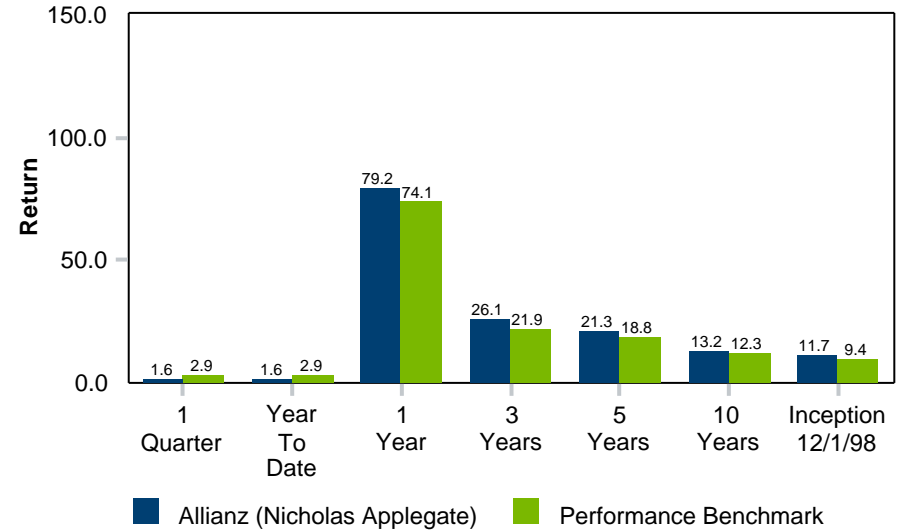
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Voya Absolute Return	0.18	2.15	0.08	0.99	0.79	-0.98	1.09	13.18	15.82	0.99
Performance Benchmark	0.00	0.00	N/A	1.00	0.85	0.00	1.00	13.21	14.48	1.00
FTSE 3 Month T-Bill	-12.37	14.53	-0.85	0.05	N/A	1.20	0.00	1.15	0.25	-0.22

Allianz (Nicholas Applegate) Performance Summary

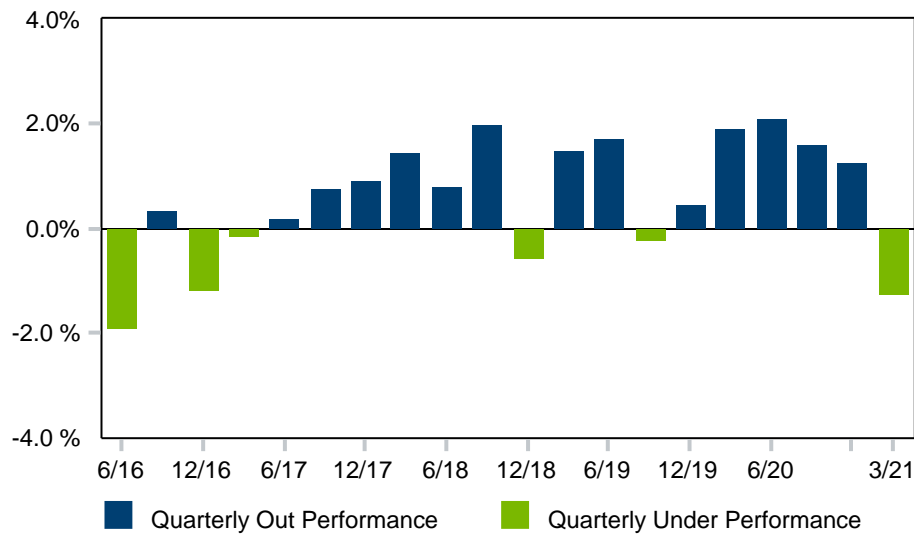
Account Information

Account Name: Allianz (Nicholas Applegate)
 Inception Date: 11/30/1998
 Account Structure: Separate Account
 Asset Class: US Equity
 Benchmark: Performance Benchmark
 Peer Group: IM U.S. Equity (SA+CF)

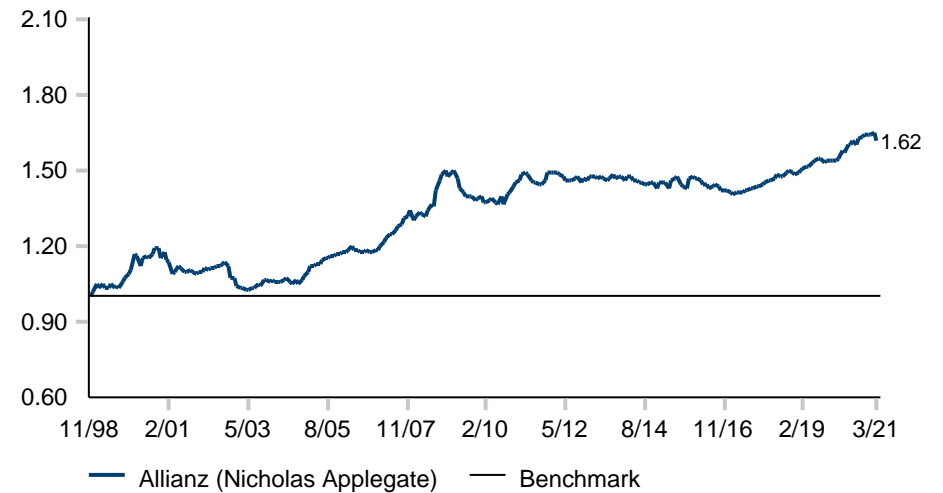
Return Summary



Quarterly Excess Performance

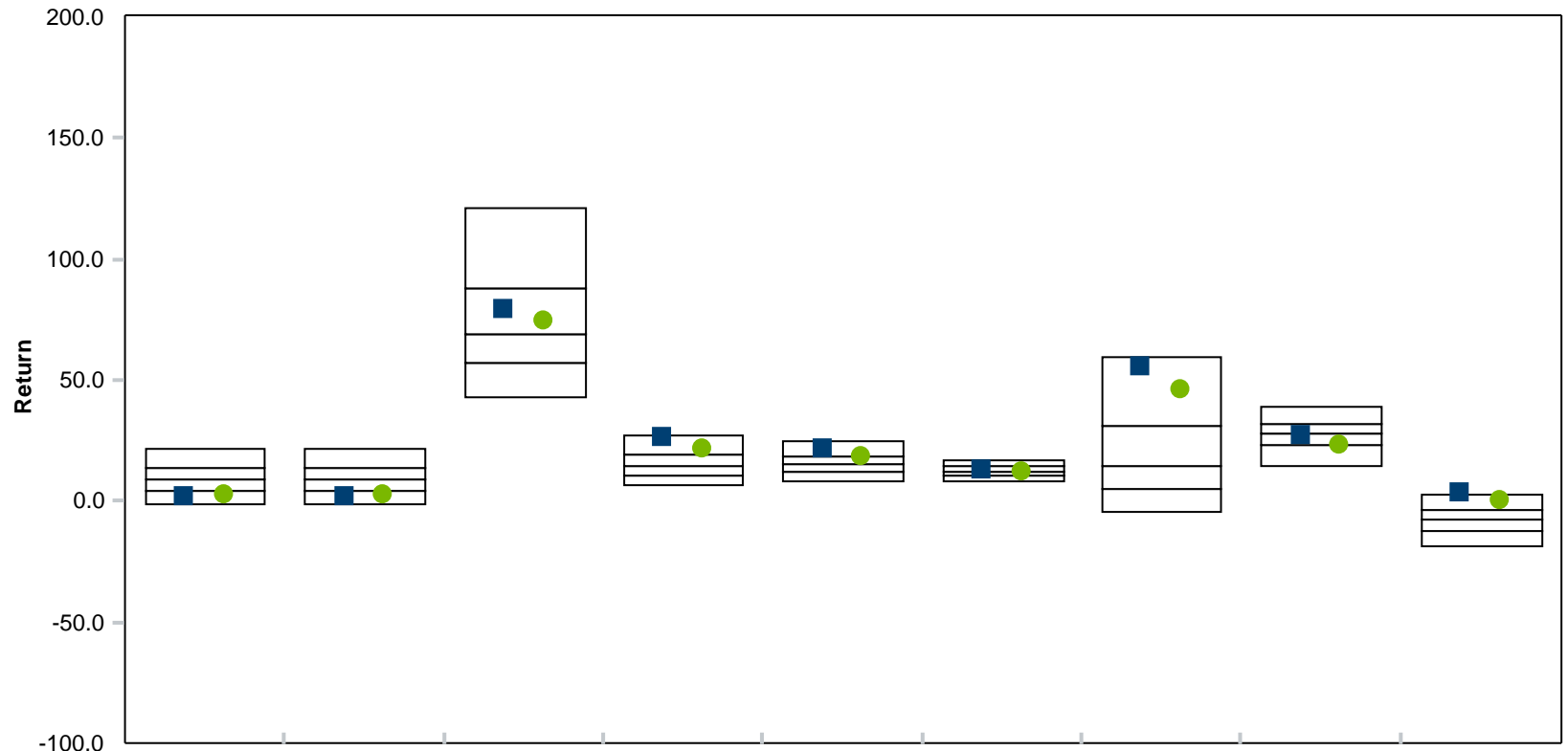


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

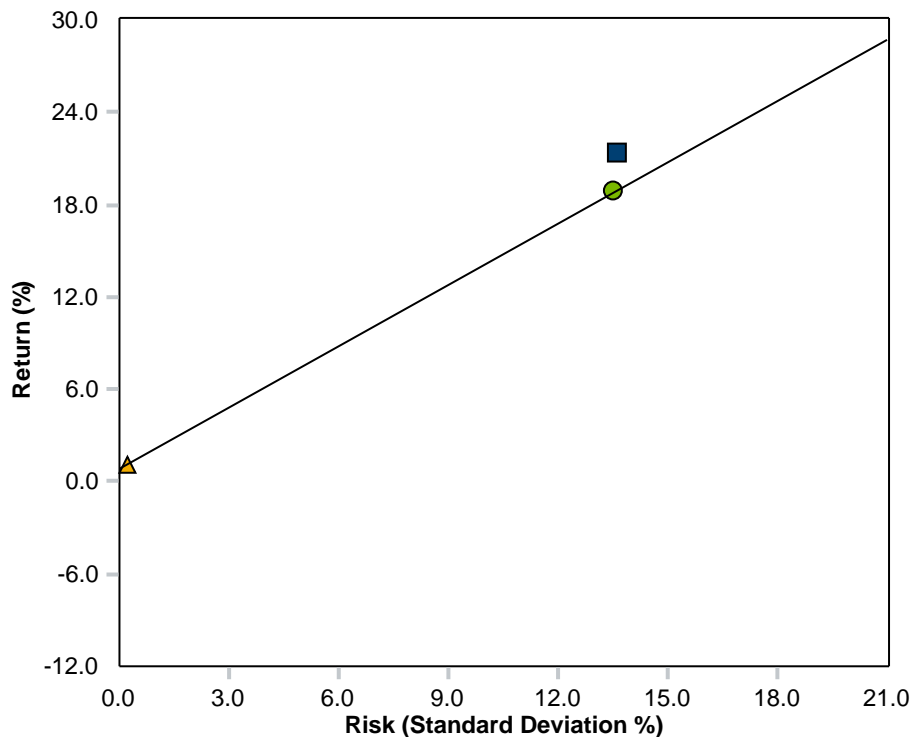


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Allianz (Nicholas Applegate)	1.6 (86)	1.6 (86)	79.2 (36)	26.1 (6)	21.3 (13)	13.2 (37)	55.7 (6)	27.0 (56)	3.7 (5)
● Performance Benchmark	2.9 (81)	2.9 (81)	74.1 (42)	21.9 (16)	18.8 (23)	12.3 (49)	46.2 (10)	23.1 (77)	0.2 (11)
5th Percentile	21.8	21.8	121.3	26.9	25.1	17.1	59.4	38.9	2.7
1st Quartile	14.1	14.1	87.8	18.8	18.3	14.2	30.8	31.8	-3.8
Median	9.0	9.0	68.7	14.5	14.9	12.2	14.8	27.9	-7.8
3rd Quartile	4.0	4.0	56.9	10.4	12.0	10.5	4.6	23.4	-12.6
95th Percentile	-1.0	-1.0	43.3	6.3	8.4	7.9	-4.4	14.3	-18.9
Population	1,584	1,584	1,574	1,506	1,375	1,133	1,671	1,798	1,881

parentheses contain percentile rankings.

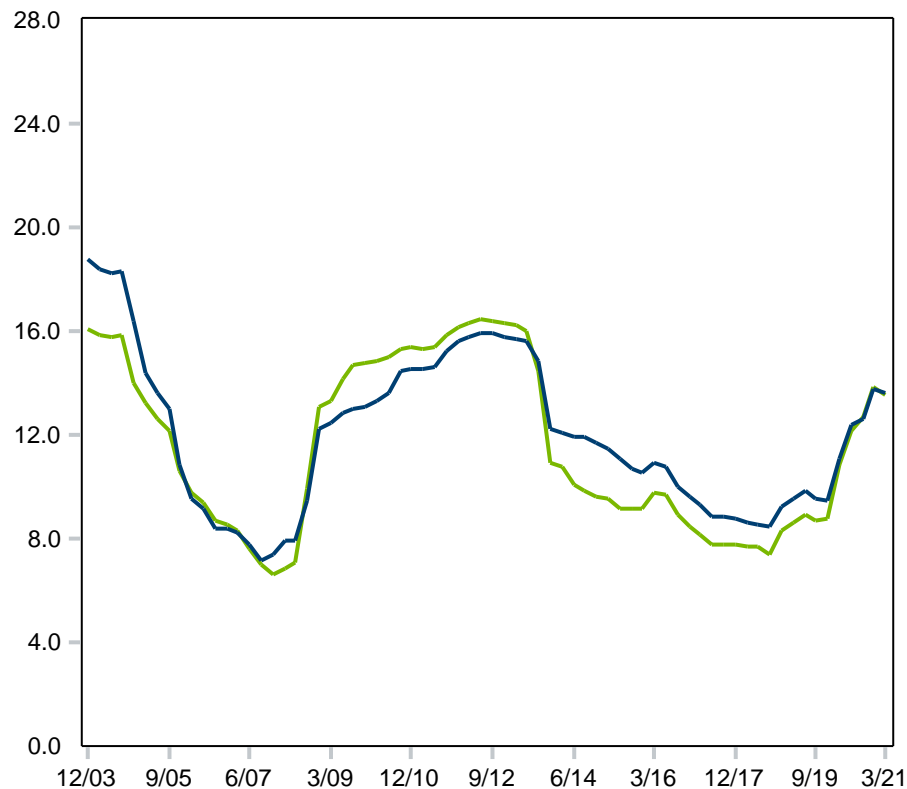
Allianz (Nicholas Applegate) Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



■ Allianz (Nicholas Applegate)
 ● Performance Benchmark
▲ FTSE 3 Month T-Bill

Rolling 5 Years Standard Deviation



— Allianz (Nicholas Applegate)
 — Performance Benchmark

5 Years Historical Statistics

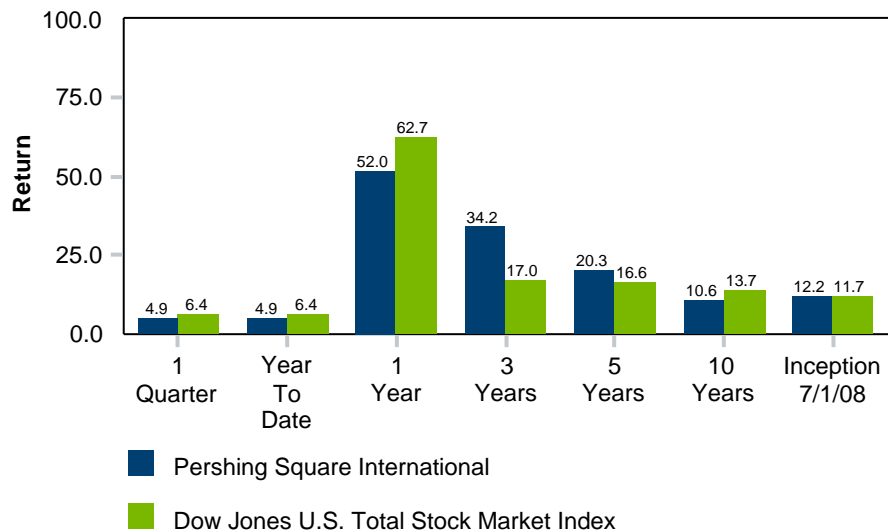
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Allianz (Nicholas Applegate)	2.17	2.30	0.94	0.97	1.41	2.32	0.99	21.34	13.61	0.99
Performance Benchmark	0.00	0.00	N/A	1.00	1.26	0.00	1.00	18.79	13.52	1.00
FTSE 3 Month T-Bill	-17.09	13.58	-1.26	0.06	N/A	1.24	0.00	1.15	0.25	-0.25

Pershing Square International Performance Summary

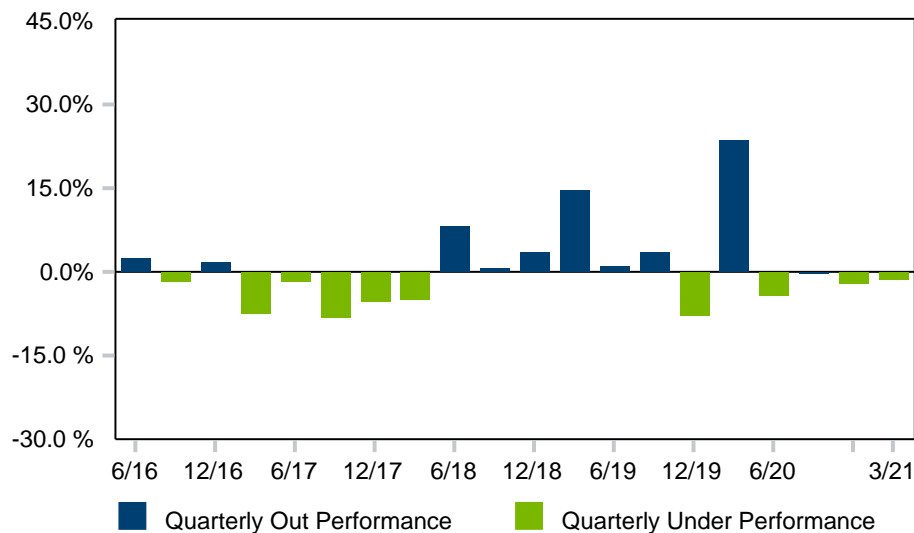
Account Information

Account Name: Pershing Square International
 Inception Date: 06/30/2008
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: Dow Jones U.S. Total Stock Market Index
 Peer Group: IM U.S. Equity (SA+CF)

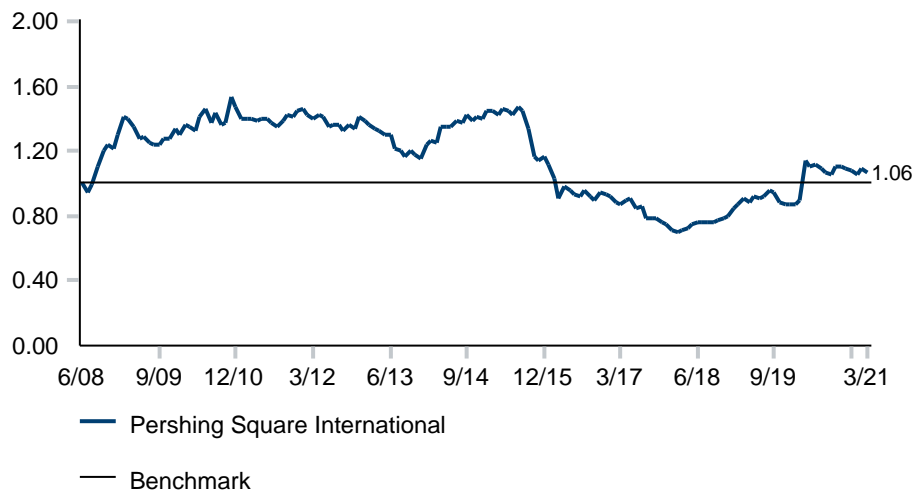
Return Summary



Quarterly Excess Performance

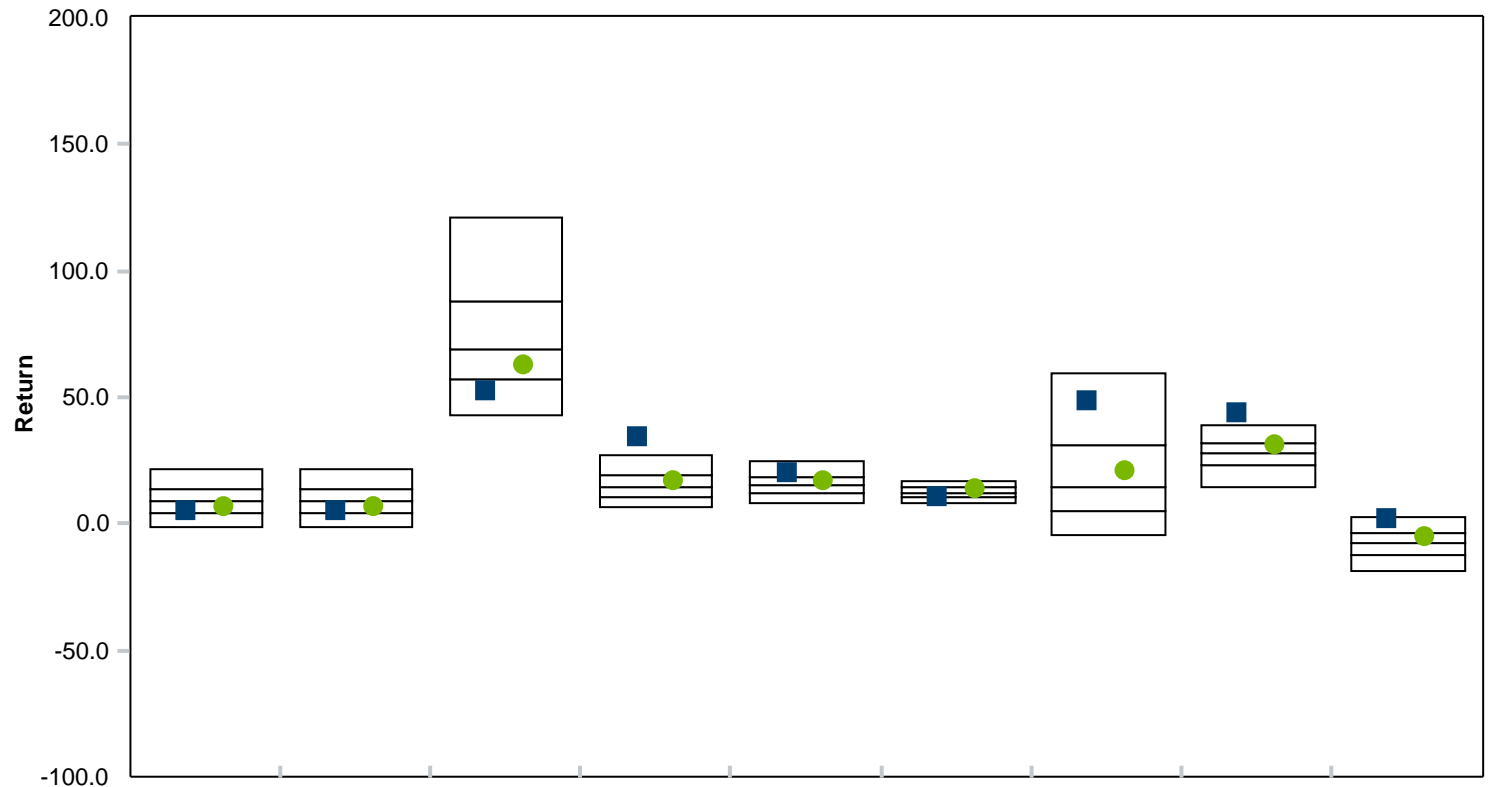


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

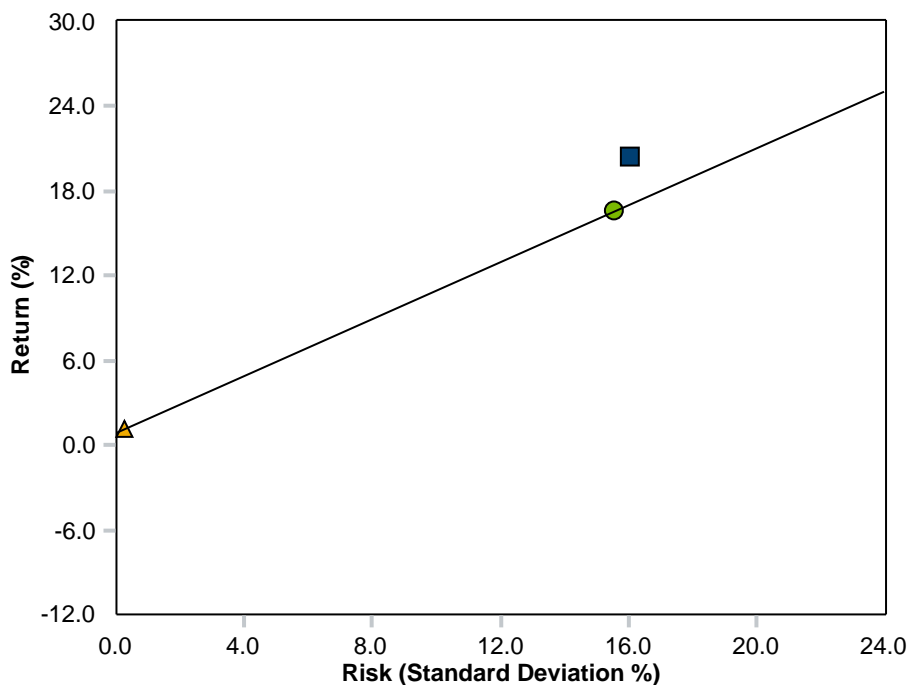


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Pershing Square International	4.9 (71)	4.9 (71)	52.0 (87)	34.2 (2)	20.3 (17)	10.6 (74)	48.8 (9)	43.5 (2)	1.8 (7)
● Dow Jones U.S. Total Stock Market Index	6.4 (62)	6.4 (62)	62.7 (62)	17.0 (35)	16.6 (36)	13.7 (31)	20.8 (37)	30.9 (31)	-5.3 (35)
5th Percentile	21.8	21.8	121.3	26.9	25.1	17.1	59.4	38.9	2.7
1st Quartile	14.1	14.1	87.8	18.8	18.3	14.2	30.8	31.8	-3.8
Median	9.0	9.0	68.7	14.5	14.9	12.2	14.8	27.9	-7.8
3rd Quartile	4.0	4.0	56.9	10.4	12.0	10.5	4.6	23.4	-12.6
95th Percentile	-1.0	-1.0	43.3	6.3	8.4	7.9	-4.4	14.3	-18.9
Population	1,584	1,584	1,574	1,506	1,375	1,133	1,671	1,798	1,881

Parenteses contain percentile rankings.

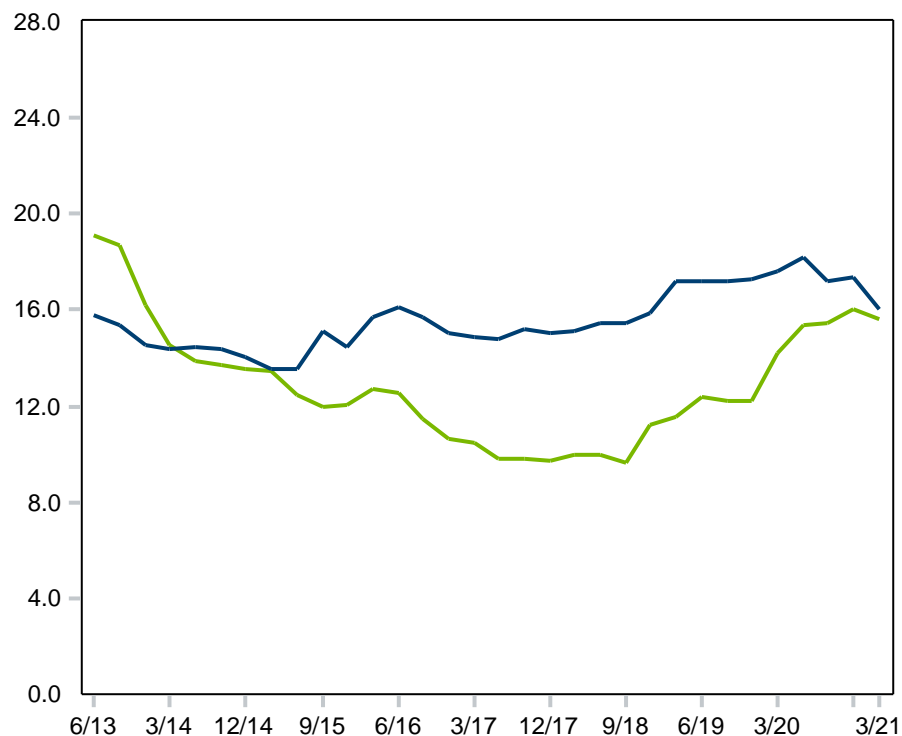
Pershing Square International Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



- Pershing Square International
- Dow Jones U.S. Total Stock Market Index
- ▲ FTSE 3 Month T-Bill

Rolling 5 Years Standard Deviation



- Pershing Square International
- Dow Jones U.S. Total Stock Market Index

5 Years Historical Statistics

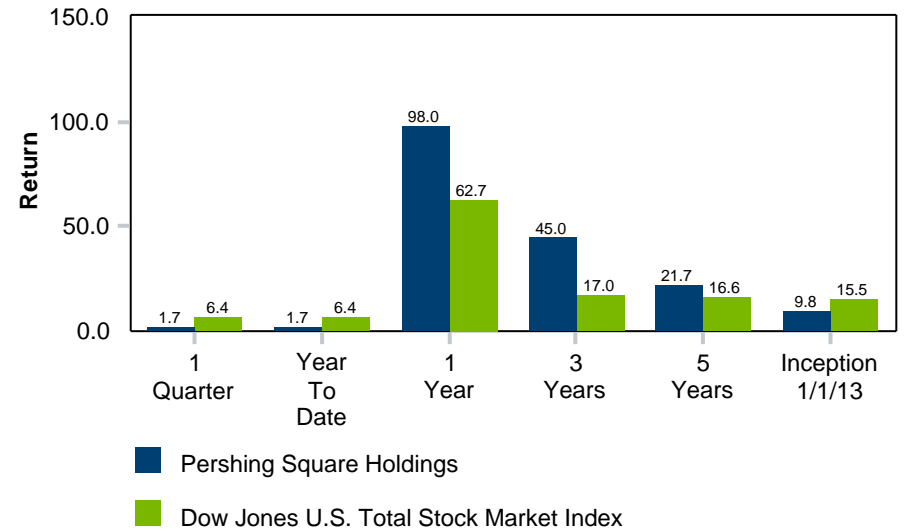
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Pershing Square International	3.23	14.70	0.22	0.32	1.17	10.59	0.59	20.33	16.07	0.57
Dow Jones U.S. Total Stock Market Index	0.00	0.00	N/A	1.00	0.99	0.00	1.00	16.60	15.58	1.00
FTSE 3 Month T-Bill	-15.51	15.63	-0.99	0.04	N/A	1.20	0.00	1.15	0.25	-0.19

Pershing Square Holdings Performance Summary

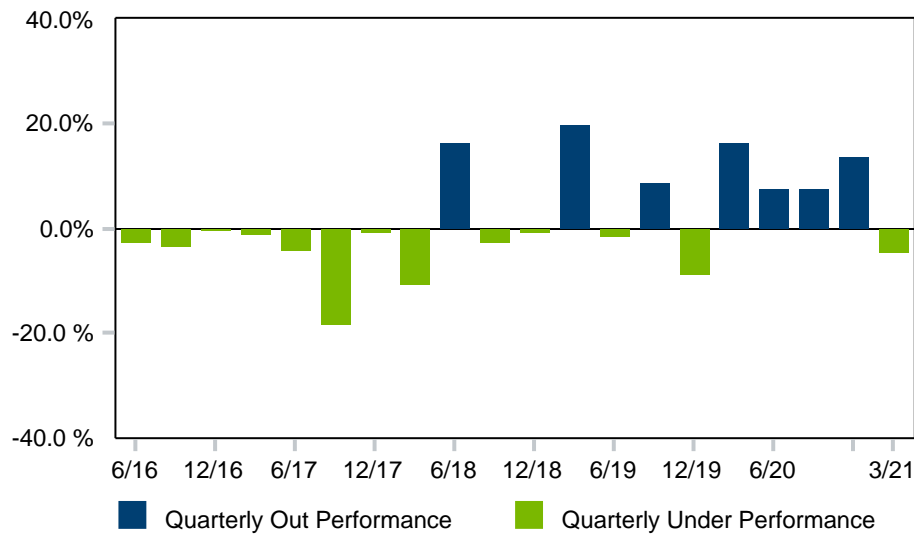
Account Information

Account Name: Pershing Square Holdings
 Inception Date: 12/31/2012
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: Dow Jones U.S. Total Stock Market Index
 Peer Group: IM U.S. Equity (SA+CF)

Return Summary



Quarterly Excess Performance

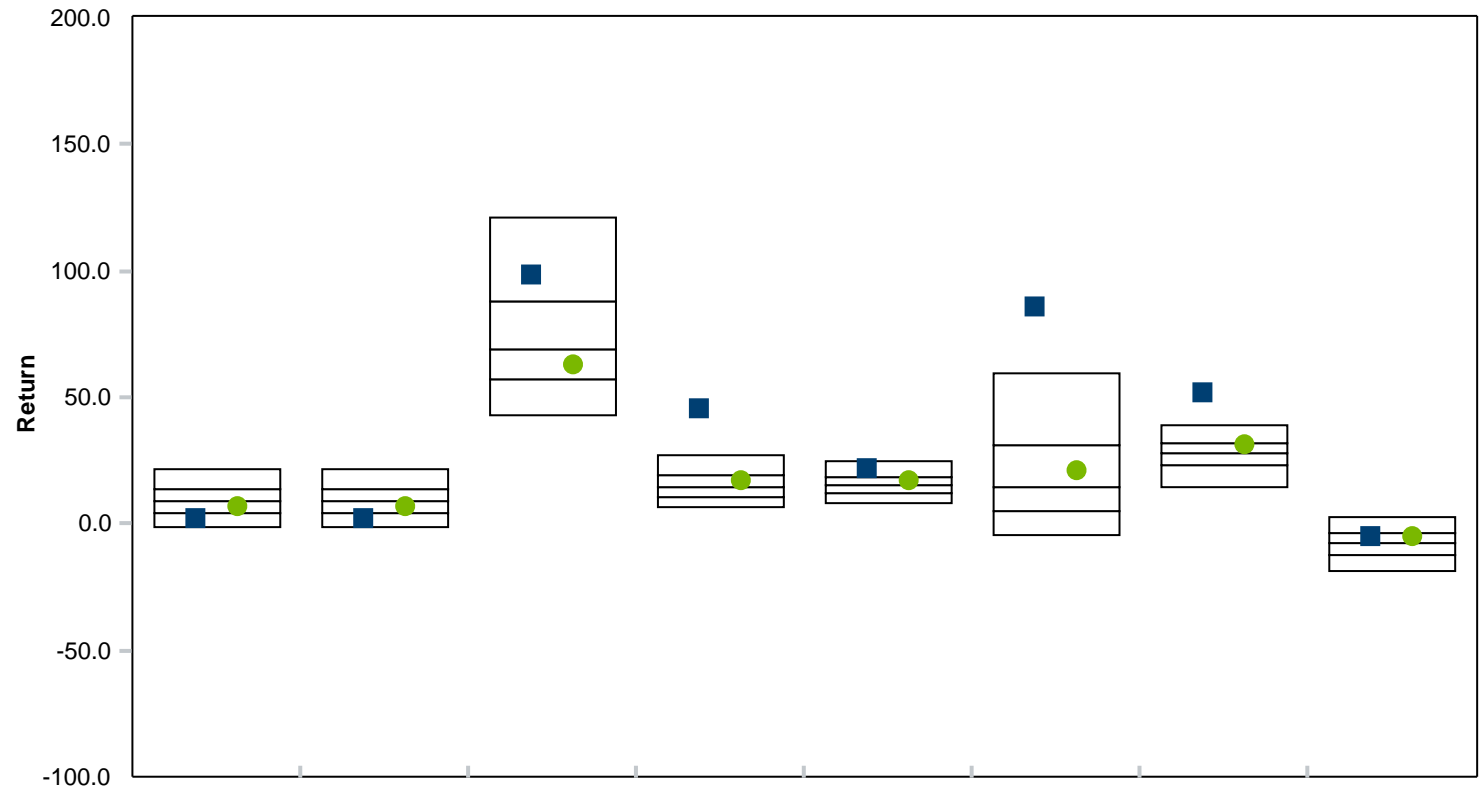


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

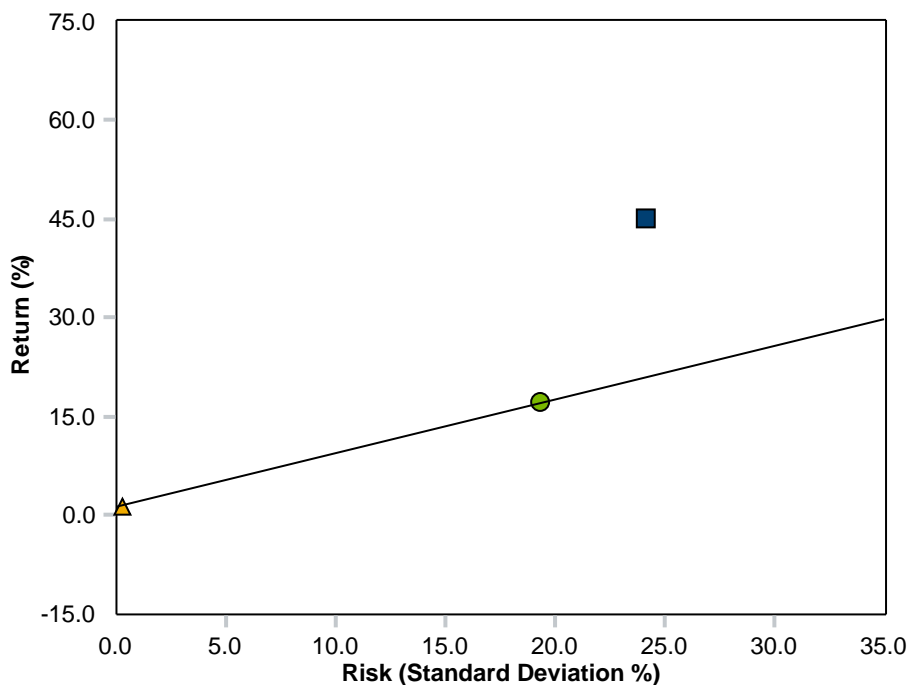


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
■ Pershing Square Holdings	1.7 (85)	1.7 (85)	98.0 (16)	45.0 (1)	21.7 (12)	85.7 (2)	51.3 (1)	-5.3 (36)
● Dow Jones U.S. Total Stock Market Index	6.4 (62)	6.4 (62)	62.7 (62)	17.0 (35)	16.6 (36)	20.8 (37)	30.9 (31)	-5.3 (35)
5th Percentile	21.8	21.8	121.3	26.9	25.1	59.4	38.9	2.7
1st Quartile	14.1	14.1	87.8	18.8	18.3	30.8	31.8	-3.8
Median	9.0	9.0	68.7	14.5	14.9	14.8	27.9	-7.8
3rd Quartile	4.0	4.0	56.9	10.4	12.0	4.6	23.4	-12.6
95th Percentile	-1.0	-1.0	43.3	6.3	8.4	-4.4	14.3	-18.9
Population	1,584	1,584	1,574	1,506	1,375	1,671	1,798	1,881

Partheses contain percentile rankings.

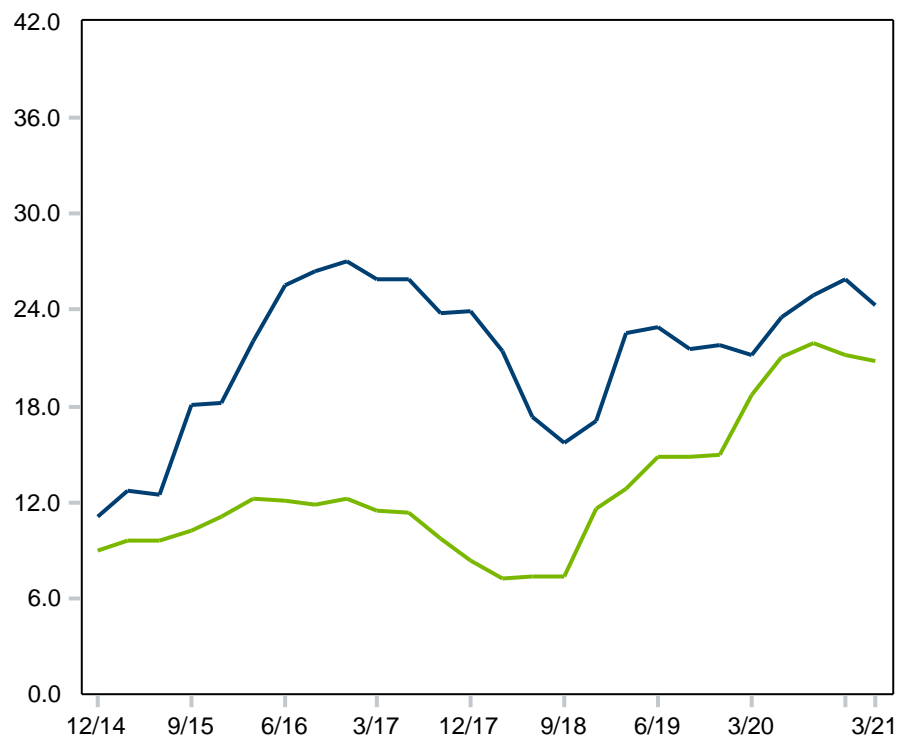
Pershing Square Holdings Risk Profile

**Annualized Return vs. Annualized Standard Deviation
3 Years**



- Pershing Square Holdings
- Dow Jones U.S. Total Stock Market Index
- ▲ FTSE 3 Month T-Bill

Rolling 2 Years Standard Deviation



- Pershing Square Holdings
- Dow Jones U.S. Total Stock Market Index

3 Years Historical Statistics

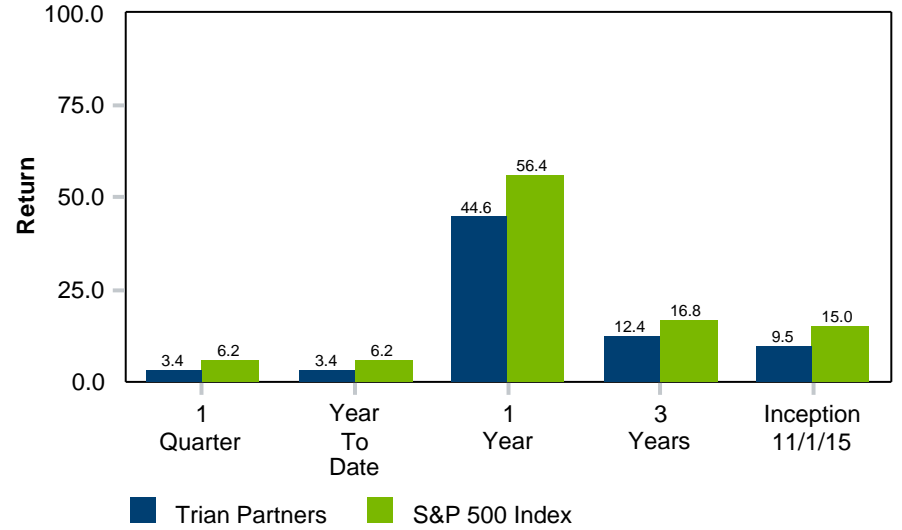
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Pershing Square Holdings	22.75	16.24	1.40	0.55	1.61	26.79	0.93	44.97	24.22	0.74
Dow Jones U.S. Total Stock Market Index	0.00	0.00	N/A	1.00	0.84	0.00	1.00	17.05	19.35	1.00
FTSE 3 Month T-Bill	-16.24	19.42	-0.84	0.05	N/A	1.51	0.00	1.45	0.27	-0.23

Trian Partners Performance Summary

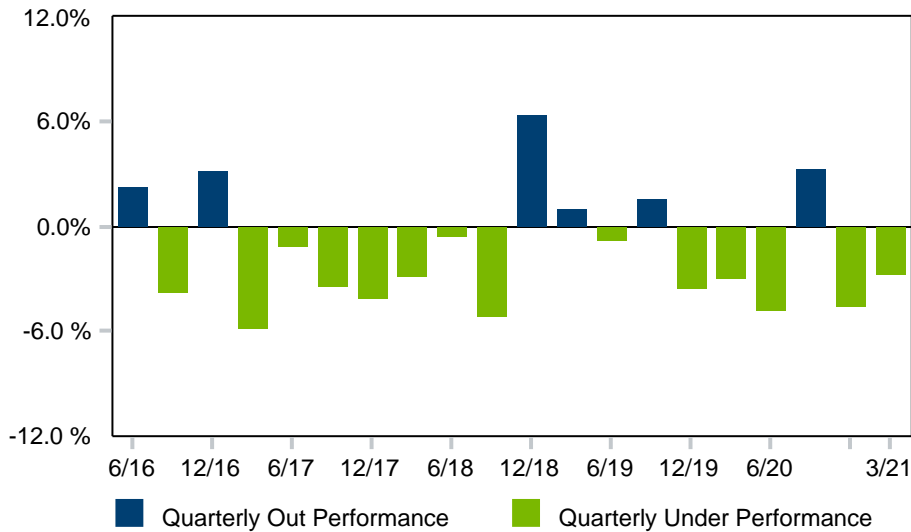
Account Information

Account Name: Trian Partners
 Inception Date: 11/01/2015
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: S&P 500 Index
 Peer Group:

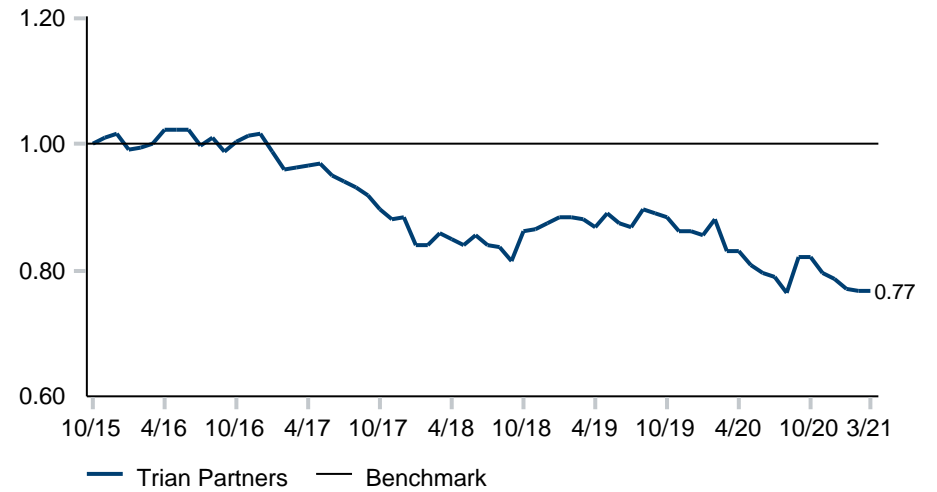
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

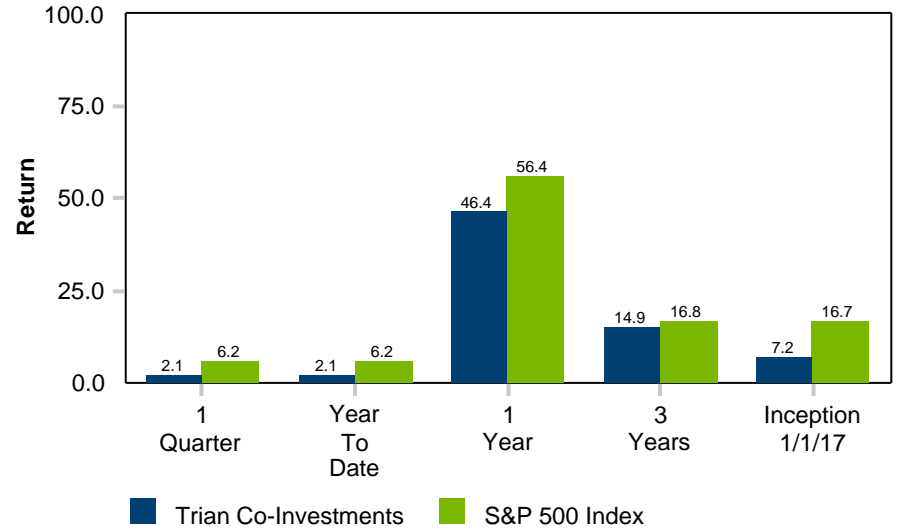


Trian Co-Investments Performance Summary

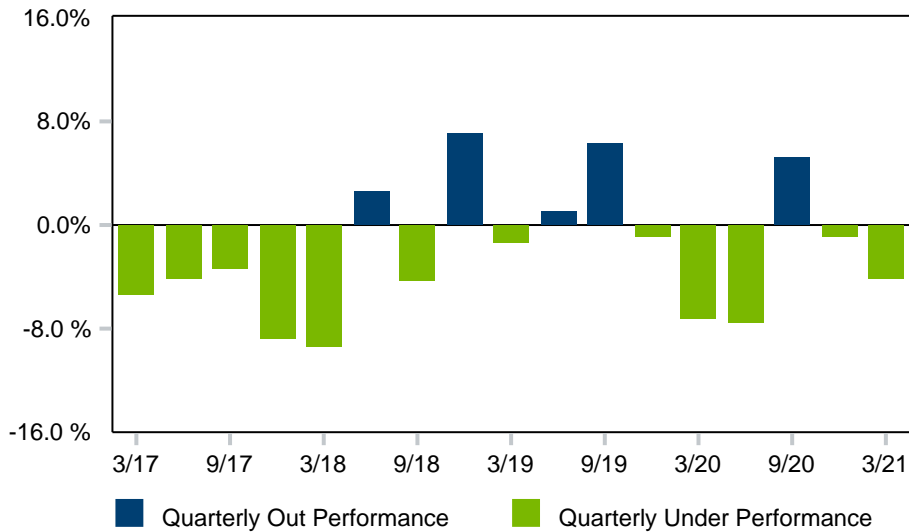
Account Information

Account Name: Trian Co-Investments
 Inception Date: 01/01/2017
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: S&P 500 Index
 Peer Group:

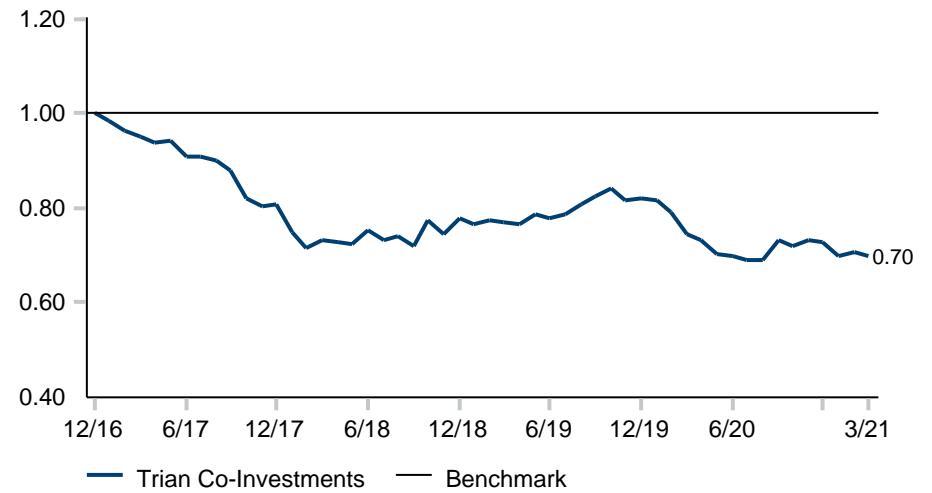
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

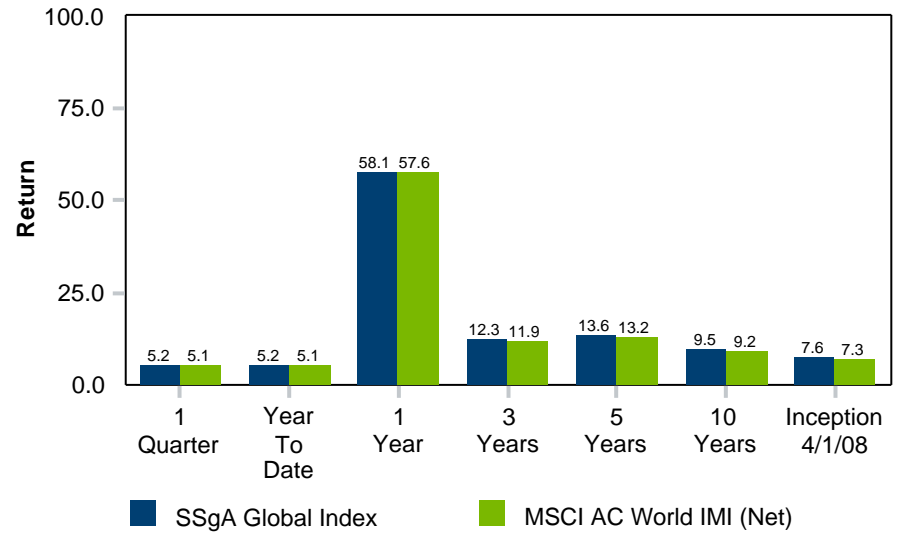


SSgA Global Index Performance Summary

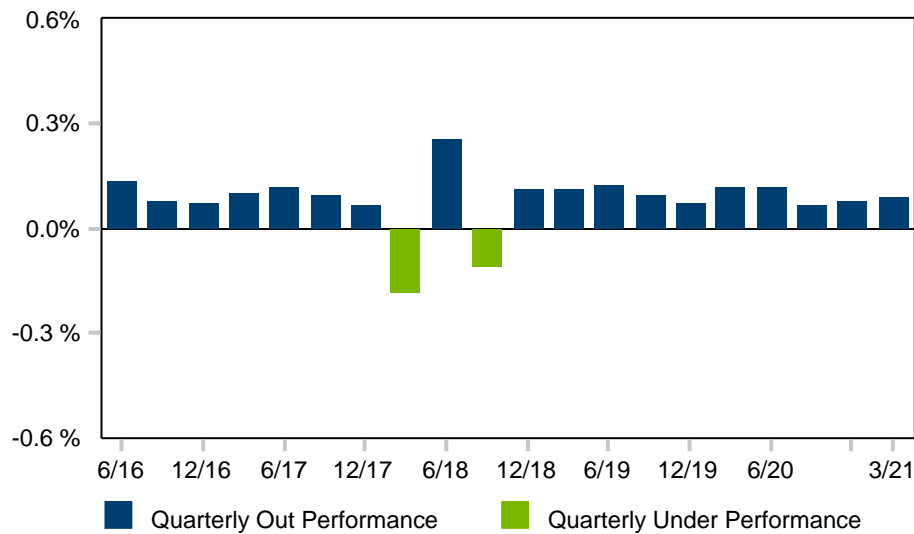
Account Information

Account Name: SSgA Global Index
 Inception Date: 03/31/2008
 Account Structure: Commingled Fund
 Asset Class: Global Equity
 Benchmark: MSCI AC World IMI (Net)
 Peer Group: IM Global Equity (SA+CF)

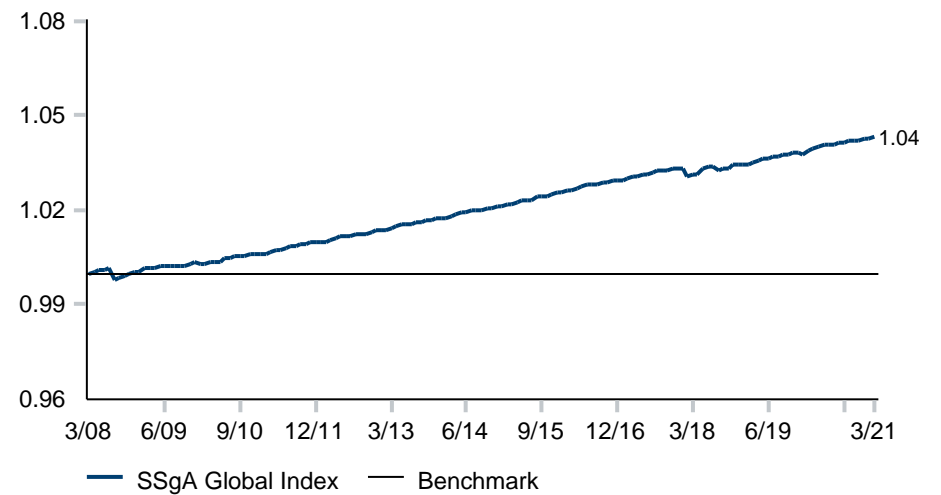
Return Summary



Quarterly Excess Performance

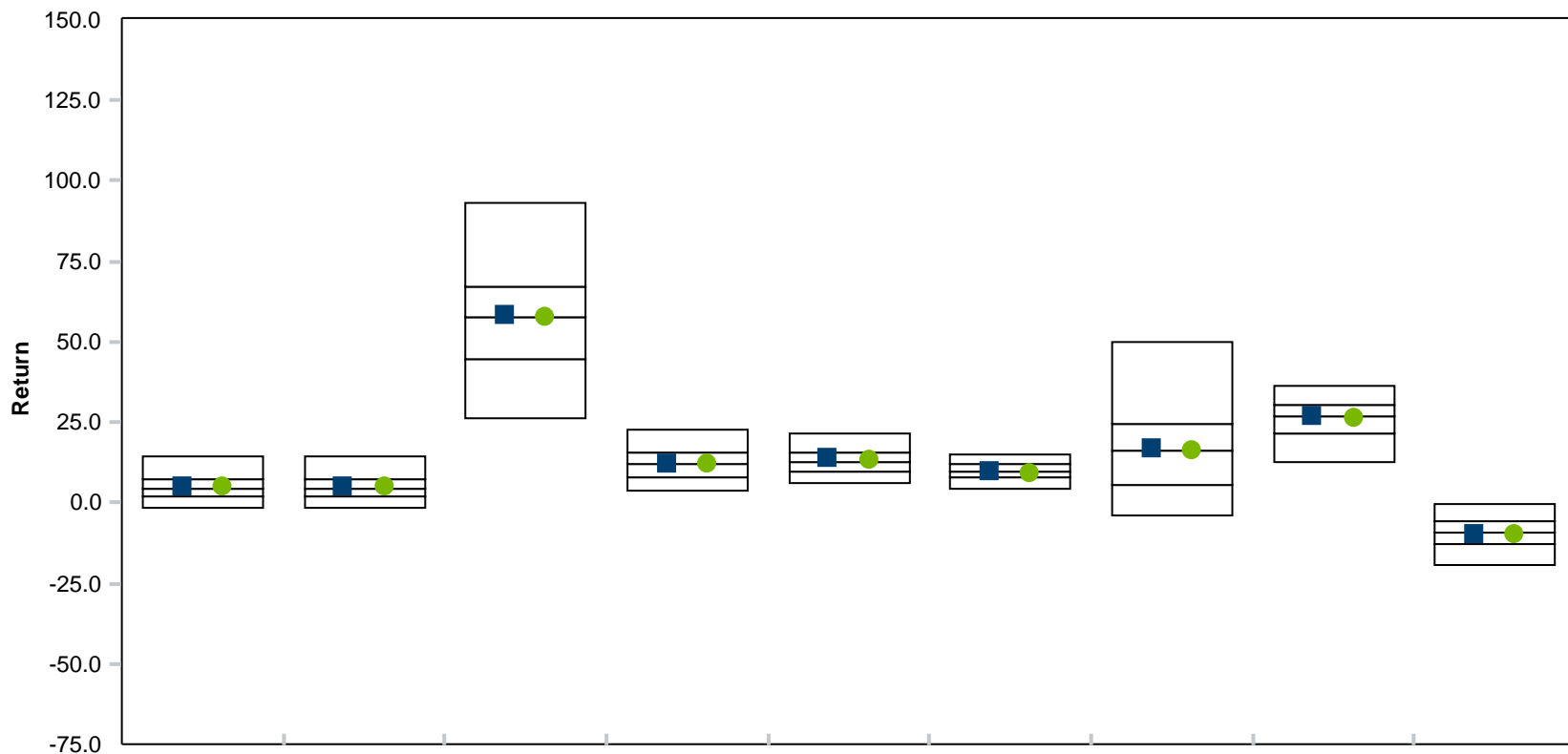


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

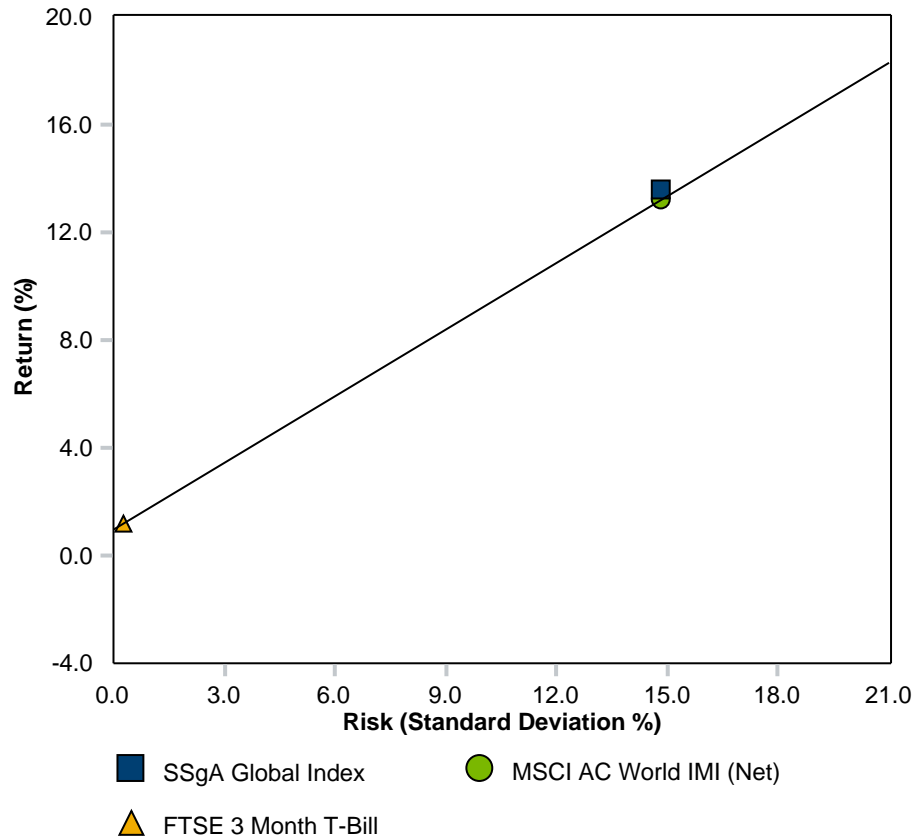


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ SSgA Global Index	5.2 (42)	5.2 (42)	58.1 (49)	12.3 (48)	13.6 (42)	9.5 (52)	16.7 (47)	26.8 (50)	-10.0 (56)
● MSCI AC World IMI (Net)	5.1 (43)	5.1 (43)	57.6 (51)	11.9 (51)	13.2 (46)	9.2 (60)	16.3 (50)	26.4 (52)	-10.1 (57)
5th Percentile	14.2	14.2	93.4	22.6	21.6	15.0	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	11.8	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	9.6	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	8.1	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	4.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	182	360	392	403

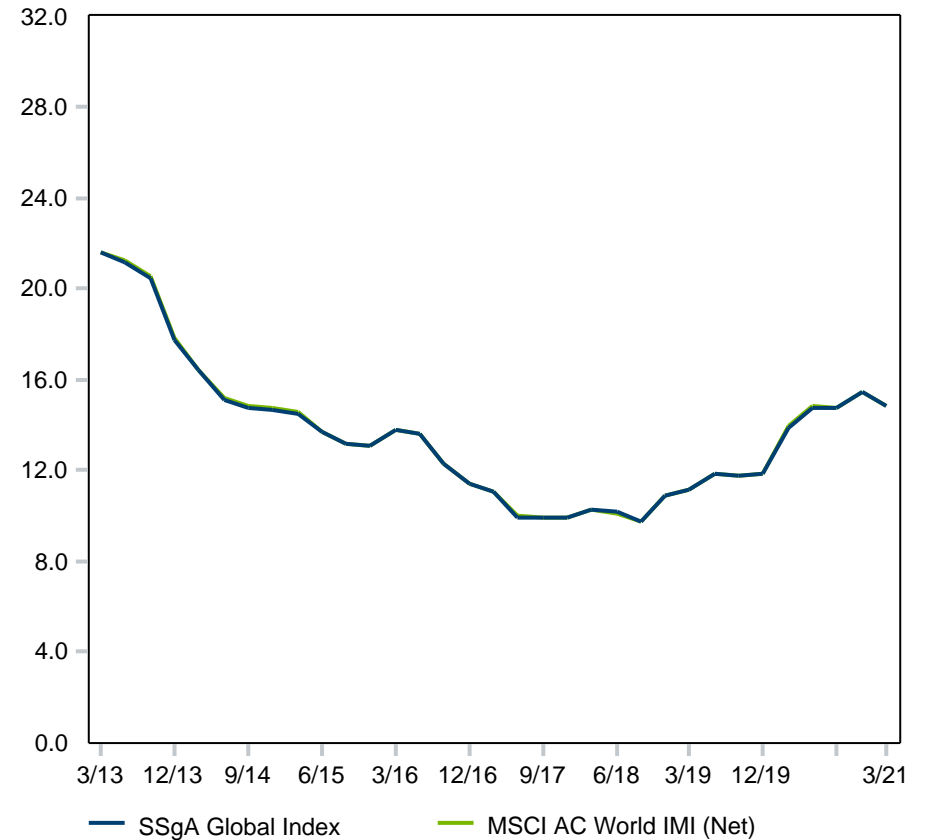
parentheses contain percentile rankings.

SSgA Global Index Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

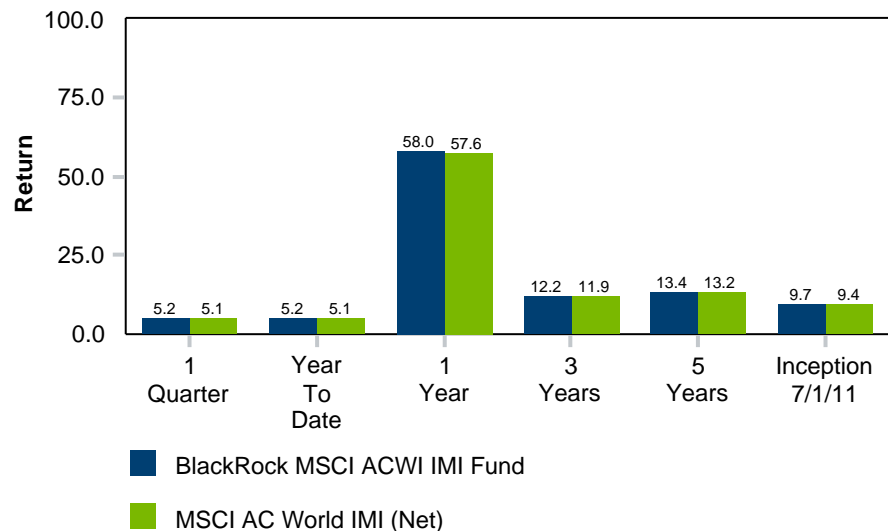
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
SSgA Global Index	0.32	0.18	1.84	1.00	0.86	0.33	1.00	13.57	14.84	1.00
MSCI AC World IMI (Net)	0.00	0.00	N/A	1.00	0.83	0.00	1.00	13.21	14.85	1.00
FTSE 3 Month T-Bill	-12.42	14.90	-0.83	0.05	N/A	1.20	0.00	1.15	0.25	-0.23

BlackRock MSCI ACWI IMI Fund Performance Summary

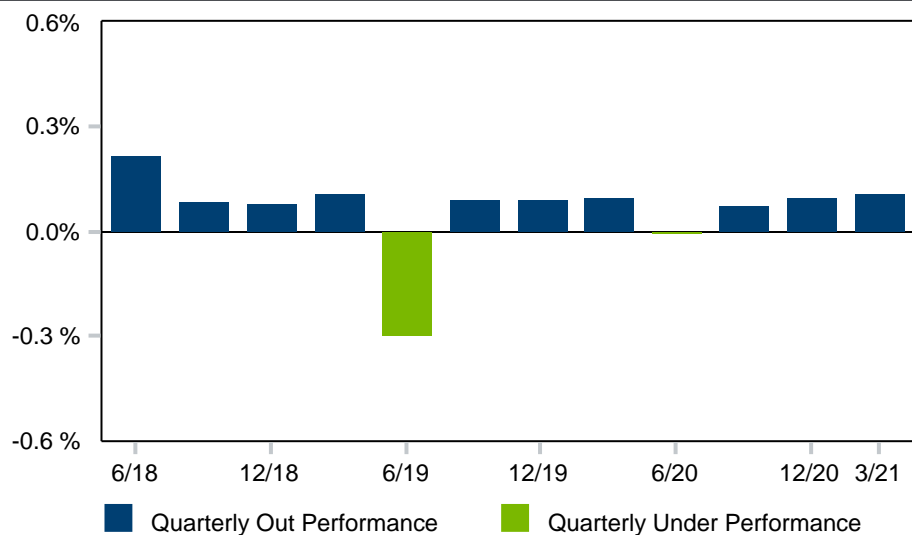
Account Information

Account Name: BlackRock MSCI ACWI IMI Fund
 Inception Date: 06/30/2011
 Account Structure: Commingled Fund
 Asset Class: Global Equity
 Benchmark: MSCI AC World IMI (Net)
 Peer Group: IM Global Equity (SA+CF)

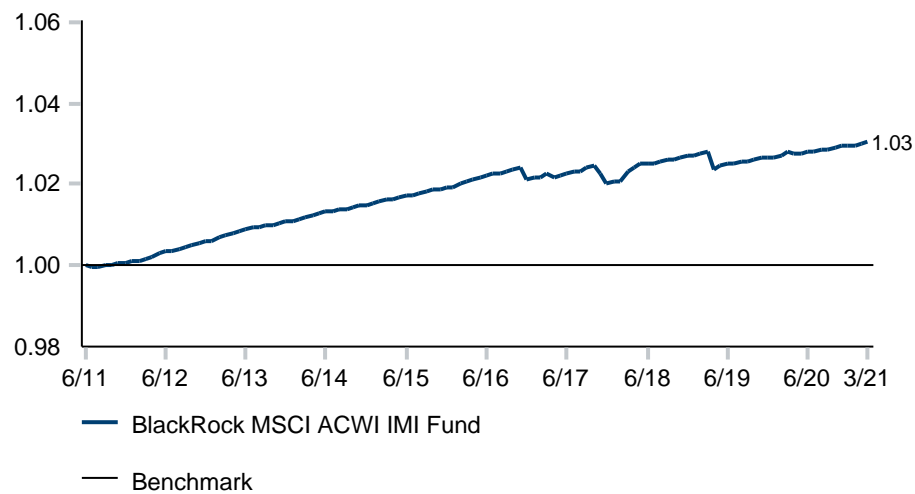
Return Summary



Quarterly Excess Performance

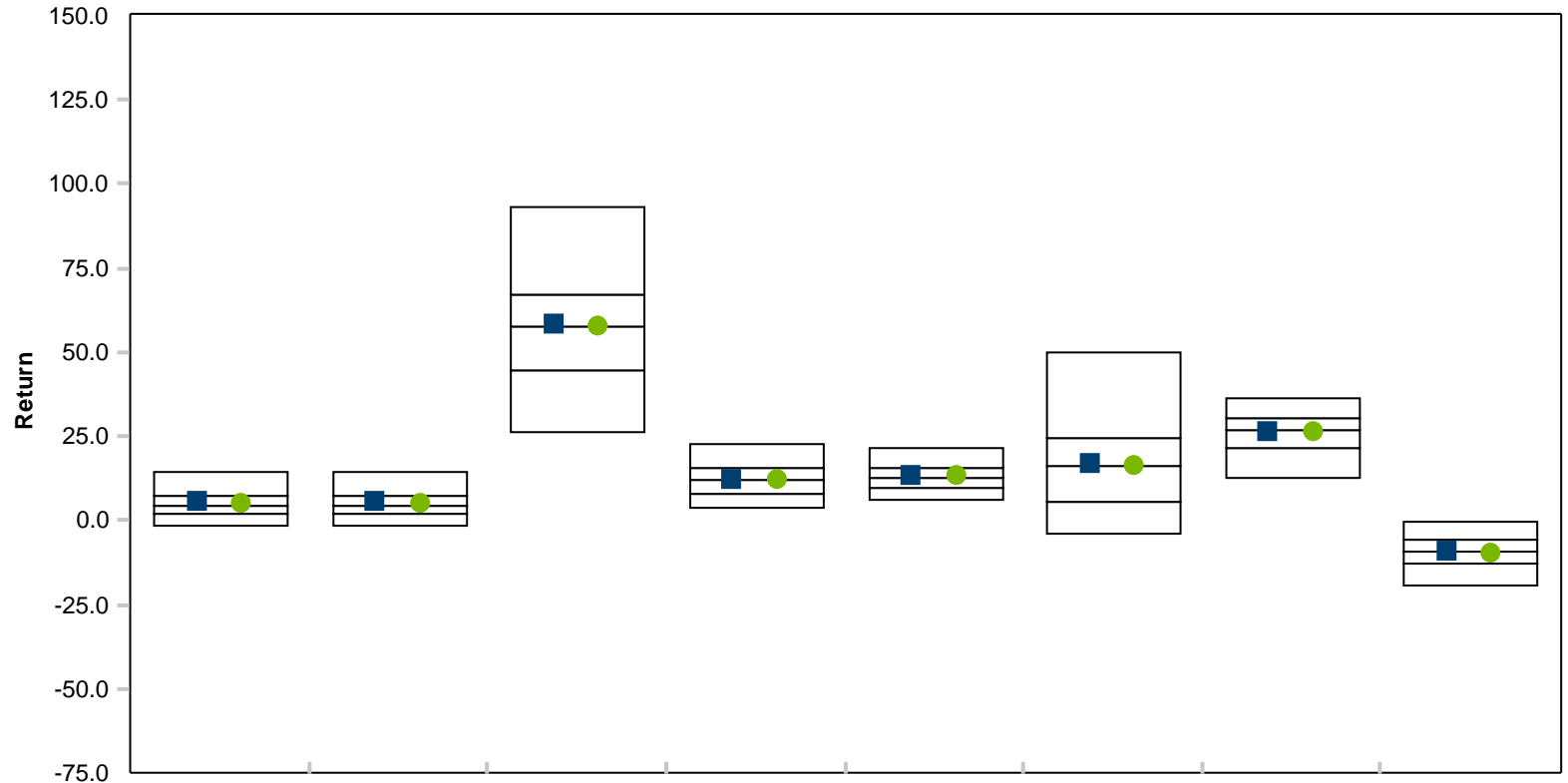


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

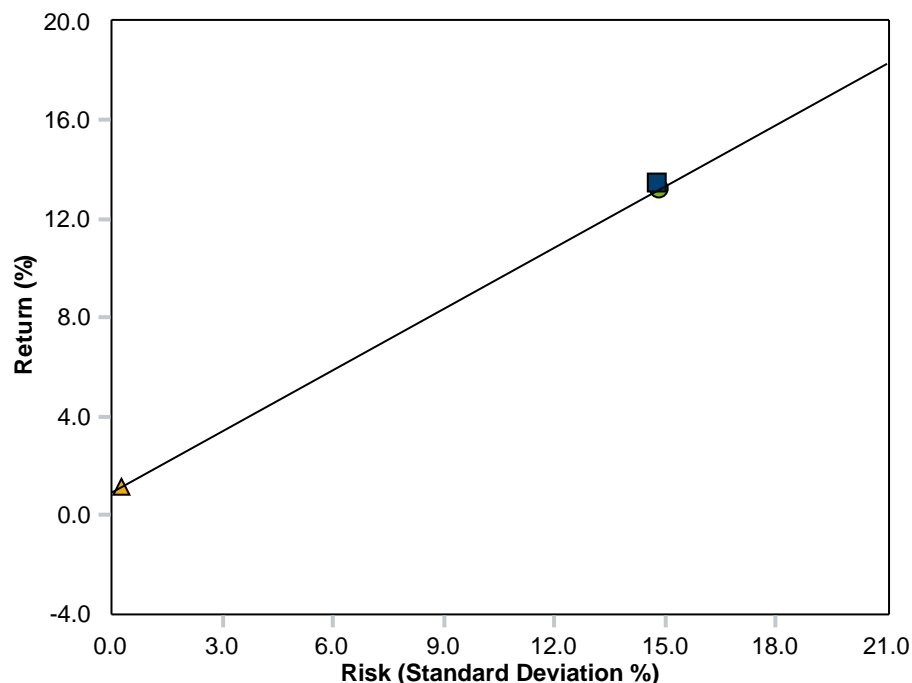


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
■ BlackRock MSCI ACWI IMI Fund	5.2 (42)	5.2 (42)	58.0 (50)	12.2 (48)	13.4 (43)	16.6 (48)	26.3 (52)	-9.5 (52)
● MSCI AC World IMI (Net)	5.1 (43)	5.1 (43)	57.6 (51)	11.9 (51)	13.2 (46)	16.3 (50)	26.4 (52)	-10.1 (57)
5th Percentile	14.2	14.2	93.4	22.6	21.6	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	360	392	403

parentheses contain percentile rankings.

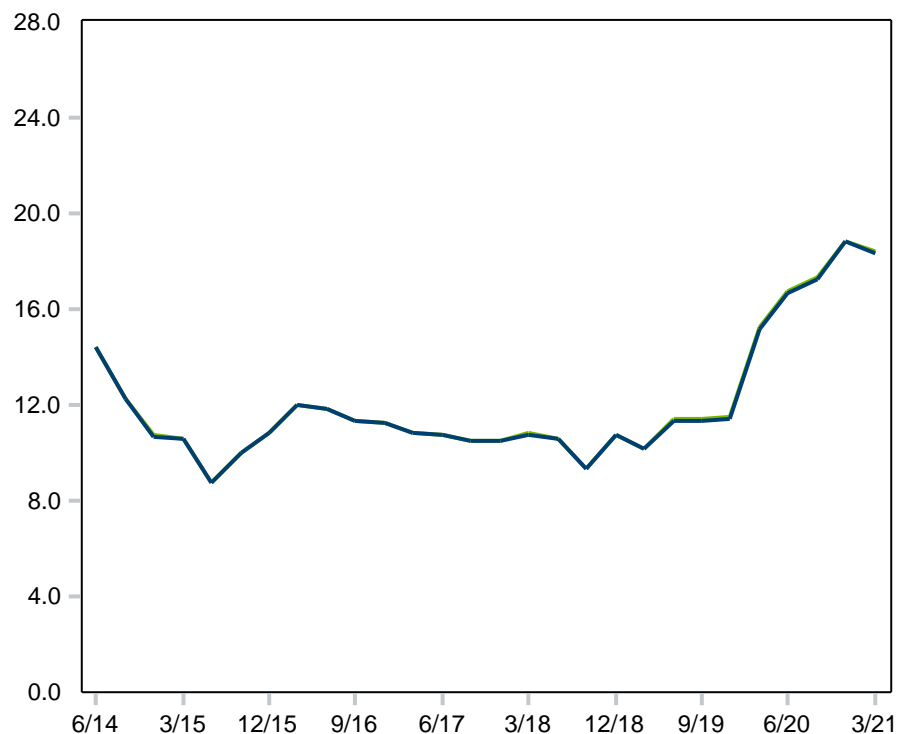
BlackRock MSCI ACWI IMI Fund Risk Profile

**Annualized Return vs. Annualized Standard Deviation
5 Years**



- BlackRock MSCI ACWI IMI Fund
- MSCI AC World IMI (Net)
- ▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



- BlackRock MSCI ACWI IMI Fund
- MSCI AC World IMI (Net)

5 Years Historical Statistics

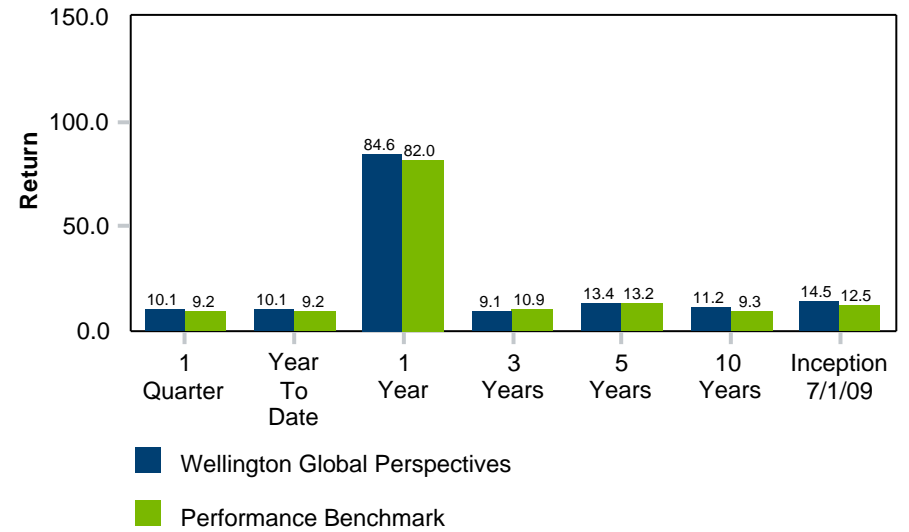
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
BlackRock MSCI ACWI IMI Fund	0.19	0.31	0.61	1.00	0.85	0.24	1.00	13.43	14.80	1.00
MSCI AC World IMI (Net)	0.00	0.00	N/A	1.00	0.83	0.00	1.00	13.21	14.85	1.00
FTSE 3 Month T-Bill	-12.42	14.90	-0.83	0.05	N/A	1.20	0.00	1.15	0.25	-0.23

Wellington Global Perspectives Performance Summary

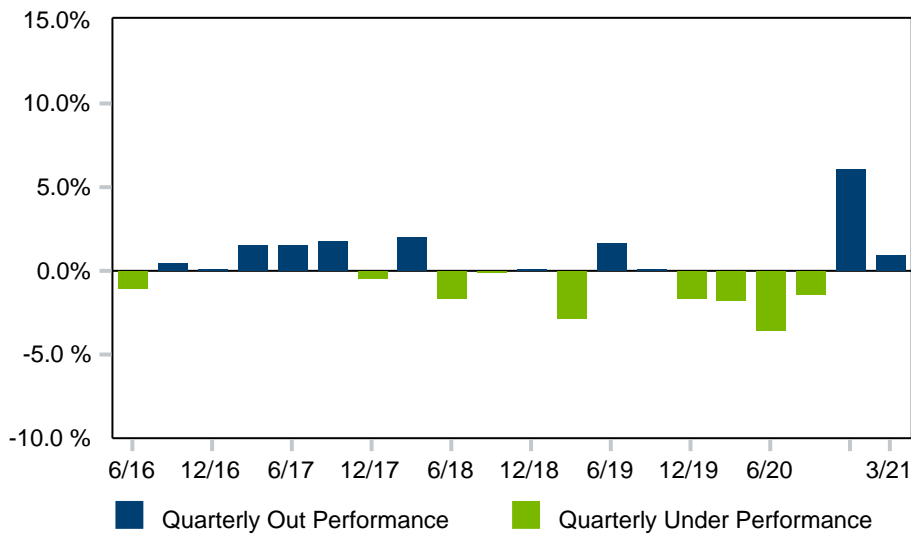
Account Information

Account Name: Wellington Global Perspectives
 Inception Date: 06/30/2009
 Account Structure: Separate Account
 Asset Class: Global Equity
 Benchmark: Performance Benchmark
 Peer Group: IM Global Equity (SA+CF)

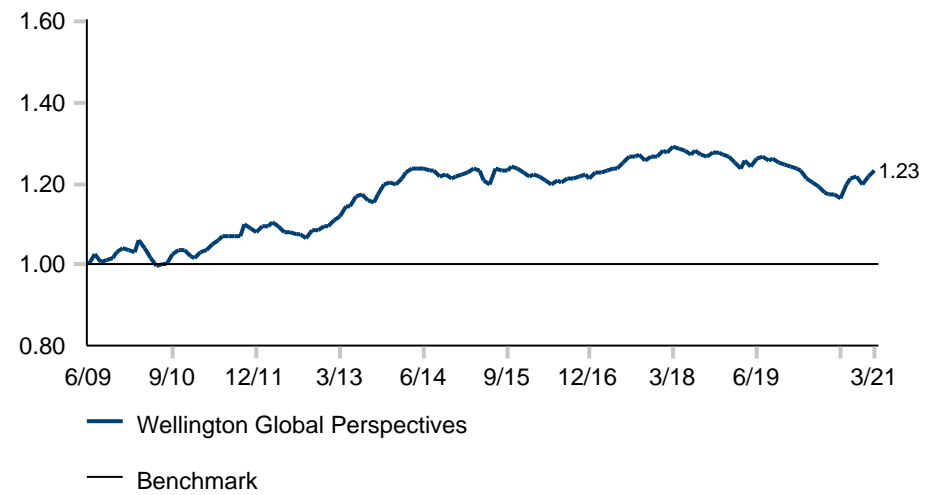
Return Summary



Quarterly Excess Performance

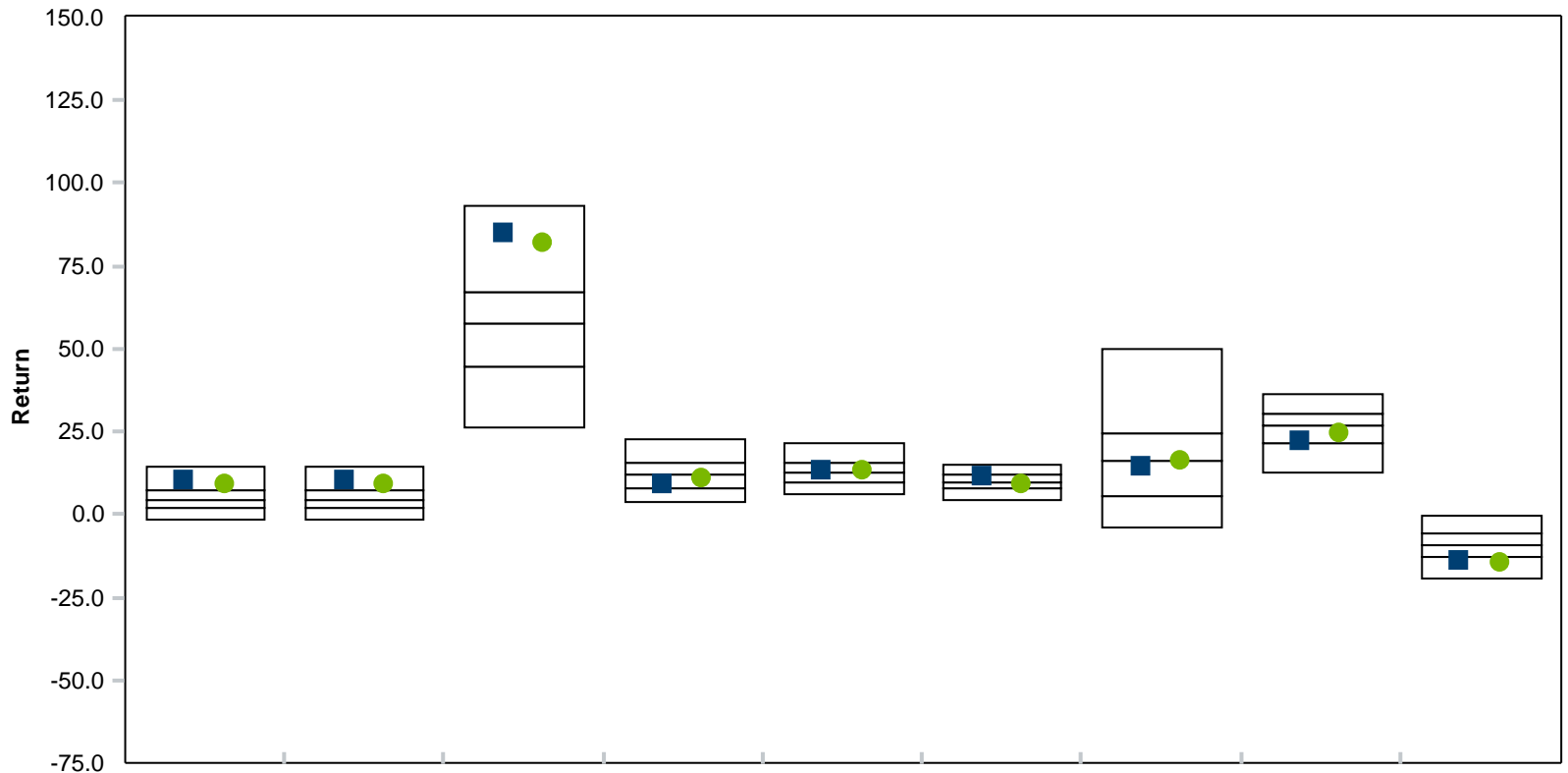


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

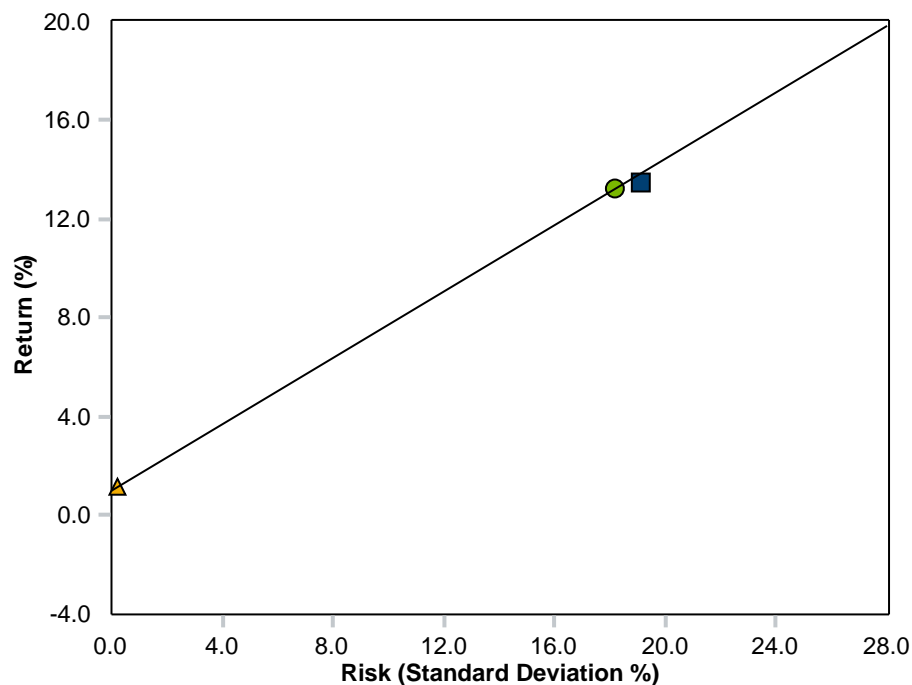


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
Wellington Global Perspectives	10.1 (15)	10.1 (15)	84.6 (9)	9.1 (69)	13.4 (44)	11.2 (29)	14.1 (56)	21.9 (75)	-14.0 (80)
Performance Benchmark	9.2 (18)	9.2 (18)	82.0 (11)	10.9 (58)	13.2 (46)	9.3 (56)	16.3 (49)	24.7 (64)	-14.4 (82)
5th Percentile	14.2	14.2	93.4	22.6	21.6	15.0	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	11.8	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	9.6	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	8.1	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	4.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	182	360	392	403

parentheses contain percentile rankings.

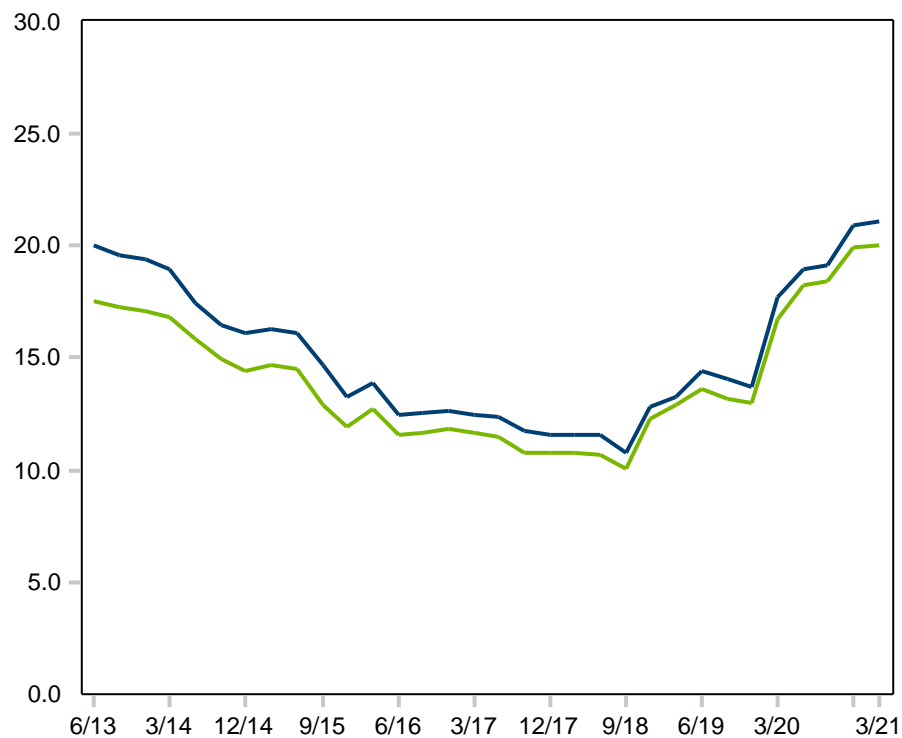
Wellington Global Perspectives Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



- Wellington Global Perspectives
- Performance Benchmark
- ▲ FTSE 3 Month T-Bill

Rolling 4 Years Standard Deviation



- Wellington Global Perspectives
- Performance Benchmark

5 Years Historical Statistics

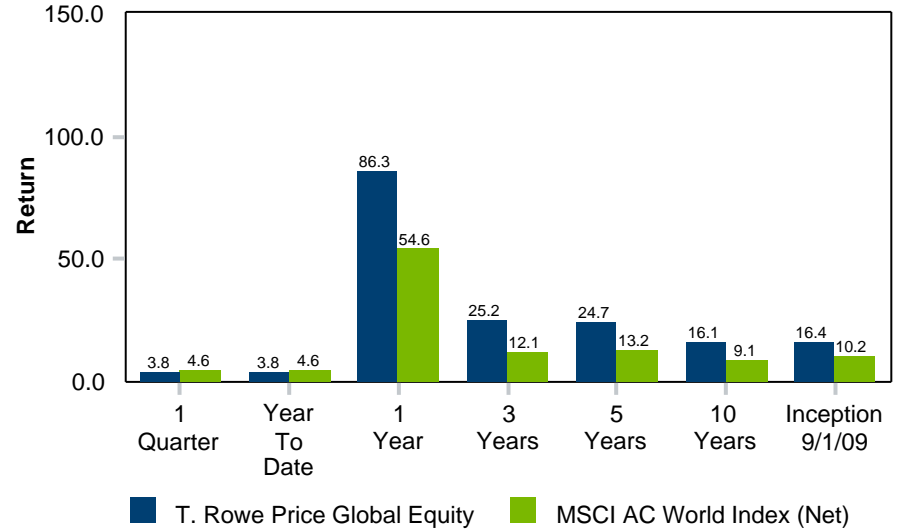
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Wellington Global Perspectives	0.37	3.31	0.11	0.97	0.70	-0.16	1.04	13.42	19.13	0.99
Performance Benchmark	0.00	0.00	N/A	1.00	0.71	0.00	1.00	13.22	18.18	1.00
FTSE 3 Month T-Bill	-13.02	18.25	-0.71	0.08	N/A	1.21	0.00	1.15	0.25	-0.28

T. Rowe Price Global Equity Performance Summary

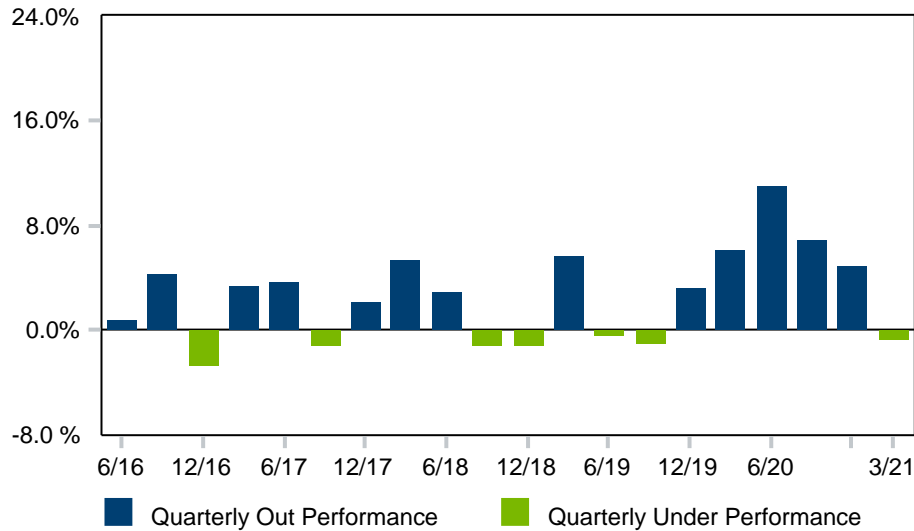
Account Information

Account Name: T. Rowe Price Global Equity
 Inception Date: 08/31/2009
 Account Structure: Separate Account
 Asset Class: Global Equity
 Benchmark: MSCI AC World Index (Net)
 Peer Group: IM Global Equity (SA+CF)

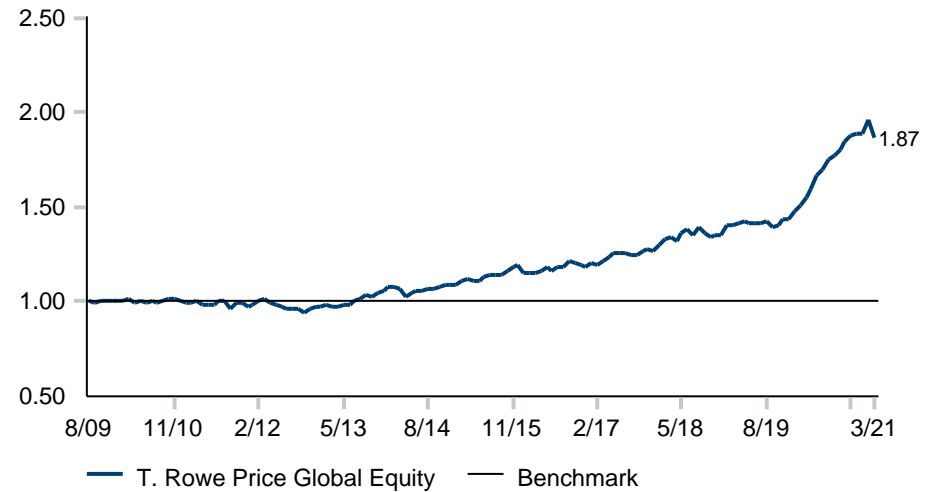
Return Summary



Quarterly Excess Performance

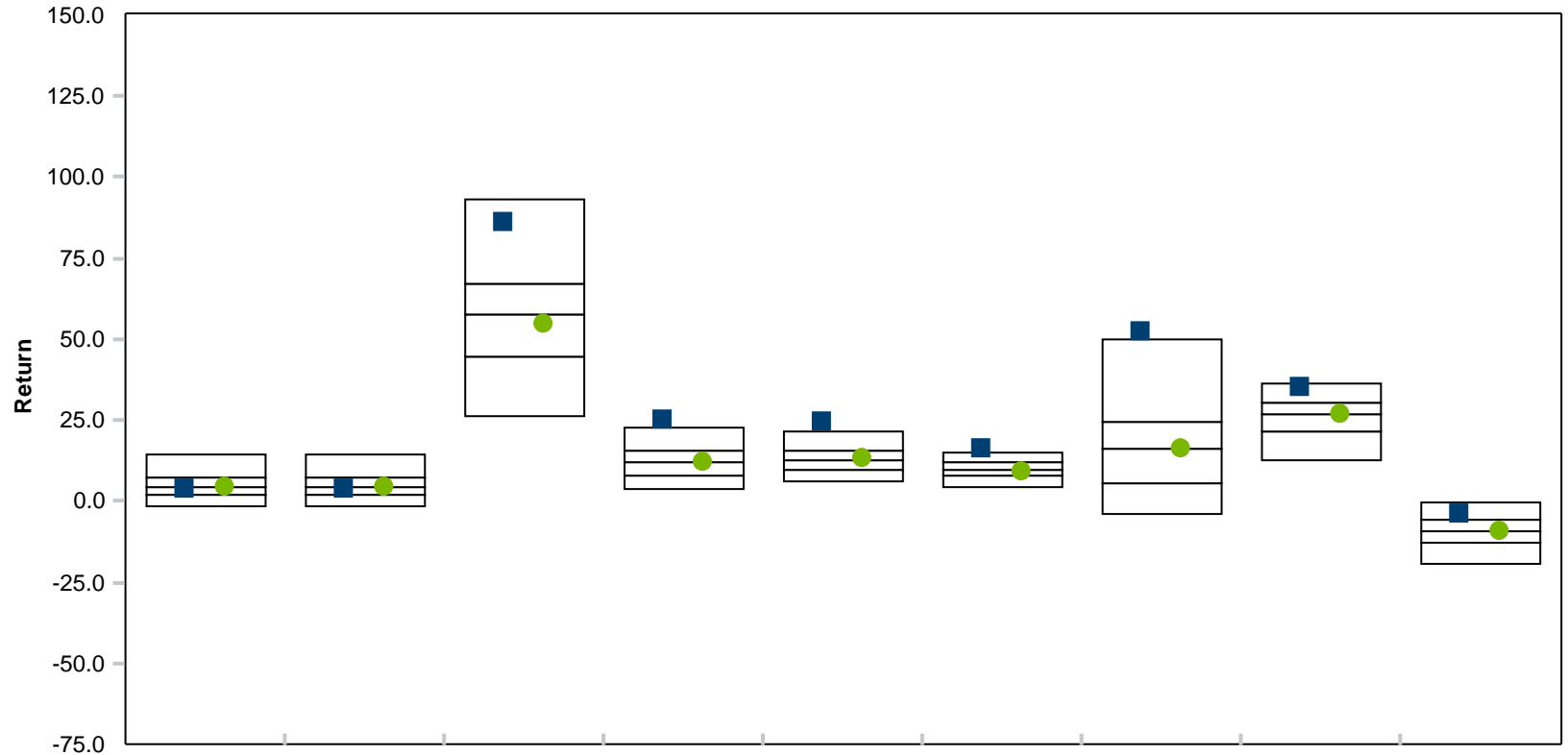


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

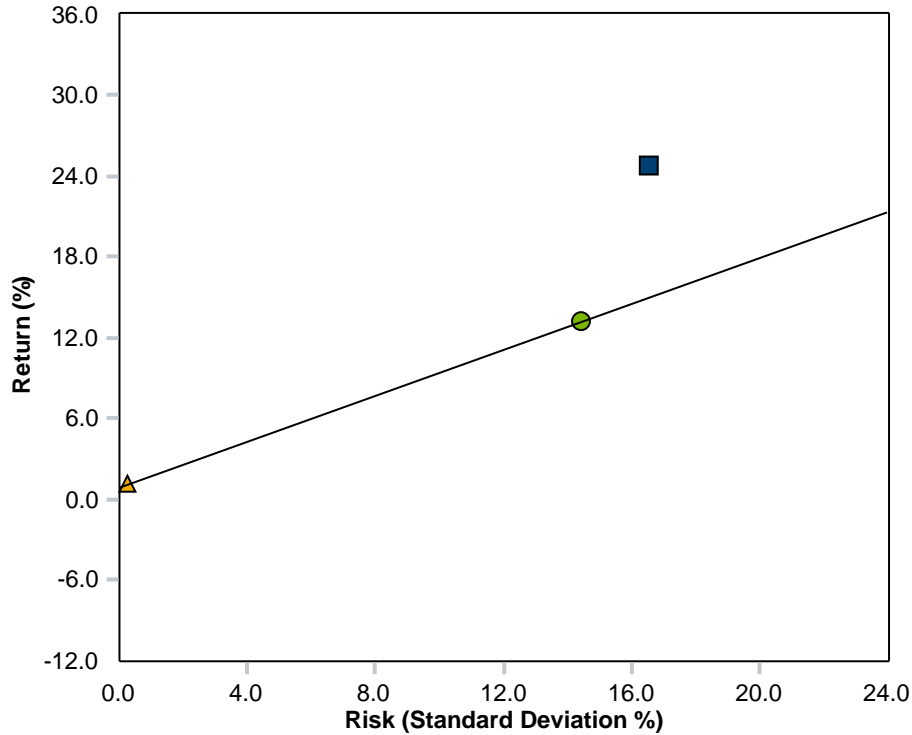


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ T. Rowe Price Global Equity	3.8 (57)	3.8 (57)	86.3 (8)	25.2 (3)	24.7 (3)	16.1 (4)	52.2 (5)	35.2 (10)	-4.0 (17)
● MSCI AC World Index (Net)	4.6 (49)	4.6 (49)	54.6 (56)	12.1 (49)	13.2 (46)	9.1 (60)	16.3 (50)	26.6 (51)	-9.4 (50)
5th Percentile	14.2	14.2	93.4	22.6	21.6	15.0	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	11.8	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	9.6	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	8.1	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	4.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	182	360	392	403

parentheses contain percentile rankings.

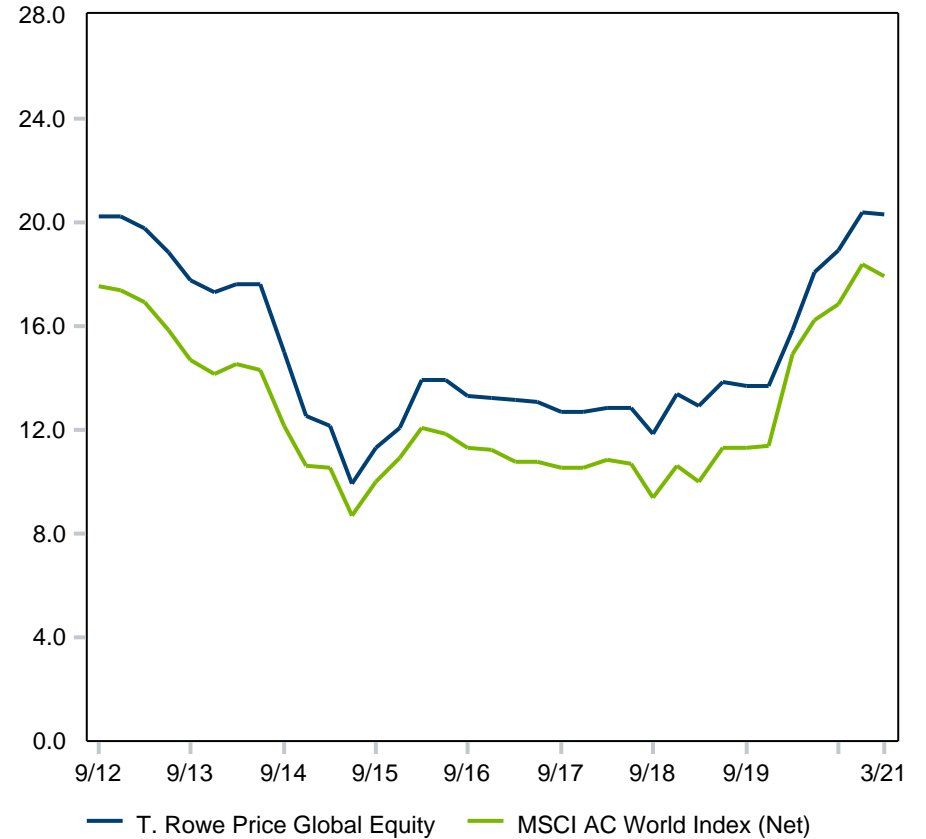
T. Rowe Price Global Equity Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



■ T. Rowe Price Global Equity ● MSCI AC World Index (Net)
▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



5 Years Historical Statistics

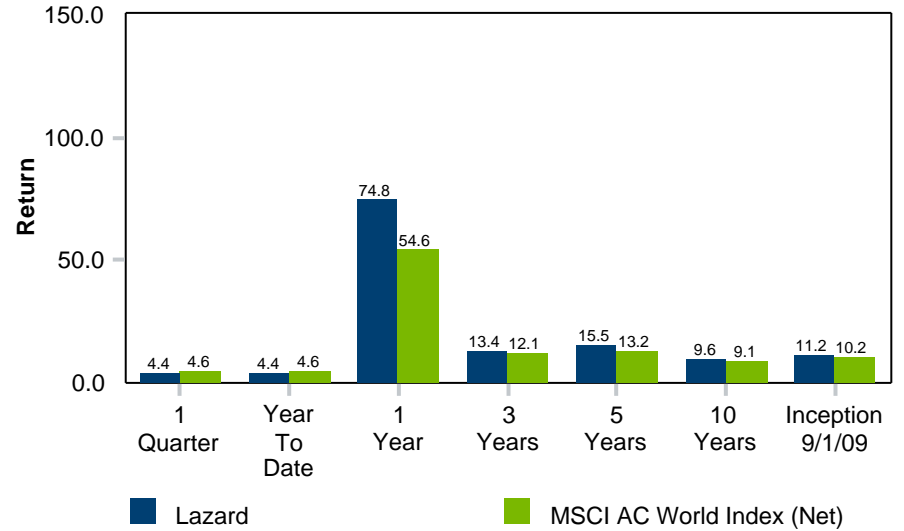
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
T. Rowe Price Global Equity	10.11	6.38	1.58	0.86	1.35	9.70	1.06	24.71	16.60	0.92
MSCI AC World Index (Net)	0.00	0.00	N/A	1.00	0.85	0.00	1.00	13.21	14.48	1.00
FTSE 3 Month T-Bill	-12.37	14.53	-0.85	0.05	N/A	1.20	0.00	1.15	0.25	-0.22

Lazard Performance Summary

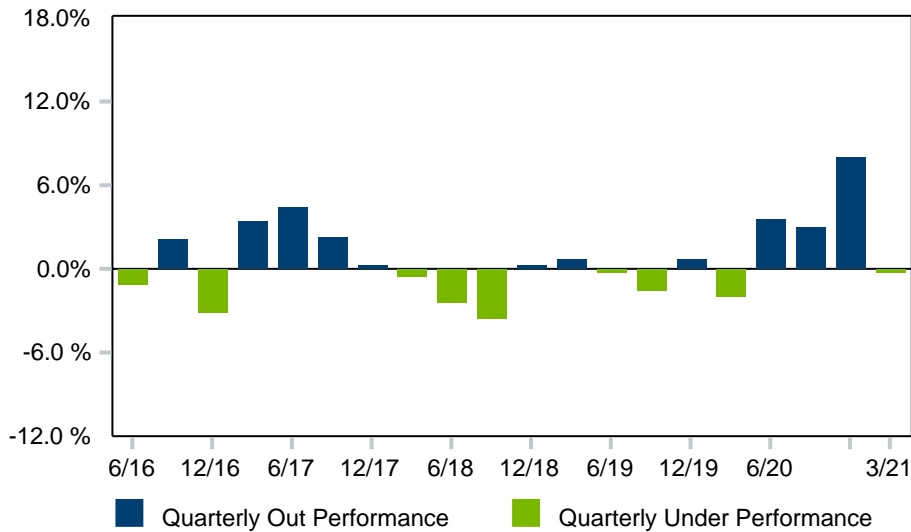
Account Information

Account Name: Lazard
 Inception Date: 08/31/2009
 Account Structure: Separate Account
 Asset Class: Global Equity
 Benchmark: MSCI AC World Index (Net)
 Peer Group: IM Global Equity (SA+CF)

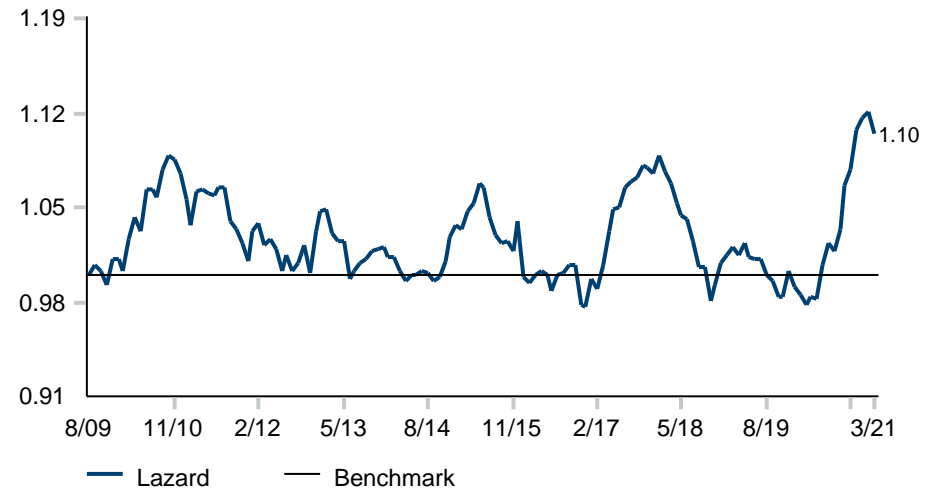
Return Summary



Quarterly Excess Performance

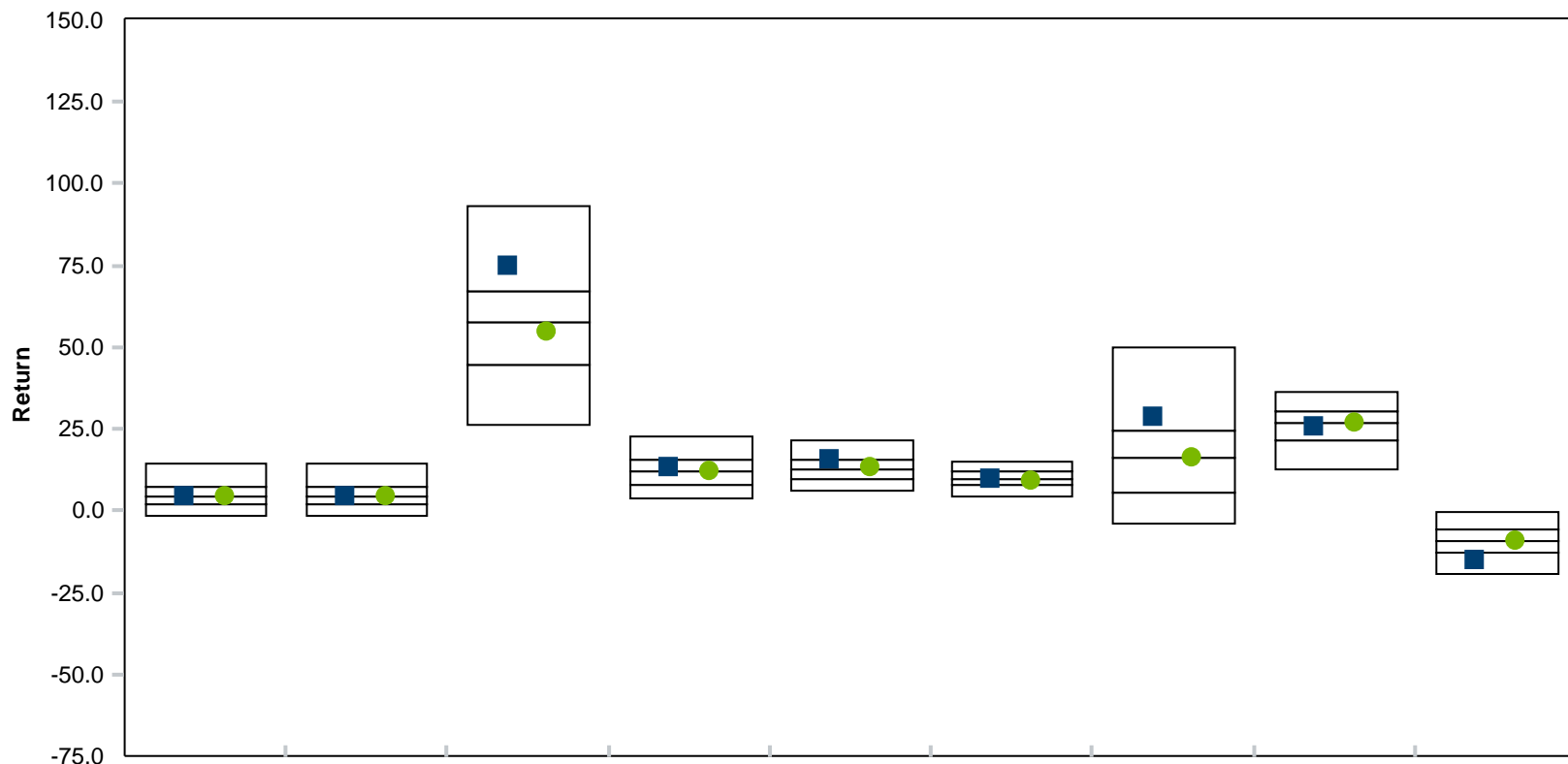


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

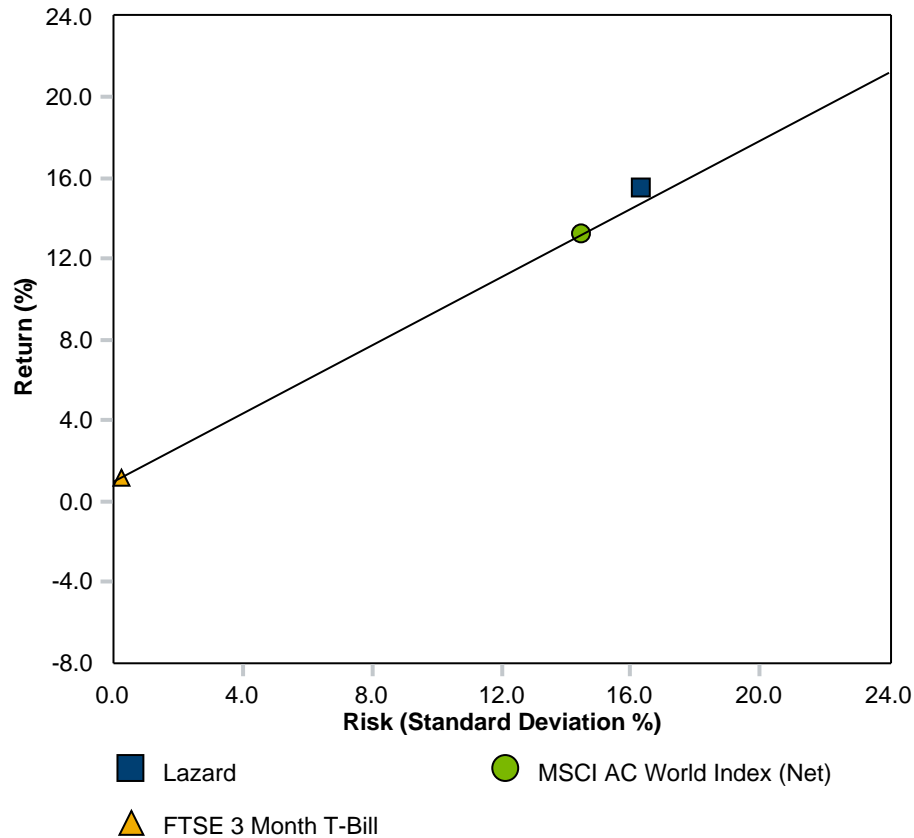


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Lazard	4.4 (51)	4.4 (51)	74.8 (17)	13.4 (39)	15.5 (27)	9.6 (51)	28.4 (22)	25.7 (56)	-14.9 (85)
● MSCI AC World Index (Net)	4.6 (49)	4.6 (49)	54.6 (56)	12.1 (49)	13.2 (46)	9.1 (60)	16.3 (50)	26.6 (51)	-9.4 (50)
5th Percentile	14.2	14.2	93.4	22.6	21.6	15.0	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	11.8	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	9.6	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	8.1	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	4.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	182	360	392	403

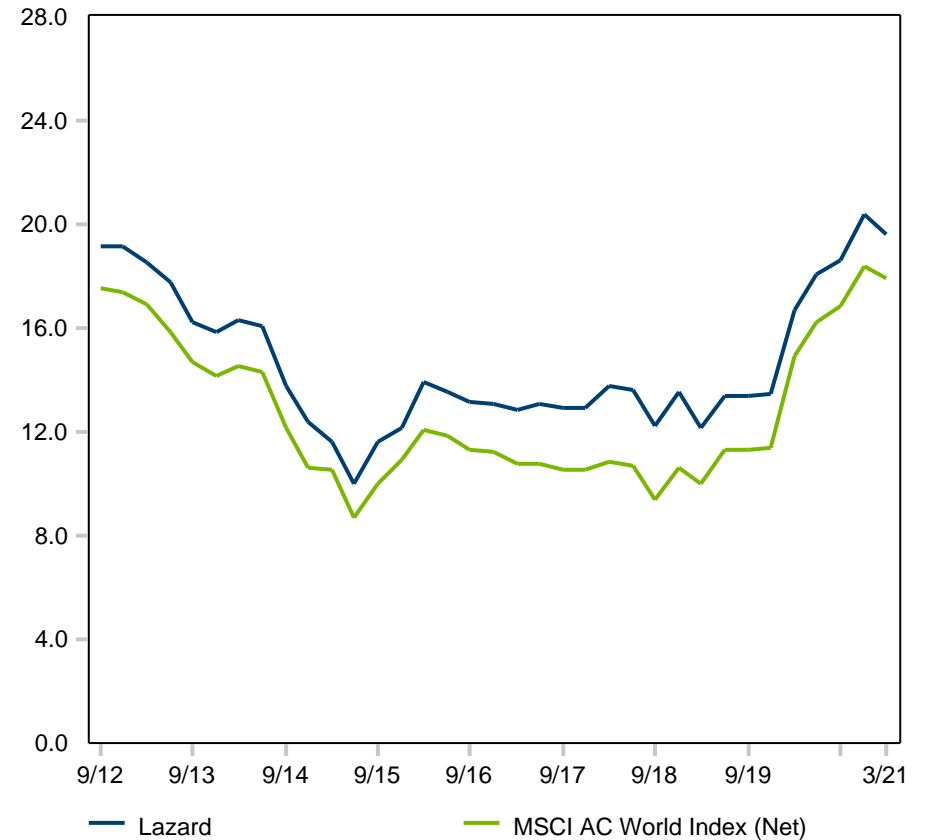
parentheses contain percentile rankings.

Lazard Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

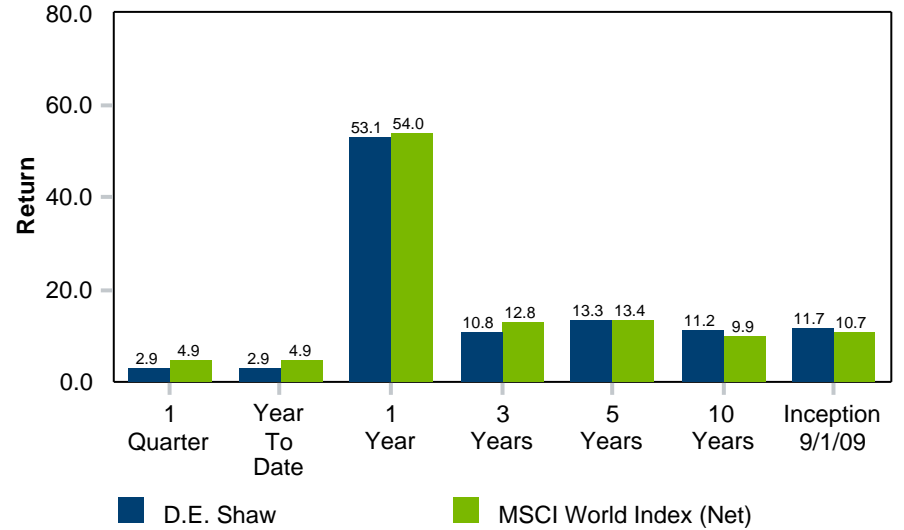
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Lazard	2.31	4.48	0.52	0.93	0.89	1.11	1.09	15.51	16.35	0.97
MSCI AC World Index (Net)	0.00	0.00	N/A	1.00	0.85	0.00	1.00	13.21	14.48	1.00
FTSE 3 Month T-Bill	-12.37	14.53	-0.85	0.05	N/A	1.20	0.00	1.15	0.25	-0.22

D.E. Shaw Performance Summary

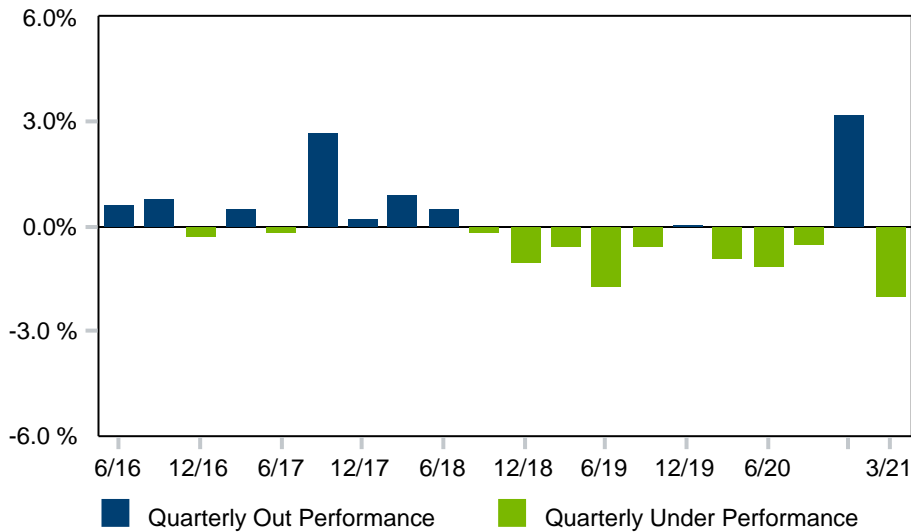
Account Information

Account Name: D.E. Shaw
 Inception Date: 08/31/2009
 Account Structure: Commingled Fund
 Asset Class: Global Equity
 Benchmark: MSCI World Index (Net)
 Peer Group: IM Global Equity (SA+CF)

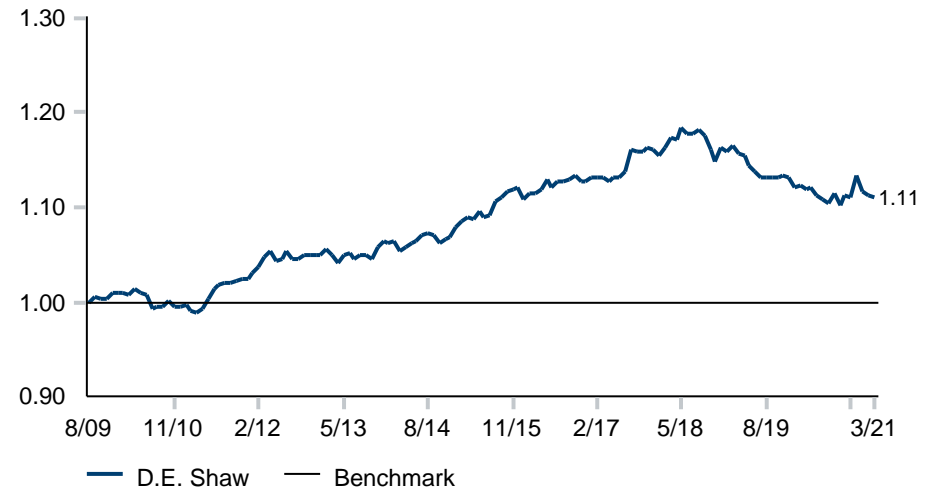
Return Summary



Quarterly Excess Performance

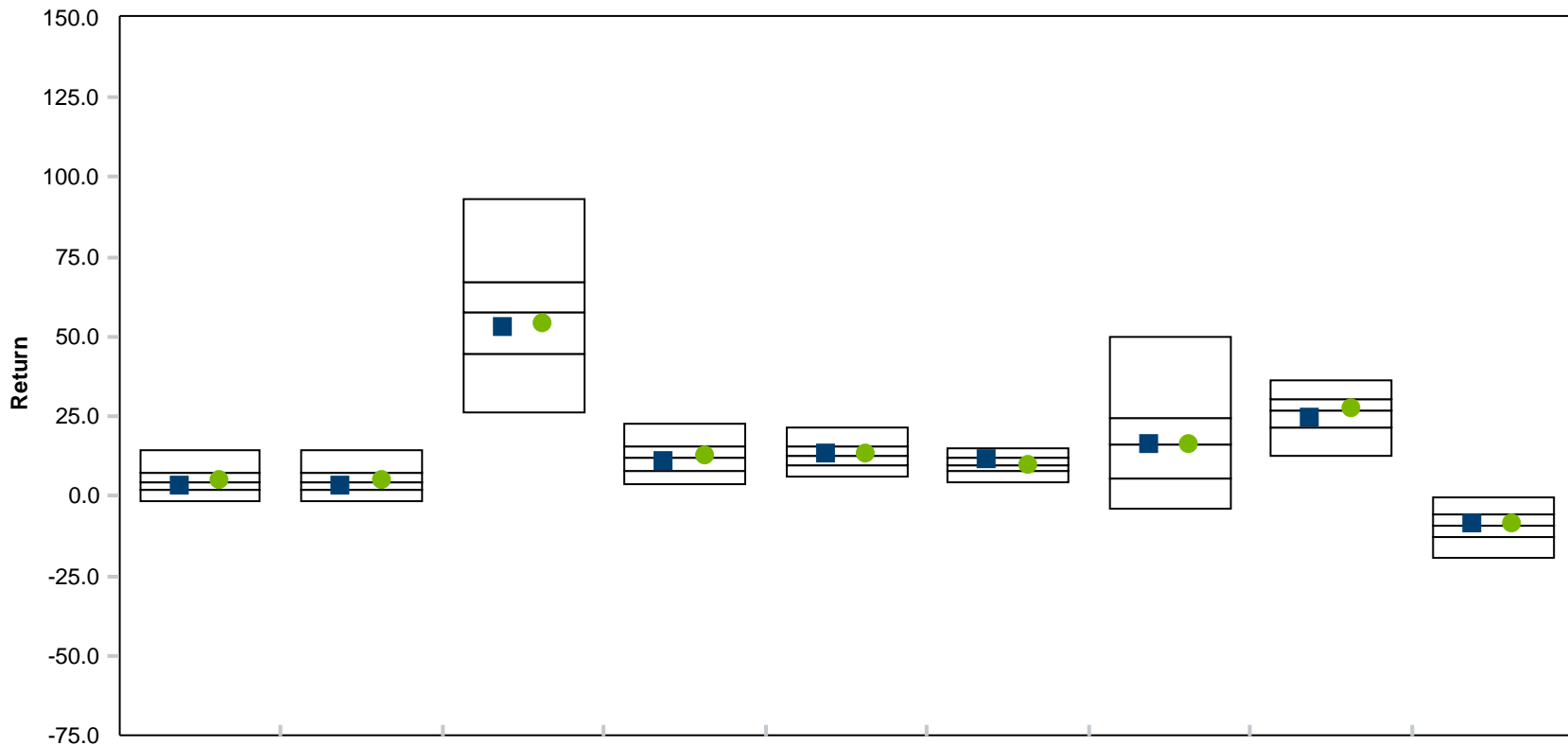


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

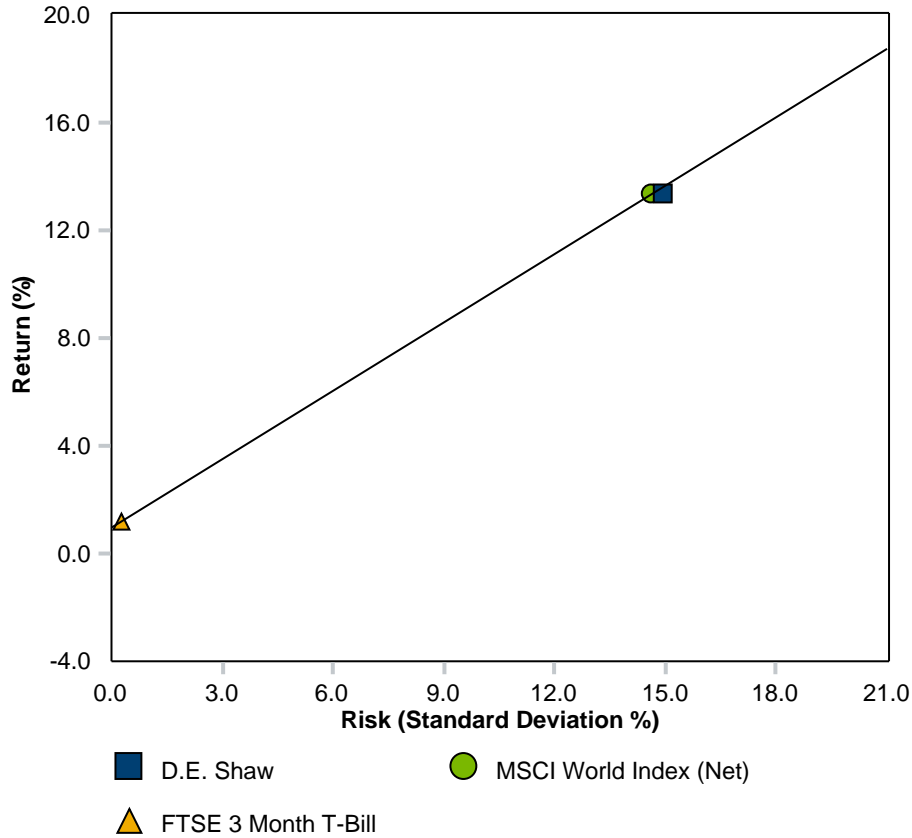


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ D.E. Shaw	2.9 (67)	2.9 (67)	53.1 (60)	10.8 (59)	13.3 (45)	11.2 (29)	16.1 (51)	24.2 (65)	-8.6 (45)
● MSCI World Index (Net)	4.9 (46)	4.9 (46)	54.0 (58)	12.8 (43)	13.4 (45)	9.9 (47)	15.9 (51)	27.7 (45)	-8.7 (46)
5th Percentile	14.2	14.2	93.4	22.6	21.6	15.0	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	11.8	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	9.6	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	8.1	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	4.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	182	360	392	403

parentheses contain percentile rankings.

D.E. Shaw Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

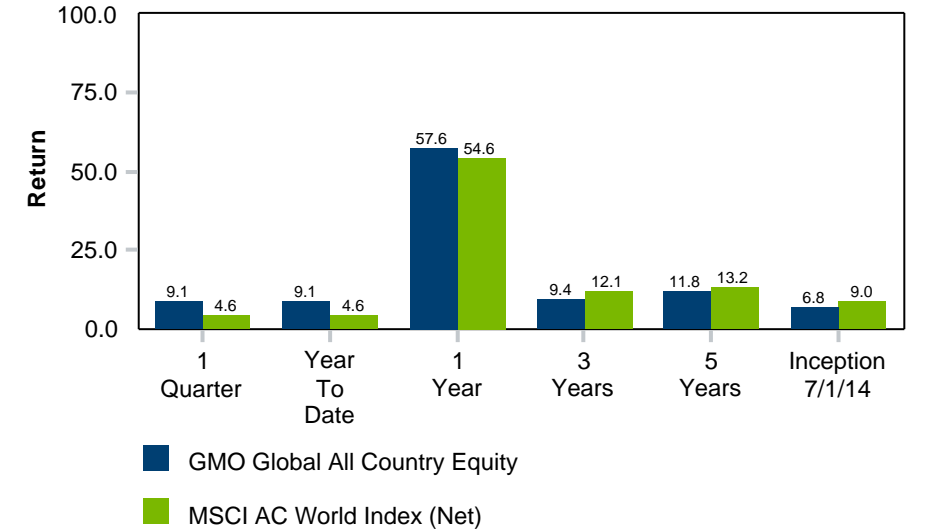
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
D.E. Shaw	0.00	2.45	0.00	0.97	0.83	-0.12	1.01	13.30	14.97	0.99
MSCI World Index (Net)	0.00	0.00	N/A	1.00	0.85	0.00	1.00	13.36	14.63	1.00
FTSE 3 Month T-Bill	-12.52	14.68	-0.85	0.04	N/A	1.20	0.00	1.15	0.25	-0.20

GMO Global All Country Equity Performance Summary

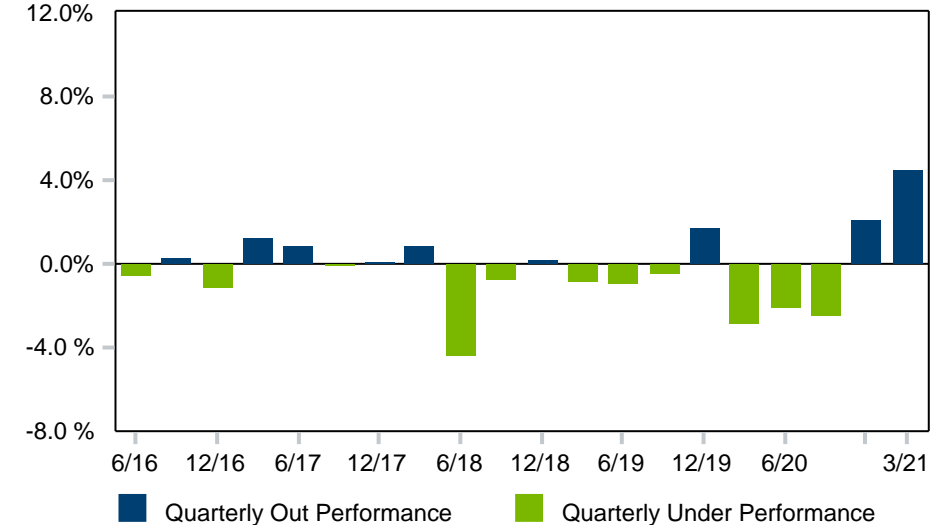
Account Information as of 03/31/21

Product Name : GMO:Global Eq All;III (GMGEX)
 Fund Family : Grantham Mayo Van Otterloo & Co LLC
 Ticker : GMGEX
 Peer Group : IM Global Multi-Cap Core Equity (MF)
 Benchmark : MSCI AC World Index (Net)
 Fund Inception : 11/26/1996
 Portfolio Manager : Team Managed
 Total Assets : \$1,703.30 Million
 Total Assets Date : 03/31/2021
 Gross Expense : 0.59%
 Net Expense : 0.58%
 Turnover : 20%

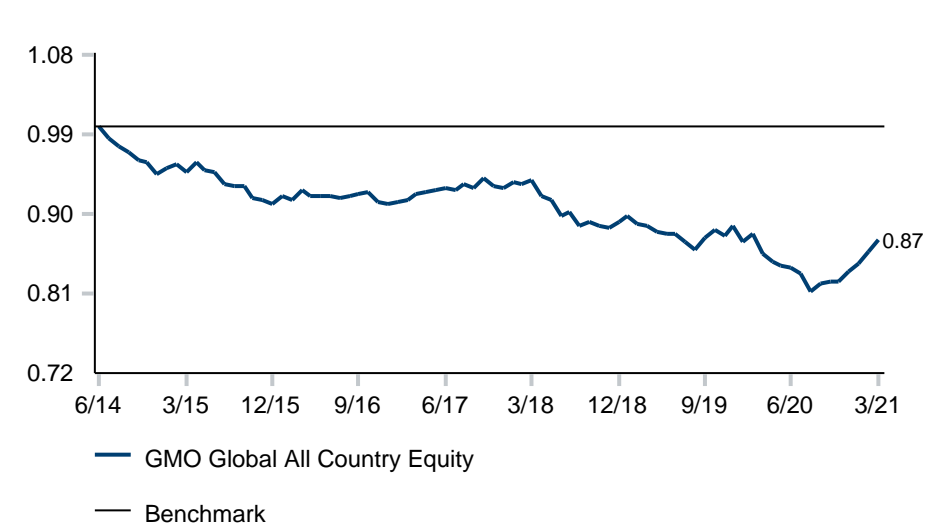
Return Summary



Quarterly Excess Performance

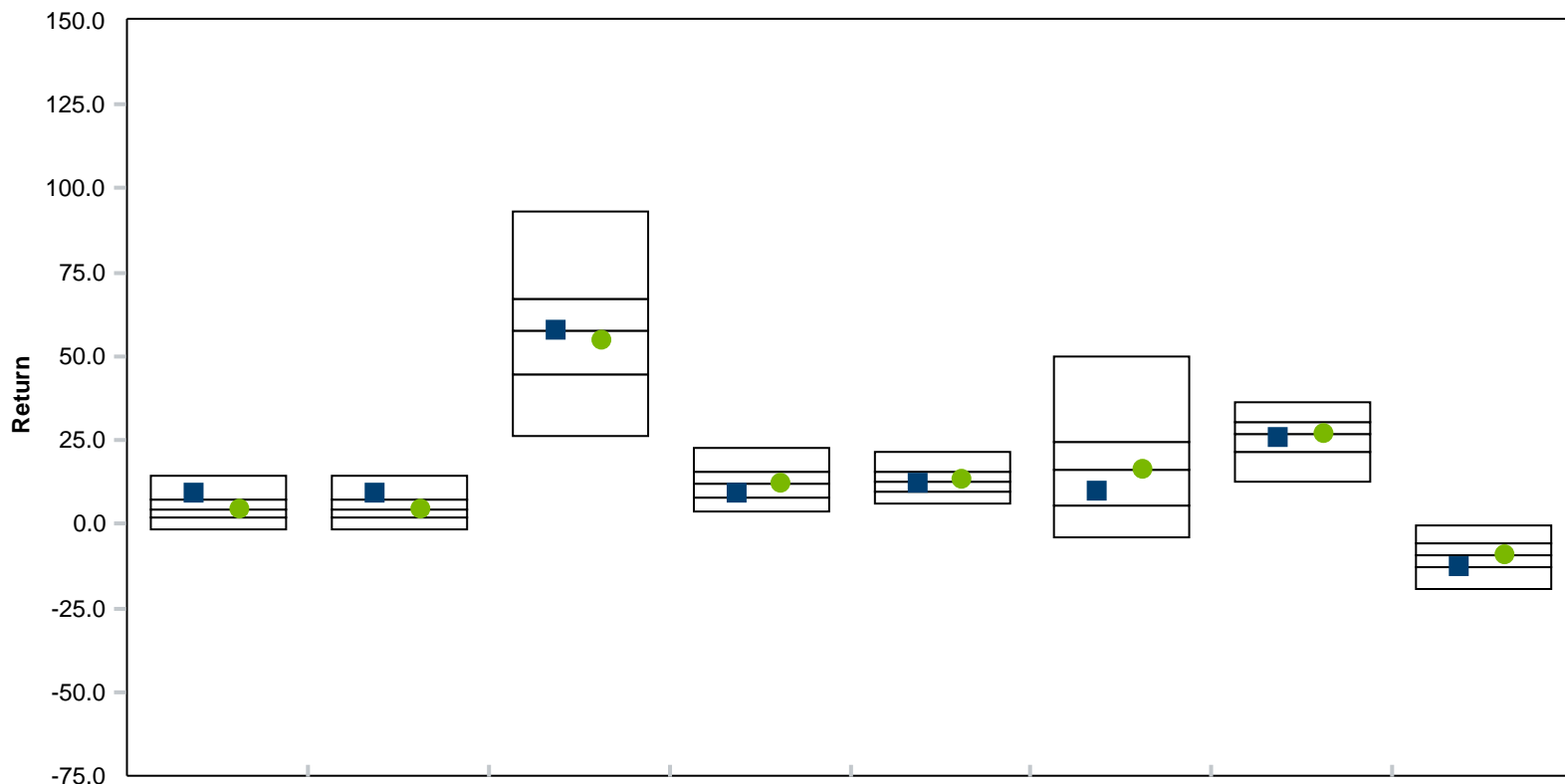


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

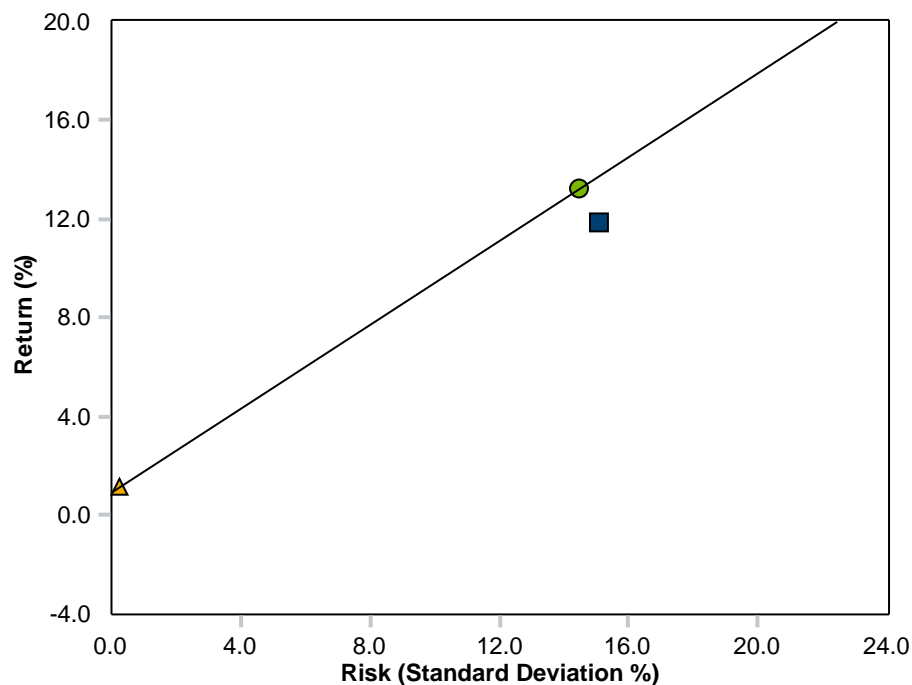


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
■ GMO Global All Country Equity	9.1 (18)	9.1 (18)	57.6 (51)	9.4 (67)	11.8 (59)	9.5 (67)	25.8 (56)	-13.1 (76)
● MSCI AC World Index (Net)	4.6 (49)	4.6 (49)	54.6 (56)	12.1 (49)	13.2 (46)	16.3 (50)	26.6 (51)	-9.4 (50)
5th Percentile	14.2	14.2	93.4	22.6	21.6	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	360	392	403

parentheses contain percentile rankings.

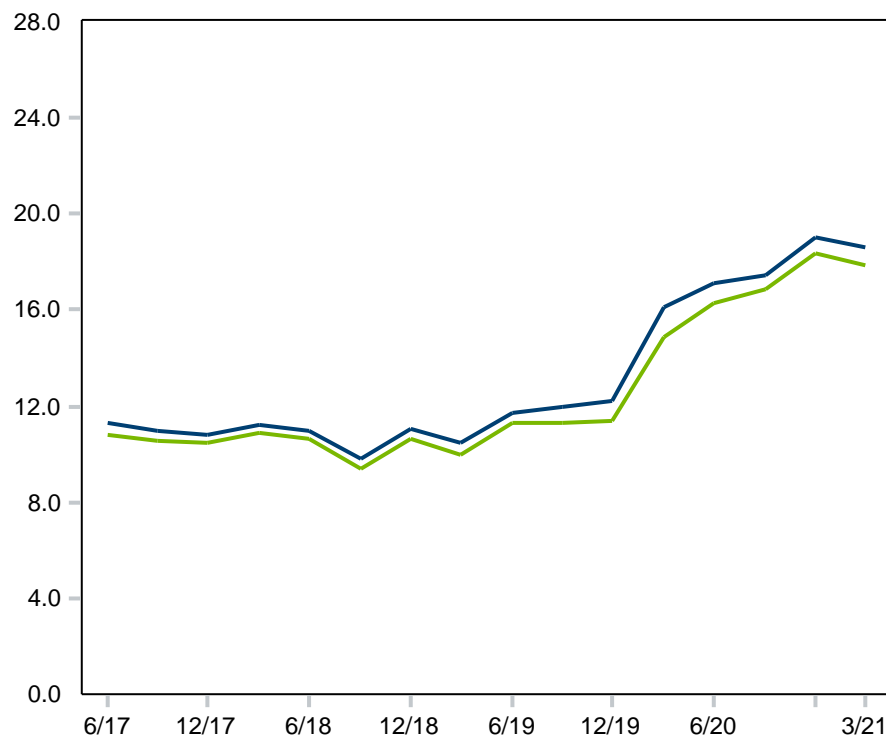
GMO Global All Country Equity Risk Profile

**Annualized Return vs. Annualized Standard Deviation
5 Years**



- GMO Global All Country Equity
- MSCI AC World Index (Net)
- ▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



- GMO Global All Country Equity
- MSCI AC World Index (Net)

5 Years Historical Statistics

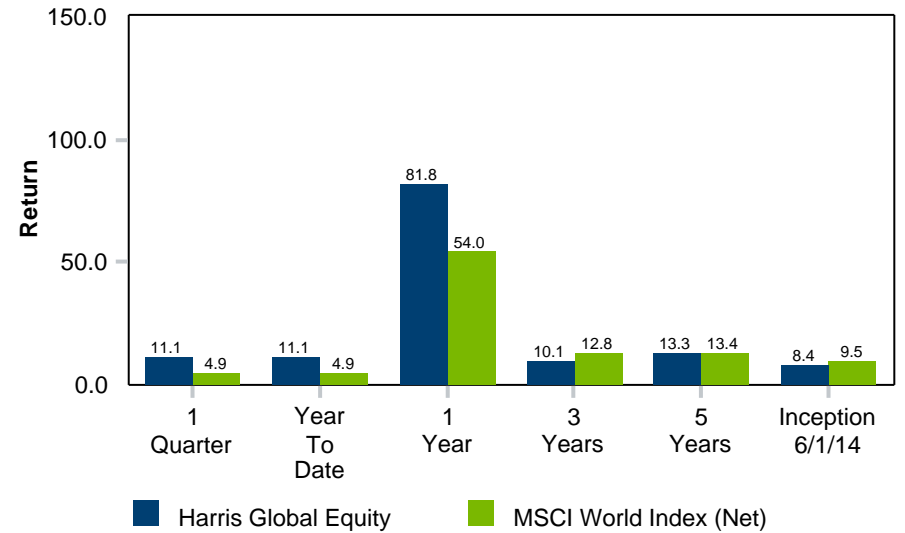
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
GMO Global All Country Equity	-1.14	3.43	-0.33	0.95	0.74	-1.34	1.02	11.84	15.10	0.97
MSCI AC World Index (Net)	0.00	0.00	N/A	1.00	0.85	0.00	1.00	13.21	14.48	1.00
FTSE 3 Month T-Bill	-12.37	14.53	-0.85	0.05	N/A	1.20	0.00	1.15	0.25	-0.22

Harris Global Equity Performance Summary

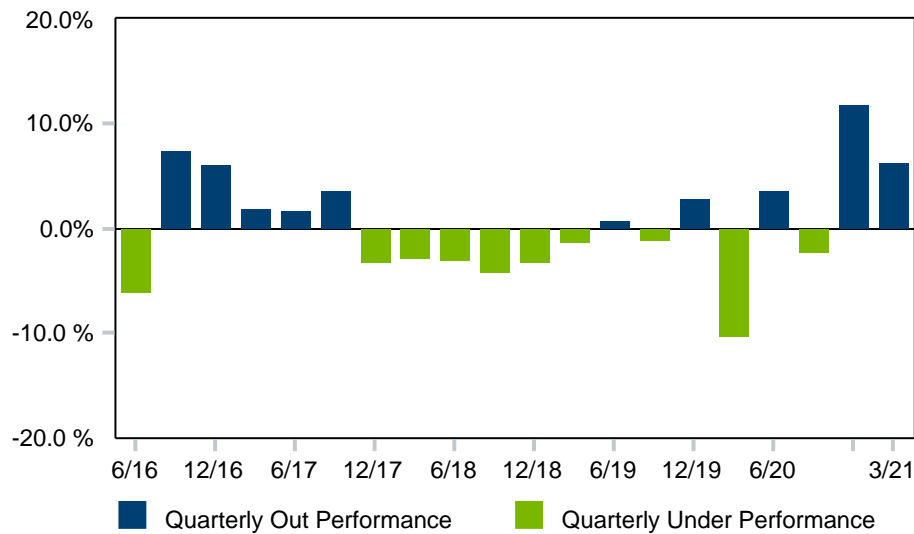
Account Information

Account Name: Harris Global Equity
 Inception Date: 06/01/2014
 Account Structure: Separate Account
 Asset Class: Global Equity
 Benchmark: MSCI World Index (Net)
 Peer Group: IM Global Equity (SA+CF)

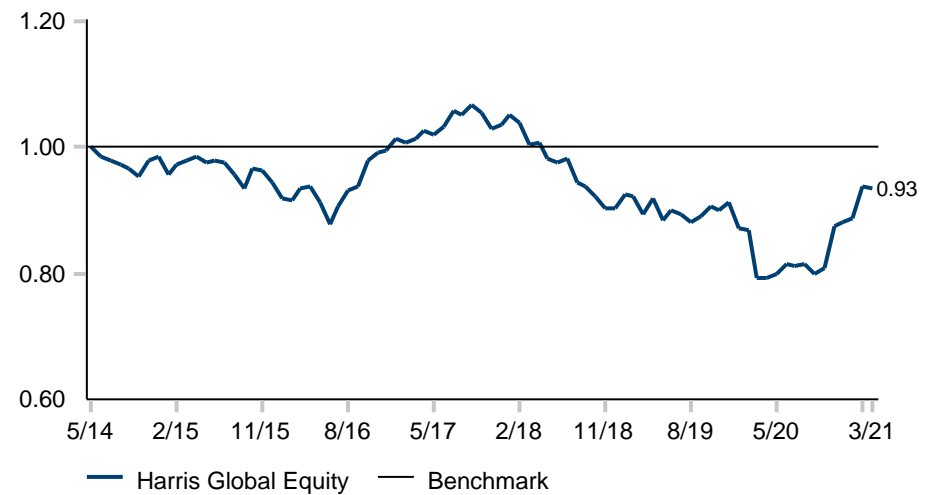
Return Summary



Quarterly Excess Performance

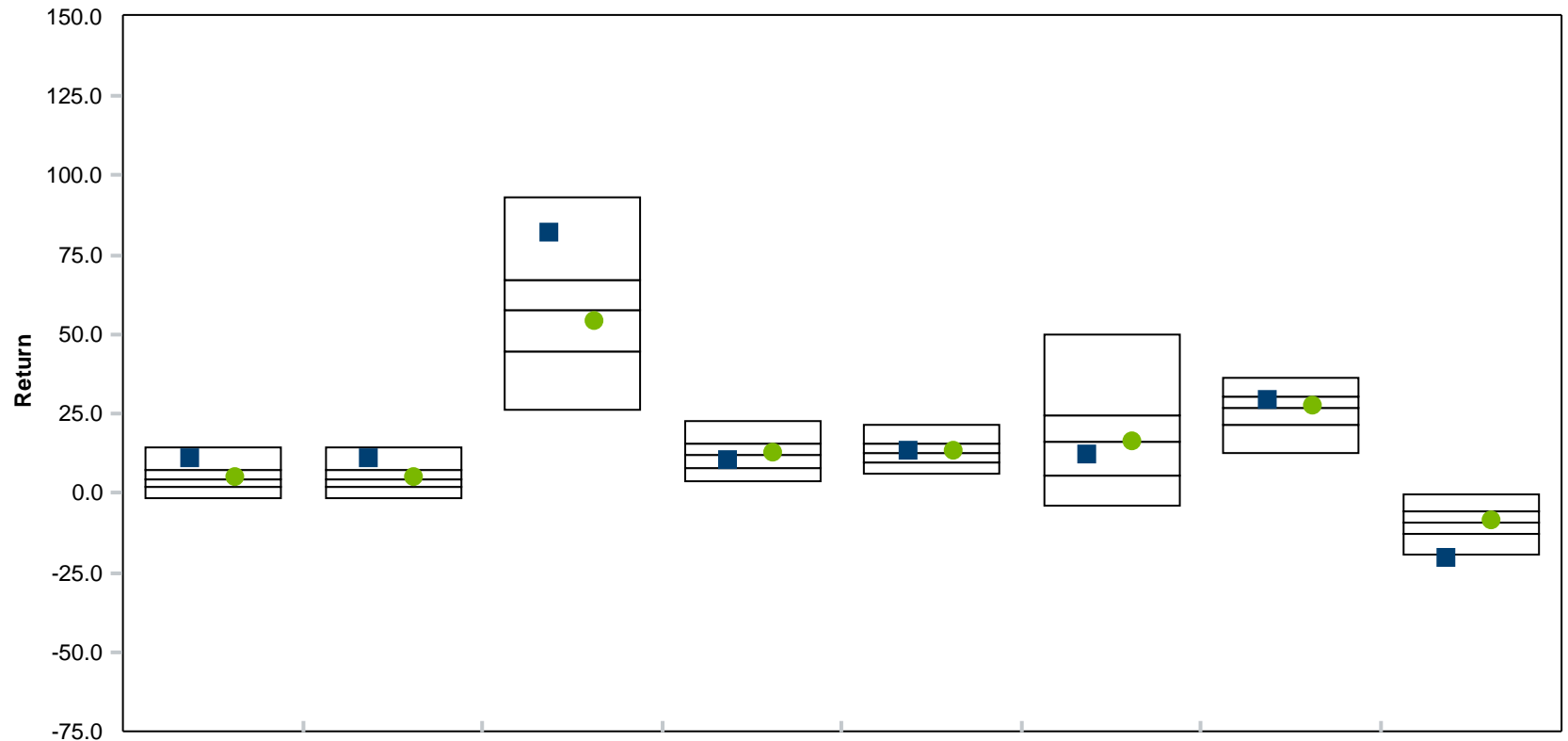


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

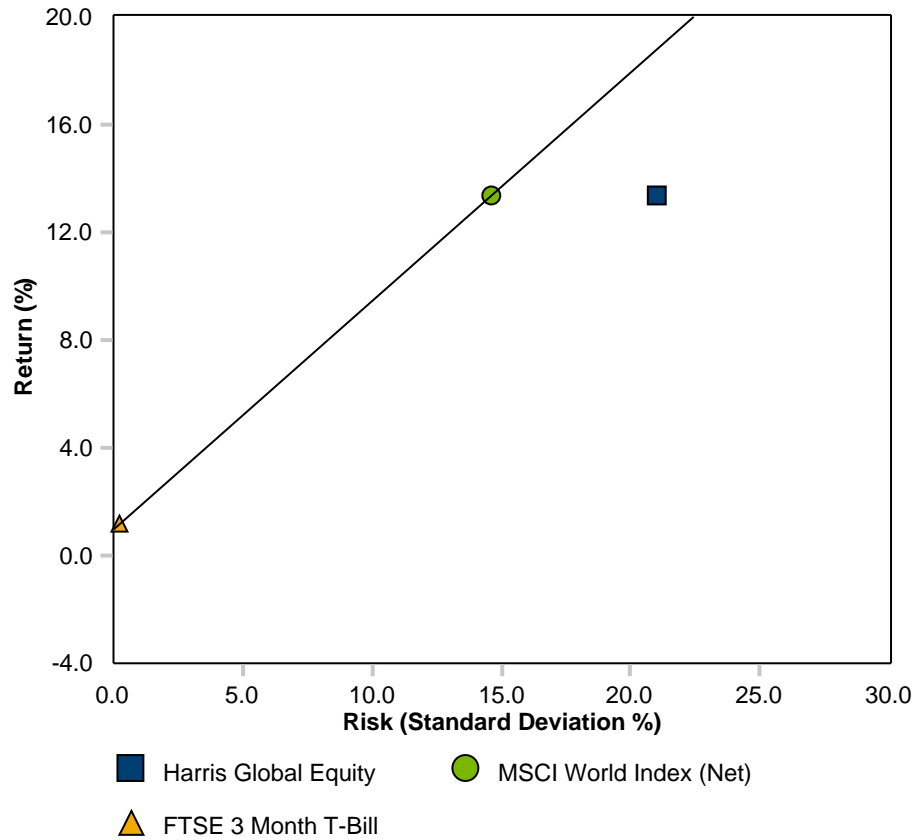


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
■ Harris Global Equity	11.1 (12)	11.1 (12)	81.8 (11)	10.1 (63)	13.3 (45)	12.1 (61)	28.9 (37)	-20.4 (97)
● MSCI World Index (Net)	4.9 (46)	4.9 (46)	54.0 (58)	12.8 (43)	13.4 (45)	15.9 (51)	27.7 (45)	-8.7 (46)
5th Percentile	14.2	14.2	93.4	22.6	21.6	50.1	36.3	-0.3
1st Quartile	7.4	7.4	67.0	15.7	15.9	24.2	30.6	-5.9
Median	4.4	4.4	57.6	11.9	12.8	16.1	26.7	-9.4
3rd Quartile	2.2	2.2	44.9	8.0	9.7	5.6	21.7	-13.1
95th Percentile	-1.8	-1.8	26.4	4.0	6.3	-4.0	12.9	-19.1
Population	342	342	340	325	295	360	392	403

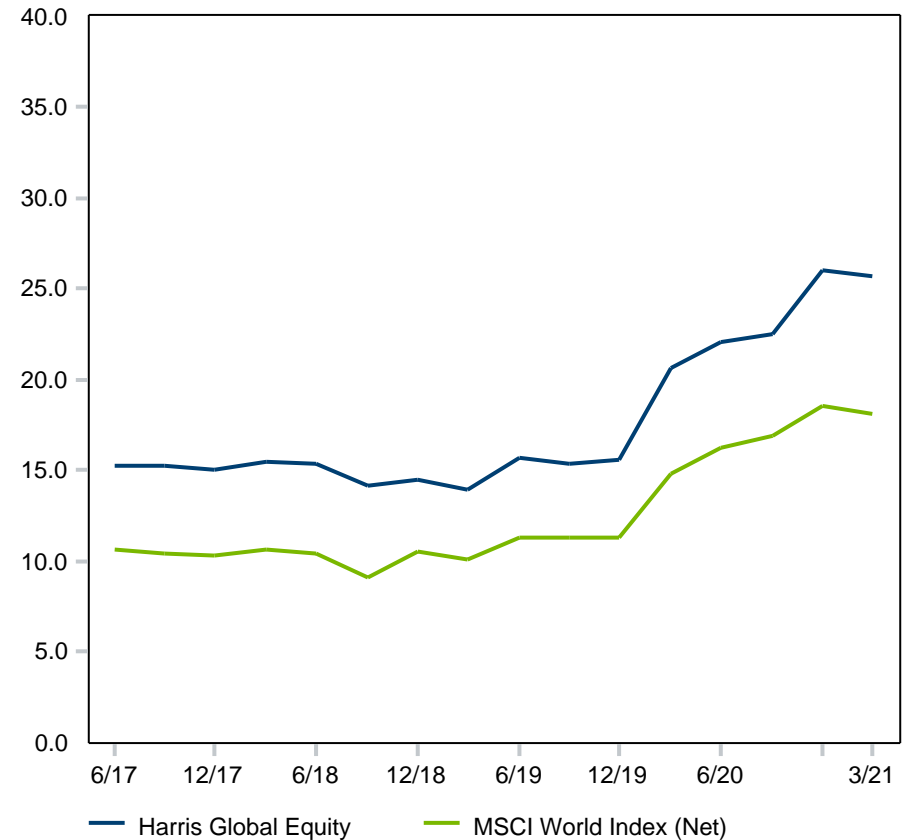
parentheses contain percentile rankings.

Harris Global Equity Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



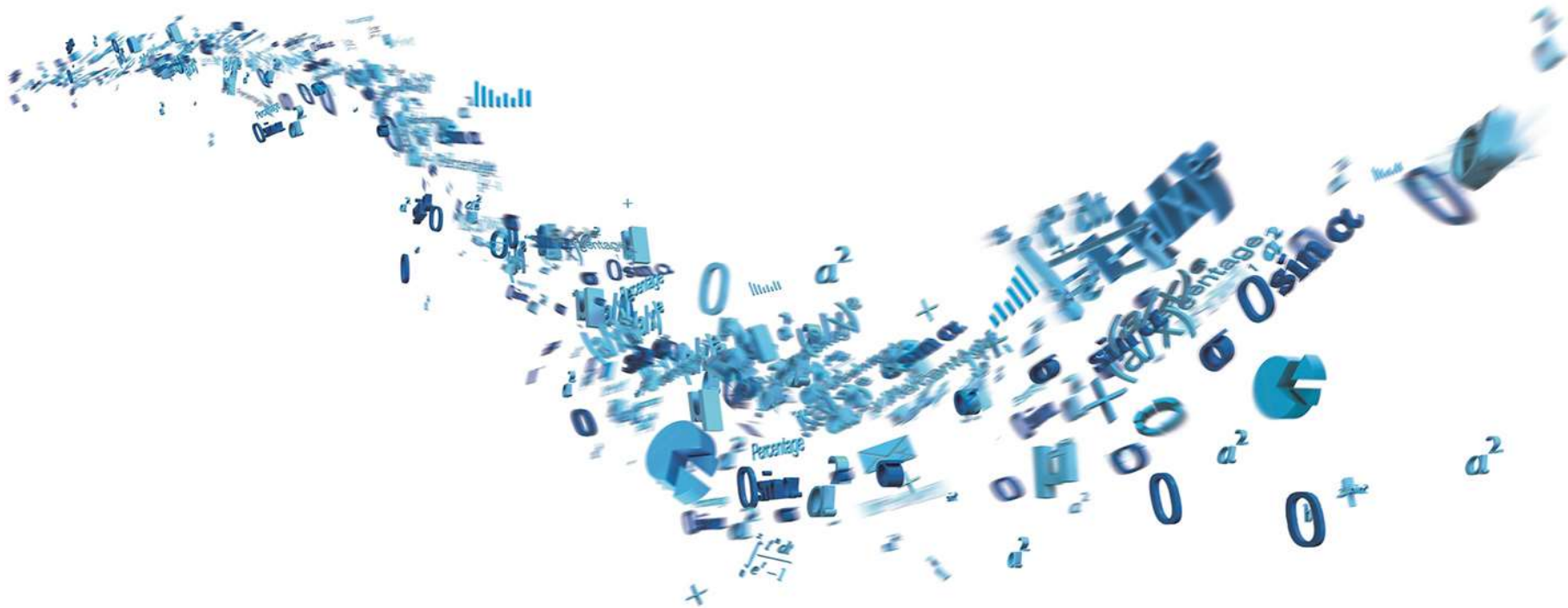
Rolling 3 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Harris Global Equity	1.14	8.96	0.13	0.88	0.65	-3.58	1.35	13.35	21.07	0.94
MSCI World Index (Net)	0.00	0.00	N/A	1.00	0.85	0.00	1.00	13.36	14.63	1.00
FTSE 3 Month T-Bill	-12.52	14.68	-0.85	0.04	N/A	1.20	0.00	1.15	0.25	-0.20

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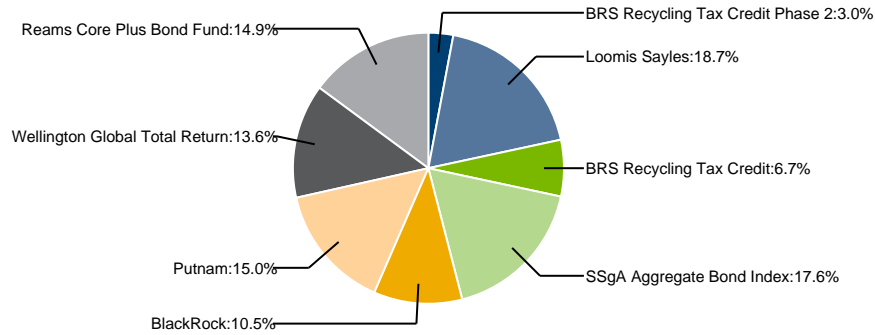


Fixed Income

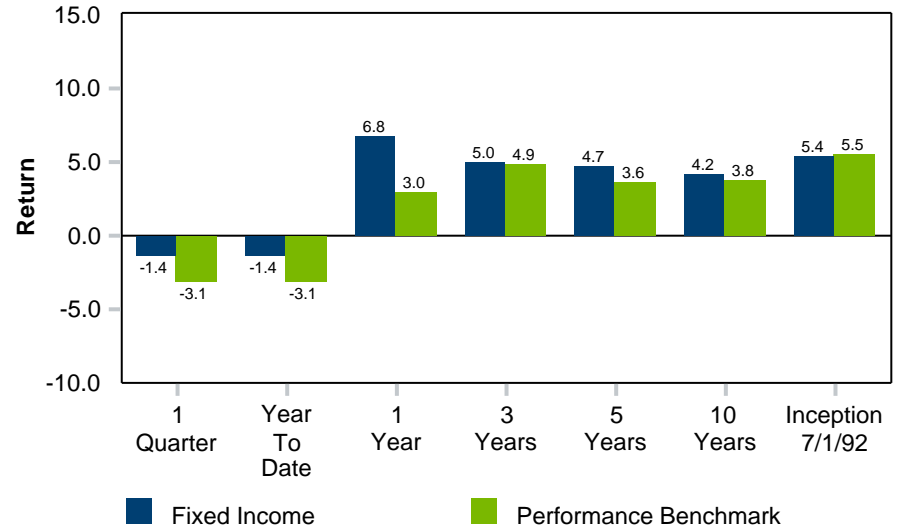
Fixed Income Portfolio Overview

Current Allocation

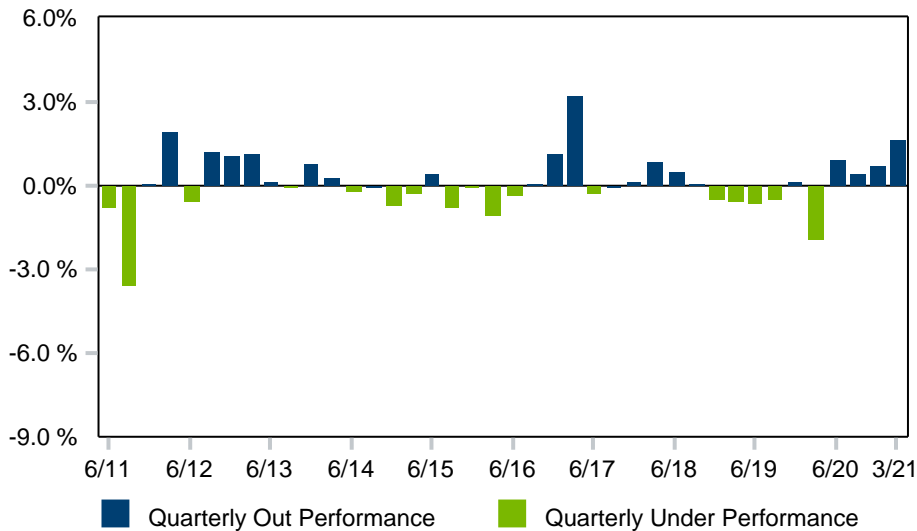
March 31, 2021 : \$2,611M



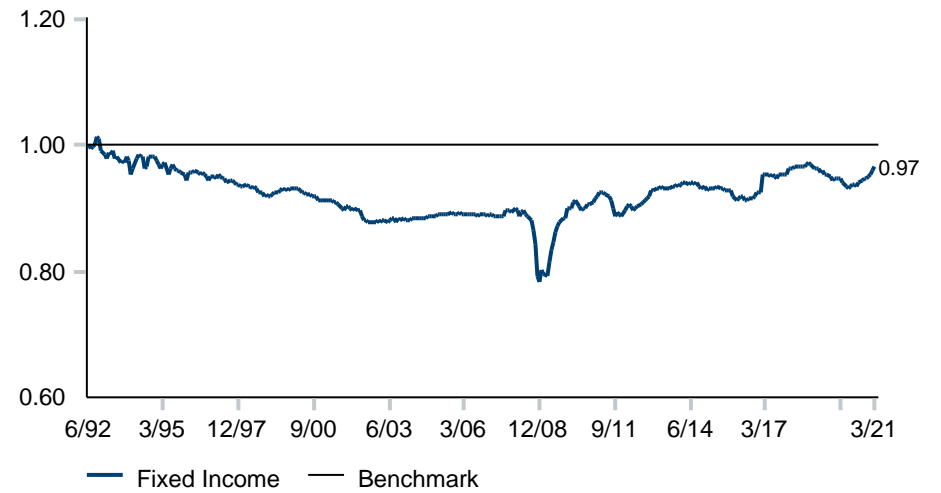
Return Summary



Quarterly Excess Performance

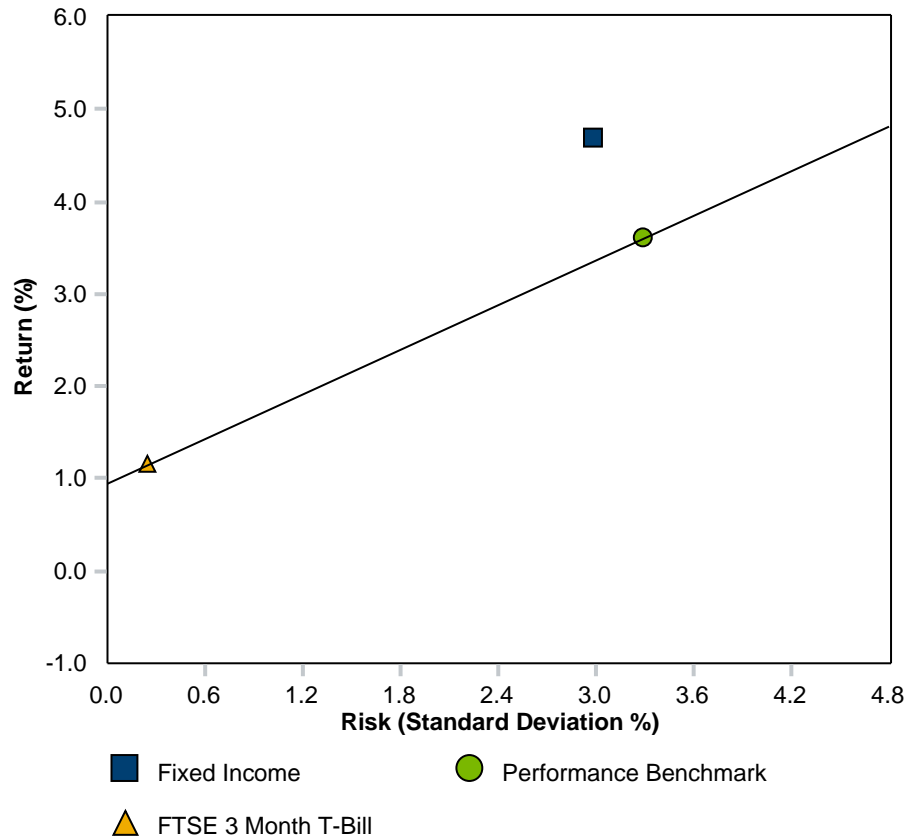


Ratio of Cumulative Wealth - Since Inception

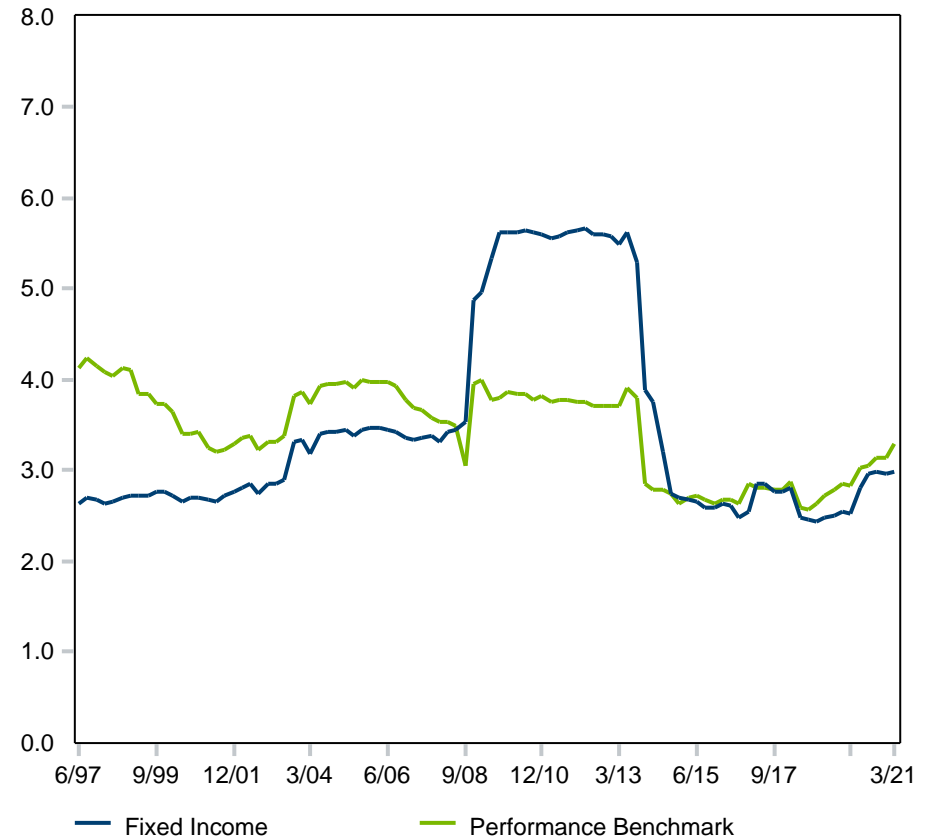


Fixed Income Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation

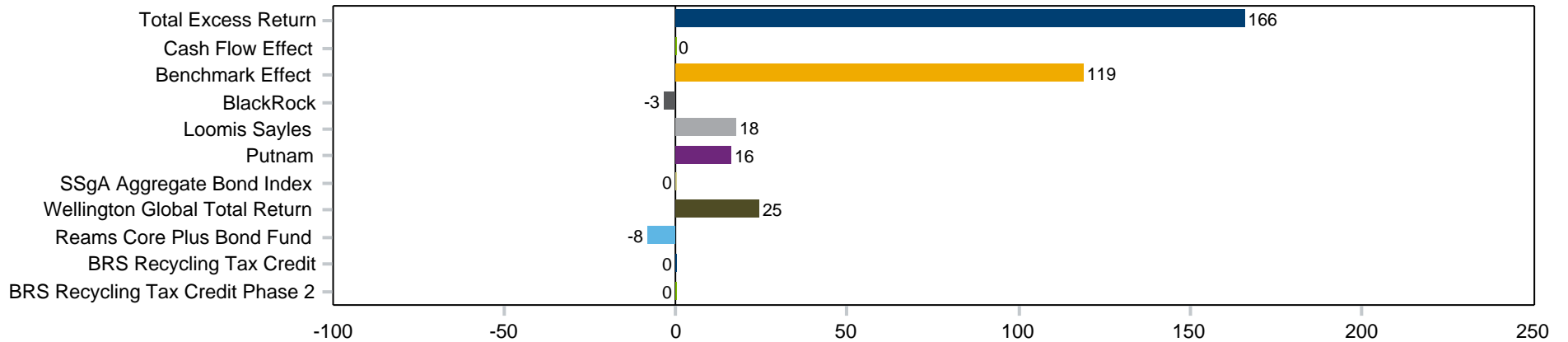


5 Years Historical Statistics

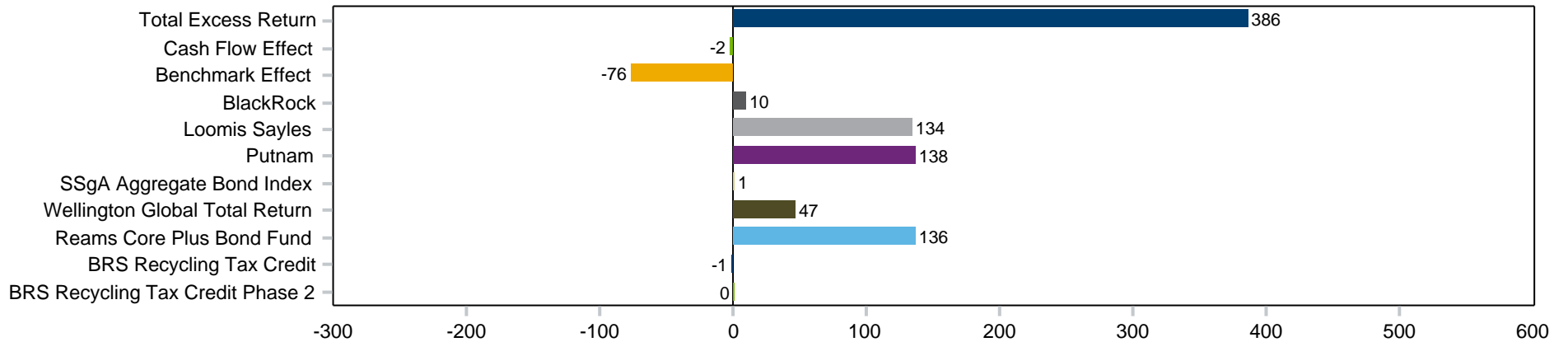
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Fixed Income	1.03	1.81	0.57	0.70	1.16	1.90	0.76	4.67	2.99	0.84
Performance Benchmark	0.00	0.00	N/A	1.00	0.75	0.00	1.00	3.59	3.29	1.00
FTSE 3 Month T-Bill	-2.44	3.25	-0.75	0.05	N/A	1.09	0.02	1.15	0.25	0.22

Asset Class Attribution

1 Quarter



1 Year



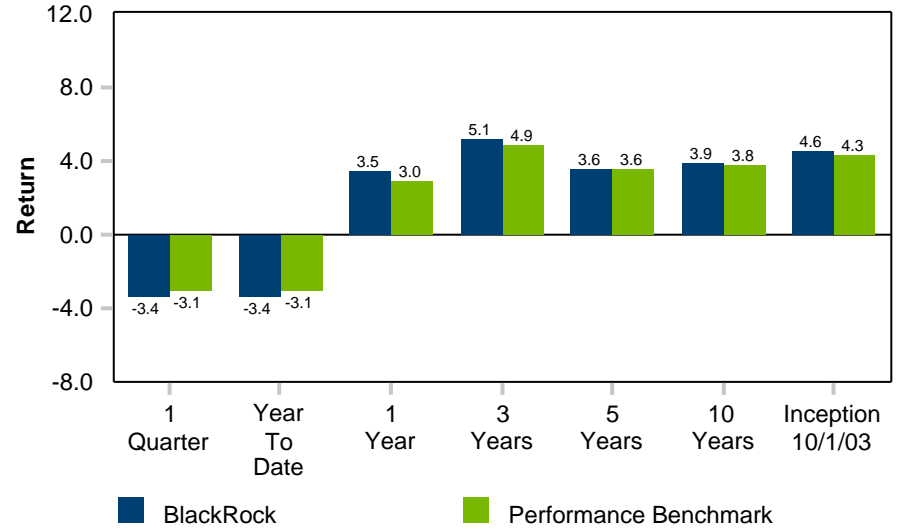
*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. This represents an approximate 9.9% yield for the 2017 fiscal year. The value shown above represents the year-end market value in accordance with GASB Statement 72, representing the 14 years of annual income, and has been incorporated into Total Fixed Income and Total Fund performance.

BlackRock Performance Summary

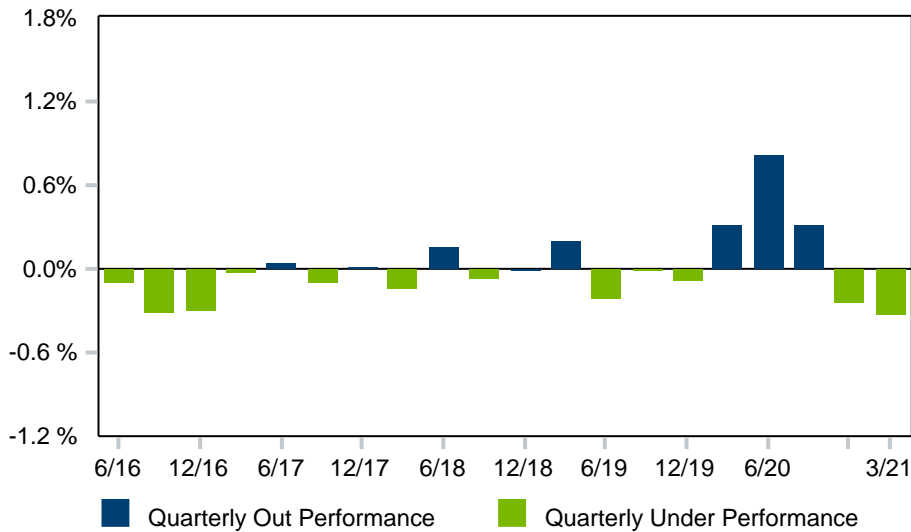
Account Information

Account Name: BlackRock
 Inception Date: 09/30/2003
 Account Structure: Separate Account
 Asset Class: US Fixed Income
 Benchmark: Performance Benchmark
 Peer Group: IM U.S. Fixed Income (SA+CF)

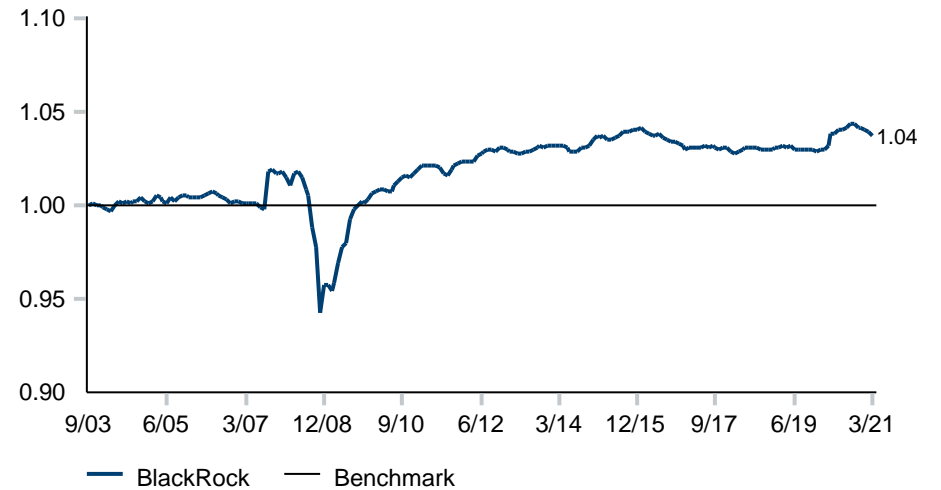
Return Summary



Quarterly Excess Performance

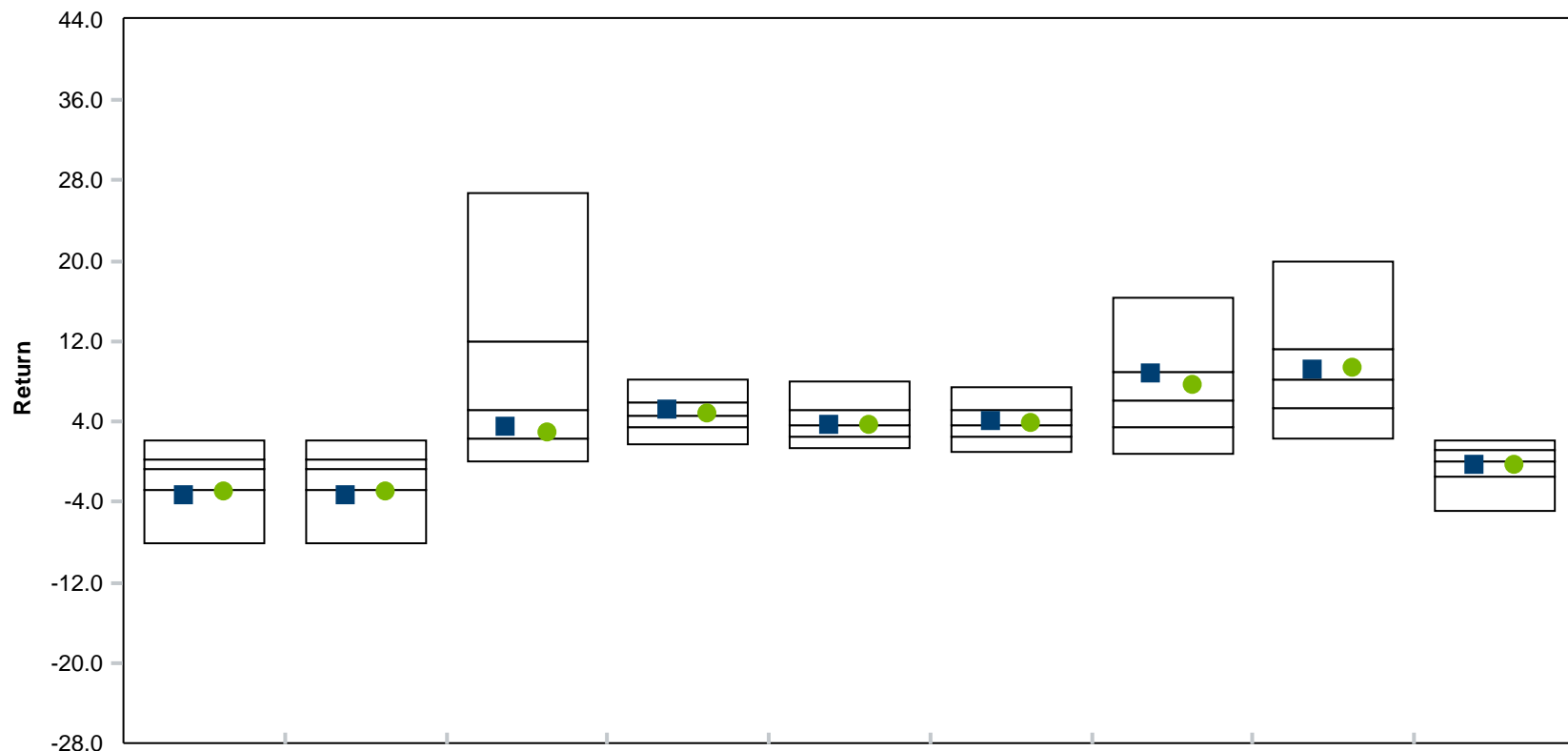


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

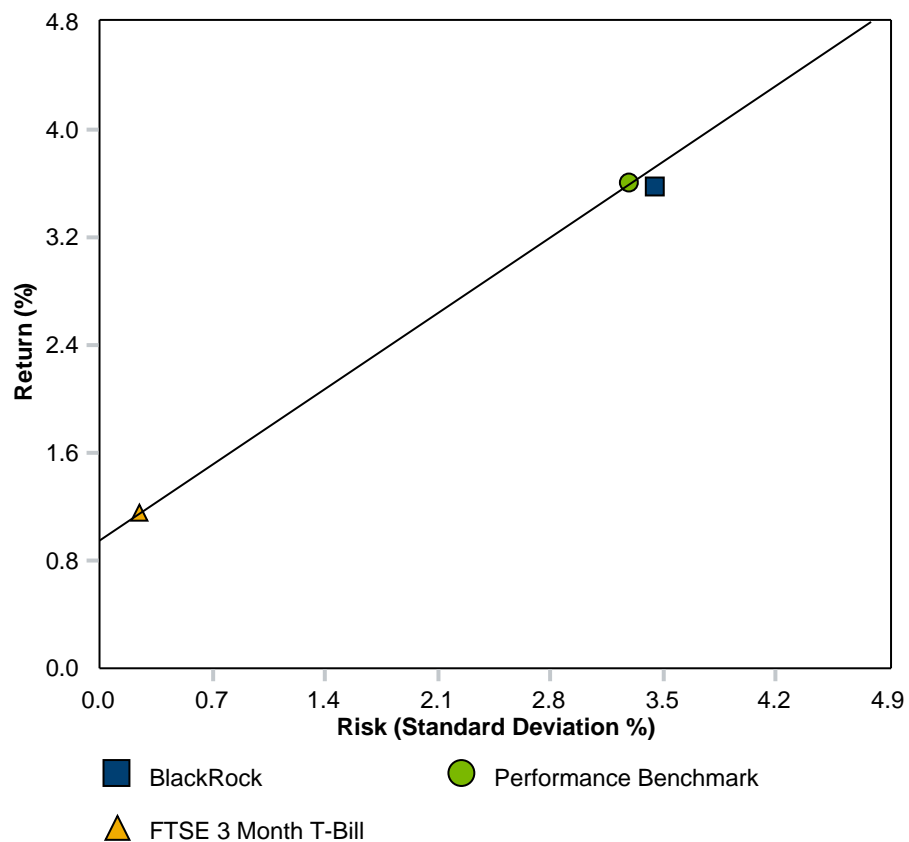


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ BlackRock	-3.4 (85)	-3.4 (85)	3.5 (64)	5.1 (39)	3.6 (52)	3.9 (44)	8.8 (26)	9.2 (39)	-0.3 (59)
● Performance Benchmark	-3.1 (80)	-3.1 (80)	3.0 (69)	4.9 (46)	3.6 (51)	3.8 (48)	7.6 (37)	9.3 (37)	-0.3 (57)
5th Percentile	2.1	2.1	26.7	8.2	8.0	7.5	16.3	19.9	2.1
1st Quartile	0.3	0.3	11.9	5.8	5.2	5.1	8.9	11.2	1.3
Median	-0.7	-0.7	5.2	4.7	3.6	3.7	6.2	8.2	0.1
3rd Quartile	-2.8	-2.8	2.4	3.4	2.4	2.4	3.5	5.3	-1.6
95th Percentile	-8.2	-8.2	0.0	1.7	1.4	0.9	0.8	2.4	-4.9
Population	940	940	933	894	828	704	986	1,035	1,085

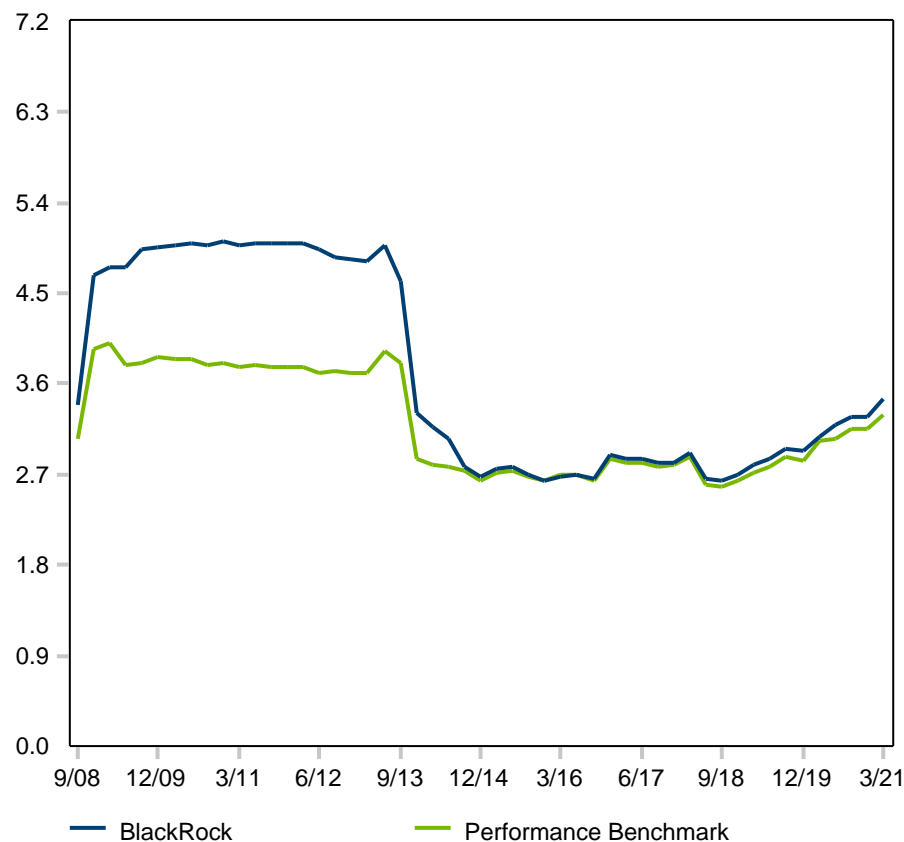
parentheses contain percentile rankings.

BlackRock Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

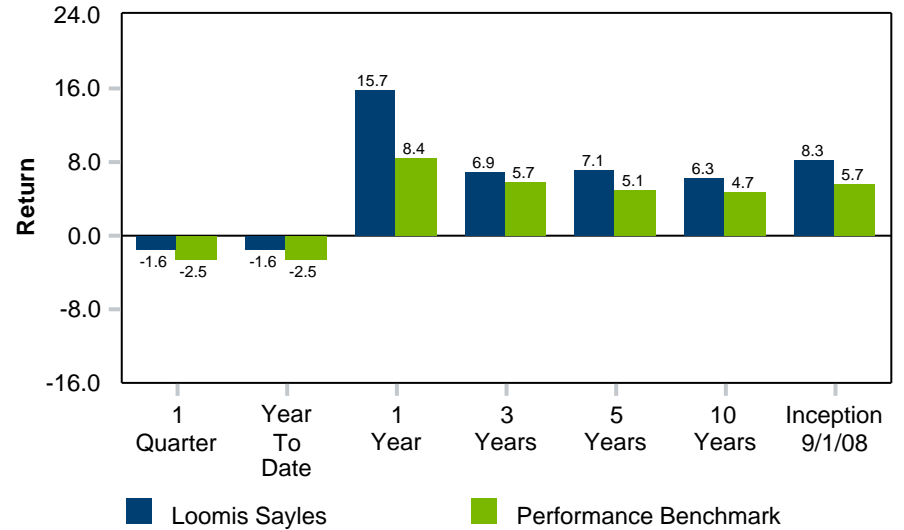
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
BlackRock	-0.02	0.43	-0.04	0.99	0.71	-0.16	1.04	3.57	3.45	0.99
Performance Benchmark	0.00	0.00	N/A	1.00	0.75	0.00	1.00	3.59	3.29	1.00
FTSE 3 Month T-Bill	-2.44	3.25	-0.75	0.05	N/A	1.09	0.02	1.15	0.25	0.22

Loomis Sayles Performance Summary

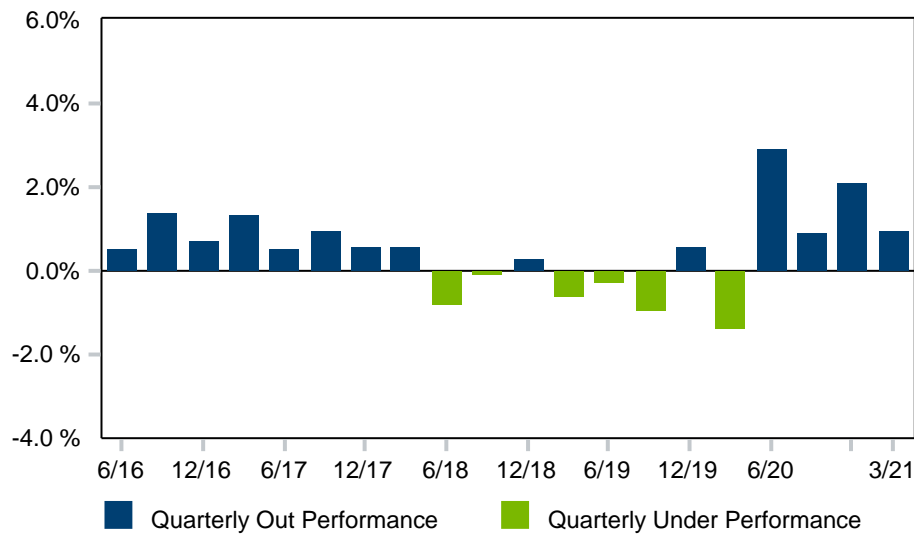
Account Information

Account Name: Loomis Sayles
 Inception Date: 06/30/2008
 Account Structure: Separate Account
 Asset Class: US Fixed Income
 Benchmark: Performance Benchmark
 Peer Group: IM U.S. Fixed Income (SA+CF)

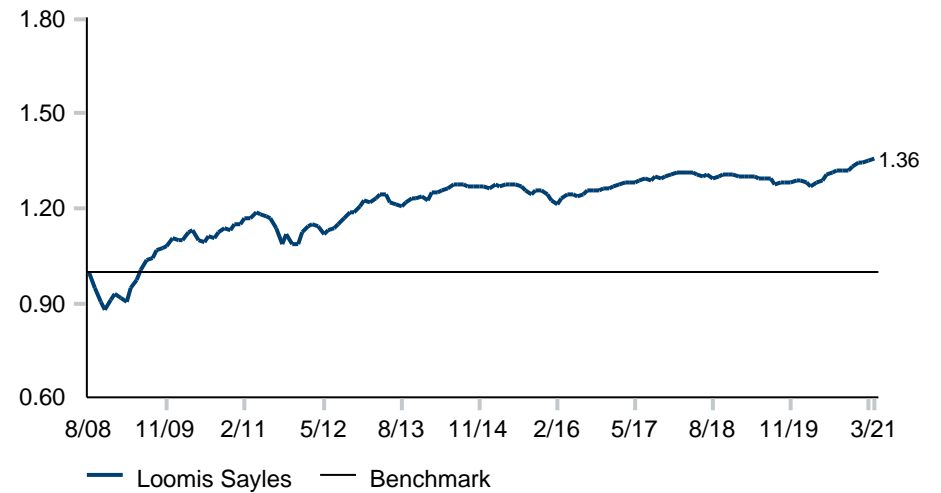
Return Summary



Quarterly Excess Performance

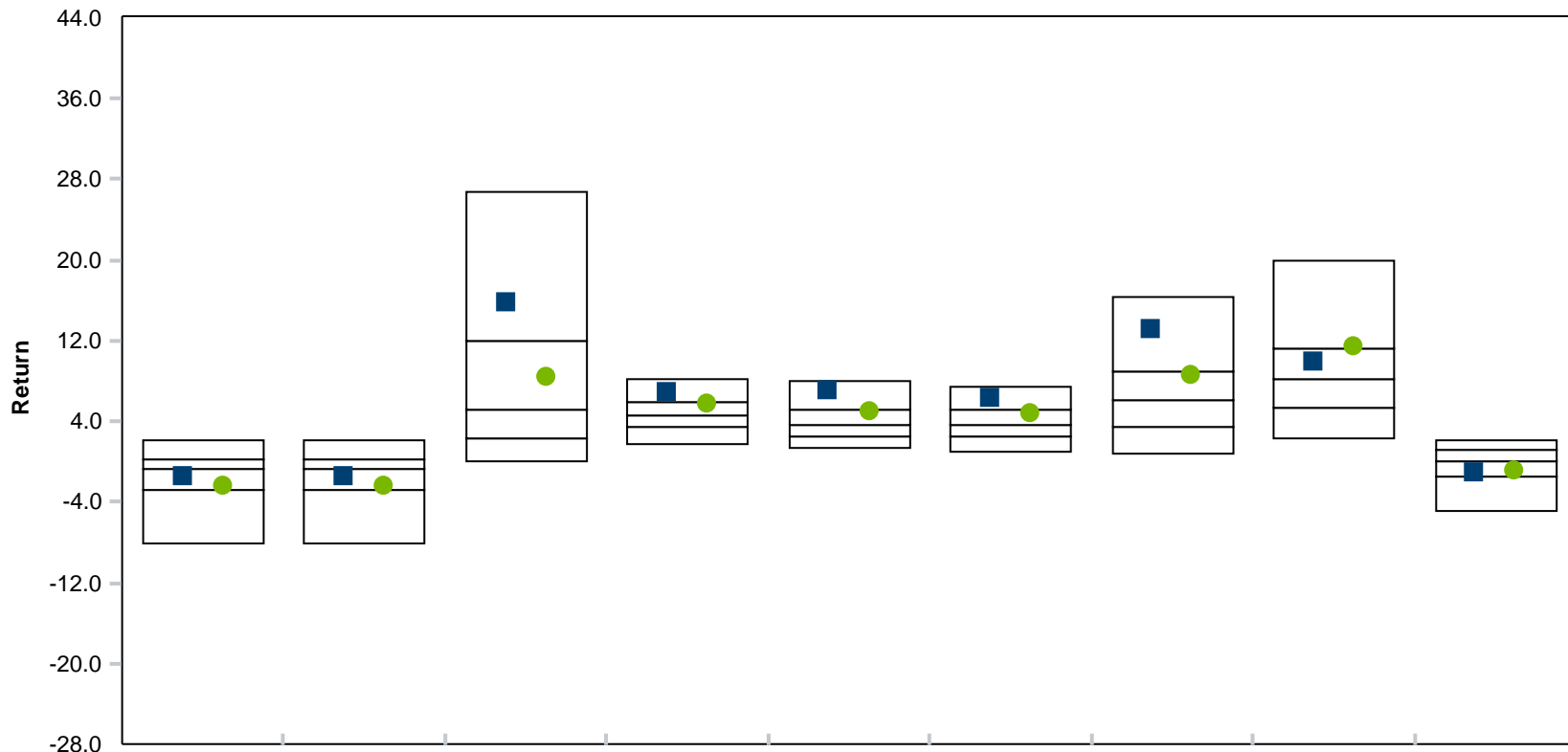


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

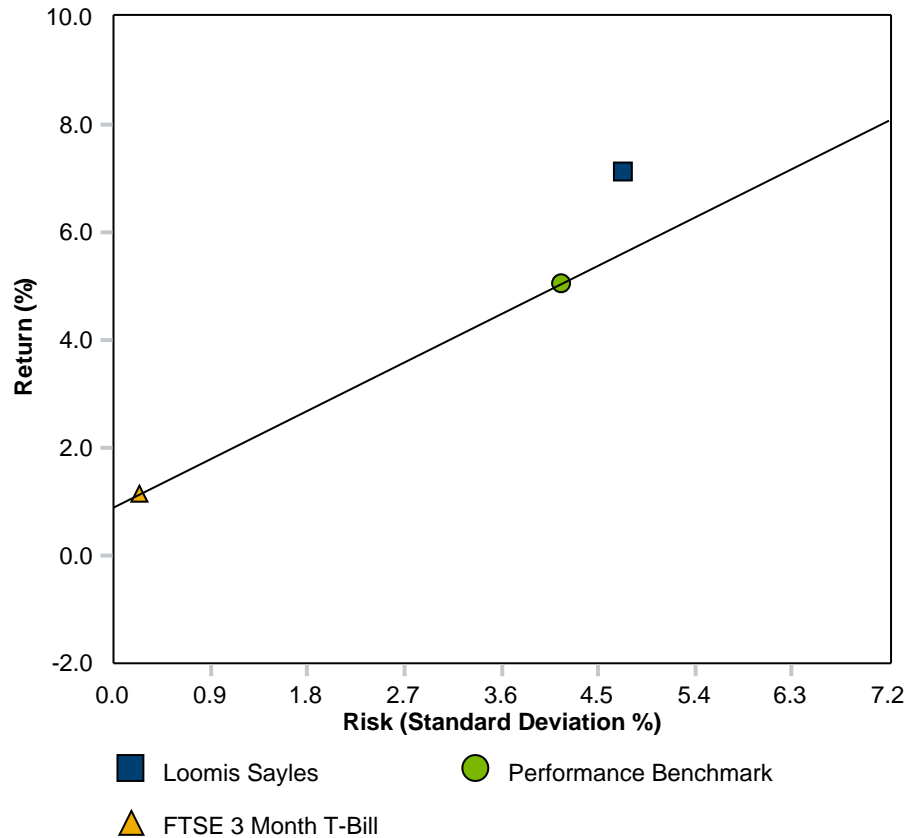


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Loomis Sayles	-1.6 (60)	-1.6 (60)	15.7 (19)	6.9 (13)	7.1 (11)	6.3 (12)	13.1 (9)	10.0 (31)	-1.1 (70)
● Performance Benchmark	-2.5 (72)	-2.5 (72)	8.4 (36)	5.7 (28)	5.1 (27)	4.7 (30)	8.5 (28)	11.4 (25)	-1.0 (69)
5th Percentile	2.1	2.1	26.7	8.2	8.0	7.5	16.3	19.9	2.1
1st Quartile	0.3	0.3	11.9	5.8	5.2	5.1	8.9	11.2	1.3
Median	-0.7	-0.7	5.2	4.7	3.6	3.7	6.2	8.2	0.1
3rd Quartile	-2.8	-2.8	2.4	3.4	2.4	2.4	3.5	5.3	-1.6
95th Percentile	-8.2	-8.2	0.0	1.7	1.4	0.9	0.8	2.4	-4.9
Population	940	940	933	894	828	704	986	1,035	1,085

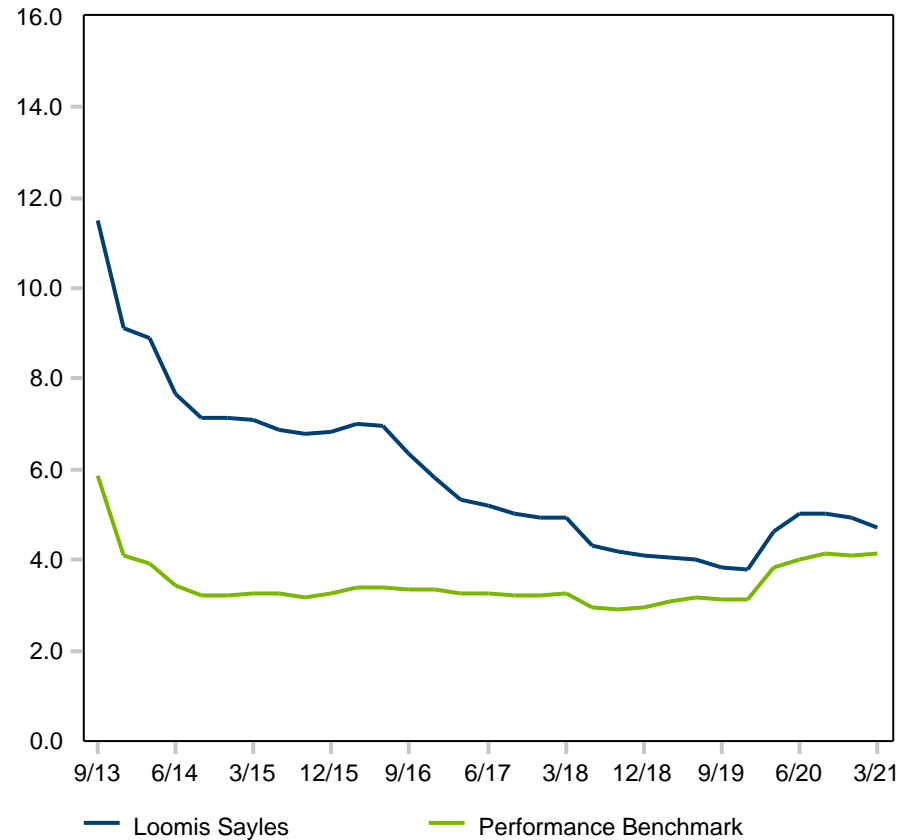
parentheses contain percentile rankings.

Loomis Sayles Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

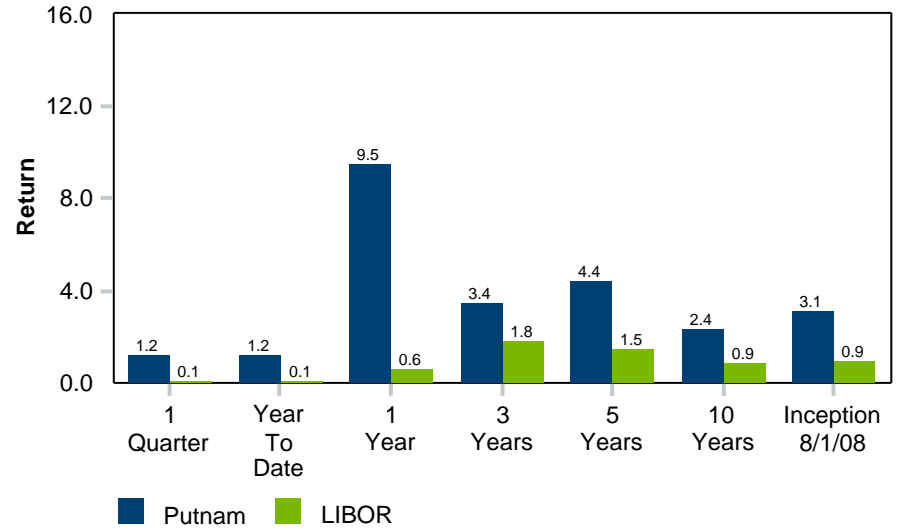
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Loomis Sayles	1.96	1.66	1.18	0.88	1.22	1.64	1.07	7.10	4.73	0.94
Performance Benchmark	0.00	0.00	N/A	1.00	0.93	0.00	1.00	5.05	4.16	1.00
FTSE 3 Month T-Bill	-3.88	4.16	-0.93	0.00	N/A	1.14	0.00	1.15	0.25	0.03

Putnam Performance Summary

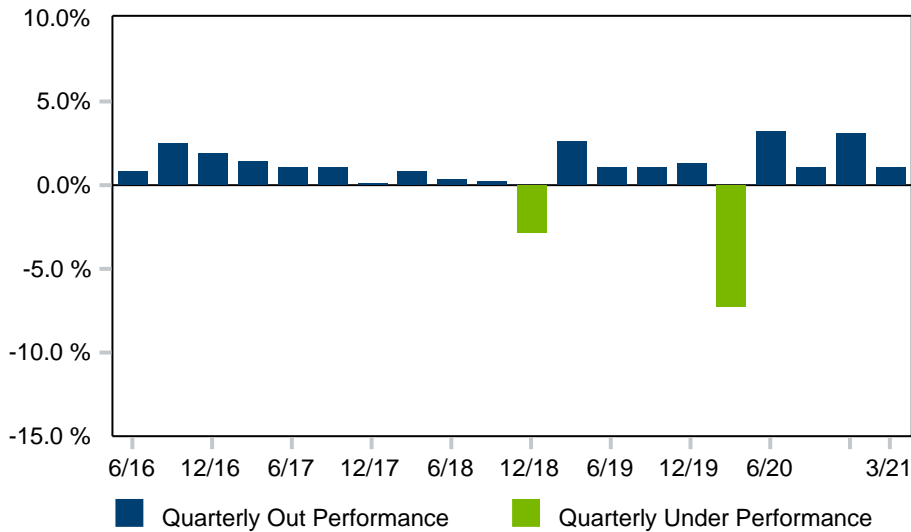
Account Information

Account Name: Putnam
 Inception Date: 06/30/2008
 Account Structure: Commingled Fund
 Asset Class: US Fixed Income
 Benchmark: LIBOR
 Peer Group: IM U.S. Fixed Income (SA+CF)

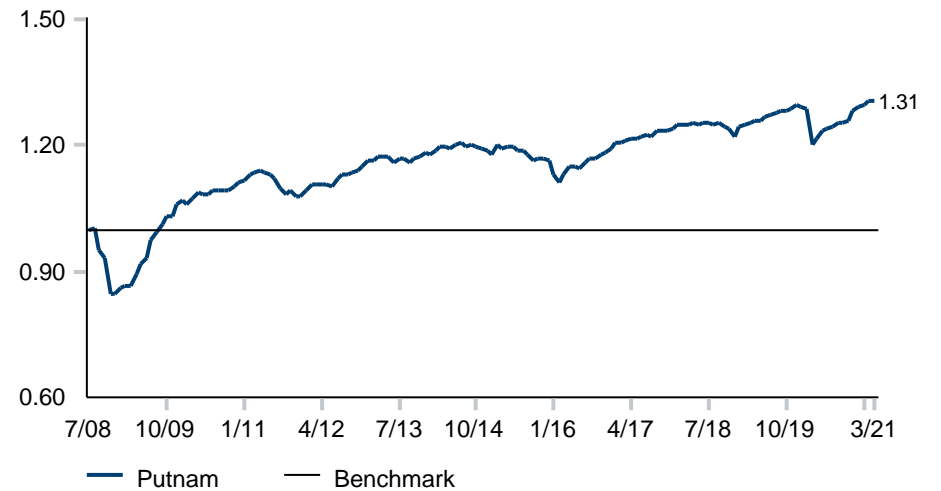
Return Summary



Quarterly Excess Performance

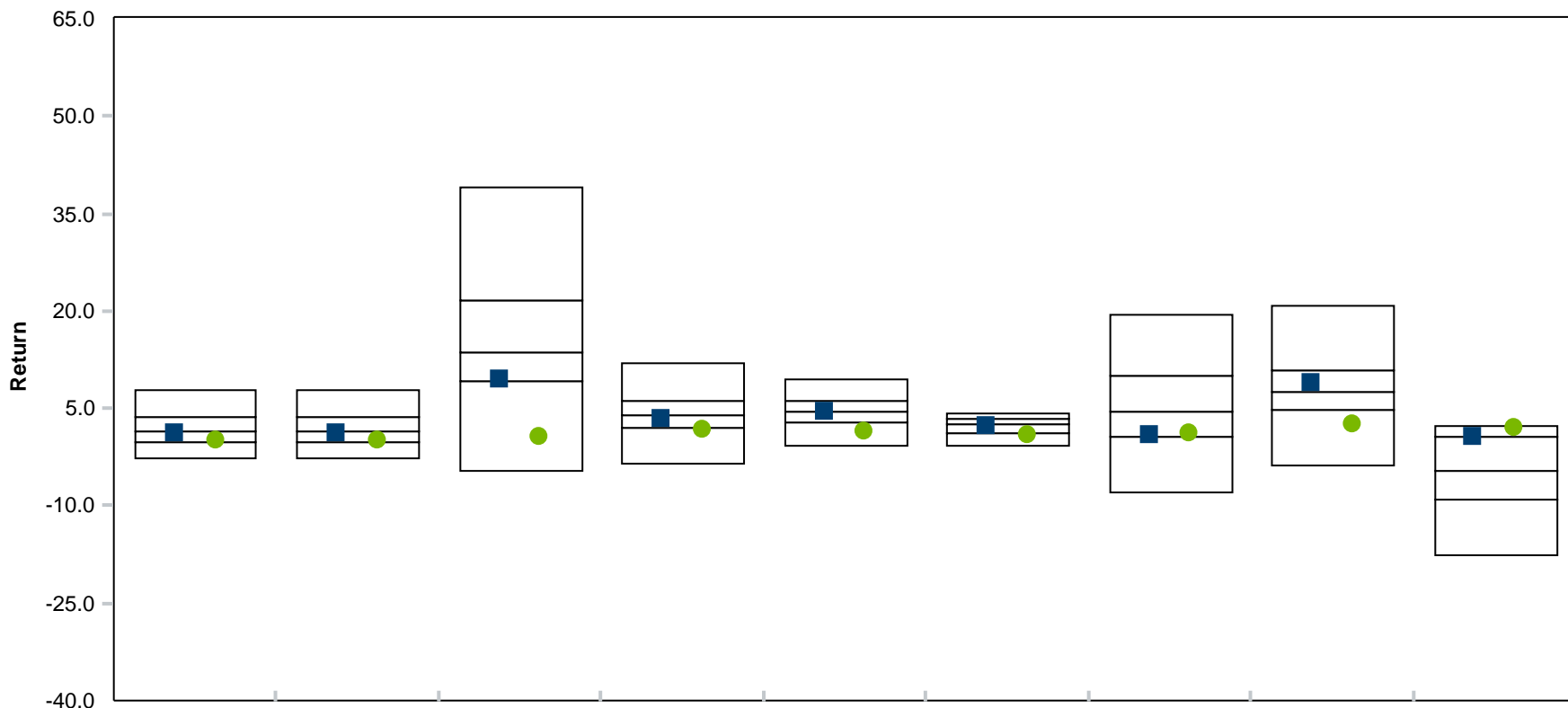


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Absolute Return (MF)

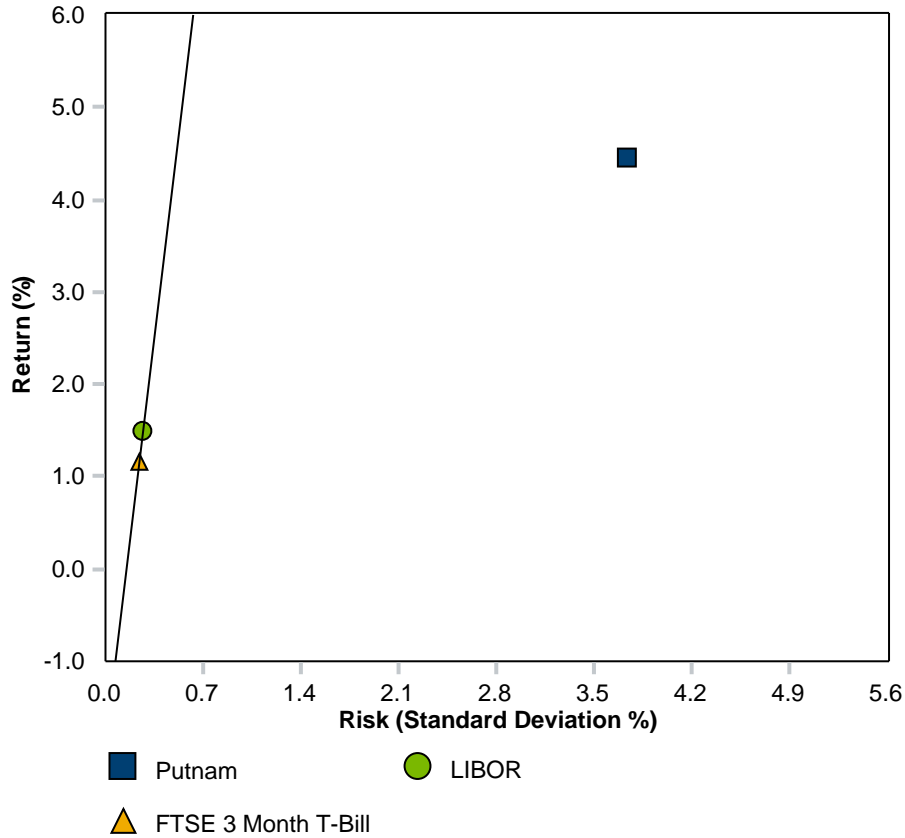


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2020	2019	2018
■ Putnam	1.2 (59)	1.2 (59)	9.5 (74)	3.4 (59)	4.4 (48)	2.4 (54)	0.9 (73)	9.0 (31)	0.7 (23)
● LIBOR	0.1 (72)	0.1 (72)	0.6 (87)	1.8 (79)	1.5 (81)	0.9 (78)	1.1 (72)	2.6 (84)	2.1 (6)
5th Percentile	7.7	7.7	38.9	12.0	9.5	4.1	19.4	20.7	2.4
1st Quartile	3.6	3.6	21.6	6.0	6.1	3.3	10.1	10.7	0.5
Median	1.4	1.4	13.7	3.8	4.4	2.6	4.4	7.7	-4.6
3rd Quartile	-0.1	-0.1	9.1	2.1	2.9	1.2	0.6	4.6	-9.0
95th Percentile	-2.8	-2.8	-4.7	-3.6	-0.9	-0.8	-8.0	-3.8	-17.6
Population	34	34	34	34	34	10	34	40	49

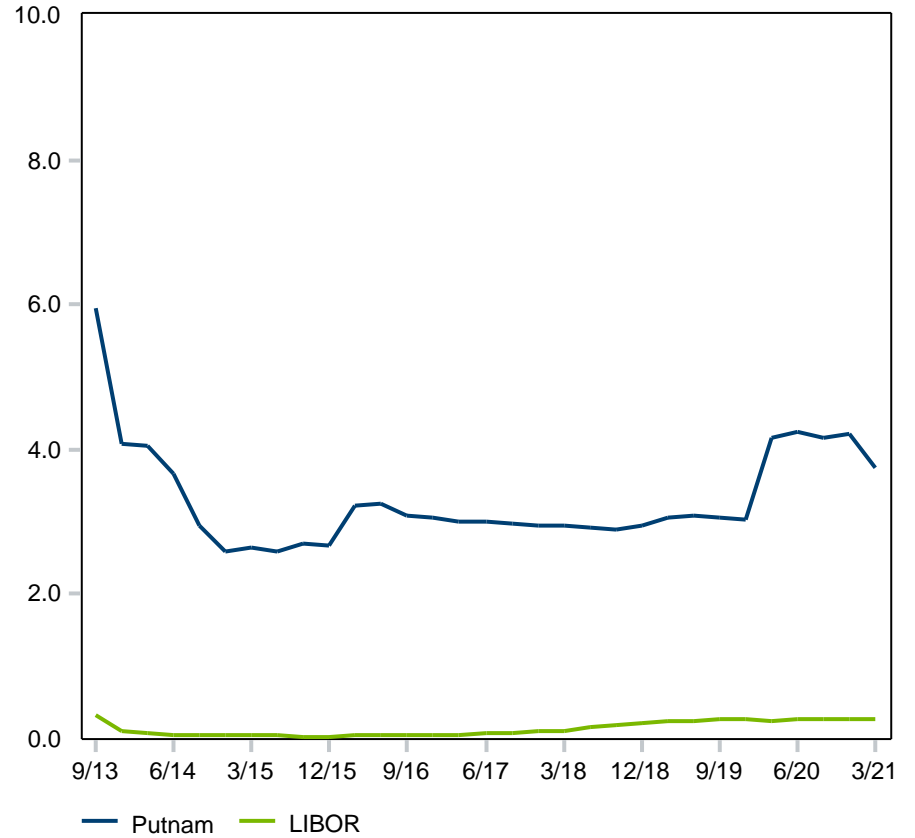
parentheses contain percentile rankings.

Putnam Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

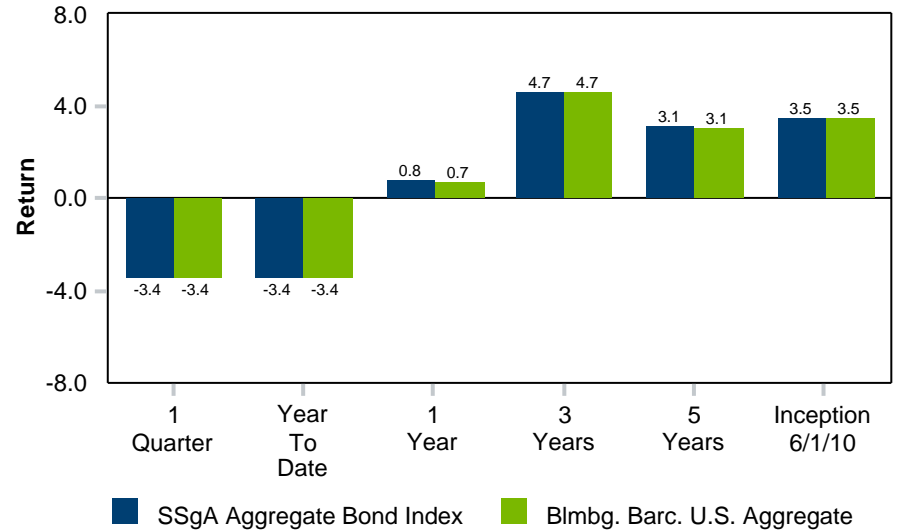
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Putnam	2.95	3.76	0.79	0.00	0.87	4.75	-0.15	4.45	3.74	-0.01
LIBOR	0.00	0.00	N/A	1.00	2.79	0.00	1.00	1.49	0.27	1.00
FTSE 3 Month T-Bill	-0.33	0.12	-2.79	0.81	N/A	-0.05	0.81	1.15	0.25	0.90

SSgA Aggregate Bond Index Performance Summary

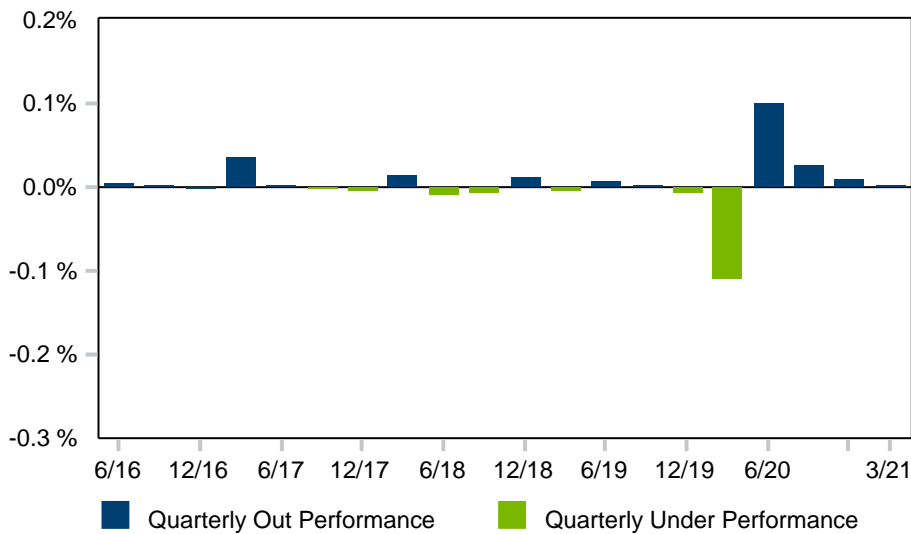
Account Information

Account Name: SSgA Aggregate Bond Index
 Inception Date: 01/01/1901
 Account Structure: Commingled Fund
 Asset Class: US Fixed Income
 Benchmark: Blmbg. Barc. U.S. Aggregate
 Peer Group: IM U.S. Fixed Income (SA+CF)

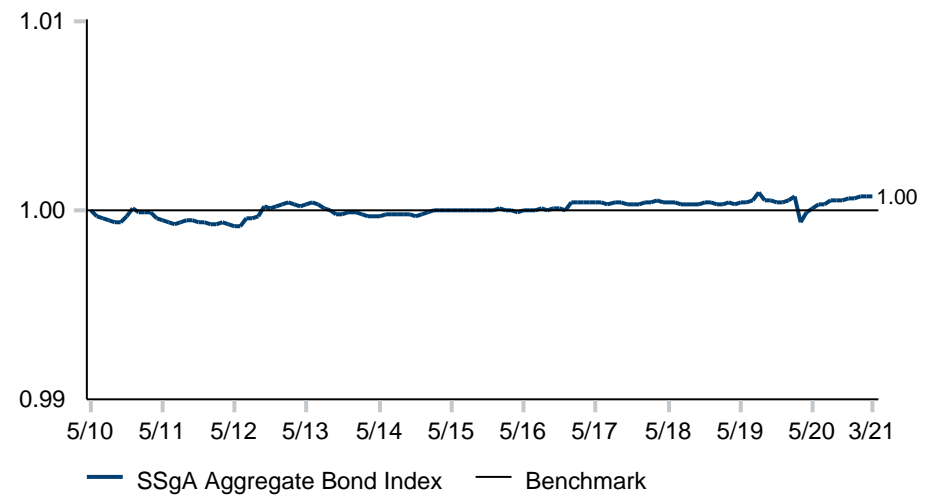
Return Summary



Quarterly Excess Performance

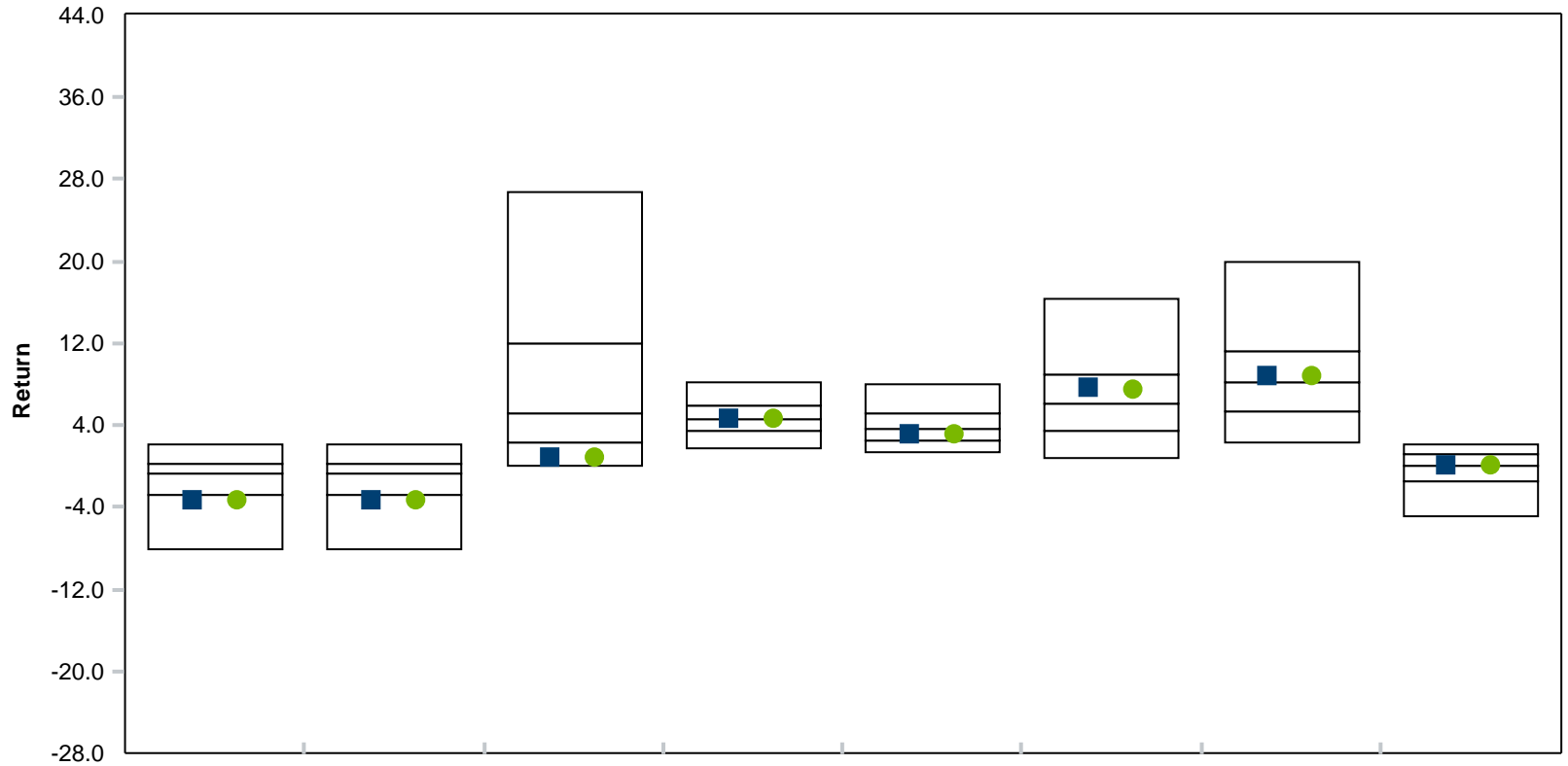


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

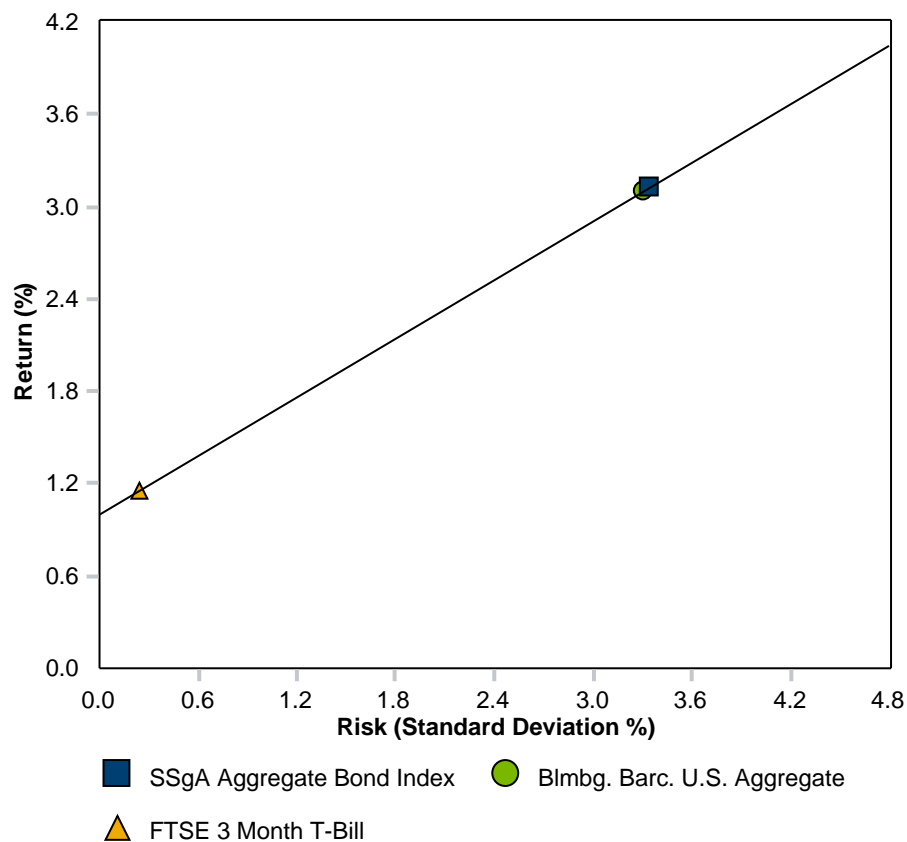


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
■ SSgA Aggregate Bond Index	-3.4 (85)	-3.4 (85)	0.8 (91)	4.7 (51)	3.1 (61)	7.5 (38)	8.7 (45)	0.0 (52)
● Blmbg. Barc. U.S. Aggregate	-3.4 (85)	-3.4 (85)	0.7 (91)	4.7 (51)	3.1 (61)	7.5 (38)	8.7 (45)	0.0 (52)
5th Percentile	2.1	2.1	26.7	8.2	8.0	16.3	19.9	2.1
1st Quartile	0.3	0.3	11.9	5.8	5.2	8.9	11.2	1.3
Median	-0.7	-0.7	5.2	4.7	3.6	6.2	8.2	0.1
3rd Quartile	-2.8	-2.8	2.4	3.4	2.4	3.5	5.3	-1.6
95th Percentile	-8.2	-8.2	0.0	1.7	1.4	0.8	2.4	-4.9
Population	940	940	933	894	828	986	1,035	1,085

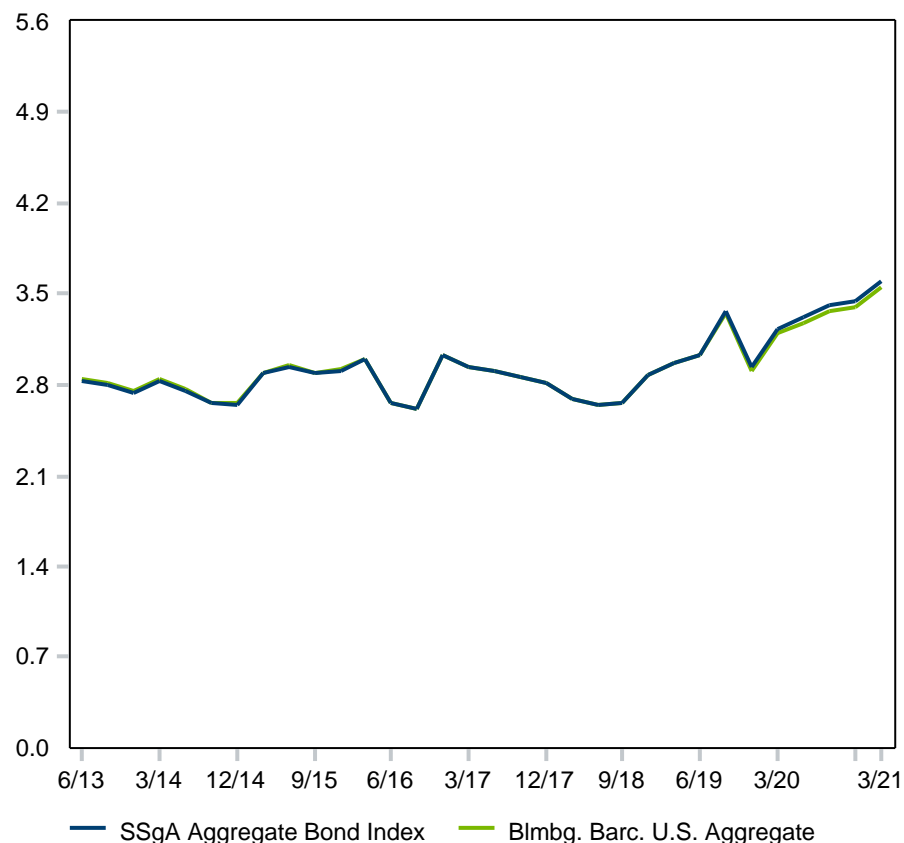
parentheses contain percentile rankings.

SSgA Aggregate Bond Index Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

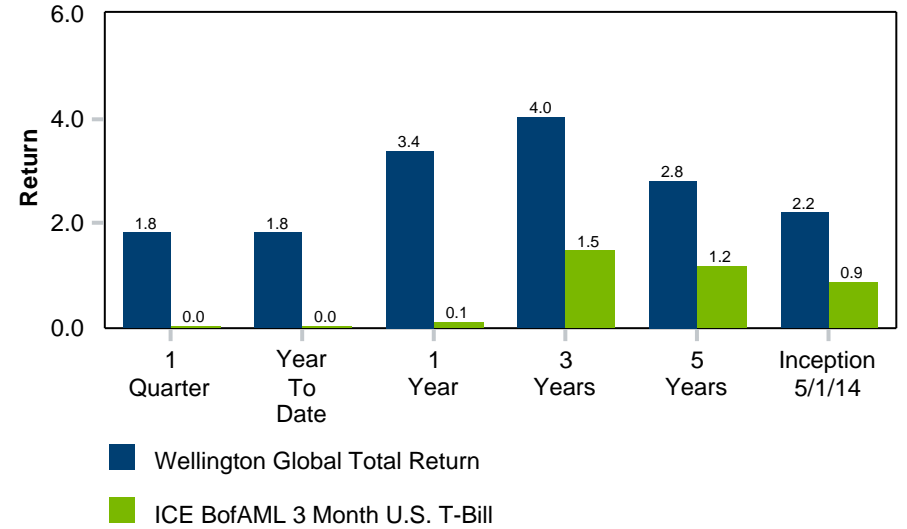
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
SSgA Aggregate Bond Index	0.02	0.08	0.20	1.00	0.61	-0.01	1.01	3.12	3.34	1.00
Blmbg. Barc. U.S. Aggregate	0.00	0.00	N/A	1.00	0.61	0.00	1.00	3.10	3.31	1.00
FTSE 3 Month T-Bill	-1.97	3.25	-0.61	0.09	N/A	1.08	0.02	1.15	0.25	0.30

Wellington Global Total Return Performance Summary

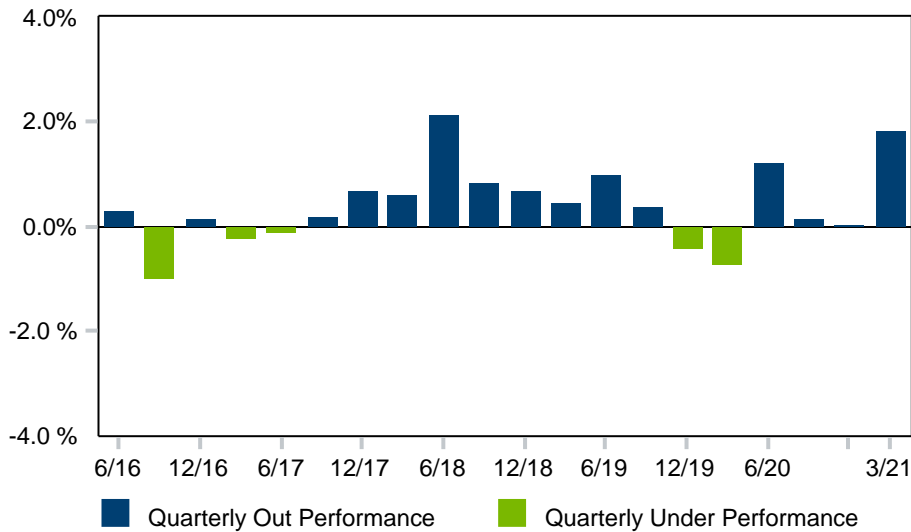
Account Information

Account Name: Wellington Global Total Return
 Inception Date: 05/13/2014
 Account Structure: Commingled Fund
 Asset Class: Global Fixed Income
 Benchmark: ICE BofAML 3 Month U.S. T-Bill
 Peer Group: IM Absolute Return (MF)

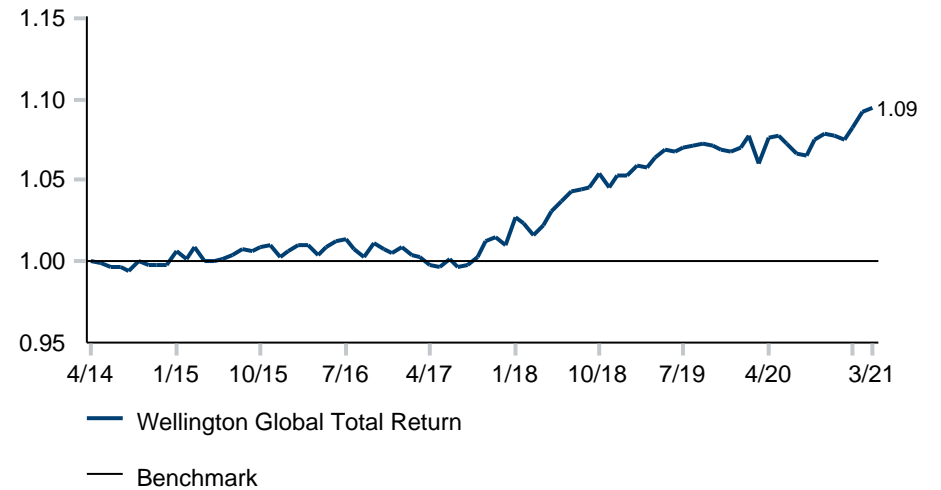
Return Summary



Quarterly Excess Performance

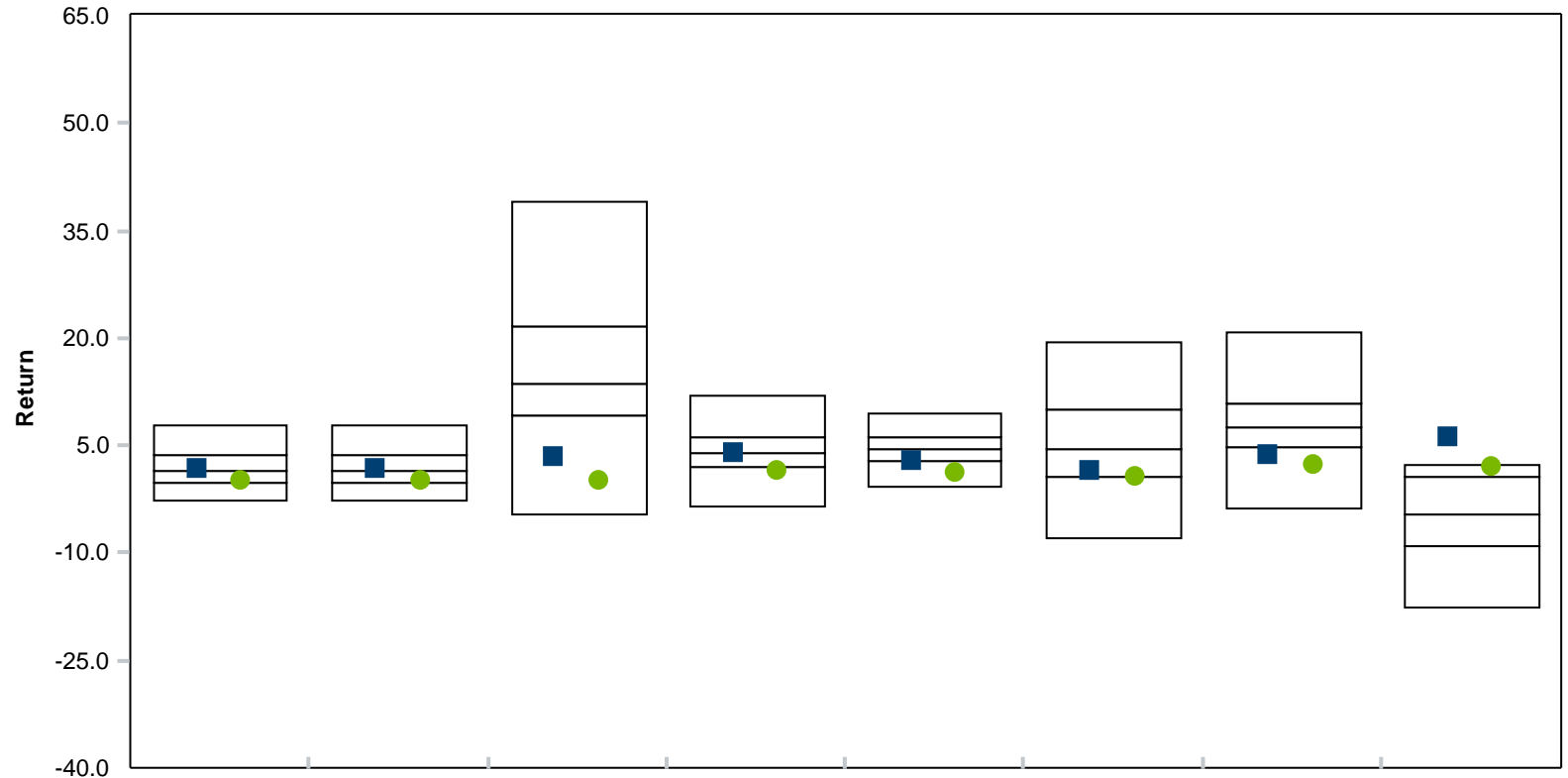


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Absolute Return (MF)

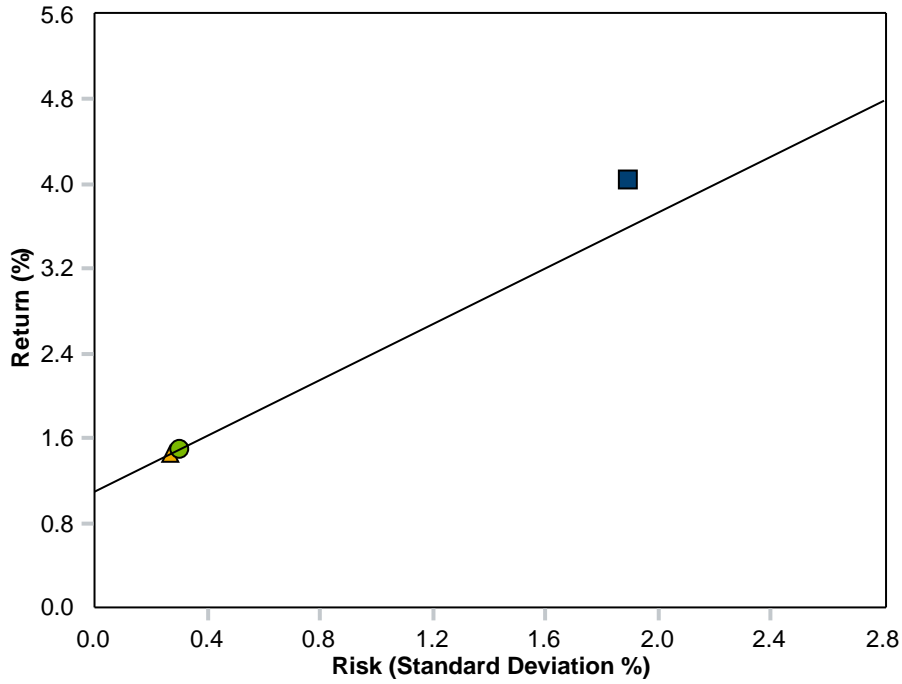


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
Wellington Global Total Return	1.8 (44)	1.8 (44)	3.4 (83)	4.0 (46)	2.8 (76)	1.4 (72)	3.7 (83)	6.2 (4)
ICE BofAML 3 Month U.S. T-Bill	0.0 (72)	0.0 (72)	0.1 (87)	1.5 (83)	1.2 (82)	0.7 (75)	2.3 (84)	1.9 (6)
5th Percentile	7.7	7.7	38.9	12.0	9.5	19.4	20.7	2.4
1st Quartile	3.6	3.6	21.6	6.0	6.1	10.1	10.7	0.5
Median	1.4	1.4	13.7	3.8	4.4	4.4	7.7	-4.6
3rd Quartile	-0.1	-0.1	9.1	2.1	2.9	0.6	4.6	-9.0
95th Percentile	-2.8	-2.8	-4.7	-3.6	-0.9	-8.0	-3.8	-17.6
Population	34	34	34	34	34	34	40	49

parentheses contain percentile rankings.

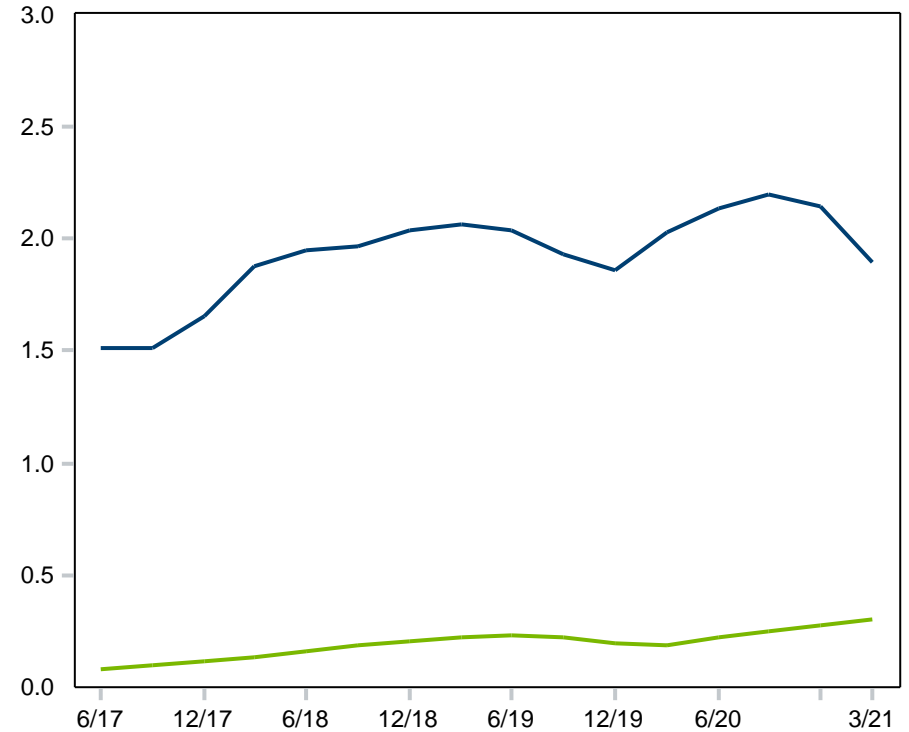
Wellington Global Total Return Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



- Wellington Global Total Return
- ICE BofAML 3 Month U.S. T-Bill
- ▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



- Wellington Global Total Return
- ICE BofAML 3 Month U.S. T-Bill

3 Years Historical Statistics

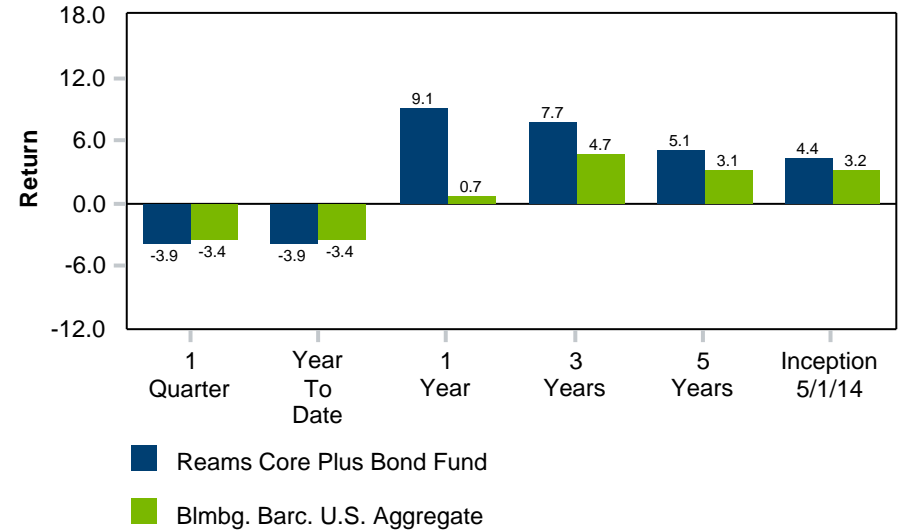
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Wellington Global Total Return	2.50	1.94	1.29	0.01	1.36	4.89	-0.54	4.04	1.90	-0.09
ICE BofAML 3 Month U.S. T-Bill	0.00	0.00	N/A	1.00	0.36	0.00	1.00	1.49	0.30	1.00
FTSE 3 Month T-Bill	-0.04	0.12	-0.36	0.85	N/A	0.22	0.83	1.45	0.27	0.92

Reams Core Plus Bond Fund Performance Summary

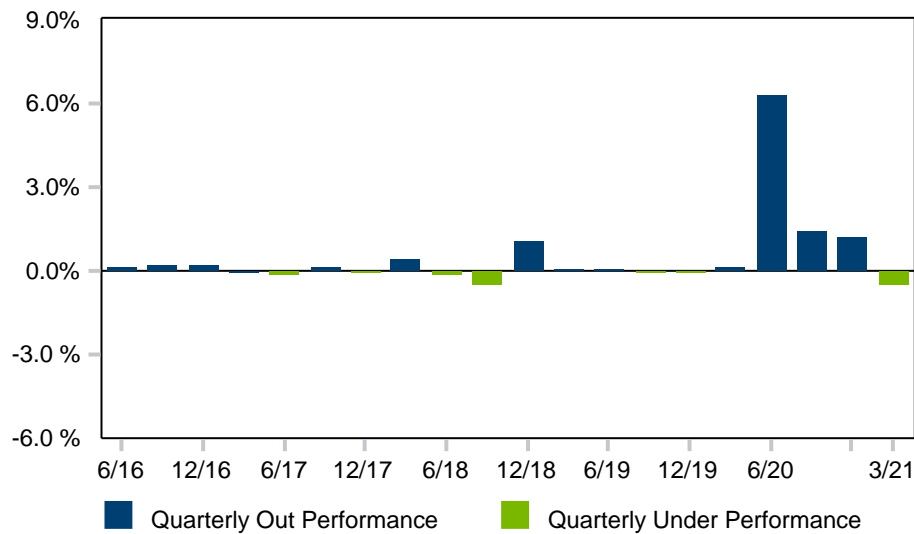
Account Information

Account Name: Reams Core Plus Bond Fund
 Inception Date: 05/08/2014
 Account Structure: Commingled Fund
 Asset Class: US Fixed Income
 Benchmark: Blmbg. Barc. U.S. Aggregate
 Peer Group: IM U.S. Fixed Income (SA+CF)

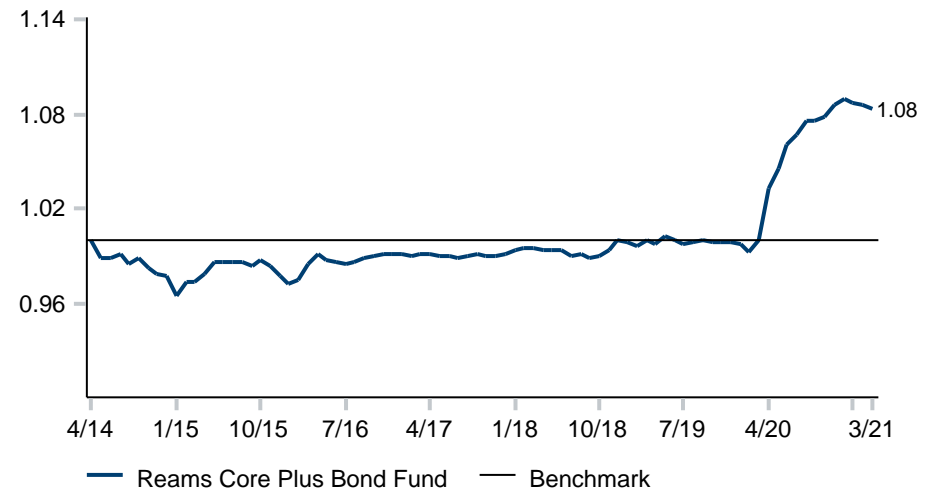
Return Summary



Quarterly Excess Performance

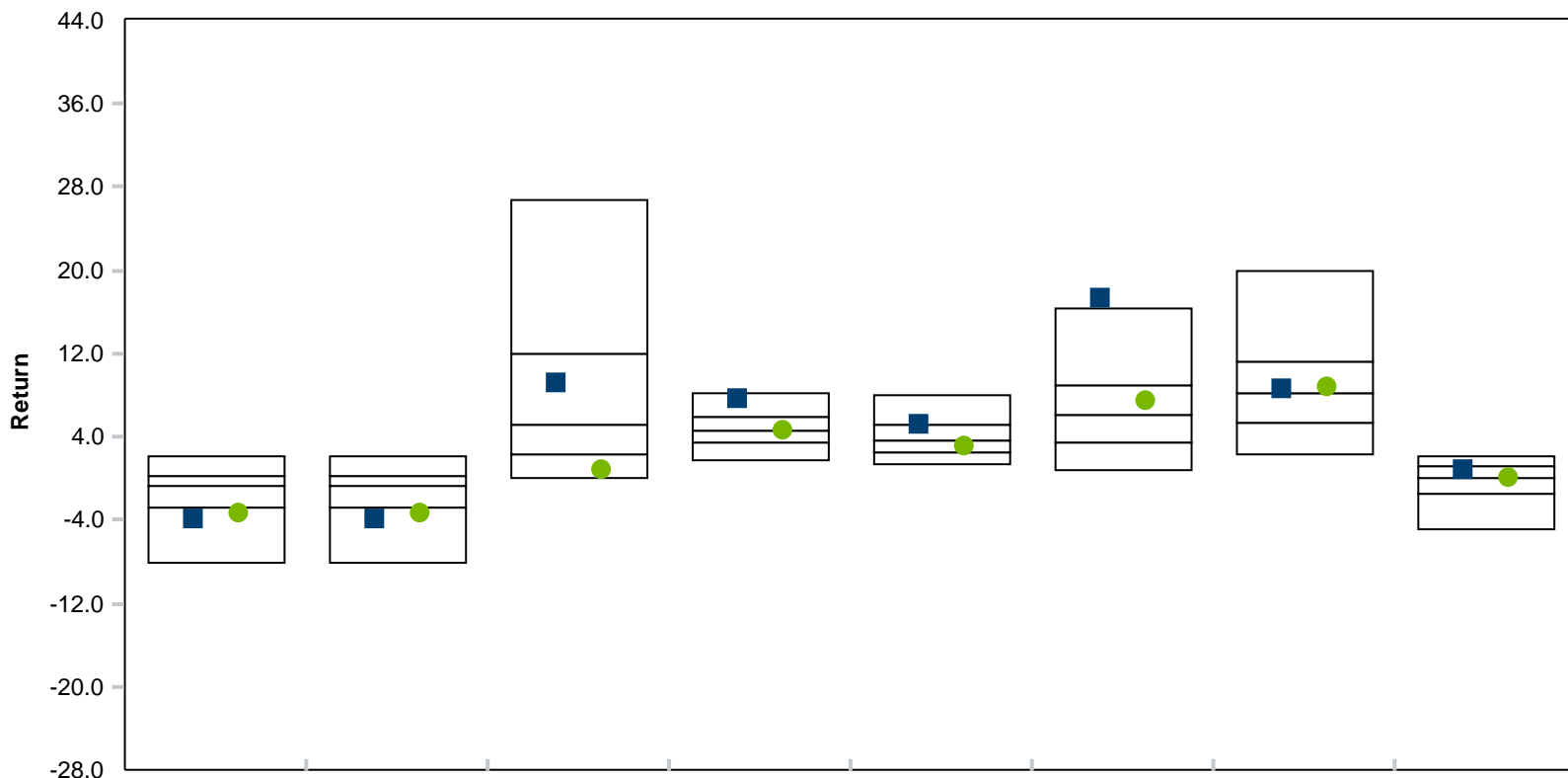


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

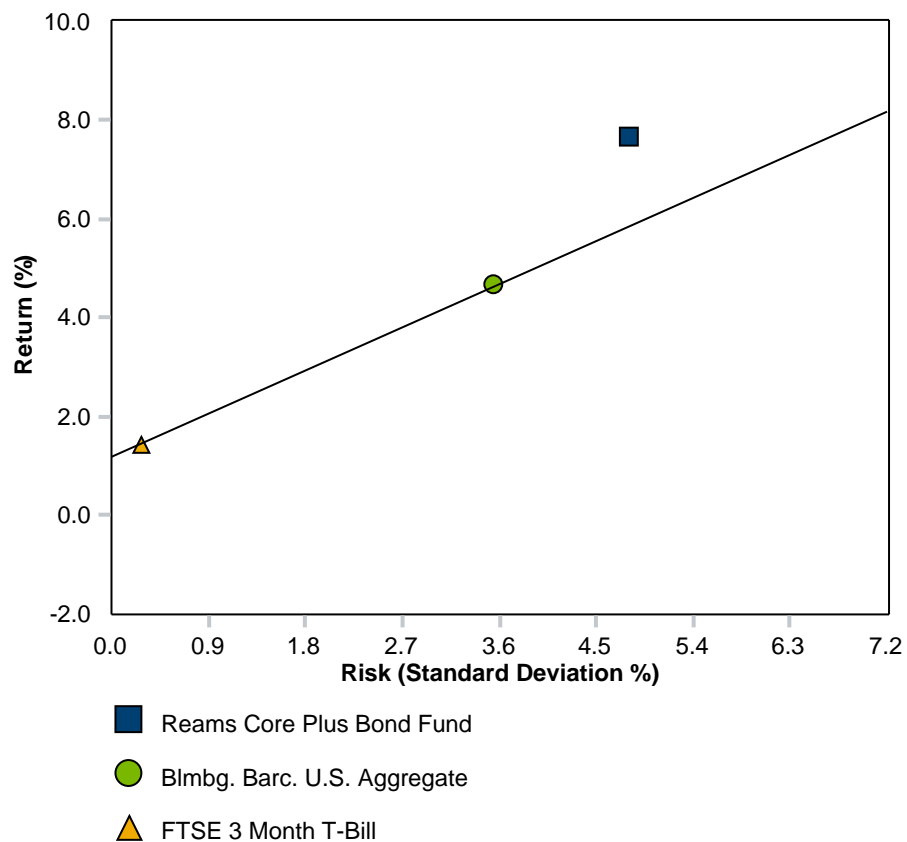


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2020	2019	2018
■ Reams Core Plus Bond Fund	-3.9 (90)	-3.9 (90)	9.1 (33)	7.7 (8)	5.1 (26)	17.2 (4)	8.6 (46)	0.9 (35)
● Blmbg. Barc. U.S. Aggregate	-3.4 (85)	-3.4 (85)	0.7 (91)	4.7 (51)	3.1 (61)	7.5 (38)	8.7 (45)	0.0 (52)
5th Percentile	2.1	2.1	26.7	8.2	8.0	16.3	19.9	2.1
1st Quartile	0.3	0.3	11.9	5.8	5.2	8.9	11.2	1.3
Median	-0.7	-0.7	5.2	4.7	3.6	6.2	8.2	0.1
3rd Quartile	-2.8	-2.8	2.4	3.4	2.4	3.5	5.3	-1.6
95th Percentile	-8.2	-8.2	0.0	1.7	1.4	0.8	2.4	-4.9
Population	940	940	933	894	828	986	1,035	1,085

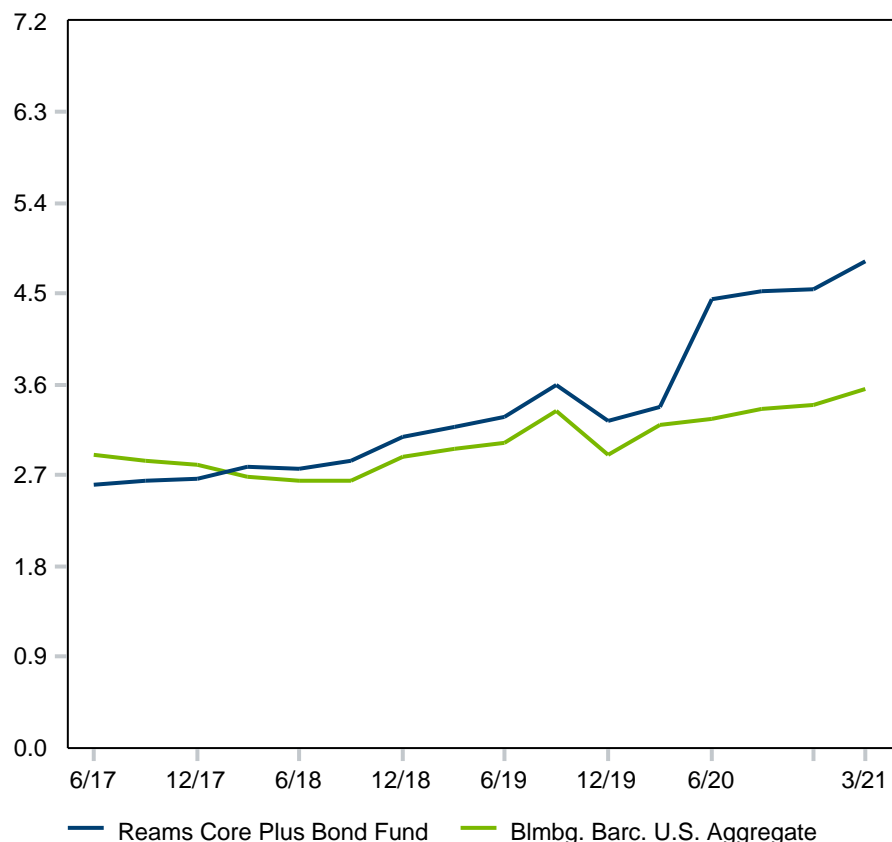
parentheses contain percentile rankings.

Reams Core Plus Bond Fund Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years

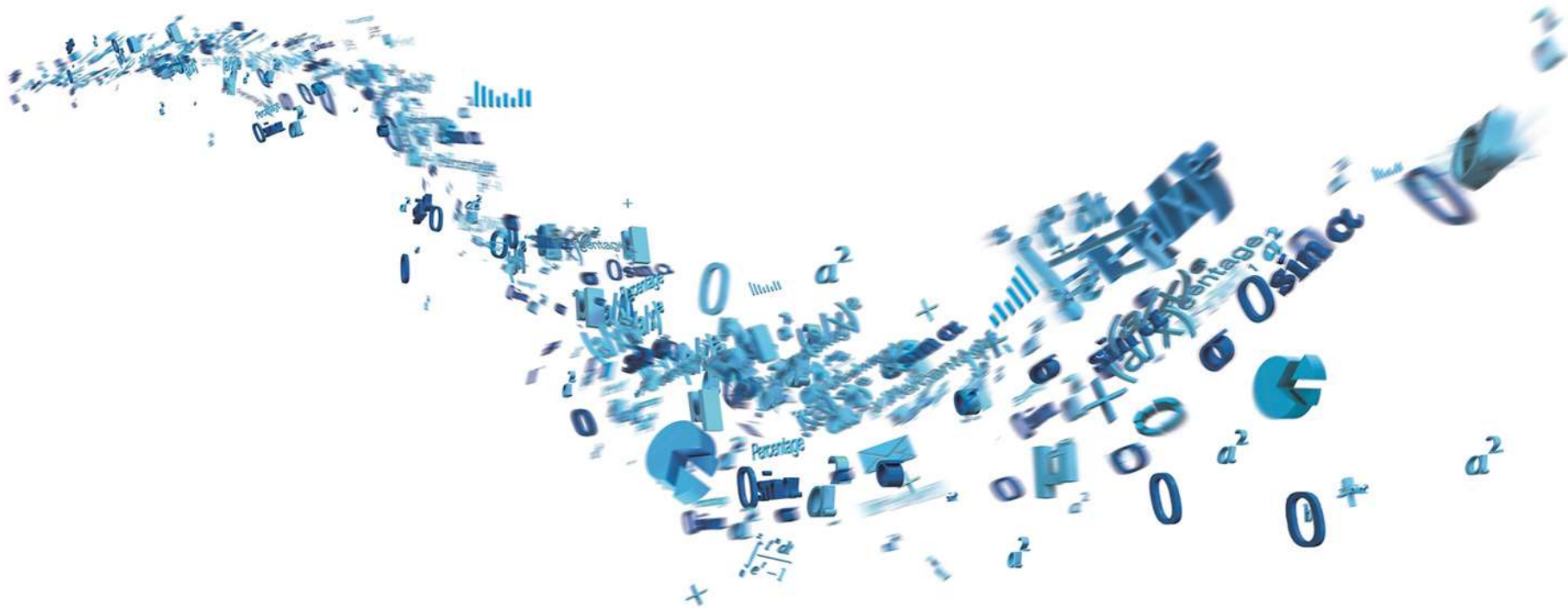


Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Reams Core Plus Bond Fund	2.90	2.42	1.20	0.77	1.26	2.05	1.19	7.66	4.82	0.88
Blmbg. Barc. U.S. Aggregate	0.00	0.00	N/A	1.00	0.91	0.00	1.00	4.65	3.56	1.00
FTSE 3 Month T-Bill	-3.18	3.48	-0.91	0.11	N/A	1.33	0.03	1.45	0.27	0.34

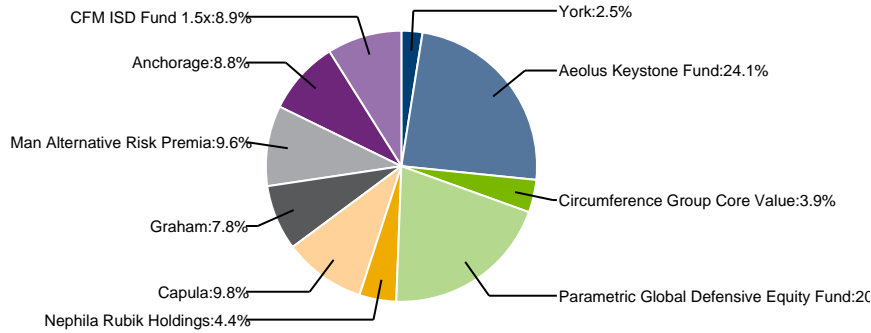


Opportunistic/Alternatives

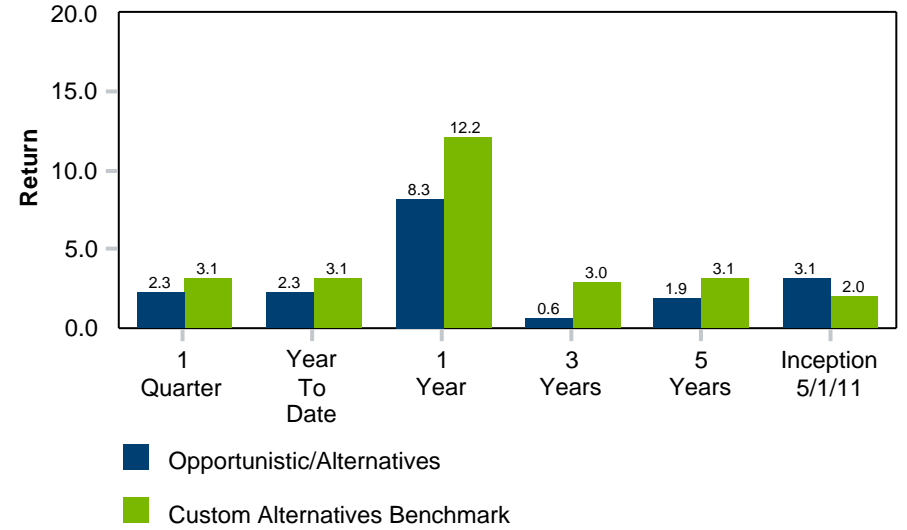
Opportunistic/Alternatives Portfolio Overview

Current Allocation

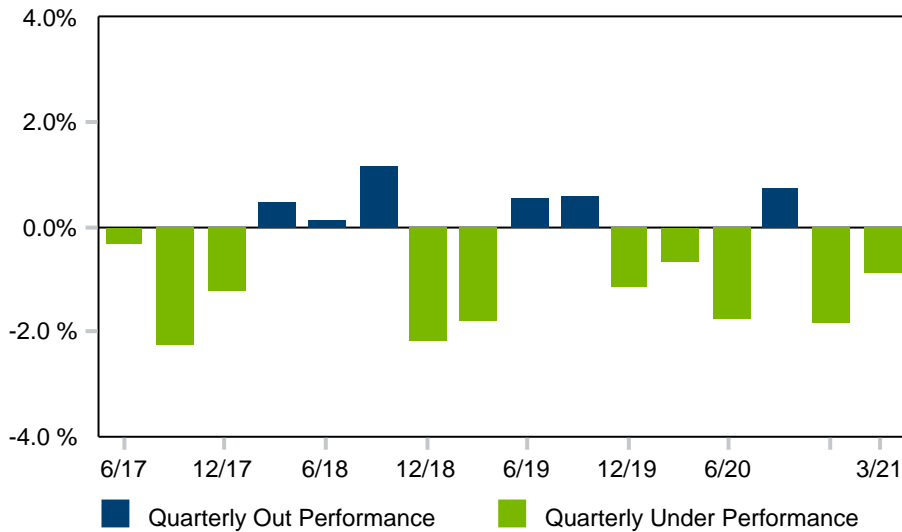
March 31, 2021 : \$930M



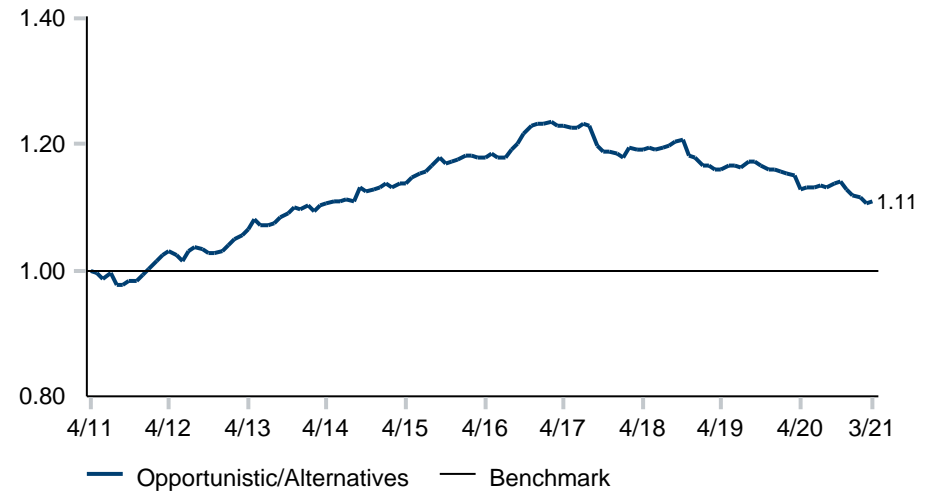
Return Summary



Quarterly Excess Performance

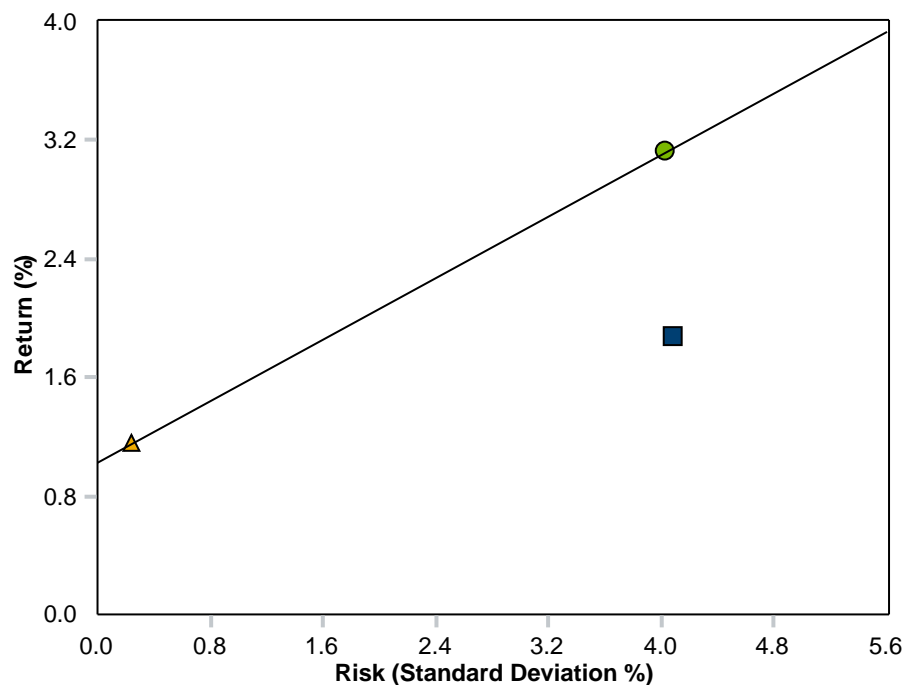


Ratio of Cumulative Wealth - Since Inception



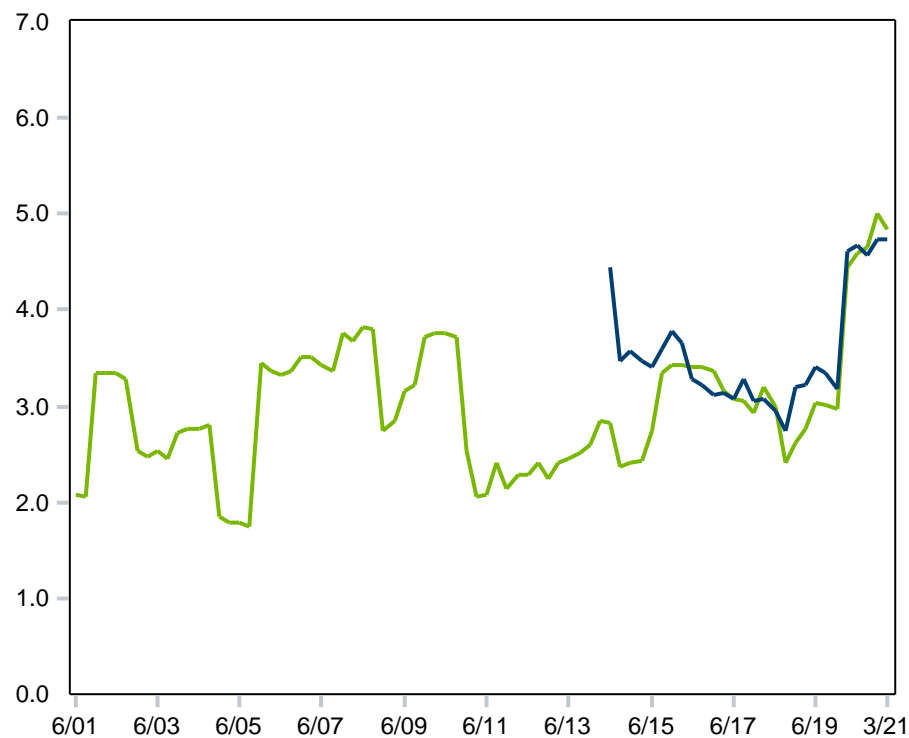
Opportunistic/Alternatives Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



- Opportunistic/Alternatives
- Custom Alternatives Benchmark
- ▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



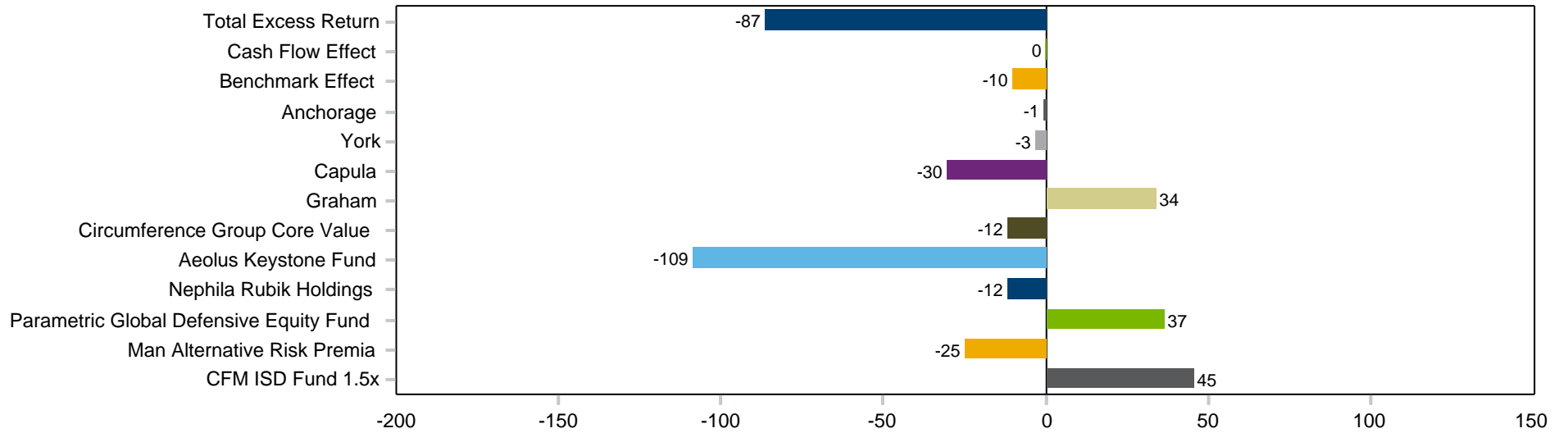
- Opportunistic/Alternatives
- Custom Alternatives Benchmark

5 Years Historical Statistics

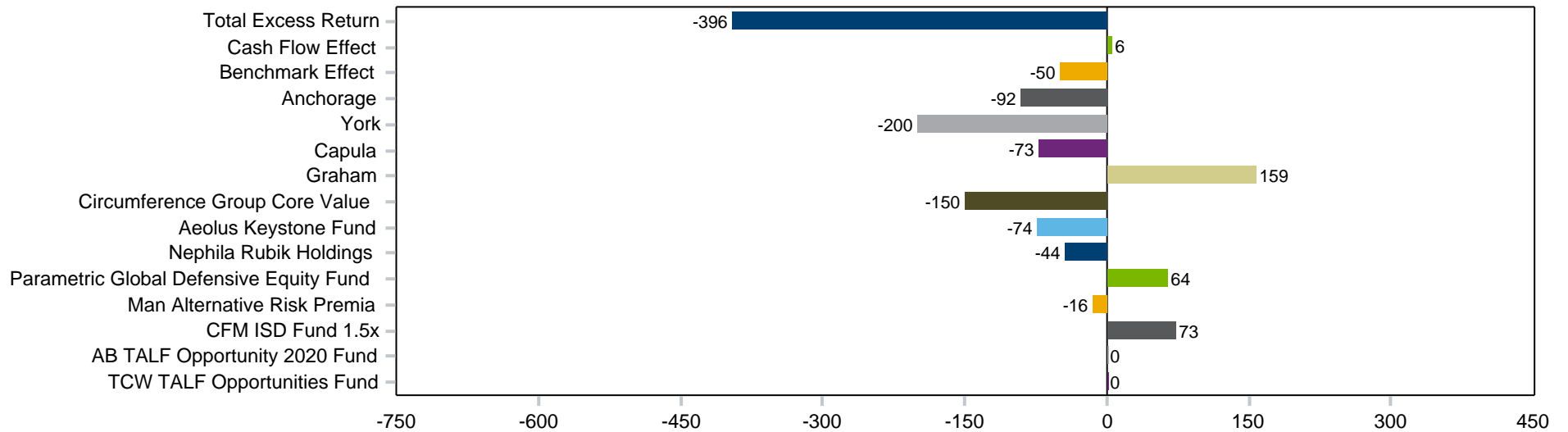
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Opportunistic/Alternatives	-1.21	2.40	-0.50	0.68	0.19	-0.69	0.84	1.88	4.09	0.83
Custom Alternatives Benchmark	0.00	0.00	N/A	1.00	0.49	0.00	1.00	3.12	4.03	1.00
FTSE 3 Month T-Bill	-2.01	4.08	-0.49	0.04	N/A	1.19	-0.01	1.15	0.25	-0.20

Asset Class Attribution

1 Quarter



1 Year

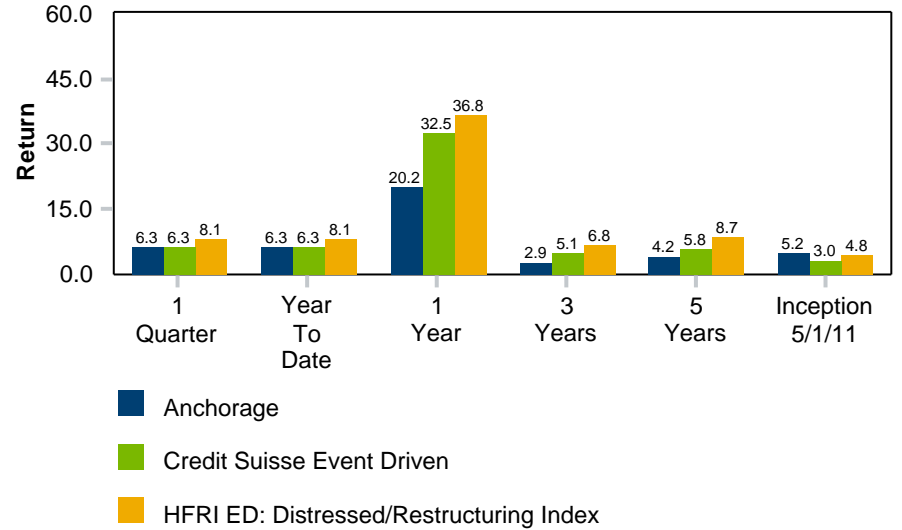


Anchorage Performance Summary

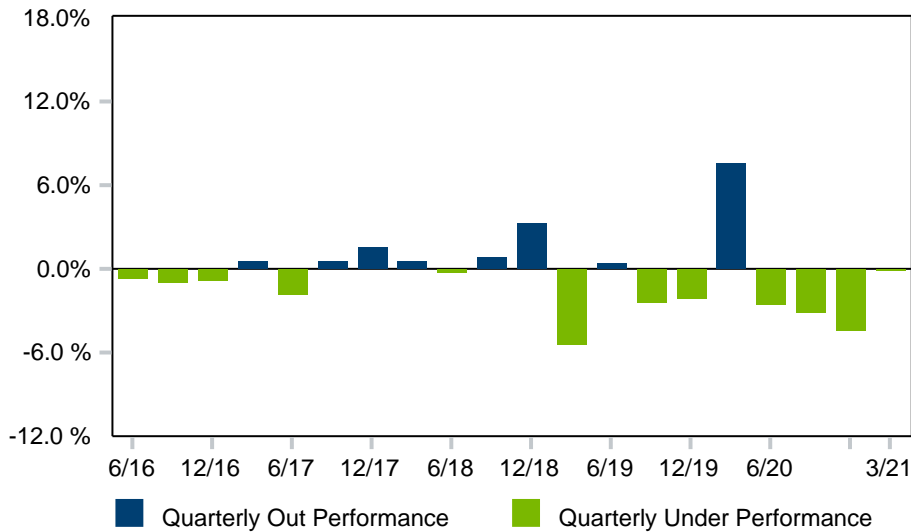
Account Information

Account Name: Anchorage
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: Credit Suisse Event Driven
 Peer Group:

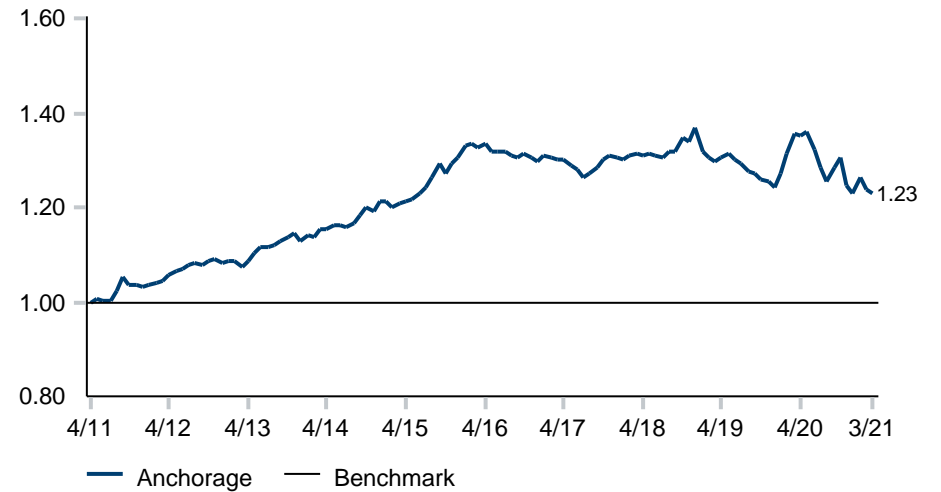
Return Summary



Quarterly Excess Performance

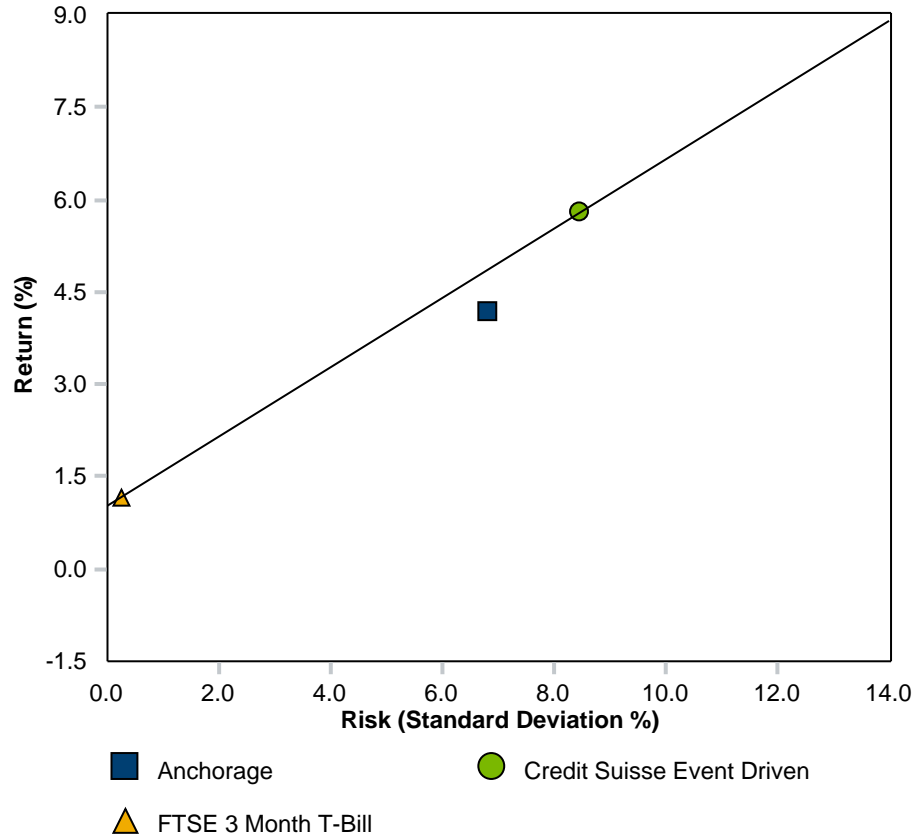


Ratio of Cumulative Wealth - Since Inception

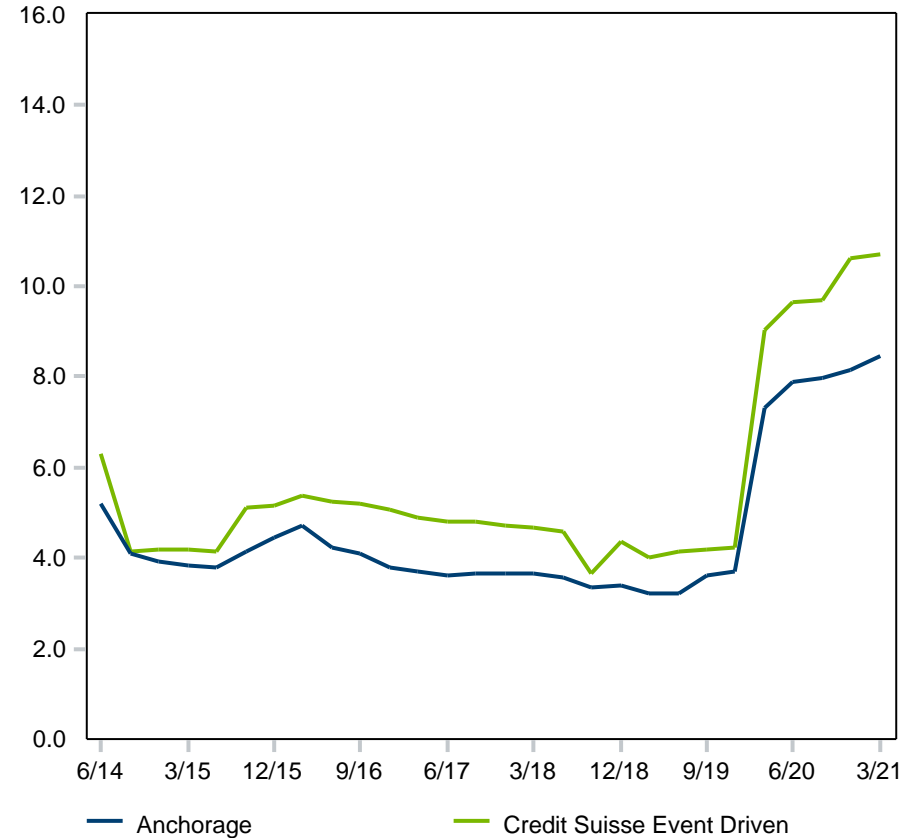


Anchorage Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

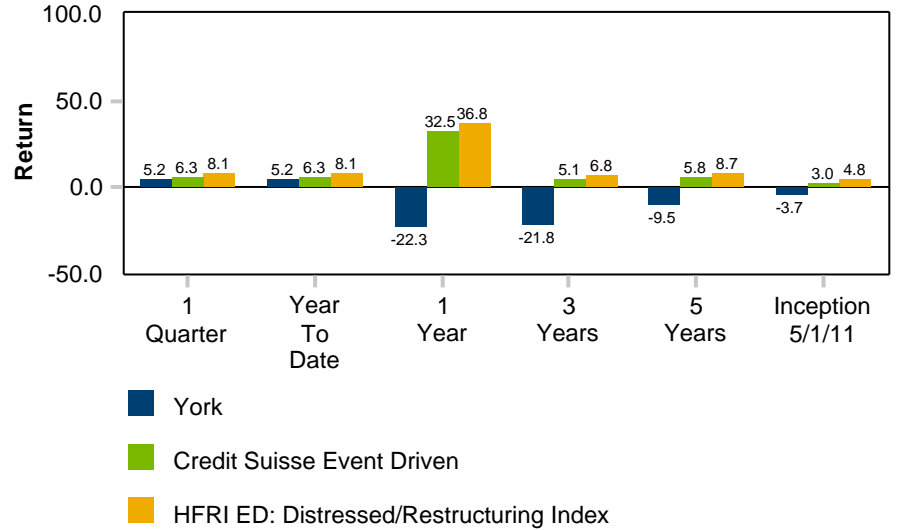
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Anchorage	-1.66	5.16	-0.32	0.63	0.46	0.50	0.64	4.18	6.83	0.79
Credit Suisse Event Driven	0.00	0.00	N/A	1.00	0.57	0.00	1.00	5.79	8.46	1.00
FTSE 3 Month T-Bill	-4.86	8.53	-0.57	0.09	N/A	1.20	-0.01	1.15	0.25	-0.30

York Performance Summary

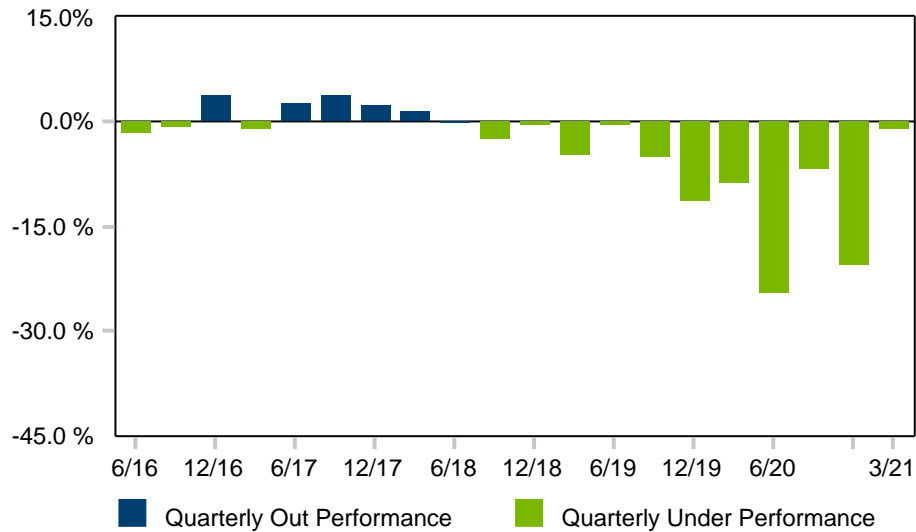
Account Information

Account Name: York
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: Credit Suisse Event Driven
 Peer Group:

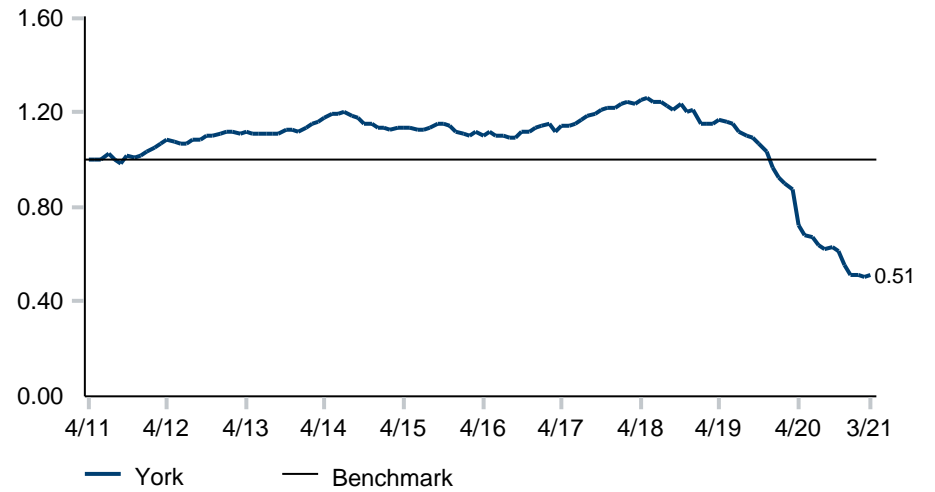
Return Summary



Quarterly Excess Performance

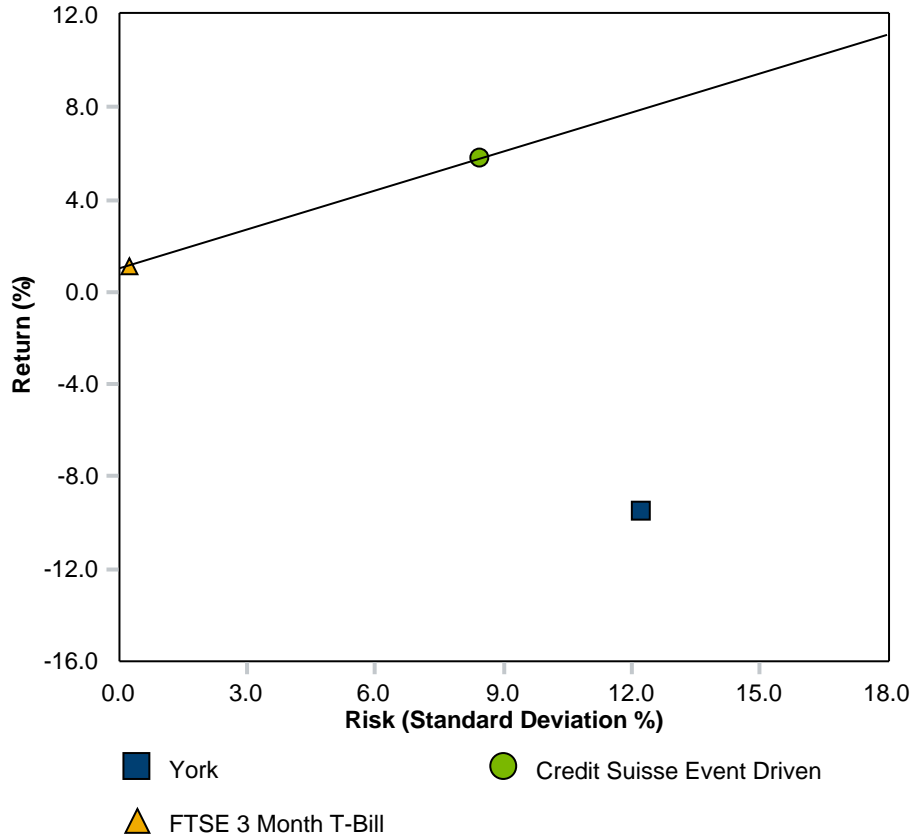


Ratio of Cumulative Wealth - Since Inception

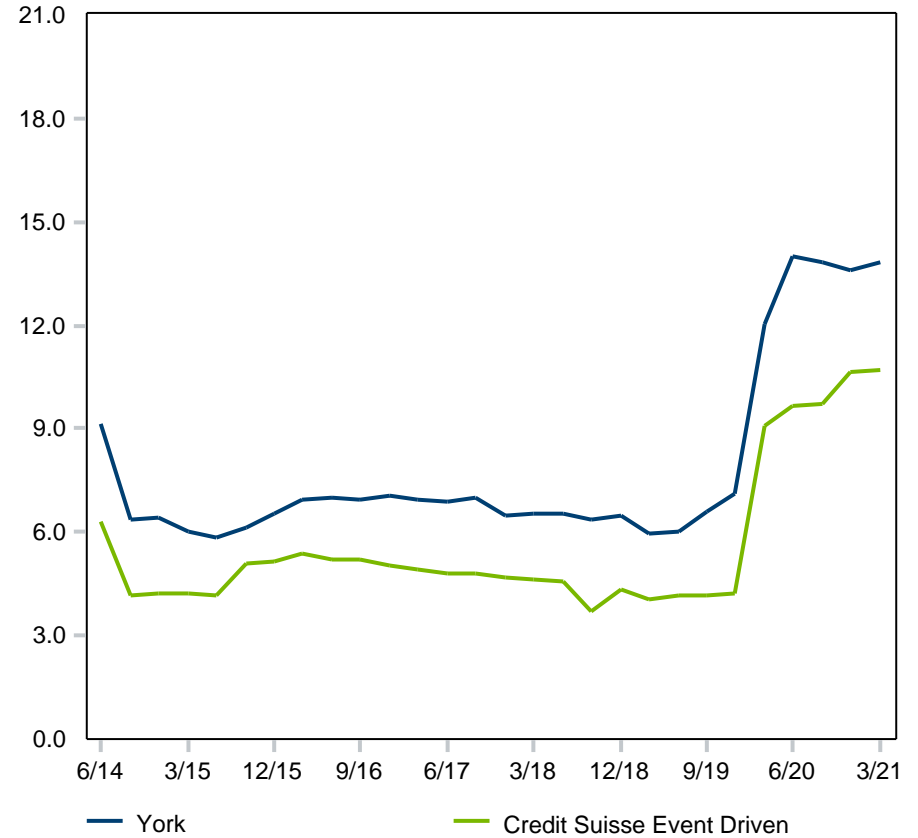


York Risk Profile

Annualized Return vs. Annualized Standard Deviation
5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

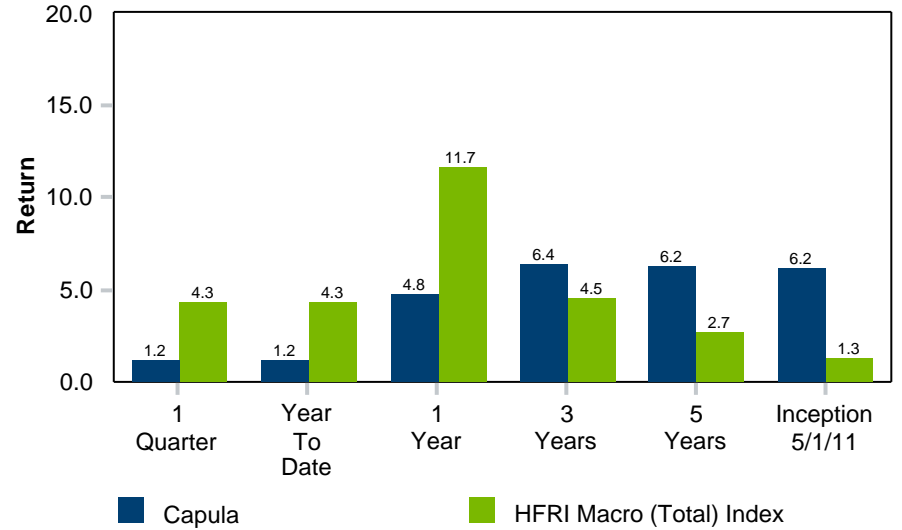
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
York	-15.18	11.80	-1.29	0.16	-0.84	-11.92	0.57	-9.52	12.24	0.40
Credit Suisse Event Driven	0.00	0.00	N/A	1.00	0.57	0.00	1.00	5.79	8.46	1.00
FTSE 3 Month T-Bill	-4.86	8.53	-0.57	0.09	N/A	1.20	-0.01	1.15	0.25	-0.30

Capula Performance Summary

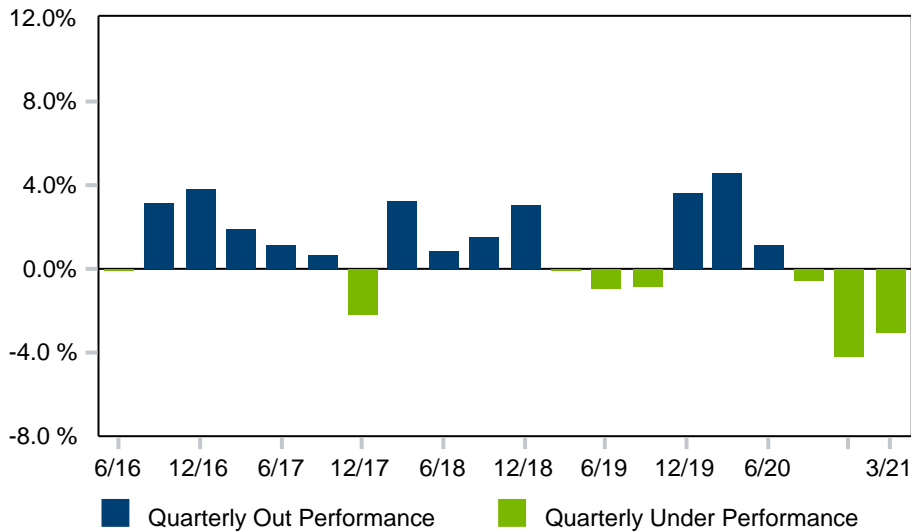
Account Information

Account Name: Capula
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: HFRI Macro (Total) Index
 Peer Group:

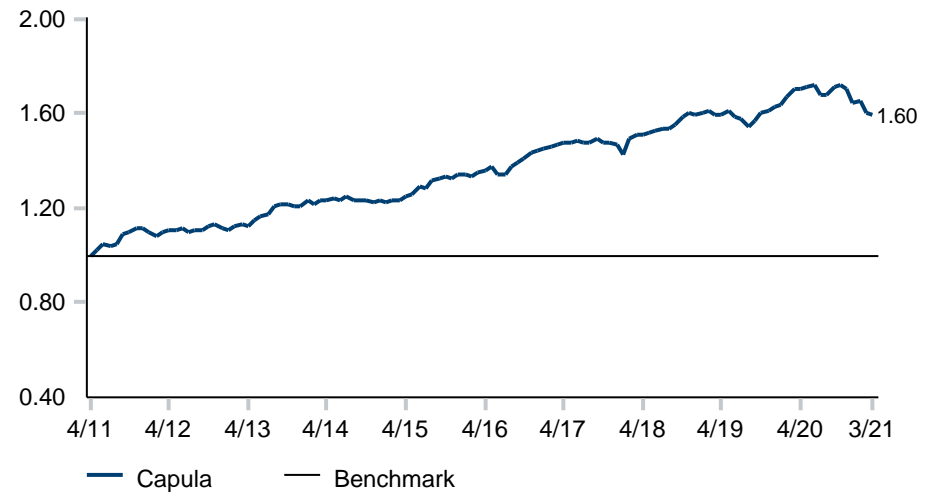
Return Summary



Quarterly Excess Performance

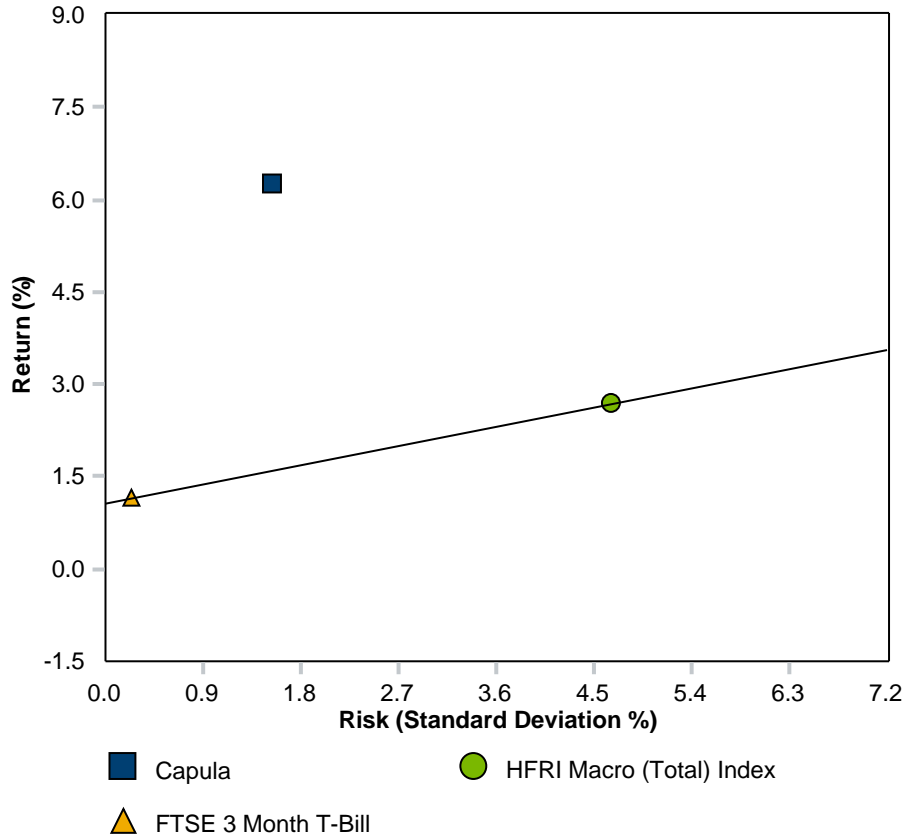


Ratio of Cumulative Wealth - Since Inception

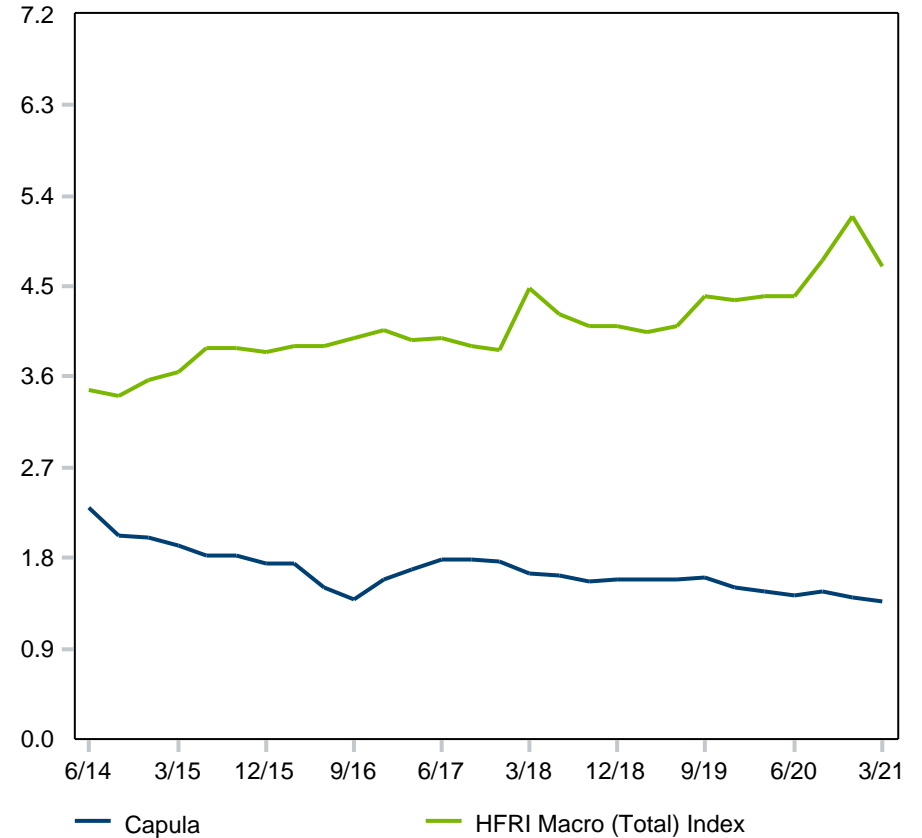


Capula Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

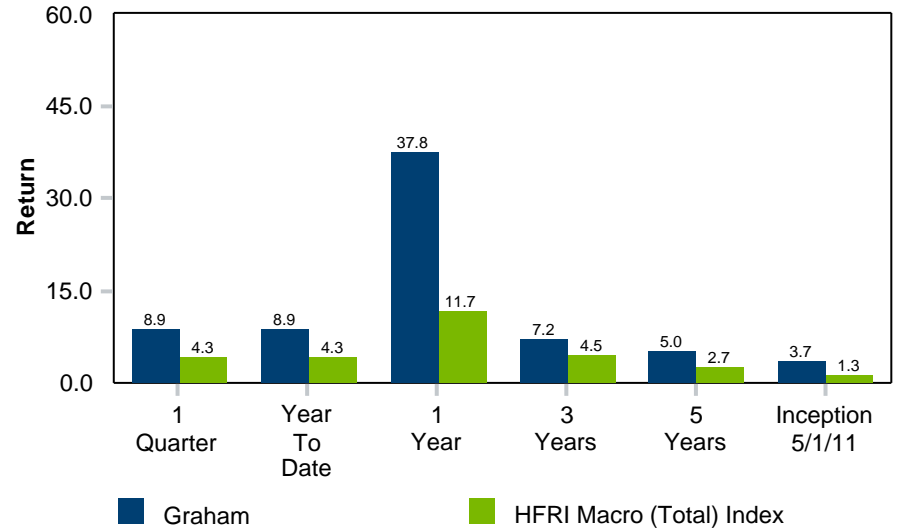
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Capula	3.33	5.07	0.66	0.01	3.18	6.36	-0.04	6.24	1.55	-0.11
HFRI Macro (Total) Index	0.00	0.00	N/A	1.00	0.34	0.00	1.00	2.68	4.66	1.00
FTSE 3 Month T-Bill	-1.61	4.69	-0.34	0.01	N/A	1.16	0.00	1.15	0.25	-0.09

Graham Performance Summary

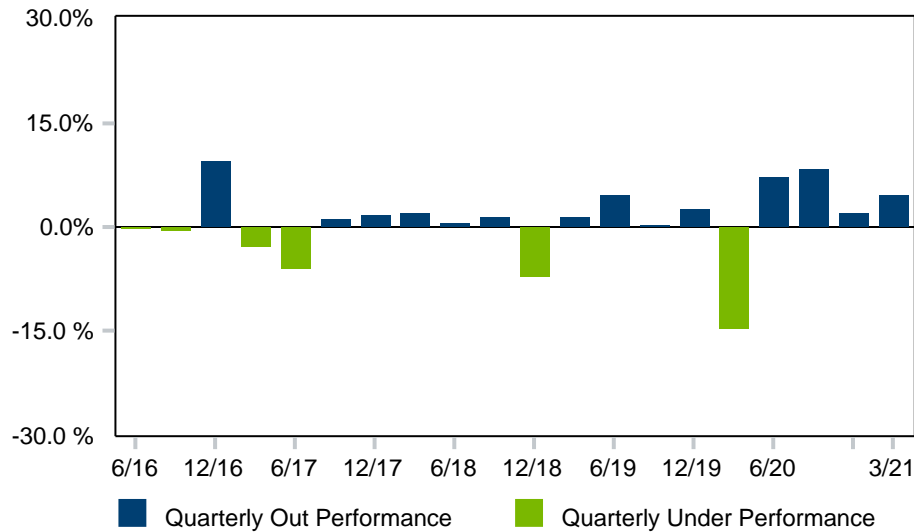
Account Information

Account Name: Graham
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: Hedge Fund
 Benchmark: HFRI Macro (Total) Index
 Peer Group:

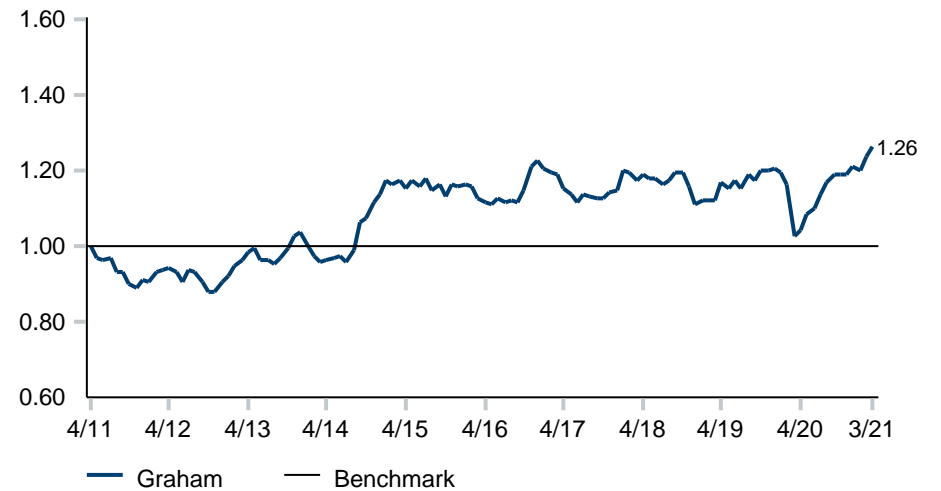
Return Summary



Quarterly Excess Performance

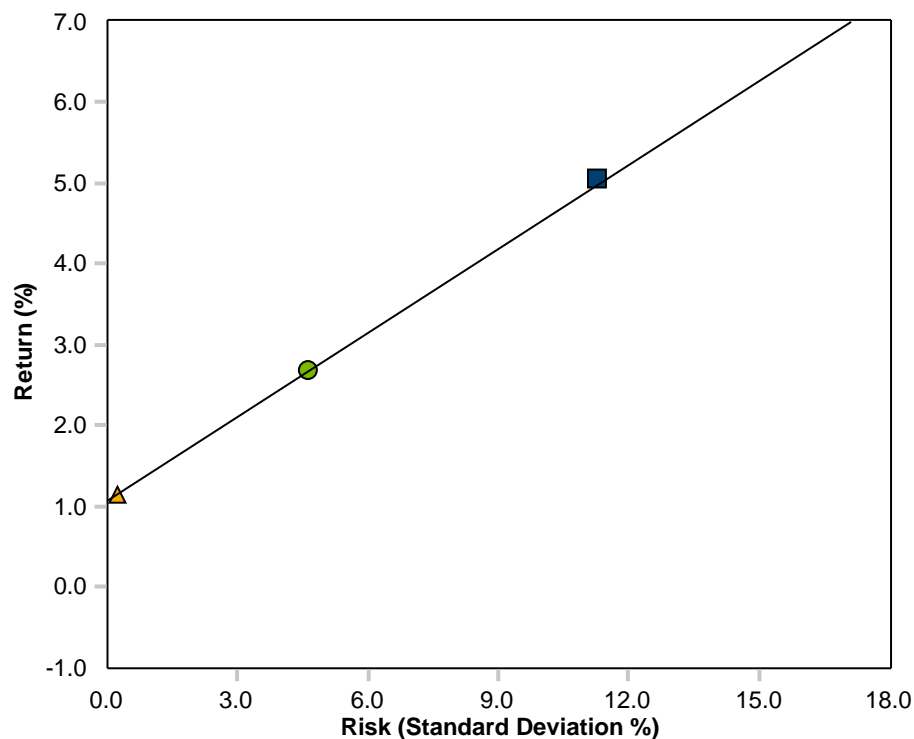


Ratio of Cumulative Wealth - Since Inception



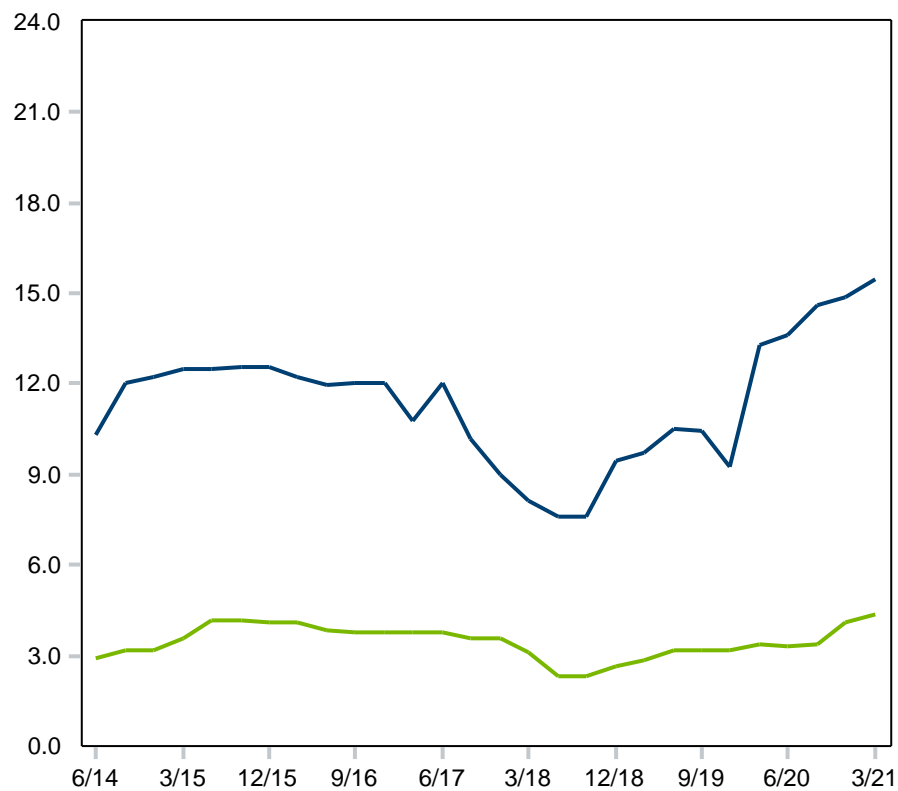
Graham Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



■ Graham ● HFRI Macro (Total) Index
 ▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



— Graham — HFRI Macro (Total) Index

5 Years Historical Statistics

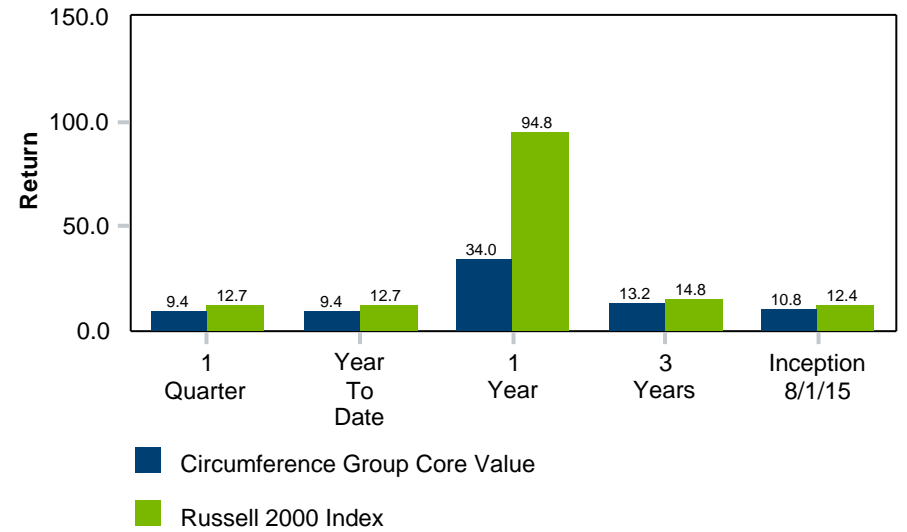
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Graham	2.81	8.85	0.32	0.45	0.39	1.08	1.63	5.05	11.28	0.67
HFRI Macro (Total) Index	0.00	0.00	N/A	1.00	0.34	0.00	1.00	2.68	4.66	1.00
FTSE 3 Month T-Bill	-1.61	4.69	-0.34	0.01	N/A	1.16	0.00	1.15	0.25	-0.09

Circumference Group Core Value Performance Summary

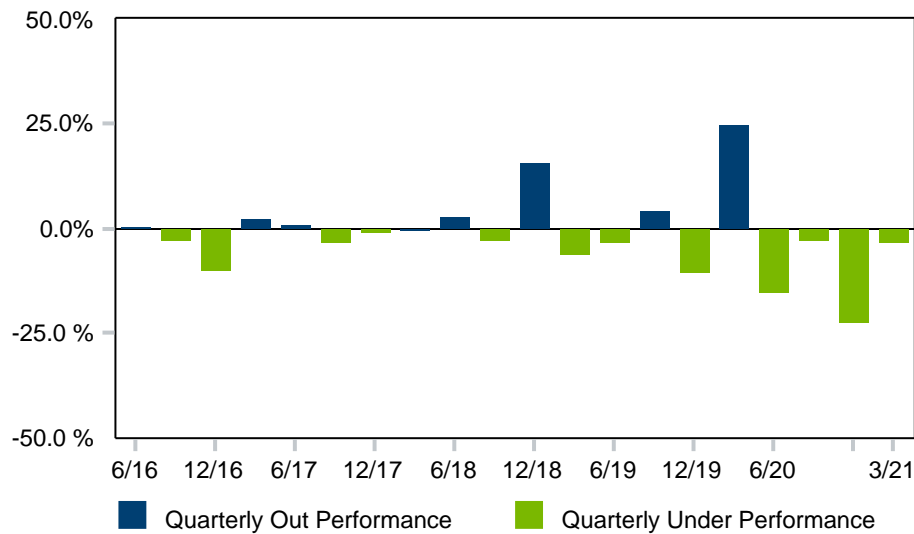
Account Information

Account Name: Circumference Group Core Value
 Inception Date: 08/31/2015
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: Russell 2000 Index
 Peer Group:

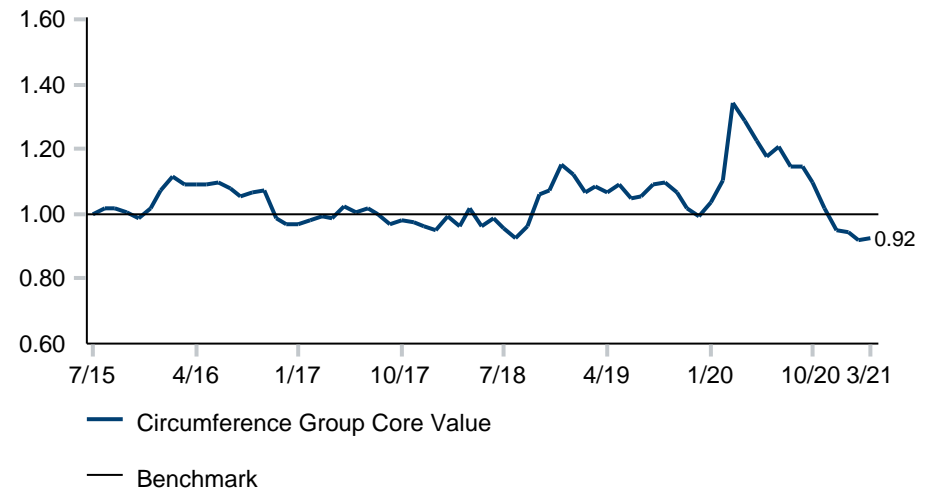
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

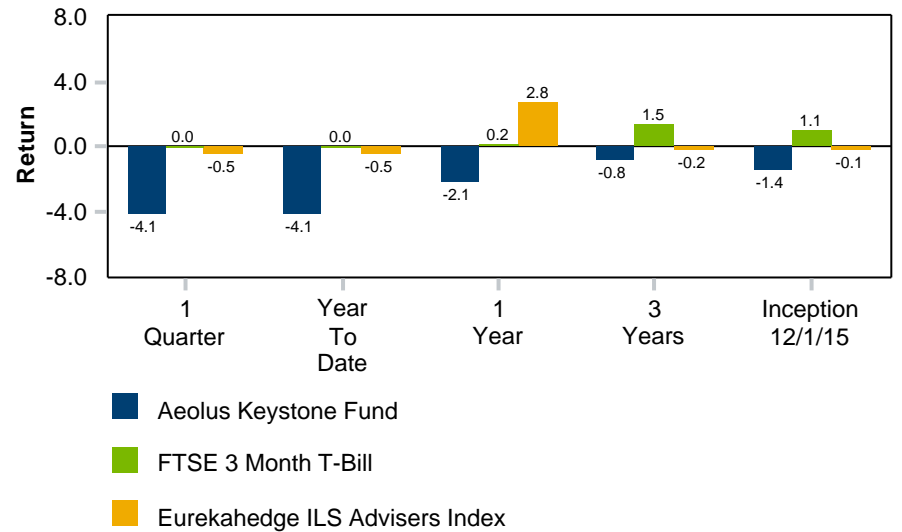


Aeolus Keystone Fund Performance Summary

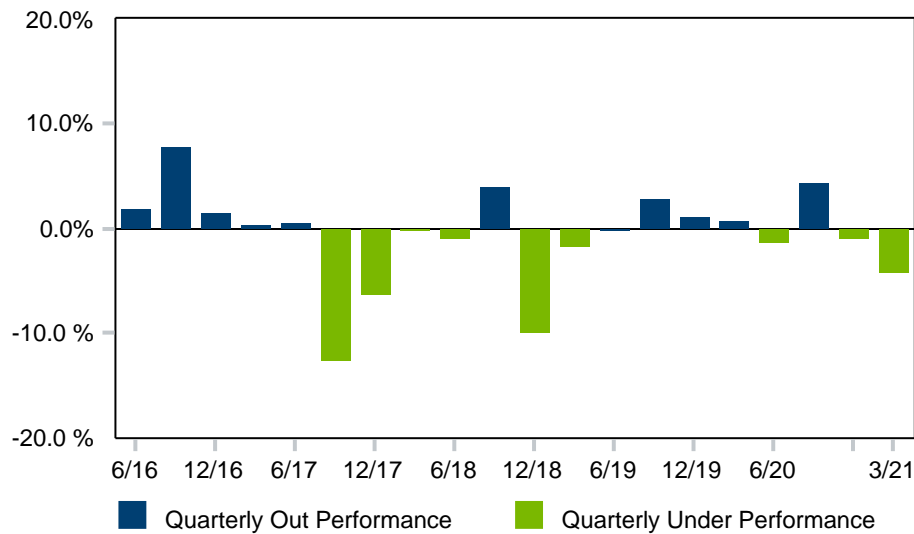
Account Information

Account Name: Aeolus Keystone Fund
 Inception Date: 12/01/2015
 Account Structure: Hedge Fund
 Asset Class: Hedge Fund
 Benchmark: FTSE 3 Month T-Bill
 Peer Group:

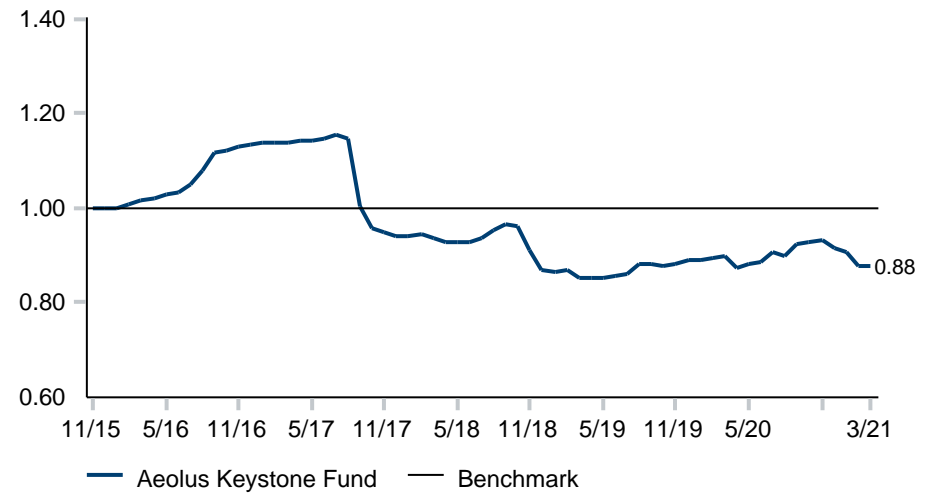
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

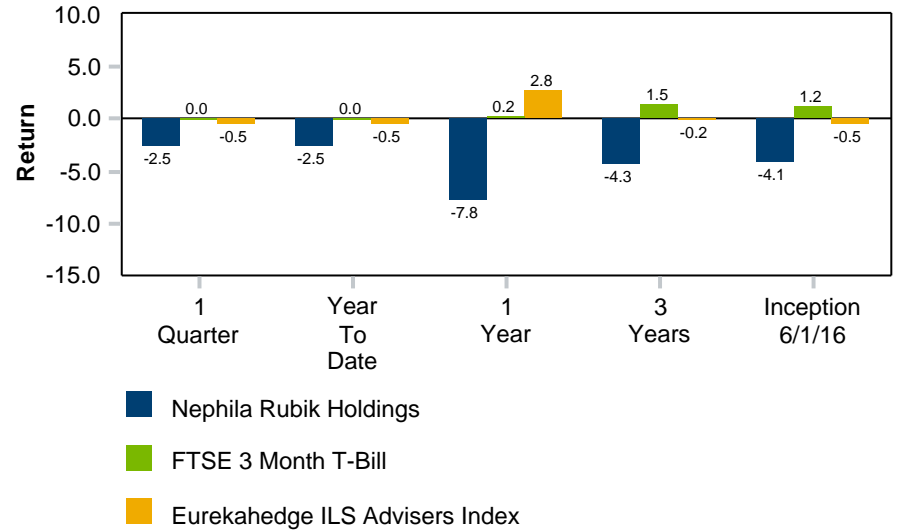


Nephila Rubik Holdings Performance Summary

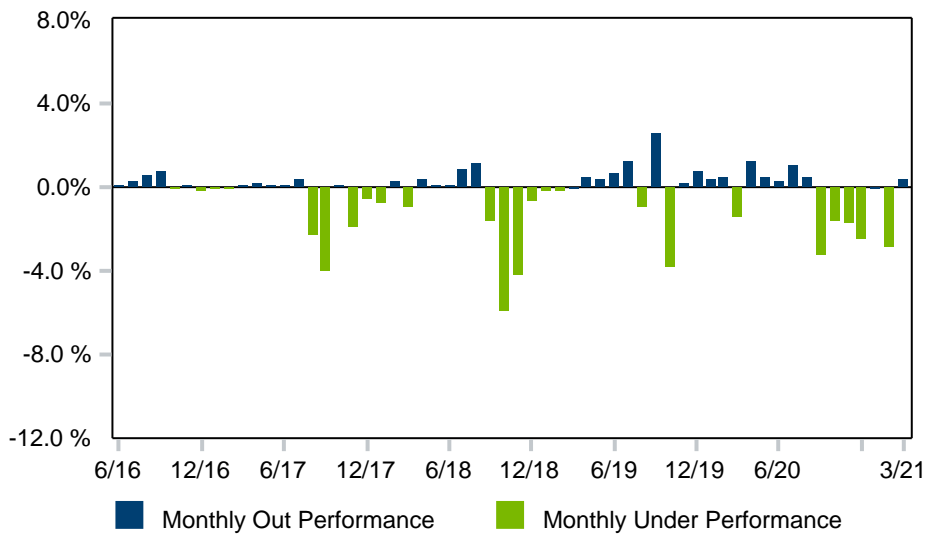
Account Information

Account Name: Nephila Rubik Holdings
 Inception Date: 06/01/2016
 Account Structure:
 Asset Class: Hedge Fund
 Benchmark: FTSE 3 Month T-Bill
 Peer Group:

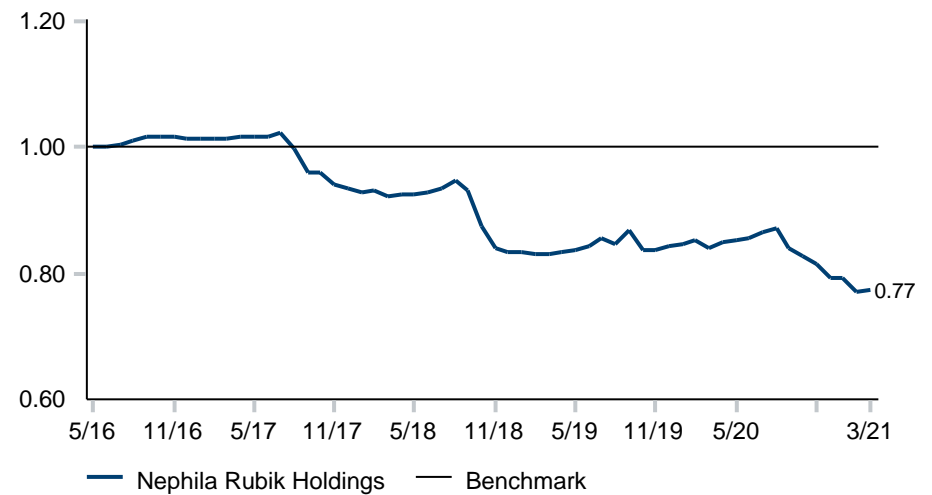
Return Summary



Monthly Excess Performance



Ratio of Cumulative Wealth - Since Inception

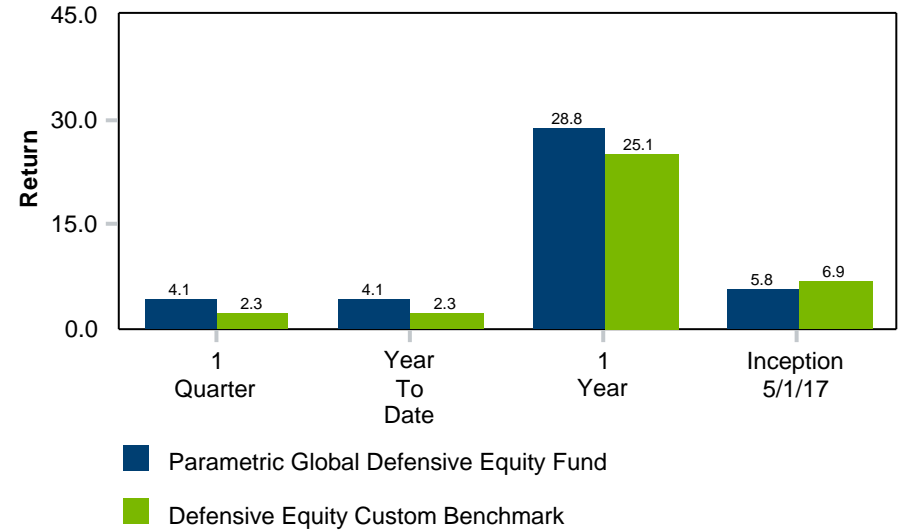


Parametric Global Defensive Equity Fund Performance Summary

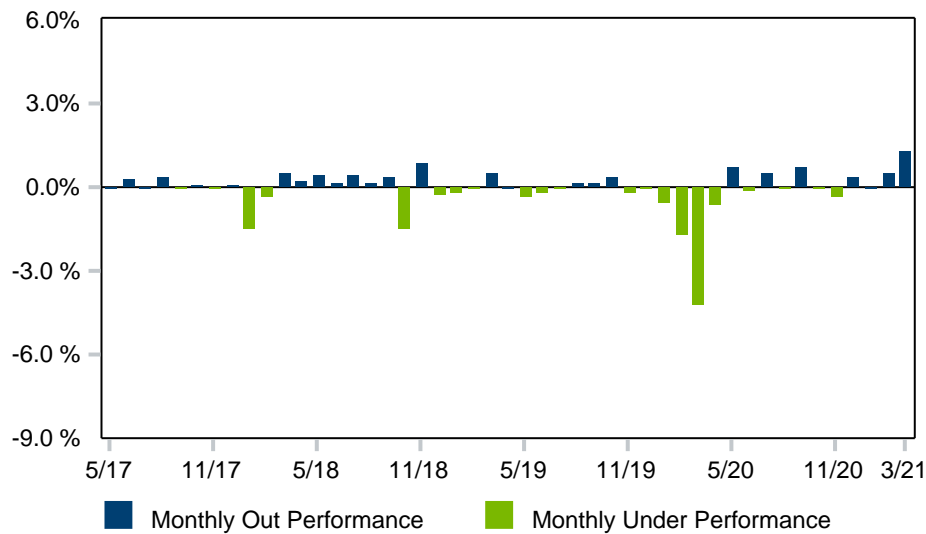
Account Information

Account Name: Parametric Global Defensive Equity Fund
 Inception Date: 06/01/2017
 Account Structure: Commingled Fund
 Asset Class: Global Equity
 Benchmark: Defensive Equity Custom Benchmark
 Peer Group:

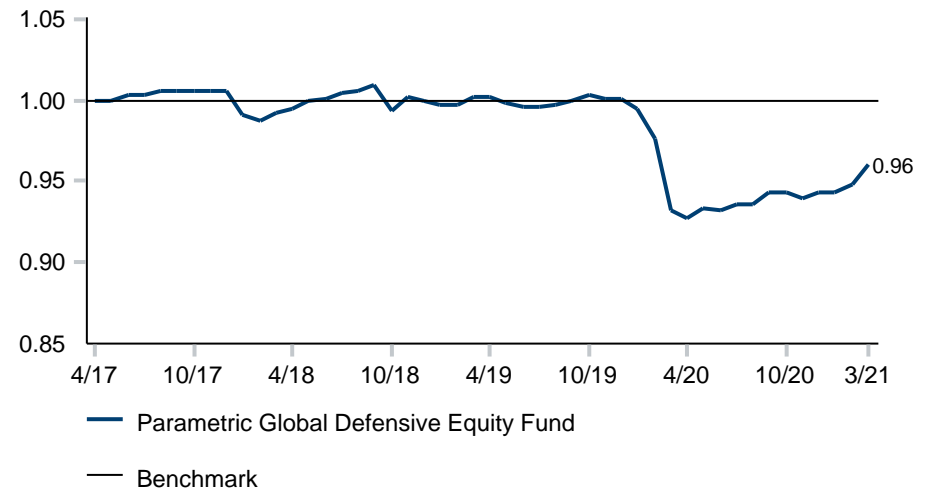
Return Summary



Monthly Excess Performance



Ratio of Cumulative Wealth - Since Inception

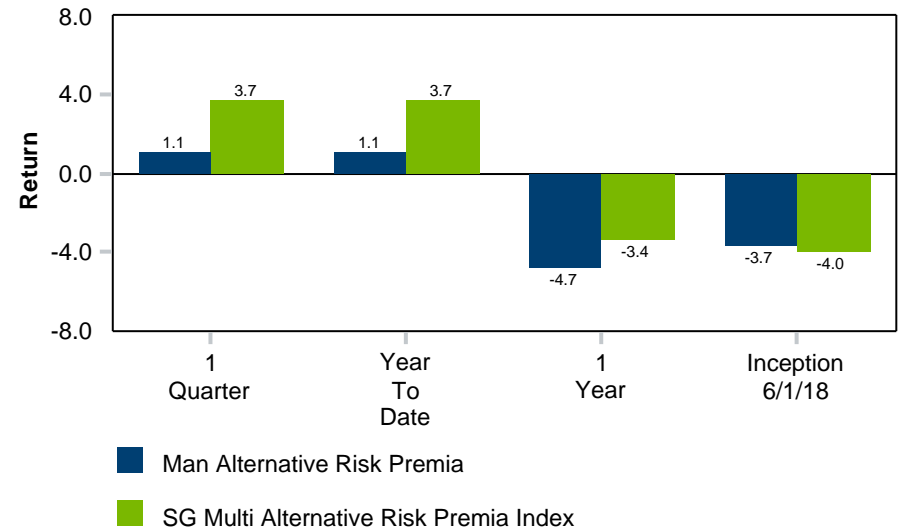


Man Alternative Risk Premia Performance Summary

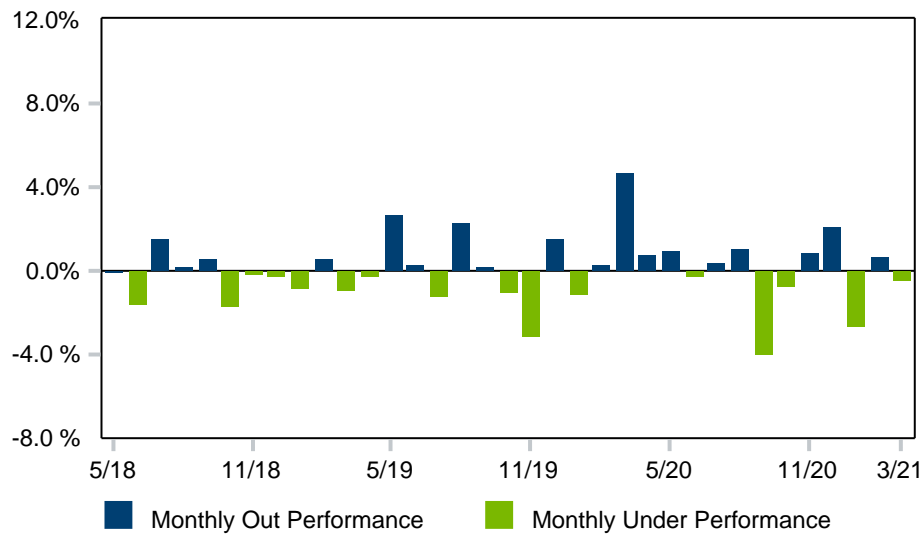
Account Information

Account Name: Man Alternative Risk Premia
 Inception Date: 06/01/2018
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: SG Multi Alternative Risk Premia Index
 Peer Group:

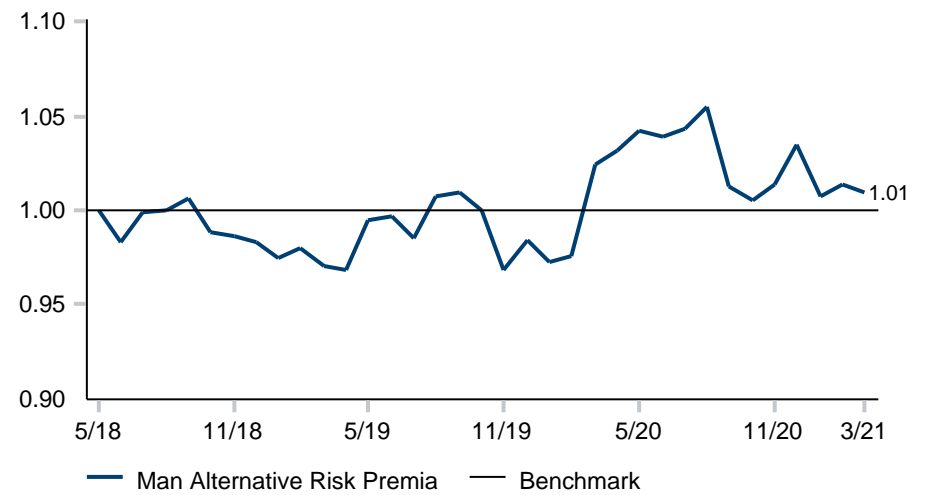
Return Summary



Monthly Excess Performance



Ratio of Cumulative Wealth - Since Inception

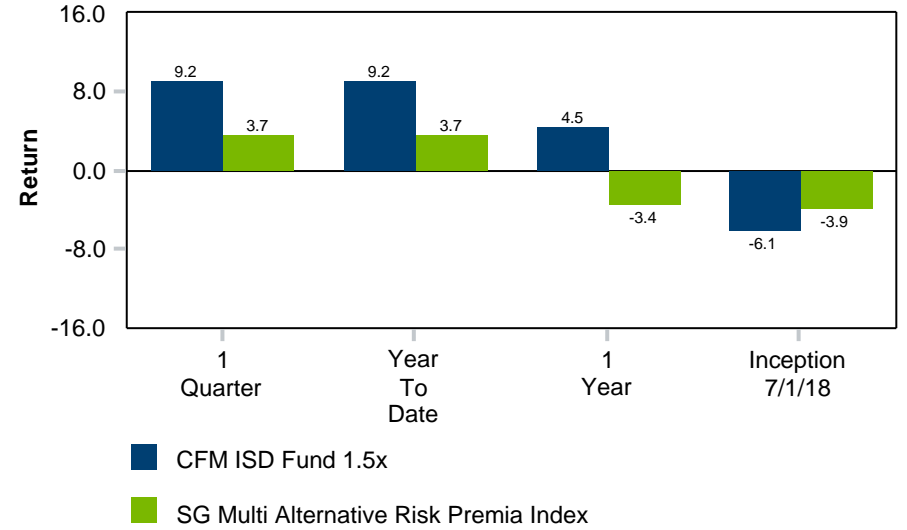


CFM ISD Fund 1.5x Performance Summary

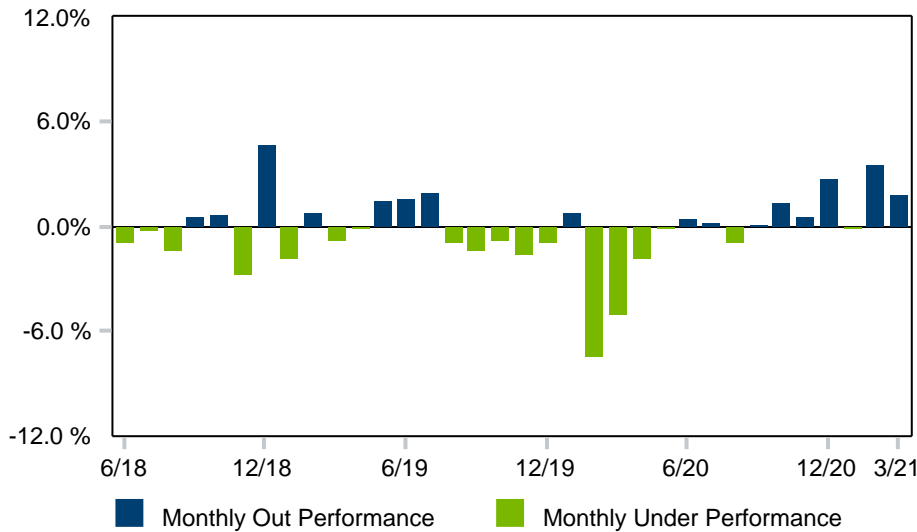
Account Information

Account Name: CFM ISD Fund 1.5x
 Inception Date: 07/01/2018
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: SG Multi Alternative Risk Premia Index
 Peer Group:

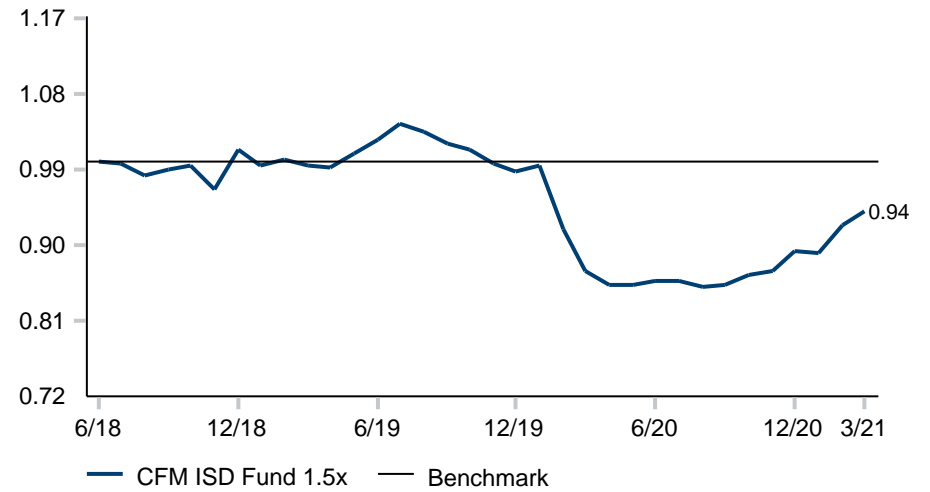
Return Summary



Monthly Excess Performance



Ratio of Cumulative Wealth - Since Inception



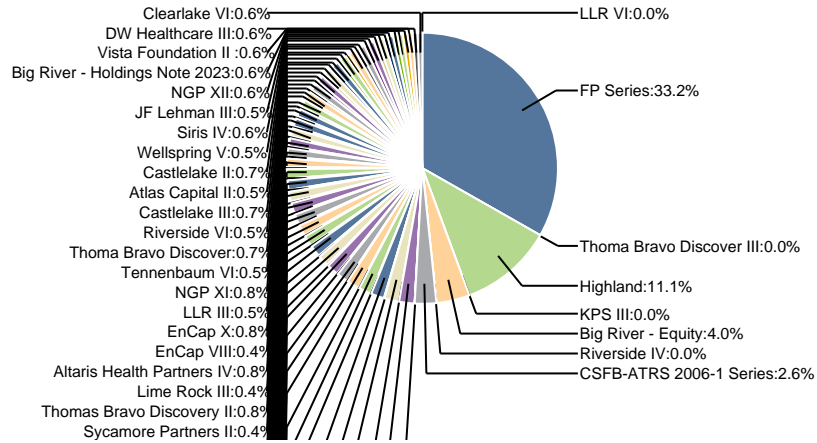


Private Equity

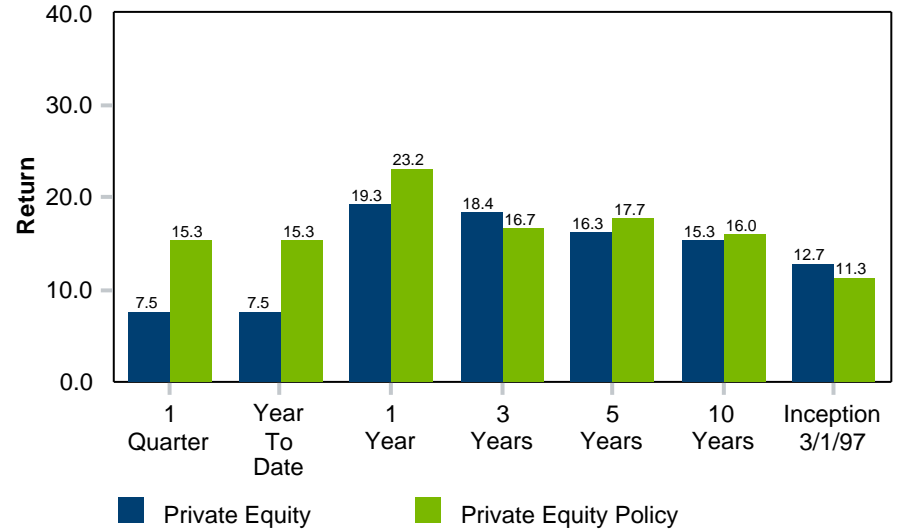
Private Equity Portfolio Overview

Current Allocation

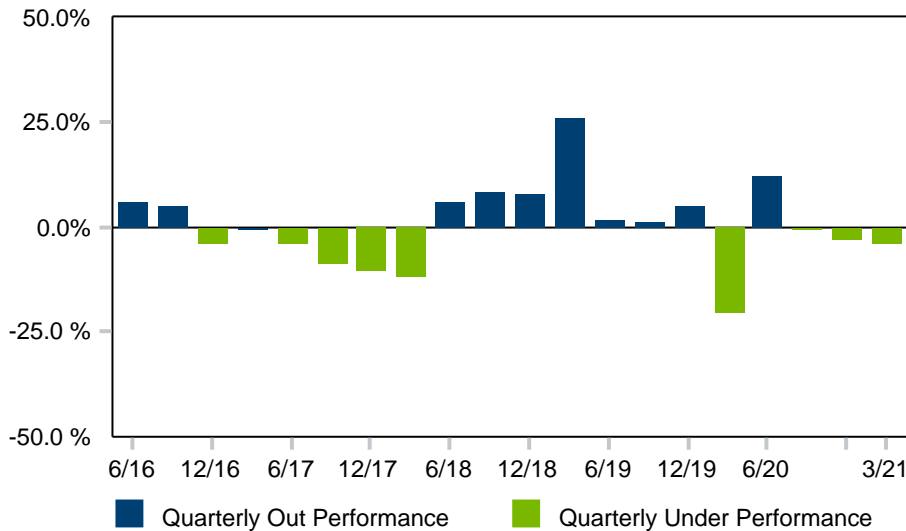
March 31, 2021 : \$2,538M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



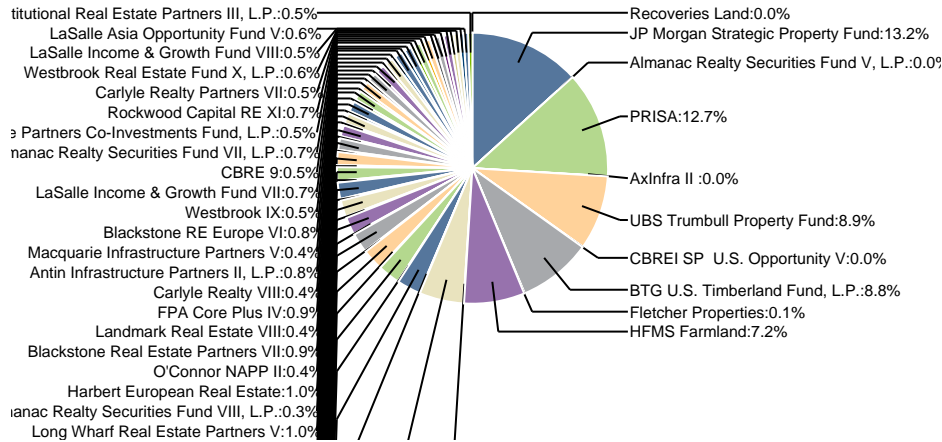


Real Assets

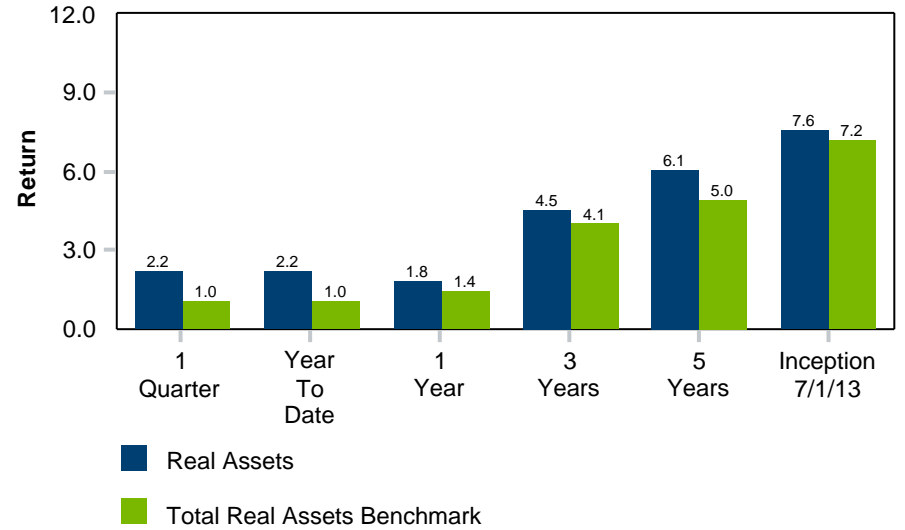
Real Assets Portfolio Overview

Current Allocation

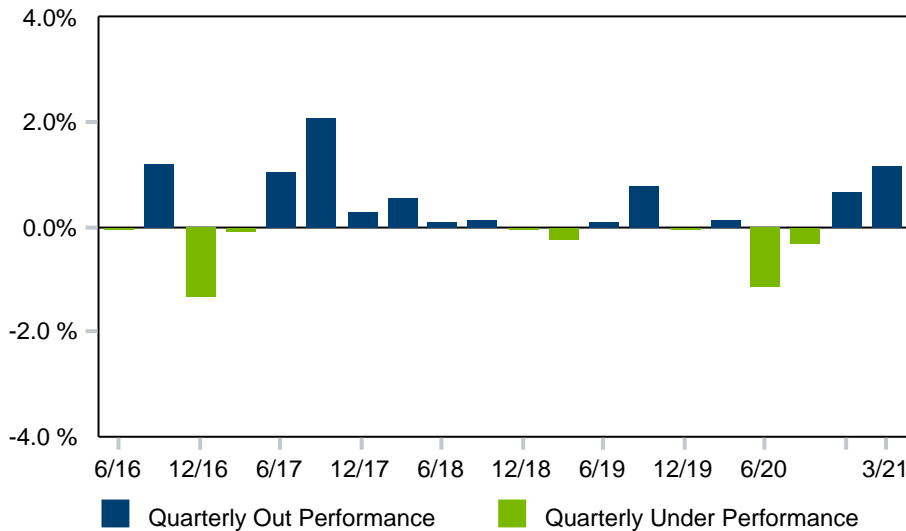
March 31, 2021 : \$2,104M



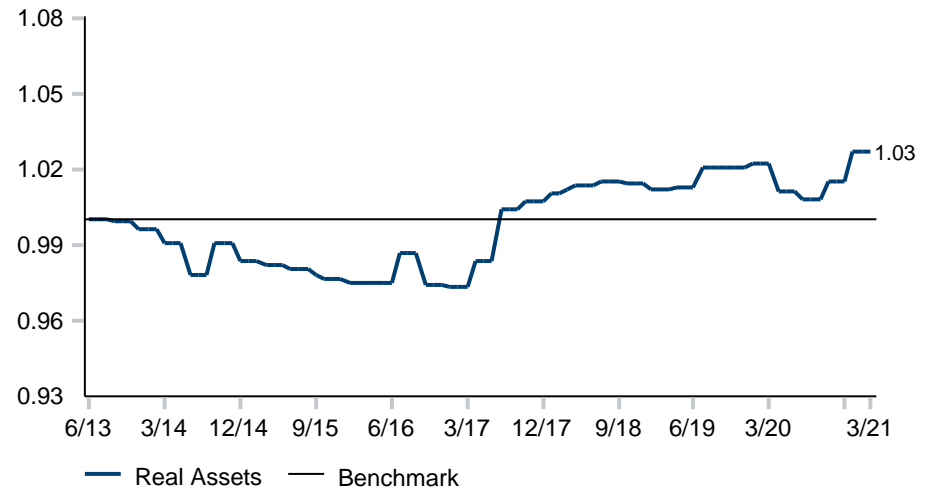
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception





Fee Schedule

Total Equity

As of March 31, 2021

Fee Schedule

	Fee Schedule	Market Value As of 03/31/2021 \$000	Estimated Annual Fee \$000	Estimated Annual Fee (%)
Total Equity		11,922,642	54,937	0.46
Jacobs Levy 130/30	0.60 % of First \$200 M 0.35 % of Next \$300 M 0.30 % Thereafter	870,553	3,362	0.39
Kennedy Capital Management	0.60 % of First \$100 M 0.50 % Thereafter	734,706	3,774	0.51
Stephens	0.75 % of First \$150 M 0.70 % of Next \$50 M 0.65 % Thereafter	616,769	4,184	0.68
Voya Absolute Return	0.60 % of First \$250 M 0.40 % Thereafter	728,135	3,413	0.47
Allianz (Nicholas Applegate)	0.40 % of First \$100 M 0.30 % of Next \$100 M 0.25 % of Next \$100 M 0.20 % Thereafter	1,020,597	2,391	0.23
Pershing Square International	1.50 % of Assets	24,768	372	1.50
Pershing Square Holdings	1.50 % of Assets	253,509	3,803	1.50
Triam Partners	1.50 % of Assets	81,620	1,224	1.50
Triam Co-Investments	0.50 % of Assets	100,469	502	0.50
SSgA Global Index	0.04 % of First \$1000 M 0.03 % Thereafter	1,188,464	457	0.04
BlackRock MSCI ACWI IMI Fund	0.05 % of First \$250 M 0.04 % Thereafter	1,130,889	477	0.04
Wellington Global Perspectives	0.80 % of Assets	722,556	5,780	0.80
T. Rowe Price Global Equity	0.43 % of First \$500 M 0.40 % Thereafter	1,584,506	6,463	0.41
Lazard	0.68 % of First \$300 M 0.65 % Thereafter	816,140	5,395	0.66
D.E. Shaw	0.84 % of First \$100 M 0.80 % of Next \$100 M 0.76 % Thereafter	894,939	6,922	0.77
GMO Global All Country Equity	0.64 % of Assets	540,517	3,459	0.64
Harris Global Equity	0.60 % of First \$100 M 0.50 % of Next \$100 M 0.45 % Thereafter	613,431	2,960	0.48

319 Above fees reflect only the current base management fee and excludes any performance fee arrangement.

Total Equity

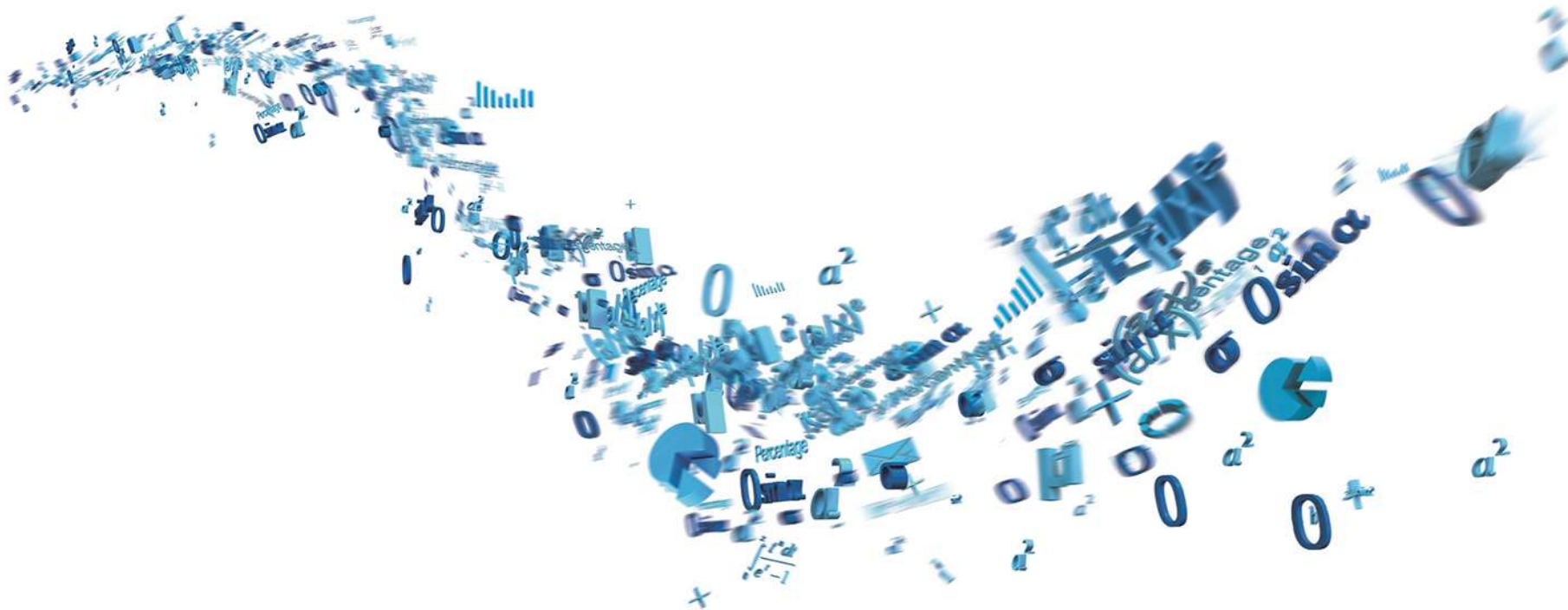
As of March 31, 2021

Fee Schedule

	Fee Schedule	Market Value As of 03/31/2021 \$000	Estimated Annual Fee \$000	Estimated Annual Fee (%)
Fixed Income		2,610,943	5,343	0.20
BlackRock	0.20 % of First \$200 M 0.15 % of Next \$200 M 0.10 % of Next \$400 M 0.08 % Thereafter	275,451	513	0.19
Loomis Sayles	0.50 % of First \$20 M 0.40 % of Next \$30 M 0.30 % Thereafter	487,263	1,532	0.31
Putnam	0.40 % of First \$100 M 0.35 % of Next \$150 M 0.30 % of Next \$250 M 0.25 % Thereafter	390,750	1,347	0.34
SSgA Aggregate Bond Index	0.04 % of First \$100 M 0.02 % Thereafter	460,364	107	0.02
Wellington Global Total Return	0.30 % of Assets	355,665	1,067	0.30
Reams Core Plus Bond Fund	0.20 % of Assets	388,418	777	0.20
BRS Recycling Tax Credit		176,000	-	-
BRS Recycling Tax Credit Phase 2		77,032	-	-
Opportunistic/Alternatives		929,859	12,896	1.39
Anchorage	2.00 % of Assets	82,134	1,643	2.00
York	1.50 % of Assets	23,275	349	1.50
Capula	2.00 % of Assets	91,306	1,826	2.00
Graham	2.00 % of Assets	72,634	1,453	2.00
Circumference Group Core Value	1.50 % of Assets	36,187	543	1.50
Aeolus Keystone Fund	2.00 % of Assets	224,149	4,483	2.00
Nephila Rubik Holdings	1.50 % of Assets	40,911	614	1.50
Parametric Global Defensive Equity Fund	0.40 % of First \$150 M 0.35 % Thereafter	186,993	729	0.39
Man Alternative Risk Premia	0.85 % of Assets	89,316	759	0.85
CFM ISD Fund 1.5x	0.60 % of Assets	82,956	498	0.60

320 Above fees reflect only the current base management fee and excludes any performance fee arrangement.

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Disclaimers and Notes

Arkansas Teacher Retirement System

Appendix

Description of Benchmarks

Total Fund - The Performance Benchmark for the Total Fund reflects a weighted average of the underlying asset class benchmarks, weighted as follows: Opportunistic/Alternatives and Real Assets at the weight of the previous month's ending market values, Fixed Income at its long-term Policy Target of 15%, and Total Equity at its long-term Policy Target of 55% plus the balance of the unfunded or uncommitted assets of the Opportunistic/Alternatives and Real Assets categories. These targets can be found on page 21 of this report. From October 2007 to July 2013, the Performance Benchmark was the performance of the asset class benchmarks as a weighted average of the previous month's ending market values. The historical components of the benchmark are shown in the table below. Returns prior to September 30, 1996, consist of the actual allocations to the seven different asset classes included in the Arkansas Teacher Retirement System over time. The historical benchmarks used for each asset class are noted below.

Date	DJ Total Stock Market Index	Russell 3000 Index	MSCI ACW ex-U.S. Index	MSCI All Country World Index	BC Universal Bond Index	BC Aggregate Bond Index	Alternative Policy*
03/2004-9/2007	40.0 %	--	17.5 %	--	25.0 %	--	17.5 %
06/2003-02/2004	40.0	--	17.5	--	--	25.0 %	17.5
10/2001-07/2003	--	40.0 %	17.5	--	--	25.0	17.5
08/1998-09/2001	--	40.0	17.0	--	--	28.0	15.0
10/1996-07/1998	--	40.0	20.0	--	--	28.0	12.0

*Historically, the Alternative Policy was comprised of the weighted averages of the Private Equity, Real Estate, and Alternatives policy benchmarks. Prior to July 31, 2003 the alternative benchmark consisted of 57.0% of the Russell 3000 + a 2% Premium per year, 8.5% of the NCREIF Southeast Timberland Index, 28.5% of the Real Estate Index, 6% of the EnnisKnupp STIF Index.

Benchmark Descriptions

Total Equity - A weighted average of the Dow Jones U.S. Total Stock Market Index and the MSCI All Country World IMI Index based on weights of the underlying investment manager allocations. As of March 1, 2021, the Total Equity Performance Benchmark was comprised of 31.2% DJ U.S. Total Stock Market Index and 68.8% MSCI ACWI IMI.

Fixed Income - The Barclays U.S. Universal Bond Index as of March 1, 2004.

Opportunistic/Alternatives - A custom benchmark consisting of 25% DJ/CS Event-Driven Index, 25% HFR Macro Index, and 50% South Timberland NCREIF Index until June 30, 2013; 60% HFRI Macro Index and 40% DJ/CS Event-Driven Index until July 31, 2015; 56% HFRI Macro Index, 38% DJ/CS Event-Driven Index, and 6% Russell 2000 Index until March 31, 2016; 45% HFRI Macro Index, 30% DJ/CS Event-Driven Index, 5% Russell 2000 Index, and 20% Citigroup 3 Month T-bill until May 31, 2016; 37% HFRI Macro Index, 25% DJ/CS Event-Driven Index, 5% Russell 2000 Index, and 33% Citigroup 3 Month T-bill until May 31, 2017; 28% HFRI Macro Index, 20% DJ/CS Event-Driven Index, 4% Russell 2000 Index, 25% Citigroup 3 Month T-bill, and 23% Parametric Performance Benchmark thereafter.

Real Assets - A custom benchmark consisting of a weighted average of the net asset values at previous month's end of the sub-categories' benchmarks, defined as Real Estate Benchmark, Timber Benchmark, Agriculture Benchmark and Infrastructure Benchmark.

Real Estate- NFI-ODCE - NCREIF Fund Index Open-end Diversified Core Equity Index is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy; underlying funds are leveraged with gross and net returns available.

Timber Property Benchmark - NCREIF Timberland Property Index (NTPI) weighted according to ATRS' regional exposure based on net asset value.

Agriculture Benchmark - NCREIF Farmland Index (NFI) weighted according to ATRS' regional and crop type exposure based on net asset value.

Infrastructure Benchmark - Consumer Price Index (CPI) plus 500 basis points annually.

Private Equity - The Dow Jones U.S. Total Stock Market Index + a 2% premium per year.

Cash Equivalents - The Citigroup 90 day T-bill.

Benchmark Descriptions

Allianz (Convertibles) Performance Benchmark - On January 1, 2005, the benchmark for the portfolio was changed to the Merrill Lynch Convertible Bond (All Quality) Index. Prior to January 1, 2005, the performance benchmark for the Allianz (previously Nicholas Applegate) portfolio was the CSFB Convertible Securities Index. Prior to May 1, 2004, the performance benchmark consisted of 90% CSFB Convertible Securities Index and 10% Salomon High Yield Index.

BlackRock Performance Benchmark - The Barclays Universal Bond Index as of March 1, 2004. Previously it was the Barclays Aggregate Bond Index.

Jacobs Levy Performance Benchmark - On January 1, 2008, the benchmark for the portfolio was changed to the Russell 3000 Index. Prior to January 1, 2008, the portfolio benchmark was the Russell 1000 Growth Index.

Loomis Sayles Performance Benchmark - An Index that splices 65% of the Barclays Government/Credit Index and 35% Barclays High Yield Index.

Nicholas Applegate Performance Benchmark - On January 1, 2005, the benchmark for the portfolio was changed to the Merrill Lynch Convertible Bond (All Quality) Index. Prior to January 1, 2005, the performance benchmark for the Nicholas Applegate portfolio was the CSFB Convertible Securities Index. Prior to May 1, 2004, the performance benchmark consisted of 90% CSFB Convertible Securities Index and 10% Salomon High Yield Index.

Parametric Performance Benchmark - 50% MSCI All Country World Index (net) and 50% Citigroup 90 day T-Bill Index as of June 1, 2017.

Wellington Global Performance Benchmark - As of July 1, 2012 the benchmark was changed to MSCI All Country World Small Cap Index. Prior to July 1, 2012, the benchmark was MSCI All Country World Small/Mid Cap Index.

Voya Absolute Return Performance Benchmark - As of December 1, 2015 the benchmark was changed to MSCI All Country World Index. Prior to December 1, 2015, the benchmark was the S&P 500 Stock Index.

Barclays Aggregate Bond Index - A market-value weighted index consisting of the Barclays Corporate, Government and Mortgage-Backed Securities Indices. The Index also includes credit card-, auto- and home equity loan-backed securities, and is the broadest available measure of the aggregate U.S. fixed income market.

Barclays Government/Credit Index - The Barclays Government/Credit Index measures the investment return of all medium and larger public issues of U.S. Treasury, agency, investment-grade corporate, and investment-grade international dollar-denominated bonds.

Barclays High Yield Index - The Barclays High Yield Index covers the universe of fixed rate, non-investment grade debt. Pay-in-kind (PIK) bonds, Eurobonds, and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

Barclays U.S. Universal Bond Index - A market-value weighted index consisting of the components of the Barclays Aggregate Bond Index, plus EuroDollar bonds, emerging markets bonds, 144A fixed income securities, and U.S. corporate high yield securities.

Benchmark Descriptions

Barclays Mortgage Index - A market value-weighted index consisting of the mortgage pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA) and Freddie Mac (FHLMC).

Citigroup 90 day T-bill Index - Treasury bill rates of return, as reported by Citigroup (Salomon Smith Barney), for bills with a maximum time remaining to maturity of 90 days.

Dow Jones U.S. Total Stock Market Index - A capitalization-weighted stock index representing all U.S. common stocks traded regularly on the organized exchanges. The Index is the broadest measure of the aggregate U.S. stock market.

FTSE Europe - A tradable index, designed to represent the performance of the 100 most highly capitalized blue chip companies in Europe.

Merrill Lynch Convertible Bond (All Quality) Index -The Merrill Lynch All Convertibles All Qualities Index is a widely used index that measures convertible securities' performance. It measures the performance of U.S. dollar-denominated convertible securities not currently in bankruptcy with a total market value greater than \$50 million at issuance.

MSCI All Country World ex-U.S. Index - A capitalization-weighted index consisting of 22 developed and 23 emerging countries, but excluding the U.S. Covers approximately 85% of global equity opportunity set outside of the U.S.

MSCI All Country World Index - A capitalization-weighted index of stocks representing 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.

MSCI All Country World IMI Index - A capitalization-weighted index representing large and small cap stock from 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.

MSCI Europe, Australasia, Far East (EAFE) Non-U.S. Stock Index - A capitalization-weighted index of stocks representing 21 developed and emerging country markets in Europe, Australia, Asia and the Far East.

MSCI World Index - A capitalization-weighted index of stocks representing 22 developed stock markets in Europe, Asia and Canada.

NFI-ODCE Index- NCREIF Fund Index Open-end Diversified Core Equity Index is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy; underlying funds are leveraged with gross and net returns available

DJ/CS Event-Driven Index - Event driven funds typically invest in various asset classes and seek to profit from potential mispricing of securities related to a specific corporate or market event. Such events can include: mergers, bankruptcies, financial or operational stress, restructurings, asset sales, recapitalizations, spin-offs, litigation, regulatory and legislative changes as well as other types of corporate events. Event driven funds can invest in equities, fixed income instruments (investment grade, high yield, bank debt, convertible debt and distressed), options and various other derivatives. Many event driven fund managers use a combination of strategies and adjust exposures based on the opportunity sets in each subsector.

Benchmark Descriptions

LIBOR Index - London Interbank Offered Rate. A filtered average of the world's most creditworthy banks' interbank deposit rates with maturities between overnight and one full year.

Russell 3000 Index - An index that measures the performance of the 3,000 stocks that make up the Russell 1000 and Russell 2000 Indices.

Russell 1000 Index - An index that measures the performance of the largest 1,000 stocks contained in the Russell 3000 Index.

Russell 1000 Value Index - An index that measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower I/B/E/S growth forecasts.

Russell 2000 Index - An index that measures the performance of the smallest 2,000 companies contained in the Russell 3000 Index.

Russell 2000 Growth Index - An index that measures the performance of those Russell 2000 companies with greater price-to-book ratios and greater I/B/E/S growth forecasts.

Russell 2000 Value Index - An index that measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower I/B/E/S growth forecasts.

Russell Mid Cap Value Index - An index that measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

S&P 500 Stock Index - A capitalization-weighted stock index consisting of the 500 largest publicly traded U.S. stocks.

South Timberland Index - The largest regional subindex of the NCREIF Timberland Index, consisting of timberland properties held in the U.S. South. This includes close to 300 properties with more than 10 million cumulative acres of timberland in the following states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. Calculations are based on quarterly returns at the individual property level. Performance is reported on an all-cash, unlevered basis, gross of investment management fees.

HFR Macro Index - Macro: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Primary investment thesis is predicated on predicted or future movements in the underlying instruments.

HFR Distressed/Restructuring Index - Distressed Restructuring Strategies employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings. Distressed Strategies employ primarily debt (greater than 60%) but also may maintain related equity exposure. Hedge Fund Research, Inc. (HFR) utilizes a UCITSIII compliant methodology to construct the HFR Hedge Fund Indices. The methodology is based on defined and predetermined rules and objective criteria to select and rebalance components to maximize representation of the Hedge Fund Universe.

Arkansas Teacher Retirement System

Appendix

Historical U.S. Equity and Global Equity composite returns

As of June 30, 2015	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
U.S. Equity	6.7	18.1	16.4	9.4	10.5	04/01/1986
Dow Jones U.S. Total Stock Market Index	7.2	17.6	17.5	8.3	-	
Global Equity	1.8	14.6	12.1	-	2.5	11/01/2007
MSCI AC World Index (Net)	0.7	13.0	11.9	6.4	2.1	

In June 2015, the ATRS Board approved the combination of the U.S. and Global equity asset classes to a single Total Equity asset class. Total Equity performance reporting began in July 2015. In the table above, we show the historical returns for the U.S. Equity and Global Equity asset classes since inception through June 2015. Performance for the Total Equity asset class prior to July 2015 represents a weighted average of the U.S. Equity and Global Equity historical performance.

Benchmark Descriptions

Bloomberg Barclays Corporate High Yield Bond Index - An index that covers the U.S.D-dominated, non-investment grade, fixed rate, taxable corporate bond market. Debt issues from emerging market countries are excluded. Securities are classified as high-yield if the middle rating is Ba1/BB+ or below.

Bloomberg Barclays Emerging Markets Index - An unmanaged index that tracks total returns for external-currency-denominated debt instruments of the emerging markets.

Bloomberg Barclays Global Aggregate - Provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian government, agency and corporate securities, and U.S.D investment grade 144A securities.

Bloomberg Barclays Global Treasury Ex-U.S. - The Barclays Global Treasury ex U.S. Index is a subset of the flagship Global Treasury Index that does not have any exposure to U.S. debt. This multi-currency benchmark includes investment grade, fixed-rate bonds issued by governments in their native currencies.

Bloomberg Barclays Inflation Index - Measures the performance of the U.S. Treasury Inflation Protected Securities ("TIPS") market.

Bloomberg Barclays Universal Index - A market value-weighted index which is the union of the U.S. Aggregate Index, U.S. High Yield Corporate Index, Eurodollar Index, U.S. Emerging Markets Index and the CMBS High Yield Index. The Index is appropriate for core plus fixed income mandates.

Bloomberg Barclays U.S. Aggregate Bond Index - A market value-weighted index consisting of government bonds, SEC-registered corporate bonds and mortgage-related and asset-backed securities with at least one year to maturity and an outstanding par value of \$250 M or greater. This index is a broad measure of the performance of the investment grade U.S. fixed income market.

Bloomberg Barclays U.S. Government/Credit Index - A subcomponent of the Barclays Capital Aggregate Index, this benchmark includes treasury securities, government related issues, and high quality corporate bonds with an outstanding par value of \$250 M or greater and at least one year of maturity remaining.

Bloomberg Barclays U.S. Government Index - A market value weighted index of U.S. government and government agency securities (other than mortgage securities) with maturities of one year or more.

Bloomberg Barclays U.S. High Yield Index - An index composed of non-investment grade corporate debt denominated in U.S. dollars. The issues have to have an outstanding par value of \$150 M or greater and at least one year of maturity remaining.

Bloomberg Barclays U.S. Intermediate Aggregate Bond Index - A market value-weighted index consisting of U.S. Treasury securities, corporate bonds and mortgage-related and asset-backed securities with one to ten years to maturity and an outstanding par value of \$250 M or greater.

Bloomberg Barclays U.S. Intermediate Government Bond Index - An unmanaged index considered representative of intermediate-term fixed-income obligations issued by the U.S. Treasury, government agencies and quasi-federal corporations.

Bloomberg Barclays U.S. Intermediate Government/Credit Index - A market-value weighted index consisting of U.S. government bonds and SEC-registered corporate bonds with one to ten years to maturity and an outstanding par value of \$150 M or greater.

Bloomberg Barclays U.S. Intermediate Treasury - An unmanaged index considered representative of intermediate-term fixed-income obligations issued by the U.S. Treasury.

Bloomberg Barclays U.S. Long Credit Bond Index - An unmanaged index considered representative of long-term fixed-income obligations issued by U.S. corporate, specified foreign debentures, and secured notes that meet the specified maturity, liquidity, and quality requirements. To qualify, bonds must be SEC-registered.

Benchmark Descriptions

Bloomberg Barclays U.S. Long Gov't/Credit Index - The Barclays Capital U.S. Government/ Credit Bond Index measures performance of U.S. dollar denominated U.S. treasuries, government-related, and investment grade U.S. corporate securities that have a remaining maturity of greater than or equal to 1 year. In addition, the securities have \$250 M or more of outstanding face value, and must be fixed rate and non-convertible.

Bloomberg Barclays U.S. Long Government Bond Index - An unmanaged index considered representative of long-term fixed- income obligations issued by the U.S. Treasury, government agencies and quasi-federal corporations.

Bloomberg Barclays U.S. TIPS - A market value-weighted index consisting of U.S. Treasury Inflation Protected Securities with one or more years remaining until maturity with total outstanding issue size of \$500m or more.

Bloomberg Barclays U.S. Treasury 20-30 Year STRIPS Index - A subcomponent of the Barclays Aggregate Index, this benchmark includes long-term treasury STRIPS.

Bloomberg Commodity Index - Consists of 22 exchange-traded futures on physical commodities, which are weighted to account for economic significance and market liquidity. Performance is calculated on an excess return basis and reflects commodity future price movements.

BofA Merrill Lynch 3 Month Treasury Bill - An index that measures the average return of the last three-month U.S. Treasury Bill issues.

BofA Merrill Lynch High Yield Master - A market-capitalization weighted index that tracks the performance of U.S. dollar- denominated, below investment grade corporate debt publicly issued in the U.S. domestic market.

Citigroup 90-Day T-Bill Index - An index that measures the average return of the last three-month U.S. Treasury Bill issues.

Credit Suisse Leveraged Loan Index - Designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market.

CRSP U.S. Large Cap Index - an index comprised of nearly 640 U.S. large cap companies and includes securities traded on NYSE, NYSE Market, NASDAQ, or ARCA, representing nearly 85% of the U.S. investable equity market. The index is reconstituted quarterly after the market close on the third Fridays of March, June, September, and December.

CRSP U.S. Total Market Index - an index comprised of nearly 4,000 constituents across mega, large, small, and micro capitalizations and includes securities traded on NYSE, NYSE Market, NASDAQ, or ARCA, representing nearly 100% of the U.S. investable equity market. The index is reconstituted quarterly after the market close on the third Fridays of March, June, September, and December.

DJ U.S. Completion Total Stock Market Index - A capitalization-weighted index that consists of the stocks in the Dow Jones U.S. Total Stock Market Index less the stocks in the S&P 500 Stock Index.

DJ U.S. Total Stock Market Index - A capitalization-weighted stock index representing all domestic common stocks traded regularly on the organized exchanges. The index is the broadest measure of the aggregate domestic stock market and includes approximately 5,000 stocks.

FTSE 4Good U.S. Select Index - a socially responsible investment (SRI) index of U.S. stocks that excludes companies with certain business activities such as weapons, tobacco, gambling, alcohol, nuclear power, and adult entertainment.

FTSE All-World ex-U.S. Index - A capitalization-weighted stock index representing 46 developed market countries and emerging market countries excluding the U.S.

Benchmark Descriptions

FTSE EPRA NAREIT Global ex-U.S. Index - Designed to represent general trends in eligible real estate equities worldwide. Relevant real estate activities are defined as the ownership, disposal and development of income-producing real estate.

FTSE Global All Cap ex U.S. Index - a market-capitalization weighted index representing the performance of roughly 5350 large, mid and small cap companies in 46 Developed and Emerging markets worldwide, excluding the USA.

FTSE Global Core Infrastructure Index - Represents the performance of infrastructure and infrastructure-related securities companies in a set of industries that FTSE defines as being involved in infrastructure. The series is based on the FTSE Global Equity Index Series and both developed and emerging markets are included.

FTSE NAREIT U.S. Equity REITS - Free float adjusted, market capitalization weighted index of U.S. based equity real estate investment trusts (REITs).

Goldman Sachs Commodity Index - A composite index of commodity sector returns which represents a broadly diversified, unleveraged, long-only position in commodity futures.

HFRI Fund-of-Fund Index - This index is equal-weighted including 800 constituents. It includes both domestic and offshore accounts and is valued in U.S. dollars. Only fund-of-fund products are included in the index that have at least \$50 M under managements and have been actively trading for at least one year. All funds report net monthly returns.

HFRI Fund Weighted Composite Index - The HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in U.S. Dollar and have a minimum of \$50 M under management or a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

Hueler Stable Value Index - The Hueler Analytics Stable Value Pooled Fund Comparative Universe represents investment strategies of \$96 billion in stable value assets, across 24 pooled funds, invested in contracts universe across a universe of 16 general account issuers and 14 synthetic wrap providers. The allocation of pooled fund assets is dominated by synthetic contracts issued by insurance companies and banks.

iMoneyNet All Taxable Money Funds Index - An index made up of the entire universe of money market mutual funds. The index currently represents over 1,300 funds, or approximately 99 percent of all money fund assets.

iMoneyNet Money Fund Average - An index made up of the entire universe of money market mutual funds. The index currently represents over 1,300 funds, or approximately 99 percent of all money fund assets.

J.P. Morgan EMBI Global Diversified - Comprised of dollar-denominated Brady bonds, traded loans and Eurobonds issued by emerging market sovereign and quasi-sovereign entities. The Diversified version limits the weights of the index countries by only including a specified portion of those countries' eligible current face amounts of debt outstanding, providing for a more even distribution of weights within the countries in the index.

MSCI All Country World ex-U.S. Index - A capitalization-weighted index of stocks representing 44 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America. Index consists of 23 developed and 21 emerging countries, but excludes the U.S.

MSCI All Country World ex-U.S. Index IMI - A capitalization-weighted index of large, mid and small cap stocks representing 22 developed (excluding the United States) and 24 emerging market countries. The index is the broadest measure of the aggregate non-U.S. stock market, covering approximately 99% of the global equity investment opportunity set outside of the United States.

Benchmark Descriptions

MSCI All Country World ex-U.S. Small Cap Index - Covers all investable small cap securities with a market capitalization below that of the companies in the MSCI Standard Indices (excluding U.S.), and target approximately 14% of each market's free-float adjusted market capitalization.

MSCI All Country World Index - A capitalization-weighted index of stocks representing 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.

MSCI All Country World Index IMI - A capitalization-weighted index of large, mid and small cap stocks representing 23 developed and 24 emerging market countries. The index is the broadest measure of the aggregate global stock market, covering approximately 99% of the global equity investment opportunity set.

MSCI EAFE Growth Index - A capitalization-weighted index of 21 stock markets in Europe, Australia, Asia and the Far East designed to capture the growth-oriented companies.

MSCI EAFE Index - A capitalization-weighted index of stocks representing 22 developed countries in Europe, Australia, Asia, and the Far East.

MSCI EAFE Small Cap Index - A capitalization-weighted index of small cap stocks representing 23 developed country markets in Europe, Australia, Asia, and the Far East.

MSCI EAFE Value Index - A capitalization-weighted index of 21 stock markets in Europe, Australia, Asia and the Far East designed to capture the value-oriented companies.

MSCI Emerging Markets Index - A capitalization-weighted index of stocks representing 22 emerging country markets.

MSCI Emerging Markets Value Index - A capitalization-weighted index considered representative of value stocks across 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.

MSCI U.S. Broad Market Index - A capitalization-weighted stock index that aggregates the MSCI U.S. Large Cap 300, Mid Cap 450, Small Cap 1,750 and Micro Cap Indices. This index represents approximately 99.5% of the capitalization of the U.S. Equity market and includes approximately 3,562 companies.

MSCI U.S. REIT Index - A broad index that fairly represents the equity REIT opportunity set with proper investability screens to ensure that the index is investable and replicable. The index represents approximately 85% of the U.S. REIT universe.

MSCI World Index - A free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets, representing 24 developed market country indices.

NCREIF Property Index - A capitalization-weighted index of privately owned investment grade income-producing properties representing approximately \$269 billion in assets.

NFI ODCE Index - A capitalization weighted index comprised of open-end, Core funds investing in commercial real estate properties. The funds that constitute the index are subject to certain geographic and property type diversification requirements as well as leverage restrictions. The index reflects the impact of leverage on investment results. The returns shown in this report are net of management fees of the respective funds included in the index.

Rolling 3-year Constant Maturity Treasury Index - An index published by the Federal Reserve Board based on the monthly average yield of a range of Treasury securities, all adjusted to the equivalent of a three-year maturity.

Russell 1000 Growth Index - An index that measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher I/B/E/S growth forecasts.

Russell 1000 Index - A capitalization-weighted index of the 1,000 largest publicly traded U.S. stocks by capitalization.

Benchmark Descriptions

Russell 1000 Value Index - An index that measures the performance of those stocks included in the Russell 1000 Index with lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.

Russell 2000 Growth Index - A capitalization-weighted index of those stocks in the Russell 2000 Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.

Russell 2000 Index - A capitalization-weighted index of the smallest 2,000 stocks in the Russell 3000 Index. The index excludes the largest- and smallest-capitalization issues in the domestic stock market.

Russell 2000 Value Index - An index that measures the performance of those stocks included in the Russell 2000 Index with lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.

Russell 2500 Growth Index - A capitalization-weighted index representing those companies within the Russell 2500 Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.

Russell 2500 Index - The Index is constructed by first identifying the 3,000 largest-capitalization U.S. stocks and ranking them by market capitalizations, choosing the bottom 2,500 names on the list.

Russell 2500 Value Index - An index that measures the performance of those stocks included in the Russell 2500 Index with lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.

Russell 3000 Growth Index - A capitalization-weighted index consisting of those Russell 3000 Index stocks that have higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.

Russell 3000 Index - A capitalization-weighted index consisting of the 3,000 largest publicly traded U.S. stocks by capitalization. This index is a broad measure of the performance of the aggregate domestic equity market.

Russell 3000 Value Index - A capitalization-weighted index consisting of those Russell 3000 Index stocks that have lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.

Russell Mid Cap Growth Index - A capitalization-weighted index representing those stocks in the Russell MidCap Index with higher price-to-book ratios and higher I/B/E/S earnings growth forecasts.

Russell Mid Cap Index - A capitalization-weighted index of the 800 smallest stocks in the Russell 1000 Index. This index is a broad measure of mid-capitalization stocks.

Russell Mid Cap Value Index - A capitalization-weighted index consisting of those Russell MidCap Index stocks that have lower price-to-book ratios and lower I/B/E/S earnings growth forecasts.

S&P 500 Index - A capitalization-weighted index representing stocks chosen by Standard & Poor's, Inc. for their size, liquidity, stability and industry group representation. The companies in the S&P 500 Index are generally among the largest in their industries.

Benchmark Descriptions

S&P Completion Index -The S&P Completion Index is a sub-index of the S&P Total Market Index, including all stocks eligible for the S&P TMI and excluding all current constituents of the S&P 500. The index covers approximately 4,000 constituents, offering investors broad exposure to mid, small, and micro cap companies.

S&P Leverage Loan Index - A daily total return index that uses LSTA/LPC Mark-to-Market Pricing to calculate market value change.

S&P MidCap 400 Index - A market-capitalization-weighted index of stocks in all major industries in the mid-range of the U.S. stock market.

Wilshire REIT - A measure of the types of U.S. real estate securities that represent the ownership and operation of commercial or residential real estate. To be included in the index, a company must have a market capitalization of \$200 M and have at least 75% of the total revenue derived from the ownership and operation of the real estate assets.

- Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect our fees or expenses.
- Past performance is no guarantee of future results.
- Please feel free to contact us at retirement@aon.com for more index information.

Thought Leadership Highlights | Public Retirement Plans

Topic	Article	Link
Aon United	COVID-19 Vaccine: Implications of Mandatory Employee Programs	Link to 1st Bulletin Link to 2nd Bulletin
Governance	Memo on Executive Order 13959—Prohibition of Investment in Securities of Chinese Military Companies	Request directly from Consultant
Market View	AA View: How far Could U.S. Yields Rise?	Link
Market View	AA View: Do China A-Shares Present a Good Investment Opportunity?	Link
Market View	AA View: U.S. Dollar Weakness has Further to Run	Link
Market View	U.S. Month in Markets (March 2021)	Link
Market View	Client Video: Value Underperformance (access code 'aon!')	Link to Video
Market View	Quarterly Investment Outlook—January 2021	Link
Market View	Townsend Real Estate Update: COVID-19 and the Impact on Office Space	Link
Annual Outlook	6-Key Themes for Public Retirement Plans	Link
Plan Design	Global Invested Capital Markets—Updated White Paper	Link
Plan Design	Trust the Process—Public Pension Investment Strategy	Link
Strategy Review	3 Ways Retirement Plans Are Evolving	Link
Strategy Review	Diverse Manager Investing Survey Report	Link
Strategy Review	Video: Demand Increasing for ESG and Responsible Investment (access code 'aon!')	Link to video
Legal & Compliance	Legal & Compliance quarterly update newsletter	Link to Article Link to Audio Summary
Legal & Compliance	2021 Compliance Calendar	Link

If you do not get Aon Investments' monthly email newsletter, but would like to, please ask your consultant.

Notes

- The rates of return contained in this report are shown on an after-fees basis unless otherwise noted. They are geometric and time-weighted. Returns for periods longer than one year are annualized.
- Universe percentiles are based upon an ordering system in which 1 is the best ranking and 100 is the worst ranking.
- Due to rounding throughout the report, percentage totals displayed may not sum to 100%. Additionally, individual fund totals in dollar terms may not sum to the plan total.

Disclaimer

Past performance is not necessarily indicative of future results.

Unless otherwise noted, performance returns presented reflect the respective fund's performance as indicated. Returns may be presented on a before-fees basis (gross) or after-fees basis (net). After-fee performance is net of each respective sub-advisors' investment management fees and include the reinvestment of dividends and interest as indicated on the notes page within this report or on the asset allocation and performance summary pages. Actual returns may be reduced by Aon Investments' investment advisory fees or other trust payable expenses you may incur as a client. Aon Investments' advisory fees are described in Form ADV Part 2A. Portfolio performance, characteristics and volatility also may differ from the benchmark(s) shown.

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Refer to Hedge Fund Research, Inc. www.hedgefundresearch.com for information on HFR indices.

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Aon Investments USA Inc.
200 East Randolph Street
Suite 700
Chicago, IL 60601
ATTN: Aon Investments Compliance Officer



Arkansas Teacher Retirement System | April 30, 2021

Monthly Investment Review

All information presented in this report should be considered preliminary.

Finalized data will be available on the next Quarterly Investment Report after the close of the quarter.

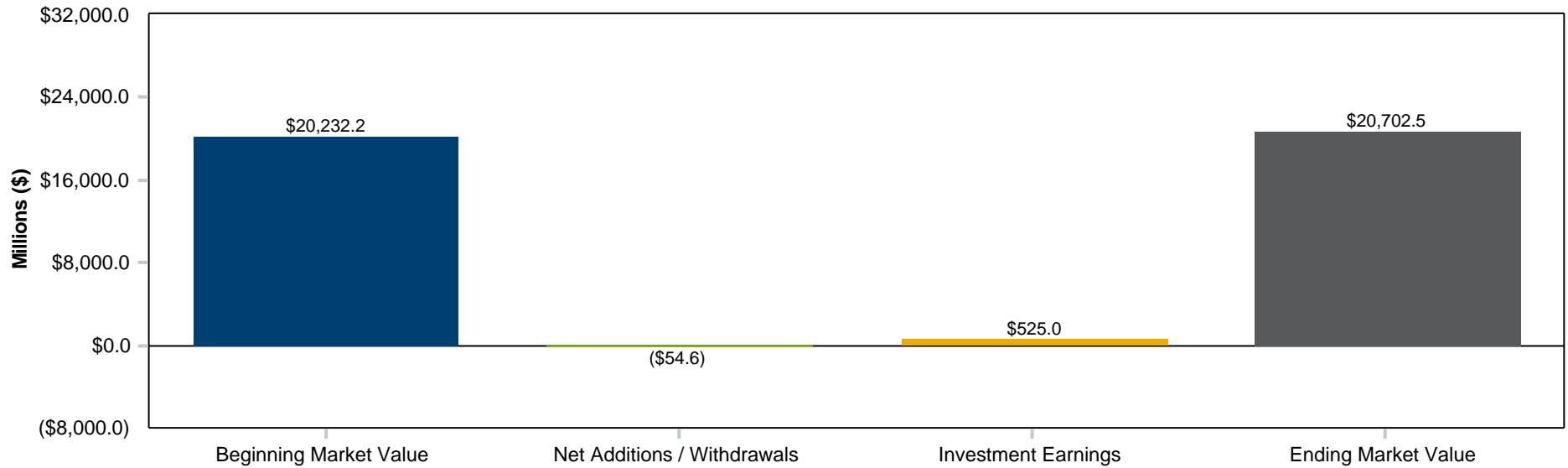
As of April 30, 2021

Market Environment

	Performance(%)						
	1 Month	Year To Date	Fiscal YTD	1 Year	3 Years	5 Years	10 Years
Dow Jones U.S. Total Stock Market Index	5.1	11.9	40.1	51.0	18.9	17.6	14.0
S&P 500 Index	5.3	11.8	36.6	46.0	18.7	17.4	14.2
Russell 1000 Index	5.4	11.6	38.9	49.5	19.2	17.8	14.2
Russell 1000 Value Index	4.0	15.7	42.0	45.9	12.3	12.2	11.1
Russell 1000 Growth Index	6.8	7.8	36.0	51.4	25.4	22.9	17.0
Russell 2000 Index	2.1	15.1	58.6	74.9	15.2	16.5	11.6
Russell 2000 Value Index	2.0	23.6	69.1	79.0	11.7	13.5	10.1
Russell 2000 Growth Index	2.2	7.2	48.8	69.2	18.0	18.9	12.9
MSCI AC World IMI (Net)	4.3	9.7	37.2	48.1	13.1	13.8	9.2
MSCI AC World ex USA IMI (Net)	3.2	7.1	34.0	44.9	7.1	10.0	4.9
MSCI EAFE Index (Net)	3.0	6.6	29.6	39.9	6.3	8.9	5.2
MSCI Emerging Markets Index (Net)	2.5	4.8	37.5	48.7	7.5	12.5	3.6
Blmbg. Barc. U.S. Universal Index	0.8	-2.2	0.0	1.8	5.4	3.6	3.7
Blmbg. Barc. U.S. Aggregate	0.8	-2.6	-1.4	-0.3	5.2	3.2	3.4
Blmbg. Barc. U.S. Government	0.7	-3.4	-4.0	-4.2	4.6	2.4	2.8
Blmbg. Barc. Credit Bond Index	1.1	-3.4	0.7	4.3	6.6	4.6	4.8
Blmbg. Barc. U.S. Mortgage Backed Securities	0.6	-0.6	-0.2	-0.2	4.1	2.5	2.8
Blmbg. Barc. U.S. Corp: High Yield	1.1	1.9	13.5	19.7	7.0	7.5	6.4
Citigroup 90-Day T-Bill	0.0	0.0	0.1	0.1	1.4	1.1	0.6

Total Plan Asset Summary

**Change in Market Value
From April 1, 2021 to April 30, 2021**



Summary of Cash Flow

	1 Month	Year To Date	Fiscal YTD	1 Year
Beginning Market Value	20,232,207,027	19,449,264,888	16,663,156,052	15,865,917,659
+ Additions / Withdrawals	-54,644,133	-244,541,845	-679,681,250	-725,316,131
+ Investment Earnings	524,960,287	1,497,800,138	4,719,048,379	5,561,921,654
= Ending Market Value	20,702,523,181	20,702,523,181	20,702,523,181	20,702,523,181

As of April 30, 2021

Asset Allocation & Performance

	Allocation			Performance(%)								
	Market Value (\$)	%	Policy(%)	1 Month	Year To Date	Fiscal YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	20,702,523,181	100.0	100.0	2.6	7.7	28.7	35.5	10.9	11.6	9.2	8.8	04/01/1986
<i>Performance Benchmark</i>				2.8	7.7	27.5	29.9	11.8	11.8	9.6	8.9	
Total Equity	12,397,898,393	59.9	57.9	4.2	10.7	45.0	59.0	12.8	14.2	10.1	11.2	07/01/2015
<i>Total Equity Performance Benchmark</i>				4.6	10.4	38.1	49.0	14.9	15.0	11.1	12.4	
Fixed Income	2,627,365,861	12.7	15.0	0.6	-0.8	2.6	4.9	5.3	4.6	4.1	5.4	07/01/1992
<i>Performance Benchmark</i>				0.8	-2.2	0.0	1.8	5.4	3.6	3.7	5.5	
Opportunistic/Alternatives	931,325,286	4.5	4.6	1.0	3.3	7.9	9.3	0.7	2.0	3.2	3.2	05/01/2011
<i>Custom Alternatives Benchmark</i>				1.2	4.4	10.1	11.4	3.3	3.3	2.1	2.1	
Real Assets	2,111,309,937	10.2	10.5									
Real Estate	1,333,621,450	6.4										
Timber	296,419,634	1.4										
Agriculture	206,748,267	1.0										
Infrastructure	274,520,586	1.3										
Private Equity	2,533,318,152	12.2	12.0									
Cash	101,305,551	0.5	0.0									

***Preliminary Results**

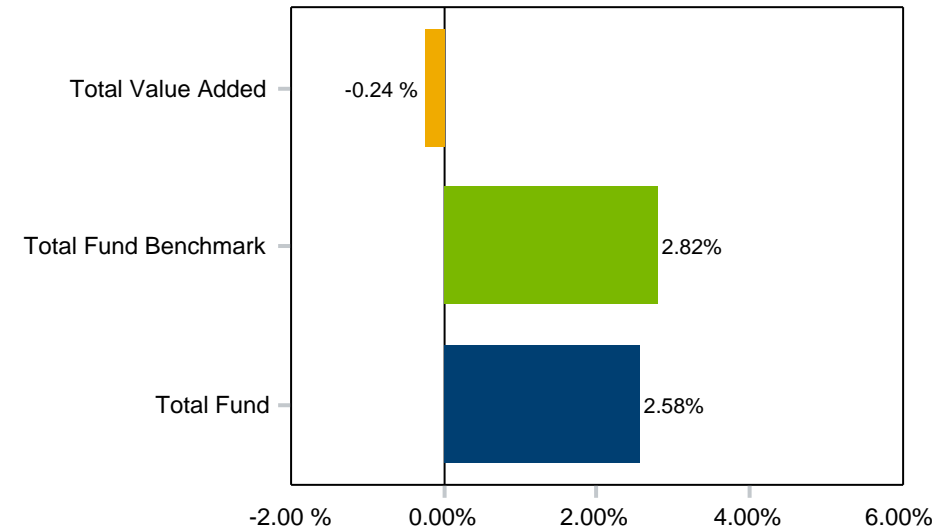
*Policy % is the interim target used for benchmarking purposes. See page 17 for long-term targets. Beginning July 1, 2013, an updated Investment Policy was adopted which includes the new Real Assets category, which includes Real Estate, Timber, Agriculture and Infrastructure.

*Real Assets and Private Equity are valued on a quarterly basis and reported on a quarter lag. Market values have been adjusted for the current month's cash flows. Updated results for these portfolios are not yet available and will be included in the quarterly performance report.

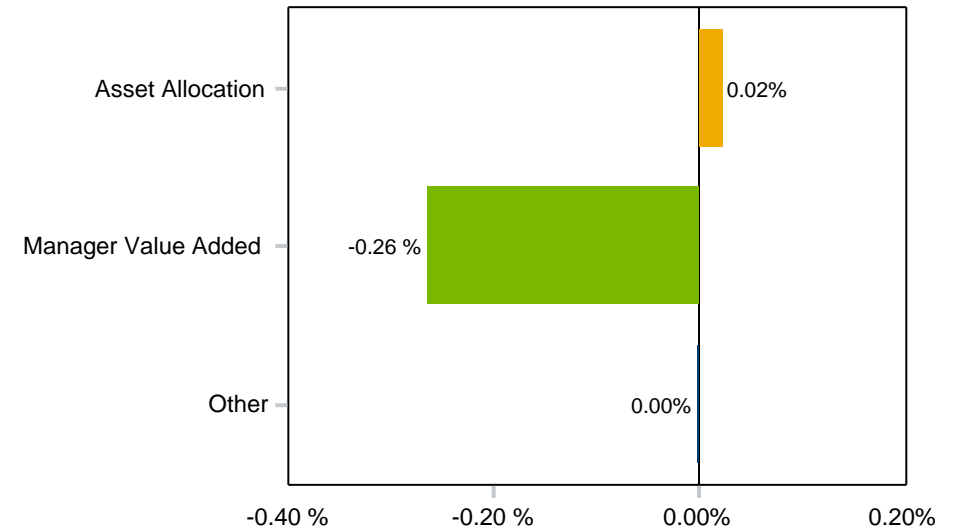
*The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 21 of this report.

Total Fund Attribution

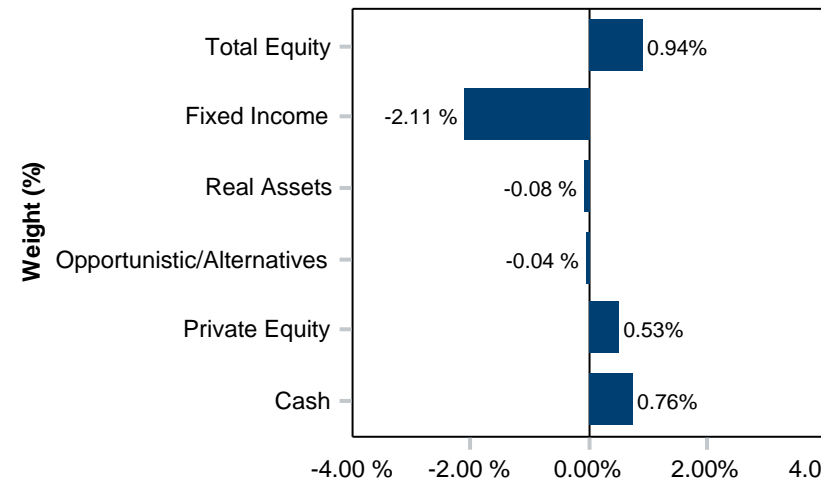
Total Fund Performance



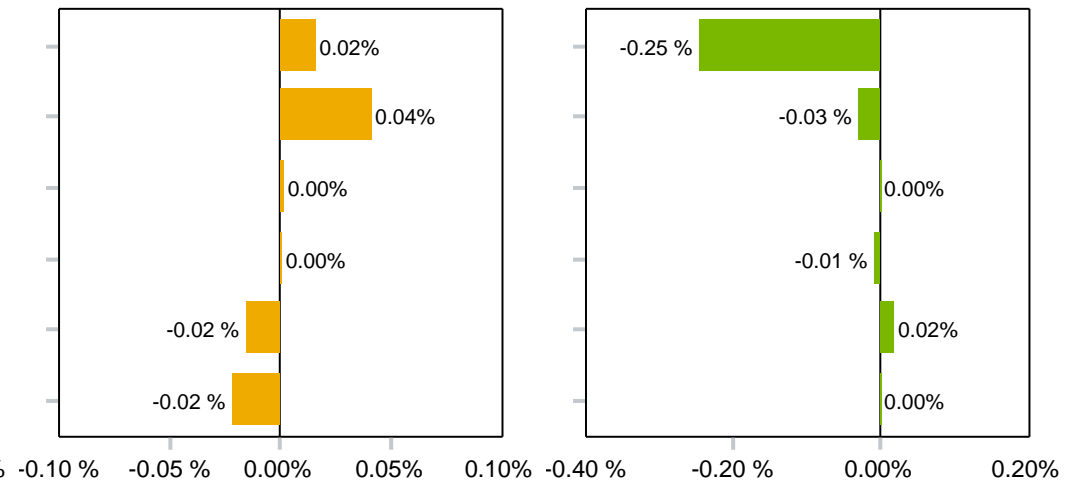
Total Value Added:-0.24 %



Total Asset Allocation:0.02%



Total Manager Value Added:-0.26 %



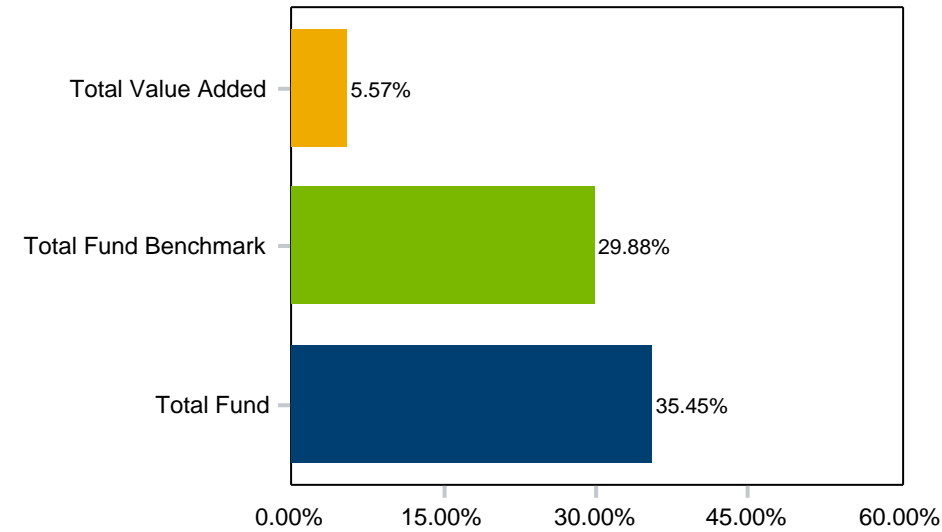
Average Active Weight

Asset Allocation Value Added

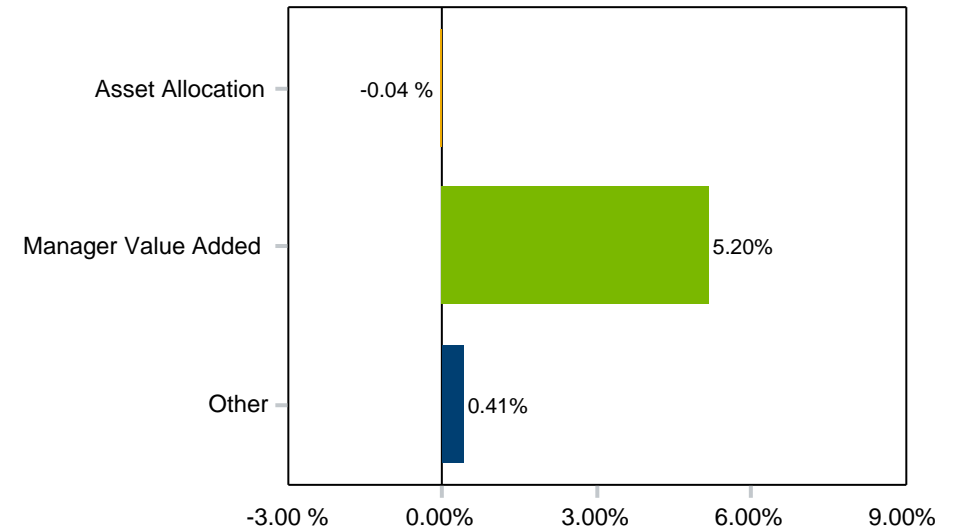
Manager Value Added

Total Fund Attribution

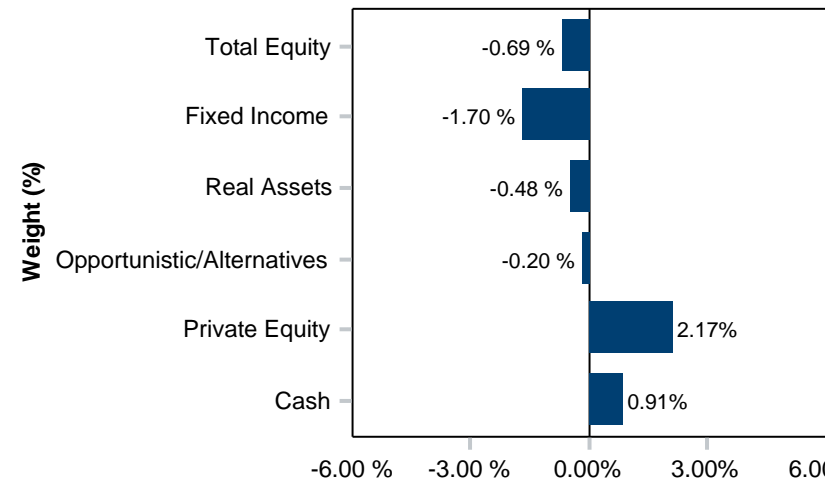
Total Fund Performance



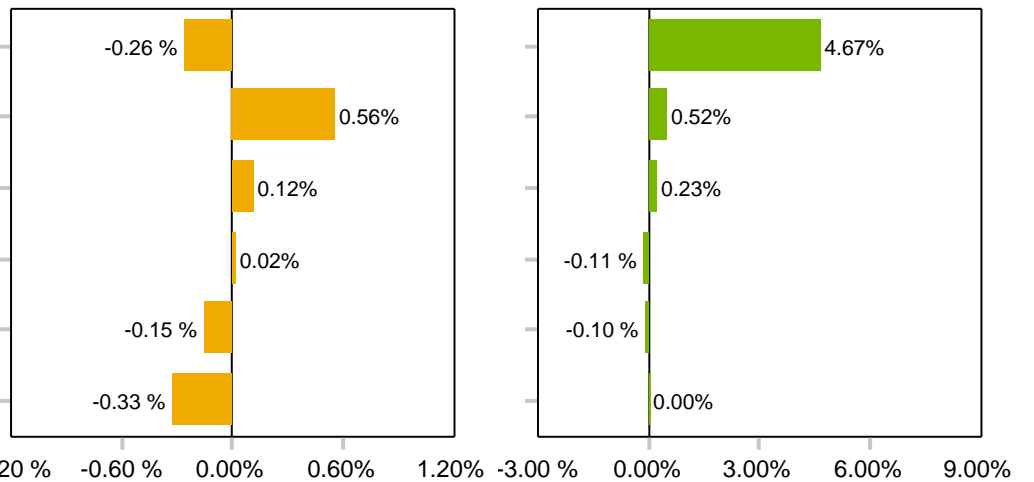
Total Value Added: 5.57%



Total Asset Allocation: -0.04%



Total Manager Value Added: 5.20%



Average Active Weight

Asset Allocation Value Added

Manager Value Added

As of April 30, 2021

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Year To Date	Fiscal YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Total Equity	12,397,898,393	100.0	4.2	10.7	45.0	59.0	12.8	14.2	11.2	07/01/2015
<i>Total Equity Performance Benchmark</i>			4.6	10.4	38.1	49.0	14.9	15.0	12.4	
Jacobs Levy 130/30	919,299,410	7.4	5.6	19.1	48.1	56.1	17.4	18.7	11.9	01/01/2008
<i>Russell 3000 Index</i>			5.2	11.8	40.1	50.9	18.9	17.7	10.6	
Kennedy Capital Management	763,967,952	6.2	3.9	24.9	70.0	82.7	11.2	13.2	12.7	01/01/1994
<i>Russell 2000 Value Index</i>			2.0	23.6	69.1	79.0	11.7	13.5	10.2	
Stephens	651,193,776	5.3	5.5	8.5	38.8	61.6	21.1	21.0	11.9	08/01/2006
<i>Russell 2000 Growth Index</i>			2.2	7.2	48.8	69.2	18.0	18.9	11.4	
Voya Absolute Return	757,279,749	6.1	4.0	8.6	38.2	50.7	12.5	13.7	11.6	10/01/2008
<i>Performance Benchmark Voya Absolute Return</i>			4.4	9.1	35.3	45.7	13.3	13.9	11.6	
Allianz (Nicholas Applegate)	1,048,904,778	8.5	2.8	4.4	45.8	65.9	27.1	21.9	11.8	12/01/1998
<i>Performance Benchmark</i>			2.6	5.5	43.9	60.8	23.0	19.1	9.4	
Pershing Square International	1,238,401	0.0	0.0	4.9	29.0	38.9	33.0	18.4	12.2	07/01/2008
<i>Dow Jones U.S. Total Stock Market Index</i>			5.1	11.9	40.1	51.0	18.9	17.6	12.1	
Pershing Square Holdings	268,505,097	2.2	5.9	7.7	61.5	83.3	44.4	19.4	10.5	01/01/2013
<i>Dow Jones U.S. Total Stock Market Index</i>			5.1	11.9	40.1	51.0	18.9	17.6	16.0	
SSgA Global Index	1,240,445,997	10.0	4.4	9.8	37.5	48.6	13.6	14.2	7.9	04/01/2008
<i>MSCI AC World IMI (Net)</i>			4.3	9.7	37.2	48.1	13.1	13.8	7.6	
BlackRock MSCI ACWI IMI Fund	1,180,343,205	9.5	4.4	9.8	37.6	48.6	13.4	14.0	10.1	07/01/2011
<i>MSCI AC World IMI (Net)</i>			4.3	9.7	37.2	48.1	13.1	13.8	9.8	

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Preliminary Results

The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 21 of this report.

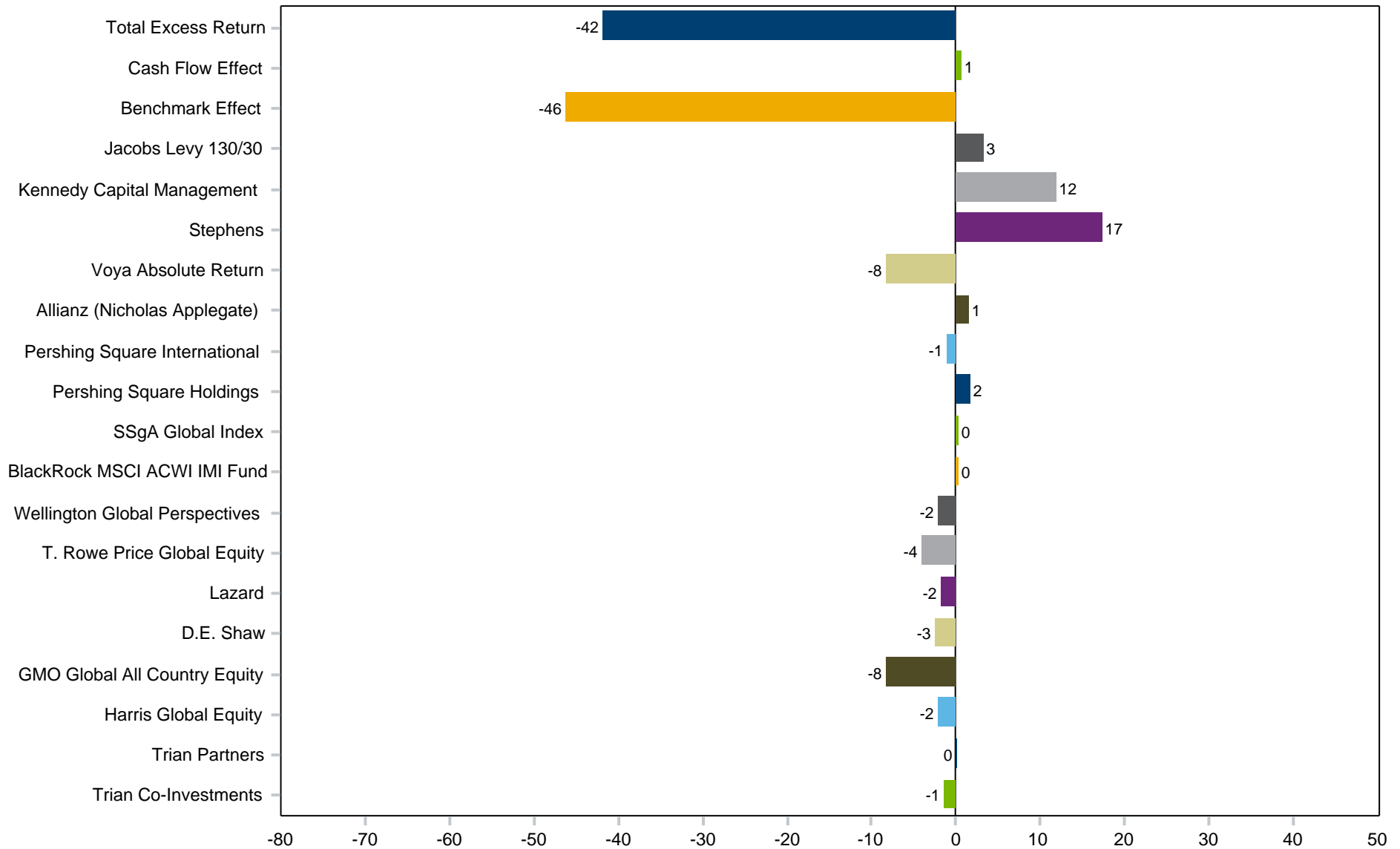
As of April 30, 2021

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Year To Date	Fiscal YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Wellington Global Perspectives	750,168,524	6.1	3.8	14.3	58.0	70.2	10.3	13.9	14.7	07/01/2009
<i>Performance Benchmark</i>			4.1	13.7	51.8	67.0	12.1	13.6	12.8	
T. Rowe Price Global Equity	1,649,466,330	13.3	4.1	8.0	48.8	71.1	27.2	25.3	16.7	08/01/2009
<i>MSCI AC World Index (Net)</i>			4.4	9.1	35.3	45.7	13.3	13.9	10.8	
<i>MSCI AC World Index Growth (Net)</i>			5.8	6.1	34.4	49.6	19.5	18.3	13.3	
Lazard	850,159,987	6.9	4.1	8.6	48.2	63.4	15.0	16.0	11.2	08/01/2009
<i>MSCI AC World Index (Net)</i>			4.4	9.1	35.3	45.7	13.3	13.9	10.8	
D.E. Shaw	933,511,240	7.5	4.3	7.4	35.1	43.5	12.0	13.8	12.0	09/01/2009
<i>MSCI World Index (Net)</i>			4.7	9.8	35.1	45.3	14.1	14.0	11.1	
GMO Global All Country Equity	554,216,590	4.5	2.5	11.8	37.9	47.5	10.6	12.2	7.1	07/01/2014
<i>MSCI AC World Index (Net)</i>			4.4	9.1	35.3	45.7	13.3	13.9	9.5	
<i>MSCI AC World Index Value (Net)</i>			3.0	12.2	36.0	41.0	6.8	9.2	5.5	
Harris Global Equity	639,597,698	5.2	4.2	15.8	54.1	70.5	11.1	13.9	9.0	06/01/2014
<i>MSCI World Index (Net)</i>			4.7	9.8	35.1	45.3	14.1	14.0	10.1	
<i>MSCI World Value (Net)</i>			3.2	13.0	35.9	40.6	7.3	9.3	6.0	
Triam Partners	85,935,293	0.7	5.3	8.9	31.6	34.9	14.7	10.8	10.3	11/01/2015
<i>S&P 500 Index</i>			5.3	11.8	36.6	46.0	18.7	17.4	15.8	
Triam Co-Investments	103,588,559	0.8	3.6	5.7	34.1	36.6	16.4		8.0	01/01/2017
<i>S&P 500 Index</i>			5.3	11.8	36.6	46.0	18.7		17.7	

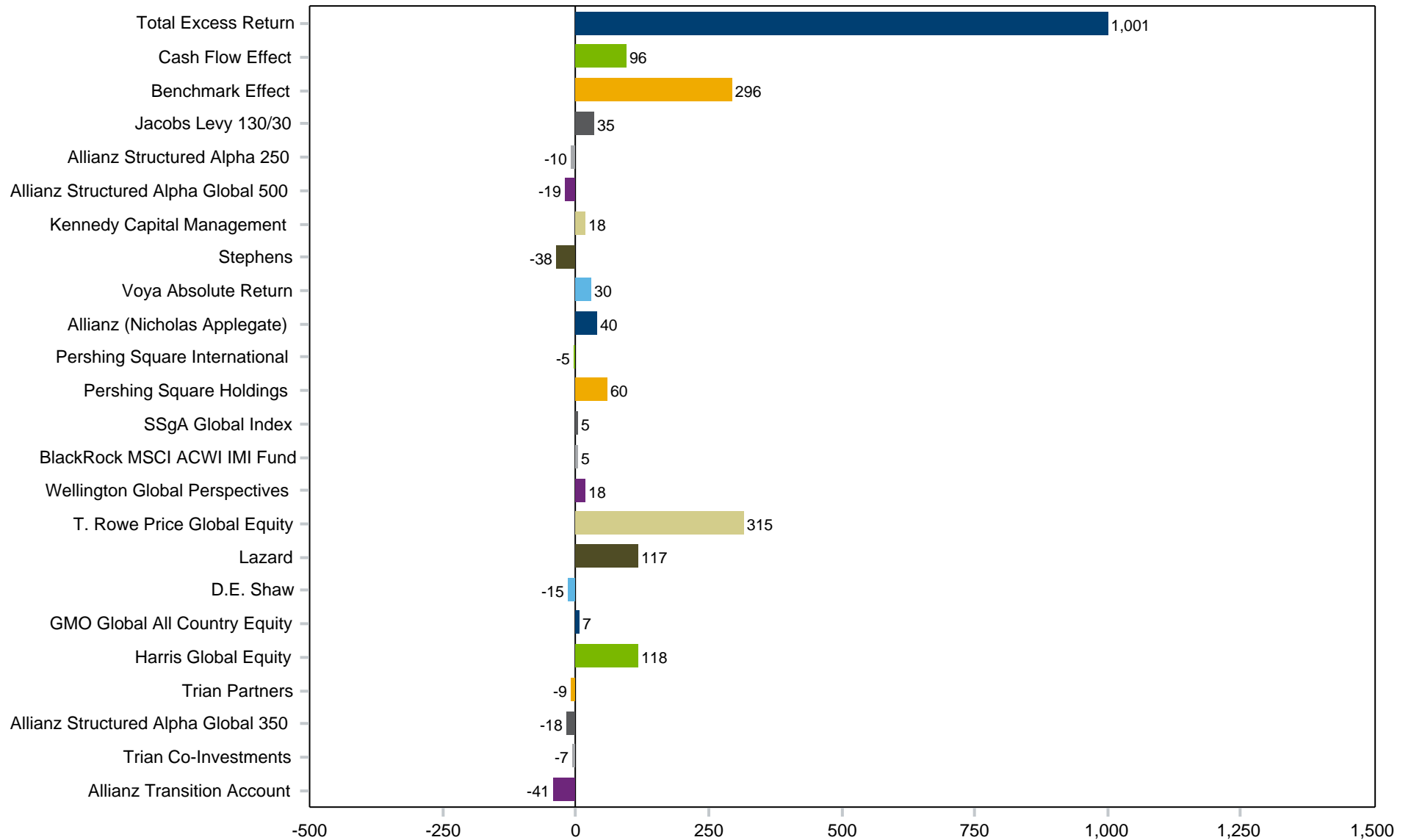
Asset Class Attribution

1 Month



Asset Class Attribution

1 Year



As of April 30, 2021

Asset Allocation & Performance

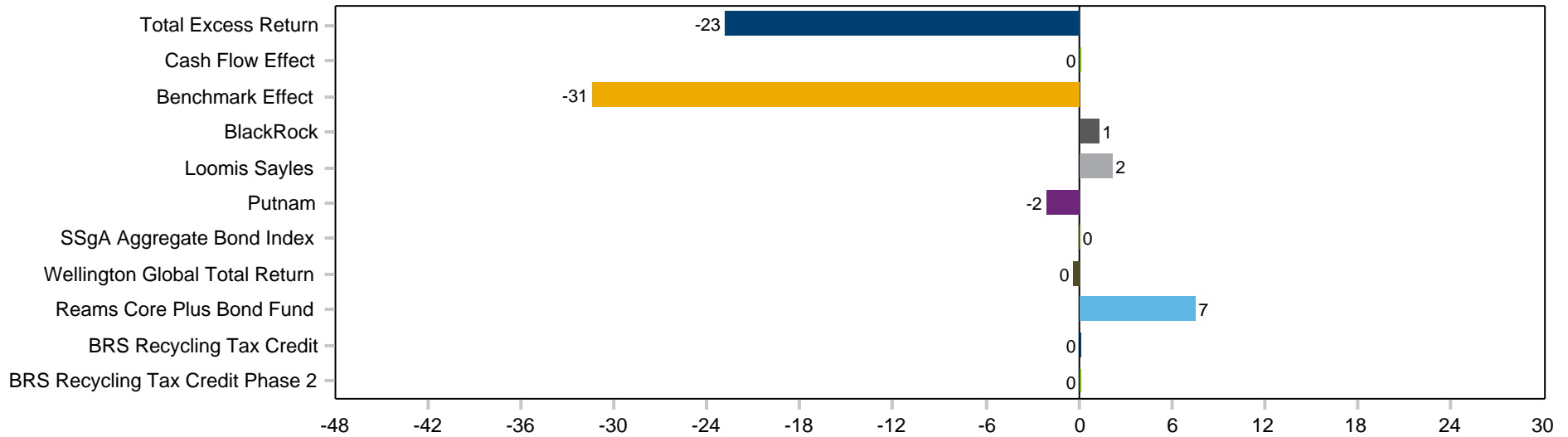
	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Year To Date	Fiscal YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Fixed Income	2,627,365,861	100.0	0.6	-0.8	2.6	4.9	5.3	4.6	5.4	07/01/1992
<i>Performance Benchmark</i>			0.8	-2.2	0.0	1.8	5.4	3.6	5.5	
BlackRock	278,152,076	10.6	1.0	-2.4	-0.1	1.8	5.7	3.7	4.6	10/01/2003
<i>Performance Benchmark</i>			0.8	-2.2	0.0	1.8	5.4	3.6	4.4	
Loomis Sayles	492,598,418	18.7	1.1	-0.5	7.5	12.7	7.3	6.7	8.3	09/01/2008
<i>Performance Benchmark</i>			1.0	-1.6	3.3	6.2	6.2	4.9	5.7	
Putnam	390,400,000	14.9	-0.1	1.1	5.5	7.8	3.2	4.1	3.1	08/01/2008
<i>LIBOR</i>			0.0	0.1	0.2	0.3	1.8	1.5	0.9	
SSgA Aggregate Bond Index	464,013,906	17.7	0.8	-2.6	-1.3	-0.2	5.2	3.2	3.5	06/01/2010
<i>Blmbg. Barc. U.S. Aggregate</i>			0.8	-2.6	-1.4	-0.3	5.2	3.2	3.5	
Wellington Global Total Return	355,665,292	13.5	0.0	1.8	2.1	1.8	3.8	2.9	2.2	06/01/2014
<i>ICE BofAML 3 Month U.S. T-Bill</i>			0.0	0.0	0.1	0.1	1.4	1.2	0.9	
Reams Core Plus Bond Fund	393,504,562	15.0	1.3	-2.7	1.2	5.1	8.4	5.2	4.6	06/01/2014
<i>Blmbg. Barc. U.S. Aggregate</i>			0.8	-2.6	-1.4	-0.3	5.2	3.2	3.2	
BRS Recycling Tax Credit	176,000,000	6.7								
BRS Recycling Tax Credit Phase 2	77,031,608	2.9								

*Preliminary Results

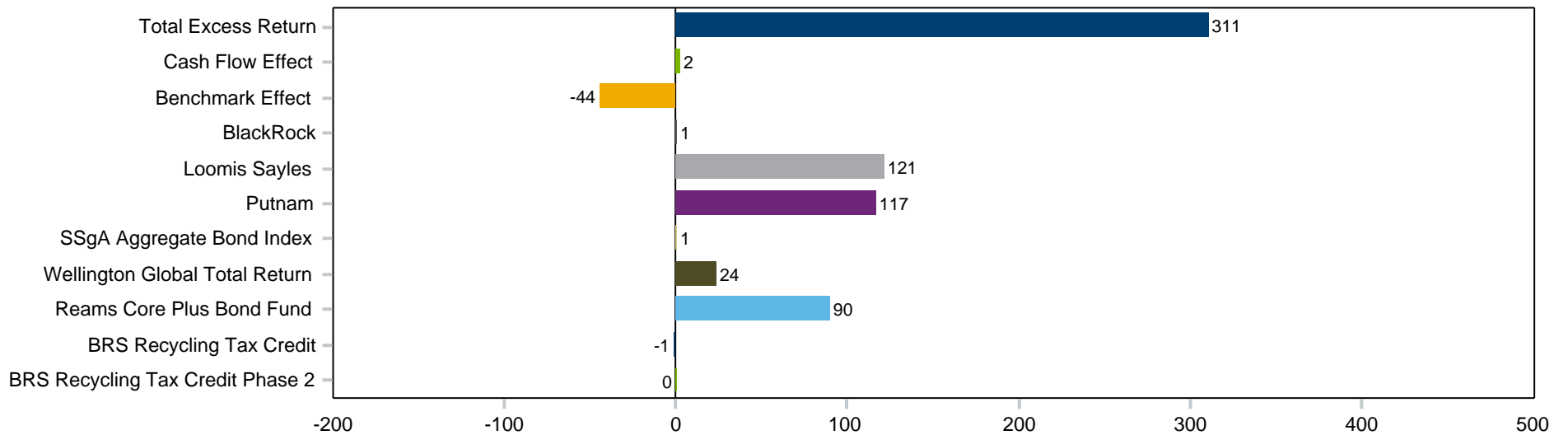
*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. The value shown above represents the year-end market value in accordance with GASB Statement 72, representing the 14 years of annual income, and has been incorporated into Total Fixed Income and Total Fund performance.

Asset Class Attribution

1 Month



1 Year



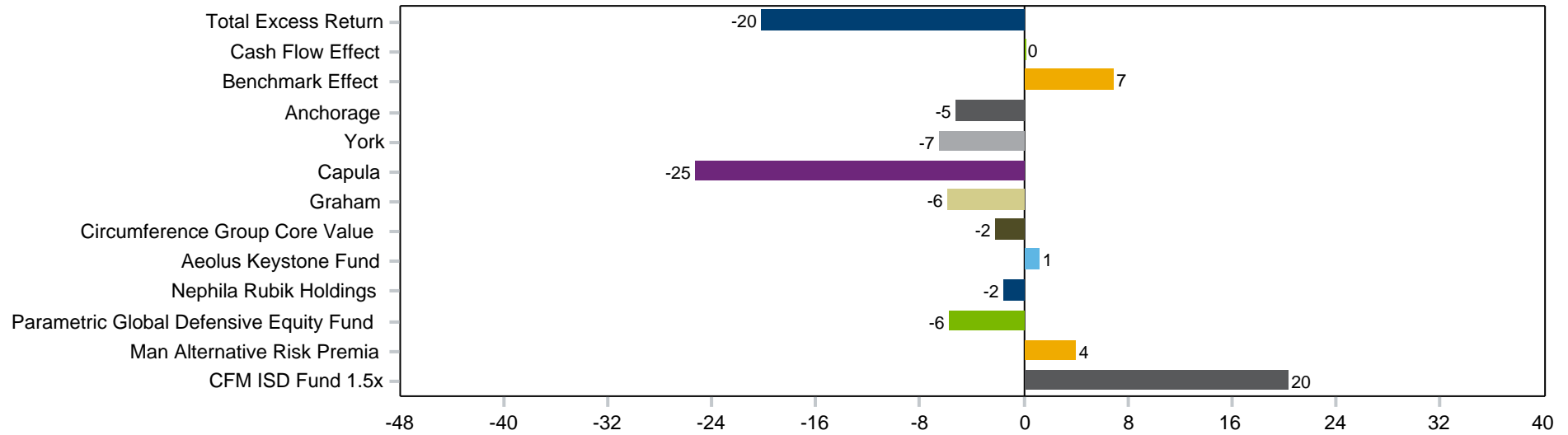
As of April 30, 2021

Asset Allocation & Performance

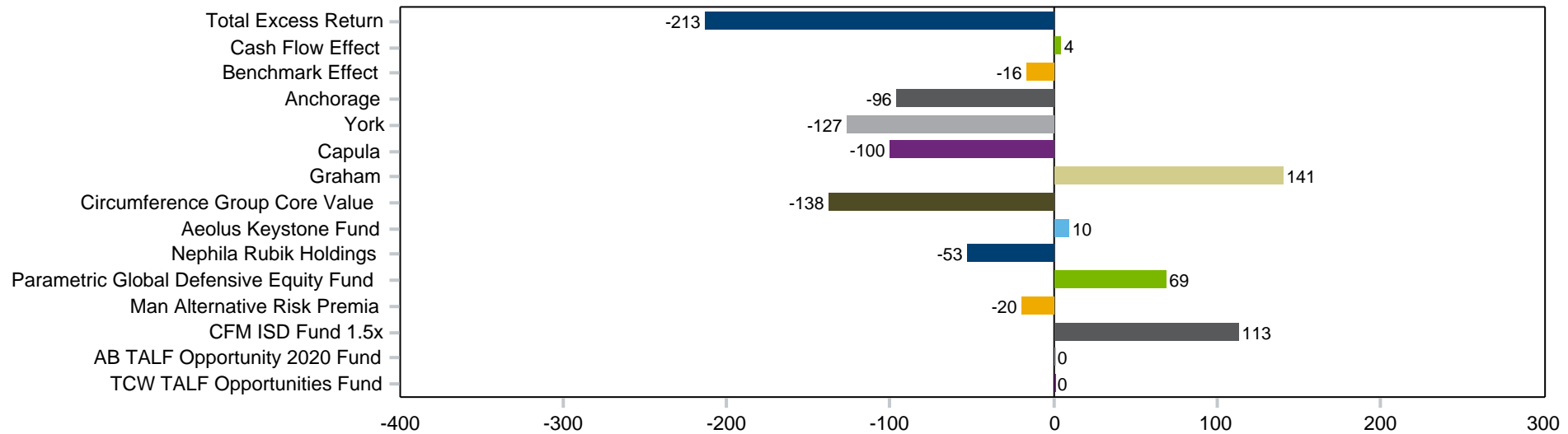
	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Year To Date	Fiscal YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Opportunistic/Alternatives	931,325,286	100.0	1.0	3.3	7.9	9.3	0.7	2.0	3.2	05/01/2011
<i>Custom Alternatives Benchmark</i>			1.2	4.4	10.1	11.4	3.3	3.3	2.1	
Anchorage	83,217,826	8.9	1.3	7.7	13.6	17.0	3.3	4.0	5.3	05/01/2011
<i>Credit Suisse Event Driven</i>			1.9	8.4	22.9	29.4	5.7	5.8	3.2	
<i>HFRI ED: Distressed/Restructuring Index</i>			1.9	10.1	27.1	36.3	7.3	8.6	4.9	
York	16,414,728	1.8	-0.7	4.4	-9.6	-10.6	-22.3	-9.8	-3.8	05/01/2011
<i>Credit Suisse Event Driven</i>			1.9	8.4	22.9	29.4	5.7	5.8	3.2	
<i>HFRI ED: Distressed/Restructuring Index</i>			1.9	10.1	27.1	36.3	7.3	8.6	4.9	
Capula	91,095,531	9.8	-0.2	1.0	2.4	3.5	6.2	6.0	6.1	05/01/2011
<i>HFRI Macro (Total) Index</i>			2.4	6.7	13.3	13.2	5.2	3.2	1.5	
Graham	73,798,795	7.9	1.6	10.6	29.3	36.1	7.2	5.7	3.8	05/01/2011
<i>HFRI Macro (Total) Index</i>			2.4	6.7	13.3	13.2	5.2	3.2	1.5	
Circumference Group Core Value	36,735,186	3.9	1.5	11.0	23.4	24.7	11.3	12.6	10.9	08/01/2015
<i>Russell 2000 Index</i>			2.1	15.1	58.6	74.9	15.2	16.5	12.6	
Aeolus Keystone Fund	223,077,048	24.0	0.1	-4.1	-0.8	0.3	-0.5	-1.9	-1.4	12/01/2015
<i>FTSE 3 Month T-Bill</i>			0.0	0.0	0.1	0.1	1.4	1.1	1.1	
<i>Eurekahedge ILS Advisers Index</i>			0.2	-0.1	2.5	3.3	0.1	-0.4	-0.1	
Nephila Rubik Holdings	40,761,987	4.4	-0.4	-2.9	-10.0	-9.3	-4.6		-4.1	06/01/2016
<i>FTSE 3 Month T-Bill</i>			0.0	0.0	0.1	0.1	1.4		1.2	
<i>Eurekahedge ILS Advisers Index</i>			0.2	-0.1	2.5	3.3	0.1		-0.4	
Parametric Global Defensive Equity Fund	190,545,964	20.5	1.9	6.1	20.0	25.2	6.3		6.3	06/01/2017
<i>Performance Benchmark</i>			2.2	4.5	16.8	21.2	7.6		7.5	
<i>MSCI AC World Index</i>			4.4	9.3	35.8	46.4	13.9		13.8	
Man Alternative Risk Premia	90,278,817	9.7	1.1	2.2	-0.8	-3.2			-3.2	06/01/2018
<i>SG Multi Alternative Risk Premia Index</i>			0.7	4.4	1.7	-1.5			-3.7	
CFM ISD Fund 1.5x	85,399,404	9.2	2.9	12.4	14.1	11.0			-4.9	07/01/2018
<i>SG Multi Alternative Risk Premia Index</i>			0.7	4.4	1.7	-1.5			-3.6	

Asset Class Attribution

1 Month



1 Year



Asset Allocation as of 4/30/2021							Values in \$1,000		
	Total Equity	U.S. Bond	Real Estate	Private Equity	Cash	Total	Percent of Total	Interim Policy	Long-Term Target
Jacobs Levy 130/30	\$919,299.4	--	--	--	--	\$919,299.4	4.44%		
Kennedy Capital Management	\$763,968.0	--	--	--	--	\$763,968.0	3.69%		
Stephens	\$651,193.8	--	--	--	--	\$651,193.8	3.15%		
Voya Absolute Return	\$757,279.7	--	--	--	--	\$757,279.7	3.66%		
Allianz (Nicholas Applegate)	\$1,048,904.8	--	--	--	--	\$1,048,904.8	5.07%		
Pershing Square International	\$1,238.4	--	--	--	--	\$1,238.4	0.01%		
Pershing Square Holdings	\$268,505.1	--	--	--	--	\$268,505.1	1.30%		
SSgA Global Index	\$1,240,446.0	--	--	--	--	\$1,240,446.0	5.99%		
BlackRock MSCI ACWI IMI Fund	\$1,180,343.2	--	--	--	--	\$1,180,343.2	5.70%		
Wellington Global Perspectives	\$750,168.5	--	--	--	--	\$750,168.5	3.62%		
T. Rowe Price Global Equity	\$1,649,466.3	--	--	--	--	\$1,649,466.3	7.97%		
Lazard	\$850,160.0	--	--	--	--	\$850,160.0	4.11%		
D. E. Shaw	\$933,511.2	--	--	--	--	\$933,511.2	4.51%		
GMO Global All Country Equity	\$554,216.6	--	--	--	--	\$554,216.6	2.68%		
Harris Global Equity	\$639,597.7	--	--	--	--	\$639,597.7	3.09%		
Trian Partners	\$85,935.3	--	--	--	--	\$85,935.3	0.42%		
Trian Partners Co-Investments	\$103,588.6	--	--	--	--	\$103,588.6	0.50%		
Capital Guardian & Knight Vinke	\$75.8	--	--	--	--	\$75.8	0.00%		
Total Equity						\$12,397,898.4	59.89%	57.91%	53.00%
BlackRock	--	\$278,152.1	--	--	--	\$278,152.1	1.34%		
Loomis Sayles	--	\$492,598.4	--	--	--	\$492,598.4	2.38%		
Putnam	--	\$390,400.0	--	--	--	\$390,400.0	1.89%		
SSgA Aggregate Bond Index	--	\$464,013.9	--	--	--	\$464,013.9	2.24%		
Wellington Global Total Return	--	\$355,665.3	--	--	--	\$355,665.3	1.72%		
Reams Core Plus Bond Fund	--	\$393,504.6	--	--	--	\$393,504.6	1.90%		
BRS Recycling Tax Credit	--	\$176,000.0	--	--	--	\$176,000.0	0.85%		
BRS Recycling Tax Credit Phase 2	--	\$77,031.6	--	--	--	\$77,031.6	0.37%		
Total Fixed Income						\$2,627,365.9	12.69%	15.00%	15.00%
Anchorage	--	--	--	\$83,217.8	--	\$83,217.8	0.40%		
Capula	--	--	--	\$91,095.5	--	\$91,095.5	0.44%		
Graham	--	--	--	\$73,798.8	--	\$73,798.8	0.36%		
York	--	--	--	\$16,414.7	--	\$16,414.7	0.08%		
Circumference Group Core Value	--	--	--	\$36,735.2	--	\$36,735.2	0.18%		
Aeolus Keystone Fund	--	--	--	\$223,077.0	--	\$223,077.0	1.08%		
Nephila Rubik Holdings	--	--	--	\$40,762.0	--	\$40,762.0	0.20%		
Parametric Global Defensive Equity	--	--	--	\$190,546.0	--	\$190,546.0	0.92%		
Man Alternative Risk Premia	--	--	--	\$90,278.8	--	\$90,278.8	0.44%		
CFM ISD Fund 1.5x	--	--	--	\$85,399.4	--	\$85,399.4	0.41%		
Total Opportunistic/Alternatives						\$931,325.3	4.50%	4.62%	5.00%
Real Estate			\$1,333,621.4			\$1,333,621.4	6.44%		
Timber			\$296,419.6			\$296,419.6	1.43%		
Agriculture			\$206,748.3			\$206,748.3	1.00%		
Infrastructure			\$274,520.6			\$274,520.6	1.33%		
Total Real Assets						\$2,111,309.9	10.20%	10.47%	15.00%
Total Private Equity				\$2,533,318.2		\$2,533,318.2	12.24%	12.00%	12.00%
Total Cash					\$101,305.6	\$101,305.6	0.49%	0.00%	0.00%
Total Fund	\$12,397,898.4	\$2,627,365.9	\$2,111,309.9	\$3,464,643.4	\$101,305.6	\$20,702,523.2	100.00%	100.00%	100.00%

*Note: The market values for the Real Assets and Private Equity investments shown above are lagged one quarter and adjusted for the current quarter's cash flows. Market values and allocation percentages may not add to the sum total due to rounding.

Asset Allocation as of 4/30/2021				Values in \$1,000			
	Real Estate	Percent of Real Estate	Percent of Total Fund		Real Estate	Percent of Real Estate	Percent of Total Fund
Almanac Realty Securities Fund V	\$99.0	0.01%	0.00%	LaSalle Income & Growth Fund VI	\$6,040.7	0.45%	0.03%
Almanac Realty Securities Fund VI	\$3,574.8	0.27%	0.02%	LaSalle Income & Growth Fund VII	\$14,419.6	1.08%	0.07%
Almanac Realty Securities Fund VII	\$14,734.0	1.10%	0.07%	LaSalle Income & Growth Fund VIII	\$10,062.4	0.75%	0.05%
Almanac Realty Securities Fund VIII	\$8,417.1	0.63%	0.04%	Lone Star Real Estate Fund IV	\$6,996.6	0.52%	0.03%
American Center	\$27,691.9	2.08%	0.13%	Long Wharf Real Estate Partners V	\$20,477.7	1.54%	0.10%
AR Insurance	\$2,236.7	0.17%	0.01%	Long Wharf Real Estate Partners VI	\$6,982.2	0.52%	0.03%
AR Teachers Retirement Building	\$5,397.5	0.40%	0.03%	Metropolitan RE Co-Investments	\$10,628.3	0.80%	0.05%
Blackstone Real Estate Partners VII	\$19,386.4	1.45%	0.09%	Met Life Commercial Mtg Inc Fund	\$48,039.5	3.60%	0.23%
Blackstone RE Europe VI	\$17,406.9	1.31%	0.08%	New Boston Fund VII	\$0.0	0.00%	0.00%
Carlyle Realty Partners VII	\$10,773.1	0.81%	0.05%	O'Connor NAPP II	\$8,482.4	0.64%	0.04%
Carlyle Realty VIII	\$9,431.8	0.71%	0.05%	PRISA	\$266,797.1	20.01%	1.29%
CBREI SP U.S. Opportunity V	\$960.3	0.07%	0.00%	Recoveries Land	\$70.0	0.01%	0.00%
CBREI SP VIII	\$21,403.1	1.60%	0.10%	Rockwood Capital RE Partners IX	\$5,609.0	0.42%	0.03%
CBREI SP IX	\$11,703.2	0.88%	0.06%	Rockwood Capital RE XI	\$14,158.2	1.06%	0.07%
Cerberus Institutional RE Partners III	\$10,954.7	0.82%	0.05%	Rose Law Firm	\$4,295.0	0.32%	0.02%
Chenal Retirement Village	\$0.0	0.00%	0.00%	Texarkana DHS	\$1,627.7	0.12%	0.01%
Calmwater	\$22,804.9	1.71%	0.11%	Torchlight Debt Opportunity Fund IV	\$4,766.6	0.36%	0.02%
Fletcher Properties	\$1,162.2	0.09%	0.01%	Torchlight Debt Opportunity Fund V	\$6,324.9	0.47%	0.03%
FPA Core Plus IV	\$29,241.1	2.19%	0.14%	Torchlight Debt Opportunity Fund VI	\$25,540.8	1.92%	0.12%
Harbert European Real Estate	\$20,936.7	1.57%	0.10%	Torchlight Debt Opportunity Fund VII	\$9,992.3	0.75%	0.05%
Heitman European Property IV	\$1,584.6	0.12%	0.01%	UBS Trumbull Property Fund	\$180,793.6	13.56%	0.87%
JP Morgan Strategic Property Fund	\$276,775.0	20.75%	1.34%	UBS Trumbull Property Income Fund	\$51,000.7	3.82%	0.25%
Kayne Anderson V	\$25,082.5	1.88%	0.12%	Victory	\$32,775.7	2.46%	0.16%
Landmark Fund VI	\$1,825.2	0.14%	0.01%	Walton Street Real Estate Debt II	\$6,510.5	0.49%	0.03%
Landmark Real Estate VIII	\$8,698.0	0.65%	0.04%	West Mphs. DHS	\$2,330.4	0.17%	0.01%
LaSalle Asia Opportunity Fund IV	\$2,379.8	0.18%	0.01%	Westbrook IX	\$9,969.1	0.75%	0.05%
LaSalle Asia Opportunity Fund V	\$10,914.7	0.82%	0.05%	Westbrook Real Estate Fund X	\$13,355.0	1.00%	0.06%
Total Real Estate					\$1,333,621.4	100.00%	6.44%

*Note: The market values for the real estate investments shown above are lagged one quarter and adjusted for the current quarter's cash flows. Market values and allocation percentages may not add to the sum total due to rounding.

Asset Allocation as of 4/30/2021				Values in \$1,000			
	Private Equity	Percent of Private Equity	Percent of Total Fund		Private Equity	Percent of Private Equity	Percent of Total Fund
Arlington Capital IV	\$31,450.5	1.24%	0.15%	JF Lehman IV	\$32,635.4	1.29%	0.16%
Arlington Capital V	\$6,503.0	0.26%	0.03%	JF Lehman V	\$7,454.6	0.29%	0.04%
Advent GPE VI	\$5,111.8	0.20%	0.02%	KPS III	\$188.9	0.01%	0.00%
Altus Capital II	\$6,433.0	0.25%	0.03%	KPS IV	\$23,906.5	0.94%	0.12%
American Industrial Partners VI	\$21,734.1	0.86%	0.10%	KPS X	\$5,646.6	0.22%	0.03%
American Industrial Partners VII	\$12,745.3	0.50%	0.06%	KPS Mid-Cap	\$4,385.2	0.17%	0.02%
Altaris Constellation Partners	\$24,061.6	0.95%	0.12%	Levine Leichtman V	\$22,478.6	0.89%	0.11%
Altaris Health Partners IV	\$20,371.7	0.80%	0.10%	Lime Rock III	\$10,373.3	0.41%	0.05%
Atlas Capital II	\$12,774.6	0.50%	0.06%	LLR III	\$11,866.0	0.47%	0.06%
Audax Mezzanine III	\$2,623.2	0.10%	0.01%	LLR VI	-\$164.0	-0.01%	0.00%
Big River - Equity	\$100,507.2	3.97%	0.49%	Mason Wells III	-\$2,041.5	-0.08%	-0.01%
Big River - Holdings Note 2023	\$13,965.9	0.55%	0.07%	NGP IX	\$1,429.4	0.06%	0.01%
Big River - Holdings Note 3/16/23	\$5,899.3	0.23%	0.03%	NGP X	\$4,624.8	0.18%	0.02%
Bison V	\$29,118.8	1.15%	0.14%	NGP XI	\$19,500.6	0.77%	0.09%
Boston Ventures VII	\$5,526.9	0.22%	0.03%	NGP XII	\$16,073.3	0.63%	0.08%
Boston Ventures IX	\$31,216.3	1.23%	0.15%	One Rock Capital Partners II	\$32,024.6	1.26%	0.15%
Boston Ventures X	\$2,409.9	0.10%	0.01%	PineBridge	\$6,174.0	0.24%	0.03%
BV VIII	\$20,680.4	0.82%	0.10%	Riverside IV	\$236.6	0.01%	0.00%
Castlelake II	\$17,727.8	0.70%	0.09%	Riverside V	\$24,783.6	0.98%	0.12%
Castlelake III	\$17,998.8	0.71%	0.09%	Riverside VI	\$12,681.2	0.50%	0.06%
Clearlake V	\$44,401.4	1.75%	0.21%	Siris III	\$24,061.6	0.95%	0.12%
Clearlake VI	\$15,169.1	0.60%	0.07%	Siris IV	\$16,332.9	0.64%	0.08%
Court Square III	\$36,396.8	1.44%	0.18%	SK Capital V	\$20,773.7	0.82%	0.10%
CSFB-ATRS 2005-1 Series	\$34,215.4	1.35%	0.17%	Sycamore Partners II	\$10,310.4	0.41%	0.05%
CSFB-ATRS 2006-1 Series	\$65,169.2	2.57%	0.31%	Sycamore Partners III	\$6,801.1	0.27%	0.03%
Diamond State Ventures II	\$2,774.4	0.11%	0.01%	TA XI	\$37,490.8	1.48%	0.18%
Doughty Hanson Tech I	\$439.9	0.02%	0.00%	Tennenbaum VI	\$12,433.9	0.49%	0.06%
DW Healthcare III	\$14,621.9	0.58%	0.07%	Thoma Bravo Discover	\$18,544.9	0.73%	0.09%
DW Healthcare IV	\$33,767.4	1.33%	0.16%	Thoma Bravo Discover II	\$20,790.3	0.82%	0.10%
DW Healthcare V	\$8,500.5	0.34%	0.04%	Thoma Bravo Discover III	-\$33.0	0.00%	0.00%
EnCap IX	\$8,119.3	0.32%	0.04%	Thoma Bravo Explore I	\$4,016.6	0.16%	0.02%
EnCap VIII	\$9,650.2	0.38%	0.05%	Thoma Bravo XI	\$30,403.5	1.20%	0.15%
EnCap X	\$19,840.5	0.78%	0.10%	Thoma Bravo XII	\$46,428.3	1.83%	0.22%
EnCap XI	\$11,079.0	0.44%	0.05%	Thoma Bravo XIII	\$34,253.9	1.35%	0.17%
Franklin Park Series	\$840,741.2	33.19%	4.06%	Thoma Bravo XIV	\$2,030.3	0.08%	0.01%
GCG IV	\$22,724.7	0.90%	0.11%	Vista Equity III	\$4,150.1	0.16%	0.02%
GCG V	\$4,061.9	0.16%	0.02%	Vista Foundation II	\$15,543.4	0.61%	0.08%
GTLA Holdings	\$40,000.0	1.58%	0.19%	Vista Foundation III	\$32,390.4	1.28%	0.16%
Highland	\$282,749.2	11.16%	1.37%	Wellspring V	\$12,981.3	0.51%	0.06%
Insight Equity II	\$20,391.4	0.80%	0.10%	Wicks IV	\$24,297.9	0.96%	0.12%
Insight Mezzanine I	\$1,666.5	0.07%	0.01%	WNG II	\$6,295.2	0.25%	0.03%
JF Lehman III	\$13,423.2	0.53%	0.06%				
Total Private Equity					\$2,533,318.2	99.47%	12.17%

*Note: The market values for the private equity investments shown above are lagged one quarter and adjusted for the current quarter's cash flows. Market values and allocation percentages may not add to the sum total due to rounding.

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Description of Benchmarks

Total Fund - The Performance Benchmark for the Total Fund reflects a weighted average of the underlying asset class benchmarks, weighted as follows: Opportunistic/Alternatives and Real Assets at the weight of the previous month's ending market values, Fixed Income and Private Equity at their long-term Policy Targets of 15% and 12%, respectively, and Total Equity at its long-term Policy Target of 50% plus the balance of the unfunded or uncommitted assets of the Opportunistic/Alternatives and Real Assets categories. These targets can be found on page 14 of the this report. From October 2007 to July 2013, the Performance Benchmark was the performance of the asset class benchmarks as a weighted average of the previous month's ending market values. The historical components of the benchmark are shown in the table below. Returns prior to September 30, 1996, consist of the actual allocations to the seven different asset classes included in the Arkansas Teacher Retirement System over time. The historical benchmarks used for each asset class are noted below.

Date	DJ Total Stock Market Index	Russell 3000 Index	MSCI ACW ex-U.S. Index	MSCI All Country World Index	BC Universal Bond Index	BC Aggregate Bond Index	Alternative Policy*
03/2004-9/2007	40.0 %	--	17.5 %	--	25.0 %	--	17.5 %
06/2003-02/2004	40.0	--	17.5	--	--	25.0 %	17.5
10/2001-07/2003	--	40.0 %	17.5	--	--	25.0	17.5
08/1998-09/2001	--	40.0	17.0	--	--	28.0	15.0
10/1996-07/1998	--	40.0	20.0	--	--	28.0	12.0

*Historically, the Alternative Policy was comprised of the weighted averages of the Private Equity, Real Estate, and Alternatives policy benchmarks. Prior to July 31, 2003 the alternative benchmark consisted of 57.0% of the Russell 3000 + a 2% Premium per year, 8.5% of the NCREIF Southeast Timberland Index, 28.5% of the Real Estate Index, 6% of the EnnisKnupp STIF Index.

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Total Equity -A weighted average of the Dow Jones U.S. Total Stock Market Index and the MSCI All Country World IMI Index based on weights of the underlying investment manager allocations. As of April 1, 2021, the Total Equity Performance Benchmark was comprised of 31.1% DJ U.S. Total Stock Market Index and 68.9% MSCI ACWI IMI.

Fixed Income - The Barclays Capital Universal Bond Index as of March 1, 2004.

Opportunistic/Alternatives - A custom benchmark consisting of 25% DJ/CS Event-Driven Index, 25% HFR Macro Index, and 50% South Timberland NCREIF Index until June 30,2013; 60% HFRI Macro Index and 40% DJ/CS Event-Driven Index until July 31, 2015; 56% HFRI Macro Index, 38% DJ/CS Event-Driven Index, and 6% Russell 2000 Index until March 31, 2016; 45% HFRI Macro Index, 30% DJ/CS Event-Driven Index, 5% Russell 2000 Index, and 20% FTSE 3 Month T-bill until May 31, 2016; 37% HFRI Macro Index, 25% DJ/CS Event-Driven Index, 5% Russell 2000 Index, and 33% FTSE 3 Month T-bill until May 31, 2017; 28% HFRI Macro Index, 20% DJ/CS Event-Driven Index, 4% Russell 2000 Index, 25% FTSE 3 Month T-bill, and 23% Parametric Performance Benchmark Until May 31, 2018. 22% HFRI Macro Index, 18% DJ/CS Event-Driven Index, 3% Russell 2000 Index, 27% FTSE 3 Month T-bill, 18.50% Parametric Performance Benchmark, and 11.5% SG Multi-Alternative Risk Premia Until June 30, 2018. 20% HFRI Macro Index, 15% DJ/CS Event-Driven Index, 3.5% Russell 2000 Index, 25% FTSE 3 Month T-bill, 16.5% Parametric Performance Benchmark, and 20% SG Multi-Alternative Risk Premia Until August 31, 2018. 17% HFRI Macro Index, 15% DJ/CS Event-Driven Index, 3.5% Russell 2000 Index, 28% FTSE 3 Month T-bill, 16.5% Parametric Performance Benchmark, and 20% SG Multi-Alternative Risk Premia Until November 30, 2018. 15% HFRI Macro Index, 15% DJ/CS Event-Driven Index, 3.5% Russell 2000 Index, 30% FTSE 3 Month T-bill, 16.5% Parametric Performance Benchmark, and 20% SG Multi-Alternative Risk Premia thereafter.

Real Assets - A custom benchmark consisting of a weighted average of the net asset values at previous month's end of the sub-categories' benchmarks, defined as Real Estate Benchmark, Timber Benchmark, Agriculture Benchmark and Infrastructure Benchmark.

Real Estate-The NCREIF Index.

Timberland Property Benchmark - NCREIF Timberland Property Index (NTPI) weighted according to ATRS' regional exposure based on net asset value.

Agriculture Benchmark - NCREIF Farmland Index (NFI) weighted according to ATRS' regional and crop type exposure based on net asset value.

Infrastructure Benchmark - Consumer Price Index (CPI) plus 500 basis points annually.

Private Equity - The Dow Jones U.S. Total Stock Market Index + a 2% premium per year.

Cash Equivalents - The Citigroup 90 day T-bill.

Arkansas Teacher Retirement System

Appendix

Description of Benchmarks

FTSE 90 day T-bill Index - Treasury bill rates of return, as reported by Citigroup (Salomon Smith Barney), for bills with a maximum time remaining to maturity of 90 days.

Bloomberg Barclays Aggregate Bond Index - A market-value weighted index consisting of the Barclays Capital Corporate, Government and Mortgage-Backed Securities Indices. The Index also includes credit card-, auto- and home equity loan-backed securities, and is the broadest available measure of the aggregate U.S. fixed income market.

Bloomberg Barclays Universal Bond Index - A market-value weighted index consisting of the components of the Barclays Capital Bond Index, plus EuroDollar bonds, emerging markets bonds, 144A fixed income securities, and U.S. credit high yield securities.

Bloomberg Barclays Mortgage Index - A market value-weighted index consisting of the mortgage pass-through securities of Ginnie Mae (GNMA), Fannie Mae (FNMA) and Freddie Mac (FHLMC).

MSCI All Country World ex-U.S. Index - A capitalization-weighted index consisting of 22 developed and 23 emerging countries, but excluding the U.S. Covers approximately 85% of global equity opportunity set outside of the U.S.

MSCI All Country World Index - A capitalization-weighted index of stocks representing 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.

MSCI All Country World IMI Index - A capitalization-weighted index representing large and small cap stock from 46 stock markets in Europe, Australia, the Far East, the Middle East, Latin America and North America.

FTSE Europe - A tradable index, designed to represent the performance of the 100 most highly capitalized blue chip companies in Europe.

MSCI Europe, Australasia, Far East (EAFE) Non-U.S. Stock Index - A capitalization-weighted index of stocks representing 21 developed and emerging country markets in Europe, Australia, Asia and the Far East.

NCREIF Index - The National Council of Real Estate Investment Fiduciaries (NCREIF) Net Property Index is an unlevered, market-value weighted Index consisting of \$128 billion in domestic institutional real estate assets. The Index is representative of the national real estate market, across all property types and regions.

Nicholas Applegate Performance Benchmark - On January 1, 2005, the benchmark for the portfolio was changed to the Merrill Lynch Convertible Bond (All Quality) Index. Prior to January 1, 2005, the performance benchmark for the Nicholas Applegate portfolio was the CSFB Convertible Securities Index. Prior to May 1, 2004, the performance benchmark consisted of 90% CSFB Convertible Securities Index and 10% Salomon High Yield Index.

Wellington Global Performance Benchmark- As of July 1, 2012 the benchmark was changed to MSCI All Country World Small Cap Index. Prior to July 1, 2012, the benchmark was MSCI All Country World Small/Mid Cap Index.

As of April 30, 2021

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BlackRock Performance Benchmark - The Barclays Capital Universal Bond Index as of March 1, 2004.

Voya Absolute Return Performance Benchmark - As of December 1, 2015 the benchmark was changed to MSCI All Country World Index. Prior to December 1, 2015, the benchmark was the S&P 500 Stock Index.

LIBOR Index - London Interbank Offered Rate. A filtered average of the world's most creditworthy banks' interbank deposit rates with maturities between overnight and one full year.

Russell 3000 Index - An index that measures the performance of the 3000 stocks that make up the Russell 1000 and Russell 2000 Indices.

Russell 1000 Index - An index that measures the performance of the largest 1,000 stocks contained in the Russell 3000 Index.

Russell 1000 Value Index - An index that measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower I/B/E/S growth forecasts.

Russell 2000 Index - An index that measures the performance of the smallest 2000 companies contained in the Russell 3000 Index.

Russell 2000 Growth Index - An index that measures the performance of those Russell 2000 companies with greater price-to-book ratios and greater I/B/E/S growth forecasts.

Russell 2000 Value Index - An index that measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower I/B/E/S growth forecasts.

Russell Mid Cap Value Index - An index that measure the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

S&P 500 Stock Index - A capitalization-weighted stock index consisting of the 500 largest publicly traded U.S. stocks.

HFR Macro Index - Macro: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Primary investment thesis is predicated on predicted or future movements in the underlying instruments.

HFR Distressed/Restructuring Index - Distressed Restructuring Strategies employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings. Distressed Strategies employ primarily debt (greater than 60%) but also may maintain related equity exposure.

Parametric Performance Benchmark - 50% MSCI All Country World Index and 50% Citigroup 90 day T-Bill Index as of June 1, 2017.

SG Multi Alternative Risk Premia Index - An equally weighted index composed of risk premia managers who employ investment programs diversified across multiple asset classes while utilizing multiple risk premia factors.

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Appendix

Historical U.S. Equity and Global Equity composite returns

As of June 30, 2015	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
U.S. Equity	6.7	18.1	16.4	9.4	10.5	04/01/1986
Dow Jones U.S. Total Stock Market Index	7.2	17.6	17.5	8.3	-	
Global Equity	1.8	14.6	12.1	-	2.5	11/01/2007
MSCI AC World Index (Net)	0.7	13.0	11.9	6.4	2.1	

In June 2015, the ATRS Board approved the combination of the U.S. and Global equity asset classes to a single Total Equity asset class. Total Equity performance reporting began in July 2015. In the table above, we show the historical returns for the U.S. Equity and Global Equity asset classes since inception through June 2015. Performance for the Total Equity asset class prior to July 2015 represents a weighted average of the U.S. Equity and Global Equity historical performance.

Notes

- The rates of return contained in this report are shown on an after-fees basis unless otherwise noted. They are geometric and time-weighted. Returns for periods longer than one year are annualized.
- Universe percentiles are based upon an ordering system in which 1 is the best ranking and 100 is the worst ranking.
- Due to rounding throughout the report, percentage totals displayed may not sum to 100%. Additionally, individual fund totals in dollar terms may not sum to the plan total.
- All information presented in this report should be considered preliminary. Finalized data will be available on next Quarterly Investment Report after the close of the quarter.

Disclaimer

Past performance is not necessarily indicative of future results.

Unless otherwise noted, performance returns presented reflect the respective fund's performance as indicated. Returns may be presented on a before-fees basis (gross) or after-fees basis (net). After-fee performance is net of each respective sub-advisors' investment management fees and include the reinvestment of dividends and interest as indicated on the notes page within this report or on the asset allocation and performance summary pages. Actual returns may be reduced by Aon Investments' investment advisory fees or other trust payable expenses you may incur as a client. Aon Investments' advisory fees are described in Form ADV Part 2A. Portfolio performance, characteristics and volatility also may differ from the benchmark(s) shown.

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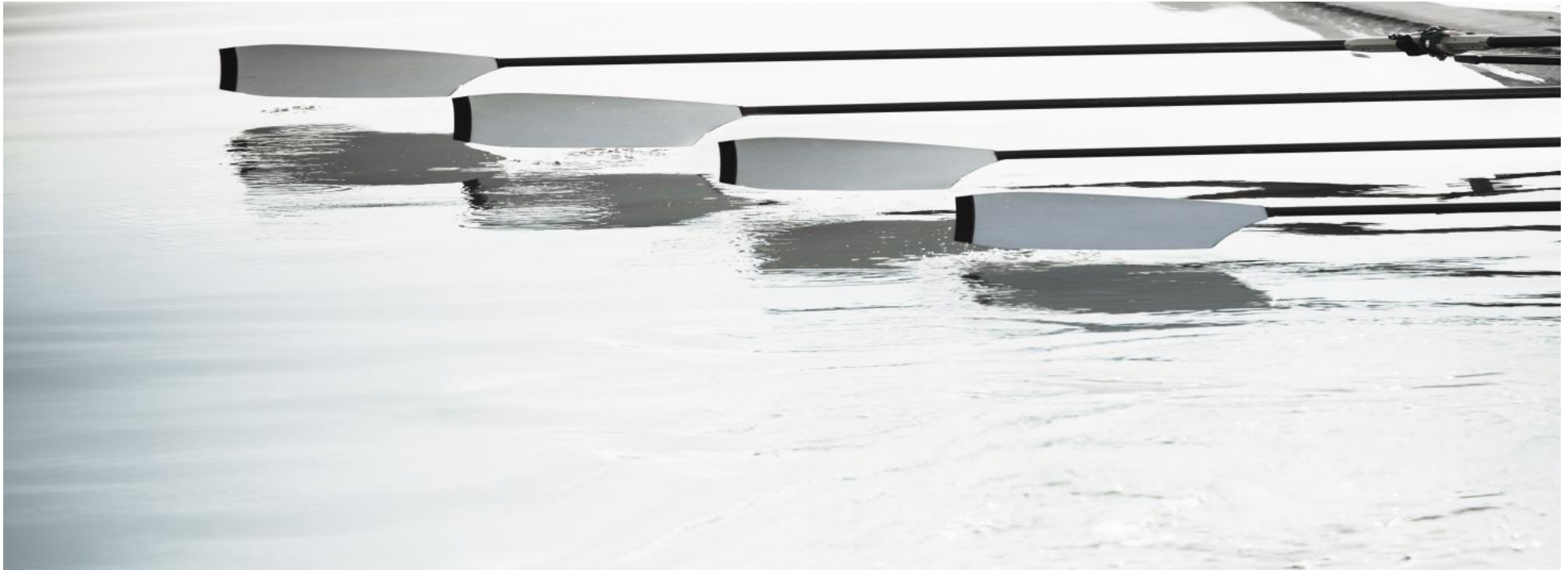
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Arkansas Teacher Retirement System Opportunistic/Alternatives Portfolio Review

June 7, 2021

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Retirement and Investment

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Section 5	Conclusions and Next Steps
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Executive Summary

Introduction

- The following presentation provides an overview of ATRS's Opportunistic/Alternatives portfolio
 - Opportunistic / Alternatives Portfolio key characteristics
 - Policy Allocation: 5%
 - Current Allocation: 4.6% / \$930 M (as of 3/31/21)
 - Objectives:
 - Improve the risk-adjusted returns of the Total Fund
 - Provide returns uncorrelated to traditional equity and fixed income markets
 - Provide flexibility to invest in attractive ideas that do not fit neatly within other asset classes
 - 100% actively managed across 6 strategy types and 10 managers
 - Strategies vary across both liquid and illiquid (1-5 years) strategies, including hedge funds and other liquid alternatives
 - Benchmark: Weighted average of underlying strategy benchmarks
- Material that follows includes a review of past performance, portfolio strategy diversification, manager structure and next steps in terms of potential future considerations
- Also included are strategies considered alternative, though not housed in the Opportunistic/ Alternatives asset class (Voya, Pershing Square and Trian)

Opportunistic/Alternatives Portfolio Key Take-Aways

- Performance has generated mixed results
 - ATRS's portfolio has outperformed its custom benchmark since its inception and has generated strong risk-adjusted returns relative to broad hedge fund indices
 - On an absolute basis and relative to traditional markets, performance has disappointed over the past 10-years – this has been true for most broad hedge fund allocations
 - Manager performance has been mixed across time periods and strategy type
- Portfolio structure is well-diversified
 - Not overly exposed to any single market or strategy type
 - Void of traditional markets exposure
 - No major gaps in coverage or untapped opportunities
- Manager structure is well-diversified and consistently reviewed for consideration
 - Mixed results over time has highlighted a few areas for further consideration
- Overall, the portfolio is well-diversified across strategy type and Aon does not recommend removing or adding new strategy types at this time
- Aon has identified a few areas across manager structure to further explore and will bring forth specific manager recommendations at the following meeting



Performance Review

Performance: Overview

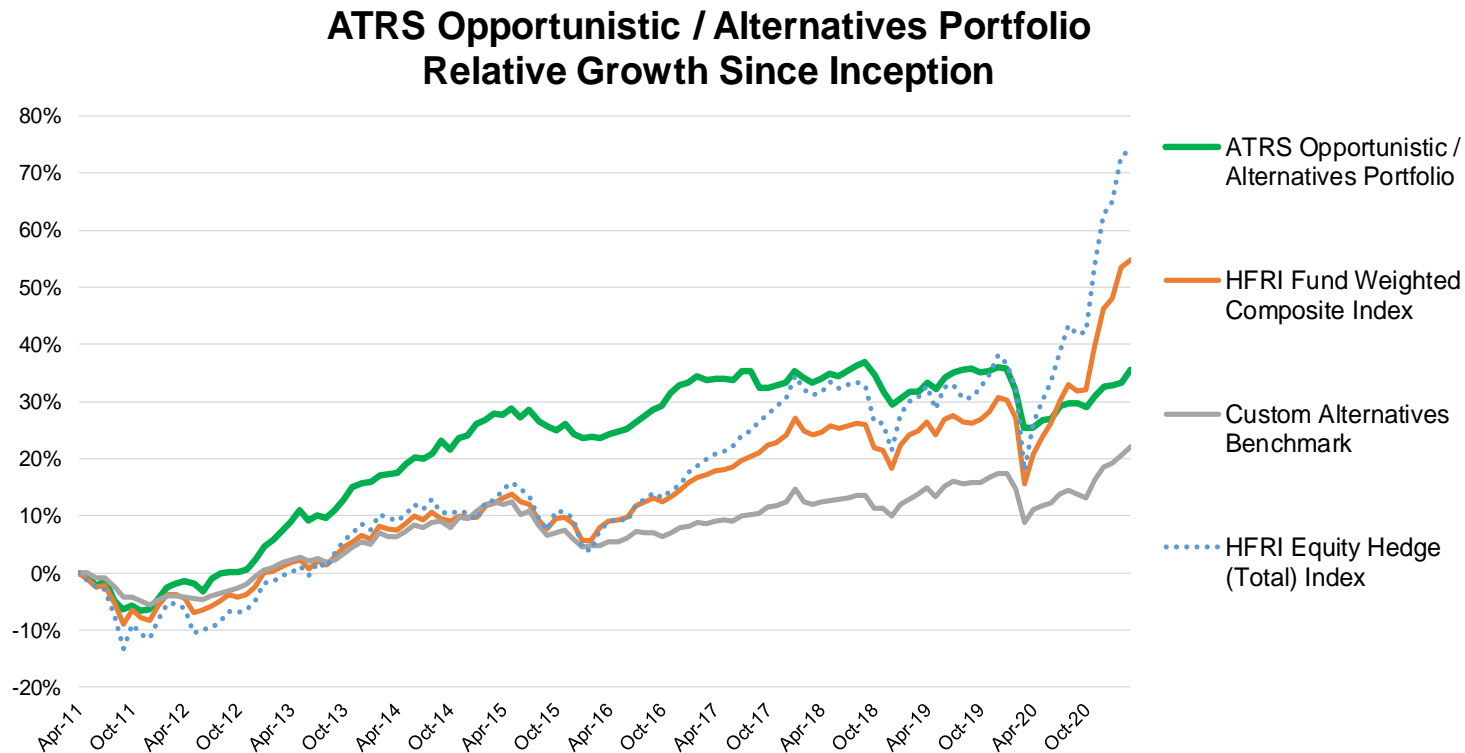
As of March 31, 2021

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	1 Quarter	Fiscal YTD	1 Year	3 Years	5 Years	Since Inception	Inception Date
Opportunistic/Alternatives	929,859,296	100.0	1.8	2.3	6.8	8.3	0.6	1.9	3.1	05/01/2011
<i>Custom Alternatives Benchmark</i>			1.4	3.1	8.8	12.2	2.9	3.1	2.0	
Anchorage	82,133,662	8.8	1.1	6.3	12.1	20.2	2.9	4.2	5.2	05/01/2011
<i>Credit Suisse Event Driven</i>			1.6	6.3	20.6	32.5	5.1	5.8	3.0	
<i>HFRI ED: Distressed/Restructuring Index</i>			0.9	8.3	25.0	37.2	6.9	8.8	4.8	
York	23,274,699	2.5	3.4	5.2	-9.0	-22.3	-21.8	-9.5	-3.7	05/01/2011
<i>Credit Suisse Event Driven</i>			1.6	6.3	20.6	32.5	5.1	5.8	3.0	
<i>HFRI ED: Distressed/Restructuring Index</i>			0.9	8.3	25.0	37.2	6.9	8.8	4.8	
Capula	91,305,533	9.8	0.6	1.2	2.6	4.8	6.4	6.2	6.2	05/01/2011
<i>HFRI Macro (Total) Index</i>			0.9	4.1	10.5	11.5	4.4	2.6	1.2	
Graham	72,633,554	7.8	3.5	8.9	27.3	37.8	7.2	5.0	3.7	05/01/2011
<i>HFRI Macro (Total) Index</i>			0.9	4.1	10.5	11.5	4.4	2.6	1.2	
Circumference Group Core Value	36,187,404	3.9	1.4	9.4	21.6	34.0	13.2	12.6	10.8	08/01/2015
<i>Russell 2000 Index</i>			1.0	12.7	55.4	94.8	14.8	16.4	12.4	
Aeolus Keystone Fund	224,149,096	24.1	-0.1	-4.1	-0.9	-2.1	-0.8	-1.8	-1.4	12/01/2015
<i>FTSE 3 Month T-Bill</i>			0.0	0.0	0.1	0.2	1.5	1.2	1.1	
<i>Eurekahedge ILS Advisers Index</i>			0.1	-0.5	2.1	2.8	-0.2	-0.4	-0.1	
Nephila Rubik Holdings	40,910,573	4.4	0.3	-2.5	-9.7	-7.8	-4.3		-4.1	06/01/2016
<i>FTSE 3 Month T-Bill</i>			0.0	0.0	0.1	0.2	1.5		1.2	
<i>Eurekahedge ILS Advisers Index</i>			0.1	-0.5	2.1	2.8	-0.2		-0.5	
Parametric Global Defensive Equity Fund	186,992,830	20.1	2.6	4.1	17.8	28.8	5.9		5.9	06/01/2017
<i>Performance Benchmark</i>			1.3	2.3	14.3	25.1	7.1		7.0	
<i>MSCI AC World Index</i>			2.7	4.7	30.1	55.3	12.7		12.8	
Man Alternative Risk Premia	89,316,008	9.6	3.1	1.1	-1.9	-4.7			-3.7	06/01/2018
<i>SG Multi Alternative Risk Premia Index</i>			3.6	3.7	1.0	-3.4			-4.0	
CFM ISD Fund 1.5x	82,955,937	8.9	5.5	9.2	10.8	4.5			-6.1	07/01/2018
<i>SG Multi Alternative Risk Premia Index</i>			3.6	3.7	1.0	-3.4			-3.9	

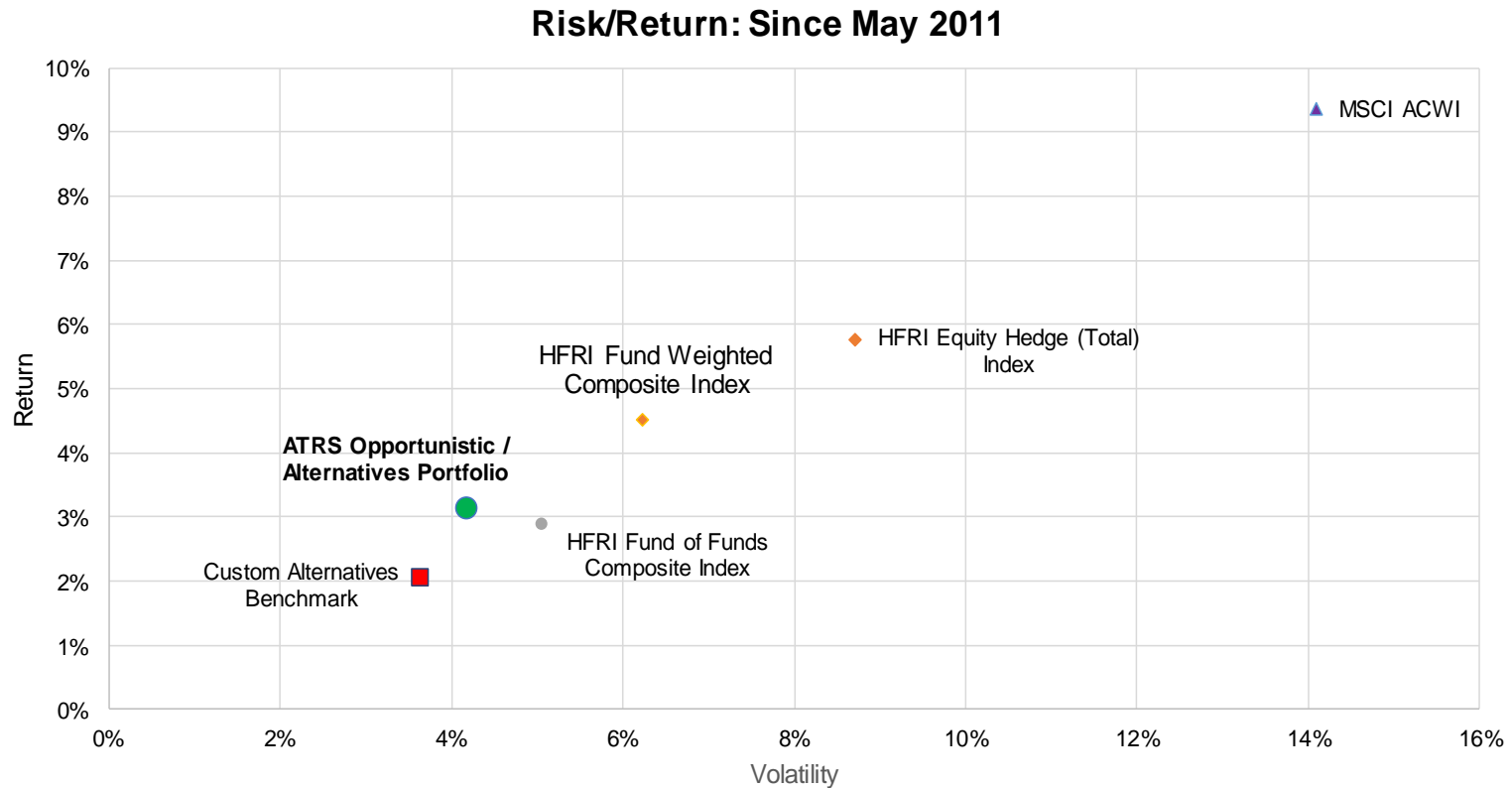
- Relative performance is blurred by the extreme market rally over the past year, especially as the Opportunistic/Alternatives portfolio is specifically designed to provide the plan with return diversification
 - Most peers in the hedge fund indices have greater market sensitivity
 - It is important to focus on longer term performance across market environments

Performance: Growth Since Inception



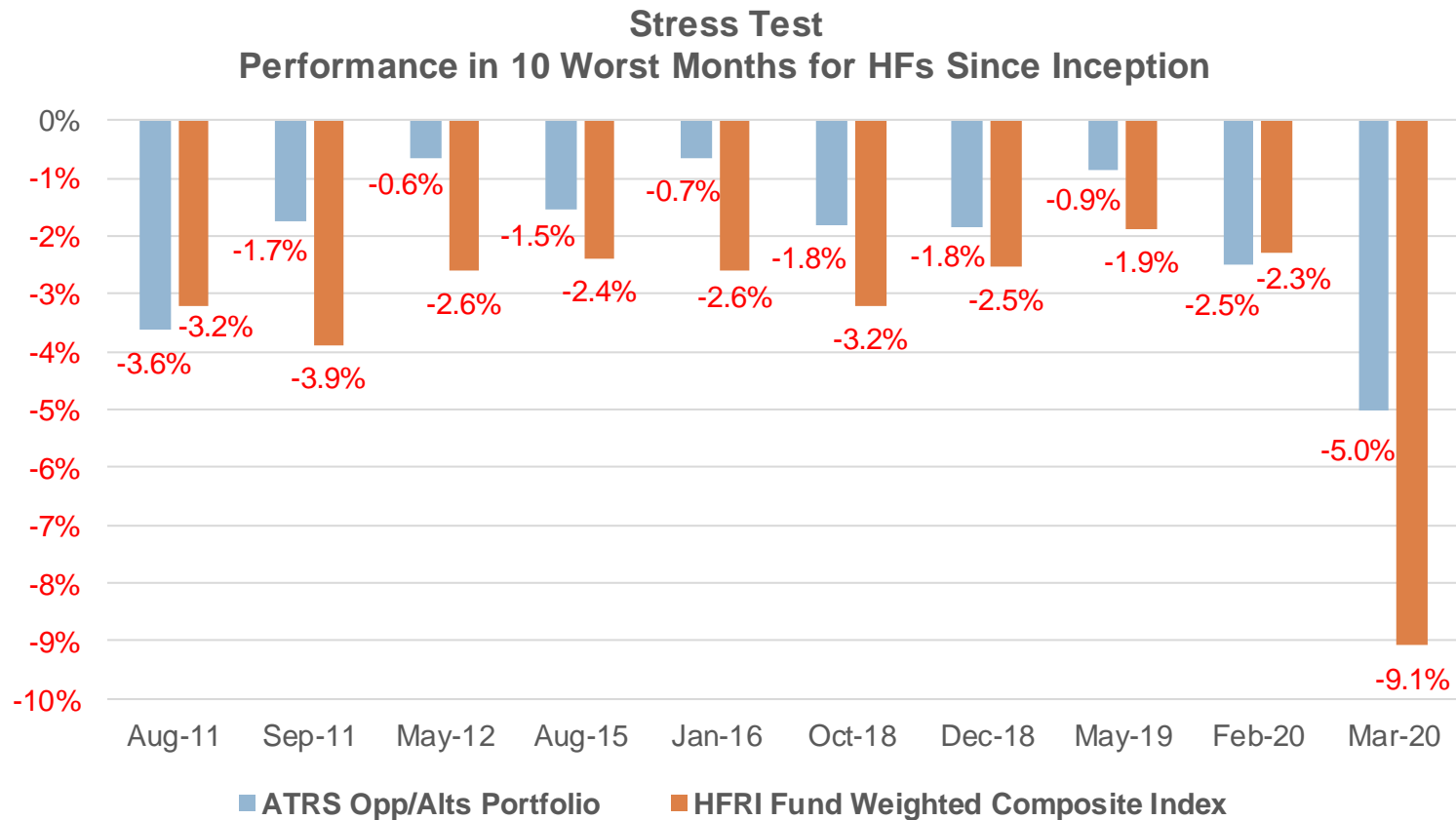
- The performance chart above illustrates how the ATRS Opportunistic/Alternatives portfolio outperformed its benchmark since inception, and with a more stable return pattern over time
 - However, performance has fallen off in the past year vs. both the benchmark and broad HF indices
 - This is due to poor performance from the event-driven/credit managers and a lack of long/short equity funds that are prevalent in the HF indices
 - The Total Fund has been better served by reserving market risk for Total Equity

Performance: Risk/Return



- Over the nearly 10-year since inception period, the Opportunistic/Alternatives portfolio has produced a return that is competitive with major HF indices at a lower level of volatility
 - As illustrated in the above chart, the risk-adjusted return is favorable
 - Much of the relative return profile can be explained by the lack of long/short equity funds
 - Our decision to take public equity risk only in the Total Equity portfolio has been prescient and the most productive use of capital

Performance: Downside Protection



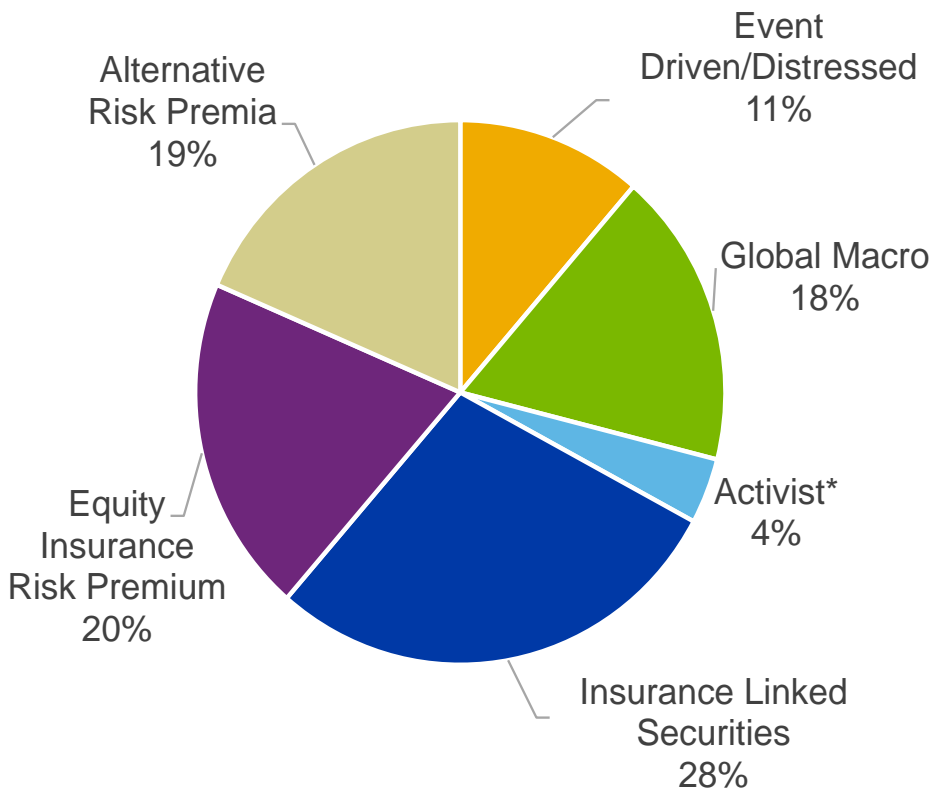
- The chart above plots the performance of the Opportunistic/Alternatives portfolio side-by-side with the broadest HF index during its 10 worst monthly returns
 - In 8 of 10 monthly period, the Opportunistic/Alternatives portfolio held up better
 - On average, the drawdown was only 61% of what was experienced by HFs broadly



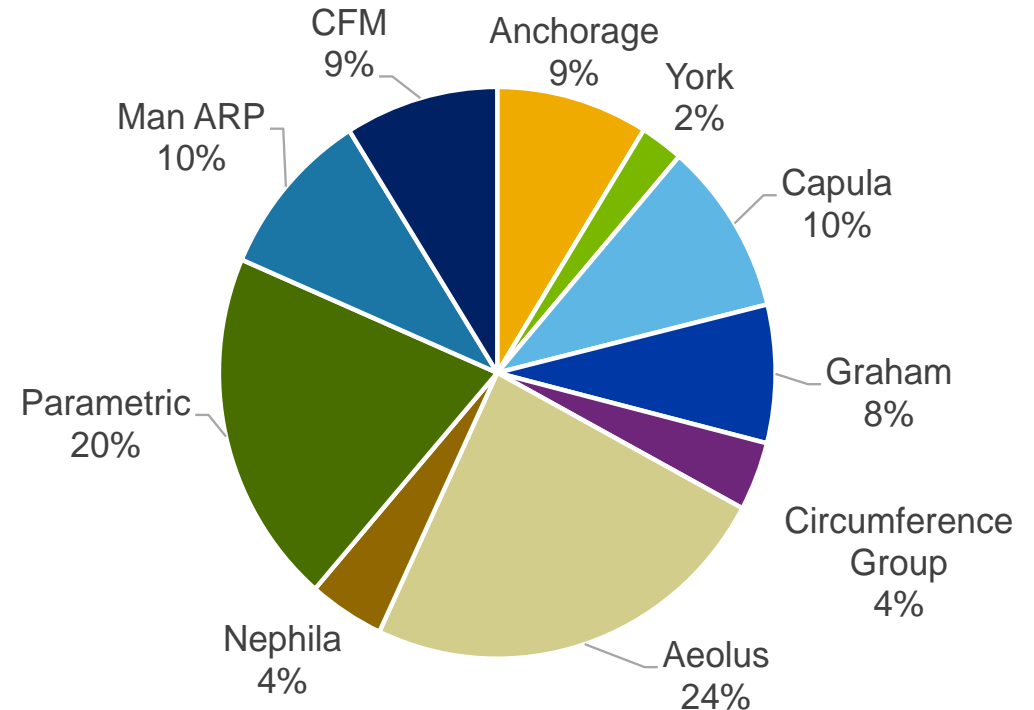
Portfolio Construction Analysis

ATRS Opportunistic/Alternatives: Current Allocation

Strategy Allocation



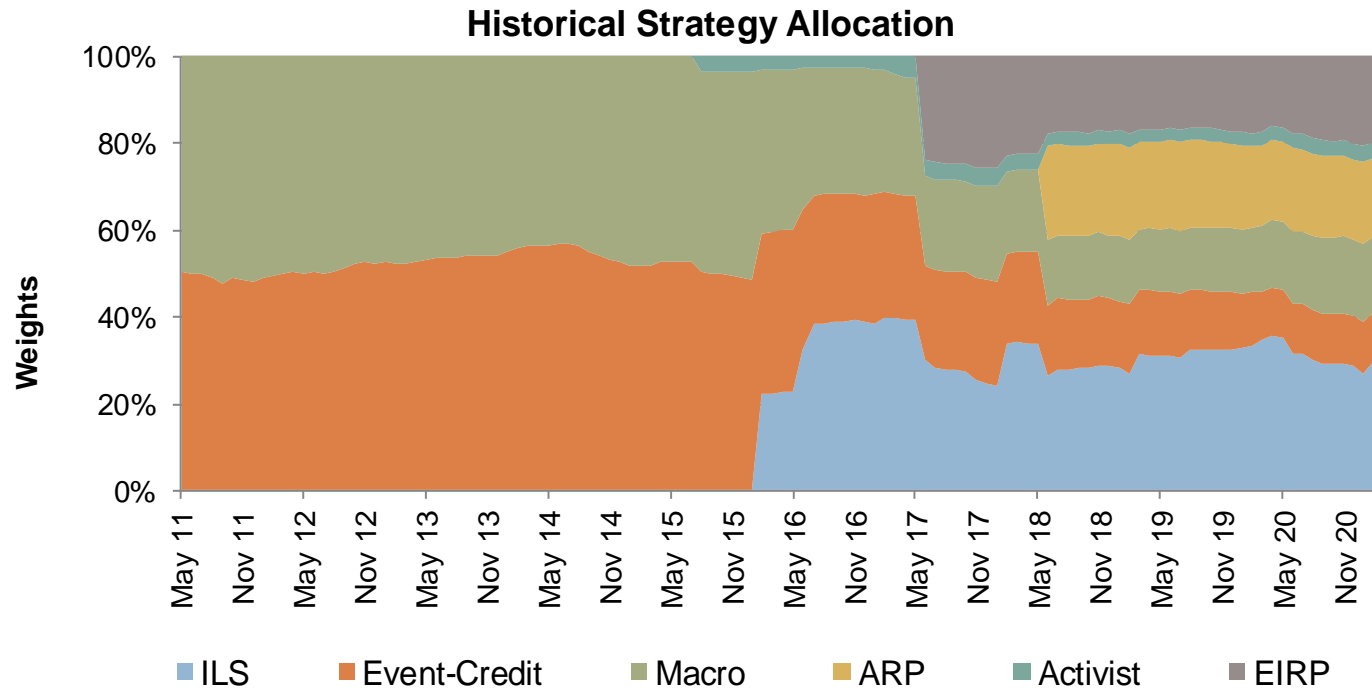
Manager Allocation



*ATRS also invested in activist managers, Trian (\$182M) and Pershing Square (\$278M) which are housed in the Global Equity asset class.

**ATRS also invested in a portable Alpha strategy (Voya Absolute Return) with about \$728M invested within Global Equity

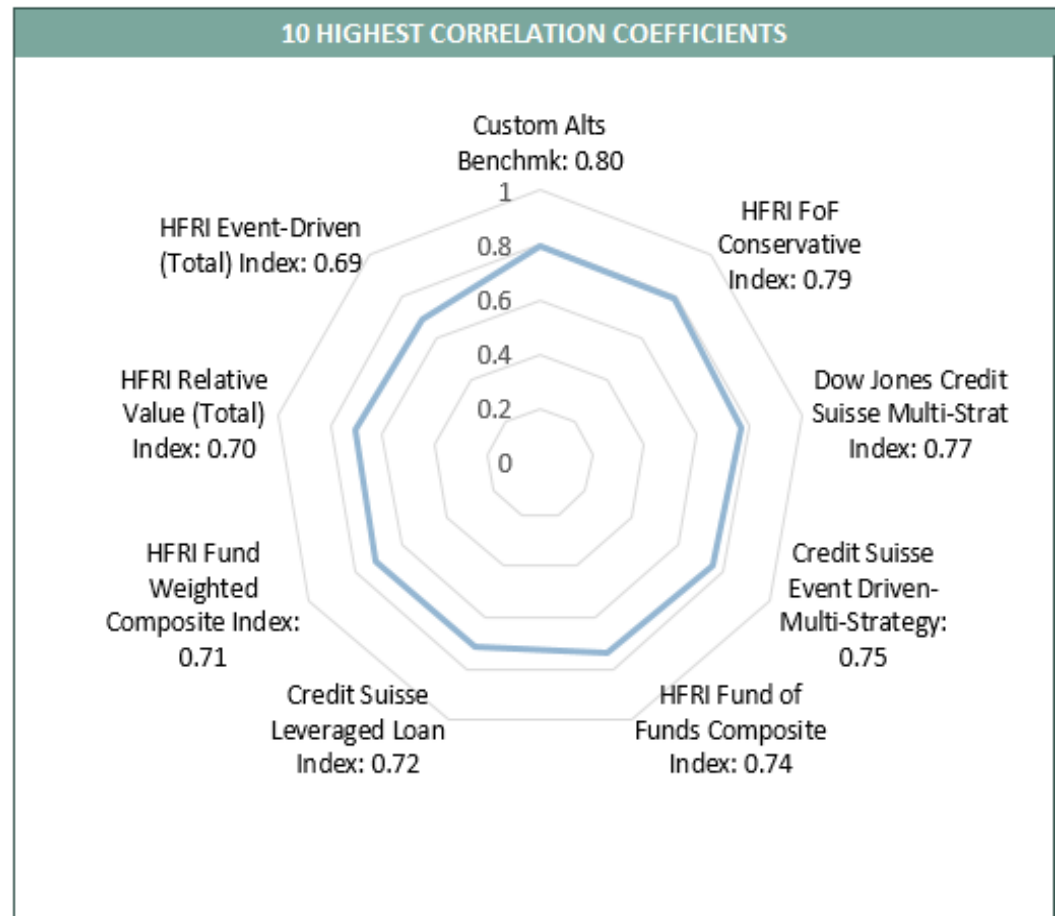
Portfolio Construction Analysis: Strategy Exposure Over Time



- The chart above illustrates the range and progression of strategies held within the Opportunistic/Alternatives portfolio
 - We will look to further expand the strategy diversification as opportunities arise
 - Several compelling investment strategies arose from the Covid crisis
 - However, the window was very short before markets charged higher due to a flood of monetary and fiscal policy liquidity

Portfolio Construction Analysis: Strong Diversification

- Aon analyzed the Opportunistic/ Alternatives portfolio's sensitivity to major capital markets and factors
- The chart on the right plots the 10 highest correlation coefficients since inception to the ATRS portfolio out of the 40 major market and strategy indices measured
- The results provide confidence that the portfolio is not overly exposed to any particular market or strategy type
- We find the portfolio to be very well diversified and void of excessive traditional markets exposure



Portfolio Construction Analysis: Low Correlation Across Funds

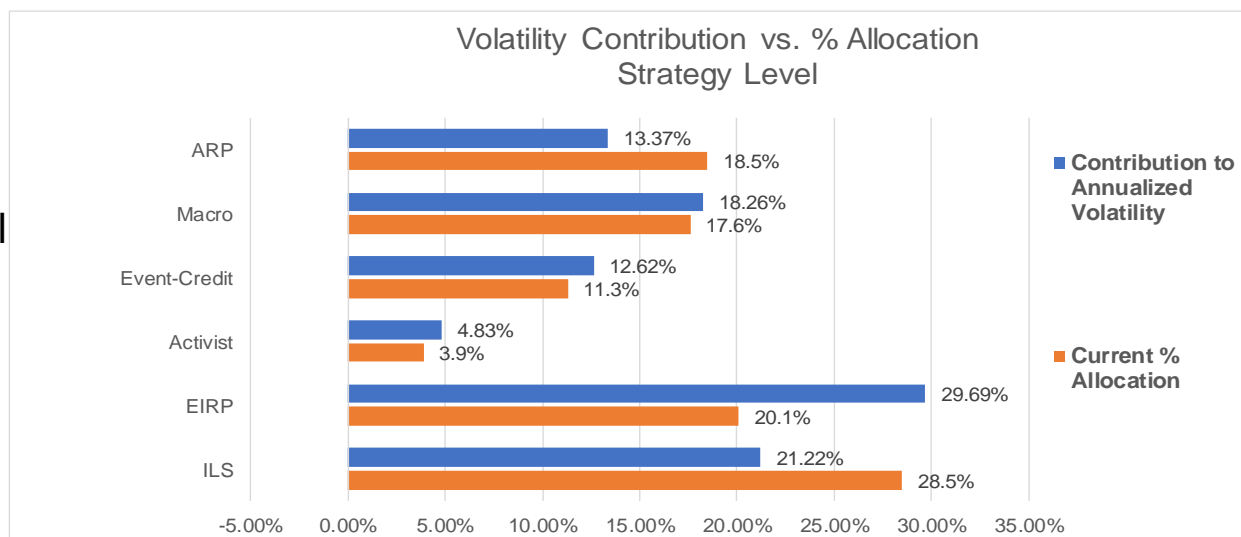
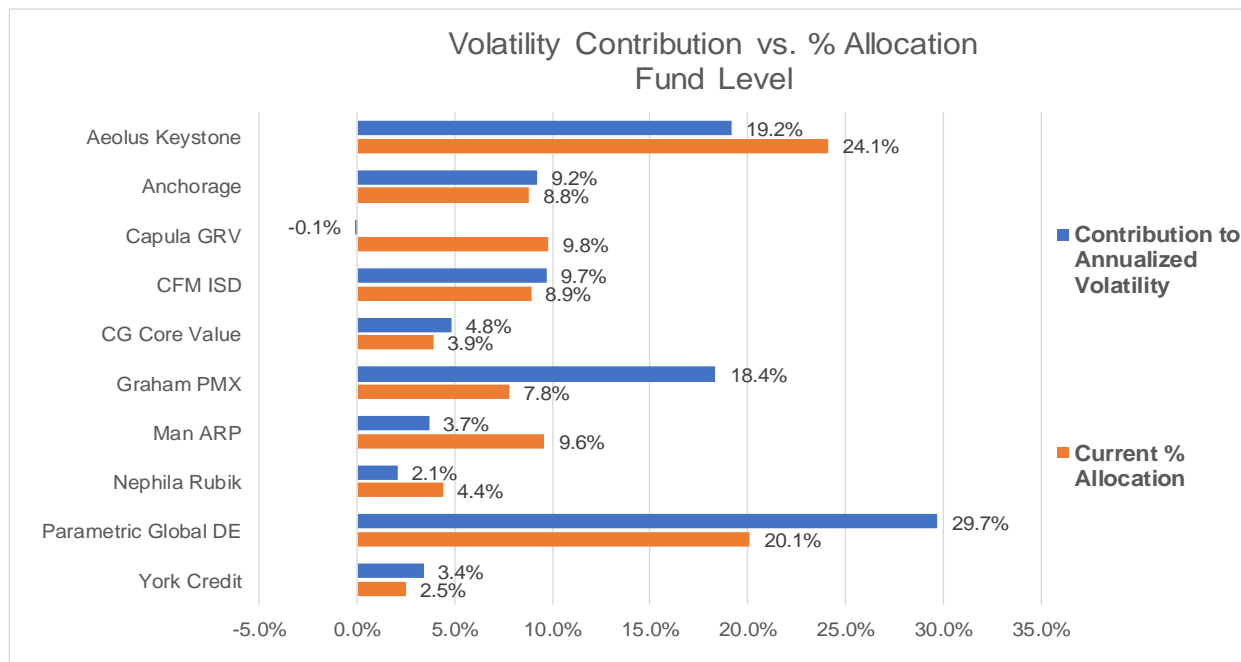
April 2016 - March 2021	ATRS Opp / Alts Portfolio	Bloom. Barclays Global Agg	Custom Alts Benchmark	Aeolus Keystone	Anchorage	Capula GRV	CFM ISD Fund 1.5x	CG Core Value	Graham PMX	Man ARP	Nephila Rubik	Parametric Global DE	S&P 500 Index	York CO
ATRS Opp / Alts Portfolio	1.00													
Bloom. Barclays Global Agg	0.14	1.00												
Custom Alts Benchmark	0.83	0.29	1.00											
Aeolus Keystone	0.37	0.07	-0.07	1.00										
Anchorage	0.57	0.15	0.64	-0.10	1.00									
Capula GRV	-0.06	-0.19	-0.12	0.13	-0.07	1.00								
CFM ISD Fund 1.5x	0.66	0.09	0.58	-0.15	0.43	-0.42	1.00							
CG Core Value	0.46	0.14	0.68	-0.11	0.36	0.03	0.16	1.00						
Graham PMX	0.76	0.18	0.77	0.06	0.49	-0.13	0.50	0.40	1.00					
Man ARP	0.48	0.16	0.44	-0.08	-0.04	-0.06	0.47	0.21	0.37	1.00				
Nephila Rubik	0.37	0.11	0.18	0.43	0.09	0.16	0.01	0.14	0.07	0.34	1.00			
Parametric Global DE	0.81	0.32	0.95	-0.06	0.60	-0.21	0.47	0.69	0.72	0.39	0.19	1.00		
S&P 500 Index	0.72	0.22	0.90	-0.04	0.49	0.00	0.31	0.75	0.65	0.39	0.23	0.94	1.00	
York CO	0.53	-0.16	0.34	0.03	0.41	-0.22	0.60	-0.02	0.31	0.09	0.00	0.32	0.14	1.00

- The correlation matrix above measures the correlation of the constituent funds against one another, the total portfolio, and a select group of benchmark indices
 - There is not only an absence of highly correlated combinations, but also many instances of negatively correlated funds
 - Importantly, there are no concerning return relationships with broad market indices

Portfolio Construction Analysis: Contribution to Volatility

- Comparing volatility contribution and % dollars allocated suggests a balanced mix, with somewhat outsized volatility contributions from Graham and Parametric
 - This is slightly misleading as each fund explicitly targets different levels of volatility, so we would expect deviations between the blue and orange bars

- Stepping back to the strategy level, we see a much more balanced risk allocation
 - Parametric could be considered a source of capital for additional investments (tactically when VIX / option premium income is low)





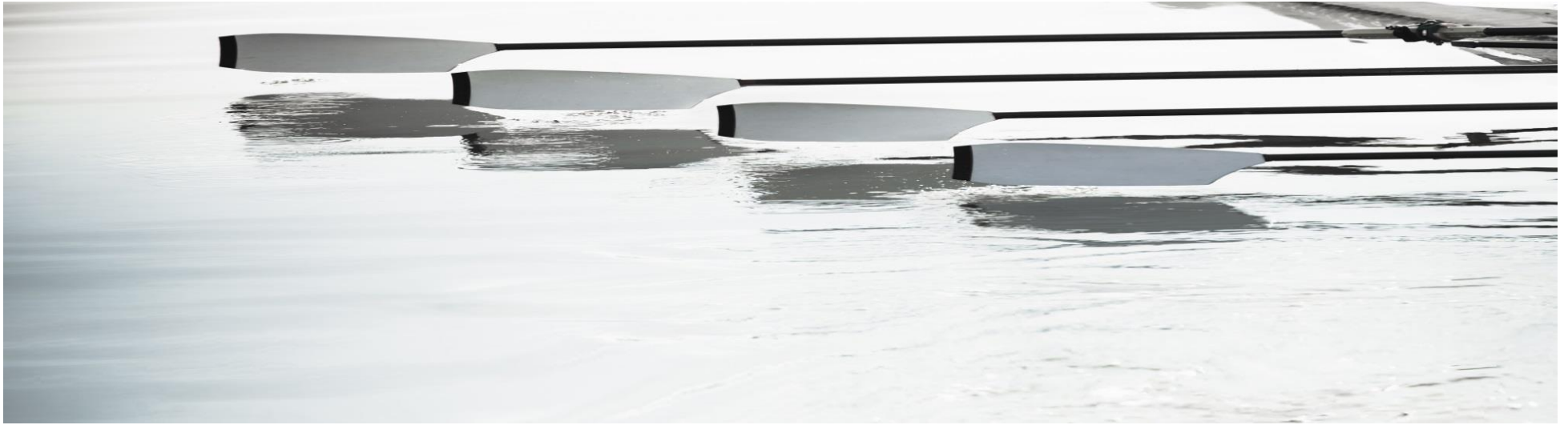
Strategy and Manager Round-up

Strategy and Manager Round-up

Strategy and Managers	Strategy Snapshot	Comments
<p>Event Driven/Credit</p> <ul style="list-style-type: none"> Anchorage York 	<ul style="list-style-type: none"> Investments based on events or market dislocations Challenged to add value since post-GFC, as central banks and gov's continually intervened to support markets; COVID has presented opportunities 	<ul style="list-style-type: none"> York continues to return capital Anchorage has underwhelmed Consider other strategies as the investment environment has evolved
<p>Global Macro</p> <ul style="list-style-type: none"> Capula Graham 	<ul style="list-style-type: none"> Takes positions based on macro-economic or top-down views on markets Among the strongest HF strategies lately 	<ul style="list-style-type: none"> Performance has been strong Perhaps most impactful source of diversification A more optimal structure with lower fees may be possible
<p>Equity Insurance Risk Premium (EIRP)</p> <ul style="list-style-type: none"> Parametric 	<ul style="list-style-type: none"> EIRP bounced back following the COVID crash of March 2020 Option premium remains above average even with equity markets at all-time highs 	<ul style="list-style-type: none"> Parametric performance has rebounded strongly In good standing

Strategy and Manager Round-up (cont'd)

Strategy and Managers	Strategy Snapshot	Comments
<p>Insurance Linked Securities</p> <ul style="list-style-type: none"> • Aeolus • Nephila 	<ul style="list-style-type: none"> • Fundamentally uncorrelated to financial markets • ILS market reacted to series of loss events in recent years by hardening with successive price increases • Expected returns have risen in each of the past 4 years 	<ul style="list-style-type: none"> • Manager performance has been disappointing since ATRS inception • Continue to believe current market conditions present attractive opportunities • Believe there may be more compelling funds to consider
<p>Alternative Risk Premia</p> <ul style="list-style-type: none"> • Man Group • CFM 	<ul style="list-style-type: none"> • Offer many forms of risk premia across asset classes • Value had been extremely challenged, but recently led a comeback for ARP 	<ul style="list-style-type: none"> • Short-lived strategy thus far (ATRS inception of 6/2018) • CFM: PM and organizational changes trigger review
<p>Activists</p> <ul style="list-style-type: none"> • Circumference • Trian • Pershing Square 	<ul style="list-style-type: none"> • Target turnaround situations in established companies at attractive valuations • Activity has picked up since COVID 	<ul style="list-style-type: none"> • ATRS has outperformed a peer activist index • Managers in good standing
<p>Portable Alpha</p> <ul style="list-style-type: none"> • Voya 	<ul style="list-style-type: none"> • Combines beta exposure with alpha component (underlying Voya funds) 	<ul style="list-style-type: none"> • Performance has been benchmark-like over long-term • Certain attractive characteristics (team, fees) suggest a review is prudent



Conclusions and Next Steps

Conclusions and Next Steps

- Overall, the Opportunistic/Alternatives portfolio is well-diversified across strategy type and manager, with no gaps in coverage or missed opportunities
- Though performance has been disappointing from an absolute return perspective, the portfolio has protected on the downside and outperformed its custom benchmark since inception
- Aon does believe there are a few areas to improve the manager structure:
 - Consider restructuring event/driven portfolio
 - Consider replacement ILS manager(s)
 - Consider one replacement ARP manager
 - Ensure optimal terms within global macro portfolio and across the entire portfolio
 - Consider a policy increase to Opportunistic / Alternatives
- Aon will work with the investment team and bring forth specific recommendations at the next meeting

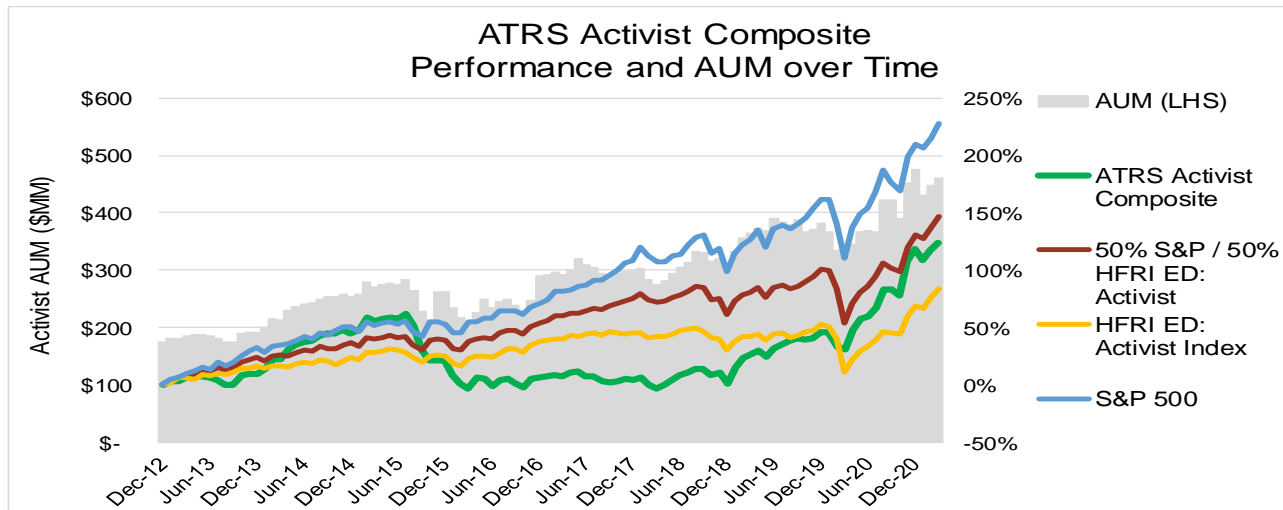


Appendix

ATRS Portfolio Comments

Activists

- Following a relatively quiet period when activists were a bit reluctant to push agendas during the business challenges imposed by the Covid pandemic, activity has since picked up
- Opportunities were abundant in the wake of the Covid crash, however the speed of the subsequent rally prevented managers from taking full advantage of depressed stock prices
- There have been several very strong performing stocks, along with a few disappointments
- Low exposure to consumer discretionary and technology stocks (as is inherently the case among most activist funds) has been an ongoing headwind relative to broad market indices
 - Activist funds target turnaround situations in established companies at attractive valuations
 - In contrast, outsized market gains have come from stocks that are early-stage growth, historically expensive, and mega-cap where shareholder influence is muted



- The HFR ED: Activist Index provides a peer comparison that accounts for a tighter range of stock candidates and style factors
 - ATRS has outperformed, and more pronounced at larger AUM levels

Activists (cont'd)

– Circumference Group

- Performance has been impressive since inception; stable and consistently positive
 - Key to this has been the manager staying true to its process: deep value entries and disciplined exits in industries where the team has operational experience
- AUM growth has been a challenge; Aon has provided suggestions to get on investors' radar
- The next phase of succession is well-underway
 - co-CIO John Haley continues to slowly step back and serve more as a mentor/sounding board with less day-to-day influence; co-CIO John Lammers has taken the lead

– Pershing Square

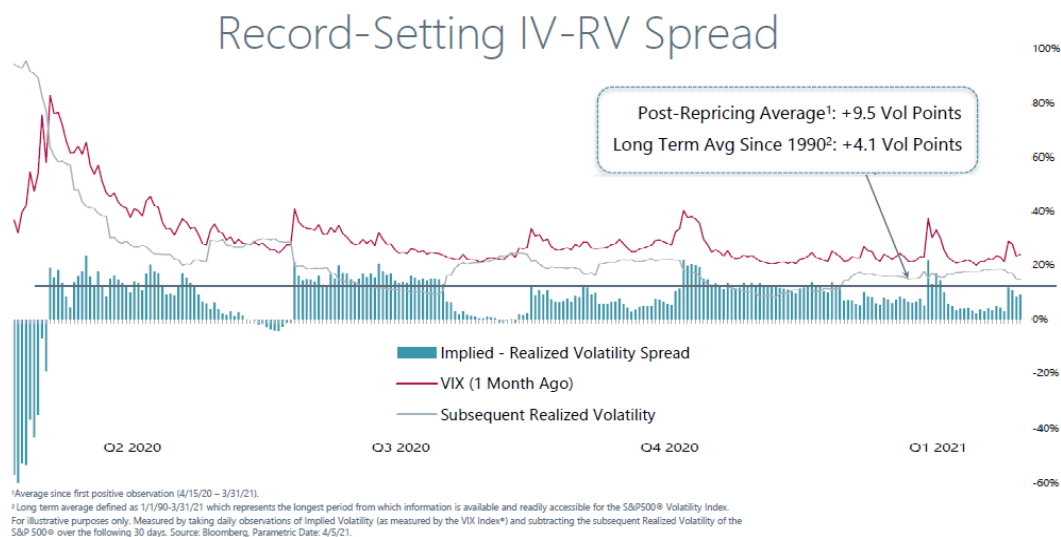
- Performance has recovered from a string of poor years with consecutive excellent years
 - The impressive 2020 results were due to the shrewd timing of credit hedges and reinvestment of gains into the core portfolio
- There has been greater stability across the firm in recent years
- The PSH discount to NAV remains high, holding steady in 2021 around an average of 25%

– Trian

- Performance recovered strongly from unfortunate pandemic exposure, and several new positions have been initiated (Comcast, Invesco, Janus) with healthy rotation
 - Trian has been careful to invest prudently in sectors of expertise rather than chase markets
- A Florida office has been established, but Trian will maintain a presence in New York
- There is \$18 million of unfunded commitments to the co-investment fund

Equity Insurance Risk Premium

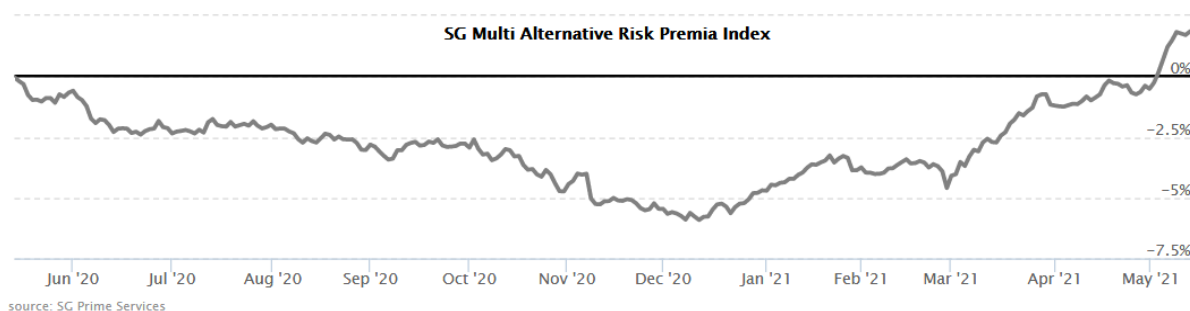
- EIRP bounced back following the Covid crash of March 2020, and option premium remains above average even with equity markets at all-time highs
 - This is in stark contrast to VIX being at all-time lows when equity markets were at all-time highs prior to the pandemic
- Parametric
- Performance has rebounded strongly in what have been among the most favorable conditions in history for the strategy (see chart below)
 - Portfolio Manager Jay Strohmaier retired recently in a well-telegraphed succession; the team is very well equipped to manage and innovate the portfolio
 - Parametric was acquired by Morgan Stanley effective March 2021
 - All indications point to no significant changes, if any, for the Global DE team and strategy



Source: Parametric

Alternative Risk Premia

- We have seen more balanced contributions from underlying risk premia over the past 2 quarters
- Value in particular had been extremely challenged, but has led a comeback for ARP (chart below)
 - The combination of low interest rates, secular economic changes, investor speculation, and pandemic impact led to its most severe underperformance in history relative to growth factors
- CFM
 - Firm-wide AUM has been steady, however the ISD program has fallen to \$640 million
 - ISD was downgraded to “Qualified” during Q4 2020 as a result of the departure of a senior member of the team, combined with a reduction in resources for the product
 - We recommend either an upgrade within CFM or another Buy rated ARP manager
 - Systematic Global Macro has been launched, which combines models from CFM’s flagship Stratus fund with defensive, convex strategies at attractive seed terms
- Man
 - Strategy AUM has been steady at \$6.5 billion, which includes multiple iterations of ARP
 - Recent enhancements include combining equity strategies and upweighted alpha-type signals
 - Keith Haydon, CIO of Man Solutions, retired in Q1 2021 but remains as an advisor; he was heavily involved in its original design but had stepped back, so we do not have concerns



Event-Driven / Credit

- The event-driven / credit universe has been challenged to add value since the post-GFC years, as central banks and governments have continually intervened to support markets (charts below)
 - This has made it difficult for funds that rely on complex financing situations, deciphering winners from losers, and devising funding solutions to generate strong returns
 - The widespread challenges faced by corporate and consumer borrowers amid the Covid crisis presented an environment that was ripe for event-driven / credit investment opportunities
 - As expected, the initial impact hit long positions along with a benefit from low quality shorts
 - While opportunities appeared, in most cases the window was very short; markets recovered before much new capital was raised and even before some due diligence could be completed
 - Spreads have tightened to all-time lows—below pre-Covid levels—in reaction to the wall of liquidity with which policymakers have responded
 - This environment continues, albeit with compelling idiosyncratic situations; alternative fixed income returns are favorable vs. the expected returns in traditional FI markets at historic lows



Note: Firm-level data is used to calculate the share of listed firms that are more than ten years old with an interest coverage ratio less than one for three years in a row.
Source: Datastream, Worldscope, DB Global Research

Source: Rivelle, Tad. CIO, The TCW Group. "Dr. Faust Goes to Washington." May 2021.



U.S. recessions are shaded; the most recent end date is undecided. Source: Ice Data Indices, LLC fred.stlouisfed.org

Event-Driven / Credit (cont'd)

– Anchorage

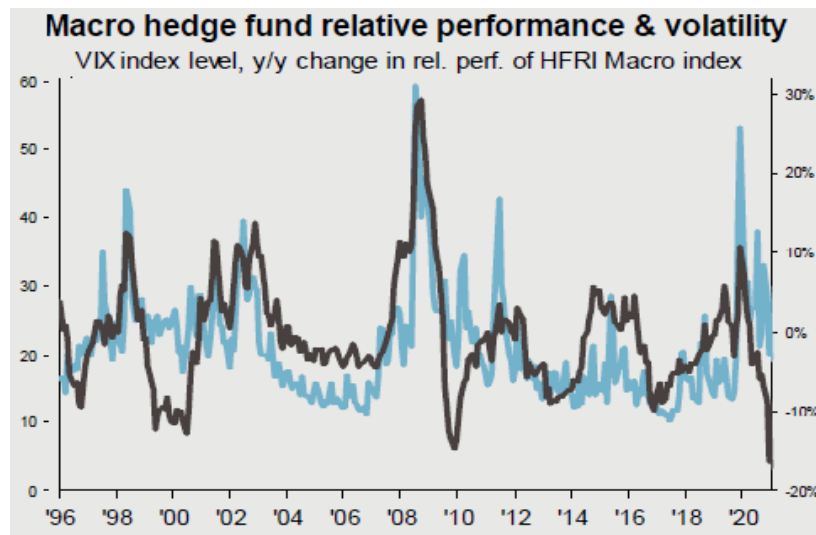
- Performance has been disappointing over the past year despite solid gains from the distressed / equity segment; short positions have been costly since helping significantly during Q1 2020
- 2021 is performance expected to benefit significantly from monetizations of core investments
- Anchorage investor redemptions have been coming at a high pace, and we are closely monitoring the liquidity profile of the fund and its progress toward monetization of core holdings
 - There is a 25% quarterly redemption limit for Series K shares
 - We estimate the transfer to Series K shares has saved ATRS nearly \$1 million in fees since January 2018

– York

- The York Credit Opportunities portfolio continues to be in liquidation following a wave of redemption requests that exceeded its ability to meet them given underlying position liquidity
- A number of departures have followed York's decision to exit the hedge fund business; Bill Vratos is now the sole CIO and remains fully involved in the unwind of the portfolio
- The portfolio is concentrated in catalyst-sensitive distressed debt and restructured equity, and has recently benefitted from positive strategic developments around core holdings
 - Q1 monetizations resulted in a sizable cash distribution to LPs in April
 - This remains the focus of the fund, however the liquidation schedule is uncertain and will likely extend beyond 2021

Global Macro

- Global macro has been among the strongest hedge fund strategies over the past couple years
 - Amid a prolonged stretch of low market volatility, macro strategies had been underwhelming performers for the better part of the last decade
 - In our view, the outlook is favorable as monetary, fiscal, and geopolitical tensions are high and volatility has picked up across markets
 - Global macro funds represent perhaps the most impactful source of diversification for ATRS
 - Higher volatility regimes have been a healthy backdrop for macro funds, consistently over history (left chart)
 - More recently, fixed income has been the source of greatest relative volatility, and macro funds have been able to capitalize on interest rate changes given market conditions (right chart)



Source: J.P. Morgan Asset Management. "Guide to The Markets." 2Q 2021 (left)
Morgan Stanley. "Global Volatility Playbook. Playing Forwards." 26, April 2021. (right)

Global Macro (cont'd)

– Capula

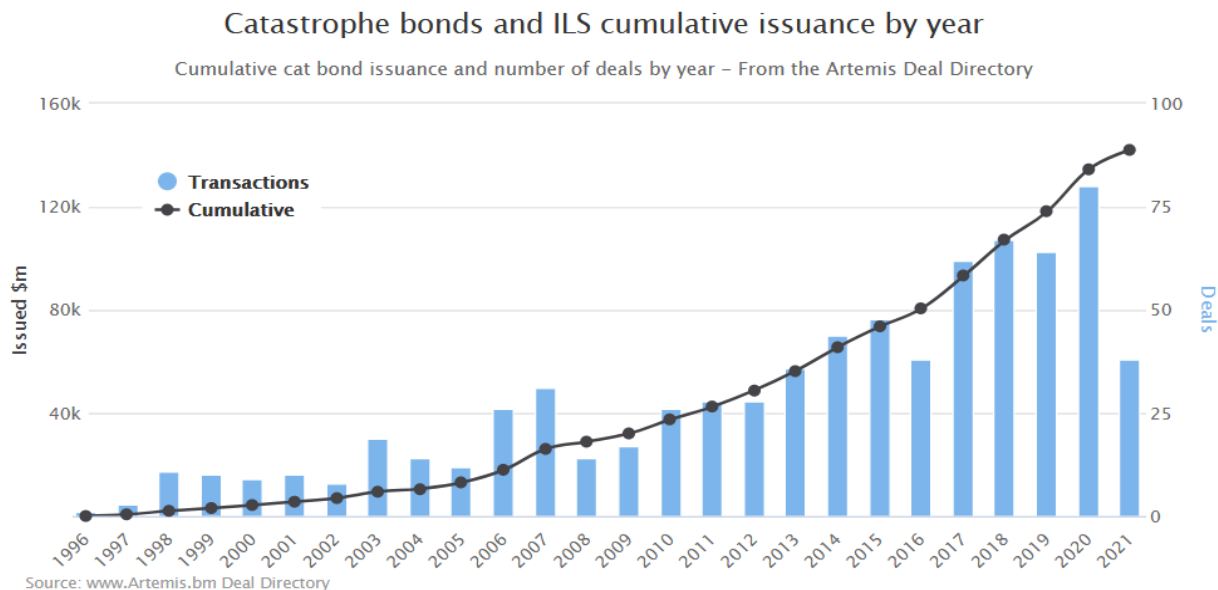
- Performance has been solid and stable, and Capula has been proactive to allocate capital to a broader range of productive strategies beyond traditional fixed income relative value (FIRV)
 - Recently launched the Tactical Macro Fund, which is offered as a standalone product in addition to the allocation from the GRV fund
 - The recent launch of Hybrid Hedge joins the Volatility and Tail Risk strategies in what Capula has positioned as its suite of Crisis Alpha strategies
- GRV has returned \$1.2 billion to investors in 2021; it will likely do this periodically going forward
- We estimate the transfer to Class K shares has saved ATRS nearly \$1 million in fees, and is on track to save roughly \$1.5 million over the 3-year commitment
 - Aon is lobbying for investor-friendly renewal terms after the 3-year lockup expires (July 2022)

– Graham

- Firm AUM growth has been healthy, increasing above \$16 billion across strategies
- Performance was mixed during 2020, basically a tale of two halves
 - In Q1, Systematic/Quantitative strategies were hurt by market reversals, while the Discretionary trading component was hurt by short volatility and credit sub-strategies
 - Following the Covid dislocation, both Prop Matrix components performed well
- We have been able to secure a slight management fee discount, but would first like to explore alternatives including breaking up the systematic and discretionary mandates
 - It may be possible to save on fees by allocating to a standalone systematic strategy
 - This is balanced by Graham absorbing the performance fees netting risk in PMX

Insurance-Linked Securities

- The ILS market continues to exhibit healthy growth
 - Deal issuance has been strong, and has climbed at a steady pace
 - Institutional investors continue to serve as a stable source of capital



- The ILS market has reacted to the series of loss events in recent years by hardening with successive price increases
 - We have seen expected returns rise in each of the past 4 years
 - More recently, funds have maintained compelling expected returns while reducing risk

Type of Contract	Layers	Jan 2019 Pricing Change	June 2019 Pricing Change	Jan 2020 Pricing Change	June 2020 Pricing Change	Jan 2021 Pricing Change
US Primary Reinsurance	Loss affected	+5% to +25%	+10% to +60%	+5% to +30%	+20% to +60%	+10% to +25%
	Non loss affected	Up to +2.5%	Up to +7.5%*	Up to +5%	+7.5% to +20%*	+5% to +15%
Non US Primary Reinsurance	Loss affected	+2.5% to +10%	+2.5% to +30%	+5% to +30%	+10% to +40%	+5% to +20%
	Non loss affected	Flat pricing	Flat pricing	Flat pricing	+2.5% to +5%	+2.5% to +7.5%
Retrocession	Loss affected	+10% to +25%	+15% to +30%	+20% to +30%	+20% to +40%	+10% to +20%
	Non loss affected	Up to +5%	Up to +15%	+5% to +10%		

Source: Artemis Dashboard. <https://www.artemis.bm/dashboard/>
Leadenhall Capital Partners (bottom)

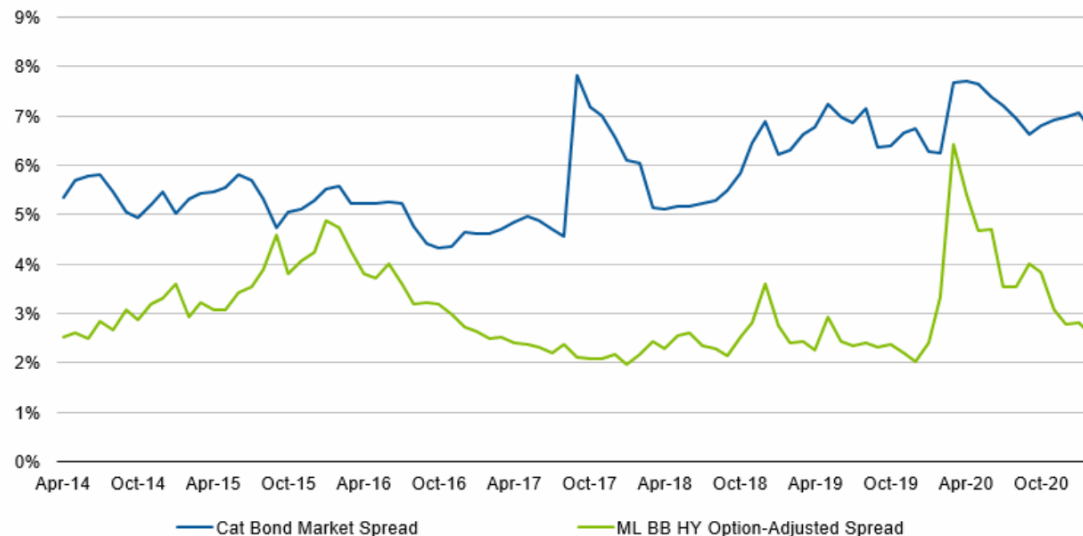
Insurance-Linked Securities (cont'd)

- We believe the current cat bond and ILS market conditions present attractive opportunities for investors, both in absolute terms and relative to other asset classes competing for capital
 - While most of the ATRS portfolio is composed of private ILS securities with higher expected returns, some conclusions can be gleaned from the widely available data of cat bonds
 - Although cat bond spreads have slightly tightened from decade-high levels in Q1 2021 following inflows, they remain attractively priced versus corporate HY spreads

Catastrophe Bond Market Spread vs. High-Yield BB Spread



April 2014–February 2021



Source: Citigroup, Bloomberg. Important data provide notices and terms available at www.franklintempletondatasources.com. Indices are unmanaged and one cannot invest in them. They do not include fees, expenses or sales charges. **Past performance is not an indicator or a guarantee of future results.**

Insurance-Linked Securities (cont'd)

– Aeolus

- AUM firmwide is roughly \$4 billion, the majority of which is in the Keystone portfolio
- Performance headwinds have continued despite much improved pricing
 - An extremely active North American hurricane season with a record year of named storms that made landfall, above-average convective storm and tornado activity, and some Covid-related losses made for a challenging 2020
 - The winter storm in the southern plains led to a negative first quarter 2021
- In the January 2021 portfolio, Aeolus has tried to take advantage of increased pricing in collateralized reinsurance during the January renewal period

– Nephila

- Nephila experienced losses in 2020 despite having correctly called an active hurricane season using its pre-season metrological models
 - Losses in direct insurance and collateralized reinsurance contracts were the main detractors; contracts written with cedents in Louisiana were some of the largest losers in the year
 - A large Midwest derecho and tornado damage also pushed down Rubik's return
 - Hedging was not aligned with actual peril exposures, and thus failed to protect the portfolio
 - The winter storm damage incurred in Feb-21 has resulted in modest losses to begin 2021
- Aon downgraded Nephila Rubik to "Qualified" during Q1 2021
 - In our view, missteps in Nephila's portfolio construction process resulted in losses despite having the discipline to hedge and foresight to correctly call the active hurricane season

Portable Alpha

- There are few variables that can determine an attractive environment for portable alpha strategies, as this is a fund structure (combining beta + alpha portfolios) rather than a distinct strategy
- However, liquid markets and cheap financing make this a cost-efficient approach

– Voya

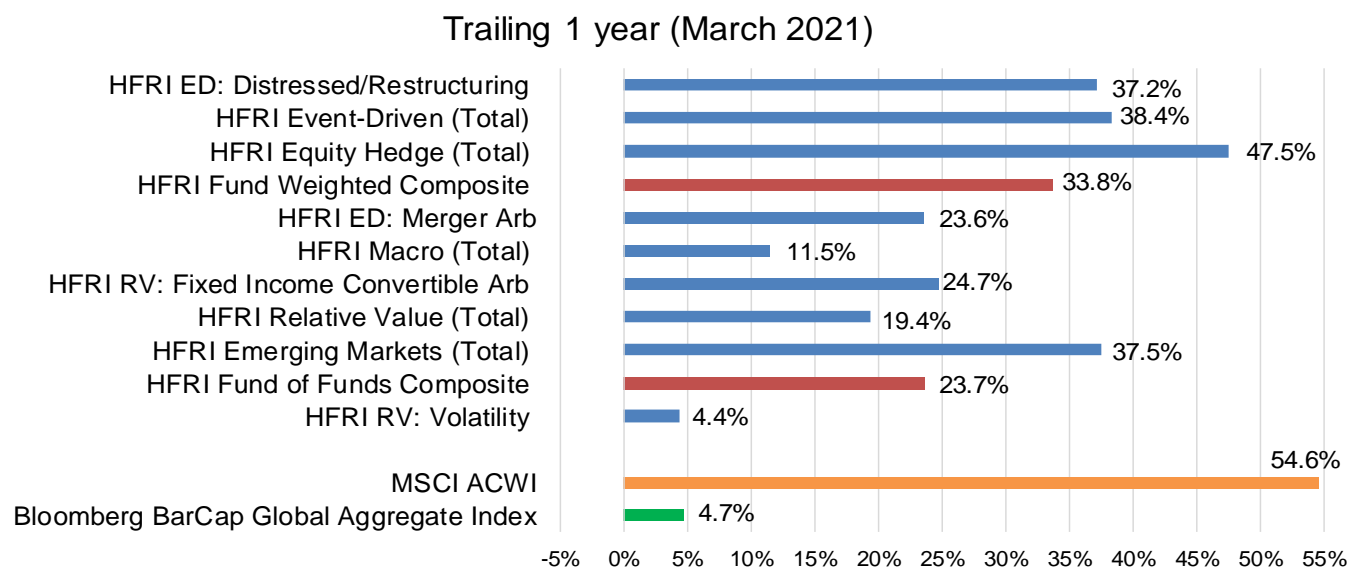
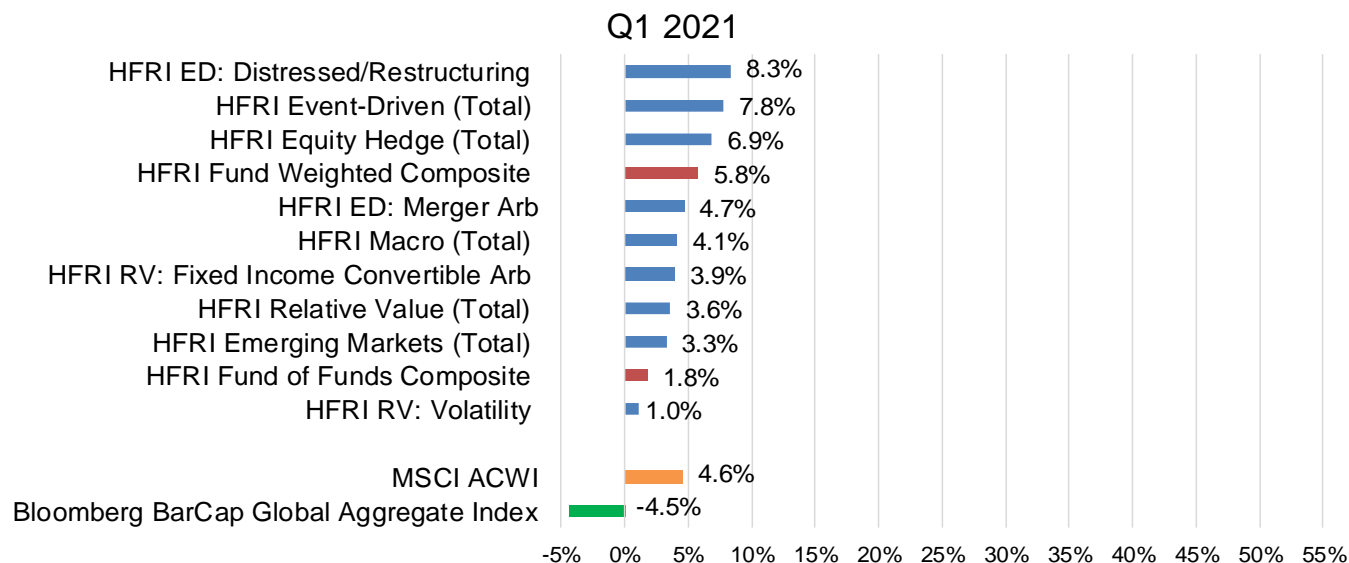
- Multi-Asset Strategies and Solutions AUM has hovered around \$30 billion, while Absolute Alpha product AUM has already been stable around \$1.6 billion
- Voya has replaced many of the legacy alpha sources from underlying Voya funds with its Voya Enhanced Risk Premia Alternative Strategy (“VERA”) platform of alternative risk premia
- We do not believe Voya has an edge in this investment style, and some sub-strategies are outsourced; however, the team is experienced, the price point is low, and 2020 was a success
- Performance has been solid recently after a multi-year period of lagging
 - The tail hedge component served its purpose during Q1 2020, while the other sub-strategies led an impressive rebound over the remainder of the year
- We have negotiated a more attractive fee schedule for the Voya account
 - Management fees lowered by 0.15% for the first \$500M; 0.15% and 0.10% tiers thereafter
 - All other terms would remain unchanged
 - This would also entail a tracking error target increase from 2.0% to 3.0% - 4.0%



Appendix

Hedge Fund Industry Update

All hedge fund strategy returns positive for the 4th consecutive quarter



Source: Hedge Fund Research, Inc.

Past performance is no guarantee of future results. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect our fees or expenses. US dollar results. Information and commentary contained herein is for informational purposes only and should not be considered investment advice

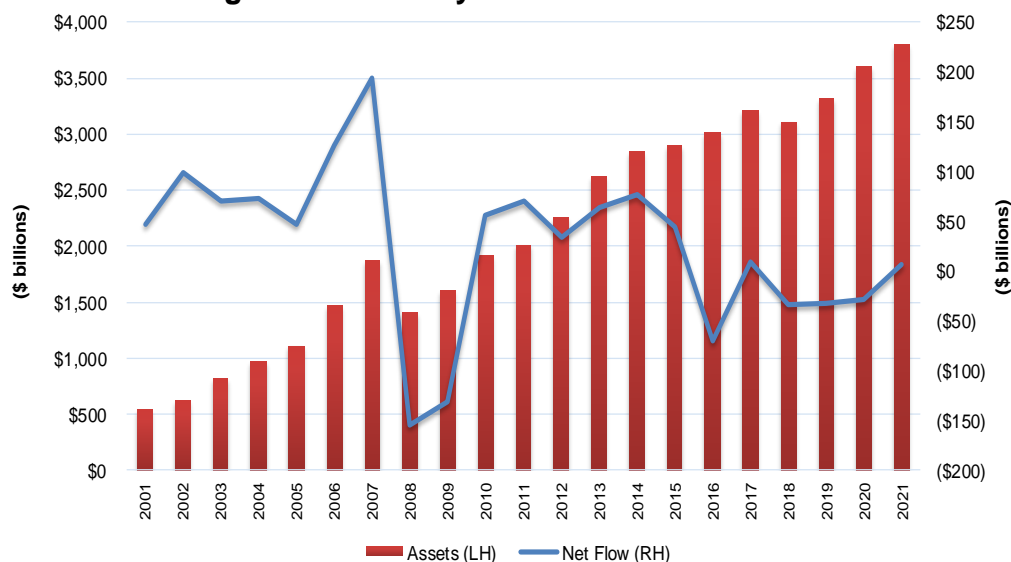
Hedge Fund Industry Update

- Hedge fund AUM reached to \$3.8 trillion in the industry's best start to a year since 2020.
 - AUM growth of \$200 billion was dominated by performance gains, however net flows (\$6.1 billion) have been positive for 3 consecutive quarters.
 - Event-Driven strategies led performance gains in Q1 2021, while Relative Value strategies received the most capital inflows (+5.6 billion).

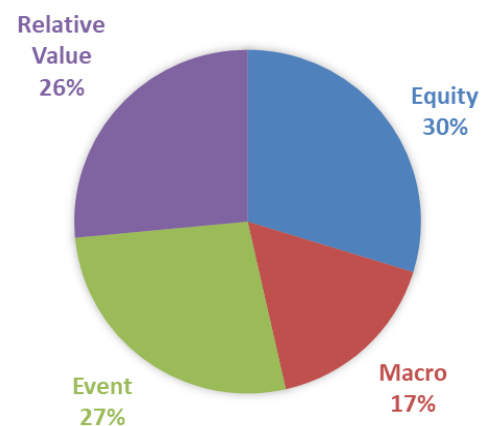
Notable Trends

- New HF launches have been the highest in years, coincident with strong capital markets and solid performance; industry conferences have proliferated with the advent of video capabilities which have supplanted in-person events in the Covid era.
- We continue to see interest in alternative income strategies, vindicated by the weak Q1 performance and outlook of sovereign bonds; other strategies have seen consistent interest, while tail hedging and dedicated SPAC funds gained traction industry-wide.
- ESG continues to gain traction across hedge fund strategies; most funds have incorporated alpha and risk considerations into their investment strategies, as applicable, while others have implemented policies at the management company level.

Hedge Fund Industry: Annual AUM and Asset Flows



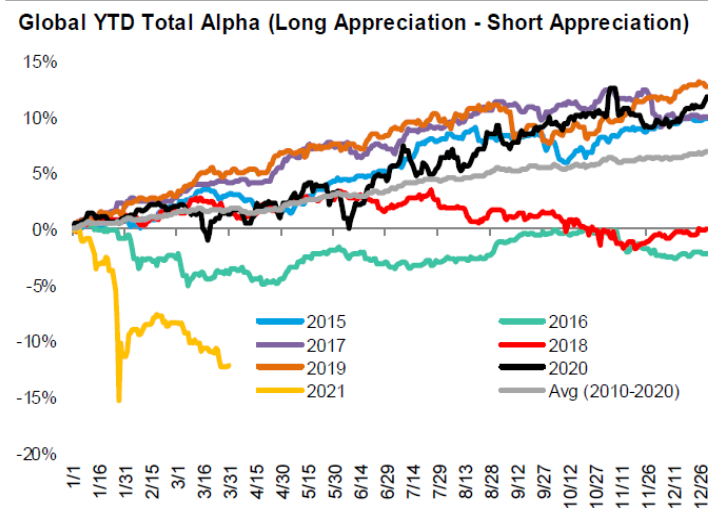
HF Strategy Composition by AUM



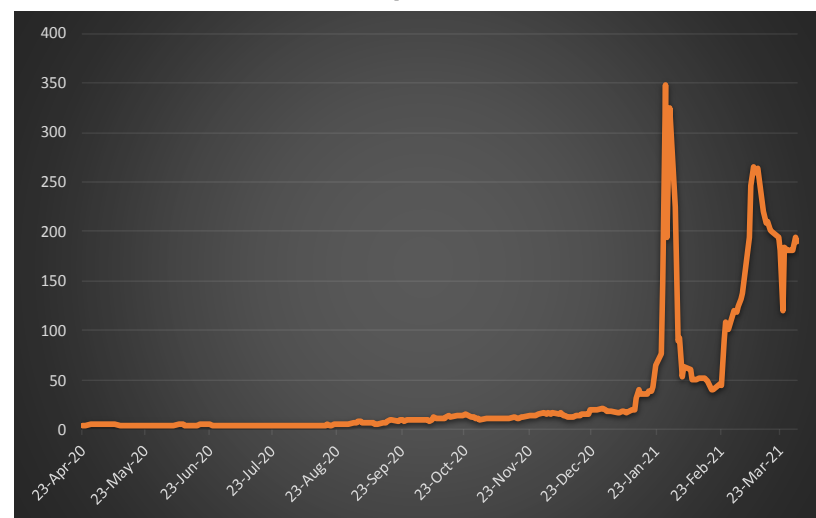
L/S equity funds post strong returns in Q1 despite negative alpha

- *HFRI Equity Hedge (Total) Index: Q1'21: +6.9%*
- Long/short equity managers reported a strong start to the year, returning +6.9%; this compared favourably with both the S&P 500 (+6.2%) and the MSCI ACWI (+4.6%).
- Performance was in stark contrast to the alpha reported by prime brokers, which saw the most negative start to a year in a many years (top chart); alpha was hit on both sides of the book, with short positions hurting returns in January and underperformance of long positions detracting in March.
- In early January, short alpha was impacted by the well-publicized actions of the sub-Reddit, r/WallStreetBets, as retail investors banded together to purchase call options on stocks with high short interest in a concerted attempt to force their prices higher, which forced dealers to buy stock and funds to cover short positions; short exposure to GameStop and several other stocks was extremely painful for a limited group of long/short funds as the share price exploded over the month (bottom chart), while the ripple effect of managers covering popular shorts lest they became targets had a far broader negative impact.
- The rise in U.S. yields as the post-COVID reflation trade took off was a significant detractor for commonly held growth stocks, and a major contributor to negative long alpha in March.
- The top performing funds during the quarter were those with higher net leverage, lower gross exposure, less individual short exposure, and positioned for rises in more cyclical, value and smaller cap stock prices.

Alpha: Worst Start to a Year since 2016



GameStop Share Price

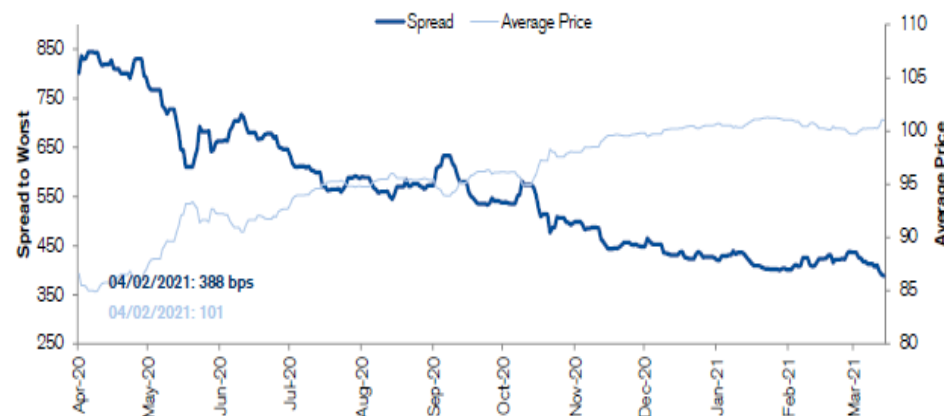


Event funds thrive as fiscal stimulus and low rates keep defaults low

HFRI Event Driven (Total) Index: Q1'21: 7.8%

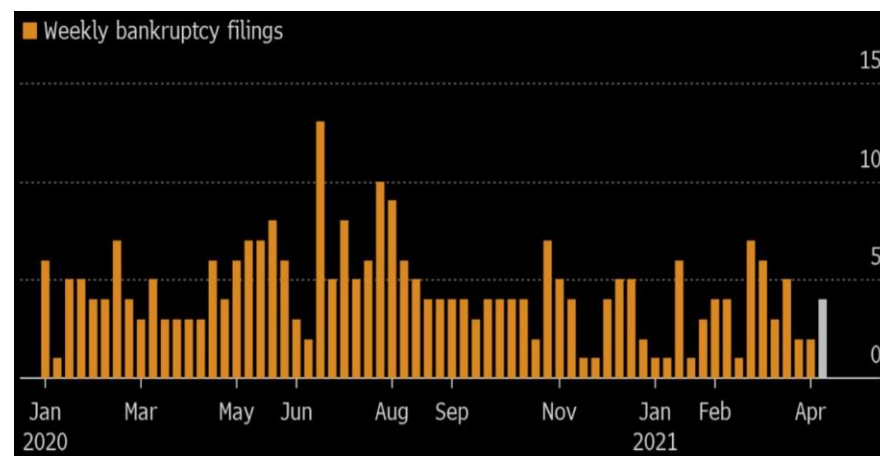
- The market dynamic changed coming into 2021, with equities and bonds going in opposite directions; the trigger was the optimism for a vaccine-led economic re-opening just as a very large fiscal stimulus package under a new U.S. administration passed Congress. Government bond prices fell sharply as yields jumped everywhere, whilst equities rose on the promise of stronger corporate profits.
- U.S. HY spreads were broadly unchanged at 390bps, less than half the peak from a year ago. The quality of the HY space has increased materially over the past year as downgrades from the IG universe during 2020 led to a rise in 'fallen angels' which now make up 17% of the universe.
- Default rates in also continued to decline despite pandemic challenges; the significant level of fiscal support and very low interest rate environment enabled companies to stave off default with bankruptcy filings falling (bottom chart).
- Q1 saw a significant increase in merger activity vs. the previous year. Even ignoring the pause in activity in the early stages of the pandemic, YTD deal counts were up 21%. Although spreads have generally tightened, median annualized spreads remain in double digits at 10%.
- Merger arbitrage was a key contributor for many funds as several deals received regulatory approval leading to spread tightening, while distressed funds prospered due to company-specific events (earnings, restructurings, settlements) and exposure to energy-related companies.

US High Yield spreads continue to tighten



Source: Credit Suisse

The number of companies filing for bankruptcy continues to fall



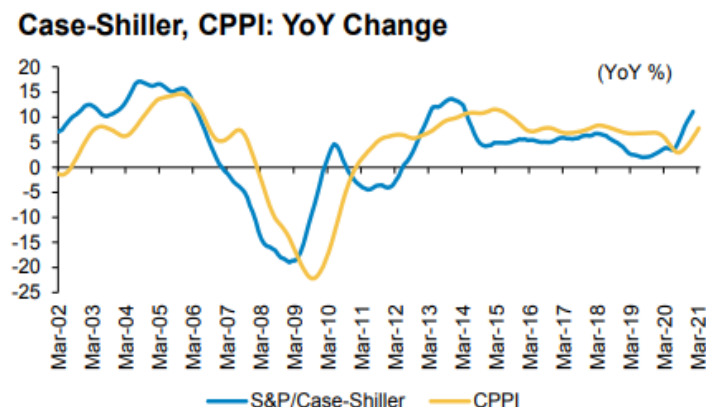
Source: Bloomberg

Structured credit has a strong quarter, dispersion remains across sectors

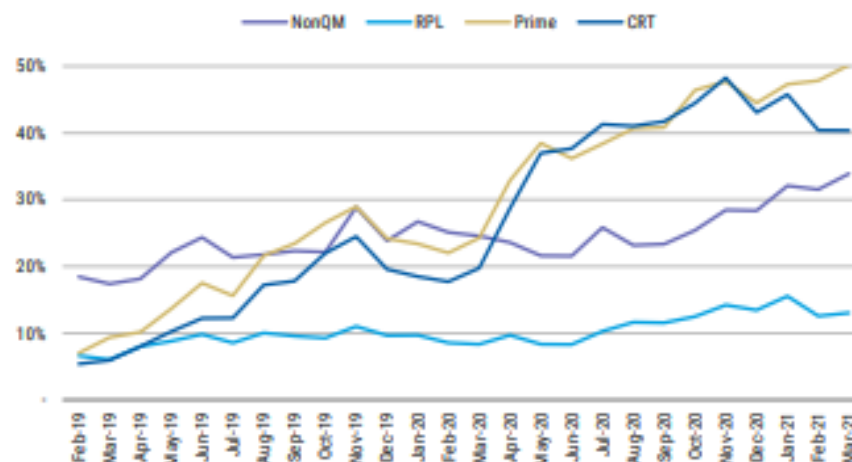
HFRI: Fixed-Income Asset Backed Index: Q1'21: +3.3%

- The first quarter saw spreads continue to come in, but returns were eroded by duration losses from rising Treasury yields. Global high yield markets lost 1.1% while most sectors of the structured credit market experienced gains.
- In an ongoing theme, a large percentage of consumer credit, real estate debt, and below investment grade corporate credit has not repriced to the same degree as other credit alternatives.
- CMBS benefitted from the overall delinquency rate declining to 6.9%, which was down from a peak of 10.3% in June.
- RMBS continues to see spreads get back to pre-Covid levels as stimulus payments, forbearance relief, and foreclosure moratoriums have helped lessen the hardships brought on by the pandemic. Meanwhile, home activity continues to rise as a result of historically low mortgage rates, limited supply, and increasing demand.
- ABS benefitted from collateral improvement and strong investor demand. Areas that continue to perform include subprime autos and credit cards.
- CLO markets saw loan prices go higher as equities and corporate credit were positive. Driven by rising interest rates, floating rate credit products outperformed.

Home and commercial properties prices higher in 2021



High prepays have been a tailwind for residential credit



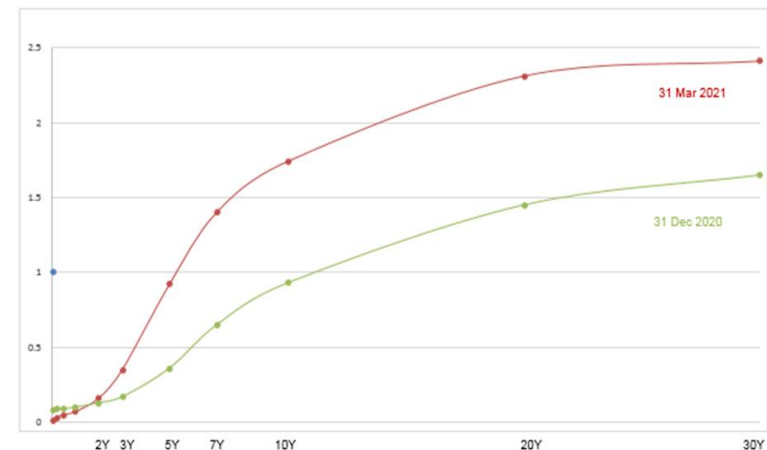
Source: Morgan Stanley

Macro performance driven by global growth rebound, inflation uncertainty

HFRI Macro (Total) Index: Q1'21: +4.1%

- Most discretionary macro managers did well maintaining their reflationary themes from the prior quarter, benefiting from both trade structure and the magnitude of market moves in their favor.
- Interest rate traders benefited from further curve steepening in developed markets. Currency trading was also positive with managers shifting exposure to long USD versus Europe as the U.S. vaccine rollout exceeded expectations. Other expressions of the reflation trade included long energy, base metals, and equity.
- Systematic strategies benefited from longer term trends within commodities and currencies. In contrast, shorter-term trends struggled with reversion during the quarter, particularly in late February due to the sharp rise in rates and accompanying higher repricing of USD.
- Despite positive expectations with a return to normal post-Covid, the outlook remains uncertain given the risk of unintended consequences from policy changes. The U.S. Federal Reserve policy will be monitored closely going forward, given concerns that the Fed may be caught behind the curve with respect to inflation expectations.

US Treasury Curve



Source: FRED

US Dollar Index (DXY)



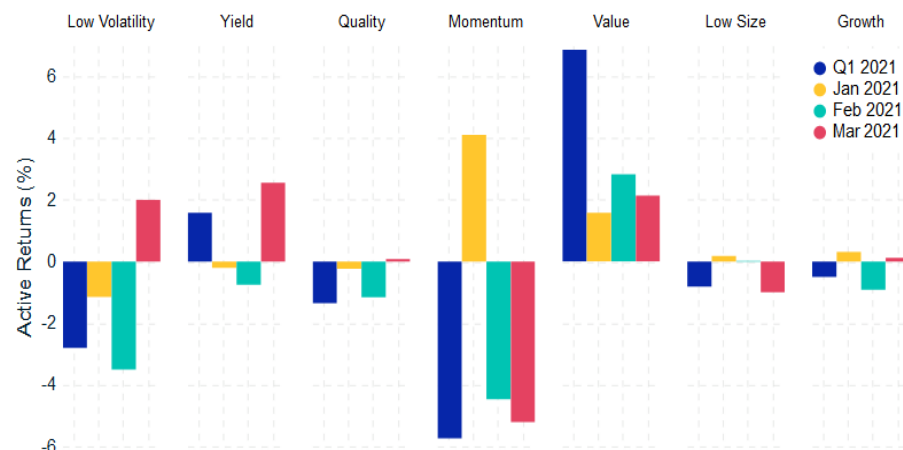
Source: Bloomberg

Relative Value strategies post gains aside from FIRV falter in February

- *HFRI Relative Value (Total) Index: Q1'21: +3.6%*
- *SG Multi Alt Risk Premia Index: Q1'21: +3.7%*
- Fixed income relative value (FIRV) strategies were mixed as the February rates surge disrupted positive returns in January and March; a negative supply/demand outlook and Fed hikes pricing in over the next 1-2 years led to an outsized impact on the belly of the curve, while poor liquidity worsened unwinding in crowded steepener trades; regional RV was also hit.
- Alternative risk premia strategies were positive during Q1 on the back of the long-awaited value rebound as the vaccine rollout and stimulus efforts drove cyclical optimism; quality, trend-following, and short volatility also contributed while momentum and fixed income strategies struggled (top chart).
- While VIX has remained elevated despite all-time highs in many equity markets, due in part to an increase in the demand for tail protection from institutional investors, single stock implied volatility took a steep dive into quarter-end which weighed on dispersion strategies (bottom chart).
- As the price of equity insurance remained relatively high, some long vol and tail strategies have targeted HY credit and FX markets where implied vol fell back to historical lows
- Outside of jumps in late January (retail short squeeze) and February (interest rates breakout), implied vol trended lower and moved into steep contango with out month contracts fetching significant premiums above spot; this environment supported positive carry from the VIX futures roll-down trade.

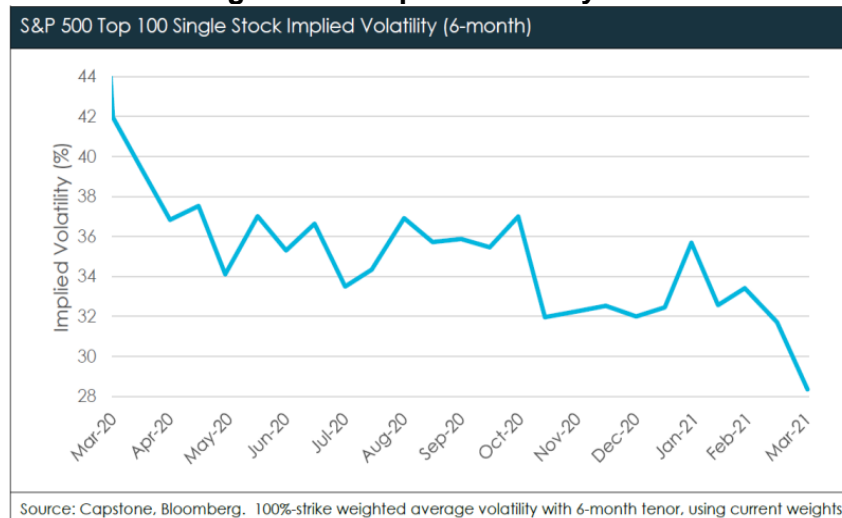
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Q1 2021 Returns of MSCI Equity Factors



Source: SG Cross Asset Research, PremiaLab

Single Stock Implied Volatility Sinks



Source: Capstone Investment Advisors, Bloomberg

Strategy Outlook Summary

		Market Environment		
		Favorable	Neutral	Unfavorable
Hedged Equity			X	
	Fundamental Long/Short	X		
	Quantitative Market Neutral		X	
	Activist		X	
Event-Driven		X		
	Merger Arbitrage	X		
	Long/Short Credit	X		
	Distressed Credit	X		
	Multi-strategy: Equity & Credit	X		
	Structured Credit: Corporate-Backed		X	
	Structured Credit: Consumer-Backed		X	
Global Macro		X		
	Discretionary	X		
	Systematic/CTA		X	
Relative Value			X	
	Alternative Risk Premia		X	
	Volatility Arbitrage	X		

Strategy Outlooks

Broad Strategy	Sub-Strategy	Favorable	Neutral	Unfavorable	Commentary
Hedged Equity/ Activist	Fundamental	✓			With ongoing volatility and uncertainty across industries in the wake of the Covid-19 breakout, the stock-picking environment is highly favorable. In addition, managers are able to adjust exposures to their benefit in this environment, while a decreasing presence of fundamental active management should lead to more price inefficiency for alpha generation. Risks to the strategy include quant/factor influences (especially amid the rise of alt risk premia funds), the omnipresence of global central banks, and position crowding due to widespread sentiment around perceived beneficiaries in the macro landscape.
	Quantitative		✓		With short term rates dropping to historical lows once again, short rebates have also come down. The market dislocation has created opportunities for quant managers, however we continue to see common factor risks driving returns which is compounded by the influence of other strategies including alternative risk premia. We prefer funds that demonstrate a high degree of idiosyncratic risk.
	Activist		✓		Activist activity has picked up following a relatively muted period in the wake of Covid when managers were reluctant to push activist agendas amid pandemic hardships. Stock valuations are high broadly, so funds are being increasingly selective. We expect opportunities to arise in volatile markets, and for ESG to become more pronounced.

Strategy Outlooks (cont'd)

Broad Strategy	Sub-Strategy	Favorable	Neutral	Unfavorable	Commentary
Event Driven/ Credit	Merger Arbitrage	✓			M&A deal activity has continued at a higher pace with several new deals announced. Although deal spreads have tightened since the dislocation in 2020, they remain wider than pre-Covid, and as such the risk-reward for the strategy remains attractive in our view. In addition, whilst SPAC (Special Purpose Acquisition Company) issuance has remained elevated as companies continue to seek alternative routes to going public, a recent SEC ruling on their accounting treatment has led to a significant slowdown in activity. Managers have been active in this space, supported by the buoyant equity markets. Our stance stays at Overweight.
	Long/Short Credit	✓			Credit markets have seen greater bifurcation, with investors gradually shifting sentiment away from lower quality issues which bodes well for fundamental strategies. The Covid crisis is creating more opportunities with dispersion between 'winners' and 'losers' going forward. Long/Short Credit managers should therefore benefit from shorting single name credits more likely to fail. This strategy offers lower risk exposure to credit markets, and while liquidity is poor versus historical standards, managers typically tackle this by limiting capacity.

Strategy Outlooks (cont'd)

Broad Strategy	Sub-Strategy	Favorable	Neutral	Unfavorable	Commentary
Event Driven/ Credit	Distressed Credit	✓			The unprecedented level of monetary stimulus packages we have seen throughout the pandemic, coupled with the ongoing low interest environment, has provided significant support to corporates and as such we are not seeing the level of corporate distress that was earlier forecast. That said, although we seem to be past the peak in defaults, particularly in some of the worst hit industries, there are still broad parts of the credit universe that are facing a need for capital. Moreover, banks' stock of non-performing loans, particularly in Europe, remains material and they are under pressure to sell these assets and reduce lending to improve their balance sheets. As a result, managers anticipate near-term opportunities in rescue finance, where banks can no longer lend, and longer-term corporate restructurings as companies struggle to manage through the devastating impact of the Covid crisis and the government stimulus tailing off.
	Multi-strategy: Equity and Credit	✓			Most multi-event managers have pivoted to opportunities in dislocated performing corporate credit and structured credit. Return prospects remain attractive, given the rich and diverse opportunity set.

Strategy Outlooks (cont'd)

Broad Strategy	Sub-Strategy	Over-weight	Neutral	Under-weight	Commentary
Event Driven/ Credit	Structured credit: corporate-backed		✓		CLO spreads remain wider than their structured product peers but the supply-demand technicals remain favorable. The corporate default outlook continues to improve, which is another catalyst for positive performance going forward. Exposure to industries that were affected by Covid will continue to be an overhang as default uncertainties linger. While CMBS looks attractive in the longer term, near term uncertainty will persist in hard hit sectors such retail, malls, hotels, and restaurants. Vaccine distribution has improved the valuation outlook for CRE, however the industry may be experiencing a secular change.
	Structured credit: consumer-backed		✓		RMBS held up well despite Covid hardships, but there is uncertainty in the sector going forward, especially if the fiscal response begins to wind down. The rate of improvement on loans in forbearance has slowed, and there is a possibility some borrowers will be unable to make payments. Housing activity continues to be strong, with low mortgage rates and limited supply, which is a positive for the sector. ABS collateral performance continues to improve, but as with RMBS there is uncertainty with consumers having redirected mortgage forbearance relief to pay consumer loans.

Strategy Outlooks (cont'd)

Broad Strategy	Sub-Strategy	Favorable	Neutral	Unfavorable	Commentary
Global Macro	Discretionary	✓			Discretionary macro managers should continue to benefit from the economic backdrop, as global recovery post-Covid raises new concerns with respect to inflation expectations. Fixed income relative-value trades, a common component of discretionary macro strategies, should benefit from continued central bank intervention, though we remain mindful of potential stress from bank funding lines. We still prefer managers that have a diversified set of return drivers across directional and relative-value trades, and prefer multi-PM suites with strong risk oversight to single-PM shops which typically have more concentrated bets in their portfolios.
	Systematic/CTA		✓		We favour an allocation to CTAs and believe they provide good portfolio diversification over time, especially during episodes of large, protracted market disturbances. In our view, funds that trade a robust set of contracts and rely less on heavily trafficked markets are less prone to whipsaws. However, timing these allocations is extremely difficult, hence the Neutral view. We now hold a moderately negative view of systematic strategies that focus on using fundamental data in building the portfolio.

Strategy Outlooks (cont'd)

Broad Strategy	Sub-Strategy	Favorable	Neutral	Unfavorable	Commentary
Relative Value	Alternative Risk Premia		✓		Because most funds offer many forms of risk premia across asset classes which collectively do not rely on a certain environment, we consider alternative risk premia to be more of a strategic allocation rather than a tactical one. While some metrics such as value have been depressed and thus poised to rebound, the lack of positive offsets in diversified ARP portfolios has been a disappointment. Risks to the strategy include factor crowding as new entrants continue to launch competing strategies. In our view, the most appealing funds are those with the resources and trading platforms to implement innovative, data-intensive strategies with high barriers to entry.
	Volatility Arbitrage	✓			As volatility rushed back into financial markets—and has thus far sustained despite the calming from extreme levels—managers now have a ripe set of conditions over the medium term. Futures markets continue to price in relatively high levels of volatility, which we expect to persist as the Covid environment continues and markets digest the impact of U.S. elections. Furthermore, demand for hedging should remain relatively strong with the Covid crash in recent memory and the erosion of fixed income's value as a portfolio hedge. We are inclined to view volatility arbitrage as more of a strategic investment, however it becomes more attractive at high levels of market volatility.



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Arkansas Teachers Retirement System Fourth Quarter 2020 Real Assets Performance Review

PROPRIETARY & CONFIDENTIAL

June 2021

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Real Assets Markets Performance and Overview

Performance Summary	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)	
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
NFI-ODCE Value Weight	1.3	1.1	1.2	0.3	4.9	4.0	6.2	5.3
NCREIF Property Index "NPI"	1.1		1.6		4.9		5.9	
NCREIF Timberland Property Index "NTI"	0.6		0.8		1.8		2.4	
NCREIF Farmland Property Index "NFI"	1.6		1.8		4.4		5.3	

- In the fourth quarter of 2020, the NFI-ODCE (net) returned 1.1%, up 80 basis points quarter-over-quarter. NFI-ODCE returns have fallen below long-term expectations of 7% to 9% gross due to the maturity of the real estate cycle, as well as distress created by the COVID-19 pandemic.
- The NCREIF Timberland Index ("NTI") returned 6 basis points for the quarter and 8 basis points for the trailing one-year return. Both total returns were driven by the positive income offsetting the negative appreciation. Regionally, the Lake States were the NTI's top performer while the South and Northeast regions lagged for the quarter.
- The NCREIF Farmland Index ("NFI") returned 1.6%, up 60 basis points from the prior quarter. Both row and permanent crops drove performance with returns of 1.6%. For the trailing one-year, permanent crops returned 1.3%, compared to row crops' 4.2%.

Portfolio Funding Status and Composition

As of December 31, 2020	ATRS' Portfolio \$ in Millions
Number of Investments	69
Total Commitments	2,946.6
Unfunded Commitments	542.2
Total Paid-In Capital	2,589.9
Total Distributions	1,821.4
Net Asset Value	2,138.8
Gross Asset Value	3,106.8
DPI	0.7x
TVPI	1.5x
Since Inception IRR	7.0%
<i>*Active and Liquidated</i>	

PORTFOLIO COMPOSITION TO TARGETS (As of 12/31/2020)		
	Target	Actual Funded
Target Real Asset Allocation	15%	11.0%
Portfolio Style Composition		
Real Estate	10%	6.8%
Core*	50%-70%	69.7%
Non-Core	30%-50%	30.3%
Value-Added**	N/A	17.7%
Opportunistic**	N/A	13.9%
Agriculture	1%	1.1%
Timber	2%	1.6%
Infrastructure	2%	1.4%
Leverage	50%	31.2%

* Includes Arkansas Investments

** No stated targets

- Recent infrastructure and real estate commitments will help the portfolio continue to move towards its target allocation irrespective of liquidating investments
- In general, the portfolio is in compliance with its Statement of Investment Policy. There are a few exceptions:
 - An overallocation to hotels though still less than 5% of the real estate portfolio
 - Timber geographic concentration remains out of compliance though significantly improved with recent BTG OEF commitment
 - Infrastructure is currently overweight Non-U.S., however Townsend and Staff are actively pursuing US focused managers

ATRS' Real Assets Performance

Performance Summary	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)		10 Year (%)		Net IRR	Equity Multiple
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET		
ATRS Total Portfolio	2.7	2.2	2.8	1.8	6.0	4.6	7.5	6.0	9.1	7.8	7.0	1.5
Total Real Assets Benchmark		1.0		1.5		4.0		5.0		7.8		

- The table shows the returns for ATRS' Total Real Assets Portfolio and the Real Assets Benchmark.
- ATRS is outperforming the benchmark over all measurable time periods.

ATRS' Real Estate Performance

Performance Summary	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)		10 Year (%)		Net IRR	Equity Multiple
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET		
Real Estate	1.9	1.5	-0.5	-1.3	4.2	3.0	6.6	5.3	10.2	8.9	7.6	1.5
NFI-ODCE Value Weight	1.3	1.1	1.2	0.3	4.9	4.0	6.2	5.3	9.9	8.9		

- The table shows the time-weighted, net of fee returns for ATRS' Total Real Estate Portfolio and the NFI-ODCE benchmark.
- There are a number of Non-Core Funds that have exited the J-curve and performance is expected to have a more meaningful impact as newer funds' investments are realized.
- The real estate portfolio outperformed the benchmark by 40 basis points for the quarter; however, the 1- and 3-Year periods continue to underperform largely due in part to market distress caused by the global pandemic, relative underperformance of UBS TPF, and a cash out refinance from an Arkansas Investment property during Q2 2020 that decreased net asset value and consequently effected the return.

ATRS' Timberland and Agriculture Performance

Performance Summary	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)		10 Year (%)		Net IRR	Equity Multiple
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET		
Timberland	3.5	3.3	4.4	3.5	6.1	5.1	5.8	4.9	3.9	3.1	5.2	1.8
Timberland Property Benchmark*	0.6		1.3		1.6		2.1		3.5			
Agriculture	0.8	0.5	3.3	2.2	4.4	3.2	4.5	3.4	N/A	N/A	4.7	1.3
Agriculture Benchmark*	1.6		3.6		4.3		4.3					

- The timber portfolio is outperforming the benchmark over all measurable time periods.
- The agriculture portfolio underperformed the benchmark over the quarter, returning 0.8%. The portfolio also underperforms over the trailing one-year, while outperforming over the three- and five-year time periods.

ATRS' Infrastructure Performance

Performance Summary	Quarter (%)		1 Year (%)		3 Year (%)		5 Year (%)		10 Year (%)		Net IRR	Equity Multiple
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET		
Infrastructure	6.7	5.9	17.5	15.3	16.2	13.5	18.2	14.4	N/A	N/A	13.3	1.4
Infrastructure Benchmark*	0.8		5.4		6.6		6.8					

- The infrastructure portfolio outperformed the Infrastructure benchmark over the quarter, returning 5.9% net, primarily driven by strong performance from KKR Global Infrastructure Investors II (11.7% net) and Global Infrastructure Partners III (10.4% net).
- ATRS' Infrastructure portfolio is outperforming the Infrastructure benchmark over all measurement periods.

ATRS' Real Assets Portfolio Highlights

- Commitment activity update
 - ATRS made the following commitments during the quarter or subsequent to quarter end
 - PGIM Real Estate Capital VII: \$40 million
 - Kayne Anderson Real Estate Partners VI: \$50 million
 - AxInfra NA II, LP: \$50 million
 - Mesa West Real Estate Income Fund V: \$40 million
 - ISQ Global Infrastructure Fund III: \$50 million
 - ATRS is in the queue for a partial redemption of UBS TPF
 - TPF's queue is up to \$7.9 billion and expect 4 years for repayment

Significant Events

- During the previous quarter, CBRE announced that Vance Maddock (President, Americas Real Estate Division) will step down from his role at the end of the year and serve as non-executive Vice Chairman, Americas. Robert Perry, who serves as the Head of the Strategic Partners fund series, will replace Mr. Maddock at the beginning of 2021. Townsend has reviewed this and is comfortable with the change in leadership.
- During the quarter, LaSalle announced that Jeff Jacobson (Global CEO) will transition to LaSalle Chairman as of January 1st, 2021. Mark Gabby (CEO and CIO of Asia Pacific), will become the new Global CEO as of the same date. Townsend has reviewed this and is comfortable with the change in leadership.

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United States Real Estate Market Update (4Q20)

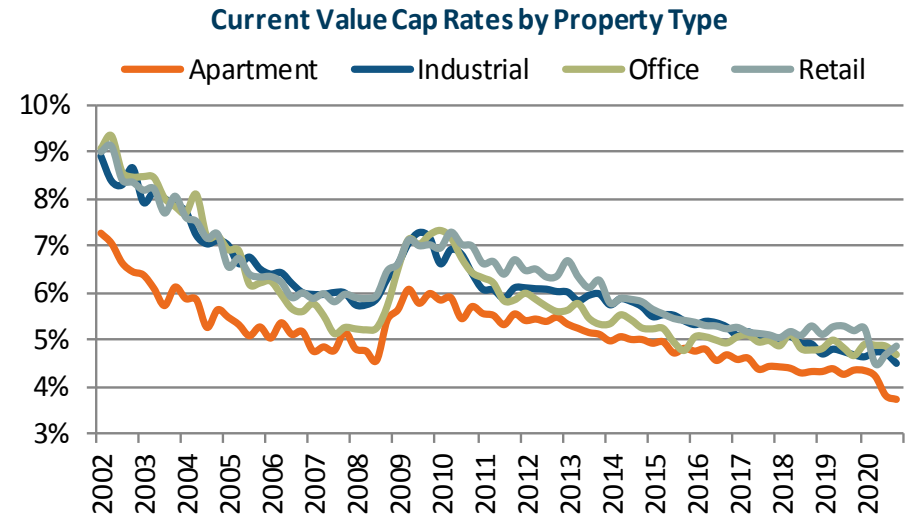
General

- On March 13, 2020, President Trump declared a national emergency. National, state, and local governments across the world implemented stay-at-home orders, which caused a near complete halt of the world economy. Governments have dramatically expanded expenditures in order to protect people and businesses from large-scale disruption. In 4Q20, equity markets continued to bounce back from the March rout and even exceeded prior highs, and the S&P 500 produced a gross total return of 12.1%. The MSCI US REIT index continued to rebound and produced a return of 11.5% but remains down -7.5% YTD.
- The U.S. entered a recession in February 2020; GDP contracted at an annualized rate of -31.4% in the 2nd quarter 2020 but rebounded and grew at annualized rate 33.1% in the 3rd quarter. In the 4th quarter, GDP grew at an annualized rate of 4.0% and was hindered by a second wave of COVID-19. The unemployment rate peaked in April at 14.7% and has since declined to 6.7% at quarter end 4Q20. The Federal Reserve has acted aggressively via quantitative easing and rate cuts, thus far financial markets have stabilized. The CARES Act provided \$1.5 trillion of stimulus to the economy. The Bloomberg average forecast has projected that the world economy will shrink by -3.9% in 2020.

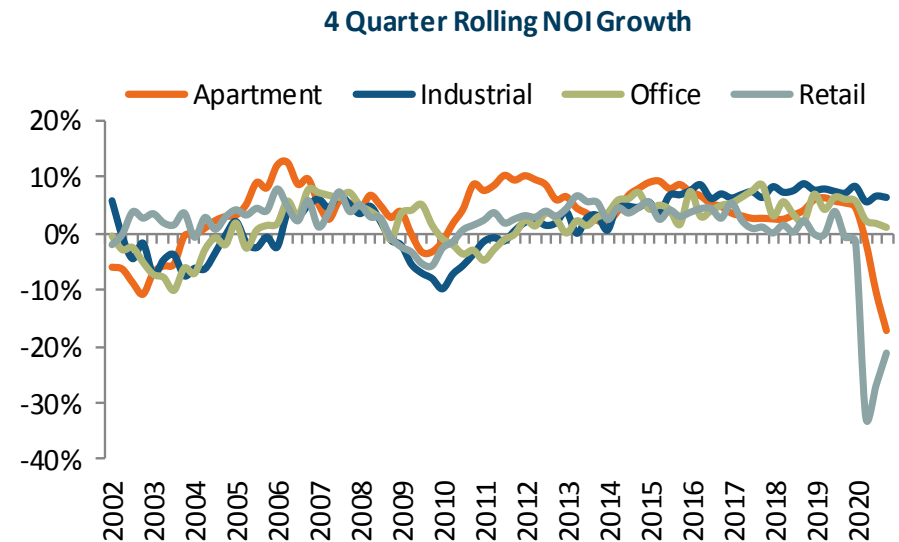
Commercial Real Estate

- Shelter in place orders and social distancing have restricted the ability to complete due diligence and acquire assets. Through January 2021, transaction volume was down by 58% YoY. Transactions have primarily occurred in the apartment and industrial sectors.
- Transaction cap rates (5.5%) expanded +60 bps during the quarter. Current valuation cap rates declined for apartments (-8 bps), office (-18 bps), and industrial (-21 bps). A lack of transactions continues to limit evidence to revalue real estate.
- NOI growth has substantially diverged between property sectors due to the impacts of COVID-19. Retail NOI has contracted substantially (-21%) YoY as rent collections declined and retailers were shutdown. Apartment NOI contracted (-17%), primarily driven by declines in effective market rents and a nearly 2% increase in vacancy rates YoY. Public market signals have been divergent by property type.
- In the fourth quarter of 2020, \$39 bn of aggregate capital was raised by real estate funds. There continues to be substantial dry powder, ~\$353 billion, seeking exposure to private real estate.

10-year treasury bond yields remained rose 20 bps to 0.9% during the quarter.



Source: NCREIF



Source: NCREIF

United States Property Matrix (4Q20)



INDUSTRIAL

- In 4Q20, industrial properties were the highest returning sector at 4.7% and outperformed the NPI by 355 bps.
- Transaction volumes increased to \$40.2 billion in the fourth quarter of the year, resulting in a 9.0% increase year-over-year. Individual asset sales increased 28.0% year-over-year, while portfolio purchases turned in a year-over-year volume decrease of 14.0%. At slightly over \$40 billion, the industrial sector turned in its second highest quarterly transaction volume value to date and increased a significant \$23.3 billion quarter-over-quarter.
- The industrial sector turned in NOI growth of 6.4% over the past year, a decrease from the prior periods TTM growth of 6.6% in 3Q20. Market rent growth is expected to decelerate compared to its recent pace but remains strong.
- Vacancy increased by 10 bps year-over-year to 3.4%, remaining close to all-time historic lows. E-commerce continues to drive demand.
- Industrial cap rates compressed approximately 20 bps from a year ago, to 4.5%. Industrial overall fundamentals still top all property sectors.

MULTIFAMILY

- The apartment sector delivered a 1.0% return during the quarter, underperforming the NPI by 15 bps.
- Transaction volume in the fourth quarter of 2020 rose to \$60.3 billion, resulting in an increase of 7.0% year-over-year. This volume continues to make multifamily the most actively traded sector for the fourteenth straight quarter.
- Cap rates decreased to 3.7%, compressing 65 bps year-over-year. Multifamily cap rates continue falling to their lowest in years, driven by continued decrease in NOI and increases in valuation.
- The multifamily sector has seen increasing vacancy rates due to the pandemic but continues to hold steady relatively speaking, vacancy has increased 185 bps from a year ago. Various rent concessions have helped managers to maintain tenants through out the pandemic, these concessions will have various impacts on NOI over the next few quarters. The aging millennials have begun shifting their desires to suburban living, but continued home price appreciation has deterred the full effect of this migratory trend.

OFFICE

- The office sector returned 0.5% in 4Q20, 65 bps below the NPI return over the period.
- Transaction volumes decreased by 29.0% year-over-year in the fourth quarter. Transaction volume equaled \$30.0 billion for the quarter, an increase of \$15.4 billion quarter-over-quarter. Single asset transactions accounted for 71.0% of volume.
- Office sector vacancy rates have expanded since the beginning of the pandemic due to work from home orders and uncertainty revolving around the future of office space. Office continues to be the highest vacancy property type at close to 11.2%.
- NOI growth continued to fall for the office sector to 1.0% in the last year, a decrease of 75 bps and 125 bps from 3Q20 and 2Q20, respectively. Due to work from home orders and rent deferrals/relief, NOI growth is expected to continue being compressed.
- Office cap rates expanded from a year ago to approximately 4.7%, an expansion of just 2 bps. Office-using job growth has been stunted significantly in 2020 due to many work from home orders.

RETAIL

- As of 4Q20, the retail sector delivered a quarterly return of -1.2%, performing 240 bps below the NPI.
- Transaction volumes totaled \$13.7 billion in the fourth quarter, falling 34% year-over-year. Single asset transactions accounted for just over 68.8% of all sales volume for the quarter.
- Cap rates have compressed approximately 35 bps within the sector over the last year, to 4.8%. The current valuation cap rate did expand quarter-over-quarter by 20 bps due to downward valuation adjustments made across the sector in general.
- NOI growth slightly increased though still significantly negative, -21.3% over the last year. This is a 5.8% increase from last quarter. Retail is expected to continue to suffer from the shift towards e-commerce and hesitance of the consumer.
- Retail vacancy rates increased 185 bps over the past year to 9.0%. Many big box stores have closed as the need for retail space shrinks, translating to a negative outlook for rent growth. Paired with the global economic crisis that has had a significant negative impact on this sector.

4Q20

Global Real Estate Market Update (4Q20)

- Global investment activity during the fourth quarter of 2020 was up significantly relative to 3Q20 but was down by 20% over the year compared to 2019. During 4Q20, Transaction volumes recovered significantly in the US and APAC regions while the EU continued to experience significant depression.
- Despite resurgence in COVID cases in certain regions, globally COVID case declines and increased availability of the vaccine have driven an uptick in investor appetite. Interest has been concentrated primarily on industrial, logistics and data center assets with heightened attention given to multifamily properties in certain regions.
- Investment activity in the Americas witnessed a sharp decline and fell by 32% year-over-year. Despite a continued rise in COVID cases, the roll out of the vaccine helped spur investment. Transaction volume in the US increased 97% relative to 3Q20.
- In the Asia Pacific region, volumes were down year-over-year, but transaction activity continued to recover rising 41% relative to 3Q20. Japan and Hong Kong saw improvement in the Q420 due to the execution of several large office deals. Mainland China and Australia investment improved but remained significantly depressed over the year. Korea investment remained strong driven by active domestic real estate funds.
- Although investment activity dropped in the EMEA region, it dropped less than the Americas, with a 25% year-over-year decline. Germany, the largest market, witnessed only a 5% decline.
- In the office sector, global leasing activity declined by over 43% year-over-year and vacancy rates increased by 80 bps to 12.9%. The declines represent an uncertainty about future office space needs. The US witnessed a 90 bps increase in vacancy reaching 15% in Q420. Across the main European markets, rents decreased by 378 bps y-o-y hitting -1.7% in Q420. In the APAC region, despite improvement, net absorption remained depressed.
- Despite a recovery in sales, the retail sector continued to suffer globally as the shutdowns and social distancing measures of the COVID-19 outbreak posed challenges for operators. The bifurcation between property types (necessity-based vs malls/street retail) and markets (urban vs suburban) has significantly widened.
- Despite the multifamily market recording a significant decrease in investments globally, the sector remains the most liquid in commercial real estate highlighting its attractiveness. In the U.S., absorption beat expectations posting an increase in vacancy of only 10 bps to 4.5%, with suburban assets performing above average. However, in Europe investment was up 7% year-over-year. In the APAC, a resurgence of demand occurred as lock-downs ebbed resulting in a 26% y-o-y increase in transaction volumes.
- Industrial yields continued to compress due to strong market fundamentals and heightened demand. US investment volumes recovered in Q420 but still fell by 1.3% compared to 4Q19. EMEA investment volumes performed better than expectations with 4Q20 outpacing 3Q19 by 11%. In the Asia Pacific, rent remained flat y-o-y but values increased slightly by 1.8%.

Global Total Commercial Real Estate Volume - 2019 - 2020

\$ US Billions	Q4 2020	Q4 2019	% Change		2020	2019	% Change Full Year
			Q4 20 - Q4 19				
Americas	141	166	-15%		367	540	-32%
EMEA	89	145	-39%		285	380	-25%
Asia Pacific	227	216	5%		770	855	-10%
Total	457	528	-13%		1422	1775	-20%

Source: Real Capital Analytics, Inc., Q4' 20

Global Outlook - GDP (Real) Growth % pa, 2020-2022

	2020	2021	2022
Global	-3.5	5.4	4.2
Asia Pacific	0.3	5.1	5.0
Australia	-2.8	3.8	3.3
China	2.3	8.4	5.5
India	-7.5	10.0	6.0
Japan	-4.8	2.7	2.1
North America	-3.7	4.9	3.6
US	-3.5	4.9	3.7
Middle East	-3.6	3.1	3.7
European Union	-6.4	4.3	4.2
France	-8.1	5.8	4.0
Germany	-4.9	3.4	3.9
UK	-10.2	4.6	5.5

Source: Bloomberg

Farmland - Fourth Quarter 2020 Market Update

FARMLAND MARKETS

- Agricultural commodity prices increased by 3% over the quarter as export demand continued to improve, driven in large part by optimistic outlook of a return to normalcy, increase inflows of capital into the sector, and inflationary concerns. **(FIGURE 1)**
- Further lifting of COVID restrictions and increased travel/ trade spurred demand for ethanol and oil pushing prices to their highest level since April. Despite the improvement in pricing, production and profitability remained muted.
- Prices for almonds and walnuts declined sharply at the onset of COVID, despite a gradual recovery, prices failed to reach projections. Subdued pricing was driven from record crop production, with almonds 20% higher than the 2019 crop and walnuts 19% higher. However, both have experienced strong demand with imports from exports that may help limit any declines; almond exports up 40% over same time last year and walnut exports up 25% over same time last year.
- Brazilian soybean exports reached their second highest level during the year driven by both domestic and Chinese demand coupled with a weaker Brazilian currency; Brazil's soybean exports were approx. 12% higher than last year. **(FIGURE 2)**
- In Australia, farmland continued to perform well as investor demand continues to bolster valuations. Total returns for managed farmland investments during 4Q20 was 11.69%.

FIGURE 1: Key Commodity Prices 4Q20

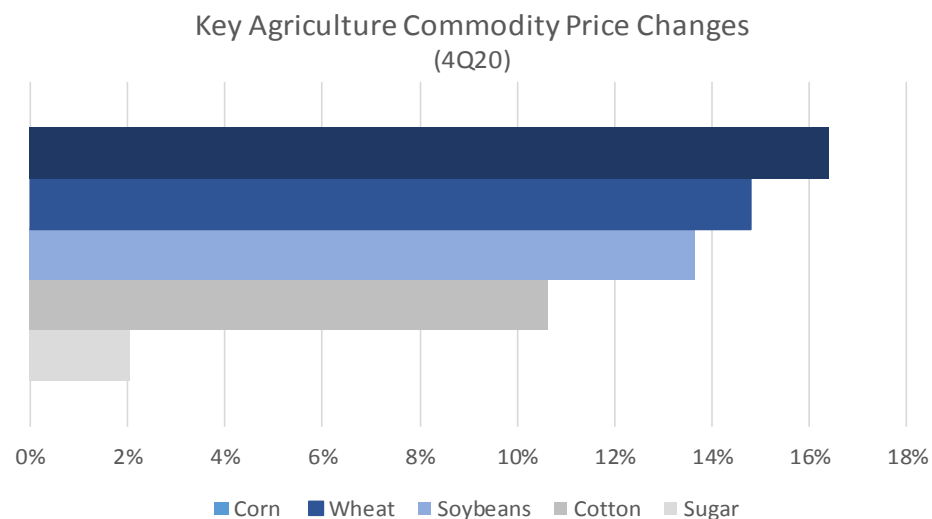
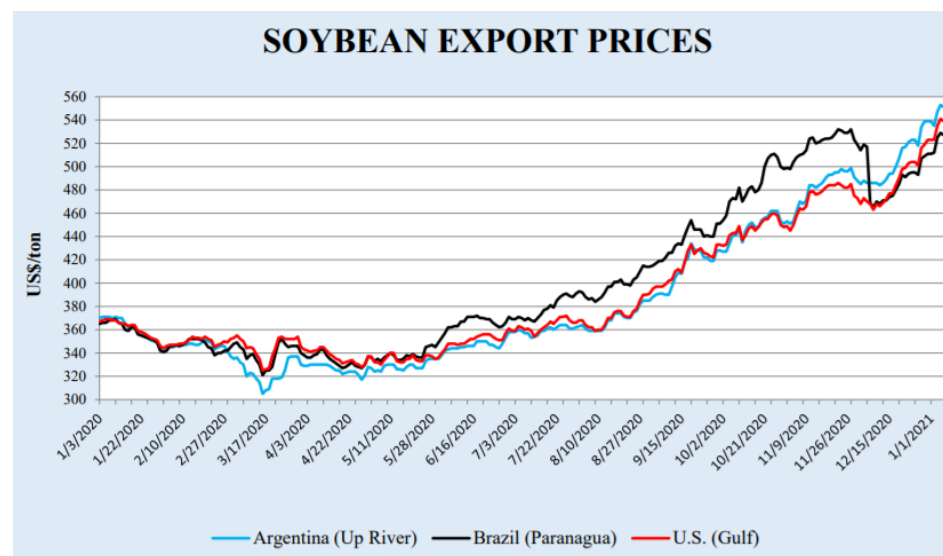


FIGURE 2: Soybean Export Prices - Major Producers

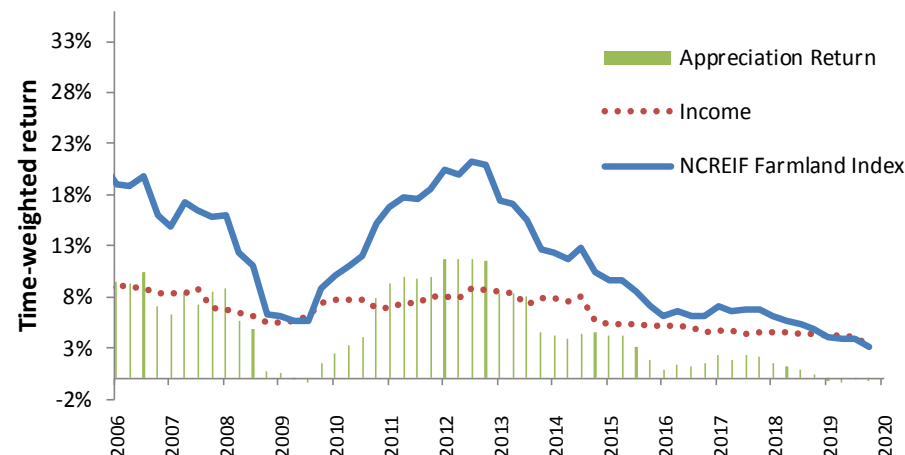


Farmland - Fourth Quarter 2020 Market Update

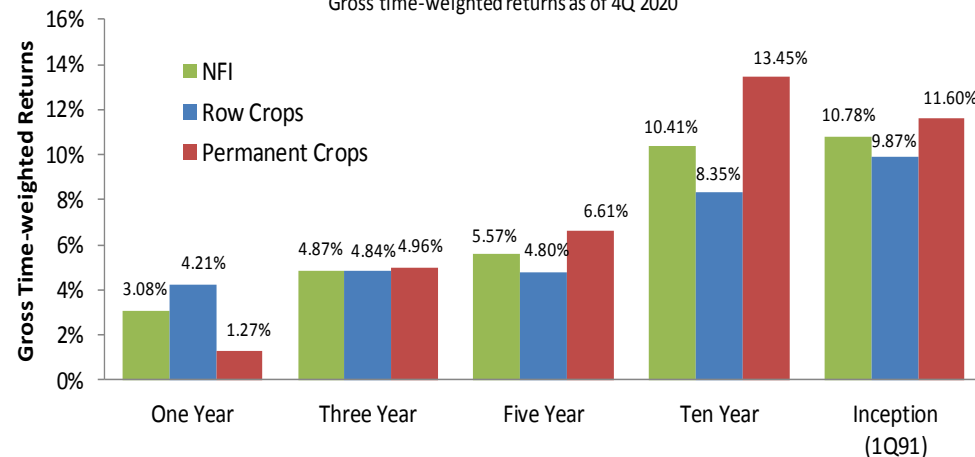
FARMLAND PERFORMANCE

- The NCREIF Farmland Index (“NFI”) returned 1.59% for 4Q20, up from last quarter’s 0.96% return and down from 4Q 2019’s 2.34%. The quarterly return consisted of a 1.53% income return and appreciation of 0.6%.
- Annual cropland values were up modestly during the quarter posting appreciation of 0.74% while permanent cropland saw value declines with appreciation of -0.94%, after registering appreciation of 0.3% and 0.06%, respectively, in Q3.
- The trailing 12-month total return was 3.08%, compared to 3.84% for the four-quarters ending 3Q 2020. The TTM total return was comprised of a 3.29% income return and -0.21% appreciation.
- Row crops outperformed permanent crops for the fourth consecutive quarter, returning a 1.61% return versus a 1.58% return for permanent crops. Performance for both was driven primarily by income as with the last few quarters, although row crop values experienced a slight uptick with a 0.74% appreciation return; permanent crop appreciation was -0.94%.
- Performance between farm types continues to converge and since the last commodity markets peak in 2012/2013. Permanent crops remain an outperformer over longer periods however, with the exception of the one-year period in which row crops over-took permanent crops during the quarter.

NCREIF Farmland Index Performance
(Rolling 1-year total returns through 4Q 2020)



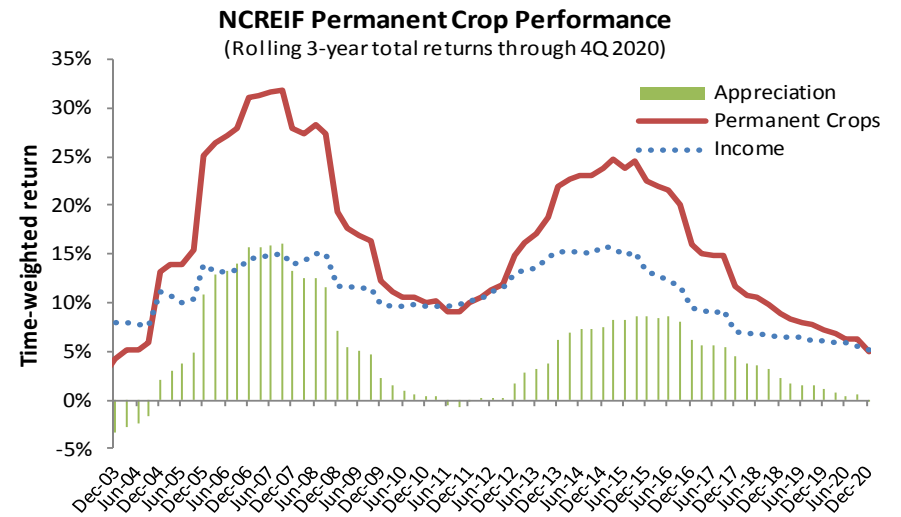
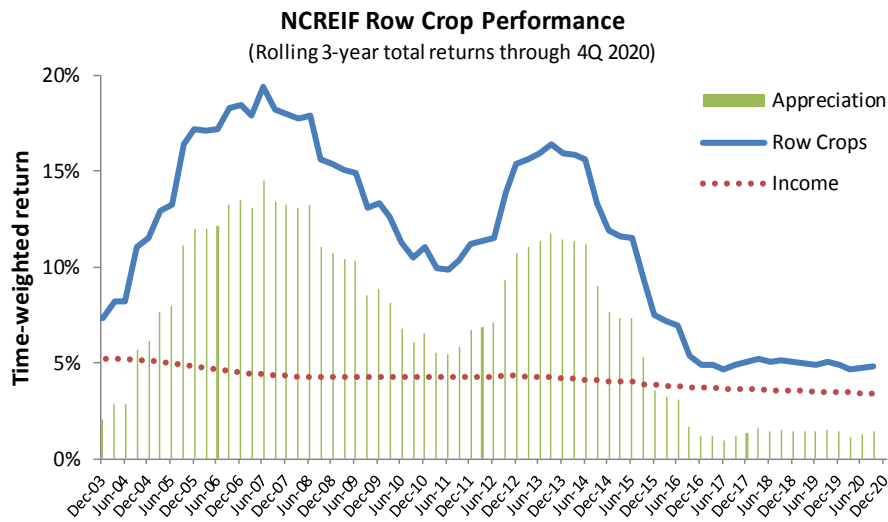
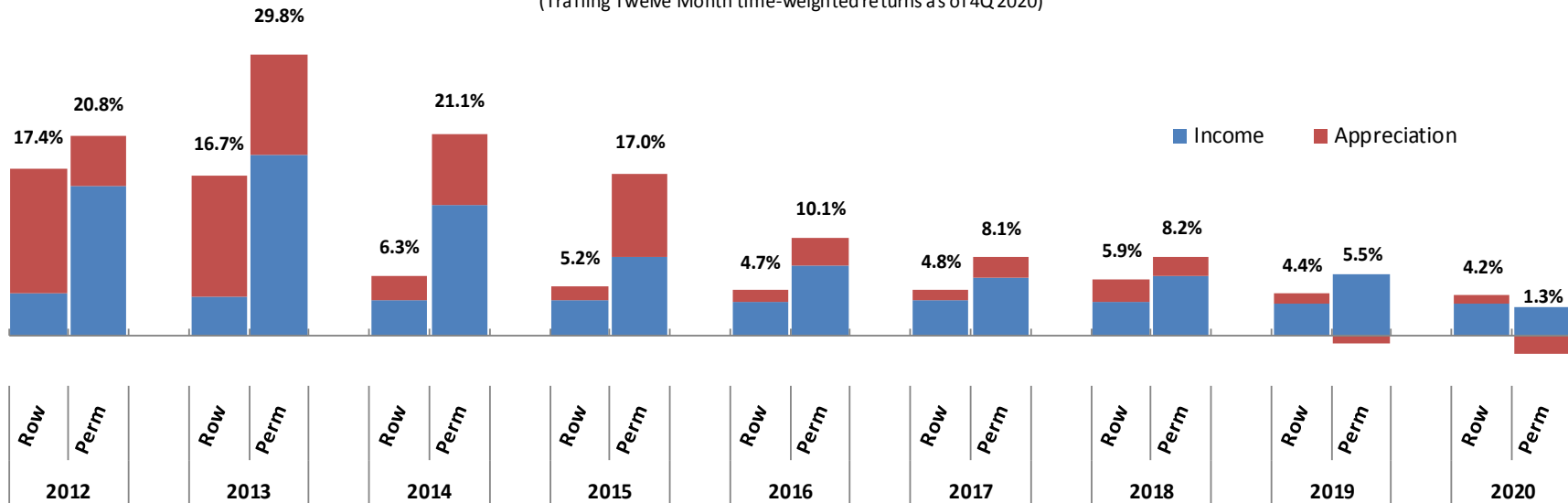
NCREIF Farmland Index Farm Type Returns
Gross time-weighted returns as of 4Q 2020



Farmland - Fourth Quarter 2020 Market Update

FARMLAND PERFORMANCE

NCREIF Farm Type Performance Attribution
(Trailing Twelve Month time-weighted returns as of 4Q 2020)





Infrastructure – Fourth Quarter 2020 Market Update

General

- Investment activity continued to recover during the quarter, with the number of transactions increasing by 17% from Q3 2020. Despite this, investment volumes remained 44% down when compared to Q4 2019 and 43% down year-on-year. In terms of fundraising, 26 funds reached their final dose during Q4 2020; an increase of 13% from Q3 2020. Although, this was well below the 45 funds which dosed during Q4 2019. The average aggregate capital raised per fund decreased by 32% from Q3 2020, whilst being 36% down when compared to the same quarter in 2019.

Europe

- Notable transactions included the sale of Brisa, a toll road in Portugal, for US\$3.5 billion. Also notable was the sale of Colisee, a care home platform in Western Europe, which sold for US\$2.7 billion. Renewable energy investment during the fourth quarter was dominated by the financial dose of the construction of a 1.2GW offshore wind farm in the U.K. for US\$4.0 billion.

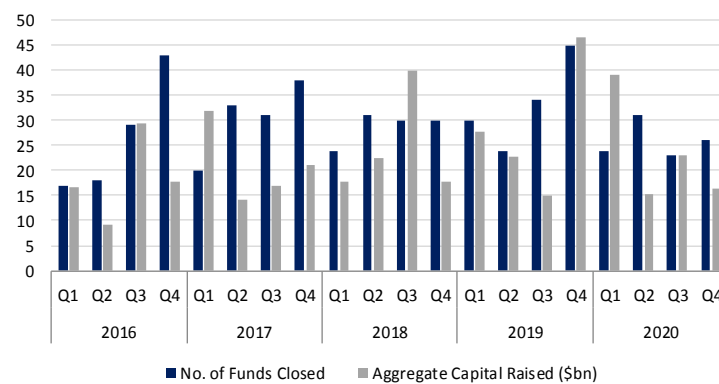
North America

- The sale of InSite Wireless Group, which owns and operates 3,000 communications sites across the U.S. and Canada, dosed during Q4 2020 for US\$3.5 billion. Another notable transaction included Macquarie's sale of International-Matex Tank terminals, a bulk liquid product handler, for US\$2.7 billion. Deal flow in the renewable energy sector was limited over the fourth quarter, with the only notable transaction being the sale of an 80% stake in EDF's 563MW renewables portfolio for US\$0.7 billion. The portfolio includes both wind and solar projects located in the U.S.

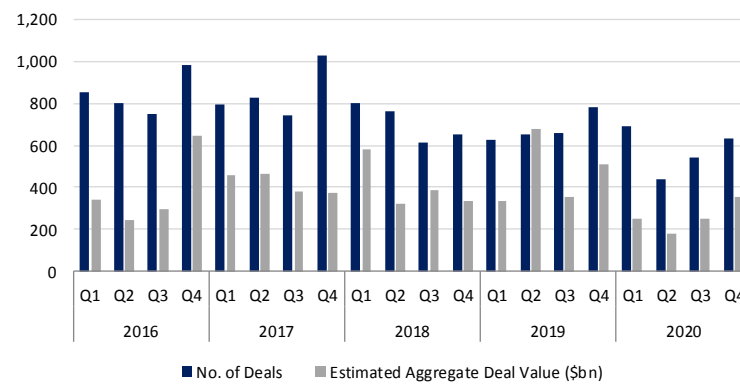
Asia Pacific

- The sale of a greenfield 2GW coal-fired power plant in Indonesia dosing during Q4 2020 for US\$3.4 billion. Other notable transactions included the sale of a 51% stake in Reliance Infrastructure Trust, which owns multiple fibre-optic assets, for US\$1.0 billion. In the renewables sector, a greenfield 75MW biomass plant in Japan reached financial close for US\$0.5 billion.

Unlisted Infrastructure Fundraising



Infrastructure Deals Completed



Source: Preqin



Timberland – Fourth Quarter 2020 Market Update

TIMBERLAND MARKETS

- The extent of the COVID-19 impact on forest products remained relatively minimal during the quarter, as the U.S. sector was bolstered by strong housing starts combined with robust repair and remodel activity over the quarter. Framing lumber and structural panel pricing corrected in November but quickly rebounded to the near all time highs seen in October (FIGURE 1). However, increased lumber demand has not helped regional log and stumpage values yet.
- Housing starts continued to rebound since the beginning of the pandemic with the U.S. housing market trending higher towards the end of the quarter, reaching an SARR¹ of 1.67 million units. There was a notable shift to increased levels of single-family home construction increasing by 12% during the quarter. Multifamily starts remained volatile and declined over 14%. (FIGURE 2)
- Pricing increased on average in the U.S. south. The extent of improvement was regional/end-market dependent. Prices in the Pacific Northwest began improving during the quarter as domestic demand continued to increase.
- Brazilian markets improved during the quarter driven by currency devaluation, low global supply, heightened consumer demand, and strong government assistance. Despite increases in wood prices, Australian wood exports fell dramatically in December 2020, down 47% yoy. The decline was driven by import bans placed by China.

FIGURE 1: U.S. Framing Lumber Index and Panel Composite Index

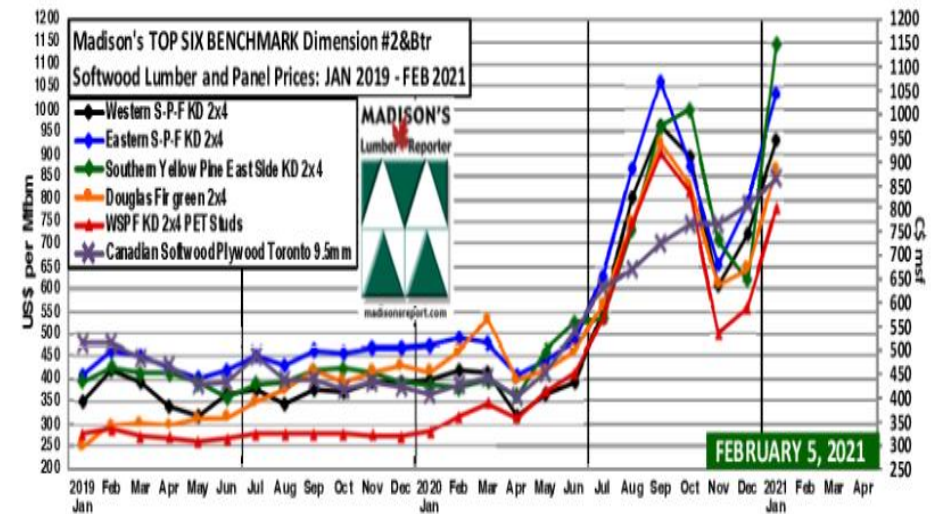
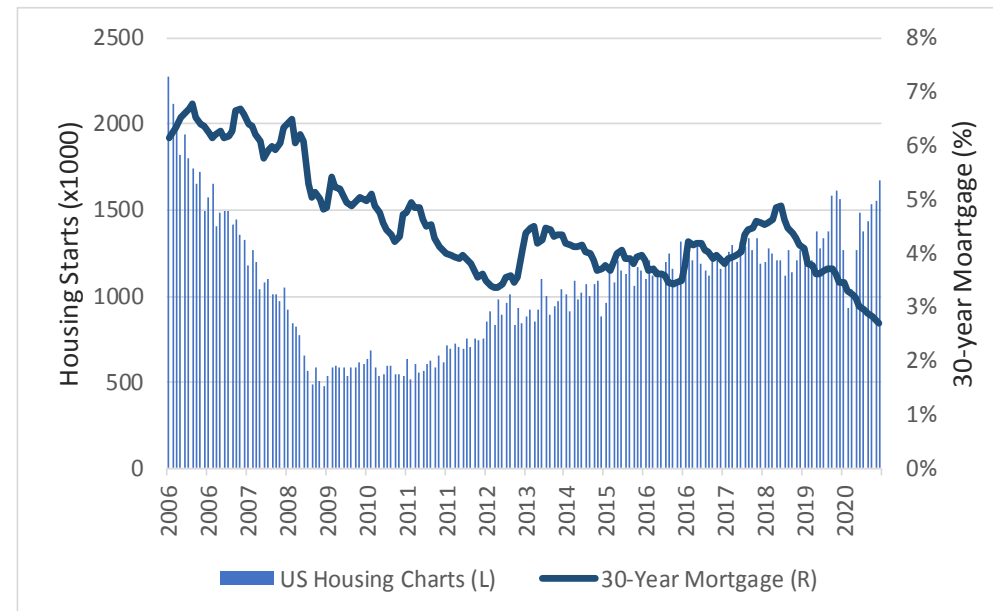


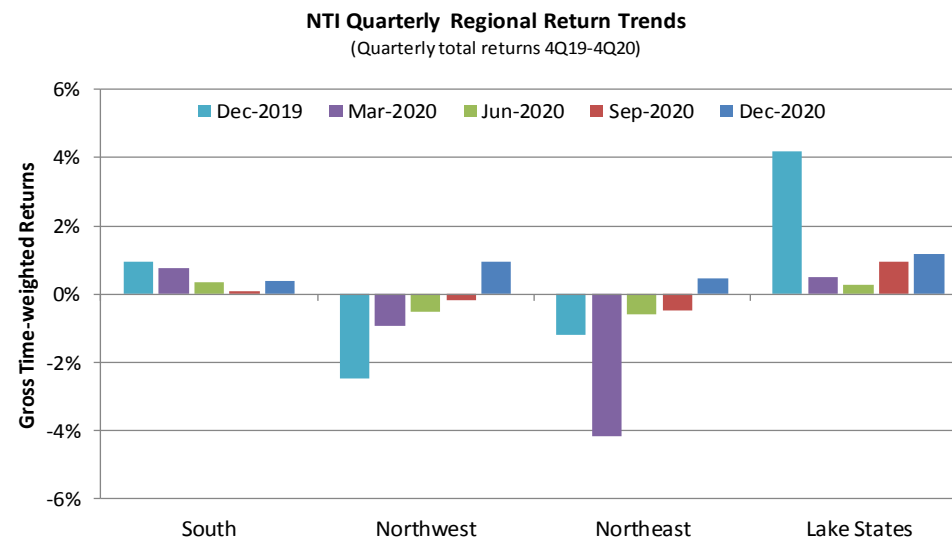
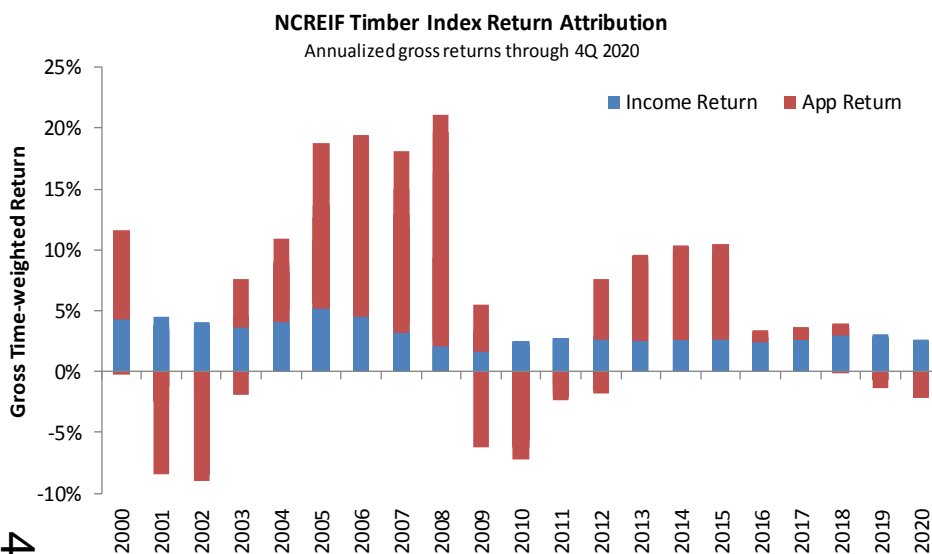
FIGURE 2: U.S. Housing Starts SAAR and 30-year Mortgage Rates



Timberland – Fourth Quarter 2020 Market Update

TIMBERLAND PERFORMANCE

- The NCREIF Timberland Index (“NTI”) returned 0.58% for the quarter, improving from last quarter’s 0.04% return and 4Q19’s -0.18% return. The return was comprised of a 0.76% income return and a negative appreciation return of -0.18% marking the sixth straight quarter of value declines. The Lake States and Northeast regions experienced increases in values during the quarter.
- The NFI’s largest timberland region - the U.S. South – returned 0.4% for the quarter consisting of a 0.67% income return and a -0.26% appreciation return as land values began to recover modestly amidst eased COVID restrictions increasing forestry activity and transaction activity. The South continues to remain relatively resilient with only one negative quarterly return since 2011 coupled with consistent income returns averaging over 2.0% per year over the last ten years.
- The Northwest returned -0.94% for the quarter, as timberland values continued to remain pressured and retreating from several years of historic highs. The return consisted of 1.1% income and -0.2% appreciation. This marks the sixth straight quarter for a negative return out of the Northwest and all driven by declines in values; declining 3.4% over the past 12-months.
- Timberland per acre values also declined slightly to \$1,736/acre versus last quarter’s value of \$1,761/acre.

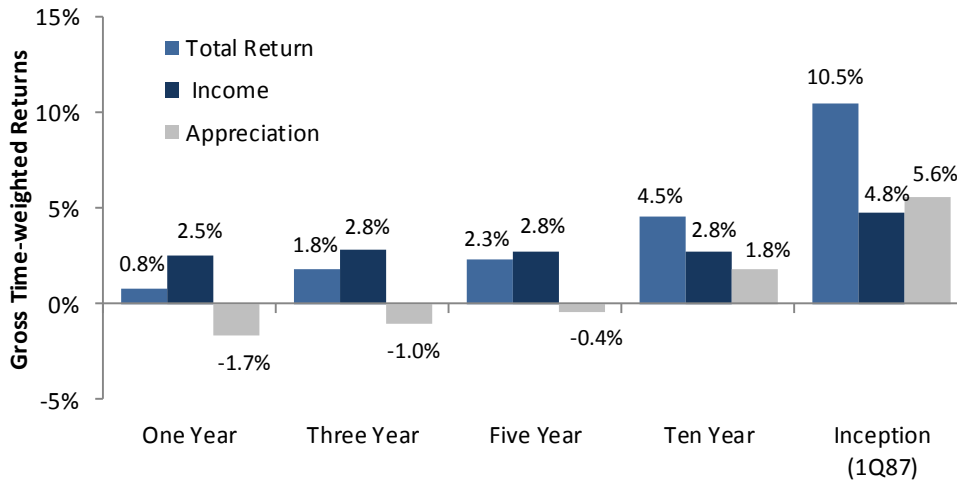


Timberland – Fourth Quarter 2020 Market Update

TIMBERLAND PERFORMANCE

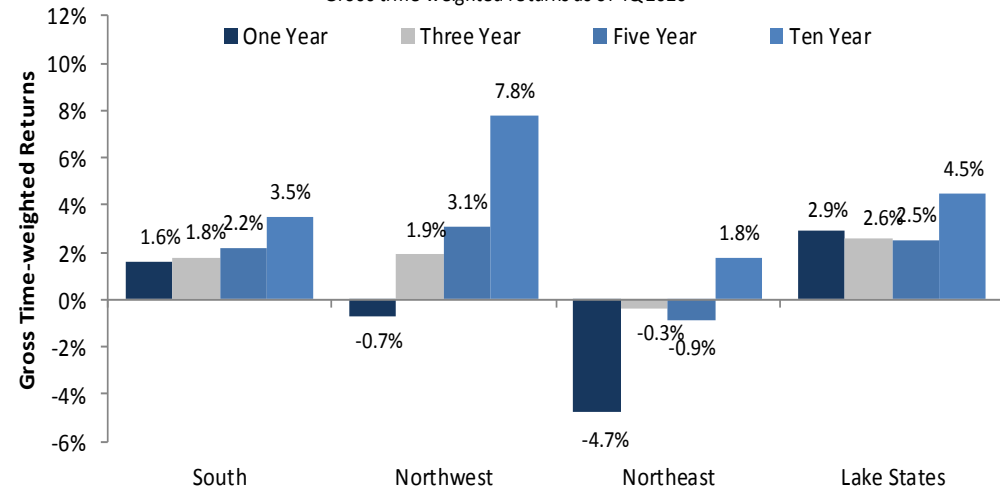
NCREIF Timber Index Returns

Gross time-weighted returns as of 4Q 2020



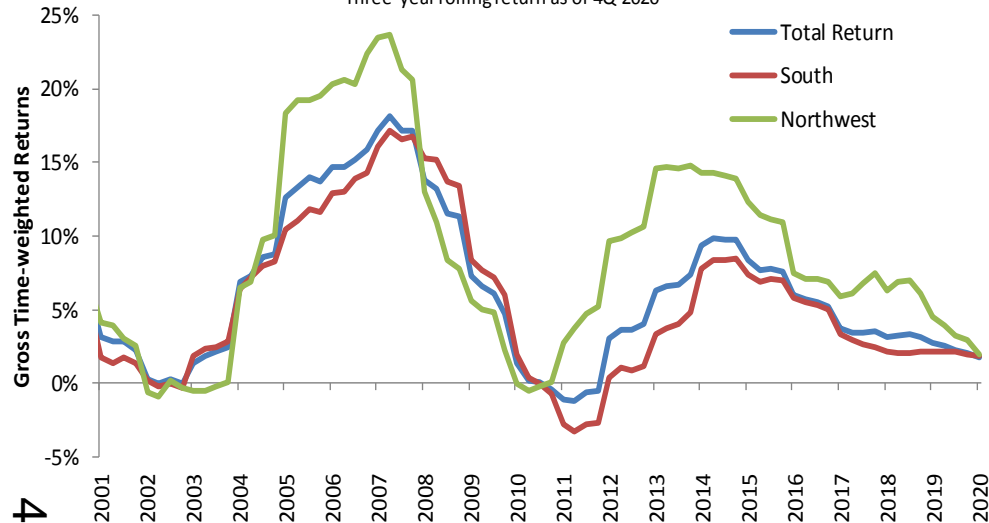
NCREIF Timber Index Regional Returns

Gross time-weighted returns as of 4Q 2020



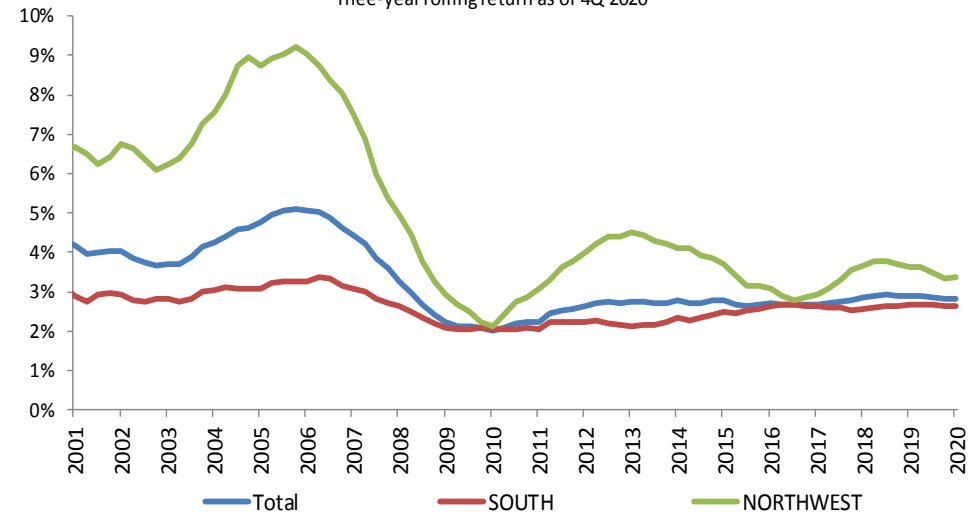
Total Returns by Region

Three-year rolling return as of 4Q 2020



EBITDA Returns by Region

Three-year rolling return as of 4Q 2020



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Agenda

Section 1	Executive Summary
Section 2	Market Overview
Section 3	Real Assets Portfolio Update
Section 4	Glossary

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ATRS' Real Estate Performance: Core Portfolio

As of 12/31/2020

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Core								
Arkansas Investments	2007	142,694,200	144,624,546	0	194,193,381	77,965,669	3.6	2.9
JP Morgan Strategic Property Fund	2006	170,000,000	170,000,000	0	72,618,110	280,318,133	13.1	10.5
Metlife Commercial Mortgage Income Fund	2018	50,000,000	50,000,000	0	3,358,784	49,215,467	2.3	1.8
PRISA SA	2005	170,000,000	184,182,196	0	110,308,067	272,289,101	12.7	10.2
UBS Trumbull Property Fund	2005	170,000,000	190,587,980	0	142,330,227	191,898,425	9.0	7.2
UBS Trumbull Property Income Fund	2016	50,000,000	50,000,000	0	5,285,486	51,873,481	2.4	1.9
Core	2005	752,694,200	789,394,723	0	528,094,054	923,560,276	43.2	34.4

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET			
Core																					
Arkansas Investments	0.0	1.0	1.0	1.0	0.0	-12.0	-12.0	-12.0	0.0	-3.5	-3.5	-3.5	0.0	7.7	7.7	7.7	7.4	7.4	1Q08	8.2	1.9
JP Morgan Strategic Property Fund	0.8	1.1	1.9	1.7	3.6	-2.1	1.4	0.6	3.8	0.8	4.6	3.7	4.0	1.8	5.8	4.9	6.1	5.2	2Q07	6.4	2.1
Metlife Commercial Mortgage Income Fund	1.5	0.1	1.5	1.3	5.2	-1.7	3.5	2.7									4.3	3.5	3Q19	3.5	1.1
PRISA SA	0.9	0.5	1.5	1.3	4.0	-1.4	2.5	1.7	4.2	1.6	5.8	5.0	4.4	2.3	6.7	5.9	6.9	6.0	3Q05	6.2	2.1
UBS Trumbull Property Fund	0.9	-2.8	-1.9	-2.1	3.9	-7.7	-4.0	-4.7	4.4	-4.1	0.2	-0.6	4.5	-1.7	2.7	1.9	5.3	4.4	2Q06	5.1	1.8
UBS Trumbull Property Income Fund	0.9	-0.2	0.7	0.5	3.5	-2.6	0.8	0.0	3.9	0.9	4.8	4.0					5.0	4.2	3Q17	4.3	1.1
Core	0.8	0.0	0.8	0.6	3.5	-4.1	-0.7	-1.4	3.7	-0.6	3.1	2.4	3.8	1.8	5.7	4.9	7.7	6.9	3Q05	6.2	1.8

Note: Arkansas Investments are included in Core portfolio

ATRS' Real Estate Performance: Value-Add Portfolio

As of 12/31/2020

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Value Added								
Almanac Realty Securities V, LP	2008	50,000,000	21,787,314	0	48,380,466	99,023	0.0	0.0
Almanac Realty Securities VI	2012	30,000,000	19,102,008	0	21,006,051	3,574,816	0.2	0.1
Almanac Realty Securities VII	2015	30,000,000	28,331,016	7,594,002	22,727,008	14,832,446	0.7	0.8
Almanac Realty Securities VIII	2018	30,000,000	6,448,531	23,551,469	233,027	6,449,787	0.3	1.1
Calmwater Real Estate Credit Fund III	2017	30,000,000	23,113,383	7,427,676	3,003,867	24,054,224	1.1	1.2
CBRE Strategic Partners U.S. Value 8	2016	25,000,000	22,826,523	2,173,477	5,494,811	23,206,461	1.1	0.9
CBRE Strategic Partners U.S. Value 9	2020	50,000,000	13,885,185	36,339,090	0	12,637,741	0.6	1.8
FPA Core Plus Fund IV	2018	30,000,000	19,800,000	10,200,000	1,554,807	19,186,987	0.9	1.1
Harbert European Real Estate Fund IV	2016	25,011,918	23,920,550	1,858,880	10,424,723	20,936,743	1.0	0.9
LaSalle Income & Growth Fund VI	2013	20,000,000	19,047,619	952,381	21,551,268	6,040,669	0.3	0.3
LaSalle Income & Growth Fund VII	2017	20,000,000	19,571,839	2,948,895	8,182,622	14,560,445	0.7	0.7
LaSalle Income & Growth Fund VIII	2018	50,000,000	10,101,435	39,898,565	0	9,313,368	0.4	1.8
Long Wharf Real Estate Partners V	2016	30,000,000	29,828,371	0	15,285,403	21,848,707	1.0	0.8
Long Wharf Real Estate Partners VI, L.P.	2020	50,000,000	9,235,164	40,723,489	0	10,133,880	0.5	1.9
New Boston Real Estate Investment Fund VII	2008	10,000,000	9,668,685	0	8,011,215	0	0.0	0.0
Rockwood Capital Real Estate Partners Fund IX	2012	30,000,000	27,422,960	2,577,040	31,097,878	5,608,993	0.3	0.3
Rockwood Capital Real Estate Partners Fund XI	2019	40,000,000	10,699,295	29,300,705	0	10,127,339	0.5	1.5
Walton Street Real Estate Debt Fund II, L.P.	2019	40,000,000	9,944,773	32,978,940	2,935,029	7,403,026	0.3	1.5
Westbrook Real Estate Fund IX	2012	40,000,000	46,197,061	3,123,868	45,995,329	9,937,680	0.5	0.5
Westbrook Real Estate Fund X	2015	25,000,000	23,991,587	2,016,766	13,000,001	15,231,694	0.7	0.6
Value Added	2007	655,011,918	394,923,298	243,665,244	258,883,505	235,184,030	11.0	17.9



ATRS' Real Estate Performance: Value-Add Portfolio (Cont.)

Time Weighted Returns:

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET			
Value Added																					
Almanac Realty Securities V, LP	-23.6	4.8	-18.8	-19.0	-31.3	2.4	-28.5	-29.0	1.5	-7.3	-4.1	-5.2	8.8	-7.0	3.3	2.0	8.4	6.8	4Q09	11.9	2.2
Almanac Realty Securities VI	-5.1	-1.1	-6.2	-6.5	2.1	-34.1	-32.1	-32.9	6.8	-18.2	-12.3	-13.0	7.0	-11.2	-4.8	-5.6	4.3	2.7	1Q13	9.3	1.3
Almanac Realty Securities VII	1.5	0.3	1.8	1.5	8.0	-1.5	6.4	5.2	8.0	5.0	13.3	12.0	8.6	6.1	15.1	12.5	15.7	12.5	3Q15	12.9	1.3
Almanac Realty Securities VIII	2.2	13.8	16.0	14.2	4.6	6.4	11.1	0.3									38.3	-63.7	1Q19	4.1	1.0
Calmwater Real Estate Credit Fund III	2.6	0.0	2.6	1.9	10.5	0.0	10.5	7.4	11.5	0.0	11.5	7.5					11.5	7.5	1Q18	7.3	1.2
CBRE Strategic Partners U.S. Value 8	1.7	0.6	2.2	2.0	7.0	-1.9	5.0	5.0	6.7	4.3	11.3	9.8					11.7	10.0	2Q17	9.3	1.3
CBRE Strategic Partners U.S. Value 9	-0.6	0.5	-0.1	-1.6													-0.1	-1.6	4Q20	-11.0	0.9
FPA Core Plus Fund IV	0.8	0.0	0.8	0.7	4.6	0.0	4.6	3.9									3.9	3.2	4Q18	2.6	1.0
Harbert European Real Estate Fund IV	0.0	2.6	2.6	2.3	9.7	-12.5	-3.1	4.7	6.6	3.7	10.8	10.3					9.3	8.1	3Q16	8.0	1.3
LaSalle Income & Growth Fund VI	0.8	-10.6	-9.8	-7.7	4.2	-18.5	-14.9	-11.7	3.5	-6.6	-3.3	-2.3	4.3	-1.4	2.8	2.7	7.9	6.9	4Q13	10.7	1.4
LaSalle Income & Growth Fund VII	0.1	1.4	1.5	1.1	0.2	-5.2	-5.1	-4.9	0.6	5.9	6.6	5.0					7.4	6.0	3Q17	6.9	1.2
LaSalle Income & Growth Fund VIII	0.7	8.4	9.1	7.4													4.9	-0.6	2Q20	-9.9	0.9
Long Wharf Real Estate Partners V	0.5	2.6	3.1	2.7	1.2	-4.9	-3.8	0.3	1.7	9.9	11.7	10.2	2.7	7.8	10.6	7.2	10.6	7.2	1Q16	8.3	1.2
Long Wharf Real Estate Partners VI, L.P.	-0.6	39.2	38.6	35.4													34.2	22.5	2Q20	13.9	1.1
New Boston Real Estate Investment Fund VII	-11.3	0.0	-11.3	-11.3	-16.3	0.0	-16.3	-16.3	-6.8	-15.4	-21.0	-22.1	-3.5	-7.6	-10.7	-12.0	-3.0	-5.1	1Q09	-2.8	0.8
Rockwood Capital Real Estate Partners Fund IX	1.6	1.0	2.7	2.0	2.1	-28.7	-27.2	-29.6	2.6	-9.4	-7.1	-9.9	2.7	-1.2	1.4	-1.1	9.2	6.1	4Q13	10.6	1.3
Rockwood Capital Real Estate Partners Fund XI	0.6	1.2	1.8	-2.0	-25.8	-76.0	-86.8	-21.9									N/M	N/M	1Q20	N/M	0.9
Walton Street Real Estate Debt Fund II, L.P.	4.1	-2.2	1.9	1.5	10.7	-2.3	8.3	6.5									9.5	7.4	3Q19	8.1	1.0
Westbrook Real Estate Fund IX	-0.3	-4.4	-4.7	-5.0	-0.8	-20.3	-20.9	-21.9	-0.7	-5.7	-6.4	-7.6	0.0	0.9	0.8	-0.4	6.7	3.7	3Q13	7.7	1.2
Westbrook Real Estate Fund X	-0.1	4.1	4.1	3.7	0.6	3.9	4.6	3.2	-0.6	13.9	13.3	10.4					16.5	9.4	4Q16	10.7	1.2
Value Added	0.8	2.1	2.9	2.3	4.7	-5.1	-0.5	-1.5	4.6	3.1	7.9	5.5	4.8	4.6	9.6	7.1	6.6	4.2	2Q07	6.7	1.3

ATRS' Real Estate Performance: Opportunistic Portfolio

As of 12/31/2020

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Opportunistic								
Blackstone Real Estate Partners Europe VI	2019	49,096,184	11,766,816	41,630,924	25,133	12,603,397	0.6	2.0
Blackstone Real Estate Partners VII	2011	50,000,000	64,456,398	5,608,725	81,385,170	19,669,441	0.9	0.9
Carlyle Realty Partners VII	2014	30,000,000	28,497,791	20,805,070	29,818,761	11,174,238	0.5	1.2
Carlyle Realty Partners VIII	2018	25,000,000	11,143,197	16,865,883	3,009,078	9,179,764	0.4	1.0
CBRE Strategic Partners U.S. Opportunity 5	2008	50,000,000	48,619,340	1,643,033	66,582,140	1,254,825	0.1	0.1
Cerberus Institutional Real Estate Partners III	2013	30,000,000	37,777,980	7,307,395	42,940,524	11,592,392	0.5	0.7
Heitman European Property Partners IV	2009	44,089,700	34,546,944	2,469,882	25,826,496	1,584,566	0.1	0.2
Kayne Anderson Real Estate Partners V	2018	25,000,000	20,000,000	5,000,000	669,027	23,508,642	1.1	1.1
Landmark Real Estate Fund VI	2010	40,000,000	35,090,608	4,909,392	52,625,921	1,825,156	0.1	0.3
Landmark Real Estate Fund VIII	2017	25,000,000	11,911,815	16,838,185	4,477,911	8,978,000	0.4	1.0
LaSalle Asia Opportunity Fund IV	2014	30,000,000	28,674,871	2,013,173	38,913,010	2,379,838	0.1	0.2
LaSalle Asia Opportunity V	2016	30,000,000	22,604,406	14,782,208	14,608,269	11,919,167	0.6	1.0
Lone Star Real Estate Fund IV	2015	24,260,817	19,445,848	4,814,970	19,424,227	7,068,264	0.3	0.4
Metropolitan Real Estate Partners Co-Investments Fund	2015	20,000,000	19,132,876	867,124	15,045,535	10,633,060	0.5	0.4
O'Connor North American Property Partners II, L.P.	2008	50,000,000	58,264,766	5,000,000	40,164,714	8,482,436	0.4	0.5
Torchlight Debt Fund VII, LP	2020	50,000,000	5,000,000	45,000,000	0	4,992,334	0.2	1.9
Torchlight Debt Opportunity Fund IV	2013	30,000,000	29,369,211	0	37,327,322	4,766,577	0.2	0.2
Torchlight Debt Opportunity Fund V	2015	25,000,000	20,001,024	5,000,000	18,313,820	7,143,546	0.3	0.5
Torchlight Debt Opportunity Fund VI	2017	25,000,000	24,979,558	0	0	25,731,794	1.2	1.0
Opportunistic	1998	652,446,701	531,283,448	200,555,963	491,157,056	184,487,439	8.6	14.4



ATRS' Real Estate Performance: Opportunistic Portfolio (Cont.)

Time Weighted Returns:

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET			
Opportunistic																					
Blackstone Real Estate Partners Europe VI	2.1	9.5	11.6	9.3	-10.4	13.6	1.4	-5.0									1.4	-5.0	1Q20	12.7	1.1
Blackstone Real Estate Partners VII	0.4	-0.3	0.1	-0.2	2.1	-25.2	-23.5	-19.8	2.8	-5.8	-3.0	-3.2	3.3	0.4	3.8	2.2	15.1	10.5	2Q12	14.6	1.6
Carlyle Realty Partners VII	3.5	-1.5	2.0	1.8	9.6	-9.0	0.1	0.6	21.3	-5.2	15.6	15.0	14.1	3.1	18.0	14.3	17.1	11.8	1Q15	14.1	1.4
Carlyle Realty Partners VIII	6.0	-1.3	4.7	3.1	12.6	8.4	22.0	15.8									20.9	8.6	4Q18	8.9	1.1
CBRE Strategic Partners U.S. Opportunity 5	-0.5	6.5	6.0	6.0	-1.0	12.0	11.0	11.0	-0.6	8.5	7.9	7.5	2.5	4.3	7.0	6.4	-10.5	-12.3	4Q08	5.4	1.4
Cerberus Institutional Real Estate Partners III	0.2	22.0	22.2	13.7	-0.2	12.8	12.6	10.1	-0.1	13.7	13.5	10.1	-0.1	10.4	10.2	7.6	16.5	11.8	4Q13	12.2	1.4
Heitman European Property Partners IV	-8.0	3.2	-4.8	-4.8	-9.1	11.9	2.1	2.1	1.4	-21.2	-19.9	-21.0	3.8	-13.2	-9.8	-11.2	-4.3	-5.8	1Q11	-3.7	0.8
Kayne Anderson Real Estate Partners V	1.2	11.5	12.7	7.7	4.9	17.5	23.0	14.6									18.6	12.1	3Q18	12.1	1.2
Landmark Real Estate Fund VI	-2.2	0.0	-2.2	-2.4	5.5	-15.9	-10.2	-11.2	-0.9	-11.7	-9.7	-10.8	7.9	-15.0	-5.5	-6.7	28.5	25.7	3Q10	18.8	1.6
Landmark Real Estate Fund VIII	5.5	-3.8	1.7	0.8	10.2	-10.9	-1.5	-4.0	13.1	-8.5	4.8	-0.2					23.7	15.4	3Q17	9.9	1.1
LaSalle Asia Opportunity Fund IV	-5.1	17.7	12.7	12.5	-8.0	19.6	10.9	10.2	-10.3	9.8	2.9	-9.5	-3.7	14.4	13.3	4.2	21.0	12.0	4Q14	33.1	1.4
LaSalle Asia Opportunity V	-8.7	21.2	12.5	11.9	-13.1	24.3	10.4	7.3	-6.8	24.0	17.8	10.3					16.3	9.1	4Q16	13.5	1.2
Lone Star Real Estate Fund IV	3.7	2.7	6.4	6.0	3.4	-11.4	-8.5	-10.9	9.8	-3.1	6.9	3.6	13.8	-1.8	12.2	9.7	11.6	9.0	4Q15	13.1	1.4
Metropolitan Real Estate Partners Co-Investments Fund	0.4	2.8	3.2	2.7	2.3	-21.1	-19.1	-18.0	1.7	2.5	4.3	3.2	0.7	7.1	7.9	6.0	7.9	6.0	1Q16	10.7	1.3
O'Connor North American Property Partners II, L.P.	0.0	0.0	0.0	-0.2	-0.2	-14.5	-14.7	-15.3	-0.2	-11.0	-11.1	-11.8	1.4	-8.1	-6.8	-8.0	-5.9	-8.7	2Q08	-3.3	0.8
Torchlight Debt Fund VII, LP	0.2	5.9	6.1	3.3													6.1	3.3	4Q20	-0.2	1.0
Torchlight Debt Opportunity Fund IV	0.4	-1.7	-1.3	-0.1	2.2	-15.0	-13.0	-4.5	5.4	-5.8	-0.7	2.4	7.2	-2.2	4.8	5.6	7.9	7.7	4Q13	9.8	1.4
Torchlight Debt Opportunity Fund V	0.9	3.8	4.6	3.1	3.9	-9.6	-6.0	-0.1	7.7	0.3	8.1	7.2	11.7	2.6	14.5	10.4	14.1	8.7	3Q15	10.3	1.3
Torchlight Debt Opportunity Fund VI	1.7	1.2	2.9	2.6	7.5	-9.6	-2.6	-3.6									13.9	4.3	2Q18	2.7	1.0
Opportunistic	0.8	5.3	6.1	4.4	2.5	-3.5	-1.0	-2.0	5.2	1.3	6.5	3.8	5.8	2.6	8.5	5.7	9.0	6.7	1Q98	10.2	1.3

ATRS' Timberland, Agriculture, and Infrastructure Performance

As of 12/31/2020

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Agriculture								
Agrivest Farmland Fund	2013	50,000,000	50,000,000	0	6,335,175	55,847,118	2.6	2.1
HFMS Farmland Separate Account	2011	125,000,000	160,019,470	11,642,592	46,662,061	155,453,734	7.3	6.2
Agriculture	2011	175,000,000	210,019,470	11,642,592	52,997,236	211,300,852	9.9	8.3
Timber								
BTG Pactual Open Ended Core U.S. Timberland Fund, LP	2019	182,930,629	182,930,628	0	3,779,542	191,691,454	9.0	7.1
BTG Timber Separate Account	1998	133,069,371	155,818,683	0	309,750,000	110,684,502	5.2	4.1
Timber	1998	316,000,000	338,749,312	0	313,529,542	302,375,956	14.1	11.3

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
Infrastructure - Core								
DIF Infrastructure V	2018	47,762,784	32,332,380	18,094,421	3,833,663	35,562,417	1.7	2.0
IFM Global Infrastructure	2017	50,000,000	50,000,000	0	1,422,315	59,217,891	2.8	2.2
Macquarie Infrastructure Partners III	2015	50,000,000	47,758,864	7,297,562	36,169,654	40,591,104	1.9	1.8
Macquarie Infrastructure Partners V	2013	50,000,000	8,822,427	41,177,573	0	8,451,373	0.4	1.9
Infrastructure - Core	2015	197,762,784	138,913,671	66,569,556	41,425,632	143,822,786	6.7	7.8
Infrastructure - Non-Core								
Antin Infrastructure Partners Fund II	2014	47,696,920	35,953,565	5,558,270	40,724,600	22,844,188	1.1	1.1
Global Energy & Power Infrastructure Fund II	2014	50,000,000	52,803,771	2,417,177	42,091,982	29,925,588	1.4	1.2
Global Infrastructure Partners III	2016	50,000,000	44,138,614	10,534,973	8,785,377	42,992,166	2.0	2.0
KKR Global Infrastructure Investors II	2014	50,000,000	53,726,842	1,302,665	43,691,806	42,299,383	2.0	1.6
Infrastructure - Non-Core	2014	197,696,920	186,622,792	19,813,085	135,293,765	138,061,325	6.5	5.9
Infrastructure	2014	395,459,704	325,536,463	86,382,641	176,719,398	281,884,110	13.2	13.7

ATRS' Timberland, Agriculture, and Infrastructure Performance (Cont.)

Time Weighted Returns:

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET			
Agriculture																					
Agrivest Farmland Fund	0.7	0.4	1.2	0.9	3.1	1.7	4.9	3.8	3.3	1.4	4.7	3.7	3.5	1.8	5.3	4.3	5.5	4.5	2Q15	4.4	1.2
HFMS Farmland Separate Account	0.6	0.1	0.6	0.3	3.8	-1.0	2.7	1.6	3.8	0.5	4.3	3.1	3.6	0.5	4.1	3.0	6.5	5.2	3Q11	4.8	1.3
Agriculture	0.6	0.2	0.8	0.5	3.6	-0.3	3.3	2.2	3.6	0.7	4.4	3.2	3.6	0.9	4.5	3.4	6.5	5.3	3Q11	4.7	1.3
Agriculture Benchmark*			1.6				3.6				4.3				4.3		8.4		3Q11		
Timber																					
BTG Pactual Open Ended Core U.S. Timberland Fund, LP	1.2	2.4	3.6	3.4	0.3	7.7	7.9	6.9									7.9	6.9	1Q20	6.8	1.1
BTG Timber Separate Account	3.2	0.1	3.3	3.1	3.3	-4.3	-1.1	-1.8	17.4	-20.5	4.1	3.3	11.2	-11.9	4.7	3.8	7.3	6.5	2Q98	5.2	2.7
Timber	1.9	1.6	3.5	3.3	1.4	3.0	4.4	3.5	16.4	-17.9	6.1	5.1	10.7	-10.2	5.8	4.9	7.6	6.8	2Q98	5.2	1.8
Timberland Property Benchmark*			0.6				1.3				1.6				2.1		5.2		2Q98		

Returns (%)	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET			
Infrastructure - Core																					
DIF Infrastructure V	4.3	4.0	8.2	7.7	8.1	11.4	20.2	17.8									14.1	10.6	3Q18	12.1	1.2
IFM Global Infrastructure	0.8	3.7	4.4	4.2	2.9	1.0	3.9	3.1									10.8	9.1	4Q18	9.1	1.2
Macquarie Infrastructure Partners III	0.0	9.7	9.7	7.6	0.4	27.8	28.2	21.3	0.5	21.2	21.7	16.1	1.4	18.5	20.0	14.7	19.5	14.4	2Q15	14.6	1.6
Macquarie Infrastructure Partners V																			1Q21	-4.5	1.0
Infrastructure - Core	1.3	5.9	7.1	6.1	3.2	12.3	15.7	12.5	2.1	14.1	16.4	12.2	2.4	14.3	16.9	12.4	16.8	12.4	2Q15	12.6	1.3
Infrastructure - Non-Core																					
Antin Infrastructure Partners Fund II	2.6	0.0	2.6	2.3	2.8	15.4	18.7	17.8	2.5	16.2	19.1	18.2	2.4	13.4	16.0	14.9	14.3	12.6	4Q14	12.0	1.8
Global Energy & Power Infrastructure Fund II	1.4	-5.0	-3.6	-3.6	5.7	-5.8	-0.4	-2.1	9.5	-2.5	7.6	4.5	18.4	0.3	28.9	21.9	20.8	10.0	1Q15	21.0	1.4
Global Infrastructure Partners III	0.4	10.5	10.9	10.4	3.7	2.1	6.3	4.6	3.8	6.7	11.0	8.6					10.6	5.8	4Q16	6.4	1.2
KKR Global Infrastructure Investors II	2.4	10.8	13.2	11.7	39.1	-9.3	39.1	38.7	14.6	1.5	20.1	18.8	6.0	8.1	17.0	15.5	19.1	14.5	1Q15	16.9	1.6
Infrastructure - Non-Core	1.7	4.7	6.3	5.7	16.6	0.8	18.6	17.6	8.8	6.0	15.7	14.0	8.6	8.7	18.4	15.2	15.9	11.9	4Q14	13.7	1.5
Infrastructure																					
Infrastructure Benchmark*			0.8				5.4				6.6				6.8		6.4		4Q14		

*The Timberland Property Benchmark was comprised of the NCREIF Timberland returns weighted according to ATRS' regional exposure based on Net Asset Value prior to 3Q20, gross of fees. The Agriculture Benchmark was comprised of the NCREIF Farmland returns weighted according to ATRS' regional and crop type exposure based on Net Asset Value prior to 3Q20, gross of fees. As of 3Q20, the Timberland and Agriculture benchmarks going forward will no longer be weighted and are just the NCREIF Timberland and NCREIF Farmland returns, gross of fees. Additionally, the Infrastructure Benchmark of CPI plus 500 bps has been adjusted to CPI plus 300 bps as of 3Q20 and the new Infrastructure Benchmark will be a blend of the two going forward.



Portfolio Performance Detail: By Vintage Year

As of 12/31/2020

Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Commitments	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)
1997	75,000,000	80,737,536	0	120,795,230	0	0.0	0.0
1998	233,069,371	268,681,332	0	457,689,777	110,684,502	5.2	4.1
1999	178,794,401	189,842,518	0	316,052,650	0	0.0	0.0
2000	209,242,960	228,396,220	0	289,418,462	355,396	0.0	0.0
2005	340,000,000	374,770,177	0	252,638,294	464,187,527	21.7	17.3
2006	220,000,000	219,970,569	0	136,817,472	280,318,133	13.1	10.5
2007	197,694,200	198,972,143	0	242,919,729	77,965,669	3.6	2.9
2008	220,000,000	195,116,197	9,866,941	245,032,284	9,836,285	0.5	0.6
2009	44,089,700	34,546,944	2,469,882	25,826,496	1,584,566	0.1	0.2
2010	40,000,000	35,090,608	4,909,392	52,625,921	1,825,156	0.1	0.3
2011	175,000,000	224,475,867	17,251,316	128,047,231	175,123,175	8.2	7.2
2012	130,000,000	130,500,009	13,008,303	141,039,783	30,713,881	1.4	1.6
2013	150,000,000	146,175,694	8,249,943	101,383,419	107,245,469	5.0	4.3
2014	157,696,920	145,929,998	30,793,690	151,548,353	66,323,852	3.1	3.6
2015	204,260,817	194,457,563	21,595,527	147,487,799	119,057,100	5.6	5.2
2016	180,011,918	163,490,093	29,349,538	44,598,665	150,928,018	7.1	6.7
2017	150,000,000	129,576,595	27,214,757	17,086,715	132,542,355	6.2	6.0
2018	257,762,784	149,825,543	113,610,338	12,658,386	152,416,432	7.1	9.9
2019	312,026,813	215,341,511	103,910,569	6,739,704	221,825,217	10.4	12.1
2020	200,000,000	36,942,775	163,240,152	0	36,215,328	1.7	7.4
Total Portfolio (Including Current & Historical Activity)							
	3,674,649,884	3,362,839,894	545,470,348	2,890,406,370	2,139,148,060	100	100

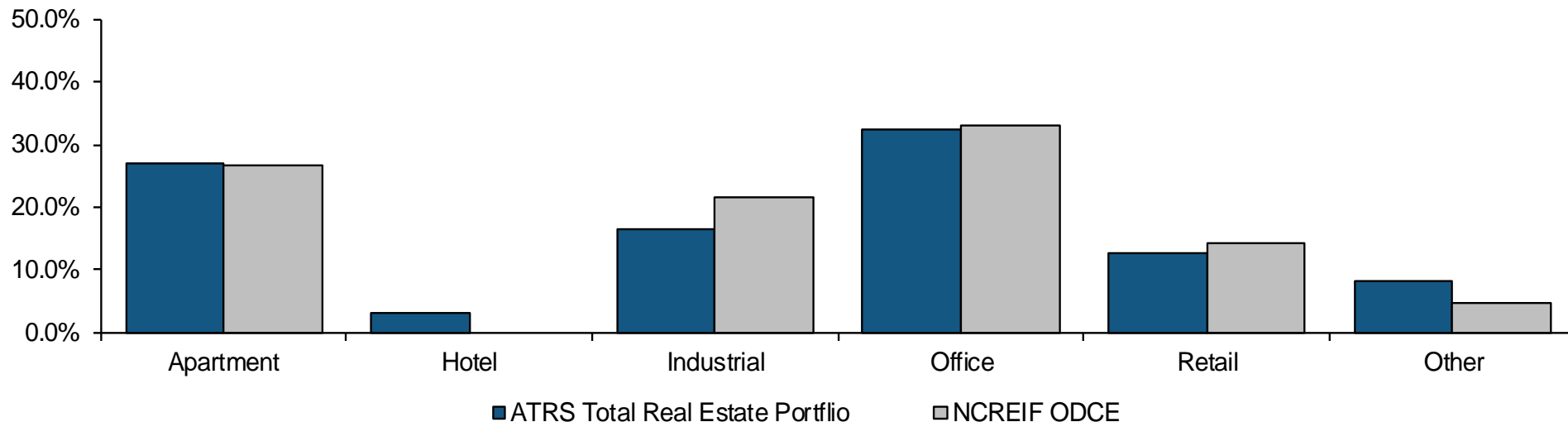
Portfolio Performance Detail: By Vintage Year (Cont.)

Time Weighted Returns:

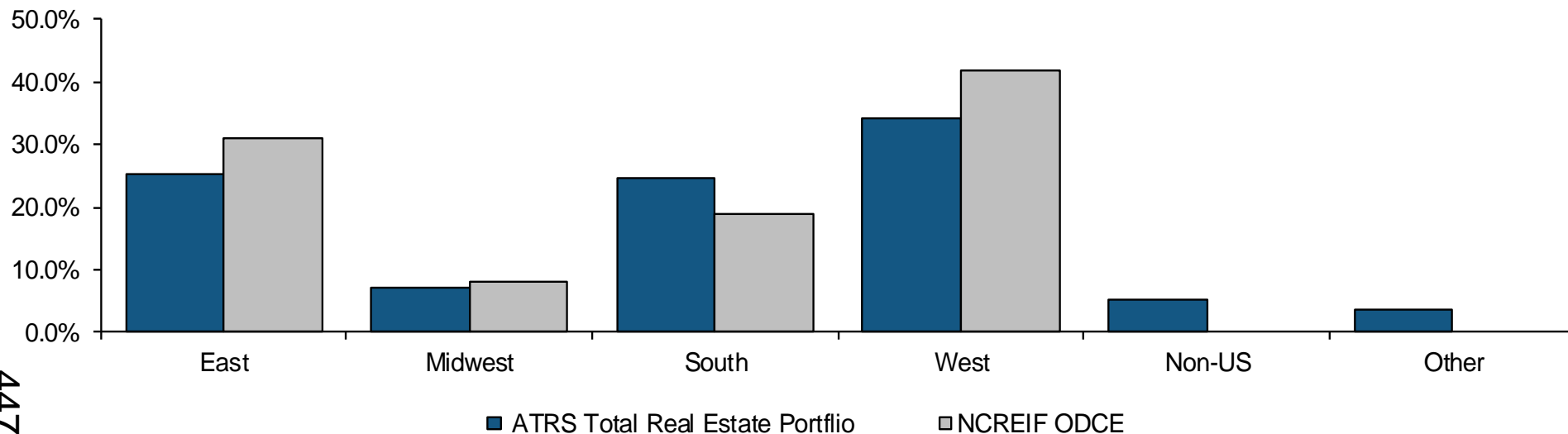
Investment Vintage Year	Quarter				1 Year				3 Year				5 Year				Inception		TWR Calculation Inception	Net IRR	Equity Multiple
	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	INC	APP	TGRS	TNET	TGRS	TNET			
1997																	4.0	3.5	1Q98	13.4	1.5
1998	3.2	0.1	3.3	3.1	3.3	-4.3	-1.1	-1.8	17.4	-20.5	4.1	3.3	11.2	-11.9	4.7	3.8	7.4	6.4	2Q98	5.6	2.1
1999																			4Q99	15.9	1.7
2000										-6.0	-6.0	-6.0		-8.8	-8.8	-8.8	2.5	1.6	4Q00	8.5	1.3
2005	0.9	-0.9	0.1	-0.1	3.9	-4.1	-0.3	-1.0	4.3	-1.0	3.2	2.5	4.4	0.4	4.9	4.1	6.5	5.6	3Q05	5.7	1.9
2006	0.8	1.1	1.9	1.7	3.6	-2.1	1.4	0.6	3.8	0.8	4.6	3.7	4.0	1.8	5.8	4.9	5.7	4.7	2Q07	5.8	1.9
2007		1.0	1.0	1.0		-12.0	-12.0	-12.0	0.4	-3.8	-3.4	-3.4	0.4	5.8	6.2	6.2	6.3	6.1	1Q08	6.2	1.6
2008	-0.4	2.0	1.6	1.5	-0.8	-2.8	-3.6	-4.0	1.2	-2.5	-1.4	-2.0	3.9	-2.5	1.4	0.4	0.9	-2.1	2Q08	5.1	1.3
2009	-8.0	3.2	-4.8	-4.8	-9.1	11.9	2.1	2.1	1.4	-21.2	-19.9	-21.0	3.8	-13.2	-9.8	-11.2	-4.3	-5.8	1Q11	-3.7	0.8
2010	-2.2	0.0	-2.2	-2.4	5.5	-15.9	-10.2	-11.2	-0.9	-11.7	-9.7	-10.8	7.9	-15.0	-5.5	-6.7	28.5	25.7	3Q10	18.8	1.6
2011	0.6	0.0	0.6	0.3	3.6	-4.5	-1.0	-1.5	3.6	-0.1	3.5	2.4	3.6	1.2	4.8	3.4	9.5	7.1	3Q11	7.1	1.4
2012	-0.3	6.8	6.5	3.1	0.3	-12.1	-11.8	-13.8	1.2	-1.4	-0.2	-2.5	1.5	2.5	4.0	2.0	11.5	7.6	1Q13	10.0	1.3
2013	0.4	3.8	4.1	3.3	2.0	10.1	12.2	9.6	2.5	8.1	10.8	8.3	3.6	7.4	11.2	8.6	12.6	10.0	4Q13	9.1	1.4
2014	2.0	-1.8	0.2	0.1	4.6	3.3	8.1	7.1	8.2	5.5	14.2	11.7	9.5	8.9	19.4	15.9	18.5	14.0	4Q14	16.1	1.5
2015	1.4	5.4	6.7	5.9	18.1	-7.0	12.1	12.9	9.1	4.2	14.4	12.8	7.6	6.6	15.1	12.5	17.3	11.4	1Q15	12.9	1.4
2016	0.0	4.8	4.8	4.5	3.7	-0.7	3.2	3.3	4.2	5.0	9.3	7.7					8.0	5.2	3Q16	6.8	1.2
2017	1.5	1.8	3.3	2.9	5.1	-2.0	3.0	1.8	5.9	4.2	10.3	7.4					14.9	10.8	3Q17	7.7	1.2
2018	2.3	3.4	5.7	4.5	6.0	5.3	11.5	8.5									8.6	4.4	3Q18	6.8	1.1
2019	1.3	2.7	3.9	3.5	0.4	8.2	8.5	7.0									8.9	4.0	3Q19	6.7	1.1
2020	-0.4	11.6	11.2	8.4													4.0	-7.4	2Q20	-4.9	1.0

Portfolio Diversification – Real Estate

**Property Type Diversification
(As of 12/31/2020)**

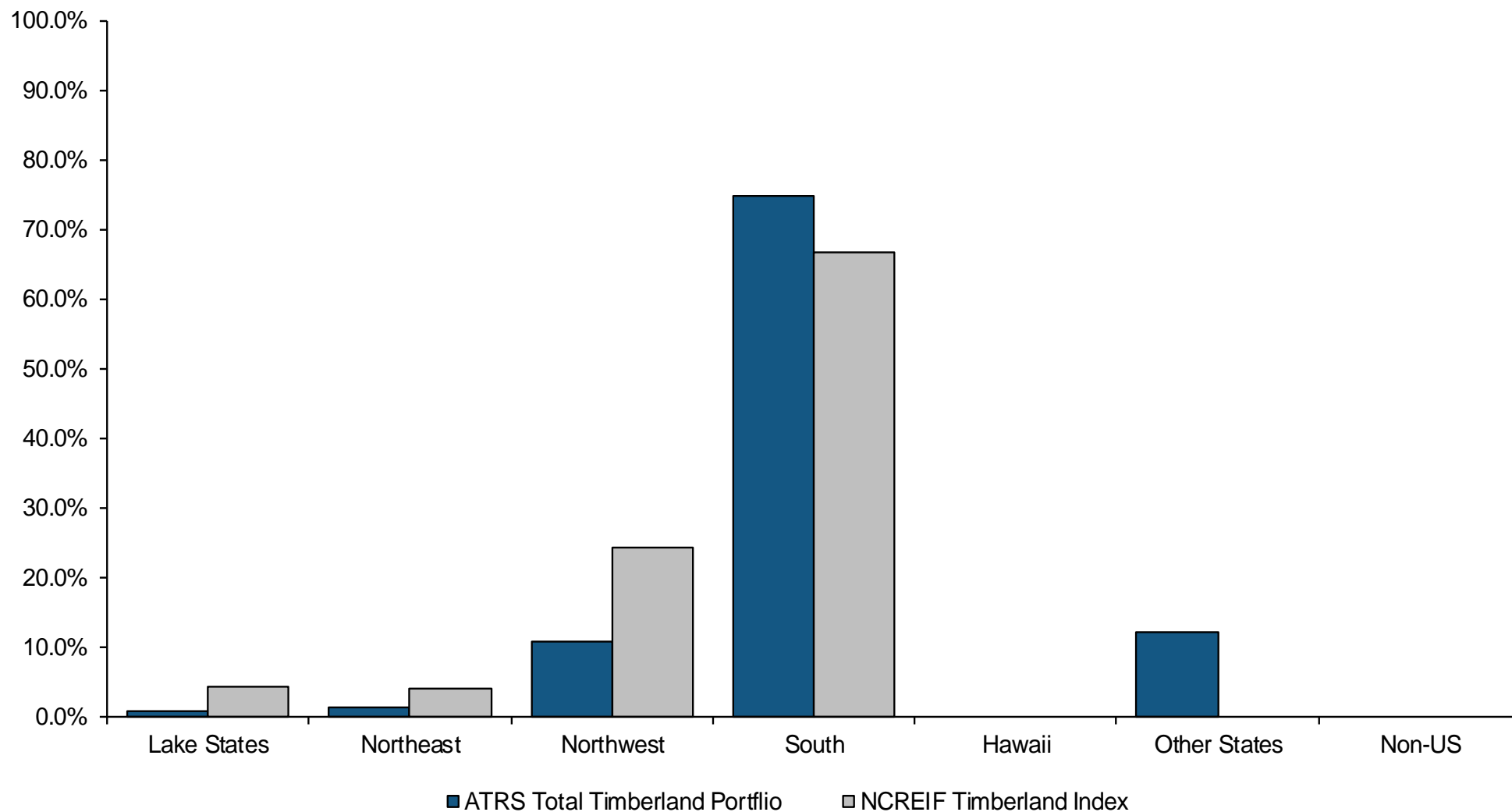


**Geographic Type Diversification
(As of 12/31/2020)**



Portfolio Diversification – Timberland

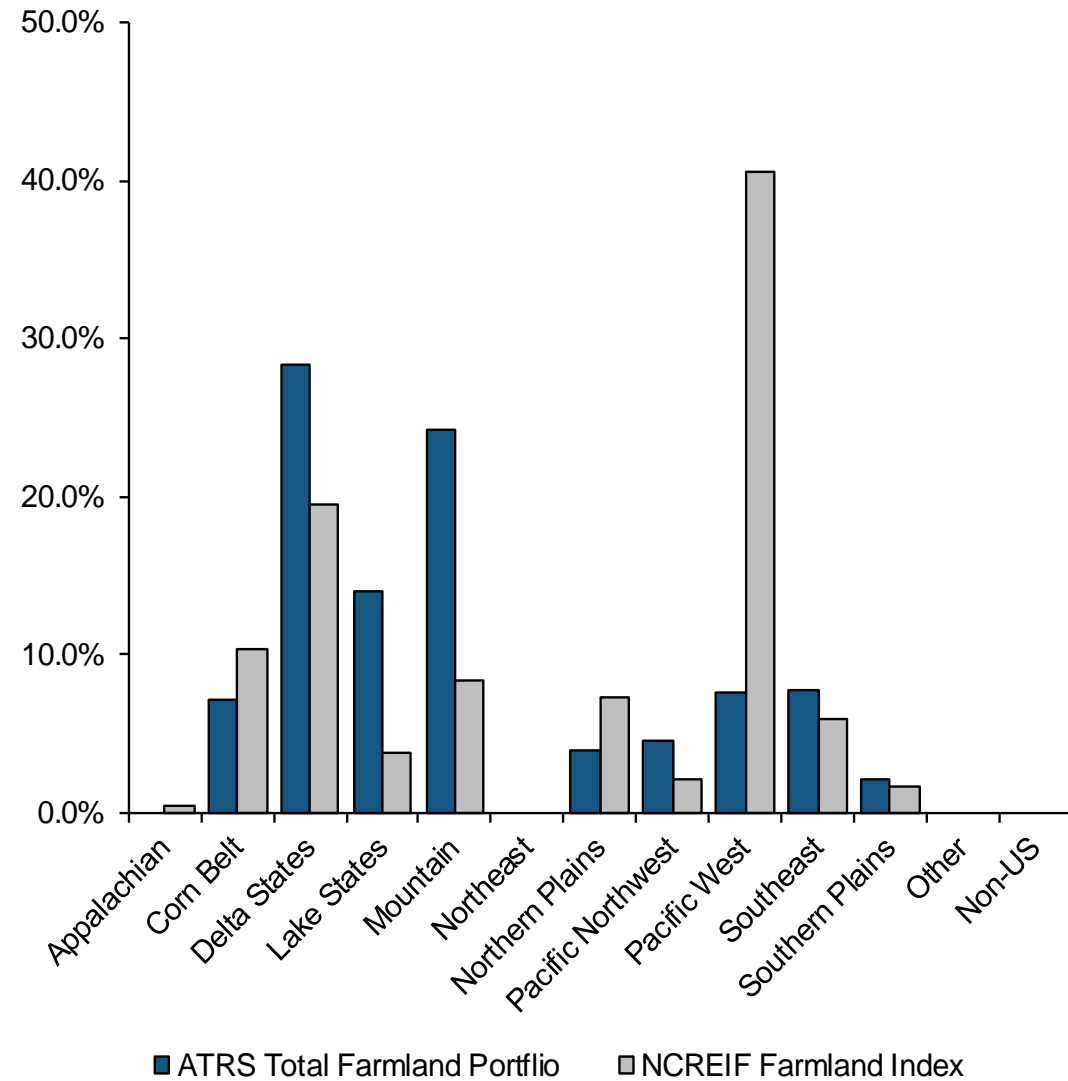
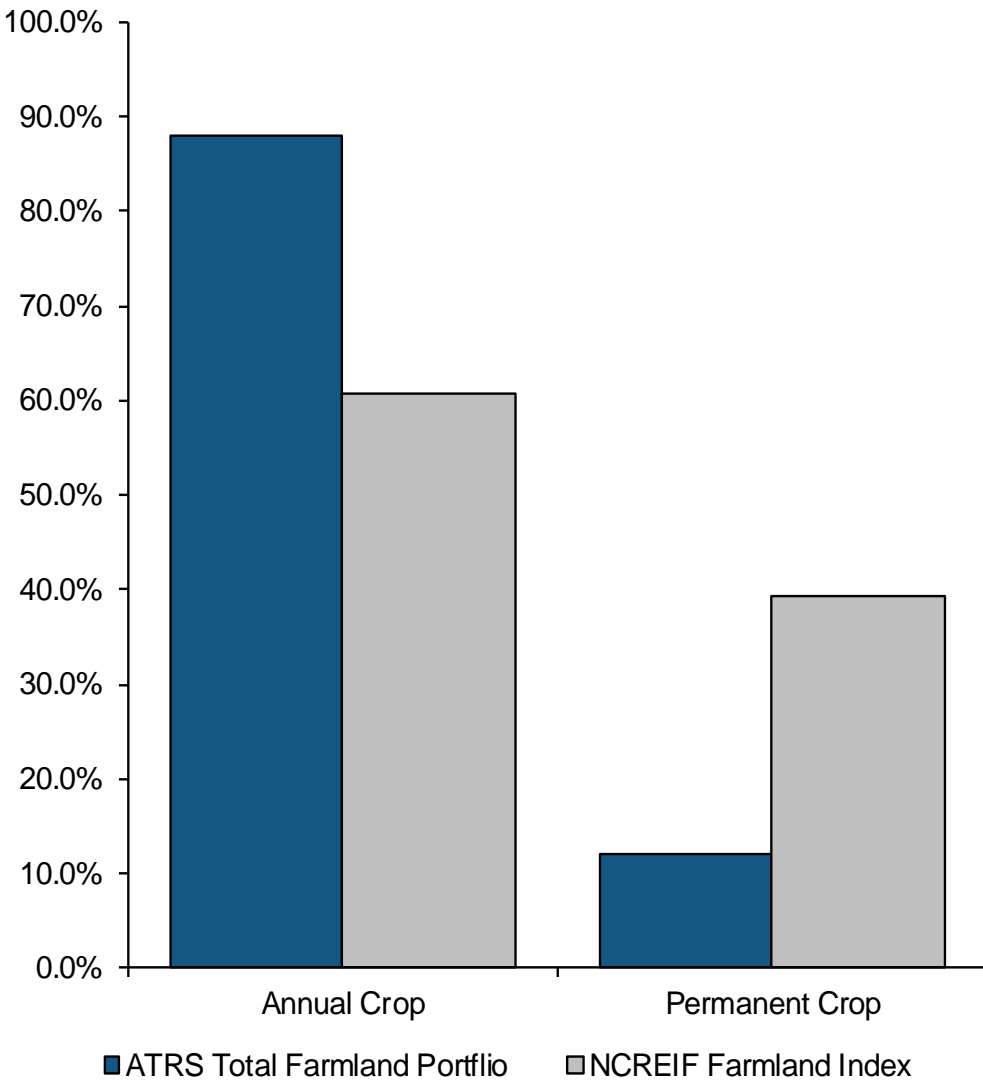
**Geographic Type Diversification
(As of 12/31/2020)**



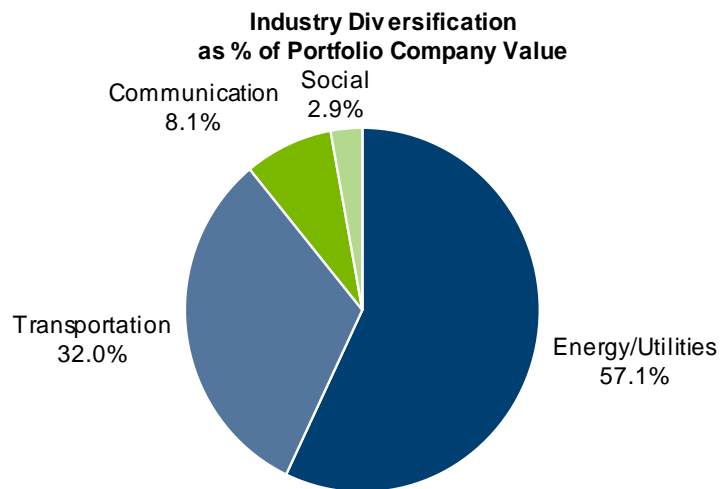
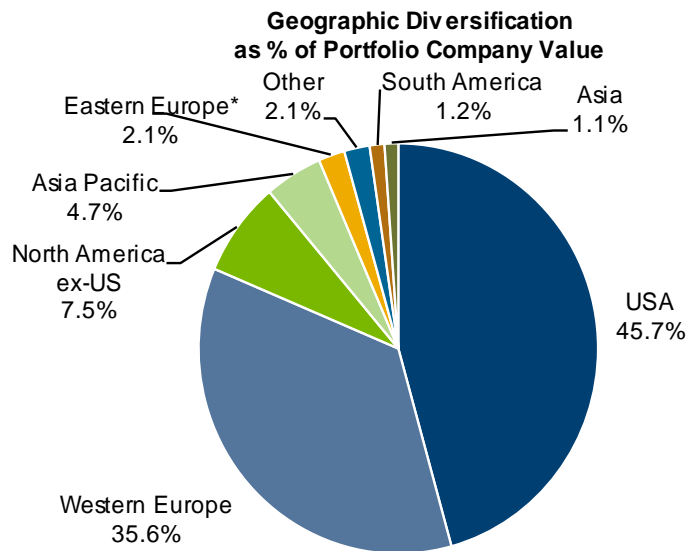
Portfolio Diversification – Agriculture

**Crop Type Diversification
(As of 12/31/2020)**

**Geographic Type Diversification
(As of 12/31/2020)**

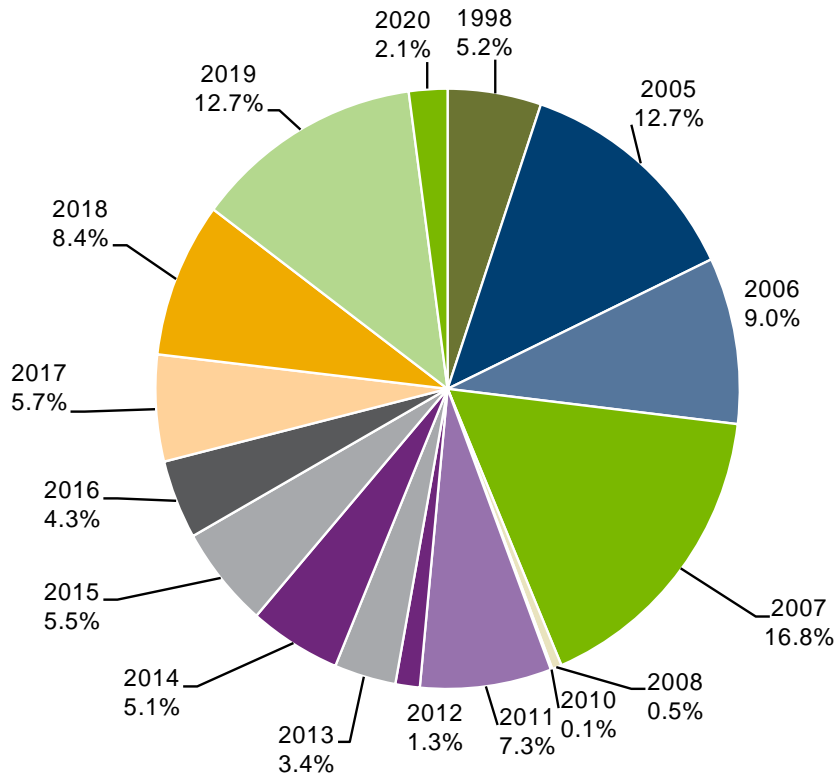


Portfolio Diversification – Infrastructure

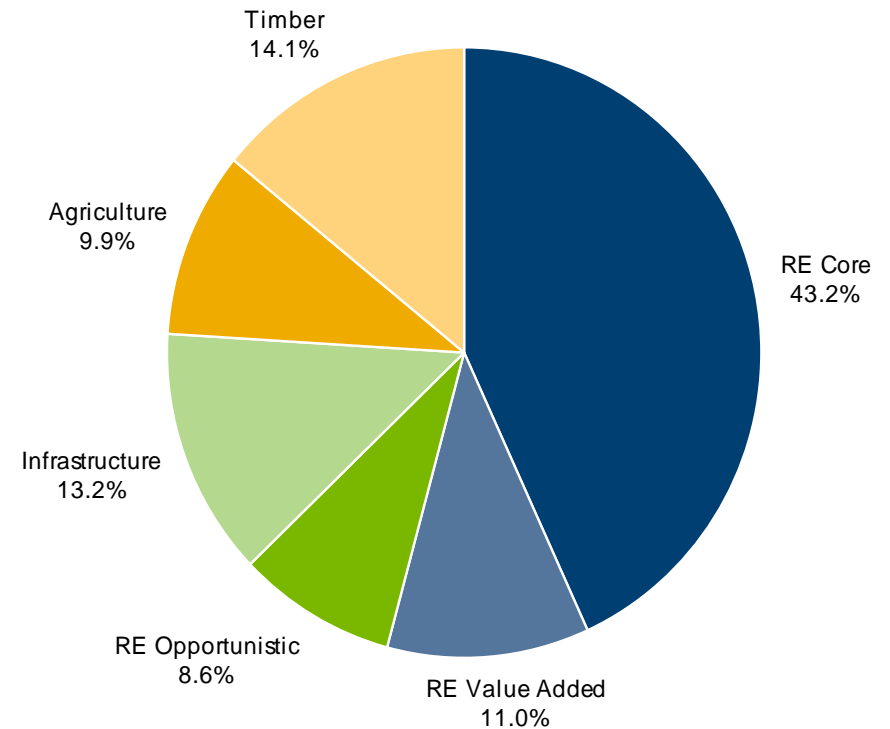


Portfolio Diversification (cont'd)

**Vintage Year Diversification by Net Asset Value
(As of 12/31/2020)**

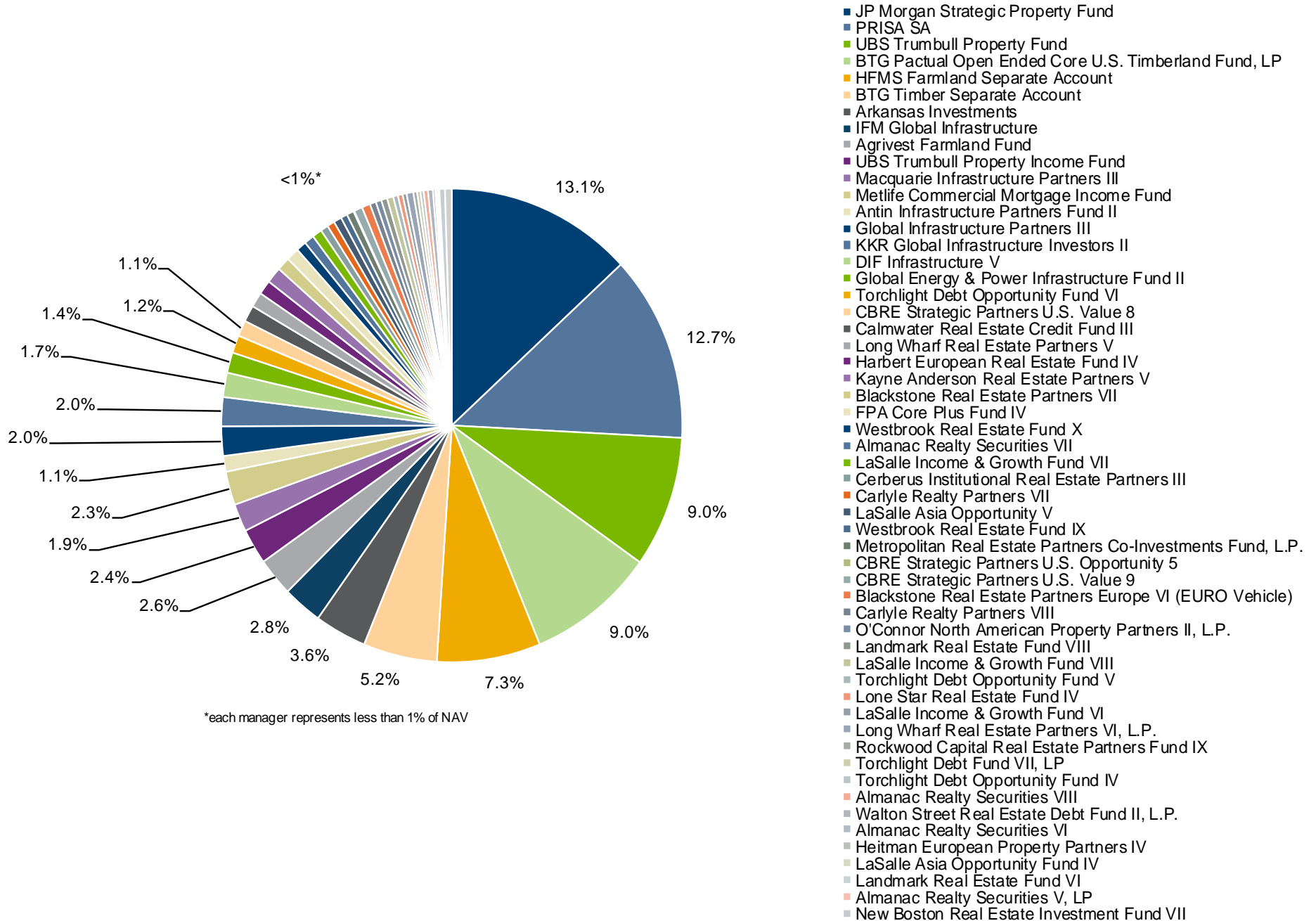


**Style Diversification by Net Asset Value
(As of 12/31/2020)**



Note: Arkansas Investments are included in Core portfolio

Manager Diversification



Management Fees

Partnership Name	Current Quarter Management Fees	YTD Management Fees
Core		
Arkansas Investments	0	0
JP Morgan Strategic Property Fund	-579,827	-2,387,234
Metlife Commercial Mortgage Income Fund	-100,000	-400,000
PRISA SA	-540,185	-2,166,129
UBS Trumbull Property Fund	-351,108	-1,453,865
UBS Trumbull Property Income Fund	-104,272	-421,159
Core	-1,675,392	-6,828,387
Value Added		
Almanac Realty Securities V, LP	-229	-940
Almanac Realty Securities VI	-11,232	-44,683
Almanac Realty Securities VII	-42,491	-161,216
Almanac Realty Securities VIII	-94,262	-375,000
Calmwater Real Estate Credit Fund III	-92,972	-369,866
CBRE Strategic Partners U.S. Value 8	-52,116	-211,241
CBRE Strategic Partners U.S. Value 9	-156,249	-829,762
FPA Core Plus Fund IV	-28,477	-122,631
Harbert European Real Estate Fund IV	-63,767	-264,724
LaSalle Income & Growth Fund VI	-15,169	-60,346
LaSalle Income & Growth Fund VII	-49,744	-187,848
LaSalle Income & Growth Fund VIII	-125,683	-500,000
Long Wharf Real Estate Partners V	-77,670	-319,615
Long Wharf Real Estate Partners VI, L.P.	-188,525	-1,368,493
New Boston Real Estate Investment Fund VII	0	0
Rockwood Capital Real Estate Partners Fund IX	-38,174	-190,021
Rockwood Capital Real Estate Partners Fund XI	-150,730	-464,267
Walton Street Real Estate Debt Fund II, L.P.	-18,629	-66,586
Westbrook Real Estate Fund IX	-32,469	-135,270
Westbrook Real Estate Fund X	-47,711	-195,608
Value Added	-1,286,298	-5,868,119

Management Fees (cont'd)

Partnership Name	Current Quarter Management Fees	YTD Management Fees
Opportunistic		
Blackstone Real Estate Partners Europe VI (EURO Vehicle)	-232,900	-533,382
Blackstone Real Estate Partners VII	-61,901	-247,815
Carlyle Realty Partners VII	-44,662	-178,656
Carlyle Realty Partners VIII	-87,978	-350,000
CBRE Strategic Partners U.S. Opportunity 5	0	0
Cerberus Institutional Real Estate Partners III	-6,876	-40,242
Heitman European Property Partners IV	0	0
Kayne Anderson Real Estate Partners V	-109,375	-437,500
Landmark Real Estate Fund VI	-5,021	-24,489
Landmark Real Estate Fund VIII	-62,500	-250,000
LaSalle Asia Opportunity Fund IV	-3,893	-15,488
LaSalle Asia Opportunity V	-67,251	-330,374
Lone Star Real Estate Fund IV	-6,355	-24,924
Metropolitan Real Estate Partners Co-Investments Fund, L.P.	-23,934	-99,709
O'Connor North American Property Partners II, L.P.	-17,423	-69,956
Torchlight Debt Fund VII, LP	-137,500	-281,318
Torchlight Debt Opportunity Fund IV	-14,850	-58,747
Torchlight Debt Opportunity Fund V	-21,558	-89,632
Torchlight Debt Opportunity Fund VI	-79,688	-318,752
Opportunistic	-983,665	-3,350,983
Real Estate	-3,945,355	-16,047,488

Management Fees (cont'd)

Partnership Name	Current Quarter Management Fees	YTD Management Fees
Infrastructure - Core		
DIF Infrastructure V	-172,363	-652,096
IFM Global Infrastructure	-111,726	-436,410
KKR Global Infrastructure Investors II	-87,833	-435,359
Macquarie Infrastructure Partners III	-114,963	-457,332
Macquarie Infrastructure Partners V	-144,461	-261,808
Infrastructure - Core	-631,346	-2,243,005
Infrastructure - Non-Core		
Antin Infrastructure Partners Fund II	-68,570	-273,436
Global Energy & Power Infrastructure Fund II	-200,574	-696,209
Global Infrastructure Partners III	-214,934	-848,424
Infrastructure - Non-Core	-484,078	-1,818,069
Infrastructure	-1,115,424	-3,916,612
Agriculture		
Agrivest Farmland Fund	-138,358	-547,786
HFMS Farmland Separate Account	-443,244	-1,754,550
Agriculture	-581,602	-2,302,335
Timber		
BTG Pactual Open Ended Core U.S. Timberland Fund, LP	-455,310	-1,860,111
BTG Timber Separate Account	-185,295	-747,989
Timber	-640,605	-3,248,705
Total Real Assets	-2,337,630	-9,467,652
Total Portfolio		
Arkansas Teachers Retirement System	-6,282,986	-24,874,536

Compliance Matrix

RISK MANAGEMENT						
Property Type - Real Estate	NFI-ODCE	Target/Constraint	Minimum	Maximum	Actual	Compliant?
Office	32.90	NFI-ODCE +/- 50%	16.45	49.35	32.50	Yes
Retail	14.20	NFI-ODCE +/- 50%	7.10	21.30	12.71	Yes
Industrial	21.60	NFI-ODCE +/- 50%	10.80	32.40	16.41	Yes
Multifamily	26.60	NFI-ODCE +/- 50%	13.30	39.90	27.07	Yes
Lodging/Hotel	0.00	NFI-ODCE +/- 50%	0.00	0.00	2.98	No
Other	4.70	n/a	0.00	20.00	8.33	Yes
Geography - Real Estate	NFI-ODCE	Target/Constraint	Minimum	Maximum	Actual	Compliant?
West	41.80	NFI-ODCE +/- 50%	20.90	62.70	34.29	Yes
East	31.00	NFI-ODCE +/- 50%	15.50	46.50	25.23	Yes
Midwest	8.10	NFI-ODCE +/- 50%	4.05	12.15	7.11	Yes
South	19.00	NFI-ODCE +/- 50%	9.50	28.50	24.63	Yes
Other	0.00	n/a	n/a	n/a	3.62	Yes
Non-U.S.	0.00	n/a	0.00	40.00	5.11	Yes
Geography - Timber	NCREIF Timberland	Target/Constraint	Minimum	Maximum	Actual	Compliant?
Lake States	4.32	NCREIF Timberland +/- 15%	0.65	4.97	0.80	Yes
Northeast	4.06	NCREIF Timberland +/- 15%	0.61	4.66	1.28	Yes
Northwest	24.25	NCREIF Timberland +/- 15%	3.64	27.88	10.85	Yes
South	66.69	NCREIF Timberland +/- 15%	10.00	76.70	74.96	Yes
Other	0.00	NCREIF Timberland +/- 15%	0.00	0.00	12.12	No

Compliance Matrix (cont'd)

RISK MANAGEMENT						
Geography - Agriculture	NCREIF Farmland	Target/Constraint	Minimum	Maximum	Actual	Compliant?
Appalachian	0.38		0.00	50.00	0.00	Yes
Corn Belt	10.36		0.00	50.00	7.19	Yes
Delta States	19.48		0.00	50.00	28.34	Yes
Lake States	3.76		0.00	50.00	14.09	Yes
Mountain	8.35		0.00	50.00	24.25	Yes
Northeast	0.00		0.00	50.00	0.00	Yes
Northern Plains	7.28		0.00	50.00	3.93	Yes
Pacific Northwest	2.05		0.00	50.00	4.61	Yes
Pacific West	40.54		0.00	50.00	7.63	Yes
Southeast	6.00		0.00	50.00	7.77	Yes
Southern Plains	1.74		0.00	50.00	2.18	Yes
Other	0.00		0.00	50.00	0.00	Yes
Non-U.S.	0.00		0.00	50.00	0.00	Yes
Geography - Infrastructure	Target/Constraint		Minimum	Maximum	Actual	Compliant?
U.S.			n/a	n/a	45.70	No
Non-U.S.			0.00	50.00	54.30	No
Asset Type - Infrastructure	Target/Constraint		Minimum	Maximum	Actual	Compliant?
Energy/Utilities			0.00	70.00	57.07	Yes
Transportation			0.00	70.00	31.98	Yes
Social			0.00	70.00	2.88	Yes
Communications			0.00	70.00	8.07	Yes
Other			0.00	70.00	0.00	Yes
Manager	Target/Constraint		Minimum	Maximum	Max	Compliant?
Energy/Utilities			0.00	30.00	14.14	Yes
Style - Real Estate	Target/Constraint		Minimum	Maximum	Actual	Compliant?
Core			50.00	70.00	69.65	Yes
Non-Core			30.00	50.00	31.65	Yes

Agenda

Section 1	Executive Summary
Section 2	Market Overview
Section 3	Real Assets Portfolio Update
Section 4	Glossary

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Glossary of Terms

- Catch-up - The provision that dictates how cash flows from the fund will be allocated between the investors and the manager in order for the manager to receive their performance fee. This allocation of cash flows occurs once the investors have collected their capital and preferred return
- Core - The most conservative institutional real estate investing style
- Core-Plus - A style whereby investments have a slightly higher level of risk and expected return than Core, primarily through use of leverage
- Development - The construction of buildings from breaking the ground through building completion. This may also include entitlement of the land and the pursuit of permits prior to construction
- DPI – Distributions to Paid In; the ratio of distributions from investments to total invested capital
- First Closing - The point at which a manager receives and executes the subscription documents and can begin drawing capital from investors
- Final Closing - The final date at which new investors can subscribe to a fund
- Internal Rate of Return (IRR) - A method of measuring the performance of a portfolio from inception through a particular point in time. This method weights returns according to the dollars invested at each point in time. Hence, this is known as dollar-weighted return. This is a better measure when the manager controls when dollars must be invested and is the most commonly used method of real estate performance evaluation; Gross IRR is gross of fee and Net IRR is net of fee
- NFI-ODCE – NCREIF Fund Index Open-end Diversified Core Equity Index is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy; underlying funds are leveraged with gross and net returns available
 - NCREIF changed the basis of diversification for the NFI ODCE from NREA to GRE effective 1Q20
- NPI – NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only; it is reported unlevered and gross of fee

Glossary of Terms (Cont'd)

- FTSE-NAREIT Equity REIT – An unmanaged capitalization-weighted index of all equity real estate investment trusts
- FTSE EPRA/NAREIT Global REIT – An unmanaged market-weighted total return index, which consists of many companies from Global markets whose floats are larger than \$100 million and derive more than half of their revenue from property-related activities
- Opportunistic - A style that is the riskiest form of real estate investing. The name derives from when such funds were formed after the early 1990s real estate market crash to take advantage of opportunities in unwanted properties. Such investments include ground-up development, highly-leveraged purchases, or transactions involving highly complicated legal or environmental situations
- Pre-Specified Deals – Investments that are purchased for a fund before its final close. The assets are typically warehoused on a line of credit
- Promote (Carried Interest) -The performance fee a manager receives once the investors have received their return of capital and the preferred return (return promised by the manager)
- RVPI – Residual Value to Paid In; the ratio of the residual value of an investment to total invested capital
- Time-Weighted Return - A method of measuring the performance of a portfolio over a particular period of time. Effectively, it is the return of one dollar invested in the portfolio at the beginning of the measurement period. This is a better return measure when the manager does not control when the dollars must be invested
- TVPI – Total value to paid-in ratio; the ratio of total value from an investment, including distributions, to total invested capital
- Value-Added - A style that represents moderate-risk real estate. A manager typically increases the future value of the investment by undertaking activities such as leasing, improving an existing building, or taking some risk through operating intensive assets, such as hotels or self-storage
- Vintage Year - The year in which a fund has its final closing. Typically coincides with the year a fund begins making investments

Glossary of Terms (Cont'd)

- NCREIF Timberland Index- The National Council of Real Estate Investment Fiduciaries (NCREIF) Timberland Index is a quarterly time series composite return measure of investment performance of a large pool of individual timber properties acquired in the private market for investment purposes only.
- NCREIF Farmland Index- The National Council of Real Estate Investment Fiduciaries (NCREIF) Farmland Index is a quarterly time series composite return measure of investment performance of a large pool of individual agricultural properties acquired in the private market for investment purposes only.

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Infrastructure InDetail

KKR Diversified Core Infrastructure Fund

February 2021

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EXECUTIVE SUMMARY

OVERVIEW

Review Date	Rating	Previous Rating
February 2021	Buy	N/A

KKR Diversified Core Infrastructure Fund (“DCIF” or the “Fund”) is an open-ended commingled core infrastructure fund sponsored by Kohlberg Kravis Roberts & Co. L.P. (“KKR”, the “Firm” or the “Manager”), a global investment firm that manages multiple asset classes, including private equity, energy, infrastructure, real estate, credit, and hedge funds through its strategic partners. Since the establishment of its infrastructure team in 2008, KKR has been actively pursuing core+ and value-add infrastructure investments across the Organization for Economic Co-operation and Development (“OECD”) countries. Across all its prior funds, the Firm has raised approximately \$11.5 billion in total commitments, invested \$7.5 billion across 34 individual transactions, realized \$4.9 billion and produced a combined net internal rate of return (“IRR”) of 14.1% and net total value to paid-in (“TVPI”) of 1.4x in U.S. Dollars (“USD”) terms, as of September 30, 2020. In addition, KKR has deployed approximately \$9 billion of co-investment capital alongside its prior infrastructure funds.

- KKR Global Infrastructure Fund I (“KKR I” or “Fund I”), a \$1.0 billion 2011 vintage fund that completed 13 investments, 11 of which have been fully realized. Fund I has generated a 15.5% net IRR and 1.9x net TVPI in USD terms.
- KKR Global Infrastructure Fund II (“KKR II” or “Fund II”), a \$3.1 billion 2014 vintage fund that is fully invested across 12 portfolio companies with 1 full and 1 partial realization. KKR II has generated a 15.7% net IRR and 1.5x net TVPI in USD terms.
- KKR Global Infrastructure Fund III (“KKR III” or “Fund III”), a \$7.4 billion 2018 vintage fund that is substantially invested across 9 portfolio companies. Performance for Fund III is not yet meaningful, it has generated a 2.3% net IRR and 1.0x net TVPI in USD terms.

Strategy: Unlike its other infrastructure funds focused on core+ and value-add infrastructure investments, DCIF is KKR’s first open-ended infrastructure fund that seeks to pursue core infrastructure investments with a buy-and-hold approach and a particular focus on investments in contracted and / or regulated cash flows from existing projects, assets and businesses located in the OECD countries of North America, Western Europe and developed Asia. DCIF will seek to invest across utilities, power and renewable, telecom, transportation, social infrastructure and energy transition sectors. The Fund will target 8-10% gross annual returns (7-9% net) including a 4-6% annual cash yield.

The Fund is effectively a blind pool at this stage with a plan to deploy \$1-2 billion on annual basis across 2-3 deals to reach 10-15 investments over a period of 5 years. As of January 31, 2021, KKR has closed two transactions as seed investments for DCIF portfolio (the “Seed Assets”) that represent approximately \$2.3 billion in required equity capital, of which at least \$650 million will come from the Fund and approximately \$1.7 billion from co-investors.

The Seed Assets are being acquired at a weighted average discount rate of approximately 8%.. While we do not expect a significant near-term valuation uplift in the first 12-24 months, the Seed Assets are expected to generate a stable cash yield of 4-6% with modest capital appreciation in the long run consistent with the targets of the Fund.

- KKR agreed to acquire Project Neon (“Neon”), a utility-scale operating renewable energy portfolio comprised of 12 wind and solar assets with combined capacity of 1.6 GW diversified across United States and a weighted average remaining term of the power purchase agreements (“PPA”) of approximately 18 years. Neon would require an equity investment of \$640 million of which a minimum \$150 million would come from DCIF while the remaining equity would be contributed by KKR’s co-investors.
- KKR has also agreed to acquire a 40% equity stake in Project Supernova (“Supernova”), a regulated electricity distribution business in Finland with 88,000 km of distribution network, 690,000 customers, and a market share of 20%. Supernova would require an equity investment of \$1.7 billion of which \$500 million is expected to come from DCIF and the balance from KKR’s co-investment partners.

Sponsor:

HQ Location	New York	Parent	Kohlberg Kravis Roberts & Co. L.P.
Ownership	Publicly listed company	Founded	1976
Employees	1,579 total employees	Team	46 investment professionals
AUM	\$233.8 billion		

Performance (as of September 30, 2020):

Fund	Vintage Year	Fund Size	Capital Invested	# of Inv.	Inv. Realized	Realized Value	Unrealized Value	Total Value	Loss Ratio	Ave. Hold Period	Gross TVPI	Net TVPI	Gross IRR	Net IRR
KKR I	2011	\$1,043.8	\$1,042.7	13	11	\$2,096.7	\$116.3	\$2,213.0	3.6%	5.3	2.1x	1.9x	17.5%	15.5%
KKR II	2014	3,098.2	3,098.4	12	2	2,667.6	2,512.5	5,180.1	1.2%	4.6	1.7	1.5	18.3%	15.7%
KKR III	2018	7,357.6	3,345.9	9	0	169.5	3,518.5	3,688.0	0.7%	N/A	1.1	1.0	7.0%	2.3%
Total			\$7,486.9	34	13	\$4,933.8	\$6,147.2	\$11,081.0	1.3%	5.2	1.5x	1.4x	16.8%	14.1%

Note: While capital invested presented in the table is gross of any currency exchange gain/(losses), line of credit balance and interest expense, and Fund expenses, the calculation of gross returns presented (gross TVPI and gross IRRs) reflect all of these items.

Portfolio Characteristics and Terms:

Structure	Open-Ended	Risk Segment	Low to Moderate / Core
Size	N/A	Sponsor Commitment	At least \$500 million
Target Sectors	Utilities, Power and Renewable, Communications, Transportation, Social Infrastructure, and Energy Transition	Target Geography	Global (OECD)
Target Stage	Mainly Brownfield	Diversification Guidelines	<ul style="list-style-type: none"> 15% for a single investment 10% outside OECD countries
Target Return (USD)	8-10% time-weighted gross return (7-9% net) including 4-6% cash yield	Partnership Level Leverage	30% of NAV
Fund Term	Open-ended / Evergreen	Investment Period	N/A
Minimum Commitment	\$10.0 million		

Fees and Timing:

	NAV	Standard ¹²	Perpetual Founding Investors ³	Other Founding Investors ⁴
Standard Management Fee	≥\$10 <\$50 million	0.850%	N/A	N/A
	≥\$50 <\$100 million	0.800%	N/A	N/A
	≥\$100 <\$200 million	0.800%	0.600% in perpetuity	0.600% for 6 years
	≥\$200 <\$500 million	0.725%	0.544% in perpetuity	0.544% for 6 years
	≥\$500 <\$1 billion	0.650%	0.488% in perpetuity	0.488% for 6 years
	≥\$1 billion	0.575%	0.431% in perpetuity	0.431% for 6 years

¹ Charged on net asset value ("NAV") of the drawn down commitment. No management fee is charged on unfunded commitment.

² Townsend has negotiated aggregation rebates for its clients that may be available. Please refer to "Review if Terms & Conditions" section of this report for more details.

³ Requires minimum commitment of \$500 million, however, Townsend has negotiated removal of this condition for its clients that commit to the Fund by March 31, 2021 and subject to aggregate commitments of all Townsend clients reaching minimum of \$500 million. Please refer to "Review if Terms & Conditions" section of this report for more details.

⁴ Requires minimum commitment of \$100 million, however, Townsend has negotiated removal of this condition for its clients that commit to the Fund by March 31, 2021. After first 6 years, the standard management fee shall apply. Please refer to "Review if Terms & Conditions" section of this report for more details.

Incentive Allocation	Standard	Perpetual Founding Investors ⁵	Other Founding Investors ⁶
Incentive Fee	5.0% of operating cash distributions	0.0% in perpetuity	0.0% for 6 years
Hurdle Rate	4.0%	N/A	N/A
Organization Expenses	Up to 0.2% of aggregate commitments	Fee Income	100% offset against management fee for transaction, financing and other fees
Co-invest Rights	Offered to LPs based on their interest	Valuations	Quarterly internal with positive assurance from external firm, at least annually complete external valuations
Subscription	Quarterly	Redemption	Quarterly
Lock-up Period	6 years for founding investors 3 years for non-founding investors ⁷	Distribution Frequency and Reinvestment	Quarterly distributions with option to auto-reinvest proceeds

COMPETITIVE ADVANTAGES

1. Strong Overall Infrastructure Track Record

KKR has significant investing experience across all target sectors and geographies of the Fund. Across all its prior funds, the Firm has raised approximately \$11.5 billion in total commitments, invested \$7.5 billion across 34 individual transactions, realized \$4.9 billion and produced a combined net IRR of 14.1% and net TVPI of 1.4x in USD terms, as of September 30, 2020. In addition, KKR has deployed approximately \$9 billion of co-investment capital alongside its prior infrastructure funds. However, it should be noted that most of KKR's infrastructure track record relates to its flagship core+ and value-add strategy. Please refer to "Limited Track Record in Core Infrastructure" under "Potential Issues and Concerns" section of this report for more details.

- KKR Global Infrastructure Fund I ("KKR I" or "Fund I"), a \$1.0 billion 2011 vintage fund that completed 13 investments, 11 of which have been fully realized. Fund I has generated a 15.5% net IRR and 1.9x net TVPI in USD terms.
- KKR Global Infrastructure Fund II ("KKR II" or "Fund II"), a \$3.1 billion 2014 vintage fund that is fully invested across 12 portfolio companies with 1 full and 1 partial realization. KKR II has generated a 15.7% net IRR and 1.5x net TVPI in USD terms.
- KKR Global Infrastructure Fund III ("KKR III" or "Fund III"), a \$7.4 billion 2018 vintage fund that is substantially invested across 9 portfolio companies. Performance for Fund III is not yet meaningful, it has generated a 2.3% net IRR and 1.0x net TVPI in USD terms.

2. Established Team and Access to Broader KKR Platform

Led by Raj Agrawal (global head of infrastructure), Brandon Freiman (head of North American infrastructure), Vincent Policard and Tara Davies (co-heads of European infrastructure), and David Luboff (head of Asian infrastructure), KKR infrastructure team is comprised of 46 dedicated investment professionals (the "Investment Team") across various offices in North America, Europe and Asia. Senior members of the Investment Team have average industry experience of over 20 years. While DCIF will have full access to all members of the Investment Team, the Fund initially has at least 8 members from the Investment Team who will focus on DCIF strategy and portfolio management. DCIF's team will be led by Tara

⁵ Requires minimum commitment of \$500 million, however, Townsend has negotiated removal of this condition for its clients that commit to the Fund by March 31, 2021 and subject to aggregate commitments of all Townsend clients reaching minimum of \$500 million. Please refer to "Review if Terms & Conditions" section of this report for more details.

⁶ Requires minimum commitment of \$100 million, however, Townsend has negotiated removal of this condition for its clients that commit to the Fund by March 31, 2021. After first 6 years, the standard incentive fee shall apply. Please refer to "Review if Terms & Conditions" section of this report for more details.

⁷ 6 years lock-up for founding investors (3-years hard lock-up and 3-years soft lock-up) and 3 years soft lock-up for other investors

Davies as the global head of core infrastructure and Oleg Shamovsky as the head of European core infrastructure. We believe both of these members have significant experience across all target sectors including regulated utilities, power and renewables, and telecom. KKR is in the process of hiring a dedicated North American head of core infrastructure who will further strengthen DCIF's team.

In addition, the Investment Team has access to KKR's broader platform resources including KKR Capstone ("Capstone"), Global Macro and Asset Allocation ("GMAA"), KKR Capital Markets ("KCM"), KKR Global Institute ("KGI") and KKR Global Public Affairs ("GPA").

- KKR Capstone: Led by Bill Cornog, Capstone is a team of over 75 experienced management and operational professionals who provide complementary expertise to the Investment Team on deal sourcing as well as post-acquisition business planning, growth and / or operational improvements.
- Global Macro and Asset Allocation: Led by Henry McVey, GMAA is a specialist team that provides a global macro perspective on countries, individual industries and companies and facilitates due diligence work and investment decision-making of the Investment Team.
- KKR Capital Markets: Led by Adam Smith, KCM is a team of over 60 capital market professionals who provide additional expertise to the Investment Team on deal financing, portfolio company capital structures, and co-investment capital.
- KKR Global Institute: Chaired by former Director of the U.S. Central Intelligence Agency, General (Ret.) David Petraeus, KGI provides analysis and insights to the Investment Team about geopolitical, technological, demographic and macroeconomic developments and trends.
- Global Public Affairs: Led by Ken Mehlman, GPA is a 15-person team that provides additional resources to the Investment Team on matters relates to government and regulatory affairs, labor unions, and trade associations.

3. Accessing Infrastructure at Competitive Fees

Base management fees start at 0.85% of NAV for balances under \$50 million, declining to 0.65% for balances over \$500 million. This compares favorably to other open-end and closed-end funds that average up to 1.0-1.5%. The Fund does not have a standard performance fee, rather seeks to better align interests with investors by charging 5% yield-based incentive on actual cash distributions subject to a 4% fund level hurdle rate of return. This compares favorably to other open-end funds that can earn performance fees on unrealized gains based on appraised values and not actual cash flows. The total cost to investors at the projected 9% investment level gross return is estimated at approximately 110-130 basis points. We feel this is an acceptable level of fees for the strategy and target gross returns.

The Fund offers a 25% rebate on management fee and zero performance fee ("Founding Investors Rebates") for the first 6 years or in perpetuity for investors with at least \$500 million commitment or those with at least \$100 million commitment, respectively, who commit to the Fund by March 31, 2021. This can materially lower the gross to net spread for founding investors.

In addition, Townsend has negotiated a special agreement with KKR on founding investors right and aggregation rebates for its clients that may be available subject to certain conditions. We believe our agreement with KKR can reduce gross to net spread for our clients to the range of 70-80 basis points. For more details, please refer to "Review of Terms & Conditions" section of this report.

4. Benefits of the Open-End Commingled Fund Structure

We believe the open-end structure is attractive for investing in buy-and-hold yielding core infrastructure. Although concentrated at this stage, the Fund provides immediate exposure to two high quality seed assets expected to produce 4-5% current income from the first year of full operations that mitigates J-Curve risk. Assets are managed with a longer-term investment horizon consistent with the objectives of institutional investors. The long-term approach can also be beneficial to transaction sourcing as certain sellers need to ensure the long-term operational capability of these assets. Investors benefit from liquidity offered on a quarterly basis, although subject to market conditions and the 3 to 6-year Fund lock-up.

5. Well-defined Investment Restrictions and Diversification Guidelines

The Fund has well defined investment restrictions for its maximum exposure to single investment (15%) and outside OECD countries (10%). The strategy does not allow any exposure to oil and gas exploration, mining, nuclear and coal energy generation assets. The Investment Team has also provided clear guidance on long-term sector exposures which indicate less focus on investments that involve volume and commodity price risk. Over the long-term, we expect the Fund to be well diversified across sectors with approximately 70% or more allocated to utilities, power and renewables, telecom and digital infrastructure and less than 15% to transportation and energy transition, each.

POTENTIAL ISSUES AND CONCERNS

Although we believe DCIF offers a compelling investment opportunity, below we have listed concerns that should be considered prior to the investment decision. Following each is a discussion of mitigating factors that help reduce our level of concern.

1. Limited Track Record in Core Infrastructure

While KKR has established a strong track record in infrastructure investing, most of it relates to its flagship strategy focused on core plus and value-add infrastructure rather than core infrastructure. There is no formal commingled fund track record for core infrastructure.

Discussion: While KKR lacks a formal track record in core infrastructure, many aspects of its core plus and value-add infrastructure track record are still relevant and supportive, i.e. capital raising, proprietary deal sourcing, deployment, and strong cash yield component in the total returns generated. Across its three prior infrastructure funds, the Firm has raised approximately \$11.5 billion in total commitments, invested \$6.9 billion across 34 individual transactions and realized \$4.9 billion as of September 30, 2020. More than 2/3rd of this capital was invested in deals that were sourced through proprietary relationships or in limited processes. KKR has also raised and deployed approximately \$9.2 billion of co-investment capital alongside many of its investments in Fund I through Fund III.

While prior funds have produced a strong combined net IRR of 14.1% and net TVPI of 1.4x in USD terms, it is important to note these funds have also generated a strong and stable cash yield (average combined annual cash yield of 5.3% since 2013) broadly consistent with or higher than DCIF's target cash yield of 4-6%.

Net Annualized Yield	Fund I	Fund II	Fund III
	2011 Vintage	2014 Vintage	2018 Vintage
Net 2013 Annualized Yield	4.6%	N/A	N/A
Net 2014 Annualized Yield	5.2%	0.0%	N/A
Net 2015 Annualized Yield	5.4%	10.2%	N/A
Net 2016 Annualized Yield	4.9%	4.9%	N/A
Net 2017 Annualized Yield	6.8%	2.7%	N/A
Net 2018 Annualized Yield	5.9%	3.6%	0.0%
Net 2019 Annualized Yield	5.4%	4.4%	3.5%
Net Q3 2020 Annualized Yield	6.3%	3.3%	3.3%

In addition, KKR has made two large core infrastructure investments in the past that represented approximately \$2 billion of capital in separate managed accounts.

- In 2010, KKR acquired 23.4% equity interest in Colonial Pipeline, a large interstate refined products pipeline in the United States, from Chevron for \$1.1 billion.
- In 2019, KKR acquired 41.5% equity interest in Coastal GasLink, an under construction natural gas transportation network in Canada, from TransCanada.

2. Blind Pool Risk

The Infrastructure team plans to deploy \$1-2 billion of capital across 2-3 deals on annual basis to reach a portfolio of 10-15 investments over a period of 5 years. While the Fund has already closed two transactions, considerable amount of blind pool risk still exists at this stage. There is a risk that the Fund is unable to raise and / or deploy enough capital to develop a well-diversified portfolio.

Discussion: KKR has already closed two transactions that represent approximately \$2.3 billion in required equity capital, of which at least \$650 million would come from the Fund and approximately \$1.7 billion would come from KKR's co-investors and partners. The Seed Assets are expected to generate a 4-6% in cash yield from the first year of full operations.

- KKR agreed to acquire Neon, a utility-scale operating renewable energy portfolio comprised of 12 wind and solar assets with combined capacity of 1.6 GW diversified across United States and a weighted average remaining term of the power purchase agreement ("PPA") of approximately 18 years. Neon would require an equity investment of \$640 million of which at least \$150 million would come from DCIF while remaining equity from co-investors.
- KKR has also agreed to acquire 40% equity stake in Supernova, a regulated electricity distribution business in Finland with 88,000 km of distribution network, 690,000 customers, and a market share of 20%. Supernova would require an equity investment of \$1.7 billion of which at least \$500 million would come from DCIF and balance from co-investors.

In addition, KKR has developed a strong pipeline of investment opportunities across its target sectors and geographies with some of the them being at advanced stage of due diligence and / or negotiation. While there is no certainty of closing these deals at this stage, we understand the Investment Team is quite advanced in their due diligence and / or negotiation with the respective sellers. These likely investments include the following;

- Project Aqueduct ("Aqueduct"), a global portfolio of 30 public private partnership ("PPP") and municipal infrastructure assets including roads, railways, hospitals, and schools with 20-25 years availability-based concession with governments. Aqueduct may require an equity investment of \$1.5-2 billion, of which \$1 billion would come from DCIF and the balance from KKR co-investment partners.
- Project Neptune ("Neptune"), a large portfolio of utility-scale solar and wind renewable energy assets in the United States. Aqueduct would require an equity investment of \$2.6 billion, of which \$1 billion would come from DCIF and balance from KKR co-investment partners.
- Project Canyon ("Canyon"), a portfolio of 29 district heating concessions in France with long term heating contracts backed by public entities.
- Project Ajax ("Ajax"), a portfolio of over 2,000 operational telecom towers in Australia with commitment to build another 1,000 towers over the next 10 years.

For additional details on investment pipeline, please refer to Exhibit I of this report.

3. Competitive Environment for New Transactions

Demand for and capital flows into infrastructure have consistently increased and resulted in return compression for core infrastructure assets that exhibit stable and predictable cash flow profile and diversification benefits. This trend is likely to continue or even accelerate coming out of the COVID-19 pandemic as the asset class held on to delivering its objectives in this period of crisis and as investors continue to seek competitive long-term yields in a low interest rate environment. We are specifically concerned with core assets that require limited operational oversight and can allow lower cost of capital investors such as large pension plans and sovereign wealth funds along with large equity funds to quickly and efficiently deploy capital. The Fund will be primarily active in this competitive segment of the market and we expect a higher percentage of opportunities to come through broadly marketed auction processes.

Discussion: KKR has actively been developing a pipeline of proprietary and limited process opportunities most notably in telecom and renewable space with a goal to limit competition where possible. More than 2/3rds of the capital of KKR's prior infrastructure funds was invested in deals that were sourced through proprietary relationships or in limited processes. This trend is also represented by the Seed Assets for DCIF. While Neon was sourced via KKR's existing relationship with

NextEra Energy, Project Supernova was sourced on bilateral basis by pre-empting a potential auction process. In auction situations KKR has generally focused on transactions where they have a competitive advantage and / or where price is not the only motivation for seller. Overall, we believe KKR is well positioned to continue to deploy capital at appropriate rates of return. However, investors should be prepared for slower deployment and lower total net returns (7.5-8%) for core infrastructure.

4. Investment Team Turnover

KKR's infrastructure team has experienced some turnover over last 5 years including departures of 2 partners, 1 managing director, and 3 directors, raising concerns around stability of the Investment Team. Following is a list of all senior level departures.

Name	Title	Function	Office	Joining	Departed	Years with KKR	Investment Committee Member
Cedric Lucas	Managing Director	Infrastructure Team	Menlo Park	Feb-14	Mar-19	5	No
Tim Osnabrug	Director	Infrastructure Team	New York	Jul-07	Mar-19	11	No
Ram Kumar	Director	Infrastructure Team	London	Apr-09	Jul-18	9	No
Jesus Olmos	Partner	Global Co-Head of Infrastructure	London	Jan-09	May-18	9	Yes
Guido Mitrani	Director	Infrastructure Team	Menlo Park	Jul-10	Mar-18	7	No
Marc Lipschultz	Partner	Global Head of Energy and Infrastructure	New York	Jul-95	Feb-16	20	Yes

Discussion: Of all 6 senior departures, Jesus Olmos, partner and global co-head of infrastructure in London office, was most critical. However, he had left the Firm in 2018 before Fund III was launched. Since then, the Investment Team has grown from 27 members to 46 members. Over the past 5 years, KKR has added 15+ senior members to the Investment Team including 5 partners, 6 managing directors and 4 directors. Part of Fund II and all of Fund III capital was deployed by the existing team who have also been managing remaining Fund I investments. We believe KKR has appropriate team strength and capabilities to continue to source, execute and manage transactions.

5. Exclusivity and Allocation Concerns

The Fund has exclusivity over low risk core infrastructure transactions with the KKR's flagship infrastructure funds maintaining exclusivity over higher risk value-add investments. However, classifying infrastructure transactions by risk and determining their appropriateness for each fund can be quite subjective. KKR has not documented specific criteria that clearly defines which fund an investment would be allocated to. Further, allocation in times of distress can create even more ambiguity around investment suitability when low risk transactions could trade at higher levels of return and could potentially fit either strategy's targets. The risk is that the Fund could lose out on higher returning, lower risk transactions due to market conditions or sourcing advantages of KKR.

Discussion: DCIF will generally have priority over low risk, regulated fully and / or contracted assets with expected gross returns below 11.0% p.a. with immediate access to cash yield and a target holding period of at least 7 years. The flagship infrastructure funds of KKR typically target mid-teen or higher gross returns with the lowest return underwritten at 13.5% since inception. We understand there is at least 300-500 basis points difference between the target returns of KKR's flagship infrastructure funds (mid-teen target gross returns) and that of DCIF (8-10% target gross returns). In addition, KKR will follow an allocation approach focused on risk rather than return. Transactions in regulated utilities and contracted assets that meet subjective criteria including stable, low risk, high margin, limited operational and execution complexity, cash yielding, limited growth etc., will be allocated to DCIF regardless of the expected returns. We believe each of the two Seed Assets clearly fit the core risk profile, and all recent KKR III transactions are consistent with flagship value-add strategy. We will seek advisory committee representation for our clients and have requested KKR provide a deal log of transactions on an ongoing basis that were not allocated to DCIF and the rationale to provide investors with a tool to monitor investment activity to ensure best practices regarding deal allocation.

6. Acquiring Minority Positions

All prior infrastructure funds of KKR have acquired several minority positions in portfolio companies raising concerns around the Investment Team's ability to influence strategic decision making and implement value creation initiatives. While acquired ownerships by KKR funds have ranged between 1% and 100%, average ownership across all 34 investments stands at 44% and average ownership among 22 minority investments (out of 34) stands at 22%.

Discussion: In addition to funds' capital, KKR has historically utilized various sources of equity capital to fund its investments including separately managed accounts ("SMA"), co-investors, and other transaction partners or co-underwriters. Capital from SMAs is managed by KKR on a discretionary basis, capital from co-investors is managed by KKR-controlled entity that acts as the general partner only authorized to act in lockstep with the affiliated KKR fund. This means SMA and co-investors do not necessarily result in any material dilution and that KKR and / or its affiliated entities or partnerships retain significant control and governance rights on all transactions. Lastly, instances where KKR will invite certain large investors to participate as co-sponsors or co-underwriters in a transaction, such partners generally represent a minority compared to total equity of KKR's funds, SMAs and co-investors, thus providing limited governance rights and board representation. Incorporating this additionally sourced capital that amounts to approximately \$9 billion invested alongside KKR funds, average ownership across all 34 investments increases to 60% and average ownership among 16 minority investments (out of 34) increases to 37%.

7. Sensitivity to large winner in Fund I and Fund II

Removing asset that produced largest dollar gain, largest net IRR and largest net TVPI impacted the performance of Fund I and Fund II. The following chart provides sensitivity of returns to largest winner based on net IRR and net TVPI.

Fund	Winner Removed	Base Net IRR	New Net IRR	Quartile	New Quartile	Base Net TVPI	New Net TVPI	Quartile	New Quartile
Largest Gain Removed									
KKR I	ELL Group	15.5%	→ 11.4%	2nd	2nd	1.9x	→ 1.5x	1st	2nd
KKR II	Deutsche Glasfaser	15.7%	→ 8.2%	2nd	2nd	1.5	→ 1.2	1st	3rd
KKR III	ADNOC Oil Pipelines	2.3%	N/A	3rd	N/A	1.0	1.0	3rd	3rd
Largest IRR Removed									
KKR I	Middletown Water & Wastewater	15.5%	15.1%	2nd	2nd	1.9x	1.9x	1st	1st
KKR II	Deutsche Glasfaser	15.7%	→ 8.2%	2nd	2nd	1.5	→ 1.2	1st	3rd
KKR III	ADNOC Oil Pipelines	2.3%	N/A	3rd	N/A	1.0	1.0	3rd	3rd
Largest Multiple of Cost Removed									
KKR I	ELL Group	15.5%	→ 11.4%	2nd	2nd	1.9x	→ 1.5x	1st	2nd
KKR II	Deutsche Glasfaser	15.7%	→ 8.2%	2nd	2nd	1.5	→ 1.2	1st	3rd
KKR III	ADNOC Oil Pipelines	2.3%	N/A	3rd	N/A	1.0	1.0	3rd	3rd

The impact on Fund I performance was relatively less pronounced. Removing ELL Group from Fund I track record reduces the net IRR from 15.5% to 11.4%, however still within the target returns range. Also, KKR has signed an agreement to sell T-Solar, one of its last two remaining assets, at a price materially higher than reported as of Sep 30, 2020. This was an underperforming asset currently marked at below cost. KKR anticipates the sale would generate gross TVPI of 1.2 to 1.3x.

The impact on Fund II was more pronounced. Removing Deutsche Glasfaser from Fund II track record reduces the net IRR from 15.7% to 8.2%. However, this is still largely an unrealized portfolio with Deutsche Glasfaser being the largest investment in Fund II and the only full exit so far. We understand there are number of investments in this portfolio that the Investment Team is still working on implementing value creation initiatives, particularly in Genesis, Q-Park, Hivory, and Calisen. While sensitivity of returns to Deutsche Glasfaser may remain, the overall impact should be lower once these relatively underperforming assets increase in value.

8. Redemption Terms

The Fund has instituted a six-year lock-up for the Founding Investors and a three-year lock-up for all other investors commencing on the date of the first capital call. Our preference for open-end funds is not to have a lock-up. Additionally,

the Fund has a sequential redemption mechanism which could lead to a “run on the bank” in times of declining values and poor performance and force investors to act swiftly to ensure a priority position in the queue. Certain investors may not be able to move as quickly as needed and could be unfairly disadvantaged.

Discussion: The 6 -years lock-up for founding investors is comprised of 3-years hard lock-up and 3-years soft lock-up. Redemptions can be requested during soft lock-up period, however a 5% discount to NAV would apply to the benefits of other existing investors in the Fund. Non founding investors will only have a 3-years soft lock-up. Even though it is not our preference, we understand the rationale behind lock-up provision early in the Fund life while it is starting to acquire assets and grow. This has also been a standard market term for other newly launched open-ended funds.

Townsend is in the process of negotiating changes to the redemption mechanism of the Fund to be more investor friendly. As a result, KKR has agreed to add the following to the mechanism;

- If any time after the 6th anniversary of the initial closing (i.e., December 31, 2026), redemption requests are more than 25% of aggregate redeemable units for 18 consecutive months then the Fund can't make new investments, notice will be given to all investors and all redemption requests will rank equally. However, please note these changes require LP consent and KKR has started reaching out to their LPs to obtain approval.

STRATEGY

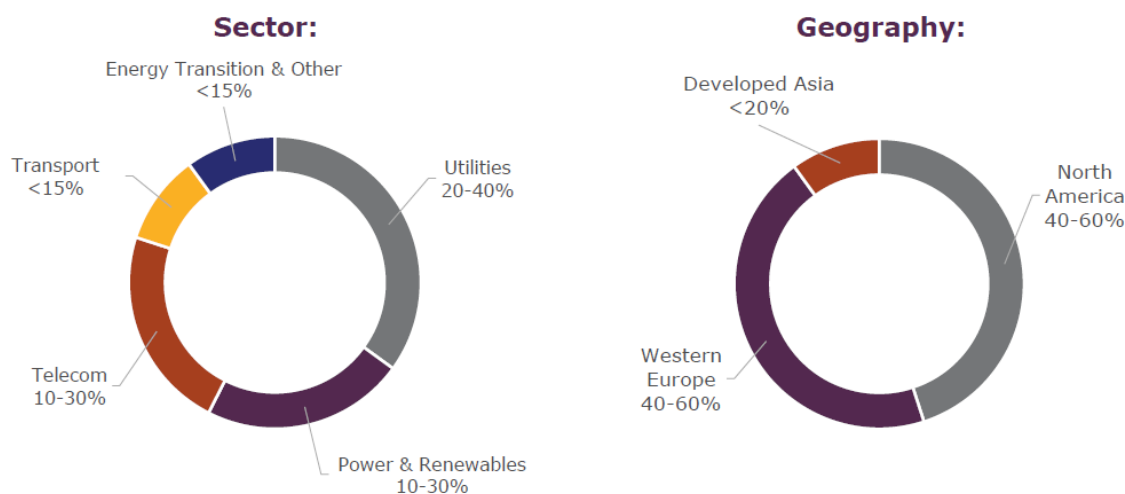
OVERVIEW

DCIF is KKR's first open-ended infrastructure fund that seeks to pursue core infrastructure investments with a buy-and-hold approach and a particular focus on investments in contracted and / or regulated cash flows from existing projects, assets and businesses located in the OECD countries in North America, Western Europe and Asia. DCIF will seek to invest in market leading companies and high-quality assets across utilities, including water, wastewater, and electricity and gas distribution; communication and digital infrastructure; power and renewable; contracted transportation; contracted energy transition infrastructure and availability-based social infrastructure. The Fund will target an 8-10% gross annual return (7-9% net) including a 4-6% in annual cash yield.

KKR utilizes a risk-based, rather than sector-based, approach to define and assess potential opportunities that are appropriate for the Fund's strategy. The Fund will primarily focus on regulated and contracted investments that have most of the following characteristics. DCIF will not focus on investments with material volume and / or commodity price risks.

- Irreplaceable assets that are very critical to the functioning of economies and / or societies
- Mature, regulated, contracted, cash generative assets with long-term predictable cash flows over economic cycles
- Investment grade capital structure and counterparty risk
- Simple transactions with low execution risk
- Significant resilience in down market scenarios

While the strategy allows DCIF to pursue development and greenfield opportunities, the focus will remain primarily on acquiring brownfield operating and cash generative assets. The Investment Team plans to deploy \$1-2 billion on annual basis across 2-3 deals to reach 10-15 investments over a period of 5 years. The following charts provide long-term sector and geographic diversification targets, assuming \$5 billion in Fund commitments have been funded.



LEVERAGE

Fund Level Leverage

The Fund may borrow capital, typically through a short-term line of credit ("LOC") for any purpose relating to the activities of the Fund, including, without limitation, as deemed appropriate by the General Partner in seeking to achieve the Fund's investment strategy, for Fund management fees and expenses and fulfilling redemption requests. Such aggregate borrowing will not exceed 30% of the Fund NAV. KKR's intention is to utilize LOC to bridge short-term capital needs primarily for new investments. Since KKR will be paid management fee on the Fund's NAV, it does not earn fees if assets are held on LOC. Further, DCIF does not have a traditional carried interest structure, therefore KKR does not also benefit from any return uplift from

extending the debt holding period. Lastly, while there is no formal requirement, the LOC documents are expected to typically limit the total borrowing to unfunded commitments of the Fund (based on the facility agreement for Neon and Supervona).

Portfolio Level Leverage

While there is no hard limit on use of leverage at the individual investment level, the Manager will generally target investment grade metrics for individual assets and a leverage level in the range of 40% to 70% of the Fund's gross asset value. Average portfolio leverage in Fund I, Fund II and Fund III stands at 51%, 39%, and 40%, respectively. However, given lower risk profile of its target core infrastructure assets, weighted average leverage in DCIF portfolio may be slightly higher than the average across flagship funds.

HEDGING

KKR will manage currency risk by actively hedging the value and cash flows of all of its non-USD investments back to USD to the extent commercially feasible.

INVESTMENT GUIDELINES

The Investment Limitations for DCIF are as follows, effective as of the date on which \$5 billion in Fund commitments have been funded;

- The Fund will not invest more than 15% of the its NAV in a single portfolio company;
- The Fund will not invest more than 10% of the NAV outside of OECD member countries;
- The Fund will not invest in transactions involving hostile take-overs;
- The Fund will not invest more than 15% of the NAV in publicly traded equity securities purchased in open market;
- The Fund will not invest in blind pool investment funds in which the Manager does not have discretion over the fund or its individual assets. Such investments exclude joint venture or investments in intermediate entity;
- The Fund will not invest in any portfolio company engaging primarily in, or in properties acquired solely for, oil and gas exploration, mining, or nuclear or coal-fired energy generation.

PIPELINE

The Fund has already identified and closed two transactions for DCIF namely Neon and Supernova. The Seed Assets represent approximately \$2.3 billion in required equity capital, of which \$650 million would come from the Fund and approximately \$1.7 billion would come from co-investors and KKR partners.

- Neon is a utility-scale operating renewable energy portfolio comprised of 12 wind and solar assets with combined capacity of 1.6 GW diversified across United States and a weighted average remaining term of the power purchase agreement ("PPA") of approximately 18 years.
- Supernova is a regulated electricity distribution business in Finland with 88,000 km of distribution network, 690,000 customers, and a market share of 20%.

A short list of other active pipeline opportunities for DCIF is attached as **Exhibit I**.

SPONSOR

OVERVIEW

Established in 1976 and headquartered in New York, KKR is a global investment firm with over \$234 billion in assets under management as of September 30, 2020 across alternative asset classes, including private equity, energy, infrastructure, real estate, credit, and through its strategic partners, hedge funds. The Firm has offices across 4 continents, 16 countries and 20 cities and approximately 1,579 employees.

KKR is a publicly traded company listed on New York Stock Exchange (NYSE: KKR). Based on information available as of Sep 30, 2020, KKR employees and former employees beneficially own approximately 33% of KKR through the ownership or control of units of KKR Holdings L.P.

In 2008, KKR established its dedicated infrastructure team. Since then, KKR has been actively pursuing core+ and value-add infrastructure investments in OECD countries. Across all its prior funds, the Firm has raised approximately \$11.5 billion in total commitments, invested \$6.9 billion across 34 individual transactions, realized \$4.9 billion. In addition, KKR has deployed approximately \$9.2 billion of co-investment capital alongside its prior infrastructure funds. In 2018, KKR also established an Asia Pacific infrastructure team to pursue infrastructure investments in the Asia Pacific region and launched KKR Asia Infrastructure Investors (“KKR Asia”), its first dedicated Asia Pacific infrastructure fund, in 2019.

KKR’s infrastructure investment team (“Investment Team”) is composed of 46 members including 6 partners (3 in the U.S., 2 in Europe, and 1 in Asia), 6 managing directors (2 in each location), 11 directors (3 in the U.S. and 4 in Europe and Asia), 5 principals, 16 associates and 2 analysts. The Investment Team is led by Raj Agrawal and is organized by geography with presence across New York, Menlo Park, Houston, London, Singapore, Seoul, Hong Kong, Tokyo, and Mumbai. DCIF will be led by Tara Davies, co-head of European infrastructure and head of core infrastructure. In addition, the Investment Team has access to KKR’s broader platform resources including KKR Capstone, Global Macro and Asset Allocation, KKR Capital Markets, KKR Global Institute and KKR Global Public Affairs. Following is the list of key senior members of the infrastructure team;

Name	Title	Location	Years in Infrastructure Experience	Years with KKR	Member of Investment Committee?
Johannes Huth	Head of KKR Europe	London	36	21	Yes
Joe Bae	Co-President and Co-CEO	New York	26	24	Yes
Raj Agrawal	Partner, Global Head of Infrastructure	Menlo Park	20	14	Yes
Tara Davies	Partner, Co-Head of European Infrastructure and Global Head of Core Infrastructure	London	21	4	Yes
Brandon Freiman	Partner, Head of North American Infrastructure	Menlo Park	17	14	Yes
David Luboff	Partner, Head of Asia-Pacific Infrastructure	Singapore	20	2	Yes
Vincent Policard	Partner, Co-Head of European Infrastructure	London	23	9	Yes
James Cunningham	Partner, North American Infrastructure	Houston	17	3	Yes
Alberto Signori	Managing Director	London	23	2	No
Waldemar Szlezak	Managing Director	New York	18	1	No
Michael De Guzman	Managing Director	Hong Kong	24	1	No
Hardik Shah	Managing Director	Mumbai	13	2	No
Neil Brown	Managing Director	New York	18	6	No
Florian Christ	Managing Director	Houston	13	<1	No
Oleg Shamovsky	Director, Head of Europe - Core Infrastructure	London	13	8	No
Andrew Jennings	Director, Head of Asia - Core Infrastructure	Sydney	14	1	No
Federica Gironi	Director	London	14	7	No
Anogie Joseph Erameh	Principal	London	8	6	No

TURNOVER

KKR’s infrastructure team has experienced some turnover including departure of 2 partners, 1 managing director, and 3 directors, raising concerns around stability in the Investment Team. Following is a list of all senior level departures over the past 5 years.

Name	Title	Function	Office	Joining	Departed	Years with KKR	Investment Committee Member
Cedric Lucas	Managing Director	Infrastructure Team	Menlo Park	Feb-14	Mar-19	5	No
Tim Osnabrug	Director	Infrastructure Team	New York	Jul-07	Mar-19	11	No
Ram Kumar	Director	Infrastructure Team	London	Apr-09	Jul-18	9	No
Jesus Olmos	Partner	Global Co-Head of Infrastructure	London	Jan-09	May-18	9	Yes
Guido Mitrani	Director	Infrastructure Team	Menlo Park	Jul-10	Mar-18	7	No
Marc Lipschultz	Partner	Global Head of Energy and Infrastructure	New York	Jul-95	Feb-16	20	Yes

Over the past 5 years, KKR has added 15+ senior members to the Investment Team including 5 partners, 6 managing directors and 4 directors. Part of Fund II and all of Fund III capital was deployed by the existing team who have also been managing remaining Fund I investments. We believe KKR has appropriate team strength and capabilities to continue to source, execute and manage transactions.

COMPENSATION AND RETENTION

KKR has a firm-wide compensation and incentive structure based on a global profit and loss statement. Typical compensation of senior executives is comprised of base salary and eligibility for discretionary incentives including cash bonus, equity compensation, and participation in KKR fund investments with the latter two being subject to a vesting period of several years. While Investment Team is eligible to share in the global carry pool described above, their allocation is driven by their contribution and performance.

CLIENT BASE

KKR's client base in prior infrastructure funds is well diversified geographically and by type among public pension plans, sovereign wealth funds, insurance companies and other institutional investors. While it is early for DCIF, KKR has already raised close to \$1 billion in aggregate commitments from a similar diverse group of investors.

COMPLIANCE / LITIGATION DISCLOSURES

As of September 30, 2020, KKR represented that it is not currently involved in litigation or regulatory matters that it considers material to firm operations.

OPERATIONAL DUE DILIGENCE

SUMMARY

A2 – Pass⁸

KKR is a large global investment manager with institutional levels of infrastructure, operations, controls and oversight. As a publicly traded company, KKR generally implements an operating environment that aligns with best practice including a robust committee structure, adequate IT application investments, and partnerships with global leading service providers (PwC, ACA, E&Y, Deloitte, and ECI) where applicable. The Firm may benefit from engaging an independent provider to conduct an external review of the Firm's internal controls, as well as an independent Fund Board of Directors.

⁸ Aon completed its review process and the firm's operations within the areas Aon reviewed largely align with a well-controlled operating environment, with limited exceptions. Managers may be rated within this category due to resource limitations or asset class limitations or where isolated areas do not align with best practice.

INVESTMENT PROCESS

OVERVIEW

Screening / Sourcing

The investment process of KKR begins with sector analysis. The Investment Team will engage in a high-level research to first determine attractive sectors in current market environment and will then perform initial screening and due diligence to identify attractive companies within the relevant sectors. The Investment Team's sector evaluation will focus on:

- a macro thesis;
- asset and management quality;
- relative valuation;
- downside protection
- expected returns.

Once attractive targets have been identified, the Investment Team will begin exploring existing relationships and / or building new relationships with the management teams of relevant companies for meetings, discussions and evaluations of their businesses. Upon preliminary evaluation and positive outcome of the initial discussion with the Fund's Investment Committee (the "IC"), the Investment Team proceeds to Phase I diligence.

Phase I Diligence

The Investment Team will identify and quantify key value drivers, risks and opportunities associated with the target company and may retain industry consultants with specific expertise and/or regulatory, legal, tax and accounting advisors to identify other potential risks. The Investment Team also engages broader KKR platform teams including Global Public Affairs and ESG teams to identify initial political and other stakeholder issues and all aspects of ESG. KCM may be involved at this stage to review capital structure / financing considerations. Lastly, the Investment Team also engages KKR Capstone to provide it with high-level operational analysis and / or perspectives. A consolidated research incorporating all of the above would be discussed with the IC once again.

Phase II Diligence

With a green light from the IC to move forward, the Investment Team will continue the research and proceed with more detailed business, regulatory, legal, tax and financial due diligence as well as assessment of the target's management team and its business plan. The Investment Team will also continue to work with the GPA, to create a stakeholder relations plan, with KKR Capstone, to assess key operational issues and to also create a post-acquisition 100-days plan, and with KCM to determine appropriate capital structure and structure required financing. Findings of the phase II diligence will be presented to the IC.

Confirmatory Diligence and Contract Negotiation.

Upon positive feedback from the IC that the transaction presents a compelling investment opportunity, the Investment Team will run reference calls and will move forward with negotiating, legal documentation and financing arrangements. Findings will be presented to seek further feedback and final approval from the IC.

Portfolio Monitoring

Once an investment has been closed, portfolio monitoring process seeks to monitor and maximize value. KKR has established Infrastructure Portfolio Management Committee (the "IPMC") responsible for bringing discipline and oversight on variety of portfolio management decisions as well as deployment of investment professionals where needed. The operational, ESG, and stakeholders plan created during the diligence phases that set out steps necessary to achieve immediate operational objectives, will be presented to the IPMC. After the first 100 days, the Investment Team will return to the IPMC and present

its progress against the plan and to outline its goals for the rest of the year. The Investment Team meets IPMC on periodic basis which may also involve presentation by the executives of the portfolio companies, typically CEO.

INVESTMENT COMMITTEE

Investments are presented to the IC at each phase of the due diligence and investment decisions are based on consensus among the IC members. The IC is composed of the following members;

- Joe Bae (Co-President and Co-Chief Operating Officer),
- Johannes Huth (Head of KKR Europe),
- Raj Agrawal (Global Head of Infrastructure),
- Tara Davies (Co-Head of European Infrastructure and Global Head of Core Infrastructure),
- Brandon Freiman (Head of North American Infrastructure),
- David Luboff (Head of Asia-Pacific Infrastructure),
- Vincent Policard (Co-Head of European Infrastructure) and
- James Cunningham (Partner, North American Infrastructure)

INFRASTRUCTURE PORTFOLIO MANAGEMENT COMMITTEE

The IPMC is composed of the following members;

- Joe Bae (Co-President and Co-Chief Operating Officer),
- Johannes Huth (Head of KKR Europe),
- Raj Agrawal (Global Head of Infrastructure),
- Tara Davies (Co-Head of European Infrastructure and Global Head of Core Infrastructure),
- Brandon Freiman (Head of North American Infrastructure),
- Vincent Policard (Co-Head of European Infrastructure) and
- James Cunningham (Partner, North American Infrastructure)
- Alberto Signori (Managing Director)
- Waldemar Szlezak (Managing Director),
- Ryan Miller (Director)
- Oleg Shamovsky (Director)
- William Cornog (Partner, KKR Capstone)
- Juan de Ochoa (Managing Director, KKR Capstone)
- Florian Christ (Managing Director, KKR Capstone)
- Henry McVey (Partner & Head of Global Macro & Asset Allocation)
- Phil Kim (Managing Director & Head of Derivatives & Liability Management)
- Aidan Corcoran (Director, Global Macro and Asset Allocation)
- Nishant Kachawa (Principal, Global Macro and Asset Allocation)

LIMITED PARTNER ADVISORY COMMITTEE

The Manager will establish an advisory committee for the Fund (the “Advisory Committee” or “LPAC”) composed of up to 6 representatives of the limited partners (all must be unaffiliated with the KKR) during the founding investor fundraising period, and up to three additional representatives thereafter.

LPAC will provide advice as requested by the Manager in connection with Fund investments, potential conflicts of interest, and other Fund matters.

While Townsend is in the process of negotiating a full voting representation on the LPAC, KKR has granted Townsend an observer status at this stage.

VALUATIONS

Valuation policy is consistent with market standards for open-end commingled funds.

- In addition to the quarterly valuations performed internally, KKR will seek positive assurance from independent third-party firm (currently Duff & Phelps) on quarterly valuations of each investment.
- Each investment will be appraised at least annually by an independent third-party firm (currently Duff & Phelps).
- The NAV will be calculated quarterly.
- Methodology to rely primarily on discounted cash flows and market comparables.
- Each investment is audited on an annual basis by third party external auditor (Deloitte & Touche LLP).

ENVIRONMENTAL, SOCIAL AND GOVERNANCE

Environmental, social and governance (“ESG”) is incorporated and imbedded in KKR’s investment process. The Firm has an established responsible investing policy that emphasizes on the importance of ESG issues in investment decisions from the perspective of managing risks and identifying opportunities of value creation.

In 2008, KKR developed a dedicated Global Public Affairs (“GPA”) team that today is led by Ken Mehlman and includes over 15 other professionals globally. The GPA team members have expertise in media, government and regulatory affairs, as well as experience in working with labor unions, industry and trade associations and nongovernmental organizations. The GPA team also assists KKR’s portfolio companies and their managements on issues related to ESG from a risk and opportunity perspective.

KKR has been a signatory to the United Nations inspired Principles for Responsible Investing (“PRI”) since 2009.

In addition, KKR is formally involved with Business for Social Responsibility (“BSR”) and Corporate Sustainability and Responsibility Europe (CSR Europe) to understand and implement emerging best practices on ESG issues.

KKR has also developed stakeholder partnerships with, the Environmental Defense Fund (“EDF”)⁹ that helps focus on environmental best practices, and with Gephardt Group (“GG”)¹⁰ that helps better manage labor union relationships.

KKR will report at least annually on progress and outcomes of its ESG considerations and efforts at the Firm level.

⁹ U.S. based nonprofit environmental advocacy group that works on global warming, ecosystem restoration, oceans, and human health.

¹⁰ Consulting firm focused on developing and promoting best practices in the areas of labor relations and employee engagement.

FUND STRUCTURE

OVERVIEW

KKR Diversified Core Infrastructure Fund, will be a Delaware limited partnership. There will also be several parallel funds and feeder vehicles established to meet the requirements of certain limited partners. Below is a summary of the key terms sourced from the PPM dated September 2020. These terms are subject to change.

REVIEW OF TERMS & CONDITIONS

Key Terms		Townsend Comment	
Target Return:	8-10% time-weighted gross returns (7-9% net) with 4-6% target cash yield	Neutral	Consistent with strategy
Fund Size:	Open-End Fund initially targeting a minimum \$5 billion; open quarterly for new commitments	Neutral	Fund will be well diversified once it reaches \$5 billion. Capital commitments totaling \$3.3 billion raised to-date. Pace of deployment has been consistent with expectations.
Sponsor Commitment:	Initially \$500 million, lesser of 5% of aggregate commitments and \$500 million upon 6 th anniversary of initial closing	Positive	Higher than most peers
Key Person Provision:	3 of the 5 key executives including Joseph Bae, Raj Agrawal, Brandon Freiman, Tara Davies and David Luboff. Applicable for first 6 years only.	Positive	Better than other open-ended funds and consistent with the other infrastructure funds managed by KKR.
GP Removal for Cause	Requires 2/3 rd of aggregate LPs	Neutral	Consistent with best practice
Lock-up	Redemptions can be requested upon 90-days notice subject to 6-years lock-up for founding investors (3-years hard lock-up and 3-years soft lock-up) and 3-years soft lock-up for non founding investors. 5% discount to NAV would be applied during sof-lock-up period, to the benefit of existing LPs of the fund.	Neutral	Lock-up period is longer than we would prefer; our preference would be to shorten the lock-up and agree up front to a phase out as the Fund grows. However, hard lock-up only applies to the founding investors against lower management fee and incentive fee holiday. Non founding investors can request redemption during soft lock-up at 5% discount to NAV.
Distributions	Quarterly (DRIP option available)	Positive	Consistent with market

Fees and Distribution Waterfall							
Organizational Expenses:	Initial organizational expenses and dead deal costs will be amortized over 10-years.						
	Ongoing expenses are expected to be ~0.10% of NAV (capped at 0.2%). We do not expect Founding Investors to bear significantly greater burden of the fees.						
Management Fee and Incentive Allocation:	Founding Investor Round (Deadline 03/31/2021)						
	Client Commitment	Standard	Aon Aggregate Client Rates				
			\$50 mn to <\$100 mn	\$100 mn to <\$200 mn	\$200 mn to <\$500 mn	\$500 mn to <\$1 bn	≥\$1 bn
			Founding Investors (1)			Perpetual Founding Investors	
	Management Fee						
	\$10 mn to <\$50 mn	0.850%	0.800%	0.600%	0.540%	0.488%	0.431%
	\$50 mn to <\$100 mn	0.800%	0.800%	0.600%	0.540%	0.488%	0.431%
	\$100 mn to <\$200 mn	0.600%	N/A	0.600%	0.540%	0.488%	0.431%
	\$200 mn to <\$500 mn	0.540%	N/A	N/A	0.540%	0.488%	0.431%
	\$500 mn to <\$1 bn	0.488%	N/A	N/A	N/A	0.488%	0.431%
>\$1 bn	0.431%	N/A	N/A	N/A	N/A	0.431%	
Incentive Fee							
\$10 mn to <\$50 mn	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
\$50 mn to <\$100 mn	0.000%	0.000%	0.000%	0.000%	0.000%	0.000%	
\$100 mn to <\$200 mn	0.000%	N/A	0.000%	0.000%	0.000%	0.000%	
\$200 mn to <\$500 mn	0.000%	N/A	N/A	0.000%	0.000%	0.000%	
\$500 mn to <\$1 bn	0.000%	N/A	N/A	N/A	0.000%	0.000%	
>\$1 bn	0.000%	N/A	N/A	N/A	N/A	N/A	
1) For first six years only, after which 5% incentive fee and the following management fee schedule would apply							
Non-Founding Investors							
Client Commitment	Standard	Aon Aggregate Client Rates					
		≥\$50 mn but <\$200 mn	≥\$200 mn but <\$500 mn	≥\$500 mn but <\$1 bn	≥\$1 bn		
Management Fee							
\$10 mn to <\$50 mn	0.850%	0.800%	0.725%	0.650%	0.575%		
\$50 mn to <\$200 mn	0.800%	0.800%	0.725%	0.650%	0.575%		
\$200 mn to <\$500 mn	0.725%	N/A	0.725%	0.650%	0.575%		
\$500 mn to <\$1 bn	0.650%	N/A	N/A	0.650%	0.575%		
>\$1 bn	0.575%	N/A	N/A	N/A	0.575%		
Incentive Fee (2)							
All commitments	5.000%	5.000%	5.000%	5.000%	5.000%		
2) 5% of asset-level cash yield less Fund expenses (subject to asset-level 4% hurdle rate, 0% trailing 12-month capital maintenance test, and excludes proceeds from return of capital)							
Distributions / Incentive Waterfall:	<ul style="list-style-type: none"> • 5% of operating cash distributions <ul style="list-style-type: none"> ○ Subject to 4% hurdle rate referred to as Fund's Performance Ratio and defined as the ratio of the Fund's aggregate cash yield for the quarter over the Fund's average quarterly net asset value ○ Subject to 0% trailing 12-month capital maintenance test ○ Excludes proceeds from return of capital ○ Estimated at 0.20%-0.3% based on a 4-6% annual cash yield target ○ Paid quarterly 						

FEE AND EXPENSE ANALYSIS

KKR is targeting an 8-10% gross investment level return with a 4-6% cash yield. At that level of return, gross to net return spread at the Fund's standard fee rates is estimated at 110-130 basis points. With the founding investors rebates and incentive fee removal negotiated by Townsend, the gross to net spread range could potentially be reduced by approximately 50 basis points.

PERFORMANCE

SUMMARY

Fund	Vintage Year	Fund Size	Capital Invested	# of Inv.	Inv. Realized	Realized Value	Unrealized Value	Total Value	Loss Ratio	Ave. Hold Period	Gross TVPI	Net TVPI	Gross IRR	Net IRR
KKR I	2011	\$1,043.8	\$1,042.7	13	11	\$2,096.7	\$116.3	\$2,213.0	3.6%	5.3	2.1x	1.9x	17.5%	15.5%
KKR II	2014	3,098.2	3,098.4	12	2	2,667.6	2,512.5	5,180.1	1.2%	4.6	1.7	1.5	18.3%	15.7%
KKR III	2018	7,357.6	3,345.9	9	0	169.5	3,518.5	3,688.0	0.7%	N/A	1.1	1.0	7.0%	2.3%
Total			\$7,486.9	34	13	\$4,933.8	\$6,147.2	\$11,081.0	1.3%	5.2	1.5x	1.4x	16.8%	14.1%

Note: While capital invested presented in the table is gross of any currency exchange gain/(losses), line of credit balance and interest expense, and Fund expenses, the calculation of gross returns presented (gross TVPI and gross IRRs) reflect all of these items.

KKR has significant investing experience across all target sectors and geographies of the Fund. Across all its prior funds, the Firm has raised approximately \$11.5 billion in total commitments, invested \$6.9 billion across 34 individual transactions, realized \$4.9 billion and produced a combined net IRR of 14.1% and net TVPI of 1.4x in USD terms, as of September 30, 2020. In addition, KKR has deployed approximately \$9.2 billion of co-investment capital alongside its prior infrastructure funds. However, it should be noted that most of KKR's infrastructure track record relates to its flagship core+ and value-add strategy. Please refer to "Limited Track Record in Core Infrastructure" under "Potential Issues and Concerns" section of this report for more details.

- KKR I, a \$1.0 billion 2011 vintage fund that completed 13 investments, eleven of which have been fully realized. Fund I has generated a 15.5% net IRR and 1.9x net TVPI in USD terms.
- KKR II, a \$3.1 billion 2014 vintage fund that is fully invested across twelve portfolio companies, two of which have been fully realized. KKR II has generated a 15.7% net IRR and 1.5x net TVPI in USD terms.
- KKR III, a \$7.4 billion 2018 vintage fund that is substantially invested across nine portfolio companies. Performance for Fund III is not yet meaningful, it has generated a 2.3% net IRR and 1.0x net TVPI in USD terms.

VINTAGE COMPARISON

The following chart compares KKR funds' since inception net returns to the Burgiss Private iQ Global Infrastructure Benchmark ("Benchmark"). Please note that Burgiss' infrastructure peer universe's sample size is limited, thus does not provide a very useful analysis. All returns are based on realized and fair market value of unrealized investments as of Sep 30, 2020.

While benchmarking for KKR III (2018 vintage fund) is not yet meaningful, KKR I and KKR II both rank 1st quartile on net TVPI and DPI basis. On the basis of net IRR, both rank 2nd quartile, marginally missing 1st quartile returns.

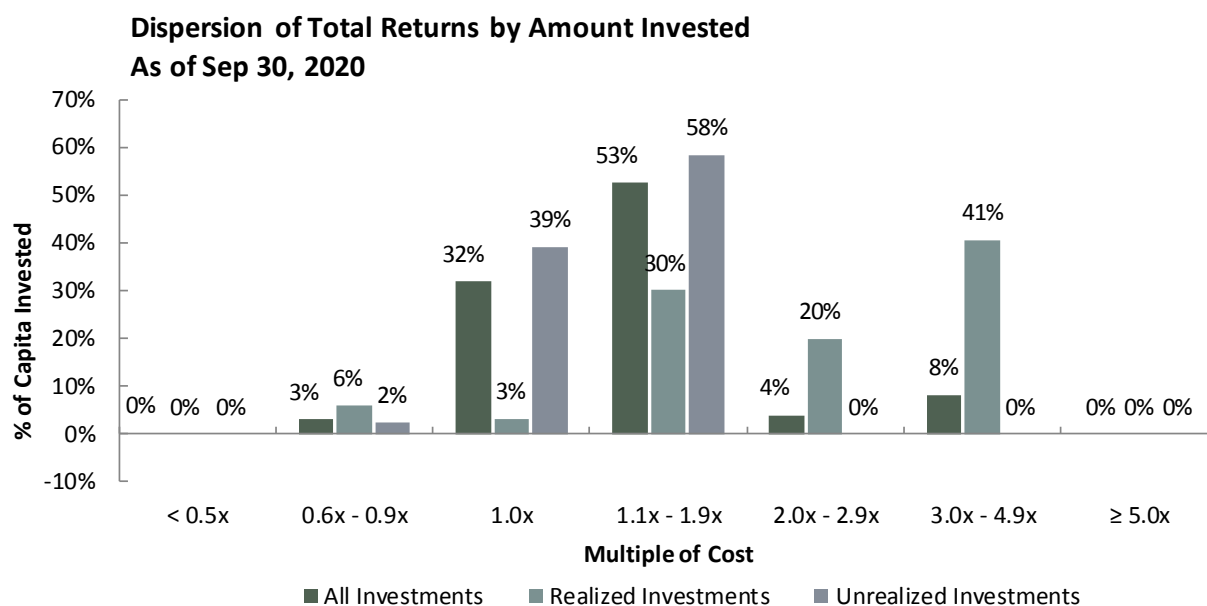
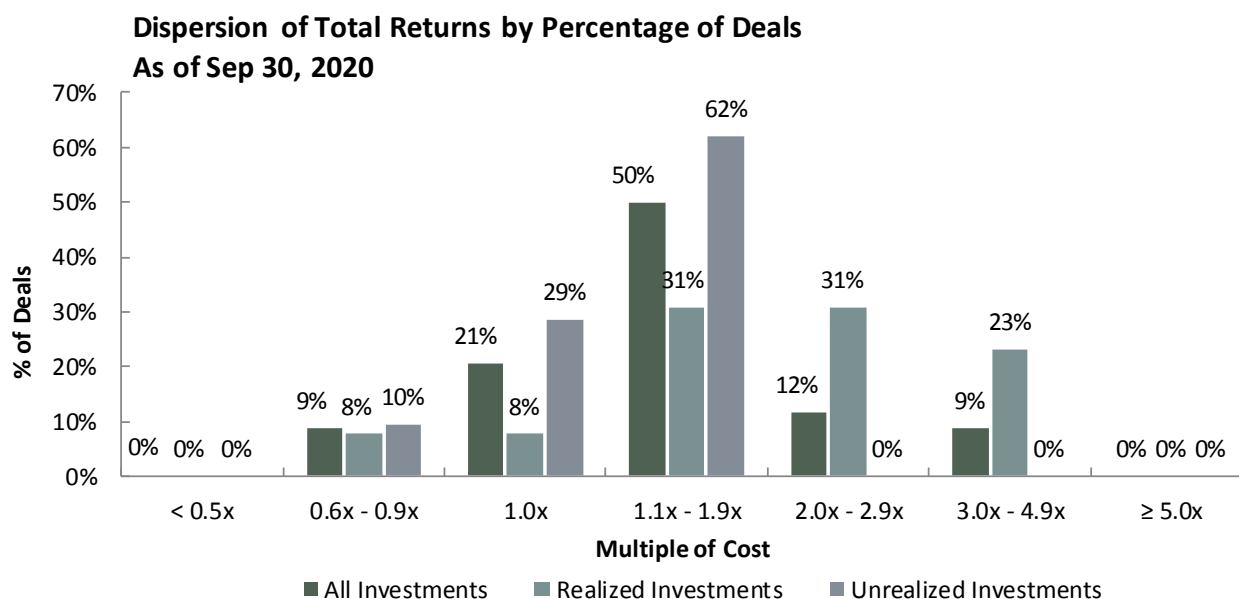
Fund	Vintage Year	Net IRR	Sample Size	1st	2nd	3rd	Benchmark Quartile
KKR I	2011	15.5%	5	16.0%	8.0%	2.3%	2nd
KKR II	2014	15.7%	20	15.8%	7.7%	4.1%	2nd
KKR III	2018	2.3%	30	10.5%	3.6%	-4.0%	3rd

Fund	Vintage Year	Net TVPI	Sample Size	1st	2nd	3rd	Quartile
KKR I	2011	1.9x	5	1.6x	1.3x	1.1x	1st
KKR II	2014	1.5	20	1.5x	1.2x	1.1x	1st
KKR III	2018	1.0	30	1.2x	1.0x	1.0x	3rd

Fund	Vintage Year	Net DPI	Sample Size	1st	2nd	3rd	Quartile
KKR I	2011	1.8x	5	1.1x	1.0x	0.5x	1st
KKR II	2014	0.8	20	0.8x	0.5x	0.4x	1st
KKR III	2018	0.1	30	0.1x	0.0x	0.0x	2nd

DISPERSION OF RETURNS

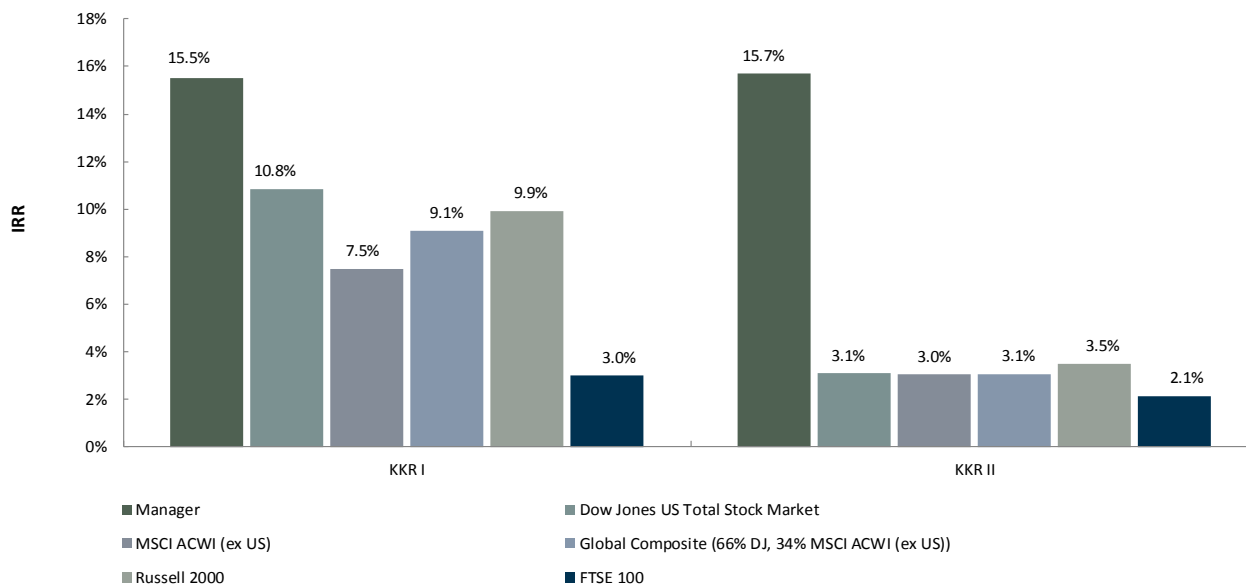
The following charts display the dispersion of individual investment returns across the series. Returns appear fairly distributed, however, Fund II had one significant winner, Deutsche Glasfaser, that represented around 15% of the fund's invested capital and generated 3.6x net TVPI and 45% net IRR.



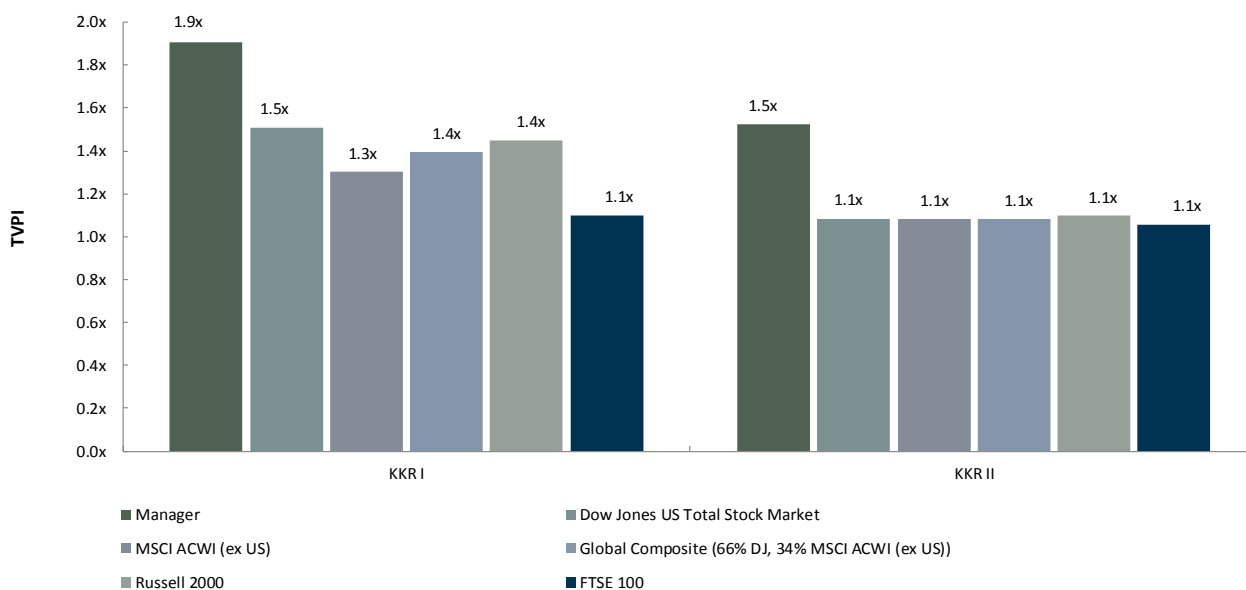
PUBLIC MARKET COMPARISON

The charts below compare performance of KKR infrastructure funds to public infrastructure market indices: Barclays Aggregate Bond Index, FTSE Developed Core Infrastructure Index, DJ Brookfield Infrastructure Index, and S&P Global Infrastructure Index. We are comparing the manager’s prior performance against the opportunity cost represented by the multiples and IRRs that would have been generated by investing in the public market indices highlighted. The fund series’ net cash flows are assumed to be invested into and redeemed out of the index to create a comparable IRR.

**Public Market Comparison Performance by IRR
As of September 30, 2020**



**Public Market Comparison Performance by TVPI
As of September 30, 2020**



EXHIBITS

EXHIBIT A: INVESTMENT SCHEDULE

KKR I
(in millions)

Company	Entry Date	Exit Date	Capital Invested	Realized Value	Unrealized Value	Total Value	Ownership %	% of Gain	Gross TVPI	Gross IRR
Renvico Renewable Energy	Sep-11	Mar-20	\$49.2	\$47.7	\$0.0	\$47.7	22%/50%	-0.1%	1.0x	-0.5%
Saba Infraestructuras	Dec-11	Jul-18	79.0	171.4	0.0	171.4	14%/18%	7.9%	2.2	12.9%
SunTap Energy I	Dec-11	Sep-18	28.5	58.9	0.0	58.9	87%/N/A	2.6%	2.1	18.9%
Coriance	Sep-12	Sep-16	135.6	314.5	0.0	314.5	70%/100%	15.3%	2.3	29.3%
Bayonne Water & Wastewater	Nov-12	Jun-17	58.9	163.4	0.0	163.4	48%/N/A	8.9%	2.8	36.0%
SSM Solar	Dec-12	Nov-15	91.2	59.9	0.0	59.9	98%/N/A	-2.7%	0.7	-13.7%
South Staffordshire	Jul-13	Jul-18	116.7	223.9	0.0	223.9	75%/N/A	9.2%	1.9	18.3%
Associated Partners	Oct-13	Feb-20	109.7	148.6	0.0	148.6	17%/N/A	3.3%	1.4	7.0%
SunTap Energy II	Jan-14	Sep-18	56.7	88.5	0.0	88.5	42%/N/A	2.7%	1.6	11.5%
ELL Group	Apr-14	Apr-20	142.5	692.0	0.0	692.0	95%/N/A	47.0%	4.9	44.2%
Middletown Water & Wastewater	Dec-14	Jun-17	17.2	57.1	0.0	57.1	86%/N/A	3.4%	3.3	61.0%
Total Realized	N/A	N/A	\$885.2	\$2,025.8	\$0.0	\$2,025.8	N/A	N/A	2.3	20.1%
T-Solar Global Operating Assets	Oct-11	N/A	46.2	25.0	16.5	41.4	12%/49%	-0.4%	0.9	-1.3%
Acciona Energia International	Oct-14	N/A	111.3	46.0	99.8	145.8	6%/33%	2.9%	1.3	5.6%
Total Unrealized	N/A	N/A	\$157.5	\$71.0	\$116.3	\$187.2	N/A	N/A	1.2	2.9%
Total			\$1,042.7	\$2,096.7	\$116.3	\$2,213.0	N/A	N/A	2.1x	17.5%

KKR II
(in millions)

Company	Entry Date	Exit Date	Capital Invested	Realized Value	Unrealized Value	Total Value	Ownership %	% of Gain	Gross TVPI	Gross IRR
Acciona Energia Internacional	Dec-14	Q4 2020	\$54.7	\$23.1	\$49.1	\$72.3	3%/33%	0.8%	1.3x	6.0%
Deutsche Glasfaser	Oct-15	May-20	454.6	1,644.6	0.0	1,644.6	67%/N/A	57.2%	3.6	44.7%
Total Realized	N/A	N/A	\$625.7	\$1,864.4	\$19.7	\$1,884.1	N/A	N/A	3.0	42.2%
Veresen Midstream	Mar-15	N/A	\$275.9	\$89.5	\$313.2	\$402.7	18%/50%	6.1%	1.5x	8.8%
X-ELIO	Dec-15	N/A	446.3	210.3	459.2	669.5	40%/47%	10.7%	1.5	12.1%
PEMEX Midstream	Jun-16	N/A	171.1	219.8	19.7	239.5	99%/N/A	3.3%	1.4	25.4%
Calisen	Jan-17	N/A	250.9	41.4	286.8	328.2	34%/70%	3.7%	1.3	7.8%
Bharti Infratel	Mar-17	N/A	95.7	11.6	46.3	57.9	1%/10%	-1.8%	0.6	-14.2%
Genesis Energy	Aug-17	N/A	249.6	15.1	233.7	248.8	8%/8%	0.0%	1.0	-0.1%
Q-Park	Oct-17	N/A	350.4	186.7	251.0	437.7	17%/100%	4.2%	1.2	9.4%
Telxius Telecom	Oct-17	N/A	352.8	51.6	483.7	535.3	14%/40%	8.8%	1.5	15.9%
NextEra Energy Partners	Nov-17	N/A	142.8	138.5	90.0	228.5	36%/NA	4.1%	1.6	22.1%
Hivory	Dec-18	N/A	253.5	35.4	279.6	315.0	10%/50%	3.0%	1.2	13.3%
Total Unrealized	N/A	N/A	\$2,472.7	\$803.2	\$2,492.7	\$3,296.0	N/A	N/A	1.3	9.6%
Total			\$3,098.4	\$2,667.6	\$2,512.5	\$5,180.1	N/A	N/A	1.7x	18.3%

KKR III
(in millions)

Company	Entry Date	Exit Date	Capital Invested	Realized Value	Unrealized Value	Total Value	Ownership %	% of Gain	Gross TVPI	Gross IRR
Total Realized	N/A	N/A	\$0.0	\$0.0	\$0.0	\$0.0	N/A	N/A		0.0%
Rocky Mountain Midstream	Jul-18	N/A	\$492.4	\$0.0	\$492.4	\$492.4	32%/50%	0.0%	1.0x	0.0%
Hivory	Dec-18	N/A	363.1	45.9	400.7	446.6	11%/50%	24.4%	1.2	12.7%
Altavair Aircraft Leasing	Jan-19	N/A	271.0	0.0	298.4	298.4	60%/100%	8.0%	1.1	13.9%
SemCAMS Midstream	Feb-19	N/A	540.5	30.8	485.7	516.5	35%/49%	-7.0%	1.0	-2.8%
Nitrogen Renewables	Jun-19	N/A	199.4	0.0	259.3	259.3	98%/N/A	17.5%	1.3	22.2%
ADNOC Oil Pipelines	Jun-19	N/A	416.3	75.7	507.1	582.8	20%/N/A	48.7%	1.4	32.0%
Hyperoptic	Oct-19	N/A	516.5	17.1	515.3	532.4	74%/N/A	4.6%	1.0	3.4%
Viridor Limited	Jul-20	N/A	529.4	0.0	542.5	542.5	40%/100%	3.8%	1.0	10.4%
Global Technical Realty	Sep-20	N/A	17.2	0.0	17.2	17.2	100%/N/A	0.0%	1.0	0.0%
Total Unrealized	N/A	N/A	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	N/A	N/A	1.1	7.0%
Total			\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	N/A	N/A	1.1x	7.0%

EXHIBIT B: REALIZED AND UNREALIZED INVESTMENT SCHEDULE

Fund	# of Inv.	Capital Invested	Realized Value	Unrealized Value	Gross TVPI	Gross IRR
KKR I - Realized	11	\$885.2	\$2,025.8	\$0.0	2.3x	20.1%
KKR I - Unrealized	2	\$157.5	\$71.0	\$116.3	1.2	2.9%
	13	\$1,042.7	\$2,096.7	\$116.3	2.1x	17.5%
KKR II - Realized	2	\$625.7	\$1,864.4	\$19.7	3.0x	42.2%
KKR II - Unrealized	10	\$2,472.7	\$803.2	\$2,492.7	1.3	9.6%
	12	\$3,098.4	\$2,667.6	\$2,512.5	1.7x	18.3%
KKR III - Realized	0	\$0.0	\$0.0	\$0.0	0.0x	0.0%
KKR III - Unrealized	9	\$3,345.9	\$169.5	\$3,518.5	1.1	7.0%
	9	\$3,345.9	\$169.5	\$3,518.5	1.1x	7.0%
<i>All Prior Funds - Realized</i>	13	\$1,510.9	\$3,890.1	\$19.7	2.6x	25.1%
<i>All Prior Funds - Unrealized</i>	21	\$5,976.1	\$1,043.7	\$6,127.5	1.2x	8.6%
All Prior Funds - Total	34	\$7,486.9	\$4,933.8	\$6,147.2	1.5	16.8%

EXHIBIT C: PERFORMANCE BY SECTORS

KKR I										
Industry	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Renewables	6	383.0	325.9	116.3	442.2	36.7%	9.8%	5.1%	1.2	2.9%
Utilities	4	328.4	758.8	0.0	758.8	31.5%	0.0%	36.8%	2.3	28.0%
Telecom	1	109.7	148.6	0.0	148.6	10.5%	0.0%	3.3%	1.4	7.0%
Transportation	2	221.5	863.4	0.0	863.4	21.2%	0.0%	54.8%	3.9	27.4%
Total	13	\$1,042.7	\$2,096.7	\$116.3	\$2,213.0	100.0%	3.6%	N/A	2.1x	17.5%

KKR II										
Industry	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Midstream	3	\$696.5	\$324.4	\$566.7	\$891.1	22.5%	0.1%	9.3%	1.3x	8.1%
Renewables	3	643.9	371.9	598.4	970.3	20.8%	0.0%	15.7%	1.5	12.7%
Utilities	1	250.9	41.4	286.8	328.2	8.1%	0.0%	3.7%	1.3	7.8%
Telecom	4	1,156.7	1,743.2	809.6	2,552.8	37.3%	3.3%	67.1%	2.2	31.7%
Transportation	1	350.4	186.7	251.0	437.7	11.3%	0.0%	4.2%	1.2	9.4%
Total	12	\$3,098.4	\$2,667.6	\$2,512.5	\$5,180.1	100.0%	1.2%	N/A	1.7x	18.3%

KKR III										
Industry	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Midstream	3	\$1,449.3	\$106.5	\$1,485.2	\$1,591.7	43.3%	1.7%	41.6%	1.1x	5.7%
Renewables	1	199.4	0.0	259.3	259.3	6.0%	0.0%	17.5%	1.3	22.2%
Utilities	1	529.4	0.0	542.5	542.5	15.8%	0.0%	3.8%	1.0	10.4%
Telecom	3	896.7	63.0	933.2	996.2	26.8%	0.0%	29.1%	1.1	8.9%
Transportation	1	271.0	0.0	298.4	298.4	8.1%	0.0%	8.0%	1.1	13.9%
Total	9	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	100.0%	0.7%	N/A	1.1x	7.0%

Investments by Industry Since Inception

Industry	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	% of Gain	Gross TVPI
Midstream	6	\$2,145.8	\$430.9	\$2,051.9	\$2,482.8	28.7%	9.4%	1.2x
Renewables	10	1,226.3	697.9	973.9	1,671.8	16.4%	12.4%	1.4
Utilities	6	1,108.7	800.2	829.3	1,629.5	14.8%	14.5%	1.5
Telecom	8	2,163.1	1,954.8	1,742.8	3,697.5	28.9%	42.7%	1.7
Transportation	4	842.9	1,050.1	549.3	1,599.4	11.3%	21.0%	1.9
Total	34	\$7,486.9	\$4,933.8	\$6,147.2	\$11,081.0	100.0%	N/A	1.5x

EXHIBIT D: PERFORMANCE BY REVENUE TYPE

KKR I

Type	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Regulated	5	\$288.2	\$517.0	\$16.5	\$533.4	27.6%	2.2%	21.0%	1.9x	14.9%
Contracted	6	532.9	716.4	99.8	816.2	51.1%	5.9%	24.2%	1.5	11.9%
Market or Structural Protection	2	221.5	863.4	0.0	863.4	21.2%	0.0%	54.8%	3.9	27.4%
Total	13	\$1,042.7	\$2,096.7	\$116.3	\$2,213.0	100.0%	3.6%	N/A	2.1x	17.5%

KKR II

Type	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Regulated	2	\$501.1	\$233.4	\$508.4	\$741.8	16.2%	0.0%	11.6%	1.5x	11.2%
Contracted	7	1,542.8	587.7	1,519.4	2,107.1	49.8%	2.5%	27.1%	1.4	11.3%
Market or Structural Protection	3	1,054.5	1,846.5	484.7	2,331.2	34.0%	0.1%	61.3%	2.2	30.2%
Total	12	\$3,098.4	\$2,667.6	\$2,512.5	\$5,180.1	100.0%	1.2%	N/A	1.7x	18.3%

KKR III

Type	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Contracted	9	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	100.0%	0.7%	100.0%	1.1x	8.1%
Total	9	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	100.0%	0.7%	N/A	1.1x	7.0%

Investments by Stage Since Inception

Type	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Gross TVPI	% of Gain
Regulated	7	\$789.3	\$750.4	\$524.8	\$1,275.2	10.5%	1.6x	13.5%
Contracted	22	5,421.6	1,473.6	5,137.7	6,611.3	72.4%	1.2	33.1%
Market or Structural Protection	5	1,276.1	2,709.8	484.7	3,194.5	17.0%	2.5	53.4%
Total	34	\$7,486.9	\$4,933.8	\$6,147.2	\$11,081.0	100.0%	1.5x	N/A

EXHIBIT E: PERFORMANCE BY GEOGRAPHIES

KKR I

Geography	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Canada	1	\$91.2	\$59.9	\$0.0	\$59.9	8.7%	34.3%	-2.7%	0.7x	-13.7%
France	2	184.8	362.2	0.0	362.2	17.7%	0.8%	15.2%	2.0	19.3%
Germany	1	142.5	692.0	0.0	692.0	13.7%	0.0%	47.0%	4.9	44.2%
Spain	3	236.5	242.3	116.3	358.6	22.7%	2.0%	10.4%	1.5	7.3%
UK	1	116.7	223.9	0.0	223.9	11.2%	0.0%	9.2%	1.9	18.3%
USA	5	271.0	516.4	0.0	516.4	26.0%	0.0%	21.0%	1.9	19.0%
Total	13	\$1,042.7	\$2,096.7	\$116.3	\$2,213.0	100.0%	3.6%	N/A	2.1x	17.5%

KKR II

Geography	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Canada	1	\$275.9	\$89.5	\$313.2	\$402.7	8.9%	0.0%	6.1%	1.5x	8.8%
France	1	253.5	35.4	279.6	315.0	8.2%	0.0%	3.0%	1.2	13.3%
Germany	1	454.6	1,644.6	0.0	1,644.6	14.7%	0.0%	57.2%	3.6	44.7%
India	1	95.7	11.6	46.3	57.9	3.1%	39.6%	-1.8%	0.6	-14.2%
Mexico	1	171.1	219.8	19.7	239.5	5.5%	0.0%	3.3%	1.4	25.4%
Netherlands	1	350.4	186.7	251.0	437.7	11.3%	0.0%	4.2%	1.2	9.4%
Spain	3	853.9	285.0	992.1	1,277.1	27.6%	0.0%	20.3%	1.5	12.7%
UK	1	250.9	41.4	286.8	328.2	8.1%	0.0%	3.7%	1.3	7.8%
USA	2	392.4	153.6	323.7	477.4	12.7%	0.2%	4.1%	1.2	7.4%
Total	12	\$3,098.4	\$2,667.6	\$2,512.5	\$5,180.1	100.0%	1.2%	N/A	1.7x	18.3%

KKR III

Geography	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Abu Dhabi	1	\$416.3	\$75.7	\$507.1	\$582.8	12.4%	0.0%	48.7%	1.4x	32.0%
Canada	1	540.5	30.8	485.7	516.5	16.2%	4.4%	-7.0%	1.0	-2.8%
Europe	1	17.2	0.0	17.2	17.2	0.5%	0.0%	0.0%	1.0	0.0%
France	1	363.1	45.9	400.7	446.6	10.9%	0.0%	24.4%	1.2	12.7%
UK	2	1,045.9	17.1	1,057.8	1,074.8	31.3%	0.0%	8.5%	1.0	4.9%
USA	3	962.9	0.0	1,050.1	1,050.1	28.8%	0.0%	25.5%	1.1	5.6%
Total	9	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	100.0%	0.7%	N/A	1.1x	7.0%

Investments by Geography Since Inception

Geography	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Gross TVPI	% of Gain
Abu Dhabi	1	\$416.3	\$75.7	\$507.1	\$582.8	5.6%	1.4x	N/A
Canada	3	907.6	180.2	798.9	979.1	12.1%	1.1	N/A
Europe	1	17.2	0.0	17.2	17.2	0.2%	1.0	N/A
France	4	801.4	443.5	680.2	1,123.7	10.7%	1.4	N/A
Germany	2	597.1	2,336.6	0.0	2,336.6	8.0%	3.9	N/A
India	1	95.7	11.6	46.3	57.9	1.3%	0.6	N/A
Mexico	1	171.1	219.8	19.7	239.5	2.3%	1.4	N/A
Netherlands	1	350.4	186.7	251.0	437.7	4.7%	1.2	N/A
Spain	6	1,090.4	527.4	1,108.3	1,635.7	14.6%	1.5	N/A
UK	4	1,413.5	282.3	1,344.6	1,627.0	18.9%	1.2	N/A
USA	10	1,626.3	670.0	1,373.8	2,043.8	21.7%	1.3	N/A
Total	34	\$7,486.9	\$4,933.8	\$6,147.2	\$11,081.0	100.0%	1.5x	N/A

EXHIBIT F: PERFORMANCE BY SOURCING TYPE

KKR I

Deal Source	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Proprietary	7	\$574.5	\$1,233.0	\$16.5	\$1,249.4	55.1%	6.5%	57.7%	2.2x	14.8%
Limited Process	4	339.6	760.7	0.0	760.7	32.6%	0.0%	36.0%	2.2	26.0%
Auction	2	128.5	103.0	99.8	202.9	12.3%	0.0%	6.4%	1.6	11.6%
Total	13	\$1,042.7	\$2,096.7	\$116.3	\$2,213.0	100.0%	3.6%	N/A	2.1x	17.5%

KKR II

Deal Source	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Proprietary	4	\$942.8	\$1,809.8	\$370.0	\$2,179.9	30.4%	4.1%	105.7%	2.3x	30.9%
Limited Process	3	970.3	481.7	962.7	1,444.4	31.3%	0.0%	40.5%	1.5	14.6%
Auction	5	1,185.4	376.1	1,179.8	1,555.9	38.3%	0.0%	31.7%	1.3	8.9%
Total	12	\$3,098.4	\$2,667.6	\$2,512.5	\$5,180.1	100.0%	1.2%	N/A	1.7x	18.3%

KKR III

Deal Source	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
Proprietary	3	\$487.6	\$0.0	\$574.8	\$574.8	14.6%	0.0%	7.4%	1.2x	18.7%
Limited Process	1	516.5	17.1	515.3	532.4	15.4%	0.0%	1.4%	1.0	3.4%
Auction	5	2,341.7	152.4	2,428.4	2,580.8	70.0%	1.0%	20.4%	1.1	7.3%
Total	9	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	100.0%	0.7%	N/A	1.1x	7.0%

Investments by Source Since Inception

Deal Source	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Gross TVPI	% of Gain
Proprietary	14	\$2,004.9	\$3,042.8	\$961.3	\$4,004.1	26.8%	2.0x	55.6%
Limited Process	8	1,826.4	1,259.4	1,478.0	2,737.4	24.4%	1.5	25.3%
Auction	12	3,655.6	631.6	3,708.0	4,339.5	48.8%	1.2	19.0%
Total	34	\$7,486.9	\$4,933.8	\$6,147.2	\$11,081.0	100.0%	1.5x	N/A

EXHIBIT G: PERFORMANCE BY TEAM LEAD

KKR I

Investor	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
J. Olmos	7	\$680.5	\$1,520.4	\$116.3	\$1,636.7	65.3%	0.9%	81.7%	2.4x	19.3%
R. Agrawal	6	362.2	576.3	0.0	576.3	34.7%	8.6%	18.3%	1.6	13.2%
Total	13	\$1,042.7	\$2,096.7	\$116.3	\$2,213.0	100.0%	3.6%	N/A	2.1x	17.5%

KKR II

Investor	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
J. Olmos	2	\$501.1	\$233.4	\$508.4	\$741.8	16.2%	0.0%	11.6%	1.5x	11.2%
R. Agrawal	4	796.2	356.2	658.8	1,015.1	25.7%	4.8%	10.5%	1.3	9.1%
V. Policard	2	805.0	1,831.3	251.0	2,082.3	26.0%	0.0%	61.4%	2.6	36.3%
T. Davies	2	603.8	93.0	770.5	863.5	19.5%	0.0%	12.5%	1.4	12.1%
B. Freiman	2	392.4	153.6	323.7	477.4	12.7%	0.2%	4.1%	1.2	7.4%
Total	12	\$3,098.4	\$2,667.6	\$2,512.5	\$5,180.1	100.0%	1.2%	N/A	1.7x	18.3%

KKR III

Investor	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	Loss Ratio by Invested Capital	% of Gain	Gross TVPI	Gross IRR
R. Agrawal	2	\$855.5	\$45.9	\$893.1	\$939.1	25.6%	0.0%	24.4%	1.1x	4.8%
B. Freiman	3	1,011.0	30.8	1,043.3	1,074.1	30.2%	2.4%	18.4%	1.1	4.7%
T. Davies	2	945.7	75.7	1,049.6	1,125.3	28.3%	0.0%	52.5%	1.2	28.2%
V. Policard	1	516.5	17.1	515.3	532.4	15.4%	0.0%	4.6%	1.0	3.4%
W. Szlezak	1	17.2	0.0	17.2	17.2	0.5%	0.0%	0.0%	1.0	0.0%
Total	9	\$3,345.9	\$169.5	\$3,518.5	\$3,688.0	100.0%	0.7%	N/A	1.1x	7.0%

Investments by Lead Investor Since Inception

Investor	# of Deals	Capital Invested	Proceeds	Unrealized	Total Value	% of Cost	% of Gain	Gross TVPI
J. Olmos	9	\$1,181.5	\$1,753.8	\$624.6	\$2,378.4	15.8%	33.3%	2.0x
R. Agrawal	12	2,013.9	978.5	1,552.0	2,530.4	26.9%	14.4%	1.3
V. Policard	3	1,321.4	1,848.4	766.3	2,614.7	17.6%	36.0%	2.0
T. Davies	4	1,549.4	168.7	1,820.1	1,988.8	20.7%	12.2%	1.3
B. Freiman	5	1,403.4	184.4	1,367.1	1,551.5	18.7%	4.1%	1.1
W. Szlezak	1	17.2	0.0	17.2	17.2	0.2%	0.0%	1.0
Total	34	\$7,486.9	\$4,933.8	\$6,147.2	\$11,081.0	100.0%	N/A	1.5x

EXHIBIT H: SEED ASSETS

Seed Deal: Project Neon

Transaction & Company Overview

- In November 2020, KKR, together with its partners, signed an agreement to acquire a diversified portfolio of contracted utility scale renewable energy assets from NextEra Energy
 - The portfolio is comprised of 1.6 net GW of 12 distinct operating utility scale wind and solar assets geographically diversified across the United States
 - ~18 years of remaining weighted average power purchase agreement (“PPA”) life with investment grade counterparties
 - Cash flows are supported by 18 PPA counterparties
- Focus on long-term sustainability with strong ESG practices

KKR as a Partner of Choice

KKR Infrastructure

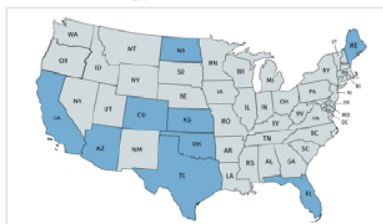
- Intended to be the first seed investment made in the Diversified Core Infrastructure Fund

Partnering with Sophisticated Investors

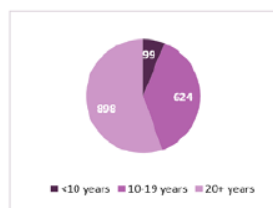
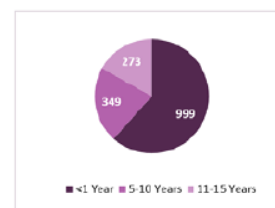
- KKR has executed two prior transactions with NextEra Energy that allowed KKR to access NextEra’s operating expertise and development pipeline
- KKR expects to be able to leverage this partnership structure for ongoing deal flow throughout the Fund life

Essential Infrastructure

- Utility-scale, operating renewable energy portfolio that is diversified across locations and technologies
- Essential component in facilitating the energy transition from fossil fuels to clean energy



Cash Flow Visibility

Remaining Contract Term
(by Net MW)Asset Age
(by Net MW)

Seed Deal: Project Supernova

Transaction & Company Overview

- KKR, together with a partner, signed an agreement to acquire a 40% stake in the largest electricity distribution company in Finland
 - The business represents ~20% of the distribution market and serves ~690 thousand customers
 - Modern network of 88,000km including two distinct networks serving both rural areas and two major cities
 - Cash flows are supported by the Finnish regulator and its Regulated Asset Base (“RAB”) framework that has been consistently administered since 2005
- We believe the economies of scale for Project Supernova can allow KKR to outperform its RAB over the life of the asset

KKR as a Partner of Choice

KKR Infrastructure

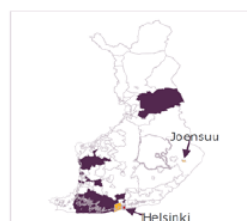
- Intended to be the second seed investment made in the Diversified Core Infrastructure Fund

Partnering with Sophisticated Investors

- KKR has identified a large, similar minded direct investor to partner alongside in equal ownership
- KKR and its partner pre-empted the auction process to allow for negotiations with the seller on a bi-lateral basis

Essential Infrastructure

- One of two privately held electricity distribution companies
- Finland is one of the coldest countries in Europe making the security of supply a critical initiative for Finland’s government



Cash Flow Visibility

Regulated Returns

- Clear, consistent regulatory framework
- Immediate access to stable cash yield
- Benefit from regulator compensation for recent capex projects that were executed prior to KKR’s ownership
- Expect strong cash yield within the Fund’s stated target of 4-6% annually
- Opportunities to outperform through incentive programs

EXHIBIT I: PIPELINE

Opportunity	Region	Sector	Source	Estimated Equity Value	Commentary
Most Advanced Opportunities					
1	Global	Public Private Partnerships	Proprietary	£2 billion	Evaluating a take-private of a global developer of municipal infrastructure. Sourced by KKR with the support of the former CEO of the target.
2	North America	Renewables	Proprietary	\$2.8 billion	Two unique transactions to form asset level renewable partnerships with a large operator and developer. Sourced through a strong relationship following a track record of successful partnership.
3	Western Europe	Energy Transition	Pre-emption	€700 million	Diversified portfolio of district heating assets backed by long-term contracts with public entities
4	APAC	Telecom	Auction	\$500 million	Participating in a process to acquire a portfolio of mobile towers from a strategic investor.
5	Western Europe	Telecom	Proprietary	€850 million	Bi-lateral partnership with a large strategic. Sourced through a senior advisor, who used to be the CEO of the parent company.
6	Global	Renewables	Proprietary	€2 billion	Evaluating the acquisition of a large, global operator and developer of solar plants and wind farms. Sourced through a proprietary relationship with the former CEO.
7	Western Europe	Utilities	Auction	£1 billion	Evaluating the purchase of a stake in the best performing electricity distribution business in the UK, which sits at the heart of UK's energy transition story.

EXHIBIT J: ORGANIZATIONAL CHART

Senior Team Leadership					
 Joe Bae Co-President and Co-CEO 25 years experience	 Raj Agrawal Global Head of KKR Infrastructure 23 years experience	 Brandon Freiman Head of North American Infrastructure 17 years experience	 Tara Davies Co-Head of European Infrastructure Head of Core Infrastructure 21 years experience	 Vincent Policard Co-Head of European Infrastructure 23 years experience	 David Luboff Head of Asia Pacific Infrastructure 20 years experience

Key Team Members								Product Team
 James Cunningham, Partner Houston	 Alberto Signori, Managing Director London	 Waldemar Szelezak, Managing Director New York	 Michael de Guzman, Managing Director Hong Kong	 Hardik Shah, Managing Director Mumbai	 Florian Christ, Managing Director Houston	 Oleg Shamovsky, Director London	 Cristina González, Director London	 Brandon Donnenfeld, Director New York
 Ryan Miller, Director London	 Cecilio Velasco, Director Singapore	 Keith Kim, Director Seoul	 Paul Workman, Director Menlo Park	 Andrew Peisch, Director Menlo Park	 James Gordon, Director London	 Christopher Tuohy, Director Houston	 Andrew Jennings, Director Sydney	 Daniel Valladares, Principal New York
 Taka Hirayama, Director Tokyo	 Felipe Hamaoui, Principal New York	 Yimei Luo, Principal Hong Kong	 Julian Barratt-Due, Principal London	 Cav Walters, Principal Menlo Park	 Alex Van Meeuwen, Principal London	 Mahek Mehta, Associate Mumbai	 Sungsoo Yang, Associate Seoul	 Nicole Bisson, Associate New York
 Bernardo Nogueira, Associate London	 Riccardo Busani, Associate London	 Felix Boyeaux, Associate Menlo Park	 Seunghye Kang, Associate New York	 Chris Van Decker, Associate Menlo Park	 Kate Casey, Associate Houston	 Jason Newsted, Associate Menlo Park	 Julia Giese, Associate London	 Penn Sednaoui, Associate New York
 Rafael Romeo Guillen, Associate London	 Aadhaar Mehra, Associate London	 Alex Chomette, Associate London	 Lucas Goh, Associate Hong Kong	 Madhura Narawane, Associate Singapore	 Orlando Kahan, Associate Menlo Park	 Eduardo Puebla, Analyst London	 James Foye, Analyst Menlo Park	



KKR Core Infrastructure Team: Deep Infrastructure Experience Coupled with KKR Operational Expertise

 Tara Davies Co-Head of Europe Infrastructure Head of Core Infrastructure London	 Oleg Shamovsky Head of Europe Core Infrastructure London	 Andrew Jennings Head of Asia Core Infrastructure Sydney	 Pending Hire Head of North America Core Infrastructure Menlo Park	 Neil Brown Managing Director New York	 Florian Christ Managing Director Houston	 Federica Gironi Director London	 Anogie Joseph-Erameh Principal London
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Access to the Broader KKR Infrastructure Team



Access to the Broader KKR Platform



Infrastructure Strategies Team

 Brandon Donnenfeld Director New York	 Daniel Valladares Principal New York	 Nicole Bisson Associate New York	 Penn Sednaoui Associate New York
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Other KKR Investment Resources

The Core Infrastructure Team leverages KKR's 465+ private market investment professionals across Private Equity, Growth Equity, Real Estate and Credit

EXHIBIT K: BIOGRAPHIES**Joe Bae, Member, Co-President & Co-Chief Operating Officer**

Joseph Y. Bae (New York) is the Co-President and Co-Chief Operating Officer of KKR and a member of the infrastructure investment committee. He joined KKR in 1996. Most recently, he was the Managing Partner of KKR Asia and the Global Head of KKR's Infrastructure and Energy Real Asset businesses. Mr. Bae has been instrumental in KKR's Asian expansion since 2005 and is the Chairman of KKR's Asia and Americas Private Equity Investment Committees and also serves on KKR's European Private Equity, Growth Equity, Energy, Infrastructure, Real Estate and Special Situations Investment Committees. He is also a member of KKR's Risk Management Committee and Inclusion and Diversity Council. Prior to KKR, Mr. Bae worked at Goldman Sachs in the area of principal investments. He received a B.A. from Harvard College.

Johannes Huth, Partner, Head of KKR Europe

Johannes P. Huth (London) joined KKR in 1999 and is a Partner of KKR and Head of KKR's operations in Europe, the Middle East, and Africa and a member of the infrastructure investment committee. He has participated in investments including Wincor Nixdorf, Zumtobel, Demag Holdings, MTU Aero Engines, DSD, Selenia, Kion Group, NXP Semiconductors, Pro7 Sat1, BMG, Wild, Württembergische Metallwarenfabrik AG (WMF) and SoftwareOne AG. Prior to joining KKR, Mr. Huth was a member of Investcorp's Management Committee and was also responsible for the firm's operations in Europe. Previously, he was with Salomon Brothers, where he was a vice president in the mergers and acquisitions departments in London and New York. Mr. Huth holds a B.Sc from the London School of Economics and an M.B.A. from the University of Chicago.

Raj Agrawal, Partner & Global Head of Infrastructure

Raj Agrawal (Menlo Park) joined KKR in 2006 and is a Partner, the Global Head of KKR's infrastructure business, the Chairman of the infrastructure investment committee and a member of the infrastructure portfolio management committee. In addition, Mr. Agrawal oversees the Global Impact and Energy Investing businesses and is a member of each respective investment committee. Prior to joining KKR, he was vice president with Warburg Pincus, where he was involved in the execution and oversight of a number of investments in the energy and infrastructure space. Mr. Agrawal's prior experience also includes McKinsey & Company, where he provided strategic, merger and acquisition advice to clients in a variety of industries. He holds a B.A., Honors and Distinction, Phi Beta Kappa, from Stanford University and an M.B.A., Arjay Miller Scholar, from the Stanford University Graduate School of Business.

Tara Davies, Partner & Co-Head of European Infrastructure and Global Head of Core Infrastructure

Tara Courtney Davies (London) joined KKR in 2016 and is a Partner, Co-Head of European Infrastructure, Global Head of Core Infrastructure and a member of the infrastructure investment committee and infrastructure portfolio management committee. Tara is currently on the board of directors of Calvin Capital, a U.K.-based gas and electricity smart metering business; Telxius, a global tower and cable company based in Spain; Acciona, a global onshore renewable business; Viridor, a UK waste to energy business and X-Elio, a global solar developer based in Spain. She was previously on the board of directors for an Abu Dhabi midstream company in joint venture with the Abu Dhabi National Oil Company. Prior to joining KKR, she was a senior managing director and head of mergers and acquisitions for Macquarie Group's infrastructure advisory arm in London. She began her career at Price Waterhouse, is a qualified Chartered Accountant and holds a Bachelor of Commerce degree from the University of Sydney.

Brandon Freiman, Partner & Head of North American Infrastructure

Brandon Freiman (Menlo Park) joined KKR in 2007 and is a Partner, Head of North American Infrastructure and a member of the infrastructure investment committee and the infrastructure portfolio management committee. He has been involved in KKR's investments in Altavair, SemCAMS Midstream, NextEra Energy Partners, Genesis Energy, Veresen Midstream, Bayonne and Middletown Water, Westbrick Energy, El Paso Midstream, Del Monte Foods, and Energy Future Holdings. Prior to joining KKR, he was with Credit Suisse Securities in its energy investment banking group, where he was involved in several mergers

and acquisition, and other corporate advisory transactions. He holds a Bachelor of Commerce, with a Joint Honors in Economics and Finance, from McGill University.

David Luboff, Partner & Head of Asia Pacific Infrastructure

David Luboff (Singapore) joined KKR in 2019. He is a Partner and Head of Asia-Pacific infrastructure. Prior to joining KKR, David spent 18 years at Macquarie Group where he was most recently the CEO, the country head for Singapore and an investment committee member of the Macquarie Asia infrastructure fund series. He was also previously appointed by the Australian Government as Chairman on the Council on Australia Latin American Relations (2010-2013). He has a Bachelor of Commerce (Actuarial) and a Bachelor of Applied Finance from Macquarie University in Sydney, Australia.

Vincent Policard, Partner & Co-Head of Europe Infrastructure

Vincent Policard (London) joined KKR in 2012. He is a Partner, Co-Head of Europe Infrastructure and a member of the infrastructure investment committee and infrastructure portfolio management committee. He has been actively involved in a number of infrastructure investments including Renvico, Coriance, ELL, Deutsche Glasfaser, Q Park, Ivory and Hyperoptic. Mr. Policard is currently on the board of directors of Renvico, ELL, Deutsche Glasfaser, Q Park, Ivory and Hyperoptic. Prior to joining KKR, Vincent spent over a decade at Morgan Stanley, most recently as an executive director on Morgan Stanley's infrastructure fund team where he was responsible for originating and executing transactions in the European infrastructure sector, played a key role in investments in Madrilena Red de Gas and Eversholt Rail Group. He holds an M.B.A. from HEC Paris, a Masters in Political Science from Sciences Po Paris and a Masters of Law from Assas University (Paris).

James Cunningham, Partner

James Cunningham (Houston) joined KKR in 2017 and is a Partner on the Energy and Infrastructure team. James is currently involved in KKR's investments in Colonial Pipeline, Rocky Mountain Midstream and Genesis Energy. Prior to joining KKR, he was a managing director with Denham Capital where he led the firm's midstream investing activities and was responsible for originating, structuring and monitoring investments across both midstream and upstream energy. Prior to that, he was a vice president with Goldman Sachs in the global energy investment banking division. James holds a B.A. in Business from Southwestern University and an M.B.A. from the Kellogg School of Management at Northwestern University.

Neil Brown, Managing Director, KKR Global Institute

Neil R. Brown (New York) joined KKR in 2014 and is Managing Director, KKR Global Institute and KKR Infrastructure, focusing on new markets investing, geopolitical and trends analysis, and energy. He has been involved in ADNOC Oil Pipelines, PEMEX Midstream, Monterra Energy, and United Group. Neil is also a senior fellow at the Atlantic Council of the United States, specializing in energy and foreign policy. Prior to joining KKR, Neil served for over eight years as a senior staff member of the U.S. Senate Foreign Relations Committee, where he also led energy security efforts for Senator Richard G. Lugar. In that capacity, Neil led legislative efforts and oversight on global energy security and governance, environment, and domestic energy. He has also served as a senior advisor at Goldwyn Global Strategies, on the U.S. Extractive Industry Transparency Initiative advisory committee for the U.S. Secretary of Interior, and as a senior fellow at the German Marshall Fund of the United States. He is an honors graduate of Harvard University and received graduate MSc and MPhil degrees from Oxford University, which he attended as a Rhodes Scholar.

Florian Christ, Managing Director, Capstone

Florian Christ (Houston) joined KKR in 2020, is a dedicated resource on KKR Capstone and serves as global operating partner for the KKR Infrastructure. Florian helps on the creation of investment ideas, the assessment of new investment opportunities, and value creation within KKR's infrastructure portfolio. Prior to KKR, Florian was a Partner with McKinsey & Company focused on Infrastructure and Energy where he led growth and operational transformations across infrastructure and energy sectors in North America, Europe and Asia. He holds a Doctorate degree, summa cum laude, from WHU – Otto Beisheim School of Management, a master's degree in Business Administration with high distinction from the University of Mannheim, as well as a Master of Commerce in Finance from the University of Sydney.

Alberto Signori, Managing Director

Alberto Signori (London) joined KKR in 2018 and is a Managing Director in the KKR Infrastructure Team focusing on investments across Europe, Middle East and Africa. Prior to joining KKR, Alberto was an investment director and member of the investment committee at Infracapital where he led and participated in a number of acquisitions in the utility, energy, telecom and transportation sectors. He also spent 10 years in the investment banking divisions at UBS and Commerzbank across merger & acquisitions, leveraged/structured finance and infrastructure investments. He holds an undergraduate degree in Economics and an M.B.A. from SDA Bocconi (Milan).

Waldemar Szlezak, Managing Director

Waldemar Szlezak (New York) joined KKR in 2019 and is a Managing Director on the KKR Infrastructure Team. Mr. Szlezak leads KKR's communications infrastructure investments in the Americas. Waldemar has been actively involved in Hyperoptic and GTR investments. Prior to joining KKR, he was a senior managing director with Soros Fund Management where he was responsible for originating, structuring and monitoring the firm's communications infrastructure and real estate investments. He holds a B.S. in Operations Research from Columbia University in New York and a B.A. in Mathematics from Knox College in Galesburg.

Michael de Guzman, Managing Director

Michael de Guzman (Hong Kong) joined KKR in 2019 as a member of the Asia Pacific Infrastructure team. Michael has over 20 years of experience in Asia Pacific infrastructure transactions, covering core and non-core infrastructure assets across various subsectors. Most recently, he was head of Philippines for Credit Suisse. Prior to joining Credit Suisse, he spent 18 years with the Macquarie Group holding senior positions in both the infrastructure funds division and the advisory division. He was involved in establishing the communications infrastructure fund and the PINAI Philippines infrastructure country fund for Macquarie. He holds an M.B.A. from the University of Chicago and a degree from the University of Sydney.

Hardik Shah, Managing Director

Hardik Shah (Mumbai) joined KKR in November 2018 and is a member of the Asia Pacific Infrastructure team. Hardik began his career at Macquarie Group in Sydney where he spent over 10 years across their Sydney and Mumbai offices and was involved in building their India Infrastructure business. More recently, he led Brookfield's India Infrastructure business and was responsible for building Brookfield's India Infrastructure team and presence. Hardik has led transactions in India across various infrastructure sectors such as Telecom Towers, Toll Roads, Airports and Renewable Energy. He holds a post graduate degree from S.P. Jain Institute of Management & research (Mumbai) and is a CFA Charter holder.

Oleg Shamovsky, Director

Oleg Shamovsky (London) joined KKR in 2013 and is a member of the KKR Infrastructure Team. He has been involved in KKR's investments in South Staffordshire, SBB/Telemach (United Group), Ambea, Mehiläinen, European Locomotive Leasing (ELL), Acciona Energia Internacional, Gestamp Asetym Solar (X-Elio Energy), and Calvin Capital (Calisen). He also serves as board member at X-Elio Energy. Prior to joining KKR, Oleg worked at Terra Firma Capital Partners in London where he was involved in a broad range of private equity investments across a variety of industries. Prior to Terra Firma, He was an investment banker with Morgan Stanley, where he advised technology companies and venture capital firms on numerous transactions in the renewable energy and technology sectors. He holds a degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology (MIT).

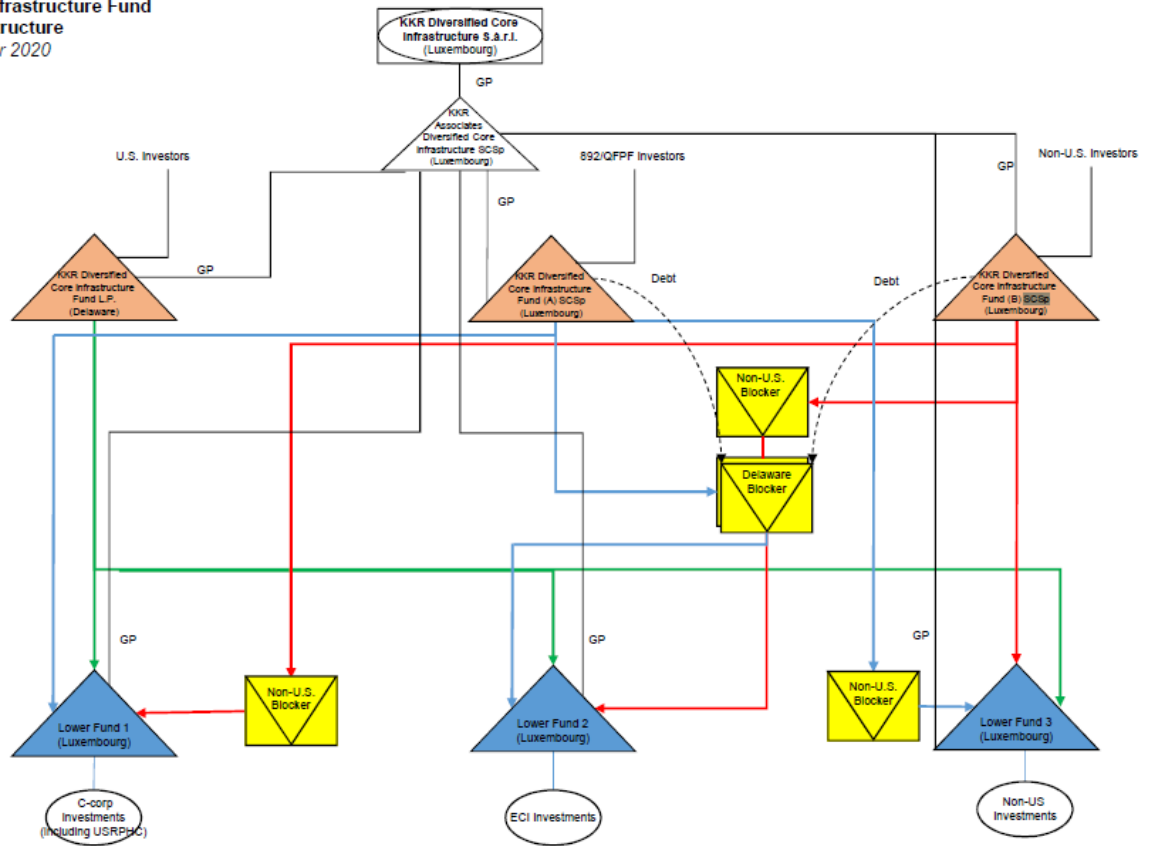
Andrew Jennings, Director

Andrew Jennings (Sydney) joined KKR in 2020 and is a member of the Asia Pacific Infrastructure team and is responsible for infrastructure investments in Australia. Prior to joining KKR, Andrew was a sector lead for the energy & utilities team within QIC's global infrastructure business where he led transactions across various sectors including renewable energy, regulated

utilities and remote power generation. Prior to QIC, he worked in Deutsche Bank's corporate finance team in both London and Sydney, specialising in infrastructure & utilities. Andrew holds a Bachelor of Engineering (Civil), with First Class Honours, and a Bachelor of Commerce from the University of Queensland.

EXHIBIT L: STRUCTURE CHART

KKR Diversified Core Infrastructure Fund Investment Structure
As of October 2020



APPENDIX

RATING RATIONALE

Factor	Comments
Strategy	DCIF offers access to core infrastructure strategy primarily targeting low risk regulated and contracted assets globally. 4-6% target annual cash yield appears attractive in a low interest rate environment and a 7-9% stable net total return is competitive with other asset classes. We have concerns over aggressive pricing in the market but believe that KKR has the competitive advantages specially in the areas of deal sourcing, structuring, financing, and operations to identify transactions that can achieve the target returns with appropriate levels of risk. The Seed Assets are consistent with the core profile of the Fund and are expected to start generating 4-5% cash yield from the first year of full operations.
Sponsor	KKR has a well-established infrastructure business and track record led by an experienced and growing team. In addition, the Investment Team has access to KKR's broader platform resources including KKR Capstone, Global Macro and Asset Allocation, KKR Capital Markets, KKR Global Institute and KKR Global Public Affairs.
Investment Process	Proven investment process evidenced by consistently successful execution across multiple infrastructure funds, energy, real estate and other private assets.
Fund Structure / Terms & Conditions	Economic terms for Founding Investors are better than market among comparable infrastructure offerings. The Fund generates higher net returns at most levels of gross return relative to an average of similar strategy infrastructure funds. The incentive fee calculated as 5% of operating distributions aligns KKR with investors seeking yield as a key component of a core infrastructure strategy. The incentive fee is also subject to 4% hurdle rate and 0% capital loss test which adds to the alignment of interest specially in the period of declining valuations. The redemption policy is not ideal but consistent with market standard.
Performance	While KKR lacks formal track record in core infrastructure, it has established investing track record across all target sectors and geographies of the Fund. Across all its non-core closed-end infrastructure funds, the Firm has raised approximately \$11.5 billion in total commitments, invested \$6.9 billion across 34 individual transactions, realized \$4.9 billion and produced a combined net IRR of 14.1% and net TVPI of 1.4x in USD terms, as of September 30, 2020. Fund I and Fund II are top performers among their vintage peers.
Operational Due Diligence	A-2 Pass
Overall Rating	DCIF is a low risk core infrastructure offering by a proven manager with strong competitive advantages and one of the well-established track records in infrastructure.

INVESTMENT RATING EXPLANATION

The comments and assertions reflect Townsend views of the specific investment product and its strengths and weaknesses in general and in the context of Townsend's *View of the World* and same vintage alternative choices.

Buy – Townsend recommends the investment for those client portfolios where it is a fit.

Qualified – Townsend believes the manager to be qualified to manage client assets.

OPERATIONAL DUE DILIGENCE RATING EXPLANATION

A1 Pass – No material operational concerns; firm's operations largely align with a well-controlled environment.

A2 Pass – The firm's operations largely align with a well-controlled environment, with limited exceptions.

Conditional Pass – AON identified specific operation concerns that the firm agreed to address in a reasonable time frame.

Fail – AON noted material operational concerns that introduce potential economic or reputational exposure.

About Townsend Group – An Aon Company

Founded in 1983, The Townsend Group provides custom real asset solutions that help clients worldwide achieve their unique investment goals. As an Aon company, The Townsend Group is now part of one of the top three outsourced chief investment officer (OCIO) providers in the world measured by global assets under management. Aon's investment organization, including Townsend, manages more than \$130 billion of worldwide assets under management and has advised on more than \$240 billion of real estate assets.

Disclaimer

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Past Performance is no guarantee of future results. Investing involves risk, including possible loss of principal.

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Townsend is a registered investment adviser with the Securities and Exchange Commission and is a wholly owned, indirect subsidiary of Aon plc.

Memorandum

To: Arkansas Teacher Retirement System (“ATRS”)
From: Chae Hong; Iftikhar Ahmed
CC: PJ Kelly; Jack Dowd; Richard Ferguson
Date: June 7, 2021
Re: KKR Diversified Core Infrastructure Fund – \$50 million Commitment Recommendation

Background and Recommendation

KKR Diversified Core Infrastructure Fund (“DCIF” or the “Fund”) is an open-ended commingled core infrastructure fund sponsored by Kohlberg Kravis Roberts & Co. L.P. (“KKR”), a global investment firm that manages multiple asset classes, including private equity, energy, infrastructure, real estate, credit, and hedge funds through its strategic partners. Unlike its other infrastructure funds focused on core+ and value-add infrastructure investments, DCIF is KKR’s first open-ended infrastructure fund that seeks to pursue core infrastructure investments with a buy-and-hold approach and a particular focus on investments in contracted and/or regulated cash flows from existing projects, assets and businesses located in the OECD countries of North America, Western Europe and developed Asia. DCIF will seek to invest across utilities, power and renewable, telecom, transportation, social infrastructure and energy transition sectors. The Fund will target 8-10% gross annual returns (7-9% net) including a 4-6% annual cash yield.

Aon Investments, USA is satisfied with the strategy of the Fund and its appropriateness for ATRS. Additionally, we believe that the merits of this offering outweigh its risks. A DCIF InDetail is attached for reference. We recommend that ATRS invest \$50 million in the Fund to fulfill ATRS’ 2022 infrastructure allocation, in accordance with the previously approved 2021 ATRS Real Asset Pacing Schedule.

ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201

RESOLUTION
No. 2021-23

**Approving Investment in KKR Diversified Core Infrastructure
Fund L.P. with Imminent Need**

WHEREAS, the Board of Trustees (Board) of the Arkansas Teacher Retirement System (ATRS) is authorized to invest and manage trust assets for the benefits of its plan participants; and

WHEREAS, the ATRS Board has reviewed the recommendation of its real assets consultant, Aon Hewitt Investment Consulting, Inc., along with the recommendation of the Investment Committee and ATRS staff regarding a potential investment in **KKR Diversified Core Infrastructure Fund L.P.**, a core infrastructure fund investing in utilities, telecom, transportation, social infrastructure and energy transition sectors; and

WHEREAS, the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000.00)** in **KKR Diversified Core Infrastructure Fund L.P.**, and the Board, after its review of the timing in which the closing of the investment in **KKR Diversified Core Infrastructure Fund L.P.** may need to occur, has determined that there is an imminent need to immediately enter into the partial equity ownership agreement prior to the next scheduled meeting of the Arkansas Legislative Council. The Board also deems it financially appropriate to enter into the partial equity ownership agreement and concludes that to forego the opportunity to promptly implement its investment directives under the prudent investor rule would be inconsistent with its fiduciary duty of care to the members and annuitants.

NOW, THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000.00)** in **KKR Diversified Core Infrastructure Fund L.P.** and agrees to immediately move to close and subscribe the approved ATRS limited partnership interest in **KKR Diversified Core Infrastructure Fund L.P.** The total investment amount is to be determined by ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment using the Imminent Need process, if acceptable terms are reached.

Adopted this 7th day of June 2021

Mr. Danny Knight, *Chair*
Arkansas Teacher Retirement System



REAL ESTATE INDETAIL

CARLYLE REALTY PARTNERS IX, L.P.

A U.S. Diversified Opportunistic Fund

March 2021

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EXECUTIVE SUMMARY

OVERVIEW

Review Date	Rating	Predecessor Fund Rating
March 2021	Buy	Buy

Carlyle Investment Management (“Carlyle” or the “Sponsor”) has established Carlyle Realty Partners IX, LP (“Fund IX” or the “Fund”) as its next vehicle in a series of opportunistic real estate funds. The \$6 billion Fund is a diversified strategy aimed at property types with favorable demand prospects driven by demographic trends. The Fund will target investments generating a 20% gross IRR or greater¹ over a ten-year term using 50% to 65% leverage.

Strategy: The Fund will execute a strategy focused on established and accelerating trends driven by U.S. demographic and technology shifts. Given their assessment of market conditions, Carlyle will overweight property types including multifamily, age-restricted apartments, single family rentals, and industrial, while underweighting GDP-linked property sectors such as office, retail, and hotels. Value is created through ground-up development, renovation, or redevelopment, using joint venture operating partners, over a three to five year business plan. The Manager has historically targeted deals within the largest 30 U.S. MSAs, with intended exit to a long-term holder. The Manager’s focus is on mid-market properties averaging \$50 million in gross transaction value.

Sponsor:

HQ Location	Washington, D.C.	Parent	Carlyle Group Inc.
Ownership	Public (NASDAQ: CG)	Founded	1987
Employees	1800+	Investment Staff (RE)	675 (113)
Gross AUM (Sep 30, 2020)	\$230 billion	RIA	Yes
Organization	Real estate team of 113 professionals (the “Manager”) within a multi asset class global alternative investment platform.		

Performance (as of 9/30/2020)

Vehicle	Fund Size (M)	Vintage	Assets (Realized)	Fair Market Value		
				Net IRR	Net EM	Quartile* (IRR/EM)
CRP I	\$296	1997	43 (43)	14.7%	1.5x	2Q / 3Q
CRP II	\$252	1999	26 (26)	9.6%	1.4x	4Q / 4Q
CRP III	\$571	2001	40 (40)	29.7%	2.7x	1Q / 1Q
CRP IV	\$950	2005	78 (78)	4.2%	1.3x	1Q / 2Q
CRP V	\$3,000	2006	151 (148)	8.7%	1.5x	1Q / 2Q
CRP VI	\$2,340	2011	129 (114)	18.0%	1.5x	2Q / 3Q
CRP VII	\$4,162	2014	195 (125)	11.7%	1.3x	3Q / 3Q
CRP VIII	\$5,505	2017	182 (17)	8.6%	1.1x	2Q / 3Q

*Relative to 179 same vintage U.S. opportunity funds from Townsend and Preqin data.

Portfolio Characteristics:

Vehicle Structure	Closed End Commingled Fund	Return Profile	Opportunistic
Expected Fund Size	\$6 billion	Sponsor Co-Invest	3% or \$150 million
Target Return	20% gross IRR	Leverage	50-65% LTC target; 60% LTV Max
Base Term	10 years	Commitment Period	5 years
Average Equity Size	\$20 million	Typical Business Plan	3-5 years
Fees:	1.5% on Committed then Invested		9% preferred return
Asset Management Fee	Discounted for Size and First Close	Incentive Fee Waterfall	20% LP / 80% GP catch-up 80% LP / 20% GP thereafter

Status: The First Close is expected on June 1, 2021. Carlyle expects subsequent closings, but likely with limited remaining capacity. Fund VIII has committed roughly 85% of capital to identified investments.

¹ This is based on the Manager’s general range of underwriting, though no formal return target is stated in offering documents. This is a less transparent practice than most of the industry. An active sponsor underwriting transactions via a numerically modeled analysis should reasonably be expected to provide a targeted net IRR or IRR range representing to investors the risk they will take in the Fund.

COMPARATIVE ADVANTAGES

1. Platform

- **Continuity of the Team and Product:** The team investing the Fund is responsible for the majority of the Sponsor's track record in U.S. real estate. Since 1997, Carlyle has made over 800 opportunistic investments representing over \$16 billion in investor equity. The team has an established network of relationships and is known in the industry. The team has a well-established investment process that is applied consistently within its core capabilities. To date, Carlyle's U.S. platform has not been distracted by divergent growth initiatives that alter this process or reduce senior time and attention. Townsend believes these qualities serve to provide better results over time and de-risk decision making, particularly in large organizations.
- **Senior Experience:** The team's senior professionals average 16 years with Carlyle and 25 years of industry experience. Six of twenty Managing Directors have been present since Fund I.
- **Resources:** The U.S. real estate team is well-staffed at 113 professionals. Compensation, including a 45% share of carried interest going to the team, is appropriate. Considering the continued success of the series, this has served to minimize turnover within the team. The team also has the benefit of significant resources with respect to the broader organization. This includes operational resources, as well as information on markets, companies, and industries; a benefit unique to a leading private equity firm.
- **Brand:** The Sponsor is a leading global alternative asset manager that has been in existence since 1987, with over \$230 billion in AUM. They are a trusted counterparty with a strong reputation.

2. Sponsor Co-Investment

This is differentiated by way of its absolute number and source. The Manager will contribute 3% of Fund commitments, up to \$150 million. This is expected to be 1% from Carlyle balance sheet capital, with the remainder coming from personal employee commitments across the firm. Of the latter, the U.S. team has committed over \$18 million to the most recent fund, and Fund IX is expected to be similar. Much of the personal commitments come from senior professionals, and Carlyle facilitates participation from more junior employees through a loan program with Wells Fargo. Carlyle guarantees a portion of this as long as the employee remains with the firm. This is a good indication that non-dedicated resources are aligned/incentivized to share information and truly be collaborative to the benefit of the Fund, as compared to more siloed peers.

3. Lower Leverage Approach

Relative to high return peers, Carlyle's strategy is not overly dependent on leverage. The Manager generally acquires or develops at 50%-65% loan-to-cost and does not use fund level borrowing as major return enhancer. This is indicative of a more conservative mindset throughout the series, and not the product of GFC-era "lessons learned" and/or pushback from historical LPs. In the series' two GFC-affected vehicles, the quality and levels of borrowing prevented magnification of losses experienced by certain peers.

4. Consistent Track Record

Despite some funds falling short of stated or implied return targets, the series has generated consistent returns for investors. While the strategy's lower leverage and high diversification make top quartile performance structurally less likely, the overall result for continuous investors is favorable. The series has produced no fund level losses. Six of eight funds have met or exceeded the vintage IRR median for U.S. opportunistic funds. The series average net IRR of 13.2% is competitive amongst peers². Further detail is included in the *Performance* section.

² In the period of vintages 2000-2017, Carlyle's average net IRR of 13.5% ranks in the upper second quartile of 25+ diversified U.S. and global opportunistic managers tracked by Townsend with at least two samples in that time span.

5. Complimentary Strategy

From a portfolio perspective, the Fund offers some differentiating factors compared to its closest alternatives. In this vintage, the Manager is still focused on segments of the market driven by long term demographic trends. In the event there is minimal distress opportunity resulting from the economic turmoil from the COVID-19 pandemic, Carlyle's approach remains less affected vis-à-vis some peers that are more distress oriented. Unlike certain peers raising large scale funds, Carlyle's approach does not rely on discounted portfolio transactions or take-private opportunities, rather it offers the potential for single asset aggregation and portfolio premiums when capital market conditions are favorable.

POTENTIAL ISSUES AND CONCERNS

1. Total Fee Load

The Manager's fee structure and business model make the Fund an expensive way to target opportunistic net returns. In total, Carlyle will have to produce 22-23% returns at the property level to provide a 15% net IRR to Fund LPs. This assumes 500 bps at the fund level, 200-300 bps in JV leakage, and a 2.0x gross equity multiple. Actual multiples have been lower, resulting in greater fund level spreads of 700 bps or more in funds achieving target IRRs. At the Fund level, fees on Committed Capital will increase gross-to-net spread relative to peers if the Fund uses its full Commitment Period. The Fund's 80% GP catch-up and interim distribution structure increase the rate at which the Manager receives carry. This front-loaded carry payout structure has a greater dilutive effect on gross-to-net spread as compared to a fully pooled promote. At the property level, the Manager's business model of allocating to JV partners requires increased expense via a second layer of promote typically paid to partners over a certain return hurdle, accounting for 200-300 bps of leakage assuming target IRRs.

Discussion: This is not a new concern and has been present in Carlyle establishing a successful track record, providing some comfort the manager can deliver competitive returns despite an expensive model. Townsend views the joint venture promote expense as more acceptable in the context of this strategy, as the Manager executes a development-heavy strategy. Partner promotes are generally a trade-off for JV operators taking on certain lender-required liabilities. Partner leakage is only a consideration when things go well. When they don't, the business model serves to provide some downside protection with respect to leverage risk. The strategy will continue to be an expensive one, but a few Fund level considerations help lessen expense at the margin. These include (i) a first close fee break, (ii) discounts for larger investors, and (iii) a history of investing funds in less than the stated Commitment Period, thus reducing the drag of fees on Committed.

2. Unconstrained Development Exposure

Though less common in opportunistic vehicles, closed-end funds typically have some limit on ground-up development as a risk guideline. Recent Carlyle funds have been heavy on development strategies, making up 93% of Fund VIII invested capital and over 70% in Fund VII.

Discussion: To the extent possible, Carlyle's strategy is de-risked within the range of ways a manager can approach development. In terms of targeted projects, Fund IX development will largely consist of apartments and industrial/warehouse properties which have relatively short and more predictable construction timelines. Construction projects are simple as opposed to large multi-phase urban mixed-use developments. The Manager does not take on entitlement risk. Carlyle also utilizes certain structuring practices that are considered standard best practice for development in closed-end funds including (i) requiring GMP contracts, (ii) borrowing at levels that do not require lender recourse, and (iii) requiring JV partners to take on lender repayment and completion guarantees where they are necessary. Previous funds have been successful in minimizing recourse debt often

associated with construction financing. Further, the Fund's high level of diversification prevents execution of any single development project from having an outsized negative effect on the Fund. In the event of problem assets, Carlyle maintains a high level of asset management staffing and in-house development expertise to provide more hands-on oversight and problem resolution compared to most allocator sponsors.

3. Key Person Risk

The Fund/Sponsor has key person risk with respect to Robert Stuckey. He has sole responsibility for final decisions on all Investment Committee items and has led the U.S. real estate activities for Carlyle since joining in 1998. Mr. Stuckey is not named singularly in the Fund's Key Person Provision (detailed in the *Fund Structure* section of this report). A retirement or departure during the Fund's five-year Commitment Period would be impactful.

Discussion: Mr. Stuckey is 58 with no immediate plans for retirement or transitioning out of his current leadership role. While Mr. Stuckey's presence is important to the continuity of the platform's leadership, there is a depth of Carlyle experience throughout the team of MDs. JV Partner relationships are shared across a group of experienced professionals, and the asset management process is defined and standardized, a necessary condition for managing the volume of individual assets in Carlyle's funds. While not naming Mr. Stuckey individually, the Key Person Provision does provide LPs the ability to suspend investment in the event of a larger exodus of senior leadership.

STRATEGY

OVERVIEW

The Manager will seek investments capable of generating a 20% gross fund-level IRR or greater, focusing on current demographic trends driving growth in a variety of real estate sectors.

- Assets are typically located in top 30 U.S. MSAs.
- Carlyle's focus is in middle-market investment size, averaging roughly \$50 million in gross capitalization, resulting in a portfolio with minimized concentration risk and 200+ assets.
- Value creation is a product of (i) ground-up development, (ii) management changes and operational improvements, (iii) redevelopment, and (iv) renovation and repositioning.
 - Development has ranged from 70-90% of recent funds and will likely be similar in Fund IX.
 - Business plans are typically 3-5 years with sale to core buyers upon stabilization.
- Given the heavy emphasis on development strategies, returns are primarily appreciation based and investors should not expect a substantial income component.
- Carlyle research generally bifurcates property sectors into the categories of "Demographic Driven" and "GDP Driven". The former has been favored in recent vintages and will be in Fund IX.
 - Demographic strategies of emphasis/scale will include development of traditional apartments, age-restricted apartments, and single-family rental housing.
 - Within GDP Driven sectors, industrial development is the primary focus.
 - Other Demographic strategies in life science, medical office, and self-storage will collectively round out the Fund's sector allocation.
 - Hotel, office, and retail sectors have been de-emphasized but may be reconsidered if more attractive discounts arise from distress during the Fund's investment period.
- **Exhibit A** includes an overview of Carlyle's research driven ranking for sector attractiveness, and an overview of the Fund VIII sector allocations, which are expected to remain similar in Fund IX.

LEVERAGE

- Intended use of leverage is conservative by opportunistic fund standards. Loan-to-cost ratios are expected to be 50-65%. This is consistent with historical practice. Typical leverage consists of capped floating rate first mortgages with individually financed positions as opposed to cross collateralized portfolio financing.

- The Fund’s formal limitation for leverage is 60% loan-to-value at the asset level, and the fund may operate at up to 70% during the Commitment Period, inclusive of subscription line and/or fund level credit. There is no LTV limit on individual assets.
- Carlyle primarily borrows debt that is not recourse to the Fund. Where required by lenders, JV partners typically take on repayment and completion guarantees. There are no explicit limitations on recourse or cross-collateralization per the LPA.

JOINT VENTURE PARTNERS

Partners are utilized heavily in day-to-day business plan execution, and deal sourcing to a lesser extent. The Manager cites that a majority of deals are now co-sourced or sourced directly by Carlyle team members through ongoing presence in their target markets. Carlyle has formed joint ventures with over 200 partners since the series’ inception and have utilized partners in over 90% of investments. Relationships rarely include formal exclusivity, but the Manager does use repeat partners frequently. Some features of JV structuring include:

- Carlyle controls all major decisions, with partners providing 5-10% of required equity.
- The operator is compensated by way of:
 - Market rate fees for property level services such as leasing and property management
 - A promoted interest in the deal’s profit, usually starting at 20% over a 9-10% IRR to Carlyle and increasing at higher return hurdles
 - In a minority of deals, an asset management fee
- As a trade-off for the promote, partners take on recourse obligations imposed by lenders, as well as cost overrun risk. Guaranteed maximum price contracts are required for developments.

INVESTMENT GUIDELINES

- No more than 15% of total commitments in one investment (or 20% including follow-on investment)
- No more than 5% in investments outside of the U.S. and Canada (or 10% including follow-on investment)
- No more than 10% of total commitments in Canadian investments
- No investment in passive “blind pool” funds
- No more than 5% of total commitments in unentitled land
- No more than 15% of total commitments in public securities and no hostile takeover/control investments
- No more than 10% of total commitments in real estate debt

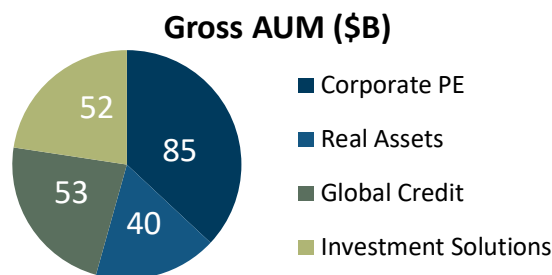
SPONSOR

OVERVIEW

The Carlyle Group was founded in 1987 by William Conway Jr., Daniel D’Aniello, and David Rubenstein.

- Carlyle completed an initial public offering in 2012 (NASDAQ: CG) and operated as a Delaware Limited Partnership until its conversion to a Delaware Corporation in 2020. The Carlyle Group Inc. is largely held by senior professionals, with less than half owned by non-employee holders of the public stock.
- Headquartered in Washington, D.C., Carlyle now employs over 1,800 professionals in 30 offices on six continents. This includes over 600 investment professionals.
- The Firm has expanded to \$230 billion in AUM in the following business lines:
 - Corporate Private Equity: global buyout and growth capital funds
 - Global Credit: liquid, illiquid, and real asset debt
 - Real Assets: global real estate and infrastructure funds
 - Investment Solutions: private equity and real estate fund of funds

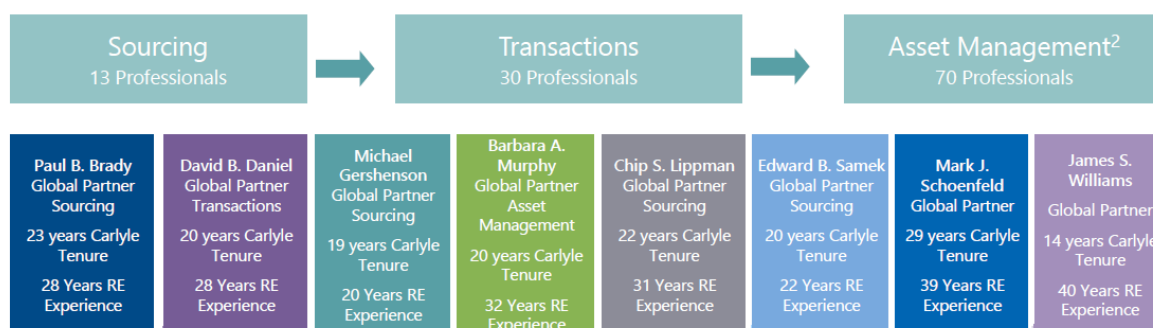
Owner Name	% Ownership
Daniel D'Aniello	12.6%
William Conway	9.8%
David Rubenstein	13.3%
Glenn Youngkin	2.1%
Kewsong Lee	0.7%
Mubadala Development Co.	5.4%
Other CG Shareholders	56.2%
Total	100%



CARLYLE REALTY

Carlyle Operates two platforms dedicated to real estate in the U.S. and Europe. These platforms operate independently with respect to personnel, decision making, and distinct investment committees. The Fund will be managed by the U.S. team (“Carlyle Realty”). Carlyle made its first real estate investments in 1993 and launched the CRP series in 1997. Robert Stuckey has led the team since joining Carlyle in 1998.

- The U.S. team has 113 professionals in four offices located in D.C., New York, San Francisco, and L.A.
- Carlyle Realty manages two product lines, including four active funds in the opportunistic fund series and an open-end core plus vehicle (“Carlyle Property Investors” or “CPI”), totaling \$18.6 billion in AUM.
- Biographies for the team’s 20 U.S. Managing Directors are included in **Exhibit B**.



TURNOVER/COMPENSATION/RETENTION

- Turnover at the senior levels has been minimal through the history of the series. In the previous five years, two departures at MD level have occurred, including George Ruhlen (retirement) and Alison Ando (personal). The team has added one professional at the MD level (Jade Newburn) during that time.
- Net of all additions and departures, the U.S. team has grown by 22 professionals since the Fund VIII launch.
- Compensation and retention is generally in line with peer practices and consists of:
 - Base salary and a discretionary bonus based on individual performance
 - An Equity Incentive Plan consisting of deferred CG stock unit awards
 - A portion of carried interest from fund vehicles
 - Split is 45% to the Carlyle Realty team and 55% to the broader company
 - Mostly tied to fund performance; a smaller amount tied to individual deal performance
 - MDs have a significant portion, but carry is shared down to the VP level
 - Retention is promoted through staged vesting over the life of the Fund

INVESTOR BASE

Carlyle’s client base is largely institutional investors. Fund IX is expected to have a similar investor base as previous funds in the series. The Manager estimates 30% U.S. public pensions, 30% in U.S. private corporate plans, E&Fs and family offices, 30% in Asia and Middle Eastern SWFs, and 10% European and Latin American institutional investors.

COMPLIANCE / LITIGATION DISCLOSURES

Carlyle represents that (i) no current or pending litigation related to the Sponsor is expected to have any material adverse effects on the Fund, (ii) Carlyle is not aware of any convictions for securities laws or related violations for Fund principals, (iii) the Fund's key investment professionals have never filed for bankruptcy or had judgements entered against them, and (iv) no Carlyle Realty investment professionals have been disqualified as a company director within the past ten years. As an RIA, Carlyle is subject to routine examinations by the SEC, the last of which occurred in 2013 with no material findings.

ESG POLICIES AND PRACTICES

SUMMARY

Carlyle is considered "Integrated" in that the Sponsor has taken essential steps to identify, evaluate, and mitigate potential financially material ESG risks within the portfolio and organization. At the organizational level, Carlyle has a dedicated Global Head of Impact (Megan Starr, hired in 2019) who oversees a team of dedicated ESG professionals, which sets high level and long-term strategy for the firm and publishes an annual Impact Review covering the firm and its various asset classes. At the Carlyle Realty level, a committee meets monthly to review ESG standards and advance/discuss the adaptation of new opportunities including programmatic benchmarking.

- Carlyle's firmwide ESG framework requires ESG review as a part of all investment DD processes and a summary included as part of the IC memo.
- Energy assessment and utility monitoring are part of the standard due diligence process, and related asset management objectives are often targeted, but the process stops short of any consolidated program to track emissions, water use, waste, or energy across the portfolio.
- Carlyle Realty is not a GRESB participant. Carlyle is a member of the Sustainability Accounting Standards Board Alliance. Carlyle is not a UN PRI signatory, citing lack of applicability on certain items, but has internally developed responsible investment guidelines that take into account UN PRI objectives.
- The firm has appropriate governance policies befitting a large organization including a code of ethics, non-discrimination policies, diversity and inclusion policies, and diverse representation on its board of directors.

OPERATIONAL DUE DILIGENCE

SUMMARY

The Aon Operational Risk Solutions and Analytics team ("AON ORSA") reviewed the Sponsor's policies, procedures, and capabilities across a range of operations, middle and back office, and control functions to determine if operations align with a well-controlled operating environment. The AON ORSA review covered (i) corporate governance and organizational structure, (ii) transaction execution, (iii) middle/back office, valuation, and cash controls, (iv) compliance, regulatory, legal, (v) investment and counterparty risk oversight, (vi) business continuity/disaster recovery, (vii) cyber security and IT, (viii) service provider selection and monitoring, and (ix) fund governance, structure, and administration.

- Carlyle is global alternative asset manager with institutional levels of infrastructure, controls, and oversight across its operating environment. The firm has implemented a well-developed committee structure to help ensure cross-functional participation in operating decisions and is subject to independent oversight by a Board of Directors. Carlyle's policies and procedures are well-documented and subject to reviews by both an internal audit team and an annual external audit completed by Ernst & Young. Carlyle has introduced a strong operating infrastructure that is mostly in alignment with best practice, with the exception certain fund administration items, including lack of a dual signature requirement for smaller cash disbursements and internal fund administration.
- The review resulted in an A2 Pass rating.

INVESTMENT PROCESS

OVERVIEW

Carlyle's investment process is organized by three functions: sourcing, transactions, and asset management. Staffing is generally organized by geography across all three groups, with consideration given to sector expertise.

- The sourcing group is staffed with 13 senior professionals and is tasked with maintaining the Manager's presence and view on each target market. The sourcing team proactively identifies investment opportunities and provides an initial screen on those sourced through Carlyle's partner network. When a deal is deemed conceptually sound, the transactions team begins due diligence.
- The transactions group is responsible for full property due diligence and has 30 professionals. Once the team has initiated full due diligence, the acquisition process includes:
 - Hiring of third party consultants including engineering and environmental studies
 - Further verification of market trends driving the investment thesis
 - Obtaining financing and seeking appraisals pursuant to lender requirements
 - Negotiation of the purchase contract
 - Presenting an investment memo to the IC prior to a hard deposit
- Though asset management is a shared responsibility of the Manager and its operating partner, Carlyle maintains a level of staffing that allows them to have an active role in business plan execution. The team includes 70 professionals. Some key aspects:
 - Teams are staffed with three to four professionals per asset. As a matter of continuity and alignment, the sourcing professional associated with the deal maintains a leadership role in the asset management process through the life of the investment.
 - There are formal processes for communication with the partner and/or property manager. These parties are required to submit quarterly written operational reports, which in turn become part of an annual portfolio review process.
 - Upon completion of the business plan, or when adequate exit pricing is available, dispositions are initiated by the asset's team leader.
- The team will utilize resources shared across the Carlyle Investment Management platform for fund administration and accounting, internal legal and compliance, and macro research.

INVESTMENT COMMITTEE

The Investment Committee consists of Carlyle Realty's 20 Managing Directors and reviews all proposed investments and approves all major restructurings and dispositions. It meets on an as-needed basis, usually multiple times weekly. The Committee makes recommendations to Rob Stuckey as IC Chairman, who has final decision-making authority on all items. The lack of a voting procedure is unique and contributes to key person risk addressed in the *Executive Summary*.

EXCLUSIVITY/ALLOCATIONS

- The Fund will be the exclusive vehicle to pursue opportunistic investments.
- Carlyle may market a successor fund when 80% of capital has been invested or committed for investments.

INVESTOR ADVISORY COMMITTEE

The GP will select a committee of limited partners with typical authority and responsibilities including (i) review of any conflicts of interest or affiliate transactions, (ii) approval of investment guideline waivers, (iii) extension of the fundraise, (iv) extension of the Fund Term beyond one year, and (v) replacement of Key Persons in certain instances pursuant to the Fund's Key Person Provision. Members are selected at GP discretion, typically based on commitment size with additional consideration to providing a diversity of investor types to represent various investor interests.

VALUATIONS

Assets are carried at fair value as determined by the Manager on a quarterly basis. Valuations are conducted by the investment team and subject to review by a representative of Carlyle's Global Valuation Committee. A third-party valuation consultant will provide independent valuation review on a sample basis. Carlyle generally does not conduct external appraisals, outside of where necessary for financing. EY conducts a review of valuations and valuation methodology as part of the annual audit process.

FUND STRUCTURE

The Fund will be structured as a Delaware limited partnership, with parallel funds to accommodate multiple investor types. **Exhibit C** depicts the expected legal structure.

- Investment Manager: Carlyle Investment Management L.L.C.
 - A Registered Investment Adviser with the SEC
- General Partner: Carlyle Realty IX, L.L.C.

KEY TERMS

Key Terms		Townsend Comment	
Target Return:	Est. 20% gross fund-level RR	Neutral	Implies approximately 15% net IRR
Fund Size:	\$6 billion target; no hard cap set	Neutral	Given the single asset focus, LPs don't necessarily gain an advantage from a large fundraise, but staffing is appropriate based on AUM and previous investment pacing
Sponsor Commitment:	3% of Commitments up to \$150 million	Positive	A meaningful contribution from the Carlyle balance sheet (1%) and employees (2%)
Commitment Period:	Five years from Effective Date	Negative	Extended periods of 5 years are generally bad for j-curve when fees are on Committed
Term:	Ten years from the Effective Date with one-year extension at GP discretion	Neutral	Slightly longer than average closed-end fund term but consistent with extended Commitment Period
Key Person Provision:	Triggered by departure of: Robert Stuckey and Chip Lippman Or Robert Stuckey and any two of Paul Brady, David Daniel, Mark Schoenfeld, or Barbara Murphy	Negative	Results in a suspension of the Commitment Period but allows Carlyle to replace the first of any departures with an MD of their choosing. All replacements should be voted on by LPs and ideally the clause would name Mr. Stuckey individually.
For Cause Removal:	With a majority in LP interest	Neutral	Standard Provision
No Fault Provisions:	A majority in LP interest may order a dissolution of the partnership	Neutral	Standard, though funds typically include a no-fault GP removal right at a higher voting threshold

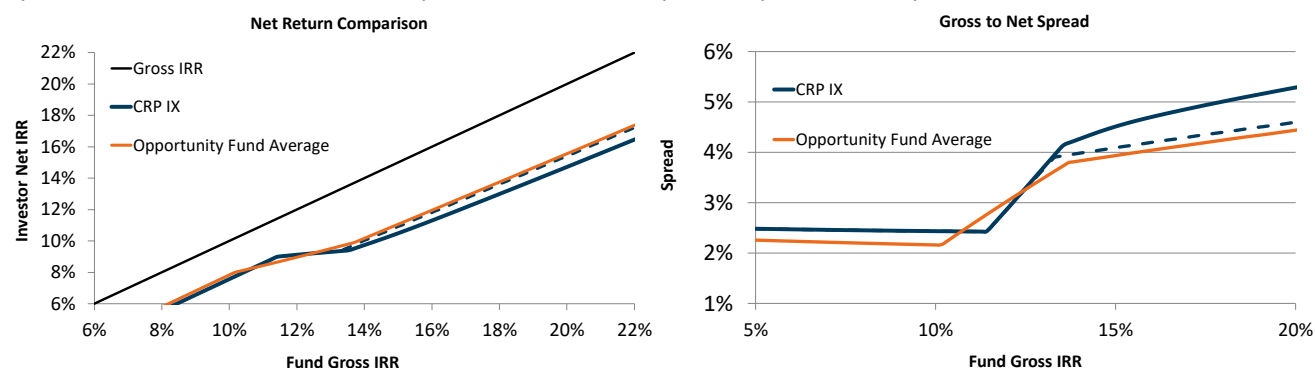
FEES AND DISTRIBUTIONS

Fees and Distribution Waterfall	
Organizational Expenses:	Expenses borne by the Fund over \$6 million will be subject to management fee offset
Asset Management Fee:	Based on Committed then Invested capital 1.50% for commitments up to \$100M 1.20% for commitments of \$100M or greater 1.15% for commitments of \$200M or greater 1.00% for commitments of \$300M or greater There is an incremental 10 bps discount for First Close Commitments up to \$100M There is an incremental 15 bps discount for First Close Commitments of \$100M or greater

Incentive Fee:	Return of Capital; 9% preferred return 20% LP / 80% GP catch-up until GP reaches 20% of profit 80% LP / 20% GP thereafter Distributed on an interim basis subject to clawback
Clawback:	Triggered in the event GP carried interest exceeds 20% of total Fund profit or LP distributions fall below return of capital plus pref at the fund level, occurring at liquidation.

FEE ANALYSIS

The charts below depict the Fund's estimated net IRR and gross/net spread across a range of gross IRR outcomes and compares the results to an average of 61 closed-end opportunistic fund offerings. The analysis assumes the 1.5% "rack rate" as does the fee used for each sample in the average. The five year Commitment Period with fees on committed capital creates the possibility for higher spreads. The 80% GP catch-up makes for an above-average spread at return levels above the 9% preferred return. The Sponsor follows a modified deal-by-deal promote payout method in place of the more common fully pooled distribution method. In this case it is acceptable because it is modified to include a make-whole covering (i) the deal's prorated fees and expenses to date, plus (ii) write-downs to date, plus (iii) return of capital on previously realized investments. The Fund has the potential to produce GP carry distributions earlier than a pooled payout, which increases IRR spread at higher returns as shown below. However, certain scenarios (back ended realizations or hold-backs due to the make-whole provisions) would reduce spread to be more in line with the pooled model, as depicted by the dotted portion of the "CRP IX" line below.



PERFORMANCE (AS OF SEPTEMBER 30, 2020)

SUMMARY

Since the inception of the series in 1997, Carlyle has raised eight funds, all of which have pursued a strategy that is materially similar to Fund IX. Townsend would note:

- The senior team has a great deal of continuity, making the full series relevant for analysis;
- Because the manager, formally or informally, references high absolute return targets, most funds have not met those targets, but the track record distinguishes itself in that (i) no vehicle has resulted in a negative return to investors and (ii) six of eight vehicles have met or exceeded the median of the vintage peer set for U.S. opportunistic fund net IRRs.

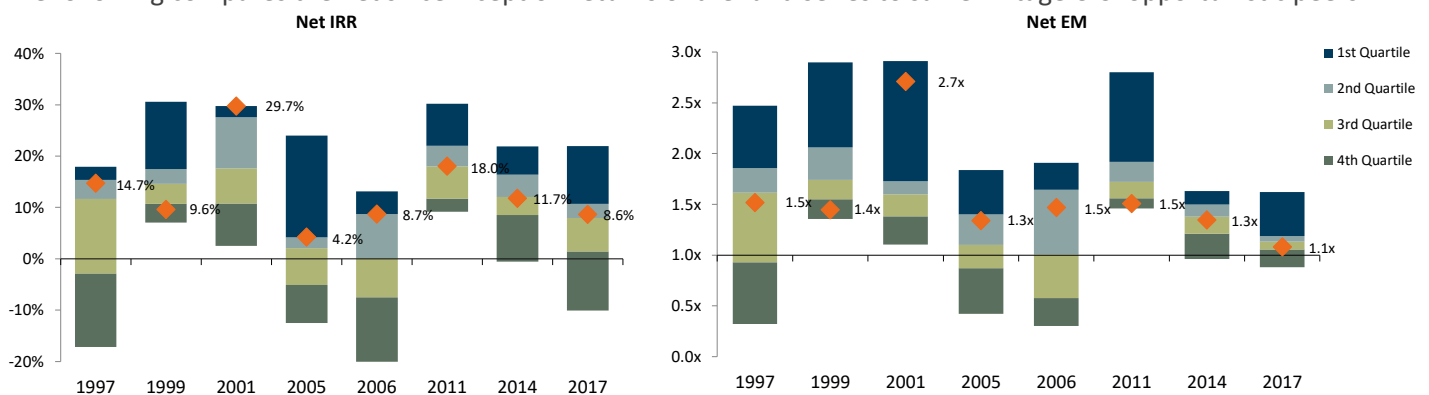
Vehicle	Fund Size (M)	Vintage	Assets (Realized)	Projected Life-of-Fund Net IRR	Fair Market Value				% Realized (of Projected Proceeds)	DPI
					Gross IRR	Net IRR	Net EM	IRR / EM Quartile		
CRP I	\$296	1997	43 (43)	14.7%	21.5%	14.7%	1.5x	2Q / 3Q	100%	1.5
CRP II	\$252	1999	26 (26)	9.6%	11.8%	9.6%	1.4x	4Q / 4Q	100%	1.4
CRP III	\$571	2001	40 (40)	29.7%	43.8%	29.7%	2.7x	1Q / 1Q	100%	2.7
CRP IV	\$950	2005	78 (78)	4.2%	7.4%	4.2%	1.3x	1Q / 2Q	100%	1.3
CRP V	\$3,000	2006	151 (148)	8.7%	12.3%	8.7%	1.5x	1Q / 2Q	87%	1.3
CRP VI	\$2,340	2011	129 (114)	18.0%	27.0%	18.0%	1.5x	2Q / 3Q	91%	1.4
CRP VII	\$4,162	2014	195 (125)	17.0%	18.8%	11.7%	1.3x	3Q / 3Q	56%	0.9
CRP VIII	\$5,505	2017	182 (17)	21.0%	33.0%	8.6%	1.1x	2Q / 3Q	7%	0.2

With respect to Fund VII and VIII projected returns:

- In both instances, deviation from FMV to projected returns can be attributed mostly to j-curve in development assets, particularly weaker than expected lease-up in completed multifamily assets due to the COVID-19 pandemic. The strategy doesn't lend itself to initial value creation "off-the-buy" or high initial cash flow, so j-curve is expected.
- Specific to Fund VIII, performance at the asset level is fairly strong despite a low FMV net IRR. The Fund's gross IRR is 33.0%, roughly a third of the fund's multifamily developments have completed construction, and the fund has generated some early realizations. Initial expenses and fees on committed capital over a short period contribute to the large gross-to-net, which is expected to normalize over the fund life.
- Line-by-line performance detail for Funds VII and VIII is included in **Exhibit D**.

PEER COMPARISON

The following compares the net since inception returns of the fund series to same vintage U.S. opportunistic peers:

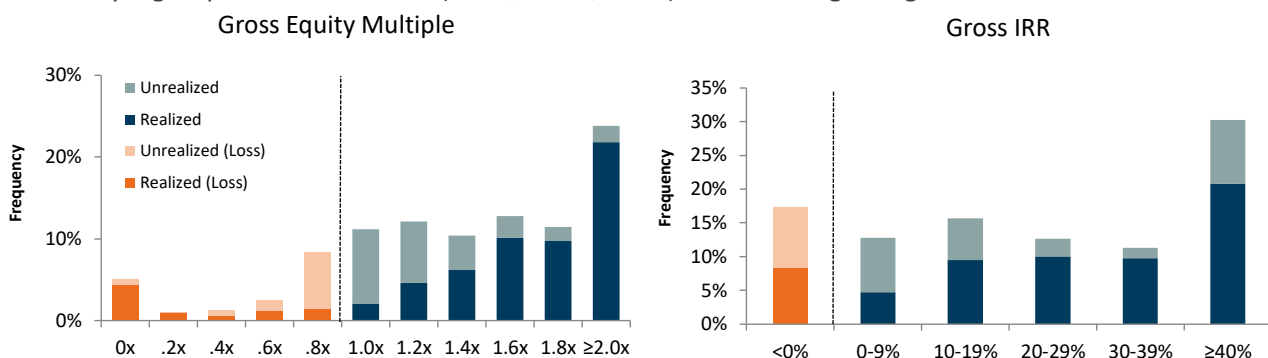


Source: Townsend and Prequin opportunistic fund data as of September 30, 2020. Range shown is 95th to 5th percentile.

DISPERSION OF RETURNS

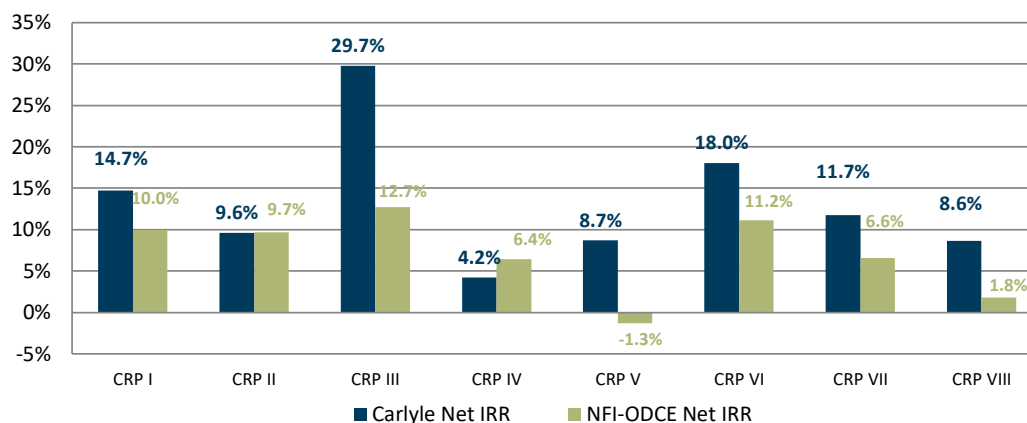
The following illustrates the dispersion of individual investment returns from funds I through VIII. Figures are based on realizations and mark-to-market gross returns.

- The return distribution is standard for an opportunistic series of this length spanning multiple cycles. The 17% ratio of losses is relatively favorable, and the majority of transactions have exceeded the Fund's targeted 20% gross returns. The loss ratio drops to 11% taking into consideration life-of-deal projections, largely due to a high number of Fund VIII developments marked near or below cost but expected to be profitable upon realization.
- There is minimal performance bias across business plan type (acquisition vs. development) and the sectors Carlyle groups as "GDP-driven" (retail, office, hotel) showed a slight negative bias in the GFC.



NFI-ODCE COMPARISON

For comparison to a lower risk alternative within the asset class, the following analysis assumes the CRP series fund net cash flow were instead invested into and out of the NFI-ODCE index, the most widely used index for U.S. fund-based core performance. The hypothetical ODCE-equivalent IRRs are compared to the Carlyle fund net since inception IRRs below. The series has produced an average of 603 bps of outperformance (447 excluding Fund III as an outlier) net of all fees to date.



OTHER U.S. PERFORMANCE

- Credit Funds: From 2008 through 2012, Carlyle invested a series of vehicles targeting RMBS opportunities arising from the GFC. These vehicles co-invested alongside CRP V and related Carlyle credit funds. They are fully realized.
- Carlyle Property Investors: In 2016 Carlyle launched an open-end core plus product. The strategy shares a similar focus on sectors with demographic tailwinds and invests primarily in stabilized assets, albeit with a higher leverage profile than typical ODCE core funds. The fund has outperformed the NFI-ODCE to date.

Credit

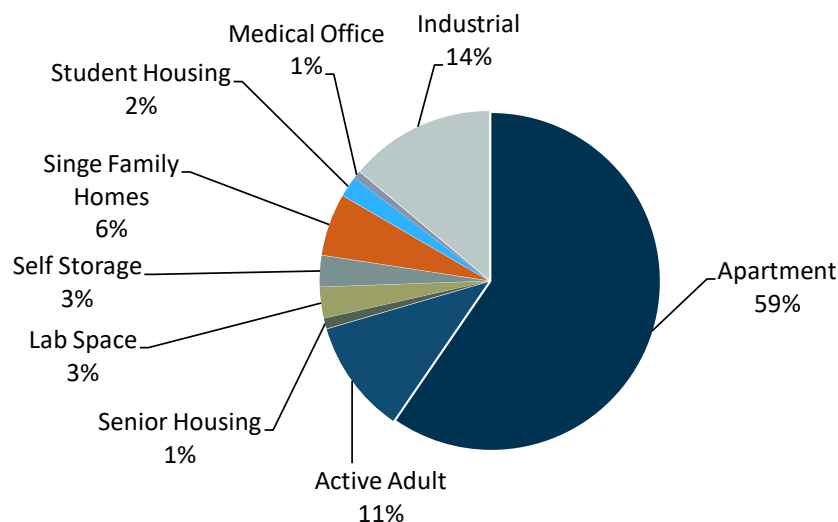
Vehicle	Invested Equity (M)	Vintage	Since Inception		Status
			Net IRR	Net EM	
RMBS I	\$84	2008	15.9%	1.3x	Fully Realized
RMBS II	\$47	2009	28.8%	1.5x	Fully Realized
RMBS III	\$28	2009	12.1%	1.3x	Fully Realized
RMBS IV	\$10	2010	19.5%	1.3x	Fully Realized
CRCP	\$144	2012	22.3%	1.3x	Fully Realized

U.S. Core Plus

	NAV (M)	GAV (M)	Investments	LTV		Net Time Weighted Returns		
						1-year	3-year	SI (3Q16)
Carlyle Property Investors	\$2,522	\$6,381	105	51.3%	CPI	7.26%	7.58%	9.97%
					NFI-ODCE	0.51%	4.25%	5.01%

EXHIBIT A: CRP Sector Allocation and Outlook

CRP IX Sector Allocation



Carlyle Sector Quality Outlook

- Not expected to be proportionate to portfolio weightings due to scalability of certain strategies
- Some sectors (eg data center, manufactured housing) are viewed favorably but execution strategies are more suited for core/core plus capital and not likely represented in Fund IX
- Detailed descriptions of the risk grade methodology are included in the Manager's 2020 White Paper

Sector	Primary Demand Driver	Cash Flow Margins	Length of Stay	Technology Adjustment	Overall Risk Grade	Return/Risk Ratio ¹	Conclusion
Active Adult	Demographics	Medium	Long	None	A-	2.0	Most Favorable
Single-Family Rental	Demographics	Medium	Long	None	B+	1.6	
Medical (Office Building)	Demographics	High	Long	None	B+	2.3	
Data Centers	GDP/ Technology	Medium	Long	Positive	B+	2.5	
Life Sciences	Demographics	High	Medium	Positive	B+	0.8	
Industrial (Warehouse)	GDP/ Technology	Medium	Medium	Positive	B	1.6	
Multifamily	Demographics	Medium	Medium	None	B	1.0	Neutral
Self Storage	Demographics	High	Medium	None	B	0.7	
Student Housing	Demographics	Medium	Short	Negative	B-	0.9	
Senior Housing	Demographics	Low	Medium	None	B-	0.6	
Office	GDP	Low	Medium	Negative	C	0.3	Least Favorable
Retail	GDP	Medium	Medium	Negative	D	0.4	
Hotel	GDP	Low	Short	Negative	D	0.3	

EXHIBIT B: Senior Personnel Biographies

Robert G. Stuckey is a Managing Director and the head of all of Carlyle's U.S. real estate funds. He has held that position since joining the firm in 1998. He is also a member of Carlyle's Management Committee. He is based in Washington, D.C. He is currently Chairman of CoreSite, a NYSE-traded REIT that owns data center properties. His awards include Top 100 New York's Most Influential Real Estate Professionals. Prior to joining Carlyle, Mr. Stuckey was Chief Investment Officer for CarrAmerica Realty Corporation. He established and led the investment effort that resulted in CarrAmerica's growth from a local to a national company. Prior to joining CarrAmerica, Mr. Stuckey was Senior Vice President of ProLogis (formerly Security Capital Industrial Trust). While at ProLogis, he held senior roles focusing on acquisition and development investments. Mr. Stuckey has also served as Chief Financial Officer for Trammell Crow Company, NE, the Northeast region of Trammell Crow Company. In addition, he was a member of Trammell Crow Ventures, a merchant banking affiliate to Trammell Crow Company. Mr. Stuckey holds an M.B.A. from Harvard University and was twice an academic All-American at the University of Nebraska.

Jonathan Bard is a Managing Director focused on U.S. real estate opportunities. He is responsible for all aspects of real estate investments, with a geographic focus on the West Coast. Mr. Bard is based in Los Angeles. Since joining Carlyle in 2011, Mr. Bard has been involved with the execution and asset management of investments across a multitude of sectors including medical office, production studios, residential, and other alternative asset types. Prior to joining Carlyle, Mr. Bard was a Vice President in the Real Estate Principal Investment Area at Goldman Sachs in New York. He also worked as an Associate at Vestar Capital Partners, where he focused on consumer and industrial buyouts. Prior to that, he was an analyst in the Global Power Investment Banking group at Lehman Brothers. Mr. Bard received his MBA from Harvard Business School and holds a BS in accounting with a minor in economics from Bucknell University.

Paul B. Brady is a Managing Director focused on U.S. real estate opportunities on the West Coast, joining the group in 1997. He is based in Southern California. Paul has been active in multiple asset classes throughout his tenure. His responsibilities include the acquisition, development, management and divestiture of numerous assets. Some notable transactions include the development of Netflix's headquarters, as well as other developments for Google and Apple, all located in the Silicon Valley. Further, Paul acquired One Wilshire and Market Post Tower among other telecom assets which Carlyle fully transformed into inter-connected data centers that served as critical assets in Carlyle's launching of the Coresite IPO. Additionally, Paul has re-developed several projects in the vibrant San Francisco life science market. Also, Paul has been instrumental in the acquisition and development of numerous multi-family and manufactured housing assets throughout the West Coast. Mr. Brady received his M.B.A. from the J.L. Kellogg Graduate School of Management at Northwestern University where he was a member of the Beta Gamma Society. He received a B.A. degree from the University of Notre Dame where he was a Notre Dame Scholar.

Timothy Bruning is a Managing Director with U.S. Real Estate, focusing on residential and commercial real estate investments in the Western United States. Mr. Bruning is based in Los Angeles. Since joining Carlyle in 2001, Mr. Bruning has been actively involved in acquisitions and asset management for a variety of property types, including for-sale residential, multifamily, student housing, retail and office. During his tenure, Mr. Bruning has worked on transaction teams that have acquired, developed and sold over \$3 billion in residential apartments and condominiums across the country. Prior to joining Carlyle, Mr. Bruning was with KPMG in Washington D.C. where he worked as a Senior Auditor. Mr. Bruning received an M.B.A. from The University of Maryland and a B.S. in accounting from the University of Richmond where he graduated magna cum laude. Mr. Bruning is a former C.P.A. and is currently a licensed real estate broker in the State of California.

Adam Buchwald is a Managing Director focused on U.S. real estate opportunities. He is responsible for all aspects of real estate investments, with a geographic focus on Texas and the Southeast, as well as a sector focus on residential properties. He is based in Washington, DC. Since joining Carlyle in 2007, Mr. Buchwald has been involved with the execution of over 122 transactions with an all-in capitalization exceeding \$2.1 billion and the asset management of Carlyle's portfolio of residential assets, which includes over 60 deals exited representing a value of

over \$1.4 billion. Prior to joining Carlyle, Mr. Buchwald was a Vice President at the Athena Group, LLC, where he executed real estate transactions and managed multiple development projects on behalf of the firm's opportunity fund. Prior to that, Mr. Buchwald worked as an Analyst in the Real Estate Mergers and Acquisitions group at Lazard. Mr. Buchwald graduated *cum laude* from Princeton University, where he received a BSE in operations research and financial engineering.

Zachary D. Crowe is a Managing Director focused on U.S. real estate opportunities. He is responsible for all aspects of real estate investments, with a particular focus on multifamily, senior housing and medical office properties. Prior to joining Carlyle, Mr. Crowe worked at Lehman Brothers for 2 years where he evaluated U.S. real estate opportunities. Since joining Carlyle in 2007, Mr. Crowe has been involved with the execution of over 100 transactions with an all-in capitalization exceeding \$5.0 billion and the asset management of Carlyle's portfolio of Active Adult and Medical Office assets. Mr. Crowe graduated with distinction from the University of Virginia with a B.A. in economics and a minor in history in 2005. He is a Special Assistant to the Trustees of the Bedford Falls Foundation and has served in multiple capacities at the University of Virginia (Advisory Board for the School of Nursing, Board of Trustees for the Health Foundation and Benefactors Society Board for the College of Arts). He is a dual citizen of the United Kingdom and United States.

David B. Daniel is a Managing Director focused on U.S. real estate opportunities. He is based in Washington, D.C. Mr. Daniel currently co-heads the Transactions group where he oversees deal structuring, due diligence, and capital structure initiatives. Since joining Carlyle in 2000, he has been involved in all aspects of the business, including sourcing, asset management, and risk management activities. Prior to joining Carlyle, Mr. Daniel was with Prologis, a multinational real estate investment trust, where he was responsible for all North American acquisition and disposition activities and was a member of Prologis' Investment Committee. Mr. Daniel received his M.B.A. from Rice University and his B.B.A. in finance from Texas A&M University.

Michael D. Gershenson is a Partner focused on U.S. real estate opportunities. He is responsible for all aspects of real estate investments, with a geographic focus on New York and Boston, as well as a product focus on multifamily, life science and industrial properties. Mr. Gershenson is based in New York. Since joining Carlyle in 2002, Mr. Gershenson has been involved with the execution of over 75 transactions with an all-in capitalization exceeding \$3.0 billion and the asset management of Carlyle's portfolio of life science, retail and industrial assets. Prior to joining Carlyle, Mr. Gershenson was with Deutsche Banc Alex. Brown's mergers, acquisitions and corporate advisory group in New York where he specialized in real estate transactions. Mr. Gershenson received a B.S.B.A. from the McDonough School of Business at Georgetown University and currently serves on the Steering Committee of the Steers Center for Global Real Estate at Georgetown University.

James M. Grippi is a Managing Director focused on U.S. Real Estate opportunities primarily in the New York market. Prior to joining Carlyle in 2007, Mr. Grippi was a Vice President/Project Executive for Bovis Lend Lease. During his 18 years with Bovis Lend Lease, he was responsible for both field operations and overall project management for over 8 million square feet of construction. A select list of projects includes Time Warner Center, Foley Square Federal Court House, White Plains Federal Court House, ABC Studios, Beth Israel Hospital, One and Four Metrotech Center and The Orion @ 350 West 42nd St. Mr. Grippi received his B.S. in Architecture from New York Institute of Technology and a Diploma in Construction Management from New York University. He currently serves on the Board of Governors for The Real Estate Board of New York.

Jason P. Hart is a Managing Director focused on U.S. real estate opportunities throughout the New York Metro market. Mr. Hart is based in New York. Since joining Carlyle in 2005, Mr. Hart has been involved in U.S. real estate transactions including the acquisition, financing, and development of condominiums, multi-family assets, self-storage facilities and single-family rental assets. Prior to joining Carlyle, Mr. Hart was a Vice President of The Praedium Group, LLC in New York where he was responsible for acquisitions in the southwestern United States. Mr. Hart graduated *cum laude* from the McDonough School of Business at Georgetown University with a B.S.B.A. in finance.

D. Scott Jenkins is a Managing Director focused on U.S. real estate opportunities. He joined the firm in 2002 and is based in Washington, DC. Scott has been involved in multiple real estate sectors throughout his tenure. He has expertise in multifamily rental, manufactured housing, self-storage and for-sale residential. His responsibilities include sourcing, acquisitions, asset management and dispositions. Scott has acquired, developed and sold numerous assets across these sectors. Recent notable transactions include the disposition of Carlyle's self-storage portfolio that was valued at \$600 million. Scott currently oversees Carlyle's national manufactured housing and self-storage platforms. Mr. Jenkins received his BBA from James Madison University with a distinction in finance. He graduated summa cum laude and was a member of the Beta Gamma Sigma and Golden Key national honor societies.

Dave Kingery is a Managing Director of U.S. Real Estate, with primary focus on the San Francisco Bay Area and Pacific Northwest. Mr. Kingery is based in San Francisco, California. Mr. Kingery has been responsible for the acquisition, asset management and disposition of over 30 investments for Carlyle, including the Netflix headquarters development, Doubletree Culver City, Plaza Del Rey manufactured housing, Mountain View Shoreline, and two Life science conversions, Edgewater and 6000 Shoreline. Prior to joining Carlyle in 2006, Mr. Kingery was with CarrAmerica in the San Francisco Bay Area. From 1996-2003 he was at ZKS Real Estate Partners, an operating partner on numerous Carlyle West Coast investments in Carlyle Realty Partners I, II, and III. Mr. Kingery received an M.S.I.A. from Purdue University and a B.S., in chemistry with a minor in athletic coaching, from University of California – Santa Barbara.

Tom R. Levy is a Managing Director focused on U.S. real estate opportunities, joining the group in 2007. He is based in Washington, D.C. Mr. Levy has been active in multiple asset classes throughout his tenure. His responsibilities include the sourcing, due diligence, development, asset management and disposition of numerous assets. Some notable transactions include the acquisition of a partial interest in 666 5th Avenue, where Mr. Levy led the due diligence, financing, leasing, and divestiture of the retail asset and 170 Broadway, where he led the due diligence, redevelopment from an office building to a Marriott Residence Inn with ground floor retail, and sale. Further, he led the acquisition of Reston Sunrise among other telecom assets that Carlyle fully transformed into inter-connected data centers that served as critical assets in Carlyle's launching of the Coresite IPO. Additionally, Mr. Levy has led the development multi-family projects in the Midwest, including Variant, Junction Flats, Maple & Main, and Park 205. Mr. Levy also led the development of active adult communities in the Midwest, including establishing the Avidor brand, and student housing projects throughout the US. Prior to joining Carlyle, Mr. Levy was a Senior Vice President at CarrAmerica Realty Corporation in Washington, DC, where he specialized in the acquisition and disposition of office buildings. From 1994 to 1996, Mr. Levy was an Associate at J.E. Robert Companies and from 1992 to 1994 he was a Senior Consultant at Arthur Andersen & Co. Mr. Levy received his MBA from American University and his BA in Economics from University of Wisconsin at Madison.

Christopher S. ('Chip') Lippman is a Managing Director focused on U.S. real estate opportunities. He joined the firm in 1998 and has led various investment sourcing strategies in markets across the United States, and holds portfolio management responsibilities for the US Real Estate funds. He is also involved in capital raising activities for Carlyle Realty Partners and Carlyle Property Investors. He is a member of the Investment Committee for the US funds and Carlyle Europe Realty. Prior to joining Carlyle, Mr. Lippman was a Vice President specializing in real estate with Friedman Billings & Ramsey, an investment bank located in Arlington, VA. From 1993 to 1997, Mr. Lippman was employed by CarrAmerica Realty Corporation, a publicly-traded real estate investment trust. He graduated cum laude from Harvard College with an AB in Economics.

Barbara A. Murphy is a Managing Director focused on U.S. real estate opportunities. She is based in Washington, D.C. Mrs. Murphy is responsible for leading the asset management strategies and investment reporting for the U.S. real estate funds. Her role includes guiding the strategies and implementation of asset management practices, managing programs and systems used to prepare investment level performance results, and overseeing long-term cash flow forecasting, fund liquidity and risk management. Prior to joining Carlyle in 2000, Mrs. Murphy was with Lincoln Property Company, an international real estate firm, and KPMG in their real estate audit and assurance

division. Mrs. Murphy received a B.S. in accounting from Virginia Polytechnic Institute and State University and completed her CPA designation in Virginia.

Brian D. Nelsen is a Managing Director focused on U.S. real estate opportunities, joining the group in 2001. He is based in Washington, DC. Brian has been active in multiple real estate sectors throughout his tenure. His responsibilities include sourcing, acquisition, development, asset management and disposition of numerous assets. Some notable transactions include the management and disposition of Carlyle's \$1.5+ Billion Residential Mortgage-Backed Securities portfolio. In addition, Brian has sourced, developed and sold numerous multifamily and student housing assets throughout the country. Brian is currently focused on multifamily and single-family rental investment opportunities in various Southeast and Florida markets along with overseeing Lauderdale Marine Center, Carlyle's yacht service facility and shipyard located in Ft. Lauderdale, FL. Mr. Nelsen received his B.B.A. cum laude in finance from James Madison University.

Jade Newburn is a Managing Director focused on U.S. real estate opportunities. He is based in Washington, DC. Prior to joining Carlyle in 2020, Jade was a Partner at Mayer Brown LLP in Chicago, where he practiced law for nearly sixteen years and represented private equity funds, institutional owners and developers across all commercial asset classes and investment structures. He currently is a member of the American College of Real Estate Lawyers and was rated by Chambers. Mr. Newburn holds undergraduate degrees from Brown University and University of Oxford (Balliol College) and a JD from Harvard Law School.

Edward V. Samek is a Managing Director focused on U.S. real estate opportunities on the West Coast. He is based in Los Angeles, CA. Mr. Samek is responsible for sourcing, investing, and portfolio management for the US Real Estate funds and has led investments in ten different product sectors across multiple geographies. Before establishing the Los Angeles office in 2006, Mr. Samek was based in Washington, D.C., where he oversaw transactions in Boston, Washington, D.C., Florida and California. Prior to joining Carlyle in 2000, Mr. Samek worked at the J.E. Robert Co. Mr. Samek graduated from the Wharton School at the University of Pennsylvania.

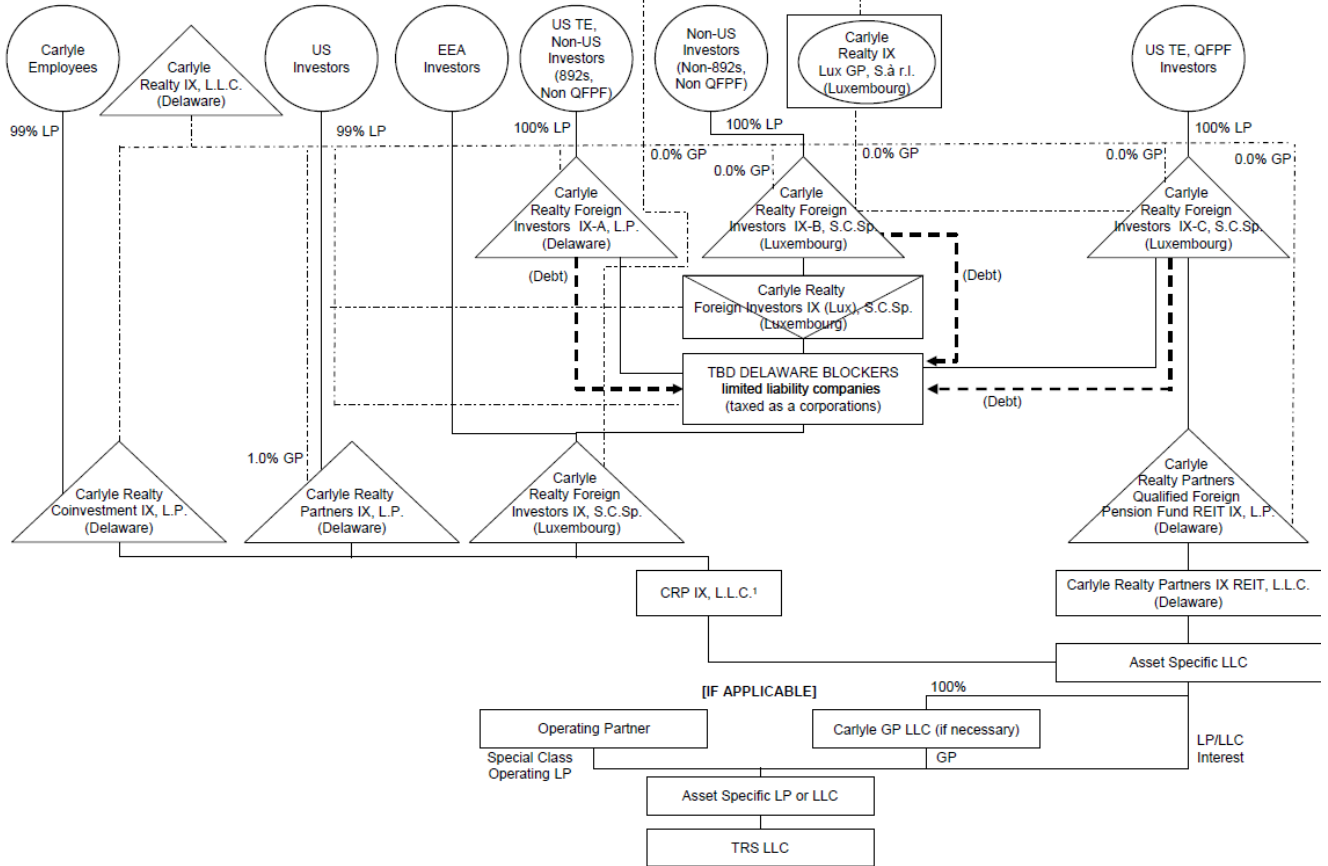
Mark J. Schoenfeld is a Managing Director, in Carlyle's U.S. real estate group. Mr. Schoenfeld is Carlyle's first real estate employee (1992) and he is based in Washington, DC. Mr. Schoenfeld's focus is on U.S. real estate investment sourcing in the northeast corridor from Washington, D.C., to Boston. He also is involved in fundraising activities for Carlyle Realty Partners and Carlyle Property Investors (CPI). He serves as Portfolio Manager for CPI and he is a member of Carlyle's real estate investment committee. His awards include Top 100 New York's Most Influential Real Estate Professionals. Prior to joining Carlyle, Mr. Schoenfeld was a Senior Vice President at Perpetual Savings Bank and before that was a Managing Director at MNC Investment Bank, a subsidiary of Maryland National Bank/American Securities Bank. Mr. Schoenfeld graduated from Michigan State University and he was a member of Beta Gamma Sigma and Phi Kappa Phi.

James S. Williams is a Managing Director focused on U.S. real estate opportunities. He is based in Washington, D.C. Prior to joining Carlyle, Mr. Williams was a Managing Director of Development of CarrAmerica Realty Corporation and President of CarrAmerica Development, Inc. He also served as a member of CarrAmerica's Investment Committee, Operating Committee, Design Review Committee, and Technology Steering Committee. Since 1996, he had been responsible for CarrAmerica's national development program which included the development of over 13 million square feet in 12 markets on behalf of CarrAmerica and its clients. Prior to rejoining CarrAmerica in 1996, Mr. Williams served as Vice President of Operations of Chadwick International for three years, where he was responsible for housing development in North Africa. From 1983 to 1993, he served in a variety of capacities for The Oliver Carr Company including Senior Vice President of Development, Senior Vice President of Design and Construction, and as Project Manager for the Willard Hotel and Office complex. Prior to that, as Project Manager, he was responsible for the development of the Peppermill! Office and Condominium project in Georgetown. Mr. Williams is the immediate past President of the District of Columbia Building Industry Association. He is also a member of NAIOP and the AOD. He holds a bachelor of science in finance from West Virginia University.

EXHIBIT C: Fund Structure

Carlyle Realty Partners IX
Fund Structure (REIT)

TRADE SECRET & STRICTLY CONFIDENTIAL



¹ Note: There may be one or more of these aggregator vehicles.

FOR DISCUSSION ONLY

This structure chart is provided for informational purposes only on a restricted and confidential basis and is subject to further modification, completion and amendment.

EXHIBIT D: Fund VIII Performance Detail (cont.)

Deal Level Information										Projected		Fair Market Value				
Investment	Fund	Deal Descriptor / Business Plan	Partner	Property Type	Location	Acquisition Date	Sale Date or Modeled Sale Date	Total Transaction Size ¹	Total Equity ²	Fund Equity ³	Realized Proceeds to Fund Equity	Realized Proceeds & Projected Proceeds to Fund Equity ⁴	Gross Equity Multiple	Gross IRR	Gross Equity Multiple	Gross IRR ⁽⁴⁾
CSH - Harbor at Lakeway	Fund VIII	Existing	Capitol Seniors Housing	Senior Living	Lakeway, TX	2/1/2018	6/30/2023	\$49,752,001	\$18,945,361	\$18,945,361	\$0	\$29,867,210	1.6x	13%	0.7x	-29%
Greystar - Overture Cary	Fund VIII	Development	Greystar	Active Adult	Cary, NC	5/17/2019	6/30/2023	\$47,260,408	\$16,652,738	\$16,652,738	\$0	\$31,251,910	1.9x	27%	1.0x	49%
Lafayette SF Rental	Fund VIII	Existing	Lafayette	Single-Family Home Rental	Riverview, FL	12/20/2019	6/30/2023	\$74,952,866	\$21,439,077	\$21,439,077	\$0	\$33,995,354	1.6x	24%	1.0x	(6)
Phelan - Salt Lake City	Fund VIII	Development	Phelan Development	Industrial	Salt Lake City, UT	9/11/2020	6/30/2023	\$57,861,876	\$19,818,782	\$19,818,782	\$0	\$31,085,589	1.6x	22%	0.9x	(6)
RangeWater - Bell Drive	Fund VIII	Development	RangeWater Real Estate	Single-Family Home Rental	Flowerly Branch, GA	6/19/2020	6/30/2023	\$45,096,823	\$16,234,856	\$16,234,856	\$0	\$25,663,532	1.6x	24%	0.8x	(6)
Sparrow Surprise Center	Fund VIII	Development	Sparrow Partners	Active Adult	Surprise, AZ	12/17/2019	6/30/2023	\$39,991,390	\$13,576,481	\$13,576,481	\$0	\$24,380,787	1.8x	28%	0.9x	(6)
StorQuest - Bothell	Fund VIII	Development	William Warren Group	Self Storage	Bothell, WA	3/21/2019	6/30/2023	\$20,430,153	\$6,040,436	\$6,040,436	\$0	\$13,521,797	2.2x	30%	1.5x	>50%
TCC - Ridgedale	Fund VIII	Development	Trammell Crow Company	Active Adult	Minnetonka, MN	12/21/2018	6/30/2023	\$56,266,065	\$18,843,562	\$18,843,562	\$0	\$33,848,419	1.8x	21%	1.0x	11%
Broadstone Vin	Fund VIII	Development	Alliance Residential	Multifamily Residential	Seattle, WA	7/13/2020	7/31/2023	\$53,420,000	\$21,100,983	\$21,100,983	\$0	\$34,863,907	1.7x	23%	0.9x	(6)
Clover - Redlands	Fund VIII	Development	Clover Management	Active Adult	Indianapolis, IN	7/20/2020	7/31/2023	\$15,858,294	\$5,160,075	\$5,160,075	\$0	\$7,851,837	1.5x	21%	0.9x	(6)
Penler - Gallatin	Fund VIII	Development	Penler	Multifamily Residential	Gallatin, TN	7/23/2020	7/31/2023	\$41,396,812	\$12,949,165	\$12,949,165	\$0	\$22,032,829	1.7x	25%	0.6x	(6)
Prose Ranch	Fund VIII	Development	Alliance Residential	Multifamily Residential	Sachse, TX	4/28/2020	7/31/2023	\$44,345,404	\$14,960,216	\$14,960,216	\$0	\$24,030,510	1.6x	22%	0.8x	(6)
RangeWater - Cadence at Nocatee	Fund VIII	Development	RangeWater Real Estate	Multifamily Residential	Jacksonville, FL	7/23/2020	7/31/2023	\$52,054,654	\$17,055,589	\$17,055,589	\$0	\$27,273,767	1.6x	21%	0.9x	(6)
RangeWater - Grand Cypress	Fund VIII	Development	RangeWater Real Estate	Multifamily Residential	Tampa, FL	7/29/2020	7/31/2023	\$56,652,773	\$17,664,096	\$17,664,096	\$0	\$28,407,305	1.6x	22%	0.8x	(6)
Toll Brothers - Emblem 120	Fund VIII	Development	Toll Brothers	Multifamily Residential	Woburn, MA	4/10/2020	8/31/2023	\$120,242,269	\$30,529,410	\$30,529,410	\$0	\$54,053,234	1.8x	26%	1.0x	(6)
Toll Brothers - Osprey	Fund VIII	Development	Toll Brothers	Multifamily Residential	Atlanta, GA	8/23/2019	8/31/2023	\$95,201,993	\$27,331,410	\$27,331,410	\$0	\$49,725,177	1.8x	22%	1.2x	(6)
Broadstone ThinkEast	Fund VIII	Development	Alliance Residential	Multifamily Residential	Austin, TX	9/9/2020	9/30/2023	\$60,033,512	\$23,717,489	\$23,717,489	\$0	\$37,567,570	1.6x	21%	0.9x	(6)
Carroll - Trinity Residences	Fund VIII	Existing	Carroll Organization	Multifamily Residential	Fort Worth, TX	8/9/2017	9/30/2023	\$75,017,494	\$26,467,043	\$26,467,043	\$0	\$32,131,084	1.8x	4%	0.9x	-8%
Greystar - Overture Powers Ferry	Fund VIII	Development	Greystar	Active Adult	Marietta, GA	6/26/2019	9/30/2023	\$45,758,786	\$15,757,812	\$15,757,812	\$0	\$28,778,051	1.2x	24%	1.2x	(6)
Point at Pathstone	Fund VIII	Development	Daniel Corporation	Multifamily Residential	Pensacola, FL	9/23/2020	9/30/2023	\$61,321,086	\$20,396,419	\$20,396,419	\$0	\$31,778,406	1.6x	21%	0.9x	(6)
Porch & Park	Fund VIII	Development	MainStreet Property Group	Multifamily Residential	Redmond, WA	9/30/2020	9/30/2023	\$54,447,200	\$17,194,725	\$17,194,725	\$0	\$27,684,905	1.6x	23%	0.8x	(6)
Prose Manor	Fund VIII	Development	Alliance Residential	Multifamily Residential	Manor, TX	9/16/2020	9/30/2023	\$42,633,640	\$15,176,070	\$15,176,070	\$0	\$23,777,114	1.6x	21%	0.9x	(6)
TCC - Glenview	Fund VIII	Development	Trammell Crow Company	Active Adult	Glenview, IL	5/4/2018	9/30/2023	\$62,033,222	\$21,724,493	\$21,724,493	\$0	\$43,168,638	2.0x	19%	1.1x	7%
The Standard - New Brunswick	Fund VIII	Development	Landmark Properties	Student Housing	New Brunswick, NJ	6/11/2018	9/30/2023	\$115,398,671	\$41,671,516	\$41,671,516	\$0	\$64,461,241	1.5x	14%	1.1x	45%
680 Hamilton	Fund VIII	Development	TPA Residential	Multifamily Residential	Atlanta, GA	7/29/2020	10/31/2023	\$57,286,324	\$20,645,122	\$20,645,122	\$0	\$35,676,909	1.7x	23%	0.9x	(6)
Broadstone McDowell	Fund VIII	Development	Alliance Residential	Multifamily Residential	Scottsdale, AZ	10/7/2019	11/30/2023	\$64,386,219	\$23,639,740	\$23,639,740	\$0	\$40,894,524	1.7x	21%	1.0x	(6)
Court Square West	Fund VIII	Development	King Street Properties	Life Science	Long Island City, NY	5/13/2019	11/30/2023	\$246,733,276	\$81,572,752	\$81,572,752	\$0	\$39,180,211	2.0x	28%	1.3x	>50%
StorQuest - Lake Stevens	Fund VIII	Development	William Warren Group	Self Storage	Lake Stevens, WA	5/8/2019	11/30/2023	\$17,593,212	\$5,189,101	\$5,189,101	\$0	\$11,774,112	2.3x	29%	1.4x	>50%
CSH - Park Creek	Fund VIII	Existing	Capitol Seniors Housing	Senior Living	Cypress, TX	2/23/2018	12/31/2023	\$35,955,379	\$14,766,464	\$14,766,464	\$0	\$22,861,358	1.5x	10%	0.9x	-8%
Elmington - Old Franklin	Fund VIII	Development	Elmington Residential	Single-Family Home Rental	Antioch, TN	9/4/2020	12/31/2023	\$35,289,423	\$15,296,811	\$15,296,811	\$0	\$21,180,915	1.4x	22%	1.0x	(6)
Greystar - Overture Chapel Hill	Fund VIII	Development	Greystar	Active Adult	Chapel Hill, NC	9/25/2018	12/31/2023	\$45,401,927	\$15,400,816	\$15,400,816	\$0	\$33,732,467	2.2x	26%	1.1x	22%
Greystar - Overture Hamlin	Fund VIII	Development	Greystar	Active Adult	Winter Garden, FL	11/15/2019	12/31/2023	\$38,826,780	\$12,636,876	\$12,636,876	\$0	\$22,451,947	1.8x	22%	0.7x	(6)
StorQuest - Marginal Way	Fund VIII	Development	William Warren Group	Self Storage	Seattle, WA	1/13/2020	1/31/2024	\$18,750,251	\$5,765,955	\$5,765,955	\$0	\$10,995,669	1.9x	25%	1.0x	(6)
Greystar - Album Benbrook	Fund VIII	Development	Greystar	Active Adult	Benbrook, TX	6/11/2020	2/29/2024	\$33,856,536	\$11,240,499	\$11,240,499	\$0	\$19,522,559	1.7x	22%	0.9x	(6)
Greystar - Destinations Golden Triangle	Fund VIII	Development	Greystar	Active Adult	Fort Worth, TX	12/23/2019	2/29/2024	\$35,342,928	\$11,794,194	\$11,794,194	\$0	\$20,000,996	1.7x	22%	0.8x	(6)
KSP - Mountain Road	Fund VIII	Existing	King Street Properties	Life Science	Framingham, MA	5/22/2019	5/31/2024	\$60,024,128	\$12,521,354	\$12,521,354	\$0	\$27,187,827	2.2x	32%	1.9x	>50%
StorQuest - Ronkonkoma	Fund VIII	Development	William Warren Group	Self Storage	Ronkonkoma, NY	2/13/2020	5/31/2024	\$15,327,482	\$5,460,108	\$5,460,108	\$0	\$11,178,124	2.0x	26%	1.0x	(6)
40 Central Square	Fund VIII	Development	Procopio Companies	Multifamily Residential	Lynn, MA	4/6/2020	9/30/2024	\$112,859,608	\$37,525,820	\$37,525,820	\$0	\$76,426,761	2.0x	29%	0.9x	(6)
Sparrow Goodyear	Fund VIII	Development	Sparrow Partners	Active Adult	Goodyear, AZ	9/4/2020	9/30/2024	\$40,636,592	\$12,990,855	\$12,990,855	\$0	\$26,138,935	2.0x	23%	0.8x	(6)
Sparrow Mera at Westgate	Fund VIII	Development	Sparrow Partners	Active Adult	Glendale, AZ	9/23/2020	9/30/2024	\$42,114,986	\$13,746,885	\$13,746,885	\$0	\$27,860,496	2.0x	23%	0.8x	(6)
StorQuest - Van Nuys	Fund VIII	Development	William Warren Group	Self Storage	Van Nuys, CA	7/17/2020	1/31/2025	\$27,362,170	\$12,028,632	\$12,028,632	\$0	\$23,158,176	1.9x	21%	0.9x	(6)
Greystar - Album Cooley Station	Fund VIII	Development	Greystar	Active Adult	Gilbert, AZ	9/30/2020	3/31/2025	\$57,714,969	\$18,171,750	\$18,171,750	\$0	\$36,291,953	2.0x	22%	0.9x	(6)
RIK - 480 Centre Street	Fund VIII	Development	RJ Kelly Companies	Self Storage	Quincy, MA	1/17/2020	3/31/2025	\$22,701,516	\$6,772,064	\$6,772,064	\$0	\$15,047,384	2.2x	22%	1.5x	(6)
24-02 QP5	Fund VIII	Development	Botanic Properties, LLC	Life Science	Long Island City, NY	9/14/2020	9/30/2026	\$263,930,257	\$71,621,831	\$71,621,831	\$0	\$167,107,753	2.3x	25%	1.1x	(6)

EXHIBIT D: Fund VII Performance Detail

Investment	Fund	Deal Descriptor / Business Plan	Partner	Property Type	Location	Acquisition Date	Sale Date or Modeled Sale Date	Total Transaction Size	Total Equity	Fund Equity	Realized Proceeds to Fund Equity	Realized Proceeds & Projected Proceeds to Fund Equity	Projected Returns		Fair Market Value Returns	
													Gross Equity Multiple	Gross IRR	Gross Equity Multiple	Gross IRR
Glass Tower	Fund VII	Development	Trumark Companies	For-Sale Residential	Los Angeles, CA	8/8/2014	8/6/2018	\$113,875,624	\$36,742,766	\$36,742,766	\$53,811,722	\$53,811,722	1.5x	18.6%	1.5x	19%
New Haven State Street Lofts	Fund VII	Development	Post Road Residential	Multifamily Residential	New Haven, CT	8/15/2014	2/15/2018	\$61,996,321	\$17,387,025	\$17,387,025	\$37,457,094	\$37,457,094	2.2x	36.1%	2.2x	36%
Greystar - Inman Station	Fund VII	Development	Greystar	Multifamily Residential	Atlanta, GA	8/25/2014	12/1/2017	\$55,563,890	\$15,002,250	\$15,002,250	\$27,506,825	\$27,506,825	1.8x	26.4%	1.8x	26%
North Shoreline Office	Fund VII	Development	Calvano	Office	Mountain View, CA	8/29/2014	3/15/2018	\$99,011,711	\$29,887,163	\$29,887,163	\$84,438,400	\$84,438,400	2.8x	49.6%	2.8x	50%
Postcard Inn Islamorada	Fund VII	Existing	No Partner	Hotel	Islamorada, FL	9/12/2014	12/31/2022	\$98,870,157	\$36,291,762	\$36,291,762	\$0	\$65,036,747	1.8x	8%	1.0x	29%
La Siesta	Fund VII	Existing	No Partner	Hotel	Islamorada, FL	9/12/2014	12/31/2022	\$19,973,203	\$9,144,222	\$9,144,222	\$0	\$13,727,557	1.5x	6%	1.0x	19%
The Patrician	Fund VII	Existing	No Partner	Senior Living	San Diego, CA	9/24/2014	12/19/2017	\$39,187,472	\$14,054,264	\$14,054,264	\$29,011,987	\$29,011,987	2.1x	30.5%	2.1x	31%
Bascom - Bayshore	Fund VII	Existing	The Bascom Group	Multifamily Residential	Las Vegas, NV	9/30/2014	9/14/2017	\$12,466,731	\$4,652,793	\$4,652,793	\$7,047,566	\$7,047,566	1.5x	21.4%	1.5x	21%
Bascom - Summerhill	Fund VII	Existing	The Bascom Group	Multifamily Residential	Las Vegas, NV	9/30/2014	9/13/2017	\$37,415,187	\$15,873,688	\$15,873,688	\$29,590,139	\$29,590,139	1.9x	31.2%	1.9x	31%
171 Halsted	Fund VII	Development	tic Realty Partners, Inc.Focus Development C	Multifamily Residential	Chicago, IL	10/2/2014	12/20/2017	\$82,066,837	\$21,843,900	\$21,843,900	\$43,927,030	\$43,927,030	2.0x	32.8%	2.0x	33%
University Commons	Fund VII	Development	Monday Properties	Multifamily Residential	Williston, ND	10/15/2014	12/31/2022	\$34,976,294	\$23,712,126	\$23,712,126	\$0	\$18,981,547	0.8x	-5%	0.6x	6%
Lennar - Berry Hill Lofts	Fund VII	Development	Lennar Multifamily Investors	Multifamily Residential	Berry Hill, TN	10/15/2014	12/14/2018	\$54,320,334	\$17,247,847	\$17,247,847	\$30,825,848	\$30,743,279	1.8x	18.8%	1.8x	19%
73 Washington Place	Fund VII	Existing	Sabharwal Properties	For-Sale Residential	New York, NY	10/22/2014	12/31/2020	\$11,942,583	\$10,840,443	\$10,840,443	\$0	\$7,010,201	0.6x	-9%	0.6x	10%
Greystar - Audubon Park	Fund VII	Development	Greystar	Multifamily Residential	Orlando, FL	10/27/2014	11/14/2017	\$65,772,635	\$18,317,366	\$18,317,366	\$40,005,449	\$39,969,675	2.2x	34.8%	2.2x	35%
Midland Office Portfolio	Fund VII	Existing	Energy Related Properties	Office	Midland, TX	11/10/2014	8/8/2019	\$49,239,154	\$19,185,084	\$19,185,084	\$44,579,135	\$44,379,636	2.3x	25.3%	2.3x	25%
The Wilshire at River Oaks District	Fund VII	Development	Pelican Builders	For-Sale Residential	Houston, TX	11/21/2014	8/26/2019	\$82,396,912	\$28,204,893	\$28,204,893	\$49,604,343	\$50,270,947	1.8x	23.4%	1.8x	23%
B Ocean Ft Lauderdale	Fund VII	Existing	InSite Group	Hotel	Fort Lauderdale, FL	12/3/2014	12/31/2023	\$163,812,685	\$44,234,551	\$44,234,551	\$9,368,064	\$7,315,877	1.7x	7%	1.1x	-51%
Atlantic Lofts II	Fund VII	Development	Pollack Partners	Multifamily Residential	Atlanta, GA	12/15/2014	11/17/2017	\$62,733,905	\$16,940,180	\$16,940,180	\$33,191,180	\$33,191,180	2.0x	31.5%	2.0x	31%
Oakmont - Pomona	Fund VII	Development	Oakmont Industrial Group	Industrial	Pomona, CA	12/19/2014	3/17/2017	\$16,200,198	\$5,796,020	\$5,796,020	\$11,625,029	\$11,525,029	2.0x	67.6%	2.0x	68%
Block 37	Fund VII	Development	Mack Urban	Multifamily Residential	Portland, OR	12/23/2014	8/2/2019	\$74,533,059	\$21,857,787	\$21,857,787	\$33,515,001	\$33,472,477	1.5x	12.3%	1.5x	12%
JS Sullivan Portfolio	Fund VII	Development	JS Sullivan Development	For-Sale Residential	San Francisco, CA	1/15/2015	7/3/2018	\$29,965,137	\$10,776,003	\$10,776,003	\$15,300,945	\$15,300,944	1.4x	17.7%	1.4x	18%
Tides IV	Fund VII	Development	East West Partners	For-Sale Residential	Mount Pleasant, SC	1/20/2015	11/26/2018	\$30,816,572	\$12,407,139	\$12,407,139	\$18,529,489	\$18,529,489	1.5x	18.8%	1.5x	19%
Vasona Technology Park	Fund VII	Existing	No Partner	Office	Campbell, IL	1/22/2015	12/29/2017	\$89,995,866	\$26,438,583	\$26,438,583	\$52,912,646	\$52,912,646	2.0x	29.3%	2.0x	29%
Newport Beach Plaza	Fund VII	Existing	No Partner	Senior Living	Newport Beach, CA	1/28/2015	12/19/2017	\$29,733,649	\$11,314,694	\$11,314,694	\$19,063,164	\$19,063,164	1.7x	23.6%	1.7x	24%
Lot 8	Fund VII	Development	Fore Property Company	Multifamily Residential	Portland, OR	2/10/2015	8/26/2019	\$67,573,477	\$20,125,391	\$20,125,391	\$38,491,179	\$38,362,914	1.9x	19.9%	1.9x	20%
St. Pete Beach Hotel	Fund VII	Existing	No Partner	Hotel	St. Pete Beach, FL	2/12/2015	10/19/2017	\$38,621,527	\$12,493,527	\$12,493,527	\$26,519,251	\$26,519,251	2.1x	38.4%	2.1x	38%
Fifth and West	Fund VII	Development	Riverside Resources	For-Sale Residential	Austin, TX	2/20/2015	6/24/2019	\$128,779,980	\$31,708,733	\$31,708,733	\$66,110,968	\$66,110,968	2.1x	27.2%	2.1x	27%
StorQuest - Kalamath	Fund VII	Development	William Warren Group	Self Storage	Denver, CO	2/23/2015	5/16/2018	\$10,932,418	\$3,193,976	\$3,193,976	\$8,484,664	\$8,484,664	2.5x	47.9%	2.5x	48%
Alexan - Galleria	Fund VII	Development	Tammell Crow Residential	Multifamily Residential	Houston, TX	2/26/2015	6/30/2022	\$101,392,256	\$35,652,811	\$35,652,811	\$0	\$47,658,685	1.3x	5%	1.1x	78%
Lakeshore Villas	Fund VII	Major Renovation	No Partner	Senior Living	Tampa, FL	2/27/2015	12/31/2022	\$52,849,795	\$26,192,777	\$26,192,777	\$0	\$26,567,324	1.0x	0%	0.8x	12%
Bascom - Bridgecourt	Fund VII	Existing	The Bascom Group	Multifamily Residential	Emeryville, CA	3/17/2015	2/8/2018	\$61,575,000	\$18,877,500	\$18,877,500	\$39,408,523	\$39,379,278	2.1x	36.0%	2.1x	36%
Avonlea at Suwanee Station	Fund VII	Development	Quintus Corp	Multifamily Residential	Suwanee, GA	3/26/2015	6/14/2017	\$29,729,590	\$8,181,000	\$8,181,000	\$18,231,210	\$18,206,566	2.2x	65.2%	2.2x	65%
StorQuest - Westbury	Fund VII	Development	William Warren Group	Self Storage	Westbury, NY	4/3/2015	5/31/2018	\$15,996,825	\$4,489,234	\$4,489,234	\$13,886,459	\$13,886,459	3.1x	54.2%	3.1x	54%
StorQuest - Tech Center	Fund VII	Development	William Warren Group	Self Storage	Denver, CO	4/14/2015	5/16/2018	\$14,067,640	\$3,780,330	\$3,780,330	\$7,361,434	\$7,339,834	2.0x	28.3%	2.0x	28%
StorQuest - Jersey City	Fund VII	Development	William Warren Group	Self Storage	Jersey City, NJ	4/20/2015	5/16/2018	\$24,817,752	\$7,674,123	\$7,674,123	\$21,321,881	\$21,268,481	2.8x	60.6%	2.8x	61%
Woolfe Street	Fund VII	Development	South City Partners	Student Housing	Charleston, SC	4/24/2015	1/31/2021	\$50,723,978	\$17,376,904	\$17,376,904	\$3,718,823	\$20,123,218	1.2x	3%	1.1x	26%
Broadstone Gillette	Fund VII	Development	Alliance Residential	Multifamily Residential	Houston, TX	4/27/2015	3/15/2018	\$65,195,327	\$24,774,223	\$24,774,223	\$41,568,077	\$41,568,077	1.7x	25.2%	1.7x	25%
Broadstone Arts District	Fund VII	Development	Alliance Residential	Multifamily Residential	Phoenix, AZ	4/30/2015	8/10/2018	\$53,027,500	\$17,768,800	\$17,768,800	\$33,957,101	\$33,957,101	1.9x	27.5%	1.9x	28%
Residences at CityPlace	Fund VII	Development	Block Real Estate Services, LLC	Multifamily Residential	Overland Park, KS	5/19/2015	10/10/2018	\$54,025,435	\$14,962,892	\$14,962,892	\$30,858,869	\$30,890,600	2.1x	30.7%	2.1x	31%
Luxury Residential Program	Fund VII	Development	elopment Group,Pathfinder Partners,Thoma	For-Sale Residential	Del Mar, CA	5/20/2015	6/30/2021	\$271,776,550	\$51,927,128	\$51,927,128	\$57,375,371	\$67,018,626	1.3x	11%	1.1x	21%
Buttonwood Village	Fund VII	Existing	No Partner	Manufactured Housing	Punta Gorda, FL	5/22/2015	11/13/2018	\$18,400,371	\$9,032,371	\$9,032,371	\$20,598,657	\$20,475,568	2.3x	34.7%	2.3x	35%
StorQuest - 7th Street	Fund VII	Development	William Warren Group	Self Storage	Phoenix, AZ	5/29/2015	5/16/2018	\$13,444,151	\$4,463,319	\$4,463,319	\$15,178,564	\$15,161,765	3.4x	60.7%	3.4x	61%
Heritage Pointe	Fund VII	Existing	No Partner	Senior Living	Teaneck, NJ	6/2/2015	9/12/2018	\$51,202,945	\$17,972,945	\$17,972,945	\$37,171,578	\$36,869,228	2.1x	27.5%	2.1x	27%
Dedeaux - Nelson & Echelon	Fund VII	Development	Dedeaux	Industrial	City of Industry, CA	6/3/2015	7/18/2018	\$50,513,766	\$14,603,480	\$14,603,480	\$22,894,612	\$22,876,854	1.6x	20.4%	1.6x	20%
1115 W. Fulton Market	Fund VII	Development	McCaffery Interests	Retail	Chicago, IL	6/8/2015	10/31/2017	\$18,398,205	\$5,522,372	\$5,522,372	\$5,702,079	\$5,702,080	1.0x	1.4%	1.0x	1%
Greystar - Overture at Lindbergh	Fund VII	Development	Greystar	Active Adult	Atlanta, GA	6/10/2015	9/30/2022	\$51,374,539	\$16,897,493	\$16,897,493	\$0	\$28,903,303	1.7x	10%	1.3x	17%
Greystar - Overture at Riverwalk	Fund VII	Existing	No Partner	Active Adult	Riverside, CA	6/10/2015	3/31/2020	\$30,914,286	\$9,114,286	\$9,114,286	\$23,947,140	\$23,869,808	2.6x	26.1%	2.6x	26%
Old Fourth Ward	Fund VII	Development	North American Properties	Multifamily Residential	Atlanta, GA	6/15/2015	6/21/2018	\$52,985,959	\$20,411,290	\$20,411,290	\$34,971,677	\$34,971,677	1.7x	27.0%	1.7x	27%
Micropolitan - NoHo West	Fund VII	Development	Micropolitan	Multifamily Residential	Los Angeles, CA	6/26/2015	12/19/2018	\$27,303,013	\$10,686,502	\$10,686,502	\$16,125,000	\$16,125,000	1.5x	16.3%	1.5x	16%
Hilton Mark Center	Fund VII	Existing	No Partner	Hotel	Alexandria, VA	7/1/2015	9/30/2023	\$110,069,659	\$47,069,659	\$47,069,659	\$12,335,533	\$7,280,517	0.8x	-6%	0.4x	-8%
Lauderdale Marine Center	Fund VII	Existing	No Partner	Marina	Fort Lauderdale, FL	7/1/2015	9/30/2021	\$183,198,344	\$58,073,344	\$58,073,344	\$14,250,000	\$26,764,511	3.9x	30%	2.6x	29%
Woodfield - Gateway Center	Fund VII	Development	Woodfield Investments	Multifamily Residential	Durham, NC	7/2/2015	6/1/2018	\$53,382,987	\$16,708,101	\$16,708,101	\$28,742,768	\$28,628,628	1.7x	29.0%	1.7x	29%
Elysian Stone Lake	Fund VII	Development	Calida	Multifamily Residential	Las Vegas, NV	7/13/2015	12/1/2017	\$57,189,214	\$18,620,293	\$18,620,293	\$37,133,732	\$37,133,732	2.0x	55.4%	2.0x	55%
Oakmont - Redwood Avenue	Fund VII	Development	Oakmont Industrial Group	Industrial	Fontana, CA	7/14/2015	3/17/2017	\$16,085,688	\$5,931,951	\$5,931,951	\$11,852,991	\$11,752,991	2.0x	60.3%	2.0x	60%
830 Winter Street	Fund VII	Existing	King Street Properties	Life Science	Waltham, MA	7/20/2015	9/12/2018	\$49,441,119	\$36,692,847	\$36,692,847	\$94,181,671	\$94,162,490	2.6x	40.3%	2.6x	40%
975 Bryant Street	Fund VII	Development	Tammell Crow Residential	Multifamily Residential	San Francisco, CA	8/5/2015	12/6/2018	\$32,277,157	\$10,796,502	\$10,796,502	\$14,023,544	\$14,008,543	1.3x	9.2%	1.3x	9%
133 Greene Street	Fund VII	Existing	60 Guilders	Retail	New York, NY	8/12/2015	10/31/2018	\$53,844,993	\$19,808,135	\$19,808,135	\$0	\$1	0.0x	(6)	0.0x	(6)
Corinthian Medical Office	Fund VII	Existing	60 Guilders	Medical Office	New York, NY	8/25/2015	12/31/2021	\$63,924,364	\$22,735,420	\$22,735,420	\$11,000,000	\$23,771,791	1.0x	2%	1.0x	81%
1800 N. Hghland Avenue	Fund VII	Existing	The Souferian Group	Office	Los Angeles, CA	9/1/2015										

EXHIBIT D: Fund VII Performance Detail (cont.)

Investment	Fund	Deal Descriptor / Business Plan	Partner	Property Type	Location	Acquisition Date	Sale Date or Modeled Sale Date	Total Transaction Size	Total Equity	Fund Equity	Realized Proceeds to Fund Equity	Realized Proceeds & Projected Proceeds to Fund Equity	Projected		Fair Market Value	
													Gross Equity Multiple	Gross IRR	Gross Equity Multiple	Gross IRR
Cottages at Seaside	Fund VII	Existing	InSite Group	Manufactured Housing	Pacifica, CA	9/9/2015	12/31/2020	\$36,541,607	\$22,240,176	\$22,240,176	\$0	\$30,460,802	1.4x	7%	1.2x	18%
Oakmont - 6th and Utica	Fund VII	Development	Oakmont Industrial Group	Industrial	Rancho Cucamonga, CA	9/9/2015	3/17/2017	\$12,844,898	\$4,645,379	\$4,645,379	\$9,206,627	\$9,106,627	2.0x	58.1%	2.0x	58%
Diamond Oaks Village	Fund VII	Development	United Group	Active Adult	Bonita Springs, FL	9/16/2015	12/31/2021	\$51,951,202	\$12,719,045	\$12,719,045	\$0	\$24,601,373	1.9x	15%	1.5x	2%
Opus - West Seventh	Fund VII	Development	The Opus Group	Multifamily Residential	St. Paul, MN	9/22/2015	5/25/2017	\$46,161,812	\$13,674,495	\$13,674,495	\$22,446,665	\$22,446,665	1.6x	46.4%	1.6x	4%
Greystar - Overture at Mueller	Fund VII	Development	Greystar	Active Adult	Austin, TX	9/23/2015	6/30/2023	\$48,021,254	\$17,715,809	\$17,715,809	\$0	\$34,333,708	1.9x	13%	1.5x	190%
Opus - La Grange	Fund VII	Development	The Opus Group	Multifamily Residential	La Grange, IL	9/23/2015	10/8/2019	\$76,418,521	\$28,653,758	\$28,653,758	\$41,146,718	\$42,448,894	1.4x	12.8%	1.4x	13%
1201 Central	Fund VII	Development	CW Development	Multifamily Residential	Charlotte, NC	9/24/2015	9/12/2019	\$65,679,501	\$23,297,114	\$23,297,114	\$37,647,822	\$37,622,822	1.6x	18.8%	1.6x	19%
College Park - Berwyn	Fund VII	Development	Wood Partners	Multifamily Residential	College Park, MD	9/24/2015	11/14/2019	\$71,514,230	\$23,478,519	\$23,478,519	\$48,358,051	\$48,301,153	2.1x	19.8%	2.1x	20%
Westport - 125th	Fund VII	Development	Westport	Self Storage	North Miami, FL	10/2/2015	9/12/2018	\$16,781,296	\$5,205,313	\$5,205,313	\$13,120,690	\$13,111,179	2.5x	44.8%	2.5x	45%
Broadstone Plantation	Fund VII	Development	Alliance Residential	Multifamily Residential	Plantation, FL	10/2/2015	11/13/2018	\$51,917,363	\$17,512,644	\$17,512,644	\$28,567,752	\$28,241,537	1.7x	21.2%	1.7x	21%
Greystar - Overture Sugar Land	Fund VII	Development	Greystar	Active Adult	Sugarland, TX	10/9/2015	12/31/2023	\$43,897,762	\$13,373,358	\$13,373,358	\$0	\$29,403,501	2.2x	13%	1.3x	18%
Plaza Del Rey	Fund VII	Existing	No Partner	Manufactured Housing	Sunnyvale, CA	10/23/2015	8/23/2019	\$179,915,500	\$79,915,500	\$79,915,500	\$204,099,920	\$203,583,706	2.6x	34.9%	2.6x	35%
Shady Grove	Fund VII	Development	The Bozzuto Group	Multifamily Residential	Rockville, MD	10/28/2015	7/2/2019	\$49,372,893	\$19,246,831	\$19,246,831	\$32,564,842	\$32,294,843	1.7x	17.6%	1.7x	18%
Songy - Hyatt Fairfax	Fund VII	Existing	Songy Highroads	Hotel	Fairfax, VA	10/29/2015	12/31/2020	\$41,241,505	\$14,289,429	\$14,289,429	\$0	\$0	0.0x	-100%	0.0x	11%
Westport - Dixie Highway	Fund VII	Development	Westport	Self Storage	North Miami Beach, FL	10/30/2015	9/12/2018	\$13,492,492	\$4,329,286	\$4,329,286	\$11,786,628	\$11,777,117	2.7x	56.1%	2.7x	56%
Stafford Crossing	Fund VII	Development	Crow Holdings Industrial	Industrial	Stafford, TX	10/30/2015	4/9/2018	\$25,865,872	\$8,327,702	\$8,327,702	\$14,372,007	\$14,362,007	1.7x	30.8%	1.7x	31%
Greystar - Overture Tanglewood	Fund VII	Development	Greystar	Active Adult	Houston, TX	11/4/2015	5/2/2019	\$57,432,539	\$14,599,002	\$14,599,002	\$25,451,874	\$25,184,123	1.7x	18.8%	1.7x	19%
Creekside at 17	Fund VII	Development	South Bay Development	Office	Campbell, CA	11/6/2015	3/2/2020	\$102,528,329	\$28,275,172	\$28,275,172	\$48,571,755	\$48,571,756	1.7x	17.5%	1.7x	17%
Olmsted Sobro	Fund VII	Development	Cocke Finkelstein, Inc.	Multifamily Residential	Nashville, TN	11/9/2015	8/9/2018	\$71,554,574	\$20,190,100	\$20,190,100	\$33,250,972	\$33,251,130	1.6x	24.3%	1.6x	24%
Axis West	Fund VII	Development	Flournoy Partners	Multifamily Residential	Orlando, FL	11/10/2015	5/10/2018	\$41,680,315	\$11,302,432	\$11,302,432	\$23,925,748	\$23,921,662	2.1x	43.8%	2.1x	44%
Uptown Fayetteville	Fund VII	Development	Specialized Real Estate Group	Multifamily Residential	Fayetteville, AR	11/12/2015	9/5/2018	\$43,020,890	\$11,615,301	\$11,615,301	\$21,898,649	\$21,703,649	1.9x	32.4%	1.9x	32%
Broadstone Roosevelt Row	Fund VII	Development	Alliance Residential	Multifamily Residential	Phoenix, AZ	11/12/2015	3/12/2019	\$63,586,350	\$22,061,850	\$22,061,850	\$37,568,033	\$37,419,472	1.7x	25.3%	1.7x	25%
StorQuest - La Mesa	Fund VII	Development	William Warren Group	Self Storage	La Mesa, CA	11/30/2015	11/8/2018	\$13,664,087	\$4,346,035	\$4,346,035	\$6,258,800	\$6,239,000	1.4x	14.7%	1.4x	15%
Greystar - Overture Fair Ridge	Fund VII	Development	Greystar	Active Adult	Fairfax, VA	12/2/2015	12/31/2022	\$67,098,568	\$21,066,990	\$21,066,990	\$0	\$44,228,198	2.1x	15%	1.5x	14%
Greystar - Overture Point Chesapeake	Fund VII	Development	Greystar	Active Adult	Virginia Beach, VA	12/3/2015	12/31/2023	\$54,335,918	\$18,145,218	\$18,145,218	\$0	\$36,308,276	2.0x	12%	1.2x	11%
Broadstone Medical Center Apartments	Fund VII	Development	Alliance Residential	Multifamily Residential	San Antonio, TX	12/10/2015	6/30/2022	\$47,955,564	\$17,064,258	\$17,064,258	\$0	\$24,021,902	1.4x	6%	1.0x	21%
Woodfield - Weston Corners	Fund VII	Development	Woodfield Investments	Multifamily Residential	Cary, NC	12/11/2015	10/16/2018	\$54,352,573	\$16,079,086	\$16,079,086	\$27,817,586	\$27,745,790	1.7x	29.0%	1.7x	29%
Greystar - Overture Domain	Fund VII	Development	Greystar	Active Adult	Austin, TX	12/17/2015	12/31/2023	\$46,148,305	\$17,768,275	\$17,768,275	\$3,070,701	\$45,361,365	2.6x	17%	1.6x	36%
Greystar - Overture Arlington Highlands	Fund VII	Development	Greystar	Active Adult	Arlington, TX	12/22/2015	12/31/2022	\$37,644,143	\$9,824,386	\$9,824,386	\$0	\$21,696,147	2.2x	15%	1.7x	10%
Alta Waverly	Fund VII	Development	Wood Partners	Multifamily Residential	Oakland, CA	1/6/2016	12/31/2022	\$98,199,660	\$35,145,757	\$35,145,757	\$0	\$68,745,211	2.0x	13%	1.5x	0%
StorQuest - Scottsdale	Fund VII	Development	William Warren Group	Self Storage	Scottsdale, AZ	1/29/2016	5/16/2018	\$7,051,125	\$2,279,715	\$2,279,715	\$8,771,847	\$8,728,647	3.8x	116.8%	3.8x	117%
Greystar - Overture Stone Oak	Fund VII	Development	Greystar	Active Adult	San Antonio, TX	2/2/2016	12/31/2022	\$34,730,606	\$9,774,401	\$9,774,401	\$0	\$19,482,039	2.0x	13%	1.5x	9%
Oakmont - Cherry Avenue	Fund VII	Development	Oakmont Industrial Group	Industrial	Fontana, CA	2/10/2016	5/5/2017	\$21,927,655	\$8,442,292	\$8,442,292	\$19,907,086	\$19,807,086	2.4x	179.5%	2.4x	179%
Greystar - Overture Crabtree	Fund VII	Development	Greystar	Active Adult	Raleigh, NC	2/12/2016	3/31/2022	\$51,787,814	\$15,597,956	\$15,597,956	\$0	\$34,088,109	2.2x	16%	1.7x	12%
Hanover - Mission Gorge	Fund VII	Development	The Hanover Company	Multifamily Residential	San Diego, CA	2/12/2016	11/1/2019	\$213,741,770	\$71,683,882	\$71,683,882	\$130,947,056	\$130,450,004	1.8x	39.8%	1.8x	40%
2253 Broadway	Fund VII	Development	Alchemy Properties	For-Sale Residential	New York, NY	2/23/2016	7/24/2020	\$170,646,848	\$53,817,218	\$53,817,218	\$86,000,000	\$86,315,936	1.6x	26.0%	1.6x	26%
St. Johns Village	Fund VII	Major Renovation	Chance Partners	Multifamily Residential	Jacksonville, FL	3/10/2016	12/31/2021	\$46,782,077	\$16,342,830	\$16,342,830	\$0	\$29,998,061	1.8x	16%	1.7x	-2%
Broadstone Riverstone	Fund VII	Development	Alliance Residential	Multifamily Residential	Sugar Land, TX	3/23/2016	1/25/2019	\$57,108,279	\$19,173,124	\$19,173,124	\$30,835,739	\$30,835,739	1.6x	22.4%	1.6x	22%
Elysian Flamingo Hualapai	Fund VII	Development	Calida	Multifamily Residential	Las Vegas, NV	3/25/2016	11/27/2019	\$72,209,444	\$23,338,080	\$23,338,080	\$45,839,527	\$45,789,527	2.0x	37.5%	2.0x	38%
Alexan - Katy Trail	Fund VII	Development	Trammell Crow Residential	Multifamily Residential	Dallas, TX	3/29/2016	6/30/2022	\$69,974,837	\$27,728,293	\$27,728,293	\$0	\$40,306,465	1.5x	11%	1.0x	29%
Arbor Terrace Shrewsbury	Fund VII	Existing	Formation Development Group	Senior Living	Tinton Falls, NJ	3/31/2016	9/12/2018	\$37,791,863	\$11,373,449	\$11,373,449	\$19,810,660	\$19,815,898	1.7x	34.6%	1.7x	35%
106 Spring	Fund VII	Existing	60 Guilders	Retail	New York, NY	4/6/2016	4/5/2019	\$134,309,362	\$50,246,917	\$50,246,917	\$0	\$0	0.0x	(6)	0.0x	(6)
Greystar - Overture Fairview	Fund VII	Development	Greystar	Active Adult	Fairview, TX	4/18/2016	12/31/2022	\$43,320,886	\$10,943,989	\$10,943,989	\$0	\$30,303,718	2.8x	19%	1.9x	4%
Hamner Avenue	Fund VII	Development	Crow Holdings Industrial	Industrial	Eastvale, CA	4/22/2016	12/14/2017	\$15,050,288	\$4,824,259	\$4,824,259	\$7,702,088	\$7,567,739	1.6x	54.0%	1.6x	54%
Bozzuto - King of Prussia	Fund VII	Development	The Bozzuto Group	Active Adult	King of Prussia, PA	5/13/2016	6/30/2022	\$78,134,141	\$27,104,497	\$27,104,497	\$0	\$53,759,972	2.0x	15.0%	1.5x	16%
Oakmont - Catawba Avenue	Fund VII	Development	Oakmont Industrial Group	Industrial	Fontana, CA	5/16/2016	12/7/2018	\$18,717,634	\$7,507,406	\$7,507,406	\$10,489,052	\$10,389,052	1.4x	16.4%	1.4x	16%
Micropolitan - Fairfax	Fund VII	Development	Micropolitan	Multifamily Residential	Los Angeles, CA	5/20/2016	12/17/2019	\$29,854,011	\$11,561,155	\$11,561,155	\$17,000,000	\$17,000,000	1.5x	14.7%	1.5x	15%
1300 W. Lake Street	Fund VII	Development	CPM Companies,University Student Living	Multifamily Residential	Minneapolis, MN	5/27/2016	12/18/2019	\$42,023,995	\$11,944,096	\$11,944,096	\$17,686,171	\$17,630,079	1.5x	12.7%	1.5x	13%
StorQuest - Lakewood	Fund VII	Development	William Warren Group	Self Storage	Lakewood, CO	5/31/2016	5/16/2018	\$12,483,795	\$2,993,504	\$2,993,504	\$5,539,879	\$5,518,279	1.9x	45.5%	1.9x	45%
StorQuest - Tigard	Fund VII	Development	William Warren Group	Self Storage	Tigard, OR	6/6/2016	8/29/2019	\$13,990,836	\$3,997,108	\$3,997,108	\$7,812,091	\$8,075,979	2.0x	33.7%	2.0x	34%
Greystar - Overture Barrett	Fund VII	Development	Greystar	Active Adult	Kennesaw, GA	6/17/2016	12/31/2021	\$43,707,807	\$12,245,529	\$12,245,529	\$1,438,009	\$25,910,839	2.1x	17%	1.7x	36%
Bloomfield Center	Fund VII	Development	Post Road Residential	Multifamily Residential	Bloomfield, CT	6/22/2016	12/28/2018	\$48,218,377	\$13,841,875	\$13,841,875	\$23,362,437	\$23,362,437	1.7x	30.3%	1.7x	30%
Greystar - Overture Dadeland	Fund VII	Development	Greystar	Senior Living	Miami, FL	6/23/2016	12/31/2023	\$124,039,312	\$38,821,136	\$38,821,136	\$0	\$71,189,899	1.8x	11%	1.1x	11%
221 W. Hubbard	Fund VII	Development	Centrum Partners	Multifamily Residential	Chicago, IL	6/24/2016	12/19/2019	\$84,795,425	\$28,537,940	\$28,537,940	\$36,136,978	\$36,086,978	1.3x	10.0%	1.3x	10%
Greystar - Overture Flower Mound	Fund VII	Development	Greystar	Active Adult	Flower Mound, TX	6/29/2016	6/30/2023	\$49,267,029	\$14,369,659	\$14,369,659	\$1,641,704	\$38,803,905	2.7x	18%	1.8x	13%
Gables - Republic Square	Fund VII	Development	Gables Residential	Multifamily Residential	Austin, TX	6/30/2016	6/7/2018	\$110,750,000	\$29,631,250	\$29,631,250	\$38,474,992	\$38,474,992	1.3x	26.6%	1.3x	27%
The Guthrie	Fund VII	Development	Argyle Residential	Multifamily Residential	Austin, TX	7/13/2016	6/13/2019	\$53,384,000	\$16,815,600	\$16,815,600	\$34,614,049	\$33,425,000	2.1x	40.4%	2.1x	40%
Opus - ABC North Loop	Fund VII	Development	Greco, The Opus Group	Multifamily Residential	Minneapolis, MN	7/14/2016	10/31/2018	\$36,108,153	\$14,070,233	\$14,070,233	\$23,358,133	\$23,347,500	1.7x	37.9%	1.7x	38%
TTC - 26 Freeman	Fund VII	Development	Trammell Crow Company	Industrial	Fife, WA	7/18/2016										

EXHIBIT D: Fund VII Performance Detail (cont.)

Deal Level Information												Projected Returns		Fair Market Value Returns		
Investment	Fund	Deal Descriptor / Business Plan	Partner	Property Type	Location	Acquisition Date	Sale Date or Modeled Sale Date	Total Transaction Size	Total Equity	Fund Equity	Realized Proceeds to Fund Equity	Realized Proceeds & Projected Proceeds to Fund Equity	Gross Equity Multiple	Gross IRR	Gross Equity Multiple	Gross IRR
CSH - Fairview Commons	Fund VII	Existing	Capitol Seniors Housing	Senior Living	Costa Mesa, CA	7/26/2016	9/30/2022	\$37,590,794	\$16,611,503	\$16,611,503	\$0	\$36,433,442	2.2x	17%	1.3x	3%
Seattle Seniors Portfolio	Fund VII	Existing	Capitol Seniors Housing	Senior Living	Woodinville, WA	8/3/2016	12/31/2021	\$95,867,204	\$41,601,628	\$20,247,208	\$0	\$39,737,828	2.0x	17%	1.3x	60%
Siena Condos	Fund VII	Development	National Development	For-Sale Residential	Boston, MA	8/4/2016	9/12/2019	\$79,052,646	\$15,109,868	\$15,109,868	\$21,355,931	\$21,355,932	1.4x	25.8%	1.4x	26%
Fountains at Ballantyne	Fund VII	Development	Proffitt Dixon	Multifamily Residential	Charlotte, NC	8/5/2016	6/27/2019	\$45,846,223	\$14,483,985	\$14,483,985	\$22,077,158	\$22,030,509	1.5x	21.1%	1.5x	21%
Hanover - Uptown	Fund VII	Development	The Hanover Company	Multifamily Residential	Oakland, CA	8/10/2016	12/31/2022	\$134,729,183	\$49,284,312	\$49,284,312	\$0	\$95,740,806	1.9x	16%	1.6x	117%
Carroll - Arium Crossroads	Fund VII	Existing	Carroll Organization	Multifamily Residential	Houston, TX	8/17/2016	9/10/2019	\$24,259,892	\$8,450,903	\$8,450,903	\$12,990,751	\$13,033,128	1.6x	21.3%	1.6x	21%
6000 Shoreline	Fund VII	Existing	No Partner	Life Science	South San Francisco, CA	8/30/2016	8/31/2017	\$38,469,955	\$13,030,000	\$13,030,000	\$35,179,285	\$34,983,108	2.7x	305.2%	2.7x	305%
SP - 724 Park Place	Fund VII	Development	Sabharwal Properties	Self Storage	Long Beach, NY	9/19/2016	9/12/2018	\$17,513,077	\$8,325,932	\$8,325,932	\$20,345,573	\$20,345,573	4.2x	192.0%	4.2x	192%
RPG - Lot 8	Fund VII	Development	RAF Pacifica Group	Industrial	Carlsbad, CA	9/21/2016	6/8/2020	\$36,129,300	\$8,561,360	\$8,561,360	\$13,846,956	\$14,962,197	1.7x	21.0%	1.7x	21%
RPG - Raceway	Fund VII	Development	RAF Pacifica Group	Industrial	Carlsbad, CA	9/21/2016	9/27/2018	\$46,109,600	\$12,927,680	\$12,927,680	\$21,211,035	\$21,211,035	1.6x	46.5%	1.6x	46%
Broadstone Oak Hills	Fund VII	Development	Alliance Residential	Multifamily Residential	San Antonio, TX	9/27/2016	6/30/2022	\$49,894,156	\$19,334,859	\$19,334,859	\$0	\$13,590,168	1.6x	13%	1.3x	10%
Lakewood Village	Fund VII	Existing	No Partner	Manufactured Housing	Punta Gorda, FL	9/28/2016	11/13/2018	\$18,921,337	\$7,304,337	\$7,304,337	\$11,291,117	\$11,241,117	1.5x	28.1%	1.5x	28%
Alexan - Ross Avenue II	Fund VII	Development	Trammell Crow Residential	Multifamily Residential	Dallas, TX	9/30/2016	6/30/2022	\$52,665,350	\$16,908,366	\$16,908,366	\$0	\$29,892,051	1.8x	16%	1.5x	16%
StorQuest - 45th Avenue	Fund VII	Development	William Warren Group	Self Storage	Denver, CO	9/30/2016	5/16/2018	\$13,193,325	\$3,154,602	\$3,154,602	\$9,082,871	\$9,061,272	2.9x	160.3%	2.9x	160%
Oakmont - Hickory Avenue	Fund VII	Development	Oakmont Industrial Group	Industrial	Rancho Cucamonga, CA	10/3/2016	12/7/2018	\$19,415,455	\$7,686,176	\$7,686,176	\$10,342,911	\$10,242,911	1.3x	19.0%	1.3x	19%
TCC - Downers Grove	Fund VII	Development	Trammell Crow Company	Multifamily Residential	Downers Grove, IL	10/19/2016	12/16/2019	\$34,492,980	\$12,081,064	\$12,081,064	\$17,746,003	\$17,949,025	1.5x	19.9%	1.5x	20%
StorQuest - Anaheim	Fund VII	Development	William Warren Group	Self Storage	Anaheim, CA	10/28/2016	9/12/2018	\$16,317,625	\$5,294,441	\$5,294,441	\$9,416,842	\$9,401,842	1.8x	54.5%	1.8x	55%
Broadstone Burnet	Fund VII	Development	Alliance Residential	Multifamily Residential	Austin, TX	10/28/2016	10/17/2019	\$57,955,903	\$19,819,312	\$19,819,312	\$40,117,073	\$40,117,244	2.0x	39.6%	2.0x	40%
1548 Maple	Fund VII	Existing	Strada	Land	Redwood City, CA	10/31/2016	3/31/2021	\$60,337,473	\$15,493,268	\$15,493,268	\$0	\$34,613,832	2.2x	24%	1.4x	26%
StorQuest - Escondido	Fund VII	Development	William Warren Group	Self Storage	Escondido, CA	11/1/2016	12/10/2019	\$13,930,657	\$4,554,346	\$4,554,346	\$6,910,000	\$7,606,920	1.5x	27.8%	1.5x	28%
RJK - 400 Audubon Road	Fund VII	Development	RJ Kelly Companies	Self Storage	Boston, MA	11/14/2016	12/17/2018	\$10,484,790	\$2,695,553	\$2,695,553	\$5,492,656	\$5,493,012	2.0x	57.2%	2.0x	57%
Hayden Research Campus	Fund VII	Existing	King Street Properties	Life Science	Lexington, MA	11/28/2016	3/23/2018	\$188,188,667	\$56,065,567	\$32,135,962	\$55,250,368	\$54,884,849	1.7x	105.1%	1.7x	105%
StorQuest - West Babylon	Fund VII	Development	William Warren Group	Self Storage	West Babylon, NY	11/29/2016	11/30/2018	\$13,032,052	\$3,489,468	\$3,489,468	\$9,060,023	\$9,038,423	2.6x	83.3%	2.6x	83%
Crescent - Lucerne	Fund VII	Development	Crescent Communities	Multifamily Residential	Orlando, FL	11/30/2016	12/31/2021	\$101,401,052	\$28,169,148	\$28,169,148	\$0	\$42,160,453	1.5x	11%	1.5x	(2)
Broadstone Winter Park	Fund VII	Development	Alliance Residential	Multifamily Residential	Winter Park, FL	12/12/2016	7/9/2019	\$65,962,267	\$25,358,562	\$25,358,562	\$39,438,559	\$39,438,559	1.6x	22.8%	1.6x	23%
Greystar - Weddington NoHo	Fund VII	Development	Greystar	Multifamily Residential	Los Angeles, CA	12/13/2016	9/23/2019	\$123,921,156	\$38,420,857	\$38,420,857	\$57,000,000	\$60,671,315	1.6x	20.2%	1.6x	20%
120 Ninth Street	Fund VII	Development	SC Bodner Company	Multifamily Residential	San Antonio, TX	12/21/2016	6/30/2022	\$44,826,583	\$19,488,390	\$19,488,390	\$0	\$29,101,877	1.5x	13%	1.4x	14%
Princeton at College Park	Fund VII	Development	RangeWater Real Estate	Multifamily Residential	Orlando, FL	12/21/2016	3/25/2020	\$48,009,847	\$13,824,689	\$13,824,689	\$18,667,448	\$18,667,448	1.4x	10.9%	1.4x	11%
Greystar - Overture Kierland	Fund VII	Development	Greystar	Active Adult	Scottsdale, AZ	12/28/2016	12/31/2021	\$49,391,754	\$14,781,559	\$14,781,559	\$0	\$35,374,867	2.4x	23%	1.8x	6%
SP - 260 Wild Avenue	Fund VII	Development	Sabharwal Properties	Self Storage	Staten Island, NY	1/26/2017	5/31/2022	\$28,467,243	\$9,871,567	\$9,871,567	\$0	\$25,099,078	2.5x	29%	2.5x	0%
Greystar - Overture San Marcos	Fund VII	Existing	Greystar	Active Adult	San Marcos, CA	1/26/2017	3/31/2020	\$47,621,850	\$16,095,512	\$16,095,512	\$31,066,620	\$30,960,089	1.9x	25.8%	1.9x	26%
Fore - Rancho Cucamonga	Fund VII	Development	Fore Property Company	Multifamily Residential	Rancho Cucamonga, CA	2/7/2017	3/18/2020	\$46,646,677	\$14,873,567	\$14,873,567	\$27,400,000	\$27,400,001	1.8x	26.9%	1.8x	27%
RJK - 99 Rivermoor Street	Fund VII	Development	RJ Kelly Companies	Self Storage	West Roxbury, MA	2/21/2017	12/17/2018	\$22,703,884	\$7,110,000	\$7,110,000	\$13,112,124	\$13,112,124	1.8x	56.8%	1.8x	57%
Broadstone Traditions	Fund VII	Development	Alliance Residential	Multifamily Residential	Bryan, TX	2/21/2017	8/29/2019	\$32,625,891	\$12,390,689	\$12,390,689	\$19,224,994	\$19,253,494	1.6x	33.5%	1.6x	34%
Greystar - Overture Cotswold	Fund VII	Development	Greystar	Active Adult	Charlotte, NC	3/1/2017	12/31/2021	\$42,721,853	\$13,004,170	\$13,004,170	\$0	\$23,036,738	1.8x	15%	1.5x	28%
StorQuest - Gardena	Fund VII	Development	William Warren Group	Self Storage	Gardena, CA	3/1/2017	5/16/2018	\$13,017,241	\$4,978,661	\$4,978,661	\$18,176,480	\$18,176,480	3.7x	621.2%	3.7x	621%
Greystar - Overture Arboretum	Fund VII	Development	Greystar	Active Adult	Austin, TX	3/6/2017	9/30/2022	\$50,508,470	\$14,781,553	\$14,781,553	\$0	\$32,747,085	2.2x	21%	1.8x	1%
Edgewood at Krog Street	Fund VII	Development	North American Properties	Multifamily Residential	Atlanta, GA	3/7/2017	12/10/2019	\$74,559,248	\$25,104,029	\$25,104,029	\$46,942,236	\$47,728,038	1.9x	45.8%	1.9x	46%
Greystar - Overture Rea Farms	Fund VII	Development	Greystar	Active Adult	Charlotte, NC	3/14/2017	9/30/2023	\$42,296,451	\$12,655,138	\$12,655,138	\$0	\$32,835,726	2.6x	21%	1.3x	0%

EXHIBIT D: Fund VII Performance Detail (cont.)

Deal Level Information												Projected		Fair Market Value		
Investment	Fund	Deal Descriptor / Business Plan	Partner	Property Type	Location	Acquisition Date	Sale Date or Modeled Sale Date	Total Transaction Size	Total Equity	Fund Equity	Realized Proceeds to Fund Equity	Realized Proceeds & Projected Proceeds to Fund Equity	Gross Equity Multiple	Gross IRR	Gross Equity Multiple	Gross IRR
866 UN Plaza	Fund VII	Existing	No Partner	Office	New York, NY	3/30/2017	6/30/2022	\$276,546,349	\$116,546,349	\$116,546,349	\$0	\$103,890,884	0.9x	-3%	0.8x	1%
Dinero Atrium Office Portfolio	Fund VII	Existing	Energy Related Properties	Office	Midland, TX	4/19/2017	8/8/2019	\$24,051,400	\$8,337,580	\$8,337,580	\$14,482,081	\$14,465,074	1.7x	33.1%	1.7x	33%
Catalyst - East Orlando	Fund VII	Development	Catalyst Development Partners	Multifamily Residential	Orlando, FL	5/3/2017	10/5/2020	\$44,943,887	\$14,143,500	\$14,143,500	\$0	\$28,881,029	2.0x	29%	1.9x	13%
Flournoy - Westchase	Fund VII	Development	Flournoy Development	Multifamily Residential	Tampa, FL	5/4/2017	9/18/2019	\$36,994,966	\$11,542,469	\$11,542,469	\$20,580,000	\$21,126,547	1.8x	45.9%	1.8x	46%
Sares Regis - Long Beach	Fund VII	Development	Sares Regis Group	Multifamily Residential	Long Beach, CA	5/5/2017	6/30/2022	\$141,197,449	\$56,235,297	\$56,235,297	\$0	\$80,740,665	1.4x	13%	1.2x	52%
StorQuest - Hillsboro	Fund VII	Development	William Warren Group	Self Storage	Hillsboro, OR	5/5/2017	8/29/2019	\$12,577,779	\$3,905,992	\$3,905,992	\$6,534,976	\$7,145,476	1.7x	40.4%	1.7x	40%
StorQuest - Paramount	Fund VII	Development	William Warren Group	Self Storage	Paramount, CA	5/11/2017	8/29/2019	\$12,240,074	\$4,489,959	\$4,489,959	\$8,859,193	\$9,055,591	2.0x	48.9%	2.0x	49%
360 Fifth Street	Fund VII	Development	Tammell Crow Residential	Multifamily Residential	San Francisco, CA	5/30/2017	8/1/2019	\$18,462,578	\$0	\$0	\$200,000	\$1	n/a	(6)	n/a	(6)
6606 Variel	Fund VII	Development	Evolution Partners	Multifamily Residential	Canoga Park, CA	5/31/2017	9/30/2022	\$90,211,049	\$33,110,862	\$33,110,862	\$0	\$55,158,995	1.7x	14%	1.4x	-10%
Solis Town Center	Fund VII	Development	Terwilliger Pappas Multi-Family Partners, LLC	Multifamily Residential	Suwanee, GA	5/31/2017	9/26/2019	\$51,275,579	\$17,514,586	\$17,514,586	\$28,311,237	\$28,813,861	1.6x	34.4%	1.6x	34%
Greystar - Overture Yorktown	Fund VII	Development	Greystar	Active Adult	Lombard, IL	6/2/2017	6/30/2023	\$67,451,590	\$23,849,407	\$23,849,407	\$0	\$35,785,578	1.5x	9%	1.3x	18%
Alta Drinkwater	Fund VII	Development	Wood Partners	Multifamily Residential	Scottsdale, AZ	6/8/2017	12/6/2019	\$68,092,117	\$24,531,943	\$24,531,943	\$44,229,608	\$44,119,847	1.8x	37.2%	1.8x	37%
West End Station	Fund VII	Development	Chaucer Creek Capital	Multifamily Residential	Winston-Salem, NC	6/21/2017	12/10/2019	\$38,406,615	\$12,181,149	\$12,181,149	\$21,802,483	\$21,623,349	1.8x	46.3%	1.8x	46%
Alexan - Montclair	Fund VII	Development	Tammell Crow Residential	Multifamily Residential	Montclair, CA	6/22/2017	2/26/2018	\$2,383,229	\$0	\$0	\$803,356	\$803,357	(7)	(7)	(7)	(7)
Avenida - Cool Springs	Fund VII	Development	Avenida Partners	Active Adult	Franklin, TN	7/7/2017	8/31/2021	\$36,599,558	\$13,507,828	\$13,507,828	\$0	\$27,738,831	2.1x	26%	1.7x	50%
Broadstone Oceanside	Fund VII	Development	Alliance Residential	Multifamily Residential	Pompano Beach, FL	8/10/2017	6/30/2022	\$75,626,000	\$27,479,700	\$27,479,700	\$0	\$45,875,796	1.7x	13%	1.4x	21%
Related - Maitland	Fund VII	Development	The Related Group	Multifamily Residential	Maitland, FL	8/17/2017	12/11/2019	\$72,049,268	\$23,310,000	\$23,310,000	\$42,100,000	\$42,100,000	1.8x	36.6%	1.8x	37%
The Standard - Flagstaff	Fund VII	Development	Landmark Properties	Student Housing	Flagstaff, AZ	8/18/2017	9/30/2021	\$106,012,659	\$34,897,842	\$34,897,842	\$1,087,100	\$51,364,925	1.5x	12%	1.3x	6%
The Mark - Tucson	Fund VII	Development	Landmark Properties	Student Housing	Tucson, AZ	8/24/2017	9/30/2021	\$84,991,191	\$30,652,581	\$30,652,581	\$0	\$37,600,405	1.2x	8%	1.0x	-9%
Greystar - Halcyon Village	Fund VII	Development	Greystar	Multifamily Residential	Alpharetta, GA	9/1/2017	12/31/2021	\$66,486,188	\$24,235,223	\$24,235,223	\$0	\$44,750,158	1.8x	22%	1.7x	6%
Greystar - Overture Coburg	Fund VII	Development	Greystar	Active Adult	Charleston, SC	9/20/2017	8/31/2023	\$49,431,189	\$14,846,052	\$14,846,052	\$0	\$33,958,768	2.3x	18%	1.5x	13%
StorQuest - Seattle	Fund VII	Development	William Warren Group	Self Storage	Seattle, WA	10/6/2017	12/10/2019	\$15,991,629	\$5,549,579	\$5,549,579	\$6,370,000	\$6,109,581	1.1x	10.3%	1.1x	10%
Greystar - Overture Dr. Phillips	Fund VII	Development	Greystar	Active Adult	Orlando, FL	10/10/2017	6/30/2023	\$48,315,861	\$15,965,871	\$15,965,871	\$0	\$33,269,367	2.1x	17%	1.2x	14%
Catalyst - St. Augustine	Fund VII	Development	Catalyst Development Partners	Multifamily Residential	St. Augustine, FL	10/12/2017	6/18/2020	\$38,300,294	\$12,005,245	\$12,005,245	\$24,400,000	\$24,486,034	2.0x	55.2%	2.0x	55%
Greystar - Overture 9th and Colorado	Fund VII	Development	Greystar	Active Adult	Denver, CO	10/31/2017	6/30/2024	\$89,326,362	\$32,508,465	\$32,508,465	\$0	\$62,858,613	1.9x	16%	1.4x	20%
Natick	Fund VII	Development	National Development	Active Adult	Natick, MA	11/22/2017	6/30/2022	\$77,908,154	\$21,699,044	\$21,699,044	\$0	\$39,555,265	1.8x	19%	1.1x	16%
Punta Gorda RV Resort	Fund VII	Existing	No Partner	Manufactured Housing	Punta Gorda, FL	12/4/2017	6/30/2021	\$19,915,889	\$7,634,573	\$7,634,573	\$0	\$13,545,487	1.8x	30%	1.4x	54%
Greystar - Overture Daniel Island	Fund VII	Development	Greystar	Active Adult	Charleston, SC	12/14/2017	2/29/2024	\$49,627,638	\$15,684,704	\$15,684,704	\$0	\$29,214,376	1.9x	14%	1.0x	12%
CSH - Greenburgh	Fund VII	Development	Capitol Seniors Housing	Senior Living	Greenburgh, NY	12/14/2017	12/31/2020	\$46,077,468	\$19,731,952	\$19,731,952	\$0	\$39,111,061	2.0x	>50%	1.8x	27%
Bowery at Southside	Fund VII	Development	Stonehawk Capital Partners	Multifamily Residential	Fort Worth, TX	12/22/2017	7/23/2020	\$48,155,383	\$15,168,946	\$15,168,946	\$25,653,228	\$25,628,227	1.7x	50.3%	1.7x	50%
The Glasshouse	Fund VII	Existing	Chelsea Development Group	Other	New York, NY	3/9/2018	10/31/2023	\$52,780,869	\$47,405,142	\$47,405,142	\$0	\$167,234,111	3.5x	>50%	1.4x	0%
Greystar - Overture Downtown Doral	Fund VII	Development	Greystar	Active Adult	Doral, FL	3/22/2018	9/30/2023	\$79,334,443	\$23,659,238	\$23,659,238	\$0	\$37,538,195	1.6x	11%	1.0x	17%
Greystar - Overture Centennial	Fund VII	Development	Greystar	Active Adult	Raleigh, NC	4/24/2018	6/30/2023	\$45,348,590	\$13,501,705	\$13,501,705	\$0	\$30,644,262	2.3x	25%	1.4x	13%
SP - 72 Caton Place	Fund VII	Development	Sabharwal Properties	Self Storage	Brooklyn, NY	5/24/2018	7/31/2022	\$65,885,714	\$24,292,457	\$24,292,457	\$0	\$56,989,260	2.3x	37%	1.9x	14%
Fountains Endhaven	Fund VII	Development	Proffitt Dixon	Multifamily Residential	Charlotte, NC	10/5/2018	12/31/2021	\$40,823,510	\$11,137,823	\$11,137,823	\$0	\$17,938,356	1.6x	39%	1.3x	26%
TCC - Evanston	Fund VII	Development	Tammell Crow Company	Active Adult	Evanston, IL	11/13/2018	9/30/2022	\$75,959,304	\$26,219,770	\$26,219,770	\$0	\$38,965,182	1.5x	23%	1.0x	13%

Appendix

Rating Rationale

ESG Policy & Practices	Considered “Integrated” as described in the ESG section of this report.
Fund Structure	Closed-end structure is consistent with non-core risk profile. Legal structuring will accommodate tax and regulatory needs of various investor types.
Investment Process	Standard institutional process with somewhat concentrated final decision authority. Joint venture partners enhance the scalability of strategy into progressively larger funds.
Operational Due Diligence	Rated A2-Pass as described in the ODD section of this report.
Performance	Consistently positive performance, generally at or above peer managers.
Sponsor	Established and experienced team within a large global organization with resources and strong brand.
Strategy	High level of development introduces higher risk offset by moderate leverage levels. Strategy is consistent with previous funds and targets demographic driven growth rather than distress.
Terms & Conditions	Generally standard LP protections with certain above-market features within the fee and promote structure.
Overall	Buy Rated

Investment Rating Explanation

The comments and assertions reflect Townsend views of the specific investment product, its strengths and weaknesses in general and in the context of Townsend’s *View of the World* and same vintage alternative choices.

- **Buy** - Suitable for institutional investors that have a portfolio construction need. Appropriate overall risk profile given the strategy and targeted returns.
- **Qualified** - Suitable for institutional capital. In addition to customary risks, contains one or more heightened risks that should be weighed against an investor’s preferences, risk tolerances, and portfolio construction needs.

Operational due diligence rating provided by Aon’s dedicated multi-asset class Operational Due Diligence team according to its autonomous review of the Sponsor’s policies & procedures, infrastructure and capabilities across a range of operations, middle and back office, and control functions.

- **A1-Pass** - No material operational concerns; firm’s operations largely align with a well-controlled operating environment.
- **A2-Pass** - Firm’s operations largely align with a well-controlled operating environment, with limited exceptions due to resource limitations or where isolated areas do not align with best practice.
- **Conditional Pass** - Aon noted specific operational concerns that the firm has agreed to address in a reasonable timeframe.

ESG scoring and an associated rating is according to guidance from AON’s internal ESG Committee and sub-committees for various asset classes.

- **Limited** - The fund management team takes limited steps to address ESG considerations in existing and anticipated portfolios.
- **Integrated** - The fund management team takes essential steps to identify, evaluate, and mitigate potential financially material ESG risks within existing and anticipated portfolios.
- **Advanced** - The fund management team demonstrates an advanced awareness of potential ESG risks in the investment strategy. The fund management team can demonstrate advanced processes to identify, evaluate, and potentially mitigate these risks across its activities.

About Townsend Group – An Aon Company

Founded in 1983, The Townsend Group provides custom real asset solutions that help clients worldwide achieve their unique investment goals. As an Aon company, The Townsend Group is now part of one of the top three outsourced chief investment officer (OCIO) providers in the world measured by global assets under management. Aon’s Investment organization, including Townsend, manages more than \$130 billion of worldwide assets under management and has advised on more than \$240 billion of real estate assets.

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Memorandum

To: Arkansas Teacher Retirement System (“ATRS”)
From: Chae Hong
CC: PJ Kelly; Jack Dowd; Richard Ferguson
Date: June 7, 2021
Re: Carlyle Realty Partners Fund IX – \$50 million Commitment Recommendation

Background and Recommendation

Carlyle Investment Management (“Carlyle”) has established Carlyle Realty Partners IX, LP (“Fund IX” or the “Fund”) as its next vehicle in a series of opportunistic real estate funds. The \$6 billion Fund is a diversified strategy aimed at property types with favorable demand prospects driven by demographic trends. The Fund will target investments generating a 20% gross IRR or greater over a ten-year term using 50% to 65% leverage. The Fund will execute a strategy focused on established and accelerating trends driven by U.S. demographic and technology shifts. Given their assessment of market conditions, Carlyle will overweight property types including multifamily, age-restricted apartments, single family rentals, and industrial, while underweighting GDP-linked property sectors such as office, retail, and hotels. Value is created through ground-up development, renovation, or redevelopment, using joint venture operating partners, over a three to five-year business plan. The Manager has historically targeted deals within the largest 30 U.S. MSAs, with intended exit to a long-term holder. The Manager’s focus is on mid-market properties averaging \$50 million in gross transaction value

Aon Investments, USA is satisfied with the strategy of the Fund and its appropriateness for ATRS. Additionally, we believe that the merits of this offering outweigh its risks. A Fund IX InDetail is attached for reference. We recommend that ATRS invest \$50 million in the Fund to fulfill ATRS’ 2021 non-core real estate allocation, in accordance with the previously approved 2021 ATRS Real Asset Pacing Schedule.

ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201

RESOLUTION
No. 2021-24

**Approving Investment in Carlyle Realty Partners IX, L.P. with
Imminent Need**

WHEREAS, the Board of Trustees (Board) of the Arkansas Teacher Retirement System (ATRS) is authorized to invest and manage trust assets for the benefits of its plan participants; and

WHEREAS, the ATRS Board has reviewed the recommendation of its real assets consultant, Aon Hewitt Investment Consulting, Inc., along with the recommendation of the Investment Committee and ATRS staff regarding a potential investment in **Carlyle Realty Partners IX, L.P.**, an opportunistic real estate fund investing in new development, heavy renovation and redevelopment of mixed commercial property types; and

WHEREAS, the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000.00)** in **Carlyle Realty Partners IX, L.P.**, and the Board, after its review of the timing in which the closing of the investment in **Carlyle Realty Partners IX, L.P.** may need to occur, has determined that there is an imminent need to immediately enter into the partial equity ownership agreement prior to the next scheduled meeting of the Arkansas Legislative Council. The Board also deems it financially appropriate to enter into the partial equity ownership agreement and concludes that to forego the opportunity to promptly implement its investment directives under the prudent investor rule would be inconsistent with its fiduciary duty of care to the members and annuitants.

NOW, THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000.00)** in **Carlyle Realty Partners IX, L.P.** and agrees to immediately move to close and subscribe the approved ATRS limited partnership interest in **Carlyle Realty Partners IX, L.P.** The total investment amount is to be determined by ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment using the Imminent Need process, if acceptable terms are reached.

Adopted this 7th day of June 2021

Mr. Danny Knight, *Chair*
Arkansas Teacher Retirement System



InDetail

GLP Capital Partners IV LP

A U.S. Industrial Fund

December 2020

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EXECUTIVE SUMMARY

OVERVIEW

Review Date	Rating	Prior Fund Rating
December 2020	Buy	NR

GLP Capital Partners (“GCP” or the “Sponsor” or the “Manager”) is sponsoring GLP Capital Partners IV LP (the “Fund” or “Fund IV”), a \$2 billion fund for value-add industrial and logistics assets across major distribution markets. The Fund is targeting an 11%-13% net IRR and 1.7x equity multiple over a ten-year life utilizing 60% leverage.

Strategy: Assemble a portfolio of bulk distribution and infill last mile logistics assets across the U.S., targeting core regional industrial hubs such as Dallas, Houston, Southern California, Inland Empire, Pennsylvania, NYC/New Jersey, and Seattle. Business plans range from value-add renovations, lease-up, forward development takeouts, build-to-suit and speculative development, and stabilized acquisitions where rents are below market. Portfolio construction is intended to create a diversified and stabilized portfolio of modern logistics assets to enable a premium upon exit.

Sponsor:

HQ Location	Santa Monica, CA	Parent	N/A
Ownership	Privately held by four Senior MDs	Founded	2019 spin-out from GLP ¹
Employees	30	AUM	\$1.8 billion GAV (\$1.0 billion equity)

Performance (as of Sep 30, 2020):

Vehicle	Vintage	Equity (M)	Fair Market Value			Realizations
			Net IRR	Net Equity Multiple	Quartile Ranking* by Net IRR/EM	% of Transactions
Club / Fund I	2015	\$3,292	20.8%	2.2x	1Q/1Q	100%
Club / Fund II	2015	\$1,980	16.4%	1.7x	2Q/1Q	100%
Club / Fund III	2016	\$647	18.0%	1.4x	1Q/1Q	100%

*Compared to the performance of 67 same vintage U.S. value-add peers. Data from Townsend and Prequin.

Fund/Portfolio Characteristics:

Structure	Closed-end commingled fund	Risk Segment	Enhanced Return/Value-Add
Targeted Size	\$2 billion (\$2.5 billion hard cap)	Sponsor Commitment	2% of aggregate commitments
Fund Term	10 years from the initial closing	Investment Period	3 years from final close
Avg Deal Size	\$50 million GAV	Typical Business Plan	5 years

Fees:

Management Fees	Blended rate: 1.5% on the first \$50 million, 1.25% on the next \$100 million, 1.0% thereafter. On Committed during the Investment Period, then on Invested.	Incentive Fees	20% of total profits, subject to an 8% preferred return followed by a 50/50 catch-up.
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Fundraise Status/Timing:

- \$730M closed as of August 2020; Second Close on January 29, 2021, roughly estimated at \$750M.
- The first \$2 billion of capital to close, or up to the funds targeted size, is allocated seed portfolio access².
- Subsequent closes after \$2 billion of capital raised will not receive an allocation to the seed portfolio.

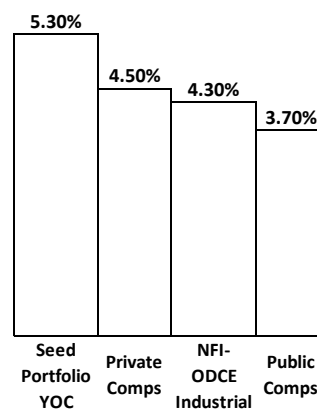
¹ GLP is a Singapore-based, global, vertically integrated real estate investment firm established in 2009. GLP operates in Brazil, China, Europe, India, Japan, and the US; and has \$89 billion in assets under management in logistics real estate and related private equity.

² The Fund has a \$540M seed portfolio. The first \$2 billion of capital to close, or up to the funds targeted size, buy into the seed assets pro-rata (27%).

COMPARATIVE ADVANTAGES

1. Seed Portfolio with Embedded Value

- GLP contributed a seed portfolio of 22 balance sheet assets, totaling \$540 million of equity, or approximately 27% of the fundraise target and 22% of the hard cap.
- Assets were acquired from 2017 to date and will be contributed at GLP's dollar cost basis plus a 6.5% carry cost (GLP's cost of capital) calculated from acquisition to August 26th, 2020³.
- Value-add business plans are largely complete and the majority of assets (19 of 22) are stabilized. Stabilized assets are 100% leased with a WALT of 9 years; 70% of tenants have investment grade credit ratings. The portfolio yield-on-cost is 5.5%; inclusive of the assigned cost of carry charge, an adjusted YOC is 5.3%.
- For comparative purposes, the chart at right compares the stabilized portion of the seed portfolio (85% of the whole portfolio) to direct market comps.
- GCP will manage LP exposure to the seed portfolio by way of a parallel fund⁴.



2. Thematic Market Opportunity

E-commerce-driven demand for logistics property is a secular trend. E-commerce represented 15% of US retail sales in 2019 and is projected to reach a market share of 39% by 2030 per CBRE. Consistent with that forecast, per JLL, e-commerce sales hit \$602 billion in the U.S. in 2019 and sales could hit \$1.5 trillion by 2025. The long-term growth trend in e-commerce directly translates into an additional demand driver for industrial real estate. Every \$1 billion in incremental e-commerce sales creates an estimated 1.2 million square feet of new industrial demand according to a study by Cushman & Wakefield.

3. Vertically Integrated Operator

GCP is a vertically-integrated operating platform with internal functions for investments, leasing and asset management, property operations, finance/accounting and legal. As the firm continues to build out its staff and its property count, it will bring functions more fully in-house. Currently, GCP engages local third-party leasing and property management firms responsible for day-to-day property-level tenant activity, and those firms report to GCP's internal leasing and operations teams, who make all leasing and asset management decisions.

4. Capital Markets Perspective / Experience

The senior management team has experience working for one of the largest buyers and successful sellers of purposely aggregated portfolios, which is relevant for this Fund strategy given its intended aggregation component. Previous experience at GLP, which had a somewhat unique reputation for executing some of the market's largest transactions, was in culling portfolio assets, making strategic acquisitions, and establishing a salable management structure specifically positioning for an optimal exit. Additionally, as a GLP spin-out, the Manager maintains its unique global network of potential buyers.

5. Meaningful Sponsor Co-Investment

The GCP team is committing 2% of the Fund, which in absolute dollar terms for a Fund that could reach a \$2.5 billion size is a meaningful sponsor co-investment for a privately held company. The opportunity to participate was offered to VP and above on the investment side, and senior VP and above on the operations side, and all eligible employees are participating.

³ Total carry charge is ~\$40M, effectively increasing the seed portfolio gross cost to LPs from \$1,107M to \$1,147M.

⁴ Financial reporting, such as capital account statements and audited financials, will separate blind pooled and seed vehicles due to this structure. With respect to the fund's quarterly reporting package, all LPs are expected to receive similar reporting. GCP will include returns for both the blind pooled and combined portfolios.

6. Fee Break

Townsend client capital will be considered in the aggregate for purposes of computing the blended rate according to the existing fee schedule.

POTENTIAL ISSUES AND CONCERNS

1. New/Emerging Manager Risk

GCP is a very recent spin-out from one of the largest global logistics companies. GCP as a legal counterparty is a new entity, without the credit-backing and capital backing of GLP. It no longer has formal employee-access to GLP resources. It must re-establish its network that was previously in-place at GLP, and it must re-build staffing and internal processes as it regrows its property count, adjusting to single asset acquisitions versus fewer/larger portfolio acquisitions. Additional time/attention from senior people is now required for corporate matters. Typical of spinouts, history as a cohesive operating unit per se, and track record attribution to the team becomes noisy.

Discussion: Currently there is sufficient staffing for the Fund. Experienced senior and mid-level investment and asset management and operations professionals are in place. New hiring has been around the funds-based sponsorship business, including Investor Relations and additional Accounting/Finance hires. Continuous staffing will occur as needed and as revenues allow. Well-known third-party service providers have been retained to support the Fund and the GP (listed in the chart at right). The firm became an SEC-registered RIA in 2019.

Operationally the firm is stable with revenues generated from the asset management fee of the fund and an investment and advisory fee for services provided to former corporate parent GLP. Current revenues inclusive of this fundraise at its targeted \$2 billion fully supports the in-place platform plus its near-term hiring schedule.

The four Senior Managing Directors have prior experience working together at GLP and shared experience of previously working at Blackstone, and 3 of the 4 (excludes Alan Yang) also worked together at mid and senior levels in Och-Ziff's real estate private equity group.

Service Providers to the Fund:	
Fund Counsel	Kirkland & Ellis
Fund Administration	CBRE
Tax & Advisory	Deloitte
Audit	KPMG
Service Providers to the GP:	
Placement Agent	Park Hill Group
Compliance	Optima Partners
IT	Sentinel Technologies

2. Crowded Trade

The strategy is in-favor and has weight of capital. The Fund is large and will most likely acquire in-part through small portfolio acquisitions and in competitive bid transactions.

Discussion: A couple Sponsor strengths provide it a competitive edge.

- Compared to allocator funds accessing the sector, the vertically-integrated operating model of GCP is more fee efficient.
- As an investor in the Fund, GLP may be uniquely helpful with off-market opportunities and market intel from global tenants. Those insights are expected to shape leasing assumptions behind acquisition selection and development site selection. (GLP will not compete with GCP in the US. Its market involvement is through the Fund and it is thereby incentivized to be helpful with intel and maintaining relationships.)

3. Supply Growth

Forward assumptions for a continued trending in rents is increasingly challenged by annual supply growth in the top-tier markets that this fund is expected to invest. Per Green Street data for the top markets, annualized forward industrial supply growth for the next 5-year period is projected to remain elevated above the prior 10-year period.

Discussion: The demand trends are equally above long-term norms. E-commerce driven demand accounted for 70% of logistics real estate demand above base levels from 2016-2018 compared to just 21% of demand 10-15 years ago.⁵ The third quarter of 2020 was the 42nd consecutive quarter of positive net absorption for logistics real estate⁶. Occupancy was 95.3% in Q3 2020, only 40bps off a record high in Q3 2018⁷. Net absorption in 2020 is expected to exceed 200 million square feet for the seventh consecutive year⁸. Demand for logistics real estate is expected to remain strong given the fundamental shift in consumption patterns to online sales and the integral role industrial property types play in the supply chain.

4. Key Person Time/Attention

Alan Yang is the majority owner of GCP and his role is CEO and member of IC. He also remains on GLP's IC as a non-employee external member, but is a voting member. He also shares oversight/board level duties with Dan Ward (Senior MD) on a number of logistics related technology investments in a managed account for GLP.

Discussion: The Sponsor represents that no GCP employee has ownership or profit interests in any of GLP's existing or go-forward funds; and Alan Yang does not receive any compensation for his participation on GLP's IC. Although not ideal from a time/attention perspective, the firm has four owners, each in senior leadership, and, the informational advantages and potential for supplemental sourcing/relationships from Mr. Yang's ongoing activities at GLP may be accretive to the fund result. Investors have some protection via the Key Person provision which states that at a minimum Alan Yang and Adam Berns (CIO) must devote substantially all business time/attention to the sponsor entity and devote the necessary time required to meet the Fund's investment objectives.

STRATEGY

OVERVIEW

Aggregation of a national portfolio of bulk distribution and in-fill last mile assets through the following transaction types (and general estimations of percent of Fund):

- Value-add acquisitions (40%)
 - Renovations to modernize and lease-up
- Forward development take-outs (15%)
- Build-to-suits (5%)
- Speculative development (20%)
- Stabilized acquisitions that enhance the portfolio aggregation strategy (20%)
 - Includes sale-leaseback transactions

Based on the seed portfolio and expected pipeline deals, likely representing 40% of the Fund:

- Average deal size is \$50 million GAV, ranging in size from \$13 million to \$300 million in the case of a small portfolio acquisition. Average property size is 450k square feet; ranging from 140k to 1M square feet.
- Markets include national centers, regional hubs, and large MSA last mile markets: Charlotte, Chicago, Dallas, Houston, Indianapolis, Las Vegas, Miami, Pennsylvania, Portland, Southern California, Seattle, and Tampa.

The Fund targets a 15%-17% gross IRR and 2x multiple. The following points highlight the primary drivers of return:

- Property level value creation:
 - Increase of occupancy, term of lease, rental rates, and/or tenant quality;
 - Bringing acquisition rents (averaging 15% below market) to market;
 - Overall planned NOI growth rate of 3%.
- Development including build-to-suit and speculative ground-up construction:
 - Spreads expected to range from ~80bps to 150bps YOC to un-trended rents (utilizing promoted third-party developers who provide recourse/guarantees plus 5%-10% of the equity).

⁵ Goldman Sachs Research.

⁶ CBRE Research U.S. Industrial & Logistics Figures (Q3 2020).

⁷ CBRE Research U.S. Industrial & Logistics Figures (Q3 2020).

⁸ Cushman & Wakefield

- Accretive financing:
 - Targeted 60% LTV financing modeling a cost of 3% (compared to a going-in cap rate of 5.25%).
- Portfolio level value creation:
 - Constructed for exit at core cap rates (valued around 50bps in cap rate differential).

LEVERAGE

The targeted use of leverage is 60% LTV; with a formal limit capping leverage at the greater of 67.5% of LTV or LTC. Limit excludes the use of the subscription facility and guaranties.

- Although recourse and guarantees are not formally prohibited per the docs, the Manager does not intend to utilize recourse (outside of required customary “bad boy” carveouts) and will push completion guarantees to development partners, typically utilizing national and large regional developers (i.e. Hillwood, Ridgeline Property Group, Panattoni).
- Cross-collateralization is expected to be utilized for efficiency in financing pools of smaller-sized assets.
- As a historical reference, average leverage of Funds I-III ranged from 60% at inception of each fund down to 43.5% at exit. No recourse financing was utilized.
- GCP utilizes LIBOR caps to mitigate interest rate risk on floating rate debt.

INVESTMENT GUIDELINES

Based on aggregate commitments:

- No more than 20% max in any single investment.
- 10% max in investments outside the U.S.; no investments outside North America.
- 15% max in debt securities (the Manager’s intended use of debt will be to access the real estate equity).

SEED ASSETS AND PIPELINE

The seed portfolio is comprised of 22 assets, totaling \$540 million of equity.

- Valuation is based on actual acquisition and stabilization costs, excluding cost of carry. No “Opco” value ascribed.
- 19 of 22 are fully stabilized (85% of the equity of the portfolio). The other 3 are development projects to be delivered in 2021; each initiated as spec projects with no confirmed pre-leasing currently.
- The seed portfolio will be allocated to the first \$2 billion of capital raised, subsequent closes after \$2 billion is raised will only receive an allocation to the blind pool vehicle.

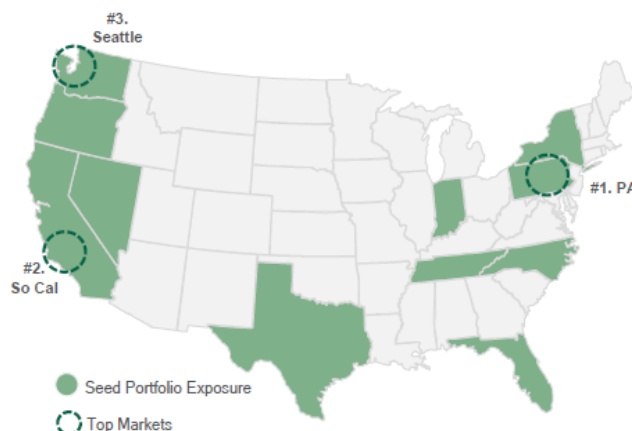


Exhibit A provides details on the seed portfolio.

In addition to the seed assets, the Sponsor closed on 10 deals totaling \$875 gross transaction value, and has another 9 deals totaling \$550 million under the Sponsor’s control and in various stages of diligence.

Exhibit B is the Fund’s pipeline report listing these 19 deals.

SPONSOR

OVERVIEW

Background: Global Logistic Properties was founded in 2009 by Jeff Schwartz (former Prologis CEO) and Ming Mei (former President of China operations for Prologis) with backing from GIC. To improve its balance sheet at the time, Prologis sold off its Chinese and Japanese portfolios and staffing to GIC for \$1.3 billion in cash. Through an IPO representing ~2/3rds of the company, GIC listed the company on the Singapore stock exchange in 2010 for

\$2.7 billion. Proceeds plus earnings and debt raised over the years, and continuous co-investment from GIC and other SWFs, went to expansion into Brazil in 2012, the US in 2014, and Europe in 2017. Each expansion was through large-scale portfolio acquisitions. The Brazil acquisition was a \$1.4 billion (gross transaction value) buyout of Propseritas funds; US acquisition was an \$8 billion buyout of IndCor from Blackstone; the Europe acquisition was a \$2.8 billion buyout of Gazeley from Brookfield. GLP became the largest provider of modern logistics facilities in China, Japan and Brazil, continues to grow its European operating/development platform, and, until recently, owned the largest privately held portfolio of logistics real estate in the United States.

Recent Platform Changes: In 2017, Global Logistics Properties was taken private. The company chose an \$11.6 billion bid from a Chinese private equity consortium (Hopu Investment Management, Hillhouse Capital, Vanke Group, and Bank of China. GLP management and several financial advisors also provided equity.)

In 2018, GLP made a decision to downsize its US operations to redeploy in Europe and Asia markets, and to maintain targeted investment in the US. The firm sold 95%+ of its assets to Blackstone in an \$18.7 billion transaction and retained 5% to contribute to a funds-based spin-out. 140 property level and operations people went with the portfolio, and 22 people were spun out of GLP to form GLP Capital Partners, or GCP. GCP is the go-forward entity for US investing for GLP. GLP is currently GCP's largest LP.

*GCP Ownership*⁹: Wholly owned and controlled by the former senior members of the GLP US arm, Alan Yang (50%+), Adam Berns (25%+), Daniel Ward (<25%), and Steven Crowe (<25%).

- GLP does not own any stake in or have any governance rights as it relates to GCP.

AUM/Revenues: \$ 1.8 billion GAV; \$1.0 billion of equity including unfunded commitments.

- Sponsor represents that the company is currently profitable; generating revenue from Fund IV asset management fees and fees for advisory and investment services provided to GLP.

Staffing and Organization:

Location	Number of Employees	Functions
Santa Monica	17	Investment staff (investment & asset management) and business operations
Denver	6	Property operating professionals, finance/accounting, and legal
Chicago	6	One investment staff plus property operations, finance/accounting, and legal
New York	1	One investment staff

Investment Professionals	Property Acquisitions & Asset Management	Fund & Corporate	Leasing & Property Operations	Accounting & Finance
Alan Yang Senior Managing Director & CEO	Ross Parkin Senior Vice President	Pete Kane Managing Director & CFO	Tom Cherry Managing Director & Head of Leasing	Annie Fitzgerald Senior Vice President & Chief Accounting Officer
Adam Berns Senior Managing Director & CIO	Oscar Wong Senior Vice President	Michelle Li Managing Director & Head of Portfolio Management & Investor Relations	Michael Leberman Vice President & Head of Construction	Heather Begley* Assistant Vice President
Daniel Ward Senior Managing Director	Ryan Sikorski Senior Associate	Heather Selph Vice President	Nick Niemann Vice President	Cassandra Lombard Senior Associate
Steven Crowe Senior Managing Director	<i>To Be Hired</i> Associate	Heather Begley* Assistant Vice President	Beth Speak Vice President	Mike Sidea Senior Associate
Camden Nogay Vice President	Tyler Griffin Analyst	<i>Identified Hire</i> Senior Associate	<i>To Be Hired</i> Vice President	Cameron Flowers Senior Associate
Jeff Kaplan Vice President		Compliance Optima Partners LLC (External) Kirkland & Ellis LLP (External)	Mike Fennessy Senior Associate	
Andrew Lukens Associate			Amy Pastor Senior Associate	

Exhibit C provides the senior team bios.

⁹ GCP is more than 51% minority owned and would thereby qualify as a MBE.

TURNOVER, COMPENSATION, AND RETENTION

Turnover: None to date.

Compensation: Incentive comp is shared broadly, from the VP level and higher amongst investment professionals, and amongst operations professionals starting at the Senior VP level; and is awarded, not requiring employees to invest in the Fund. For this initial fund (as GCP), carry is split 50%/50% between GCP and GLP. GLP's share of carried interest is in exchange for holding and contributing seed assets at cost plus carry and their anchor LP investment.

Retention: Carried interest is subject to four-year incremental vesting.

INVESTOR BASE

Comprised primarily of sovereign wealth funds; also includes international and domestic pensions, insurance companies, several large family office investors, and GLP.

COMPLIANCE AND LITIGATION

The Sponsor has made the following disclosures:

- The firm registered as an investment adviser with the SEC in August 2019. In 2020, the firm underwent a routine investment adviser examination by the SEC. Per the Sponsor, outside of a technical issue related to the implementation of the SEC's custody rule (which was not related to the Fund; and has been addressed and is considered closed) there were no additional issues identified.
- Neither the firm nor any senior member of the firm have been reported to or investigated by any regulatory authority within the past ten years.
- No key individuals, the GP, or any affiliated entity have ever filed for bankruptcy or had any judgements entered against them.
- There is an outstanding lawsuit that names GCP and one of its co-founders as a defendant. The issue stems from the GLP/Blackstone transaction as one former employee of GLP is contesting the basis of his termination by GLP and the sufficiency of the severance provided to him. GCP believes the claims are meritless and intends to seek dismissal.

ESG POLICIES AND PRACTICES

OVERVIEW

As a recently founded firm, GCP is not rated given it is still in the early stages of implementing its ESG policy & procedures. Similar to many newly organized peers still building out staffing, the firm does not yet have a dedicated ESG staff member, does not report to GRESB, and is not a signatory to PRI, garnering a negative rating initially.

- Near-term initiatives for the environment include developing environmentally conscious construction guidelines; evaluating every development, tenant improvement, and capital improvement project for environmental certification; reviewing the current portfolio for renewable energy options and the installation of energy and water efficient products; and gathering energy and water usage data at properties to benchmark overall progress.
- Regarding social issues, GCP formed the GCP Foundation in July 2020. The Foundation seeks to make a positive impact on identified disadvantaged communities in areas in which GCP operates. Additionally, starting in 2019, employees participated in the firm's initial annual GCP Day of Giving by donating time and capital to 7 local non-profits.

OPERATIONAL DUE DILIGENCE

OVERVIEW

Independent of investment due diligence, the Aon Operational Risk Solutions and Analytics ("Aon ORSA") group is reviewing the Sponsor's policies, procedures, and capabilities across a range of operations, middle and back office,

and control functions looking for established controls and operating procedures that align with best practice. Areas covered during AON ORSA's review include: (i) corporate governance, (ii) transaction execution, (iii) cash controls, (iv) valuations, (v) compliance, regulatory, and legal controls, (vi) counterparty risk oversight, (vii) business continuity/disaster recovery, (viii) cyber security, and (ix) service provider selection and monitoring.

- The Aon ORSA review is currently in process.

INVESTMENT PROCESS

OVERVIEW

Sourcing/Acquisitions: The GCP investment team responsible for sourcing and evaluating potential investments includes all four Senior MDs and 8 other investment and asset management professionals. GCP leverages its network of relationships in the sector including tenants, developers, other owners, and brokers.

Investment Committee: Chaired by Alan Yang, the IC is involved throughout all stages of each asset's hold period. This includes acquisitions, financings, developments, other major cap-ex decisions, refinancing, and dispositions. Formal approval from the IC members are required for acquisition and disposition decisions, and must be unanimous with all four members voting.

IC Member	Firm Title	Years of Experience	Years with Firm*
Alan Yang	CEO, Senior Managing Director	16	5
Adam Berns	CIO, Senior Managing Director	11	4
Daniel Ward	Senior Managing Director	12	3
Steven Crowe	Senior Managing Director	12	2

*Inclusive of experience at GLP.

Asset Management: Four people have asset management responsibilities, divided primarily by region, and oversee in-house leasing & property operations personnel. In-house leasing & operations staffing is slated to grow with the portfolio. Structurally, the firm created a formal subsidiary entity to house those functions, described below. Developments utilize joint venture development partners and in-house construction management.

USE OF AFFILIATED/SUBSIDIARY RESOURCES

The Sponsor formed a subsidiary, GCP Asset Management LLC, to provide property management, leasing, corporate services including accounting and reporting, construction management, development consulting, and transaction support services. The Fund's asset management team oversees and directs the subsidiary, making all major decisions according to its business plans for the assets.

- GCP Asset Management is expected to receive fees for such services. Compensation payable for such services, paid by the property, will not exceed the amounts otherwise payable if comparable services were provided by third parties on an arm's-length basis.
- GCP Asset Management currently uses third-party national, regional, or local firms for on-site day-to-day property management and leasing.

EXCLUSIVITY AND ALLOCATIONS

The Fund will be the exclusive investment vehicle for GCP during its Investment Period.

VALUATIONS

Valuation policy is in line with ASC 820, the accounting standard for fair value. A valuation deal team is responsible for preparing the valuation analysis; which is then reviewed by the CFO and Head of Portfolio Management; and ultimately presented to the Valuation Committee (includes Senior MDs plus the CFO) for approval. Methodology and values are reviewed annually by KPMG, the Fund's auditor, in connection with year-end audit procedures.

LP ADVISORY COMMITTEE

LPAC to be formed at GP discretion¹⁰. Typical LPAC duties. Any voting matter requires a majority for approval.

USE OF PLACEMENT AGENT

GCP has retained Park Hill Group.

FUND STRUCTURE

OVERVIEW

Closed-end fund comprised of three parallel partnerships to best accommodate various investor types, each organized as a Delaware limited partnership. Underlying assets/interests to be held in REITs, blocker corps, and flow-through entities as appropriate. **Exhibit E** is the diagram of the legal structuring.

- Sponsor/Investment Manager: GLP Capital Partners LP
 - Registered as an investment advisor with the SEC.
- General Partner: GLP Capital Partners IV GP LP, LLC a Delaware limited partnership

TERMS AND CONDITIONS

Key Terms		Townsend Comments	
Target Return:	15%-17% gross return	Neutral	11% - 13% net return
Fund Size:	\$2 billion (\$2.5 billion hard cap)	Neutral	Larger fund size for a new/emerging manager; but not inconsistent with the senior team's prior experience. Mitigated to some extent by a pre-seeded portfolio that equates to 27% of the targeted fund raise.
Sponsor Commitment:	2% of aggregate commitments	Positive	Contributed solely from the GCP team with the vast majority coming from the Senior Managing Directors. VP and above on the investment team and Senior VP on the operations team are also participating. 75%, up to \$30 million, contributed in cash with the balance coming via a management fee waiver.
Investment Period:	3 years from final closing	Neutral	With one 1-year extension subject to LPAC consent.
Fund Term:	10 years from the initial close	Neutral	With one 1-year extension in GCP's discretion; and two additional one-year extensions with LPAC consent.
Key Person Provision:	Triggered singly if either Alan Yang or Adam Berns cease to devote substantial business time/attention to the management company and necessary time/attention to meet the investment objectives of the Fund.	Neutral	Suspends new investment activity unless a majority of LPs vote to approve said new investment or a replacement key person is approved by LPAC. The fact that the clause identifies Alan Yang or Adam Berns singularly as triggering event is a positive, but an industry standard PERE mechanism would suspend the investment period in totality unless 66 2/3rds percent of LPs elect to reinstate or LPAC approves a replacement.
No-Fault Remedies:	Orderly fund liquidation by 75% of LP capital.	Neutral	

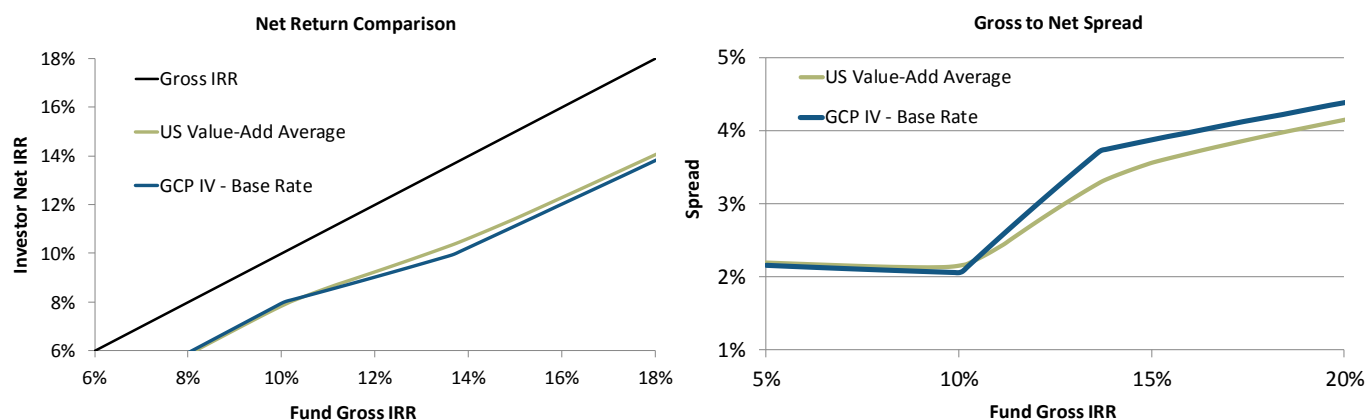
¹⁰ To date, the Manager has agreed to provide an LPAC seat to two lead LPs, both of whom committed \$100M+ in the First Close, an Asian SWF and a Mid-East pension.

Fees and Distribution Waterfall

Org Expenses:	Fund will bear formation expenses up to \$3.5 million.
Investment Management Fees:	On Committed during the investment period, then on invested thereafter (blended rate); <ul style="list-style-type: none"> • 1.5% on the first \$50 million • 1.25% on the next \$100 million • 1.0% on any amount greater than \$150 million
Incentive Fee/Waterfall Distribution:	20% of profits, subject to an 8% annual compounded preferred return and a 50/50 catch-up. Fully pooled waterfall (requiring all contributions and payments to be returned before the GP receives any carry).
Clawback:	Triggered if (i) carried interest exceeds 20% of net cumulative profits, and (ii) if cumulative LP distributions fall below a return of capital plus a complete preferred return.

FEE AND EXPENSE ANALYSIS

Townsend compared the base fee rate to a market average of 126 U.S. value-add funds across a range of gross return outcomes, the results of which are depicted in the charts below. In that context, at the base rate, fees are at the higher end of the range at gross returns in excess of 10% relative to peers due largely to the use of a 50%/50% GP catch-up, which is only utilized by half of the peer set.



PERFORMANCE

OVERVIEW

The track record represents the GCP investment team's performance while working within the former corporate parent GLP. While at GLP, the GCP investment team collectively invested \$5.9 billion of equity in the US over approximately four years on behalf of Funds I-III, and returned \$12.1 billion to investors:

- As a composite: gross IRR of 20.7%, and gross equity multiple of 2.05x.
- Per vehicle is broken out in the table; each was a club fund with a small group of 3 to 6 investors.

Vehicle	Vintage	Equity (M)	Targeted Return (Net IRR)	Fair Market Value			Realizations
				Gross IRR	Estimated Net IRR*	Quartile Ranking** by Estimated Net	% of Projected Proceeds
GLP US Income Partners I	2015	\$3,292	12%	21.6%	17.1%	1Q	100%
GLP US Income Partners II	2015	\$1,980	10%	18.6%	14.4%	2Q	100%
GLP US Income Partners III	2016	\$647	10%	20.6%	16.2%	1Q	100%

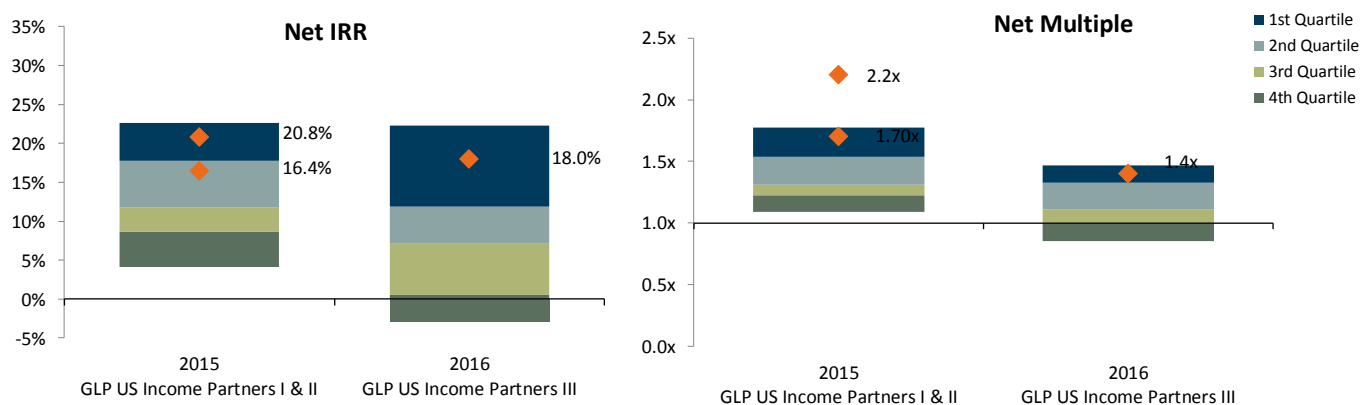
*Applying the Fund IV fee load to the reported gross numbers.

- Fund I (2015 – 2019): Acquired Blackstone’s IndCor portfolio for a total purchase price of \$8.1 billion; comprised of approximately 115 million square feet. Markets were primarily Southern California, Reno, Bay Area, New Jersey, and Dallas. Investors were GIC, CPPIB, CIC, and one other Asian SWF investor.
- Fund II (2015 – 2019): Acquired the Industrial Income Trust portfolio for a total purchase price of \$4.6 billion. The portfolio was roughly 58 million square feet. Markets were Southern California, DC/Baltimore, Pennsylvania, Phoenix, and Houston. The primary investor was China Life (66% stake).
- Fund III (2016 – 2019): Acquired a 15 million square foot portfolio from Hillwood for \$1.1 billion and agreed to provide an additional \$400 million of equity for pre-identified pipeline assets to be acquired in partnership with Hillwood. Markets primarily Dallas, Chicago, Las Vegas, Pennsylvania, and Atlanta.

GCP has permission to use the track record per its spin-out agreement with GLP. Attribution to the current GCP team is inherently noisy as a spin-out from a larger organization, but reasonable given that the current GCP team was the core team responsible for sourcing, executing, and managing investments in Funds I-III. Specifically, Alan Yang was responsible for sourcing and leading the portfolio acquisitions within Fund I and Fund II. Fund III responsibilities were split but all attributable to current GCP employees including Alan Yang, Adam Berns (CIO), and Ross Parkin (Senior VP of Acquisitions). Additionally, Alan Yang and Adam Berns both served on the GLP IC¹¹ from 2016-2018; with the other US Senior Managing Directors participating as non-voters.

RELATIVE TO PEERS

Compared to 67 same vintage U.S. value-add peers regardless of strategy/property type:



Source: Townsend and Prequin fund data. Range shown is 95th to 5th percentile.

Compared to an industrial only fund peer set:

- The higher returning strategies tended to be single-acquisition execution and then some aggregated for portfolio exits, while the GLP strategy at the time was portfolio acquisition for a core-plus type risk/return profile. Going forward, the GCP strategy targets a value-add risk/return profile with single asset acquisition, purposefully aggregating to a portfolio exit.

GCP Fund	Vintage Range	US Industrial Vintage Rank	Industrial Vintage Sample Size
Fund I	2014-2015	2Q	8
Fund II	2015-2016	3Q	8
Fund III	2016-2017	2Q	11

¹¹ The other members were Ming Mei (Founder & CEO of GLP), Steve Schutte (COO of the global parent), Kaz Tsutsumi (CFO of the global parent), Mark Tan (General Counsel), and Ralf Wessel (Capital Markets-Investor Relations).

ODCE COMPARISON

The chart assumes prior GCP fund series cash flows were instead invested into and out of both the NFI-ODCE index and the NPI-ODCE industrial sub-component ("Industrial Index Returns") to create a net IRR comparison. Because sub-components are not simply split out of

the index and published officially, Townsend utilized the published unlevered industrial-only performance and adjusted for the index-average amount of leverage and an assumed fee load (100 basis points which is typical for core funds) to produce a more relevant comparison in the chart.

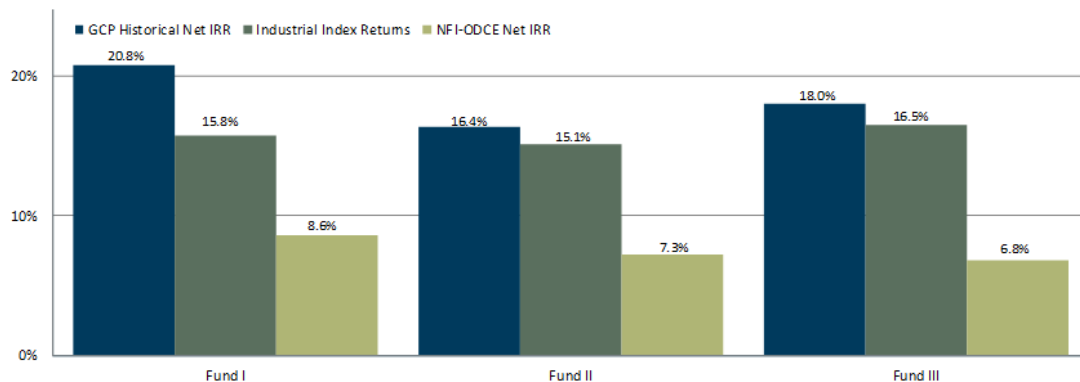


Exhibit A: Seed Portfolio

Overview

Asset	Market	Acquisition Year	Year Built	Square Feet	Clear Height	% Leased		Pro Forma Basis (\$000) ¹	Stabilized YOC
						At Closing	Current		
Park 100 Logistics Center Phase I	Pennsylvania	2017	2019	730,080	36'	0.0%	100.0%	65,300	6.5%
Park 100 Logistics Center Phase II	Pennsylvania	2017	2020	811,200	36'	0.0%	100.0%	78,800	6.0%
Northgate 5	Las Vegas	2018	2018	191,026	32'	0.0%	100.0%	15,600	7.1%
Southpark Business Center	Nashville	2018	2016	172,420	32'	50.0%	100.0%	13,400	6.3%
CentrePort II	Dallas	2018	2017	430,852	32'	0.0%	100.0%	34,700	5.6%
Northgate 9	Las Vegas	2018	2018	731,560	36'	0.0%	100.0%	55,000	6.8%
2901 Lakemont	Charlotte	2018	2015	164,576	32'	100.0%	100.0%	17,000	5.4%
3725 Westinghouse	Charlotte	2018	2018	599,018	36'	100.0%	100.0%	55,600	5.4%
Northwest Logistics Center	Houston	2018	2018	411,460	32'	0.0%	100.0%	27,600	7.5%
14505 Proctor Ave.	Southern California	2018	1969	217,464	22'	0.0%	100.0%	30,700	5.8%
DHL - Lakeland	Tampa	2018	2018	520,000	36'	100.0%	100.0%	48,400	6.0%
DHL - Whitestown	Indianapolis	2018	2018	410,424	36'	53.9%	100.0%	28,100	5.6%
DHL - San Bernardino	Southern California	2018	2013	830,750	36'	100.0%	100.0%	100,700	4.3%
Northgate 4	Las Vegas	2018	2018	215,804	32'	100.0%	100.0%	23,900	5.4%
Best Buy BTS	Seattle	2018	2019	405,000	32'	100.0%	100.0%	43,500	4.9%
Dupont NWLC	Seattle	2018	2019	628,640	36'	0.0%	100.0%	72,800	5.2%
611 Reyes	Southern California	2019	1986	164,500	26'	0.0%	100.0%	25,800	5.9%
DHL - York	Pennsylvania	2019	2019	1,000,000	36'	100.0%	100.0%	85,500	5.3%
Otto Road	New York City	2020	1970	240,000	20'	100.0%	100.0%	123,100	5.0%
Operating Portfolio			2015	8,874,774	34'	48.3%	100.0%	\$945,500	5.6%
Foundry Medley Center	South Florida	2019	2021	311,963	32'			49,100	4.9%
Lacey Logistics 1	Seattle	2020	2021	146,366	30'			16,100	5.9%
Bridge Point I-5	Portland	2020	2021	677,033	34'			96,900	5.5%
Development Portfolio			2021	1,135,362	33'			\$162,100	5.4%
Total / Weighted Average			2015	10,010,136	34'	42.8%	88.7%	\$1,107,600	5.5%

Sales and Lease Comps

Asset	Market	Comparable Market	Lease Comps				Sales Comps				
			Pro Forma Stabilized Basis ('000s) ¹	Seed Portfolio Rents		Comp Set Market Rent ²	Seed Portfolio		Comp Set Market Sales		
				UW	In-Place		Price PSF	Stabilized YOC	Price PSF	Cap Rate ³	
Park 100 Logistics Center Phase I	Pennsylvania	Lehigh Valley	\$85,300	\$5.15	\$5.80	\$6.01	\$89	6.5%	\$126	4.5%	
Park 100 Logistics Center Phase II	Pennsylvania	Lehigh Valley	\$78,800	\$5.15	\$5.80	\$6.01	\$97	6.0%	\$126	4.5%	
Northgate 5	Las Vegas	Las Vegas	\$15,600	\$5.04	\$5.76	\$5.62	\$82	7.0%	\$105	5.0%	
Southpark Business Center	Nashville	Nashville	\$13,400	\$4.77	\$4.84	\$5.17	\$78	6.3%	\$74	5.2%	
CentrePort II	Dallas	Dallas	\$34,700	\$4.11	\$4.50	\$4.88	\$81	5.8%	\$90	4.8%	
Northgate 9	Las Vegas	Las Vegas	\$55,000	\$4.88	\$5.02	\$5.62	\$75	6.0%	\$105	5.0%	
2901 Lakemont	Charlotte	Charlotte	\$17,000	\$4.89	\$5.56	\$5.18	\$103	5.4%	\$88	5.1%	
3725 Westinghouse	Charlotte	Charlotte	\$55,600	\$4.89	\$5.05	\$5.18	\$93	5.4%	\$88	5.1%	
Northwest Logistics Center	Houston	Houston	\$27,600	\$4.73	\$5.04	\$4.99	\$67	7.5%	\$93	4.8%	
14505 Proctor Ave.	Southern California	In-fill LA - SGV	\$30,700	\$7.32	\$8.16	\$8.43	\$141	5.8%	\$204	4.4%	
DHL - Lakeland	Tampa	Central Florida	\$48,400	\$5.04	\$5.23	\$5.25	\$93	6.0%	\$89	5.2%	
DHL - Whitestown	Indianapolis	Indianapolis	\$28,100	\$3.43	\$3.50	\$3.46	\$68	5.8%	\$61	5.7%	
DHL - San Bernardino	Southern California	Inland Empire East	\$100,700	\$5.08	\$5.17	\$5.40	\$121	4.3%	\$134	3.9%	
Northgate 4	Las Vegas	Las Vegas	\$23,900	\$5.80	\$5.94	\$5.62	\$111	5.4%	\$105	5.0%	
Best Buy BTS	Seattle	Seattle	\$43,500	\$5.25	\$5.25	\$6.00	\$107	4.9%	\$158	4.2%	
Dupont NWLC	Seattle	Seattle	\$72,800	\$5.88	\$6.03	\$6.00	\$116	5.2%	\$158	4.2%	
611 Reyes	Southern California	In-fill LA - SGV	\$25,800	\$8.40		\$8.43	\$157	5.5%	\$204	4.4%	
DHL - York	Pennsylvania	Central Pennsylvania	\$85,500	\$4.55	\$4.55	\$5.03	\$88	5.3%	\$97	4.9%	
Otto Road	New York	New York City	\$123,100	\$25.50		\$25.44	\$513	5.0%	\$516	3.6%	
Operating Portfolio			\$945,500	\$5.59	\$5.25	\$6.07	\$107	5.5%	\$172	4.5%	
Foundry Medley Center	South Florida	Miami	\$49,100	\$7.54		\$7.67	\$157	4.9%	\$188	3.9%	
Lacey Logistics 1	Seattle	Seattle	\$16,100	\$6.42		\$6.00	\$110	5.9%	\$158	4.2%	
Bridge Point I-5	Portland	Portland	\$96,900	\$7.90		\$7.78	\$143	5.5%	\$133	4.7%	
Development Portfolio			\$162,100	\$7.61		\$7.52	\$143	5.4%	\$152	4.4%	
Total / Weighted Average			\$1,107,600	\$5.81		\$6.23	\$111	5.5%	\$169	4.5%	

Exhibit B: Pipeline
(as of May 12, 2021)

\$1.5bn Pre-Specified Portfolio, including \$566mm of transactions under control

Transaction Size	Market	Status	Description
\$79mm	Portland	Closed	Development of five building, ~530k SF project
\$74mm	Pennsylvania	Closed	Acquisition of ~285k SF urban logistics asset
\$43mm	Chicago	Closed	Acquisition of ~315k SF distribution center in close proximity to Midway Airport
\$36mm	Dallas	Closed	Acquisition of ~400k SF recently delivered distribution center
\$20mm	Southern California	Closed	Acquisition of ~150k SF asset in Inland Empire West
\$18mm	South Florida	Closed	Acquisition of ~100k SF asset in close proximity to Miami International Airport
\$315mm	Pennsylvania / Central Valley	Closed	Acquisition of ~2.8mm SF core + value-add mixed portfolio
\$110mm	South Florida	Closed	Development of three building, ~500k SF project
\$85mm	Seattle	Closed	Build-to-suit development of ~515k SF distribution center
\$110mm	Pennsylvania	Closed	Acquisition of two infill assets totaling ~1mm SF
\$40mm	Southern California	Under control	Forward acquisition of ~150k SF new construction, infill asset
\$65mm	Pennsylvania	Under control	Development of ~765k SF distribution center with existing development partner
\$110mm	Seattle	Under control	Development of two building, 1.1mm SF project
\$70mm	Southern California	Under control	Development "option" for ~510k SF distribution center
\$25mm	Atlanta	Under control	Forward acquisition of ~200k SF new construction, infill asset
\$20mm	Baltimore	Under control	Acquisition of 35k SF stabilized asset on 14 acre site
\$100mm	Boston	Under control	Forward acquisition of ~610k SF new construction
\$26mm	Dallas	Under control	Forward acquisition of ~350k SF new construction
\$110mm	Houston	Under control	Acquisition of three building 660k SF portfolio + two building 385k SF development

As of May 12, 2021.

Note: For illustrative purposes only. The investment opportunities described herein represent potential investments with respect to which the investment team is undertaking significant work towards possible completion of an investment transaction. There can be no assurances that any of these opportunities will culminate in a completed transaction for Fund IV, or if completed, that such transactions will be consummated on the terms described herein. There can be no assurance that any transaction will be successful if completed or that GCP will be able to invest in similar opportunities in the future.

Exhibit C: Bios

Investment Committee

Alan Yang is the CEO and a Senior Managing Director of GCP and Chairman of the Investment Committee of GLP. Prior to forming GCP, Alan led GLP's U.S. entry through the acquisition of IndCor from Blackstone, scaled the platform to be the second largest owner of logistics properties in the United States within one year of entry, and led GLP's sale of its U.S. platform in the largest ever private real estate transaction globally. While at GLP, Alan led large scale, strategic initiatives outside of China and Japan. During his tenure, the company grew from \$11 billion of AUM across China, Japan and Brazil in a publicly listed format, to \$64 billion of AUM across a global, privately held platform now including the United States, Europe and India. Prior to GLP, Alan was a principal at Blackstone, where he spent nearly eight years executing over \$70 billion of transactions across all asset classes including EOP, Hilton, Meristar and the formational transactions of Blackstone's first logistics platform, IndCor. He was also a founding member of Blackstone's Los Angeles and Tokyo offices in 2005 and 2007, respectively. Prior to Blackstone, Alan started his career in Merrill Lynch's real estate investment banking group. Alan graduated *summa cum laude* from Georgetown University's McDonough School of Business.

Adam Berns is the CIO and a Senior Managing Director of GCP. Prior to forming GCP, Adam led numerous investments while at GLP, including the formational transactions for Fund III, GLP's entry into Europe, and GLP's sale of its U.S. platform in the largest ever private real estate transaction globally. Prior to joining GLP, Adam worked at Och-Ziff and Blackstone in the real estate private equity groups, where he worked on equity and distressed debt transactions across various property types, including formational acquisitions for Blackstone's first logistics platform, IndCor, and numerous recapitalizations and restructurings, such as GGP's emergence from bankruptcy. Adam graduated *magna cum laude* from the Wharton School at the University of Pennsylvania.

Daniel Ward is a Senior Managing Director of GCP. Prior to GCP, Daniel led investments totaling nearly \$700 million while at GLP, including the cross-border acquisition of a \$415 million nine-asset portfolio across the United States and Europe. Daniel was also responsible for GLP's debt capital markets activity in the United States and led financings totaling \$1.5 billion. Prior to joining GLP, Daniel spent over four years at Och-Ziff's real estate private equity group, where he executed equity and debt transactions totaling over \$1 billion across all major asset classes. Prior to joining Och-Ziff, Daniel spent two years at Blackstone's real estate private equity group, where he invested in transactions totaling \$1.1 billion across multiple asset classes, including acquisitions for the IndCor logistics platform. Prior to Blackstone, Daniel started his career in Deutsche Bank's real estate investment banking group. Daniel graduated *magna cum laude* from the Wharton School at the University of Pennsylvania.

Steven Crowe is a Senior Managing Director of GCP. Prior to GCP, Steven was involved with numerous investment transactions and capital markets activities across the United States and Europe while at GLP and led investments totaling over \$1 billion, including GLP's acquisition of the Goodman Group's Central and Eastern European logistics portfolio and operating platform. Prior to joining GLP, Steven was a principal in Och-Ziff's real estate private equity group, where he spent approximately seven years executing over \$1 billion of equity and debt investments across multiple asset classes. Prior to Och-Ziff, Steven began his career in Blackstone's real estate private equity group. Steven graduated *summa cum laude* from the Wharton School at the University of Pennsylvania.

Additional Senior Management

Pete Kane is a Managing Director and Chief Financial Officer of GCP and oversees all financial and information technology functions of the organization. Prior to joining GCP, Pete was the CFO of GLP's U.S. platform and helped guide the organization through the strategic sale of assets from Fund I-III to Blackstone in 2019. Prior to GLP, Pete held various roles with Prologis from 2005 to 2017, most recently as the Senior Vice President of Global Operations. Pete was previously the CFO of GE Capital Residential Connections, where he was responsible for all financial affairs of the organization. Prior to GE, Pete worked in various capacities with Arthur Andersen LLP. Pete graduated *magna cum laude* from the University of Colorado and is a Certified Public Accountant.

Michelle Li is a Managing Director and Head of Portfolio Management and Investor Relations of GCP. Prior to joining GCP, Michelle was a Principal in Blackstone's real estate private equity group, where she spent ten years of her career. Most recently, Michelle was a founding member of Blackstone's global Core+ business and oversaw portfolio management and operations of Blackstone Property Partners U.S., an openended Core+ fund. Prior to this role, Michelle evaluated investment opportunities across various asset classes in the U.S., Latin America and the U.K. and executed on over \$4 billion of transactions, including formational acquisitions for Blackstone's first logistics platform, IndCor. Michelle graduated *magna cum laude* from Harvard College and received an MBA from Harvard Business School.

Tom Cherry is a Managing Director and Head of Leasing of GCP, overseeing all of GCP's leasing-related activities. Previously, Tom was the Executive Vice President – Leasing for GLP's U.S. platform, with overall responsibility for the platform's leasing and asset management functions. Tom worked with GLP in an advisory capacity for seven years prior to joining the company. He has spent 30 years working in commercial real estate on a global and national basis with CBRE, Cushman & Wakefield and, most recently, JLL. Tom graduated from the University of Southern California.

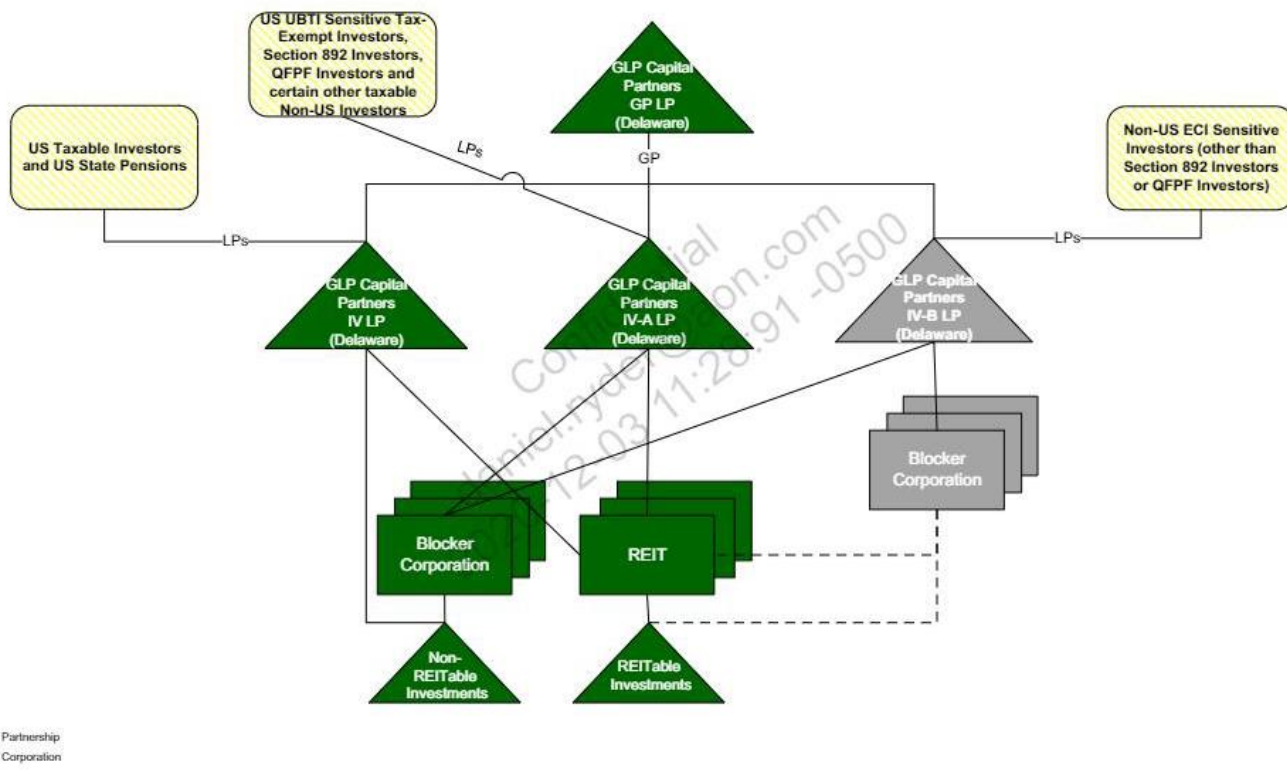
Annie Fitzgerald is a Senior Vice President and Chief Accounting Officer of GCP. Annie held a similar position at GLP's U.S. platform starting in March 2018. Prior to joining GLP, Annie served as Chief Accounting Officer of Care Capital Properties, where she oversaw SEC reporting, Sarbanes-Oxley compliance, and accounting and treasury functions. Annie worked at InvenTrust Properties Corp., including as Chief Accounting Officer from 2011 to 2016. While at InvenTrust, Annie was primarily responsible for SEC reporting, accounting and budget and forecasting functions and was the finance lead through various strategic platform transactions. Prior to InvenTrust Properties Corp., Annie was a consultant and project manager at CTS Holdings Inc. Prior to CTS Holdings Inc. she held various accounting and finance related positions at Equity Office Properties Trust. Annie graduated from Drake University and is a Certified Public Accountant.

Oscar Wong is a Senior Vice President of Acquisitions of GCP. Prior to joining GCP, Oscar led investment and capital markets initiatives in the eastern United States for GLP beginning in 2018. Prior to joining GLP, Oscar spent approximately five years with J.P. Morgan's Real Estate Americas platform where he was a Vice President on the acquisitions team. During his time at J.P. Morgan, Oscar led over \$1 billion of equity investments across multiple property types and served as the logistics specialist for the western United States. Prior to J.P. Morgan, Oscar worked at AEW Capital Management and LaSalle Investment Management. Oscar graduated with distinction from the University of Toronto and holds a Masters degree in real estate development from the University of Southern California.

Ross Parkin is a Senior Vice President of Acquisitions of GCP. Prior to joining GCP, Ross led investments and dispositions totaling \$900 million since 2016 while at GLP. Prior to joining GLP, Ross served as Head of Acquisitions for Evergreen Industrial Properties, a TPG portfolio company that was sold to Ivanhoe Cambridge. Previously, Ross was a Vice President of Investments for PS Business Parks, responsible for investment and capital markets initiatives in the United States. During his career, Ross has executed over \$6 billion in transactions across multiple product types. Ross graduated from the Neely School of Business at Texas Christian University.

Exhibit D: Fund Legal Structure

Draft for Discussion Purposes Only



APPENDIX

Rating Rationale

<i>Strategy</i>	Consistent with AON/Townsend's macro View for potentially out-performing real estate sectors.
<i>Sponsor/Manager</i>	Property specialist operator; unique alignment of a first-time fund, with meaningful sponsor co-investment, and the endorsement of significant capital from lead investors that had prior success with the team.
<i>ESG Policy & Practices</i>	The firm is too new to have its planned ESG policies fully implemented.
<i>Operational Due Diligence</i>	Currently in process; will be rated by Aon's independent ODD team.
<i>Investment Process</i>	Disciplined, institutional process derived from senior leader's time at well-performing fund sponsors Blackstone and Och-Ziff Real Estate.
<i>Fund Structure, Terms & Conditions</i>	Closed-end structure is appropriate for the intended portfolio aggregation component of the strategy. Legal structure accommodates the LP base. Terms and conditions are fair and within market relative to value-add peers.
<i>Performance</i>	Very strong on an absolute basis; 2 of 3 funds in top quartile relative to similar vintage value-add peers, and all 3 in top quartile by equity multiple. Additionally, within the strongly out-performing sub-set of industrial funds, 2 of 3 funds place above the median of vintage peers.
Overall	Buy Rated

Investment Rating Explanation

The comments and assertions reflect Townsend views of the specific investment product, its strengths and weaknesses in general and in the context of Townsend's *View of the World* and same vintage alternative choices.

- **Buy** - Suitable for institutional investors that have a portfolio construction need. Appropriate overall risk profile given the strategy.
- **Qualified** - Suitable for institutional capital. In addition to customary risks, contains one or more heightened risks that should be weighed against an investor's preferences, risk tolerances, and portfolio construction needs.

Operation due diligence rating provided by Aon's dedicated multi-asset class Operational Due Diligence team according to its autonomous review of the Sponsor's policies and procedures, infrastructure and capabilities across a range of operations, middle and back office, and control functions.

- **A1 Pass** – No material operational concerns; firm's operations largely align with a well-controlled operating environment.
- **A2-Pass** – Firm's operations largely align with well-controlled operating environment, with limited exceptions due to resource limitations or where isolated areas do not align with best practice.
- **Conditional Pass** – Material operational concerns that introduce the potential for economic loss or reputational risk exposure.

About Townsend Group – An Aon Company

Founded in 1983, The Townsend Group provides custom real asset solutions that help clients worldwide achieve their unique investment goals. As an Aon company, The Townsend Group is now part of one of the top three outsourced chief investment officer (OCIO) providers in the world measured by global assets under management. Aon's Investment organization, including Townsend, manages more than \$130 billion of worldwide assets under management and has advised on more than \$240 billion of real estate assets.

Disclaimer

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950 Main Avenue
Suite 1600
Cleveland, OH 44113

Memorandum

To: Arkansas Teacher Retirement System (“ATRS”)
From: Chae Hong
CC: PJ Kelly; Jack Dowd; Richard Ferguson
Date: June 7, 2021
Re: GLP Capital Partners IV – \$50 million Commitment Recommendation

Background and Recommendation

GLP Capital Partners (“GCP”) is sponsoring GLP Capital Partners IV LP (the “Fund” or “Fund IV”), a \$2 billion fund for value-add industrial and logistics assets across major distribution markets. The Fund is targeting an 11%-13% net IRR and 1.7x equity multiple over a ten-year life utilizing 60% leverage. The Fund’s strategy is to assemble a portfolio of bulk distribution and infill last mile logistics assets across the U.S., targeting core regional industrial hubs such as Dallas, Houston, Southern California, Inland Empire, Pennsylvania, NYC/New Jersey, and Seattle. Business plans range from value-add renovations, lease-up, forward development takeouts, build-to-suit and speculative development, and stabilized acquisitions where rents are below market. Portfolio construction is intended to create a diversified and stabilized portfolio of modern logistics assets to enable a premium upon exit.

Aon Investments, USA is satisfied with the strategy of the Fund and its appropriateness for ATRS. Additionally, we believe that the merits of this offering outweigh its risks. A Fund IV InDetail is attached for reference. We recommend that ATRS invest \$50 million in the Fund to fulfill ATRS’ 2021 non-core real estate allocation, in accordance with the previously approved 2021 ATRS Real Asset Pacing Schedule.

ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201

RESOLUTION
No. 2021-25

**Approving Investment in GLP Capital Partners IV L.P. with
Imminent Need**

WHEREAS, the Board of Trustees (Board) of the Arkansas Teacher Retirement System (ATRS) is authorized to invest and manage trust assets for the benefits of its plan participants; and

WHEREAS, the ATRS Board has reviewed the recommendation of its real assets consultant, Aon Hewitt Investment Consulting, Inc., along with the recommendation of the Investment Committee and ATRS staff regarding a potential investment in **GLP Capital Partners IV L.P.**, a value-add industrial and logistics real estate fund investing in assets across major distribution markets; and

WHEREAS, the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000.00)** in **GLP Capital Partners IV L.P.**, and the Board, after its review of the timing in which the closing of the investment in **GLP Capital Partners IV L.P.** may need to occur, has determined that there is an imminent need to immediately enter into the partial equity ownership agreement prior to the next scheduled meeting of the Arkansas Legislative Council. The Board also deems it financially appropriate to enter into the partial equity ownership agreement and concludes that to forego the opportunity to promptly implement its investment directives under the prudent investor rule would be inconsistent with its fiduciary duty of care to the members and annuitants.

NOW, THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000.00)** in **GLP Capital Partners IV L.P.** and agrees to immediately move to close and subscribe the approved ATRS limited partnership interest in **GLP Capital Partners IV L.P.** The total investment amount is to be determined by ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment using the Imminent Need process, if acceptable terms are reached.

Adopted this 7th day of June 2021

Mr. Danny Knight, *Chair*
Arkansas Teacher Retirement System

Arkansas Teacher Retirement System Private Equity Portfolio Review

December 31, 2020

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Executive Summary

Portfolio Summary

Since establishing the private equity program in 1996, Arkansas Teacher Retirement System (“ATRS”) has committed approximately \$5.4 billion to 87 primary funds, 26 fund-of-funds, 1 co-investment fund, and 12 direct investments through December 31, 2020. Of the \$5.4 billion committed, 86% has been contributed, 104% of contributed capital has been returned, and a total value of 1.7 times contributed capital has been generated. ATRS’ portfolio has outperformed the Dow Jones U.S. Total Stock Market Index equivalent (“PME”) by 380 basis points since inception.

Investment Activity

For the twelve months ended December 31, 2020, ATRS made capital contributions of approximately \$386.1 million and received distributions of \$394.3 million, for net distributions of \$8.2 million.

Commitment Activity

Since January 1, 2020, ATRS closed on commitments totaling \$245.0 million to the following eight funds:

- Thoma Bravo Explore I (\$20.0 million)
- FP Venture XIII (\$60.0 million)
- BV X (\$30.0 million)
- FP Intl X (\$30.0 million)
- Greyrock V (\$35.0 million)
- Thoma Bravo XIV (\$20.0 million)
- Thoma Bravo Discover III (\$20.0 million)
- LLR VI (\$30.0 million)

Additionally, subsequent to year-end, ATRS closed on a \$30.0 million commitment to Greenbriar V.

Market Commentary

COVID-19 Update

The most important private markets trend during 2020 was the relative lack of disruption caused by the COVID-19 pandemic. After a slowdown in Q2 as the pandemic began to spread, capital markets and deal activity rebounded strongly in the second half of the year.

U.S. Private Equity

Despite the pandemic conditions, U.S. PE investment activity saw a year-over-year decline of only 7% in dollar terms and 3% in deal count terms. Fundraising activity saw a more pronounced slowdown from the record activity in 2019. Given the relative stability of investment activity during 2020, pricing and leverage levels also remained relatively consistent.

U.S. Venture Capital

Venture investment activity was also not disrupted significantly by the pandemic, as deal activity was flat year-over-year and investment activity was up 13%. The number of firms successfully raising funds continued to decline in 2020 as it has since 2018. However, fund sizes continue to grow as capital commitments increased by 30% year-over-year and approached \$75 billion, in aggregate. As with investment activity, exits were relatively flat in deal count terms but an IPO boom in the second half of the year drove record exit value.

Franklin Park

May 13, 2021

Portfolio Overview

Portfolio Summary



Group	Num.	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	Remaining Value (%)	Exposure (\$)	DPI	TVPI	Net IRR
By Vehicle											
1996-2000: Legacy Portfolio	13	1,106,390,461	1,070,676,238	0	1,639,782,207	439,910	0.0%	439,910	1.5 x	1.5 x	9.2%
2005-2006: CSFB Portfolio	2	654,300,000	687,782,355	65,216,271	978,443,517	111,046,206	3.9%	176,262,477	1.4 x	1.6 x	8.8%
Post 2006 Fund Portfolio	99	3,133,323,718	2,365,260,068	1,102,496,210	2,046,144,791	2,033,526,291	71.0%	3,136,022,501	0.9 x	1.7 x	16.5%
Big River Steel	8	257,880,449	257,940,356	0	132,006,068	397,665,142	13.9%	397,665,142	0.5 x	2.1 x	19.9%
Blue Oak Arkansas	1	18,000,000	19,740,000	0	5,385,136	0	0.0%	0	0.3 x	0.3 x	-34.8%
Highland LLC	2	218,244,727	234,114,727	0	31,674,525	282,749,215	9.9%	282,749,215	0.1 x	1.3 x	21.3%
GTLA Holdings	1	20,000,000	20,000,000	0	0	40,000,000	1.4%	40,000,000	0.0 x	2.0 x	34.5%
Total	126	5,408,139,355	4,655,513,745	1,167,712,481	4,833,436,243	2,865,426,763	100.0%	4,033,139,244	1.0 x	1.7 x	11.3%
By Fund Type											
Co-Investment Fund	1	263,823,718	261,043,899	153,347,228	201,741,790	230,946,627	8.1%	384,293,855	0.8 x	1.7 x	17.7%
Fund-of-Funds	26	1,334,300,000	1,074,698,519	323,916,426	1,240,793,621	745,996,155	26.0%	1,069,912,581	1.2 x	1.8 x	11.8%
Operating Company	12	514,125,176	531,795,084	0	169,065,728	720,414,357	25.1%	720,414,357	0.3 x	1.7 x	18.7%
Primary Fund	87	3,295,890,461	2,787,976,244	690,448,827	3,221,835,104	1,168,069,625	40.8%	1,858,518,452	1.2 x	1.6 x	10.7%
Total	126	5,408,139,355	4,655,513,745	1,167,712,481	4,833,436,243	2,865,426,763	100.0%	4,033,139,244	1.0 x	1.7 x	11.3%

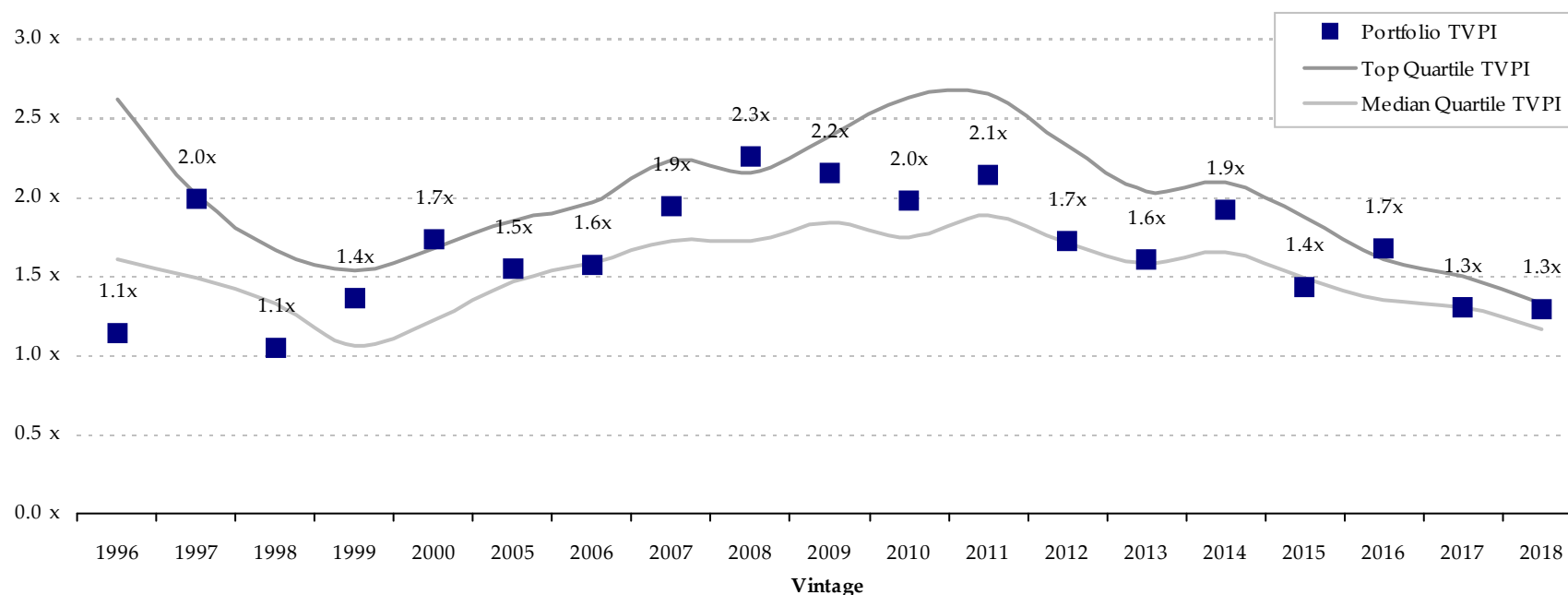
Portfolio Summary



Group	Num.	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	Remaining Value (%)	Exposure (\$)	DPI	TVPI	Net IRR
By Strategy											
Buyout	62	2,422,390,461	1,987,455,890	541,992,404	2,410,690,312	947,505,911	33.1%	1,489,498,315	1.2 x	1.7 x	11.4%
Distressed Debt	3	100,000,000	93,881,464	25,486,571	82,144,587	50,114,604	1.7%	75,601,175	0.9 x	1.4 x	7.1%
Growth Equity	3	120,000,000	87,904,590	34,957,033	177,779,668	55,492,820	1.9%	90,449,853	2.0 x	2.7 x	20.2%
Hard Assets	12	545,744,727	539,660,833	43,821,357	210,622,867	424,881,896	14.8%	468,703,253	0.4 x	1.2 x	6.8%
Infrastructure	8	270,880,449	272,676,670	0	129,165,913	397,665,142	13.9%	397,665,142	0.5 x	1.9 x	17.7%
Mezzanine	7	285,000,000	185,254,158	44,170,893	213,578,879	30,876,785	1.1%	75,047,678	1.2 x	1.3 x	10.1%
Multi-Strategy	6	974,123,718	1,015,814,288	219,046,499	1,207,342,614	346,707,137	12.1%	565,753,636	1.2 x	1.5 x	8.2%
Special Assets	1	30,000,000	8,497,598	21,502,402	3,195	6,295,226	0.2%	27,797,628	0.0 x	0.7 x	NMF
Structured Capital	3	85,000,000	77,660,809	27,652,650	40,357,887	53,854,218	1.9%	81,506,868	0.5 x	1.2 x	8.4%
Turnaround	8	210,000,000	146,929,801	89,760,748	142,435,386	85,911,600	3.0%	175,672,348	1.0 x	1.6 x	15.1%
Venture Capital	13	365,000,000	239,777,643	119,321,924	219,314,935	466,121,425	16.3%	585,443,349	0.9 x	2.9 x	24.0%
Total	126	5,408,139,355	4,655,513,745	1,167,712,481	4,833,436,243	2,865,426,763	100.0%	4,033,139,244	1.0 x	1.7 x	11.3%
By Sub-Asset Class											
Corporate Finance	101	4,529,014,179	3,883,941,019	1,048,390,557	4,445,055,580	1,678,890,982	58.6%	2,727,281,539	1.1 x	1.6 x	10.5%
Direct Investments	12	514,125,176	531,795,084	0	169,065,728	720,414,357	25.1%	720,414,357	0.3 x	1.7 x	18.7%
Venture Capital	13	365,000,000	239,777,643	119,321,924	219,314,935	466,121,425	16.3%	585,443,349	0.9 x	2.9 x	24.0%
Total	126	5,408,139,355	4,655,513,745	1,167,712,481	4,833,436,243	2,865,426,763	100.0%	4,033,139,244	1.0 x	1.7 x	11.3%

- Remaining Value is defined as the investor's value as reported by the fund's manager.
- Exposure is defined as the sum of the investor's Remaining Value plus Unfunded Commitment.
- DPI is the ratio of Distributed Capital to Contributed Capital.
- TVPI is the ratio of Distributed Capital plus Remaining Value to Contributed Capital.
- Net IRR is defined as the annualized, compound rate of return using daily draws, distributions and Remaining Value as of the Report Date, net of fees and expenses, including late closing interest.
- Results include fully liquidated investments (if applicable).
- Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date.

TVPI by Vintage



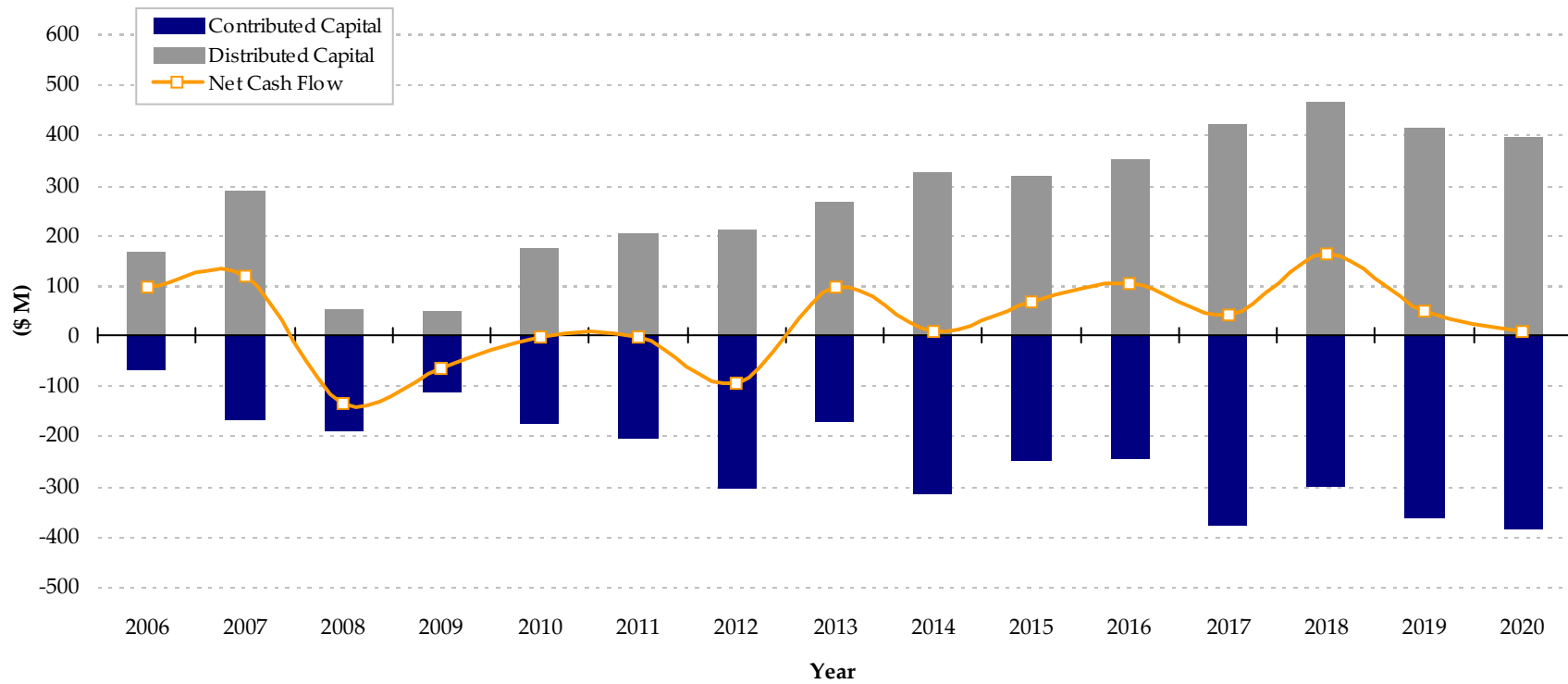
Net IRR vs. PME vs. Cambridge Associates: U.S. All Private Equity

Calculation Set	1-Year	3-Year	5-Year	10-Year	Inception
Aggregate Portfolio	20.5%	19.8%	17.6%	15.9%	11.3%
DJ US TSM TR Index* Public Market Equivalent	20.5%	14.1%	15.2%	13.6%	7.5%
Cambridge Associates: U.S. All Private Equity	17.9%	15.6%	13.6%	14.9%	N/A
Post 2006 Fund Portfolio	24.5%	20.4%	18.0%	16.9%	16.5%
DJ US TSM TR Index* Public Market Equivalent (Post 2006 Fund Portfolio)	20.6%	14.0%	15.2%	14.0%	13.7%

* The Dow Jones U.S. Total Stock Market Total Return Index measures all U.S. equity securities that have readily available prices and is calculated with dividend reinvestment.

-
- Benchmark TVPI represents vintage year first quartile per Cambridge Associates, as of September 30, 2020. The portfolio is compared to data compiled across multiple strategies including U.S. Buyout, Growth Equity, Venture Capital, Mezzanine, Distressed, Fund-of-funds, and Secondary funds.
 - Net IRR is defined as the annualized, compound rate of return using daily draws, distributions and Remaining Value as of the Report Date, net of fees and expenses, including late closing interest.
 - The public market equivalent (PME) represents the performance of a public market index expressed in terms of an IRR, using the same cash flows and timing as the investor's investment activity in private equity. The PME serves as a proxy for the return the investor could have achieved by investing in the public market. The PME return assumes cash flows are invested at the end of each day.
 - Cambridge Associates: U.S. All Private Equity reflects the pooled net IRR based on data compiled from Cambridge Associates as of September 30, 2020.
 - Benchmark data is not available (N/A).

Annual Cash Flow

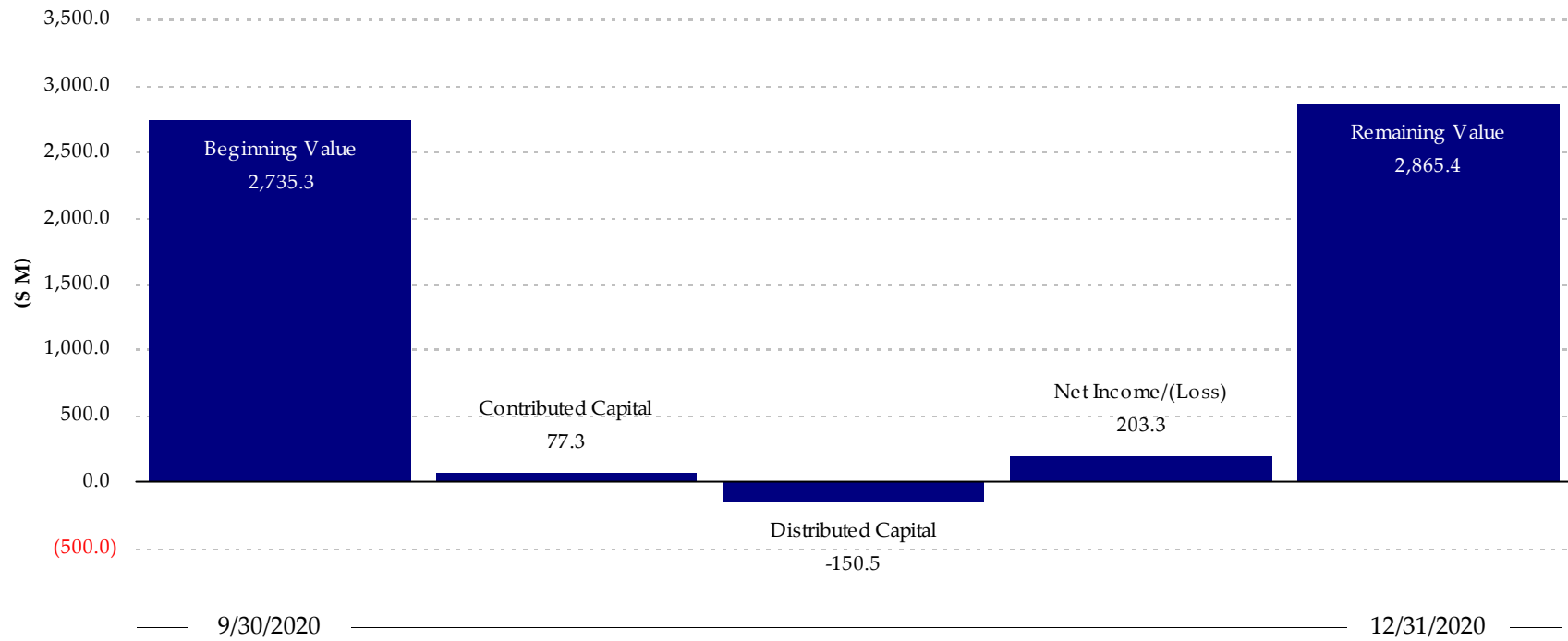


2020 (\$)		
Distributed	Contributed	Net Cash Flow
394,272,653	-386,082,724	8,189,929

▫ Cash flow data was compiled through the Report Date.

Capital Account Change Since Prior Quarter

Quarterly Portfolio Activity



Percent Change in Value	7.4%
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- Beginning Value represents the aggregate Remaining Value of the portfolio as of the prior quarter-end.
- Percent Change in Value is calculated by dividing Net Income / (Loss) by Beginning Value.

Recent Commitments



Commitments for Year Ended December 31, 2020

Fund	Strategy	Date	Commitment (\$)
Thoma Bravo Explore I	Buyout	Jan 2020	20,000,000
FP Venture XIII	Venture Capital	Feb 2020	60,000,000
BV X	Buyout	Feb 2020	30,000,000
FP Intl X	Buyout	Mar 2020	30,000,000
Greyrock V	Mezzanine	Apr 2020	35,000,000
Thoma Bravo XIV	Buyout	May 2020	20,000,000
Thoma Bravo Discover III	Buyout	May 2020	20,000,000
LLR VI	Growth Equity	Sep 2020	30,000,000
Total			245,000,000

Year to Date Commitments as of May 13, 2021

Fund	Strategy	Date	Commitment (\$)
Greenbriar V	Buyout	Feb 2021	30,000,000
Total			30,000,000

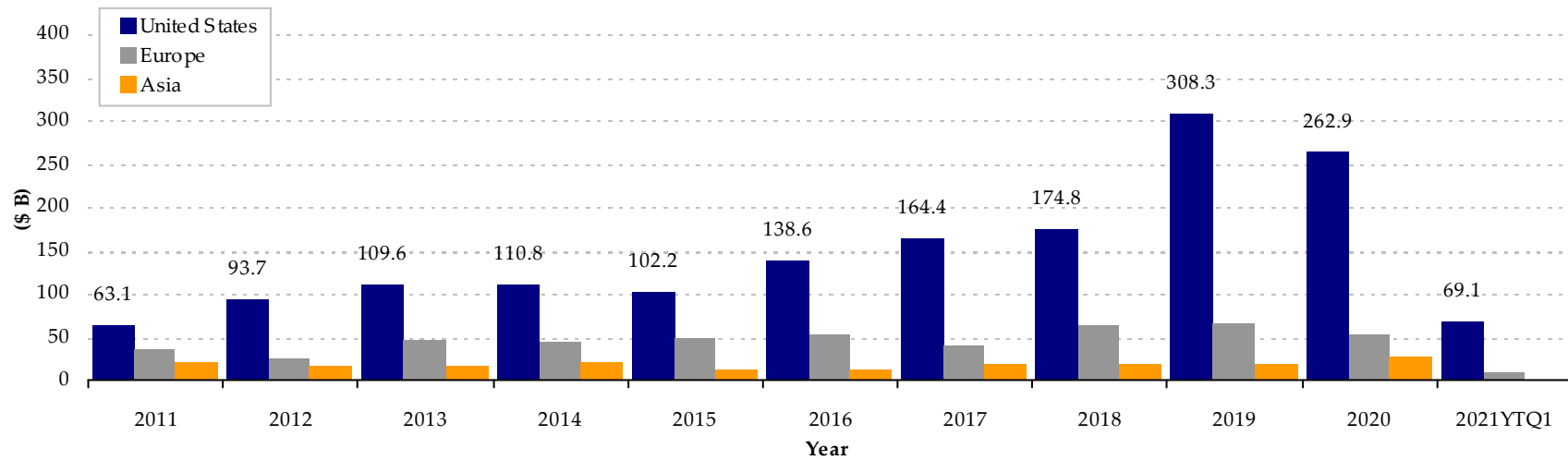
Approved and Pending Commitments as of May 13, 2021

Not Applicable

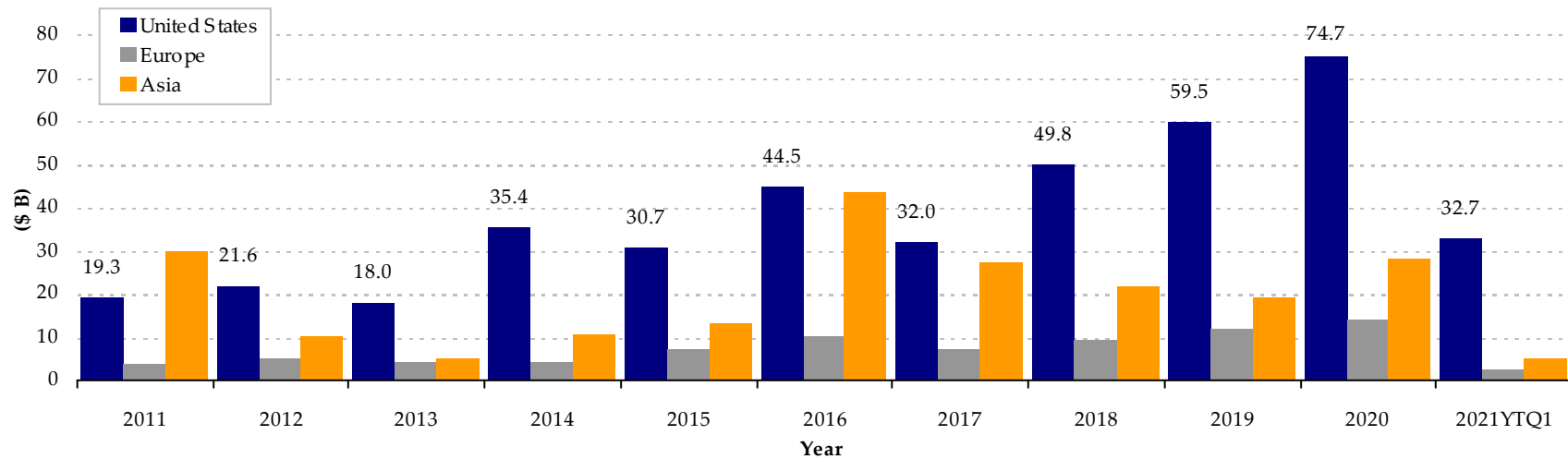
- Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date, if applicable.
- ATRS committed an additional \$30.0 million to FP VC XIII, bringing total commitments to the Fund to \$60.0 million.

Market Update

Buyout Funds

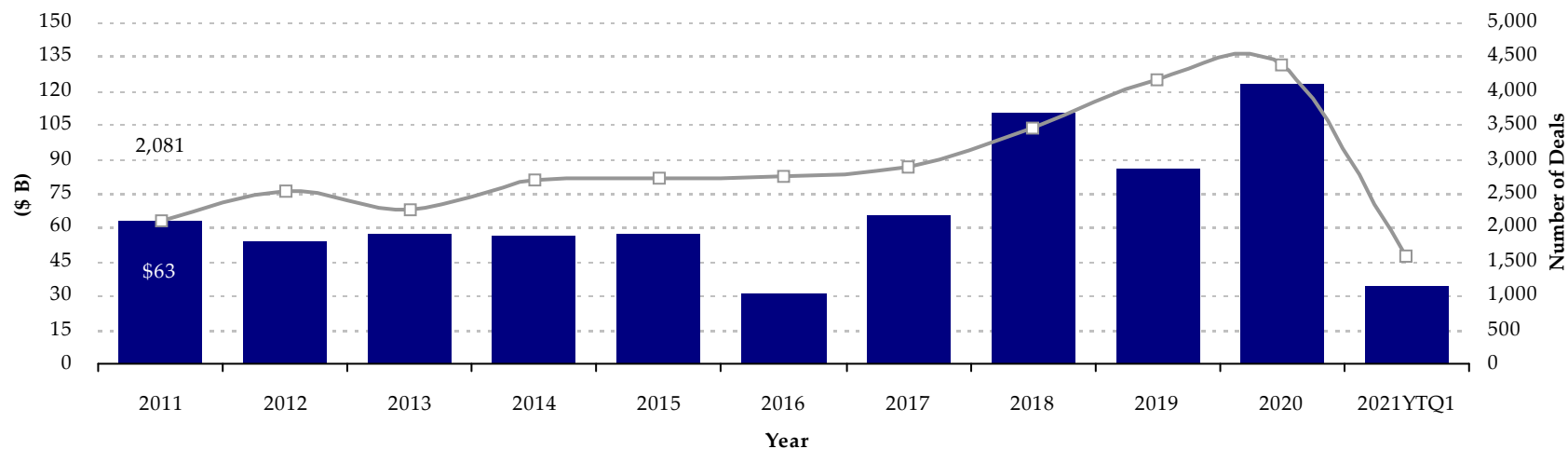


Venture Funds

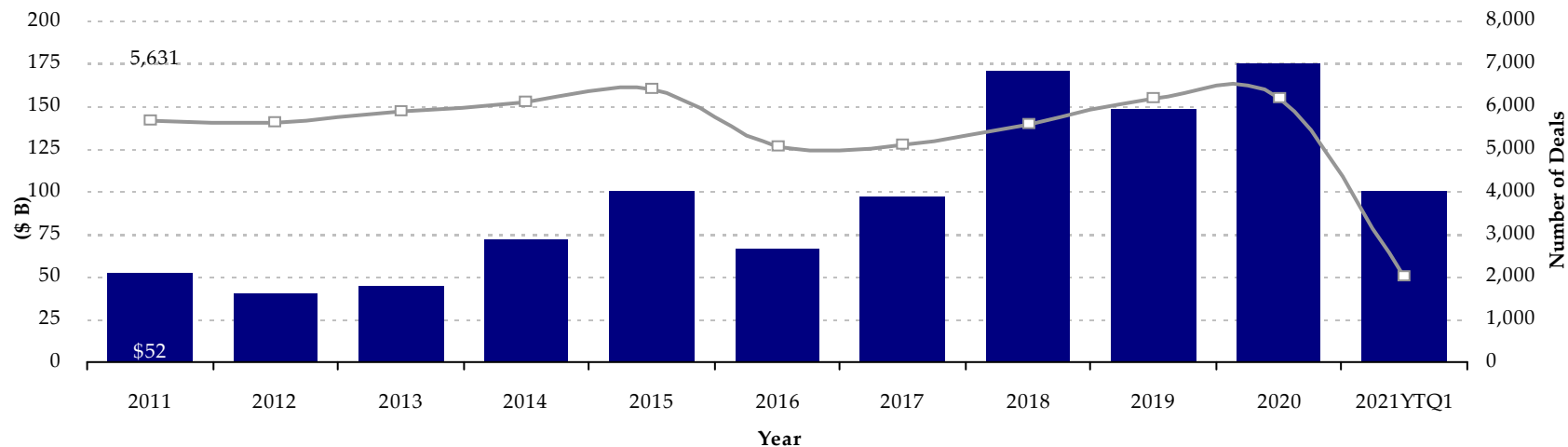


Source: Thomson One Private Equity.
Data compiled through 4Q 2020.

U.S. Buyout

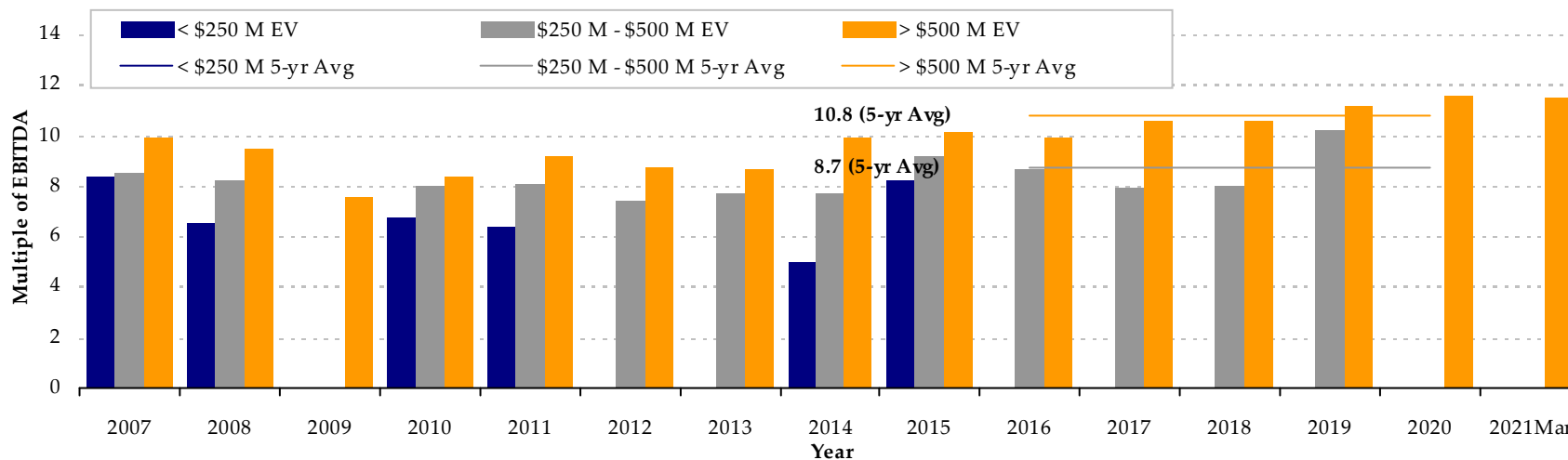


U.S. Venture

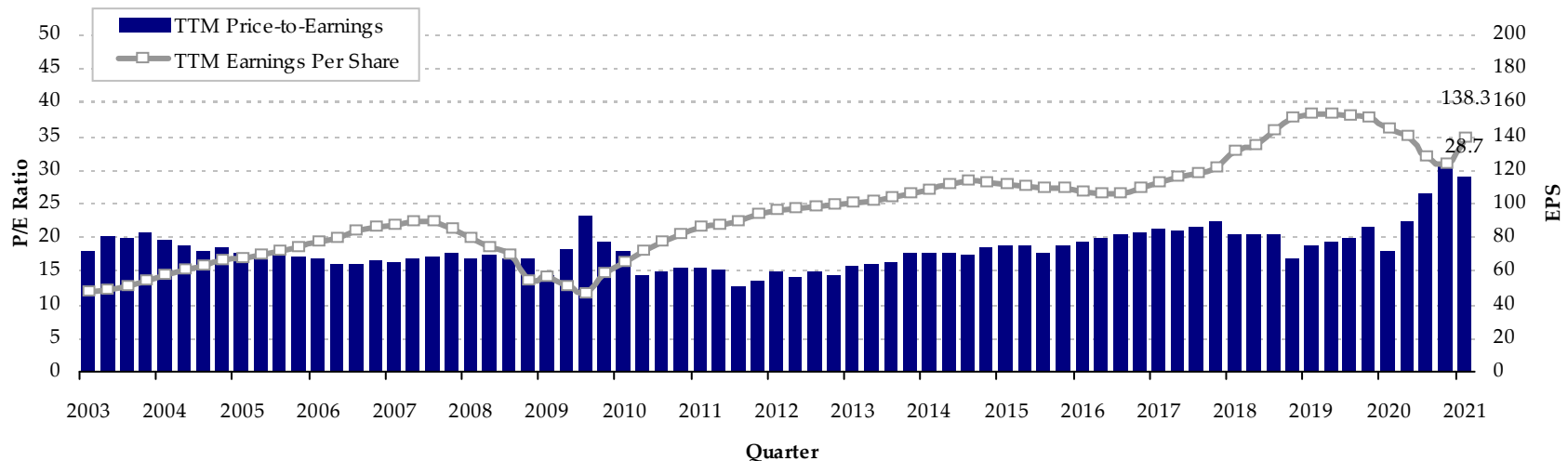


- Source: Thomson One Private Equity.
- Data compiled through 4Q 2020.

U.S. LBO Pricing Multiples

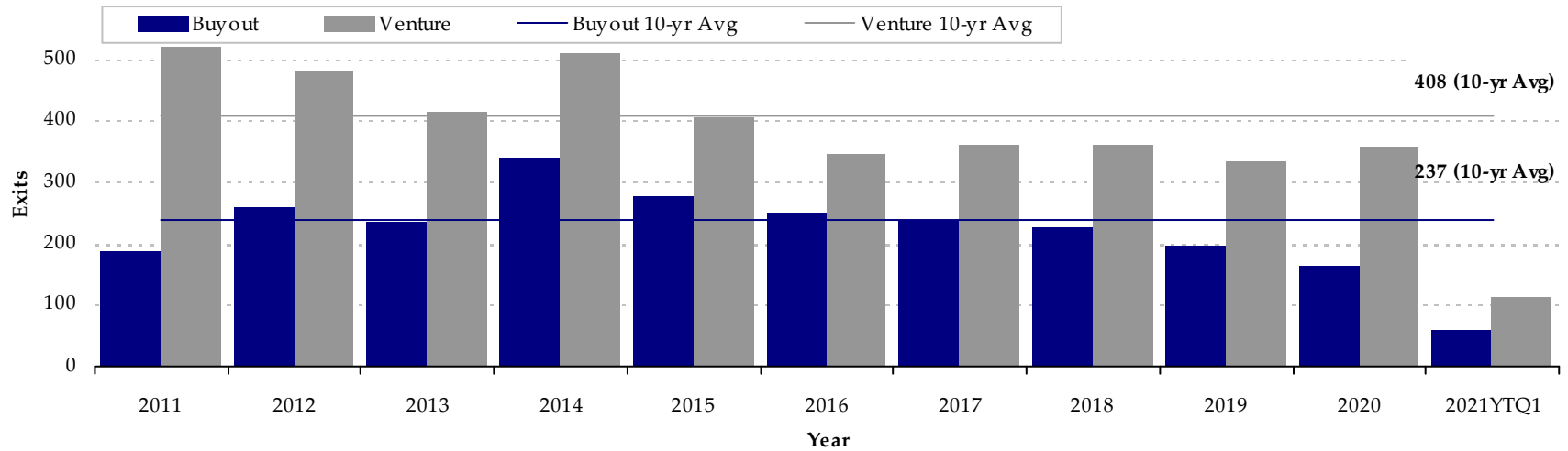


S&P 500 Valuation and Earnings

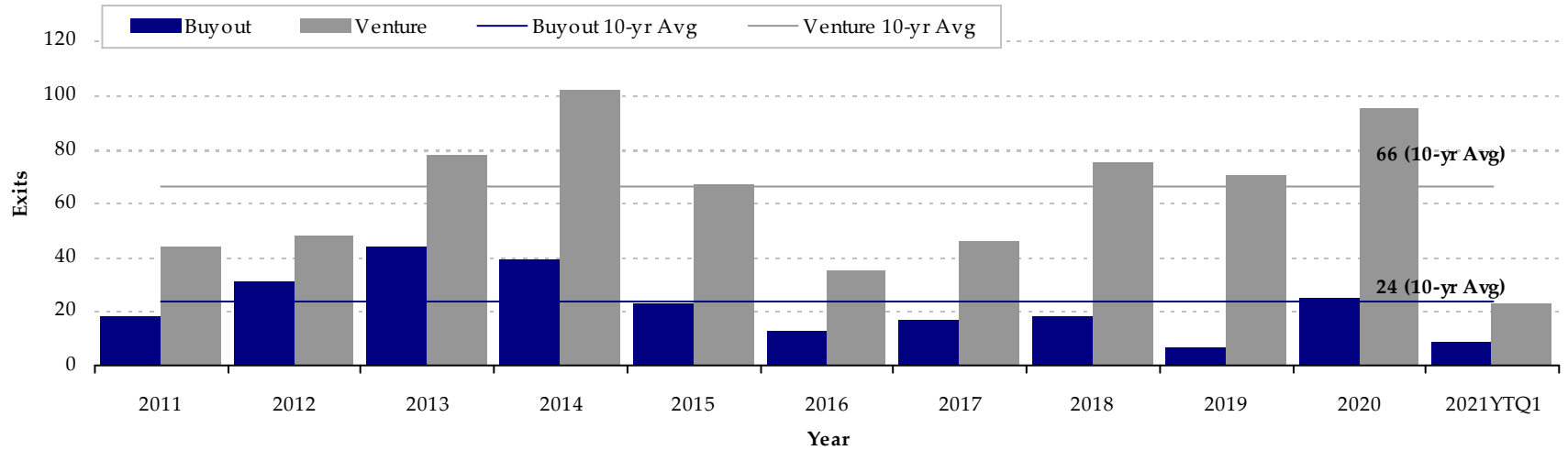


Source: Standard & Poor's Leveraged Commentary.

U.S. Mergers and Acquisitions



U.S. Initial Public Offerings



- Source: Thomson One Private Equity.
- Data compiled through 4Q 2020.

Vintage Returns

Group	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
U.S. All PE Median	15.4%	13.1%	15.1%	14.5%	12.5%	15.7%	14.4%	13.4%	15.9%	12.6%
U.S. All PE Top Quartile	23.0%	21.3%	23.2%	20.0%	19.5%	22.2%	22.7%	23.0%	27.2%	25.4%
U.S. Buyout Median	20.3%	17.8%	16.9%	16.0%	13.6%	18.1%	15.4%	15.1%	22.3%	9.1%
U.S. Buyout Top Quartile	26.8%	23.5%	23.9%	22.6%	19.6%	22.9%	24.0%	25.3%	33.9%	16.3%
U.S. Energy Median	8.1%	6.7%	0.5%	-0.9%	3.5%	5.9%	0.3%	4.3%	-4.4%	0.0%
U.S. Energy Top Quartile	17.6%	19.5%	7.8%	6.1%	15.2%	11.4%	11.2%	8.1%	7.9%	5.5%
U.S. Real Estate Median	14.6%	13.4%	15.2%	11.3%	11.3%	10.7%	10.7%	10.2%	8.0%	5.9%
U.S. Real Estate Top Quartile	19.8%	18.8%	20.9%	15.1%	16.2%	13.5%	13.8%	13.5%	10.7%	9.2%
U.S. Venture Median	10.8%	15.1%	18.2%	15.8%	14.2%	17.5%	14.9%	16.6%	17.1%	17.4%
U.S. Venture Top Quartile	21.9%	27.4%	23.8%	20.6%	21.0%	26.7%	23.5%	27.5%	28.1%	32.7%

- Source: Cambridge Associates.
- Data compiled through September 30, 2020.

Performance Analysis

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
Buyout									
21st Century Group I *	2000	\$80,365,451	25,000,000	27,141,173	0	22,841,928	0	0.8 x	-3.8%
Advent GPE VI-A	2008	\$9,000,000,000	40,000,000	40,167,228	0	79,351,051	5,111,836	2.1 x	16.7%
Altaris Constellation	2017	\$165,000,000	20,000,000	16,263,116	5,543,214	2,199,308	28,057,829	1.9 x	22.2%
Altaris IV	2018	\$1,085,000,000	24,000,000	16,043,685	7,956,315	0	20,371,675	1.3 x	15.7%
Altus Capital II	2010	\$200,000,000	20,000,000	18,555,037	4,381,151	21,881,638	6,432,986	1.5 x	11.3%
American Industrial VI	2016	\$1,845,000,000	20,000,000	22,445,427	2,929,159	5,374,586	26,118,020	1.4 x	13.5%
American Industrial VII	2019	\$3,075,000,000	30,000,000	1,976,977	28,410,569	387,546	1,678,209	1.0 x	NMF
Arlington IV	2016	\$700,000,000	23,000,000	21,903,987	3,137,677	9,400,408	31,905,125	1.9 x	29.0%
Arlington V	2019	\$1,692,000,000	25,000,000	4,887,969	20,112,031	0	6,255,884	1.3 x	NMF
Boston Ventures VII	2006	\$434,507,010	50,000,000	43,016,769	8,258,947	44,748,285	5,526,884	1.2 x	2.9%
BV IX	2017	\$750,000,000	30,000,000	22,376,402	12,687,563	5,063,574	27,180,101	1.4 x	27.8%
BV VIII	2012	\$486,800,000	30,000,000	26,817,228	3,463,958	38,027,943	20,680,362	2.2 x	51.7%
BV X	2020	\$1,122,000,000	30,000,000	544,210	29,455,790	0	85,861	0.2 x	NMF
Clearlake V	2018	\$3,623,125,000	30,000,000	27,627,305	6,573,707	8,435,222	44,401,360	1.9 x	50.1%
Clearlake VI	2020	\$7,068,000,000	30,000,000	7,680,726	22,406,746	250,159	8,293,782	1.1 x	NMF
Court Square III	2012	\$3,173,449,997	40,000,000	43,459,207	2,762,020	32,556,449	40,914,173	1.7 x	18.4%
Cypress MBP II *	1999	\$2,376,060,606	50,000,000	52,304,562	0	50,840,220	0	1.0 x	-0.5%
DLJ MBP III *	2000	\$5,304,941,647	200,000,000	215,345,711	0	458,746,671	0	2.1 x	19.4%
Doughty Hanson III *	1997	\$2,660,000,000	100,000,000	99,374,207	0	197,482,184	0	2.0 x	13.5%
DW Healthcare III	2012	\$268,147,500	40,000,000	37,138,408	2,861,592	56,029,790	14,621,924	1.9 x	18.5%
DW Healthcare IV	2016	\$294,274,000	30,000,000	27,942,263	3,586,703	11,273,132	34,836,645	1.7 x	27.0%
DW Healthcare V	2019	\$611,000,000	30,000,000	7,778,585	22,221,415	0	6,452,836	0.8 x	NMF
FP CF Access	2020	\$146,408,500	60,000,000	10,929,391	19,125,510	0	10,627,154	1.0 x	NMF
FP Intl 2011	2011	\$45,000,000	25,000,000	23,001,840	2,328,196	20,384,864	13,907,909	1.5 x	8.4%
FP Intl 2012	2012	\$70,000,000	25,000,000	16,747,990	8,452,924	9,584,271	13,643,808	1.4 x	8.7%
FP Intl 2013	2013	\$97,000,000	20,000,000	13,753,540	6,386,688	2,733,781	21,221,017	1.7 x	13.7%
FP Intl 2014	2014	\$97,000,000	25,000,000	15,850,395	9,274,062	6,859,269	17,075,962	1.5 x	14.2%
FP Intl 2015	2015	\$113,000,000	25,000,000	16,482,380	8,616,635	976,174	23,641,905	1.5 x	15.7%
FP Intl 2016	2016	\$97,000,000	25,000,000	15,902,062	9,214,019	2,479,253	16,856,528	1.2 x	8.2%
FP Intl 2017	2017	\$98,000,000	25,000,000	14,413,265	10,706,690	17,557	25,141,776	1.7 x	36.2%
FP Intl 2018	2018	\$65,500,000	25,000,000	14,312,977	10,847,286	0	19,612,338	1.4 x	37.7%
FP Intl 2019	2019	\$70,500,000	30,000,000	5,744,681	24,426,221	0	7,100,127	1.2 x	NMF
FP Intl X	2021	\$139,000,000	30,000,000	0	30,000,000	0	0	N/A	NMF
HMTF III *	1996	\$2,458,754,795	76,743,018	76,799,039	0	87,834,289	0	1.1 x	1.8%
HMTF IV *	1998	\$4,023,532,721	100,000,000	98,010,015	0	67,130,479	0	0.7 x	-6.1%
HMTF V *	2000	\$1,552,965,194	207,366,433	205,198,451	0	378,102,491	0	1.8 x	17.6%

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
JF Lehman III	2011	\$575,500,000	39,000,000	44,012,406	5,309,096	49,324,686	15,364,820	1.5 x	10.2%
JF Lehman IV	2016	\$833,000,000	30,000,000	26,747,005	3,252,996	22,065,332	35,695,367	2.2 x	33.2%
JF Lehman V	2020	\$1,312,320,000	30,000,000	8,827,673	21,172,327	0	8,198,181	0.9 x	NMF
Mason Wells III	2010	\$525,000,000	30,000,000	28,553,580	1,446,420	68,546,055	12,570,412	2.8 x	19.9%
Oak Hill I *	1999	\$1,600,000,000	50,000,000	50,786,497	0	91,264,962	0	1.8 x	10.6%
One Rock II	2017	\$964,000,000	30,000,000	26,325,817	3,674,183	0	35,879,970	1.4 x	17.5%
Riverside IV	2009	\$406,091,370	40,000,000	31,433,665	0	74,584,420	236,638	2.4 x	21.3%
Riverside V	2013	\$561,224,490	35,000,000	35,750,158	1,044,259	24,247,705	24,419,602	1.4 x	8.3%
Riverside VI	2019	\$327,916,667	30,000,000	10,035,951	19,964,049	0	8,720,732	0.9 x	NMF
Second Cinven *	1998	£904,547,000	65,281,010	65,281,010	0	104,700,661	0	1.6 x	9.3%
Siris III	2015	\$1,810,000,000	25,000,000	30,775,862	4,137,215	17,160,296	25,138,969	1.4 x	15.2%
Siris IV	2019	\$3,452,454,000	30,000,000	16,700,142	13,470,378	170,520	18,534,561	1.1 x	NMF
SK Capital V	2018	\$2,013,000,000	30,000,000	12,995,908	17,004,092	10,490	14,592,434	1.1 x	10.6%
Thoma Bravo Discover	2016	\$1,074,000,000	10,000,000	11,350,409	1,767,370	9,155,280	19,419,823	2.5 x	37.7%
Thoma Bravo Discover II	2018	\$2,402,685,000	17,000,000	13,548,801	3,673,210	222,011	20,380,531	1.5 x	41.3%
Thoma Bravo Discover III	2021	\$3,861,470,000	20,000,000	0	20,000,000	0	-33,015	N/A	NMF
Thoma Bravo Explore I	2020	\$1,127,120,000	20,000,000	3,821,541	16,178,459	0	4,016,554	1.1 x	NMF
Thoma Bravo XI	2014	\$3,662,000,000	20,000,000	20,785,558	2,135,646	37,513,202	33,272,668	3.4 x	31.3%
Thoma Bravo XII	2016	\$7,603,860,000	30,000,000	30,853,942	7,029,944	7,886,040	44,684,877	1.7 x	18.8%
Thoma Bravo XIII	2019	\$12,575,745,000	30,000,000	24,470,155	14,574,884	15,449,096	29,079,969	1.8 x	NMF
Thoma Bravo XIV	2021	\$17,889,895,914	20,000,000	0	20,000,000	0	0	N/A	NMF
Vista Equity III	2007	\$1,287,129,725	50,000,000	54,300,911	3,929,771	127,483,122	4,114,937	2.4 x	28.5%
Vista Foundation II	2013	\$1,145,000,000	15,000,000	15,570,569	7,564,067	13,755,963	15,465,285	1.9 x	15.8%
Vista Foundation III	2016	\$2,950,561,226	30,000,000	28,446,995	9,609,547	8,023,566	42,757,371	1.8 x	28.1%
Wellspring V	2011	\$1,194,387,756	40,000,000	45,877,620	14,387,533	62,177,579	12,981,306	1.6 x	16.5%
Wicks IV	2011	\$414,000,000	40,000,000	42,267,506	4,540,170	55,956,803	24,259,901	1.9 x	19.3%
Total Buyout			2,422,390,461	1,987,455,890	541,992,404	2,410,690,312	947,505,911	1.7 x	11.4%
Distressed Debt									
Castlelake II	2011	\$996,762,000	35,000,000	32,656,036	2,625,461	27,816,398	17,803,573	1.4 x	6.4%
Castlelake III	2014	\$1,421,000,000	25,000,000	23,149,741	1,864,884	14,604,008	18,896,012	1.4 x	7.8%
Tennenbaum VI	2010	\$530,000,000	40,000,000	38,075,687	20,996,226	39,724,181	13,415,019	1.4 x	7.3%
Total Distressed Debt			100,000,000	93,881,464	25,486,571	82,144,587	50,114,604	1.4 x	7.1%

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
Growth Equity									
LLR III	2008	\$803,000,000	50,000,000	48,504,590	4,357,033	85,370,014	11,866,010	2.0 x	15.3%
LLR VI	2021	\$1,800,000,000	30,000,000	0	30,000,000	0	-163,986	N/A	NMF
TA XI	2010	\$4,000,100,000	40,000,000	39,400,000	600,000	92,409,654	43,790,796	3.5 x	26.8%
Total Growth Equity			120,000,000	87,904,590	34,957,033	177,779,668	55,492,820	2.7 x	20.2%
Hard Assets									
EnCap IX	2013	\$5,154,639,175	25,000,000	28,503,587	1,252,593	21,895,849	8,514,824	1.1 x	2.6%
EnCap VIII	2010	\$3,608,247,422	47,500,000	54,117,730	0	31,031,849	10,518,401	0.8 x	-8.5%
EnCap X	2015	\$6,701,030,928	30,000,000	28,034,161	3,974,000	6,120,700	22,813,309	1.0 x	1.1%
EnCap XI	2017	\$6,961,190,722	35,000,000	12,137,961	22,862,039	0	7,635,409	0.6 x	-26.3%
GTLA Holdings	2018	\$20,000,000	20,000,000	20,000,000	0	0	40,000,000	2.0 x	34.5%
Highland Contingent Note	2018	\$152,244,727	152,244,727	152,244,727	0	15,000,000	155,165,550	1.1 x	17.9%
Highland Equity	2016	\$66,000,000	66,000,000	81,870,000	0	16,674,525	127,583,665	1.8 x	22.2%
Lime Rock Resources III	2014	\$762,000,000	25,000,000	25,535,784	360,836	4,687,078	10,370,560	0.6 x	-10.1%
NGP IX	2007	\$4,000,000,000	50,000,000	54,215,131	201,825	76,326,171	1,429,360	1.4 x	10.9%
NGP X	2012	\$3,586,000,000	35,000,000	36,173,293	520,437	29,165,161	4,962,707	0.9 x	-1.9%
NGP XI	2014	\$5,325,000,000	30,000,000	29,947,902	1,530,184	9,571,092	19,814,790	1.0 x	-0.7%
NGP XII	2017	\$4,304,081,633	30,000,000	16,880,556	13,119,444	150,442	16,073,321	1.0 x	-2.1%
Total Hard Assets			545,744,727	539,660,833	43,821,357	210,622,867	424,881,896	1.2 x	6.8%
Infrastructure									
Big River - Equity	2014	\$151,090,000	151,090,000	151,090,000	0	19,160,000	377,800,000	2.6 x	21.4%
Big River - Funding *	2017	\$3,750,000	3,750,000	3,750,000	0	3,812,795	0	1.0 x	4.3%
Big River - Holdings Note *	2017	\$12,000,000	12,000,000	12,000,000	0	13,343,726	0	1.1 x	11.0%
Big River - Holdings Note 2023	2018	\$12,000,000	12,000,000	12,000,000	0	0	13,965,867	1.2 x	5.6%
Big River - Holdings Note 2023-2	2018	\$5,150,000	5,150,000	5,150,000	0	62,323	5,899,275	1.2 x	6.7%
Big River - Preferred Equity *	2017	\$41,980,449	41,980,449	41,980,449	0	51,702,368	0	1.2 x	12.5%
Big River - Sr Secured Debt *	2015	\$26,910,000	26,910,000	26,966,221	0	35,699,565	0	1.3 x	14.7%
Blue Oak Arkansas *	2014	\$18,000,000	18,000,000	19,740,000	0	5,385,136	0	0.3 x	-34.8%
Total Infrastructure			270,880,449	272,676,670	0	129,165,913	397,665,142	1.9 x	17.7%

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
Mezzanine									
Audax Mezzanine III	2011	\$1,002,250,000	25,000,000	24,668,609	6,201,254	29,002,931	3,285,218	1.3 x	9.4%
Big River - Mezzanine *	2014	\$5,000,000	5,000,000	5,003,686	0	8,225,290	0	1.6 x	17.3%
Blackstone Mezzanine I *	1999	\$1,141,000,000	100,000,000	73,353,517	0	96,729,026	0	1.3 x	10.2%
DLJ Investment II *	1999	\$1,600,000,000	80,000,000	43,611,022	0	60,468,989	0	1.4 x	10.4%
Greyrock IV	2017	\$275,000,000	30,000,000	27,201,286	3,934,700	7,292,465	24,829,076	1.2 x	8.8%
Greyrock V	2020	\$280,000,000	35,000,000	1,444,567	33,555,432	0	1,096,024	0.8 x	NMF
Insight Mezzanine I	2009	\$94,678,011	10,000,000	9,971,470	479,507	11,860,178	1,666,467	1.4 x	6.6%
Total Mezzanine			285,000,000	185,254,158	44,170,893	213,578,879	30,876,785	1.3 x	10.1%
Multi-Strategy									
ATRS-FP PE	2012	\$265,516,382	263,823,718	261,043,899	153,347,228	201,741,790	230,946,627	1.7 x	17.7%
CSFB-ATRS 2005-1 Series	2005	\$252,525,253	250,000,000	277,750,644	10,724,211	394,735,551	34,914,989	1.5 x	7.6%
CSFB-ATRS 2006-1 Series	2006	\$406,331,658	404,300,000	410,031,712	54,492,060	583,707,966	76,131,217	1.6 x	9.8%
DH Tech I	2000	\$236,700,000	50,000,000	61,471,034	0	20,543,107	439,910	0.3 x	-21.4%
Diamond State *	1999	\$46,000,000	2,000,000	2,000,000	0	3,097,200	0	1.5 x	5.5%
Diamond State II	2007	\$25,361,350	4,000,000	3,517,000	483,000	3,517,000	4,274,394	2.2 x	9.2%
Total Multi-Strategy			974,123,718	1,015,814,288	219,046,499	1,207,342,614	346,707,137	1.5 x	8.2%
Special Assets									
WNG II	2019	\$438,350,000	30,000,000	8,497,598	21,502,402	3,195	6,295,226	0.7 x	NMF
Total Special Assets			30,000,000	8,497,598	21,502,402	3,195	6,295,226	0.7 x	NMF
Structured Capital									
Bison V	2017	\$384,132,653	35,000,000	27,078,753	13,259,698	7,680,848	26,444,422	1.3 x	14.5%
Levine Leichtman V	2013	\$1,644,081,633	20,000,000	24,954,044	3,562,620	17,576,967	21,235,827	1.6 x	13.6%
PineBridge Structured III	2016	\$600,000,000	30,000,000	25,628,013	10,830,332	15,100,072	6,173,969	0.8 x	-8.4%
Total Structured Capital			85,000,000	77,660,809	27,652,650	40,357,887	53,854,218	1.2 x	8.4%

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
Turnaround									
Atlas Capital II	2014	\$900,000,000	15,000,000	19,178,876	6,008,150	14,915,084	13,006,918	1.5 x	18.5%
Insight Equity II	2009	\$429,735,291	30,000,000	30,791,562	1,121,093	32,590,351	20,440,818	1.7 x	10.3%
KPS III Supplemental	2009	\$816,326,531	40,000,000	37,777,254	16,117,982	80,212,144	188,942	2.1 x	22.8%
KPS IV	2014	\$3,571,428,571	25,000,000	21,772,162	2,796,727	5,509,461	23,906,526	1.4 x	16.7%
KPS Mid-Market I	2019	\$1,020,408,163	20,000,000	3,679,966	16,320,034	0	3,770,181	1.0 x	NMF
KPS V	2020	\$6,122,448,980	30,000,000	5,679,607	24,320,393	0	5,646,608	1.0 x	NMF
Sycamore Partners II	2014	\$2,700,000,000	25,000,000	22,042,116	4,084,626	9,208,345	13,951,899	1.1 x	1.8%
Sycamore Partners III	2018	\$4,870,000,000	25,000,000	6,008,257	18,991,743	0	4,999,708	0.8 x	-13.9%
Total Turnaround			210,000,000	146,929,801	89,760,748	142,435,386	85,911,600	1.6 x	15.1%
Venture Capital									
FP Venture 2008	2008	\$102,000,000	30,000,000	30,000,000	169,823	46,494,329	39,853,981	2.9 x	18.2%
FP Venture 2009	2009	\$58,000,000	25,000,000	24,426,925	779,026	47,775,781	20,058,595	2.8 x	18.8%
FP Venture 2010	2010	\$80,000,000	25,000,000	15,984,375	1,648,330	15,609,802	29,804,624	2.8 x	17.6%
FP Venture 2011	2011	\$70,000,000	25,000,000	24,107,625	1,084,730	54,339,054	119,892,335	7.2 x	39.8%
FP Venture 2012	2012	\$80,000,000	25,000,000	22,125,000	3,017,618	20,751,581	51,657,287	3.3 x	24.8%
FP Venture 2013	2013	\$87,000,000	20,000,000	17,977,398	2,114,935	18,576,720	30,126,884	2.7 x	25.5%
FP Venture 2014	2014	\$93,000,000	25,000,000	23,656,160	1,443,907	9,719,641	51,047,650	2.6 x	23.8%
FP Venture 2015	2015	\$113,000,000	25,000,000	23,230,200	1,866,270	1,484,902	45,870,281	2.0 x	24.5%
FP Venture 2016	2016	\$82,000,000	25,000,000	18,902,439	6,209,379	2,553,747	27,575,743	1.6 x	21.8%
FP Venture 2017	2017	\$113,000,000	25,000,000	13,938,053	11,132,949	1,985,561	21,773,437	1.7 x	45.8%
FP Venture 2018	2018	\$80,500,000	25,000,000	13,043,478	12,053,667	217	15,963,323	1.2 x	20.1%
FP Venture 2019	2019	\$80,500,000	30,000,000	8,198,758	21,878,026	23,600	8,797,061	1.1 x	NMF
FP Venture XIII	2020	\$162,000,000	60,000,000	4,187,232	55,923,264	0	3,700,224	0.9 x	NMF
Total Venture Capital			365,000,000	239,777,643	119,321,924	219,314,935	466,121,425	2.9 x	24.0%
Total Portfolio			5,408,139,355	4,655,513,745	1,167,712,481	4,833,436,243	2,865,426,763	1.7 x	11.3%

- Remaining Value is defined as the investor's value as reported by the fund's manager.
- TVPI is the ratio of Distributed Capital plus Remaining Value to Contributed Capital.
- Net IRR is defined as the annualized, compound rate of return using daily draws, distributions and Remaining Value as of the Report Date, net of fees and expenses, including late closing interest.
- An asterisk indicates an investment that is fully liquidated, if applicable.
- Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date, if applicable.
- Returns calculated for funds in the early years of their lives are particularly not meaningful given the J-curve effect. During these early years, due to illiquidity, stagnant valuations, fees and expenses, fund performance tends to be negative (the bottom of the "J").

Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
1996								
HMTF III *	Buyout	76,743,018	76,799,039	0	87,834,289	0	1.1 x	1.8%
Total 1996		76,743,018	76,799,039	0	87,834,289	0	1.1 x	1.8%
1997								
Doughty Hanson III *	Buyout	100,000,000	99,374,207	0	197,482,184	0	2.0 x	13.5%
Total 1997		100,000,000	99,374,207	0	197,482,184	0	2.0 x	13.5%
1998								
HMTF IV *	Buyout	100,000,000	98,010,015	0	67,130,479	0	0.7 x	-6.1%
Second Cinven *	Buyout	65,281,010	65,281,010	0	104,700,661	0	1.6 x	9.3%
Total 1998		165,281,010	163,291,025	0	171,831,140	0	1.1 x	0.9%
1999								
Blackstone Mezzanine I *	Mezzanine	100,000,000	73,353,517	0	96,729,026	0	1.3 x	10.2%
Cypress MBP II *	Buyout	50,000,000	52,304,562	0	50,840,220	0	1.0 x	-0.5%
Diamond State *	Multi-Strategy	2,000,000	2,000,000	0	3,097,200	0	1.5 x	5.5%
DLJ Investment II *	Mezzanine	80,000,000	43,611,022	0	60,468,989	0	1.4 x	10.4%
Oak Hill I *	Buyout	50,000,000	50,786,497	0	91,264,962	0	1.8 x	10.6%
Total 1999		282,000,000	222,055,598	0	302,400,397	0	1.4 x	7.7%
2000								
21st Century Group I *	Buyout	25,000,000	27,141,173	0	22,841,928	0	0.8 x	-3.8%
DH Tech I	Multi-Strategy	50,000,000	61,471,034	0	20,543,107	439,910	0.3 x	-21.4%
DLJ MBP III *	Buyout	200,000,000	215,345,711	0	458,746,671	0	2.1 x	19.4%
HMTF V *	Buyout	207,366,433	205,198,451	0	378,102,491	0	1.8 x	17.6%
Total 2000		482,366,433	509,156,369	0	880,234,197	439,910	1.7 x	14.8%
2005								
CSFB-ATRS 2005-1 Series	Multi-Strategy	250,000,000	277,750,644	10,724,211	394,735,551	34,914,989	1.5 x	7.6%
Total 2005		250,000,000	277,750,644	10,724,211	394,735,551	34,914,989	1.5 x	7.6%

Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
2006								
Boston Ventures VII	Buyout	50,000,000	43,016,769	8,258,947	44,748,285	5,526,884	1.2 x	2.9%
CSFB-ATRS 2006-1 Series	Multi-Strategy	404,300,000	410,031,712	54,492,060	583,707,966	76,131,217	1.6 x	9.8%
Total 2006		454,300,000	453,048,481	62,751,007	628,456,251	81,658,101	1.6 x	9.2%
2007								
Diamond State II	Multi-Strategy	4,000,000	3,517,000	483,000	3,517,000	4,274,394	2.2 x	9.2%
NGP IX	Hard Assets	50,000,000	54,215,131	201,825	76,326,171	1,429,360	1.4 x	10.9%
Vista Equity III	Buyout	50,000,000	54,300,911	3,929,771	127,483,122	4,114,937	2.4 x	28.5%
Total 2007		104,000,000	112,033,042	4,614,596	207,326,293	9,818,691	1.9 x	20.4%
2008								
Advent GPE VI-A	Buyout	40,000,000	40,167,228	0	79,351,051	5,111,836	2.1 x	16.7%
FP Venture 2008	Venture Capital	30,000,000	30,000,000	169,823	46,494,329	39,853,981	2.9 x	18.2%
LLR III	Growth Equity	50,000,000	48,504,590	4,357,033	85,370,014	11,866,010	2.0 x	15.3%
Total 2008		120,000,000	118,671,818	4,526,856	211,215,394	56,831,827	2.3 x	16.6%
2009								
FP Venture 2009	Venture Capital	25,000,000	24,426,925	779,026	47,775,781	20,058,595	2.8 x	18.8%
Insight Equity II	Turnaround	30,000,000	30,791,562	1,121,093	32,590,351	20,440,818	1.7 x	10.3%
Insight Mezzanine I	Mezzanine	10,000,000	9,971,470	479,507	11,860,178	1,666,467	1.4 x	6.6%
KPS III Supplemental	Turnaround	40,000,000	37,777,254	16,117,982	80,212,144	188,942	2.1 x	22.8%
Riverside IV	Buyout	40,000,000	31,433,665	0	74,584,420	236,638	2.4 x	21.3%
Total 2009		145,000,000	134,400,876	18,497,608	247,022,874	42,591,460	2.2 x	17.7%
2010								
Altus Capital II	Buyout	20,000,000	18,555,037	4,381,151	21,881,638	6,432,986	1.5 x	11.3%
EnCap VIII	Hard Assets	47,500,000	54,117,730	0	31,031,849	10,518,401	0.8 x	-8.5%
FP Venture 2010	Venture Capital	25,000,000	15,984,375	1,648,330	15,609,802	29,804,624	2.8 x	17.6%
Mason Wells III	Buyout	30,000,000	28,553,580	1,446,420	68,546,055	12,570,412	2.8 x	19.9%
TA XI	Growth Equity	40,000,000	39,400,000	600,000	92,409,654	43,790,796	3.5 x	26.8%
Tennenbaum VI	Distressed Debt	40,000,000	38,075,687	20,996,226	39,724,181	13,415,019	1.4 x	7.3%
Total 2010		202,500,000	194,686,409	29,072,127	269,203,180	116,532,238	2.0 x	15.0%

Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
2011								
Audax Mezzanine III	Mezzanine	25,000,000	24,668,609	6,201,254	29,002,931	3,285,218	1.3 x	9.4%
Castlelake II	Distressed Debt	35,000,000	32,656,036	2,625,461	27,816,398	17,803,573	1.4 x	6.4%
FP Intl 2011	Buyout	25,000,000	23,001,840	2,328,196	20,384,864	13,907,909	1.5 x	8.4%
FP Venture 2011	Venture Capital	25,000,000	24,107,625	1,084,730	54,339,054	119,892,335	7.2 x	39.8%
JF Lehman III	Buyout	39,000,000	44,012,406	5,309,096	49,324,686	15,364,820	1.5 x	10.2%
Wellspring V	Buyout	40,000,000	45,877,620	14,387,533	62,177,579	12,981,306	1.6 x	16.5%
Wicks IV	Buyout	40,000,000	42,267,506	4,540,170	55,956,803	24,259,901	1.9 x	19.3%
Total 2011		229,000,000	236,591,643	36,476,440	299,002,316	207,495,062	2.1 x	18.1%
2012								
ATRS-FP PE	Multi-Strategy	263,823,718	261,043,899	153,347,228	201,741,790	230,946,627	1.7 x	17.7%
BV VIII	Buyout	30,000,000	26,817,228	3,463,958	38,027,943	20,680,362	2.2 x	51.7%
Court Square III	Buyout	40,000,000	43,459,207	2,762,020	32,556,449	40,914,173	1.7 x	18.4%
DW Healthcare III	Buyout	40,000,000	37,138,408	2,861,592	56,029,790	14,621,924	1.9 x	18.5%
FP Intl 2012	Buyout	25,000,000	16,747,990	8,452,924	9,584,271	13,643,808	1.4 x	8.7%
FP Venture 2012	Venture Capital	25,000,000	22,125,000	3,017,618	20,751,581	51,657,287	3.3 x	24.8%
NGP X	Hard Assets	35,000,000	36,173,293	520,437	29,165,161	4,962,707	0.9 x	-1.9%
Total 2012		458,823,718	443,505,025	174,425,777	387,856,985	377,426,888	1.7 x	17.7%
2013								
EnCap IX	Hard Assets	25,000,000	28,503,587	1,252,593	21,895,849	8,514,824	1.1 x	2.6%
FP Intl 2013	Buyout	20,000,000	13,753,540	6,386,688	2,733,781	21,221,017	1.7 x	13.7%
FP Venture 2013	Venture Capital	20,000,000	17,977,398	2,114,935	18,576,720	30,126,884	2.7 x	25.5%
Levine Leichtman V	Structured Capital	20,000,000	24,954,044	3,562,620	17,576,967	21,235,827	1.6 x	13.6%
Riverside V	Buyout	35,000,000	35,750,158	1,044,259	24,247,705	24,419,602	1.4 x	8.3%
Vista Foundation II	Buyout	15,000,000	15,570,569	7,564,067	13,755,963	15,465,285	1.9 x	15.8%
Total 2013		135,000,000	136,509,296	21,925,162	98,786,985	120,983,439	1.6 x	13.3%

Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
2014								
Atlas Capital II	Turnaround	15,000,000	19,178,876	6,008,150	14,915,084	13,006,918	1.5 x	18.5%
Big River - Equity	Infrastructure	151,090,000	151,090,000	0	19,160,000	377,800,000	2.6 x	21.4%
Big River - Mezzanine *	Mezzanine	5,000,000	5,003,686	0	8,225,290	0	1.6 x	17.3%
Blue Oak Arkansas *	Infrastructure	18,000,000	19,740,000	0	5,385,136	0	0.3 x	-34.8%
Castlelake III	Distressed Debt	25,000,000	23,149,741	1,864,884	14,604,008	18,896,012	1.4 x	7.8%
FP Intl 2014	Buyout	25,000,000	15,850,395	9,274,062	6,859,269	17,075,962	1.5 x	14.2%
FP Venture 2014	Venture Capital	25,000,000	23,656,160	1,443,907	9,719,641	51,047,650	2.6 x	23.8%
KPS IV	Turnaround	25,000,000	21,772,162	2,796,727	5,509,461	23,906,526	1.4 x	16.7%
Lime Rock Resources III	Hard Assets	25,000,000	25,535,784	360,836	4,687,078	10,370,560	0.6 x	-10.1%
NGP XI	Hard Assets	30,000,000	29,947,902	1,530,184	9,571,092	19,814,790	1.0 x	-0.7%
Sycamore Partners II	Turnaround	25,000,000	22,042,116	4,084,626	9,208,345	13,951,899	1.1 x	1.8%
Thoma Bravo XI	Buyout	20,000,000	20,785,558	2,135,646	37,513,202	33,272,668	3.4 x	31.3%
Total 2014		389,090,000	377,752,380	29,499,022	145,357,607	579,142,985	1.9 x	16.2%
2015								
Big River - Sr Secured Debt *	Infrastructure	26,910,000	26,966,221	0	35,699,565	0	1.3 x	14.7%
EnCap X	Hard Assets	30,000,000	28,034,161	3,974,000	6,120,700	22,813,309	1.0 x	1.1%
FP Intl 2015	Buyout	25,000,000	16,482,380	8,616,635	976,174	23,641,905	1.5 x	15.7%
FP Venture 2015	Venture Capital	25,000,000	23,230,200	1,866,270	1,484,902	45,870,281	2.0 x	24.5%
Siris III	Buyout	25,000,000	30,775,862	4,137,215	17,160,296	25,138,969	1.4 x	15.2%
Total 2015		131,910,000	125,488,825	18,594,120	61,441,637	117,464,464	1.4 x	14.5%
2016								
American Industrial VI	Buyout	20,000,000	22,445,427	2,929,159	5,374,586	26,118,020	1.4 x	13.5%
Arlington IV	Buyout	23,000,000	21,903,987	3,137,677	9,400,408	31,905,125	1.9 x	29.0%
DW Healthcare IV	Buyout	30,000,000	27,942,263	3,586,703	11,273,132	34,836,645	1.7 x	27.0%
FP Intl 2016	Buyout	25,000,000	15,902,062	9,214,019	2,479,253	16,856,528	1.2 x	8.2%
FP Venture 2016	Venture Capital	25,000,000	18,902,439	6,209,379	2,553,747	27,575,743	1.6 x	21.8%
Highland Equity	Hard Assets	66,000,000	81,870,000	0	16,674,525	127,583,665	1.8 x	22.2%
JF Lehman IV	Buyout	30,000,000	26,747,005	3,252,996	22,065,332	35,695,367	2.2 x	33.2%
PineBridge Structured III	Structured Capital	30,000,000	25,628,013	10,830,332	15,100,072	6,173,969	0.8 x	-8.4%
Thoma Bravo Discover	Buyout	10,000,000	11,350,409	1,767,370	9,155,280	19,419,823	2.5 x	37.7%
Thoma Bravo XII	Buyout	30,000,000	30,853,942	7,029,944	7,886,040	44,684,877	1.7 x	18.8%
Vista Foundation III	Buyout	30,000,000	28,446,995	9,609,547	8,023,566	42,757,371	1.8 x	28.1%
Total 2016		319,000,000	311,992,542	57,567,126	109,985,941	413,607,133	1.7 x	22.0%

Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
2017								
Altaris Constellation	Buyout	20,000,000	16,263,116	5,543,214	2,199,308	28,057,829	1.9 x	22.2%
Big River - Funding *	Infrastructure	3,750,000	3,750,000	0	3,812,795	0	1.0 x	4.3%
Big River - Holdings Note *	Infrastructure	12,000,000	12,000,000	0	13,343,726	0	1.1 x	11.0%
Big River - Preferred Equity *	Infrastructure	41,980,449	41,980,449	0	51,702,368	0	1.2 x	12.5%
Bison V	Structured Capital	35,000,000	27,078,753	13,259,698	7,680,848	26,444,422	1.3 x	14.5%
BV IX	Buyout	30,000,000	22,376,402	12,687,563	5,063,574	27,180,101	1.4 x	27.8%
EnCap XI	Hard Assets	35,000,000	12,137,961	22,862,039	0	7,635,409	0.6 x	-26.3%
FP Intl 2017	Buyout	25,000,000	14,413,265	10,706,690	17,557	25,141,776	1.7 x	36.2%
FP Venture 2017	Venture Capital	25,000,000	13,938,053	11,132,949	1,985,561	21,773,437	1.7 x	45.8%
Greyrock IV	Mezzanine	30,000,000	27,201,286	3,934,700	7,292,465	24,829,076	1.2 x	8.8%
NGP XII	Hard Assets	30,000,000	16,880,556	13,119,444	150,442	16,073,321	1.0 x	-2.1%
One Rock II	Buyout	30,000,000	26,325,817	3,674,183	0	35,879,970	1.4 x	17.5%
Total 2017		317,730,449	234,345,659	96,920,480	93,248,644	213,015,341	1.3 x	15.8%
2018								
Altaris IV	Buyout	24,000,000	16,043,685	7,956,315	0	20,371,675	1.3 x	15.7%
Big River - Holdings Note 2023	Infrastructure	12,000,000	12,000,000	0	0	13,965,867	1.2 x	5.6%
Big River - Holdings Note 2023-2	Infrastructure	5,150,000	5,150,000	0	62,323	5,899,275	1.2 x	6.7%
Clearlake V	Buyout	30,000,000	27,627,305	6,573,707	8,435,222	44,401,360	1.9 x	50.1%
FP Intl 2018	Buyout	25,000,000	14,312,977	10,847,286	0	19,612,338	1.4 x	37.7%
FP Venture 2018	Venture Capital	25,000,000	13,043,478	12,053,667	217	15,963,323	1.2 x	20.1%
GTLA Holdings	Hard Assets	20,000,000	20,000,000	0	0	40,000,000	2.0 x	34.5%
Highland Contingent Note	Hard Assets	152,244,727	152,244,727	0	15,000,000	155,165,550	1.1 x	17.9%
SK Capital V	Buyout	30,000,000	12,995,908	17,004,092	10,490	14,592,434	1.1 x	10.6%
Sycamore Partners III	Turnaround	25,000,000	6,008,257	18,991,743	0	4,999,708	0.8 x	-13.9%
Thoma Bravo Discover II	Buyout	17,000,000	13,548,801	3,673,210	222,011	20,380,531	1.5 x	41.3%
Total 2018		365,394,727	292,975,138	77,100,020	23,730,263	355,352,061	1.3 x	24.6%

Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
2019								
American Industrial VII	Buyout	30,000,000	1,976,977	28,410,569	387,546	1,678,209	1.0 x	NMF
Arlington V	Buyout	25,000,000	4,887,969	20,112,031	0	6,255,884	1.3 x	NMF
DW Healthcare V	Buyout	30,000,000	7,778,585	22,221,415	0	6,452,836	0.8 x	NMF
FP Intrnl 2019	Buyout	30,000,000	5,744,681	24,426,221	0	7,100,127	1.2 x	NMF
FP Venture 2019	Venture Capital	30,000,000	8,198,758	21,878,026	23,600	8,797,061	1.1 x	NMF
KPS Mid-Market I	Turnaround	20,000,000	3,679,966	16,320,034	0	3,770,181	1.0 x	NMF
Riverside VI	Buyout	30,000,000	10,035,951	19,964,049	0	8,720,732	0.9 x	NMF
Siris IV	Buyout	30,000,000	16,700,142	13,470,378	170,520	18,534,561	1.1 x	NMF
Thoma Bravo XIII	Buyout	30,000,000	24,470,155	14,574,884	15,449,096	29,079,969	1.8 x	NMF
WNG II	Special Assets	30,000,000	8,497,598	21,502,402	3,195	6,295,226	0.7 x	NMF
Total 2019		285,000,000	91,970,783	202,880,009	16,033,957	96,684,786	1.2 x	NMF
2020								
BV X	Buyout	30,000,000	544,210	29,455,790	0	85,861	0.2 x	NMF
Clearlake VI	Buyout	30,000,000	7,680,726	22,406,746	250,159	8,293,782	1.1 x	NMF
FP CF Access	Buyout	60,000,000	10,929,391	19,125,510	0	10,627,154	1.0 x	NMF
FP Venture XIII	Venture Capital	60,000,000	4,187,232	55,923,264	0	3,700,224	0.9 x	NMF
Greyrock V	Mezzanine	35,000,000	1,444,567	33,555,432	0	1,096,024	0.8 x	NMF
JF Lehman V	Buyout	30,000,000	8,827,673	21,172,327	0	8,198,181	0.9 x	NMF
KPS V	Turnaround	30,000,000	5,679,607	24,320,393	0	5,646,608	1.0 x	NMF
Thoma Bravo Explore I	Buyout	20,000,000	3,821,541	16,178,459	0	4,016,554	1.1 x	NMF
Total 2020		295,000,000	43,114,947	222,137,921	250,159	41,664,388	1.0 x	NMF
2021								
FP Intrnl X	Buyout	30,000,000	0	30,000,000	0	0	N/A	NMF
LLR VI	Growth Equity	30,000,000	0	30,000,000	0	-163,986	N/A	NMF
Thoma Bravo Discover III	Buyout	20,000,000	0	20,000,000	0	-33,015	N/A	NMF
Thoma Bravo XIV	Buyout	20,000,000	0	20,000,000	0	0	N/A	NMF
Total 2021		100,000,000	0	100,000,000	0	-197,001	N/A	NMF
Total Portfolio		5,408,139,355	4,655,513,745	1,167,712,481	4,833,436,243	2,865,426,763	1.7 x	11.3%

-
- Remaining Value is defined as the investor's value as reported by the fund's manager.
 - TVPI is the ratio of Distributed Capital plus Remaining Value to Contributed Capital.
 - Net IRR is defined as the annualized, compound rate of return using daily draws, distributions and Remaining Value as of the Report Date, net of fees and expenses, including late closing interest.
 - An asterisk indicates an investment that is fully liquidated, if applicable.
 - Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date, if applicable.
 - Returns calculated for funds in the early years of their lives are particularly not meaningful given the J-curve effect. During these early years, due to illiquidity, stagnant valuations, fees and expenses, fund performance tends to be negative (the bottom of the "J").

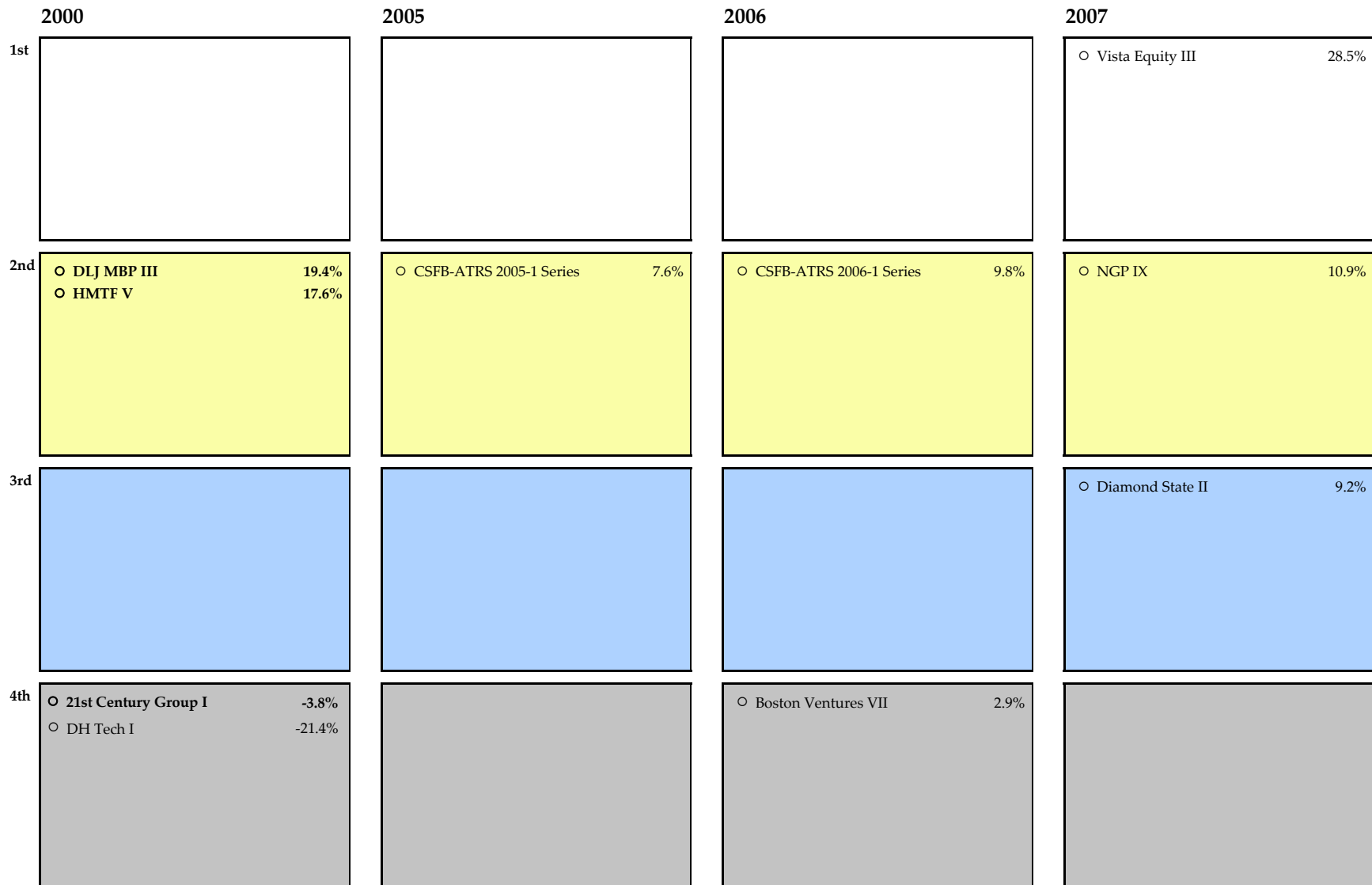
Performance by Vintage Year and Quartile Group

	1996	1997	1998	1999
1st		○ Doughty Hanson III 13.5%		
2nd			○ Second Cinven 9.3%	○ Oak Hill I 10.6% ○ Diamond State 5.5%
3rd	○ HMTF III 1.8%			
4th			○ HMTF IV -6.1%	○ Cypress MBP II -0.5%

● Venture ○ Non-venture

BOLD = Realized

Performance by Vintage Year and Quartile Group



● Venture ○ Non-venture

BOLD = Realized

Performance by Vintage Year and Quartile Group

	2008	2009	2010	2011
1st			○ TA XI 26.8%	● FP Venture 2011 39.8%
2nd	<ul style="list-style-type: none"> ● FP Venture 2008 18.2% ○ Advent GPE VI-A 16.7% ○ LLR III 15.3% 	<ul style="list-style-type: none"> ○ KPS III Supplemental 22.8% ○ Riverside IV 21.3% ● FP Venture 2009 18.8% 	<ul style="list-style-type: none"> ○ Mason Wells III 19.9% ● FP Venture 2010 17.6% 	<ul style="list-style-type: none"> ○ Wicks IV 19.3%
3rd				○ Wellspring V 16.5%
4th		○ Insight Equity II 10.3%	<ul style="list-style-type: none"> ○ Altus Capital II 11.3% ○ EnCap VIII -8.5% 	<ul style="list-style-type: none"> ○ JF Lehman III 10.2% ○ FP Intl 2011 8.4%

● Venture ○ Non-venture

BOLD = Realized

Performance by Vintage Year and Quartile Group



	2012	2013	2014	2015
1st	<ul style="list-style-type: none"> ○ BV VIII 51.7% ● FP Venture 2012 24.8% 	<ul style="list-style-type: none"> ● FP Venture 2013 25.5% 	<ul style="list-style-type: none"> ○ Thoma Bravo XI 31.3% 	<ul style="list-style-type: none"> ● FP Venture 2015 24.5%
2nd	<ul style="list-style-type: none"> ○ DW Healthcare III 18.5% ○ Court Square III 18.4% ○ ATRS-FP PE 17.7% 	<ul style="list-style-type: none"> ○ Vista Foundation II 15.8% ○ FP Intl 2013 13.7% 	<ul style="list-style-type: none"> ● FP Venture 2014 23.8% ○ Atlas Capital II 18.5% 	<ul style="list-style-type: none"> ○ FP Intl 2015 15.7% ○ EnCap X 1.1%
3rd	<ul style="list-style-type: none"> ○ NGP X -1.9% 	<ul style="list-style-type: none"> ○ EnCap IX 2.6% 	<ul style="list-style-type: none"> ○ KPS IV 16.7% ○ FP Intl 2014 14.2% ○ NGP XI -0.7% 	<ul style="list-style-type: none"> ○ Siris III 15.2%
4th	<ul style="list-style-type: none"> ○ FP Intl 2012 8.7% 	<ul style="list-style-type: none"> ○ Riverside V 8.3% 	<ul style="list-style-type: none"> ○ Sycamore Partners II 1.8% ○ Lime Rock Resources III -10.1% 	

● Venture ○ Non-venture

BOLD = Realized

	2016	2017	2018
1st	<ul style="list-style-type: none"> ○ Thoma Bravo Discover 37.7% ○ JF Lehman IV 33.2% ○ Arlington IV 29.0% ○ Vista Foundation III 28.1% ○ DW Healthcare IV 27.0% 	<ul style="list-style-type: none"> ● FP Venture 2017 45.8% ○ FP Intl 2017 36.2% 	<ul style="list-style-type: none"> ○ Clearlake V 50.1% ○ Thoma Bravo Discover II 41.3% ○ FP Intl 2018 37.7%
2nd	<ul style="list-style-type: none"> ● FP Venture 2016 21.8% ○ Thoma Bravo XII 18.8% 	<ul style="list-style-type: none"> ○ BV IX 27.8% ○ NGP XII -2.1% 	<ul style="list-style-type: none"> ● FP Venture 2018 20.1% ○ Altaris IV 15.7% ○ SK Capital V 10.6%
3rd	<ul style="list-style-type: none"> ○ American Industrial VI 13.5% 	<ul style="list-style-type: none"> ○ Altaris Constellation 22.2% ○ One Rock II 17.5% 	
4th	<ul style="list-style-type: none"> ○ FP Intl 2016 8.2% 	<ul style="list-style-type: none"> ○ EnCap XI -26.3% 	<ul style="list-style-type: none"> ○ Sycamore Partners III -13.9%

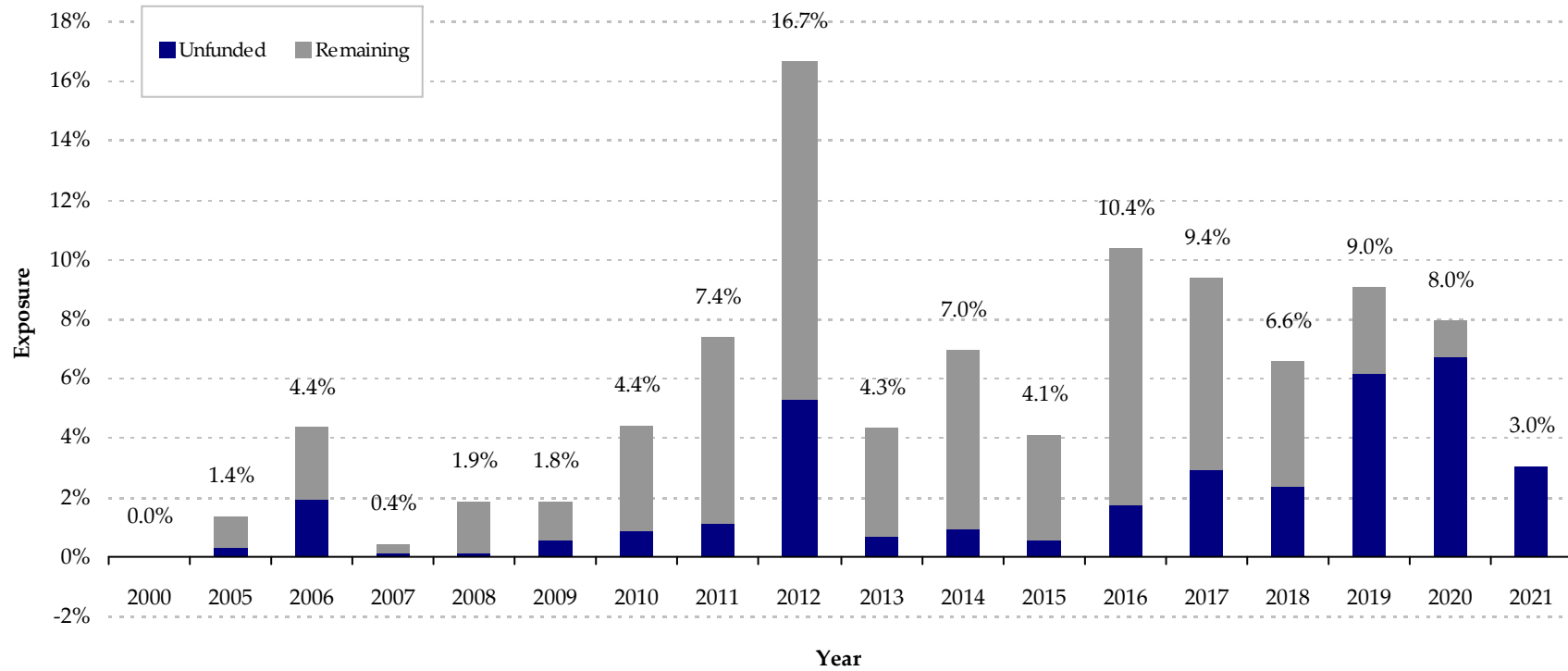
● Venture ○ Non-venture

BOLD = Realized

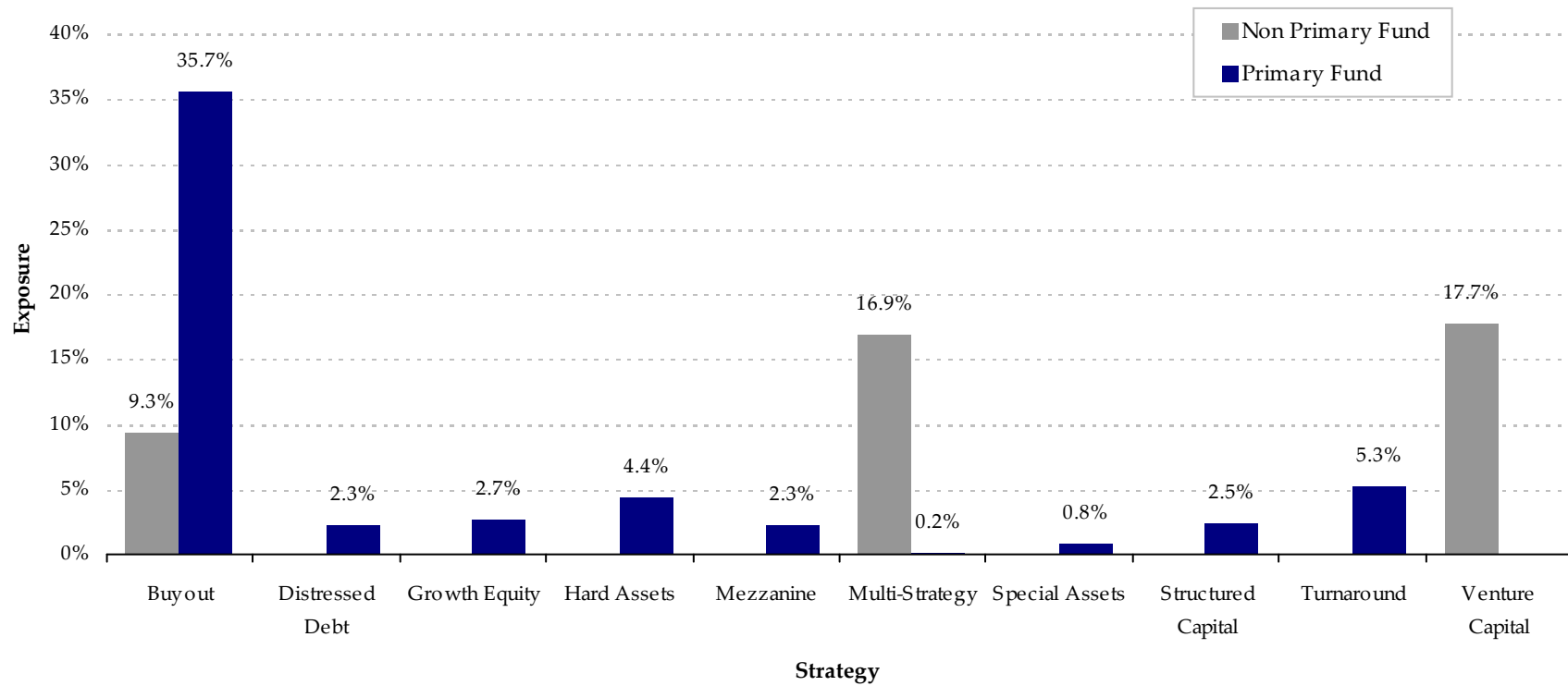
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- The analysis compares each fund's Net IRR versus its respective peer group by vintage year and strategy. Funds with a corporate finance strategy, excluding private debt, are compared to Cambridge Associates, U.S. Buyout. Funds with a venture capital strategy are compared to Cambridge Associates, U.S. Venture Capital. Multi-strategy funds are compared to data compiled by Cambridge Associates for funds across multiple strategies including U.S. Buyout, Growth Equity, Venture Capital, Mezzanine, Distressed, Fund-of-Funds, and Secondary Funds. Funds with a hard assets strategy are compared to Cambridge Associates, U.S. Private Equity Energy. Funds with a real estate strategy are compared to Cambridge Associates, U.S. Real Estate. Benchmark data is not available for funds with a private debt strategy.
 - The analysis excludes the two most recent vintage years, as fund performance is deemed not yet meaningful (NMF).
 - Net IRR is defined as the annualized, compound rate of return using daily draws, distributions and Remaining Value as of the Report Date, net of fees and expenses, including late closing interest.
 - Benchmark data was compiled from Cambridge Associates as of September 30, 2020. Hard Assets benchmark data for Vintage Years prior to 2005 is not available.

Diversification Analysis

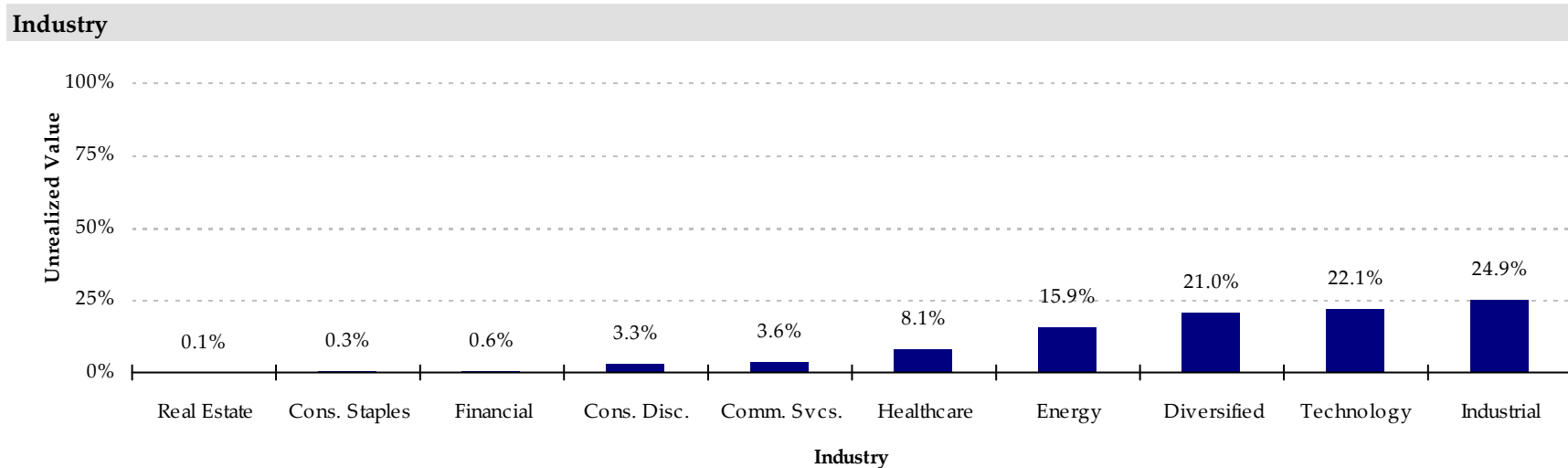
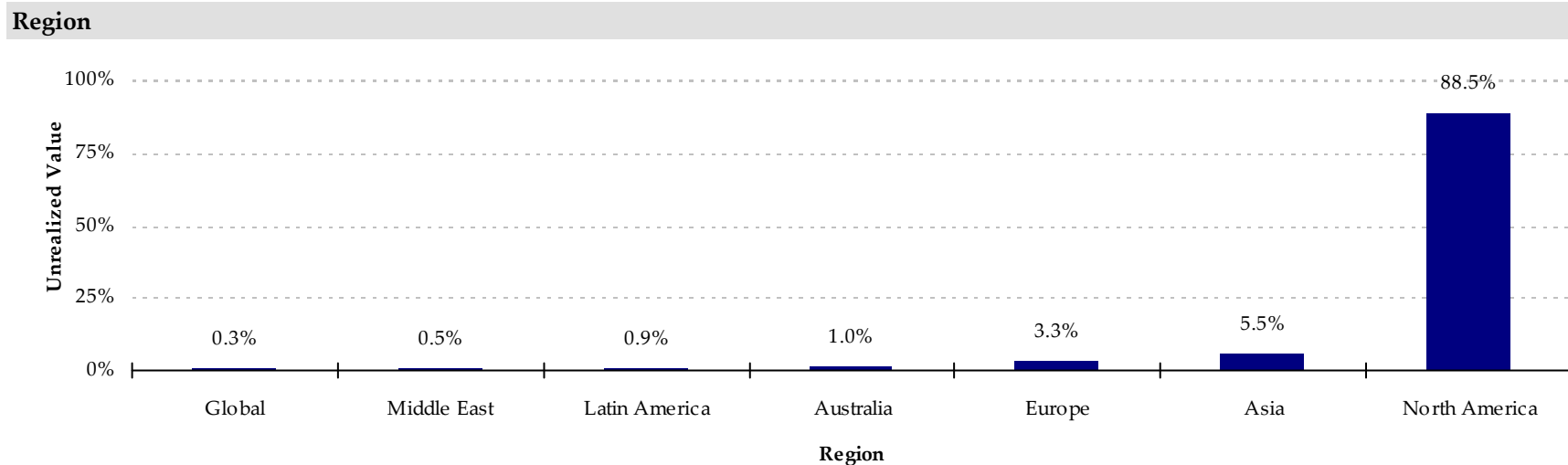
Exposure By Vintage Year



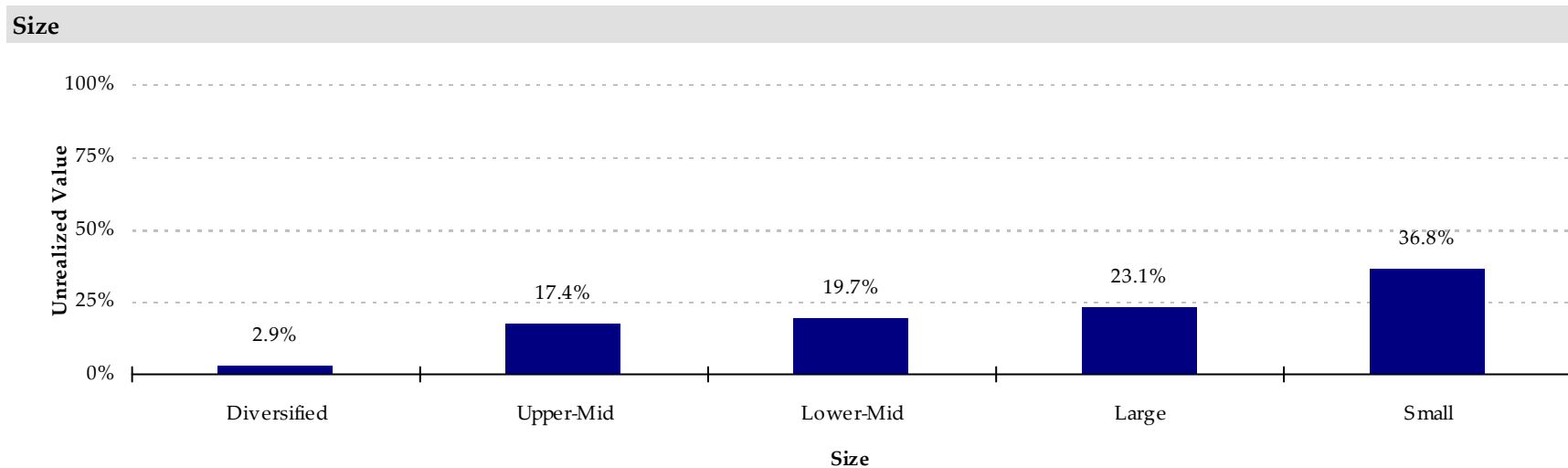
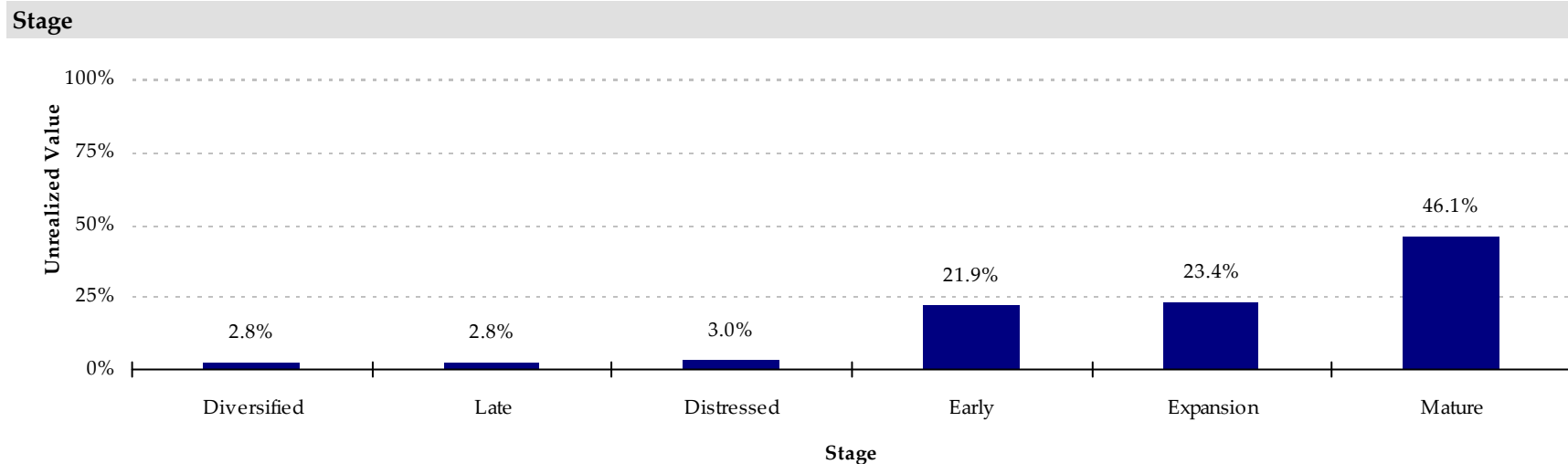
- Exposure is defined as the sum of the investor's Remaining Value plus Unfunded Commitment.
- Data includes commitments through the Report Date.



- Exposure is defined as the sum of the investor's Remaining Value plus Unfunded Commitment.
- Primary Fund represents interests in private equity funds acquired directly from the seller (i.e. fund manager). Non Primary Fund represents interests in private equity funds acquired through a commitment to a fund-of-funds or secondary fund-of-funds.



- Unrealized Value represents the value of portfolio holdings as reported by fund managers.
- Values are estimated based on the investor's percent interest in each fund's portfolio holdings.
- Values are converted to the investor's currency, when applicable, as of the Report Date.

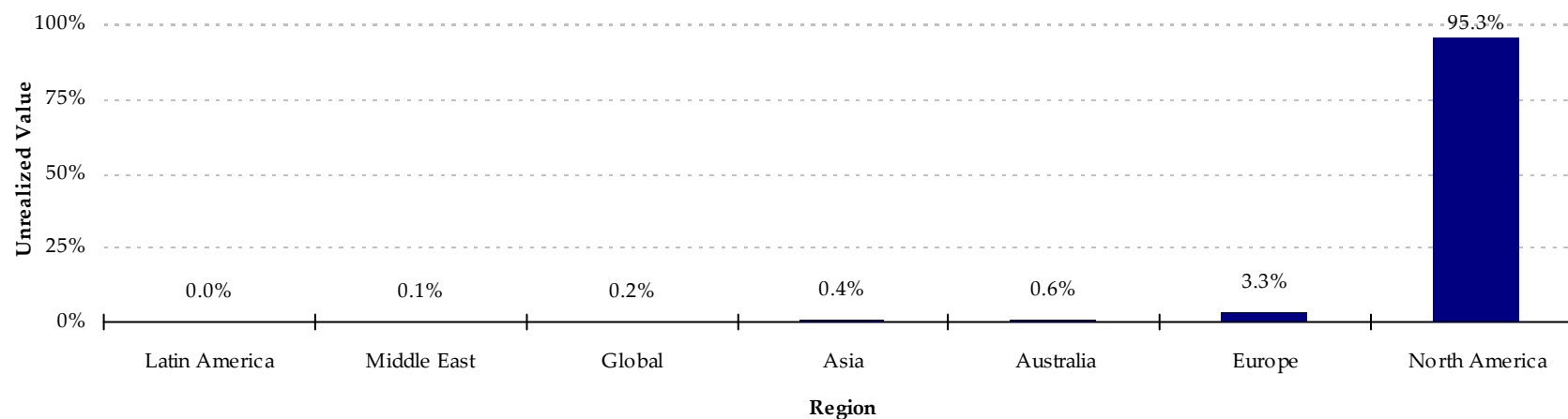


- Unrealized Value is the value of portfolio holdings as reported by the fund manager.
- Values are estimated based on the investor's percent interest in each fund's portfolio holdings.
- Values converted to the investor's currency, when applicable, as of the Report Date.

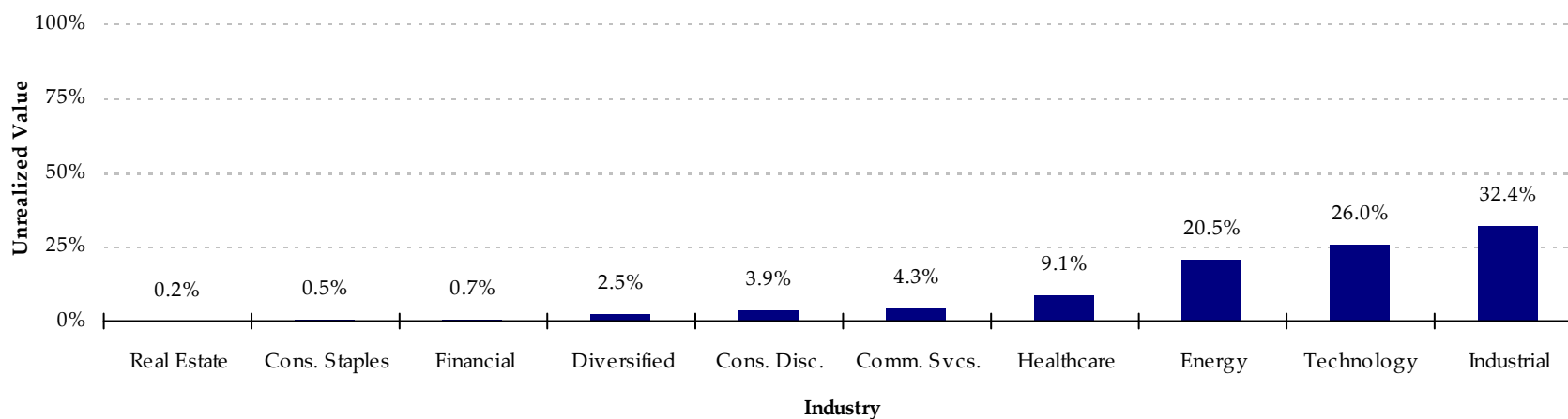
Holdings by Region and Industry (ex Fund Holdings)



Region



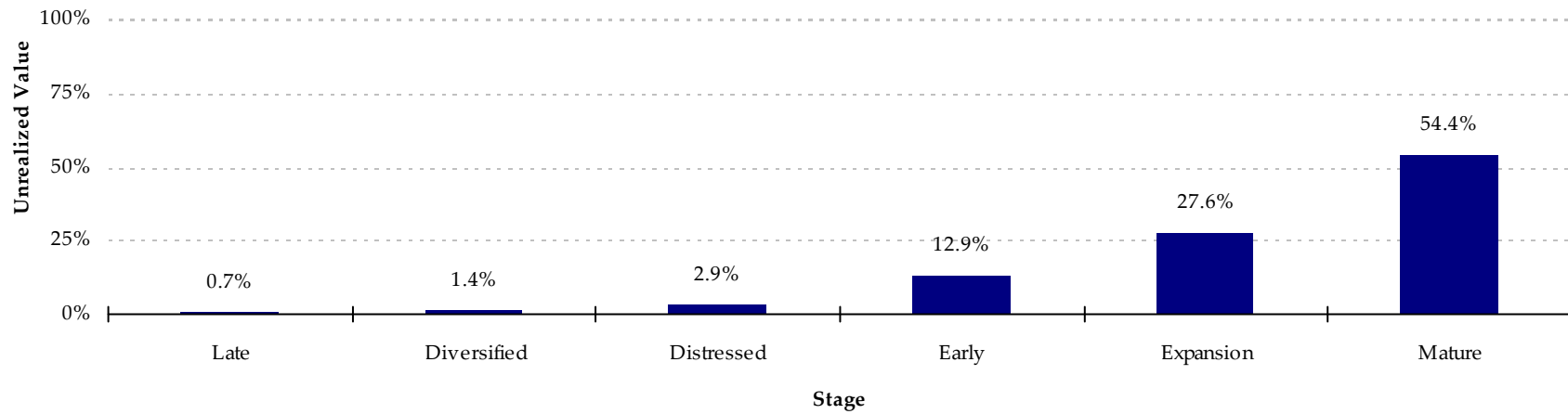
Industry



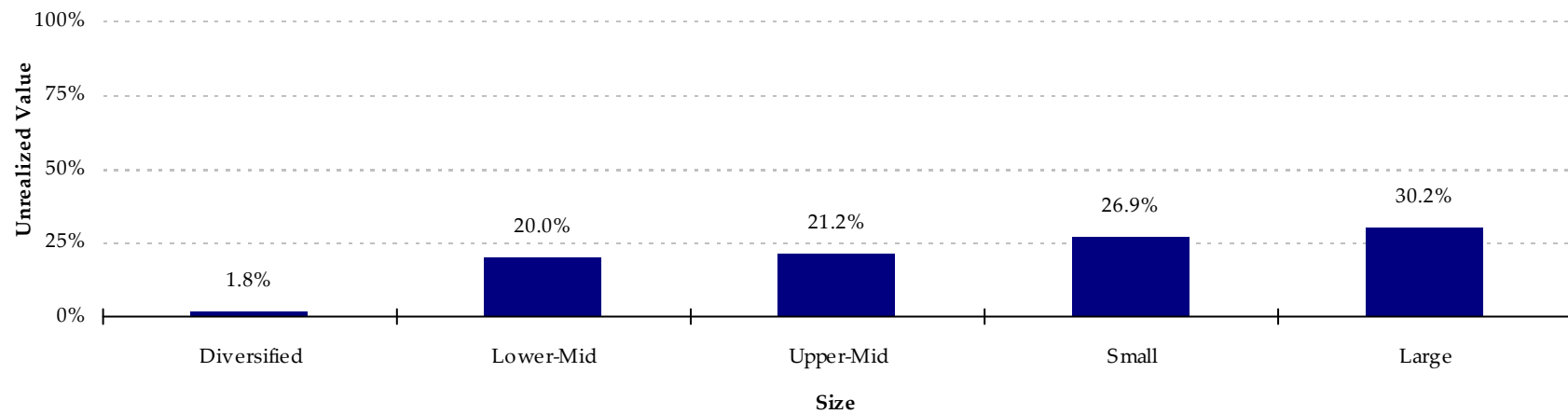
- Fund investments in other funds were excluded from this analysis.
- Unrealized Value represents the value of portfolio holdings as reported by fund managers.
- Values are estimated based on the investor's percent interest in each fund's portfolio holdings.
- Values are converted to the investor's currency, when applicable, as of the Report Date.

Holdings by Stage and Size (ex Fund Holdings)

Stage

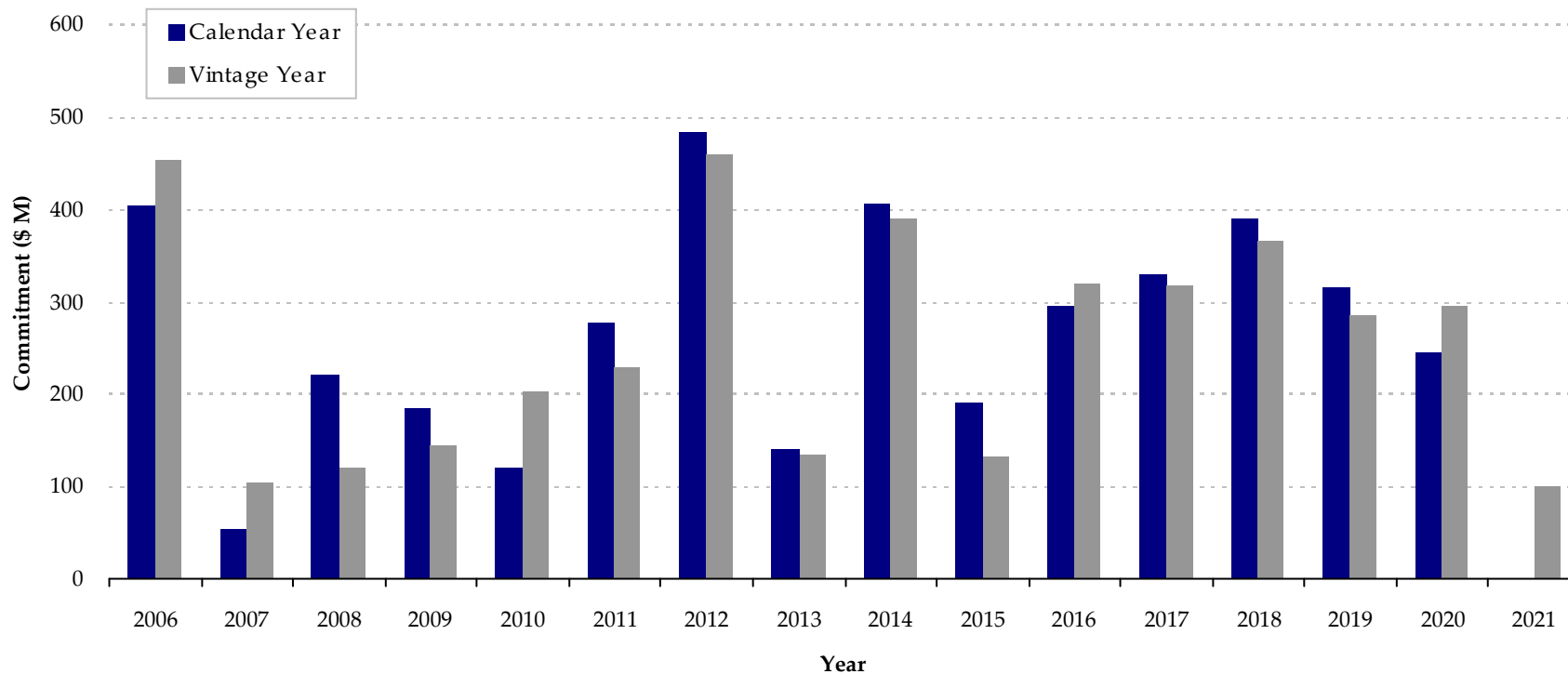


Size



- Fund investments in other funds were excluded from this analysis.
- Unrealized Value represents the value of portfolio holdings as reported by fund managers.
- Values are estimated based on the investor's percent interest in each fund's portfolio holdings.
- Values are converted to the investor's currency, when applicable, as of the Report Date.

Recent Activity



- Vintage Year represents the year in which investors first contribute capital to a fund.
- Calendar Year represents the year in which a commitment to a fund formally closed.
- Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date, if applicable.
- Commitments were compiled through the Report Date.

Glossary

Term	Definition	Term	Definition
Barclays US Corporate High Yield Index	The Barclays US Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on Barclays EM country definition, are excluded.	Dow Jones US Total Stock Market Total Return Index	The Dow Jones US Total Stock Market Total Return Index measures all U.S. equity securities with readily available prices. It is a free float-adjusted market capitalization weighted index and is calculated with dividend reinvestment.
Bridge Financing	Temporary funding that will eventually be replaced by permanent capital from equity investors or debt lenders	DPI	Ratio of Distributed Capital to Contributed Capital
Buyout	Fund whose strategy is to acquire controlling interests in companies	Early Stage	A company's first Stage of development. Company is generally generating modest or no revenues
Co/Direct Investment	Investment made directly into a company, rather than indirectly through a fund	Equity	Security type that signifies ownership of a company (e.g. common stock, preferred stock, warrants, etc.)
Committed Capital	Total dollar amount of capital pledged to a fund	Expansion Stage	A company's third Stage of development. Company is generally experiencing high growth and nearing profitability
Contributed Capital	Total capital contributed to a fund for investments, fees and expenses, including late closing interest paid, less returns of excess capital called	Exposure	Sum of Remaining Value plus Unfunded Commitment
Cost Basis	Remaining amount of invested capital	Fund-of-Funds	Fund whose strategy is to make investments in other funds
Debt	Security type that signifies a repayment obligation by a company (e.g. senior debt, subordinated debt, bridge loan etc.)	Geographic Region	Market location of a company: North America, Western Europe, Africa/Middle East, Latin America, Asia/Pacific Rim
Distressed	A company's final Stage of development. Company is generally experiencing operational or financial distress	Growth Equity	Fund whose strategy is to invest in companies to expand or restructure operations, enter new markets or finance an acquisition without a change of control of the business
Distressed Debt	<ul style="list-style-type: none"> • Distressed Trading – Fund whose strategy is to invest and trade debt of financially stressed companies • Distressed Restructuring – Fund whose strategy is to acquire and restructure debt of financially stressed companies • Opportunistic Credit – Fund whose strategy is to flexibly invest in debt securities and income-producing assets of any kind, where the issuer or holder is financially stressed • Structured Capital – Fund whose strategy is to issue hybrid debt and equity securities to mature companies 	Hard Assets	Fund whose strategy is to invest in natural resources or infrastructure
Distributed Capital	Capital distributed to the limited partners, including late closing interest earned	Infrastructure	Fund whose strategy is to acquire interests in physical structures and networks that provide the essential services for society's economic and social needs (e.g. roads, tunnels, communication networks, etc.)
		Internal Rate of Return (IRR)	The discount rate that results in a net present value of zero of a series of cash flows. The IRR considers both cash flow timing and amount and is the preferred performance measure for private market funds
		Invested Capital	Capital invested by a fund in portfolio holdings
		Investment Type	Classification of an investment vehicle: Primary Fund, Secondary Fund, Fund-of-Funds

Term	Definition	Term	Definition
J-Curve	Refers to the shape of the curve illustrating a fund's performance over time. During the initial years of a fund's life, as a result of illiquidity, stagnant valuations, fees and expenses, a fund's performance tends to be negative (the bottom of the "J"). Eventually, as portfolio companies are realized or increase in value and fees become a smaller percentage of overall contributions, performance improves and investors' returns move up the "J" shaped curve	Net IRR	Annualized effective compound rate of return using daily contributions, distributions and Remaining Value as of the Report Date, net of all fees and expenses, including late closing interest
Large	Company with a Size greater than \$1 billion	Percent Interest	Represents an investor's economic interest in a fund based upon the investor's commitment divided by total fund commitments
Late Stage	A company's second Stage of development. Company is generally generating high revenue growth and high losses	Primary Investment	An interest in a private equity fund acquired directly from the fund manager during the fundraising period
Lower-Mid	Company with a Size greater than \$100 million, but less than \$250 million	Public Market Equivalent (PME)	A private equity benchmark that represents the performance of a public market index expressed in terms of an IRR, using the same cash flows and timing as the investor's investment activity in private equity. The PME serves as a proxy for the return the investor could have achieved by investing in the public market. The PME benchmark return assumes cash flows are invested at the end of each day
Mature	A company's fourth Stage of development. Company is generally generating modest to no growth and operating profitably	Publication Date	Refers to the date this report was created as reflected in the Executive Summary
Mezzanine	<ul style="list-style-type: none"> • Sponsored Mezzanine – Fund whose strategy is to issue subordinated loans to companies owned by private equity fund sponsors • Non-Sponsored Mezzanine – Fund whose strategy is to issue subordinated loans to companies not owned by private equity fund sponsors 	Real Assets	Fund whose strategy is to invest in assets that are tangible or physical in nature such as land, machinery, and livestock
MSCI ACWI Index - Total Return	The MSCI ACWI Total Return is a reflection of the performance of the MSCI ACWI Index, including dividend reinvestment, as calculated by Bloomberg. The MSCI ACWI Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets. The MSCI ACWI consists of 45 country indices comprising 24 developed and 21 emerging market country indices.	Real Estate	Fund whose strategy is to acquire interests in real estate property
Natural Resources	Fund whose strategy is to acquire interests in naturally-occurring, economically valuable raw materials and all physical facilities and capabilities required for the extraction, refinement, and delivery to end users (e.g. oil and gas properties, timberland, etc.)	Realized Capital	Capital distributed to a fund from portfolio holdings
NCREIF Property Index	The NCREIF Property Index is a quarterly, unleveraged composite total return for private commercial real estate properties held for investment purposes only.	Recallable / Recyclable Capital	Capital that has been previously distributed by a fund to investors but may be called again for investment purposes. It is generally associated with realizations that have occurred in the early years of a fund or refers to uninvested capital that has been temporarily returned (i.e. returns of excess capital)
		Recapitalization	The reorganization of a company's capital structure
		Remaining Value	Capital account balance as reported by the General Partner, generally on a fair value basis
		Report Date	Refers to the end date of the reporting period as reflected on the cover page
		Return on Investment (ROI)	Ratio of Realized Capital plus Unrealized Value to Invested Capital

Term	Definition	Term	Definition
Russell 1000® Total Return Index	The Russell 1000® Total Return Index measures the performance, including dividend reinvestment, of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000® Index and includes approximately 1000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000 represents approximately 92% of the U.S. market.	Size	Capitalization size of a company: Large, Upper-Mid, Lower-Mid, Small
Russell 3000® Total Return Index	The Russell 3000® Total Return Index measures the performance, including dividend reinvestment, of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market.	Small	Company with a Size of less than \$100 million
S&P 500 Price Index	The S&P 500 Price Index is a capitalization-weighted index of 500 stocks. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.	Small Business Investment Company (SBIC)	Lending and investment firms that are licensed and regulated by the Small Business Administration (SBA). The licensing enables them to borrow from the federal government to supplement the private funds of their investors
S&P 500 Total Return Index	The S&P 500 Total Return Index is a reflection of the performance of the S&P 500 Index, including dividend reinvestment. All regular cash dividends are assumed to be reinvested in the S&P 500 Index on the ex-date. Special cash dividends trigger a price adjustment in the price return index.	Small Buyout	Fund whose strategy is to acquire or recapitalize Small businesses
Secondary Investment	Investments that involve the purchase of private equity fund interests or portfolios of direct investments in privately held companies from existing institutional investors	Special Assets	<ul style="list-style-type: none"> • Healthcare Royalties – Fund whose strategy is to acquire royalty or revenue interests, or issue loans, backed by approved life science products • Music Royalties – Fund whose strategy is to acquire royalty or revenue interests, or issue loans, backed by music copyright assets • Aircraft Leasing – Fund whose strategy is to acquire and lease commercial aircraft • Life Settlement - Fund whose strategy is to acquire life insurance policies • Shipping – Fund whose strategy is to acquire and charter commercial shipping vessels • Asset Backed Securities – Fund whose strategy is to acquire or structure securities that are backed by income-producing assets
Sector	Industry in which the company operates: technology, telecommunications, healthcare, financial services, diversified, industrial, consumer, energy, etc.	Stage	The course of development through which a company passes from its inception to its termination: Early, Late, Expansion, Mature, Distressed
Senior Debt	<ul style="list-style-type: none"> • Direct Lending – Fund whose strategy is to issue senior loans to mature companies • Unitranche – Fund whose strategy is to issue hybrid senior and subordinated loans to mature companies • Venture Debt – Fund whose strategy is to issue loans to venture stage companies • Asset Based Lending – Fund whose strategy is to issue loans to companies where the amount of allowable borrowing outstanding is based on asset collateral value • Rescue Financing – Fund whose strategy is to issue loans to financially stressed companies 	Sub-Asset Class	Private equity investments are generally classified as Buyout, Venture Capital, Mezzanine, Distressed/Turnaround, and Fund-of-Funds
		TVPI	Ratio of Distributed Capital plus Remaining Value to Contributed Capital
		Unfunded Commitment	Amount of capital that remains to be contributed to a fund as defined in a fund's limited partnership agreement
		Unrealized Value	Holding value of a portfolio company assigned by the General Partner, which generally represents fair value
		Upper-Mid	Company with a Size greater than \$250 million but less than \$1 billion
		Venture Capital	Fund whose strategy is to make investments in Early Stage and/or Late Stage companies

Term	Definition
Vintage Year	The calendar year in which an investor first contributes capital to a fund

End Notes

The information contained in this report is confidential and may contain proprietary information. The information contained herein is strictly for the use of Arkansas Teacher Retirement System and, subject to applicable law, may not be reproduced, transmitted or used in whole or in part for any other purpose without the expressed written consent of Franklin Park.

Information regarding the Arkansas Teacher Retirement System portfolio, trends and performance returns are based on or derived from information and data provided by third-party sources, including Arkansas Teacher Retirement System's historical records. Franklin Park assumes that such information is accurate and that the sources from which it has been obtained are reliable. For example, the performance figures contained within this report are calculated by Franklin Park based on information provided by the managers of Arkansas Teacher Retirement System's private equity fund investments (General Partners). The General Partners have not verified the performance figures presented by Franklin Park and such figures may differ from those calculated by General Partners or other investors.

Franklin Park presents Net IRR performance as recommended by the CFA Institute. The IRR calculation is a dollar-weighted return measurement, which considers both cash flow timing and amount, and is net of fees, expenses and carried interest. The total portfolio Net IRR presented herein is net of fees, expenses and carried interest paid by underlying private equity fund investments, but is gross of fees and expenses paid to Franklin Park. The IRR is most commonly used for measuring the performance of private equity funds. Until a fund is liquidated, typically over 10 to 12 years, the IRR is only an interim estimated return. An IRR is particularly not meaningful in the first two years of a fund's life given the J-curve effect (see footnote). The actual IRR of any private equity fund investment is not known until final liquidation.

▫ The J-curve refers to the shape of the curve that illustrates a private equity fund's performance over time. During the initial years of a fund's life, due to fees and expenses, a fund's performance tends to be negative (the bottom of the "J"). Eventually, as portfolio company investments increase in value, fund performance improves and returns move up the "J" shaped curve.



**Recommendation Report
Kerberos Capital Fund III, L.P.**

Executive Summary

Fund	Kerberos Capital Fund III, LP (the “Fund”)
General Partner	Kerberos Capital Management (the “General Partner” or “Kerberos”)
Report Date	May 2021
Fundraising	The General Partner is targeting limited partner capital commitments of \$300 million, with a cap of \$400 million. The General Partner is targeting a first closing in June 2021.
Source	The General Partner has retained Elk Capital Advisors to assist with fundraising.
Investment Strategy	The Fund is being formed to make senior secured, recourse loans to law firms that generate success-fee based revenue by litigating mass tort, class action and personal injury claims. The Fund will target a net IRR of 18%.
Management Team	Based in Chicago, the General Partner was founded in 2018 by Joe Siprut. The General Partner is led by Mr. Siprut along with Tzivia Masliansky and Eric Yeager (collectively, the “Principals”). The Principals are supported by a mid-level investment professional, a Controller, a General Counsel and three operations professionals.
Track Record	The General Partner has raised two prior separate accounts in 2018 and 2019 (“Funds I-II”). The following chart summarizes the performance of the prior separate accounts, as of September 30, 2020.

Aggregate Performance Summary ¹			(USD 000)				
Fund (Vintage)	Fund Size	Rlzd Deals / # Deals	Invested	Realized	Unrealized	Gross ROI	Gross IRR
Fund I (2018)	54,000	3 / 15	52,486	11,408	50,718	1.2x	28.7%
Fund II (2019)	134,000	1 / 8	129,541	35,717	112,001	1.1x	28.3%
Total		4 / 23	182,027	47,125	162,719	1.2x	28.4%

¹ Gross of fees and carried interest expenses. The unrealized investments were valued by the General Partner.

Investment Evaluation

- The Fund’s strategy is compelling.** The Fund’s strategy should generate attractive risk-adjusted returns. The General Partner targets law firm loans with significant downside protection by lending at LTVs of 15-25% of the value of typically hundreds or thousands of underlying cases. At the same time, the nascent state of the litigation finance market allows the General Partner to command interest rates of 20-23% on its loans.
- The Principals have significant experience and complementary backgrounds as lawyers and litigators in class action, personal injury, and mass tort cases.** Prior to founding the General Partner, Joe Siprut had a successful career as a litigator with an expertise in similar plaintiff-side litigation matters as the General Partner’s typical borrowers. Mr. Siprut’s plaintiff-side litigation experience is balanced by the defense-side experience of Tzivia Masliansky and Eric Yeager.
- The General Partner’s team has recently come together.** Joe Siprut founded the General Partner in 2018 and Tzivia Masliansky and Eric Yeager joined in early 2020. The Principals had not worked together previously.

Further, Joe Siprut is key to the team. Mr Siprut was the sole investment professional responsible for much of the General Partner's prior track record, and will have a key role in all Fund investments. Additionally, Mr. Siprut also leads firm development and strategic direction.

4. **The General Partner's track record is limited.** The General Partner raised Fund I in 2018 and has made 15 investments to date, with three realizations. The General Partner raised Fund II in 2019 and has made eight investments to date, with one realization. Further, the Principals do not have prior litigation finance investment experience before joining the General Partner.

However, while still early in their lives, Funds I and II have performed well to date. The prior funds have each produced greater than 20% net IRRs, while experiencing no losses or impairments. The four realized investments to date have produced a 33.5% IRR in aggregate.

Recommendation Franklin Park recommends a commitment of up to \$30 million in the Fund, subject to satisfactory negotiation of final documentation, based on the following:

- The General Partner's strategy is compelling;
- The General Partner's team has complementary legal and credit backgrounds; and
- The General Partner's early track record is impressive.

**ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201**

**RESOLUTION
No. 2021-26**

**Approving Investment in Kerberos Capital
Fund III, L.P. with Imminent Need**

WHEREAS, the Board of Trustees (Board) of the Arkansas Teacher Retirement System (ATRS) is authorized to invest and manage trust assets for the benefits of its plan participants; and

WHEREAS, the ATRS Board has reviewed the recommendation of its private equity consultant, Franklin Park Associates, LLC, along with the recommendation of the Investment Committee and ATRS staff regarding a potential investment in **Kerberos Capital Fund III, L.P.**, a debt fund that will focus on the litigation finance market; and

WHEREAS, the ATRS Board approves an investment of up to **\$30 million dollars (\$30,000,000.00)** in **Kerberos Capital Fund III, L.P.**, and the Board, after its review of the timing in which the closing of the investment in **Kerberos Capital Fund III, L.P.** may need to occur, has determined that there is an imminent need to immediately enter into the partial equity ownership agreement prior to the next scheduled meeting of the Arkansas Legislative Council. The Board also deems it financially appropriate to enter into the partial equity ownership agreement and concludes that to forego the opportunity to promptly implement its investment directives under the prudent investor rule would be inconsistent with its fiduciary duty of care to the members and annuitants.

NOW, THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment of up to **\$30 million dollars (\$30,000,000.00)** in **Kerberos Capital Fund III, L.P.** and agrees to immediately move to close and subscribe the approved ATRS limited partnership interest in **Kerberos Capital Fund III, L.P.** The total investment amount is to be determined by ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment using the Imminent Need process, if acceptable terms are reached.

Adopted this 7th day of June 2021

Mr. Danny Knight, *Chair*
Arkansas Teacher Retirement System

1 State of Arkansas As Engrossed: H2/26/19 H2/28/19

2 92nd General Assembly

A Bill

3 Regular Session, 2019

HOUSE BILL 1429

4

5 By: Representative Dotson

6 By: Senator J. Dismang

7

8

For An Act To Be Entitled

9 AN ACT TO ESTABLISH THE CODE OF ARKANSAS RULES; TO
10 CREATE AN ONLINE SEARCHABLE DATABASE OF
11 ADMINISTRATIVE RULES; AND FOR OTHER PURPOSES.

12

13

14

Subtitle

15

TO ESTABLISH THE CODE OF ARKANSAS RULES.

16

17

18 BE IT ENACTED BY THE GENERAL ASSEMBLY OF THE STATE OF ARKANSAS:

19

20 SECTION 1. Arkansas Code § 25-15-203 is amended to add an additional
21 subsection to read as follows:

22 (c) To the extent possible, a rule shall be written in plain language.

23

24 SECTION 2. Arkansas Code § 25-15-204(e)(1)(A), concerning the filing
25 of a rule, is amended to read as follows:

26 (e)(1)(A) An agency shall file with the Secretary of State and the
27 Legislative Council a:

28 (i) ~~copy~~ Copy of each rule, including without
29 limitation an emergency rule, proposed by the agency;

30 (ii) ~~and a financial~~ Financial impact statement for
31 the proposed rule;

32 (iii) Notice for the adoption, amendment, or repeal
33 of any rule required to be published on the internet under this section;

34 (iv) Statement setting forth the reason for the
35 proposed rule; and

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(v) Summary of the proposed rule.



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SECTION 3. Arkansas Code § 25-15-205 is amended to read as follows:

25-15-205. Rules – “The Arkansas Register”.

(a)(1) The Secretary of State shall compile, index, and publish on its website a document to be known as The Arkansas Register.

(2) The Arkansas Register shall contain:

(A) all adopted rules of any agency A copy of each rule, including without limitation an emergency rule, proposed by an agency;

(B) A financial impact statement for the proposed rule;

(C) The notice for the adoption, amendment, or repeal of any rule required to be published on the internet under § 25-15-204;

(D) Statement setting forth the reason for the proposed rule; and

(E) Summary of the proposed rule.

(3) The inclusion of a direct link to an electronic version of the information under subdivision (a)(2) of this section shall satisfy the requirements of this section.

(4)(A) The Secretary of State may omit from publication in the Arkansas Register any rule in which publication would be unduly cumbersome, expensive, or otherwise impractical.

(B) If a rule is omitted from publication under subdivision (a)(4)(A) of this section, the Arkansas Register shall indicate where and how a copy of the omitted rule may be obtained.

(b) The Secretary of State shall update The Arkansas Register at least monthly no later than the first Tuesday of every month, setting forth a synopsis of rules filed by agencies.

(c)(1) If requested, a printed copy of The Arkansas Register shall be furnished to all state agencies and other persons at prices fixed by the Secretary of State to cover publication and mailing costs.

(2) Proceeds from the sale of The Arkansas Register shall be deposited in the Constitutional Officers Fund and the State Central Services Fund in the State Treasury.

(d) A progress report on publication and distribution shall be provided to the Legislative Council annually.

SECTION 4. Arkansas Code § 25-15-202(2), concerning the definition of

1 "agency", is amended to read as follows:

2 (2)(A) "Agency" means a board, commission, department, officer, or
3 other authority of the government of the State of Arkansas, whether within,
4 or subject to review by, another agency, except the General Assembly, the
5 courts, and Governor.

6 (B) The word "agency" shall include the Division of Child
7 Care and Early Childhood Education of the Department of Human Services and
8 the Child Care Appeal Review Panel for purposes of administrative appeal.

9 (C)(i) The Except as provided in subdivision (2)(C)(ii),
10 of this section, the word "agency" shall not include the Arkansas Public
11 Service Commission, the Arkansas Pollution Control and Ecology Commission,
12 the Workers' Compensation Commission, and the Department of Workforce
13 Services, as the existing laws governing those agencies provide adequate
14 administrative procedures for those agencies.

15 (ii) As used in § 25-15-218, the word "agency" shall
16 include the Arkansas Public Service Commission, the Arkansas Pollution
17 Control and Ecology Commission, the Workers' Compensation Commission, and the
18 Department of Workforce Services.

19 (D) This subchapter does not repeal delegations of
20 authority as provided by law;

21

22 SECTION 5. Arkansas Code § 25-15-218 is amended to read as follows:

23 25-15-218. ~~Publication on the Internet—Uniform numbering system~~ Code
24 of Arkansas Rules.

25 ~~(a)(1) The Secretary of State shall publish on the Internet:~~

26 ~~(A) All adopted rules of each agency;~~

27 ~~(B) A copy of each rule proposed by an agency and the~~
28 ~~financial impact statement for each rule; and~~

29 ~~(C) The notice for the adoption, amendment, or repeal of~~
30 ~~any rule required to be published on the Internet under § 25-15-204.~~

31 ~~(2) The Secretary of State may publish the rules on the~~
32 ~~Secretary of State's Internet website or may contract with a provider of~~
33 ~~Internet services to publish the rules on another Internet website.~~

34 ~~(3) No fee shall be charged for public access to the rules on~~
35 ~~the Internet website.~~

36 ~~(b) The Secretary of State may omit from publication on its Internet~~

1 ~~website any rules in which publication would be unduly cumbersome, expensive,~~
2 ~~or otherwise, so long as its Internet website indicates where and how a copy~~
3 ~~of the omitted materials may be obtained.~~

4 ~~(c) Each agency shall file its adopted rules, proposed rules, and~~
5 ~~notices with the Secretary of State in an electronic format acceptable to the~~
6 ~~Secretary of State.~~

7 ~~(d)(1) The Secretary of State shall establish a uniform numbering~~
8 ~~system for rules of agencies.~~

9 ~~(2) Beginning July 1, 2005, all rules filed with the Secretary~~
10 ~~of State shall conform with the numbering system.~~

11 ~~(3) By July 1, 2005, each agency shall:~~

12 ~~(A) Revise its rules to comply with the numbering system~~
13 ~~adopted by the Secretary of State; and~~

14 ~~(B) Provide the Secretary of State with a complete set of~~
15 ~~the rules in an electronic format acceptable to the Secretary of State.~~

16 ~~(e) The Secretary of State shall adopt rules implementing this~~
17 ~~section.~~

18 (a) The Bureau of Legislative Research shall:

19 (1)(A)(i) Compile, format, and index a codification of the
20 general and permanent rules of agencies to be known as the "Code of Arkansas
21 Rules".

22 (ii) The Bureau of Legislative Research shall not
23 include in the Code of Arkansas Rules an emergency rule promulgated under §
24 25-15-204(c).

25 (B)(i) In carrying out the codification under subdivision
26 (a)(1)(A)(i) of this section, the Bureau of Legislative Research shall have
27 the same powers and duties related to the Code of Arkansas Rules as the
28 Arkansas Code Revision Commission, Code Revisor, and Bureau of Legislative
29 Research have related to the Arkansas Code of 1987 Annotated under § 1-2-
30 303(d)(1).

31 (ii) The Bureau of Legislative Research shall not
32 make any change in the substance or meaning of any provision of a rule.

33 (C)(i) The Bureau of Legislative Research shall consult
34 with an agency when codifying a rule of that agency.

35 (ii) An agency that objects to the form of the
36 codification of a rule by the Bureau of Legislative Research may appeal the

1 codification of the rule to the:

2 (a) Legislative Council or a subcommittee of
3 the Legislative Council designated for that purpose; or

4 (b) If the General Assembly is in session, the
5 Joint Budget Committee or a subcommittee of the Joint Budget Committee
6 designated for that purpose;

7 (2)(A) Develop a uniform style, format, and numbering system for
8 the rules in the Code of Arkansas Rules.

9 (B) The uniform style, format, and numbering system
10 developed under subdivision (a)(2)(A) of this section shall conform as nearly
11 as practical to the style of the Arkansas Code of 1987 Annotated.

12 (C) Rules included in the Code of Arkansas Rules shall be
13 cited and referred to by the numbering system established under subdivision
14 (a)(2)(A) of this section;

15 (3) Communicate to agencies the uniform style, format, and
16 numbering system;

17 (4)(A) Cause the Code of Arkansas Rules to be published as an
18 online searchable database that is available for use by the general public at
19 no charge.

20 (B) The online searchable database under subdivision
21 (a)(4)(A) of this section shall:

22 (i) Constitute the official version of the Code of
23 Arkansas Rules; and

24 (ii) Be prima facie evidence of the rules contained
25 in the Code of Arkansas Rules.

26 (C) In no event shall the Bureau of Legislative Research
27 be required to produce a print version of the Code of Arkansas Rules,
28 including without limitation in response to a request under the Freedom of
29 Information Act of 1967, §§ 25-19-101 et seq.;

30 (5) Update the Code of Arkansas Rules at least monthly with the
31 current version of each rule adopted by an agency; and

32 (6) Indicate in bold type on the webpage of the Code of Arkansas
33 Rules the date of the latest update.

34 (b) Each agency shall draft its rules to comply with the uniform
35 style, format, and numbering system developed by the Bureau of Legislative
36 Research under subdivision (a)(2) of this section.

1 (c)(1) Except as provided in subdivision (c)(2) of this section, a
2 rule that is not included in the Code of Arkansas Rules is not enforceable by
3 the agency promulgating the rule.

4 (2)(A) The Bureau of Legislative Research may omit from
5 publication in the Code of Arkansas Rules any rule in which publication would
6 be unduly cumbersome, expensive, or otherwise impractical.

7 (B) If a rule is omitted from publication under
8 subdivision (c)(2)(A) of this section, the Code of Arkansas Rules shall
9 indicate where and how a copy of the omitted rule may be obtained.

10 (d)(1) The Bureau of Legislative Research may enter into a
11 professional services contract to assist in carrying out the duties under
12 this section.

13 (2) The Bureau of Legislative Research shall retain the
14 copyright over the Code of Arkansas Rules.

15 (e)(1) The Bureau of Legislative Research may prepare guidance
16 documents for agencies regarding matters necessary for the implementation of
17 this section, including without limitation the:

18 (A) Form and style of content that will be included in the
19 Code of Arkansas Rules; and

20 (B) Submission of information to the Bureau of Legislative
21 Research for inclusion in the Code of Arkansas Rules.

22 (2) A guidance document under subdivision (e)(1) of this section
23 is not a rule under § 25-15-202.

24
25 SECTION 6. DO NOT CODIFY. (a) No later than December 31, 2019, each
26 agency subject to § 25-15-218 shall transmit to the Bureau of Legislative
27 Research an electronic version of each rule that has been adopted and is
28 currently in effect.

29 (b) The Bureau of Legislative Research shall:

30 (1) Inform each agency of the format in which rules shall be
31 transmitted under subsection (a) of this section;

32 (2) Submit a report on the status of the codification to the
33 Legislative Council on January 1, April 1, July 1, and October 1 of each year
34 until the codification is complete; and

35 (3) Complete the codification of the Code of Arkansas Rules
36 required in this act by January 1, 2023.

1 (c)(1) To promote the efficient development of a Code of Arkansas
2 Rules, the Bureau of Legislative Research shall work with the Governor's
3 Office to coordinate and direct agencies in the effort to develop the Code of
4 Arkansas Rules.

5 (2) The Bureau of Legislative Research may establish a phased
6 approach which requires agencies to submit portions of their rules before
7 December 31, 2019.

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/s/Dotson

APPROVED: 4/2/19

ATRS Rule 10
T-DROP AND RETURN TO SERVICE
A.C.A. §§ 24-7-502, 24-7-708

I. Definitions

A. "DROP" means a deferred retirement option plan enacted by the General Assembly and administered under ATRS or a reciprocal system.

B. "Early participant" means a member who has at least twenty-eight (28) years but less than thirty (30) years of credited service in ATRS including combined service with a reciprocal system, and is authorized by the Board for early participation in the plan.

C. "Fiscal year" means the operating year for the State of Arkansas that begins on July 1 of each calendar year and ends on June 30 of the next calendar year.

D. "Participant" means a member who elects to participate in T-DROP under A.C.A. § 24-7-1301 et seq.

E. "ATRS Employer" means an employer who participates in the Arkansas Teacher Retirement System whose employees are eligible for membership under A.C.A. § 24-7-501 or other applicable law.

F. "Plan deposits" means the deposits made to each participant's T-DROP account pursuant to A.C.A. § 24-7-1306.

G. "Plan interest" means the rate or rates per annum, as the Board shall set ~~prior to and adopt by~~ the beginning end of the first quarter of the fiscal year and applies to subsequent years unless modified by the Board, that is credited in each participant's T-DROP account. The Board shall determine the plan interest rate based upon A.C.A. § 24-7-1307(c). All T-DROP participants that have not retired shall receive plan interest at the end of each fiscal year.

H. "Post 10-year T-DROP interest" means the rate per annum, compounded annually, as the Board shall set and adopt at by the end of the first quarter of each fiscal year, credited on June 30 to the balance of the T-DROP participant's account that meets the following criteria:

1. The member participated in T-DROP for ten (10) years by receiving deposits, interest, or both; and
2. The member has not retired.

I. "Quarter" means one-fourth (1/4) of a fiscal year. The four (4) quarters applicable in this rule are:

1st Quarter: July 1 through September 30

2nd Quarter: October 1 through December 31

3rd Quarter: January 1 through March 31

4th Quarter: April 1 through June 30

J. "Retiree" means a member receiving an ATRS retirement annuity.

K. "Salary" is defined by A.C.A. § 24-7-202, provided that nonmandatory compensation that is taxable by the IRS is not salary for ATRS purposes.

L. "T-DROP Cash Balance Account" means the financial account set up for a participant who elects to defer distribution of his or her T-DROP account at a time that he or she is eligible to receive a lump-sum distribution of the T-DROP balance.

M. "T-DROP Cash Balance Account interest" means the interest rate per annum applicable to a participant's T-DROP Cash Balance Account, compounded monthly into a participant's T-DROP Cash Balance Account. The interest rates payable on the T-DROP Cash Balance Accounts are set forth in this Rule.

N. "T-DROP Service Credit" shall be determined using the same rules that apply for service credit for an active member with the exception that "on call" availability shall not be used for T-DROP service credit requirements.

II. Employment of an ATRS Retiree by an ATRS Employer

A. Upon acceptance of employment with an ATRS employer, the retiree and the ATRS employer must report to ATRS the retiree's employment on the forms and reports as required by ATRS.

B. ATRS employers will regularly report all employed retirees on retirement reports as required by ATRS.

C. Effective July 1, 2009, no earnings limitation shall apply to retirees employed with ATRS employers.

D. A retiree employed by an ATRS employer shall not accrue additional service credit, and no member contributions shall be withheld or paid to ATRS. Employer contributions, however, shall be paid to ATRS on the salary earned by a retiree who returns to work for an ATRS employer.

E E. For the return-to-work rules applicable to disability retirees receiving benefits under A.C.A. § 24-7-704, see Rule 9.VII (Disability Retirement).

III. The ATRS Board of Trustees has the authority under A.C.A. § 24-7-1301 to promulgate rules, including the adoption of **an interest rate, rates**, by resolution of the Board, for the administration of a deferred retirement option plan (T-DROP) for eligible members.

IV. T-DROP Participation and Account Credit

A. In lieu of terminating employment and retiring under A.C.A. § 24-7-701, an active member of ATRS may elect to participate in T-DROP and continue to work for an ATRS employer. By continuing covered employment, the participant defers receipt of retirement benefits until a later date.

B. A member shall have at least thirty (30) years of credit in ATRS to participate in T-DROP, or, to become an early participant in T-DROP, at least twenty-eight (28) years but less than thirty (30).

C. During participation in T-DROP, ATRS shall credit each participant's T-DROP account with plan deposits and plan interest.

D. The plan interest rate determined by majority vote of the Board is final and binding upon ATRS and shall not be adjusted based on any revised rate of return reported after that date.

E. The Post 10-year T-DROP interest rate shall be set by the Board prior to the beginning of each fiscal year at the same meeting that the plan interest rate is set. The Post 10-year T-DROP interest rate will be credited to the participant's T-DROP account on June 30th of each year, or through the date of retirement, whichever occurs first.

F. The Post 10-year T-DROP interest rate for each year determined by majority vote of the Board is final and binding upon ~~the~~ ATRS and shall not be adjusted based on any revised rate of return reported after that date.

V. Rules

A. T-DROP Benefit Generally

1. The participant's T-DROP benefit will be the monthly straight life annuity benefit to which the member would have been entitled had the member retired under A.C.A. § 24-7-701.
2. The participant's T-DROP benefit may be reduced as set forth in these Rules and under A.C.A. § 24-7-1301 et seq.
3. The T-DROP deposit shall not include the additional benefit, also known as the "monthly benefit stipend" provided in A.C.A. § 24-7-713.

B. Plan deposits shall be a percentage of the T-DROP benefit, as follows:

If a plan participant has at least thirty (30) years of credited service in ATRS, including combined service with a reciprocal system, the plan deposit is the participant's plan benefit as calculated at the entry into T-DROP, and then reduced by one percent (1%) for each year of credited service, including fractions of a year.

For early participants, the plan deposit is the early participant's plan benefit as calculated at the entry into T-DROP, and then reduced by one percent (1%) for each year of credited service, including fractions of a year, and further reduced by at least an additional one-half percent (.5%), but no more than one percent (1%), of the initially reduced plan deposit, for each month of credited service under thirty (30) years.

C. A participant shall elect an annuity option provided in A.C.A. § 24-7-706 at the time the participant separates from service and is granted a monthly retirement benefit or files for retirement upon reaching normal retirement age.

D. T-DROP Participation Limits

1. A member's participation in T-DROP shall not exceed ten (10) consecutive calendar years for accruing plan deposits; however, the Board is authorized

under A.C.A. § 24-7-1307 to provide for a separate deposit, called the Post 10-year T-DROP interest.

2. If a participant continues covered employment after completing ten (10) years in T-DROP, the T-DROP account will be credited with Post 10-year T-DROP interest as set by the Board. Benefits payable at retirement will be based on the account balance the month before the participant begins drawing retirement benefits.

E. The annuity upon which plan deposits are calculated shall receive the cost-of-living increase provided for in A.C.A. § 24-7-713 or § 24-7-727. The annuity plus the cost-of-living increase is reduced or adjusted under this Rule.

F. If a participant elects to cash out or annuitize their T-DROP account balance upon election to retire, once the T-DROP account is distributed to the member, the participant shall not be allowed to reenroll in T-DROP, unless the member cancels their election under A.C.A. § 24-7-1302.

G. As soon as possible after the end of each fiscal year, ATRS shall furnish the participant an annual statement of the participant's T-DROP account. The statement of T-DROP deposits and interest will not be final until the annual accounting has been reconciled for part-time T-DROP participants.

H. If a participant earns service credit of one hundred sixty (160) days or greater within a fiscal year and the participant does not terminate employment, retire, or die during the fiscal year, or the ATRS employer does not terminate the employer/employee relationship, then ATRS will allow crediting of twelve (12) monthly T-DROP deposits per fiscal year.

I. Part-time employment while participating If a participant earns less than one hundred sixty (160) days of service credit within a fiscal year, then T-DROP deposits shall be made in accordance to the T-DROP plan: part time employment schedule as follows:

1. In the first or fourth quarter of the fiscal year, ~~five (5)~~ fifteen (15) or more days of service credit shall be required to credit the participant's account with three (3) monthly deposits for that particular quarter. If a participant receives less than ~~five (5)~~ fifteen (15) days of service credit in either the first or fourth quarter of the fiscal year, then no T-DROP deposits shall be made in the three months for that particular quarter.

2. In the second or third quarters of the fiscal year, ~~fifteen (15)~~ twenty-five (25) or more days of service credit shall be required to credit the participant's account with three (3) monthly deposits for that particular quarter. If a participant receives less than ~~fifteen (15)~~ twenty-five (25) days of service credit in either the second or third quarter of the fiscal year, then no T-DROP deposits shall be made in the three months for that particular quarter.

VI. Ceasing T-DROP and Distribution Options

A. T-DROP monthly deposits automatically cease when:

1. The participant separates from service and is granted a monthly retirement

benefit from ATRS or a reciprocal plan; or

2. The participant reaches normal retirement age and retires without separation from service, or
3. The participant separates from covered employment but does not apply for monthly retirement benefits; or
4. The participant dies.

B. Any lump-sum distribution of a participant's T-DROP account balance is eligible to be rolled over into the member's qualifying retirement plan. ~~The~~ ATRS shall only roll over the T-DROP lump sum balance into one qualifying plan.

C. A participant may direct that all or a part of their lump-sum distribution ~~as set forth in Ark. Code Ann. § 24-7-1308 continue~~ to be held by ATRS in a T-DROP Cash Balance Account described in this rule.

D. T-DROP is intended to operate in accordance with Section 415 and other applicable sections of the IRS Code. Any provision of the T-DROP that conflicts with an applicable provision of the IRS Code is invalid.

E. If a participant separates from covered employment but does not apply for monthly retirement benefits, the T-DROP monthly deposit shall cease the month of separation from service. No deposits will be credited to the participant's account for the duration of the separation. Upon returning to covered employment, the monthly deposits will resume. Upon application for retirement, benefits will be paid according to the account balance at the time of separation from service or the month prior to the effective date of benefits after reaching normal retirement age. Provided however, if a member has not separated from covered employment and remains on an ATRS employer payroll without obtaining sufficient service credit for monthly deposits, the member shall remain eligible for annual interest.

F. Effect of Uniformed Service on T-DROP

1. If a participant leaves ATRS covered employment to serve, on a voluntary or involuntary basis, in the uniformed services of the United States and returns to ATRS covered employment, the member shall be treated as not having incurred a break in service with the ATRS employer. The ATRS employer shall certify to ATRS that reemployment was in accordance with the requirements set forth in Section 4312 of P.L.103-353, the Uniformed Services Employment and Reemployment Act (USERA) of 1994.

2. Under this subsection, uniformed services of the United States are limited to the armed forces, the Army, and the Air National Guard when engaged in active duty for training, inactive duty training, full-time National Guard duty, the commissioned corps of the Public Health Service, and any other category of persons designated by the President in time of war or emergency.

VII. Death of a T-DROP Participant Prior to Retirement

A. In the event a participant dies while still in T-DROP, the benefits payable from

the T-DROP account shall be determined according to A.C.A. § 24-7-710.

B. Unless otherwise directed to an alternative residual beneficiary or beneficiaries by the member, a T-DROP participant's surviving spouse may choose to receive the T-DROP benefit in a lump sum. If the spouse elects a lump-sum payment of the T-DROP balance, then the survivor annuities payable under A.C.A. § 24-7-710 shall be calculated on the service credit and salary earned by the member prior to participating in T-DROP. If an alternative residual beneficiary or beneficiaries are chosen, then the residue is paid as a lump sum, and no monthly annuity is paid.

C. For the purposes of A.C.A. § 24-7-709 related to disposition of residue, any amount received from the T-DROP account, either in the form of a lump sum or annuity payments, shall be considered to be annuity payments received by the member or his or her designated beneficiary and shall act to reduce or eliminate the disposition of residue payable under A.C.A. § 24-7-1310.

VIII. DROP Participation Under Reciprocal Systems

A. If a reciprocal system offers a DROP for its members, then service credit in ATRS, a reciprocal system, or the combination of service credit in the systems may be counted to meet the minimum service credit requirements for participation under each system's DROP.

B. The benefit payable by the reciprocal system shall be based on the DROP provisions of each system. The final average salary used to determine plan deposits shall be that of the reciprocal system which furnishes the highest final average salary at the time of retirement. Each reciprocal system shall use the method of computing final average salary stipulated by its law. Salaries earned in the Arkansas Judicial Retirement System and alternate retirement plans shall not be used in computing final average salary.

C. Plan deposits and plan interest credited to the DROP account will be paid under the deferred retirement option program in effect for that reciprocal system.

IX. T-DROP Cash Balance Account (CBA)

A. At the time that a participant may elect to receive a lump-sum ~~distribution of all of their T-DROP account balance; distribution.~~ the participant may ~~instead~~ elect to defer all or a part of their T-DROP account and direct that such amount be held in a T-DROP Cash Balance Account (CBA) for the participant. If a participant chooses to defer only part of the T-DROP distribution into a T-DROP Cash Balance Account, the remainder of the T-DROP distribution shall be annuitized with ATRS ~~according to the distribution options set out under A.C.A. § 24-7-1308.~~ or received as a lump-sum distribution.

B. After the T-DROP Cash Balance Account has been established on the ATRS' accounting system, a participant with a T-DROP Cash Balance Account balance may withdraw funds from the account six (6) times per quarter on such forms as ATRS may issue. ATRS may allow the participant to obtain additional withdrawals in a quarter with Executive Director approval. A participant may also request a recurring monthly distribution of a set amount until the CBA balance is

depleted or the request is terminated by the participant. Minimum distributions will be made sufficient to satisfy legal requirements under Ark. Code Ann. § 24-7-730 and the Internal Revenue Code.

C. A T-DROP Cash Balance Account shall be credited monthly with T-DROP Cash Balance Account interest, beginning the month after the account is established, and debited for all withdrawals and distributions.

D. T-DROP Cash Balance Account Interest Schedule

1. The initial interest rates for participants electing to enter the T-DROP Cash Balance Account program are set forth in this subsection. Members establishing a T-DROP Cash Balance Account on or after July 1, 2012, shall receive interest on their T-DROP Cash Balance Account according to the following schedule:

After establishing a T-DROP Cash Balance Account and:

For the first fiscal year of participation: 2.50% interest.

For two (2) fiscal years: 2.75% interest.

For three (3) fiscal years: 3.00% interest.

For four (4) fiscal years: 3.25% interest.

For five (5) fiscal years: 3.50% interest.

For six (6) or more fiscal years: 4.00% interest.

2. These interest rates are minimum interest rates that apply to T-DROP Cash Balance Accounts that are established while these rates are in effect. The T-DROP Cash Balance Account interest may be increased by the ATRS Board of Trustees on a forward-looking and Ad Hoc basis.

E. The T-DROP Cash Balance Account Interest rates payable on T-DROP Cash Balance Accounts established on or after July 1, 2012, shall remain in effect unless the ATRS Board of Trustees adopts a different schedule with lower interest rates to be used for future entrants to the T-DROP Cash Balance Account at least one (1) year prior to the beginning of a fiscal year in which the lower interest rates shall apply. The ATRS Board of Trustees may adopt an interest rate schedule for new entrants by Resolution, setting forth the new interest rate schedule for the T-DROP Cash Balance Account. T-DROP Cash Balance Accounts existing prior to the effective date of the Resolution shall be unaffected by the new interest rate schedule.

F. When adjusting and setting rates for interest on a T-DROP Cash Balance Account, the Board may consider the current market conditions, competing financial offerings to members, the bank rate for certificates of deposits, the status of ATRS' returns on investments, and the current state of T-DROP Cash Balance Account participation. The Board may periodically authorize by resolution a special ad hoc incentive payment for the Cash Balance Accounts if the Board determines that payment is likely to retain existing T-DROP Cash Balance Account holders and increase future participation in T-DROP Cash Balance Accounts. The ad hoc increase may be set as a single amount to be

applied to all Cash Balance Accounts or may be computed as a graduated amount based upon the length of time the Cash Balance Account has been in existence.

G. If a participant dies with a T-DROP Cash Balance Account, the account balance shall be paid as provided under Ark. Code Ann. § 24-7-1310.

ATRS Rule 9
RETIREMENT AND BENEFITS
A.C.A. §§ 24-7-202, 24-7-205, 24-7-502, 24-7-701 — 24-7-707, 24-7-709,
24-7-710, 24-7-727, 24-4-732, Act 808 of 1987

I. Definitions

A. "Act 808 Employee" means an employee of a state agency who, on April 8, 1987, was an active member of the Arkansas Teacher Retirement System (ATRS) and qualified to retire before January 1, 1988, under the Early Retirement Incentive Law of 1987 (Act 187 of 1987), could elect to become a member of the Arkansas Public Employees Retirement System (APERS) and have their credited service in ATRS transferred to APERS.

B. "Annuity options" means the member's election at retirement of an annuity that shall be paid throughout the retiree's lifetime in accordance with A.C.A. § 24-7-706.

C. "Effective Retirement Date" means, for purposes of ATRS retirement benefits, the 1st day of the month in which the member requests to receive retirement benefits and for which the member has submitted a timely retirement application.

D. "Marriage dissolution" means a final decree of divorce, separate maintenance, or annulment duly executed by a court of competent jurisdiction and filed of record in the Office of the Ex Officio Recorder.

E. "Medical committee" means the committee of three (3) physicians appointed by the Board under A.C.A. § 24-7-303 for the purpose of evaluating disability retirement applications.

F. "Option beneficiary" means a person(s) nominated by the member, in writing at retirement, who, if eligible, will receive annuity payments under the annuity option selected by the member after the member's death.

G. "Person" for purposes of Rule 9 means an individual, corporation, partnership or other legal entity.

H. "Participating employer" means an employer who participates in ATRS whose employees are eligible for membership under A.C.A. § 24-7-501, A.C.A. § 24-7-202, or other applicable law.

I. "Residue" means the member's accumulated contributions, including regular interest standing in the member's credit at the time of his/her retirement.

J. "Residue beneficiary" means a person(s) nominated by the member to receive the residue, if any, under A.C.A. § 24-7-709.

K. "Receivable" means monies due to ATRS from a member, former member, participating employer, contributor, retiree, beneficiary, or alternate payee under a qualified domestic relations order as a result of an overpayment of any payment or benefit by ATRS.

L. "Retiree" means a retired member who is receiving an annuity from ~~the~~ ATRS.

II. Age And Service Retirement Eligibility

A. If eligible, an active or inactive member who attains age sixty (60) and has five (5) or more years of actual and reciprocal service credit may voluntarily retire upon written application filed with ATRS.

B. If eligible, an active or inactive member who has not reached age sixty (60) and has twenty-five (25) or more years of actual and reciprocal service credit, including purchased or free credited service, may voluntarily retire upon written application filed with ~~the~~ ATRS.

C. In order to be eligible, a member must comply with the following requirements:

1. Satisfy the credited service requirements under one of ~~the~~ ATRS' retirement statutes, A.C.A. §§ 24-7-701—707;
2. Be credited with all required employer and member contributions in the member's deposit account, with no amounts owed to ATRS;
3. Pay all amounts owed to ATRS for underpayments or purchase service accounts; and
4. Terminate employment with all participating employers, or have reached ~~age sixty-five (65) or older.~~ the normal retirement age.

III. Benefits

A. Benefits Formula

The retirement benefits payable shall be the total number of contributory years of credited service, multiplied by a factor between 1.75% and 2.15% of the final average salary as set by the board, plus the total number of noncontributory years of credited service multiplied by a factor between ~~.5%~~ 0.5% and 1.39% of the final average salary, as set by the board. The board shall modify the factor for credited service as necessary to maintain actuarial soundness. (A.C.A. § 24-7-705).

B. Effective Date of Retirement Benefits (A.C.A. § 24-7-701)

1. If a member meets all eligibility requirements for retirement and is approved for retirement, annuity benefits shall be effective the month proposed by the member in their application. If the member does not file an application at least one calendar month prior to the proposed effective retirement date, then that proposed retirement effective date cannot be used, and the member's effective retirement date shall be the following month. If a member has signed an employment contract for the fiscal year and has been paid in full without providing service for the full period of the employment contract, the member's retirement effective date shall not be prior to July 1 of the subsequent fiscal year.

2. If a member has accrued a full year of service credit equal or greater to one hundred and sixty (160) days in a fiscal year, the member's retirement date shall not begin earlier than July 1 of the subsequent fiscal ~~year.~~ year unless:

a. the member has attained the normal retirement age and is not separating from employment; or

b. the member is not a classroom teacher vacating a classroom.

C. Compound Cost of Living Adjustment (A.C.A. § 24-7-727)

The Board by resolution may reverse a compound cost of living adjustment as needed to maintain the actuarial soundness of ~~the~~ ATRS. A reversal may be phased in as the Board determines appropriate.

D. Last Benefit Payment Upon Death

Benefits are payable through the month in which the retiree's death occurs.

E. Change of Marital Status

If the marriage of the retiree member legally ends for any reason, the member may choose to cancel the designation of the former spouse as the designated beneficiary. If the member so chooses, the member must file a change of option beneficiary on an ATRS approved form, and any change in the benefit amount shall become effective the month after receipt by ATRS of the approved form.

IV. A member that has attained the normal retirement age ~~65 or older~~ may apply for retirement benefits without terminating employment and may begin drawing benefits with no effect on the member's retirement benefit.

V. In addition to a complete retirement application, the following documents are mandatory documents and shall be submitted to ATRS within six (6) months of the effective date of retirement unless an extension is granted by ATRS:

A. Member elects a straight life annuity:

1. Proof of member's birthdate from a birth certificate or other authenticating documents.
2. Proof of member's taxpayer identification number from a Social Security card or other authenticating documents.

B. Member elects Option A or Option B benefit with Spouse as the beneficiary:

1. Proof of member's birthdate from a birth certificate or other authenticating documents.
2. Proof of member's taxpayer identification number from a Social Security card or other authenticating documents.
- 3 Proof of spouse's birthdate from a birth certificate or other authenticating documents.
4. Proof of spouse's taxpayer identification number from a Social Security card or other authenticating documents.

5. Proof of marriage between the member and spouse from a marriage license or equivalent, marriage license recording document, or other legally acceptable proof of the existence of the marriage.

C. Member elects Option A or Option B benefit with incompetent child as the beneficiary:

1. Proof of member's birthdate from a birth certificate or other authenticating documents.

2. Proof of member's taxpayer identification number from a Social Security card or other authenticating documents.

3. Adequate proof of the existence of a guardianship due to the incapacity of the member's child that preexists the member's official retirement date.

Authenticating documents may include the order appointing guardianship of the person, letters of guardianship, or other adequate proof of the existence of the guardianship.

4. Proof of child's taxpayer identification number from a Social Security card or other authenticating documents.

D. Member elects Option C annuity:

1. Proof of member's birthdate from a birth certificate or other authenticating documents.

2. Proof of member's taxpayer identification number from a Social Security card or other authenticating documents.

E. If the member elects an alternative residual beneficiary or beneficiaries in lieu of their spouse, the member shall submit the names of the alternative residual beneficiary or beneficiaries along with the alternative residual beneficiary's or beneficiaries' birthdate from a birth certificate or other authenticating document approved by ATRS, on a form provided and approved by ATRS. The selection of an alternative residual beneficiary or beneficiaries allows the member's residue from T-DROP and/or the member's contributions to be paid in a lump sum to the alternative residual beneficiary or beneficiaries and a monthly retirement annuity shall not be paid.

F. The failure to submit a complete retirement application and any mandatory documents within a six-month period from the member's effective retirement date plus any extension granted by ATRS shall result in the retirement application being voided and the application shall have no effect. This rule on required documents applies to all retirement applications including retirement based upon age retirement, service retirement, early retirement, and disability retirement.

VI. State Employee Transfers to APERS (Act 808) Rules

A. The Act 808 employee will make the election to transfer to APERS on a form furnished by ATRS.

B. The transfer from ~~the~~ ATRS to APERS will become effective on the date of retirement.

C. ATRS will certify to APERS a record of the Act 808 employee's service credit in ATRS.

D. At the time of retirement, if the Act 808 employee is a non-contributory member of ATRS, he will retire under the non-contributory provisions of Act 187 of 1987 and shall be entitled to a refund of Act 808 employee contributions made since January 1, 1978, to ATRS.

E. At the time of retirement, if the Act 808 employee was a contributory member of ATRS, he will retire under the contributory provisions of Act 187 of 1987.

F. For any Act 808 employee who elects to transfer to APERS, APERS will pay the monthly benefits.

G. APERS will certify monthly to ATRS the amount of monthly benefits paid and ATRS will transfer it's pro-rata portion to APERS.

H. Upon receipt of a death certificate from APERS for a retiree who chose straight life annuity and has a balance remaining in his account, ATRS will transfer the remaining balance in the retiree's account to APERS for refunding to the designated beneficiary or beneficiaries.

VII. Disability Retirement Rules

A.

1. If the member is eligible under A.C.A. § 24-7-704 and these Rules, and the [Medical Committee medical committee](#) determines a disability exists for the member, then disability retirement benefits shall commence the month the member files a written application with ATRS if at the time the member files the application the member is no longer employed by an ATRS covered employer.

2. If the member is still employed by an ATRS covered employer at the time the member files the application for disability retirement, then, once approved, the disability retirement will commence the month following the last day of covered employment.

B.

1. Termination of active membership for disability retirement benefits shall be the last date of any employer payment to the member due to the end of the employee/employer relationship.

2. The member is considered active if they are using earned sick leave, Family Medical Leave Act (FMLA) leave, annual leave, and catastrophic leave. Worker's compensation, which may or may not include the use of leave granted by the employer, is not considered leave by which a member is considered active, nor does it extend the date of active membership.

C.

1. The following criteria and deadlines, applied to the individual member circumstances, affect eligibility for continued disability payments for a member who has been approved by ATRS for disability retirement, based upon the date

of the first ATRS disability retirement check. The deadlines may be extended under the provisions of this Rule and A.C.A. § 24-7-704.

a. If the first disability retirement check to the member is dated before July 1, 2015, and the member is under fifty-seven (57) years before July 1, 2015, the member shall submit to ATRS a Social Security Administration (SSA) determination letter dated before July 1, 2018, that finds that the member is disabled. In the absence of a SSA determination letter, the member's disability retirement payments will cease on June 30, 2018.

b. If the first disability retirement check to the member is dated July 1, 2015, or after, and the member is under fifty-seven (57) years on the date of the first disability retirement check, member shall submit to ATRS a Social Security Administration (SSA) determination letter dated within thirty-six (36) months from the date of the first disability retirement check that finds that the member is disabled. In the absence of a SSA determination letter, the member's disability retirement payments will cease thirty-six (36) months from the date of the first disability retirement check. For example:

- Date of 1st ATRS disability retirement check: January 2017, then

- Social Security Administration determination letter finding dated by: December 2019; or

- Date of last disability retirement check if no SSA determination letter: December 2019

2. ATRS will grant an extension to the above deadlines if the member can provide documentation to ATRS that:

a. The SSA disability claim was properly filed and remained active for at least twenty-four (24) months prior to the deadline above; and

b. An active SSA disability claim is still under review by the SSA with no voluntary dismissal or withdrawal.

3. Once the member who is receiving disability retirement reaches sixty (60) years of age, the member thereafter will receive regular retirement benefits as if voluntarily retired under A.C.A. § 24-7-701 and no Social Security Administration determination letter is required.

4. A member may apply for ~~an additional review of~~ a disability ~~claim~~ review within three (3) months of disability benefits ceasing due to a denial letter and finding by the Social Security Administration that the member is not disabled. The member's disability ~~claim~~ review will follow the procedure set forth in A.C.A. § 24-7-704.

D.

1. A member under the age of sixty (60) may be employed by an ATRS covered employer and also receive ATRS disability retirement if the member performs less than eighty (80) days of actual service during a fiscal year.

2. A member shall not receive disability retirement if the member indirectly

performs work for an ATRS covered employer as described in A.C.A. § 24-7-704(a)(4)(B).

3. If a member is approved for disability retirement but continues to work either directly or indirectly for the covered employer, the member shall terminate employment with the covered employer or indirect employer by the proposed disability retirement effective date, or, if the member is finalizing work for the employer, then the employee may terminate employment up to two (2) full calendar months after the ~~Medical Committee~~ medical committee meets.

4. If the member does not terminate employment under these Rules and the termination requirement under A.C.A. § 24-7-502, the application is rescinded and the member can reapply.

5. After receiving an ATRS disability retirement a member may choose to return to regular employment with an ATRS covered employer and relinquish their disability retirement. In this instance, the member would no longer receive disability retirement and would be an active member and shall comply with A.C.A. § 24-7-738 (Act 549 of 2017).

E. If the application for disability retirement benefits is denied and the member elects and otherwise qualifies for voluntary retirement, the effective date for retirement shall be determined by the date the disability retirement application is filed.

F. If the member dies after the disability application is received by ATRS but before disability retirement is approved, then ATRS shall consider the member to have died in "active" service and survivor benefits under A.C.A. § 24-7-710 shall be paid, unless the member has designated an alternative residual beneficiary or beneficiaries.

G. The annuity formula for computing disability retirement benefits is the same as for voluntary age and service retirement.

H.

1. For all disability retirement applications approved by the ~~Medical Committee~~ medical committee after May 31, 2011, the Board shall allow a disability retiree at the time of retirement to designate an Option A or Option B beneficiary. Option C beneficiaries shall not be available to disability retirees. A.C.A. § ~~24-7-706(a)(3);~~ 24-7-706(a)(3)

2. If a disability retiree designates an Option A or Option B spouse beneficiary, and the disability retiree dies before reaching age sixty (60), then the same rules that apply to active member option beneficiaries shall apply to the disability Option A and Option B beneficiaries under A.C.A. § 24-7-710(b).

3. If a disability retiree designates an Option A or Option B incapacitated child beneficiary, and the disability retiree dies before reaching age sixty (60), then the same rules that apply to an active member surviving child shall apply to the disability Option A or Option B beneficiary under A.C.A. § 24-7-710(c) until the disability retiree would have turned age sixty (60), then the Option A or Option B

incapacitated child beneficiary shall receive the greater of the surviving child annuity under A.C.A. § 24-7-710(c) or the Option A spouse annuity under A.C.A. § 24-7-710(a).

I. ~~Disability retirees who are disapproved~~ If a member applies for further disability annuities ~~due retirement and is denied.~~

~~1. within six(6) months they have a one-time right to request a second review, provided additional medical examination reviewed by the Medical Committee shall be removed from ATRS' retiree payroll the earlier of six months following the review date or the first of the month following the return to covered employment. documentation is submitted.~~

~~J. 2. If a member applies for is denied~~ disability retirement ~~and is disapproved, he/she has after~~ the right to second review, they may file a new disability application submitting additional information for review consideration as long as the member remains active.

~~J. After a disability review, due to a finding by the Social Security Administration that the member is not disabled, the medical committee's recommendations will be submitted to the Board for a final order. If a member is denied for further disability benefits due to a disability review by the medical committee.~~

~~1. they shall have 30 days from the date of the disability review to offer additional medical information; and~~

~~2. request that the Board send the matter back to the medical committee for reconsideration.~~

VIII. Annuity Options and Disposition of Residue After Retirement Rules

Before the date the first benefit payment of an annuity becomes due, a member retiring with age or service may elect an option to receive an annuity payable as provided in one of the following. (Disability retirement option rights are set forth in Rule 9.VII.H. above):

A. **Option 1:** A straight life annuity payable monthly for the life of the retiree. Upon the retiree's death, if the retiree has not received payments equal to the residue amount, the residue remaining, if any, shall be paid to the residue beneficiary. If no residue beneficiaries survive the retiree, the residue will be paid to the retiree's estate.

B. Effect of Option 1 Retiree's Death within the First Year of Retirement

If an Option 1 retiree dies within one year of retirement, and his or her spouse qualifies for Option A benefits, the spouse may elect to cancel the Option 1 annuity in effect and elect Option A (100% survivor annuity) at that time.

The election shall become effective the first day of the month following receipt of the election form by ATRS. If the spouse elects Option A, the residue, if any, will not be paid until the Option A beneficiary's death.

C. Persons Eligible as Option A or Option B Beneficiaries at the Time of Retirement

In order to be nominated as an Option A or B beneficiary, the person must be one of the following:

1. The retiree's spouse (if the retiree has been married to the spouse for at least one (1) year prior to the first annuity payment being paid to the retiree);
2. A dependent child (regardless of age) who has been ruled physically or mentally incapacitated by a court of competent jurisdiction.

D. Eligibility of a Spouse to Become an Option A or Option B Beneficiary after a Member's Retirement

If a member was married to his or her spouse for less than one (1) year upon his or her effective retirement date or the member marries after his or her effective retirement date, then the member may elect to cover the spouse after being married for one (1) year. Upon meeting the one (1) year marriage requirement, the member shall have six (6) months to file an election to cover his or her spouse under either Option A or Option B. The written election must be filed on a form approved by ATRS.

E. Emancipation of Incapacitated Child Option Beneficiary

If an incapacitated child, who has been adjudged physically or mentally incapacitated by a court of competent jurisdiction, is nominated as an Option A or Option B beneficiary, and a court has determined that the incapacity issue no longer indicates incapacitation, or the incapacitated person is emancipated through marriage or dies, then the member may request ATRS to remove the incapacitated child from the member's account. Proof of the court's decision shall be by a copy of the court order, proof of emancipation shall be by a copy of the child's marriage license, or proof of death shall be by the death certificate.

Once proof is provided, the member may elect to return to Option 1 at that time, or if the member is married, the member shall have six months to designate the member's spouse as the member's option beneficiary. The election shall become effective the first day of the month following receipt of the election form by ATRS.

F. Residue Paid Upon Death of Option Annuitant

If after a retiree dies, an option annuity becomes payable, but the option beneficiary dies prior to the retiree and the option beneficiary receiving annuity payments equal to the residue amount, the residue, if any, shall be paid to member's residue beneficiary. If no residue beneficiary is nominated or survives upon the death of the option beneficiary, the residue remaining, if any, shall be paid to the last surviving option beneficiary's estate.

G. Final Benefit Check

Benefits are payable through the month in which the last option beneficiary's death occurs. If the option beneficiary dies prior to receiving the last check, ATRS will pay the final check in the normal manner paid prior to death. If payment of the final check in the normal course becomes impossible, the final option beneficiary's annuity check will be returned to ~~the~~ ATRS.

H. Eligible Residue Beneficiaries

Any "person" as defined in this policy is eligible to be designated by the member to receive the residue, if any, payable upon the member's death including individuals, trusts, estates, corporations, and other legally recognized entities.

IX. Error Corrections and Collection of Overpayments Rules

A. If a change or error in ATRS' records discovered during the ATRS look back period results in either an overpayment or underpayment to ATRS, the Board authorizes ATRS to correct the error in the records and to adjust any benefit or adjust any other amount payable to the corrected amount and take all necessary action as the circumstances may require, including the options allowed under A.C.A. § 24-7-205(b).

B. If a benefit participant under a qualified domestic relations order pursuant to A.C.A. §§ 9-18-101—103, is paid any benefit or payment by ATRS to which the benefit participant is not entitled, and it is discovered during the ATRS look back period, then a receivable is created and the Board or its designee(s), may collect the amount due to ATRS as set forth in A.C.A. § 24-7-205.

C. Before making an adjustment of benefits or pursuing any other collection action, a notice shall be provided to the person who is the subject of the adjustment. The notice will state the amount determined to be a receivable and the reasons underlying the determination. The notice shall also suggest alternate methods for payment of the receivable.

D. Appeals to dispute collections shall be made according to the procedures and requirements of ATRS Rule 13. During the appeal process, retirement benefits may continue to be paid.

E. Actions that affect rights on benefits cannot be corrected or adjusted further than a 5 year "look back" period unless a manifest injustice has occurred or an exception exists under A.C.A. § 24-7-205.

F. The board or its designee may also make adjustments to the employer, member, and ATRS records beyond the look-back period if the board determines that the time limitation imposed by the lookback period will result in a manifest injustice in a specific case. See Rule 17 – Manifest Injustice.

G. The Board authorizes the Executive Director to waive interest on required contributions in an amount not to exceed \$5,000. Any request to excuse an interest amount exceeding \$5,000 shall be submitted to the ATRS Board for review. The Executive Director shall report to the Board any amounts excused under this section.

H. If required, a receivable under this section that is found by the Board or its designee to be uncollectible or for which adjustment or payment has been waived will be submitted to the Chief Fiscal Officer of the state for abatement pursuant to A.C.A. §§ 19-2-301--307.

I. A determination by ATRS of a manifest injustice in a particular instance due to a technical error or error in judgment is always discretionary and governed by the

provisions in A.C.A. § 24-7-205.

X. Retirement Application Rules

A. A copy of the ATRS retirement application can be downloaded from the ATRS website or requested from ATRS.

B. In order for a retirement application to be timely filed, there is a three (3) month "window" to apply for retirement benefits.

For active members currently employed, the window for filing your retirement application is:

1. No sooner than four (4) months prior to your Effective Retirement Date; and,
2. No later than one (1) month before your Effective Retirement Date.

C. For an inactive, vested, immediately eligible-to-retire member, retirement benefits are payable the month after the retirement application is received.

D. The procedure for handling received retirement applications is as follows:

1. If a retirement application is received by ATRS before the three (3) month window begins for the member's anticipated Effective Retirement Date, the application is not timely filed, and ATRS will reject the application and notify the member of the dates that their retirement application can be filed timely and the procedure to do so.

2. If a retirement application is received after the three (3) month window ends for the member's anticipated Effective Retirement Date, the retirement application is not timely filed and the member will receive a new Effective Retirement Date beginning on the 1st day of the next month.

E. This Rule does not apply to an application for disability retirement or survivor benefits.

The following table shows examples of the "windows" for filing a retirement application:

EXAMPLE OF RETIREMENT FILING DATES			
Effective Date of Retirement	Retirement Application Must be Filed In:	Last Date of Employment	First Retirement Check
January 1	September, October or November	December 31	End of January
February 1	October, November or December	January 31	End of February
March 1	November, December or January	Feb 28/29 (Leap year)	End of March
April 1	December, January or February	March 31	End of April
May 1	January, February or March	April 30	End of May
June 1	February, March or April	May 31	End of June
July 1	March, April or May	June 30	End of July
August 1	April, May or June	July 31	End of August
September 1	May, June or July	August 31	End of September
October 1	June, July or August	September 30	End of October
November 1	July, August or September	October 31	End of November
December 1	August, September or October	November 30	End of December

The following table is the only "window" for filing a T-DROP application:

Effective Date of Retirement	Retirement Application Must be Filed In:
July 1	March, April or May

ATRS Rule 4
ELECTION OF BOARD OF TRUSTEES
A.C.A. §§ 24-7-301, 24-7-302

The ~~general administration and proper operation of ATRS is vested in the~~ Board of Trustees ~~that consists is comprised~~ of eleven (11) elected ~~members trustees~~ and four (4) ~~ex-officio members. Pursuant to A.C.A. § 24-7-301, the ex-officio trustees. The~~ Board shall adopt rules and regulations regarding ~~sets~~ the election of trustees following qualifications for eligible candidates and eligible voters for the eleven (11) elected trustee vacancies. ~~positions.~~

I. General Rules for ~~Candidacy Candidates~~ and ~~Voting Voters~~ in Trustee Elections

~~A. For purposes of eligibility for an active member trustee position and voting, "active members" shall mean active members as defined in A.C.A. § 24-7-202 and members participating in T-DROP, if employed by a participating employer and receiving T-DROP plan deposits.~~

~~B.~~ If a candidate is employed in more than one position with a participating employer(s), eligibility shall be determined based on their primary position for which they receive the greater percentage of covered salary.

~~C. For purposes of eligibility for B. To be an administrator trustee position eligible candidate or voting eligible voter for that position, "administrator" shall mean a public school superintendent, assistant superintendent, principal, or vice-principal; a higher education president, chancellor or director; or trustee position that requires a community college, vocational/technical or educational cooperative director, president, license. "licensure" means:~~

~~1. A state teaching license or vice president, who is and employed by a participating employer; OR any employee of an education related agency participating in ATRS that is employed in educational institution at a position grade GS13 or above GS9-GS12 or its equivalent, including unclassified employees. equivalent; or~~

~~D. For purposes of eligibility for a licensed trustee position 2. A state administrator's license. or voting for that position, "licensure" shall mean a person employed in a position requiring state teaching licensure or an education institution grade GS09-GS12 GS13 or higher. or its equivalent and who is not equivalent, including an administrator.~~

~~E. For purposes of eligibility for a nonlicensed trustee position and voting for that unclassified position, "nonlicensed" shall mean a member employed in a position with a participating employer that does not require state licensure including employment in at an educationally related education-related agency participating in a position grade GS08 or below or its equivalent. Nonlicensed shall not include any position that is defined as an administrator or that requires licensure. ATRS.~~

~~F. C.~~ Only members are authorized to vote in a trustee election. Guardians,

attorneys-in-fact, or ~~others~~ other proxy may not vote on behalf of a member.

~~G. D.~~ Terms not defined in these rules shall have the meaning set forth in A.C.A. § ~~24-7-202 et. seq.~~ 24-7-202.

~~H. E.~~ An employee working for ATRS is not eligible to be elected to the board, appointed to the board, or be a candidate to be elected or appointed to the board.

II. Candidate Qualifications and Voter Eligibility for Elected Trustee Positions

A. Active Member Trustee Position Nos. 1-4 - Congressional Districts

1. There shall be four (4) active member ~~trustees~~ trustees, each of whom will represent one of the four congressional districts in Arkansas.

~~A. Active Member Trustee Position Nos. 1-4 - Congressional Districts~~

2. To be an eligible candidate and eligible voter for an active member trustee position, "active member" means a member eligible for service credit that is rendering service to an ATRS-covered employer, consistent with A.C.A. § 24-7-202. Members participating in T-DROP, if employed by a participating employer and receiving T-DROP plan deposits, shall be considered an active member.

~~1. Qualifications for Candidacy:~~ 3. Candidate Qualification:

- a. Active member with a minimum of five (5) years of actual service.
- b. Employed by a participating employer located in the congressional district for which ~~he/she is~~ they are seeking election.
- c. Employed in a position requiring state teaching licensure or the equivalent under these rules.

~~2. 4. Eligible Voters for Trustee Position Nos. 1-4~~ Voters:

a. Active members, regardless of credited service, employed by participating employers located in the respective congressional ~~districts and who are~~ otherwise eligible districts.

b. Eligible to be a candidate for an active member trustee position.

c. Employed in a position requiring state teaching licensure or the equivalent under this subsection: these rules.

B. Active Administrator Trustee Position Nos. 5-6

~~There shall be two~~

1. Two (2) active member trustees ~~each of whom must~~ shall be employed as an administrator.

2. To be an eligible candidate and eligible voter for an administrator as defined trustee position, "administrator" means a public school superintendent, assistant superintendent, principal, or vice-principal; a higher education president, chancellor or director; or a community college, vocational/technical or

educational cooperative director, president, or vice president, who is employed by a participating employer or any employee of an education related agency participating in these rules. ATRS that is employed in a position grade GS13 or higher, or its equivalent, including unclassified employees.

~~1. Qualifications for Candidacy:~~ 3. Candidate Qualification:

- a. Active member with a minimum of five (5) years of actual service.
- b. Active members employed in positions requiring an administrator's license.
- c. As provided in A.C.A. § 24-7-301, at least one of the administrators serving as an active administrator trustee must be employed by a participating employer as an Arkansas school superintendent or educational cooperative director.

~~e.~~ d. If an election is being held for either position and the other administrator position is not held by a superintendent or educational cooperative director, candidates for the open position must be a superintendent or educational cooperative director and the notice of election shall so state that requirement.

~~d. Candidates for Position No. 5 and Position No. 6 shall be licensed administrators employed by a participating employer.~~

~~2. 4. Eligible Voters for Trustee Position Nos. 5-6~~

~~Eligible voters for Position Nos. 5 and 6 shall be active~~ a. Active members, regardless of credited ~~service, employed as licensed administrators.~~ service.

b. Employed in positions requiring an administrator's license.

C. Nonlicensed Trustee Position No. 7

~~1. Qualifications One (1) trustee shall be an active member whose position does not require a state license, and who is employed by a participating employer.~~

~~2. To be an eligible candidate and eligible voter for Candidacy: a nonlicensed trustee position, "nonlicensed" means employed in a position with a participating employer that does not require a state license, including employment by an educationally related agency in a position Grade GS8 or below. Nonlicensed shall not include any position defined as an administrator.~~

~~3. Candidate Qualification:~~

- a. Active member with a minimum of five (5) years of actual service.
- b. Employed in a position that does not requiring require a state licensure. license.

~~2. 4. Eligible Voters for Trustee Position No. 7~~

~~Eligible voters for Position No. 7 shall be all active~~ a. Active members, regardless of credited ~~service, who are employed~~ service.

b. Employed by participating employers in nonlicensed positions as defined these rules.

D. Minority Trustee Position No. 8

~~There shall be one~~ 1. One (1) member trustee ~~of shall represent~~ a minority racial ~~or~~ ethnic group.

~~1. Qualifications for Candidacy:~~ 2. Candidate Qualification:

a. An active or retiree member of ATRS with a minimum of five (5) years of actual service

b. ~~Member of a minority racial~~ Black or ~~ethnic group~~ African American, Hispanic American, American Indian or Native American, Asian, and Pacific Islander, consistent with A.C.A. § 1-2-503.

~~2. c. Resident of the State of Arkansas.~~

~~3. Eligible Voters for Trustee Position No. 8~~

a. All active members, regardless of credited service

b. Retiree members

E. Retired Member Trustees (At-Large) - Position Nos. 9-11

~~There shall be three~~ 1. Three (3) ~~retired member~~ trustees who shall be "retirees" or "~~retirants~~" as defined under A.C.A. § 24-7-202.

~~1. Qualifications for Candidacy:~~ 2. Candidate Qualification:

a. Retiree member of ~~ATRS~~ ATRS.

b. Resident of the State of ~~Arkansas~~ Arkansas.

~~2. 3.~~ Eligible Voters for Trustee Position Nos. 9-11

All retirees of ATRS, regardless ~~of present employment status or residency.~~

4. Eligible Voters

a. Retiree member of ATRS, regardless of present employment status or residency.

III. Rules on Elected Trustee Nominations

A. During December in a year in which an elected trustee position is subject to election or to fill a vacancy in a special election, ATRS shall publish public notice of an upcoming trustee position election in a statewide newspaper for at least five (5) consecutive days. The notice will also be sent to such persons or groups that have requested a notice of Trustee vacancies. The notice shall also be posted on the ATRS website from December until the closing of the nomination period.

B. For all elected positions, a candidate must submit a petition signed legibly by at least twenty-five (25) ATRS members who are eligible to vote for the trustee position for which the member is seeking nomination. The petition must include the last four digits of each signatory's Social Security number for verification of the member's eligibility to vote for the position.

C. The original petitions for nomination must be submitted to the ATRS Executive Director no later than January 10. Actual delivery must be made by January 10, regardless of postmark date or other methods to attempt delivery.

D. Upon receipt of a petition, ATRS will confirm its receipt and verify the eligibility of the candidate for the trustee position under A.C.A. § 24-7-301. ATRS will verify the member's signatures signing the petition as eligible voters.

E. The candidates submitting a petition for nomination will receive notice by ATRS if the petition is accepted and will receive a list of other members who were certified to participate in the election for the trustee position for which they seek nomination.

F. Prior to ballots being mailed, ATRS or its designee will conduct a random drawing for ballot position. At least two (2) independent witnesses shall be present to certify the drawing of the ballot position. Candidates will be notified of the order in which they will be listed on the ballot.

G. Upon request of a candidate, ATRS will provide a list of mailing addresses of eligible voters for the distribution of a candidate's campaign materials. The candidate's message shall not contain information that would constitute defamation of another candidate. Campaign materials will be mailed by the election vendor from its place of business. All postage for such materials shall be the candidate's sole expense.

IV. Rules on Trustee Elections

A. ATRS shall employ an independent election vendor to conduct the trustee elections.

B. If any position receives only one nomination and the position is not contested, the Board at its next regular or special meeting may certify the nomination and declare the candidate duly elected as a trustee prior to the commencement of the trustee's term.

C. ATRS shall publish ballots that shall be submitted to the election vendor for mailing on March 15 to the member's address of record.

D. Completed ballots must be received by the election vendor on or before April 15 to be counted. The vendor shall only count such ballots that are correctly completed.

E. Results for positions not subject to a run-off election shall be certified to ATRS by April 20.

F. If upon certification of the outcome of a trustee election by the vendor, if no candidate receives at least 50% of the votes cast by eligible voters, a runoff election will be held between the two (2) candidates receiving the highest number of votes for the position. The run-off ballots will be mailed by the election vendor to eligible voters on or before May 1.

G. Completed ballots for a run-off election must be received by the election vendor on or before June 1 to be counted.

H. Upon the completion of the run-off election, results shall be certified by the election vendor to ATRS by June 5.

I. Any candidate included on the ballot may submit a challenge to the election

vendor's certified results for an elected trustee position by submitting a written challenge to the ATRS Executive Director. A challenge must be received within five (5) calendar days of the certification of the elections results for the position at issue. If a candidate challenges the election results, the election process will be suspended for the same number of days that the resolution of the challenge requires, and the remaining election schedule will be adjusted accordingly.

J. Upon receipt of a challenge, the ATRS Board will hold a special meeting to consider the challenge. The Executive Director will issue an ATRS recommendation to the Board along with the administrative record relating to the position being challenged.

K. For any fixed date in the election schedule that falls on a holiday or a weekend, the official date shall become the next business day.

L. Upon completion of an election, all elected trustee terms, except for special elections, begin on July 1 following the election.

V. Board Procedures to Fill Unexpired Terms for Elected Trustees

ATRS staff shall notify the Board of all resignations and vacancies by other causes in any Trustee position as soon as possible after staff has knowledge of the vacancy. The Board shall take appropriate action authorized by law to fill the vacancy. The Board may by majority vote appoint a trustee until the next ATRS election. In the event the Board by majority vote determines that the vacancy should be filled by a special election, then a special election shall be scheduled as follows:

If an elected trustee position is declared vacant by the Board and is to be filled by a special election then, in accordance with this rule, ATRS shall publish notice as set out in Section III.A. that a special election will be held and will announce the schedule for the special election, which will include the following: 1) the date the vacancy occurred and position being vacated; 2) the time period for circulating petitions for nominating signatures; 3) the deadline for filing petitions with ATRS; 4) the date ATRS will verify the validity of petitions; 5) the date ballots will be sent to eligible voters; 6) the election date; and 7) the date the term shall begin.

VI. Term of Elected Trustee Office and Vacancies

A. The term of office of each elected trustee shall be six (6) years.

B. Each trustee shall continue to serve as trustee until their term expires unless they resign or is otherwise ineligible under these rules.

C. In a year in which a six (6) year term of a trustee expires, the position shall be filled under the regular election schedule in this rule.

D. A trustee elected to fill an unexpired term in a special election will serve for the remainder of the six (6) year term of the vacating trustee.

VII. Rules on Elected Trustee Vacancies

A. An active member trustee shall be ineligible to serve after becoming inactive or retiring.

B. An active member trustee shall be ineligible to serve if he or she changes employment category during his or her term of office and the employment category is a requirement of the trustee position, i.e., an administrator becomes a classroom teacher.

C. A retiree member trustee shall be ineligible to serve after becoming active.

D. A trustee vacancy can occur if the trustee is absent from meetings.

1. The Board of Trustees or its designee will notify the Board member after the second consecutive absence.

2. A vacancy will occur if the Board votes to declare a position vacant due to one of the following:

a. A trustee is absent for three (3) consecutive regular Board meetings and the absences are not excused by the Board. An absence that is excused by a majority of the members of the Board shall not be counted towards a vacancy. Attendance on either day of a two-day Board meeting is sufficient to meet the attendance requirement for that meeting;

b. A trustee is ineligible due to a change in status under A.C.A. § 24-7-302 resulting in three (3) consecutive absences at regular Board meetings prior to the expiration of the trustee's term; or

c. Resignation or death of a trustee which will create three (3) or more consecutive absences at regular Board meetings prior to the expiration of the trustee's term.

If the Board declares a vacancy by resolution under the section above, the Board may vote to hold a special election to fill an unexpired term under the Board procedures to fill unexpired terms for elected trustees. If the Board does not certify a vacancy under this section, the vacancy will be filled during the next annual ATRS election held upon expiration of an elected trustee's term, utilizing approved election procedures for that position.

**BEFORE THE
ARKANSAS TEACHER RETIREMENT SYSTEM**

IN THE MATTER OF
CONTINUATION OF DISABILITY RETIREMENT BENEFITS
UNDISPUTED RECOMMENDATIONS

PROPOSED DISABILITY REVIEW ORDER

INTRODUCTION

This matter is a review of the medical committee's recommendations that certain members' disability retirement benefits be continued under subdivision A.C.A. §24-7-704(b)(3)(D)(iii).

FINDINGS OF FACT

1. The following members applied for disability review after having been initially approved for disability benefits, ATRS ID's: 254667; 463677; 181233; 248699, 162605
2. After reviewing each member's records, the medical committee recommended that each member be **approved** eligibility to continue receiving ATRS disability benefits.
3. After reviewing each member's records, the medical committee recommended that each member remain eligibility to receive ATRS disability benefits.

ANALYSIS AND RECOMMENDATION TO THE BOARD

Arkansas law provides that an ATRS member who has been approved for disability benefits must provide, within thirty-six months, a favorable determination by the Social Security Administration that the member is disabled. In the alternative A.C.A. §24-7-704(b)(3)(C) allows the member to ask for additional time to provide the SSA decision, or to apply for a review by the medical committee due to the lack of an SSA

determination letter.

The medical committee considers each request for review, and makes a recommendation to the Board on the question of whether the member continues to meet “the definition of disability under subdivision (a)(1)(D)” of A.C.A. §24-7-704. The primary element of the standard of review is whether the member is able to perform their previous covered employment work duties.

In the cases noted above, the medical committee is recommending to the Board that it find that these members continue to be “disabled” within the meaning of the ATRS law and are entitled to continue to receive ATRS disability benefits.

The Executive Director recommends that the Board of Trustees accept the medical committee recommendation to approve continued disability benefits in each case.

Reviewed and approved

Danny Knight, Chairman

June 7, 2021

**BEFORE THE
ARKANSAS TEACHER RETIREMENT SYSTEM**

IN THE MATTER OF
TERMINATION OF DISABILITY RETIREMENT BENEFITS
UNDISPUTED RECOMMENDATIONS

PROPOSED DISABILITY REVIEW ORDER

INTRODUCTION

This matter is a review of the medical committee's recommendation that certain members' disability retirement benefits be terminated under subdivision A.C.A. §24-7-704(b)(3)(D)(iii).

FINDINGS OF FACT

1. The following members applied for disability review after having been initially approved for disability benefits, ATRS ID's: 173857.
2. After reviewing each member's records, the medical committee recommended that each member be **denied** eligibility to continue receiving ATRS disability benefits.
3. None of the members listed in Paragraph 1. requested a review of the medical committee's recommendation to deny continued benefits.
4. The time to request a review of the medical committee's recommendation has expired in each case listed above.
5. Each member's disability benefits have been suspended pending a review of the medical committee's recommendation by the Board of Trustees pursuant to A.C.A. §24-7-704(b).

ANALYSIS AND RECOMMENDATION TO THE BOARD

Arkansas law provides that an ATRS member who has been approved for disability

benefits must provide, within thirty-six months, a favorable determination by the Social Security Administration that the member is disabled. In the alternative A.C.A. §24-7-704(b)(3)(C) allows the member to ask for additional time to provide the SSA decision, or to apply for a review by the medical committee due to the lack of an SSA determination letter.

The medical committee considers each request for review, and makes a recommendation to the Board on the question of whether the member continues to meet “the definition of disability under subdivision (a)(1)(D)” of A.C.A. §24-7-704. The primary element of the standard of review is whether the member is able to perform their previous covered employment work duties.

In the cases noted above, the medical committee recommends to the Board that it find that these members are no longer “disabled” within the meaning of the ATRS law and are no longer entitled to continue to receive ATRS disability benefits. None of the members have challenged that recommendation and the time to object has expired.

The Executive Director recommends that the Board of Trustees accept the medical committee recommendation to terminate disability benefits in each case.

Reviewed and approved

Danny Knight, Chairman

June 7, 2021

SUMMARY OF DISABILITY APPLICATIONS SUBMITTED
FOR CONSIDERATION BY THE MEDICAL COMMITTEE

The Medical Committee met in executive session in the first floor conference room at 9:30 a.m. on April 7, 2021. Those members present were Dr. Eddie Phillips, Dr. Hoyte Pyle, and Dr. Jim Morse. Anne Marie Lehman Berardi of the Teacher Retirement System was also in attendance.

A total of eighteen disability applications were considered. Of the eighteen applicants, ten were approved. Two were denied. Six had more information requested.

Respectfully Submitted,



Eddie Phillips, CMO
Medical Committee Chairman

Respectfully Submitted,



Anne Marie Lehman Berardi
Retirement Benefits Counselor

SUMMARY OF DISABILITY APPLICATIONS SUBMITTED
FOR CONSIDERATION BY THE MEDICAL COMMITTEE

The Medical Committee met in executive session in the first floor conference room at 9:30 a.m. on May 5, 2021. Those members present were Dr. Eddie Phillips, Dr. Hoyte Pyle, and Dr. Jim Morse. Anne Marie Lehman Berardi of the Teacher Retirement System was also in attendance.

A total of sixteen disability applications were considered. Of the sixteen applicants, six were approved. Seven applicants were denied. Three applicants had more information requested.

Respectfully Submitted,



Eddie Phillips, CMO
Medical Committee Chairman

Respectfully Submitted,



Anne Marie Lehman Berardi
Retirement Benefits Counselor