

ARKANSAS TEACHER RETIREMENT SYSTEM

October 7, 2019

1400 West Third Street

BOARD ROOM

Little Rock, AR 72201

Board of Trustees Meeting

11:00 a.m.

Trustees

Danny Knight, Vice Chair

Dr. Richard Abernathy

Anita Bell

Lloyd Black

Kathy Clayton

Kelly Davis

Bobby G. Lester

Chip Martin

Robin Nichols

Janet Watson

Ex Officio Trustees

Candace A. Franks, 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

October 7, 2019
11:00 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. ***Election of Board Chair and Vice-Chair.**
- V. Executive Summary. (Attachment No. 1) page 6.
- VI. ***Approval of Prior Meeting Minutes.**
 - A. ***June 3, 2019.** (Attachment No. 2) page 17.
 - B. ***July 8, 2019.** (Attachment No. 3) page 30.
 - C. ***September 11, 2019.** (Attachment No. 4) page 33.
- VII. Member Interest Waived Under A.C.A Sec. 24-7-205. A total of \$51.96 was waived this reporting period. *Clint Rhoden, Executive Director* (Attachment No. 5) page 37.
- VIII. Employer Interest and Penalties Waived Under A.C.A. Sec. 24-7-411. A total of \$3,091.04 was waived this reporting period. *Clint Rhoden, Executive Director* (Attachment No. 6) page 38.
- IX. Manifest Injustice Report. (Attachment No. 7) page 39.
- X. ***Manifest Injustice for Board Approval.**
 - 4. ***In Re: Sandra Ledbetter MI-2018-006.**
- XI. Investment Committee Report. *Robin Nichols, Investment Committee Chair*

* Action Item

2019-10-03 13:21:04.506408

- A. Arkansas Related and Investment Update.
 1. List of Fund Closings.
 - a. DW Healthcare Partners V, LP, a Private Equity Buyout Fund that Invests in Expansion Stage Companies in the Healthcare Sector with Imminent Need, the Board Authorized Commitment of up to \$30 Million Dollars on April 1, 2019 was Accepted and Closed on July 22, 2019.
 - b. Rockwood Capital Real Estate Partners Fund XI, L.P., a Closed End Value Added Real Estate Fund that Invests in Value Added Office, Apartment, Retail, and Hotel Properties Across Multiple Regions in the U.S., the Board Authorized Commitment of up to \$40 Million Dollars on April 1, 2019 was Accepted and Closed on June 14, 2019.
 - c. Walton Street Real Estate Debt Fund II, L.P., a Closed End Value Added Real Estate Debt Fund that Invests in a Diversified Portfolio of Higher Yielding Commercial Real Estate Debt Investments, the Board Authorized Commitment of up to \$40 Million Dollars on April 1, 2019 was Accepted and Closed on May 17, 2019.
 - d. Franklin Park Venture Fund Series 2019, L.P. a Fund of Funds Managed by Franklin Park Investing in Venture Capital Private Equity Funds, the Transfer of the Commitment of up to \$30 Million Dollars from the Franklin Park Venture Capital Access Fund, L.P. to the Franklin Park Venture Fund Series 2019 Authorized by the Board on June 3, 2019 was Accepted and Closed on June 25, 2019.
 - e. Franklin Park Corporate Finance Access Fund, L.P., a Fund of Funds Managed by Franklin Park Investing in Smaller Buyout, Growth, and Turnaround Private Equity Funds, the Transfer of the Commitment of up to \$30 Million Dollars from the ATRS/FP Private Equity Fund to the Franklin Park Corporate Finance Access Fund Authorized by the Board on June 3, 2019 was Accepted and Closed on July 31, 2019.
 - f. JFL Equity Investors V, L.P., a Private Equity Buyout Fund that Invests in the Defense, Aerospace and Maritime Industries and Related Businesses, the Board Authorized Commitment of up to \$30 Million Dollars on June 3, 2019 was Accepted and Closed on June 26, 2019.
 2. Programs Being Unwound by the Fund Managers.
- B. General Investment Consultant Report.
 1. Performance Report for the Quarter Ended June 30, 2019. (Attachment No. 8) page 41.

* Action Item

2. Preliminary Performance Report for the Month Ended August 31, 2019. (Attachment No. 9) page 194.
3. Emerging Manager Report for Fiscal Year Ended June 30, 2019. (Attachment No. 10) page 218.
4. ***Recommendation to Commit up to an Additional \$30 Million Dollars in Aeolus Catastrophe Keystone PF Fund, LP, an Opportunistic/Alternative Reinsurance Fund Specializing in Property Catastrophe Insurance Coverage.** (Attachment No. 11) page 236.
 - a. ***Resolution 2019-38.** (Attachment No. 12) page 240.

C. Real Assets Consultant Report.

1. Performance Report for the Quarter Ended March 31, 2019 . (Attachment No. 13) page 241.
2. ***Recommendation to Commit up to \$50 Million Dollars in AxInfra NA II LP, an Open-Ended Infrastructure Fund Specializing in U.S. and Canadian Energy and Transportation Assets.** (Attachment No. 14) page 290.
 - a. ***Resolution 2019-39.** (Attachment No. 15) page 329.
3. ***Recommendation to Rebalance ATRS Timber Holdings Managed by BTG Pactual by Exchanging Certain ATRS Timber Holdings for Shares of the BTG Pactual Open Ended Core US Timberland Fund, LP, a Timber Fund Focused on Long-Term Commercial Timber Properties.** (Attachment No. 16) page 330.
 - a. ***Resolution 2019-40.** (Attachment No. 17) page 345.

D. Private Equity Consultant Report.

1. Preliminary Private Equity Portfolio Review for the Quarter Ended June 30, 2019. (Attachment No. 18) page 347.
2. Emerging Manager Report for Fiscal Year Ended June 30, 2019. (Attachment No. 19) page 399.
3. ***Recommendation to Commit up to \$30 Million Dollars in Clearlake Capital Partners VI, L.P. a Private Equity Fund that Makes Opportunistic Debt and Equity Investments in Middle Market Companies Undergoing Change and/or are in Underserved Industries or Markets in North America.** (Attachment No. 20) page 406.
 - a. ***Resolution 2019-41.** (Attachment No. 21) page 427.

XII. Operations Committee Report.

- A. Open Forum for Potential Rule or Law Changes by Committee Members and Board Members Present.

* Action Item

1. Open Forum.

B. ***Rule Change: Rule 1 - Board Governance.** (Attachment No. 22) page 428.

C. ***Potential Rule Changes.**

1. ***Rule 6 - Membership Rules.** (Attachment No. 23) page 439.

2. ***Rule 7 - Reporting and Eligibility.** (Attachment No. 24) page 452.

3. ***Rule 8 - Purchases and Refunds.** (Attachment No. 25) page 462.

4. ***Rule 9 - Retirement and Benefits.** (Attachment No. 26) page 469.

6. ***Rule 11 - Survivors and Domestic Relations Orders.** (Attachment No. 27) page 483.

XIII. ***Staff Reports.**

A. ***Medical Committee Reports. A Total of 33 Disability Retirement Applications Approved.** (Attachment No. 28) page 492.

XIV. ***Adjourn.**

EXECUTIVE SUMMARY

TO: Board of Trustees
FROM: ATRS Staff
RE: Executive Summary
DATE: October 7, 2019

- VII. 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.
- VIII. Report of Employer Interest and Penalties 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. No employer interest and penalties were waived for this reporting period. This is a standard report for information and is not an action item.
- IX. Manifest Injustice Report.** The Manifest Injustice Committee reviewed one (1) claim this reporting period. A copy of the report is included in the Board packet. The rule on Manifest Injustice requires reports to the Board at least two times per year. This is the first report of 2019. If the ATRS Trustees would like a different format or reporting process, just let ATRS staff know. This Manifest Injustice report is for information and is not an action item.
- X. Manifest Injustice for Board Approval.**
- A. In Re: Sandra Ledbetter MI-2018-006.** Sandra Ledbetter has been an employee of the Little Rock School District (LRSD) since 1991. For six (6) years, from fiscal year 1995 to fiscal year 2000, the LRSD failed to report her employment and did not pay the employer contributions for her noncontributory service. As a result, Ms. Ledbetter's record is missing six (6) years of noncontributory service. The LRSD has certified Ms. Ledbetter's salary and service for the years from 1995 to 2000. The manifest injustice committee met and found that a manifest injustice has occurred. A.C.A 24-7-205(d) allows ATRS to correct an error in a member's record beyond the 5 year look-back period in the event of a manifest injustice. However, to correct Ms. Ledbetter's record, the

employer contributions in the amount of \$19,437.47 must be paid to ATRS. A.C.A. 24-7-411(a) requires ATRS to impose an interest penalty that ranges from 6% to 8% for the years in question. A large amount of interest (\$61,928.53) has been assessed as a result of the 20 years that has passed since the initial unreported service. A.C.A. 24-7-411(c) allows the Board to waive interest if the employer delinquency was not the result of intentional nondisclosure, fraud or misrepresentation and that under the circumstances the payment would be unduly penal, or burdensome. Since executive staff only has authority to waive up to \$5,000, ATRS staff has placed this item on the agenda. ATRS has no evidence that the failure to report and remit employer contributions on Ms. Ledbetter's service was the result of an intentional nondisclosure, fraud or misrepresentation. Given that the initial failure to report the service occurred over 20 years ago, the amount of interest due could be considered unduly penal and burdensome. In the past ATRS has waived the interest associated with errors in reporting employer matching contributions. Executive Staff recommends the waiver of the \$61,928.53 interest due in the effort to finally resolve the errors in Ms. Ledbetter's record. **This is an action item.**

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

A. Arkansas Related and Investment Update

1. List of Fund Closings

- a. **DW Healthcare Partners V, LP, a Private Equity Buyout Fund that Invests in Expansion Stage Companies in the Healthcare Sector with Imminent Need, the Board Authorized Commitment of up to \$30 Million Dollars on April 1, 2019 was Accepted and Closed on July 22, 2019.** The ATRS full commitment of \$30 million dollars was negotiated, accepted, and closed on July 22, 2019.
- b. **Rockwood Capital Real Estate Partners Fund XI, L.P., a Closed End Value Added Real Estate Fund that Invests in Value Added Office, Apartment, Retail, and Hotel Properties Across Multiple Regions in the U.S., the Board Authorized Commitment of up to \$40 Million Dollars on April 1, 2019 was Accepted and Closed on June 14, 2019.** The ATRS full commitment of \$40 million dollars was negotiated, accepted, and closed on June 14, 2019.

- c. **Walton Street Real Estate Debt Fund II, L.P., a Closed End Value Added Real Estate Debt Fund that Invests in a Diversified Portfolio of Higher Yielding Commercial Real Estate Debt Investments, the Board Authorized Commitment of up to \$40 Million Dollars on April 1, 2019 was Accepted and Closed on May 17, 2019.** The ATRS full commitment of \$40 million dollars was negotiated, accepted, and closed on May 17, 2019.
 - d. **Franklin Park Venture Fund Series 2019, L.P. a Fund of Funds Managed by Franklin Park Investing in Venture Capital Private Equity Funds, the Transfer of the Commitment of up to \$30 Million Dollars from the Franklin Park Venture Capital Access Fund, L.P. to the Franklin Park Venture Fund Series 2019 Authorized by the Board on June 3, 2019 was Accepted and Closed on June 25, 2019.** The ATRS full commitment of \$30 million dollars was negotiated, accepted, and closed on June 25, 2019.
 - e. **Franklin Park Corporate Finance Access Fund, L.P., a Fund of Funds Managed by Franklin Park Investing in Smaller Buyout, Growth, and Turnaround Private Equity Funds, the Transfer of the Commitment of up to \$30 Million Dollars from the ATRS/FP Private Equity Fund to the Franklin Park Corporate Finance Access Fund Authorized by the Board on June 3, 2019 was Accepted and Closed on July 31, 2019.** The ATRS full commitment of \$30 million dollars was negotiated, accepted, and closed on July 31, 2019.
 - f. **JFL Equity Investors V, L.P., a Private Equity Buyout Fund that Invests in the Defense, Aerospace and Maritime Industries and Related Businesses, the Board Authorized Commitment of up to \$30 Million Dollars on June 3, 2019 was Accepted and Closed on June 26, 2019.** The ATRS full commitment of \$30 million dollars was negotiated, accepted, and closed on June 26, 2019.
2. **Programs Being Unwound by the Fund Managers.** The Board approved Franklin Park and Circumference Group to manage funds

that include appraisal rights at the February 5, 2018 meeting. Appraisal rights can be used to protect minority shareholders during the conversion of publicly held companies to private equity companies.

Franklin Park was approved to expand the strategy of the existing ATRS/FP Fund to include appraisal rights and Circumference Group was approved to start a new fund, the CG Equity Opportunity Fund. Both funds use committed capital for investment opportunities and the committed capital is only funded when the fund manager identifies an investment opportunity. Since the Board approved these strategies 2018, the opportunity set has been decreasing due to changing economic conditions.

Franklin Park and Circumference Group have recently approached ATRS staff and both firms believe the best course is to unwind the appraisal rights strategies they manage for ATRS due to the changing environment and decreasing opportunity set. Since limited capital had been called for the strategy the unwinding process for Circumference Group was completed in July and the process to unwind the Franklin Park allocation is expected to be completed soon.

B General Investment Consultant

- 1. Performance Report for the Quarter Ended June 30, 2019.** P.J. Kelly of Aon Hewitt Investment Consulting will provide the Board with a portfolio update for the quarter ending June 30, 2019.
- 2. Preliminary Performance Report for the Month Ended August 31, 2019.** P. J. Kelly of Aon Hewitt Investment Consulting will provide the Board with a preliminary portfolio update for the month ending August 31, 2019.
- 3. Emerging Manager Report for Fiscal Year Ended June 30, 2019.** P.J. Kelly of Aon Hewitt Investment Consulting (AHIC) will provide the Board with a report of AHIC's manager research process, including coverage of emerging managers, and provide an update on due diligence activities on emerging managers conducted on behalf of ATRS for the fiscal year ended June 30, 2019.

4. **Recommendation to Commit up to an Additional \$30 Million Dollars in Aeolus Catastrophe Keystone PF Fund, LP, an Opportunistic/Alternative Reinsurance Fund Specializing in Property Catastrophe Insurance Coverage.** This is the fifth recommendation on investing with Aeolus, after a recommendation of up to \$110 million dollars was approved in 2015, a recommendation of up to \$37 million dollars was approved in 2016, a recommendation of up to \$110 million dollars was approved in 2017, and a recommendation of up to \$70 million dollars was approved in 2018.

Aeolus Reinsurance, based in Bermuda, was founded in 2006 by Peter Appel and David Eklund. This firm was seeded by large investors, such as Bank of America and Merrill Lynch, and successfully provided global catastrophic protection to the reinsurance market for several years. In 2011 the founders transformed the firm into Aeolus Capital Management in order to raise capital from other third party investors to provide additional flexibility in deploying capital. The fund, Aeolus Property Catastrophe Keystone PF Fund, LP, seeks to use highly customized portfolios based on actuarial projections concerning catastrophic events, such as hurricanes, to provide returns that are not usually correlated to other asset classes. The fund is expected to yield a gross return of the Treasury bill rate plus 15%. Reinsurance and retrocession markets underwrite in two seasons, January 1st and June 1st.

The Board authorized commitment of up to \$110 million dollars in the fund at the October 5, 2015 meeting was for the January underwriting season. The Board authorized commitment of up to \$37 million dollars in the fund at the April 4, 2016 meeting was for the June underwriting season. The Board authorized commitment of up to \$110 million dollars at the November 13, 2017 meeting was split with \$50 million dollars added to the January 2018 underwriting season and \$60 million dollars made available to cover larger than normal holdbacks across the prior tranches to maintain the appropriate ATRS investment allocation to each tranche. The Board authorized commitment of up to \$70 million dollars at the December 17, 2018 meeting was intended to be allocated across the January 2019 and June 2019 tranches or other future renewals.

Both Aon Hewitt Investment Consulting and ATRS staff recommend an additional allocation of up to \$30 million dollars to Aeolus Property Catastrophe Keystone PF Fund, LP. The expected use of

the additional allocation is for the January 2020 renewal tranche and other future renewals. Because of hurricanes during the recent underwriting seasons, Aeolus is reserving more funds than usual to deal with any potential claims. The \$30 million dollar additional commitment is needed this year for two reasons. The first reason is to take advantage of the current opportunity for increased expected returns. The premiums that create profits for Aeolus are expected to increase due to claims created by the recent hurricanes. The second reason is the higher than usual level of claims creates a need to reserve additional funds that would normally be released to investors in time for investment in the upcoming January tranche. The additional allocation of \$30 million dollars is intended to deal with the timing issue between reserves for potential claims, and the timing required to fund other upcoming underwriting seasons. Similar to the prior investments in Aeolus, the draft resolution for this additional allocation also allows for recallable distributions.

If approved, the additional funds can be used by ATRS to help reach the recommended allocations for upcoming renewal periods. Investment in reinsurance funds will help ATRS to continue to add diversification to the ATRS portfolio and help reduce the reliance on the traditional stock and bond markets.

C. Real Assets

- 1. Performance Report for the Quarter Ended March 31, 2019.** Chae Hong and Iftikhar Ahmed of Aon Hewitt Investment Consulting will provide the Board with a performance report for the quarter ending March 31, 2019.
- 2. Recommendation to Commit up to \$50 Million Dollars in AxInfra NA II LP, an Open-Ended Infrastructure Fund Specializing in U.S. and Canadian Energy and Transportation Assets.** The fund typically seeks to invest in Canadian and U.S. mid-sized assets defined as requiring equity investments of \$15 million dollars to \$75 million dollars in energy assets (such as power generation, renewables, transmission and distribution systems, pipelines, and gas collection), transportation assets (such as roads, bridges, airports, seaports, and mass transit systems), and social infrastructure assets (such as hospitals, schools, courthouses, and other institutional buildings). The strategy will invest in a mix involving both operations of existing infrastructure assets and new infrastructure assets.

The fund is managed by Axiom Infrastructure. Headquartered in Montréal, Canada with offices in Toronto, Vancouver, and New York, Axiom is a specialist infrastructure investment firm that has approximately \$2.7 billion dollars in total assets under management across two funds, a closed-ended infrastructure fund and an open-ended infrastructure fund. Axiom Infrastructure is an employee owned, independent firm with employees owning 85% of the company and Maxsa Holding (a passive financial investor) owning the remaining 15%. The Axiom Infrastructure investment team is led by Pierre Anctil, Stephane Mailhot, Juan Caceres and Thierry Vandal and is comprised of 19 investment professionals and 10 asset management professionals, indicating a good mix of complementary skill sets across investment, finance, and asset management as well as engineering and operational functions.

Both ATRS staff and Aon Hewitt Investment Consulting recommend an investment of up to \$50 million dollars in AxInfra NA II, LP.

3. **Recommendation to Rebalance ATRS Timber Holdings Managed by BTG Pactual by Exchanging Certain ATRS Timber Holdings for Shares of the BTG Pactual Open Ended Core US Timberland Fund, LP, a Timber Fund Focused on Long-Term Commercial Timber Properties.** ATRS has invested in timber assets since 1998 through a Timberland Investment Group (TIG). The TIG was originally owned by Wachovia Bank, who sold it to Regions Bank in 2004. Regions Bank sold TIG to BTG Pactual in June of 2013. BTG Pactual is the current owner of TIG and is the company responsible for the management of timber assets owned by ATRS. Gerrity Lansing is the Head of TIG and David Cassels is the Portfolio Manager.

As part of an effort to diversify geographically, improve liquidity, and increase returns TIG has proposed exchanging a portion of ATRS directly held timber properties for shares of BTG Pactual Open Ended Core US Timberland Fund, LP ("OEF"). The current ATRS timber assets are primarily located in the South. OEF has diversified holdings which include the Pacific Northwest. The Pacific Northwest is expected to provide quality returns and along with other OEF holdings will increase geographic diversity in the ATRS timber portfolio.

If approved ATRS would contribute approximately \$184 million dollars' worth of directly held timber for a similar amount of shares in OEF. The exact dollar amount would be based on upcoming appraisals but the proposed contribution would include all or part of the following properties: Bear Island and GP/Dinwiddle in Virginia,

CNC in North and South Carolina, and Gilman II in Florida. Remaining ATRS owned timber properties not exchanged for shares in OEF including the timber assets located in Arkansas, the TKY hardwoods property located in Tennessee and Kentucky, the Four Corners property in Wisconsin, and the Huber property in Tennessee would continue to be held in a separate account for ATRS and managed by BTG Pactual.

The remaining directly held property listed above would have a value of approximately \$148 million dollars. The proposed rebalanced combination of directly held properties, ATRS owned shares of OEF (approximately \$184 million dollars), and any loans associated with timber investments would have a value of approximately \$332 million dollars. This amount is similar to the value of the current ATRS timber portfolio. The proposed rebalancing is intended to add diversification, liquidity, and performance to the ATRS portfolio without directly creating a decrease in the value of the ATRS timber portfolio or increase in TIG management fees.

Both ATRS staff and Aon Hewitt Investment Consulting recommend rebalancing the timber portfolio by exchanging certain ATRS timber holdings for shares of the BTG Pactual Open Ended Core US Timberland Fund, LP.

D. Private Equity Consultant Report. *Franklin Park*

- 1. Preliminary Private Equity Portfolio Review for the Quarter Ended June 30, 2019.** Michael Bacine of Franklin Park will provide the Board with a preliminary portfolio review for the quarter ending June 30, 2019.
- 2. Emerging Manager Report for Fiscal Year Ended June 30, 2019.** Michael Bacine of Franklin Park will provide the Board with a report of Franklin Park's manager research process, including coverage of emerging managers, and provide an update on due diligence activities on emerging managers conducted on behalf of ATRS for the fiscal year ended June 30, 2019.
- 3. Recommendation to Commit up to \$30 Million Dollars in Clearlake Capital Partners VI, L.P. a Private Equity Fund that Makes Opportunistic Debt and Equity Investments in Middle Market Companies Undergoing Change and/or are in Underserved Industries or Markets in North America.** Based in Santa Monica, California, Clearlake Capital was formed in 2007 by

Steve Chang, Jose Feliciano and Behdad Eghbali with sponsorship by Reservoir Capital. As of April 2017, Reservoir no longer has a stake in the general partner. The fund is now managed by Messrs. Feliciano and Eghbali as well as Prashant Mehrota and Colin Leonard (partners) who are supported by fifteen investment professionals. The partners have an average of over nine years of experience each with the general partner and sixteen years each in the private equity industry.

Clearlake makes both debt and equity investments in companies undergoing significant change or that are in underserved industries or markets. These investment opportunities often involve bankruptcies, restructurings and turnarounds. They may also involve companies that are experiencing legal or regulatory challenges or challenges meeting growth plans. The fund will focus primarily on the industrials and energy, software and technology-enabled services, and consumer sectors.

The Board approved a \$30 million dollar commitment to Clearlake Capital V, L.P. at the September 25, 2017 meeting. Clearlake V is still maturing but on track to perform well. The firm has generated a net IRR in excess of 30% on its previous four funds and is targeting a net return above 20% for Clearlake VI. Both Franklin Park and ATRS staff recommend an investment of up to \$30 million dollars in Clearlake Capital VI, L.P.

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

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

- 1. Open Forum.** This is a standard part of the Committee agenda to allow Committee Members and Board Members in attendance to address topics and issues for consideration.

B Potential Rule Changes from Rule to Board Policy. Rules 1-1 through 1-19 have been removed for the Administrative Procedures Act (APA) in 2005. These Rules have been reformatted and consolidated into Board Policies. There are a few minor changes regarding the Audit Committee Charter that need to be reviewed and approved. **This is an action item.**

- 1. Board Policy 1: Board Governance**

C. Potential Rule Changes. This batch of potential rules changes is the continuation of a process to consolidate the current 50 individual rules into 15 more comprehensive rules. The consolidation process includes many

cosmetic changes to the rules such as a standard numbering scheme and improved section titles. Along with the consolidation process, rules are modified to include substantive changes due to recent legislative changes and Board actions.

1. Rule 6 - Membership Rules.

Rule 6 is a consolidation of Rules 6-1, 6-1A, 6-1B, 6-2, 6-10, 6-11, and 6-12. A definition of "Administrator" is added as a result of the passage of Act 427 of 2019. A chart is added at the end to illustrate whether a member is contributory or non-contributory depending on when the member joined ATRS.

2. Rule 7: Reporting and Eligibility.

Rule 7 was recently reformatted and consolidated effective August 5, 2019. This new draft incorporates changes required by 2019 legislative action regarding calculation of final average salary and service credit. Other parts were rewritten for ease of understanding.

3. Rule 8: Purchases and Refunds.

Rule 8 allows overpayments of "de minimus" amounts (currently \$25.00) to be credited to the member's account and not refunded, unless requested by the member. Some parts have been rewritten for ease of understanding.

4. Rule 9 - Retirement and Benefits.

Rule 9 is a consolidation of Rules 9-1, 9-2, 9-3, 9-4, 9-7, 9-8, and 9-9. This draft incorporates changes required by 2019 legislative action regarding when an ATRS disability retiree may work for a covered employer without loss of the disability benefit, and the delay of retirement benefits until July 1 when a member has accrued a full year of service credit before the end of the fiscal year.

5. Rule 10 - T-DROP and Return to Service.

Rule 10 incorporates changes required by 2019 legislative action regarding calculation of plan deposits for T-DROP and early participants. It also changes the definition of "Early participant" consistent with Act 296 of 2019.

6. Rule 11 - Survivors and Domestic Relations Orders.

Rule 11 is a consolidation of Rules 11-1, 11-2, 11-3, and 11-5. It also incorporates changes required by 2019 legislative action regarding eligibility of surviving dependent children up to age 23 to receive a dependent child benefit, and clarifies that if the member's

highest salary year occurs in the year the member died, the dependent child benefit will be calculated using that full year of salary.

XIII. Staff Reports.

- A. Medical Committee Reports. A Total of 33 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 54 disability applications were received, 33 were approved, 13 were denied, and 8 needed more information. **This is an action item.**

XIV. Other Business.

XV. Adjourn.

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

**Monday, June 3, 2019
11:00 a.m.
1400 West Third Street
Little Rock, AR 72201**

ATTENDEES

Board Members Present

Jeff Stubblefield, Chair
Danny Knight, Vice Chair
Dr. Richard Abernathy
Anita Bell
Lloyd Black
Kelly Davis
Susannah Marshall, designee for Candace Franks
Johnny Key*
Hon. Andrea Lea
Bobby Lester
Jason Brady, designee for Dennis Milligan
Deborah Thompson
Janet Watson*

Board Members Absent

Kathy Clayton
Robin Nichols

Reporters Present

Mike Wickline, AR Dem Gaz

**via telephone*

ATRS Staff Present

Clint Rhoden, Executive Director
Rod Graves, Deputy Director
Tammy Porter, Ex. Assistant/Board Secretary
Curtis Carter, Chief Fiscal Officer
Dena Dixson, Internal Audit Risk Mgmt.
Mitzi Ferguson, Internal Audit/Risk Mgmt.
Vicky Fowler, HR Manager
Laura Gilson, General Counsel
Wayne Greathouse, Assoc. Dir. of Investments
Jerry Meyer, Manager, Real Assets
Martha Miller, Staff Attorney
Joseph Sithong, Software Support Analyst
Leslie Ward, Manager, Private Equity
Brenda West, Internal Audit/Risk Mgmt.

Guest Present

Donna Morey, ARTA
Chip Martin, Newly Elect BOT
Jay Wills, APERS
Duncan Baird, APERS
PJ Kelly, AHIC
Katie Comstock, AHIC
Lura Campbell, ARTA
Bob Thompson, ARTA

- I. **Call to Order/Roll Call.** Mr. Jeff Stubblefield, Chair, called the Board of Trustee meeting to order at 11:00 a.m. Roll call was taken. Ms. Kathy Clayton and Ms. Robin Nichols were absent.

Mr. Stubblefield reminded the Board about the Trustee Workshop on Friday, July 19, 2019.

Mr. Stubblefield introduced and welcomed Mr. Chip Martin. Mr. Martin is the newly elected Trustee for Position 3 and will take office on July 1, 2019.

Mr. Stubblefield told the Board that Jerry Meyer would give tours of the 2nd floor after the Board meeting to see the newly renovated offices.

II. Motion to Excuse Absences.

Mr. Knight *moved to excuse Ms. Clayton and Ms. Nichols from the June 3, 2019, Board of Trustees meeting. Ms. Bell seconded the motion, and the Board unanimously approved the motion.*

III. Adoption of Agenda.

Ms. Thompson *moved for adoption of the Agenda. Mr. Lester 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. June 6, 2016 - Corrected Minutes.

Ms. Davis *moved for approval of the Corrected Minutes of the Board of Trustees meeting of June 6, 2016. Auditor Lea seconded the motion, and the Board unanimously approved the motion.*

B. April 1, 2019 Minutes.

Mr. Brady *moved for approval of the Minutes of the Board of Trustees meeting of April 1, 2019. Ms. Bell seconded the motion, and the Board unanimously approved the motion.*

C. April 29, 2019 Minutes.

Mr. Lester *moved for approval of the Minutes of the Board of Trustees meeting of April 29, 2019. Mr. Brady seconded the motion, and the Board unanimously approved the motion.*

VI. 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. 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 was a standard report for information and was not an action item.

VII. 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. No employer interest and penalties was waived for this reporting period. This was a standard report for information and was not an action item.

VIII.

IX. Audit Committee Report. Kelly Davis, Chair, gave a report on the Audit Committee Meeting.

A. Internal Audit Department Charter. Mitzi Ferguson discussed the Internal Audit Department Charter. This was approved by the Audit committee and the Board of Trustees on June 6, 2016. However, the approval was not reflected in the Minutes of the June 6, 2016 minutes. The approval of the minutes above corrected the scrivener's error. For completeness, the Committee was asked to approve the Internal Audit Department Charter.

Ms. Davis moved to approve Internal Audit Department Charter, and the Board unanimously approved the Motion.

B. Audit Committee Charter. In the April 1, 2019 committee meeting, IA presented the Committee with changes to the Audit Committee Charter. In response to questions from the Committee, IA and the legal department made some additional changes. Those changes were presented to the Committee for approval and presentation to the Board. After discussion, the Committee recommends tabling approval of the Audit Committee Charter until staff can make some changes.

Auditor Lea moved to approve tabling the Audit Committee Charter. Ms. Marshall seconded the motion and the Board unanimously approved the Motion.

- C. Reappointment of Audit Committee At-Large Member.** In the April 1, 2019 Board of Trustees meeting, the Board approved extending the service term of At-Large members to include two (2) full four (4) year terms. Ricky Quattlebaum, who is at the end of his first 4-year term, is now eligible to serve an additional full 4-year term. Mr. Quattlebaum's knowledge and experience in accounting and internal auditing have made him invaluable to the Audit Committee and the Internal Audit Department. Therefore, it is requested that his services be retained.

Ms. Davis moved to approve Reappointment of Audit Committee At-Large Member Ricky Quattlebaum, and the Board unanimously approved the Motion.

- D. Internal Audit Report: Disability Benefits.** Dena Dixon provided the Committee with the Internal Audit Report regarding disability benefits. The objectives of the audit were to determine eligibility for disability benefits in accordance with ATRS laws, rules and procedures, determine effective date and benefits for disability members were calculated accurately and consistently, to evaluate internal controls surrounding the calculation of disability benefits, and to determine requirements related to Social Security determination and continuation of disability benefits. Ms. Dixon explained each of the findings, along with the recommendation and Staff response. Auditor Lea asked if there was a goal or timeframe to get the findings resolved. Director Rhoden explained findings were put on an action list and will be addressed before re-review. He also explained that in future audits and findings, a target date will be set.
- E. 2019–2020 Internal Audit Plan.** As required by the International Standards for the Professional Practice of Internal Auditing issued by the Institute of Internal Auditors (IA), and by Arkansas Teacher Retirement Systems (ATRS) Internal Audit Charter, IA submit the following Internal Audit Plan for the Internal Audit Fiscal Year 2020. Projects were identified for this audit plan by using the ATRS risk assessment. 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. Choices were made in determining which audits to perform first by determining which areas posed greater risks for the system. IA have selected areas of processes for review where failure of the system to adequately perform could have serious consequences for ATRS, its members and stakeholders, and the Board. The proposed audit plan was presented

to the Committee. Copies of the Conflict of Interest Statements and Code of Ethics Acknowledgement Statements for Internal Audit staff were also presented to the Committee along with the FY2019 Summary of Work Completed.

Ms. Davis moved to approve 2019–2020 Internal Audit Plan, and the Board unanimously approved the Motion.

X. Investment Committee Report. Danny Knight, Vice 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.

1. Recommendation to Provide Staff Authority to Negotiate Refinancing of American Center in Nashville, TN. In December of 2000 ATRS partnered with Cooper Communities, Inc. (Cooper) for the purpose of purchasing American Towers located at 3100 West End, Nashville, TN, for \$71 million dollars. ATRS contributed approximately \$17 million dollars for 80% ownership and Cooper contributed approximately \$4 million dollars for 20% ownership with the balance being debt of approximately \$50 million dollars.

The approximate \$50 million dollar debt at the time of purchase in 2000 was refinanced with AIG in 2006. The terms of the 2006 refinancing included a 15 year loan of \$66 million dollars with a 25 year amortization period and an interest rate of 7.04%. The additional loan amount in 2006 of approximately \$16 million dollars was used for a stream of payments to ATRS totaling approximately \$10 million dollars over time with the remainder being used for tenant improvements and upgrades intended to increase the value of the property.

The 2006 refinancing debt is coming due in the near future and current favorable interest rates make another refinancing economically attractive. The 7.04% interest rate obtained from the refinancing in 2006 was considered to be a good rate at the time but current rates are lower and another refinancing could produce significant savings and another cash payout to ATRS. The 2006 refinancing also contained prepayment penalties which effectively economically prevented refinancing for a period of time. Now that the loan is closer to maturity the prepayment penalty has been reduced and the potential savings

from available lower interest rates should help offset any remaining prepayment penalties over time.

The proposed refinancing would result in a payout to ATRS of approximate \$17.6 million dollar as well as an approximate 9% IRR from the 2000 purchase date to the 2019 refinancing. ATRS will realize another 9% IRR from the 2019 refinancing date to the 2029 maturity date assuming historical occupancy and rent growth.

Both Aon Hewitt Investment Consulting and ATRS staff recommend providing staff authority to negotiate and execute the refinancing of American Center.

Mr. Knight *moved to adopt Resolution 2019-26, to Provide Staff Authority to Negotiate Refinancing of American Center in Nashville, TN. The Board unanimously adopted the Resolution.*

2. List of Fund Closings.

- a. **American Industrial Partners Capital Fund VII, L.P., a Private Equity Buyout, Turnaround and Distressed Debt Fund that will Target Middle Market Underperforming Companies in the Industrial Sector, the Board Authorized Commitment of up to \$30 Million Dollars on February 4, 2019 was Accepted and Closed on March 29, 2019.** The ATRS full commitment of \$30 million dollars was negotiated, accepted, and closed on March 29, 2019.
- b. **Arlington Capital Partners V, LP, a Private Equity Buyout Fund Specializing in Small to Lower Mid-Market Companies in the U.S. with Imminent Need, the Board Authorized Commitment of up to \$30 Million Dollars on April 1, 2019 was Accepted and Closed on May 3, 2019.** Due to high demand for this fund, ATRS received a smaller allocation by the General Partner than requested. A commitment of \$25 million dollars was negotiated, accepted, and closed on May 3, 2019.
- c. **Blackstone Real Estate Partners Europe VI, SCSp, a Closed End Opportunistic Real Estate Fund that Acquires Distressed and Undermanaged European**

Properties at Below Market Prices and Executes Business Plans that Seek to Creating Core Real Estate Assets with Imminent Need, the Board Authorized Commitment of up to €44 Million Euros (Approximately the Equivalent of \$50 Million Dollars) on April 1, 2019 was Accepted and Closed on April 30, 2019. The ATRS full commitment of €44 million euros (approximately the equivalent of \$50 million dollars) was negotiated, accepted, and closed on April 30, 2019.

3. Total Equity Rebalancing Update and Recap.

- a. **The Board Authorized Redeployment of the Assets Formerly Managed by Daruma Capital Management to the Existing AllianzGI Structured Alpha Global Equity 350 L.L.C. Fund and the Existing BlackRock MSCI ACWI IMI Index Fund A on April 1, 2019 was Successfully Completed on May 13, 2019.** The Board authorized redeployment of assets formerly managed by Daruma to the existing Allianz GI Structured Alpha Global Equity 350 fund and the existing BlackRock MSCI ACWI IMI fund was successfully completed on May 13, 2019.
- b. **The Board Authorized Redeployment of Assets Managed by Pershing Square Capital Management, L.P., by Closing the Pershing Square International Ltd Fund and Redeploying the Assets to the Existing BlackRock MSCI ACWI IMI Index Fund A on April 1, 2019 was Initiated April 9, 2019.** Due to fund guidelines and redemption notification requirements, the Board authorized redeployment of assets managed by Pershing Square Capital Management in the Pershing Square International fund is expected to be completed by mid-2021.

Rod Graves provided the Committee with an update on Big River Steel (BRS). Mr. Graves reported that Phase II was recently fully financed with ATRS using capital returned from prior BRS related investments to fund the ATRS pro rata portion of Phase II.

B. General Investment Consultant Report.

1. **Preliminary Performance Report for for the Quarter Ended March 31, 2019.** PJ Kelly and Katie Comstock of Aon Hewitt Investment Consulting provided the Committee with a preliminary performance report for the quarter ending March 31, 2019. The ATRS fund had a market value of approximately \$17.2 billion dollars. The total fund had a return of 8.5% since inception, performing at its benchmark of 8.5%. Total equity had a market value of approximately \$9.1 billion dollars. Total equity had a return of 7.7% since inception, underperforming its benchmark of 8.2%.
2. **Preliminary Performance Report for the Month Ended April 30, 2019.** P. J. Kelly and Katie Comstock of Aon Hewitt Investment Consulting provided the Committee with a preliminary portfolio update for the month ending April 30, 2019. The ATRS fund had a market value of approximately \$17.4 billion dollars. The total fund had a return of 8.5% since inception, performing at its benchmark of 8.5%. Total equity had a market value of approximately \$9.3 billion dollars. Total equity had a return of 8.6% since inception, underperforming its benchmark of 9.0%.

C. Real Asset Consultant Report.

1. **Performance Report for the Quarter Ended December 31, 2018.** Chae Hong of Aon Hewitt Investment Consulting provided the Committee with a performance report for the quarter ending December 31, 2018. NCREIF's NPI registered at 1.4% and NFI-ODCE (net) returned 1.5% for the quarter. In the fourth quarter of 2018, the NFI-ODCE (net) returned 1.5%, down 40 bps quarter-over-quarter. NFI-ODCE returns are holding up well despite the maturity of the real estate cycle. Quarterly returns continue to moderate towards the long-term average with net income being a larger driver of the total return. NCREIF Farmland Index returned 2.9% for the quarter, up 160 bps from the prior quarter. Permanent and row crops notches similar performance at approximately 1.3% each. NCREIF Timberland Index returned 1.0% for the quarter. The NTIs trailing one year return was 3.4% and driven primarily by an income return of 3.2% while appreciated returned 0.7%. Regionally, the Northwest remains the NTIs top performer while the U.S. Lakes region lagged.

D. Private Equity Consultant Report.

1. **Private Equity Portfolio Review for the Quarter Ended December 31, 2018.** Michael Bacine of Franklin Park provided the Committee with a portfolio review for the quarter ending December 31, 2018. The ATRS Legacy Portfolio is in the liquidating stage and has a remaining value of less than 0.1% of the ATRS private equity portfolio with a total IRR of 9.2%. CSFB Portfolio is also liquidating and will continue to see distributions. CSFB has a remaining value of 8.4% of the ATRS private equity portfolio with a net IRR of 8.8%. The Post 2006 Portfolio represents 2/3 of the ATRS private equity portfolio and will continue to grow as more commitments to capital are made. The Post 2006 Portfolio has a net IRR of 15.2%. The total fund had a net IRR of 10.8% for the quarter ended December 31, 2018.

2. **Recommendation to Commit up to \$30 Million Dollars in JFL Equity Investors V, L.P., a Private Equity Buyout Fund that Invests in the Defense, Aerospace and Maritime Industries and Related Businesses.** J.F. Lehman & Company, the general partner of JFL Equity Investors IV, was founded in 1992 to provide financial advisory services to companies in the defense and aerospace sectors. The advisory business ended in 1997 when the firm formed its first institutional private equity partnership. The firm has a history of successful investments in the defense, aerospace and maritime industries primarily in the United States. Based in New York, with satellite offices in Washington, D.C. and London, the firm is led by John Lehman, Louis Mintz, Stephen Brooks and Alexander Harman who average 19 years of experience together. ATRS is currently invested in the firm's third and fourth fund. Similar to the previous four funds, this fund will make control investments in small to lower middle market companies that are either founder-owned or part of a corporate divestiture. The types of companies targeted for acquisition will generally be suppliers to the government or commercial markets and will typically be under-managed, carry excess costs or suffer from insufficient resources.

The general partner's experienced and cohesive management team with its specialized knowledge and relationships in the defense, aerospace and maritime industries as well as its

overall solid track record make JFL Equity Investors V an attractive investment. The average performance of the previous three funds is approximately 30% gross IRR. There are some risks in the focus sectors of the fund such as government regulation and dependency on federal and state budgets; however, the team will seek to mitigate those risks by targeting businesses with diverse revenue sources and those in high priority areas of government spending.

Both Franklin Park and ATRS staff recommend an investment in JFL Equity Investors V, L.P. with a commitment of up to \$30 million dollars.

Mr. Knight *moved to adopt* Resolution 2019-27, to Commit up to \$30 Million Dollars in JFL Equity Investors V, L.P., a Private Equity Buyout Fund that Invests in the Defense, Aerospace and Maritime Industries and Related Businesses. The Board *unanimously adopted the Resolution.*

3. **Recommendation to Transfer the Commitment of up to \$30 Million Dollars to the Franklin Park Venture Capital Access Fund, L.P. that was Authorized by the Board on December 3, 2018 to the Franklin Park Venture Fund Series 2019, L.P. a Fund of Funds Managed by Franklin Park Investing in Venture Capital Private Equity Funds.** In December, the Board approved a commitment of up to \$30 million in the Franklin Park Venture Access Fund, L.P., a new vehicle designed to provide more flexibility to invest in high quality venture funds over a multi-year period. ATRS would serve as an anchor in this new fund with special economic terms (no fees or carried interest). At this time, however, it appears that the new fund will not be able to close until much later in the year. In order to take advantage of ongoing opportunities in the venture space this year, ATRS would need to commit to the Franklin Park Venture Fund Series 2019 instead of the Franklin Park Venture Access Fund that was previously approved.

Both Franklin Park and ATRS staff agree with the recommendation to transfer the \$30 million allocation approved by the Board in December to the Franklin Park Venture Capital Access Fund to the Franklin Park Venture Fund Series 2019, L.P.

Mr. Knight *moved to adopt* Resolution 2019-28, to Transfer the Commitment of up to \$30 Million Dollars to the Franklin Park Venture Capital Access Fund, L.P. that was Authorized by the Board on December 3, 2018 to the Franklin Park Venture Fund Series 2019, L.P. a Fund of Funds Managed by Franklin Park Investing in Venture Capital Private Equity Funds. The Board *unanimously adopted the Resolution.*

4. **Recommendation to Transfer the Commitment of up to \$30 Million Dollars to the ATRS/FP Private Equity Fund that was Authorized by the Board on December 3, 2018 and Closed on March 1, 2019 to the Franklin Park Corporate Finance Access Fund, L.P., a Fund of Funds Managed by Franklin Park Investing in Smaller Buyout, Growth, and Turnaround Private Equity Funds.** In December, the Board approved a commitment of up to \$30 million to the ATRS/FP Private Equity Fund. This fund typically makes co-investments, investments in smaller buyout, growth, and turnaround funds as well as in appraisal rights. The Franklin Park Corporate Finance Access Fund (a fund of funds) was formed recently to allow other small investors to invest in smaller buyout, growth, and turnaround funds going forward. Like the Franklin Park Venture Access Fund, ATRS would essentially be the anchor investor in this fund (with no fees or carried interest) in that we would invest \$30 million through the ATRS/FP Private Equity Fund. Over the years, the ATRS/FP Private Equity Fund has become fairly complicated with the different types of investments and would become more complicated by adding a fund of funds. In order to simplify accounting and monitoring for the ATRS/FP Private Equity Fund, it was recommended that ATRS invest the previously approved \$30 million directly in the Franklin Park Corporate Finance Access Fund.

Both Franklin Park and ATRS staff agree with the recommendation to transfer the \$30 million allocation approved by the Board in December to the ATRS/FP Private Equity Fund to the Franklin Park Corporate Finance Access Fund.

Mr. Knight *moved to adopt* Resolution 2019-29, to Transfer the Commitment of up to \$30 Million Dollars to the ATRS/FP Private Equity Fund that was Authorized by the Board on December 3, 2018 and

Closed on March 1, 2019 to the Franklin Park Corporate Finance Access Fund, L.P., a Fund of Funds Managed by Franklin Park Investing in Smaller Buyout, Growth, and Turnaround Private Equity Funds. The Board *unanimously adopted the Resolution.*

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.

XI. Staff Reports.

A. Medical Committee Reports. Willie Kincade presented the Medical Committee reports. A total of 43 disability applications were received, 31 were approved, 4 were denied, and 8 were needed more information for disability benefits.

Dr. Abernathy moved to approve the Medical Committee Reports. Mr. Lester seconded the motion, and the Board unanimously approved the motion.

B. Security Monitoring RFQs. Director Rhoden gave an update on the security monitoring RFQs.

XIII. Mr. Benard Sulliban gave the Board a presentation on proposed legislation for Board Consideration. Mr. Sulliban passed out a handout for the Board to review. A copy of the handout is attached to the minutes.

XIV. Other Business:

A. Recognition of Retiring Trustees.

Mr. Knight moved to adopt Resolution 2019-32, Commending Ms. Deborah Thompson for her Service to the Arkansas Teacher Retirement System. Ms. Davis seconded

the *motion*, and the Board *unanimously adopted the Resolution*.

Dr. Abernathy *moved to adopt* Resolution 2019-33, Commending Mr. Jeff Stubblefield for his Service to the Arkansas Teacher Retirement System. Mr. Lester *seconded the motion*, and the Board *unanimously adopted the Resolution*.

XV. Adjourn.

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

Meeting adjourned at 12:02 p.m.

Clint Rhoden,
Executive Director

Mr. Danny Knight, Vice Chair
Board of Trustees

Tammy Porter,
Recorder

Date Approved

**MINUTES
ARKANSAS TEACHER RETIREMENT SYSTEM
BOARD OF TRUSTEES-CALLED TELEPHONIC**

**Monday, July 8, 2019
3:30 p.m.
1400 West Third Street
Little Rock, AR 72201**

ATTENDEES

Board Members Present

Danny Knight, Acting Chair
Dr. Richard Abernathy*
Anita Bell*
Lloyd Black*
Kathy Clayton*
Kelly Davis*
Susanna Marshall, designee for Candace Franks*
Auditor Andrea Lea*
Bobby Lester*
Jason Brady, designee for Dennis Milligan*
Robin Nichols*
Janet Watson*

Board Members Absent

Johnny Key
Chip Martin

ATRS Staff Present

Clint Rhoden, Executive Director
Rod Graves, Deputy Director
Tammy Porter, Executive Assistant/Board Chair
Martha Miller, Attorney
Manju, Director, Information Systems

Guest Present

Donna Morey, ARTA
Linda Powell, ARTA

Reporters Present

Mike Wickline, AR Democrat Gazette

- I. **Call to Order/Roll Call.** Mr. Danny Knight, Acting Chair, called the Board of Trustee meeting to order at 3:30 p.m. Voice roll call was taken. Mr. Johnny Key and Mr. Chip Martin were absent.

- II. **Adoption of Agenda**

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

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

- IV. Recognize Vacancy for Position #6 – Administrator (Superintendent).** With his retirement, Mr. Jeff Stubblefield is no longer able to serve as a Trustee in Position 6. The Board, by adoption of Resolution 2019-34, recognized that a vacancy exists

Ms. Bell moved to adopt Resolution 2019-34, Recognize Vacancy for Position #6 - Administrator (Superintendent). Ms. Davis seconded the motion and the Board unanimously adopted the Resolution.

- V. Fulfilment of Vacancy Pursuant to A.C.A. 24-7-302(b)(2).** A.C.A. §24-302 states that if a vacancy occurs in the office of an elected trustee, then the board, by a majority vote, may fill the vacancy by a special election, or appointment of a trustee until the next system election. After discussion by the Board, it was decided to fill the vacancy by appointment. They request that Director Rhoden send an executive director update notifying members of the vacancy and allow people to submit an application to fill the unexpired term of Position #6.

Dr. Abernathy moved to approve the appointment of a Trustee to fill the unexpired term of Position #6 - Administrator (Superintendent). Mr. Lester seconded the motion and the Board unanimously approved the Resolution.

- VI. Appointment of Physician for Medical Committee to review Applications for Disability Retirement.** Mr. Rhoden will present the recommendation for a physician to be appointed to the Medical Committee. Pursuant to A.C.A. §24-7-303(f), the ATRS Board shall appoint physicians to the ATRS Medical Committee to review disability retirement applications. ATRS staff has worked diligently to locate potential physicians to fill the vacant position we currently have on the Medical Committee due to retirements of former physicians.

The recommendation was Dr. Jim Morse. Dr. Morse graduated UAMS Medical School in 1973; Did his medicine internship U of Alabama Medical Center, Birmingham. Al. Internal Medicine Residency at UAMS Little Rock. Was in private practice for over 30 years.

ATRS staff concurs with the recommendation.

Mr. Brady moved to adopt Resolution 2019-35, to appoint Dr. Jim Morse to serve as a member of the ATRS Medical Committee. Dr. Abernathy seconded the motion and the Board unanimously adopted the Resolution.

VII. Other Business. None

VIII. Adjourn.

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

Meeting adjourned at 4:00 p.m.

Clint Rhoden,
Executive Director

Mr. Danny Knight, Acting Chair
Board of Trustees

Tammy Porter,
Board Secretary

Date Approved

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

Wednesday, September 11, 2019

1:45 p.m.

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

ATTENDEES

Board Members Present

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

ATRS Staff Present

Clint Rhoden, Executive Director
Rod Graves, Deputy Director
Tammy Porter, Ex. Asst./Board Secretary
Laura Gilson, General Counsel
Willie Kincade, Assoc. Director of Operations
Manju, Director, Information System
Jerry Meyer, Manager Real Assets
Martha Miller, Staff Attorney
Joseph Sithong, Software Support Analyst

Guest Present

Jorge Perez, Division of Legislative Audit

Board Members Absent

Kathy Clayton
Johnny Key, Education Commissioner

* *via telephone*

- I. **Call to Order/Roll Call.** Mr. Danny Knight, Acting Chair called the Board of Trustees meeting to order at 1:45 p.m. Roll call was taken. Ms. Kathy Clayton and Mr. Johnny Key were absent.

- II. **Adoption of Agenda.**

Mr. Brady moved for adoption of the Agenda. Dr. Abernathy 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. Investment Committee Report. Robin Nichols, Chair, gave a report on the Investment Committee meeting.

- A. Recommendation to Commit up to \$30 Million Dollars in KPS Special Situations Fund V, L.P., a Private Equity Turnaround Fund that will Invest in Large Manufacturing Companies with Solvable Operating and Financial Difficulties.** Mr. Michael Bacine of Franklin Park presented the recommendation to the Committee. ATRS invested in KPS III Supplemental in 2009 and in KPS IV in 2013. Both funds have performed very well with each generating a net IRR greater than 21%. The firm which is headquartered in New York and has an office in Frankfurt, Germany has historically made operational turnaround investments in mid-market and large manufacturing companies. Fund V will focus solely on larger companies while another new KPS fund will invest in middle market companies (see item B. below). The fund will target companies with appreciable potential that have identifiable and solvable operating and financial problems. Many of the deals will arise out of bankruptcy and out-of-court proceedings as well as acquisitions of underperforming non-core assets of large companies.

The KPS senior team is led by four principals, Michael Psaros, David Shapiro, Raquel Palmer and Jay Bernstein who have an average tenure of 24 years with the general partner. The principals are supported by mid and junior investment professionals, business development professionals and a portfolio operations group.

Both Franklin Park and ATRS staff recommend an investment of up to \$30 million in KPS Special Situations Fund V, L.P.

Ms. Nichols moved to adopt Resolution 2019-36, to Commit up to \$30 Million Dollars in KPS Special Situations Fund V, L.P., a Private Equity Turnaround Fund that will Invest in Large Manufacturing Companies with Solvable Operating and Financial Difficulties. The Board unanimously adopted the Resolution.

- B. Recommendation to Commit up to \$30 Million Dollars in KPS Special Situations Mid-Cap Fund, L.P., a Private Equity Turnaround Fund that will Invest in Middle Market Manufacturing Companies with Solvable Operating and Financial Difficulties.** Mr. Michael Bacine of Franklin Park presented the recommendation to the Committee. This fund will be operated in the same manner as KPS Special Situations Fund V, L.P. described above except that it will focus on middle market companies.

Previous KPS funds invested in both large and mid-sized companies and were highly successful with each type. Due to the robust deal flow in both the large and middle market spaces, the general partner has been able to create two separate teams to focus on specific deal sizes. The general partner will bring to bear the same expertise and resources for both funds, and the terms and economics will be the same as well. Both funds are highly sought-after and the general partner will hold only one closing for each fund in early October.

Both Franklin Park and ATRS staff recommend an investment of up to \$30 million in KPS Special Situations Mid-Cap Fund, L.P.

Ms. Nichols *moved to adopt* Resolution 2019-37, to Commit up to \$30 Million Dollars in KPS Special Situations Mid-Cap Fund, L.P., a Private Equity Turnaround Fund that will Invest in Middle Market Manufacturing Companies with Solvable Operating and Financial Difficulties

- V. **Executive Session.** A vacancy exists and the Board has asked for this item to be placed on the agenda. The Board has traditionally gone into Executive Session to discuss an appointment to the Board as allowed by the Arkansas Freedom of Information Act.

Mr. Knight *moved to convene* into Executive Session for the purpose of discussing filling the vacant position on the Board. Ms. Nichols *seconded the motion* and the Board *unanimously approved the motion*.

Mr. Knight, Acting Chair, called the Executive Session of the Board of Trustees to Order at 1:48 p.m.

Mr. Knight, Acting Chair, reconvened the Board of Trustees meeting at 2:10 p.m.

- VI. **Appointment of Trustee to fill Unexpired Term for Member Position No. 6.**

Dr. Abernathy *moved to approve* the Appointment of Mr. Shawn Higginbotham, to fill the Unexpired Term for Member Position No. 6, on the Board of Trustees. Ms. Watson *seconded the motion* and the Board *unanimously approved the motion*.

- VII. **Other Business. None**

- VIII. **Adjourn.**

Mr. Knight *moved to adjourn* the Board of Trustee Meeting. Ms. Watson seconded the *motion*, and the Board Committee *unanimously approved the motion*.

Meeting adjourned at 2:17 p.m.

Clint Rhoden
Executive Director

Mr. Danny Knight, Acting Chair
Board of Trustees

Tammy Porter,
Board Secretary

Date Approved

Waiver of Member Interest 2019

October 7, 2019 Board Meeting

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

<u>Amount</u>	<u>Reason to Waive Interest</u>
\$10.35	Internal request – Interest balance was not communicated to member.
\$19.46	Internal request – Reporting Department changed procedures.
\$11.80	Internal request – Reporting Department changed procedures.
\$10.35	Internal request – Reporting Department changed procedures.

Waiver of Employer Report Penalties 2019
October 7, 2019 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.

Employer Penalties Waived	
Academics Plus Charter School Maumelle, AR	\$450.00
Arkansas Arts Academy Charter Rogers, AR	\$150.00
Earle School District Earle, AR	\$450.00
Forrest City School District Forrest City, AR	\$450.00
Genoa Central School District Texarkana, AR	\$450.00
Imboden Area Charter School Imboden, AR	\$150.00
Vilonia School District Vilonia, AR	\$450.00
Wynne Public School Wynne, AR	\$300.00
Total Employer Penalties Waived	\$2,850.00
Employer Interest Waived	
Earle School District Earle, AR	\$0.39
Forrest City School District Forrest City, AR	\$240.65
Total Employer Interest Waived	\$241.04
Total Employer Penalties & Interest Waived	\$3,091.04

Arkansas Teacher Retirement System
 Board of Trustees Meeting
 October 7, 2019

MIC Claim #	Claimant Type	Facts and Circumstances	Findings and Recommendations of Committee	Executive Director Remedy
2018-015	Option A Beneficiary	Due to an ATRS error, Beneficiary did not receive benefits and the error was not discovered by ATRS until March 2018.	The MI Committee recommends that an overpayment of \$645.22 be waived by the system	ATRS Executive Director concurs with the Recommendation.

Total Members/Interested Parties	2
Total Amount	\$645.22

Arkansas Teacher Retirement System
Board of Trustees Meeting
October 7, 2019



Arkansas Teacher Retirement System | Second Quarter 2019

Quarterly Investment Review

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

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All Investors: Cyber Risk Exposure from Third-party Asset Managers	Link
All Investors: Key Considerations for Responsible Investing Initiatives	Link
All Investors: What is Different about this Commercial Real Estate Cycle?	Link
All Investors: Bank Capital Relief	Link
All Investors: Debating Active vs. Passive	Link
All Investors: The Real Deal	Link
All Investors ex-DC: When Opportunity Knocks Again: Ideas for Incorporating Opportunistic Flexibility Into Asset Allocation	Link
All Investors ex-DC: Why Diversify Now?	Link
All Investors ex-DC: Case Study: Custodian Review Drives Lower Fees for More Services	Link
DC: Case Study: Improving DC Participant Experience	Link
DC: Government, Education, and Utility Sectors Could be fit for an 'Aggressive' Target Date Fund Glide Path	Link
DC: How to Offer 403(b) Participants a Secure Retirement Income	Link
DC: Living the Dream: Aon DC and Financial Wellbeing Employee Survey 2018	Link
DC: Why Target Date Funds Should be Lower Risk for Populations without Defined Benefit Plans	Link
Private DB: Retiree Lump Sum Windows Back on the Table - Navigating Risk Management Options (webinar replay)	Link

Current Topics of Interest and Events

Webinar: Global Perspectives on Real Estate Investing and Townsend View of the World	Replay
Webinar: Global DC and Financial Wellbeing Employee Survey	Replay
Second Quarter 2019 Market Review and Outlook	Link
Newsletters: Pathways Newsletter for Retirement Plans CIO Insights Connections Newsletter for Non-Profits Legal Consulting and Compliance Newsletter	

Thought Leadership Hub

<https://retirement-investment-insights.aon.com/>

Opinions, estimates, forecasts, and statements on financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice. The views and strategies described may not be suitable for all investors. References to specific securities, asset classes, and financial markets are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations.

AHIC's Key Themes for Public Pensions

Environment

- Things are not as bad as the bond market would imply...
- ... but they are not as good as implied by the equity market.
- Both markets are at risk of some disappointment.
- Navigating this environment is difficult. Good areas for consideration include portfolio exposures to risky assets, the extent of diversification, and whether more buffers can be made available to prepare for much more difficult market conditions.

Current Investment Themes

- Equities are looking attractive to rebalance back to target and take advantage of gains for natural cash flow...
- ... but it is not the time to buy large amounts of bonds.
- If allowed by the policy, proceeds from equity sales should be put to work in non-correlated assets. Assets such as Direct Real Estate, Direct Infrastructure, and Non-directional alternative strategies are worth considering.
- Factor investing and the equity insurance risk premia may be attractive complements to traditional active and passive management for equities
- For investors who can tolerate illiquidity, consider including bank capital relief or insurance linked securities, both of which have attractive entry points

Long-Term Strategy

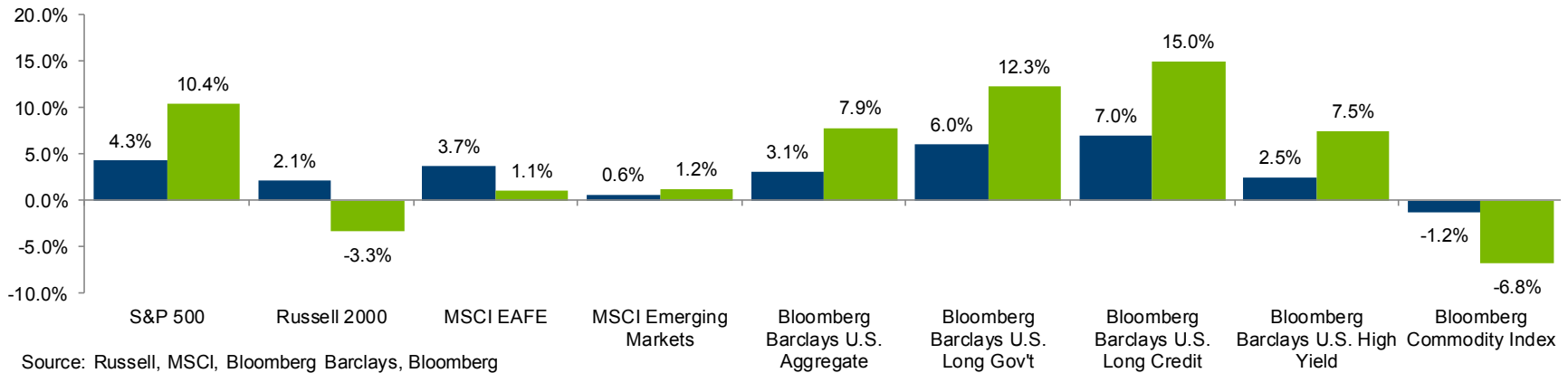
- Investment Related
 - Consider opportunities to capture illiquidity premium
 - Opportunity allocations may be a governance approach to facilitate getting compelling, but nontraditional investments into the portfolio
- Governance Related
 - Consider doing an Investment Program Analyzer to survey stakeholders about opportunities to improve decision-making processes
 - Consider reviewing fees and services with custodians if they haven't been evaluated recently

The opinions referenced are as of June 30, 2019 and are subject to change due to changes in the market or economic conditions and may not necessarily come to pass. Information contained herein is for informational purposes only and should not be considered investment advice. Diversification does not ensure a profit nor does it protect against loss of principal. Diversification among investment options and asset classes may help to reduce overall volatility.

Market Highlights

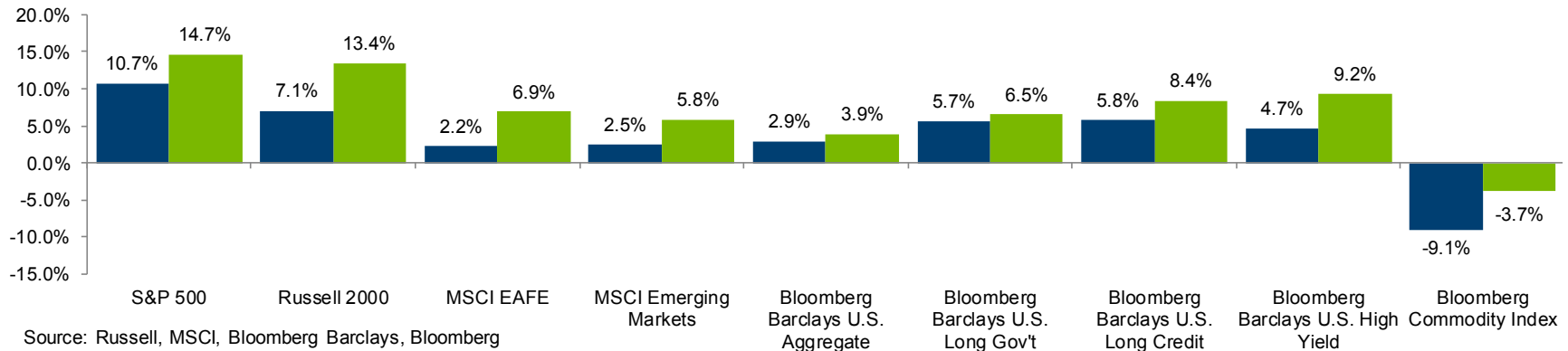
SHORT TERM RETURNS AS OF 06/30/2019

■ Second Quarter 2019 ■ One-Year



LONG TERM ANNUALIZED RETURNS AS OF 06/30/2019

■ Five-Year ■ Ten-Year



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Investment advice and consulting services provided by Aon Hewitt Investment Consulting, Inc., an Aon Company.

Market Highlights

Returns of the Major Capital Markets

Period Ending 06/30/2019

	Second Quarter	1-Year	3-Year ¹	5-Year ¹	10-Year ¹
Equity					
MSCI All Country World IMI	3.37%	4.56%	11.42%	6.03%	10.32%
MSCI All Country World	3.61%	5.74%	11.62%	6.16%	10.15%
Dow Jones U.S. Total Stock Market	4.09%	8.88%	13.99%	10.13%	14.68%
Russell 3000	4.10%	8.98%	14.02%	10.19%	14.67%
S&P 500	4.30%	10.42%	14.19%	10.71%	14.70%
Russell 2000	2.10%	-3.31%	12.30%	7.06%	13.45%
MSCI All Country World ex-U.S. IMI	2.74%	0.26%	9.17%	2.25%	6.78%
MSCI All Country World ex-U.S.	2.98%	1.29%	9.39%	2.16%	6.54%
MSCI EAFE	3.68%	1.08%	9.11%	2.25%	6.90%
MSCI EAFE (Local Currency)	2.80%	2.17%	9.80%	5.85%	8.35%
MSCI Emerging Markets	0.61%	1.21%	10.66%	2.49%	5.81%
Fixed Income					
Bloomberg Barclays Global Aggregate	3.29%	5.85%	1.62%	1.20%	2.89%
Bloomberg Barclays U.S. Aggregate	3.08%	7.87%	2.31%	2.95%	3.90%
Bloomberg Barclays U.S. Long Gov't	6.00%	12.28%	1.42%	5.68%	6.54%
Bloomberg Barclays U.S. Long Credit	7.02%	14.97%	5.33%	5.78%	8.41%
Bloomberg Barclays U.S. Long Gov't/Credit	6.59%	13.82%	3.76%	5.68%	7.62%
Bloomberg Barclays U.S. TIPS	2.86%	4.84%	2.08%	1.76%	3.64%
Bloomberg Barclays U.S. High Yield	2.50%	7.48%	7.52%	4.70%	9.24%
Bloomberg Barclays Global Treasury ex U.S.	3.55%	4.70%	0.51%	0.23%	1.98%
JP Morgan EMBI Global (Emerging Markets)	3.76%	11.32%	4.65%	4.47%	7.41%
Commodities					
Bloomberg Commodity Index	-1.19%	-6.75%	-2.18%	-9.15%	-3.74%
Goldman Sachs Commodity Index	-1.42%	-11.49%	1.55%	-13.33%	-5.19%
Hedge Funds					
HFRF Fund-Weighted Composite ²	1.89%	1.52%	5.01%	2.95%	4.71%
HFRF Fund of Funds ²	1.69%	1.36%	4.32%	2.23%	3.23%
Real Estate					
NAREIT U.S. Equity REITS	1.24%	11.21%	4.20%	7.92%	15.46%
NCREIF NFI - ODCE	0.99%	6.41%	7.57%	9.76%	9.88%
FTSE Global Core Infrastructure Index	3.54%	16.81%	10.61%	7.57%	11.87%
Private Equity					
Burgiss Private iQ Global Private Equity ³		10.43%	12.77%	11.52%	13.12%

MSCI Indices show net total returns. 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 December 31, 2018

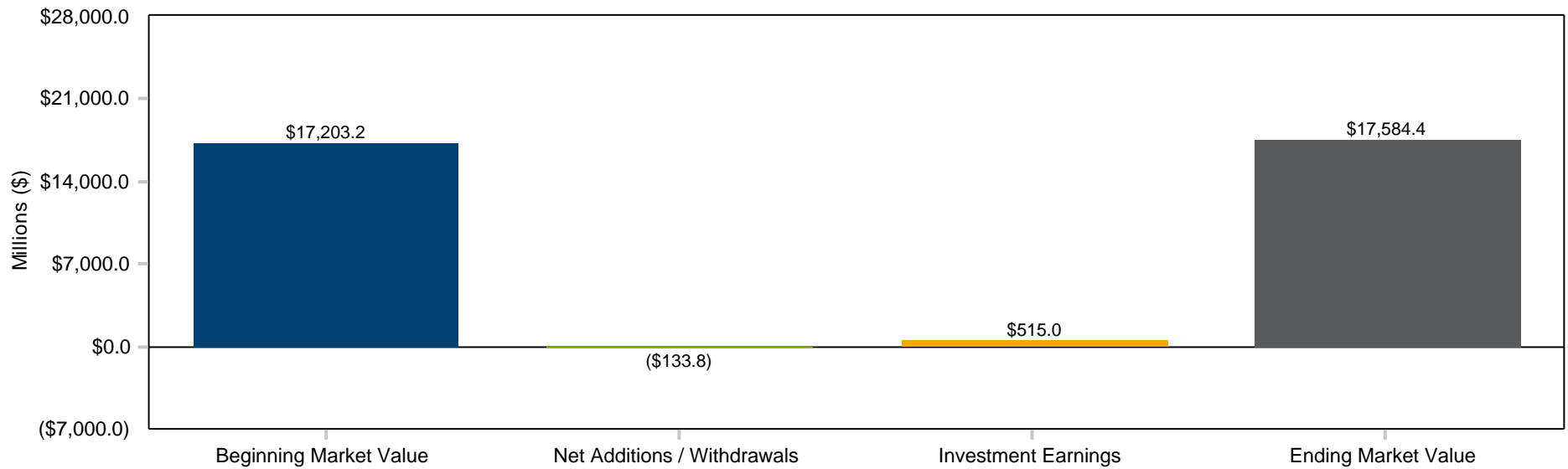
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Total Fund

Total Plan Asset Summary

Change in Market Value
From April 1, 2019 to June 30, 2019

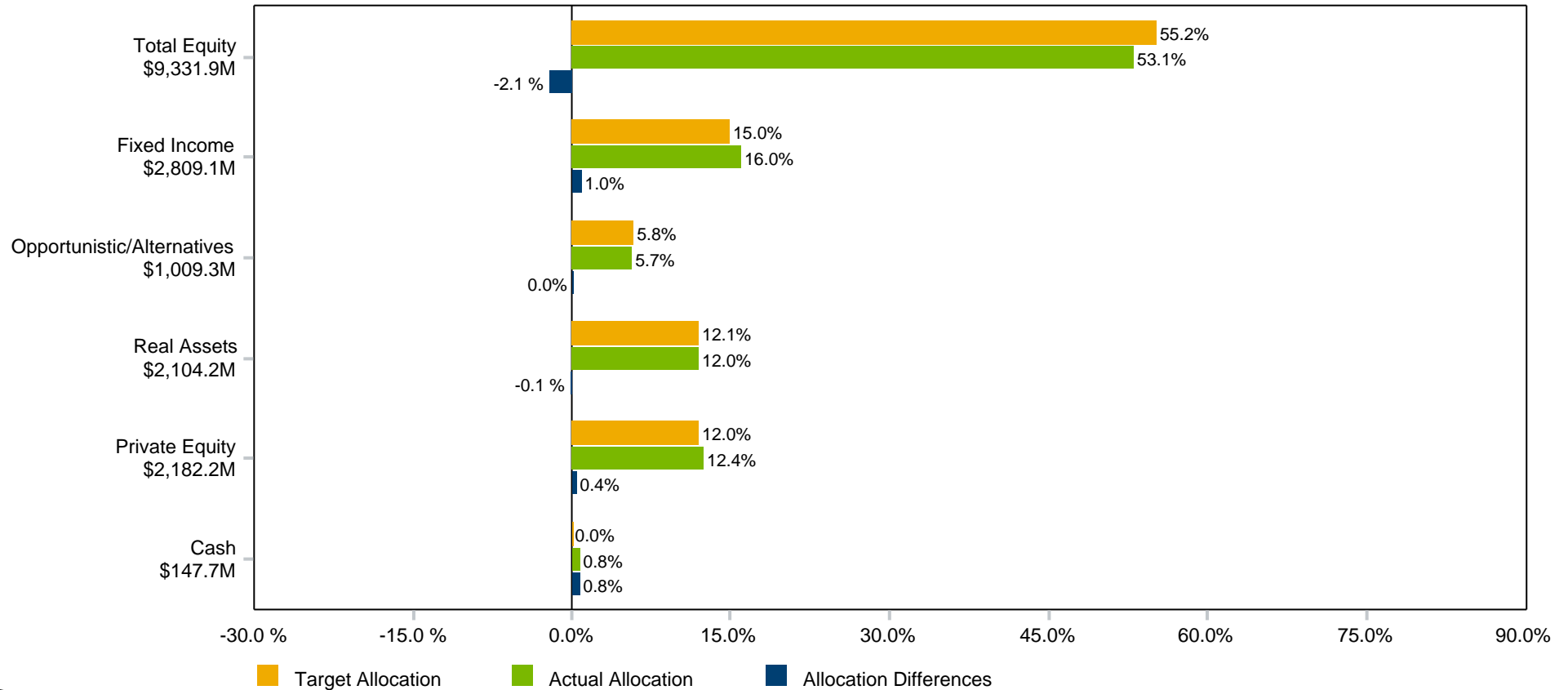


Summary of Cash Flow

	1 Quarter	Year To Date	Fiscal YTD
Total Fund			
Beginning Market Value	17,203,209,191	16,047,375,068	17,343,640,417
+ Additions / Withdrawals	-133,822,944	-239,858,906	-692,728,921
+ Investment Earnings	514,976,852	1,776,846,938	933,451,604
= Ending Market Value	17,584,363,100	17,584,363,100	17,584,363,100

Asset Allocation Compliance

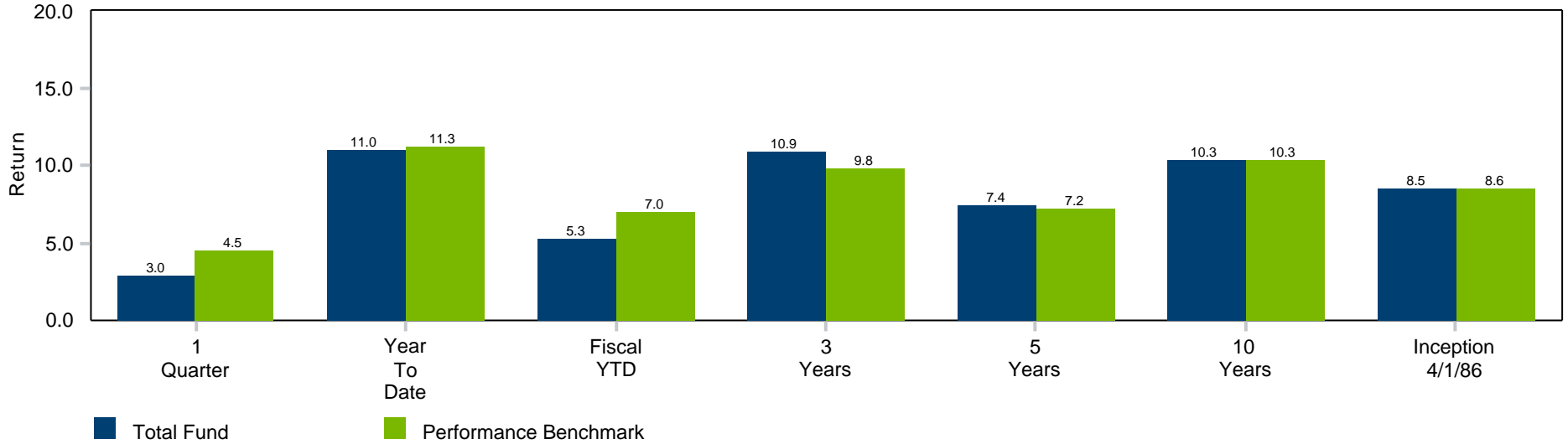
	Market Value (\$M)	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Total Fund	17,584.4	100.00	100.00	N/A	N/A
Total Equity	9,331.9	53.07	55.16	50.00	60.00
Fixed Income	2,809.1	15.98	15.00	13.00	17.00
Opportunistic/Alternatives	1,009.3	5.74	5.78	0.00	7.00
Real Assets	2,104.2	11.97	12.06	10.00	15.00
Private Equity	2,182.2	12.41	12.00	9.50	14.50
Cash	147.7	0.84	0.00	0.00	5.00



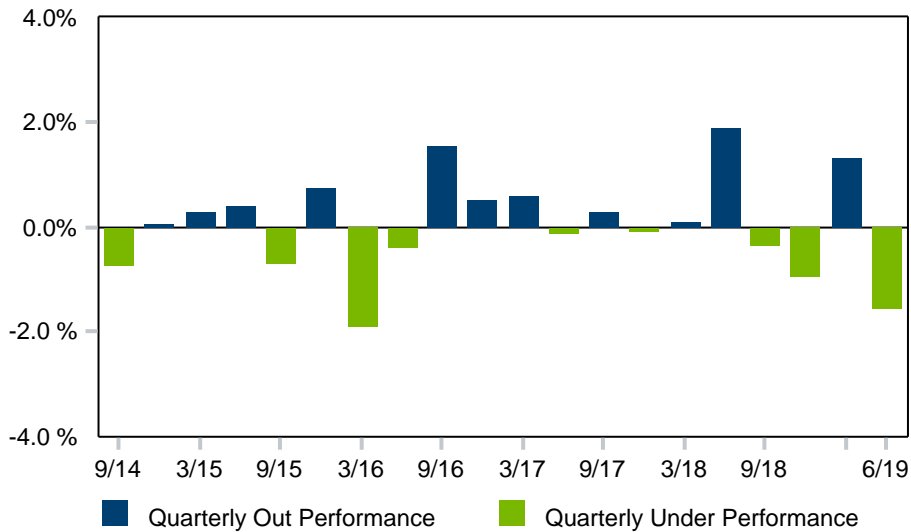
Market values and allocation percentages may not add to the sum total due to rounding.

Total Plan Performance Summary

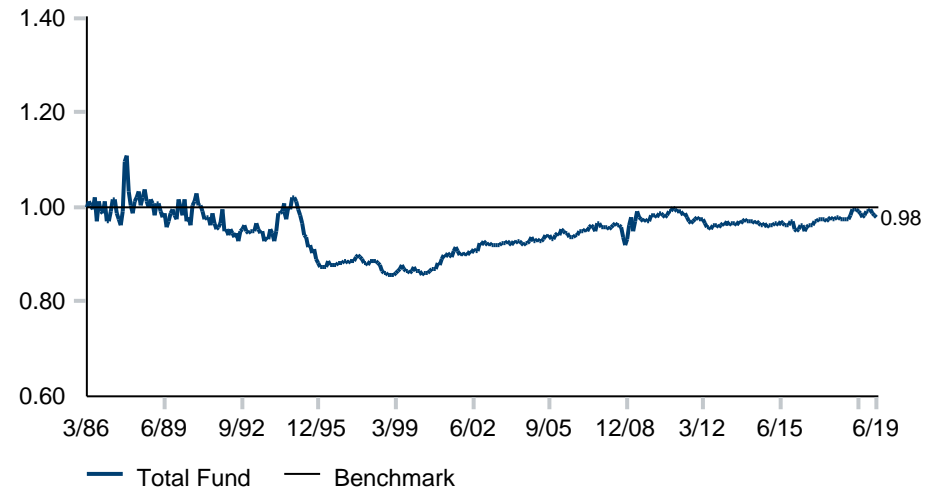
Return Summary



Quarterly Excess Performance

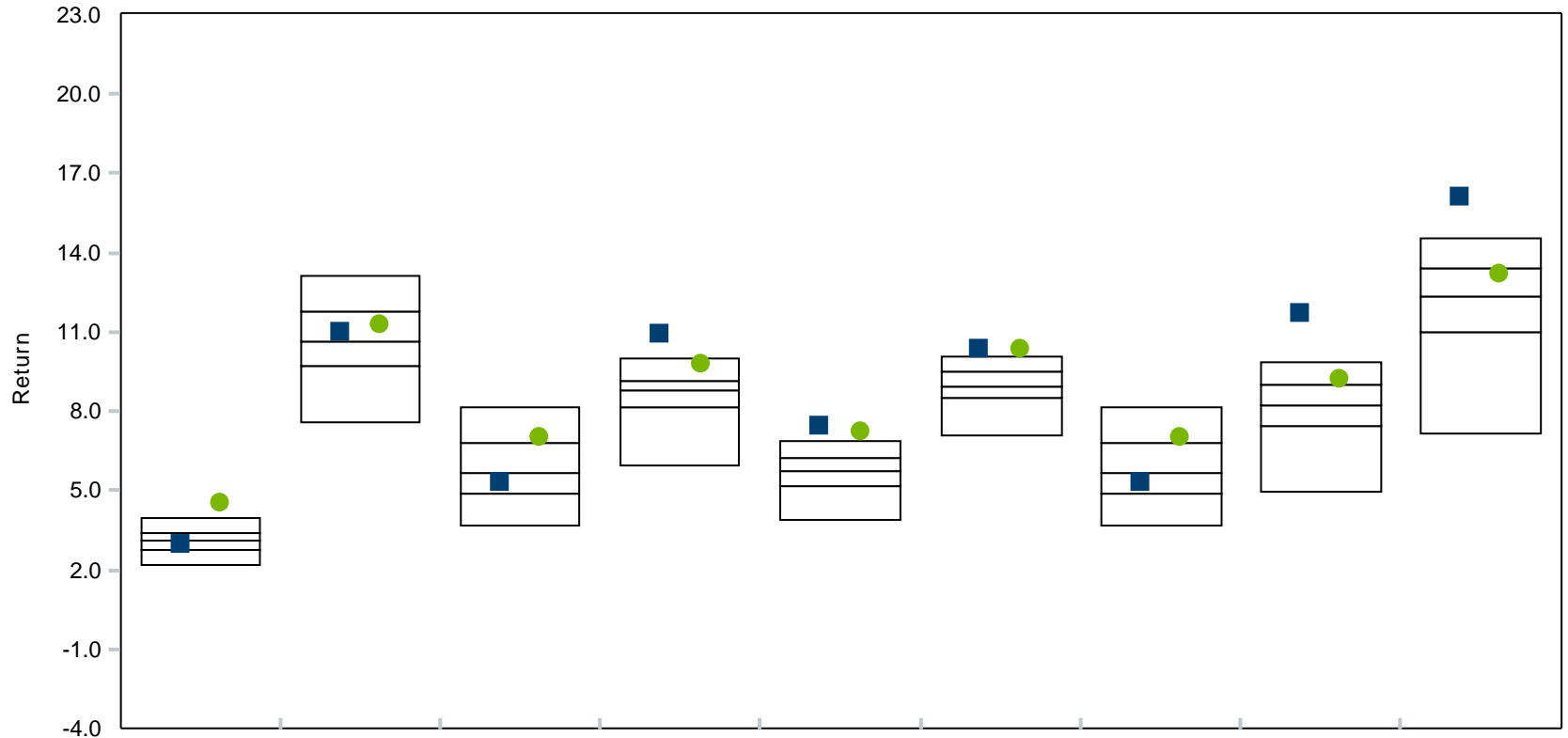


Ratio of Cumulative Wealth - Since Inception



Plan Sponsor Peer Group Analysis

All Public Plans > \$1B-Total Fund



	1 Quarter	Year To Date	Fiscal YTD	3 Years	5 Years	10 Years	Fiscal Year 2019	Fiscal Year 2018	Fiscal Year 2017
■ Total Fund	3.0 (62)	11.0 (43)	5.3 (59)	10.9 (1)	7.4 (1)	10.3 (1)	5.3 (59)	11.7 (1)	16.1 (1)
● Performance Benchmark	4.5 (1)	11.3 (37)	7.0 (19)	9.8 (8)	7.2 (1)	10.3 (1)	7.0 (19)	9.2 (18)	13.2 (28)
5th Percentile	4.0	13.2	8.1	10.0	6.8	10.1	8.1	9.9	14.5
1st Quartile	3.4	11.8	6.8	9.2	6.2	9.5	6.8	9.0	13.4
Median	3.1	10.7	5.7	8.8	5.7	8.9	5.7	8.2	12.3
3rd Quartile	2.7	9.7	4.9	8.2	5.2	8.5	4.9	7.5	11.0
95th Percentile	2.2	7.6	3.6	5.9	3.9	7.1	3.6	4.9	7.2
Population	94	94	91	90	90	86	91	85	104

59 Parentheses contain percentile rankings.

As of June 30, 2019

Asset Allocation & Performance

	Allocation			Performance(%)							
	Market Value (\$)	%	Policy(%)	1 Quarter	Year To Date	Fiscal YTD	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	17,584,363,100	100.0	100.0	3.0	11.0	5.3	10.9	7.4	10.3	8.5	04/01/1986
Performance Benchmark				4.5	11.3	7.0	9.8	7.2	10.3	8.6	
Total Equity	9,331,900,813	53.1	55.0	3.7	18.2	4.1	12.9	7.4	12.0	8.2	07/01/2015
Total Equity Performance Benchmark				3.6	16.9	5.9	12.2	7.6	12.0	8.6	
Fixed Income	2,809,114,229	16.0	15.0	2.5	5.3	6.4	4.3	3.4	5.6	5.4	07/01/1992
Performance Benchmark				3.1	6.5	8.1	2.8	3.2	4.4	5.6	
Opportunistic/Alternatives	1,009,298,395	5.7	5.7	1.8	3.6	-0.2	2.3	2.2		3.7	05/01/2011
Custom Alternatives Benchmark				1.3	4.8	2.1	2.8	1.2		1.8	
Real Assets	2,104,193,769	12.0	12.3	1.3	2.4	5.6	7.5	8.7		8.8	07/01/2013
Total Real Assets Benchmark				1.2	2.5	5.7	6.2	8.0		8.5	
Real Estate	1,369,706,778	7.8		1.2	2.6	5.7	7.9	9.8	8.3	9.0	12/01/1998
NFI-ODCE (Net)				1.2	2.7	6.5	7.0	9.2	8.7	9.1	
Timber	246,527,680	1.4		-2.2	-1.8	-0.3	2.9	3.7	2.0	6.9	06/01/1998
Timberland Property Benchmark				0.1	0.1	0.1	2.1	3.8	2.4		
Agriculture	196,715,499	1.1		0.8	1.6	3.5	3.7	4.7		5.8	09/01/2011
Agriculture Benchmark				1.5	3.0	5.4	4.5	5.1			
Infrastructure	291,243,812	1.7		6.0	6.3	14.6				14.6	07/01/2018
CPI + 5%				2.0	4.5	6.7				6.7	
Private Equity	2,182,152,246	12.4	12.0	2.9	3.3	12.8	17.2	14.2	13.6	12.4	03/01/1997
Private Equity Policy				14.6	-1.4	10.8	15.7	12.5	18.3	10.5	
Cash	147,703,647	0.8	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 141 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 June 30, 2019

Asset Allocation & Performance

	Allocation		Performance(%)								
	Market Value (\$)	%	1 Quarter	Year To Date	Fiscal YTD	3 Years	5 Years	10 Years	Since Inception	Inception Date	
Total Fund	17,584,363,100	100.0	3.0 (62)	11.0 (43)	5.3 (59)	10.9 (1)	7.4 (1)	10.3 (1)	8.5 (1)	04/01/1986	
Performance Benchmark			4.5 (1)	11.3 (37)	7.0 (19)	9.8 (8)	7.2 (1)	10.3 (1)	8.6 (1)		
Total Equity	9,331,900,813	53.1	3.7 (53)	18.2 (37)	4.1 (57)	12.9 (26)	7.4 (31)	12.0 (31)	8.2 (35)	07/01/2015	
Total Equity Performance Benchmark			3.6 (53)	16.9 (46)	5.9 (45)	12.2 (33)	7.6 (29)	12.0 (30)	8.6 (30)		
Jacobs Levy 130/30	619,426,533	3.5	2.4 (73)	18.3 (45)	5.5 (49)	16.4 (19)	14.3 (4)	17.4 (4)	10.1 (14)	01/01/2008	
Russell 3000 Index			4.1 (42)	18.7 (41)	9.0 (31)	14.0 (32)	10.2 (26)	14.7 (31)	8.5 (38)		
Allianz Structured Alpha U.S. 250	176,417,158	1.0	5.0 (25)	21.4 (22)	10.9 (20)	15.6 (23)	12.6 (9)	17.4 (4)	18.0 (4)	05/01/2009	
S&P 500 Index			4.3 (37)	18.5 (42)	10.4 (23)	14.2 (31)	10.7 (21)	14.7 (30)	15.1 (29)		
Allianz Structured Alpha Global 500	832,881,849	4.7	4.7 (30)	21.5 (16)	6.1 (44)	14.3 (18)			14.5 (11)	10/01/2015	
MSCI AC World IMI (Net)			3.4 (59)	16.1 (52)	4.6 (54)	11.4 (42)			10.8 (39)		
Allianz Structured Alpha Global 350	441,987,147	2.5	4.3 (37)	19.8 (27)	5.8 (46)				13.3 (30)	12/01/2016	
MSCI AC World IMI (Net)			3.4 (59)	16.1 (52)	4.6 (54)				11.4 (47)		
Kennedy Capital Management	531,143,395	3.0	2.2 (47)	16.4 (38)	-7.8 (69)	8.7 (52)	4.6 (62)	14.2 (19)	12.1 (10)	01/01/1994	
Russell 2000 Value Index			1.4 (67)	13.5 (70)	-6.2 (57)	9.8 (38)	5.4 (45)	12.4 (67)	9.5 (93)		
Stephens	429,918,649	2.4	6.7 (23)	23.2 (45)	8.4 (29)	18.4 (39)	10.0 (48)	15.0 (47)	10.2 (35)	08/01/2006	
Russell 2000 Growth Index			2.7 (77)	20.4 (59)	-0.5 (72)	14.7 (64)	8.6 (64)	14.4 (67)	9.4 (58)		
Voya Absolute Return	542,928,696	3.1	3.7 (51)	15.6 (55)	4.0 (57)	11.2 (46)	8.6 (21)	13.8 (12)	10.3 (20)	10/01/2008	
Performance Benchmark			3.6 (53)	16.2 (52)	5.7 (46)	11.6 (41)	8.6 (21)	13.6 (13)	10.4 (20)		
Allianz (Nicholas Applegate)	596,230,175	3.4	5.6 (18)	17.9 (50)	12.5 (14)	14.9 (27)	8.0 (52)	12.5 (78)	9.9 (29)	12/01/1998	
Performance Benchmark			3.9 (48)	14.4 (79)	7.8 (38)	12.2 (51)	6.8 (66)	11.6 (89)	7.6 (62)		
Pershing Square International	120,480,882	0.7	5.3 (22)	35.6 (1)	30.7 (1)	13.3 (39)	1.9 (96)	10.8 (93)	9.2 (56)	07/01/2008	
Dow Jones U.S. Total Stock Market Index			4.1 (42)	18.7 (41)	8.9 (31)	14.0 (33)	10.1 (27)	14.7 (30)	10.2 (33)		
Pershing Square Holdings	126,112,025	0.7	2.7 (69)	37.3 (1)	21.7 (2)	8.6 (83)	-5.5 (99)		0.6 (100)	01/01/2013	
Dow Jones U.S. Total Stock Market Index			4.1 (42)	18.7 (41)	8.9 (31)	14.0 (33)	10.1 (27)		13.8 (26)		
Trian Partners	66,829,590	0.4	3.5	18.7	13.1	8.4			8.2	11/01/2015	
S&P 500 Index			4.3	18.5	10.4	14.2			12.2		
Trian Co-Investments	76,829,744	0.4	5.4	18.3	14.4				3.0	01/01/2017	
S&P 500 Index			4.3	18.5	10.4				13.8		
SSgA Global Index	926,462,357	5.3	3.5 (56)	16.3 (51)	4.8 (52)	11.7 (40)	6.4 (44)	10.7 (53)	6.1 (54)	04/01/2008	
MSCI AC World IMI (Net)			3.4 (59)	16.1 (52)	4.6 (54)	11.4 (42)	6.0 (52)	10.3 (60)	5.7 (64)		

As of June 30, 2019

Asset Allocation & Performance

	Allocation		Performance(%)								Inception Date
	Market Value (\$)	%	1 Quarter	Year To Date	Fiscal YTD	3 Years	5 Years	10 Years	Since Inception		
BlackRock MSCI ACWI IMI Fund	318,438,161	1.8	3.1 (62)	15.9 (53)	4.5 (54)	11.5 (41)	6.3 (46)			8.0 (54)	07/01/2011
MSCI AC World IMI (Net)			3.4 (59)	16.1 (52)	4.6 (54)	11.4 (42)	6.0 (52)			7.6 (64)	
Wellington Global Perspectives	529,962,508	3.0	3.4 (58)	14.0 (70)	-3.8 (90)	11.6 (41)	5.6 (58)	13.8 (12)		13.8 (12)	07/01/2009
Performance Benchmark			1.7 (80)	15.0 (61)	-3.0 (88)	10.0 (59)	5.2 (66)	11.2 (44)		11.2 (44)	
T. Rowe Price Global Equity	895,861,790	5.1	3.2 (62)	21.6 (15)	8.0 (31)	19.0 (4)	12.5 (6)			12.9 (12)	09/01/2009
MSCI AC World Index (Net)			3.6 (53)	16.2 (52)	5.7 (46)	11.6 (41)	6.2 (50)			9.0 (66)	
MSCI AC World Index Growth (net)			4.9 (27)	20.1 (25)	7.2 (37)	13.8 (20)	8.5 (21)			10.7 (34)	
Lazard	558,078,888	3.2	3.3 (60)	16.6 (49)	2.7 (66)	12.5 (30)	6.4 (44)			9.1 (63)	09/01/2009
MSCI AC World Index (Net)			3.6 (53)	16.2 (52)	5.7 (46)	11.6 (41)	6.2 (50)			9.0 (66)	
D.E. Shaw	690,080,533	3.9	2.3 (72)	14.4 (66)	2.6 (67)	12.3 (32)	8.0 (26)			11.0 (29)	09/01/2009
MSCI World Index (Net)			4.0 (44)	17.0 (46)	6.3 (43)	11.8 (40)	6.6 (42)			9.5 (55)	
GMO Global All Country Equity	411,116,890	2.3	2.7 (68)	14.3 (67)	3.5 (63)	9.8 (60)	3.4 (81)			3.4 (81)	07/01/2014
MSCI AC World Index (Net)			3.6 (53)	16.2 (52)	5.7 (46)	11.6 (41)	6.2 (50)			6.2 (50)	
MSCI AC World Index Value (Net)			2.3 (72)	12.4 (80)	4.3 (55)	9.4 (64)	3.8 (79)			3.8 (79)	
Harris Global Equity	440,641,536	2.5	4.7 (30)	16.4 (50)	-2.0 (86)	12.6 (28)	4.6 (73)			4.6 (76)	06/01/2014
MSCI World Index (Net)			4.0 (44)	17.0 (46)	6.3 (43)	11.8 (40)	6.6 (42)			6.9 (42)	
MSCI World Value (Net)			2.5 (70)	12.9 (77)	4.2 (56)	9.3 (66)	4.1 (76)			4.4 (77)	
Fixed Income	2,809,114,229	16.0	2.5 (73)	5.3 (77)	6.4 (68)	4.3 (9)	3.4 (31)	5.6 (23)		5.4	07/01/1992
Performance Benchmark			3.1 (31)	6.5 (46)	8.1 (13)	2.8 (60)	3.2 (45)	4.4 (61)		5.6	
BlackRock	405,931,723	2.3	2.9 (38)	6.5 (38)	8.0 (27)	2.6 (53)	3.2 (43)	4.9 (44)		4.6 (39)	10/01/2003
Performance Benchmark			3.1 (28)	6.5 (38)	8.1 (25)	2.8 (47)	3.2 (44)	4.4 (52)		4.4 (45)	
Loomis Sayles	423,477,349	2.4	2.9 (39)	7.0 (31)	7.4 (40)	5.7 (16)	4.0 (26)	8.7 (12)		8.3 (7)	09/01/2008
Performance Benchmark			3.2 (24)	8.0 (25)	8.2 (23)	4.2 (30)	3.7 (32)	5.9 (33)		5.7 (30)	
Putnam	367,500,000	2.1	1.8 (37)	5.2 (44)	3.7 (32)	5.2 (24)	2.2 (48)	3.9		3.1	08/01/2008
LIBOR			0.7 (67)	1.4 (86)	2.6 (41)	1.7 (68)	1.1 (66)	0.7		0.9	
SSgA Aggregate Bond Index	648,969,434	3.7	3.1 (29)	6.1 (46)	7.9 (30)	2.3 (59)	3.0 (51)			3.4 (60)	06/01/2010
Barclays Aggregate Index			3.1 (29)	6.1 (46)	7.9 (30)	2.3 (60)	2.9 (52)			3.4 (60)	
Wellington Global Total Return	339,432,334	1.9	1.6 (42)	2.7 (77)	5.3 (14)	3.2 (58)	2.3 (47)			2.1 (51)	05/01/2014
BofA Merrill Lynch 3 Month US T-Bill			0.6 (68)	1.2 (87)	2.3 (45)	1.4 (71)	0.9 (71)			0.8 (70)	
Reams Core Plus Bond Fund	354,771,780	2.0	3.1 (27)	6.2 (44)	8.6 (17)	2.8 (48)	3.2 (44)			3.1 (52)	05/01/2014
Barclays Aggregate Index			3.1 (29)	6.1 (46)	7.9 (30)	2.3 (60)	2.9 (52)			3.1 (52)	
BRS Recycling Tax Credit	192,000,000	1.1									
BRS Recycling Tax Credit Phase 2	77,031,608	0.4									

As of June 30, 2019

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Quarter	Year To Date	Fiscal YTD	3 Years	5 Years	10 Years	Since Inception	Inception Date
Opportunistic/Alternatives	1,009,298,395	5.7	1.8	3.6	-0.2	2.3	2.2		3.7	05/01/2011
Custom Alternatives Benchmark			1.3	4.8	2.1	2.8	1.2		1.8	
Anchorage	77,393,370	0.4	2.8	2.3	1.4	4.5	2.6		5.6	05/01/2011
Credit Suisse Event Driven			2.4	7.5	1.9	4.9	0.3		2.2	
York	69,143,393	0.4	1.9	2.1	-5.9	6.5	-0.5		4.0	05/01/2011
Credit Suisse Event Driven			2.4	7.5	1.9	4.9	0.3		2.2	
Capula	81,075,263	0.5	1.6	3.9	6.3	5.9	6.6		6.0	05/01/2011
HFRI Macro (Total) Index			2.6	4.9	2.5	0.4	1.4		0.2	
Graham	60,420,995	0.3	7.1	11.0	2.1	1.7	5.3		2.2	05/01/2011
HFRI Macro (Total) Index			2.6	4.9	2.5	0.4	1.4		0.2	
Circumference Group Core Value	28,361,411	0.2	-1.4	6.8	2.7	10.7			9.0	08/01/2015
Russell 2000 Index			2.1	17.0	-3.3	12.3			7.7	
Aeolus Keystone Fund	281,232,102	1.6	0.7	-0.5	-5.8	-4.9			-3.2	12/01/2015
Citigroup 3 Month T-Bill			0.6	1.2	2.3	1.4			1.2	
Eurekahedge ILS Advisers Index			-1.5	-1.1	-5.5	-2.5			-1.6	
Nephila Rubik Holdings	43,950,491	0.2	2.2	2.5	-6.9	-4.2			-4.1	06/01/2016
Citigroup 3 Month T-Bill			0.6	1.2	2.3	1.4			1.3	
Eurekahedge ILS Advisers Index			-1.5	-1.1	-5.5	-2.5			-2.4	
Parametric Global Defensive Equity Fund	165,734,311	0.9	1.6	8.3	3.9				4.7	05/01/2017
Performance Benchmark			2.3	8.8	4.7				5.2	
MSCI AC World Index			3.8	16.6	6.3				9.5	
Circumference Group Equity Opportunity Fund	1,777,970	0.0	0.9	13.5	16.4				12.4	04/01/2018
Man Alternative Risk Premia	98,883,287	0.6	2.2	4.2	1.8				-0.4	06/01/2018
SG Multi Alternative Risk Premia Index			-0.5	2.7	0.4				-0.1	
CFM ISD Fund 1.5x	101,325,802	0.6	2.5	3.9	2.8				2.8	07/01/2018
SG Multi Alternative Risk Premia Index			-0.5	2.7	0.4				0.4	

As of June 30, 2019

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Quarter	Year To Date	Fiscal YTD	3 Years	5 Years	10 Years	Since Inception	Inception Date
Real Assets	2,104,193,769	12.0	1.3	2.4	5.6	7.5	8.7		8.8	07/01/2013
Total Real Assets Benchmark			1.2	2.5	5.7	6.2	8.0		8.5	
Real Estate	1,369,706,778	7.8	1.2	2.6	5.7	7.9	9.8	8.3	9.0	12/01/1998
NFI-ODCE (Net)			1.2	2.7	6.5	7.0	9.2	8.7	9.1	
Timber	246,527,680	1.4	-2.2	-1.8	-0.3	2.9	3.7	2.0	6.9	06/01/1998
Timberland Property Benchmark			0.1	0.1	0.1	2.1	3.8	2.4		
RMK Timberland I	246,527,680	1.4								
Agriculture	196,715,499	1.1	0.8	1.6	3.5	3.7	4.7		5.8	09/01/2011
Agriculture Benchmark			1.5	3.0	5.4	4.5	5.1			
HFMS Farmland	142,718,294	0.8	0.9	1.6	3.4	3.4	4.6		5.8	09/01/2011
HFMS custom NCREIF Farmland Index			1.4	3.0	4.9	3.6	4.4			
UBS Agrivest Core Farmland Fund	53,997,205	0.3	0.6	1.6	4.0	4.5			4.9	07/01/2015
UBS Agrivest custom NCREIF Farmland Index			1.6	3.2	6.2	5.6			6.2	
Infrastructure	291,243,812	1.7	6.0	6.3	14.6				14.6	07/01/2018
CPI + 5%			2.0	4.5	6.7				6.7	
Private Equity	2,182,152,246	12.4	2.9	3.3	12.8	17.2	14.2	13.6	12.5	04/01/1997
Private Equity Policy			14.6	-1.4	10.8	15.7	12.5	18.3	10.6	
Cash	147,703,647	0.8								

*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 141 of this report.

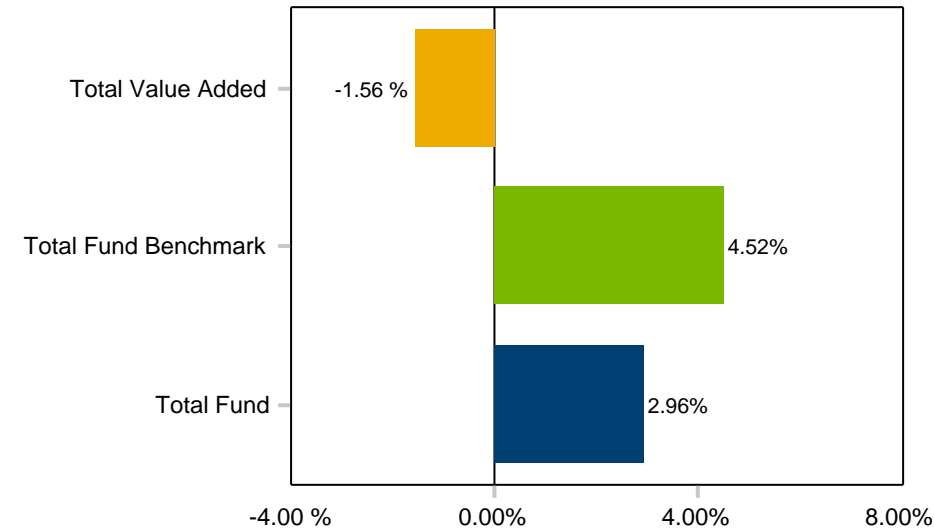
*The inception date above for infrastructure reflects the inception date for the calculation and reporting of time-weighted returns. The Infrastructure program began in July 2014 and the full history of Infrastructure returns are included in Total Real Assets and Total Fund performance.

*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.

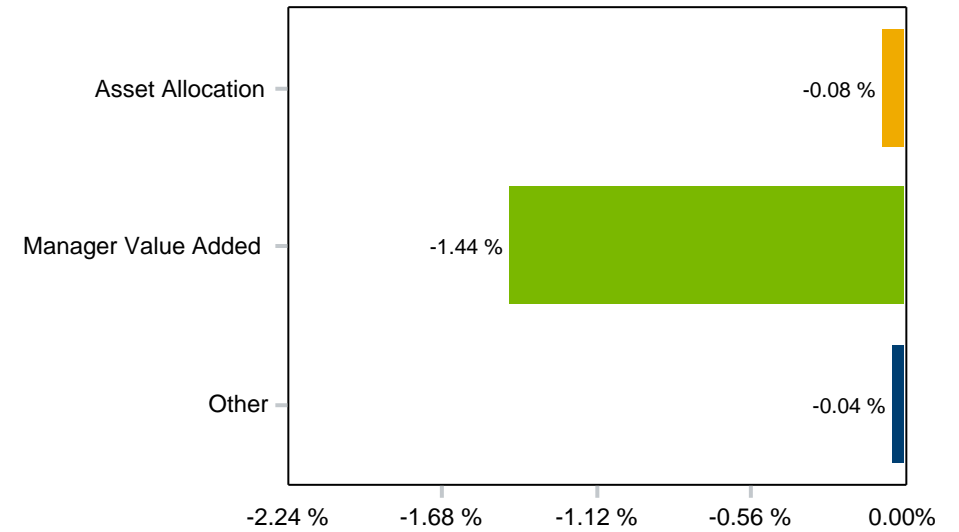
*ATRS made a total commitment of \$100 million to the Trian Co-Investments Fund. As of 6/30/2019, there was an unfunded commitment value equal to 25,670,368.

Total Fund Attribution

Total Fund Performance

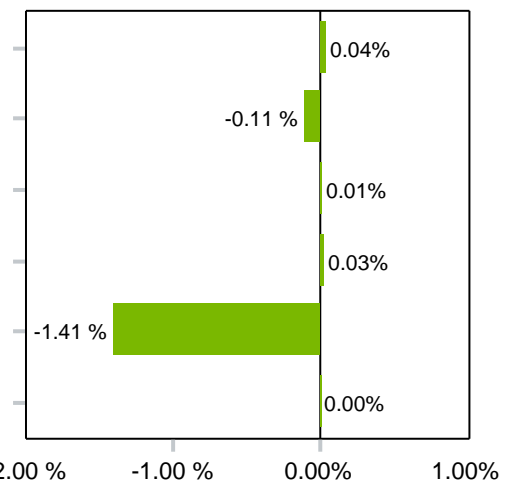
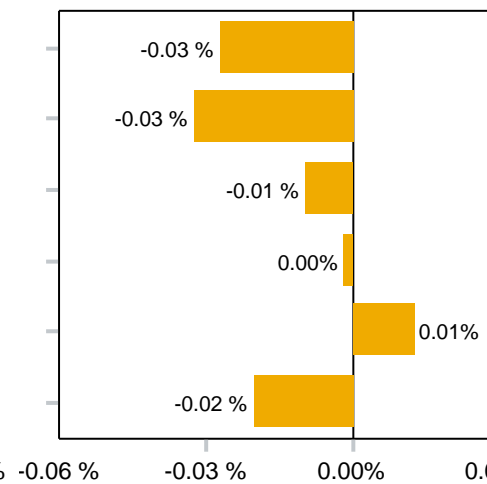
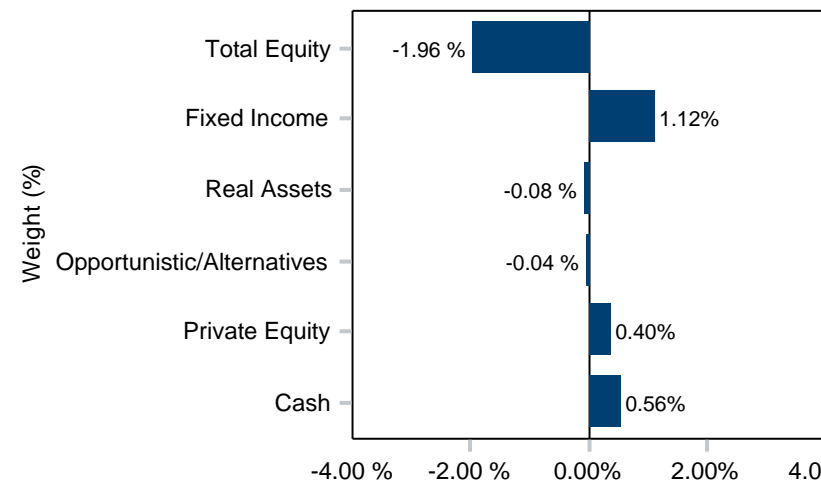


Total Value Added: -1.56 %



Total Asset Allocation: -0.08 %

Total Manager Value Added: -1.44 %



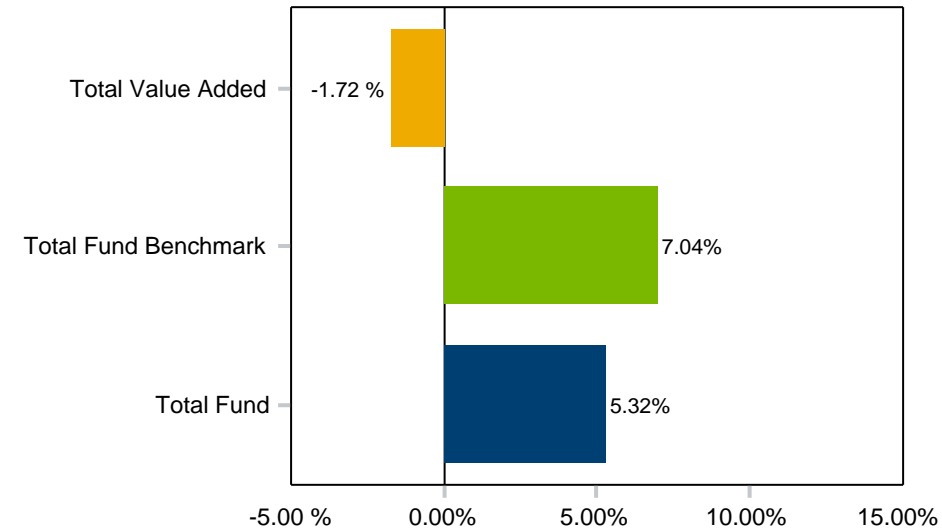
Average Active Weight

Asset Allocation Value Added

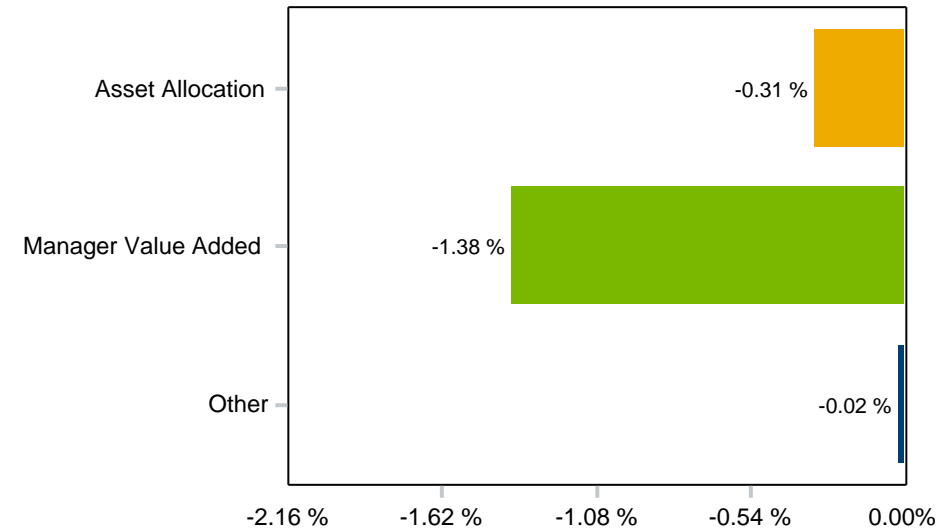
Manager Value Added

Total Fund Attribution

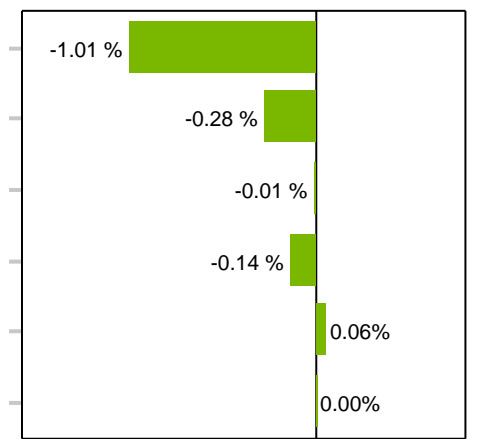
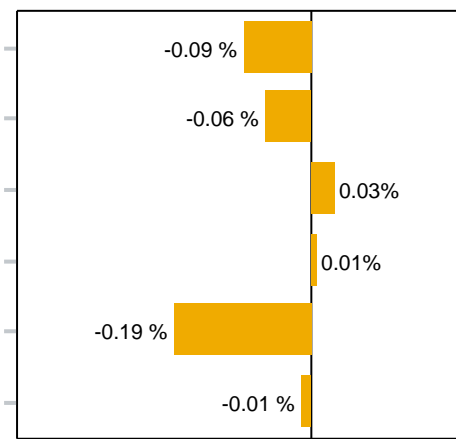
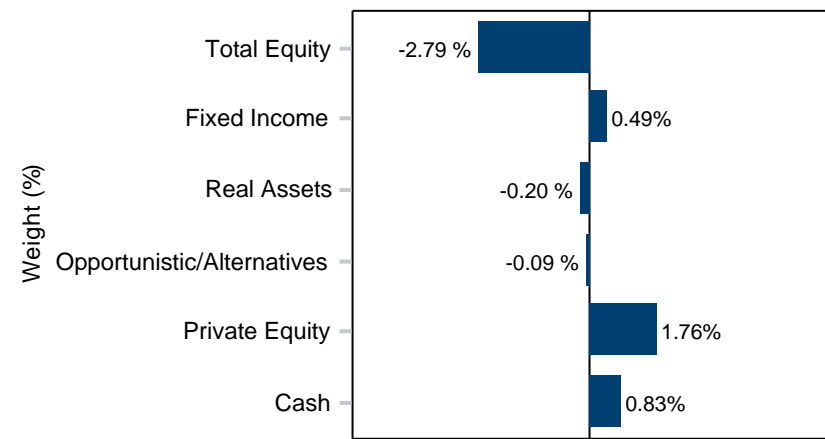
Total Fund Performance



Total Value Added: -1.72 %



Total Asset Allocation: -0.31 % Total Manager Value Added: -1.38 %



Average Active Weight

Asset Allocation Value Added

Manager Value Added

As of June 30, 2019

Calendar Year Performance

	Performance(%)									
	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	Fiscal Year 2010
Total Fund	5.3 (59)	11.7 (1)	16.1 (1)	-0.5 (70)	5.2 (1)	19.0 (3)	14.3 (3)	-1.0 (100)	22.4 (28)	13.5 (40)
Performance Benchmark	7.0 (19)	9.2 (18)	13.2 (28)	1.8 (10)	5.2 (1)	18.3 (10)	13.5 (10)	2.1 (25)	21.9 (40)	13.1 (57)
Total Equity	4.1 (57)	13.4 (28)	22.1 (26)	-4.8 (58)	4.1 (31)	25.5 (34)	20.3 (34)	-6.3 (54)	31.5 (42)	17.1 (22)
Total Equity Performance Benchmark	5.9 (45)	12.2 (34)	19.0 (47)	-1.5 (38)	3.6 (35)	23.9 (46)	18.9 (48)	-1.8 (25)	31.2 (46)	13.6 (38)
Jacobs Levy 130/30	5.5 (49)	19.9 (21)	24.6 (16)	8.3 (4)	14.2 (6)	24.3 (53)	22.4 (48)	1.4 (41)	43.2 (15)	15.2 (57)
Russell 3000 Index	9.0 (31)	14.8 (43)	18.5 (53)	2.1 (22)	7.3 (43)	25.2 (43)	21.5 (54)	3.8 (24)	32.4 (55)	15.7 (53)
Allianz Structured Alpha U.S. 250	10.9 (20)	15.7 (38)	20.4 (40)	6.0 (7)	10.7 (20)	28.1 (20)	23.7 (40)	3.7 (25)	42.6 (16)	17.0 (48)
S&P 500 Index	10.4 (23)	14.4 (46)	17.9 (58)	4.0 (12)	7.4 (42)	24.6 (49)	20.6 (60)	5.4 (14)	30.7 (66)	14.4 (63)
Allianz Structured Alpha Global 500	6.1 (44)	13.7 (26)	23.8 (17)							
MSCI AC World IMI (Net)	4.6 (54)	11.1 (42)	19.0 (47)							
Daruma Asset Management	-14.6 (100)	11.7 (86)	20.7 (68)	-8.7 (82)	-2.4 (98)	21.5 (81)	32.9 (5)	-13.6 (100)	46.3 (8)	28.6 (11)
Russell 2000 Index	-3.3 (48)	17.6 (39)	24.6 (31)	-6.7 (63)	6.5 (55)	23.6 (61)	24.2 (58)	-2.1 (46)	37.4 (71)	21.5 (54)
Kennedy Capital Management	-7.8 (69)	12.2 (50)	24.2 (30)	-4.9 (62)	2.7 (51)	29.4 (10)	34.4 (6)	-4.2 (66)	33.9 (52)	34.5 (10)
Russell 2000 Value Index	-6.2 (57)	13.1 (40)	24.9 (23)	-2.6 (41)	0.8 (67)	22.5 (69)	24.8 (59)	-1.4 (34)	31.4 (72)	25.1 (48)
Stephens	8.4 (29)	29.5 (21)	18.3 (82)	-7.8 (41)	5.1 (89)	18.4 (80)	18.7 (83)	3.0 (8)	46.7 (32)	18.9 (54)
Russell 2000 Growth Index	-0.5 (72)	21.9 (57)	24.4 (41)	-10.8 (57)	12.3 (33)	24.7 (40)	23.7 (53)	-2.7 (39)	43.5 (55)	18.0 (58)
Voya Absolute Return	4.0 (57)	9.9 (52)	20.3 (37)	1.9 (21)	7.8 (12)	26.9 (23)	19.7 (39)	6.0 (6)	30.5 (51)	14.9 (31)
Performance Benchmark	5.7 (46)	10.7 (45)	18.8 (49)	1.1 (24)	7.4 (13)	24.6 (40)	20.6 (33)	5.4 (6)	30.7 (50)	14.4 (34)
Allianz (Nicholas Applegate)	12.5 (14)	16.4 (34)	15.9 (74)	-7.1 (79)	4.4 (69)	23.1 (66)	19.4 (70)	-2.4 (65)	29.7 (72)	18.6 (40)
Performance Benchmark	7.8 (38)	12.0 (63)	16.8 (68)	-4.7 (66)	3.5 (74)	24.4 (51)	18.6 (75)	-3.2 (72)	22.5 (96)	22.6 (23)
Pershing Square International	30.7 (1)	2.8 (97)	8.2 (95)	-33.2 (100)	12.9 (10)	29.1 (15)	17.3 (81)	0.8 (45)	26.8 (87)	31.6 (6)
Dow Jones U.S. Total Stock Market Index	8.9 (31)	14.8 (43)	18.5 (53)	2.0 (23)	7.2 (44)	25.0 (45)	21.5 (54)	4.0 (23)	32.4 (54)	16.1 (51)
Pershing Square Holdings	21.7 (2)	-2.7 (100)	8.3 (95)	-49.1 (100)	15.2 (5)	30.4 (10)				
Dow Jones U.S. Total Stock Market Index	8.9 (31)	14.8 (43)	18.5 (53)	2.0 (23)	7.2 (44)	25.0 (45)				
Triam Partners	13.1	2.8	9.5							
S&P 500 Index	10.4	14.4	17.9							
SSgA Global Index	4.8 (52)	11.4 (40)	19.4 (43)	-3.4 (49)	1.2 (56)	23.8 (47)	17.5 (57)	-6.6 (56)	31.4 (43)	13.4 (40)
MSCI AC World IMI (Net)	4.6 (54)	11.1 (42)	19.0 (47)	-3.9 (53)	0.8 (59)	23.4 (50)	17.1 (60)	-6.9 (57)	31.0 (48)	13.1 (41)

As of June 30, 2019

Calendar Year Performance

	Performance(%)									
	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	Fiscal Year 2010
BlackRock MSCI ACWI IMI Fund	4.5 (54)	11.4 (40)	19.1 (45)	-3.4 (49)	1.2 (56)	23.9 (47)	17.7 (56)	-6.6 (47)		
MSCI AC World IMI (Net)	4.6 (54)	11.1 (42)	19.0 (47)	-3.9 (53)	0.8 (59)	23.4 (50)	17.1 (60)	-6.9 (50)		
Wellington Global Perspectives	-3.8 (90)	15.7 (18)	24.8 (14)	-4.2 (54)	-1.4 (73)	33.1 (4)	30.7 (5)	-9.1 (71)	45.8 (3)	20.1 (16)
Performance Benchmark	-3.0 (88)	13.8 (26)	20.5 (36)	-4.7 (58)	1.5 (54)	26.0 (29)	20.6 (33)	-9.9 (76)	35.8 (19)	20.6 (14)
T. Rowe Price Global Equity	8.0 (31)	21.3 (6)	28.8 (7)	-0.6 (33)	7.5 (13)	32.0 (5)	18.2 (52)	-7.7 (62)	28.2 (68)	
MSCI AC World Index (Net)	5.7 (46)	10.7 (45)	18.8 (49)	-3.7 (51)	0.7 (59)	22.9 (55)	16.6 (64)	-6.5 (55)	30.1 (54)	
MSCI AC World Index Growth (net)	7.2 (37)	16.1 (17)	18.6 (50)	-2.7 (45)	4.9 (25)	23.1 (54)	15.4 (71)	-5.3 (47)	32.0 (37)	
Lazard	2.7 (66)	9.8 (52)	26.2 (11)	-10.7 (89)	7.3 (13)	23.3 (51)	15.8 (69)	-11.4 (82)	29.6 (58)	
MSCI AC World Index (Net)	5.7 (46)	10.7 (45)	18.8 (49)	-3.7 (51)	0.7 (59)	22.9 (55)	16.6 (64)	-6.5 (55)	30.1 (54)	
D.E. Shaw	2.6 (67)	15.8 (18)	19.2 (45)	0.0 (29)	3.9 (33)	25.6 (33)	19.3 (44)	-1.9 (26)	31.1 (47)	
MSCI World Index (Net)	6.3 (43)	11.1 (43)	18.2 (52)	-2.8 (45)	1.4 (55)	24.0 (46)	18.6 (49)	-5.0 (45)	30.5 (51)	
GMO Global All Country Equity	3.5	6.8	20.0	-6.5	-4.5					
MSCI AC World Index (Net)	5.7	10.7	18.8	-3.7	0.7					
MSCI AC World Index Value (Net)	4.3	5.4	19.0	-4.8	-3.4					
Harris Global Equity	-2.0	5.0	38.9	-12.8	0.7					
MSCI World Index (Net)	6.3	11.1	18.2	-2.8	1.4					
MSCI World Value (Net)	4.2	5.6	18.7	-3.7	-2.9					

As of June 30, 2019

Calendar Year Performance

	Performance(%)									
	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	Fiscal Year 2010
Fixed Income	6.4 (68)	1.3 (18)	5.2 (6)	3.5 (85)	1.0 (64)	6.1 (45)	3.8 (13)	5.2 (95)	7.3 (35)	17.4 (22)
Performance Benchmark	8.1 (13)	-0.3 (82)	0.9 (62)	5.8 (30)	1.6 (41)	5.2 (76)	0.2 (60)	7.4 (80)	4.8 (87)	10.6 (90)
BlackRock	8.0 (27)	-0.3 (75)	0.3 (65)	6.0 (24)	2.4 (16)	5.2 (51)	0.3 (60)	8.0 (32)	6.3 (37)	13.7 (38)
Performance Benchmark	8.1 (25)	-0.3 (72)	0.9 (51)	5.8 (26)	1.6 (39)	5.2 (50)	0.2 (62)	7.4 (41)	4.8 (50)	10.6 (54)
Loomis Sayles	7.4 (40)	1.8 (26)	8.1 (16)	1.9 (72)	1.1 (59)	12.0 (11)	10.7 (7)	4.4 (75)	15.7 (10)	26.0 (6)
Performance Benchmark	8.2 (23)	0.5 (46)	4.0 (26)	5.0 (37)	1.0 (64)	6.8 (35)	2.8 (29)	8.4 (26)	7.8 (27)	15.5 (32)
Putnam	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)	16.9 (7)
LIBOR	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)	0.4 (82)
SSgA Aggregate Bond Index	7.9 (30)	-0.4 (76)	-0.3 (81)	6.0 (23)	1.9 (28)	4.3 (62)	-0.6 (81)	7.4 (39)	3.9 (65)	
Barclays Aggregate Index	7.9 (30)	-0.4 (76)	-0.3 (82)	6.0 (23)	1.9 (29)	4.4 (61)	-0.7 (83)	7.5 (39)	3.9 (64)	
Wellington Global Total Return	5.3 (14)	5.1 (32)	-0.7 (85)	1.3 (32)	0.5 (38)					
BofA Merrill Lynch 3 Month US T-Bill	2.3 (45)	1.4 (60)	0.5 (83)	0.2 (42)	0.0 (45)					
Reams Core Plus Bond Fund	8.6	0.0	0.0	6.1	1.5					
Barclays Aggregate Index	7.9	-0.4	-0.3	6.0	1.9					
BRS Recycling Tax Credit										
BRS Recycling Tax Credit Phase 2										
Opportunistic/Alternatives	-0.2	0.6	6.8	-1.7	5.8	10.2	12.9	-1.0		
Custom Alternatives Benchmark	2.1	3.5	2.8	-3.7	1.7	6.3	7.1	-3.9		
Anchorage	1.4	6.2	5.9	-3.9	3.8	18.9	19.4	-1.0		
Credit Suisse Event Driven	1.9	3.8	9.3	-10.4	-2.0	14.1	14.5	-7.2		
York	-5.9	12.2	14.3	-12.9	-7.2	22.4	19.4	-0.8		
Credit Suisse Event Driven	1.9	3.8	9.3	-10.4	-2.0	14.1	14.5	-7.2		
Capula	6.3	3.8	7.8	6.1	8.9	7.9	4.0	3.4		
HFRI Macro (Total) Index	2.5	1.1	-2.4	1.8	4.2	1.5	-0.1	-2.8		
Graham	2.1	6.5	-3.2	-1.0	23.9	2.7	5.9	-8.3		
HFRI Macro (Total) Index	2.5	1.1	-2.4	1.8	4.2	1.5	-0.1	-2.8		
Circumference Group Core Value	2.7	15.9	14.0							
Russell 2000 Index	-3.3	17.6	24.6							
Aeolus Keystone Fund	-5.8	-17.9	11.2							
Citigroup 3 Month T-Bill	2.3	1.3	0.5							
Eurekahedge ILS Advisers Index	-5.5	-6.6	5.0							
Nephila Rubik Holdings	-6.9	-7.7	2.2							
Citigroup 3 Month T-Bill	2.3	1.3	0.5							
Eurekahedge ILS Advisers Index	-5.5	-6.6	5.0							
Parametric Global Defensive Equity Fund	3.9	5.8								
Performance Benchmark	4.7	6.3								
MSCI AC World Index	6.3	11.3								
Circumference Group Equity Opportunity Fund	16.4									
Man Alternative Risk Premia	1.8									
SG Multi Alternative Risk Premia Index	0.4									

As of June 30, 2019

Calendar Year Performance

	Performance(%)									
	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	Fiscal Year 2010
CFM ISD Fund 1.5x	2.8									
SG Multi Alternative Risk Premia Index	0.4									
Real Assets	5.6	9.4	7.5	9.5	11.7	9.0				
Total Real Assets Benchmark	5.7	6.2	6.6	10.0	11.5	11.4				
Real Estate	5.7	11.1	6.9	12.0	13.4	12.1	7.9	9.8	17.7	-11.4
NFI-ODCE (Net)	6.5	7.1	7.4	12.6	12.4	12.7	10.5	13.4	16.0	-9.6
Timber	-0.3	1.2	8.0	0.4	9.4	-1.1	6.8	-5.3	4.8	-3.0
Timberland Property Benchmark	0.1	2.6	3.7	2.5	10.5	7.7	6.9	-2.9	-0.4	-6.0
RMK Timberland I										
Agriculture	3.5	3.3	4.3	9.8	2.5	11.0	11.5			
Agriculture Benchmark	5.4	3.5	4.5	5.6	6.5	12.8	20.9			
HFMS Farmland	3.4	2.9	3.9	10.7	2.5	11.0	11.5			
HFMS custom NCREIF Farmland Index	4.9	2.0	4.0	4.8	6.5	12.8	20.9			
UBS Agrivest Core Farmland Fund	4.0	4.5	5.0	6.2						
UBS Agrivest custom NCREIF Farmland Index	6.2	5.0	5.5	8.4						
Infrastructure	14.6									
CPI + 5%	6.7									
Private Equity	12.8	22.3	16.7	7.7	11.9	20.6	12.5	12.5	16.0	4.5
Private Equity Policy	10.8	16.1	20.4	1.6	14.5	25.0	16.8	9.4	20.1	55.6
Cash	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.

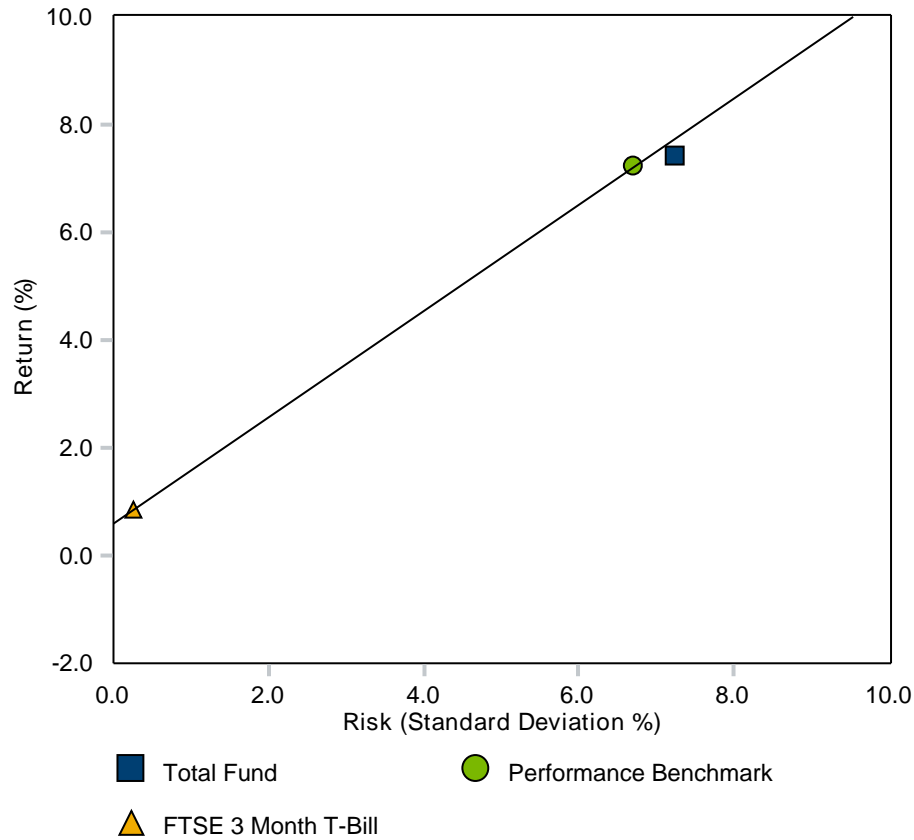
*The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 141 of this report.

*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.

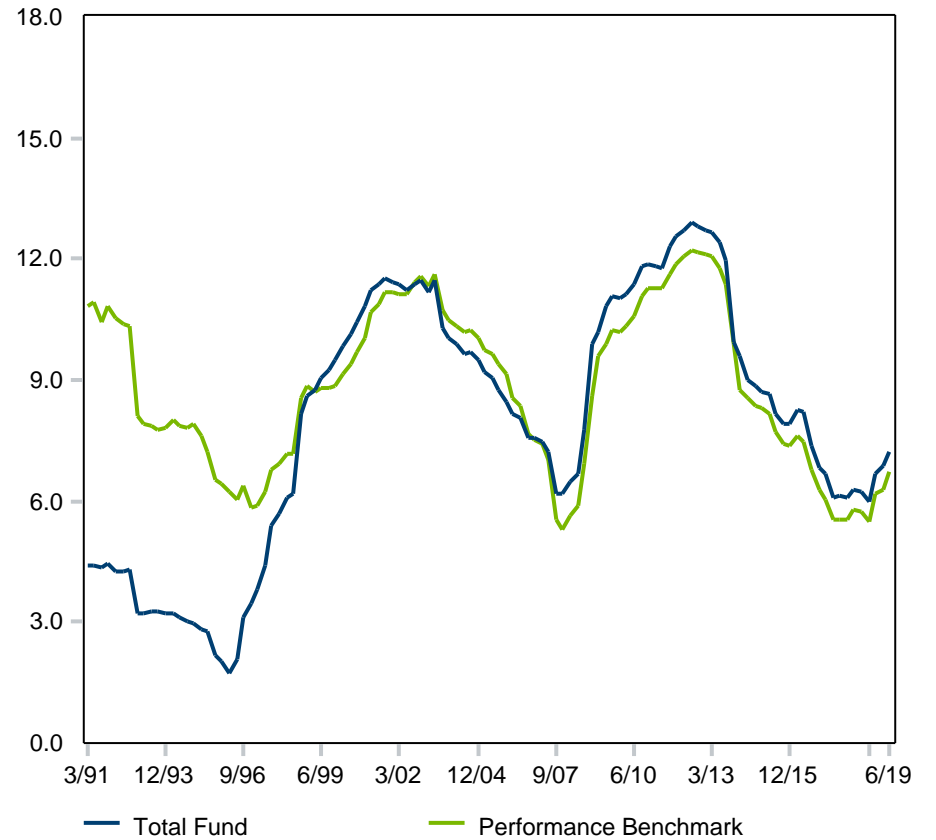
*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. This represents an approximate 9.9% yield for the 2017 fiscal year. The value shown above represents the year-end market value in accordance 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

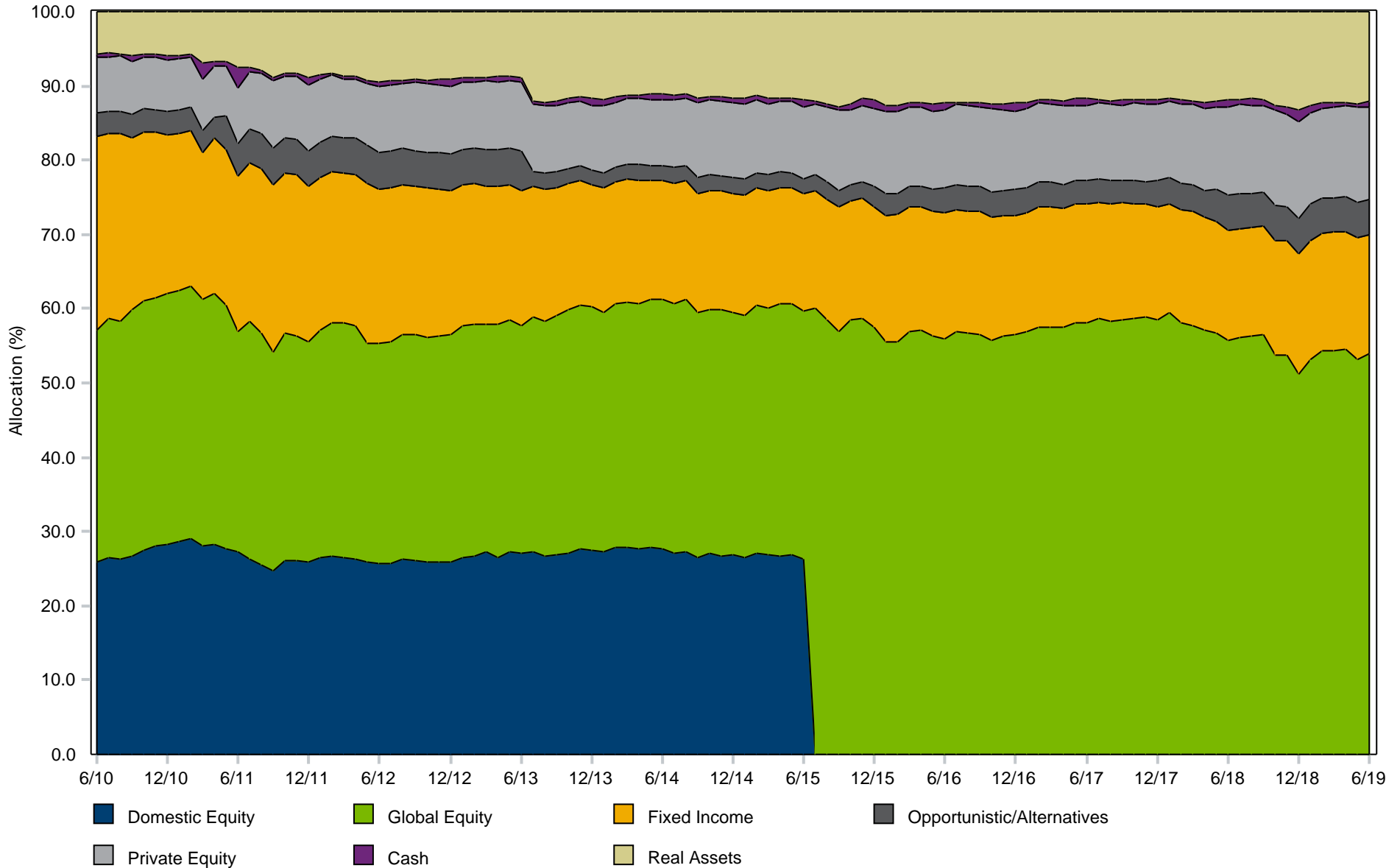


5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Fund	0.22	1.89	0.11	0.93	0.91	-0.08	1.04	7.41	7.24	0.97
Performance Benchmark	0.00	0.00	N/A	1.00	0.95	0.00	1.00	7.22	6.72	1.00
FTSE 3 Month T-Bill	-6.37	6.72	-0.95	0.00	N/A	0.84	0.00	0.84	0.25	0.03

Historical Asset Allocation by Segment

Total Fund



Asset Allocation as of 6/30/2019							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	\$619,426.5	--	--	--	--	\$619,426.5	3.52%		
Allianz Structured Alpha U.S. 250	\$176,417.2	--	--	--	--	\$176,417.2	1.00%		
Allianz Structured Alpha Global 500	\$832,881.8	--	--	--	--	\$832,881.8	4.73%		
Allianz Structured Alpha Global 350	\$441,987.1	--	--	--	--	\$441,987.1	2.51%		
Kennedy Capital Management	\$531,143.4	--	--	--	--	\$531,143.4	3.02%		
Stephens	\$429,918.6	--	--	--	--	\$429,918.6	2.44%		
Voya Absolute Return	\$542,928.7	--	--	--	--	\$542,928.7	3.09%		
Allianz (Nicholas Applegate)	\$596,230.2	--	--	--	--	\$596,230.2	3.39%		
Pershing Square International	\$120,480.9	--	--	--	--	\$120,480.9	0.68%		
Pershing Square Holdings	\$126,112.0	--	--	--	--	\$126,112.0	0.72%		
SSgA Global Index	\$926,462.4	--	--	--	--	\$926,462.4	5.27%		
BlackRock MSCI ACWI IMI Fund	\$318,438.2	--	--	--	--	\$318,438.2	1.81%		
Wellington Global Perspectives	\$529,962.5	--	--	--	--	\$529,962.5	3.01%		
T. Rowe Price Global Equity	\$902,054.0	--	--	--	--	\$902,054.0	5.13%		
Lazard	\$558,078.9	--	--	--	--	\$558,078.9	3.17%		
D.E. Shaw	\$690,080.5	--	--	--	--	\$690,080.5	3.92%		
GMO Global All Country Equity	\$411,116.9	--	--	--	--	\$411,116.9	2.34%		
Harris Global Equity	\$440,641.5	--	--	--	--	\$440,641.5	2.50%		
Triam Partners	\$66,829.6	--	--	--	--	\$66,829.6	0.38%		
Triam Partners Co-Investments	\$76,829.7	--	--	--	--	\$76,829.7	0.44%		
Capital Guardian, Knight Vinke, & Relational	\$72.3	--	--	--	--	\$72.3	0.00%		
Total Equity						\$9,338,093.0	53.09%	54.97%	53.00%
BlackRock	--	\$405,931.7	--	--	--	\$405,931.7	2.31%		
Loomis Sayles	--	\$423,477.3	--	--	--	\$423,477.3	2.41%		
Putnam	--	\$367,500.0	--	--	--	\$367,500.0	2.09%		
SSgA Aggregate Bond Index	--	\$648,969.4	--	--	--	\$648,969.4	3.69%		
Wellington Global Total Return	--	\$339,432.3	--	--	--	\$339,432.3	1.93%		
Reams Core Plus Bond Fund	--	\$354,771.8	--	--	--	\$354,771.8	2.02%		
BRS Recycling Tax Credit	--	\$192,000.0	--	--	--	\$192,000.0	1.09%		
BRS Recycling Tax Credit Phase 2	--	\$77,031.6	--	--	--	\$77,031.6	0.44%		
Total Fixed Income						\$2,809,114.2	15.97%	15.00%	15.00%
Anchorage	--	--	--	\$77,393.4	--	\$77,393.4	0.44%		
Capula	--	--	--	\$81,075.3	--	\$81,075.3	0.46%		
Graham	--	--	--	\$60,421.0	--	\$60,421.0	0.34%		
York	--	--	--	\$69,143.4	--	\$69,143.4	0.39%		
Circumference Group Core Value	--	--	--	\$28,361.4	--	\$28,361.4	0.16%		
Circumference Group Equity Opportunity Fund	--	--	--	\$1,778.0	--	\$1,778.0	0.01%		
Aeolus Keystone Fund	--	--	--	\$281,232.1	--	\$281,232.1	1.60%		
Nephila Rubik Holdings	--	--	--	\$43,950.5	--	\$43,950.5	0.25%		
Parametric Global Defensive Equity	--	--	--	\$165,734.3	--	\$165,734.3	0.94%		
Man Alternative Risk Premia	--	--	--	\$98,883.3	--	\$98,883.3	0.56%		
CFM ISD Fund 1.5x	--	--	--	\$101,325.8	--	\$101,325.8	0.58%		
Total Opportunistic/Alternatives						\$1,009,298.4	5.74%	5.71%	5.00%
Real Estate			\$1,369,706.8			\$1,369,706.8	7.79%		
Timber			\$246,527.7			\$246,527.7	1.40%		
Agriculture			\$196,715.5			\$196,715.5	1.12%		
Infrastructure			\$291,243.8			\$291,243.8	1.66%		
Total Real Assets						\$2,104,193.8	11.96%	12.32%	15.00%
Total Private Equity				\$2,182,152.2		\$2,182,152.2	12.41%	12.00%	12.00%
Total Cash					\$147,703.6	\$147,703.6	0.84%	0.00%	0.00%
Total Fund	\$9,338,093.0	\$2,809,114.2	\$2,104,193.8	\$3,191,450.6	\$147,703.6	\$17,590,555.3	100.0%	100.0%	100.0%

*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 6/30/2019				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	\$1,812.7	0.13%	0.01%	LaSalle Income & Growth Fund VII	\$13,190.8	0.96%	0.07%
Almanac Realty Securities Fund VI	\$8,079.6	0.59%	0.05%	Lone Star Real Estate Fund IV	\$10,708.4	0.78%	0.06%
Almanac Realty Securities Fund VII	\$23,179.4	1.69%	0.13%	Long Wharf Real Estate Partners V	\$25,252.4	1.84%	0.14%
Almanac Realty Securities Fund VIII	\$1,296.6	0.09%	0.01%	Metropolitan RE Co-Investments	\$13,874.3	1.01%	0.08%
American Center	\$69,607.3	5.08%	0.40%	New Boston Fund VII	\$248.6	0.02%	0.00%
AR Insurance	\$7,014.7	0.51%	0.04%	O'Connor NAPP II	\$10,580.4	0.77%	0.06%
AR Teachers Retirement Building	\$5,088.2	0.37%	0.03%	Olympus	\$355.4	0.03%	0.00%
Blackstone Real Estate Partners VII	\$29,591.9	2.16%	0.17%	PRISA	\$270,809.7	19.77%	1.54%
Carlyle Realty Partners VII	\$17,249.9	1.26%	0.10%	Recoveries Land	\$84.0	0.01%	0.00%
Carlyle Realty VIII	\$2,036.9	0.15%	0.01%	Rockwood Capital RE Partners IX	\$10,517.3	0.77%	0.06%
CBREI SP U.S. Opportunity V	\$10,666.8	0.78%	0.06%	Rose Law Firm	\$4,632.9	0.34%	0.03%
CBREI SP VIII	\$22,393.6	1.63%	0.13%	Texarkana DHS	\$1,807.0	0.13%	0.01%
Cerberus Institutional RE Partners III	\$14,765.1	1.08%	0.08%	Torchlight Debt Opportunity Fund II	\$486.3	0.04%	0.00%
Chenal Retirement Village	\$1,900.0	0.14%	0.01%	Torchlight Debt Opportunity Fund III	\$0.0	0.00%	0.00%
Calmwater	\$16,343.6	1.19%	0.09%	Torchlight Debt Opportunity Fund IV	\$9,002.1	0.66%	0.05%
Fletcher Properties	\$1,296.8	0.09%	0.01%	Torchlight Debt Opportunity Fund V	\$19,469.3	1.42%	0.11%
FPA Core Plus IV	\$13,707.8	1.00%	0.08%	Torchlight Debt Opportunity Fund VI	\$10,077.4	0.74%	0.06%
Harbert European Real Estate	\$28,102.3	2.05%	0.16%	UBS Trumbull Property Fund	\$252,236.2	18.42%	1.43%
Heitman European Property IV	\$3,573.5	0.26%	0.02%	UBS Trumbull Property Income Fund	\$52,392.4	3.83%	0.30%
JP Morgan Strategic Property Fund	\$281,849.5	20.58%	1.60%	Victory	\$32,912.9	2.40%	0.19%
Kayne Anderson V	\$10,455.6	0.76%	0.06%	Walton Street Real Estate Debt II	\$2,000.0	0.15%	0.01%
Landmark Fund VI	\$3,599.1	0.26%	0.02%	West Mphs. DHS	\$2,371.2	0.17%	0.01%
Landmark Real Estate VIII	\$5,203.2	0.38%	0.03%	Westbrook IX	\$16,447.0	1.20%	0.09%
LaSalle Asia Opportunity Fund IV	\$3,763.9	0.27%	0.02%	Westbrook Real Estate Fund X	\$14,102.8	1.03%	0.08%
LaSalle Asia Opportunity Fund V	\$5,939.1	0.43%	0.03%	Woodland Heights	\$0.3	0.00%	0.00%
LaSalle Income & Growth Fund VI	\$7,630.6	0.56%	0.04%				
Total Real Estate					\$1,369,706.8	100.00%	7.78%

Asset Allocation as of 6/30/2019				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	\$21,613.4	0.99%	0.12%	JF Lehman III	\$30,679.9	1.41%	0.17%
Advent GPE VI	\$7,749.8	0.36%	0.04%	JF Lehman IV	\$25,109.9	1.15%	0.14%
Altus Capital II	\$8,326.4	0.38%	0.05%	KPS III	\$7,029.5	0.32%	0.04%
American Industrial Partners VI	\$19,461.0	0.89%	0.11%	KPS IV	\$12,336.2	0.57%	0.07%
Altaris Constellation Partners	\$19,033.3	0.87%	0.11%	Levine Leichtman V	\$16,848.1	0.77%	0.10%
Altaris Health Partners IV	\$7,287.4	0.33%	0.04%	Lime Rock III	\$24,467.9	1.12%	0.14%
Atlas Capital II	\$12,031.7	0.55%	0.07%	LLR III	\$9,001.0	0.41%	0.05%
Audax Mezzanine III	\$4,068.6	0.19%	0.02%	Mason Wells III	\$15,696.8	0.72%	0.09%
Big River - Equity	\$317,000.0	14.53%	1.80%	NGP IX	\$1,193.4	0.05%	0.01%
Big River - Equity (Phase 2)	\$58,000.0	2.66%	0.33%	NGP X	\$13,543.6	0.62%	0.08%
Big River - Holdings Note 2023	\$12,529.7	0.57%	0.07%	NGP XI	\$28,750.4	1.32%	0.16%
Big River - Holdings Note 3/16/23	\$5,241.4	0.24%	0.03%	NGP XII	\$8,540.9	0.39%	0.05%
Bison V	\$17,697.7	0.81%	0.10%	One Rock Capital Partners II	\$17,596.1	0.81%	0.10%
Boston Ventures VII	\$17,172.0	0.79%	0.10%	PineBridge	\$15,510.3	0.71%	0.09%
Boston Ventures IX	\$14,122.4	0.65%	0.08%	Riverside IV	\$3,356.4	0.15%	0.02%
BV VIII	\$22,959.9	1.05%	0.13%	Riverside V	\$25,022.6	1.15%	0.14%
Castlelake II	\$17,274.4	0.79%	0.10%	Riverside VI	\$3,953.7	0.18%	0.02%
Castlelake III	\$18,769.4	0.86%	0.11%	Siris III	\$14,281.7	0.65%	0.08%
Clearlake V	\$19,651.3	0.90%	0.11%	Siris IV	\$4,236.9	0.19%	0.02%
Court Square III	\$38,868.9	1.78%	0.22%	SK Capital V	\$3,423.0	0.16%	0.02%
CSFB-ATRS 2005-1 Series	\$51,310.4	2.35%	0.29%	Sycamore Partners II	\$18,142.9	0.83%	0.10%
CSFB-ATRS 2006-1 Series	\$100,223.7	4.59%	0.57%	Sycamore Partners III	\$2,522.0	0.12%	0.01%
Diamond State Ventures II	\$6,127.8	0.28%	0.03%	TA XI	\$26,873.5	1.23%	0.15%
Doughty Hanson Tech I	\$441.8	0.02%	0.00%	Tennenbaum VI	\$14,349.9	0.66%	0.08%
DW Healthcare III	\$20,394.8	0.93%	0.12%	Thoma Bravo Discover	\$11,995.0	0.55%	0.07%
DW Healthcare IV	\$28,598.9	1.31%	0.16%	Thoma Bravo Discover II	\$3,815.8	0.17%	0.02%
EnCap IX	\$16,800.6	0.77%	0.10%	Thoma Bravo XI	\$30,916.4	1.42%	0.18%
EnCap VIII	\$15,508.5	0.71%	0.09%	Thoma Bravo XII	\$34,320.4	1.57%	0.19%
EnCap X	\$25,895.2	1.19%	0.15%	Thoma Bravo XIII	\$10,651.3	0.49%	0.06%
EnCap XI	\$5,449.5	0.25%	0.03%	Vista Equity III	\$5,995.8	0.27%	0.03%
Franklin Park Series	\$593,993.1	27.22%	3.37%	Vista Foundation II	\$15,503.9	0.71%	0.09%
GCG	\$20,086.0	0.92%	0.11%	Vista Foundation III	\$22,162.9	1.02%	0.13%
GTLA Holdings	\$20,000.0	0.92%	0.11%	Wellspring V	\$17,798.6	0.82%	0.10%
Highland	\$63,402.4	2.91%	0.36%	Wicks IV	\$30,089.9	1.38%	0.17%
Insight Equity II	\$25,372.3	1.16%	0.14%	WNG II	\$464.9	0.02%	0.00%
Insight Mezzanine I	\$3,506.9	0.16%	0.02%				
Total Private Equity					\$2,182,152.2	100.00%	12.40%

*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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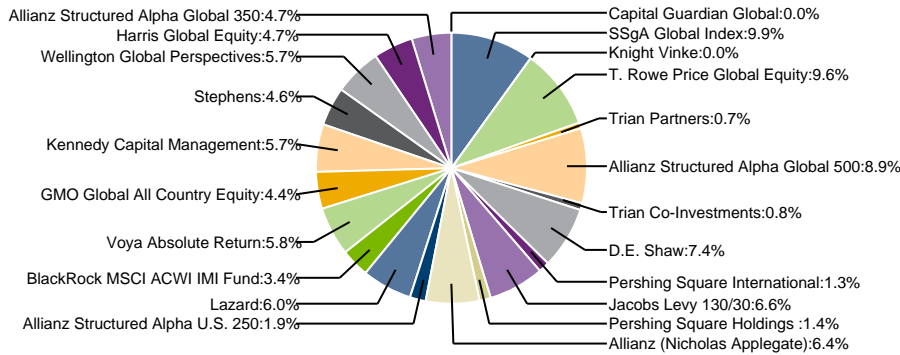


Total Equity

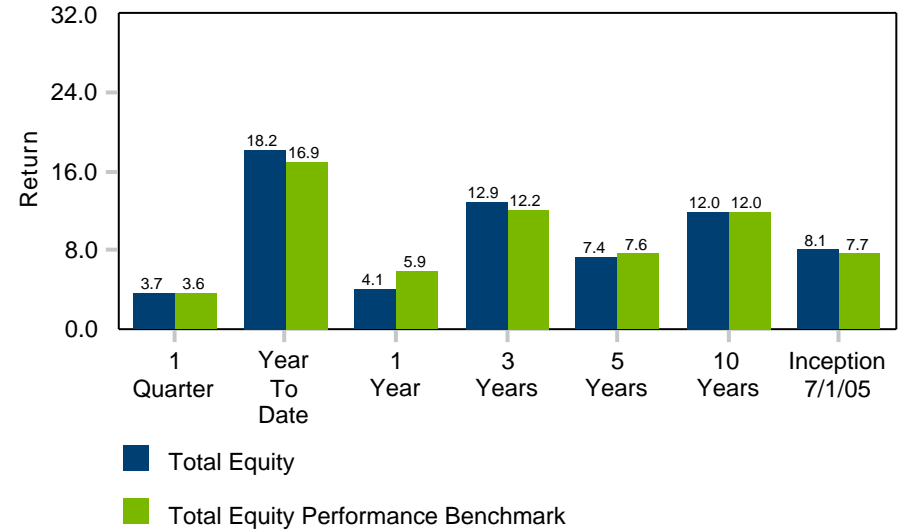
Total Equity Portfolio Overview

Current Allocation

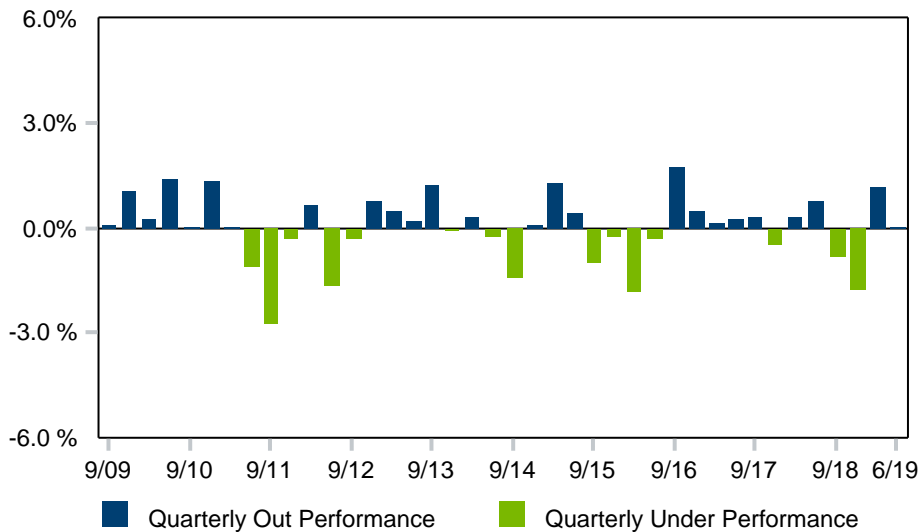
June 30, 2019 : \$9,332M



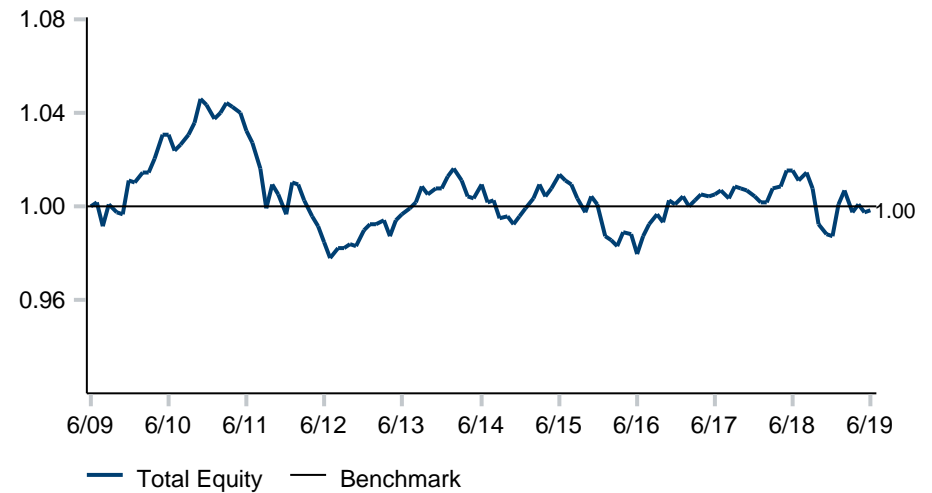
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - 10 Years

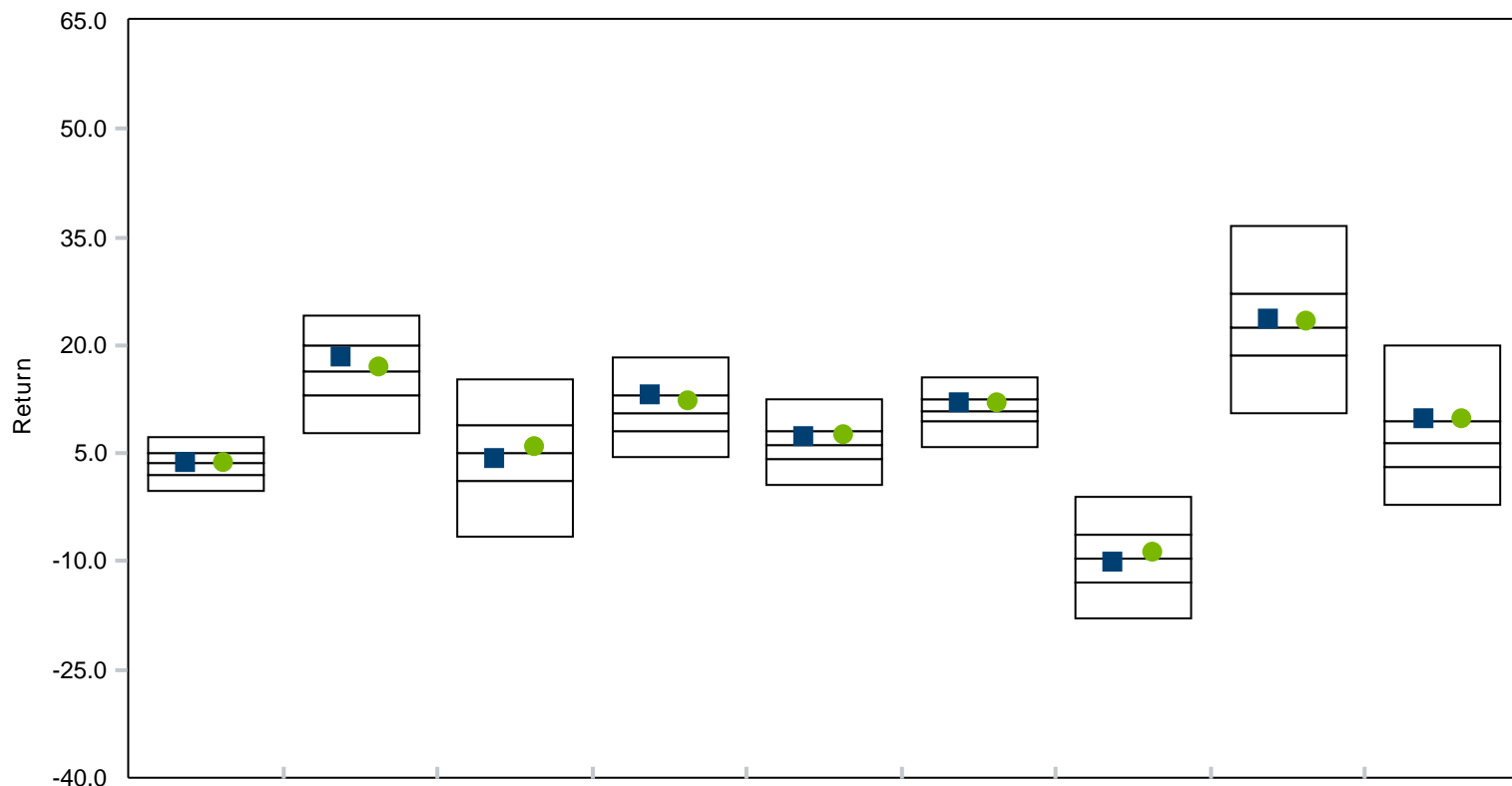


The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 141 of this report.

As of June 30, 2019

Peer Group Analysis

IM Global Equity (SA+CF)

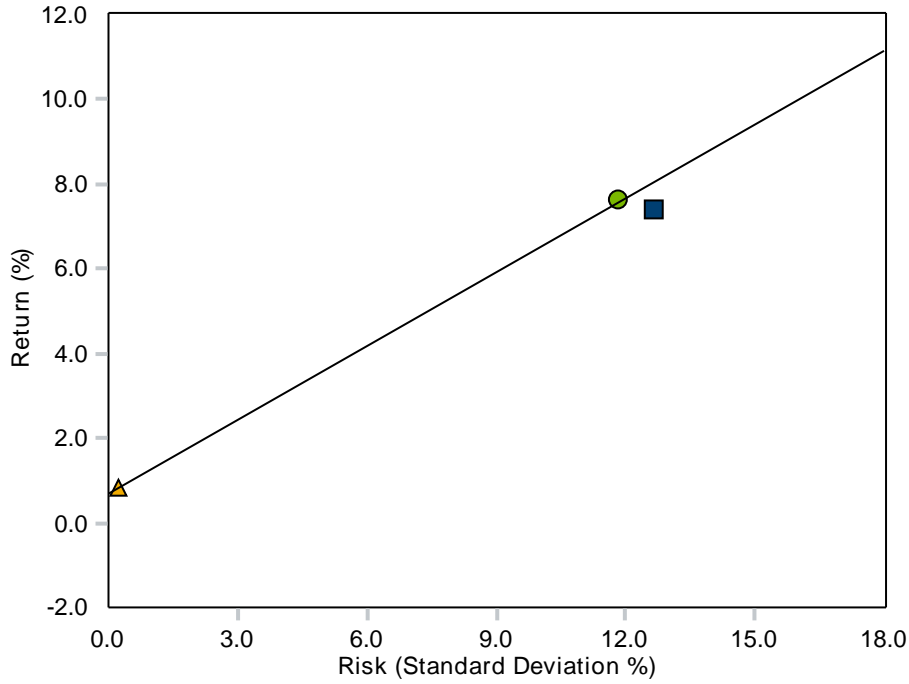


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ Total Equity	3.7 (53)	18.2 (37)	4.1 (57)	12.9 (26)	7.4 (31)	12.0 (31)	-10.2 (56)	23.5 (44)	9.9 (23)
● Total Equity Performance Benchmark	3.6 (53)	16.9 (46)	5.9 (45)	12.2 (33)	7.6 (29)	12.0 (30)	-8.7 (43)	23.1 (47)	9.8 (24)
5th Percentile	7.2	24.1	15.2	18.4	12.5	15.5	-1.1	36.5	19.9
1st Quartile	5.0	20.0	8.9	13.0	8.1	12.4	-6.4	27.2	9.4
Median	3.7	16.4	5.0	10.6	6.1	10.9	-9.6	22.5	6.3
3rd Quartile	2.1	13.1	1.2	8.1	4.3	9.5	-12.9	18.6	3.1
95th Percentile	-0.1	7.9	-6.7	4.4	0.5	5.9	-17.9	10.6	-2.3
Population	475	475	473	447	405	254	510	537	564

79
Parentheses contain percentile rankings.

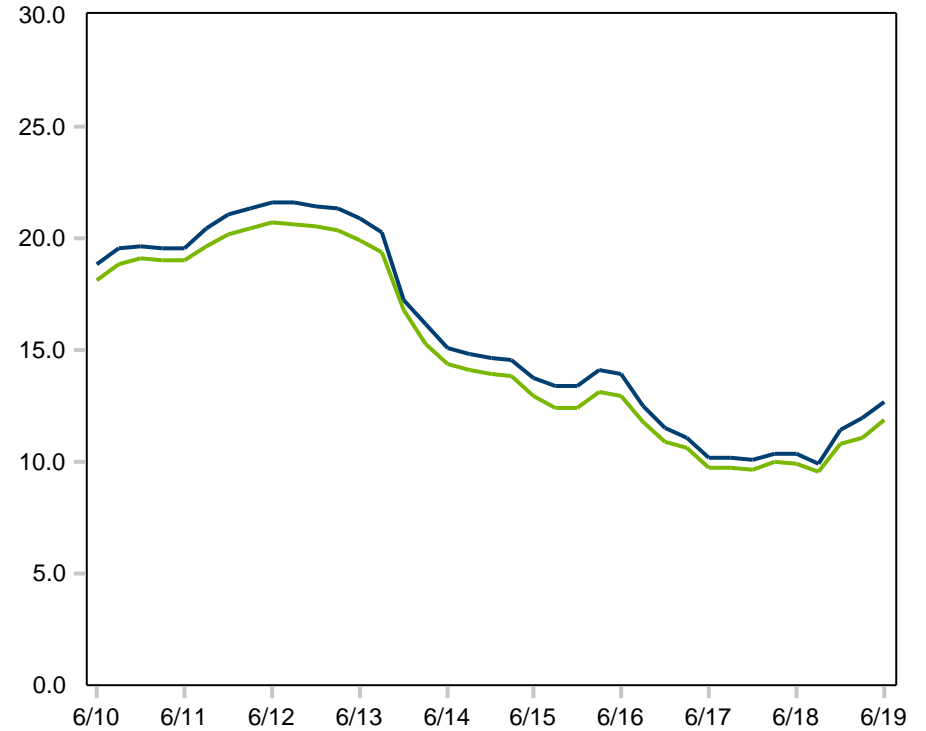
Total Equity Risk Profile

Annualized Return vs. Annualized Standard Deviation
5 Years



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

Rolling 5 Years Standard Deviation



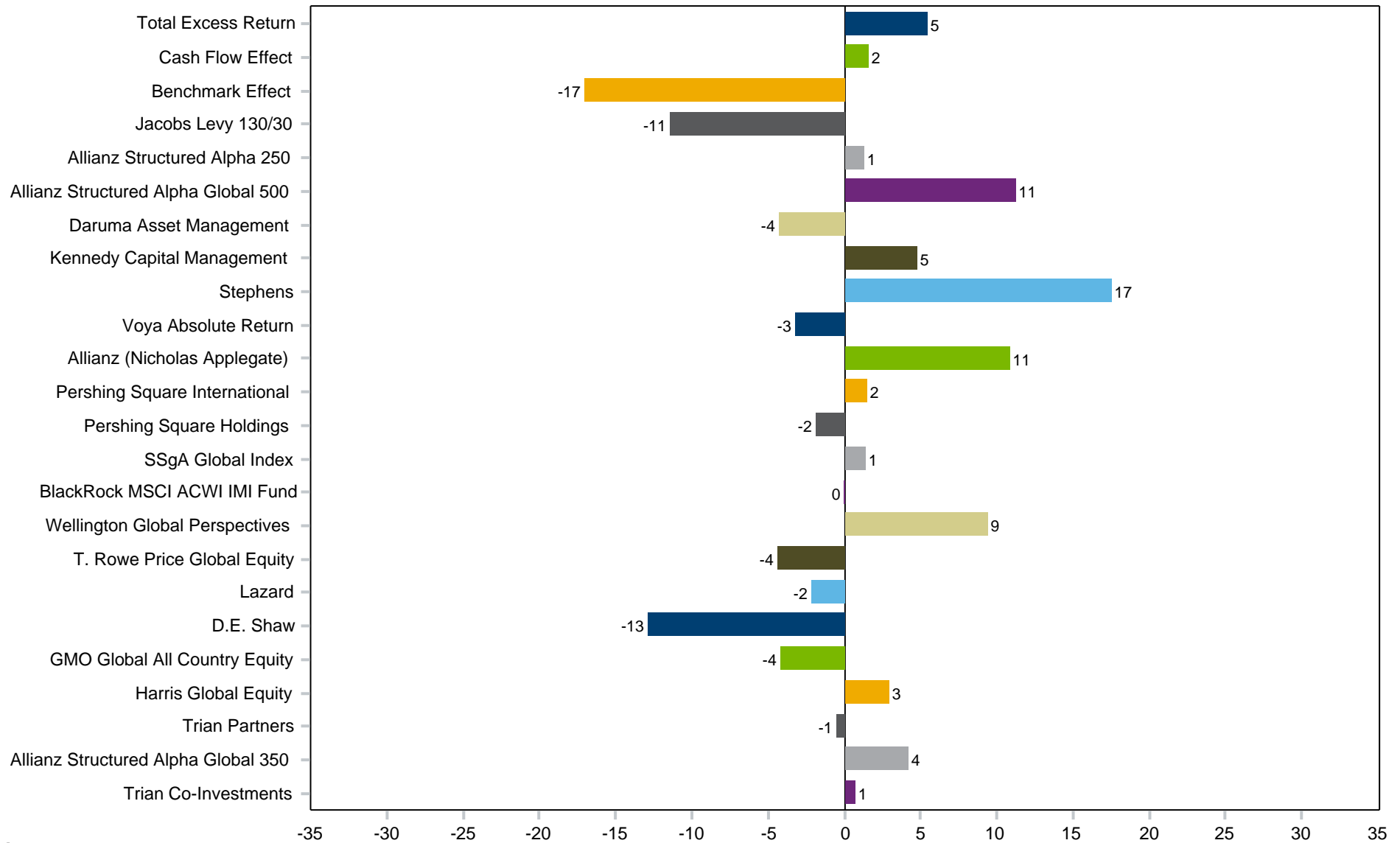
- Total Equity
- Total Equity Performance Benchmark

5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Equity	-0.12	1.89	-0.07	0.98	0.56	-0.59	1.06	7.36	12.68	0.99
Total Equity Performance Benchmark	0.00	0.00	N/A	1.00	0.61	0.00	1.00	7.60	11.87	1.00
FTSE 3 Month T-Bill	-7.20	11.86	-0.61	0.00	N/A	0.84	0.00	0.84	0.25	0.03

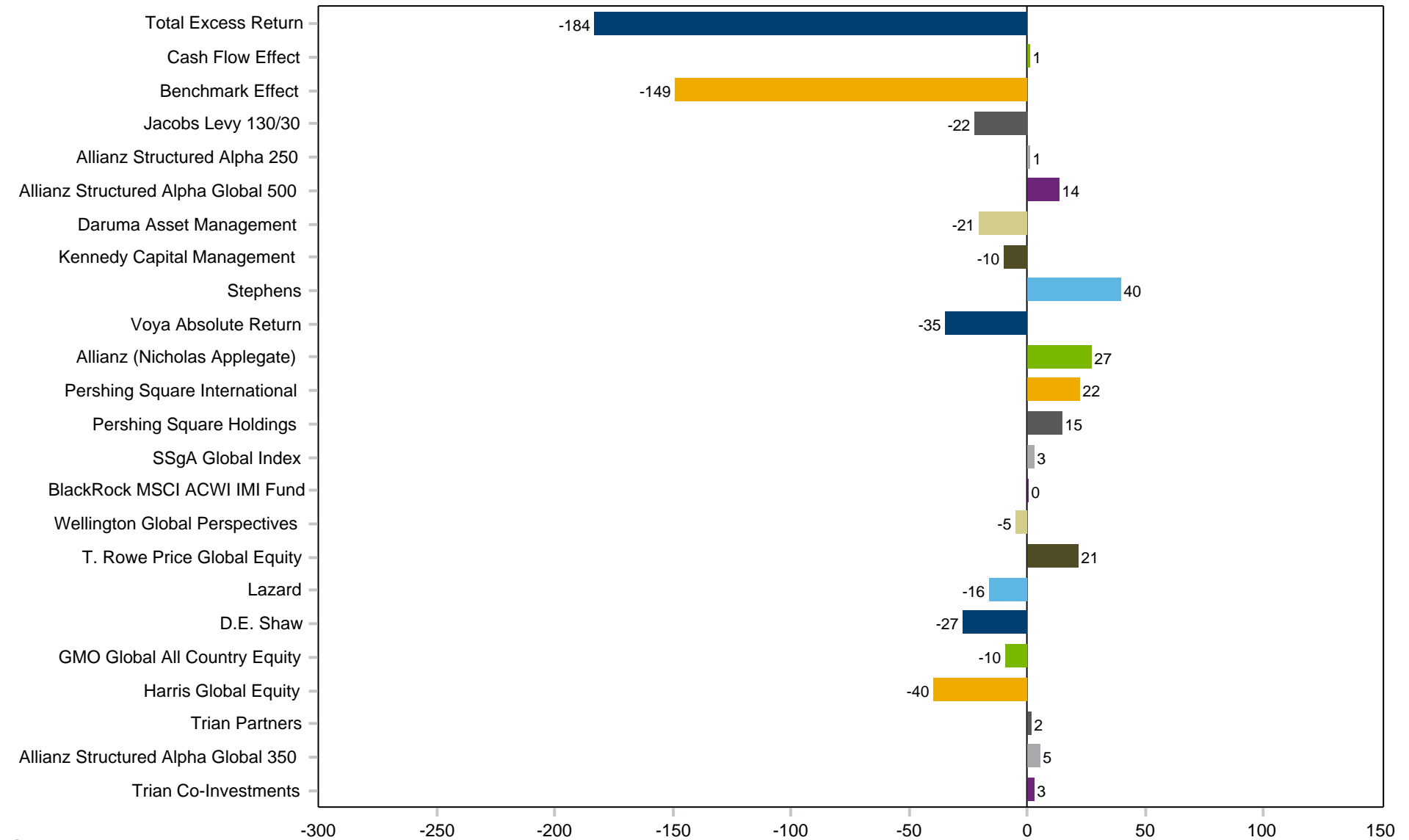
Asset Class Attribution

1 Quarter



Asset Class Attribution

1 Year

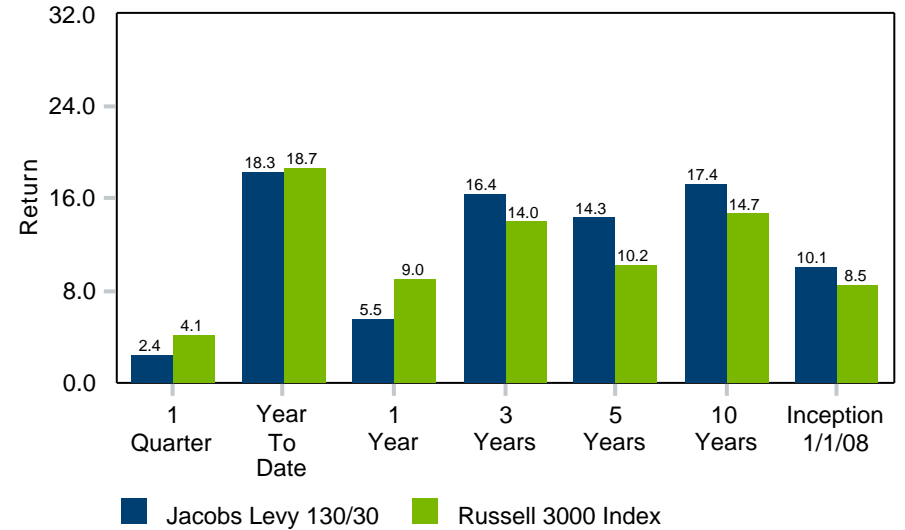


Jacobs Levy 130/30 Performance Summary

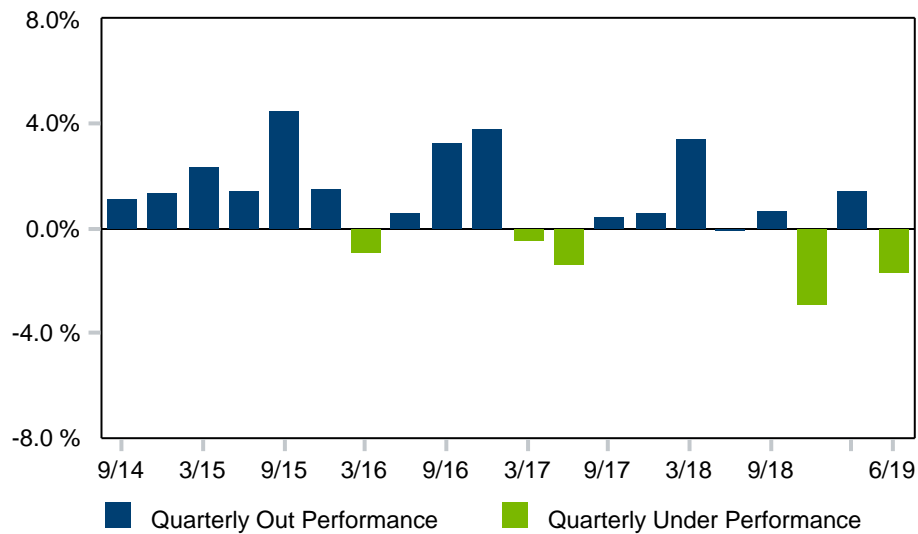
Account Information

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)

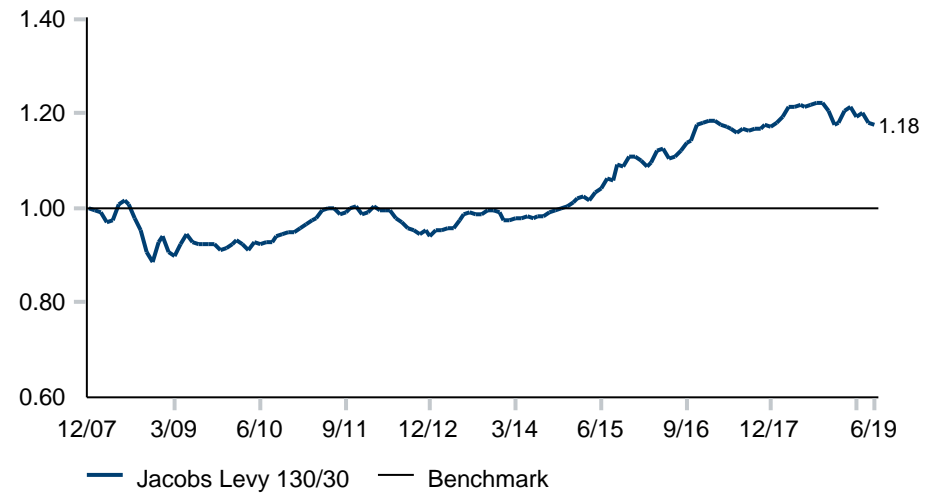
Return Summary



Quarterly Excess Performance

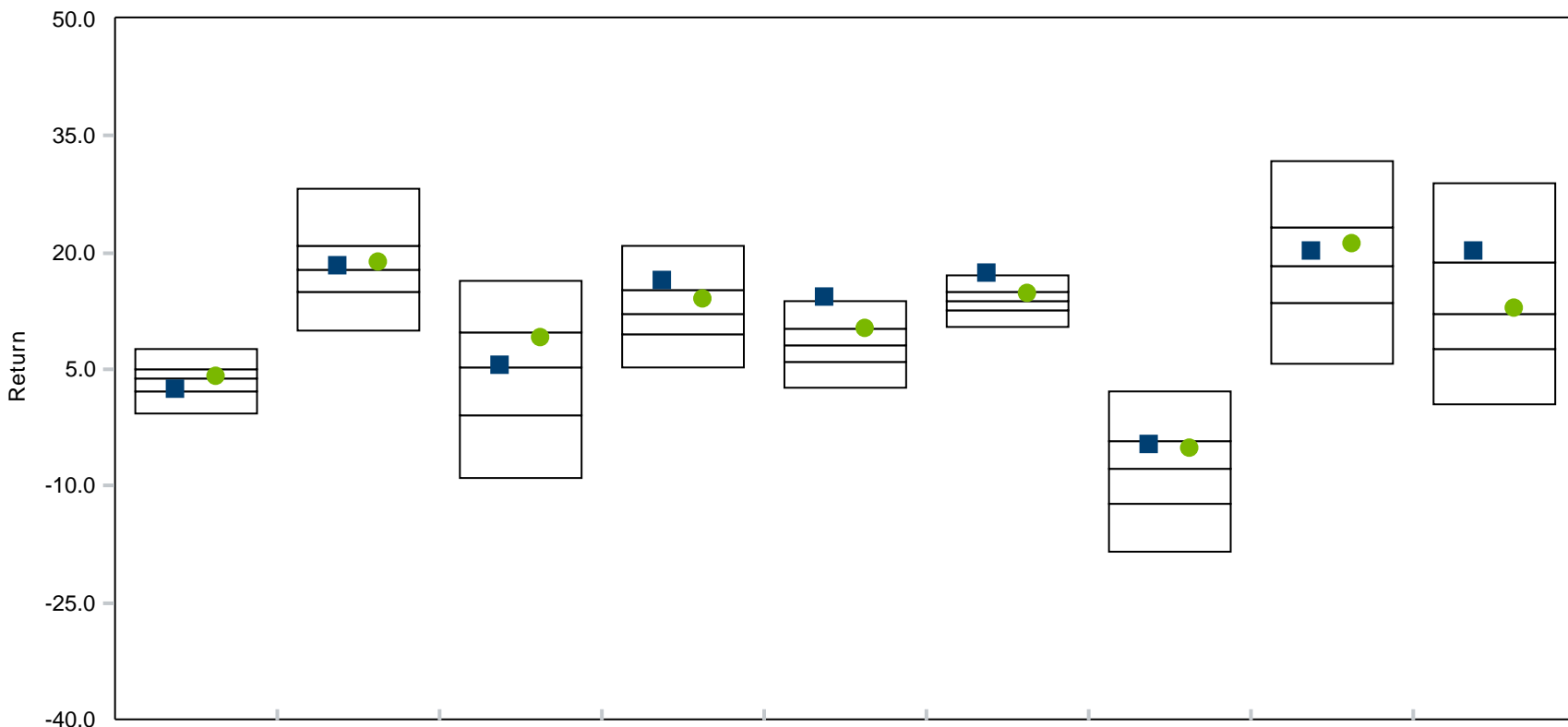


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

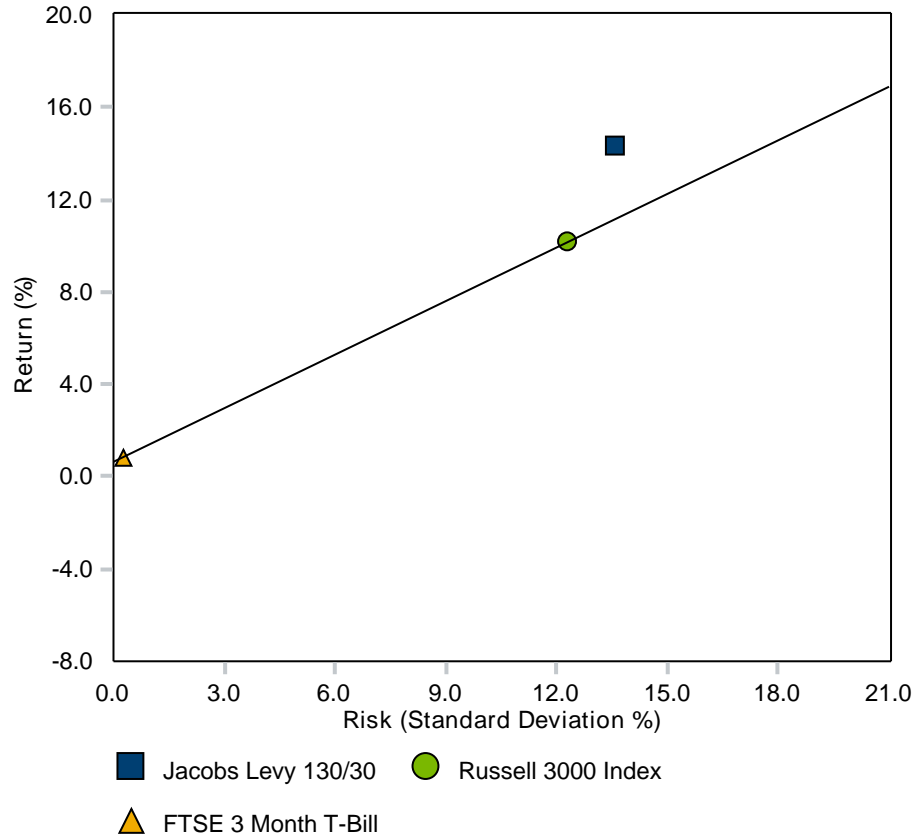


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ Jacobs Levy 130/30	2.4 (73)	18.3 (45)	5.5 (49)	16.4 (19)	14.3 (4)	17.4 (4)	-4.7 (28)	20.3 (41)	20.2 (20)
● Russell 3000 Index	4.1 (42)	18.7 (41)	9.0 (31)	14.0 (32)	10.2 (26)	14.7 (31)	-5.2 (33)	21.1 (35)	12.7 (48)
5th Percentile	7.6	28.3	16.3	20.9	13.7	17.1	2.2	31.7	29.0
1st Quartile	5.0	20.8	9.7	15.1	10.2	15.0	-4.2	23.2	18.7
Median	3.7	17.9	5.3	12.2	8.1	13.8	-7.9	18.3	12.1
3rd Quartile	2.2	15.0	-0.8	9.5	6.0	12.7	-12.4	13.6	7.6
95th Percentile	-0.7	10.0	-8.9	5.2	2.5	10.3	-18.5	5.6	0.6
Population	2,234	2,234	2,227	2,173	2,098	1,770	2,390	2,515	2,669

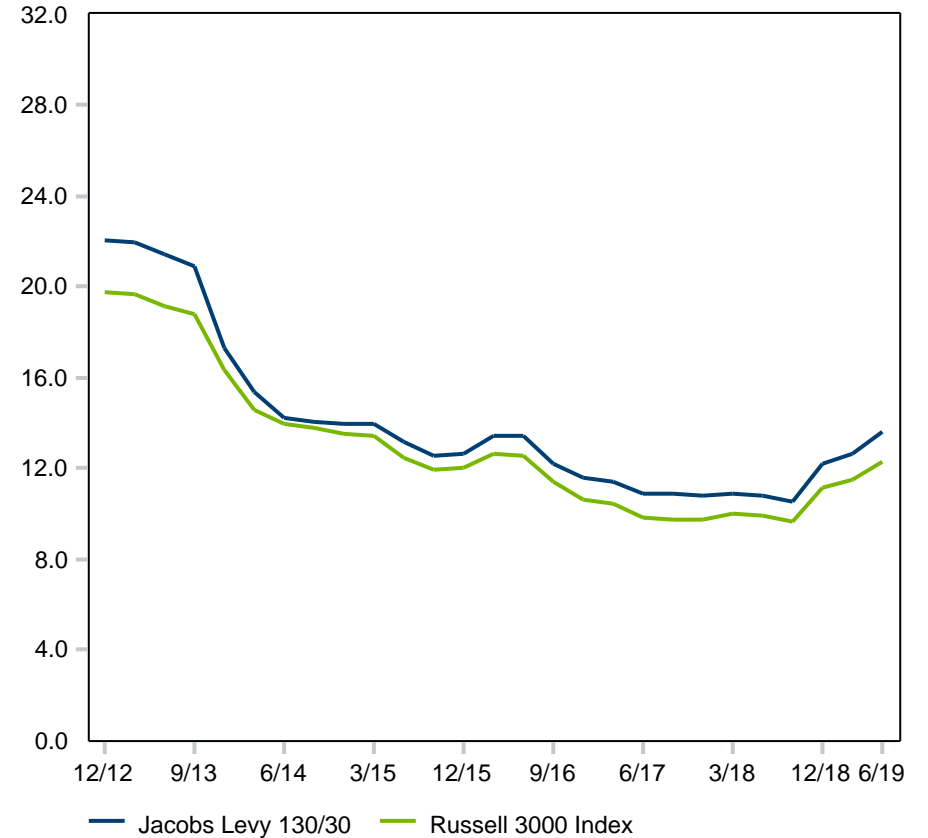
70 Parentheses contain percentile rankings.

Jacobs Levy 130/30 Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

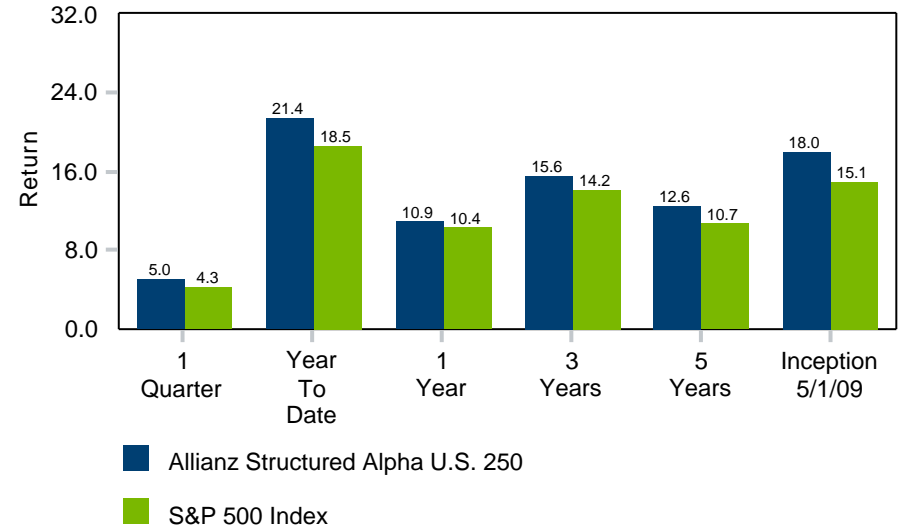
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Jacobs Levy 130/30	3.85	3.81	1.01	0.92	0.99	3.25	1.06	14.30	13.61	0.96
Russell 3000 Index	0.00	0.00	N/A	1.00	0.78	0.00	1.00	10.19	12.33	1.00
FTSE 3 Month T-Bill	-9.65	12.32	-0.78	0.00	N/A	0.84	0.00	0.84	0.25	0.03

Allianz Structured Alpha U.S. 250 Performance Summary

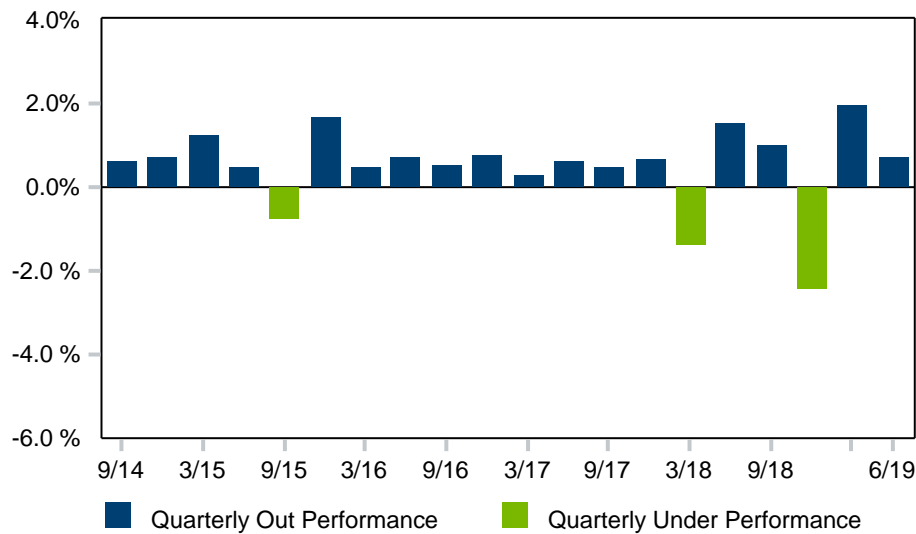
Account Information

Account Name: Allianz Structured Alpha U.S. 250
 Inception Date: 04/30/2009
 Account Structure: Commingled Fund
 Asset Class: US Equity
 Benchmark: S&P 500 Index
 Peer Group: IM U.S. Equity (SA+CF)

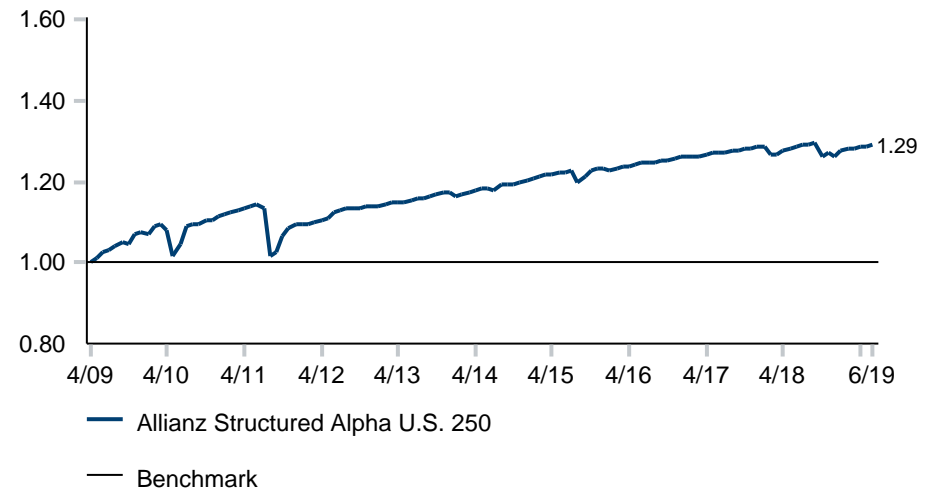
Return Summary



Quarterly Excess Performance

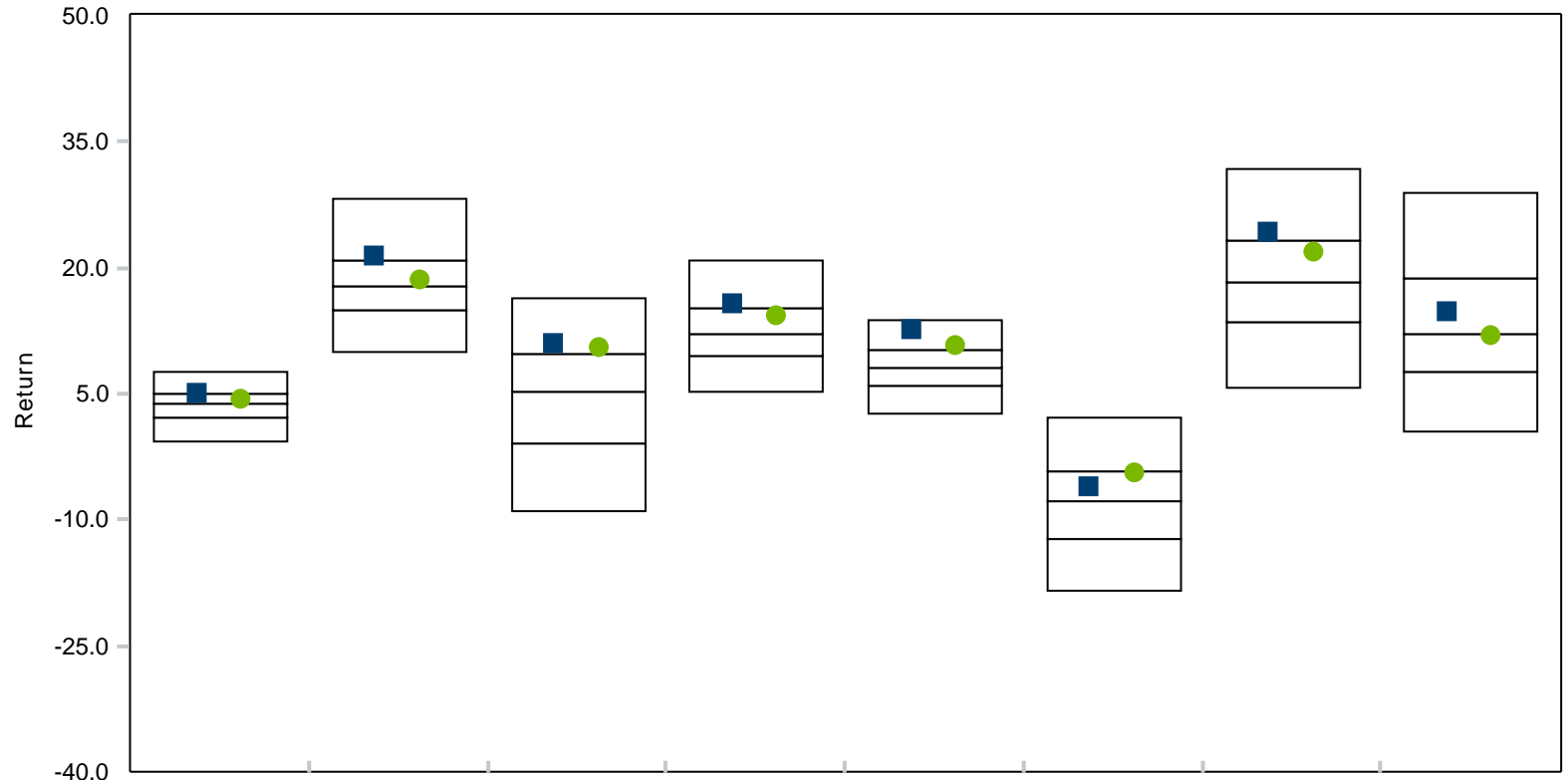


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)



	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ Allianz Structured Alpha U.S. 250	5.0 (25)	21.4 (22)	10.9 (20)	15.6 (23)	12.6 (9)	-6.2 (40)	24.2 (22)	14.7 (41)
● S&P 500 Index	4.3 (37)	18.5 (42)	10.4 (23)	14.2 (31)	10.7 (21)	-4.4 (26)	21.8 (31)	12.0 (51)
5th Percentile	7.6	28.3	16.3	20.9	13.7	2.2	31.7	29.0
1st Quartile	5.0	20.8	9.7	15.1	10.2	-4.2	23.2	18.7
Median	3.7	17.9	5.3	12.2	8.1	-7.9	18.3	12.1
3rd Quartile	2.2	15.0	-0.8	9.5	6.0	-12.4	13.6	7.6
95th Percentile	-0.7	10.0	-8.9	5.2	2.5	-18.5	5.6	0.6
Population	2,234	2,234	2,227	2,173	2,098	2,390	2,515	2,669

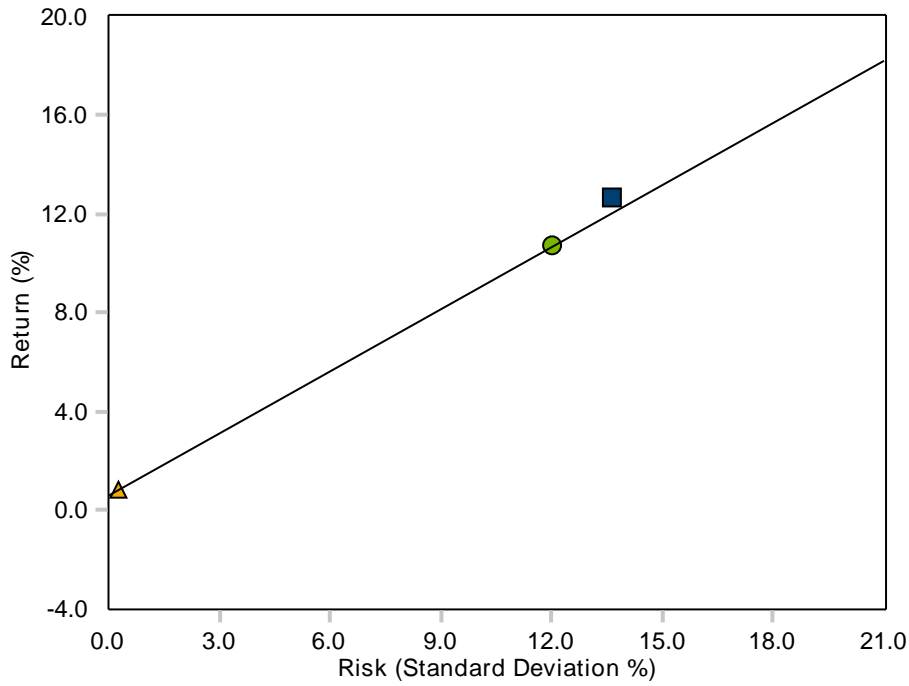


Population

— Parentheses contain percentile rankings.

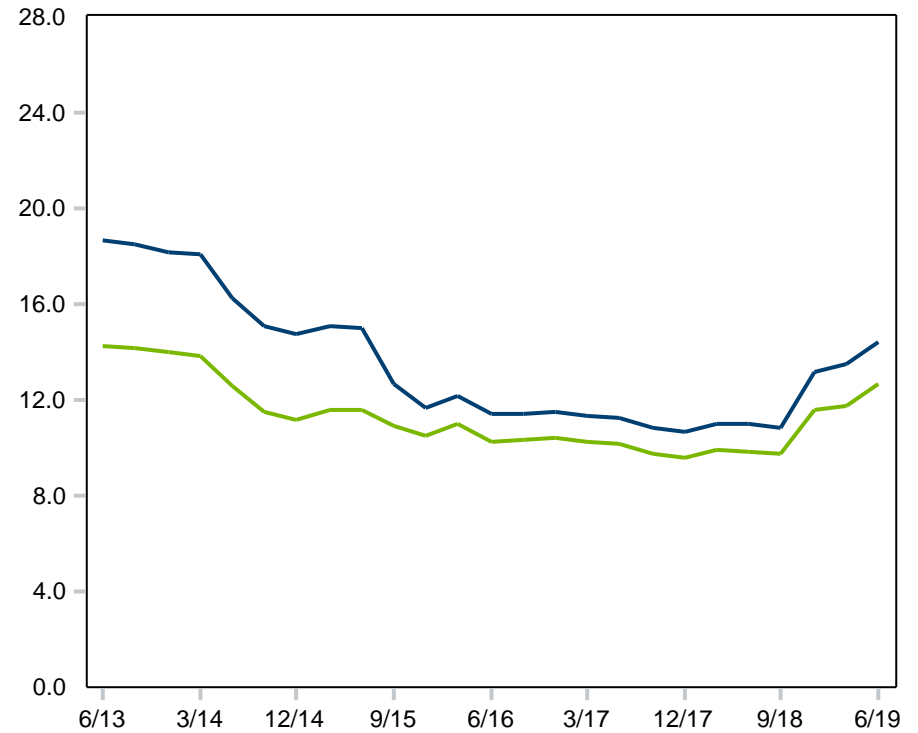
Allianz Structured Alpha U.S. 250 Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



- Allianz Structured Alpha U.S. 250
- S&P 500 Index
- ▲ FTSE 3 Month T-Bill

Rolling 4 Years Standard Deviation



- Allianz Structured Alpha U.S. 250
- S&P 500 Index

5 Years Historical Statistics

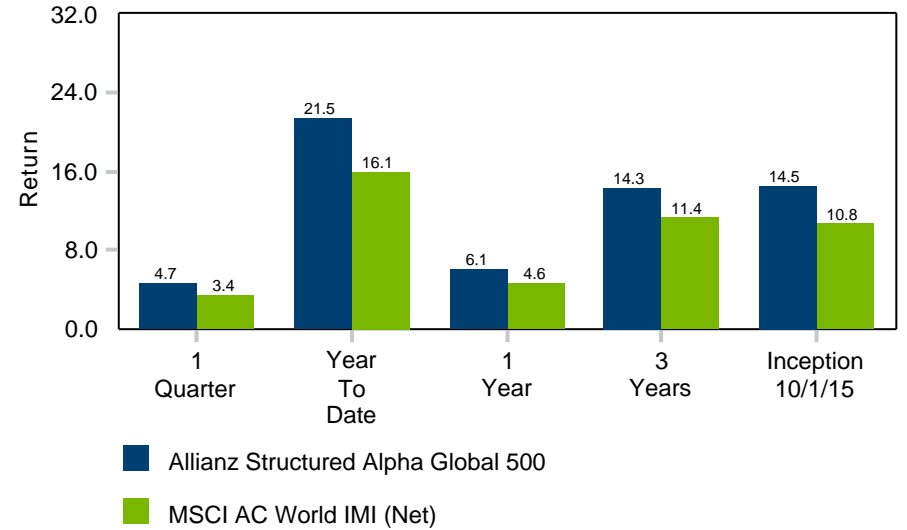
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Allianz Structured Alpha U.S. 250	1.94	2.29	0.85	0.98	0.88	0.60	1.12	12.63	13.63	0.99
S&P 500 Index	0.00	0.00	N/A	1.00	0.84	0.00	1.00	10.71	12.03	1.00
FTSE 3 Month T-Bill	-10.09	12.03	-0.84	0.00	N/A	0.84	0.00	0.84	0.25	0.03

Allianz Structured Alpha Global 500 Performance Summary

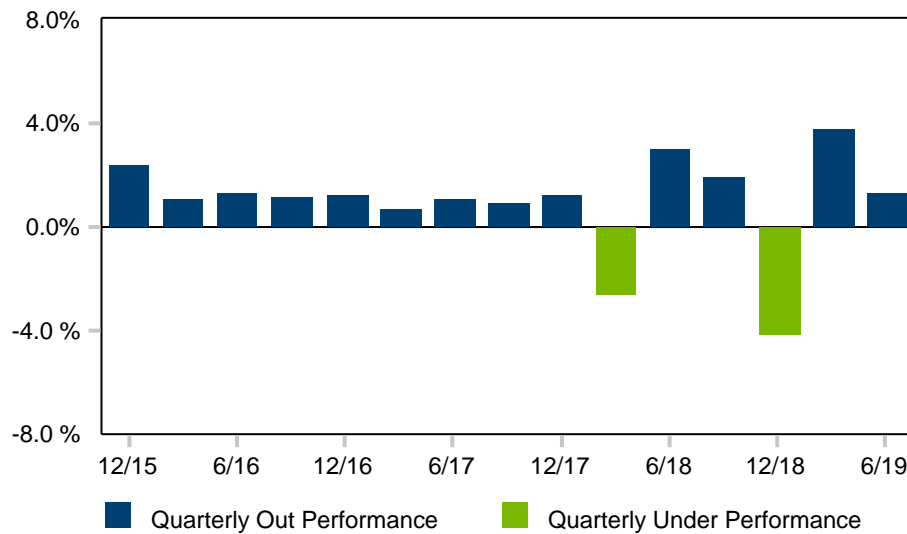
Account Information

Account Name: Allianz Structured Alpha Global 500
 Inception Date: 10/01/2015
 Account Structure: Commingled Fund
 Asset Class: Global Equity
 Benchmark: MSCI AC World IMI (Net)
 Peer Group: IM Global Equity (SA+CF)

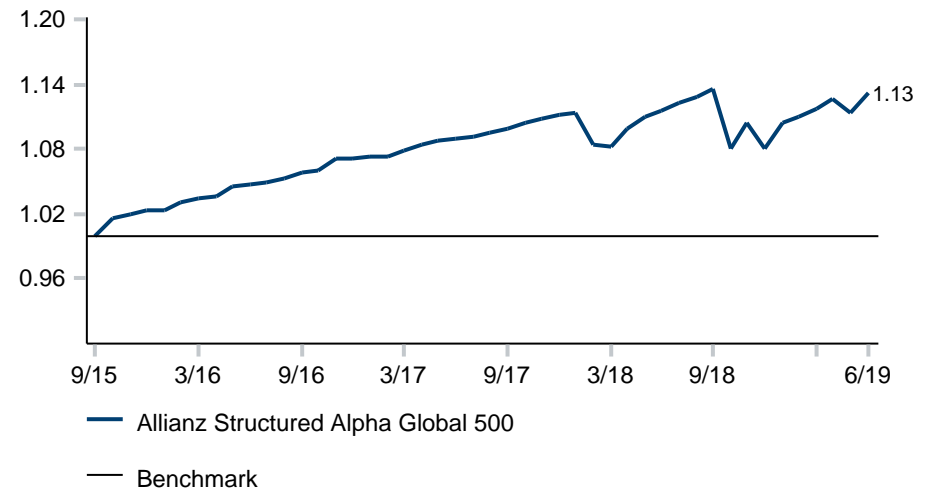
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

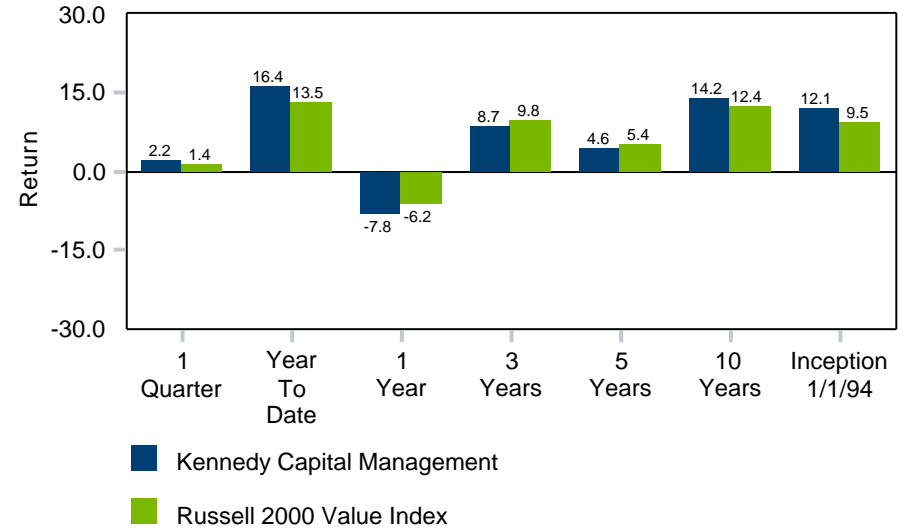


Kennedy Capital Management Performance Summary

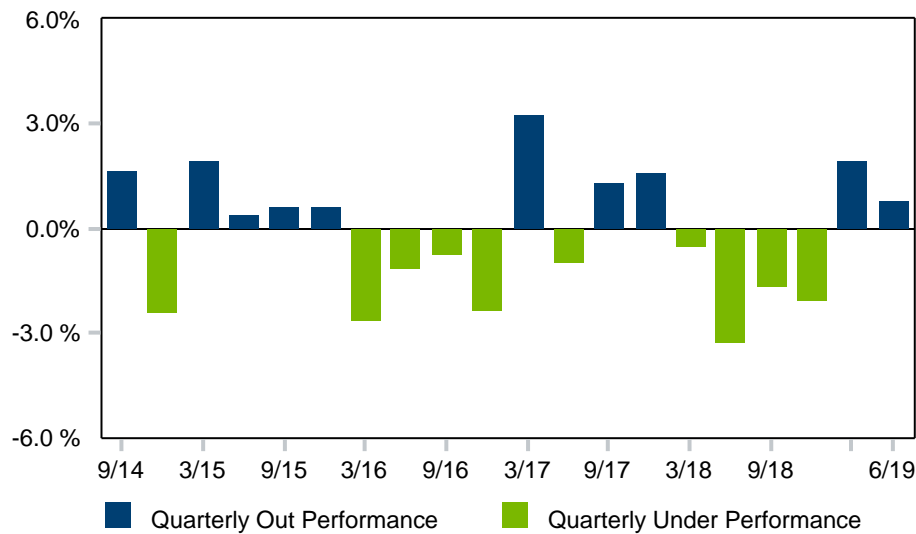
Account Information

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)

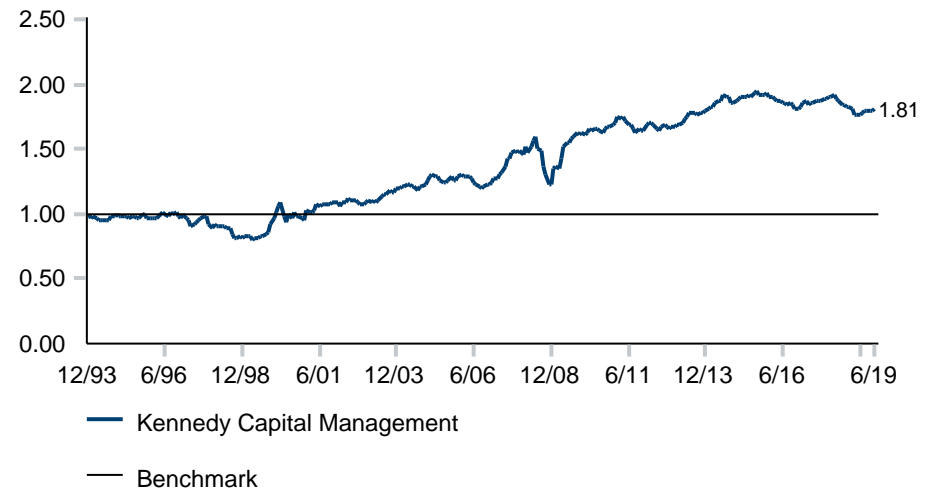
Return Summary



Quarterly Excess Performance

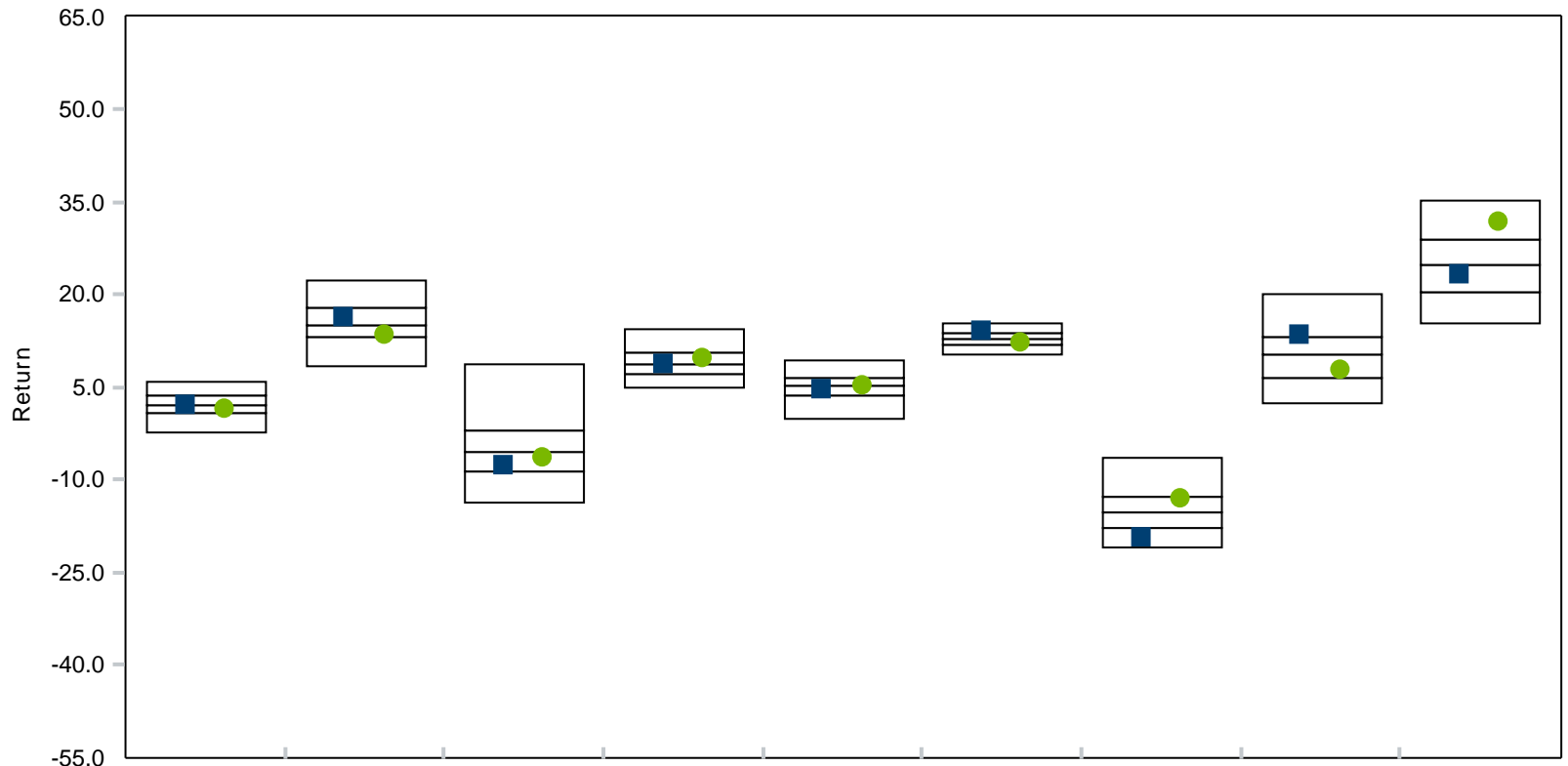


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

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

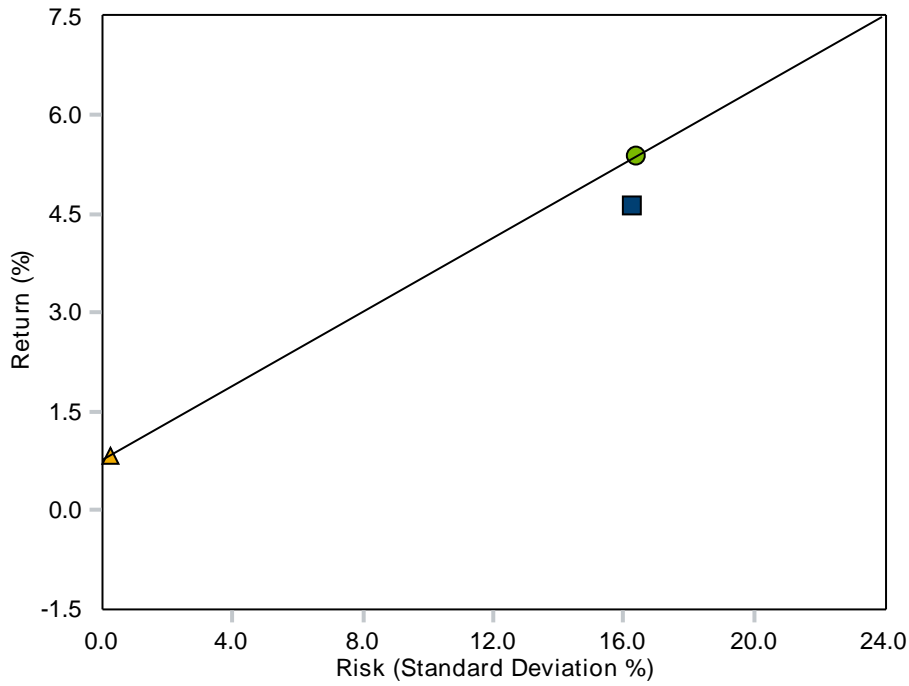


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ Kennedy Capital Management	2.2 (47)	16.4 (38)	-7.8 (69)	8.7 (52)	4.6 (62)	14.2 (19)	-19.4 (85)	13.4 (25)	23.4 (60)
● Russell 2000 Value Index	1.4 (67)	13.5 (70)	-6.2 (57)	9.8 (38)	5.4 (45)	12.4 (67)	-12.9 (30)	7.8 (68)	31.7 (11)
5th Percentile	6.1	22.4	8.7	14.5	9.4	15.4	-6.5	20.2	35.2
1st Quartile	3.8	17.8	-1.8	10.8	6.5	13.7	-12.5	13.4	29.0
Median	2.1	15.2	-5.3	8.8	5.2	13.0	-15.1	10.5	24.9
3rd Quartile	1.0	13.1	-8.7	7.1	3.9	11.9	-17.8	6.7	20.4
95th Percentile	-2.3	8.4	-13.8	4.9	-0.1	10.3	-21.0	2.6	15.5
Population	193	193	193	188	184	163	214	225	232

CF
 Parentheses contain percentile rankings.

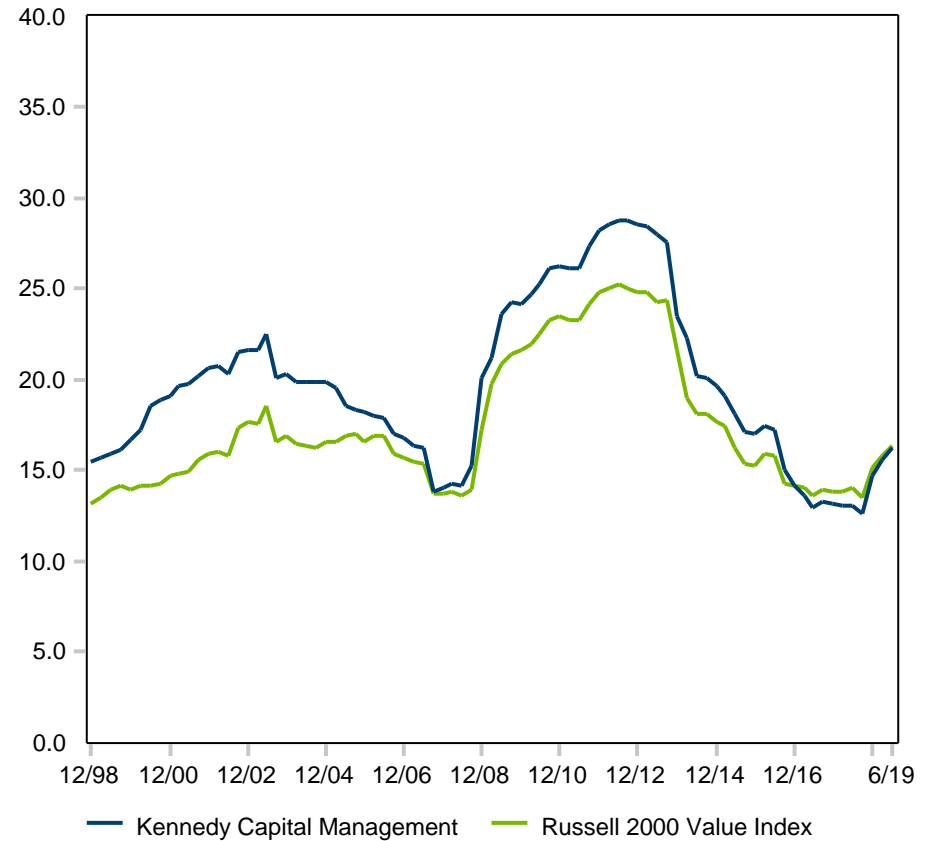
Kennedy Capital Management Risk Profile

Annualized Return vs. Annualized Standard Deviation
5 Years



- Kennedy Capital Management
- Russell 2000 Value Index
- ▲ FTSE 3 Month T-Bill

Rolling 5 Years Standard Deviation



5 Years Historical Statistics

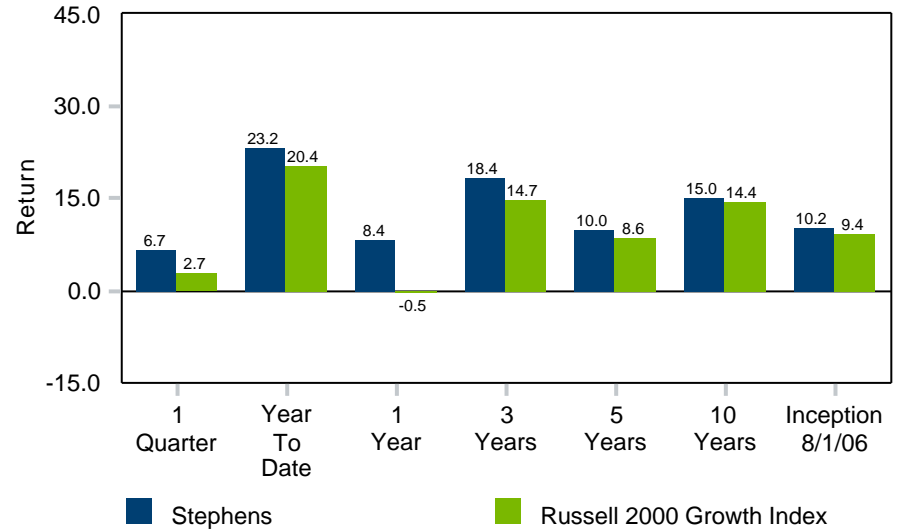
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Kennedy Capital Management	-0.74	3.24	-0.23	0.96	0.31	-0.55	0.97	4.63	16.26	0.98
Russell 2000 Value Index	0.00	0.00	N/A	1.00	0.35	0.00	1.00	5.39	16.41	1.00
FTSE 3 Month T-Bill	-5.74	16.42	-0.35	0.00	N/A	0.85	0.00	0.84	0.25	-0.03

Stephens Performance Summary

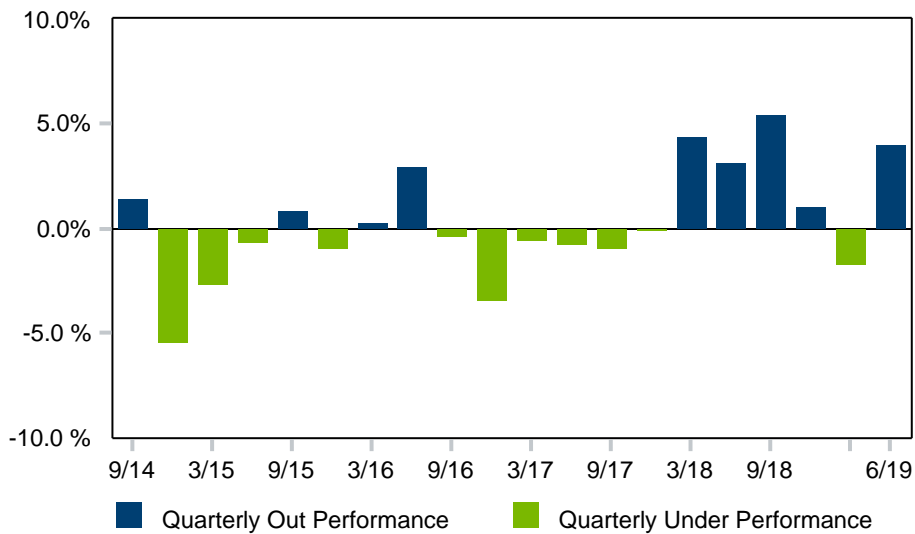
Account Information

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)

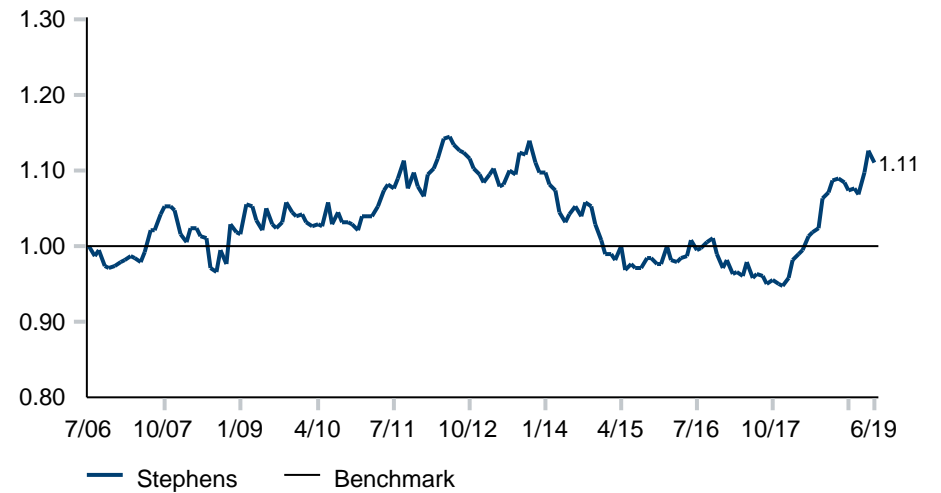
Return Summary



Quarterly Excess Performance

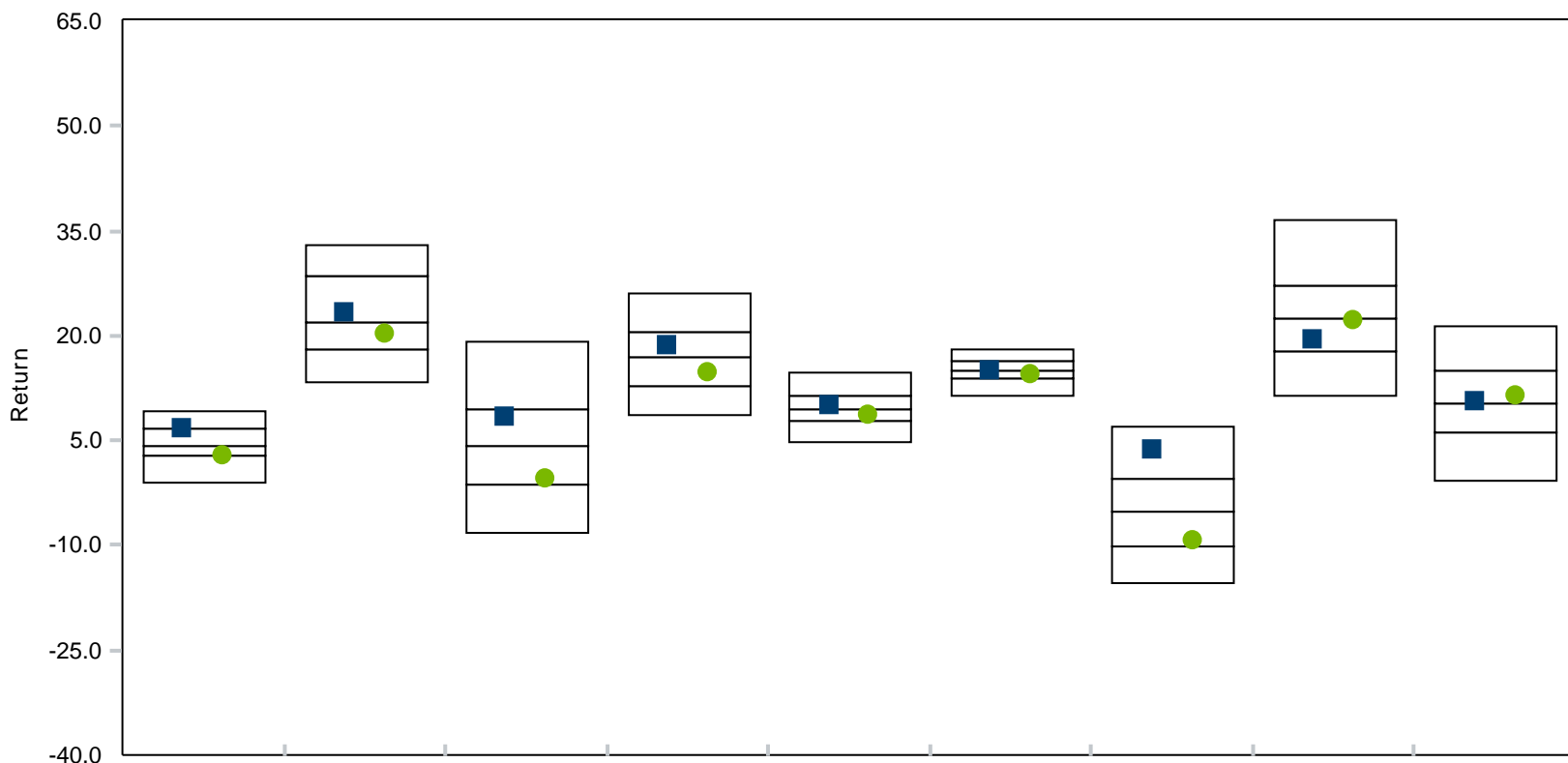


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

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

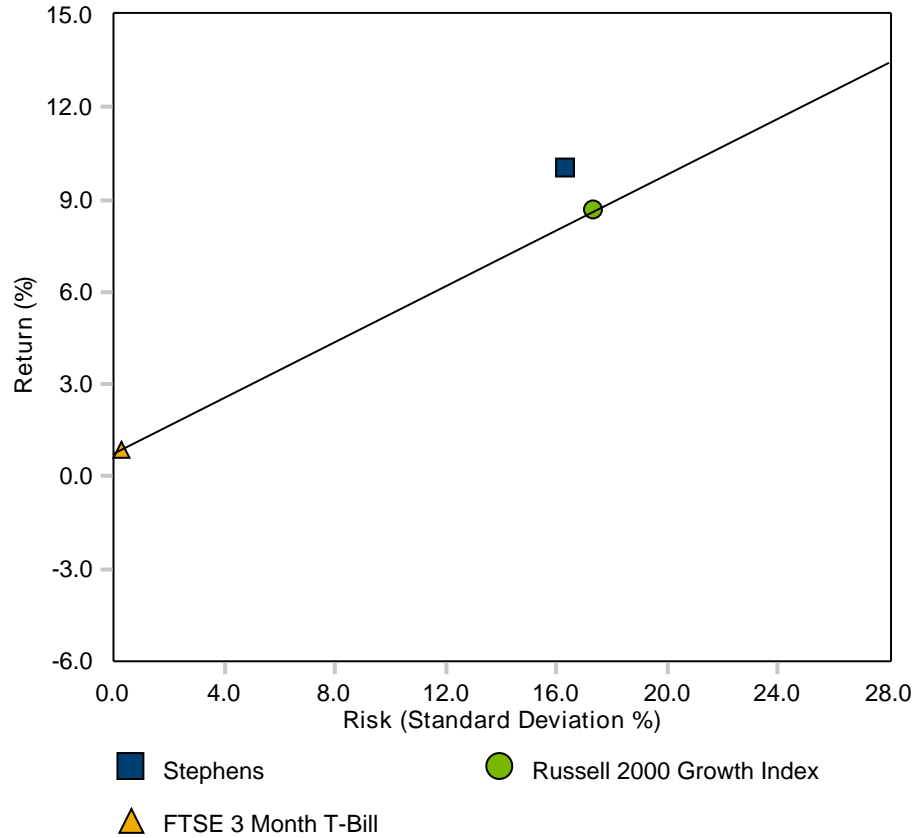


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ Stephens	6.7 (23)	23.2 (45)	8.4 (29)	18.4 (39)	10.0 (48)	15.0 (47)	3.7 (10)	19.4 (67)	10.6 (49)
● Russell 2000 Growth Index	2.7 (77)	20.4 (59)	-0.5 (72)	14.7 (64)	8.6 (64)	14.4 (67)	-9.3 (73)	22.2 (52)	11.3 (45)
5th Percentile	9.1	32.8	19.2	26.1	14.8	18.1	6.8	36.4	21.3
1st Quartile	6.6	28.4	9.4	20.5	11.4	16.4	-0.4	27.3	15.0
Median	4.3	22.0	4.2	17.0	9.6	14.9	-5.2	22.5	10.3
3rd Quartile	2.8	18.1	-1.4	12.8	7.7	13.8	-10.1	17.7	6.2
95th Percentile	-1.0	13.2	-8.3	8.6	4.8	11.5	-15.3	11.3	-0.8
Population	163	163	162	159	153	141	174	177	187

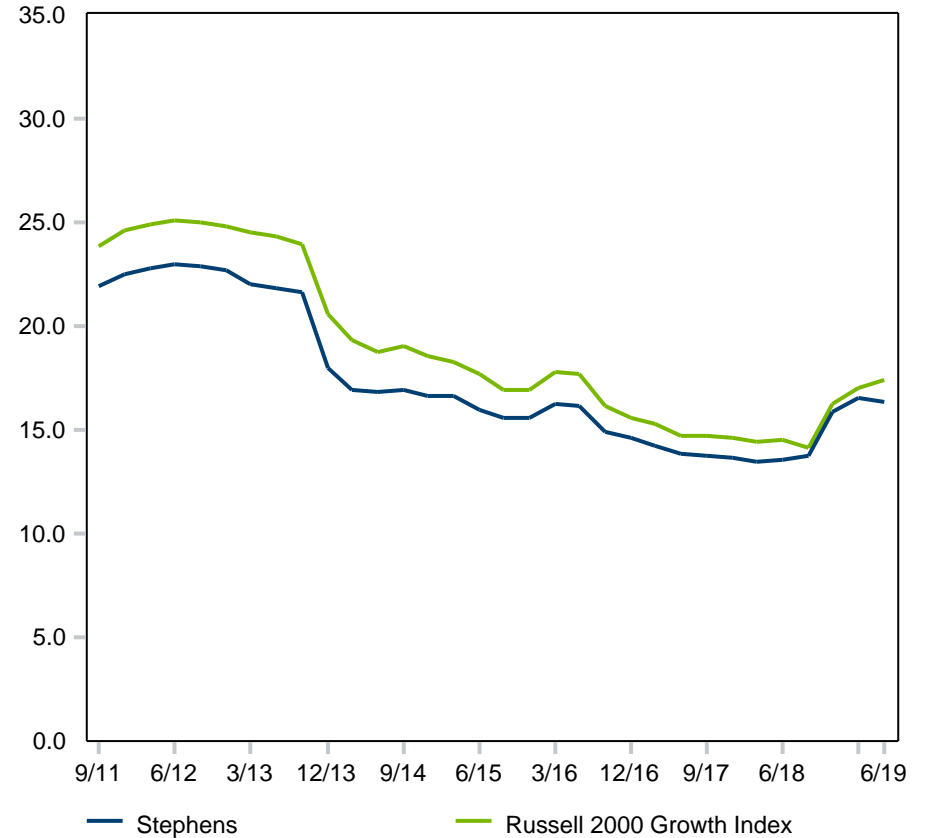
Population
 Parentheses contain percentile rankings.

Stephens Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

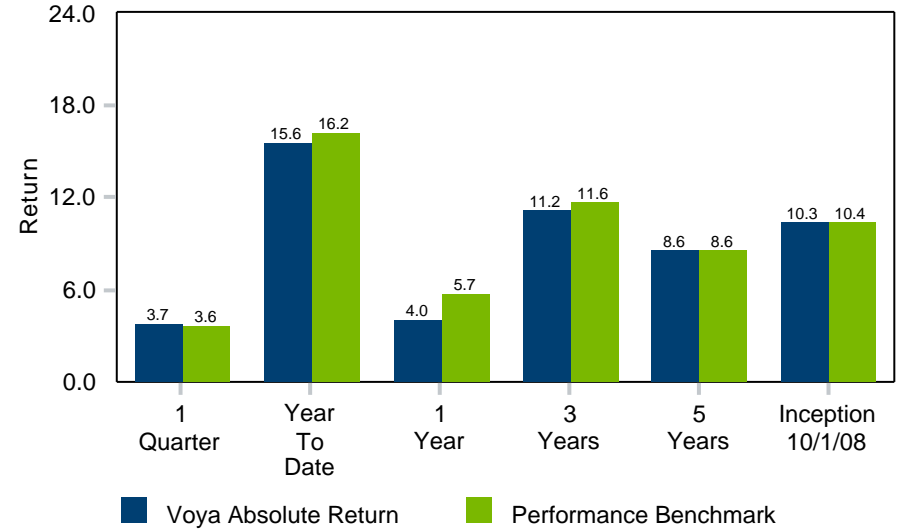
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Stephens	1.07	4.95	0.22	0.92	0.61	2.04	0.90	9.98	16.36	0.96
Russell 2000 Growth Index	0.00	0.00	N/A	1.00	0.52	0.00	1.00	8.63	17.38	1.00
FTSE 3 Month T-Bill	-8.97	17.38	-0.52	0.00	N/A	0.84	0.00	0.84	0.25	0.01

Voya Absolute Return Performance Summary

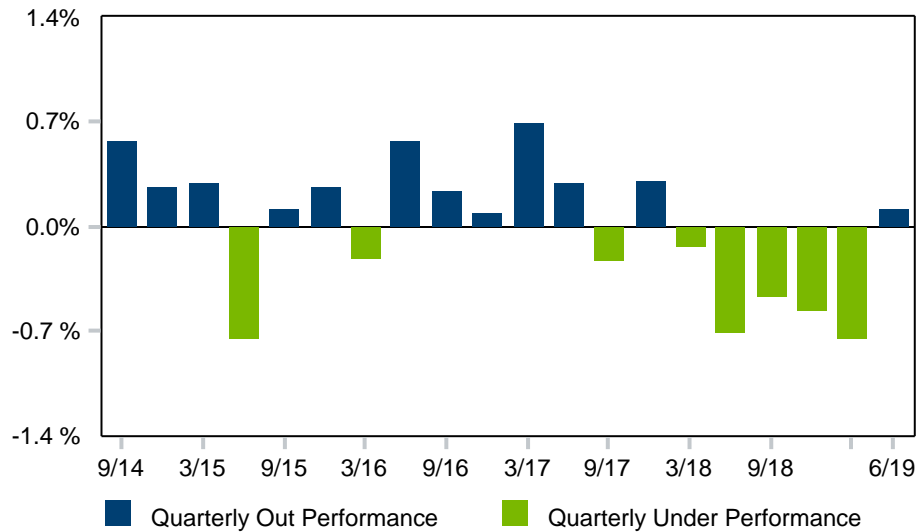
Account Information

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)

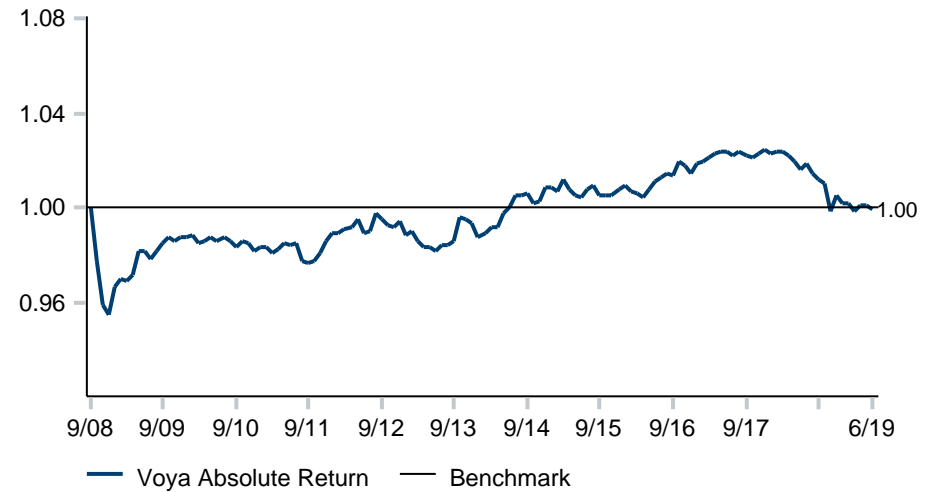
Return Summary



Quarterly Excess Performance

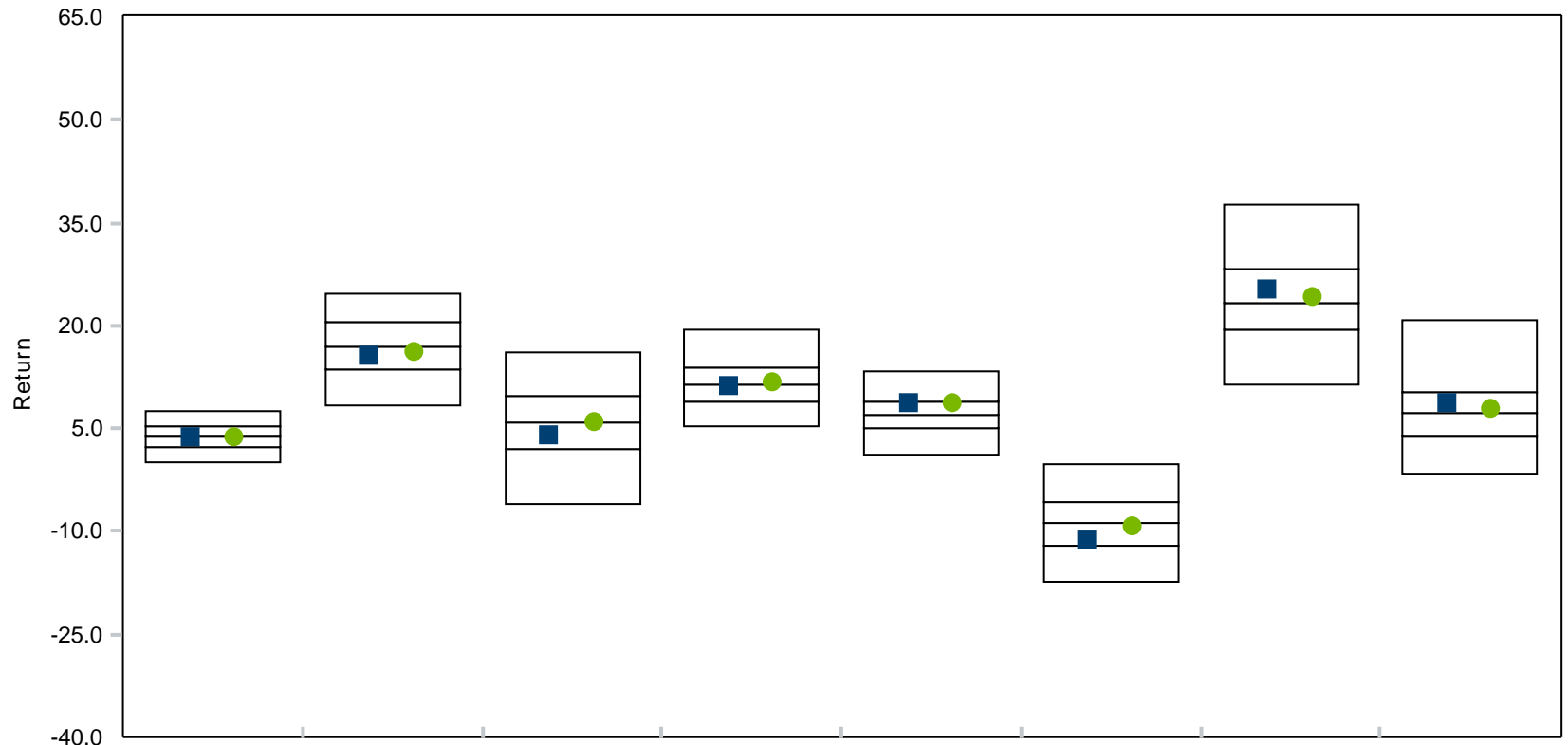


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

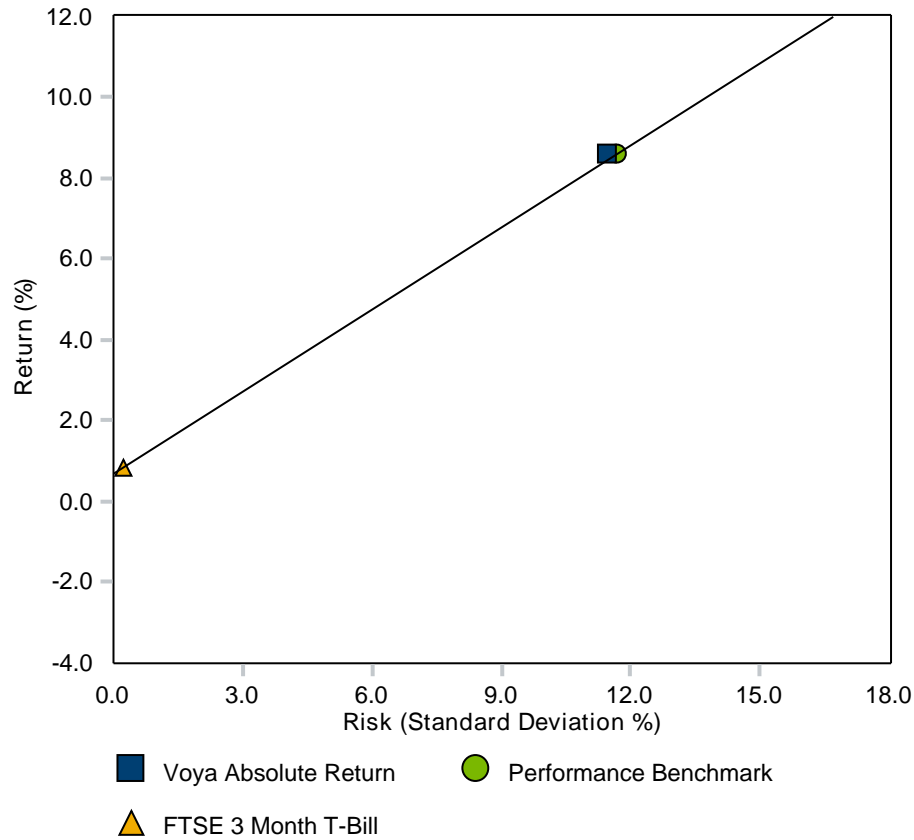


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ Voya Absolute Return	3.7 (55)	15.6 (59)	4.0 (64)	11.2 (54)	8.6 (27)	-11.1 (68)	25.2 (40)	8.6 (38)
● Performance Benchmark	3.6 (57)	16.2 (54)	5.7 (51)	11.6 (49)	8.6 (27)	-9.4 (56)	24.0 (47)	7.9 (44)
5th Percentile	7.4	24.6	16.0	19.3	13.4	-0.3	37.5	20.8
1st Quartile	5.2	20.4	9.8	13.9	8.9	-5.7	28.2	10.2
Median	3.9	16.8	5.8	11.5	6.9	-8.9	23.4	7.1
3rd Quartile	2.2	13.5	2.0	8.9	5.1	-12.2	19.4	3.9
95th Percentile	0.1	8.3	-6.0	5.2	1.3	-17.2	11.4	-1.5
Population	475	475	473	447	405	510	537	564

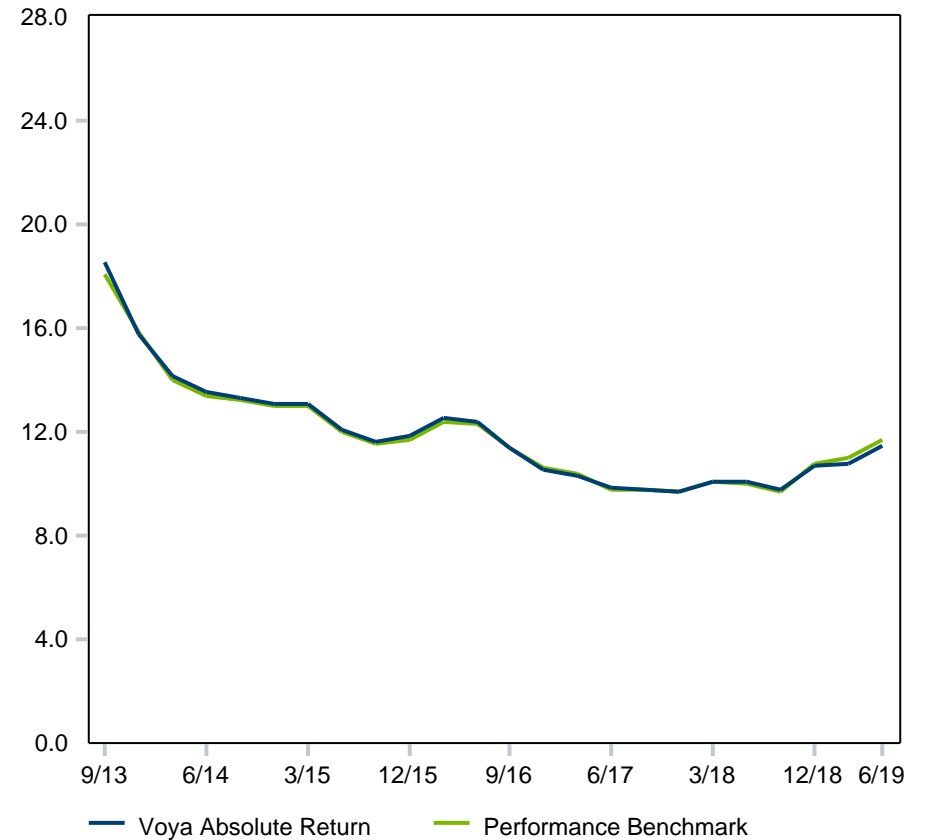
6 Parentheses contain percentile rankings.

Voya Absolute Return Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

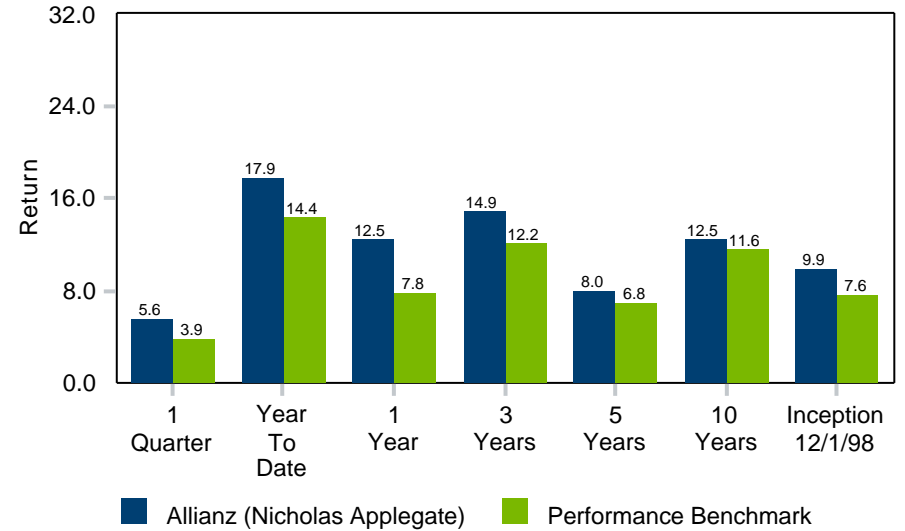
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Voya Absolute Return	-0.04	1.06	-0.04	0.99	0.70	0.17	0.98	8.59	11.48	1.00
Performance Benchmark	0.00	0.00	N/A	1.00	0.69	0.00	1.00	8.61	11.71	1.00
FTSE 3 Month T-Bill	-8.12	11.71	-0.69	0.00	N/A	0.85	0.00	0.84	0.25	-0.01

Allianz (Nicholas Applegate) Performance Summary

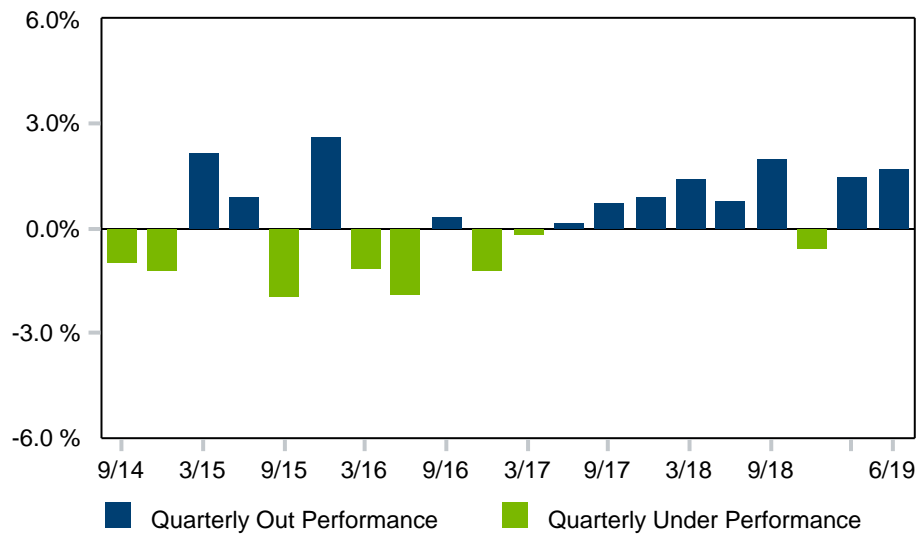
Account Information

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)

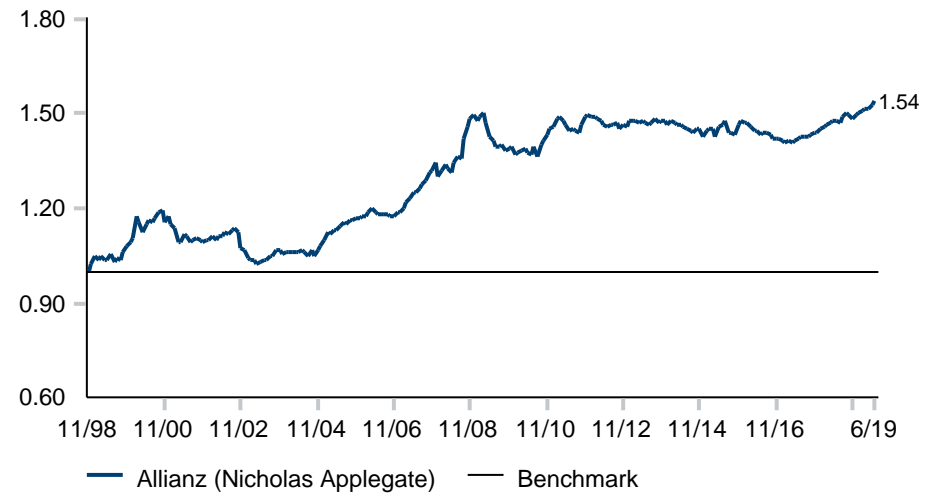
Return Summary



Quarterly Excess Performance

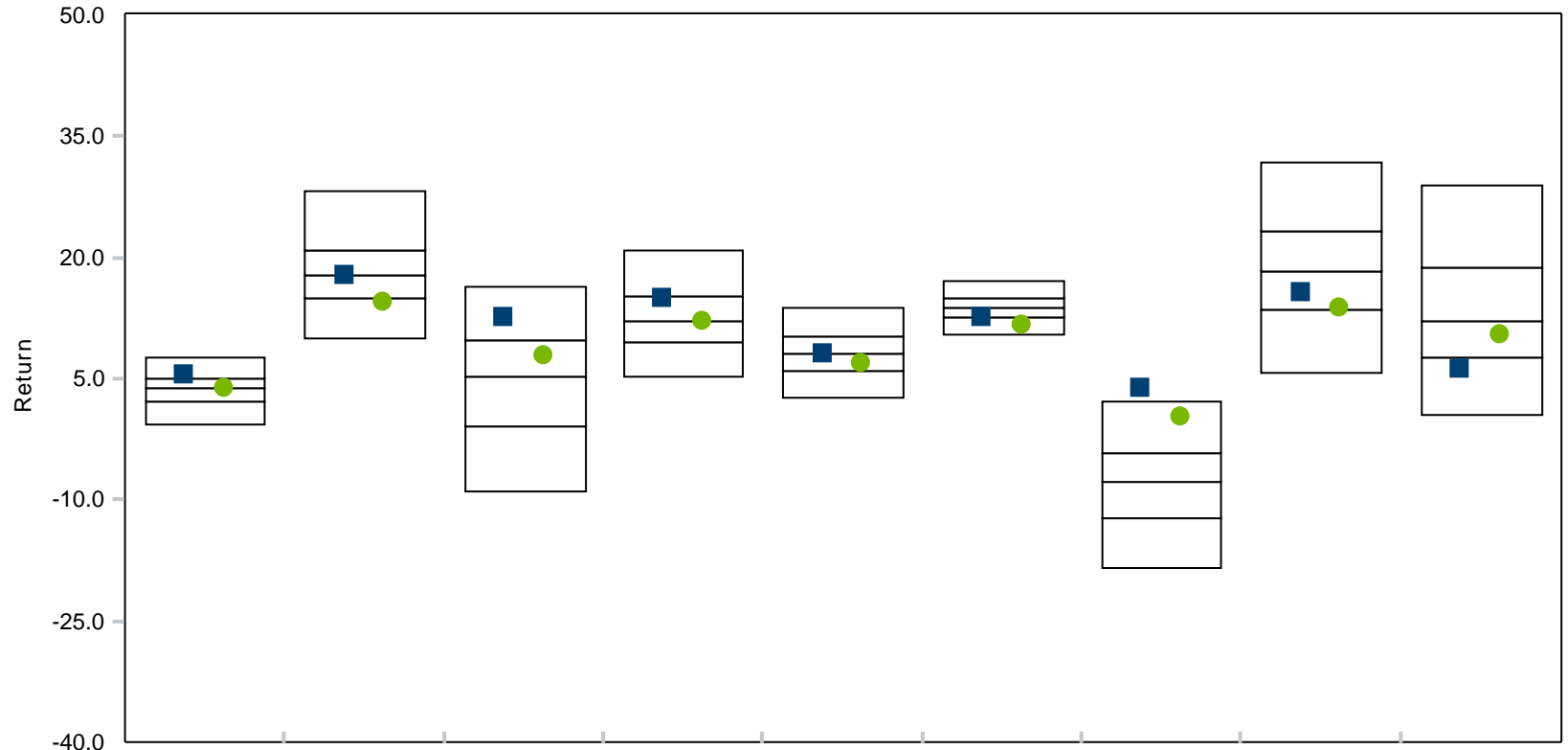


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

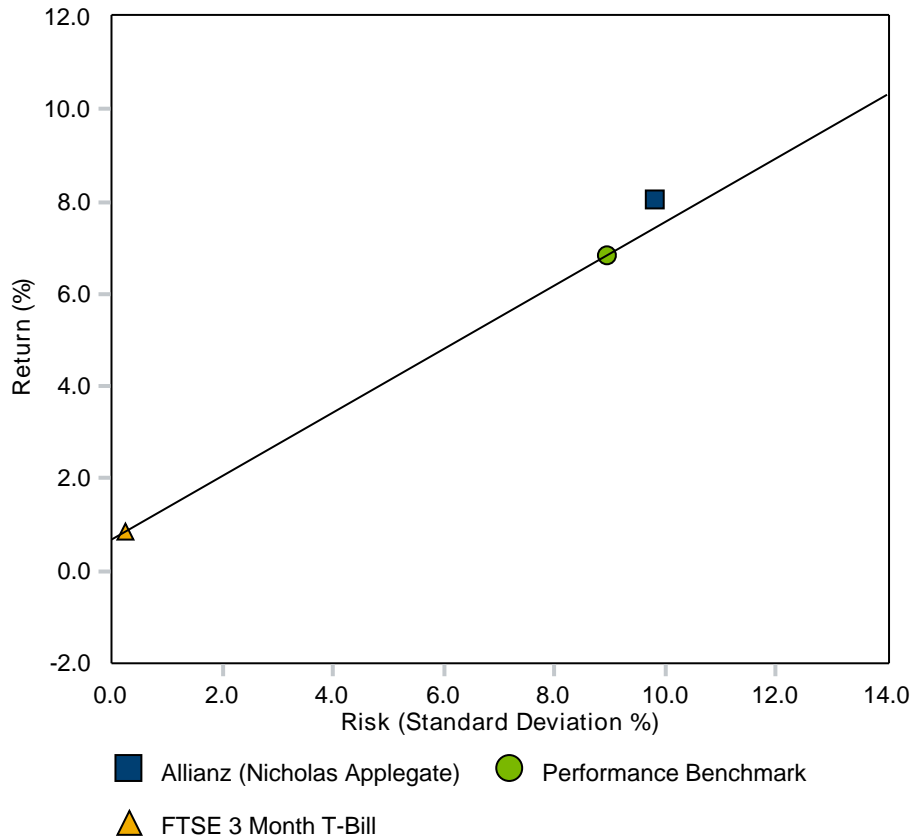


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ Allianz (Nicholas Applegate)	5.6 (18)	17.9 (50)	12.5 (14)	14.9 (27)	8.0 (52)	12.5 (78)	3.7 (4)	15.6 (64)	6.2 (81)
● Performance Benchmark	3.9 (48)	14.4 (79)	7.8 (38)	12.2 (51)	6.8 (66)	11.6 (89)	0.2 (9)	13.7 (75)	10.4 (62)
5th Percentile	7.6	28.3	16.3	20.9	13.7	17.1	2.2	31.7	29.0
1st Quartile	5.0	20.8	9.7	15.1	10.2	15.0	-4.2	23.2	18.7
Median	3.7	17.9	5.3	12.2	8.1	13.8	-7.9	18.3	12.1
3rd Quartile	2.2	15.0	-0.8	9.5	6.0	12.7	-12.4	13.6	7.6
95th Percentile	-0.7	10.0	-8.9	5.2	2.5	10.3	-18.5	5.6	0.6
Population	2,234	2,234	2,227	2,173	2,098	1,770	2,390	2,515	2,669

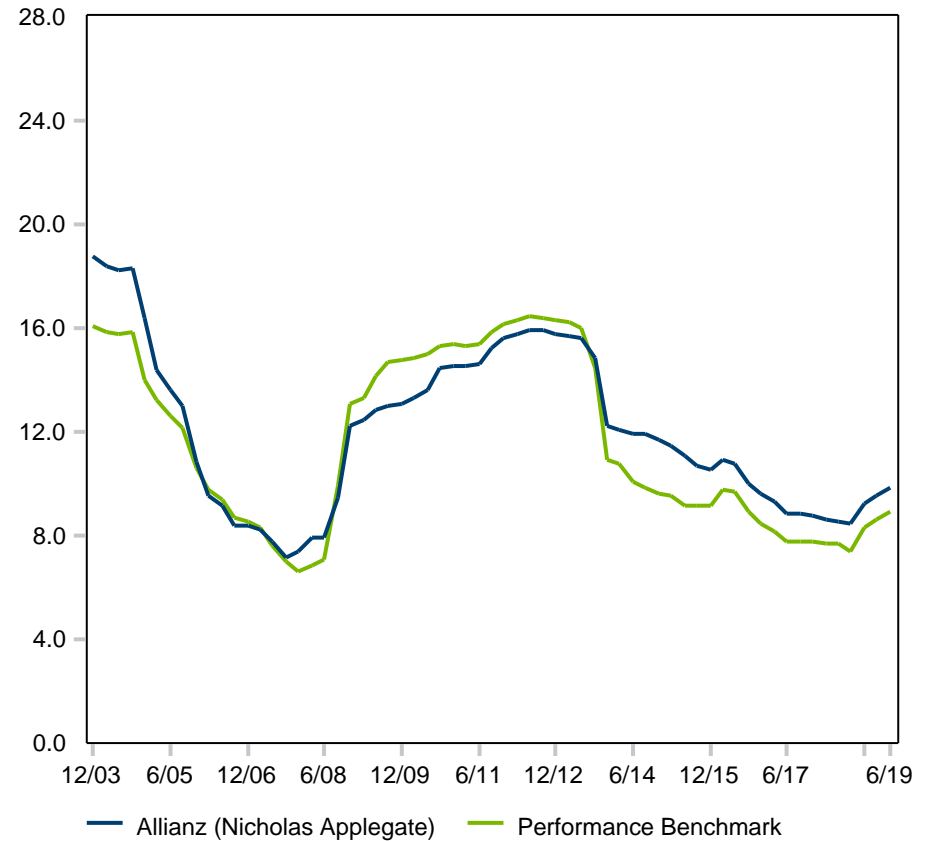
96 Parentheses contain percentile rankings.

Allianz (Nicholas Applegate) Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

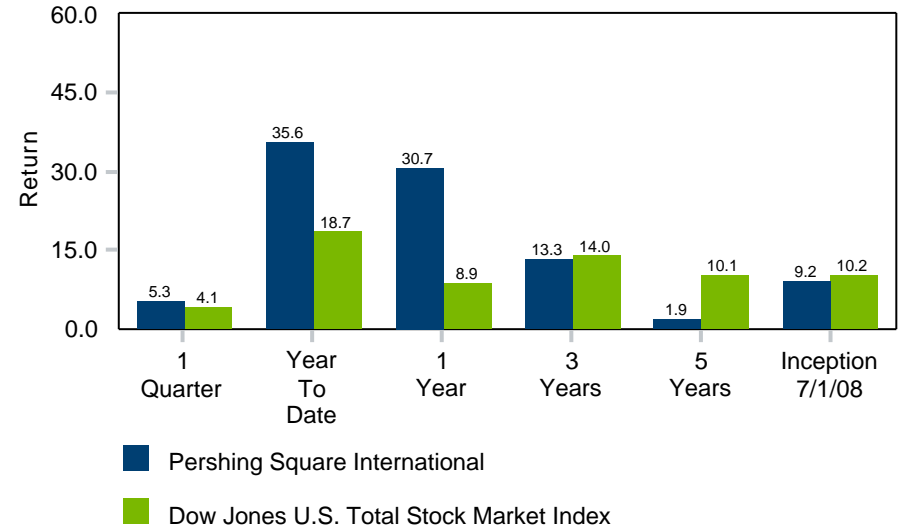
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Allianz (Nicholas Applegate)	1.19	2.91	0.41	0.91	0.75	0.86	1.05	8.02	9.81	0.96
Performance Benchmark	0.00	0.00	N/A	1.00	0.69	0.00	1.00	6.83	8.95	1.00
FTSE 3 Month T-Bill	-6.18	8.93	-0.69	0.01	N/A	0.82	0.00	0.84	0.25	0.10

Pershing Square International Performance Summary

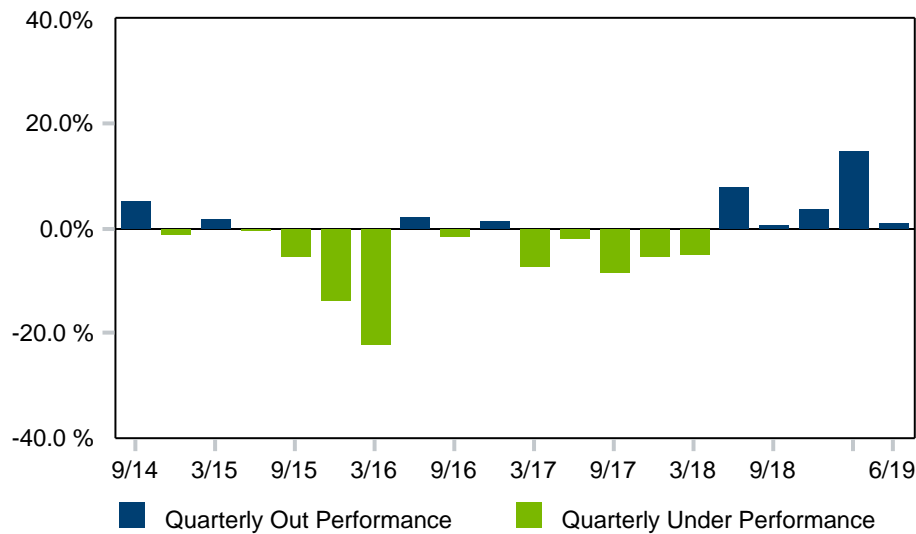
Account Information

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)

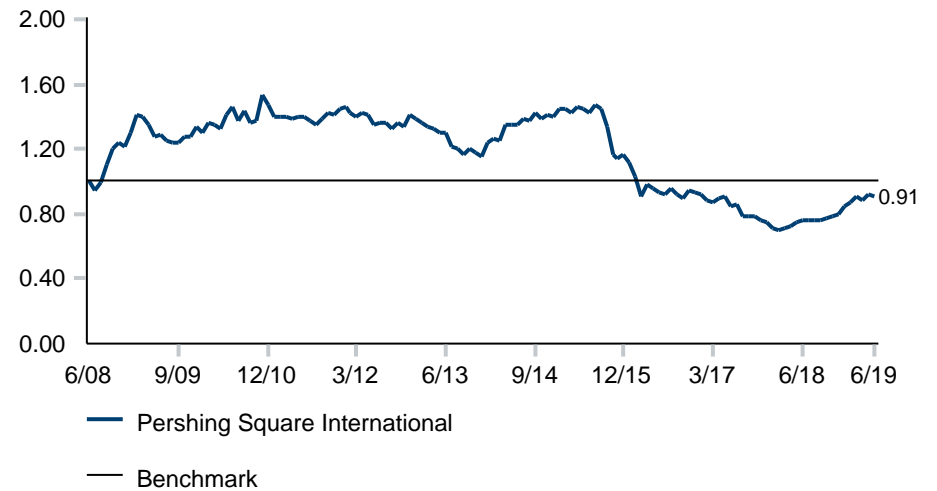
Return Summary



Quarterly Excess Performance

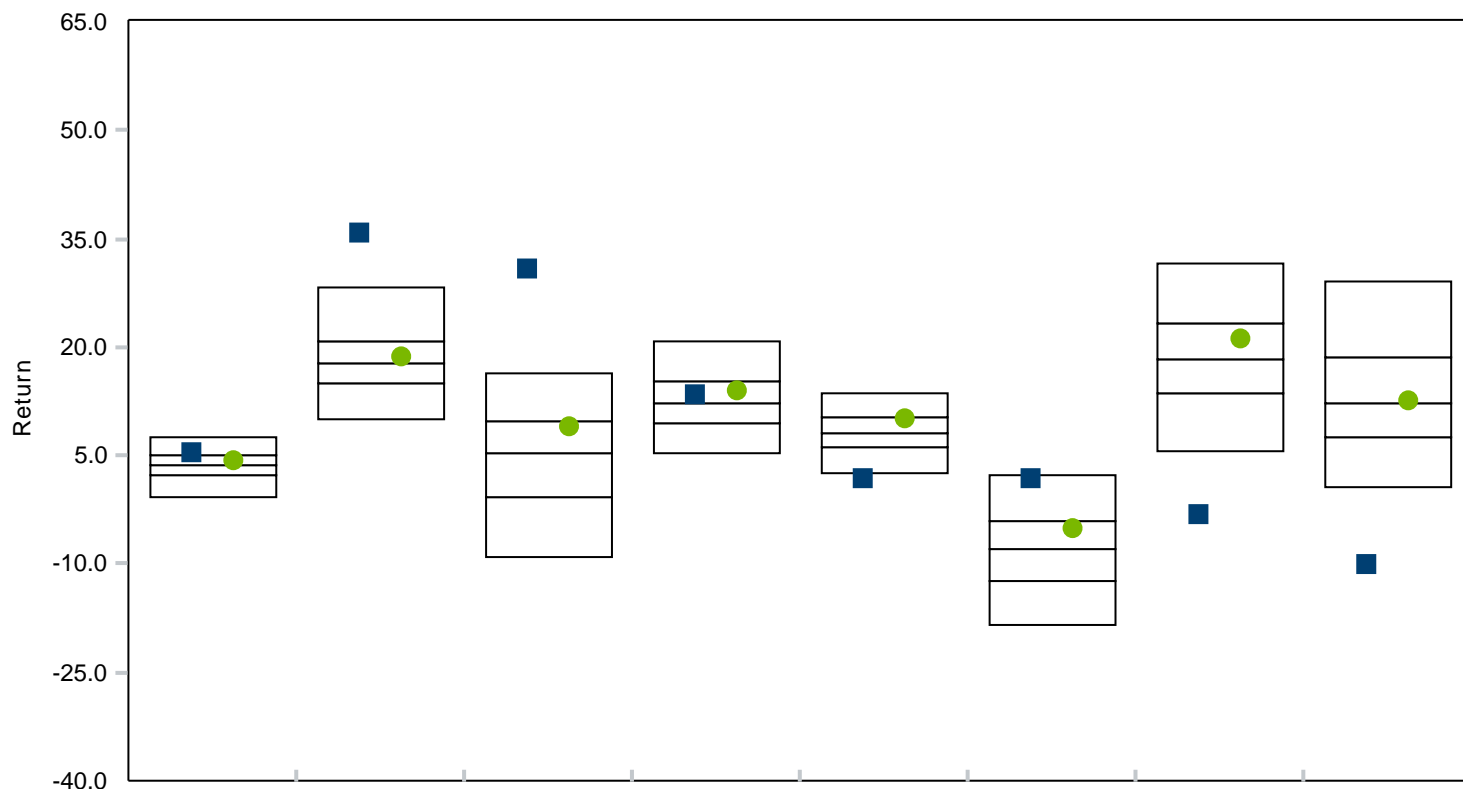


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)

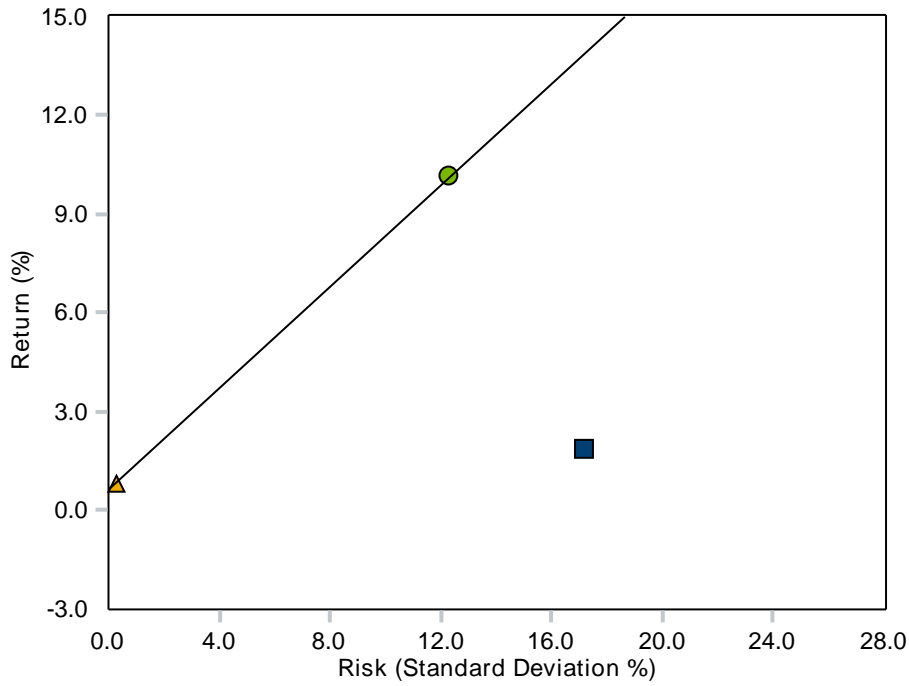


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ Pershing Square International	5.3 (22)	35.6 (1)	30.7 (1)	13.3 (39)	1.9 (96)	1.8 (6)	-3.2 (99)	-10.1 (100)
● Dow Jones U.S. Total Stock Market Index	4.1 (42)	18.7 (41)	8.9 (31)	14.0 (33)	10.1 (27)	-5.3 (33)	21.2 (35)	12.6 (49)
5th Percentile	7.6	28.3	16.3	20.9	13.7	2.2	31.7	29.0
1st Quartile	5.0	20.8	9.7	15.1	10.2	-4.2	23.2	18.7
Median	3.7	17.9	5.3	12.2	8.1	-7.9	18.3	12.1
3rd Quartile	2.2	15.0	-0.8	9.5	6.0	-12.4	13.6	7.6
95th Percentile	-0.7	10.0	-8.9	5.2	2.5	-18.5	5.6	0.6
Population	2,234	2,234	2,227	2,173	2,098	2,390	2,515	2,669

96
Parentheses contain percentile rankings.

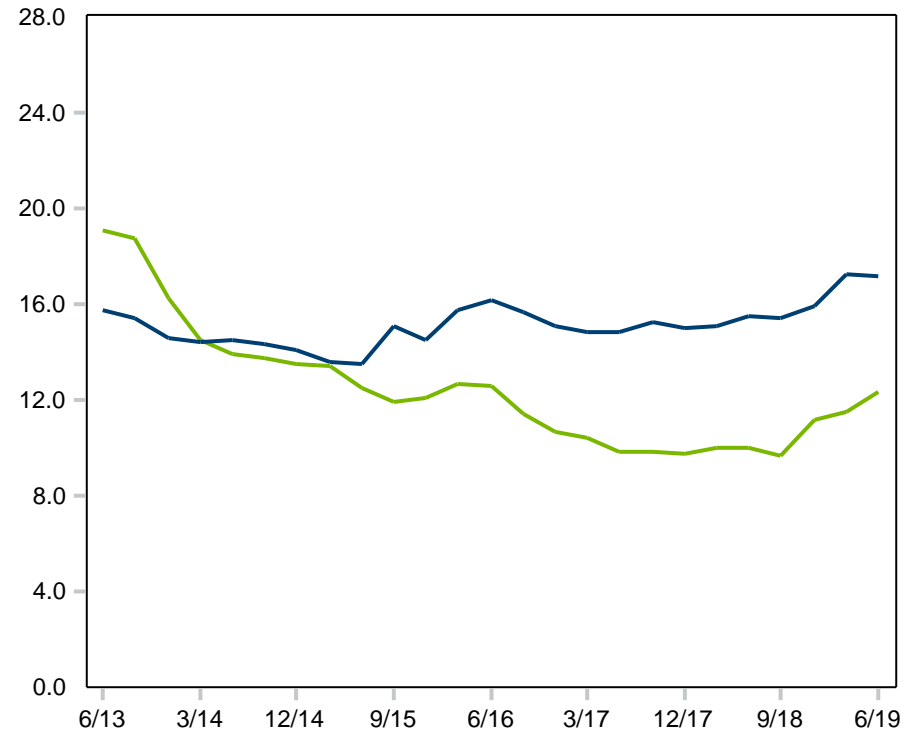
Pershing Square International Risk Profile

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

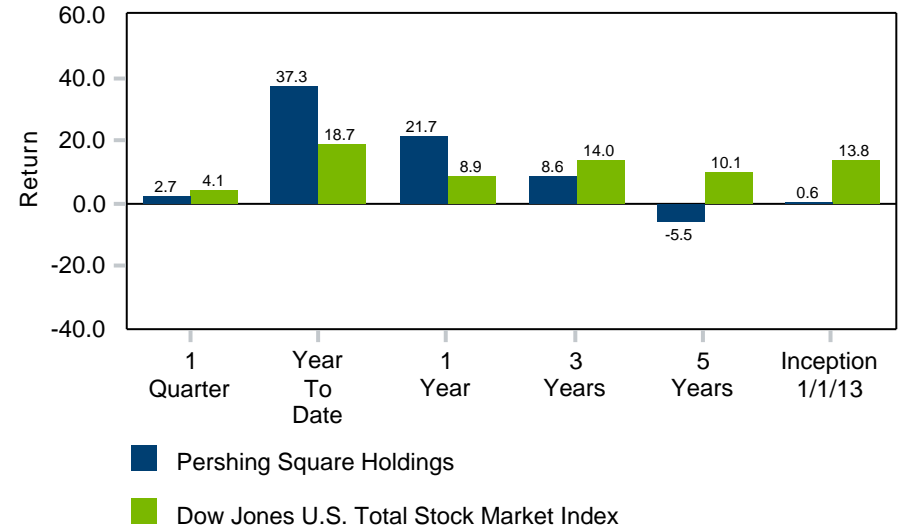
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Pershing Square International	-7.15	14.03	-0.51	0.35	0.14	-5.17	0.82	1.86	17.18	0.59
Dow Jones U.S. Total Stock Market Index	0.00	0.00	N/A	1.00	0.78	0.00	1.00	10.13	12.34	1.00
FTSE 3 Month T-Bill	-9.60	12.33	-0.78	0.00	N/A	0.84	0.00	0.84	0.25	0.03

Pershing Square Holdings Performance Summary

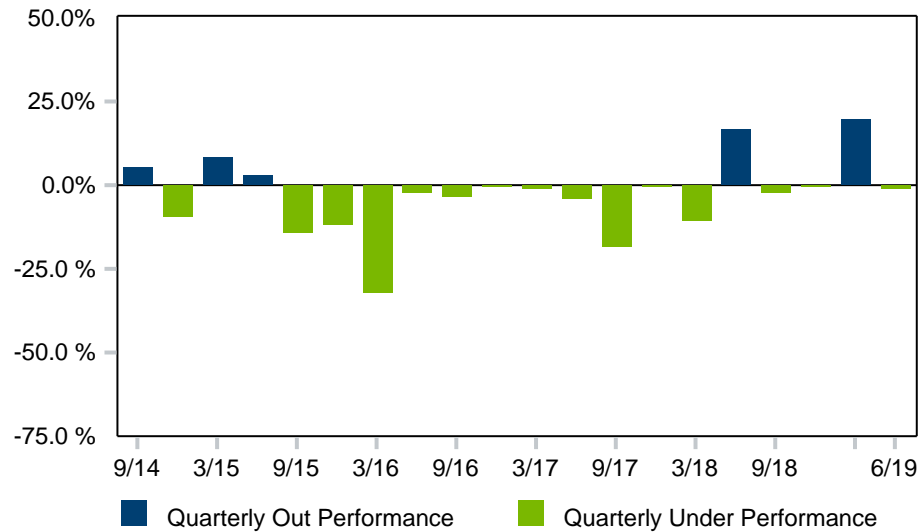
Account Information

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)

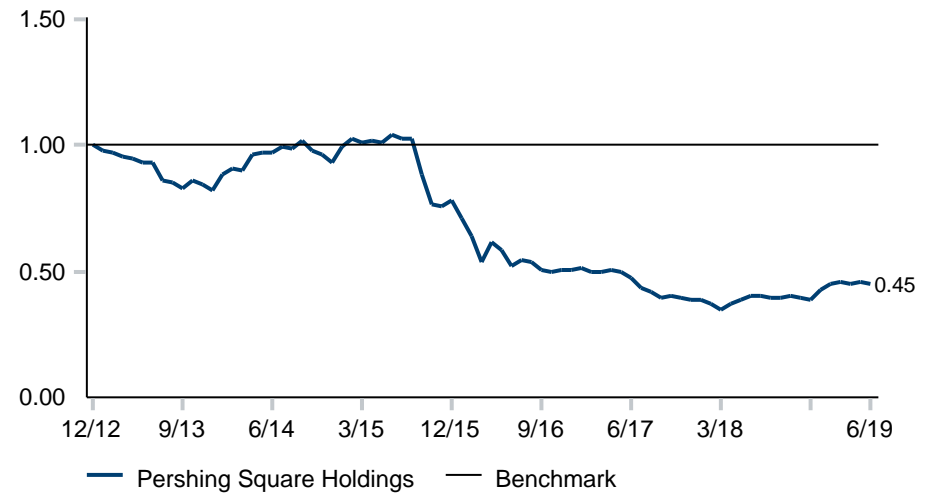
Return Summary



Quarterly Excess Performance

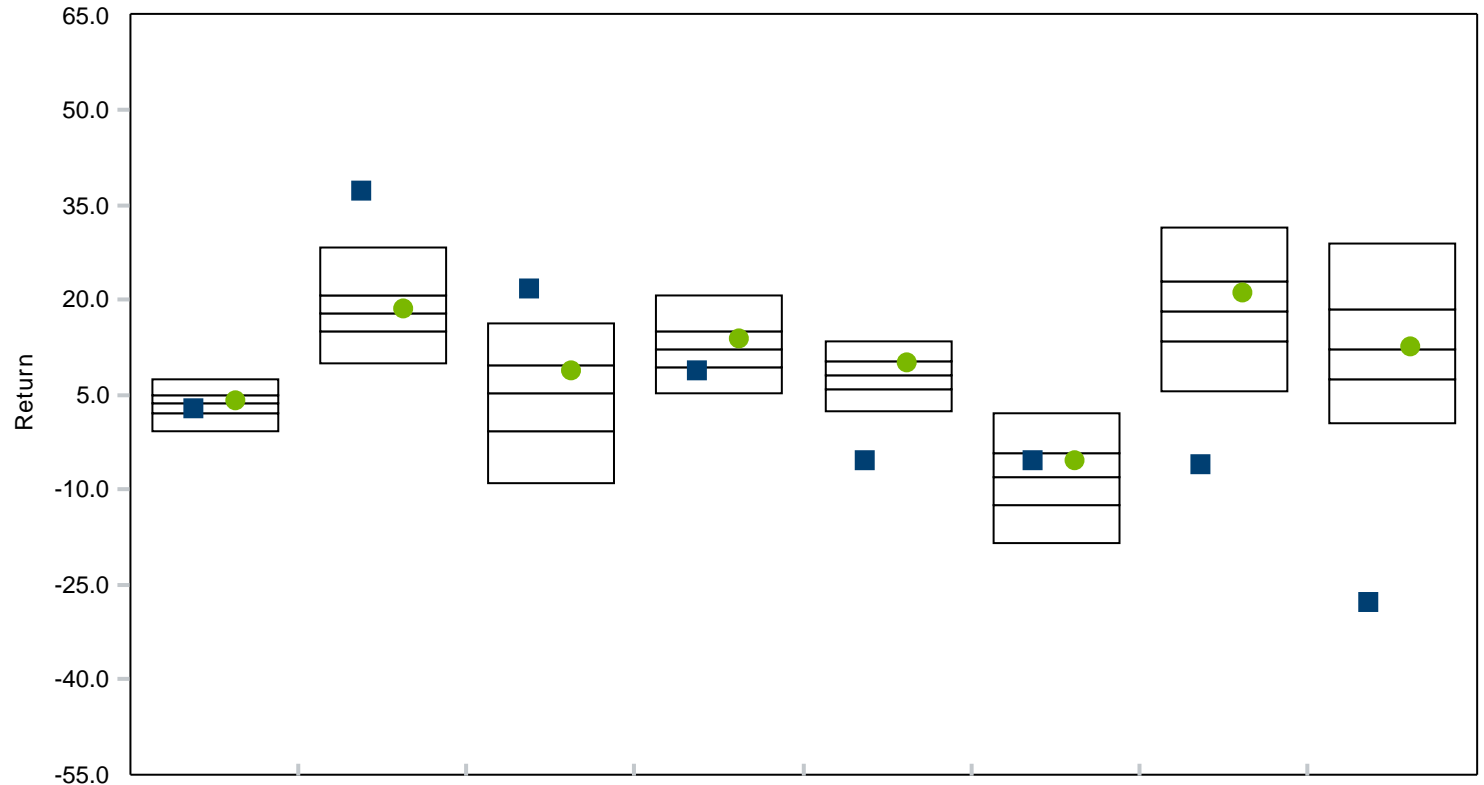


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Equity (SA+CF)



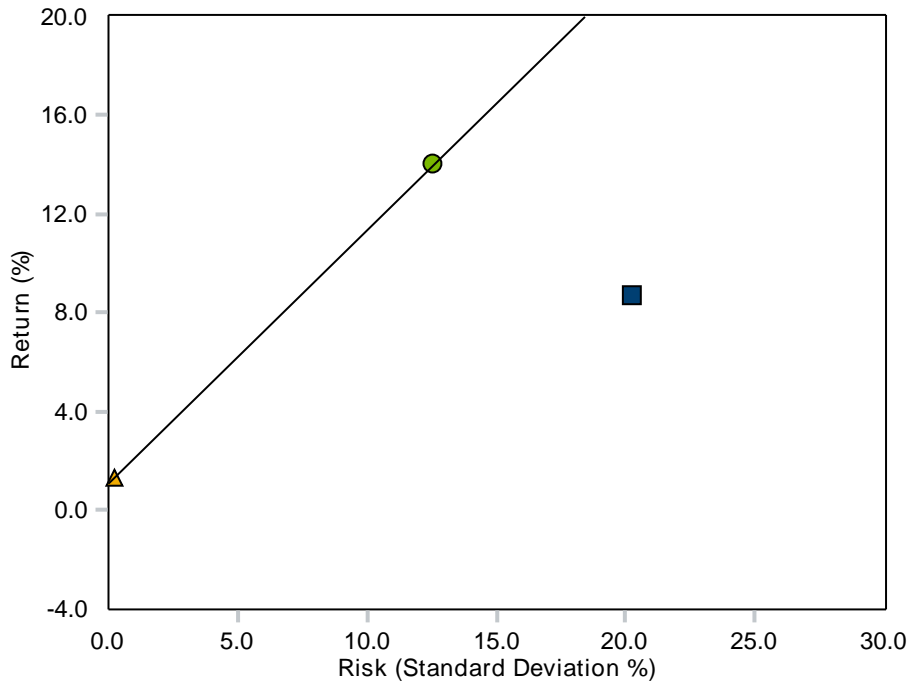
■ Pershing Square Holdings
● Dow Jones U.S. Total Stock Market Index

	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
Pershing Square Holdings	2.7 (69)	37.3 (1)	21.7 (2)	8.6 (83)	-5.5 (99)	-5.3 (33)	-6.0 (100)	-27.9 (100)
Dow Jones U.S. Total Stock Market Index	4.1 (42)	18.7 (41)	8.9 (31)	14.0 (33)	10.1 (27)	-5.3 (33)	21.2 (35)	12.6 (49)
5th Percentile	7.6	28.3	16.3	20.9	13.7	2.2	31.7	29.0
1st Quartile	5.0	20.8	9.7	15.1	10.2	-4.2	23.2	18.7
Median	3.7	17.9	5.3	12.2	8.1	-7.9	18.3	12.1
3rd Quartile	2.2	15.0	-0.8	9.5	6.0	-12.4	13.6	7.6
95th Percentile	-0.7	10.0	-8.9	5.2	2.5	-18.5	5.6	0.6
Population	2,234	2,234	2,227	2,173	2,098	2,390	2,515	2,669

Parantheses contain percentile rankings.

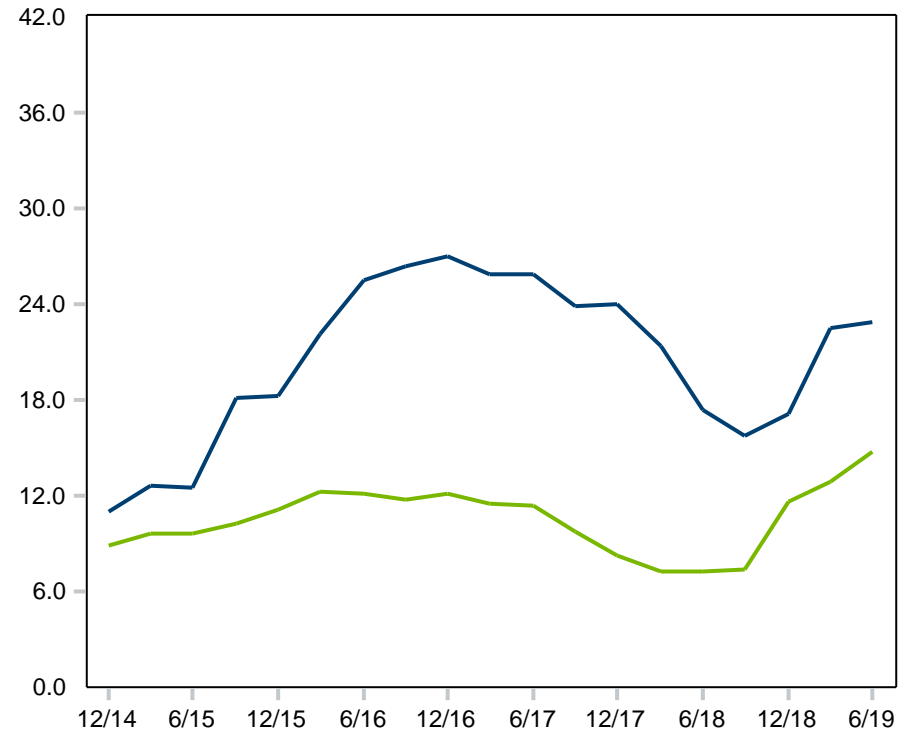
Pershing Square Holdings Risk Profile

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

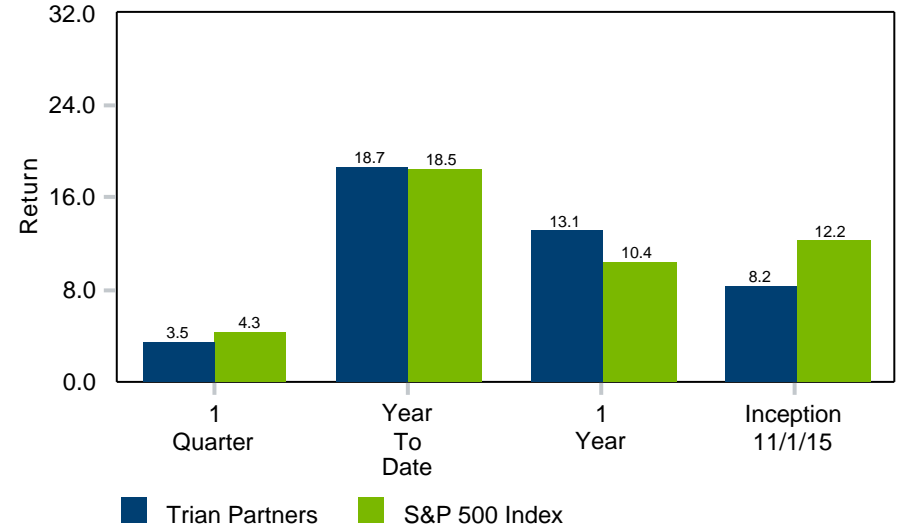
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Pershing Square Holdings	-3.66	13.43	-0.27	0.58	0.44	-6.69	1.23	8.65	20.27	0.76
Dow Jones U.S. Total Stock Market Index	0.00	0.00	N/A	1.00	1.00	0.00	1.00	13.99	12.55	1.00
FTSE 3 Month T-Bill	-12.60	12.57	-1.00	0.01	N/A	1.38	0.00	1.36	0.23	-0.09

Trian Partners Performance Summary

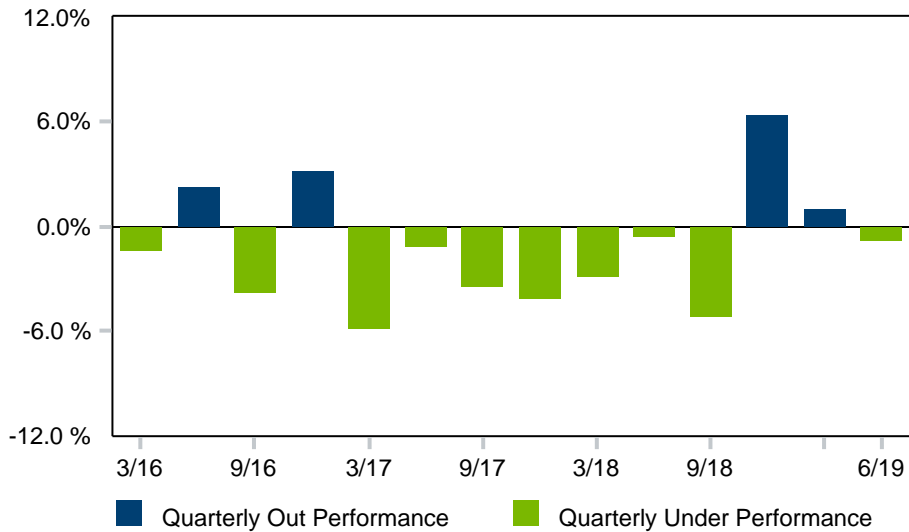
Account Information

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

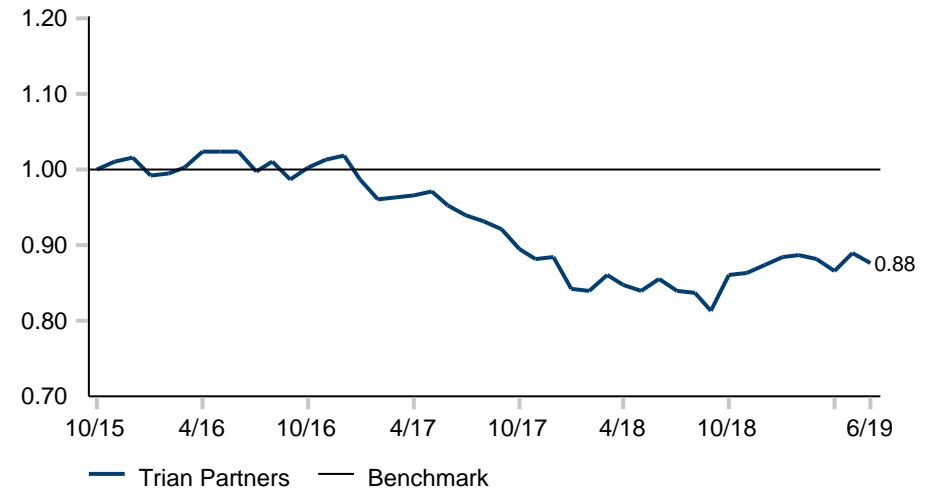
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

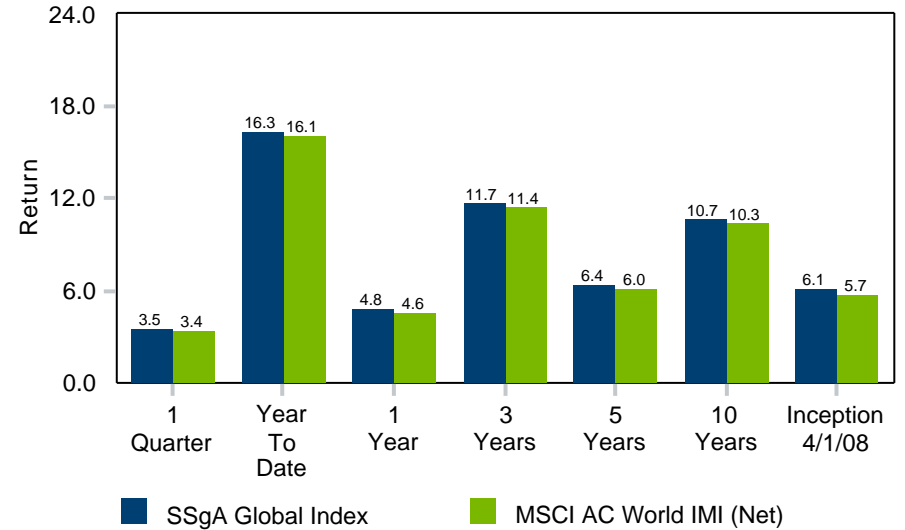


SSgA Global Index Performance Summary

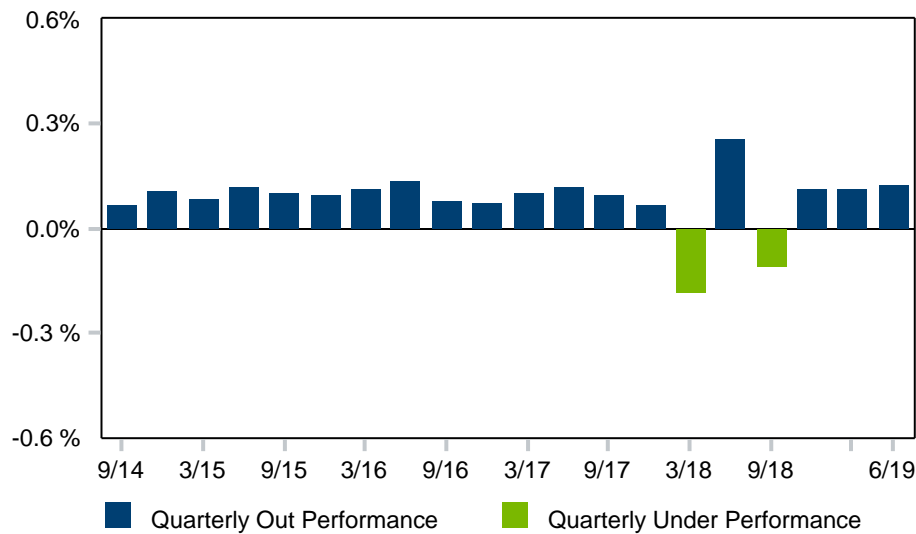
Account Information

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)

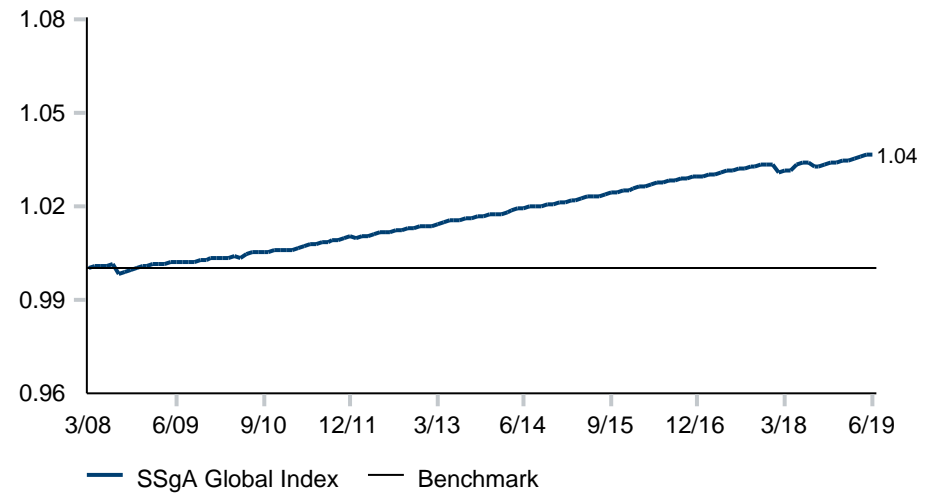
Return Summary



Quarterly Excess Performance

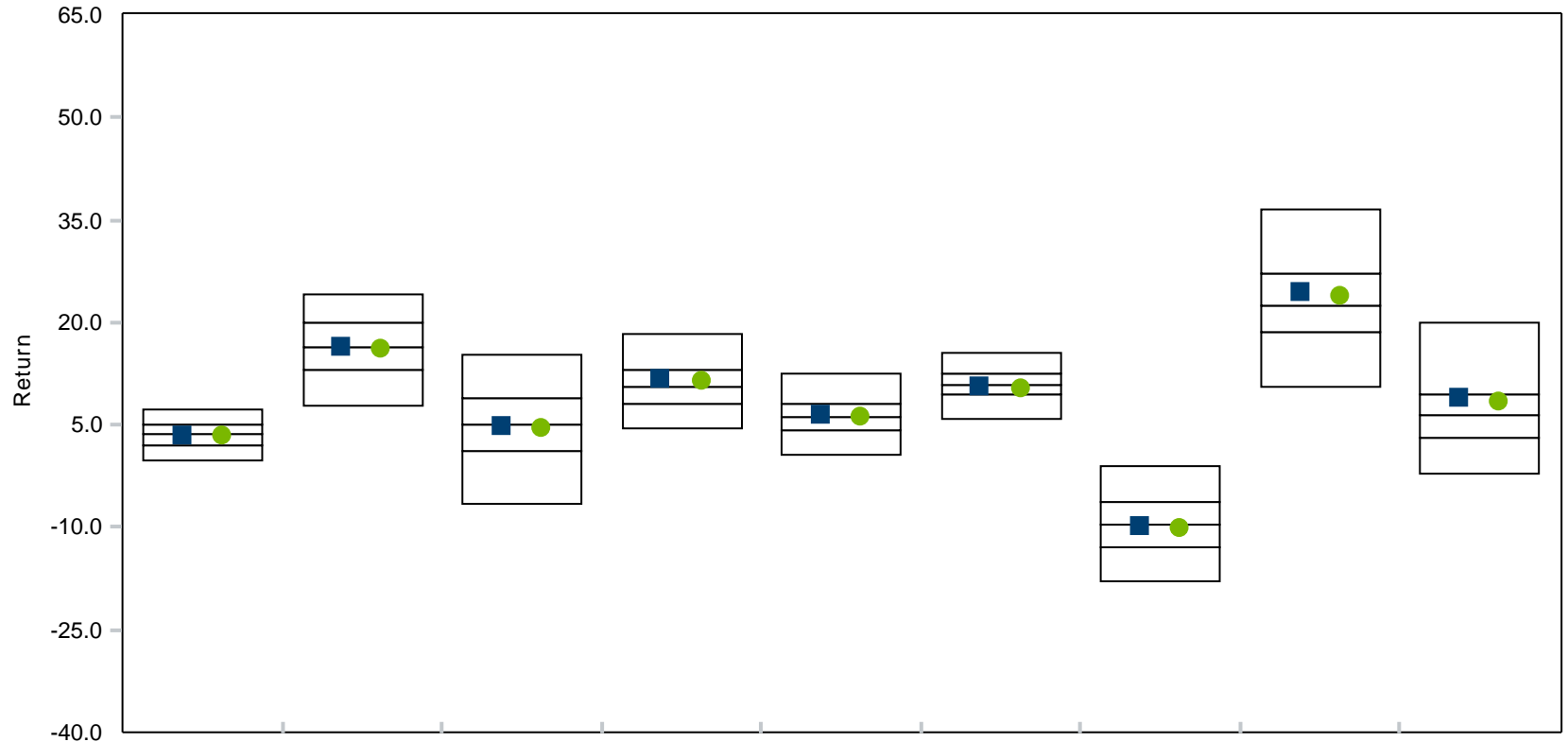


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

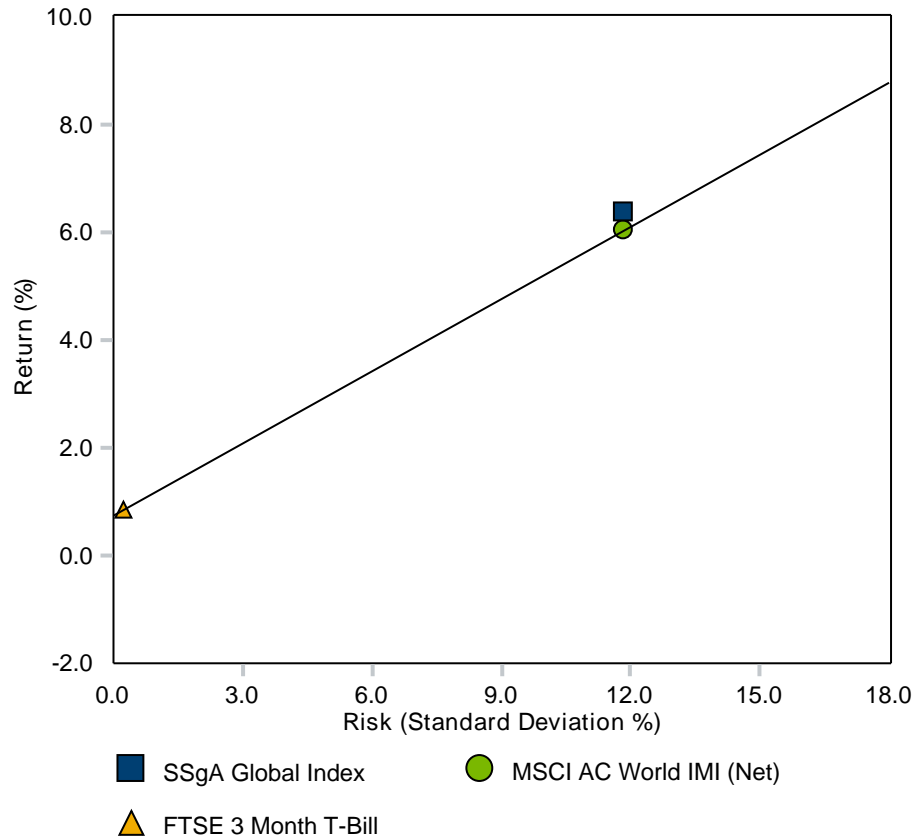


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ SSgA Global Index	3.5 (56)	16.3 (51)	4.8 (52)	11.7 (40)	6.4 (44)	10.7 (53)	-10.0 (54)	24.4 (39)	8.8 (30)
● MSCI AC World IMI (Net)	3.4 (59)	16.1 (52)	4.6 (54)	11.4 (42)	6.0 (52)	10.3 (60)	-10.1 (56)	23.9 (42)	8.4 (34)
5th Percentile	7.2	24.1	15.2	18.4	12.5	15.5	-1.1	36.5	19.9
1st Quartile	5.0	20.0	8.9	13.0	8.1	12.4	-6.4	27.2	9.4
Median	3.7	16.4	5.0	10.6	6.1	10.9	-9.6	22.5	6.3
3rd Quartile	2.1	13.1	1.2	8.1	4.3	9.5	-12.9	18.6	3.1
95th Percentile	-0.1	7.9	-6.7	4.4	0.5	5.9	-17.9	10.6	-2.3
Population	475	475	473	447	405	254	510	537	564

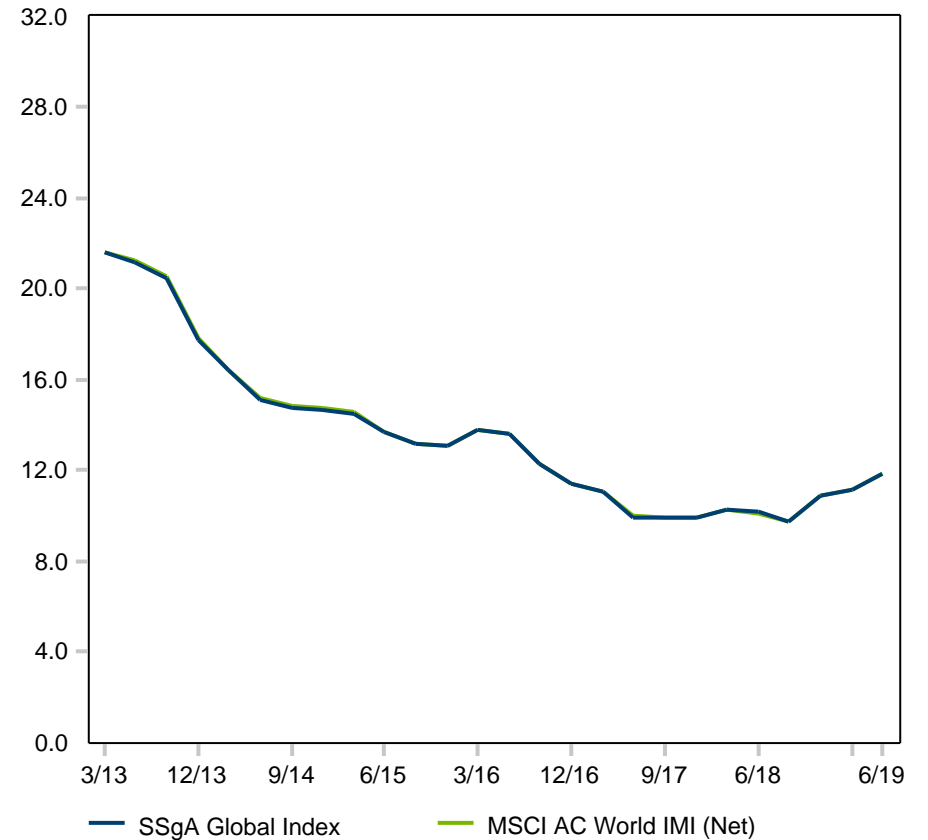
parentheses contain percentile rankings.

SSgA Global Index Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

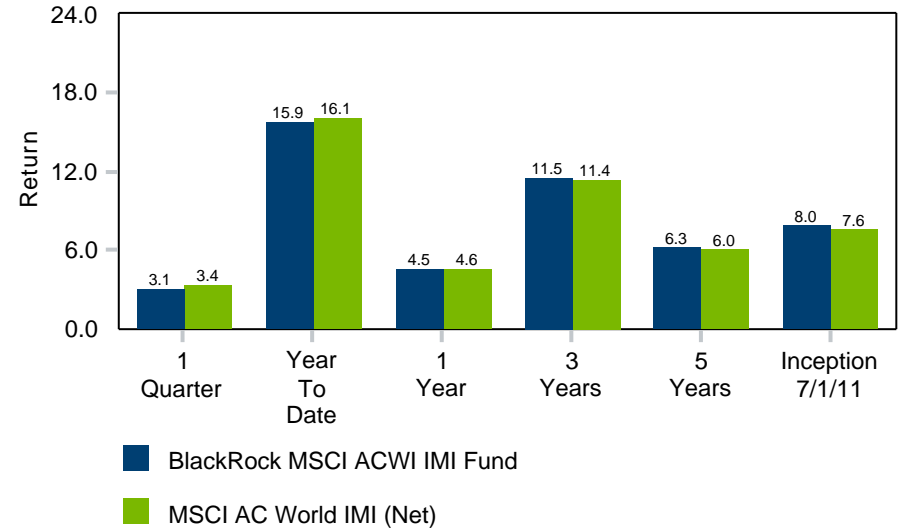
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
SSgA Global Index	0.34	0.17	1.95	1.00	0.51	0.33	1.00	6.39	11.86	1.00
MSCI AC World IMI (Net)	0.00	0.00	N/A	1.00	0.48	0.00	1.00	6.03	11.85	1.00
FTSE 3 Month T-Bill	-5.72	11.84	-0.48	0.00	N/A	0.84	0.00	0.84	0.25	0.04

BlackRock MSCI ACWI IMI Fund Performance Summary

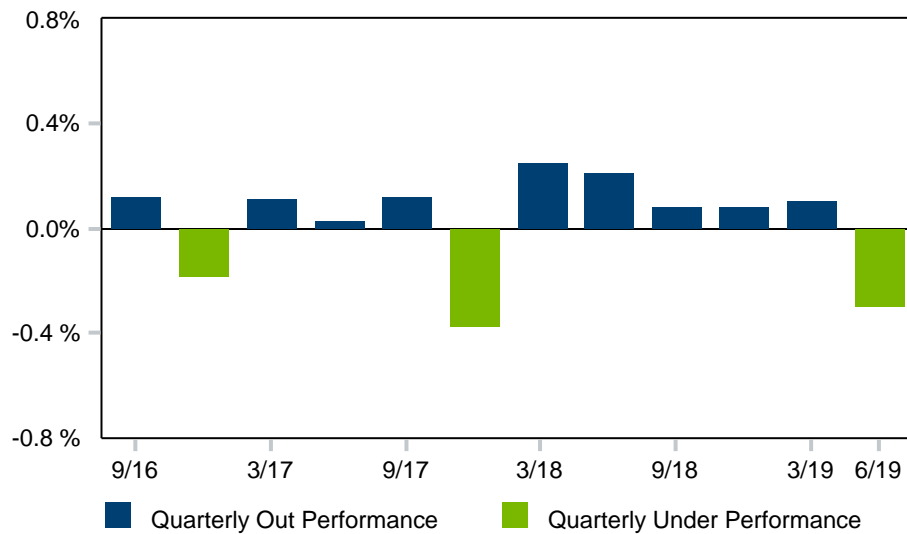
Account Information

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)

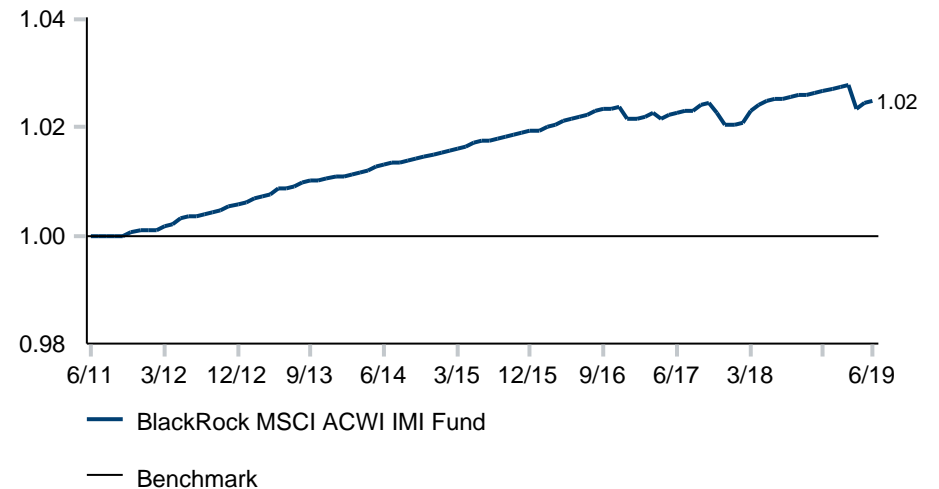
Return Summary



Quarterly Excess Performance

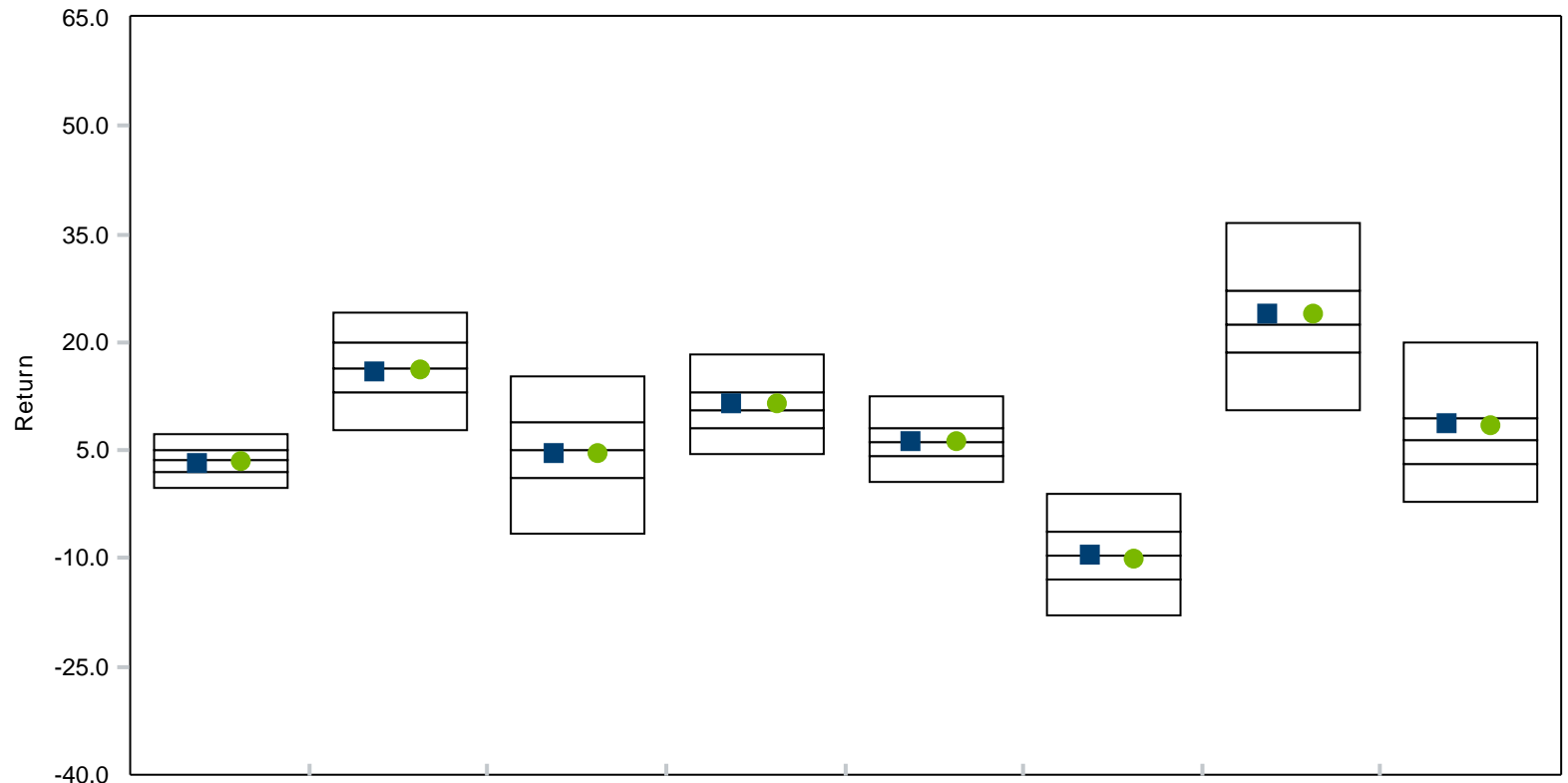


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

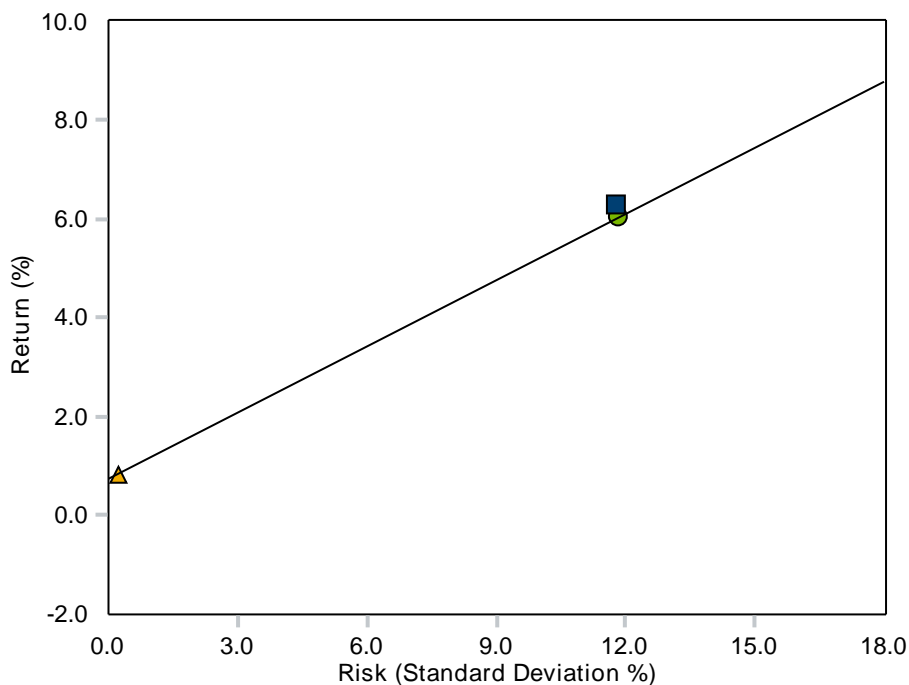


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ BlackRock MSCI ACWI IMI Fund	3.1 (62)	15.9 (53)	4.5 (54)	11.5 (41)	6.3 (46)	-9.5 (50)	23.8 (42)	8.6 (32)
● MSCI AC World IMI (Net)	3.4 (59)	16.1 (52)	4.6 (54)	11.4 (42)	6.0 (52)	-10.1 (56)	23.9 (42)	8.4 (34)
5th Percentile	7.2	24.1	15.2	18.4	12.5	-1.1	36.5	19.9
1st Quartile	5.0	20.0	8.9	13.0	8.1	-6.4	27.2	9.4
Median	3.7	16.4	5.0	10.6	6.1	-9.6	22.5	6.3
3rd Quartile	2.1	13.1	1.2	8.1	4.3	-12.9	18.6	3.1
95th Percentile	-0.1	7.9	-6.7	4.4	0.5	-17.9	10.6	-2.3
Population	475	475	473	447	405	510	537	564

Parentheses contain percentile rankings.

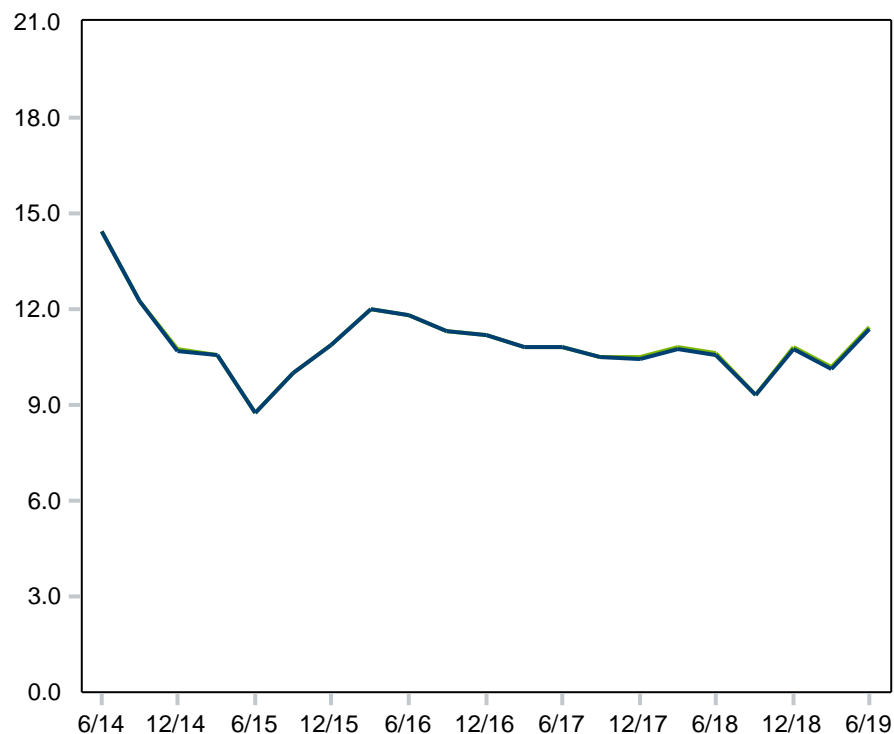
BlackRock MSCI ACWI IMI Fund Risk Profile

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

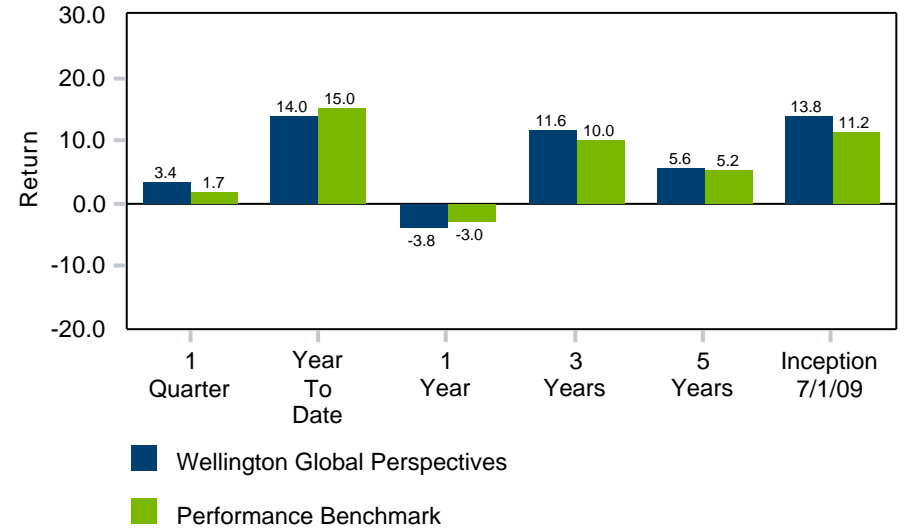
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
BlackRock MSCI ACWI IMI Fund	0.23	0.31	0.73	1.00	0.50	0.25	1.00	6.28	11.80	1.00
MSCI AC World IMI (Net)	0.00	0.00	N/A	1.00	0.48	0.00	1.00	6.03	11.85	1.00
FTSE 3 Month T-Bill	-5.72	11.84	-0.48	0.00	N/A	0.84	0.00	0.84	0.25	0.04

Wellington Global Perspectives Performance Summary

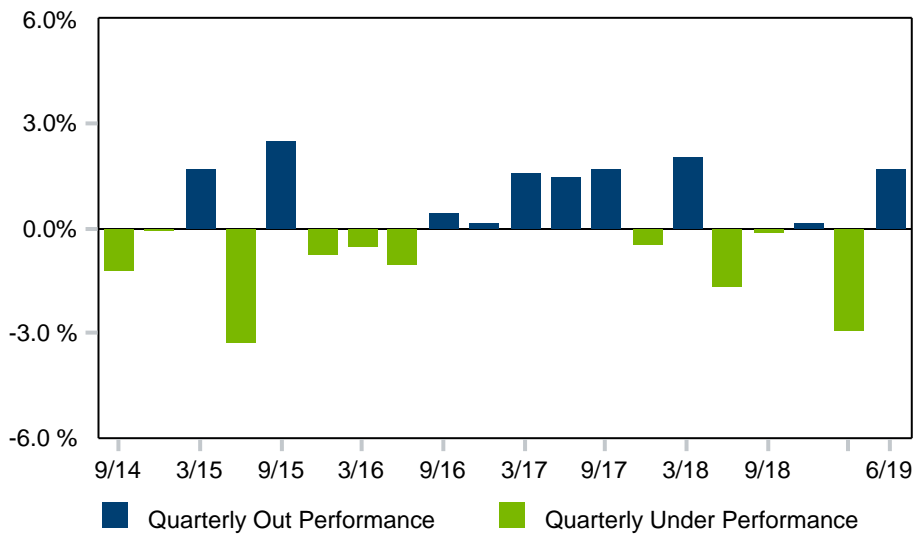
Account Information

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 Small Cap Equity (SA+CF)

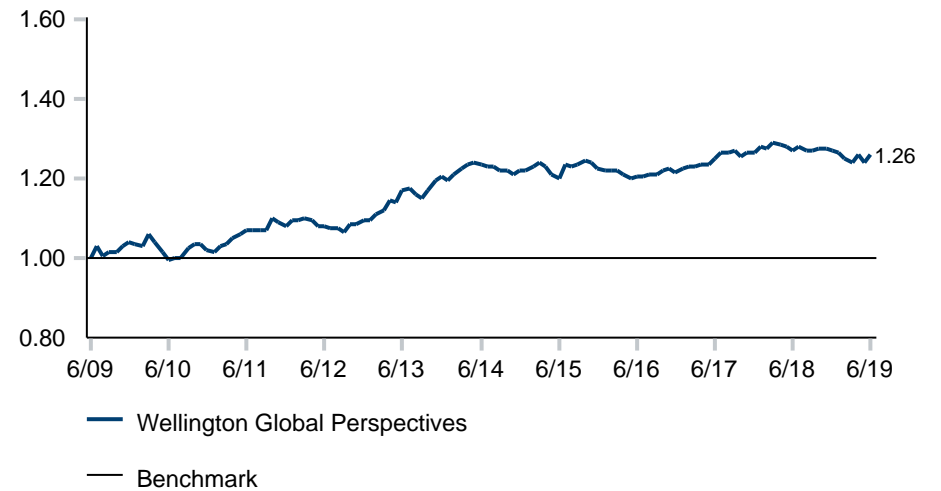
Return Summary



Quarterly Excess Performance

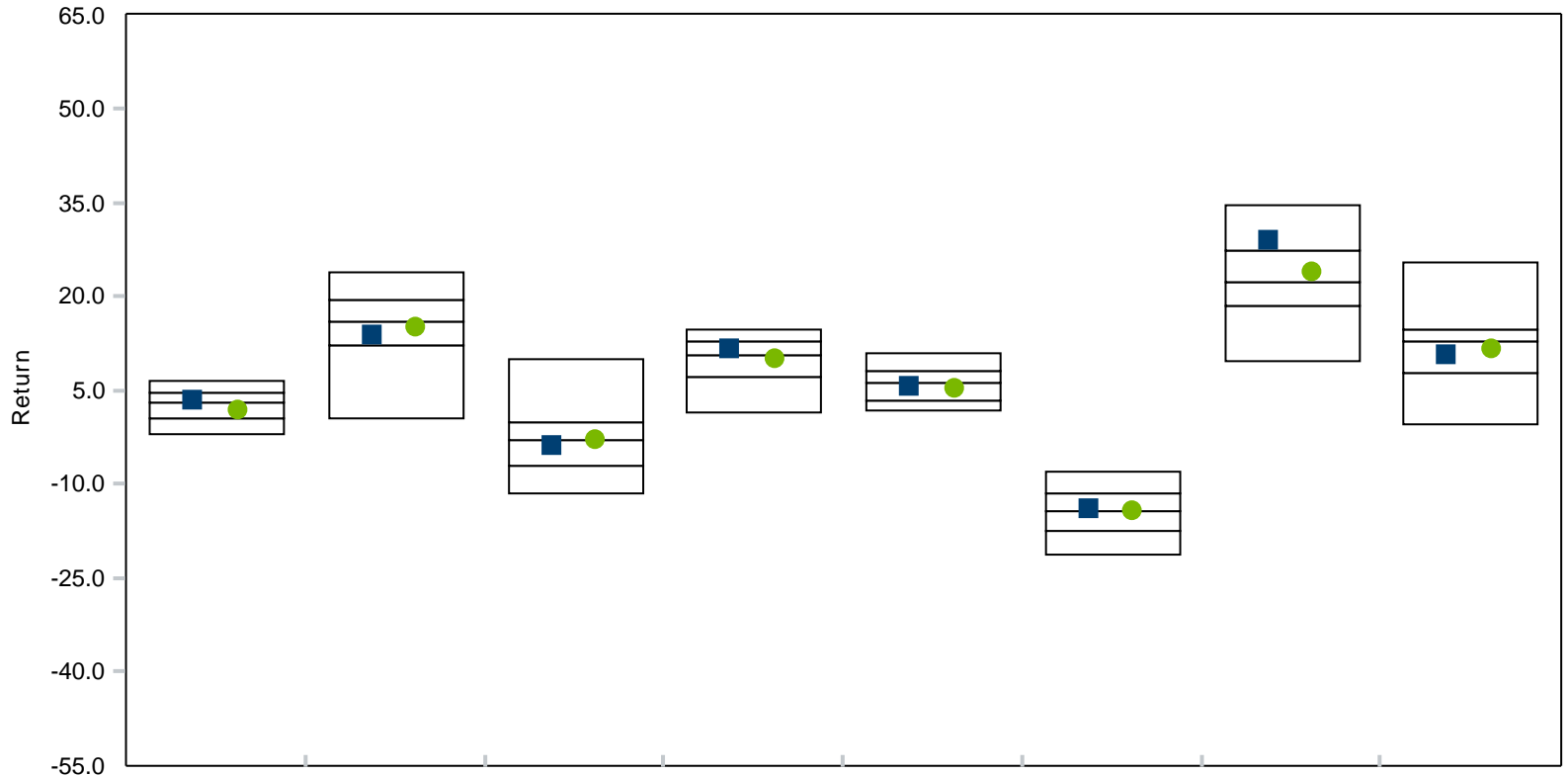


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Small Cap Equity (SA+CF)

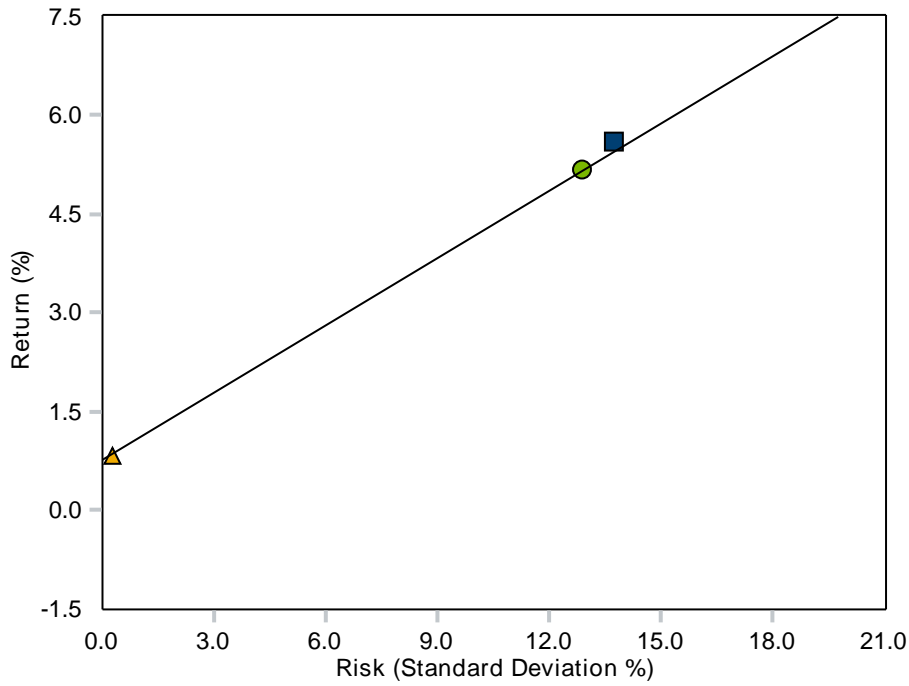


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
Wellington Global Perspectives	3.4 (47)	14.0 (64)	-3.8 (56)	11.6 (39)	5.6 (62)	-14.0 (44)	29.0 (20)	10.6 (57)
Performance Benchmark	1.7 (63)	15.0 (55)	-3.0 (52)	10.0 (61)	5.2 (64)	-14.4 (50)	23.8 (40)	11.6 (53)
5th Percentile	6.6	23.9	10.1	14.8	11.0	-7.8	34.6	25.5
1st Quartile	4.7	19.5	-0.1	12.8	8.2	-11.5	27.4	14.7
Median	3.3	16.0	-2.9	10.7	6.4	-14.4	22.3	12.8
3rd Quartile	0.5	12.3	-7.1	7.1	3.5	-17.3	18.6	7.9
95th Percentile	-2.1	0.4	-11.3	1.5	1.7	-21.1	9.6	-0.4
Population	28	28	28	26	25	31	31	33

Parenteses contain percentile rankings.

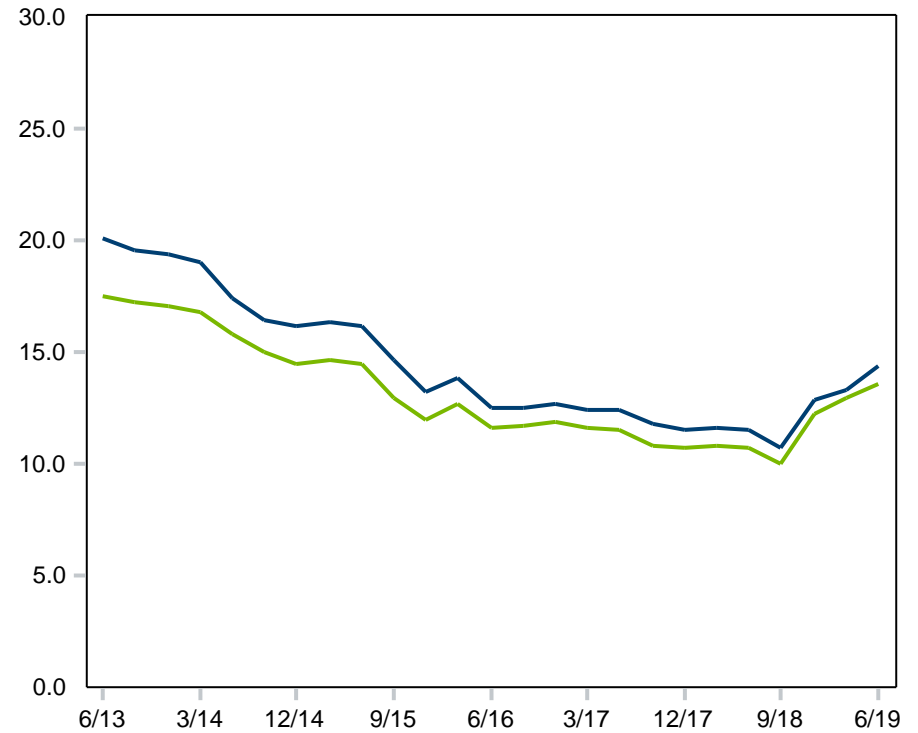
Wellington Global Perspectives Risk Profile

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	0.50	3.00	0.17	0.95	0.40	0.26	1.04	5.58	13.79	0.98
Performance Benchmark	0.00	0.00	N/A	1.00	0.39	0.00	1.00	5.17	12.94	1.00
FTSE 3 Month T-Bill	-5.04	12.94	-0.39	0.00	N/A	0.84	0.00	0.84	0.25	-0.01

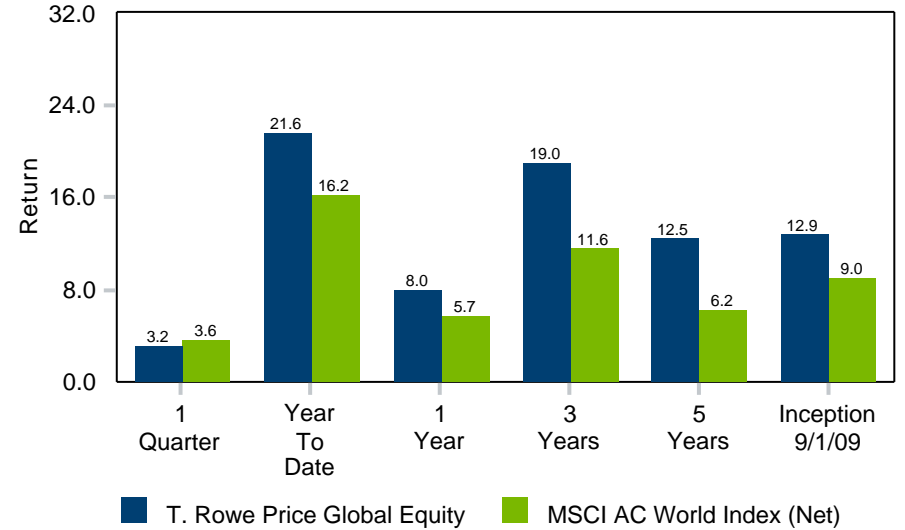


T. Rowe Price Global Equity Performance Summary

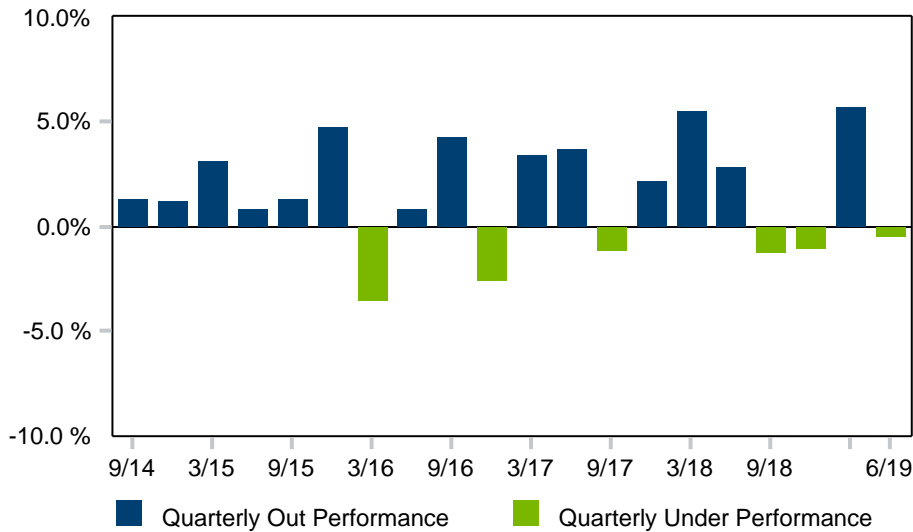
Account Information

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)

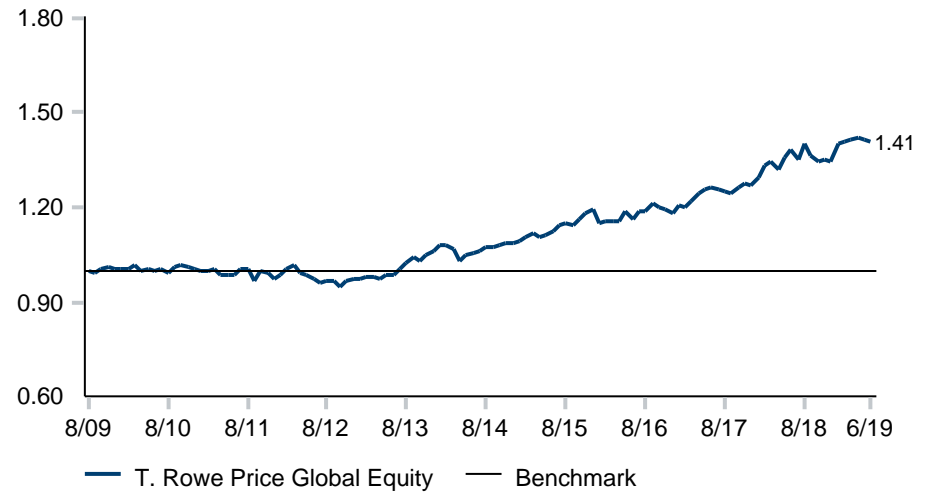
Return Summary



Quarterly Excess Performance

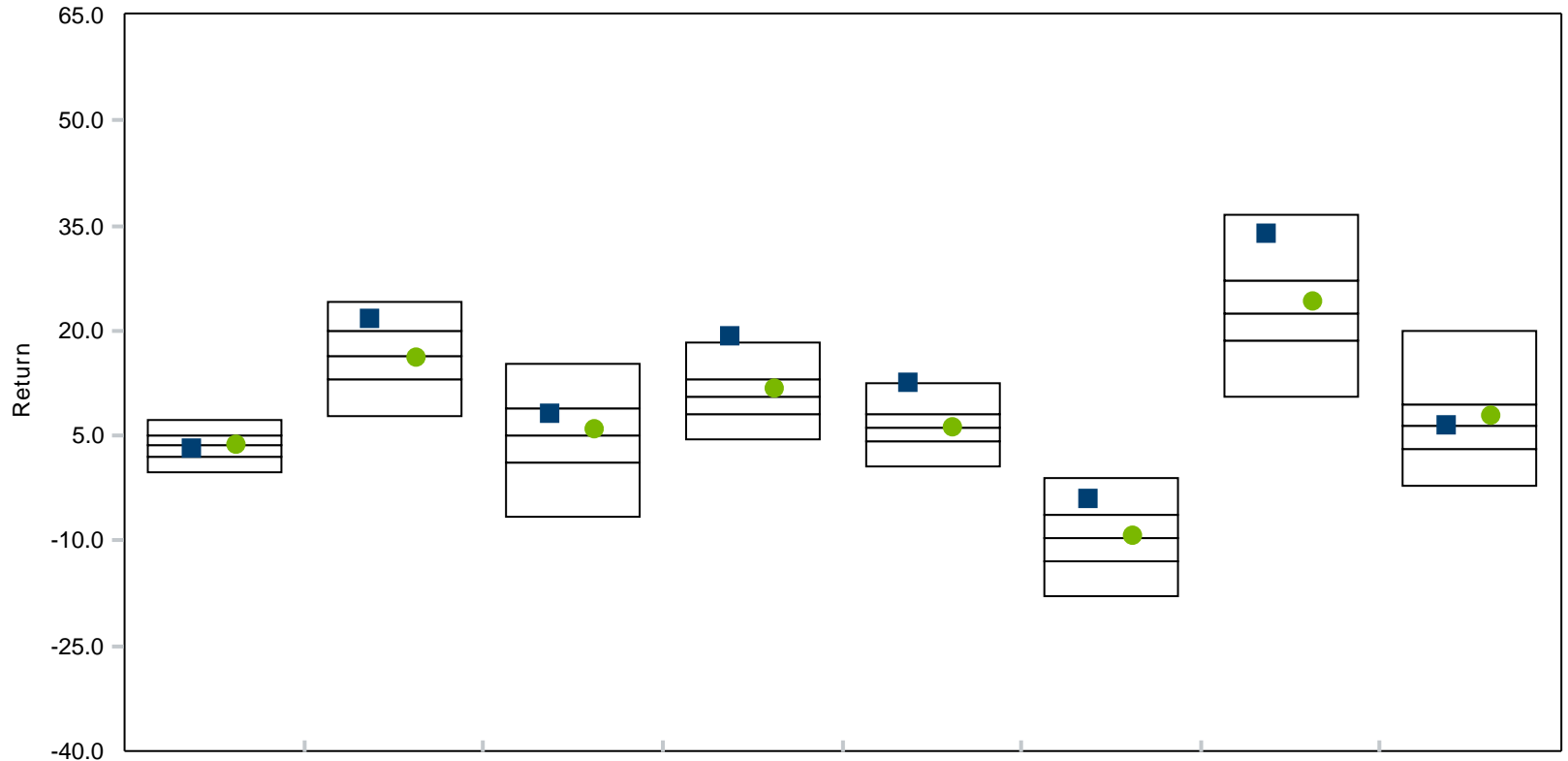


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

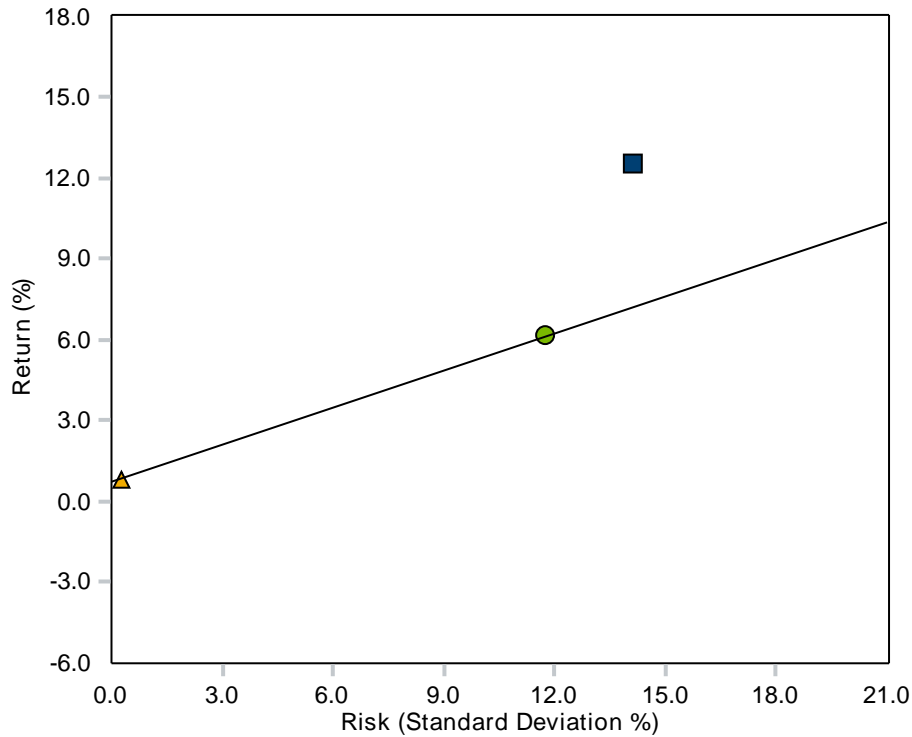


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ T. Rowe Price Global Equity	3.2 (62)	21.6 (15)	8.0 (31)	19.0 (4)	12.5 (6)	-4.0 (14)	33.7 (9)	6.4 (49)
● MSCI AC World Index (Net)	3.6 (53)	16.2 (52)	5.7 (46)	11.6 (41)	6.2 (50)	-9.4 (50)	24.0 (42)	7.9 (38)
5th Percentile	7.2	24.1	15.2	18.4	12.5	-1.1	36.5	19.9
1st Quartile	5.0	20.0	8.9	13.0	8.1	-6.4	27.2	9.4
Median	3.7	16.4	5.0	10.6	6.1	-9.6	22.5	6.3
3rd Quartile	2.1	13.1	1.2	8.1	4.3	-12.9	18.6	3.1
95th Percentile	-0.1	7.9	-6.7	4.4	0.5	-17.9	10.6	-2.3
Population	475	475	473	447	405	510	537	564

Partheses contain percentile rankings.

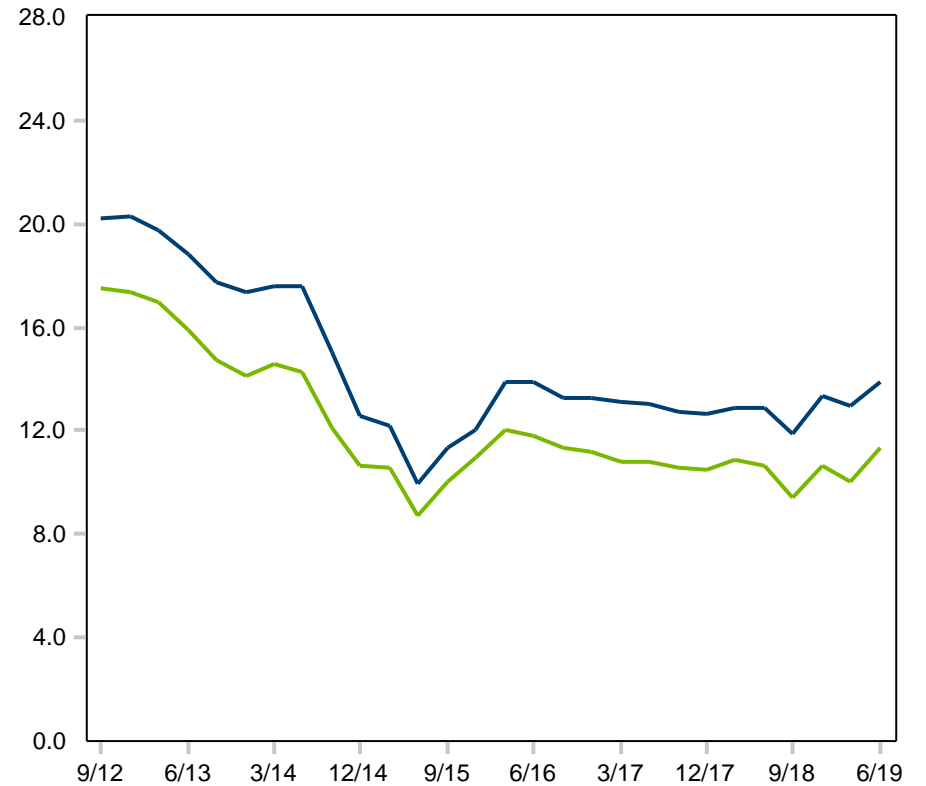
T. Rowe Price Global Equity Risk Profile

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



— T. Rowe Price Global Equity — MSCI AC World Index (Net)

5 Years Historical Statistics

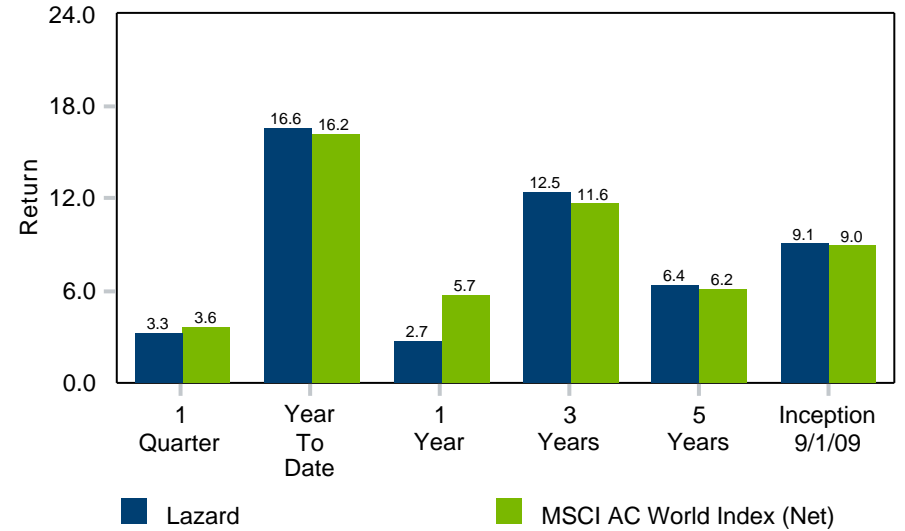
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
T. Rowe Price Global Equity	6.14	5.07	1.21	0.88	0.85	5.41	1.13	12.50	14.16	0.94
MSCI AC World Index (Net)	0.00	0.00	N/A	1.00	0.50	0.00	1.00	6.16	11.79	1.00
FTSE 3 Month T-Bill	-5.84	11.78	-0.50	0.00	N/A	0.84	0.00	0.84	0.25	0.04

Lazard Performance Summary

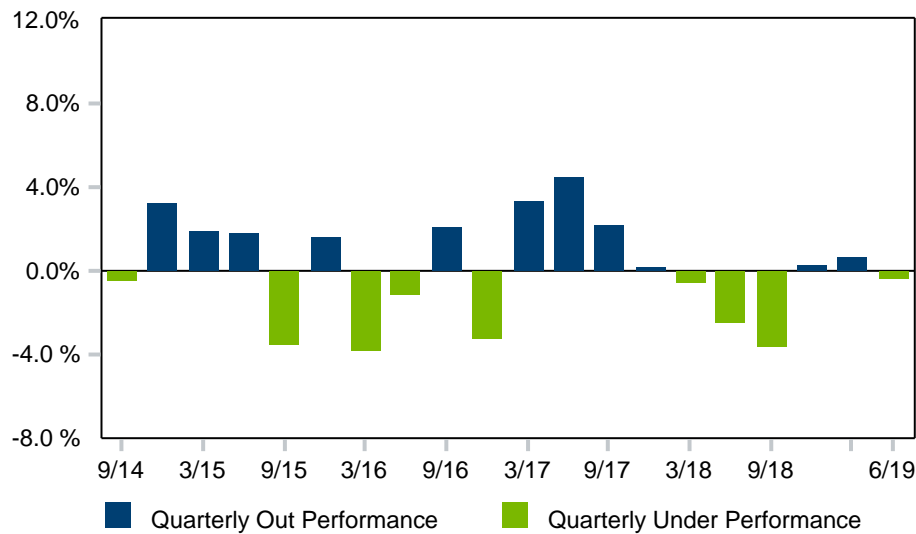
Account Information

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)

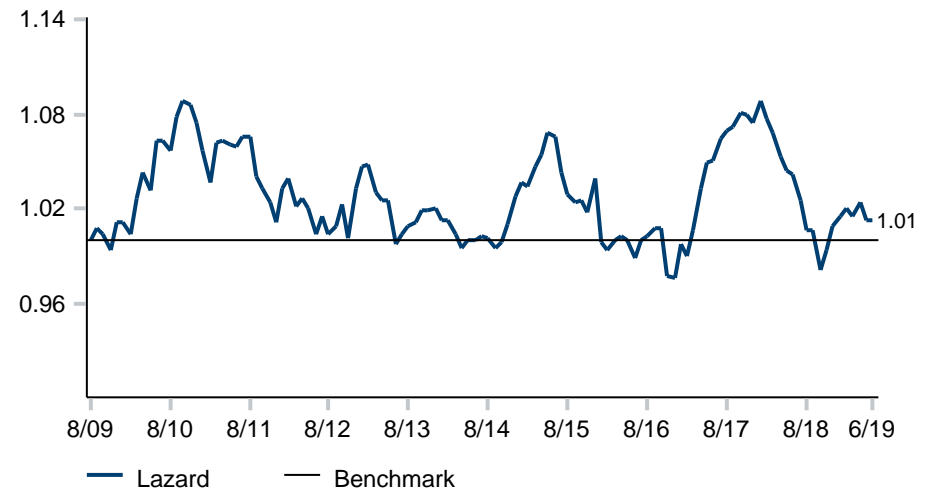
Return Summary



Quarterly Excess Performance

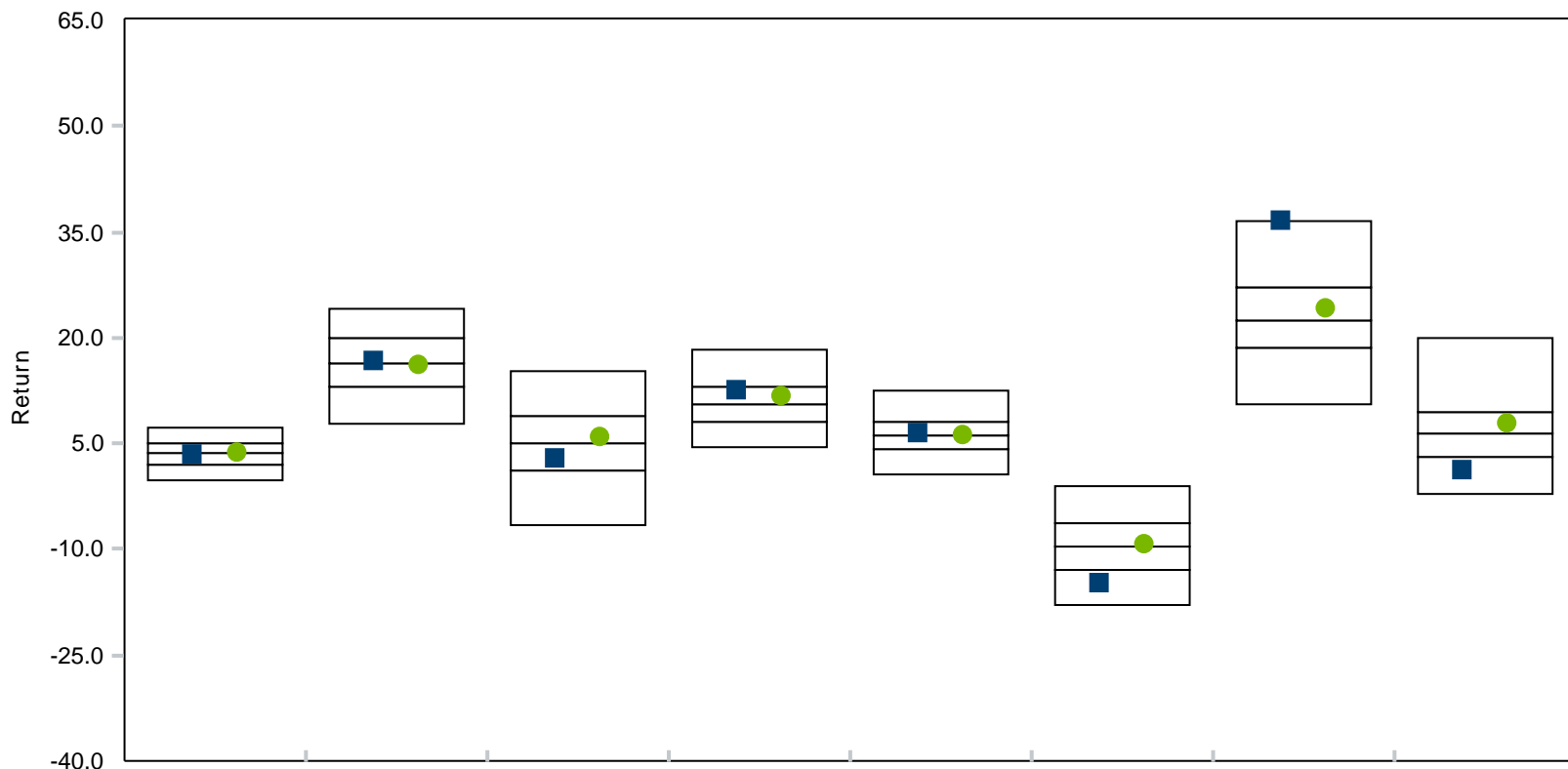


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

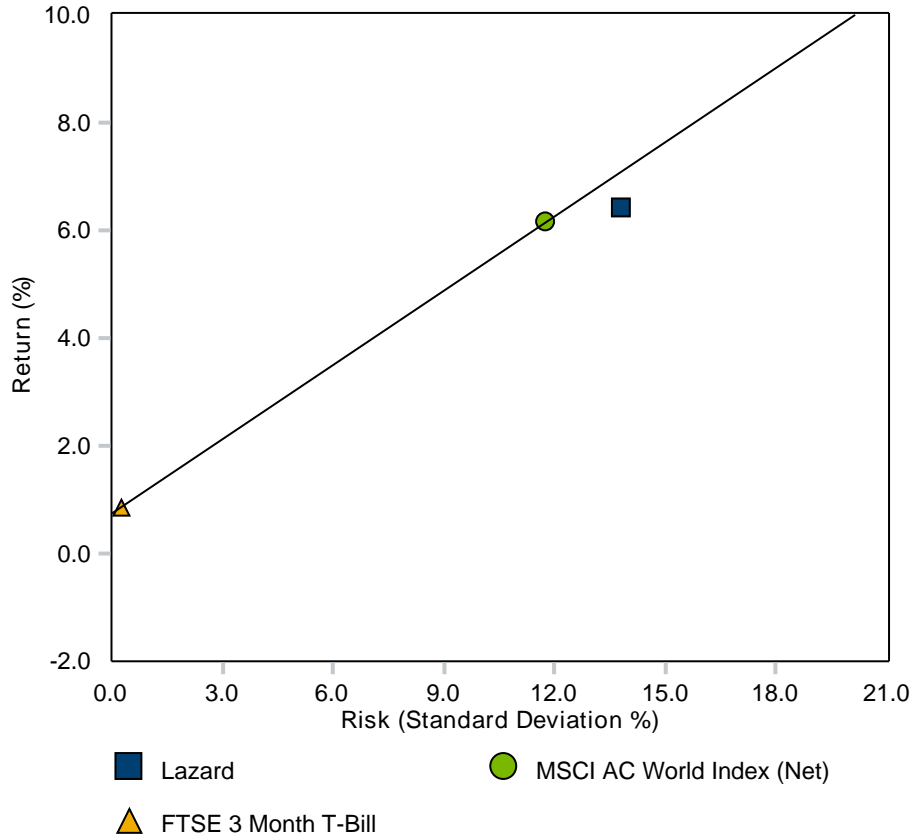


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ Lazard	3.3 (60)	16.6 (49)	2.7 (66)	12.5 (30)	6.4 (44)	-14.9 (87)	36.5 (6)	1.3 (85)
● MSCI AC World Index (Net)	3.6 (53)	16.2 (52)	5.7 (46)	11.6 (41)	6.2 (50)	-9.4 (50)	24.0 (42)	7.9 (38)
5th Percentile	7.2	24.1	15.2	18.4	12.5	-1.1	36.5	19.9
1st Quartile	5.0	20.0	8.9	13.0	8.1	-6.4	27.2	9.4
Median	3.7	16.4	5.0	10.6	6.1	-9.6	22.5	6.3
3rd Quartile	2.1	13.1	1.2	8.1	4.3	-12.9	18.6	3.1
95th Percentile	-0.1	7.9	-6.7	4.4	0.5	-17.9	10.6	-2.3
Population	475	475	473	447	405	510	537	564

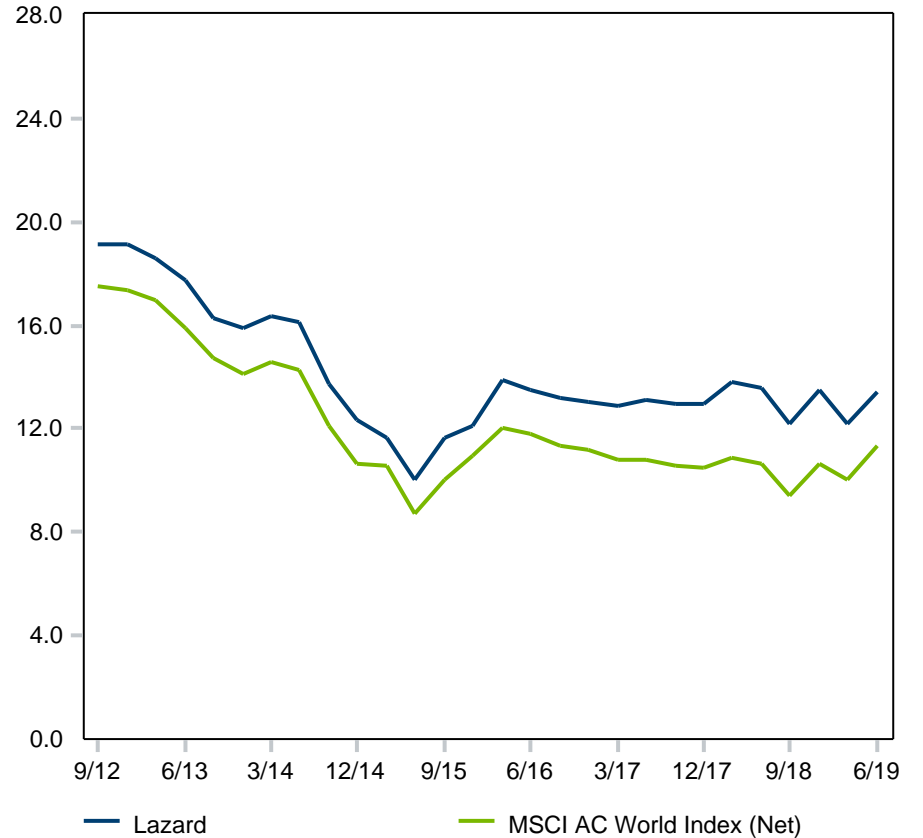
Partheses contain percentile rankings.

Lazard Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

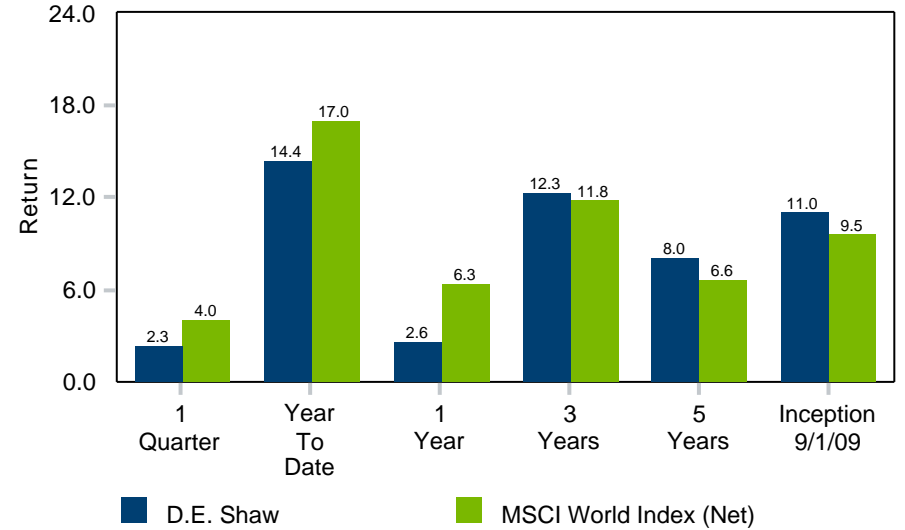
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Lazard	0.51	4.35	0.12	0.91	0.46	-0.30	1.12	6.42	13.84	0.95
MSCI AC World Index (Net)	0.00	0.00	N/A	1.00	0.50	0.00	1.00	6.16	11.79	1.00
FTSE 3 Month T-Bill	-5.84	11.78	-0.50	0.00	N/A	0.84	0.00	0.84	0.25	0.04

D.E. Shaw Performance Summary

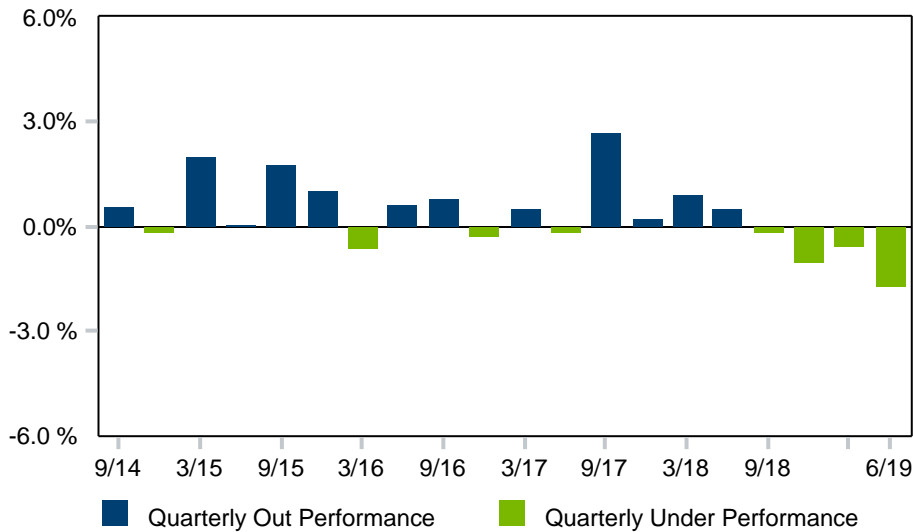
Account Information

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)

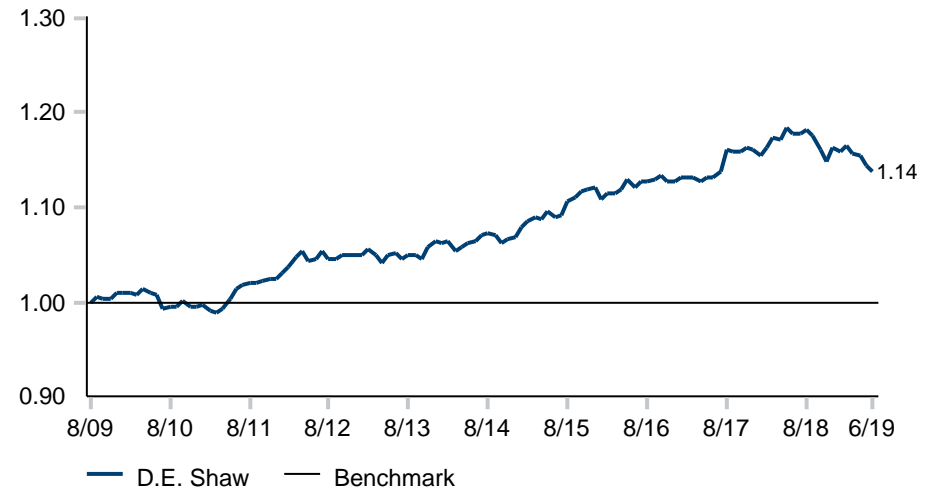
Return Summary



Quarterly Excess Performance

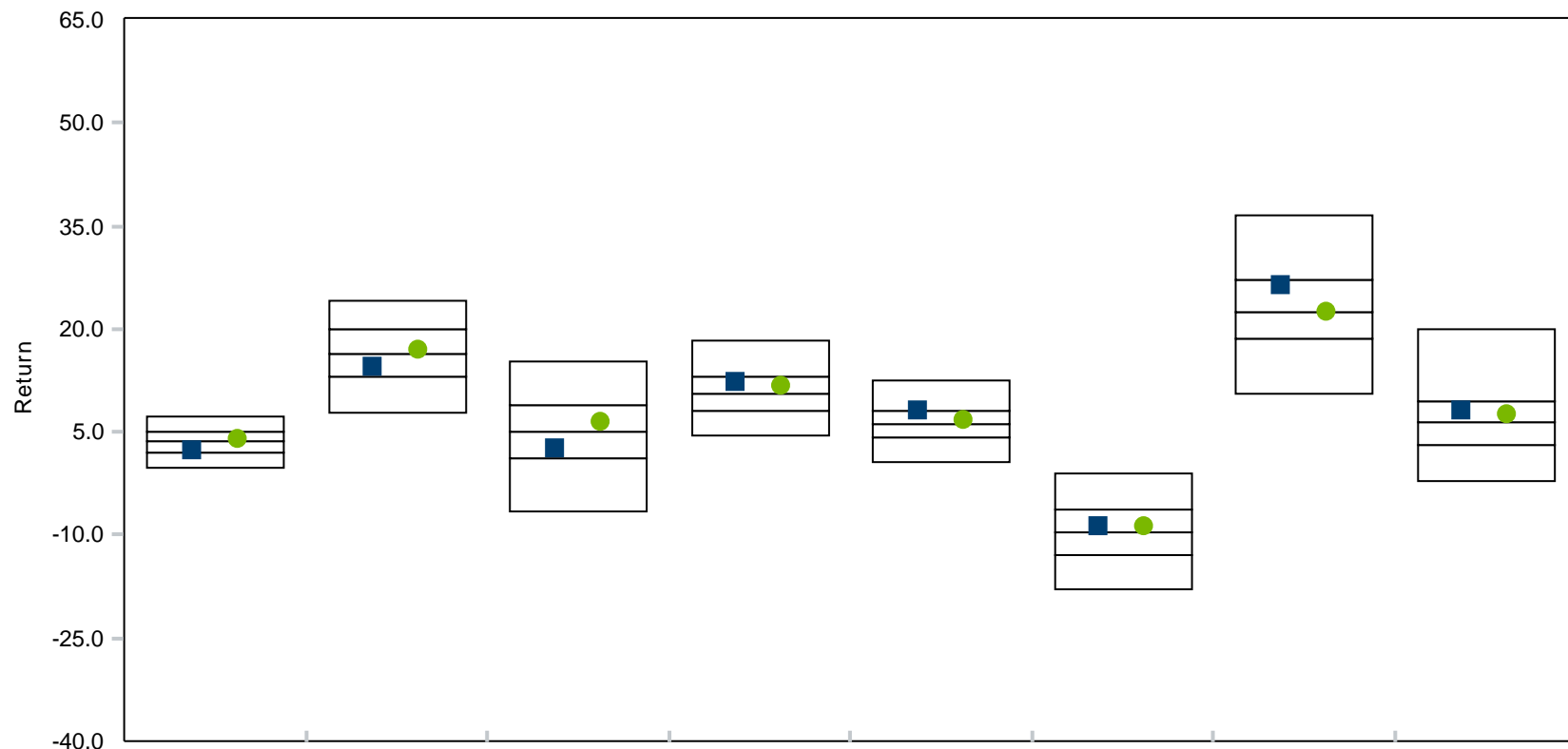


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Global Equity (SA+CF)

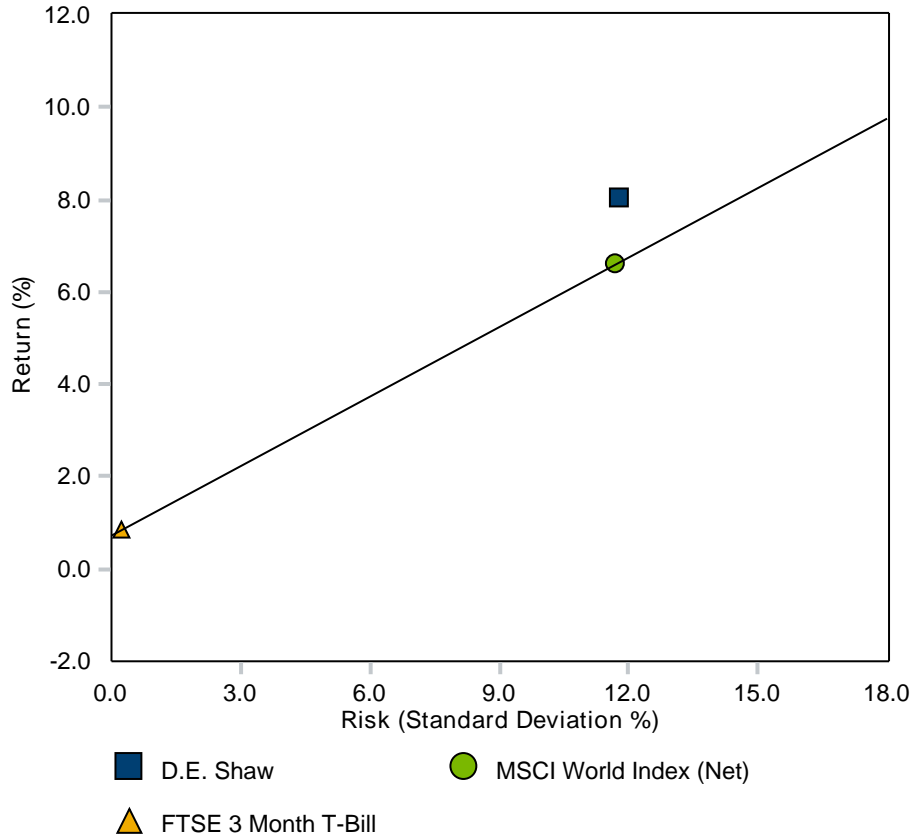


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ D.E. Shaw	2.3 (72)	14.4 (66)	2.6 (67)	12.3 (32)	8.0 (26)	-8.6 (43)	26.2 (30)	8.0 (37)
● MSCI World Index (Net)	4.0 (44)	17.0 (46)	6.3 (43)	11.8 (40)	6.6 (42)	-8.7 (43)	22.4 (51)	7.5 (40)
5th Percentile	7.2	24.1	15.2	18.4	12.5	-1.1	36.5	19.9
1st Quartile	5.0	20.0	8.9	13.0	8.1	-6.4	27.2	9.4
Median	3.7	16.4	5.0	10.6	6.1	-9.6	22.5	6.3
3rd Quartile	2.1	13.1	1.2	8.1	4.3	-12.9	18.6	3.1
95th Percentile	-0.1	7.9	-6.7	4.4	0.5	-17.9	10.6	-2.3
Population	475	475	473	447	405	510	537	564

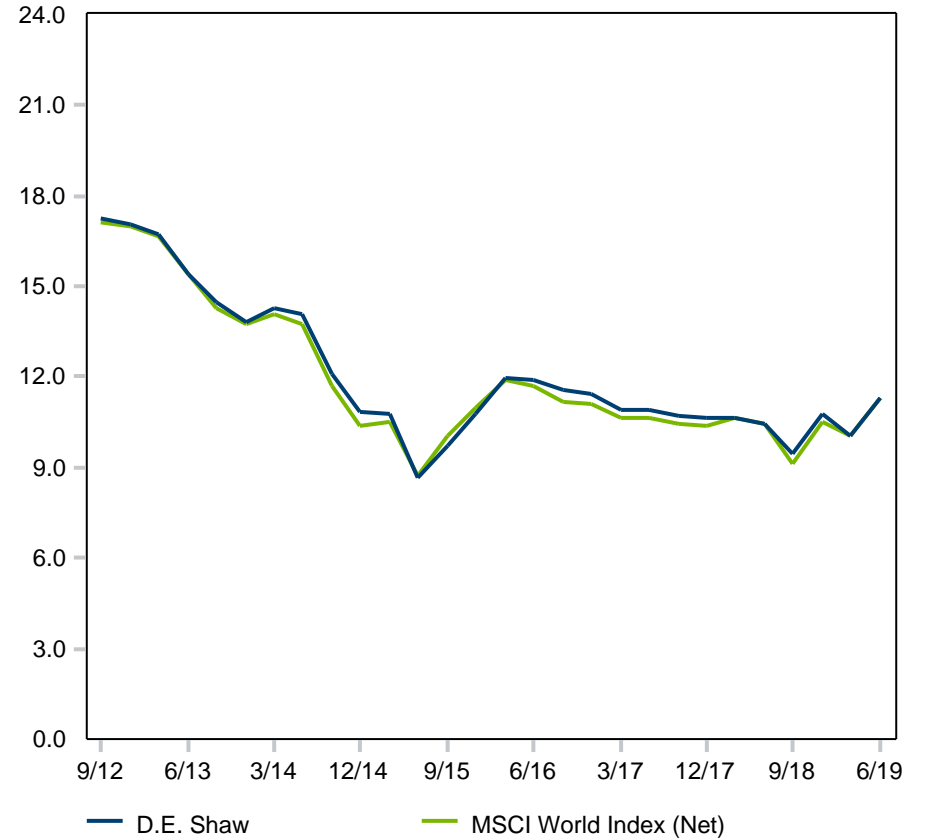
611 Parentheses contain percentile rankings.

D.E. Shaw Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

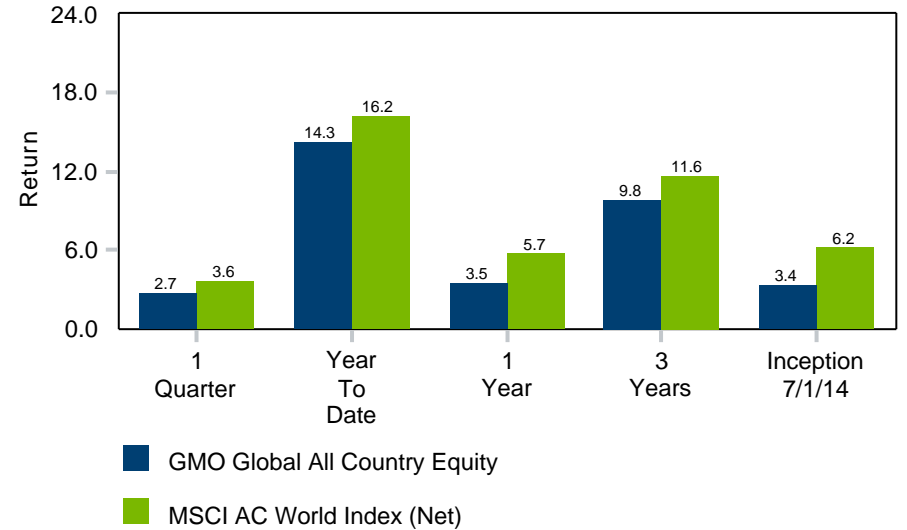
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
D.E. Shaw	1.36	2.16	0.63	0.97	0.64	1.43	0.99	8.04	11.81	0.98
MSCI World Index (Net)	0.00	0.00	N/A	1.00	0.53	0.00	1.00	6.60	11.71	1.00
FTSE 3 Month T-Bill	-6.25	11.70	-0.53	0.00	N/A	0.84	0.00	0.84	0.25	0.05

GMO Global All Country Equity Performance Summary

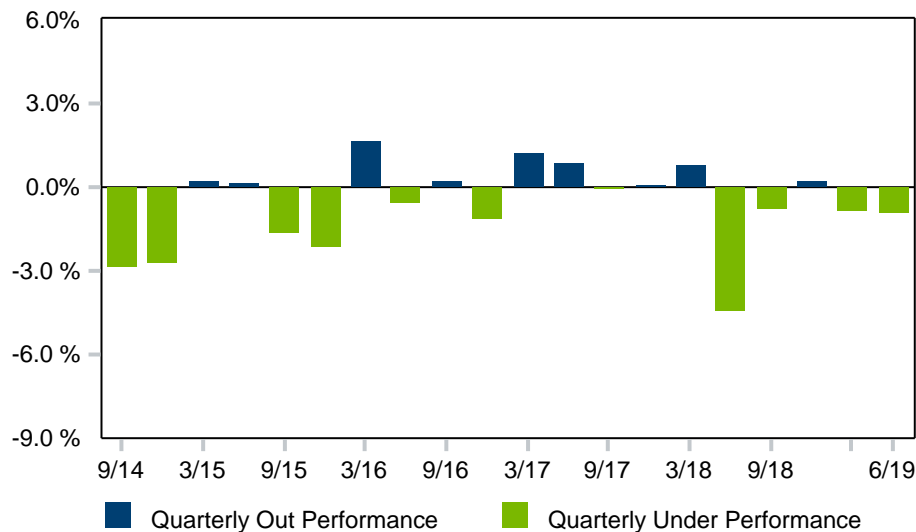
Account Information as of 06/30/19

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 : Inker/Wilderman
 Total Assets : \$1,610.90 Million
 Total Assets Date : 06/30/2019
 Gross Expense : 0.63%
 Net Expense : 0.62%
 Turnover : 11%

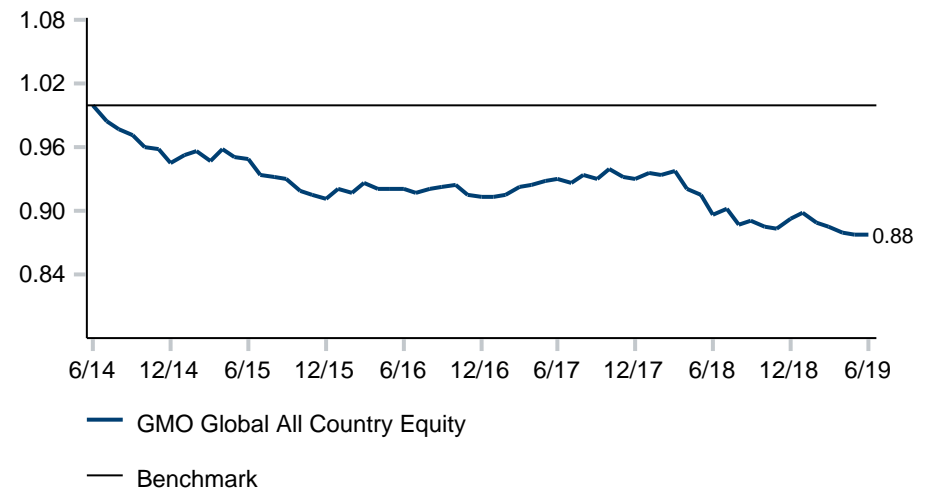
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

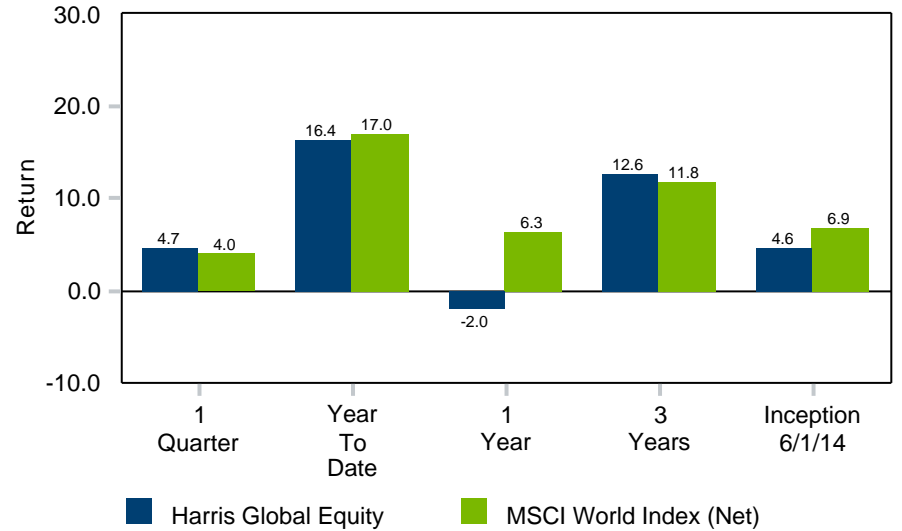


Harris Global Equity Performance Summary

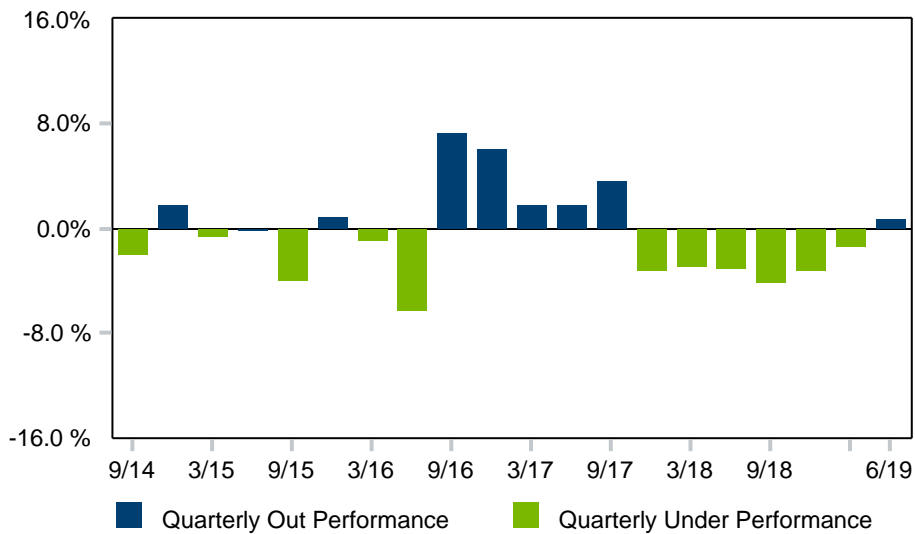
Account Information

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)

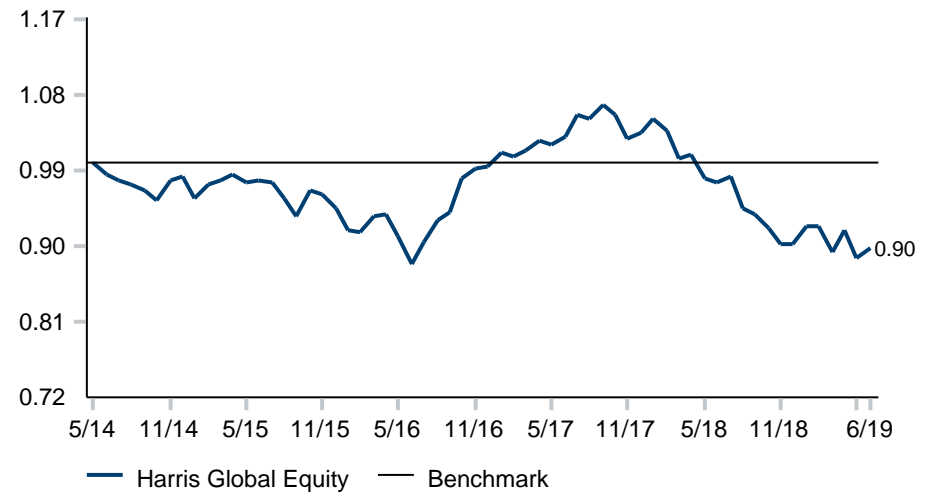
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



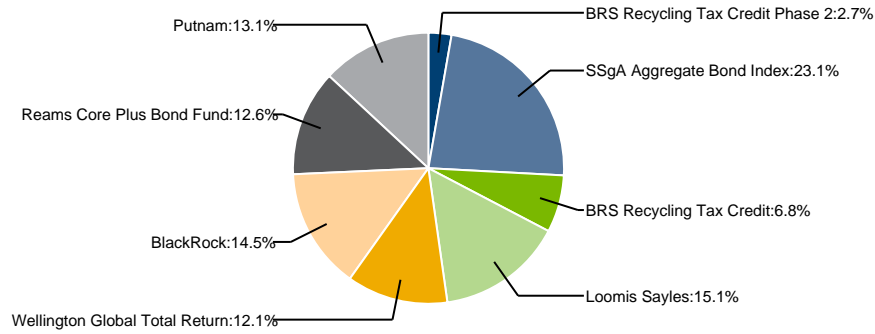


Fixed Income

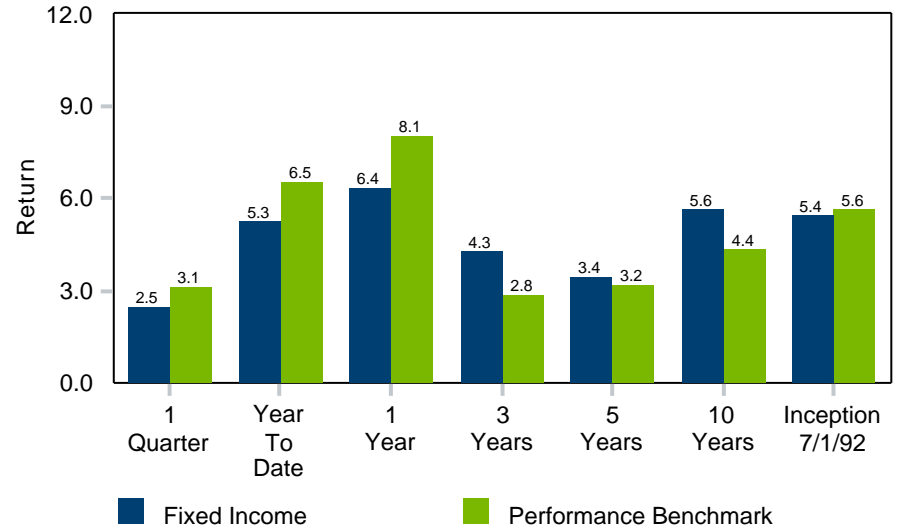
Fixed Income Portfolio Overview

Current Allocation

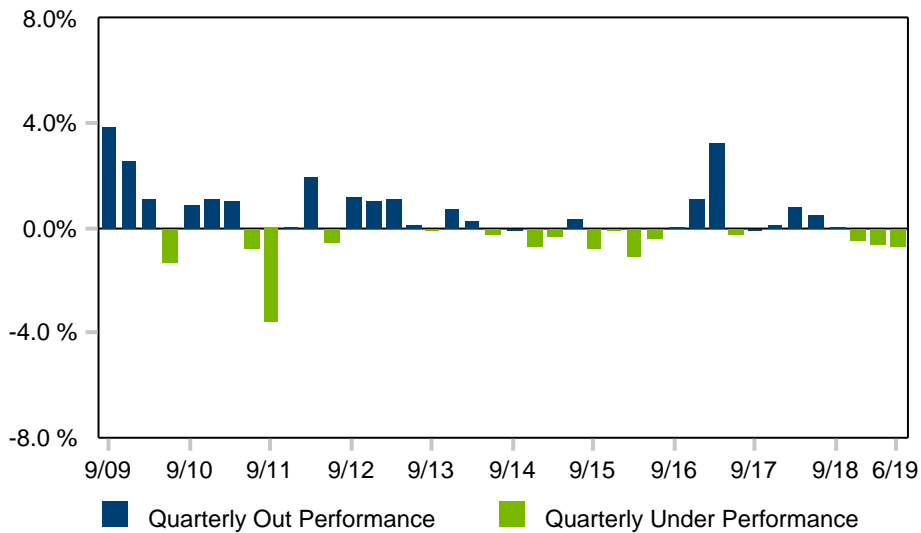
June 30, 2019 : \$2,809M



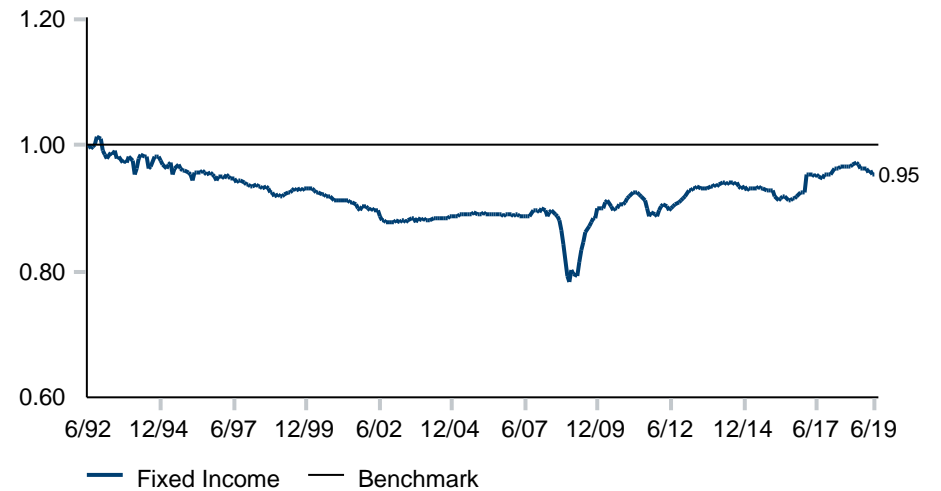
Return Summary



Quarterly Excess Performance

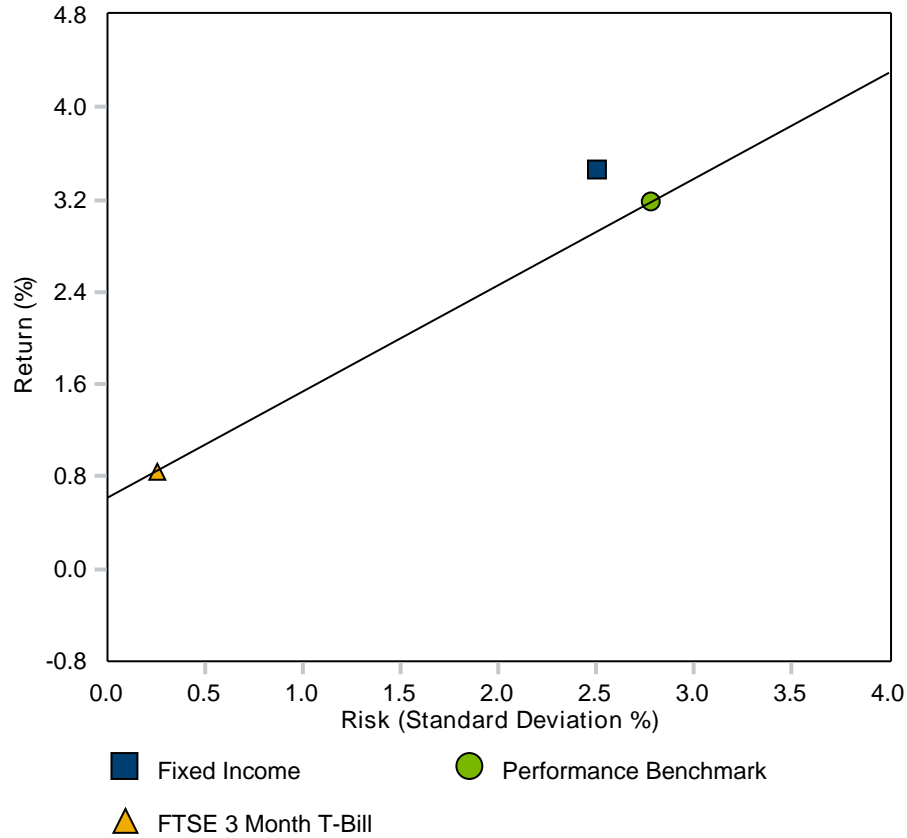


Ratio of Cumulative Wealth - Since Inception

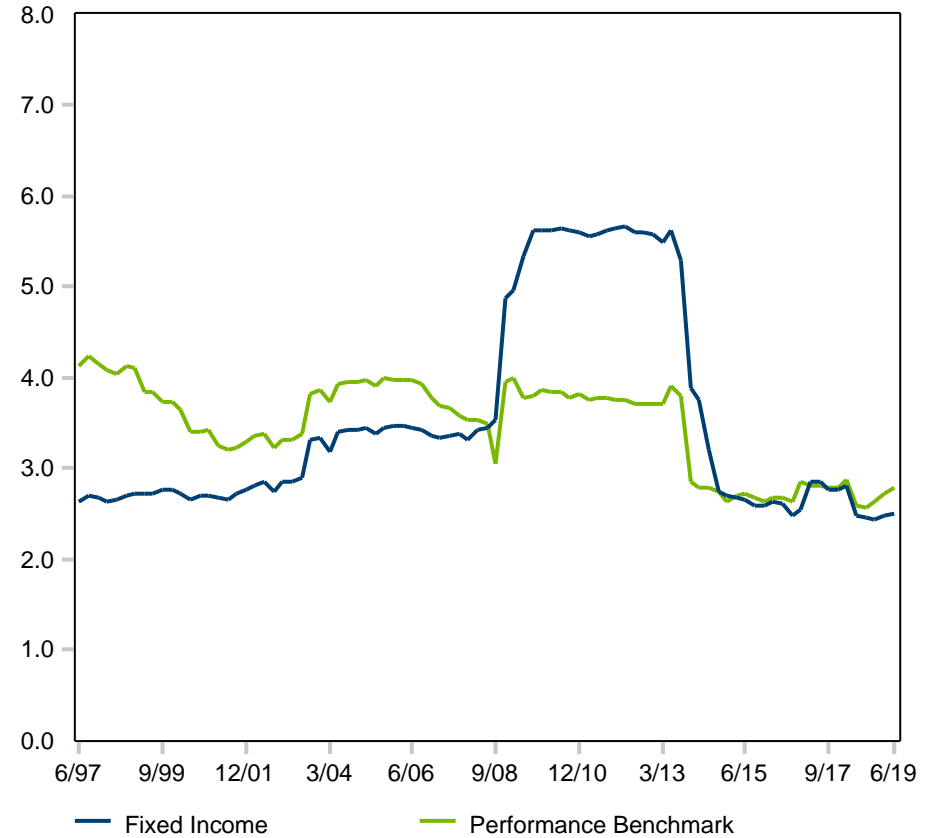


Fixed Income Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation

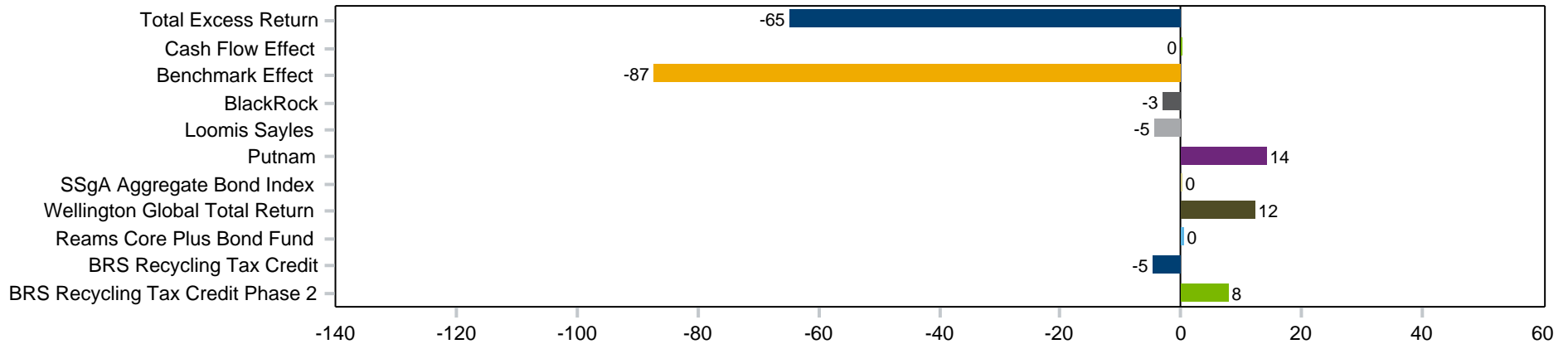


5 Years Historical Statistics

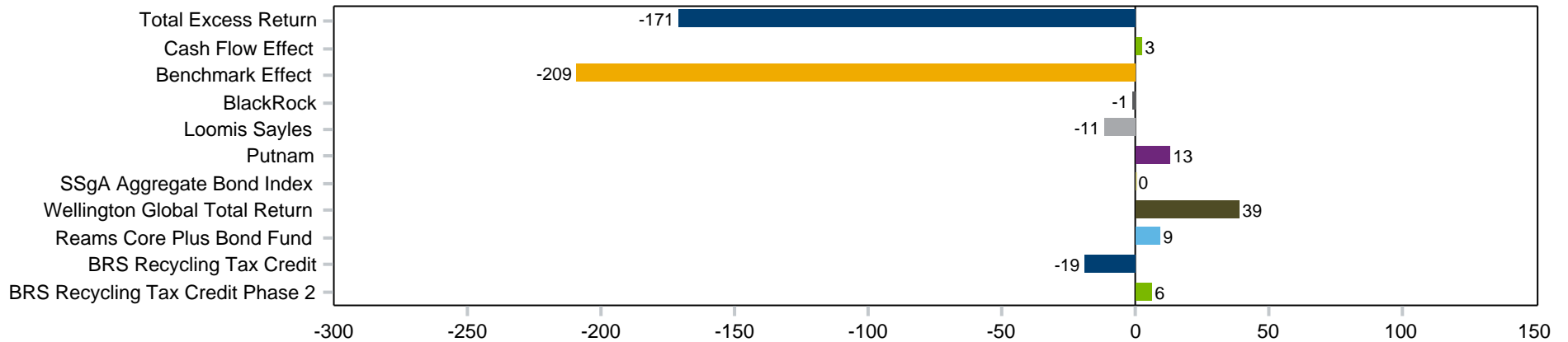
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Fixed Income	0.25	1.79	0.14	0.60	1.04	1.21	0.70	3.45	2.51	0.78
Performance Benchmark	0.00	0.00	N/A	1.00	0.85	0.00	1.00	3.18	2.78	1.00
FTSE 3 Month T-Bill	-2.33	2.75	-0.85	0.03	N/A	0.79	0.02	0.84	0.25	0.18

Asset Class Attribution

1 Quarter



1 Year



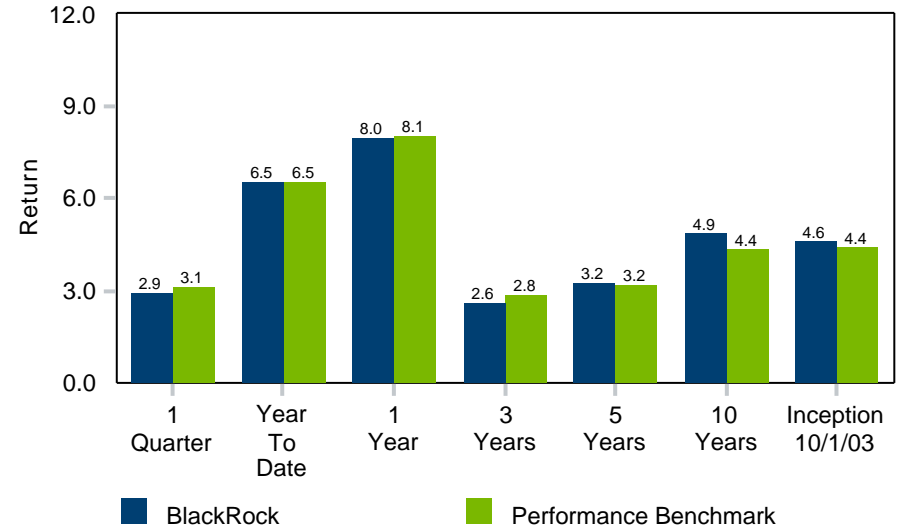
*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. This represents an approximate 9.9% yield for the 2017 fiscal year. The value shown above represents the year-end market value in accordance 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

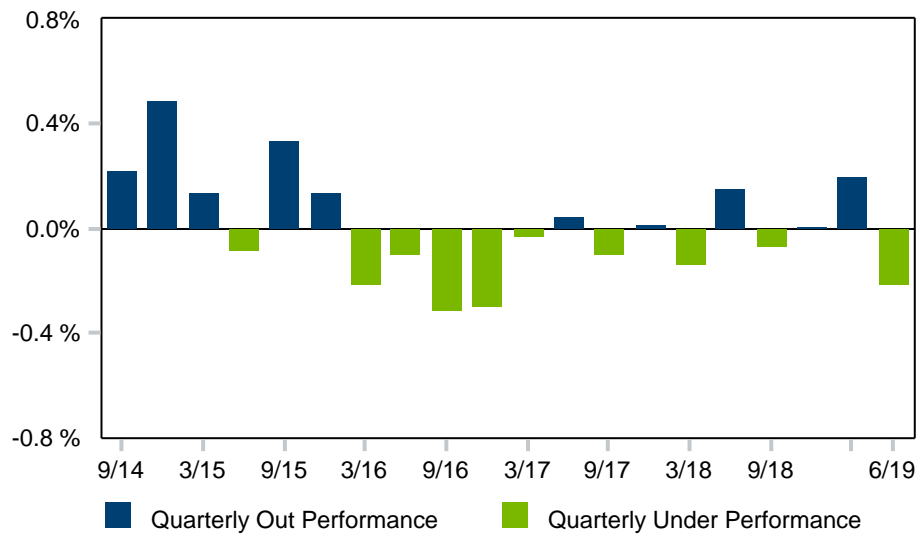
Account Information

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)

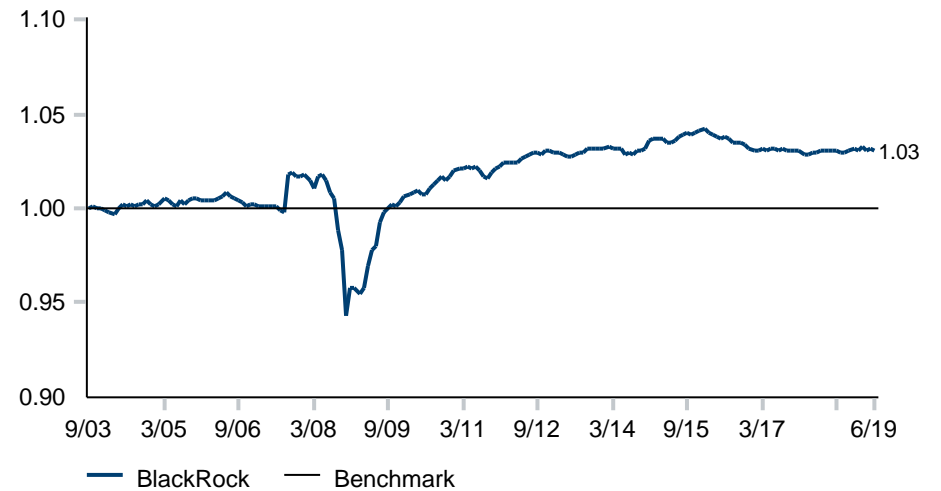
Return Summary



Quarterly Excess Performance

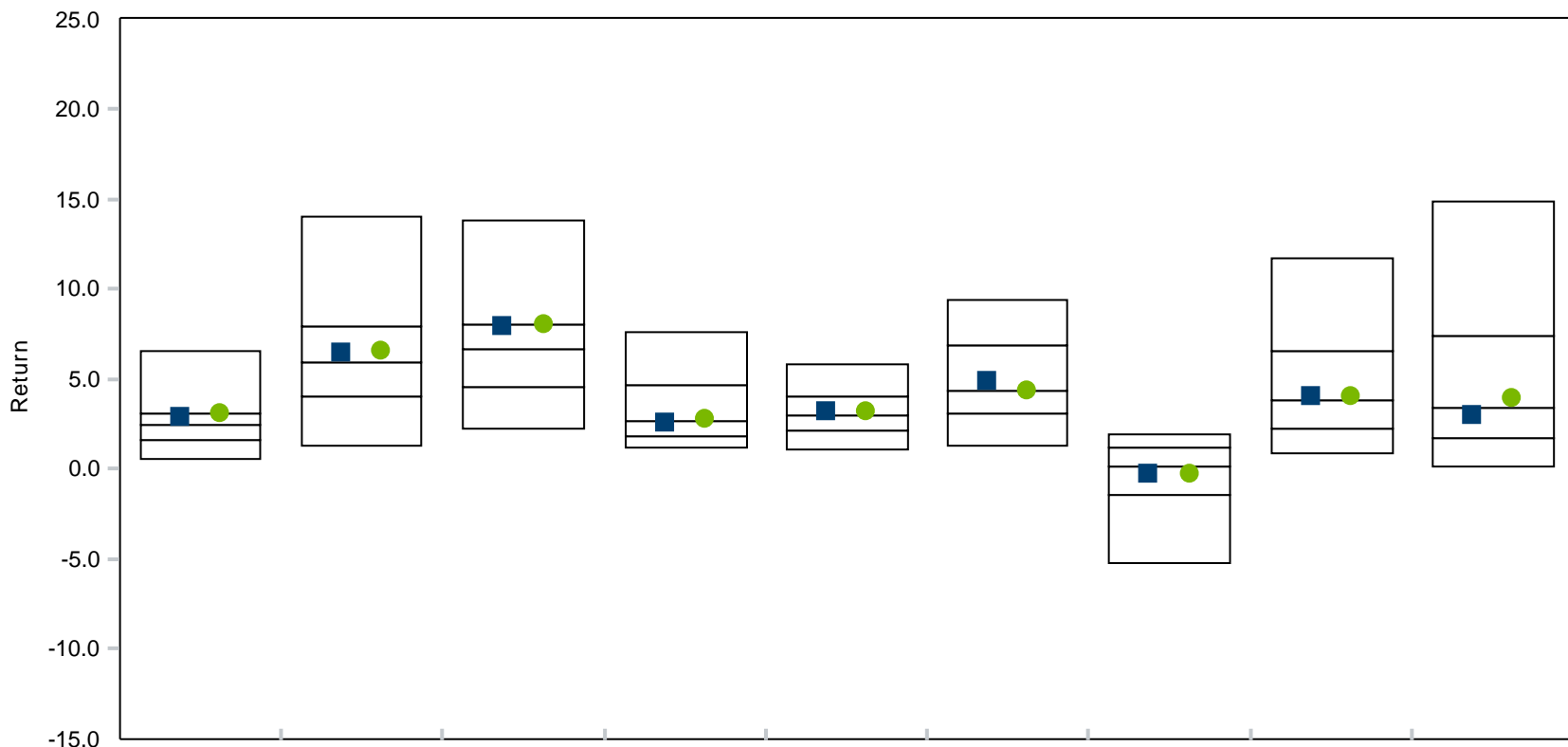


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

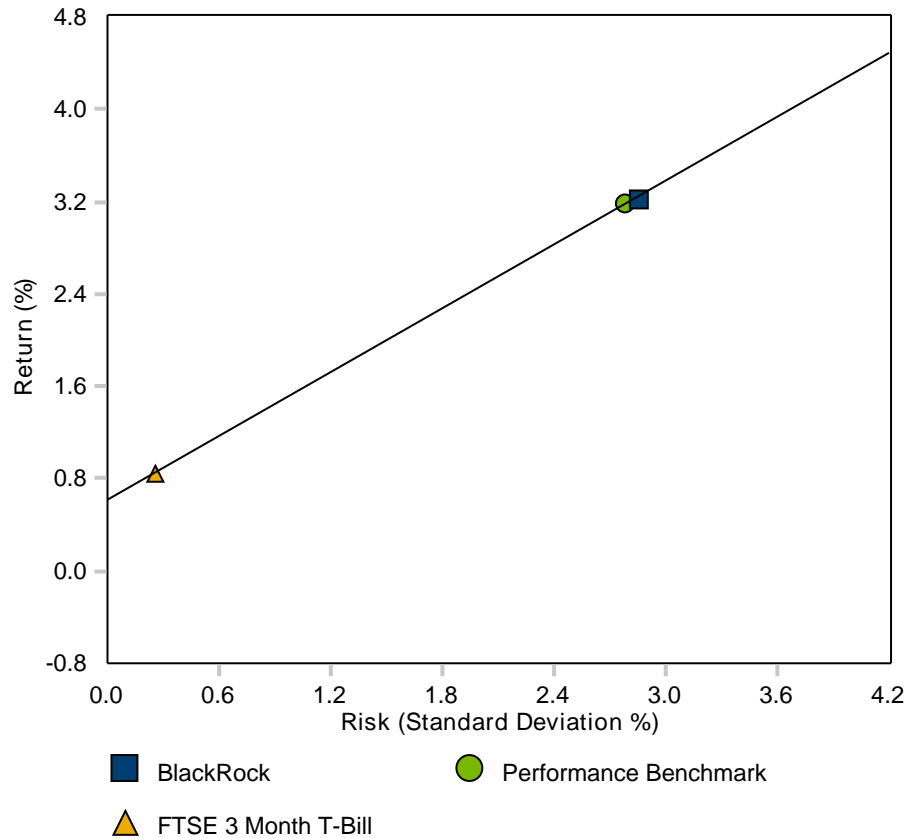


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	10 Years	2018	2017	2016
■ BlackRock	2.9 (38)	6.5 (38)	8.0 (27)	2.6 (53)	3.2 (43)	4.9 (44)	-0.3 (60)	4.0 (48)	3.0 (55)
● Performance Benchmark	3.1 (28)	6.5 (38)	8.1 (25)	2.8 (47)	3.2 (44)	4.4 (52)	-0.3 (59)	4.1 (47)	3.9 (45)
5th Percentile	6.6	14.1	13.9	7.6	5.9	9.4	2.0	11.7	14.9
1st Quartile	3.2	7.9	8.1	4.7	4.1	6.9	1.2	6.6	7.4
Median	2.5	5.9	6.7	2.7	3.0	4.4	0.1	3.9	3.4
3rd Quartile	1.6	4.0	4.5	1.9	2.1	3.1	-1.5	2.3	1.7
95th Percentile	0.6	1.3	2.2	1.2	1.1	1.3	-5.2	0.9	0.2
Population	1,324	1,322	1,322	1,277	1,243	1,034	1,431	1,486	1,539

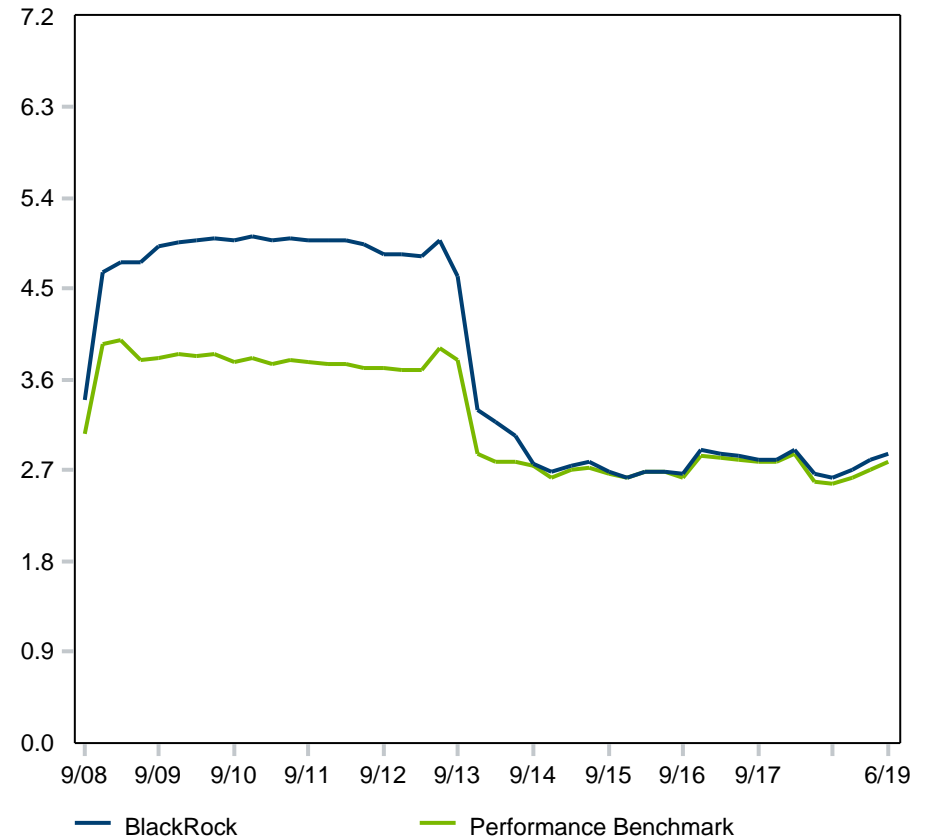
parentheses contain percentile rankings.

BlackRock Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

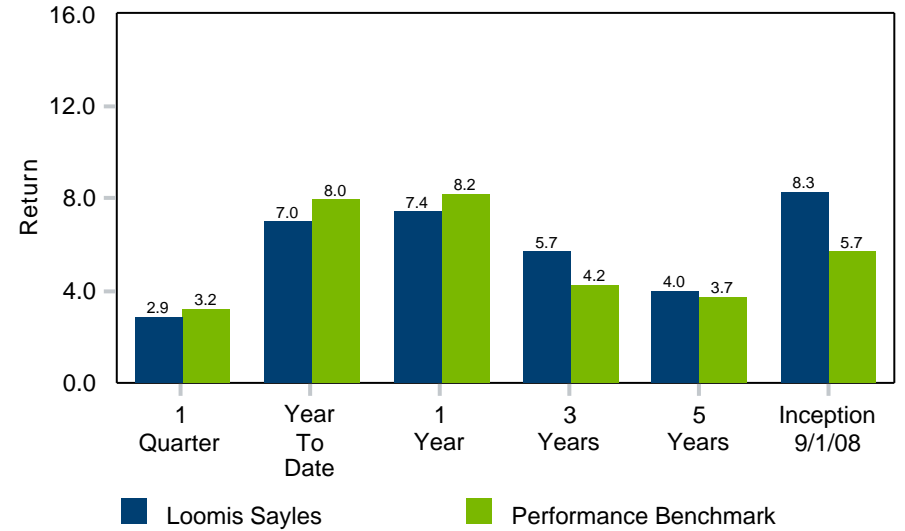
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
BlackRock	0.04	0.36	0.10	0.98	0.84	-0.02	1.02	3.22	2.86	0.99
Performance Benchmark	0.00	0.00	N/A	1.00	0.85	0.00	1.00	3.18	2.78	1.00
FTSE 3 Month T-Bill	-2.33	2.75	-0.85	0.03	N/A	0.79	0.02	0.84	0.25	0.18

Loomis Sayles Performance Summary

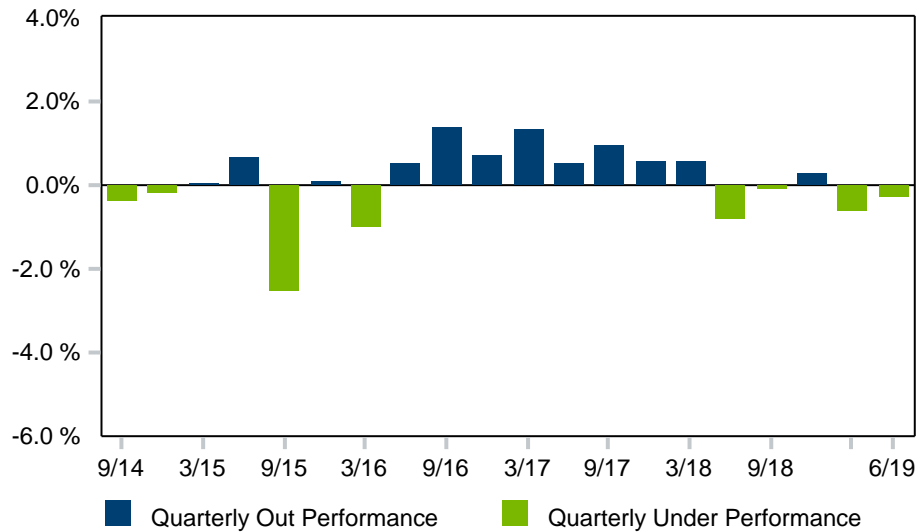
Account Information

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)

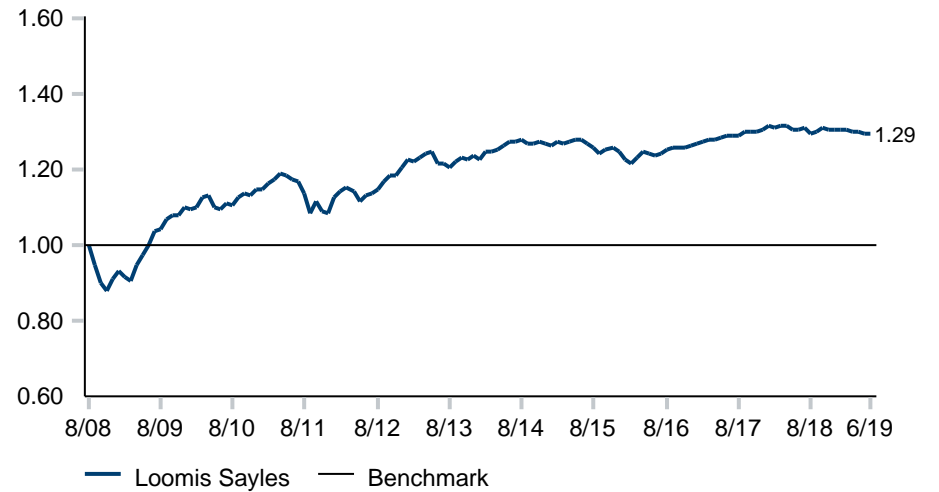
Return Summary



Quarterly Excess Performance

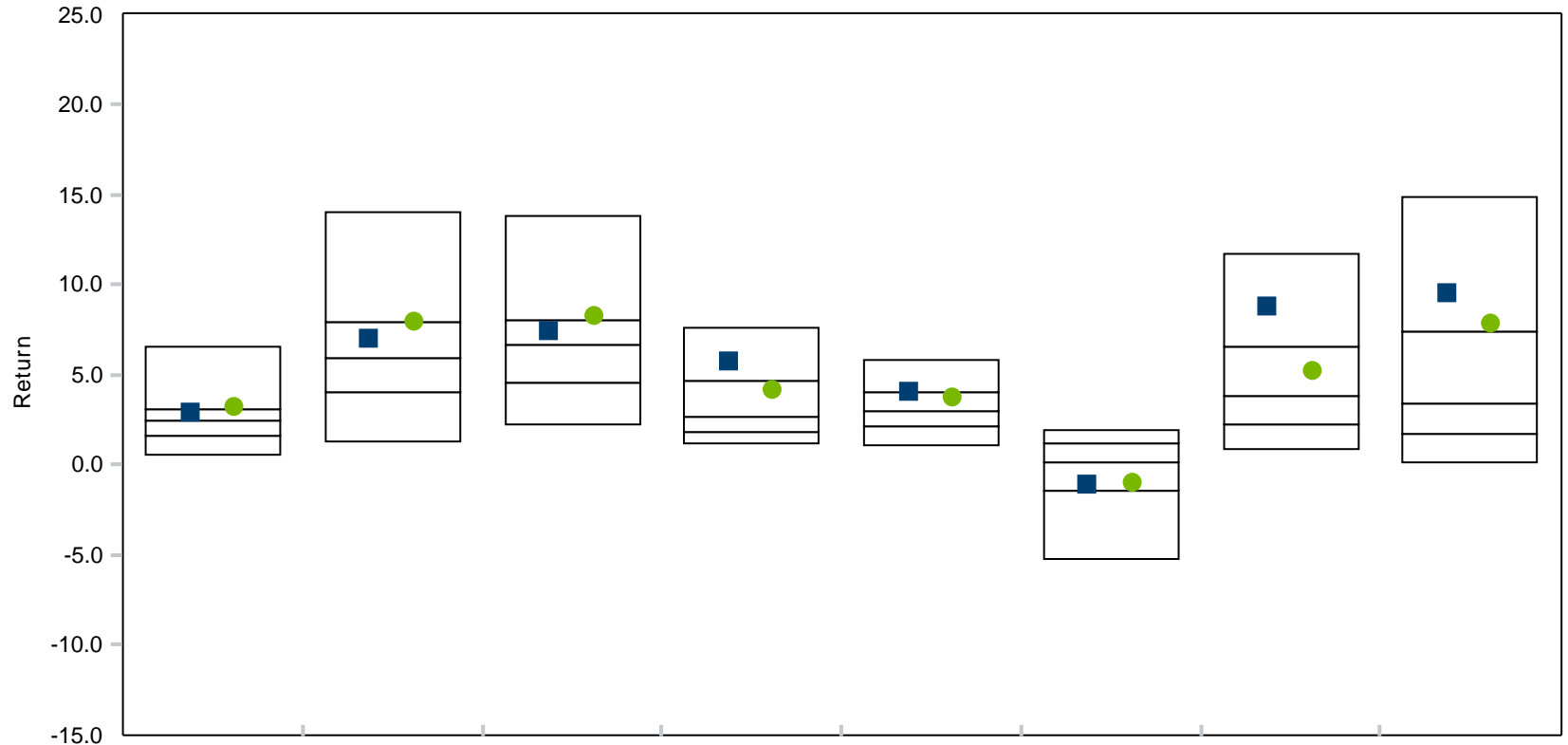


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

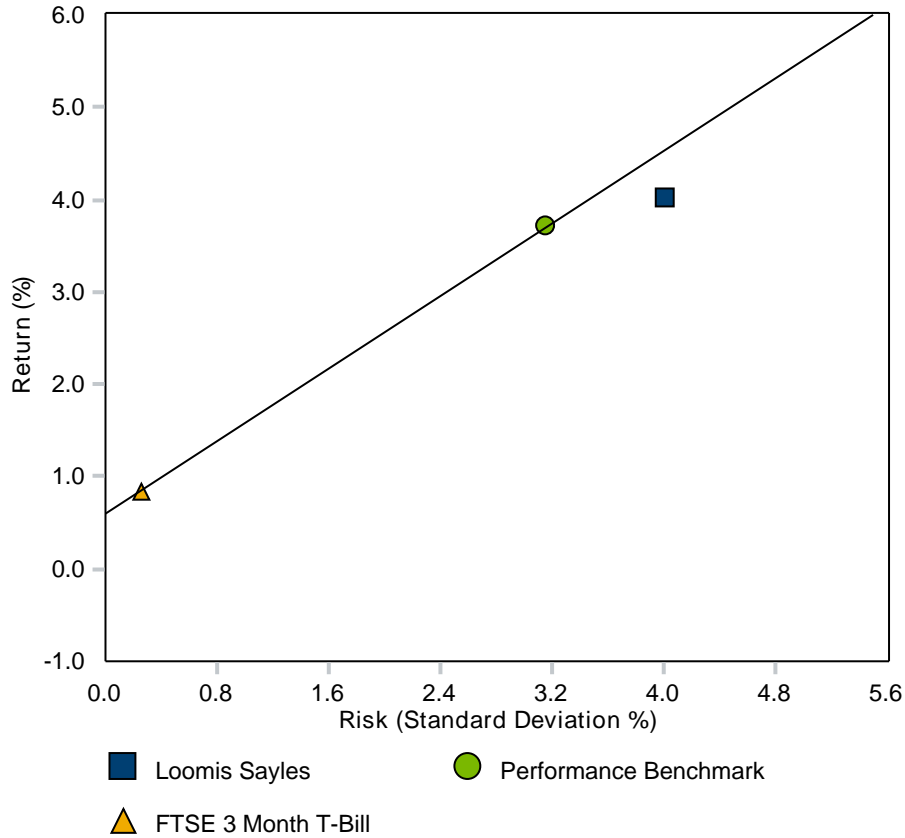


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ Loomis Sayles	2.9 (39)	7.0 (31)	7.4 (40)	5.7 (16)	4.0 (26)	-1.1 (72)	8.8 (12)	9.5 (19)
● Performance Benchmark	3.2 (24)	8.0 (25)	8.2 (23)	4.2 (30)	3.7 (32)	-1.0 (71)	5.2 (33)	7.8 (24)
5th Percentile	6.6	14.1	13.9	7.6	5.9	2.0	11.7	14.9
1st Quartile	3.2	7.9	8.1	4.7	4.1	1.2	6.6	7.4
Median	2.5	5.9	6.7	2.7	3.0	0.1	3.9	3.4
3rd Quartile	1.6	4.0	4.5	1.9	2.1	-1.5	2.3	1.7
95th Percentile	0.6	1.3	2.2	1.2	1.1	-5.2	0.9	0.2
Population	1,324	1,322	1,322	1,277	1,243	1,431	1,486	1,539

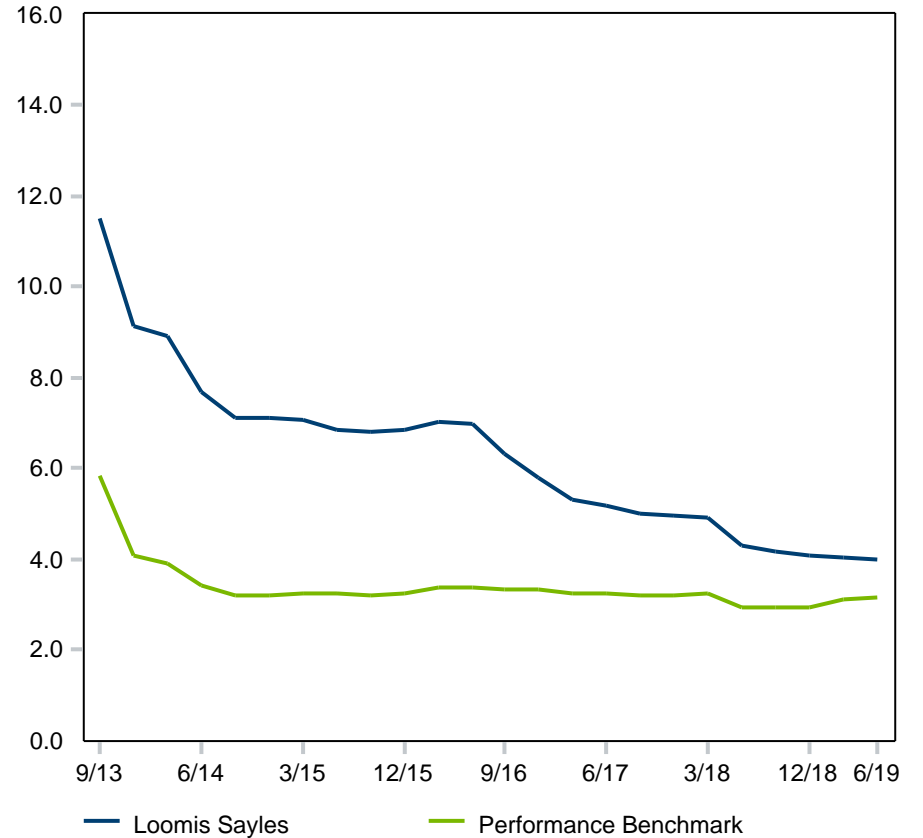
10 11
 Parentheses contain percentile rankings.

Loomis Sayles Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

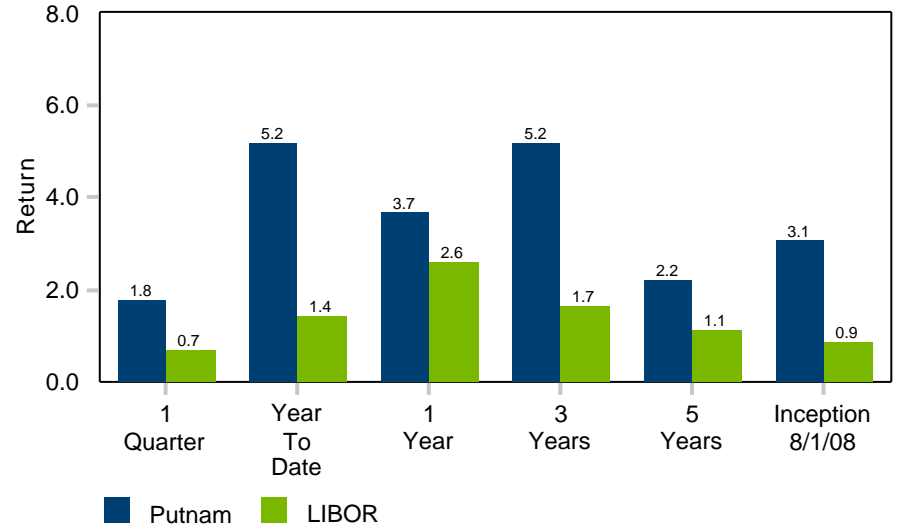
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Loomis Sayles	0.33	1.99	0.17	0.76	0.80	-0.08	1.11	4.02	4.02	0.87
Performance Benchmark	0.00	0.00	N/A	1.00	0.91	0.00	1.00	3.70	3.16	1.00
FTSE 3 Month T-Bill	-2.85	3.12	-0.91	0.03	N/A	0.79	0.01	0.84	0.25	0.17

Putnam Performance Summary

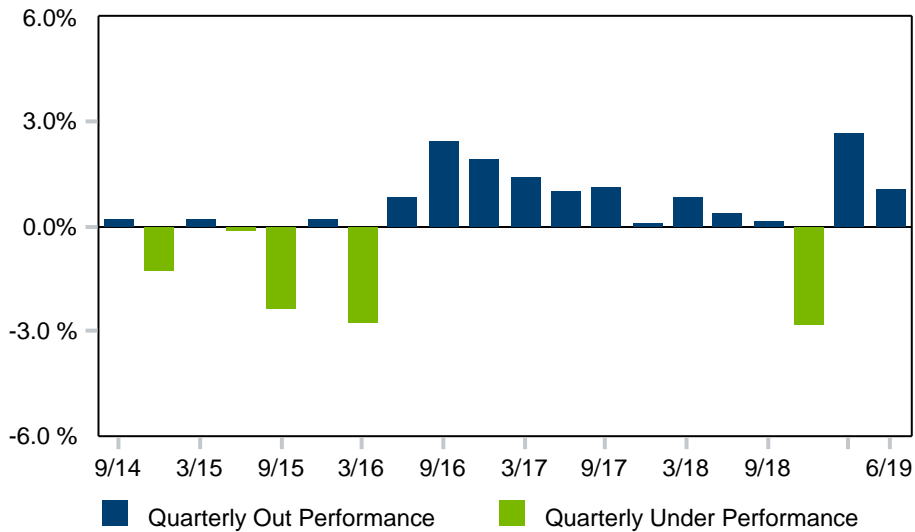
Account Information

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)

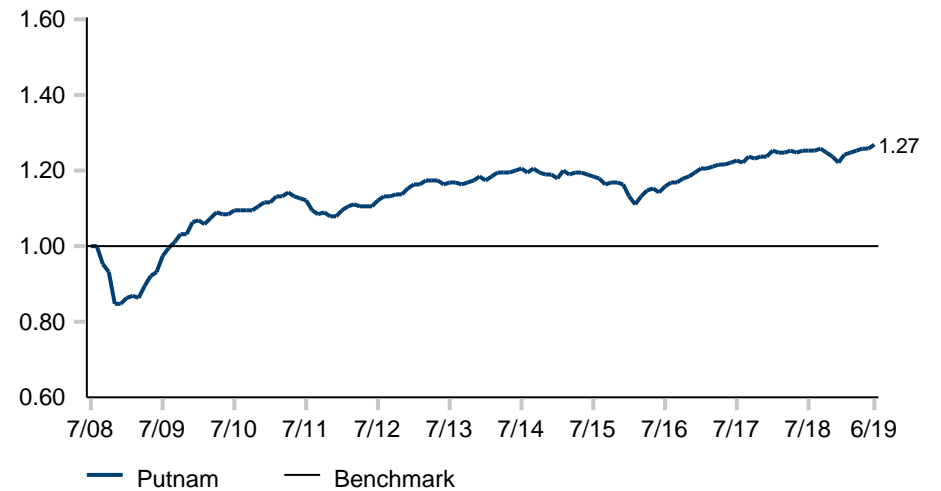
Return Summary



Quarterly Excess Performance

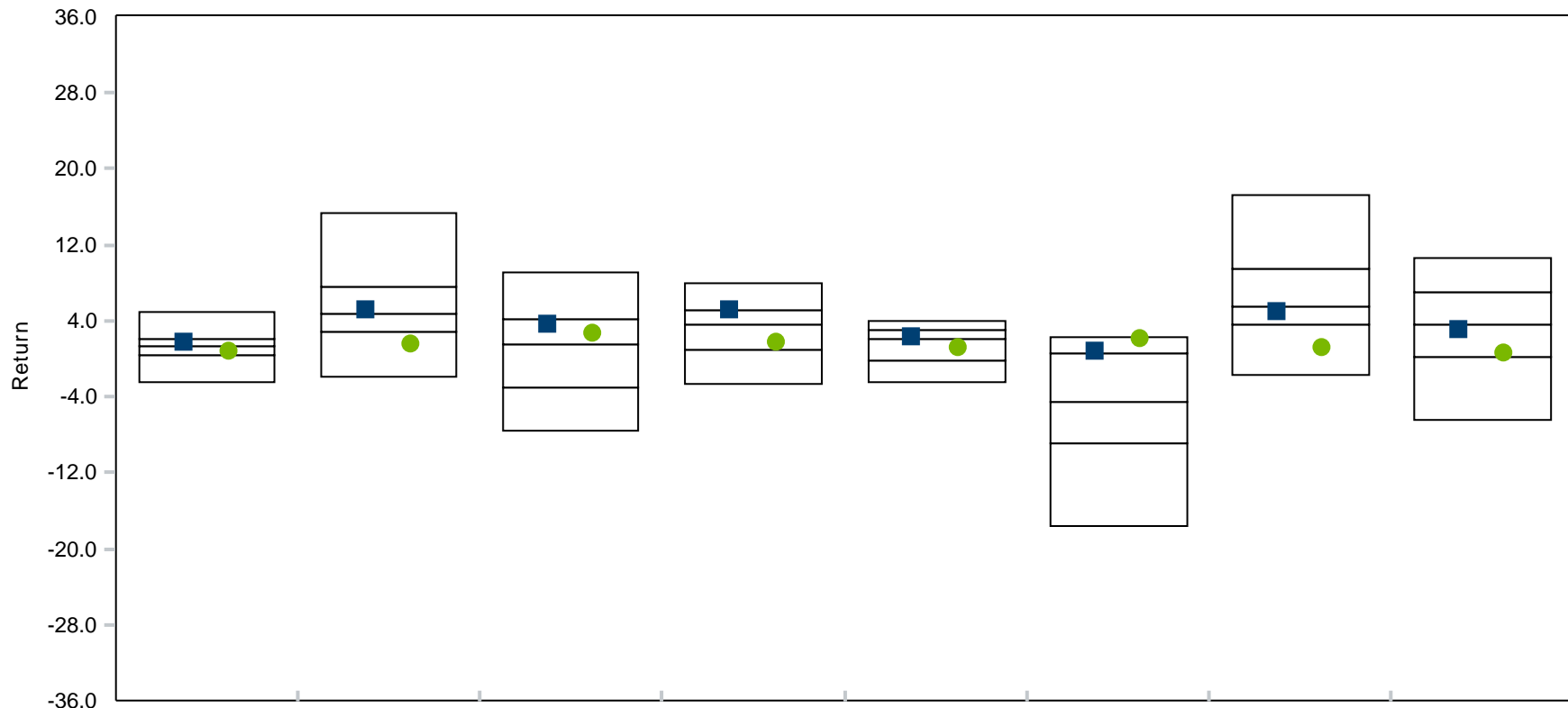


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM Absolute Return (MF)

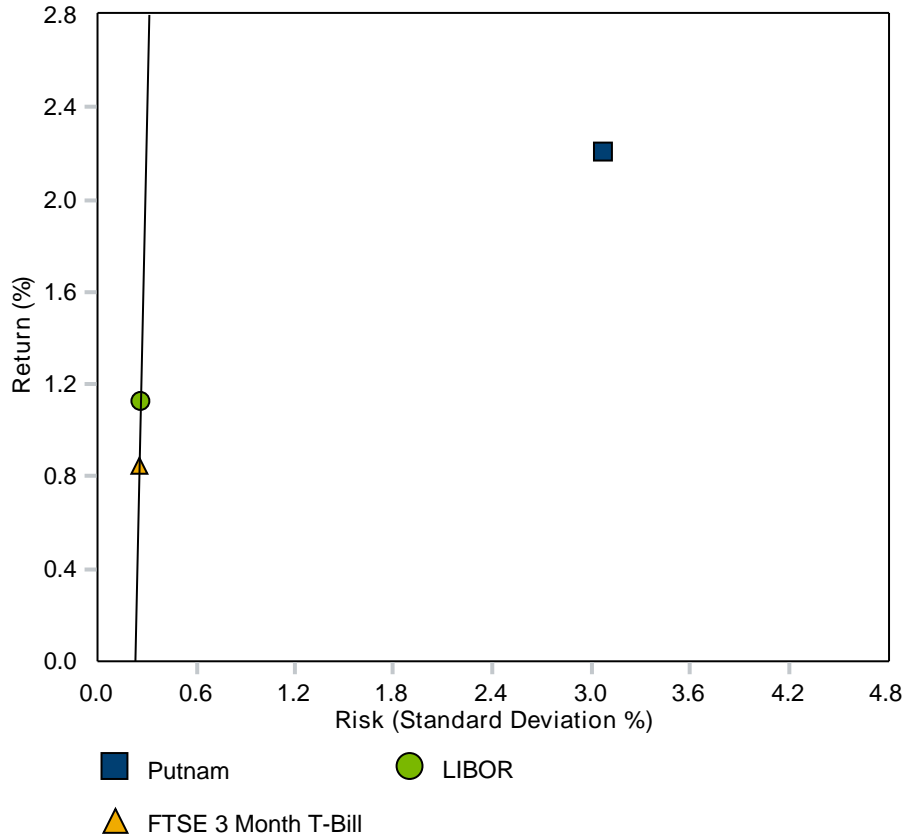


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ Putnam	1.8 (37)	5.2 (44)	3.7 (32)	5.2 (24)	2.2 (48)	0.7 (23)	4.9 (57)	3.1 (55)
● LIBOR	0.7 (67)	1.4 (86)	2.6 (41)	1.7 (68)	1.1 (66)	2.1 (6)	1.1 (91)	0.7 (74)
5th Percentile	5.0	15.4	9.0	8.0	4.0	2.4	17.2	10.5
1st Quartile	2.1	7.6	4.1	5.1	3.0	0.5	9.5	6.9
Median	1.4	4.8	1.5	3.5	2.0	-4.6	5.5	3.5
3rd Quartile	0.3	2.9	-2.9	1.0	-0.2	-9.0	3.5	0.1
95th Percentile	-2.4	-1.9	-7.7	-2.7	-2.5	-17.6	-1.7	-6.4
Population	45	45	45	45	38	49	51	51

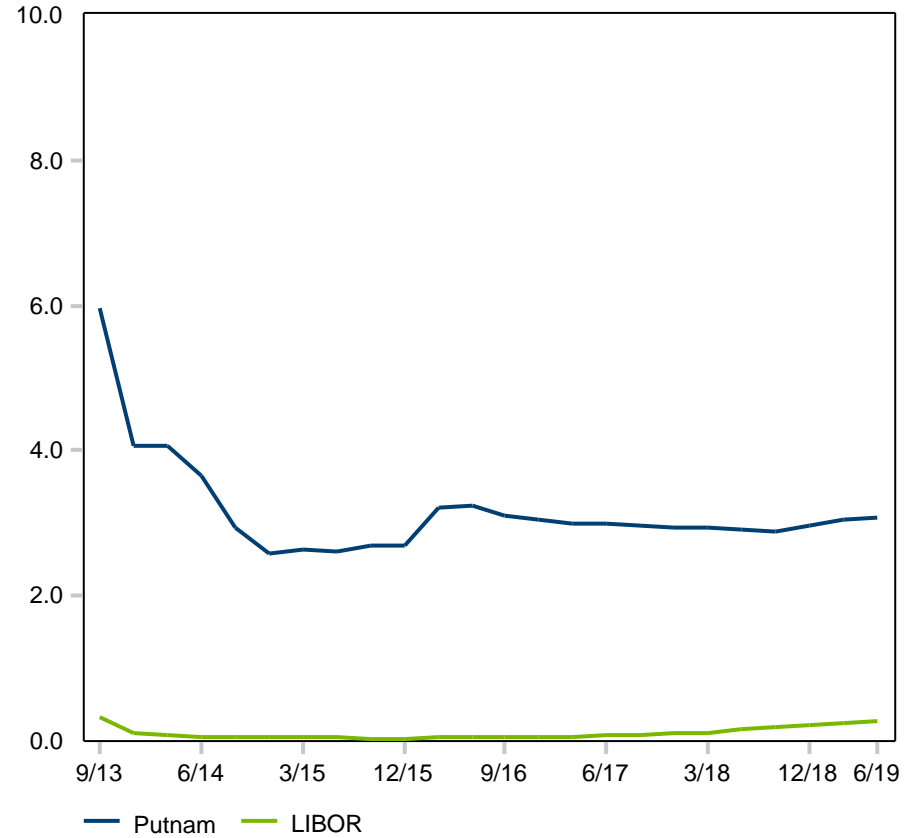
Parantheses contain percentile rankings.

Putnam Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

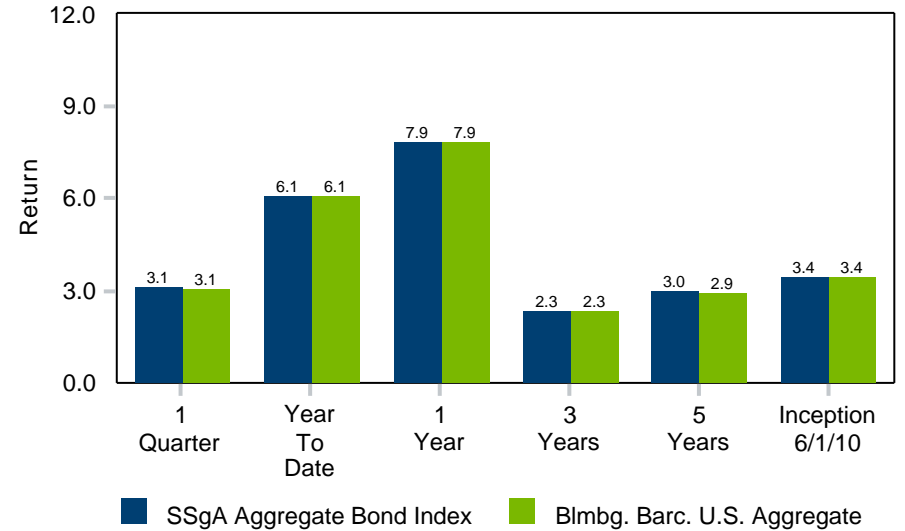
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Putnam	1.11	3.04	0.36	0.04	0.45	-0.38	2.33	2.20	3.08	0.20
LIBOR	0.00	0.00	N/A	1.00	4.67	0.00	1.00	1.12	0.26	1.00
FTSE 3 Month T-Bill	-0.28	0.06	-4.67	0.95	N/A	-0.21	0.94	0.84	0.25	0.97

SSgA Aggregate Bond Index Performance Summary

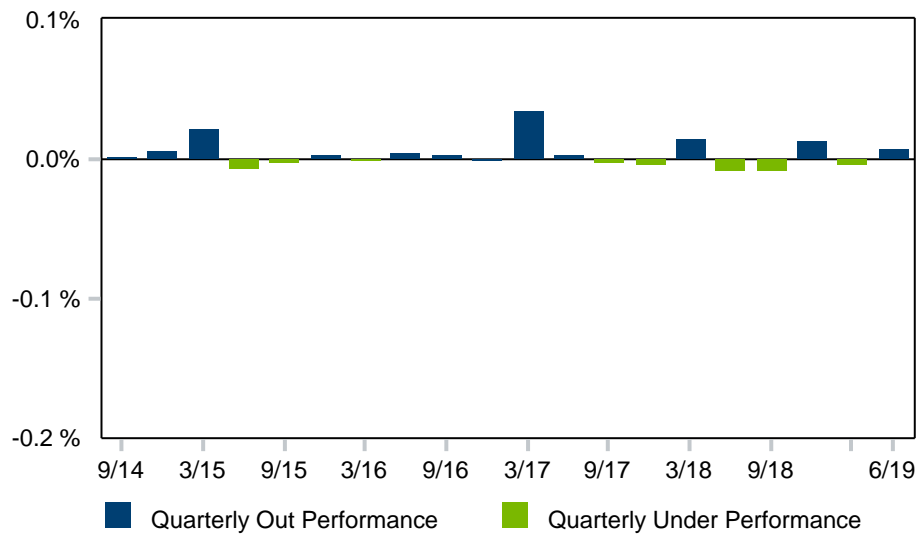
Account Information

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)

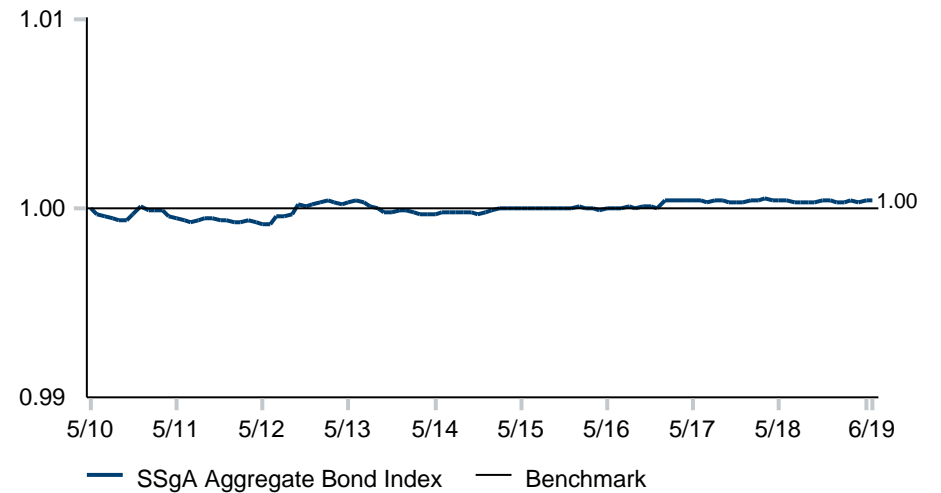
Return Summary



Quarterly Excess Performance

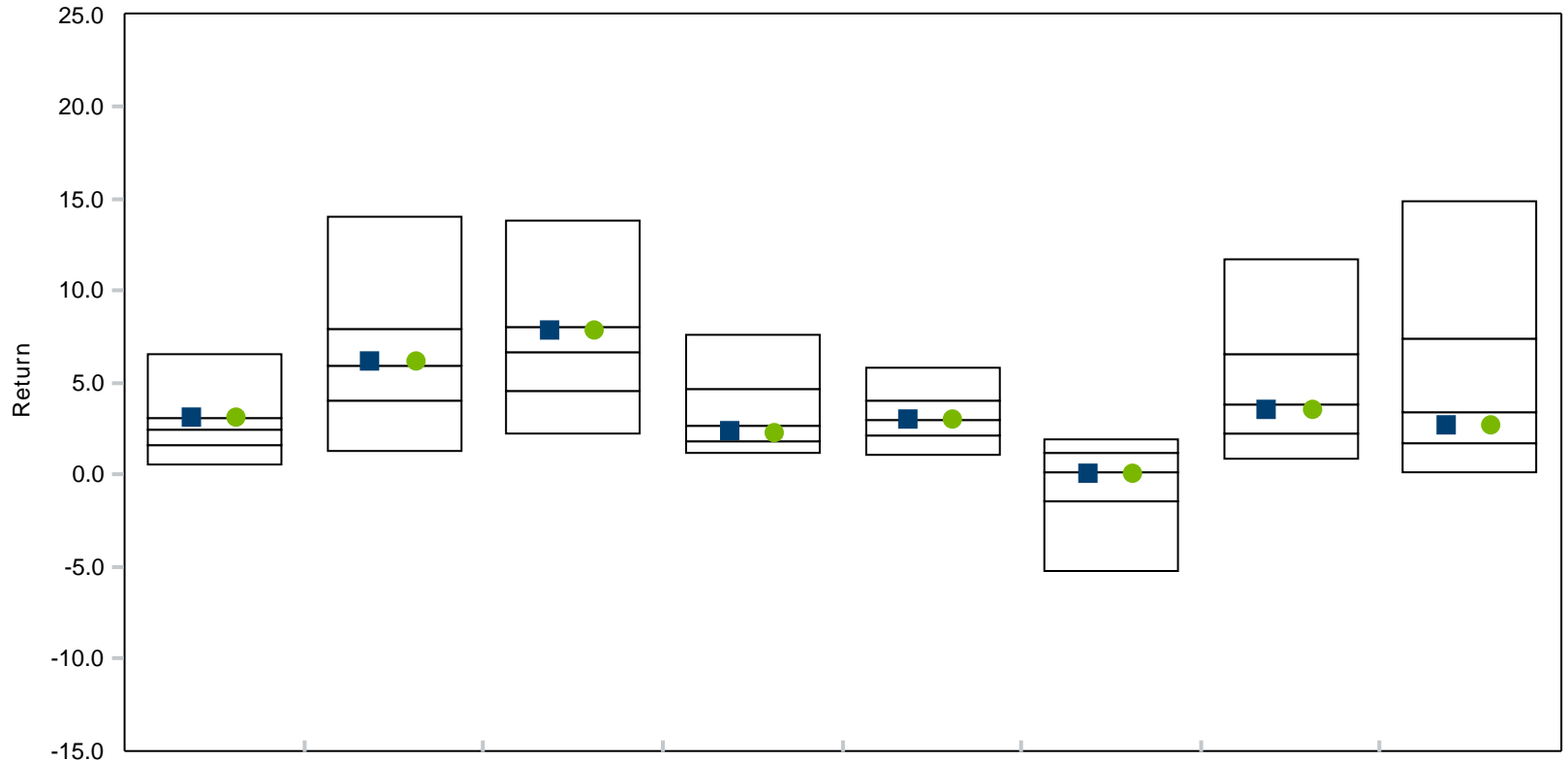


Ratio of Cumulative Wealth - Since Inception



Peer Group Analysis

IM U.S. Fixed Income (SA+CF)

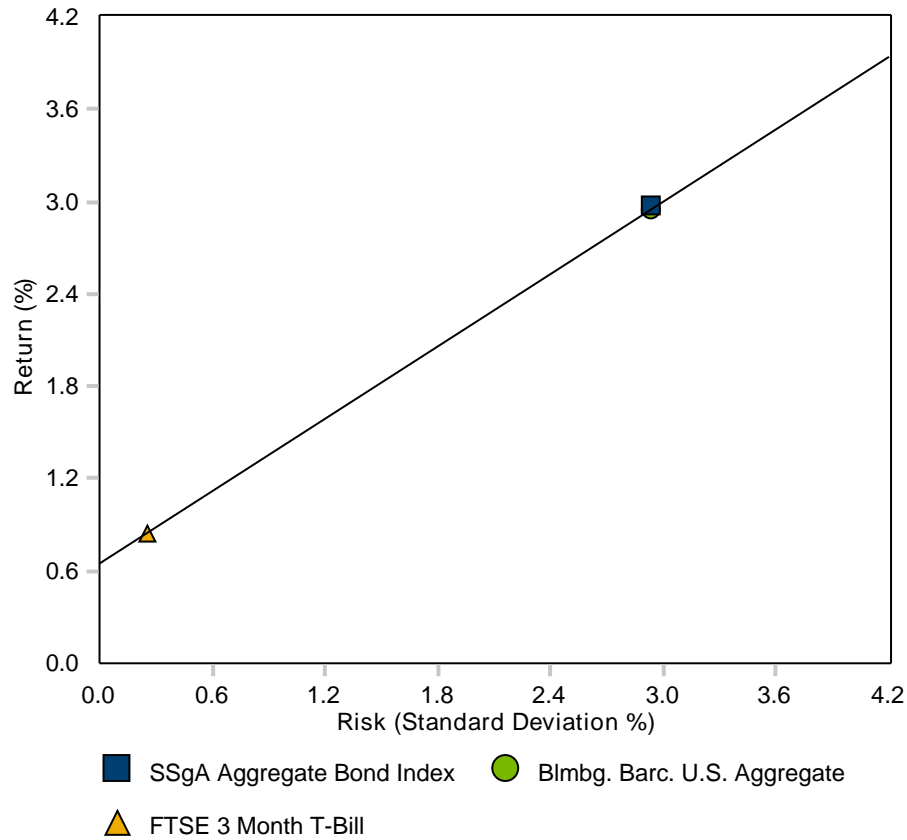


	1 Quarter	Year To Date	1 Year	3 Years	5 Years	2018	2017	2016
■ SSgA Aggregate Bond Index	3.1 (29)	6.1 (46)	7.9 (30)	2.3 (59)	3.0 (51)	0.0 (52)	3.6 (56)	2.7 (60)
● Blmbg. Barc. U.S. Aggregate	3.1 (29)	6.1 (46)	7.9 (30)	2.3 (60)	2.9 (52)	0.0 (53)	3.5 (57)	2.6 (60)
5th Percentile	6.6	14.1	13.9	7.6	5.9	2.0	11.7	14.9
1st Quartile	3.2	7.9	8.1	4.7	4.1	1.2	6.6	7.4
Median	2.5	5.9	6.7	2.7	3.0	0.1	3.9	3.4
3rd Quartile	1.6	4.0	4.5	1.9	2.1	-1.5	2.3	1.7
95th Percentile	0.6	1.3	2.2	1.2	1.1	-5.2	0.9	0.2
Population	1,324	1,322	1,322	1,277	1,243	1,431	1,486	1,539

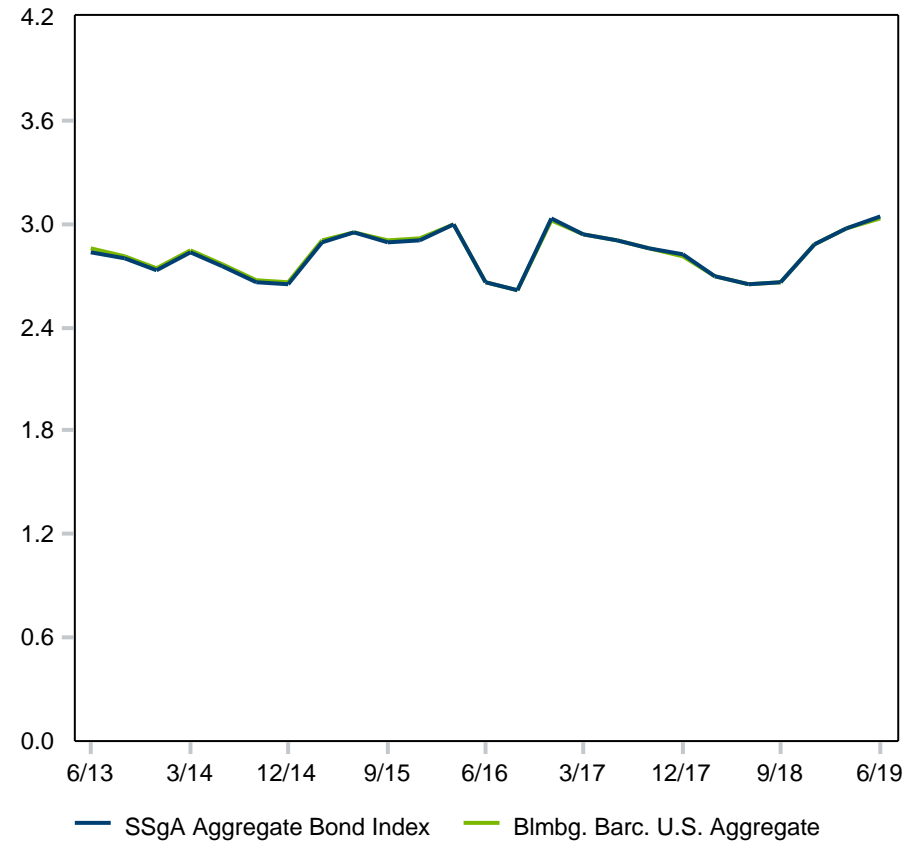
parentheses contain percentile rankings.

SSgA Aggregate Bond Index Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

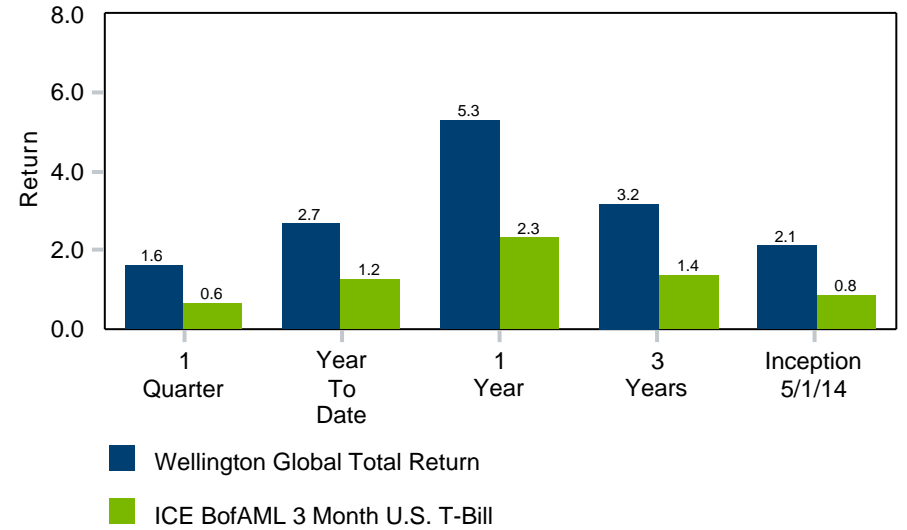
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
SSgA Aggregate Bond Index	0.01	0.03	0.55	1.00	0.73	0.01	1.00	2.96	2.94	1.00
Blmbg. Barc. U.S. Aggregate	0.00	0.00	N/A	1.00	0.73	0.00	1.00	2.95	2.94	1.00
FTSE 3 Month T-Bill	-2.11	2.90	-0.73	0.03	N/A	0.80	0.01	0.84	0.25	0.17

Wellington Global Total Return Performance Summary

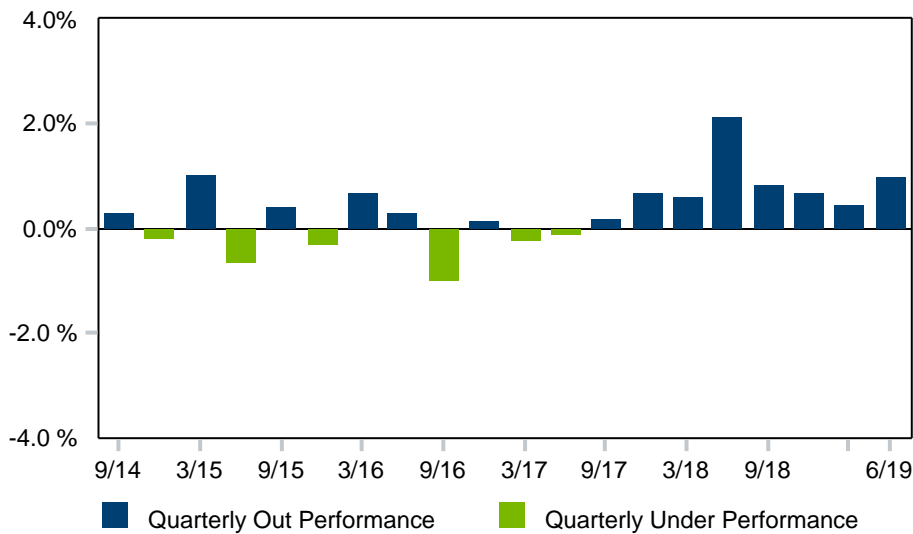
Account Information

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)

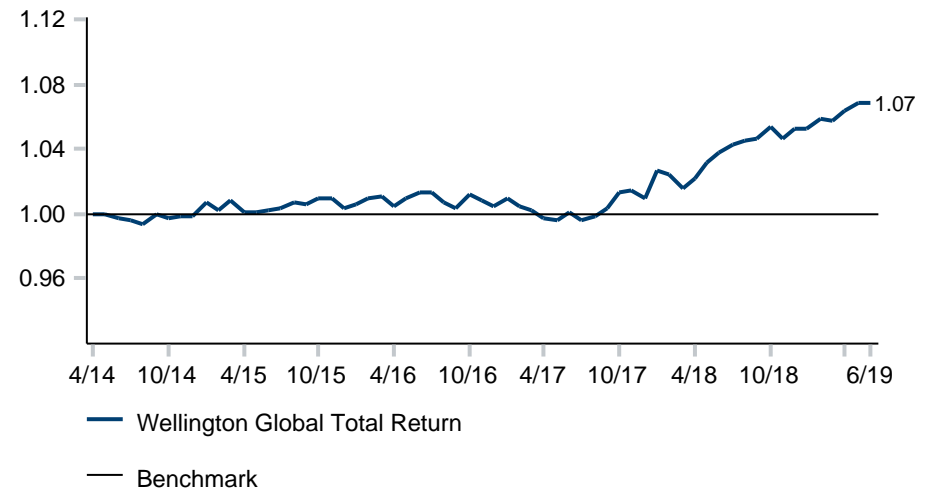
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

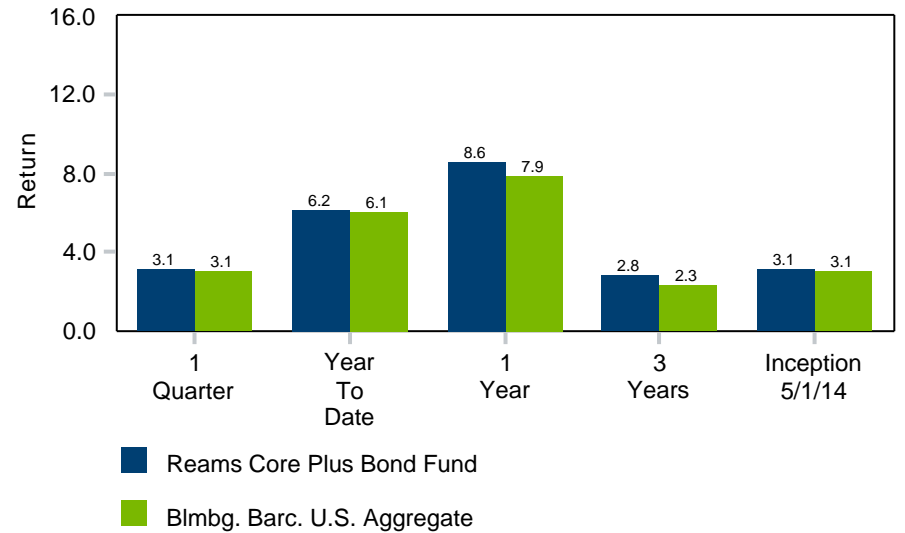


Reams Core Plus Bond Fund Performance Summary

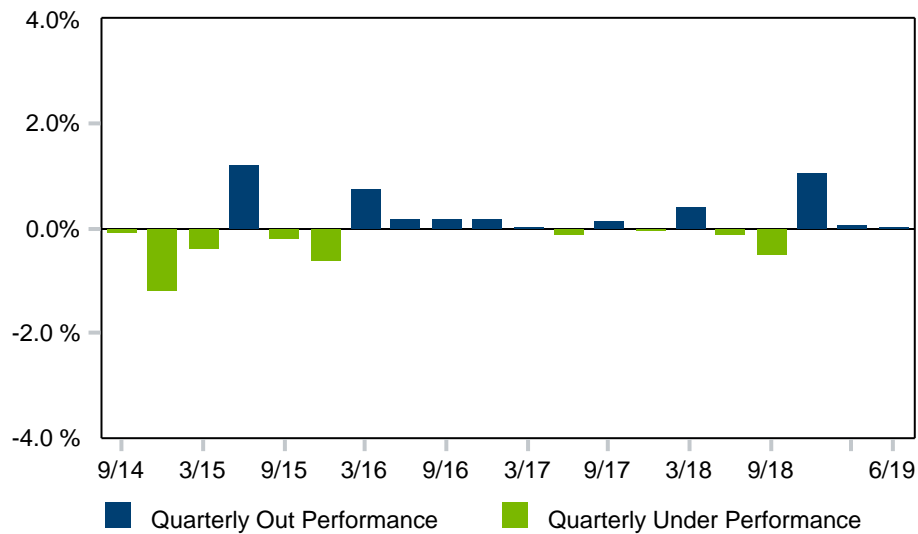
Account Information

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)

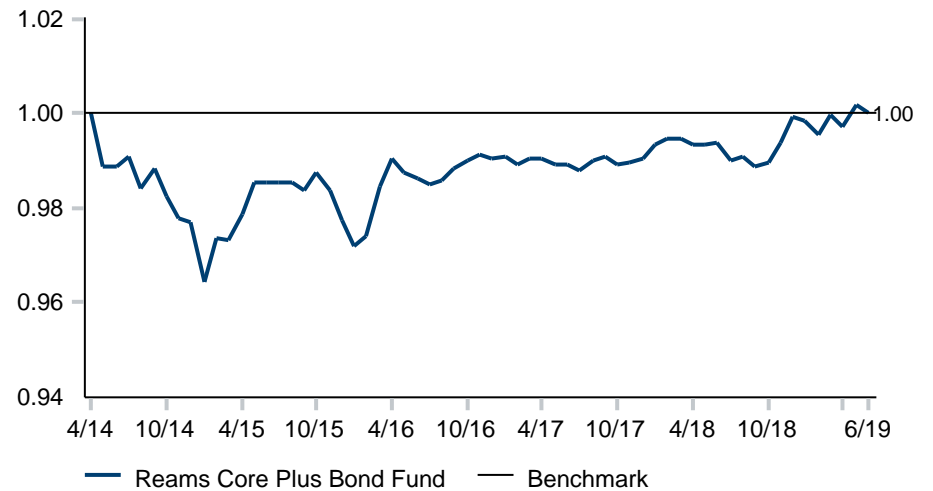
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



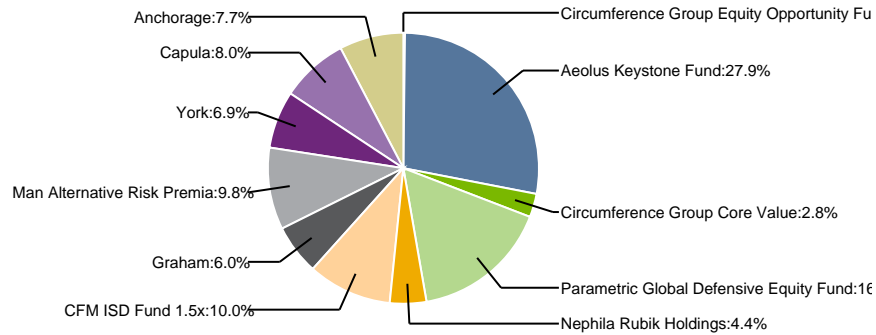


Opportunistic/Alternatives

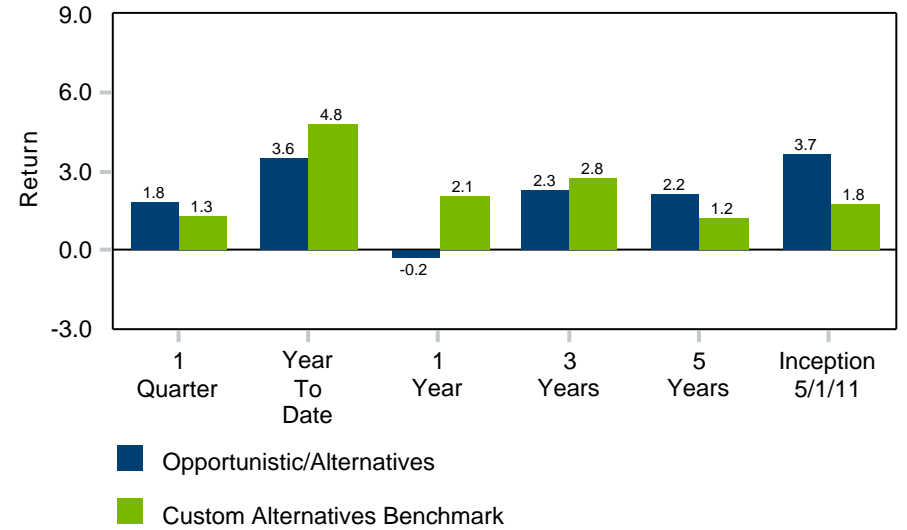
Opportunistic/Alternatives Portfolio Overview

Current Allocation

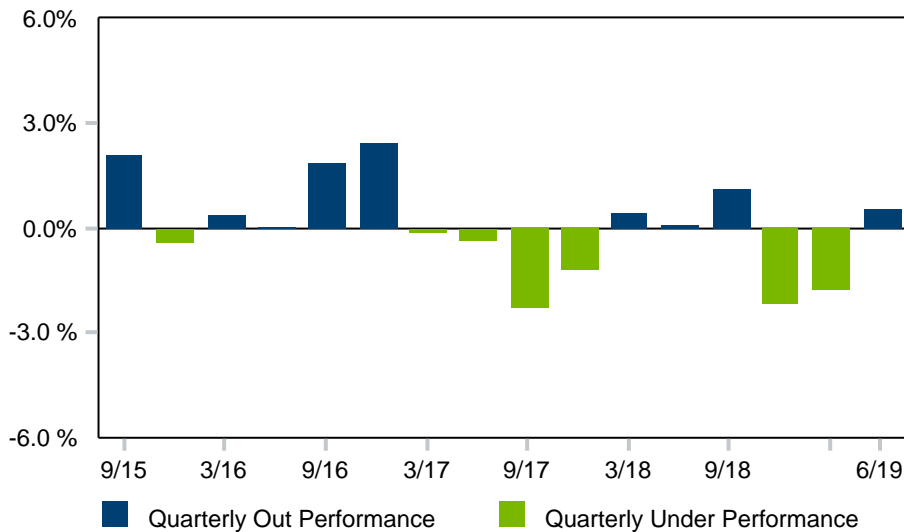
June 30, 2019 : \$1,009M



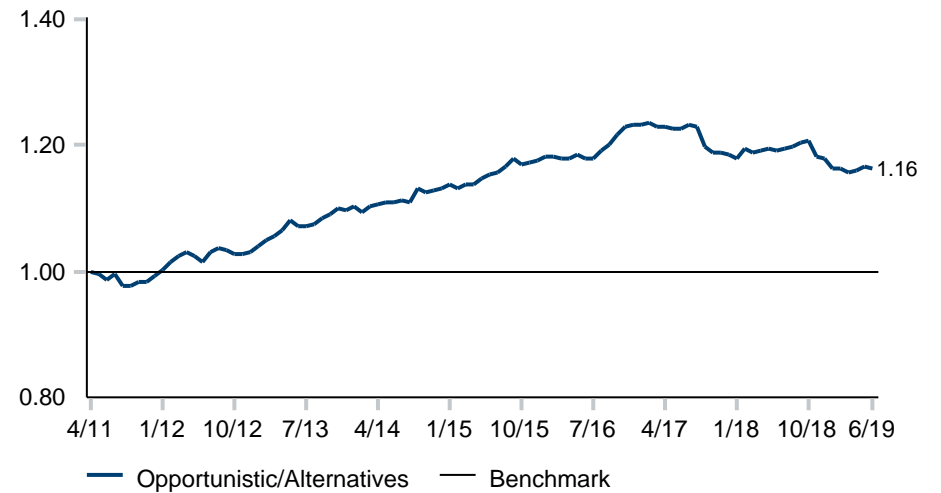
Return Summary



Quarterly Excess Performance

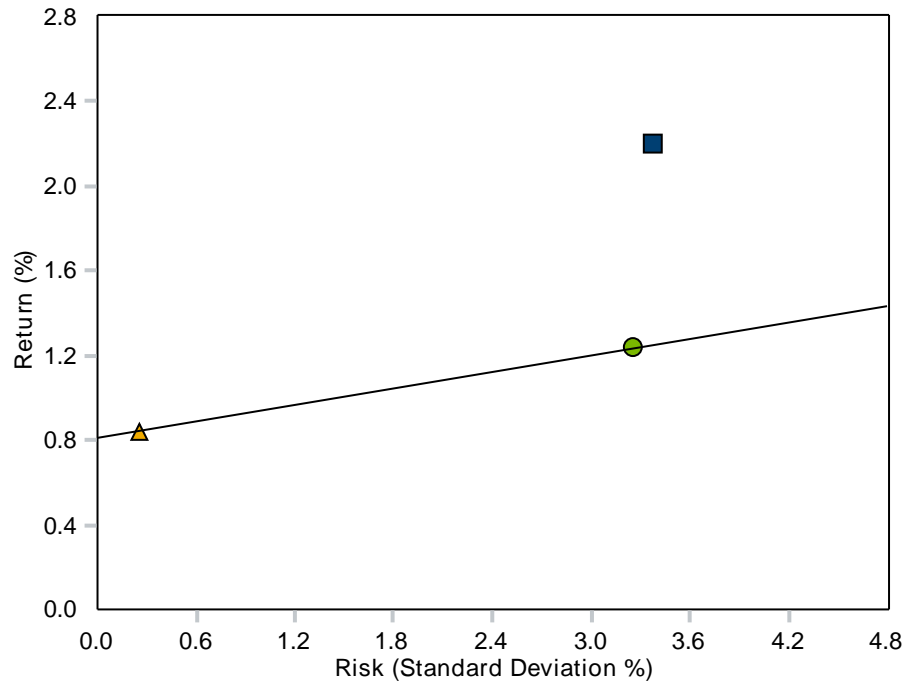


Ratio of Cumulative Wealth - Since Inception



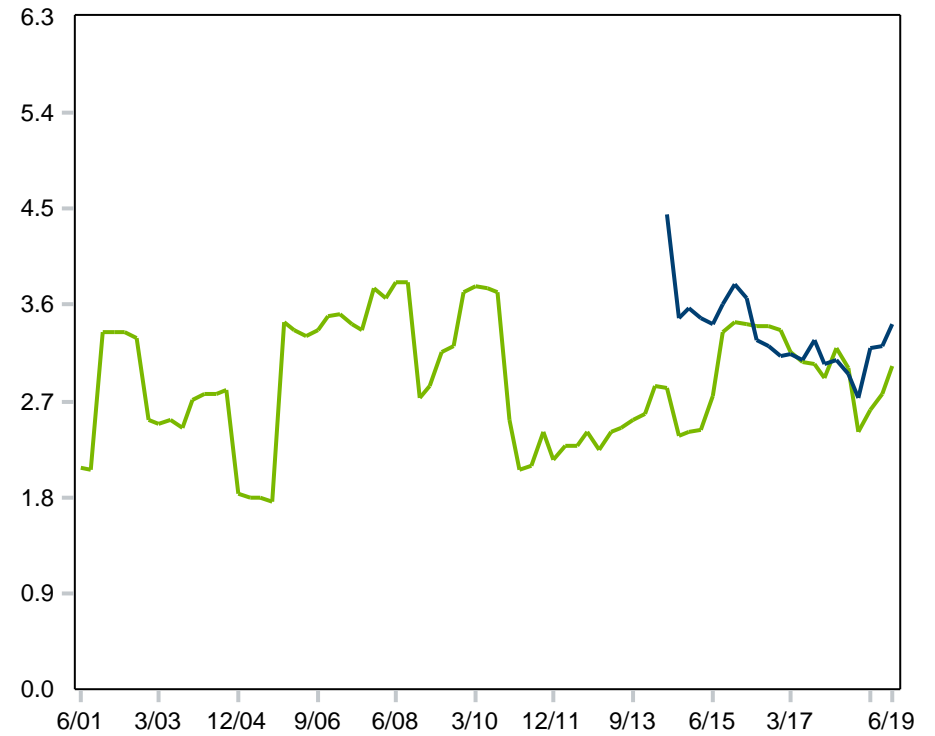
Opportunistic/Alternatives Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



- Opportunistic/Alternatives
- Custom Alternatives Benchmark
- ▲ FTSE 3 Month T-Bill

Rolling 3 Years Standard Deviation



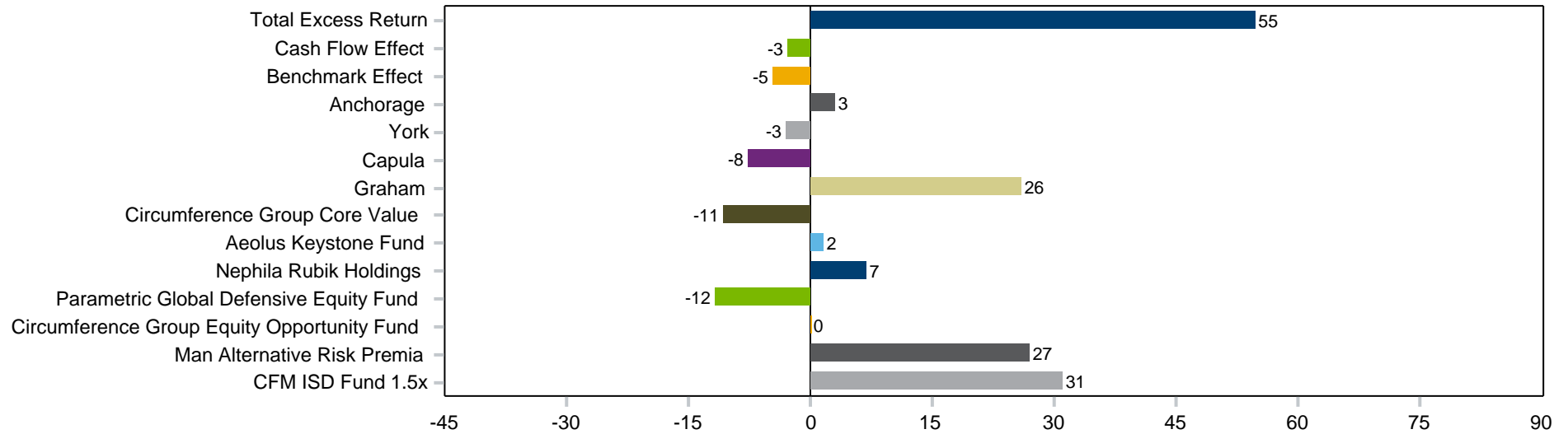
- Opportunistic/Alternatives
- Custom Alternatives Benchmark

5 Years Historical Statistics

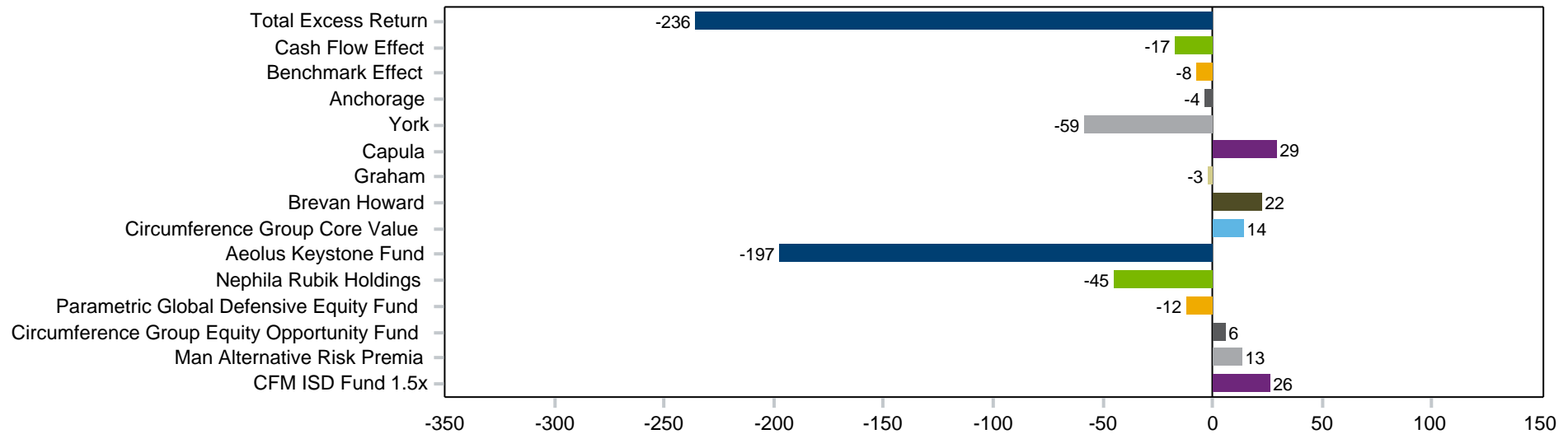
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Opportunistic/Alternatives	0.95	2.40	0.39	0.55	0.41	1.26	0.77	2.19	3.38	0.74
Custom Alternatives Benchmark	0.00	0.00	N/A	1.00	0.14	0.00	1.00	1.24	3.26	1.00
FTSE 3 Month T-Bill	-0.44	3.24	-0.14	0.01	N/A	0.83	0.01	0.84	0.25	0.10

Asset Class Attribution

1 Quarter



1 Year

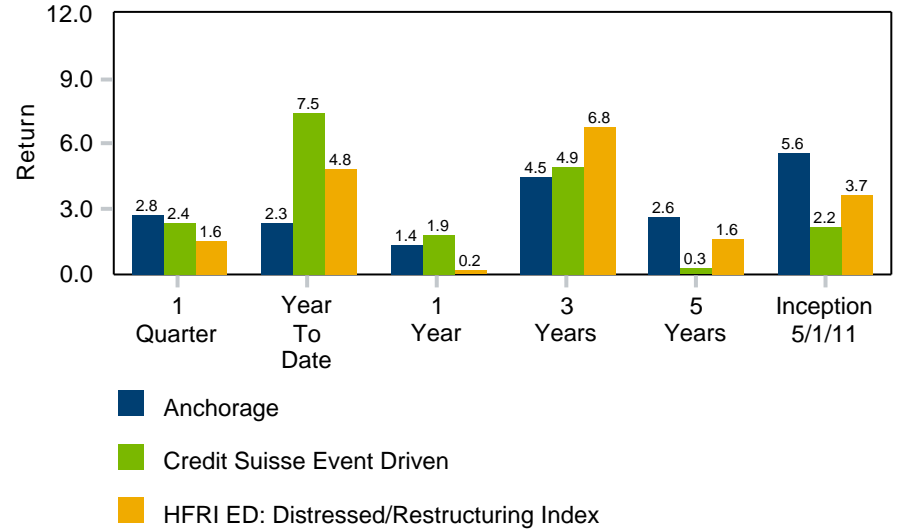


Anchorage Performance Summary

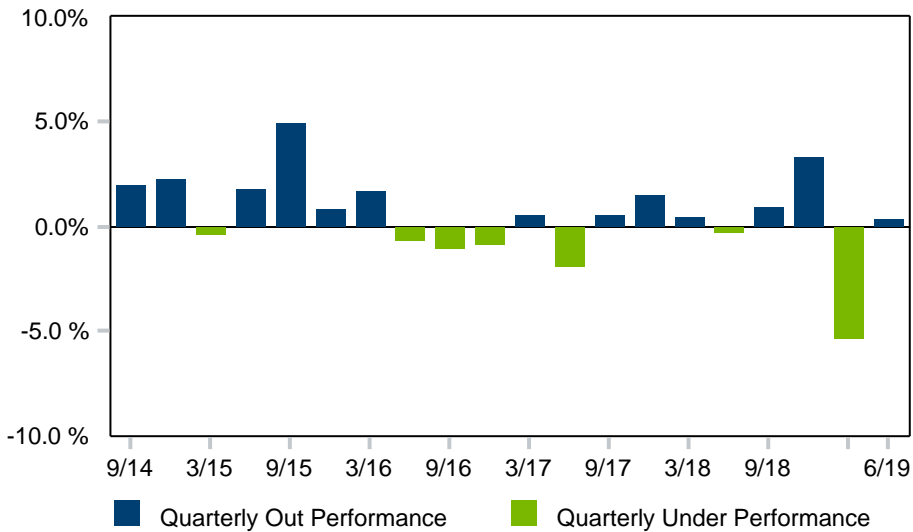
Account Information

Account Name: Anchorage
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: Credit Suisse Event Driven
 Peer Group:

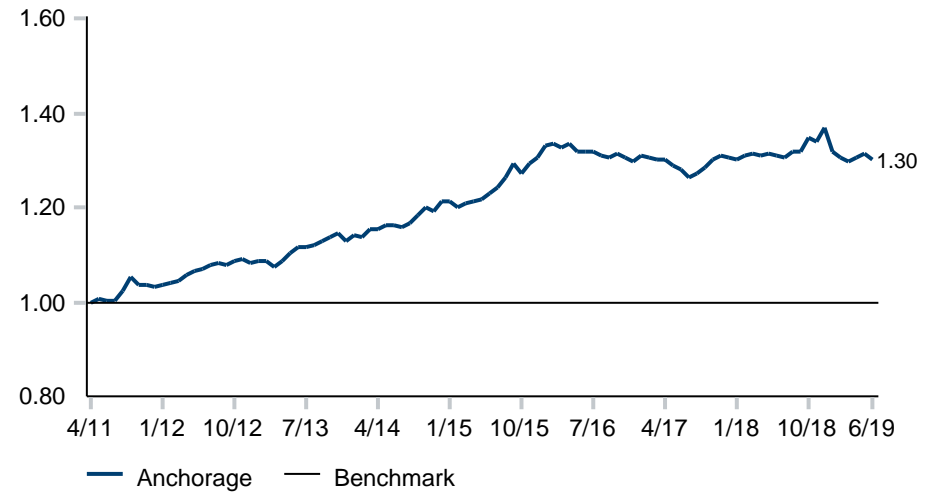
Return Summary



Quarterly Excess Performance

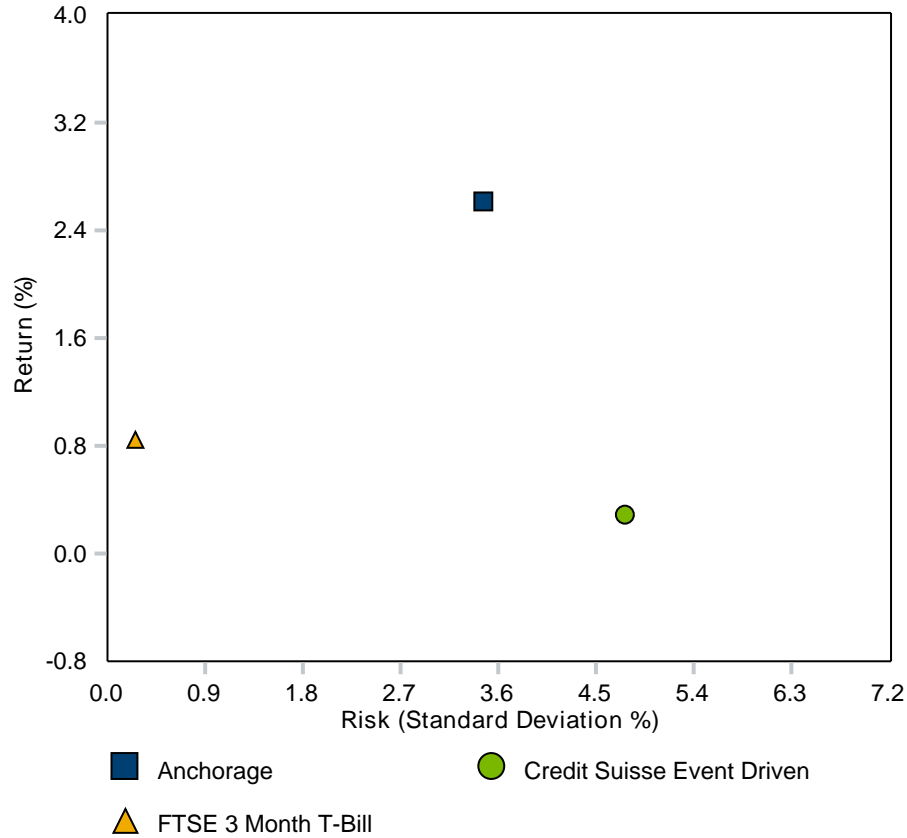


Ratio of Cumulative Wealth - Since Inception

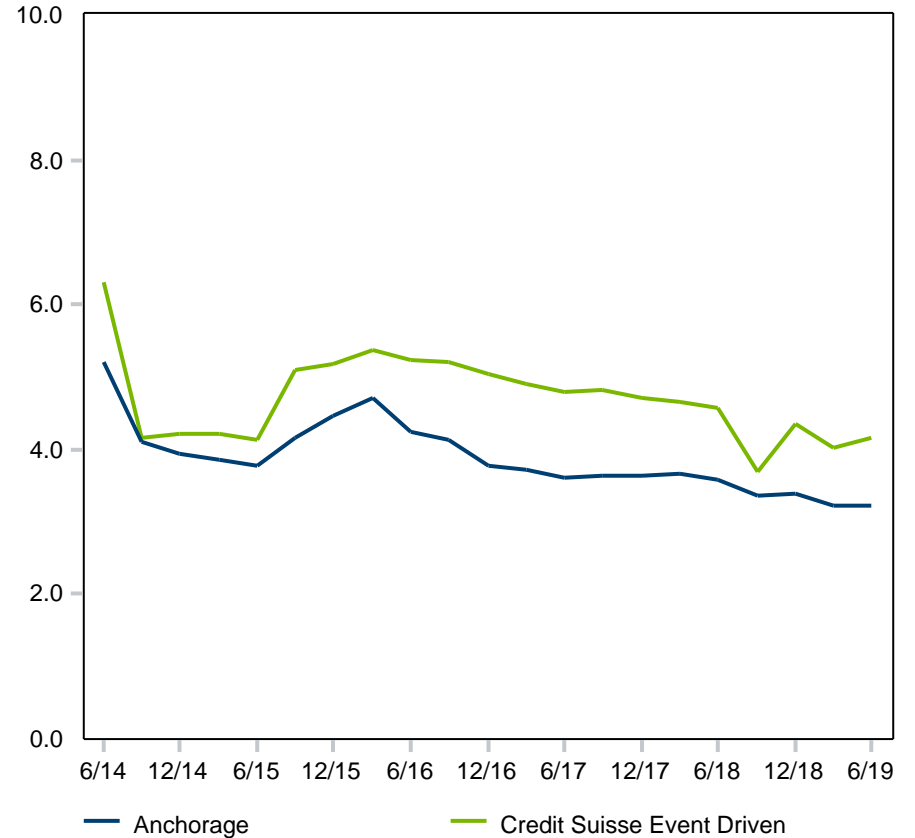


Anchorage Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

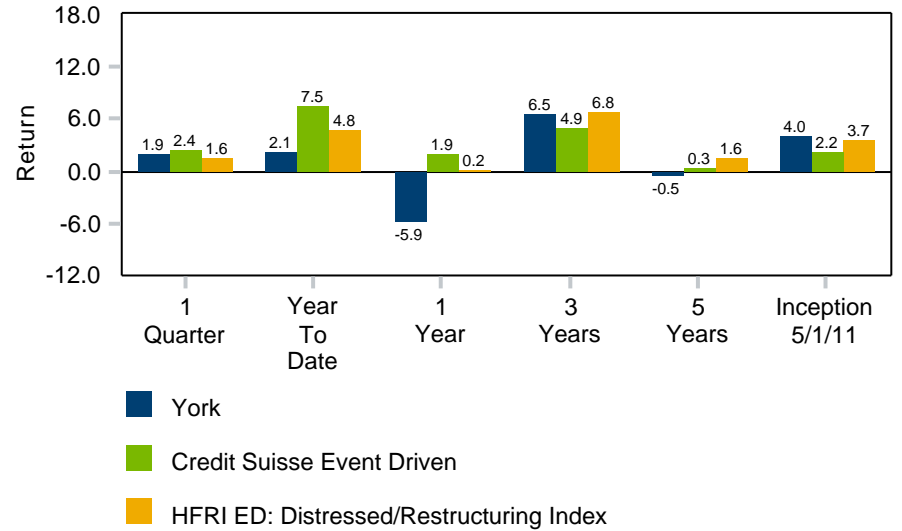
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Anchorage	2.25	3.81	0.59	0.38	0.52	2.49	0.45	2.61	3.47	0.62
Credit Suisse Event Driven	0.00	0.00	N/A	1.00	-0.09	0.00	1.00	0.28	4.78	1.00
FTSE 3 Month T-Bill	0.45	4.75	0.09	0.03	N/A	0.84	0.01	0.84	0.25	0.16

York Performance Summary

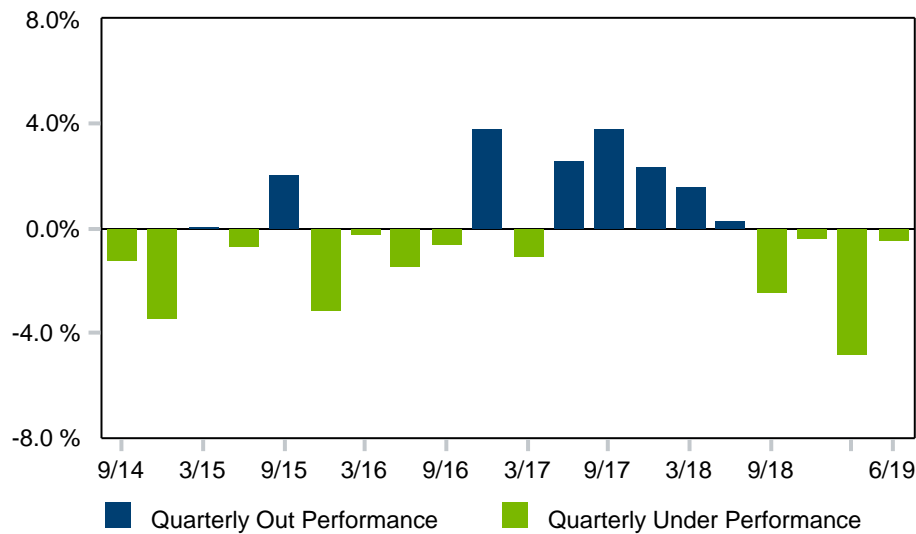
Account Information

Account Name: York
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: Credit Suisse Event Driven
 Peer Group:

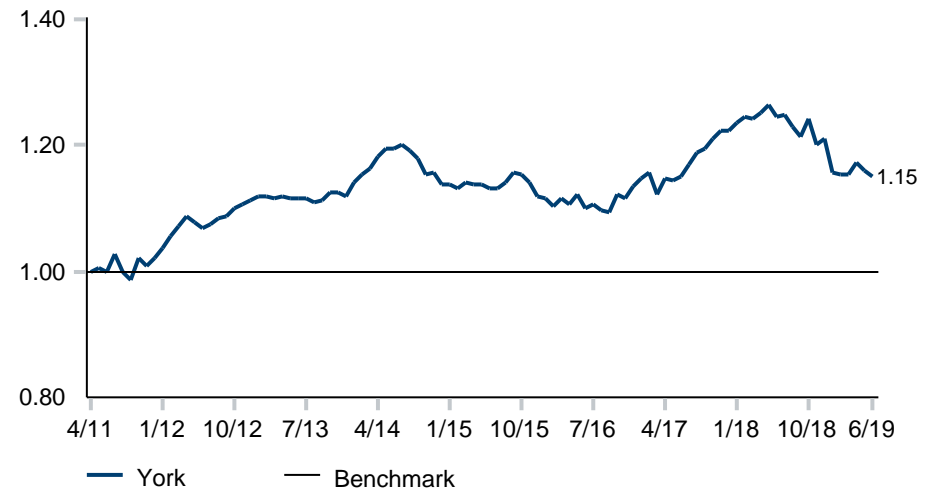
Return Summary



Quarterly Excess Performance

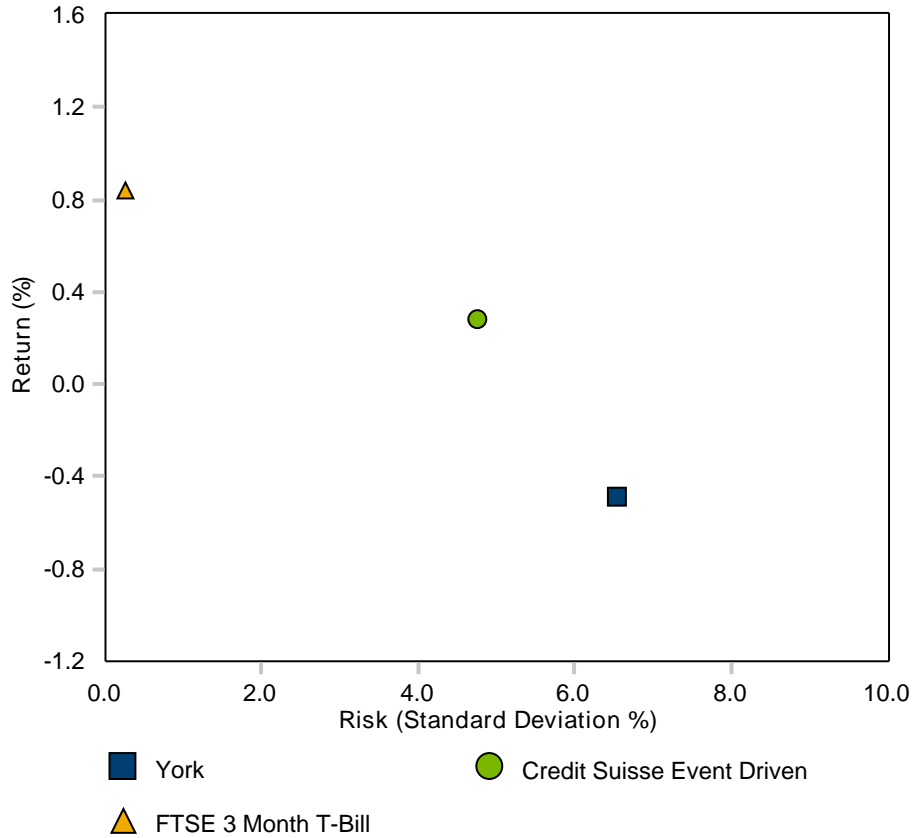


Ratio of Cumulative Wealth - Since Inception

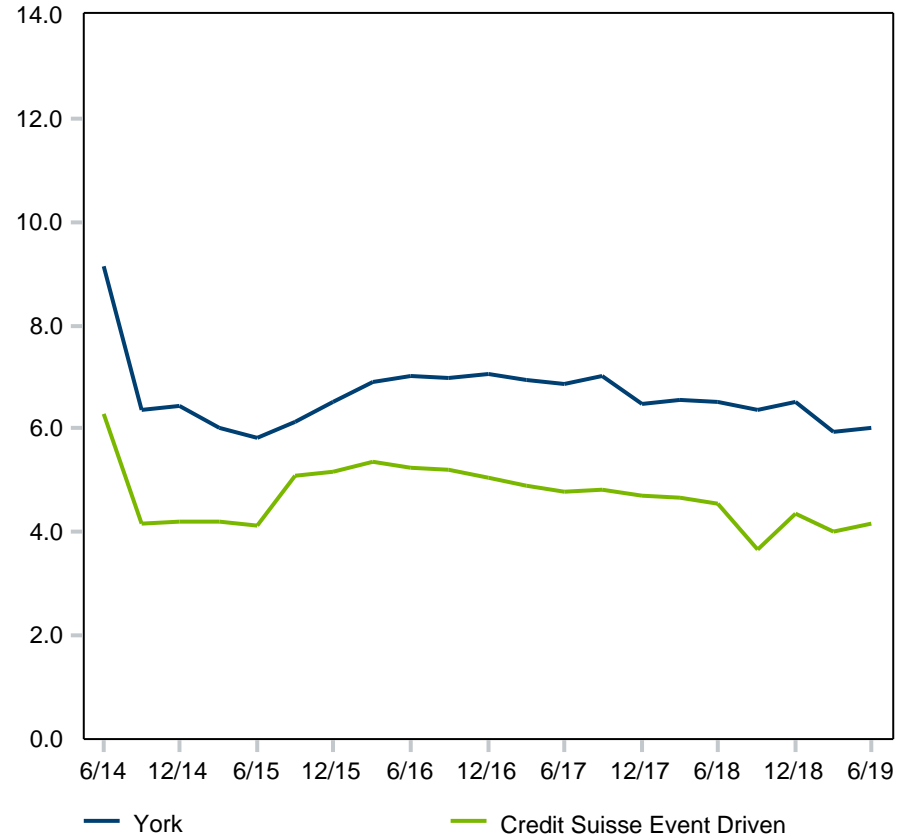


York Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

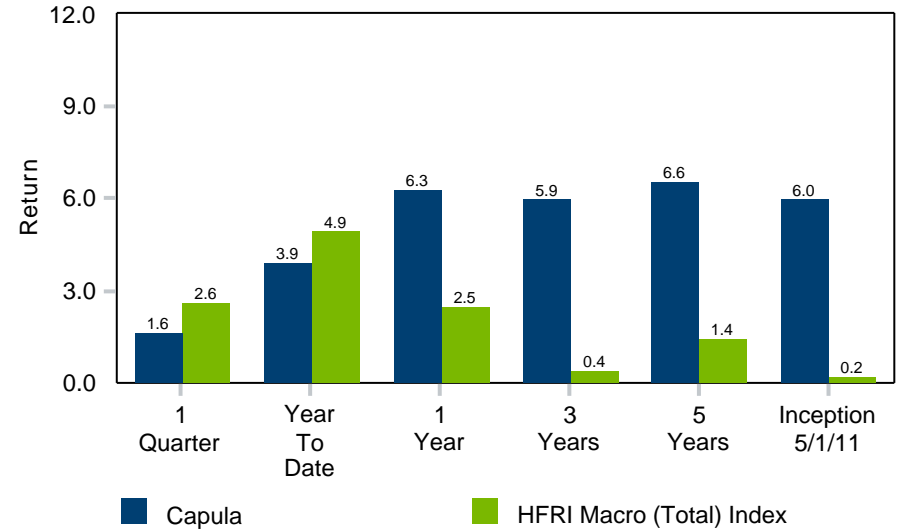
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
York	-0.68	4.69	-0.14	0.49	-0.17	-0.66	0.96	-0.49	6.56	0.70
Credit Suisse Event Driven	0.00	0.00	N/A	1.00	-0.09	0.00	1.00	0.28	4.78	1.00
FTSE 3 Month T-Bill	0.45	4.75	0.09	0.03	N/A	0.84	0.01	0.84	0.25	0.16

Capula Performance Summary

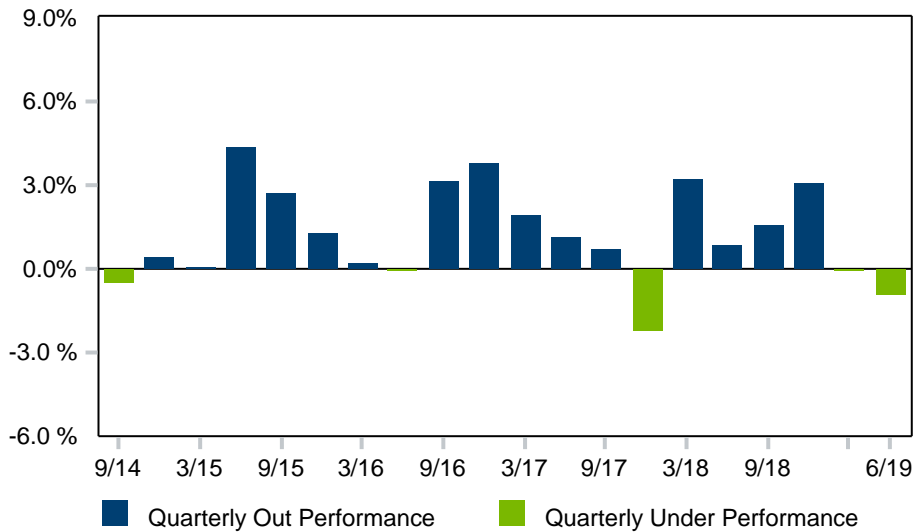
Account Information

Account Name: Capula
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: US Hedge Fund
 Benchmark: HFRI Macro (Total) Index
 Peer Group:

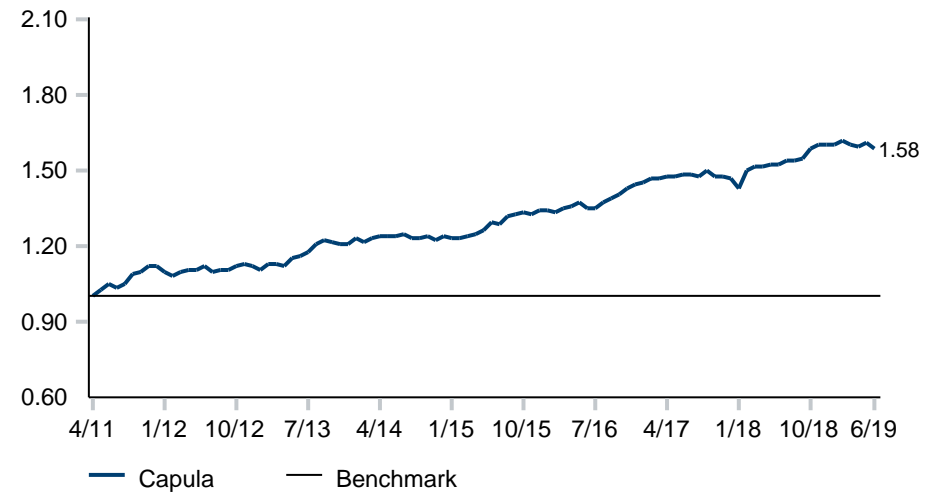
Return Summary



Quarterly Excess Performance

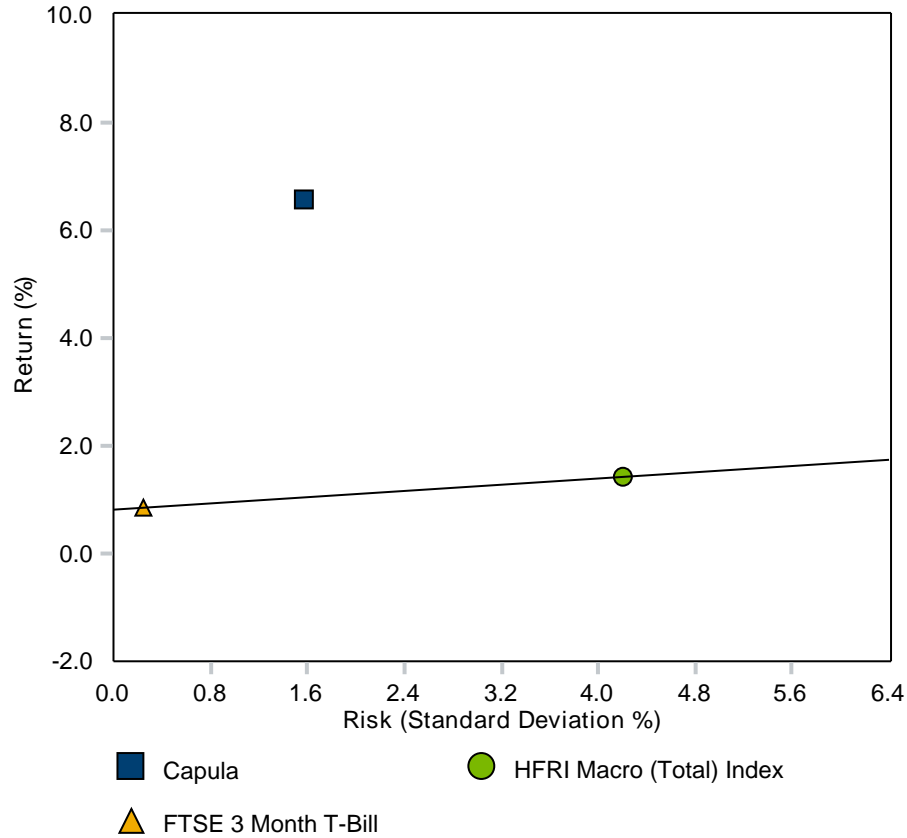


Ratio of Cumulative Wealth - Since Inception

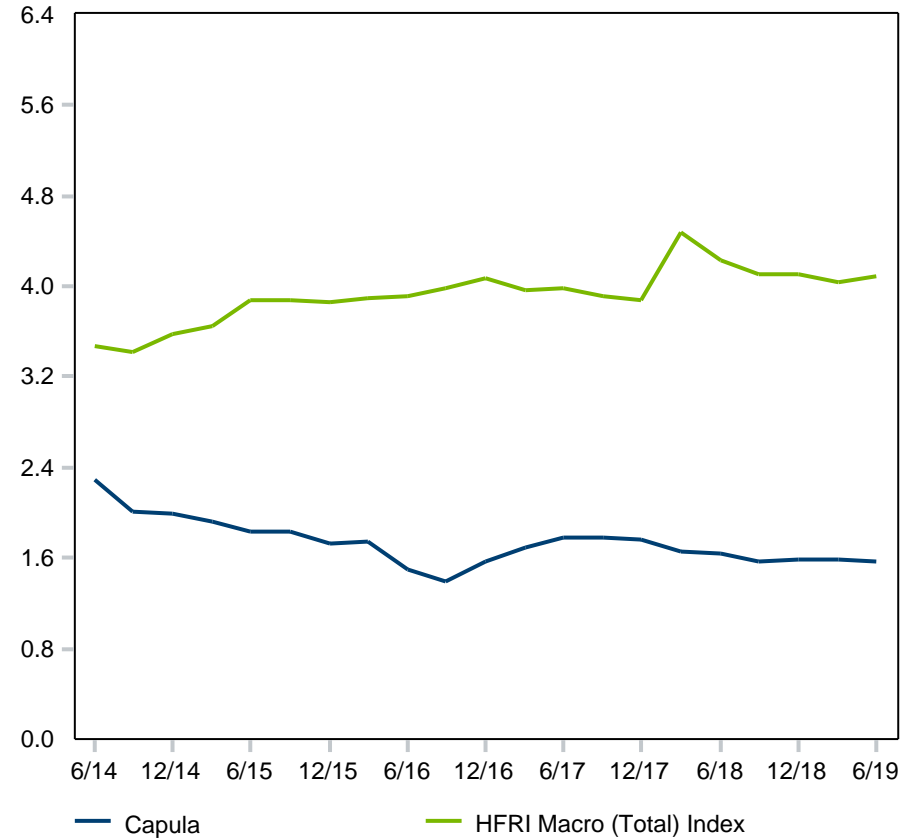


Capula Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

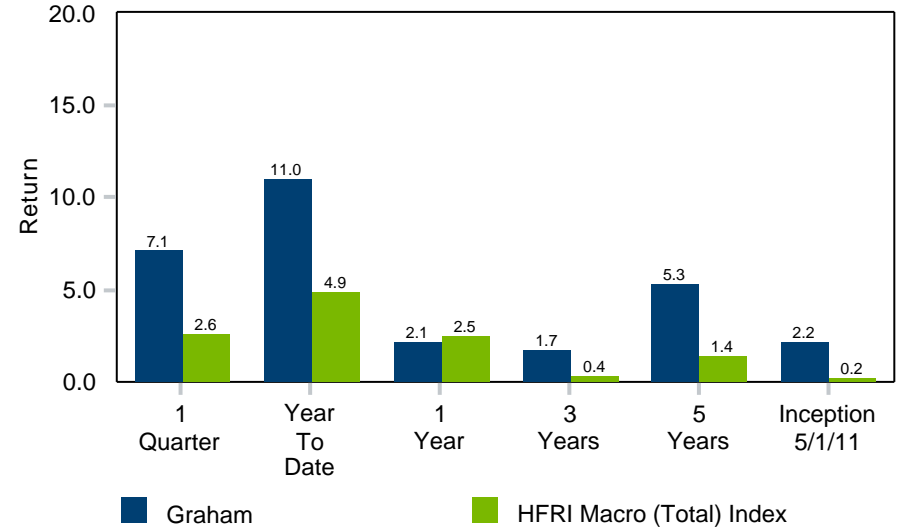
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Capula	4.89	4.19	1.17	0.04	3.37	6.45	0.08	6.56	1.58	0.20
HFRI Macro (Total) Index	0.00	0.00	N/A	1.00	0.15	0.00	1.00	1.41	4.22	1.00
FTSE 3 Month T-Bill	-0.65	4.22	-0.15	0.00	N/A	0.84	0.00	0.84	0.25	0.01

Graham Performance Summary

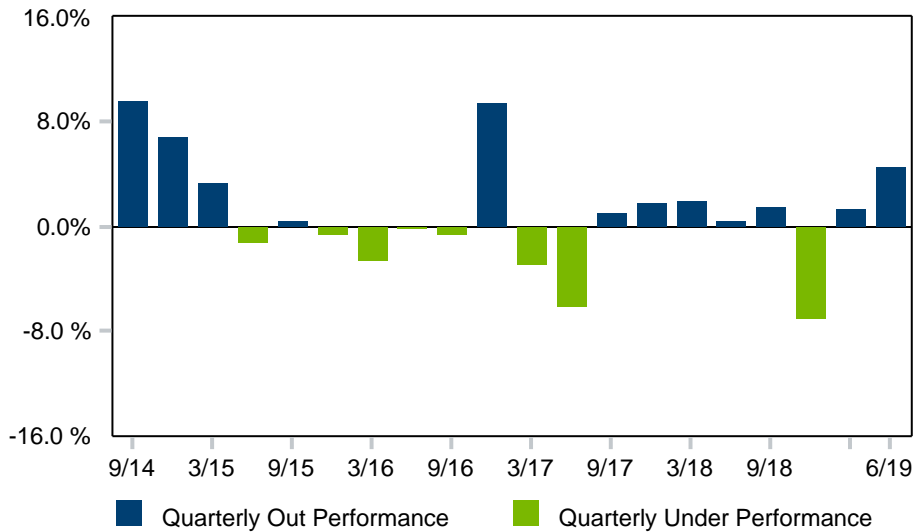
Account Information

Account Name: Graham
 Inception Date: 05/01/2011
 Account Structure: Hedge Fund
 Asset Class: Hedge Fund
 Benchmark: HFRI Macro (Total) Index
 Peer Group:

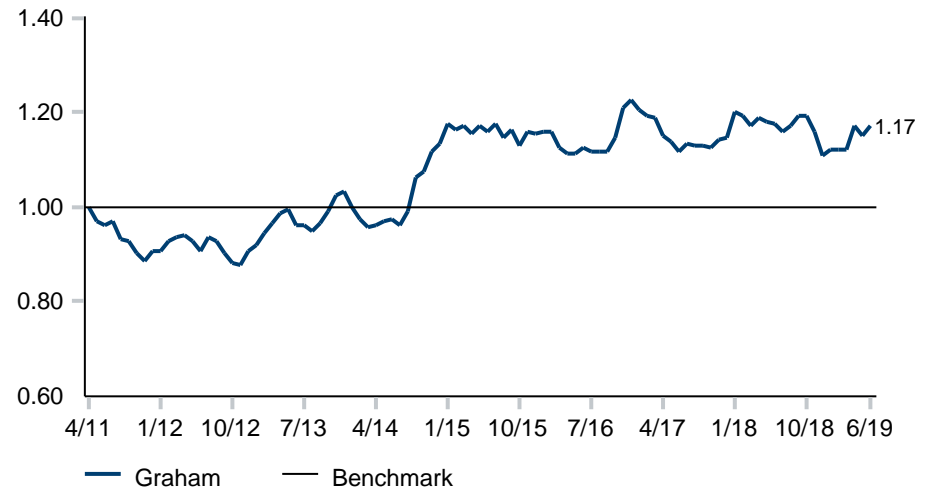
Return Summary



Quarterly Excess Performance

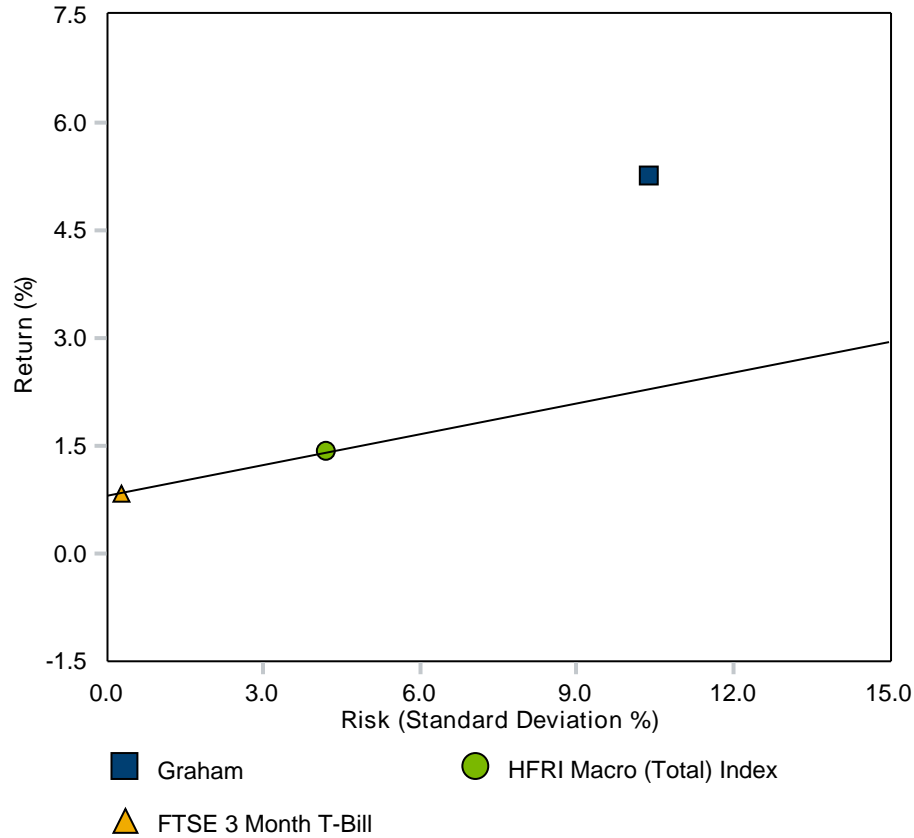


Ratio of Cumulative Wealth - Since Inception

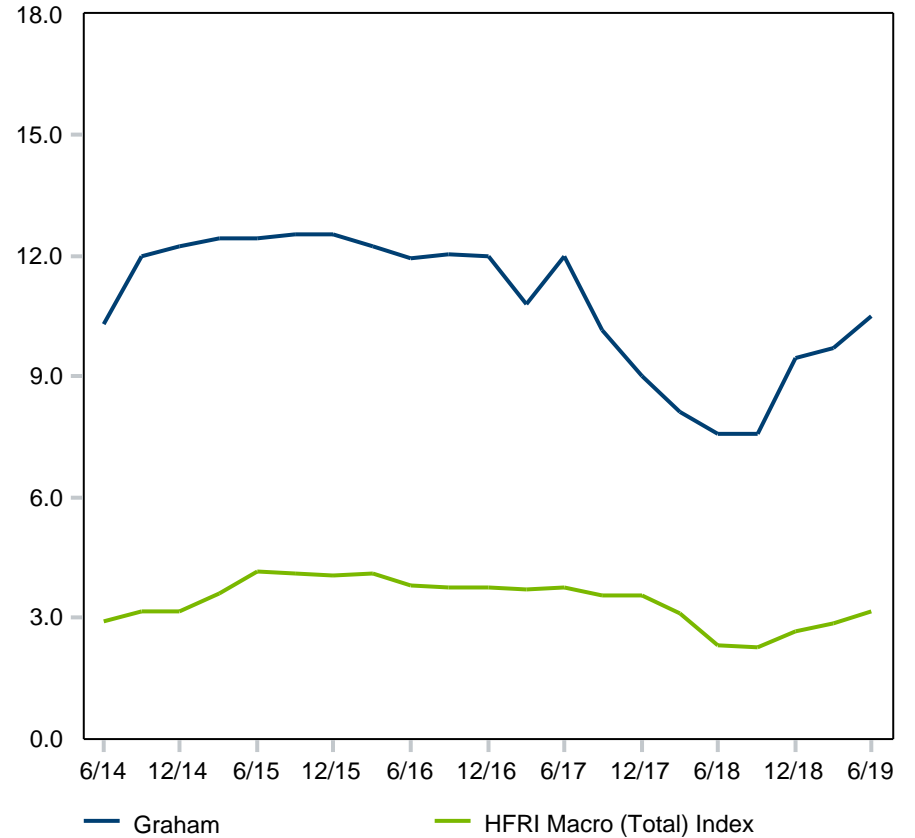


Graham Risk Profile

Annualized Return vs. Annualized Standard Deviation
5 Years



Rolling 3 Years Standard Deviation



5 Years Historical Statistics

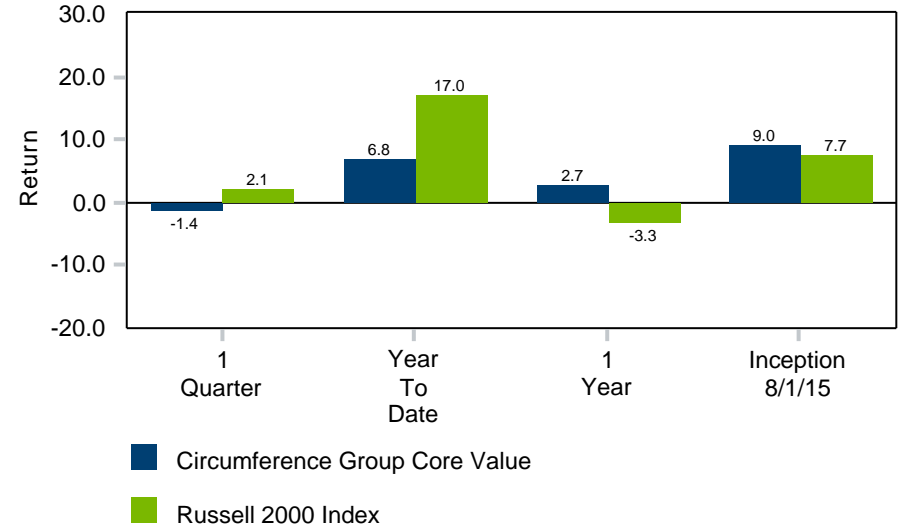
	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Graham	4.17	7.74	0.54	0.57	0.46	2.92	1.86	5.26	10.41	0.75
HFRI Macro (Total) Index	0.00	0.00	N/A	1.00	0.15	0.00	1.00	1.41	4.22	1.00
FTSE 3 Month T-Bill	-0.65	4.22	-0.15	0.00	N/A	0.84	0.00	0.84	0.25	0.01

Circumference Group Core Value Performance Summary

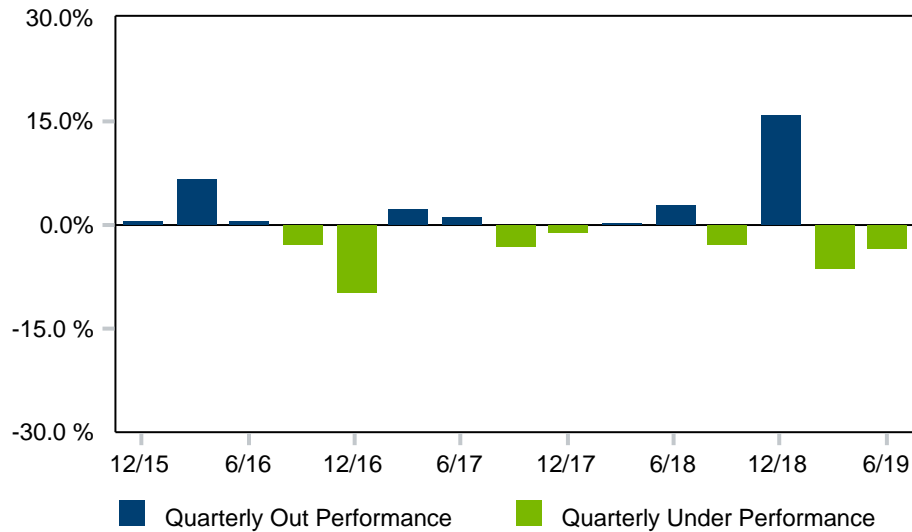
Account Information

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

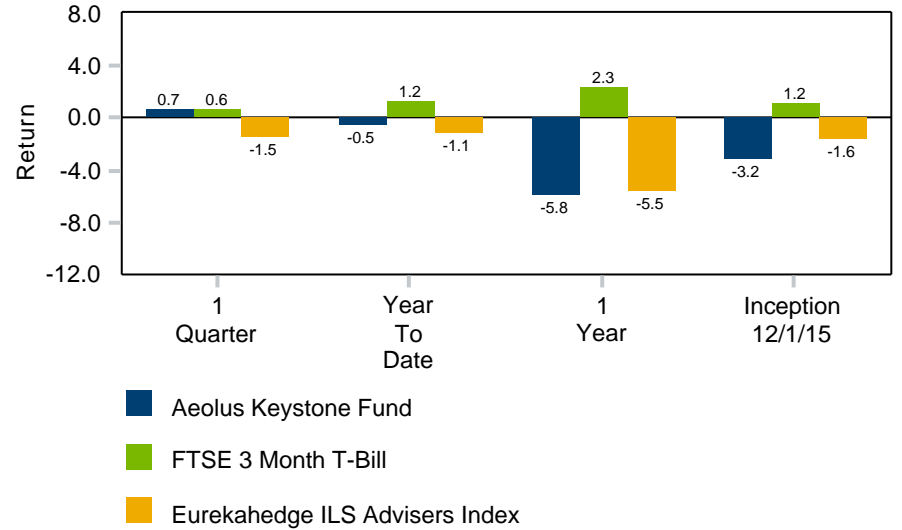


Aeolus Keystone Fund Performance Summary

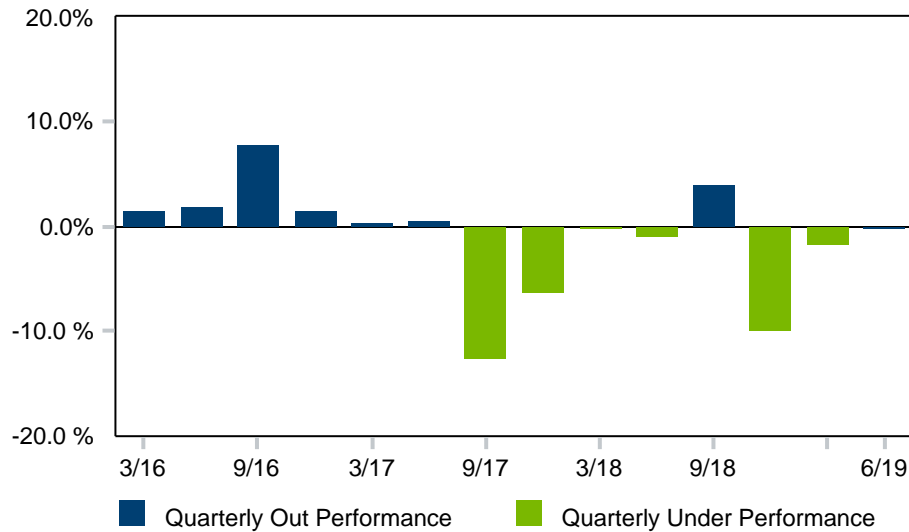
Account Information

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:

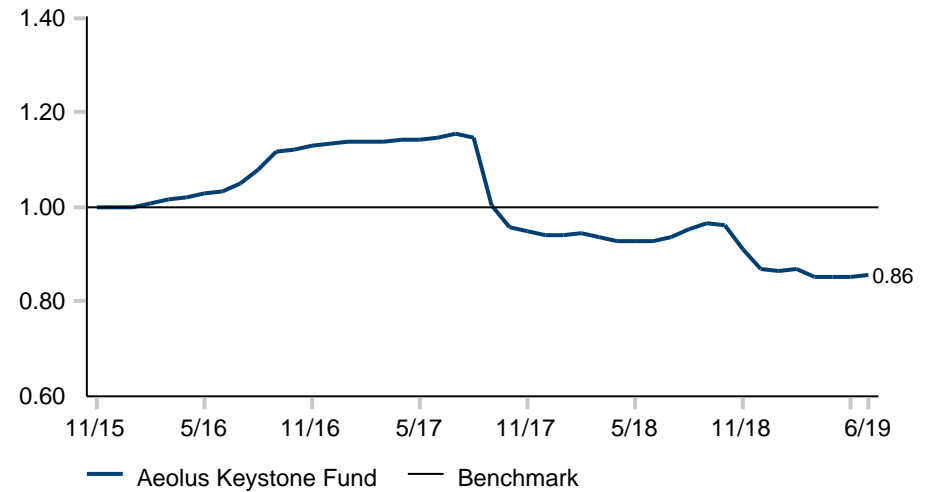
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

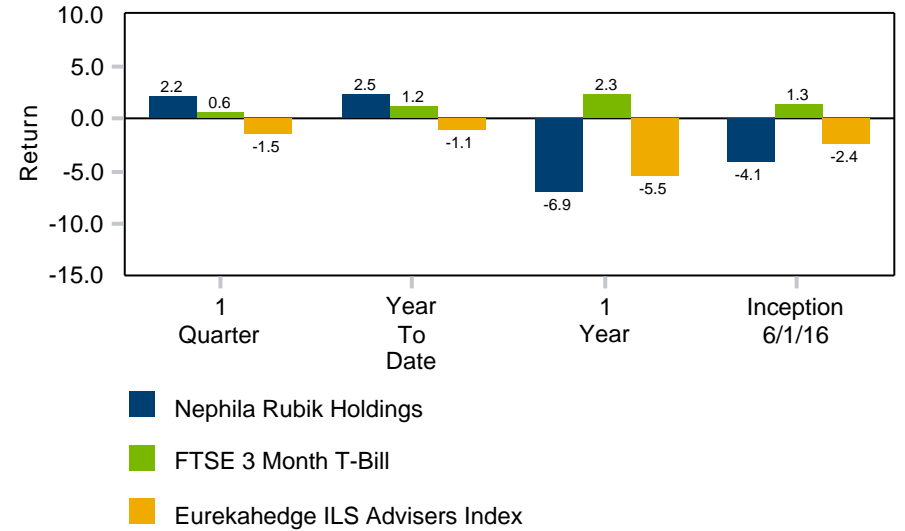


Nephila Rubik Holdings Performance Summary

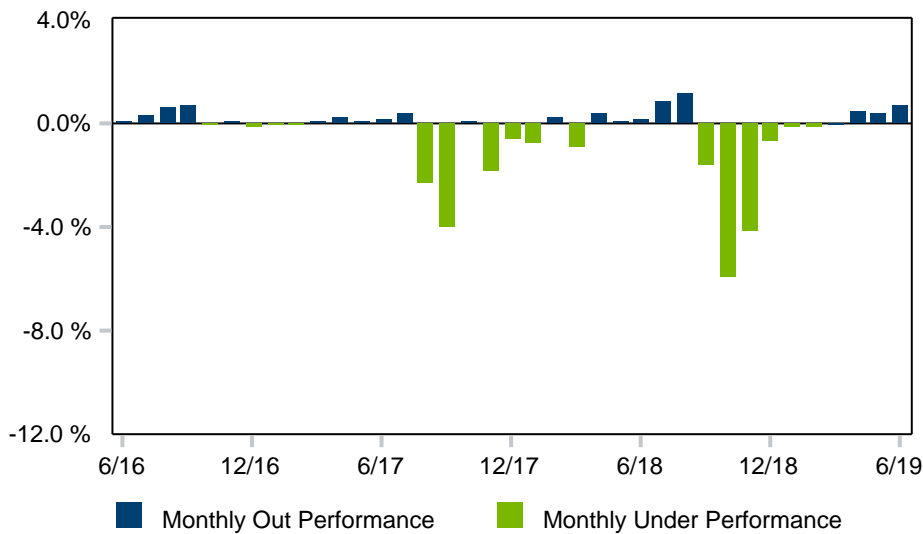
Account Information

Account Name: Nephila Rubik Holdings
 Inception Date: 06/01/2016
 Account Structure:
 Asset Class: Hedge Fund
 Benchmark: FTSE 3 Month T-Bill
 Peer Group:

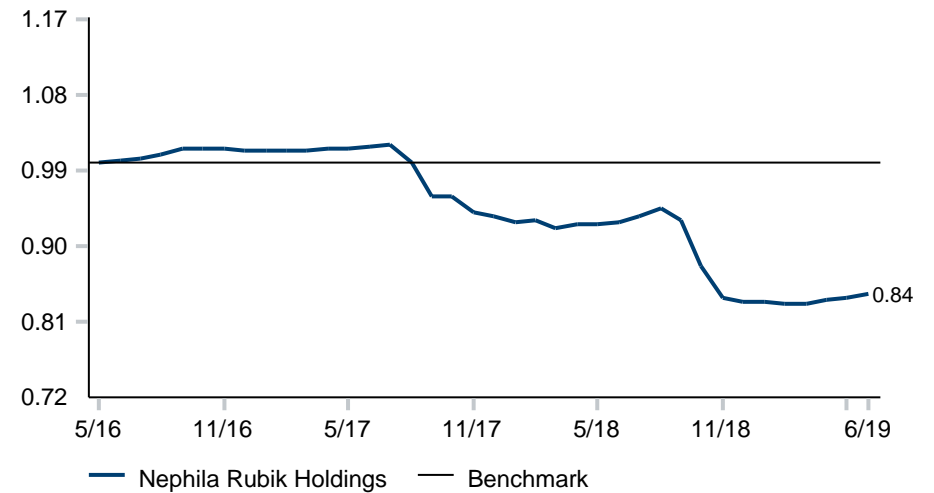
Return Summary



Monthly Excess Performance



Ratio of Cumulative Wealth - Since Inception

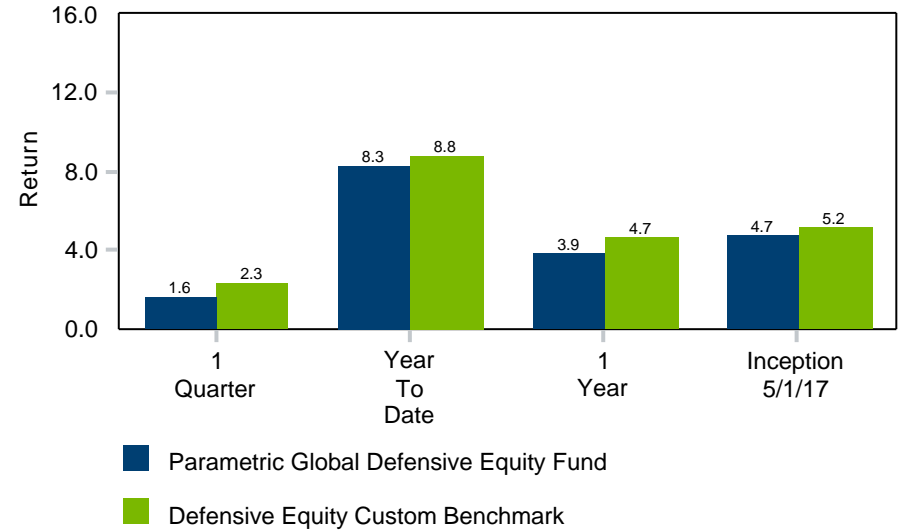


Parametric Global Defensive Equity Fund Performance Summary

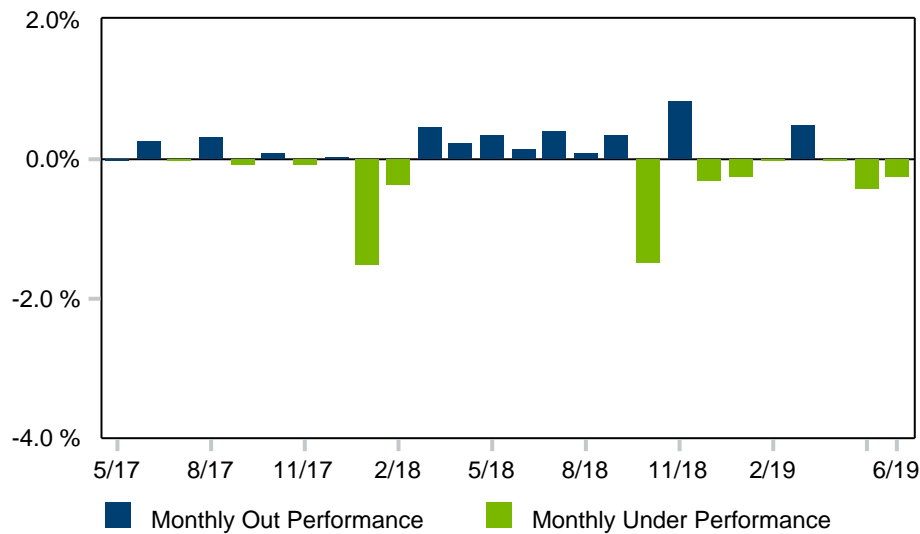
Account Information

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:

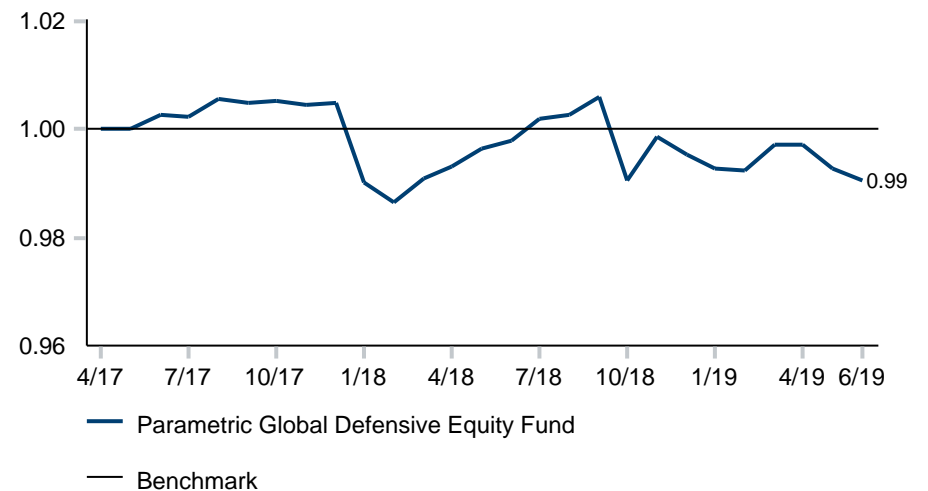
Return Summary

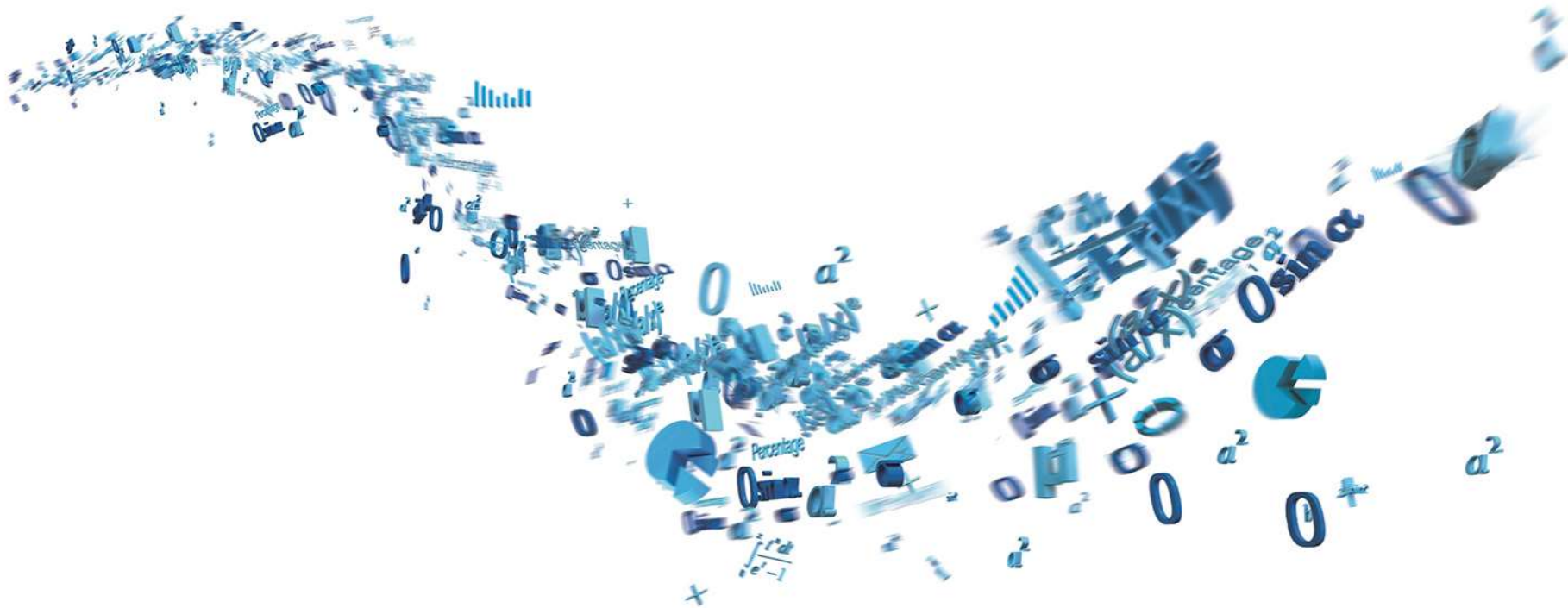


Monthly Excess Performance



Ratio of Cumulative Wealth - Since Inception



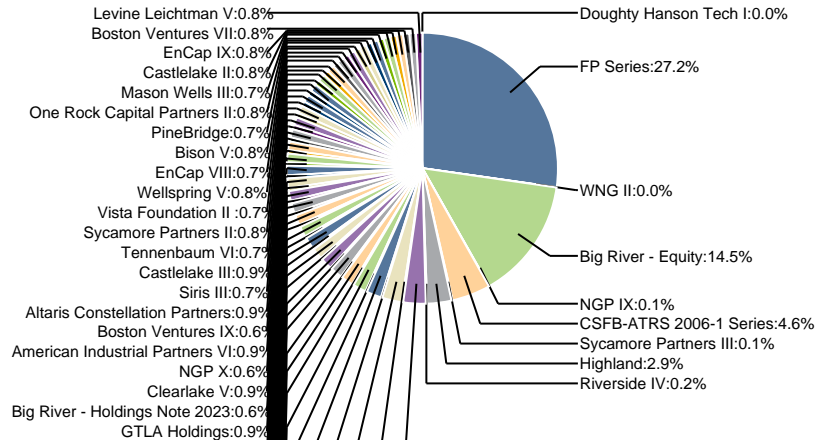


Private Equity

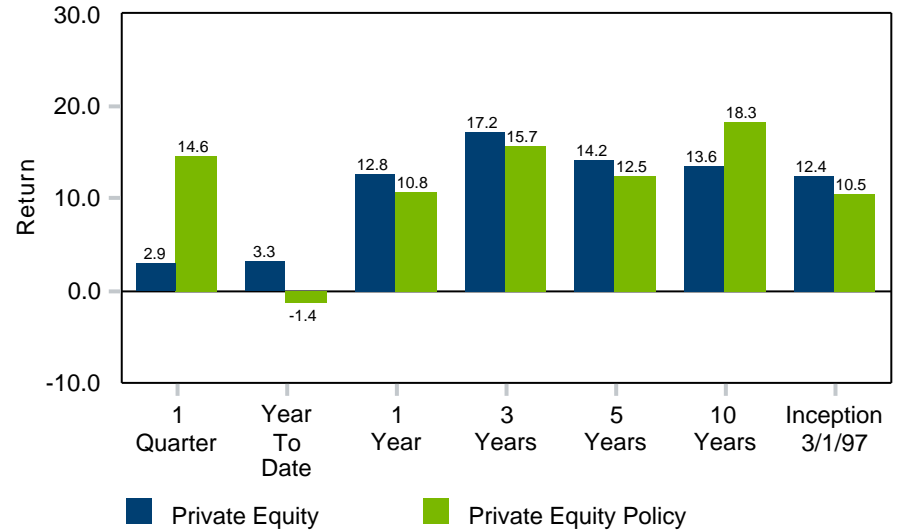
Private Equity Portfolio Overview

Current Allocation

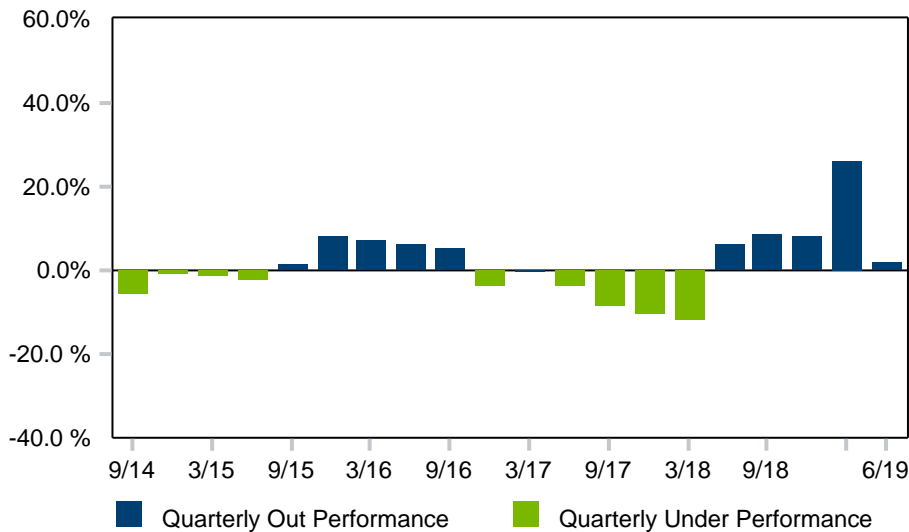
June 30, 2019 : \$2,182M



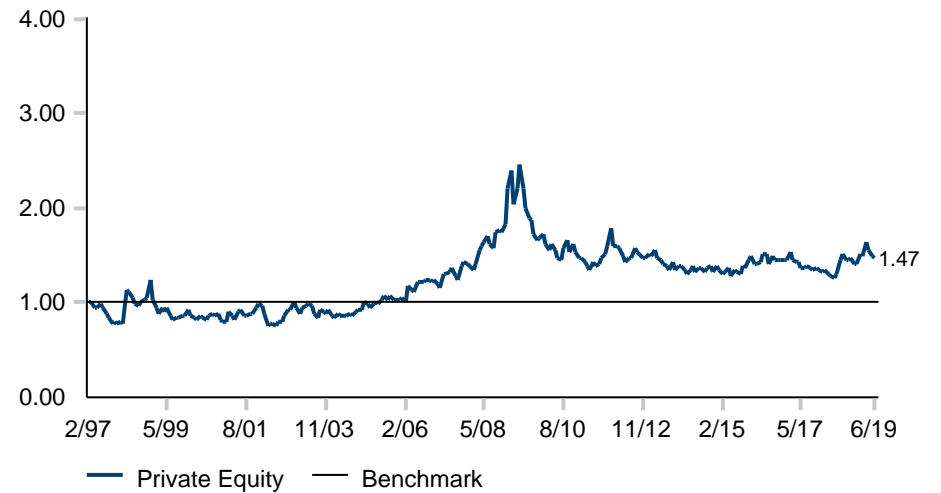
Return Summary

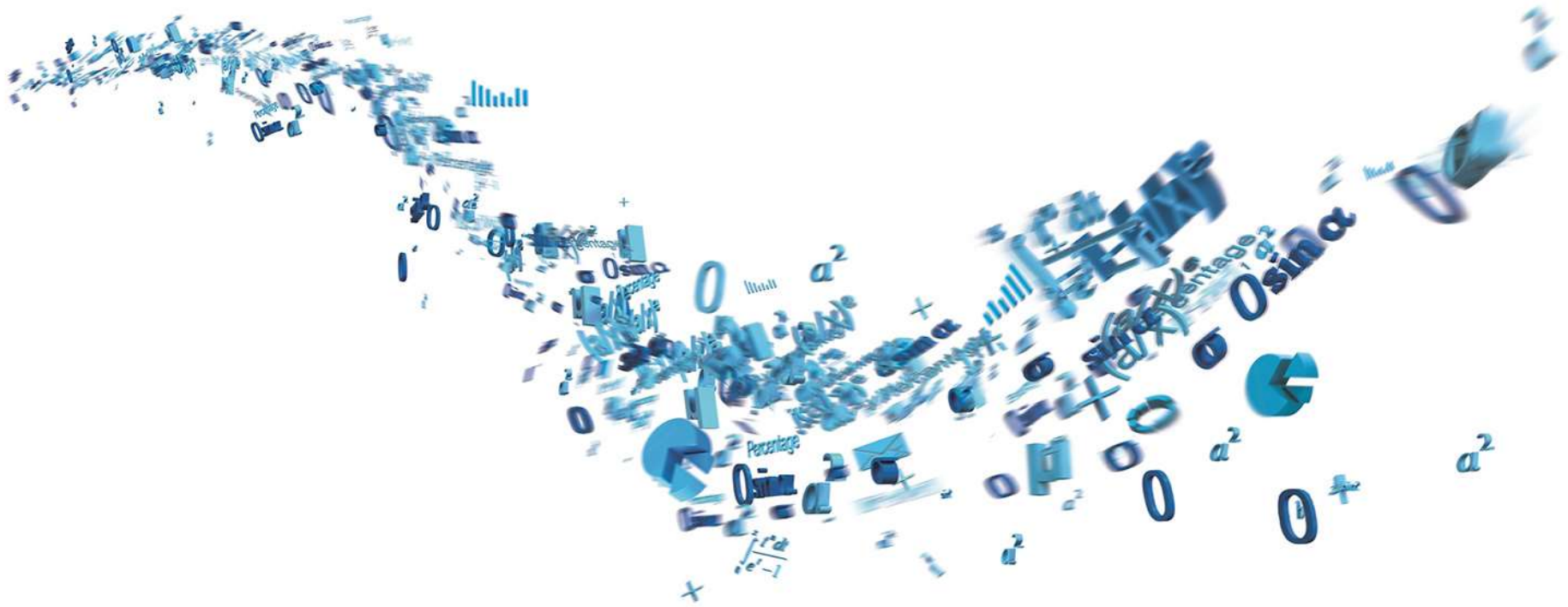


Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



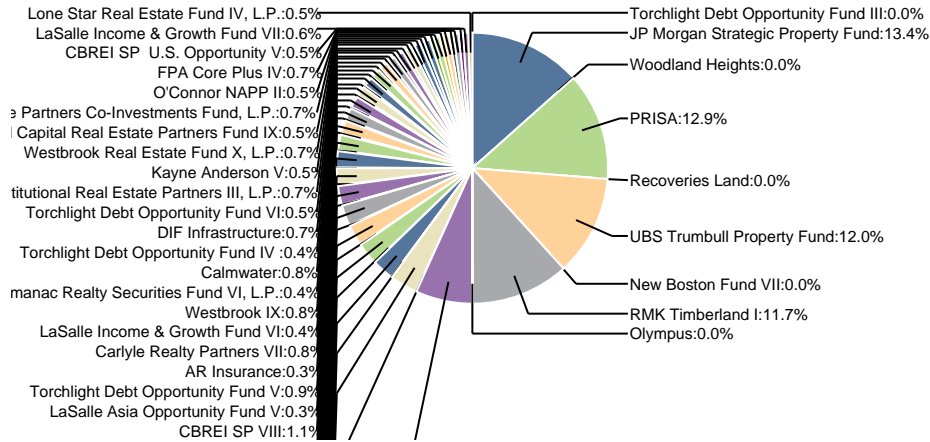


Real Assets

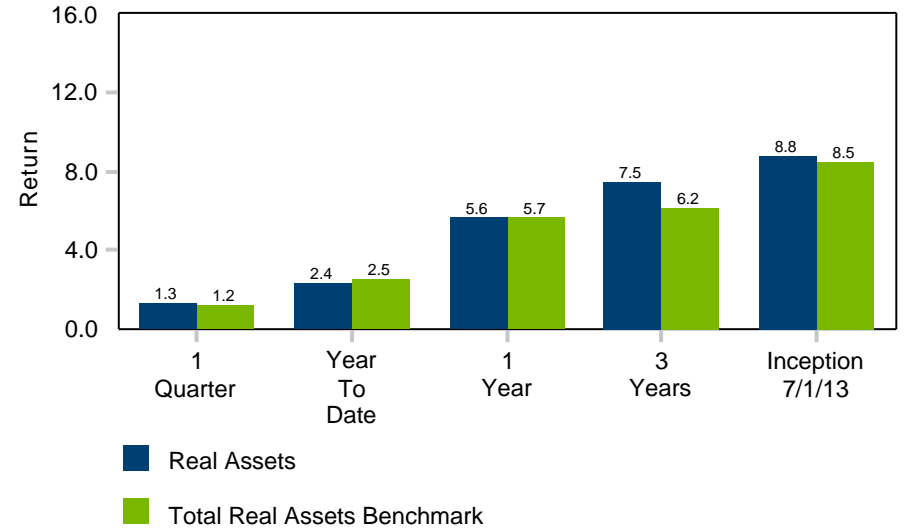
Real Assets Portfolio Overview

Current Allocation

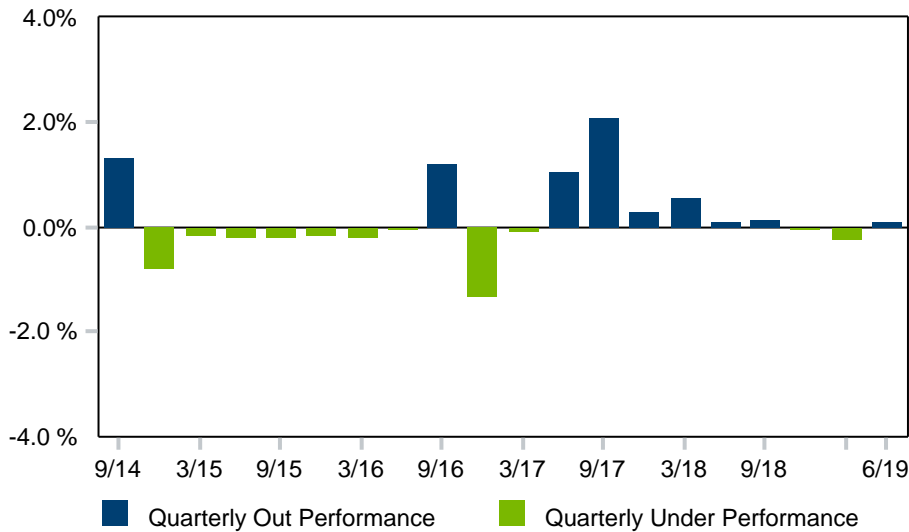
June 30, 2019 : \$2,104M



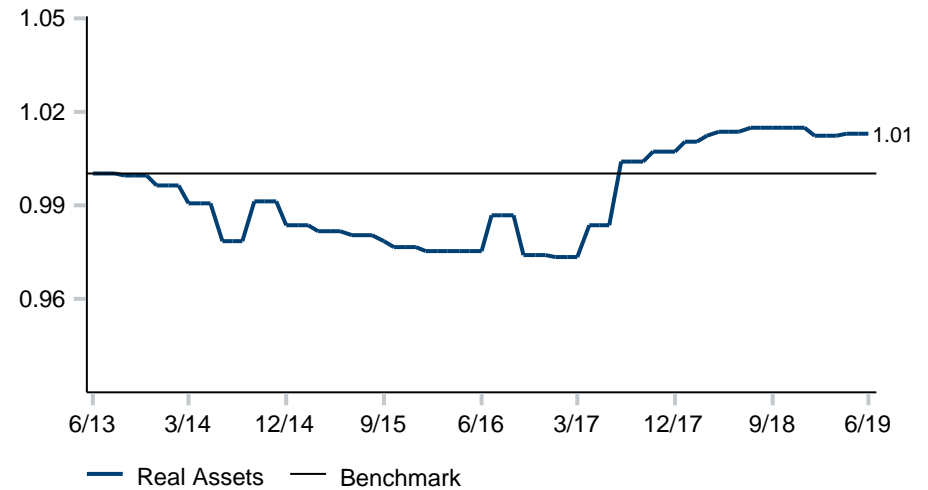
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

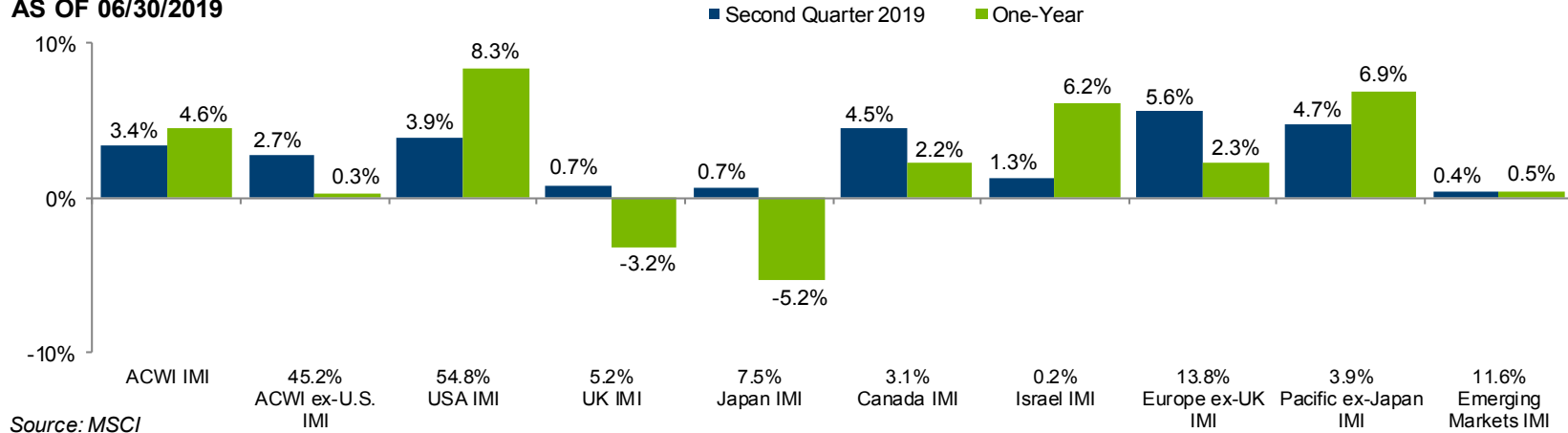




Market Environment

Global Equity Markets

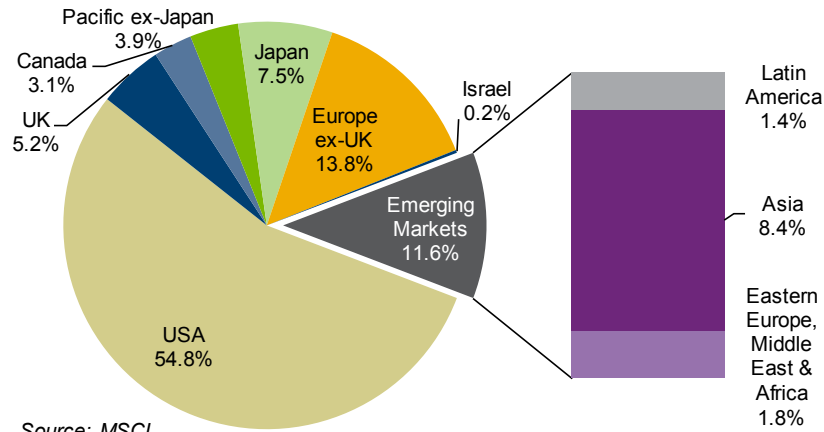
GLOBAL MSCI IMI INDEX RETURNS (USD, Net) AS OF 06/30/2019



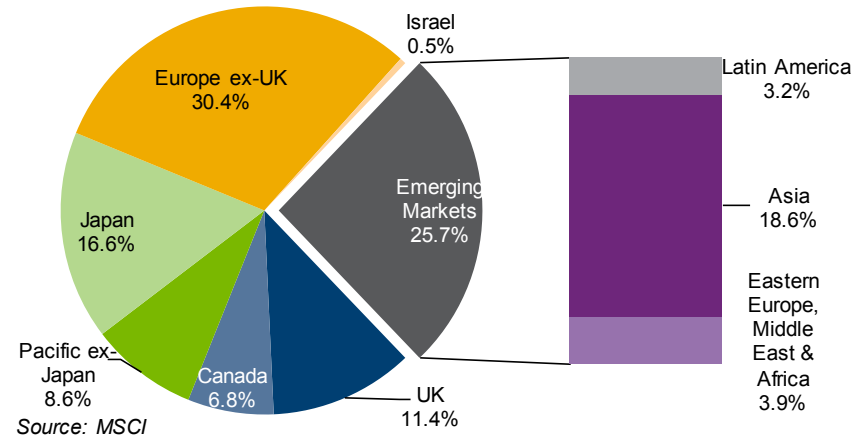
- Global trade negotiations dominated equity markets in Q2 2019. In local currency terms, the MSCI AC World Investable Market Index returned 3.4% which was supported by prospects of looser monetary policy by major central banks and positive progress in U.S.-China trade negotiations.
- Increased expectations of further monetary stimulus from the European Central Bank (ECB) combined with a strengthening of the euro against the U.S. dollar resulted in the European equities being the strongest performer (in USD terms) over the quarter.
- Japanese equities delivered positive returns in USD terms due to strong yen performance against the U.S. dollar over the quarter. In local currency terms, however, Japanese equities largely lagged other markets with yen strength and escalating trade tensions leading Japanese equities to be the only equity market to post negative returns in local currency terms over the second quarter. Emerging market equities, especially those with greater linkages to China, came under pressure due to uncertainties around the ongoing trade dispute.

Global Equity Markets

**MSCI ALL COUNTRY WORLD IMI INDEX
GEOGRAPHIC ALLOCATION AS OF 06/30/2019**



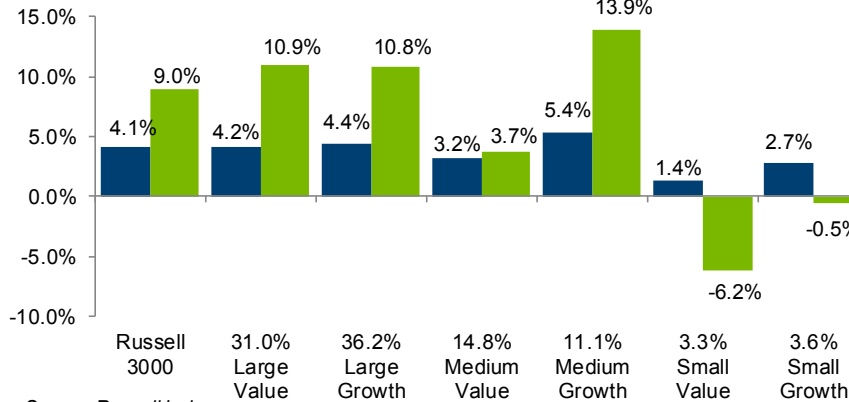
**MSCI ALL COUNTRY WORLD EX-U.S. IMI INDEX
GEOGRAPHIC ALLOCATION AS OF 06/30/2019**



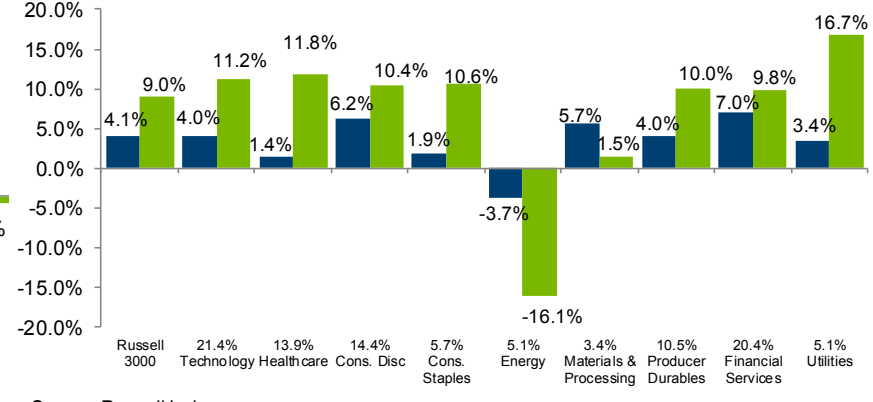
- The two exhibits on this slide illustrate the percentage that each country/region represents of the global and international equity markets as measured by the MSCI All Country World IMI Index and the MSCI All Country World ex-U.S. IMI Index, respectively.

U.S. Equity Markets

**RUSSELL STYLE RETURNS
AS OF 06/30/2019**



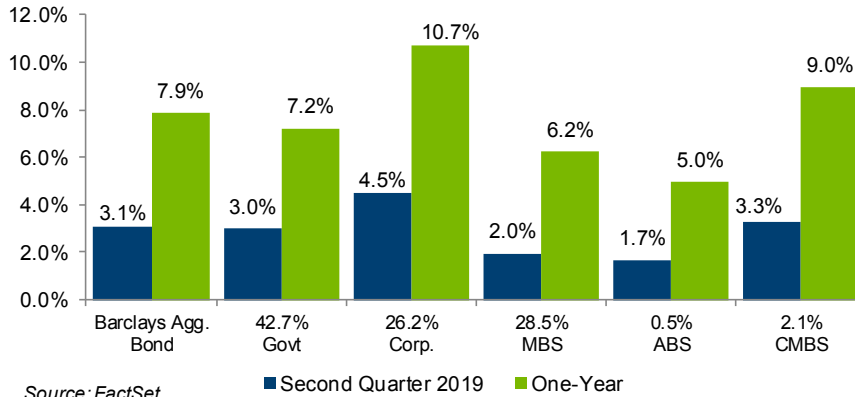
**RUSSELL GICS SECTOR RETURNS
AS OF 06/30/2019**



- U.S. equities continued their rally despite economic data painting a mixed picture, fueled by the increased expectation for an interest rate cut by the U.S. Federal Reserve (Fed). Greater optimism over thawing U.S.-China trade tensions towards the end of the quarter also helped to lift investor sentiment. The Russell 3000 Index rose 4.1% during the second quarter and 9.0% over the one-year period.
- All sectors, except for Energy (-3.7%), generated positive returns over the quarter. In particular, Financial Services (7.0%) and Consumer Discretionary (6.2%) were the best performing sectors in Q2 2019.
- Performance was positive across the market capitalization spectrum over the quarter. In general, small cap stocks underperformed both large and medium cap stocks over the quarter. Growth stocks outperformed their Value counterparts in Q2 2019, benefitting from the fall in U.S. yields.

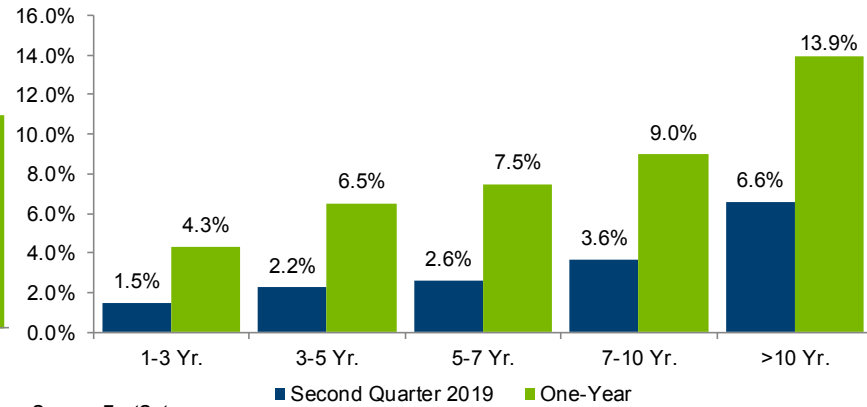
U.S. Fixed Income Markets

BLOOMBERG BARCLAYS AGGREGATE RETURNS BY SECTOR AS OF 06/30/2019



Source: FactSet

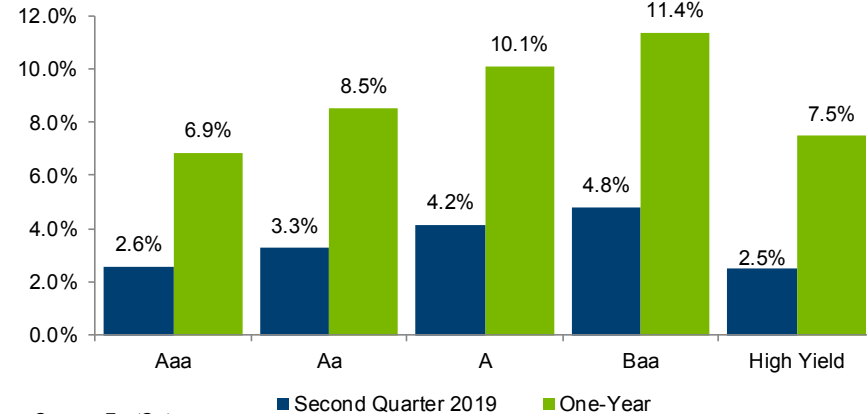
BLOOMBERG BARCLAYS AGGREGATE RETURNS BY MATURITY AS OF 06/30/2019



Source: FactSet

- The Bloomberg Barclays U.S. Aggregate Bond Index returned 3.1% over the quarter. Corporate bonds were the best performers, returning 4.5% whilst ABS bonds underperformed with a return of 1.7%.
- Performance was positive across all credit grades. Within investment grade bonds, lower quality bonds outperformed with Baa bonds returning 4.8%.
- Long-maturity bonds outperformed both intermediate and short-maturity bonds over the quarter. Long-maturity bonds returned 6.6% while short-maturity bonds returned only 1.5% in Q2 2019.

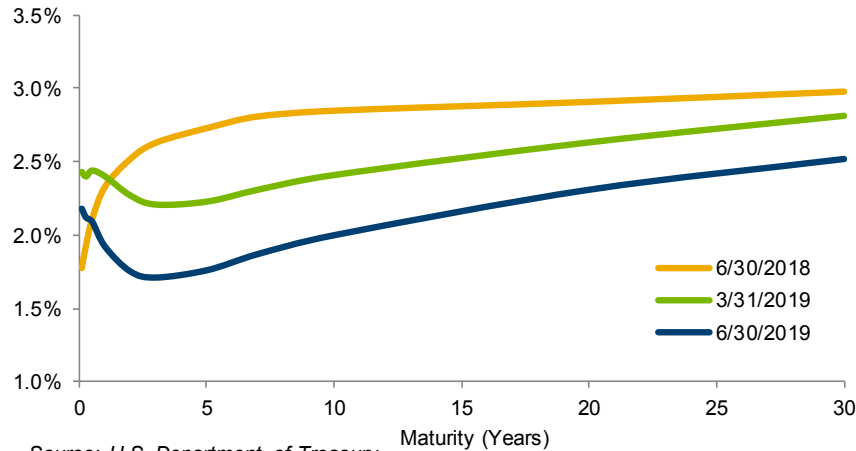
BLOOMBERG BARCLAYS AGGREGATE RETURNS BY QUALITY AND HIGH YIELD RETURNS AS OF 06/30/2019



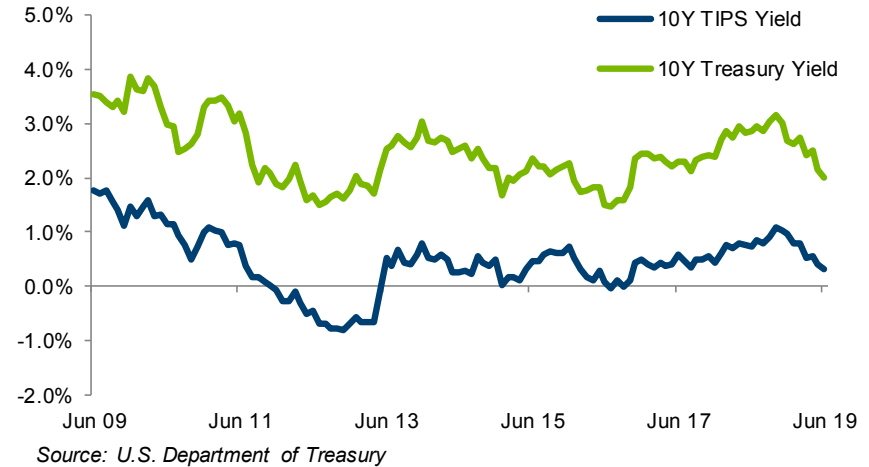
Source: FactSet

U.S. Fixed Income Markets

U.S. TREASURY YIELD CURVE



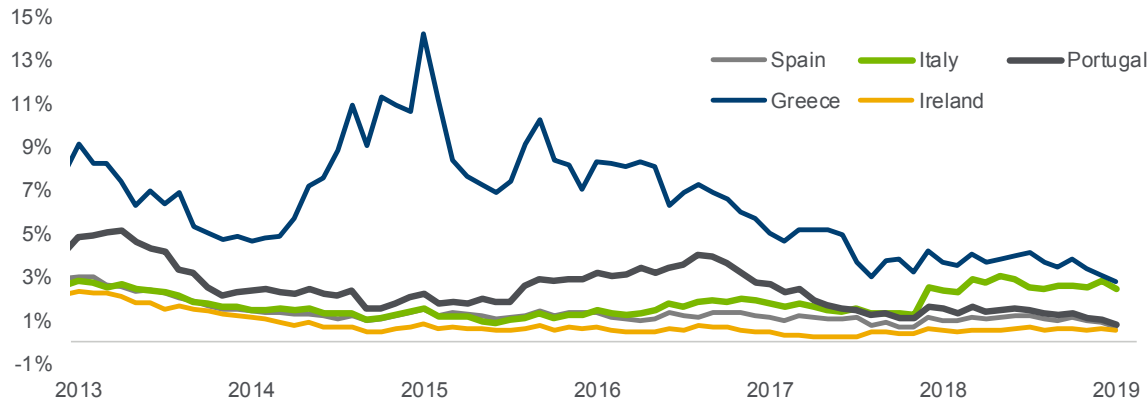
U.S. 10-YEAR TREASURY AND TIPS YIELDS



- The U.S. nominal yield curve shifted downwards over the quarter with yields falling across all maturities. In Q2 2019, 10-year US Treasury yield dipped below 2.0% for the first time since 2016 but ultimately rested at 2.0% at the end of the quarter; a 41bps decrease since the end of March.
- The Fed appeared to capitulate to financial market pressure by signaling possible rate cuts this year, with eight out of seventeen officials expecting at least one rate cut in 2019. This came amidst a slowing U.S. economy and elevated risks from the ongoing trade dispute.
- The 10-year TIPS yield fell by 22bps over the quarter and ended the period at 0.31%. Breakeven inflation decreased as inflation expectations had moved lower.

European Fixed Income Markets

**EUROZONE PERIPHERAL BOND SPREADS
(10-YEAR SPREADS OVER GERMAN BUNDS)**



Source: FactSet

- Eurozone government bond spreads over 10-year German bunds generally fell across the Eurozone. ECB officials indicated the possibility of a fresh round of quantitative easing if needed to stimulate the flagging economy.
- German government bund yields fell by 26bps to a record low of -0.33% as the country's manufacturing sector continued in the contraction territory.
- Italian government bond yields fell by 41bps to 2.08% over the quarter. The dovish stance from the ECB encouraged greater risk appetite and sent more risky bond yields lower. Minutes from the European Commission meeting on June 5th indicated that the European Commission will hold off disciplinary actions over Italy's fiscal target and could give additional time until the end of the year to reduce its public debt.
- Greek government bond yields reached a record low over the quarter, falling by 130bps to 2.43%.

Credit Spreads

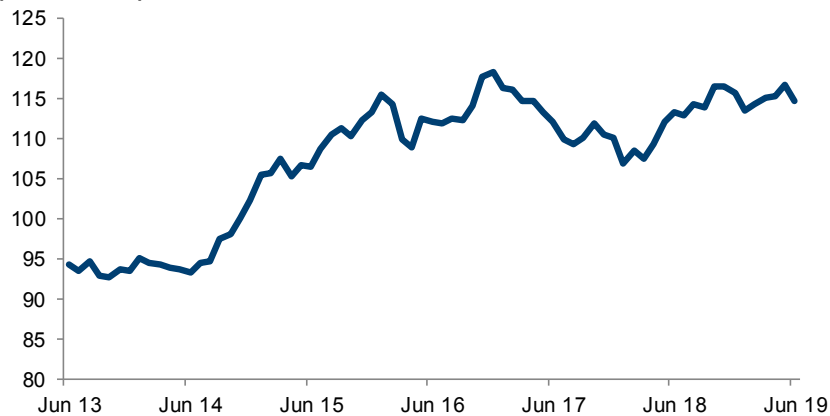
Spread (bps)	06/30/2019	03/31/2019	06/30/2018	Quarterly Change (bps)	1-Year Change (bps)
U.S. Aggregate	46	44	44	2	2
Long Gov't	1	1	1	0	0
Long Credit	161	172	174	-11	-13
Long Gov't/Credit	92	99	101	-7	-9
MBS	46	35	28	11	18
CMBS	69	69	70	0	-1
ABS	41	39	47	2	-6
Corporate	115	119	123	-4	-8
High Yield	377	391	363	-14	14
Global Emerging Markets	282	283	288	-1	-6

Source: FactSet, Bloomberg Barclays

- Mirroring equity market concern, credit spreads increased in the middle of the quarter but broadly retraced May's spread widening late in the quarter as investor concerns eased and risk appetite returned.
- In Q2 2019, High Yield bond spreads narrowed by 14bps – the largest spread narrowing among credit market we consider here. Despite the spread narrowing, High Yield bonds underperformed investment grade bonds due to the lower duration of the index. Spreads on securitized debt widened slightly, most notably for Mortgage-Backed Securities which increased by 11bps.

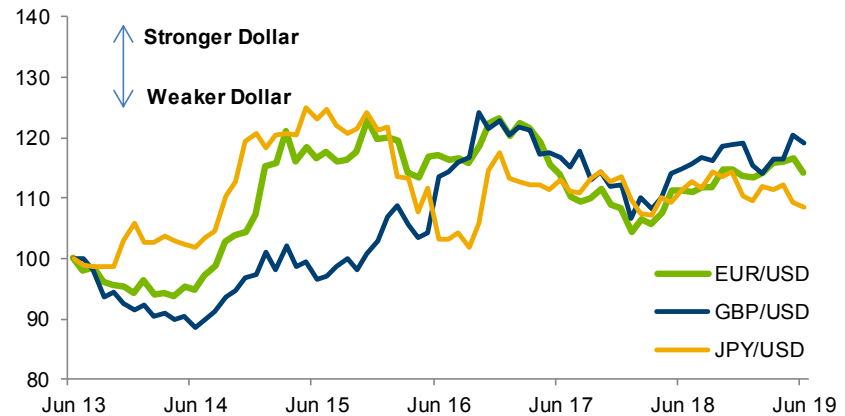
Currency

**TRADE WEIGHTED U.S. DOLLAR INDEX
(1973 = 100)**



Source: Federal Reserve

**U.S. DOLLAR RELATIVE TO EUR, GBP AND JPY
REBASED TO 100 AT 06/30/2013**

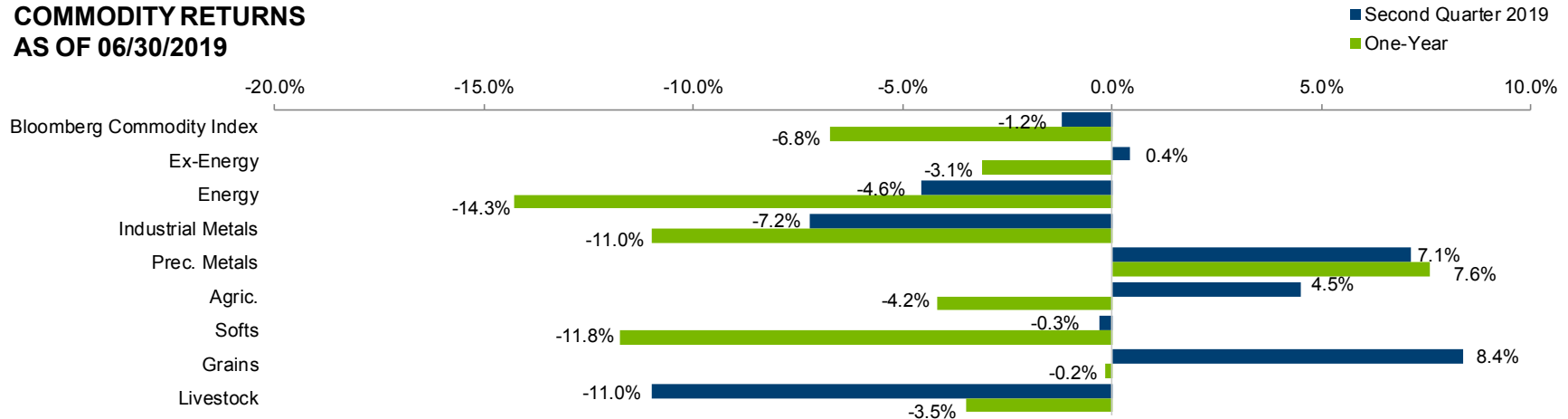


Source: FactSet

- The U.S. dollar fell 0.4% on a trade-weighted basis over the quarter, depreciating against all major currencies with the exception of sterling. The upward trend in the U.S. dollar stalled in the second quarter. The dollar fell in June as expectations of Fed easing grew. Cyclical supports to the 'greenback' (stronger relative economic growth and wide interest rate differentials) lost momentum.
- In the UK, Brexit uncertainties continued as UK Prime Minister Theresa May announced her resignation and the prohibitive favorite, Boris Johnson, has taken a very tough stance on Brexit which has increased expectations of a "Hard-Brexit" by the end of October. Against this backdrop, sterling depreciated by 2.3% against the U.S. dollar.
- Despite a more dovish ECB and a weaker economic outlook, the euro appreciated by 1.4% against the U.S. dollar.
- The yen strengthened over the quarter as investors moved back to the 'safe-haven' currency. Similar to the Euro Area, there was less disappointment in economic releases over the quarter while the gap between U.S. and Japanese government bond yields narrowed by just under 50bps.

Commodities

COMMODITY RETURNS AS OF 06/30/2019



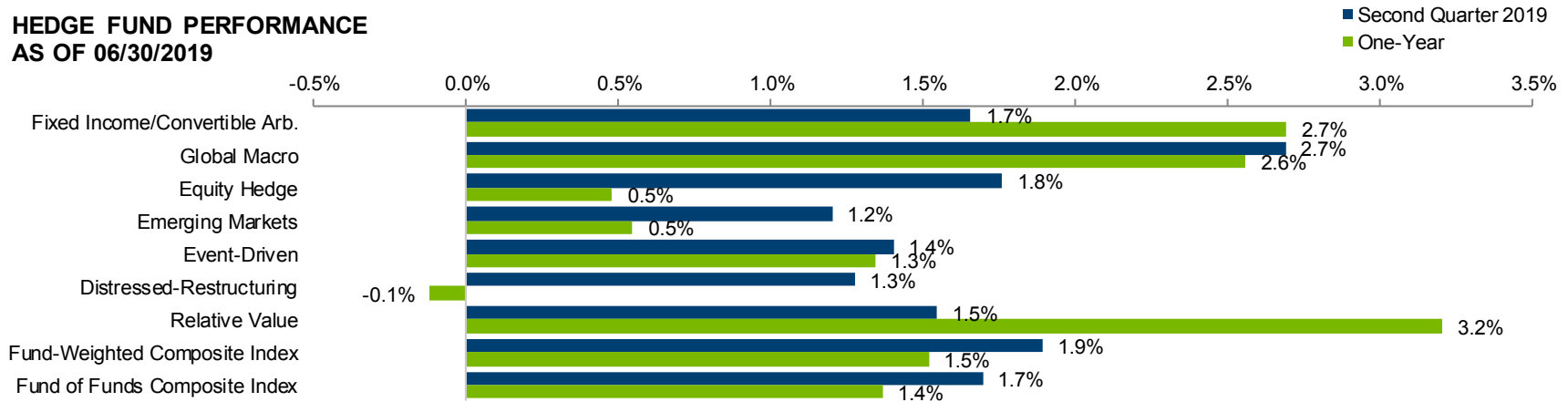
Source: Bloomberg

Note: Softs and Grains are part of the wider Agriculture sector

- Commodities generally fell over the quarter with the Bloomberg Commodity Index returning -1.2%.
- Livestock (-11.0%) was the worst performing sector whilst Precious Metals (7.1%) returned the most. The latter benefitted from safe-haven buying in a quarter where geopolitical risks rose and gold prices surged by 8.8%.
- The Energy sector fell 4.6% over the quarter. The price of Brent crude oil fell by 2.7% to \$67/bbl and the WTI crude oil spot price fell by 2.8% to \$58/bbl. Oil prices got some support from rising tensions in Middle East as the U.S. re-imposed sanctions on Iran. However, a sharp rise in U.S. crude inventories and, more significantly, signs of slowing global growth put pressure on energy prices. Weaker anticipated demand due to a slowing economic environment also pushed Industrial Metals lower with copper prices falling 7.9% to \$5,972/t.

Hedge Fund Markets Overview

HEDGE FUND PERFORMANCE AS OF 06/30/2019

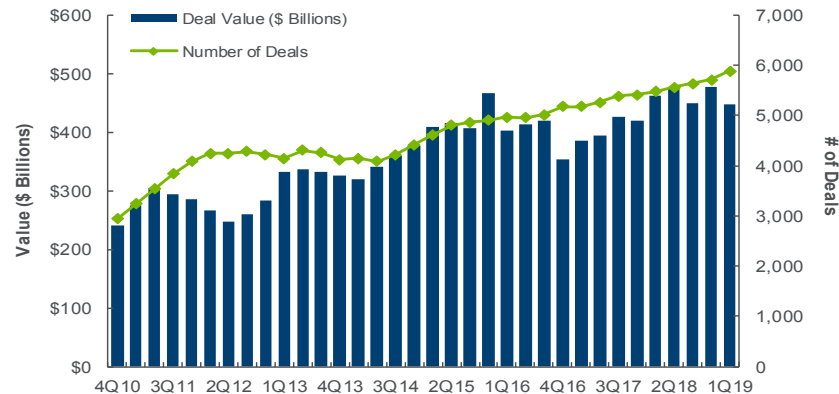


Note: Latest 5 months of HFR data are estimated by HFR and may change in the future.

Source: HFR

- Hedge fund performance was positive across all strategies in the second quarter.
- Over the quarter, Global Macro and Equity Hedge strategies were the best performers with returns of 2.7% and 1.8%. The former's strong return offset weaker performance over the previous nine months and led to a positive return of 2.6% over the trailing twelve months. Conversely, Distressed-Restructuring and Emerging Markets were the worst performers, returning 1.3% and 1.2%, respectively.
- The HFRI Fund-Weighted Composite Index and the HFRI Fund of Funds Composite Index produced returns of 1.9% and 1.7%, respectively.

Private Equity Market Overview – Q1 2019 – Slide 1 of 2



- Distressed Debt:** The LTM U.S. high-yield default rate was 1.4% as of March 2019, which was down from December 2018's LTM rate of 2.4%.⁵ During the quarter, \$4.0 billion was raised by 11 funds, lower than both the \$4.9 billion raised by 14 funds in Q4 2018 and \$8.7 billion raised by 17 funds in Q1 2018.¹ Dry powder was estimated at \$118.0 billion at the end of Q1 2019, which was up slightly from year-end 2017's total of \$117.6 billion. This remained above the five-year annual average level of \$103.3 billion.¹
- Secondaries:** Eight funds raised \$1.8 billion during the quarter, down significantly from the \$8.2 billion raised by seven funds in Q4 2018 and the \$5.9 billion raised by 11 funds in Q1 2018.¹ At the end of Q1 2019, there were an estimated 58 secondary and direct secondary funds in market targeting roughly \$78.5 billion.¹ The average discount rate for all private equity sectors finished the quarter at 9.5%, higher than the 8.9% discount at the end of 2018.⁶
- Infrastructure:** \$24.2 billion of capital was raised by 13 funds in Q1 2019 compared to \$16.6 billion of capital raised by 16 partnerships in Q1 2018. At the end of the quarter, dry powder stood at an estimated \$175.0 billion, down slightly from year-end 2018's total of \$177.0 billion. Infrastructure managers completed 508 deals with an estimated aggregate deal value of \$58.0 billion in Q1 2019 compared to 568 deals totaling \$54.0 billion a quarter ago¹.
- Natural Resources:** During Q1 2019, four funds closed on \$1.3 billion compared to 11 funds totaling \$1.8 billion in Q4 2018. Energy and utilities industry managers completed approximately 36 deals totaling an estimated \$4.2 billion through Q1 2019, which represents 12.2% of the full year capital deployment in 2018.¹

Sources: ¹ Preqin ² Standard & Poor's ³ PwC/CB Insights MoneyTree Report ⁴ PitchBook/NVCA Venture Monitor ⁵ Fitch Ratings ⁶ Thomson Reuters ⁷ UBS

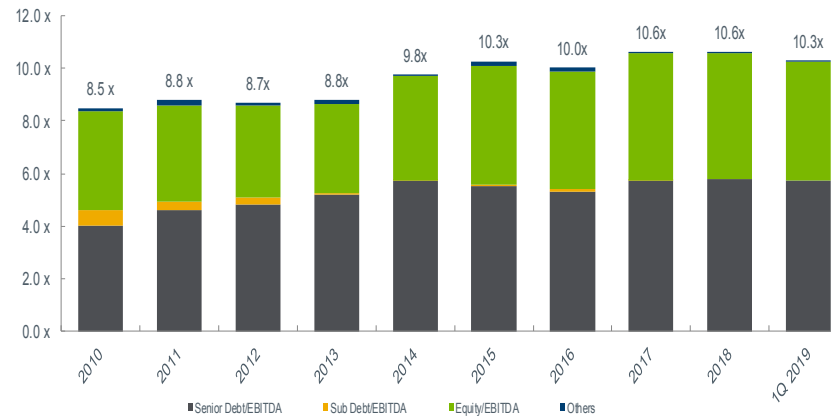
Notes: FY=Fiscal year ended 12/31; YTD=Year to date; LTM=Last 12 months (aka trailing 12 months); PPM=Purchase Price Multiples: Total Purchase Price ÷ EBITDA.

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Private Equity Market Overview – Q1 2019 – Slide 2 of 2



- Fundraising:** In Q1 2019, \$143.1 billion was raised by 319 funds, which was a decrease of 8.9% on a capital basis and a decrease of 35.3% by number of funds from the prior quarter. Dry powder stood at \$2.0 trillion at the end of Q1 2019, an increase of 5.7% and 33.6% compared to Q4 2018 and the five year average, respectively.¹
- Buyout:** Global private equity-backed buyout deals totaled \$102.2 billion in Q1 2019, which was down 13.4% on a number of deals basis and 22.4% on a capital basis from Q1 2018.¹ At the end of Q1 2019, the average purchase price multiple for all U.S. LBOs was 10.3x EBITDA, a drop of 0.3x from year-end 2018 and up slightly from the five-year average (10.2x).² Large cap purchase price multiples stood at 10.3x, down compared to the full-year 2018 level of 10.6x.² The weighted average purchase price multiple across all European transaction sizes averaged 10.9x EBITDA for Q1 2019, down from the 11.3x multiple seen at year-end 2018. Purchase prices for transactions of €1.0 billion or more decreased from 11.7x in 2018 to 11.3x at the end of Q1 2019. Transactions between €500.0 million and €1.0 billion were down 0.4x from the end of 2018, and stood at 10.9x at the end of the quarter.² Globally, exit value totaled \$38.0 billion from 382 deals during the first quarter, significantly lower than the \$65.5 billion in exits from 464 deals during Q1 2018.¹
- Venture:** During the first quarter, 1,279 venture-backed transactions totaling \$24.6 billion were completed in the U.S., which was a substantial decrease on a capital basis over the prior quarter's total of \$38.7 billion across 1,328 deals. This was still 30.1% higher than the five-year quarterly average of \$18.9 billion.³ Total U.S. venture-backed exit activity totaled approximately \$46.7 billion across 137 completed transactions in Q1 2019, up slightly on a capital basis from the \$37.2 billion across 184 exits in Q4 2018.⁴
- Mezzanine:** Three funds closed on \$1.0 billion during the first quarter. This was a significant decrease from the prior quarter's total of \$8.0 billion raised by 14 funds and represented a decrease of 81.0% from the five-year quarterly average of \$5.3 billion. Estimated dry powder was \$58.8 billion at the end of Q1 2019, up from the \$53.5 billion seen at the end of 2018.¹

Sources: ¹ Preqin ² Standard & Poor's ³ PwC/CB Insights MoneyTree Report ⁴ PitchBook/NVCA Venture Monitor ⁵ Fitch Ratings ⁶ Thomson Reuters ⁷ UBS

Notes: FY=Fiscal year ended 12/31; YTD=Year to date; LTM=Last 12 months (aka trailing 12 months); PPM=Purchase Price Multiples: Total Purchase Price ÷ EBITDA.

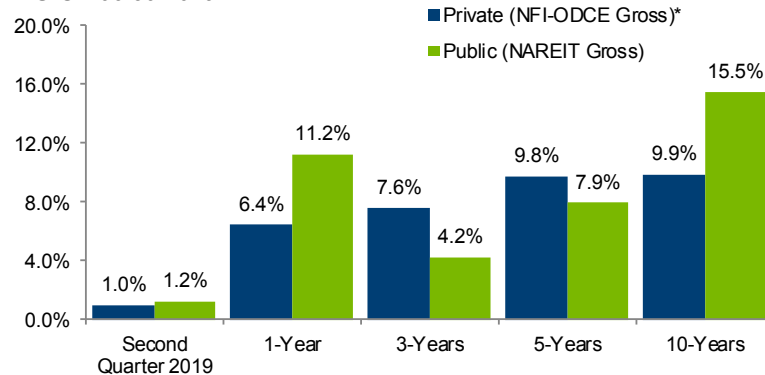
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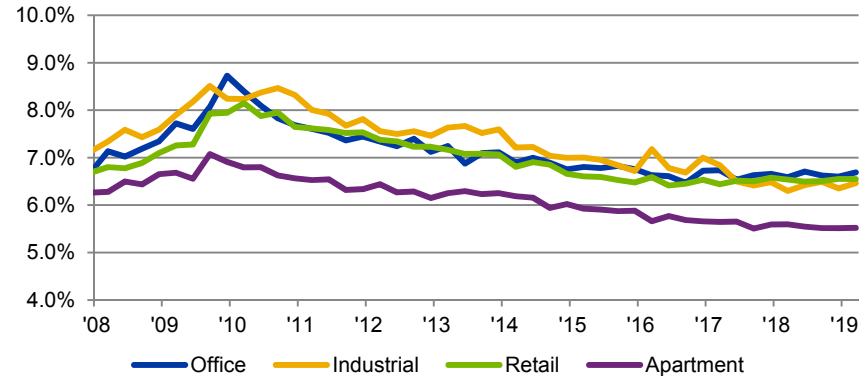
U.S. Commercial Real Estate Markets

PRIVATE VS. PUBLIC REAL ESTATE RETURNS AS OF 06/30/2019



*Second quarter returns are preliminary
Sources: NCREIF, Factset

CAP RATES BY SECTOR SOURCE: RCA, AON HEWITT 3/31/2019



- U.S. core real estate returned 1.0%* over the second quarter, equating to 6.4% total gross return year-over-year, including a 4.1% income return. Debt mark-to-market was a drag on performance due to declining interest rates.
- Global property markets, as measured by the FTSE EPRA/NAREIT Global Developed Real Estate Index, returned -1.0% (USD) in aggregate during the second quarter. The sector was mainly flat after a strong rebound during the prior quarter. REIT market performance was driven by Asia Pacific (0.6% USD), North America (0.7% USD) and Europe (-1.9% USD). The U.S. REIT markets (FTSE NAREIT Equity REITs Index) gained 1.2% in the second quarter. Lower U.S. Treasury yields were supportive for REIT share prices. Outside of the U.S., government bond yields similarly fell with the German 10-year bond yield falling from -0.07% to -0.33% at the end of the quarter.
- According to RCA, through May 2019, the U.S. property market experienced price growth of 7.2% year-over-year across major sectors. In addition, transaction volume was down 8% over the same period.
- Return expectations have normalized, with forward expectations in line with historical norms. The market has priced in a rate cut from the Federal Reserve, and declining interest rates have led to a rally across various asset classes. According to Preqin, there remains a record amount of dry powder (\$331 billion) in closed-end vehicles seeking real estate exposure, which should continue to lend support to valuations and liquidity in the commercial real estate market.

*Indicates preliminary NFI-ODCE data gross of fees

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Fee Schedule

Fee Schedule

	Fee Schedule	Market Value As of 06/30/2019 \$000	Estimated Annual Fee \$000	Estimated Annual Fee (%)
Total Equity		9,331,901	40,000	0.43
Jacobs Levy 130/30	0.60 % of First \$200 M 0.35 % of Next \$300 M 0.30 % Thereafter	619,427	2,608	0.42
Allianz Structured Alpha U.S. 250		176,417	-	-
Allianz Structured Alpha Global 500		832,882	-	-
Allianz Structured Alpha Global 350		441,987	-	-
Kennedy Capital Management	0.60 % of First \$100 M 0.50 % Thereafter	531,143	2,756	0.52
Stephens	0.75 % of First \$150 M 0.70 % of Next \$50 M 0.65 % Thereafter	429,919	2,969	0.69
Voya Absolute Return	0.60 % of First \$250 M 0.40 % Thereafter	542,929	2,672	0.49
Allianz (Nicholas Applegate)	0.40 % of First \$100 M 0.30 % of Next \$100 M 0.25 % of Next \$100 M 0.20 % Thereafter	596,230	1,542	0.26
Pershing Square International	1.50 % of Assets	120,481	1,807	1.50
Pershing Square Holdings	1.50 % of Assets	126,112	1,892	1.50
Triam Partners	1.50 % of Assets	66,830	1,002	1.50
Triam Co-Investments	0.50 % of Assets	76,830	384	0.50
SSgA Global Index	0.04 % of First \$1000 M 0.03 % Thereafter	926,462	371	0.04
BlackRock MSCI ACWI IMI Fund	0.05 % of First \$250 M 0.04 % Thereafter	318,438	152	0.05
Wellington Global Perspectives	0.80 % of Assets	529,963	4,240	0.80
T. Rowe Price Global Equity	0.43 % of First \$500 M 0.40 % Thereafter	895,862	3,708	0.41
Lazard	0.68 % of First \$300 M 0.65 % Thereafter	558,079	3,718	0.67
D.E. Shaw	0.84 % of First \$100 M 0.80 % of Next \$100 M 0.76 % Thereafter	690,081	5,365	0.78
GMO Global All Country Equity	0.64 % of Assets	411,117	2,631	0.64
Harris Global Equity	0.60 % of First \$100 M 0.50 % of Next \$100 M 0.45 % Thereafter	440,642	2,183	0.50
Fixed Income		2,809,114	5,196	0.18

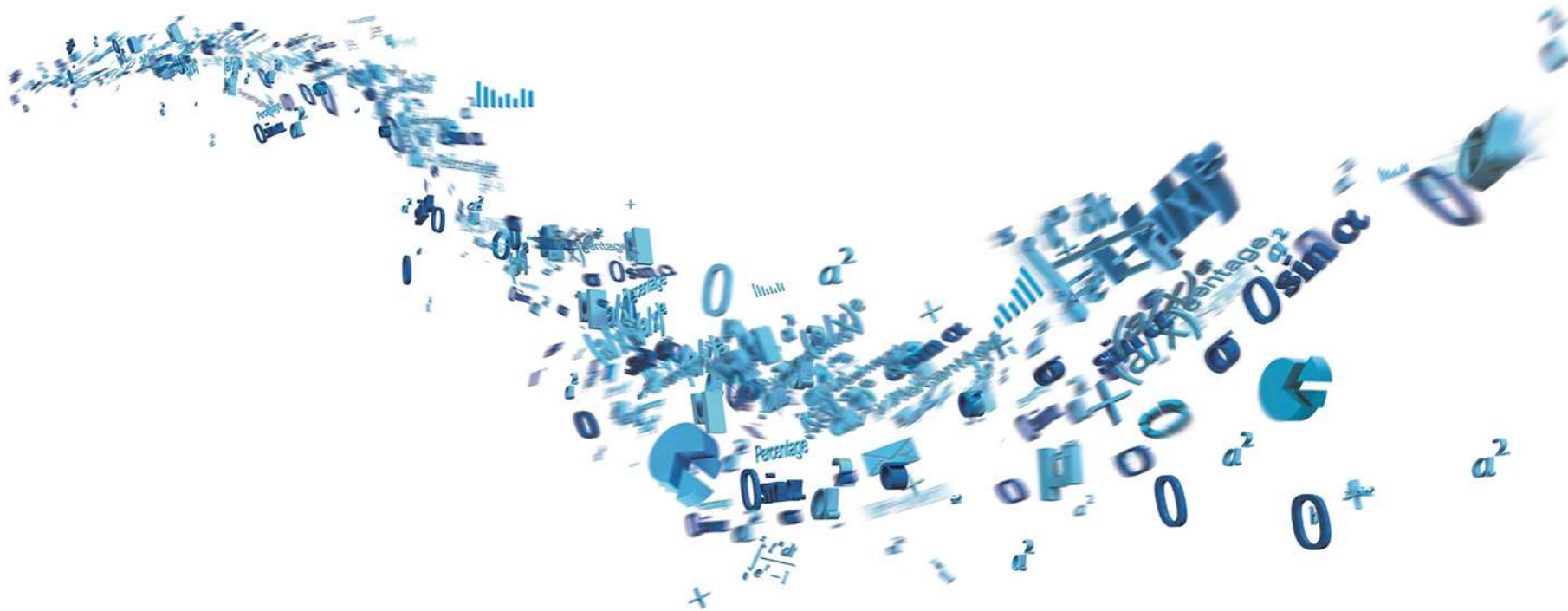
176 Above fees reflect only the current base management fee and excludes any performance fee arrangement.

Fee Schedule

	Fee Schedule	Market Value As of 06/30/2019 \$000	Estimated Annual Fee \$000	Estimated Annual Fee (%)
BlackRock	0.20 % of First \$200 M 0.15 % of Next \$200 M 0.10 % of Next \$400 M 0.08 % Thereafter	405,932	706	0.17
Loomis Sayles	0.50 % of First \$20 M 0.40 % of Next \$30 M 0.30 % Thereafter	423,477	1,340	0.32
Putnam	0.40 % of First \$100 M 0.35 % of Next \$150 M 0.30 % of Next \$250 M 0.25 % Thereafter	367,500	1,278	0.35
SSgA Aggregate Bond Index	0.04 % of First \$100 M 0.02 % Thereafter	648,969	145	0.02
Wellington Global Total Return	0.30 % of Assets	339,432	1,018	0.30
Reams Core Plus Bond Fund	0.20 % of Assets	354,772	710	0.20
BRS Recycling Tax Credit		192,000	-	-
BRS Recycling Tax Credit Phase 2		77,032	-	-
Opportunistic/Alternatives		1,009,298	14,228	1.41
Anchorage	2.00 % of Assets	77,393	1,548	2.00
York	1.50 % of Assets	69,143	1,037	1.50
Capula	2.00 % of Assets	81,075	1,622	2.00
Graham	2.00 % of Assets	60,421	1,208	2.00
Circumference Group Core Value	1.50 % of Assets	28,361	425	1.50
Aeolus Keystone Fund	2.00 % of Assets	281,232	5,625	2.00
Nephila Rubik Holdings	1.50 % of Assets	43,950	659	1.50
Parametric Global Defensive Equity Fund	0.40 % of First \$150 M 0.35 % Thereafter	165,734	655	0.40
Circumference Group Equity Opportunity Fund		1,778	-	-
Man Alternative Risk Premia	0.85 % of Assets	98,883	841	0.85
CFM ISD Fund 1.5x	0.60 % of Assets	101,326	608	0.60

177 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 June 1, 2019, the Total Equity Performance Benchmark was comprised of 29.2% DJ U.S. Total Stock Market Index and 70.8% 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 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 USD-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 USD investment grade 144A securities.

Bloomberg Barclays Global Treasury Ex-US - The Barclays Global Treasury ex US Index is a subset of the flagship Global Treasury Index that does not have any exposure to US 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 million 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 million 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 million 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 million 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 million 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 million 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 US Large Cap Index - an index comprised of nearly 640 US large cap companies and includes securities traded on NYSE, NYSEMarket, 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 US 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 US 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 US 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 US 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 equity-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 million 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 US Dollar and have a minimum of \$50 Million 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-US 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 million 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@aonhewitt.com for more index information.

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 AHIC's investment advisory fees or other trust payable expenses you may incur as a client. AHIC's 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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Aon Hewitt Investment Consulting, Inc.
200 East Randolph Street
Suite 1500
Chicago, IL 60601
ATTN: AHIC Compliance Officer



Arkansas Teacher Retirement System | August 31, 2019

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.

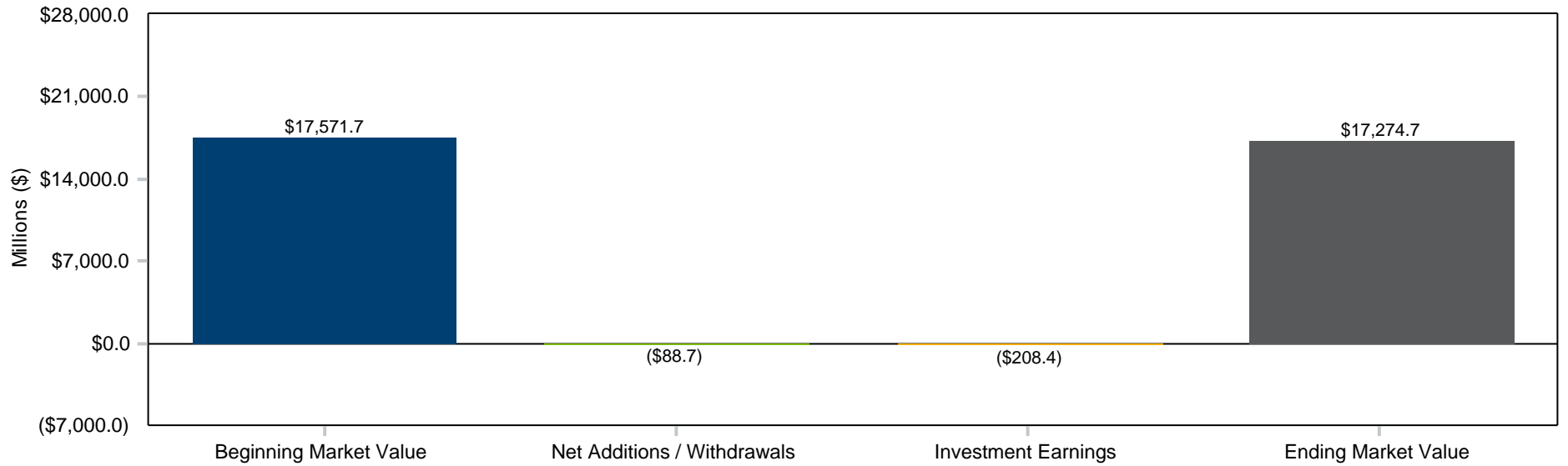
As of August 31, 2019

Market Environment

	Performance(%)					
	1 Month	Year To Date	1 Year	3 Years	5 Years	10 Years
Dow Jones U.S. Total Stock Market Index	-2.0	18.0	1.2	12.2	9.5	13.4
S&P 500 Index	-1.6	18.3	2.9	12.7	10.1	13.4
Russell 1000 Index	-1.8	18.5	2.5	12.6	9.8	13.5
Russell 1000 Value Index	-2.9	13.8	0.6	8.1	6.6	11.5
Russell 1000 Growth Index	-0.8	23.3	4.3	17.0	13.1	15.4
Russell 2000 Index	-4.9	11.8	-12.9	7.9	6.4	11.6
Russell 2000 Value Index	-5.6	7.3	-14.9	5.1	4.6	10.0
Russell 2000 Growth Index	-4.3	16.3	-11.0	10.6	8.1	13.1
MSCI AC World IMI (Net)	-2.5	13.5	-1.4	8.9	5.4	8.7
MSCI AC World ex USA IMI (Net)	-3.1	8.6	-4.1	5.7	1.5	4.9
MSCI EAFE Index (Net)	-2.6	9.7	-3.3	5.9	1.9	5.0
MSCI Emerging Markets Index (Net)	-4.9	3.9	-4.4	5.8	0.4	4.1
Blmbg. Barc. U.S. Universal Index	2.3	9.3	10.1	3.4	3.5	4.3
Blmbg. Barc. U.S. Aggregate	2.6	9.1	10.2	3.1	3.3	3.9
Blmbg. Barc. U.S. Government	3.4	8.6	10.3	2.5	3.0	3.2
Blmbg. Barc. Credit Bond Index	3.1	13.4	13.0	4.5	4.4	5.6
Blmbg. Barc. U.S. Mortgage Backed Securities	0.9	5.5	7.1	2.4	2.8	3.2
Blmbg. Barc. U.S. Corp: High Yield	0.4	11.0	6.6	6.2	4.9	8.5
Citigroup 90-Day T-Bill	0.2	1.6	2.4	1.5	0.9	0.5

Total Plan Asset Summary

**Change in Market Value
From August 1, 2019 to August 31, 2019**



Summary of Cash Flow

	1 Month	Year To Date	1 Year
Total Fund			
Beginning Market Value	17,571,712,798	16,047,375,068	17,757,008,025
+ Additions / Withdrawals	-88,662,683	-437,426,858	-711,523,837
+ Investment Earnings	-208,360,067	1,664,741,837	229,205,860
= Ending Market Value	17,274,690,047	17,274,690,047	17,274,690,047

As of August 31, 2019

Asset Allocation & Performance

	Allocation			Performance(%)								
	Market Value (\$)	%	Policy(%)	1 Month	Fiscal YTD	Year To Date	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Total Fund	17,274,690,047	100.0	100.0	-1.2	-0.7	10.2	1.2	9.1	7.1	9.5	8.4	04/01/1986
Performance Benchmark				-1.0	-0.5	10.7	3.0	8.4	6.8	9.4	8.5	
Total Equity	9,090,395,493	52.6	54.9	-2.7	-1.9	15.9	-2.4	10.1	6.8	10.6	7.4	07/01/2015
Total Equity Performance Benchmark				-2.4	-1.7	14.9	-0.6	9.9	6.9	10.6	7.8	
Fixed Income	2,790,485,437	16.2	15.0	1.5	1.8	7.2	7.7	4.5	3.7	5.2	5.5	07/01/1992
Performance Benchmark				2.3	2.6	9.3	10.1	3.4	3.5	4.3	5.7	
Opportunistic/Alternatives	1,010,541,226	5.8	5.8	0.3	1.0	4.6	-0.5	2.1	2.3		3.7	05/01/2011
Custom Alternatives Benchmark				-0.1	0.6	5.4	2.1	2.7	1.3		1.8	
Real Assets	2,165,844,199	12.5	12.3									
Real Estate	1,410,093,222	8.2										
Timber	262,601,125	1.5										
Agriculture	196,523,938	1.1										
Infrastructure	296,625,914	1.7										
Private Equity	2,144,429,898	12.4	12.0									
Cash	72,993,794	0.4	0.0									

***Preliminary Results**

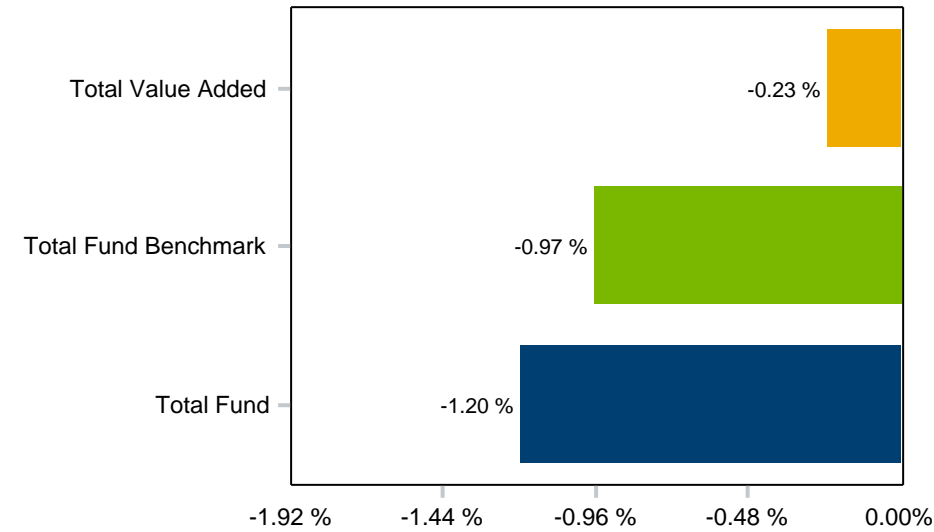
*Policy % is the interim target used for benchmarking purposes. See page 17 for long-term targets. Beginning July 1, 2013, an updated Investment Policy was adopted which includes the new Real Assets category, which includes Real Estate, Timber, Agriculture and Infrastructure.

*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.

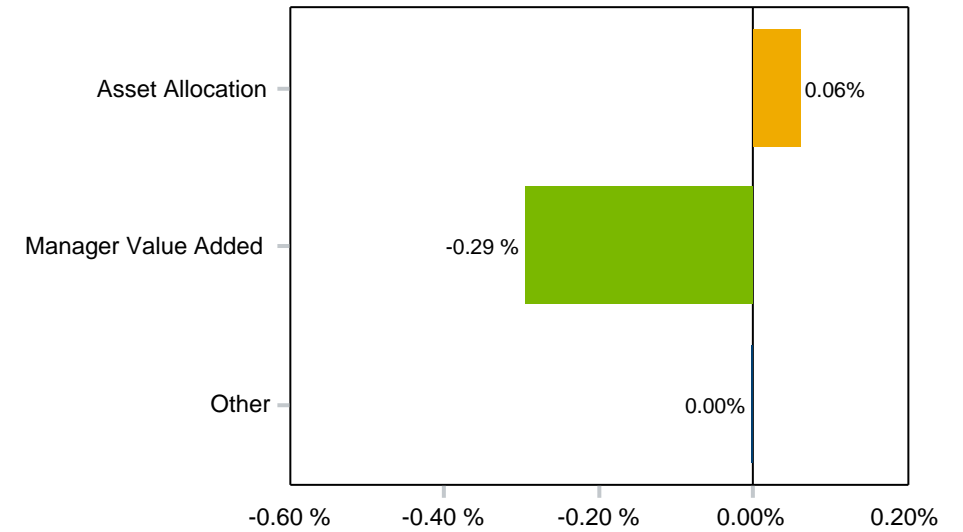
*The inception of the Total Equity asset class was July 1, 2015. Performance prior to July 2015 represents the weighted average of the U.S. Equity and Global Equity asset class monthly returns. For historical performance of the U.S. Equity and Global Equity asset classes please see page 21 of this report.

Total Fund Attribution

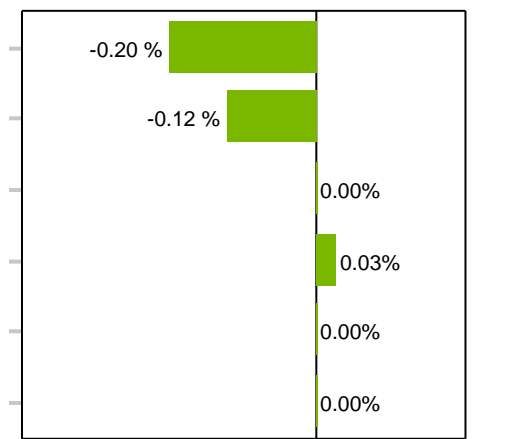
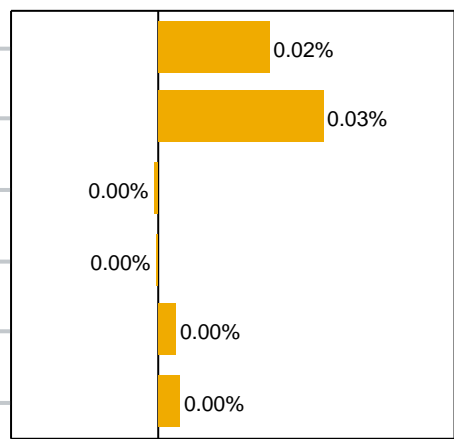
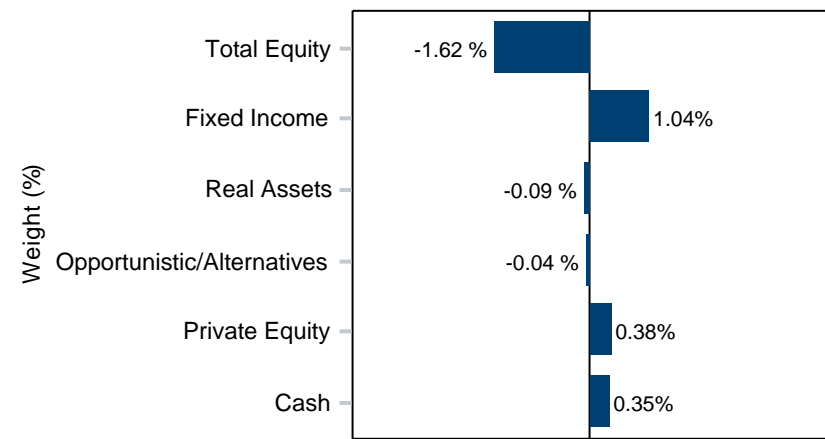
Total Fund Performance



Total Value Added:-0.23 %



Total Asset Allocation:0.06% Total Manager Value Added:-0.29 %



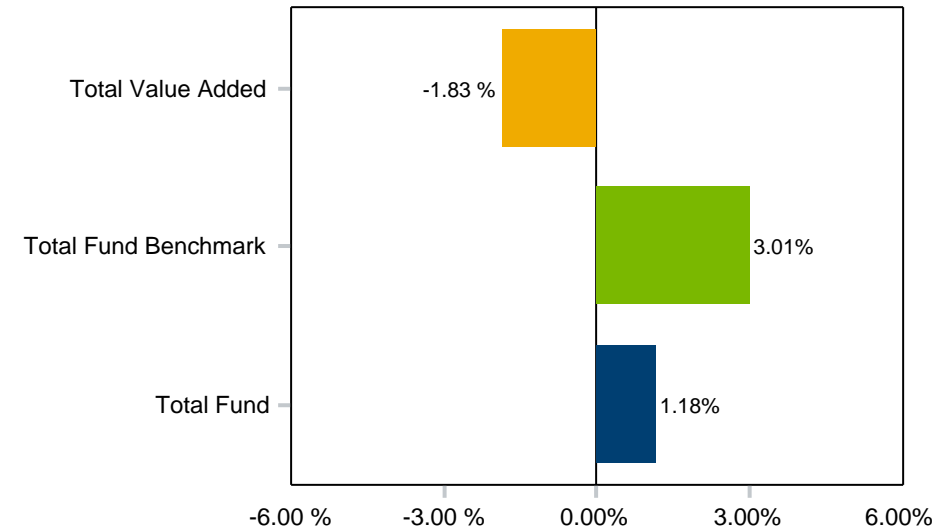
Average Active Weight

Asset Allocation Value Added

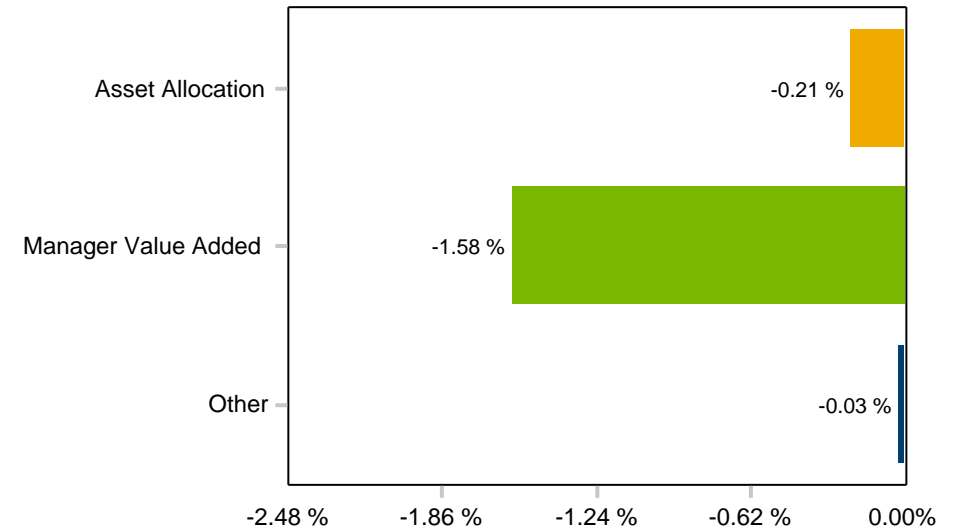
Manager Value Added

Total Fund Attribution

Total Fund Performance

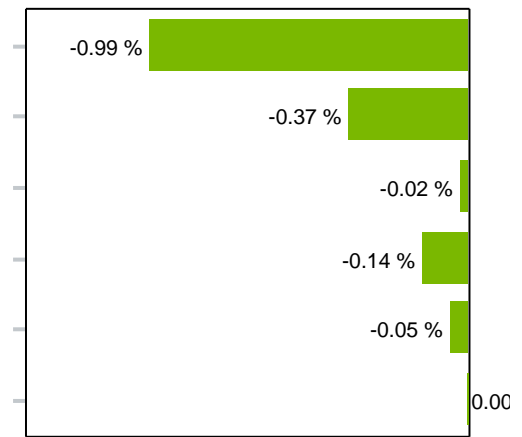
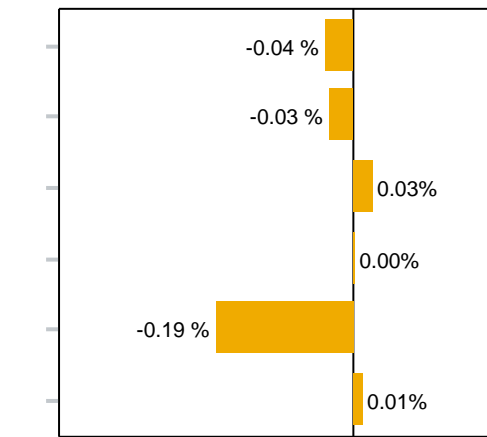
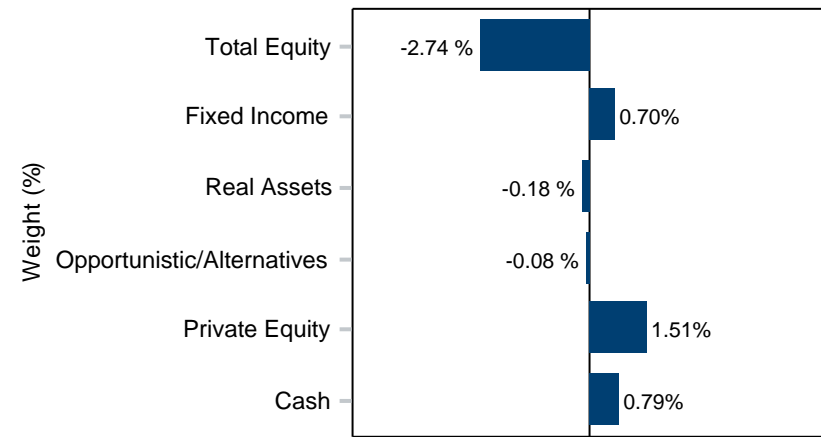


Total Value Added: -1.83 %



Total Asset Allocation: -0.21 %

Total Manager Value Added: -1.58 %



Average Active Weight

Asset Allocation Value Added

Manager Value Added

As of August 31, 2019

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Fiscal YTD	Year To Date	1 Year	3 Years	5 Years	Since Inception	Inception Date
Total Equity	9,090,395,493	100.0	-2.7	-1.9	15.9	-2.4	10.1	6.8	7.4	07/01/2015
Total Equity Performance Benchmark			-2.4	-1.7	14.9	-0.6	9.9	6.9	7.8	
Jacobs Levy 130/30	616,039,107	6.8	-3.0	-0.5	17.6	-2.7	13.9	13.6	9.9	01/01/2008
Russell 3000 Index			-2.0	-0.6	18.0	1.3	12.2	9.6	8.4	
Allianz Structured Alpha U.S. 250	176,226,406	1.9	-1.8	-0.1	21.3	2.8	14.0	11.9	17.7	05/01/2009
S&P 500 Index			-1.6	-0.2	18.3	2.9	12.7	10.1	14.8	
Allianz Structured Alpha Global 500	815,858,305	9.0	-2.7	-2.0	19.0	-1.0	11.6		13.3	10/01/2015
MSCI AC World IMI (Net)			-2.5	-2.2	13.5	-1.4	8.9		9.7	
Allianz Structured Alpha Global 350	432,405,916	4.8	-2.7	-2.2	17.2	-1.1			11.5	12/01/2016
MSCI AC World IMI (Net)			-2.5	-2.2	13.5	-1.4			9.8	
Kennedy Capital Management	505,124,678	5.6	-5.4	-5.0	10.6	-15.1	4.4	3.6	11.8	01/01/1994
Russell 2000 Value Index			-5.6	-5.4	7.3	-14.9	5.1	4.6	9.2	
Stephens	417,164,248	4.6	-4.9	-3.1	19.4	-6.9	14.8	9.6	9.8	08/01/2006
Russell 2000 Growth Index			-4.3	-3.4	16.3	-11.0	10.6	8.1	8.9	
Voya Absolute Return	530,537,244	5.8	-2.8	-2.4	12.9	-2.0	8.6	7.4	9.9	10/01/2008
Performance Benchmark Voya Absolute Return			-2.4	-2.1	13.8	-0.3	9.2	7.6	10.0	
Allianz (Nicholas Applegate)	603,942,697	6.6	-0.8	1.3	19.3	8.1	13.3	8.1	9.9	12/01/1998
Performance Benchmark			-1.2	0.4	14.9	4.0	10.6	6.6	7.6	
Pershing Square International	109,806,593	1.2	2.2	4.1	41.2	27.7	12.1	2.0	9.5	07/01/2008
Dow Jones U.S. Total Stock Market Index			-2.0	-0.6	18.0	1.2	12.2	9.5	9.9	
Pershing Square Holdings	133,824,129	1.5	3.7	6.7	46.5	23.4	8.3	-5.0	1.6	01/01/2013
Dow Jones U.S. Total Stock Market Index			-2.0	-0.6	18.0	1.2	12.2	9.5	13.3	
SSgA Global Index	867,840,038	9.5	-2.5	-2.2	13.8	-1.0	9.2	5.8	5.8	04/01/2008
MSCI AC World IMI (Net)			-2.5	-2.2	13.5	-1.4	8.9	5.4	5.4	
BlackRock MSCI ACWI IMI Fund	311,546,633	3.4	-2.5	-2.2	13.3	-1.4	9.0	5.6	7.5	07/01/2011
MSCI AC World IMI (Net)			-2.5	-2.2	13.5	-1.4	8.9	5.4	7.2	

200

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 August 31, 2019

Asset Allocation & Performance

	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Fiscal YTD	Year To Date	1 Year	3 Years	5 Years	Since Inception	Inception Date
Wellington Global Perspectives	512,291,272	5.6	-4.5	-3.5	10.0	-9.8	8.1	5.0	13.1	07/01/2009
Performance Benchmark			-3.6	-3.2	11.3	-8.8	6.8	4.6	10.6	
T. Rowe Price Global Equity	884,520,327	9.7	-2.3	-1.3	20.0	1.4	15.9	11.6	12.6	08/01/2009
MSCI AC World Index (Net)			-2.4	-2.1	13.8	-0.3	9.2	5.5	8.9	
MSCI AC World Index Growth (Net)			-1.3	-0.3	19.7	2.0	12.1	8.2	10.6	
Lazard	540,266,293	5.9	-3.6	-3.3	12.7	-1.0	9.1	5.5	8.4	08/01/2009
MSCI AC World Index (Net)			-2.4	-2.1	13.8	-0.3	9.2	5.5	8.9	
D.E. Shaw	675,693,891	7.4	-2.1	-2.1	12.0	-4.0	9.8	7.3	10.6	09/01/2009
MSCI World Index (Net)			-2.0	-1.6	15.2	0.3	9.6	6.1	9.2	
GMO Global All Country Equity	394,387,701	4.3	-3.4	-4.1	9.7	-3.4	6.7	2.8	2.5	07/01/2014
MSCI AC World Index (Net)			-2.4	-2.1	13.8	-0.3	9.2	5.5	5.5	
MSCI AC World Index Value (Net)			-3.5	-3.9	8.0	-2.6	6.2	2.8	2.9	
Harris Global Equity	425,920,787	4.7	-3.5	-3.4	12.4	-6.5	7.6	4.1	3.8	06/01/2014
MSCI World Index (Net)			-2.0	-1.6	15.2	0.3	9.6	6.1	6.3	
MSCI World Value (Net)			-3.1	-3.3	9.2	-2.2	6.4	3.4	3.6	
Triam Partners	68,295,719	0.8	1.5	2.2	21.3	10.4	8.3		8.5	11/01/2015
S&P 500 Index			-1.6	-0.2	18.3	2.9	12.7		11.6	
Triam Co-Investments	68,633,221	0.8	1.2	3.9	22.9	12.5			4.2	01/01/2017
S&P 500 Index			-1.6	-0.2	18.3	2.9			12.8	

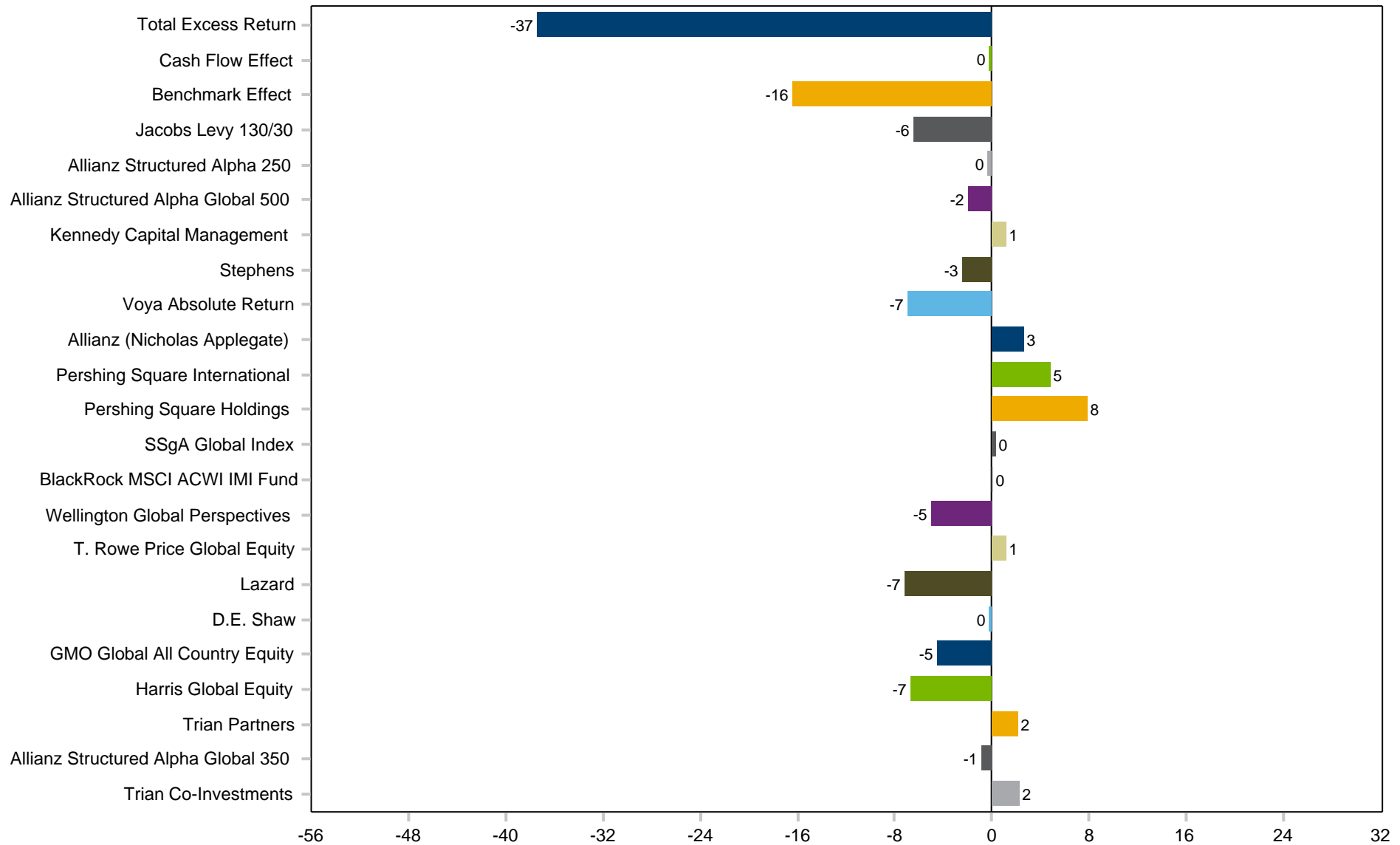
2019

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.

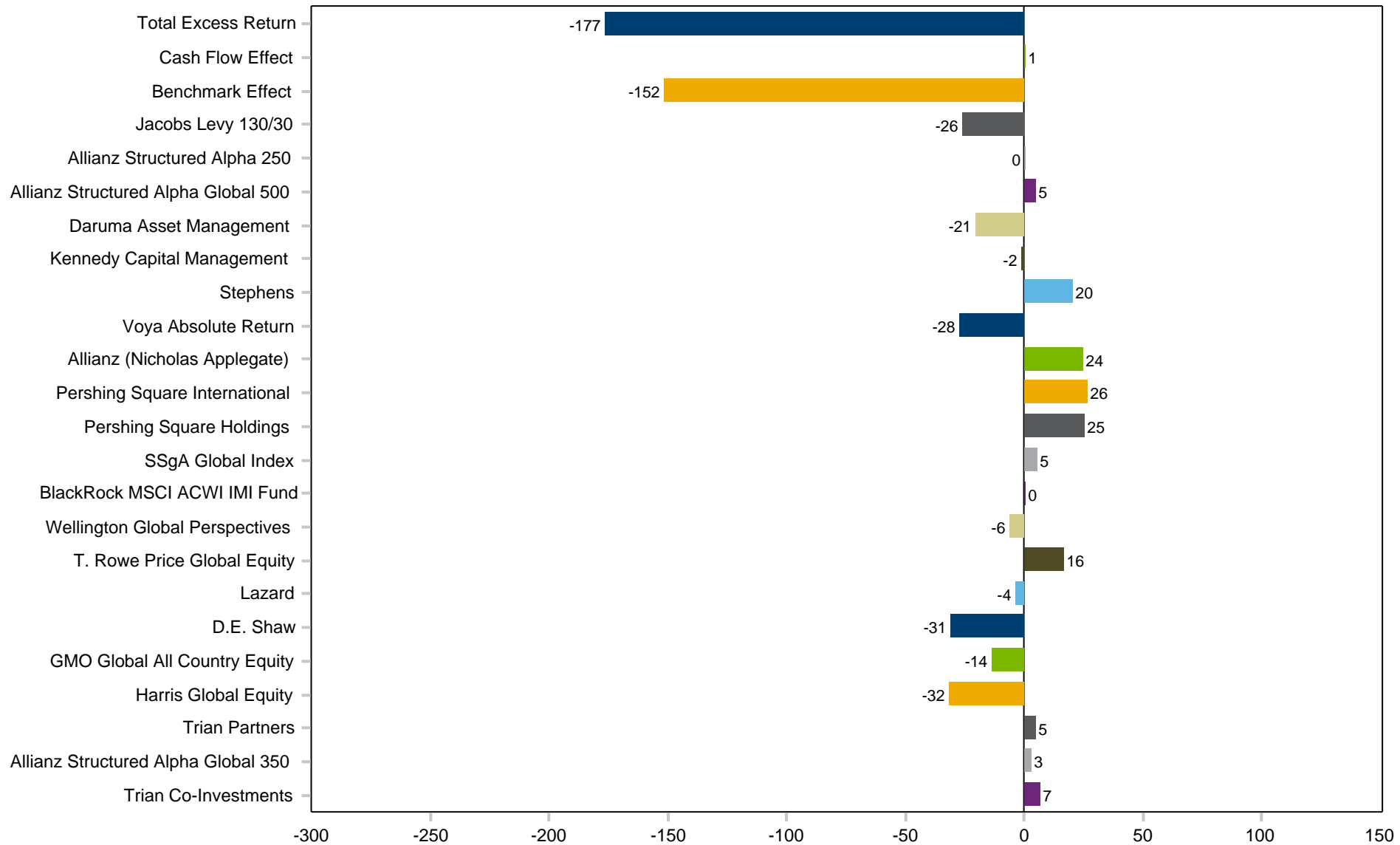
Asset Class Attribution

1 Month



Asset Class Attribution

1 Year



As of August 31, 2019

Asset Allocation & Performance

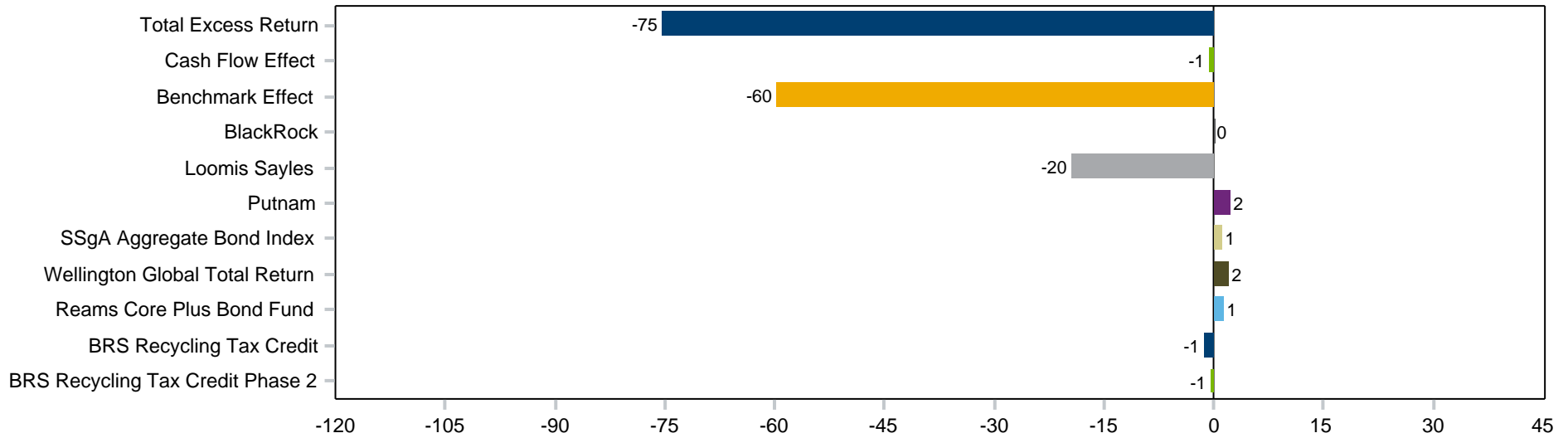
	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Fiscal YTD	Year To Date	1 Year	3 Years	5 Years	Since Inception	Inception Date
Fixed Income	2,790,485,437	100.0	1.5	1.8	7.2	7.7	4.5	3.7	5.5	07/01/1992
Performance Benchmark			2.3	2.6	9.3	10.1	3.4	3.5	5.7	
BlackRock	416,562,718	14.9	2.3	2.6	9.3	10.0	3.2	3.6	4.7	10/01/2003
Performance Benchmark			2.3	2.6	9.3	10.1	3.4	3.5	4.5	
Loomis Sayles	429,190,502	15.4	1.0	1.3	8.4	8.2	5.0	4.1	8.3	09/01/2008
Performance Benchmark			2.3	2.6	10.8	9.8	4.4	4.1	5.9	
Putnam	372,450,000	13.3	0.4	1.3	6.6	4.8	4.9	2.5	3.2	08/01/2008
LIBOR			0.2	0.4	1.9	2.6	1.8	1.2	0.9	
SSgA Aggregate Bond Index	597,040,229	21.4	2.6	2.9	9.2	10.2	3.1	3.4	3.7	06/01/2010
Blmbg. Barc. U.S. Aggregate			2.6	2.8	9.1	10.2	3.1	3.3	3.7	
Wellington Global Total Return	342,147,198	12.3	0.4	0.7	3.5	5.0	3.6	2.5	2.3	06/01/2014
ICE BofAML 3 Month U.S. T-Bill			0.2	0.4	1.6	2.4	1.5	0.9	0.9	
Reams Core Plus Bond Fund	364,063,182	13.0	2.7	2.6	9.0	11.0	3.5	3.6	3.5	06/01/2014
Blmbg. Barc. U.S. Aggregate			2.6	2.8	9.1	10.2	3.1	3.3	3.4	
BRS Recycling Tax Credit	192,000,000	6.9								
BRS Recycling Tax Credit Phase 2	77,031,608	2.8								

*Preliminary Results

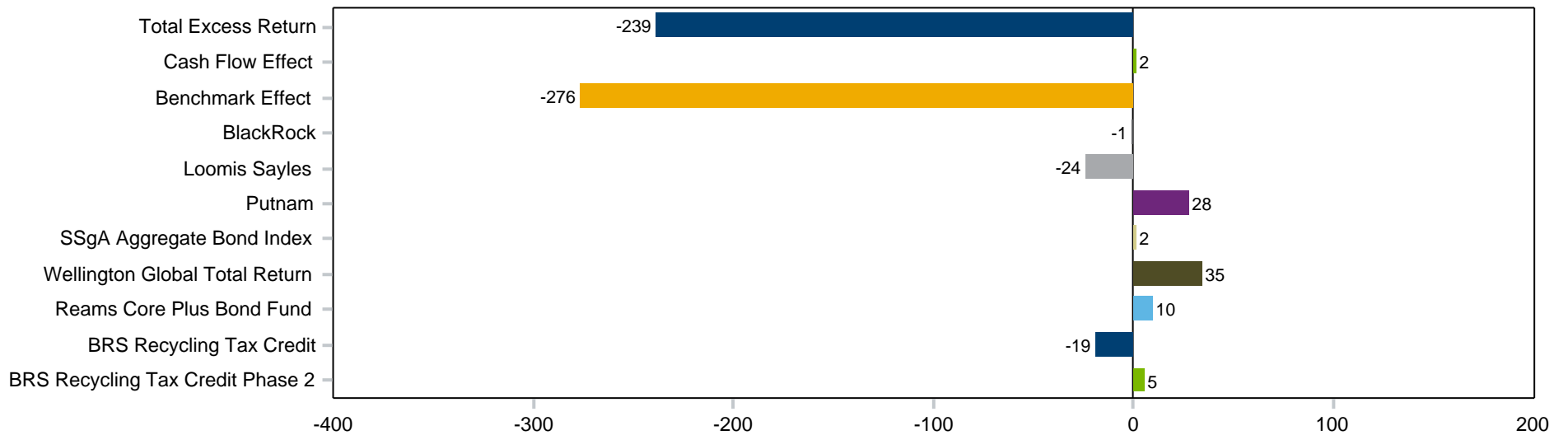
*The BRS Recycling Tax Credit represents an annual income stream of \$16 million dollars over the next 14 years, which ATRS purchased for approximately \$162 million. The value shown above represents the year-end market value in accordance with GASB Statement 72, representing the 14 years of annual income,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

Asset Class Attribution

1 Month



1 Year



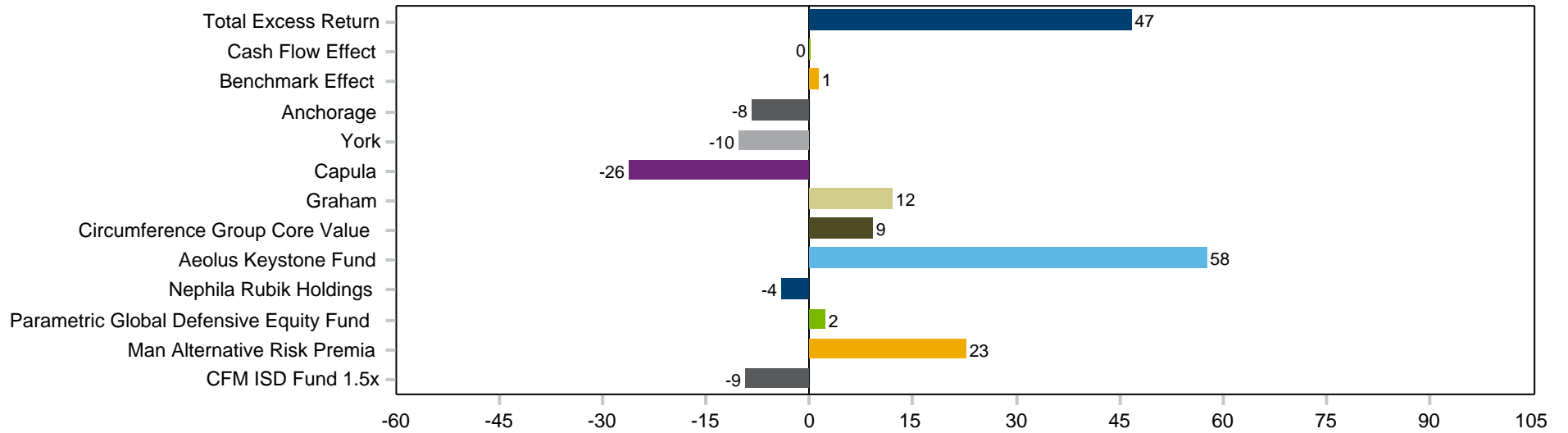
As of August 31, 2019

Asset Allocation & Performance

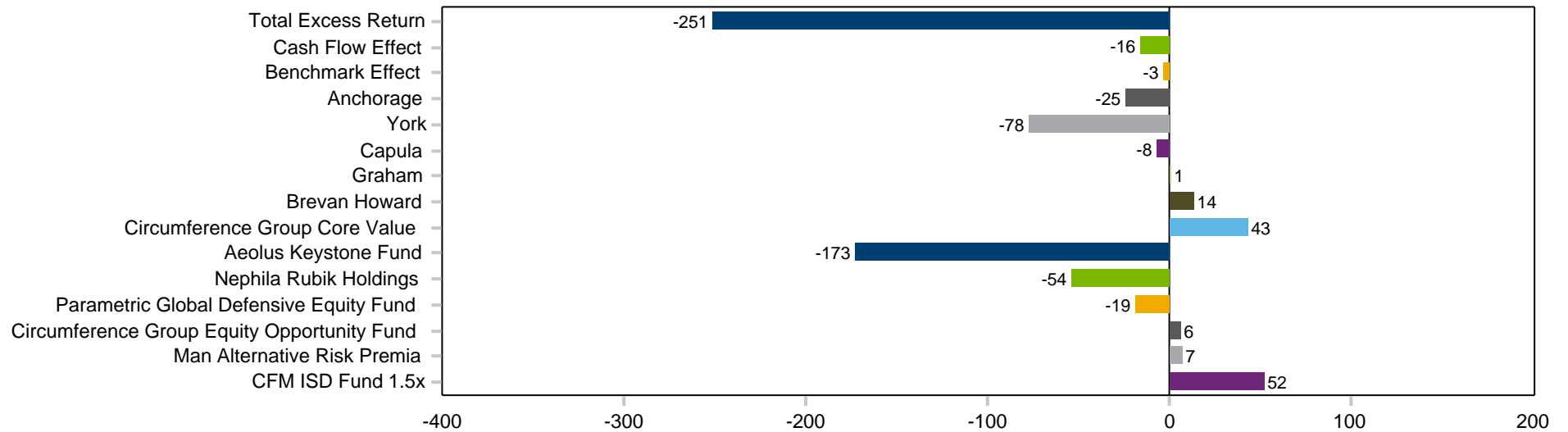
	Allocation		Performance(%)							
	Market Value (\$)	%	1 Month	Fiscal YTD	Year To Date	1 Year	3 Years	5 Years	Since Inception	Inception Date
Opportunistic/Alternatives	1,010,541,226	100.0	0.3	1.0	4.6	-0.5	2.1	2.3	3.7	05/01/2011
Custom Alternatives Benchmark			-0.1	0.6	5.4	2.1	2.7	1.3	1.8	
Anchorage	74,876,479	7.4	-2.4	-3.3	-1.0	-3.5	2.6	1.9	5.0	05/01/2011
Credit Suisse Event Driven			-1.2	-1.4	5.9	-0.4	3.4	0.1	2.0	
HFRI ED: Distressed/Restructuring Index			-0.5	-0.8	3.9	-0.9	5.1	1.6	3.4	
York	65,276,665	6.5	-2.8	-5.6	-3.6	-10.7	3.5	-1.5	3.2	05/01/2011
Credit Suisse Event Driven			-1.2	-1.4	5.9	-0.4	3.4	0.1	2.0	
HFRI ED: Distressed/Restructuring Index			-0.5	-0.8	3.9	-0.9	5.1	1.6	3.4	
Capula	81,752,282	8.1	0.0	0.8	4.8	6.0	5.8	6.6	6.0	05/01/2011
HFRI Macro (Total) Index			3.3	4.6	9.8	6.9	2.1	2.1	0.7	
Graham	63,363,035	6.3	5.3	4.9	16.4	7.1	3.8	5.7	2.7	05/01/2011
HFRI Macro (Total) Index			3.3	4.6	9.8	6.9	2.1	2.1	0.7	
Circumference Group Core Value	28,229,520	2.8	-1.7	-0.5	6.3	2.7	9.2		8.5	08/01/2015
Russell 2000 Index			-4.9	-4.4	11.8	-12.9	7.9		6.2	
Aeolus Keystone Fund	283,181,873	28.0	2.3	3.3	2.8	-5.5	-5.2		-2.2	12/01/2015
FTSE 3 Month T-Bill			0.2	0.4	1.6	2.4	1.5		1.2	
Eurekahedge ILS Advisers Index			0.0	0.4	-0.7	-6.1	-2.8		-1.4	
Nephila Rubik Holdings	44,253,487	4.4	-0.7	0.7	3.2	-8.4	-4.3		-3.7	06/01/2016
FTSE 3 Month T-Bill			0.2	0.4	1.6	2.4	1.5		1.4	
Eurekahedge ILS Advisers Index			0.0	0.4	-0.7	-6.1	-2.8		-2.1	
Parametric Global Defensive Equity Fund	164,584,431	16.3	-0.9	-0.7	7.5	0.5			4.2	06/01/2017
Performance Benchmark			-1.1	-0.8	8.0	1.7			4.6	
MSCI AC World Index			-2.3	-2.0	14.3	0.3			7.0	
Man Alternative Risk Premia	101,288,338	10.0	1.6	2.4	6.7	3.5			1.6	06/01/2018
SG Multi Alternative Risk Premia Index			-0.7	1.4	4.1	2.7			1.0	
CFM ISD Fund 1.5x	103,735,117	10.3	-1.6	2.4	6.4	8.0			4.5	07/01/2018
SG Multi Alternative Risk Premia Index			-0.7	1.4	4.1	2.7			1.5	

Asset Class Attribution

1 Month



1 Year



Asset Allocation as of 8/31/2019	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	\$616,039.1	--	--	--	--	\$616,039.1	3.57%		
Allianz Structured Alpha U.S. 250	\$176,226.4	--	--	--	--	\$176,226.4	1.02%		
Allianz Structured Alpha Global 500	\$815,858.3	--	--	--	--	\$815,858.3	4.72%		
Allianz Structured Alpha Global 350	\$432,405.9	--	--	--	--	\$432,405.9	2.50%		
Kennedy Capital Management	\$505,124.7	--	--	--	--	\$505,124.7	2.92%		
Stephens	\$417,164.2	--	--	--	--	\$417,164.2	2.41%		
Voya Absolute Return	\$530,537.2	--	--	--	--	\$530,537.2	3.07%		
Allianz (Nicholas Applegate)	\$603,942.7	--	--	--	--	\$603,942.7	3.50%		
Pershing Square International	\$109,806.6	--	--	--	--	\$109,806.6	0.64%		
Pershing Square Holdings	\$133,824.1	--	--	--	--	\$133,824.1	0.77%		
SSgA Global Index	\$867,840.0	--	--	--	--	\$867,840.0	5.02%		
BlackRock MSCI ACWI IMI Fund	\$311,546.6	--	--	--	--	\$311,546.6	1.80%		
Wellington Global Perspectives	\$512,291.3	--	--	--	--	\$512,291.3	2.97%		
T. Rowe Price Global Equity	\$884,520.3	--	--	--	--	\$884,520.3	5.12%		
Lazard	\$540,266.3	--	--	--	--	\$540,266.3	3.13%		
D.E. Shaw	\$675,693.9	--	--	--	--	\$675,693.9	3.91%		
GMO Global All Country Equity	\$394,387.7	--	--	--	--	\$394,387.7	2.28%		
Harris Global Equity	\$425,920.8	--	--	--	--	\$425,920.8	2.47%		
Triam Partners	\$68,295.7	--	--	--	--	\$68,295.7	0.40%		
Triam Partners Co-Investments	\$68,633.2	--	--	--	--	\$68,633.2	0.40%		
Capital Guardian, Knight Vinke, & Relational	\$70.3	--	--	--	--	\$70.3	0.00%		
Total Equity						\$9,090,395.5	52.62%	54.87%	53.00%
BlackRock	--	\$416,562.7	--	--	--	\$416,562.7	2.41%		
Loomis Sayles	--	\$429,190.5	--	--	--	\$429,190.5	2.48%		
Putnam	--	\$372,450.0	--	--	--	\$372,450.0	2.16%		
SSgA Aggregate Bond Index	--	\$597,040.2	--	--	--	\$597,040.2	3.46%		
Wellington Global Total Return	--	\$342,147.2	--	--	--	\$342,147.2	1.98%		
Reams Core Plus Bond Fund	--	\$364,063.2	--	--	--	\$364,063.2	2.11%		
BRS Recycling Tax Credit	--	\$192,000.0	--	--	--	\$192,000.0	1.11%		
BRS Recycling Tax Credit Phase 2	--	\$77,031.6	--	--	--	\$77,031.6	0.45%		
Total Fixed Income						\$2,790,485.4	16.15%	15.00%	15.00%
Anchorage	--	--	--	\$74,876.5	--	\$74,876.5	0.43%		
Capula	--	--	--	\$81,752.3	--	\$81,752.3	0.47%		
Graham	--	--	--	\$63,363.0	--	\$63,363.0	0.37%		
York	--	--	--	\$65,276.7	--	\$65,276.7	0.38%		
Circumference Group Core Value	--	--	--	\$28,229.5	--	\$28,229.5	0.16%		
Aeolus Keystone Fund	--	--	--	\$283,181.9	--	\$283,181.9	1.64%		
Nephila Rubik Holdings	--	--	--	\$44,253.5	--	\$44,253.5	0.26%		
Parametric Global Defensive Equity	--	--	--	\$164,584.4	--	\$164,584.4	0.95%		
Man Alternative Risk Premia	--	--	--	\$101,288.3	--	\$101,288.3	0.59%		
CFM ISD Fund 1.5x	--	--	--	\$103,735.1	--	\$103,735.1	0.60%		
Total Opportunistic/Alternatives						\$1,010,541.2	5.85%	5.81%	5.00%
Real Estate			\$1,410,093.2			\$1,410,093.2	8.16%		
Timber			\$262,601.1			\$262,601.1	1.52%		
Agriculture			\$196,523.9			\$196,523.9	1.14%		
Infrastructure			\$296,625.9			\$296,625.9	1.72%		
Total Real Assets						\$2,165,844.2	12.54%	12.33%	15.00%
Total Private Equity				\$2,144,429.9		\$2,144,429.9	12.41%	12.00%	12.00%
Total Cash					\$72,993.8	\$72,993.8	0.42%	0.00%	0.00%
Total Fund	\$9,090,395.5	\$2,790,485.4	\$2,165,844.2	\$3,154,971.1	\$72,993.8	\$17,274,690.0	100.0%	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 8/31/2019				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	\$1,812.7	0.13%	0.01%	LaSalle Income & Growth Fund VII	\$13,190.8	0.94%	0.08%
Almanac Realty Securities Fund VI	\$8,079.6	0.57%	0.05%	Lone Star Real Estate Fund IV	\$10,082.7	0.72%	0.06%
Almanac Realty Securities Fund VII	\$23,214.2	1.65%	0.13%	Long Wharf Real Estate Partners V	\$25,252.4	1.79%	0.15%
Almanac Realty Securities Fund VIII	\$1,296.6	0.09%	0.01%	Metropolitan RE Co-Investments	\$13,029.5	0.92%	0.08%
American Center	\$69,407.3	4.92%	0.40%	Met Life Commercial Mtg Inc Fund	\$50,000.0	3.55%	0.29%
AR Insurance	\$7,014.7	0.50%	0.04%	New Boston Fund VII	\$113.5	0.01%	0.00%
AR Teachers Retirement Building	\$5,088.2	0.36%	0.03%	O'Connor NAPP II	\$10,580.4	0.75%	0.06%
Blackstone Real Estate Partners VII	\$28,286.9	2.01%	0.16%	Olympus	\$355.4	0.03%	0.00%
Carlyle Realty Partners VII	\$17,249.9	1.22%	0.10%	PRISA	\$270,809.7	19.21%	1.57%
Carlyle Realty VIII	\$3,207.4	0.23%	0.02%	Recoveries Land	\$84.0	0.01%	0.00%
CBREI SP U.S. Opportunity V	\$10,114.6	0.72%	0.06%	Rockwood Capital RE Partners IX	\$10,517.3	0.75%	0.06%
CBREI SP VIII	\$22,473.6	1.59%	0.13%	Rose Law Firm	\$4,632.9	0.33%	0.03%
Cerberus Institutional RE Partners III	\$14,420.3	1.02%	0.08%	Texarkana DHS	\$1,807.0	0.13%	0.01%
Chenal Retirement Village	\$1,900.0	0.13%	0.01%	Torchlight Debt Opportunity Fund II	\$486.3	0.03%	0.00%
Calmwater	\$19,172.3	1.36%	0.11%	Torchlight Debt Opportunity Fund III	\$0.0	0.00%	0.00%
Fletcher Properties	\$1,296.8	0.09%	0.01%	Torchlight Debt Opportunity Fund IV	\$7,284.6	0.52%	0.04%
FPA Core Plus IV	\$18,207.8	1.29%	0.11%	Torchlight Debt Opportunity Fund V	\$12,040.6	0.85%	0.07%
Harbert European Real Estate	\$28,102.3	1.99%	0.16%	Torchlight Debt Opportunity Fund VI	\$8,114.8	0.58%	0.05%
Heitman European Property IV	\$3,573.5	0.25%	0.02%	UBS Trumbull Property Fund	\$249,985.3	17.73%	1.45%
JP Morgan Strategic Property Fund	\$279,797.5	19.84%	1.62%	UBS Trumbull Property Income Fund	\$51,965.4	3.69%	0.30%
Kayne Anderson V	\$12,397.6	0.88%	0.07%	Victory	\$32,912.9	2.33%	0.19%
Landmark Fund VI	\$3,599.1	0.26%	0.02%	Walton Street Real Estate Debt II	\$2,000.0	0.14%	0.01%
Landmark Real Estate VIII	\$5,066.6	0.36%	0.03%	West Mphs. DHS	\$2,371.2	0.17%	0.01%
LaSalle Asia Opportunity Fund IV	\$3,763.9	0.27%	0.02%	Westbrook IX	\$15,077.4	1.07%	0.09%
LaSalle Asia Opportunity Fund V	\$7,122.3	0.51%	0.04%	Westbrook Real Estate Fund X	\$14,102.8	1.00%	0.08%
LaSalle Income & Growth Fund VI	\$7,630.6	0.54%	0.04%	Woodland Heights	\$0.3	0.00%	0.00%
Total Real Estate					\$1,410,093.2	100.00%	8.16%

*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 8/31/2019				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	\$21,613.4	1.01%	0.13%	Insight Equity II	\$25,500.2	1.19%	0.15%
Arlington Capital V	\$187.9	0.01%	0.00%	Insight Mezzanine I	\$3,506.9	0.16%	0.02%
Advent GPE VI	\$6,585.7	0.31%	0.04%	JF Lehman III	\$30,679.9	1.43%	0.18%
Altus Capital II	\$8,326.4	0.39%	0.05%	JF Lehman IV	\$22,202.5	1.04%	0.13%
American Industrial Partners VI	\$19,461.0	0.91%	0.11%	KPS III	\$7,029.5	0.33%	0.04%
Altaris Constellation Partners	\$19,033.3	0.89%	0.11%	KPS IV	\$12,269.0	0.57%	0.07%
Altaris Health Partners IV	\$12,477.2	0.58%	0.07%	Levine Leichtman V	\$16,605.5	0.77%	0.10%
Atlas Capital II	\$13,703.7	0.64%	0.08%	Lime Rock III	\$24,467.9	1.14%	0.14%
Audax Mezzanine III	\$3,267.4	0.15%	0.02%	LLR III	\$9,001.0	0.42%	0.05%
Big River - Equity	\$317,000.0	14.78%	1.84%	NGP IX	\$1,193.4	0.06%	0.01%
Big River - Equity (Phase 2)	\$58,000.0	2.70%	0.34%	NGP X	\$13,543.6	0.63%	0.08%
Big River - Holdings Note 2023	\$12,529.7	0.58%	0.07%	NGP XI	\$27,858.8	1.30%	0.16%
Big River - Holdings Note 3/16/23	\$5,241.4	0.24%	0.03%	NGP XII	\$9,395.7	0.44%	0.05%
Bison V	\$17,594.0	0.82%	0.10%	One Rock Capital Partners II	\$17,596.1	0.82%	0.10%
Boston Ventures VII	\$16,797.4	0.78%	0.10%	PineBridge	\$16,447.1	0.77%	0.10%
Boston Ventures IX	\$13,282.0	0.62%	0.08%	Riverside IV	\$3,356.4	0.16%	0.02%
BV VIII	\$20,395.6	0.95%	0.12%	Riverside V	\$25,022.6	1.17%	0.14%
Castlelake II	\$17,187.7	0.80%	0.10%	Riverside VI	\$3,953.7	0.18%	0.02%
Castlelake III	\$17,590.6	0.82%	0.10%	Siris III	\$14,573.0	0.68%	0.08%
Clearlake V	\$21,302.8	0.99%	0.12%	Siris IV	\$8,807.8	0.41%	0.05%
Court Square III	\$38,973.4	1.82%	0.23%	SK Capital V	\$3,481.4	0.16%	0.02%
CSFB-ATRS 2005-1 Series	\$39,733.5	1.85%	0.23%	Sycamore Partners II	\$18,120.0	0.84%	0.10%
CSFB-ATRS 2006-1 Series	\$92,422.4	4.31%	0.54%	Sycamore Partners III	\$2,700.9	0.13%	0.02%
Diamond State Ventures II	\$6,127.8	0.29%	0.04%	TA XI	\$20,893.5	0.97%	0.12%
Doughty Hanson Tech I	\$441.8	0.02%	0.00%	Tennenbaum VI	\$13,670.7	0.64%	0.08%
DW Healthcare III	\$20,394.8	0.95%	0.12%	Thoma Bravo Discover	\$11,995.0	0.56%	0.07%
DW Healthcare IV	\$28,598.9	1.33%	0.17%	Thoma Bravo Discover II	\$5,595.8	0.26%	0.03%
DW Healthcare V	\$2,013.8	0.09%	0.01%	Thoma Bravo XI	\$25,956.9	1.21%	0.15%
EnCap IX	\$16,507.1	0.77%	0.10%	Thoma Bravo XII	\$33,876.7	1.58%	0.20%
EnCap VIII	\$15,244.6	0.71%	0.09%	Thoma Bravo XIII	\$10,651.3	0.50%	0.06%
EnCap X	\$26,984.9	1.26%	0.16%	Vista Equity III	\$6,017.1	0.28%	0.03%
EnCap XI	\$6,247.9	0.29%	0.04%	Vista Foundation II	\$15,661.1	0.73%	0.09%
Franklin Park Series	\$590,131.4	27.52%	3.42%	Vista Foundation III	\$22,442.1	1.05%	0.13%
GCG	\$20,086.0	0.94%	0.12%	Wellspring V	\$19,274.8	0.90%	0.11%
GTLA Holdings	\$20,000.0	0.93%	0.12%	Wicks IV	\$30,089.9	1.40%	0.17%
Highland	\$64,769.0	3.02%	0.37%	WNG II	\$737.5	0.03%	0.00%
Total Private Equity					\$2,144,429.9	100.00%	12.41%

*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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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 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 August 1, 2019, the Total Equity Performance Benchmark was comprised of 29.7% DJ U.S. Total Stock Market Index and 70.3% 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 Equivalentents - 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 August 31, 2019

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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 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.

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 AHIC's investment advisory fees or other trust payable expenses you may incur as a client. AHIC's 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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Aon Hewitt Investment Consulting, Inc. ("AHIC") is a federally registered investment advisor with the U.S. Securities and Exchange Commission ("SEC"). AHIC is also registered with the Commodity Futures Trade Commission as a commodity pool operator and a commodity trading advisor, and is a member of the National Futures Association. The AHIC ADV Form Part 2A disclosure statement is available upon written request to:

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ATTN: AHIC Compliance Officer

Emerging Manager Report

Arkansas Teacher Retirement System (ATRS)

August 28, 2019

Investment advice and consulting services provided by Aon Hewitt Investment Consulting, Inc., an Aon Company.

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Introduction

Aon Hewitt Investment Consulting (AHIC) serves as the general and real assets investment consultant to the Arkansas Teacher Retirement System (ATRS). Our objective as a consultant is to assist the System in achieving its stated goals and objectives. While the primary goal of ATRS is ultimately to secure the retirement benefits for the members, ATRS also has a formal goal to seek out and consider retaining emerging managers consistent with the Prudent Investor Rule.

AHIC understands and supports ATRS's goal to seek out and consider emerging managers for the investment portfolio. AHIC is also bound by fiduciary requirements and thus all investment manager recommendations, emerging or otherwise, are made in accordance with fiduciary duties.

In accordance with the ATRS Emerging Managers Goal and Acknowledgment Act 304, this report contains information regarding our firm-wide manager research process, including coverage of emerging managers and our ongoing efforts in the space, and provides an update on ATRS's due diligence activity on emerging managers during the 2019 fiscal year.

AHIC Manager Research Overview

Global Investment Management Research Team

AHIC's Global Investment Manager (GIM) Research Team is dedicated exclusively to assisting our clients in selecting best in class investment strategies that most appropriately fit within each client's unique circumstances. Currently, the GIM team is comprised of over 100 dedicated investment professionals who are based across the U.S., Canada U.K., and Continental Europe and cover global markets and products across six broad asset classes.

Investment Manager Database: InView

AHIC maintains an internal, proprietary database, InView, which includes an extensive list of investment managers across asset classes. The database captures quantitative and qualitative information, consultants' notes and comments, and ratings on all managers visited and vetted. Additionally, InView maintains the complete history of our ratings, analysis, and research based on our coverage of these strategies over time.

Across all asset classes, our database contains statistical and product information on over 10,000 investment managers and approximately 24,000 products. The table below details the number of managers and products by asset class.

	InView Database as of 3/31/2019	
	Products	Managers
Equities	6,582	1,376
Fixed Income	2,675	648
Hedge Funds	1,397	739
Private Equity	6,918	2,544
Infrastructure	267	147
Real Estate	4,231	1,313
Multi Asset/DGF/TTAA	772	317
Cash	138	67
Currency	82	58
Commodities	51	30
Other	417	195
Unclassified	231	4,711
Total	23,761	10,012**

**Totals will be less than the sum of asset classes, as managers will have products in more than one asset class.*

Investment Manager Rating Process

The initial phase of our investment manager rating process is our proprietary investment manager screening model called InForm. Our InForm process analyzes available investment manager data and rates each product according to seven factors: business, staff, investment process, investment risk, performance, terms/conditions, and operations. It is performed on a quarterly basis across the global universe of equity and fixed income products. It quickly sifts through thousands of products to identify those worthy of additional research. Leveraging the InForm process allows us to spend valuable client hours performing in-depth research on only the strongest candidates that better serve our clients' needs.

Importantly, our InForm process is inclusive of all managers that elect to provide data, allowing us to identify especially strong and cutting edge, yet perhaps less well-known and/or emerging type investment managers and products. Not only does this ensure emerging managers the ability to be included in our investment manager rating process, we believe the all-inclusive nature our InForm model drives creativity in portfolio design.

The second phase of our manager research process is a more expanded evaluation of the seven aforementioned factors, including an in-depth assessment of operations. Examples of research topics by factor are listed as follows:

- *Business*: Profitability, stability and spread of ownership, client base, remuneration policy
- *Staff*: Quality, depth of resource, team dynamic, staff turnover
- *Investment Process*: Competitive advantage, repeatability, skill, implementation
- *Risk*: Embedded in process, independent verification, mix of measurements
- *Performance Analysis*: Consistent with stated process, risk adjusted, persistent
- *Terms and Conditions*: Client Service, fees, ESG, best practices in documentation
- *Operational Due Diligence*: Operational controls, valuation of assets, independent directors, third-party vendors

Our research team meets and/or has conference calls with investment managers to gather needed information to perform in-depth research and prepare for a detailed rating meeting. A "Buy" rating requires at least one onsite meeting with the manager. All requested information and notes are stored in the InView database.

When full due diligence concludes, the product is then scored and rated through a formal voting process. Each manager must pass our operational due diligence process to receive a "Buy" rating.

Investment Manager Search Process

Our investment manager search process is completely customized to meet the needs and desires of our clients. The steps taken are dependent on the asset class, mandate type, and available strategies in the space, as well as a client's level of desired involvement. The table below summarizes a typical investment manager search and due diligence process. We invite the ATRS Investment Team and Trustees to participate in each step described, or none at all.

Process Step	Description
Determine selection criteria	AHIC works with ATRS to determine selection criteria (e.g., investment style, experience, performance, fees, size, risk, stability of staff). We consider the circumstances of each opportunity and determine which criteria are most important to emphasize. AHIC also opportunistically brings forth investment ideas to ATRS as they are identified.
Identify preliminary candidates	AHIC, in coordination with GIM, screens our InView database to identify preliminary candidates that meet the selection criteria. We also include any candidates that ATRS would like us to consider.
Update information/visit managers	AHIC reviews the information in our databases regarding candidate managers, updates the information, and visits the managers, as needed. While we typically have much of the quantitative data we require to screen managers and assign an initial score, we recognize the importance of a qualitative assessment. It is during this step in a search that we introduce our qualitative assessment. This includes meeting face-to-face with portfolio managers, analysts, traders, and executive management. We also conduct operational due diligence (ODD) on-site visits, which are led by our dedicated team of ODD professionals.
Select and profile finalist candidates	Based on the preceding analysis, AHIC reviews the candidates and proposes finalists to ATRS. AHIC typically narrows the field of candidates to three or four firms, completes a comparative analysis, and considers fit within ATRS's broader portfolio to assist in finalist selection.
Discuss finalist candidates/interview finalists	AHIC discusses the finalist candidate(s) with ATRS and answers any questions. Additionally, we can help organize presentations by finalist candidates at ATRS's offices and participate in any interview process desired.
Select managers	Following the finalist discussion and any finalist meetings, ATRS is in a position to select the manager(s) that best fits its investment structure. AHIC is also in a position to recommend our highest conviction manager based on the above analysis and understanding of ATRS's specific circumstances.

The Townsend Group

The Townsend Group is AHIC's real estate investment management and consulting arm. It's global real estate platform has approximately \$16 billion in assets under management, \$190 billion in advised assets, and approximately 80 investment professionals. In the appendix of this report, we provide highlights of Townsend's manager due diligence process and procedures.

AHIC Emerging Manager Efforts

Alongside ATRS, AHIC is also committed to supporting emerging managers and being proactive in identifying and maintaining knowledge of the emerging manager universe. AHIC has dedicated resources to ensure we expand our existing platform to more broadly reflect the diverse landscape of asset managers. In 2015, AHIC added resources to ensure inclusion of emerging, diverse (MWBE) and responsible investing (RI) managers. Meredith Jones leads these efforts and works closely with AHIC's Global Manager Research Team to ensure comprehensive coverage and knowledge sharing across these efforts. Meredith has also led the development of the firm's emerging and diverse manager program which is highlighted below.

Client Engagement

AHIC engages with clients to fulfill emerging and diverse investor searches. Recent examples include:

- Provided \$119.9B¹ public plan with diverse candidates for two fixed income searches.
- Worked with \$25B² plan to invest \$50m in diverse, female-run fund.
- Working with large DC plan to add diverse managers to line-up³.
- Working with large foundation to provide MWBE investment policy enhancements³.
- Working with large DC plan to add 'Rooney Rule' to investment policy³.

We include in the appendix of this report emerging manager-related projects our firm has completed over recent years.

Education & MWBE Research

AHIC worked with the National Association of Investment Companies (NAIC) to produce "*Examining the Results: The Financial Returns of Diverse Private Equity Companies.*"

AHIC conducts client and education sessions on the diverse and emerging landscape, as well as the different approaches clients can take to initiate or enhance emerging/diverse manager programs.

MWBE Outreach

Since 2015, we have dramatically increased our presence in the emerging and diverse manager communities, attending and/or spoke at 10+ emerging/diverse conferences per year, including for large MWBE programs as well as industry groups NAIC, NASP and 100 Women in Finance. Below we provide a sample of the large conferences attended. The bullets in italics indicate conferences in which AHIC had a speaking role.

- *Consortium West*

¹ As of June 2018

² As of December 2018

³ Ongoing work

- *Consortium East*
- 100 Women in Finance Meet the Female Managers West
- *UAW Emerging Manager conference*
- *NAIC*
- *Opal Women's Investment Conference*
- *eVestment*
- Markets Group PE
- *NYSTRS*
- Grosvenor
- Texas TRS
- New York Common
- Morgan Stanley Prime Brokerage Women's Investment Leadership Conference
- European Investor Female Manager Conference

We also include in the appendix of this report historical emerging manager-related participation and/or speaking engagements.

Industry Outreach

AHIC has been quoted or featured in 20+ articles on emerging/diverse managers, including a feature in Emerging Manager Monthly.

Relationships

Aon has ongoing relationships with more than 30 emerging and diverse fund managers.

Open Door Policy

Any emerging or diverse managers seeking introductory meetings with Aon are able to secure a meeting. To date, we have met with more than 100 minority and women owned investment firms across the asset management spectrum, as well as nearly 100 additional "emerging" fund managers. This augments more traditional data base strategies and allows us to gather data on a slate of managers that will fit investors' varied needs.

At AHIC, we believe that emerging and diverse managers can fill several needs, including return enhancement, diversification, and fulfilling investment mandates. We acknowledge that every organization has a unique definition of an emerging manager, varying among size requirements and ownership requirements - typically among females, persons with disability and minority groups. Our approach towards emerging and diverse managers, including our investment manager research process is to be all inclusive and does not set barriers such as assets under management, years in business, or ownership requirements that would unduly screen out any type of manager.

Currently, 445 minority and woman-owned business enterprise (MWBE) managers are included in our database. Emerging managers are included in the database and evaluated in the same manner that non-emerging managers are evaluated.

The table below details AHIC's emerging manager historical activity.

	Public Equity	Fixed Income	Private Equity	Real Estate*	Hedge Funds	Total
# of MWBE Managers Recommended	8	5	15	1	4	33
# of MWBE Managers on Buy List	9	4	0	0	2	15

*Real Estate numbers do not include the Townsend coverage which can be found on subsequent pages

Below, we break out the manager meetings over the 2018 calendar year.

Summary of AHIC 2018 manager meetings:

	# of Meetings
Emerging	125
MWBE	61
Responsible Investing	5

The Townsend Group

AHIC has also bolstered its emerging and diverse coverage through its acquisition of The Townsend Group. Townsend is also dedicated to supporting clients' emerging and diverse investment programs. Since 2004, The Townsend Group invested or committed:

- \$9.1 billion to emerging managers
- \$3.3 billion to minority and/or women owned managers
- \$6 billion to first or second time funds

Over the past 5 years, The Townsend Group approved:

- 19 MWBE funds, committing \$928 million in total
- 49 emerging managers, committing \$4 billion in total

ATRS Emerging Manager Utilization

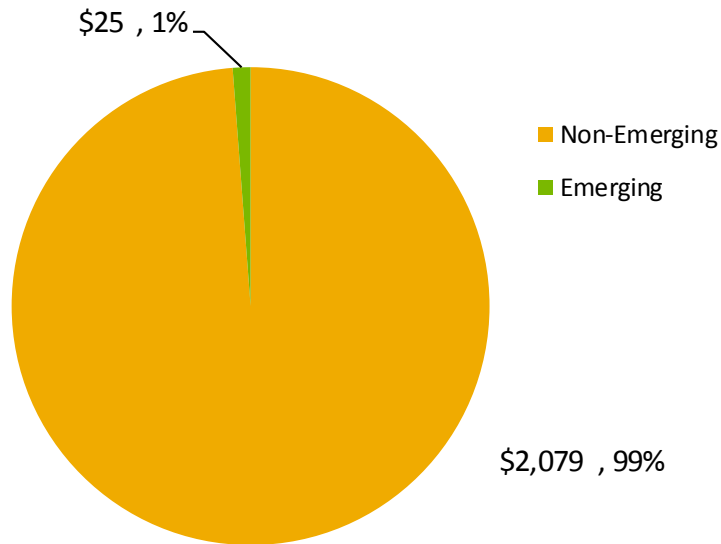
For purposes of fulfilling the goal to seek and consider emerging managers, Arkansas defines emerging managers as “firms whose majority ownership is black or African American, Hispanic American, American Indian or Native American, Asian, and Pacific Islander.” Within the asset classes that AHIC provides investment consulting services, ATRS currently utilizes one emerging manager within the real assets asset class.

During the 2019 fiscal year, Daruma Asset Management, a majority Asian and female owned firm that managed approximately \$400M of ATRS assets in a U.S. equity small cap strategy was terminated. Daruma had undergone significant organizational and personnel changes over the past several years as well as notable declines in assets under management. Due to the unfavorable organizational changes in addition to poor strategy execution which had led to poor performance, AHIC lost confidence in Daruma’s ability to achieve alpha above the index on a go-forward basis. Based on the above, the ATRS Board of Trustees decided to terminate the strategy. While the Board, along with AHIC, supports ATRS’s goal to seek out and consider emerging managers, ultimately this decision was made based on the primary goal of ATRS which is to invest the Plan assets in the most appropriate manner to secure the retirement benefits for the members. It was determined that an investment with Daruma was no longer consistent with that primary objective.

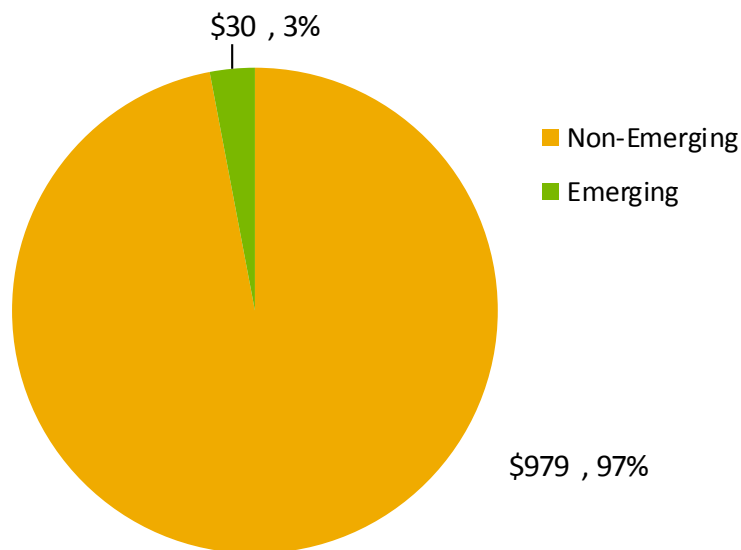
We note that Circumference Group does not fit within ATRS’s specific definition of an emerging manager firm; however, we list Circumference Group below as we believe the hiring of Circumference Group is consistent with the spirit of ATRS’s emerging manager goal. ATRS fulfilled an initiative in 2015 to hire an Arkansas-based investment management firm with the hiring of Circumference Group. Circumference Group is located in Little Rock, AR, was founded in 2009, and at the time of hire had less than \$100 million in AUM. Under alternative definitions, Circumference Group is considered an emerging manager. As of June 30, 2019, the firm’s AUM has grown to approximately \$140 million.

Manager	Strategy	Emerging Status	Portfolio Size	Tenure with ATRS
Long Wharf Investors	Value Added Real Estate	Majority Hispanic owned	\$25 M	11 years
<i>Circumference Group</i>	<i>Core Value & Concentrated Positions</i>	<i>Small Manager</i>	<i>\$30 M</i>	<i>5 years</i>

Emerging Utilization of Real Assets (millions)



Emerging Utilization of Opportunity/Alternatives (millions)



*Represents assets allocated to Circumference Group which does not fall under the Arkansas emerging manager definition but is considered an emerging manager under alternative definitions.

ATRS 2019 Fiscal Year Search Activity

During the 2019 fiscal year, there was limited manager search activity for the ATRS portfolio. The activity included 4 new strategies in the real assets asset class. The table below summarizes investment manager hiring activity for the total equity, fixed income, opportunistic/alternative and real assets asset classes, and whether an emerging manager was considered.

New Account	Type	Minority/Emerging Managers Considered?
Blackstone Real Estate Partners Europe VI	Real Assets (Real Estate)	N/A – the new account is with an existing manager within the ATRS portfolio
LaSalle Growth & Income Fund VIII	Real Assets (Real Estate)	N/A – the new account is with an existing manager within the ATRS portfolio
Rockwood Capital Real Estate Partners Fund XI	Real Assets (Real Estate)	N/A – the new account is with an existing manager within the ATRS portfolio
Walton Street Real Estate Debt Fund II	Real Assets (Real Estate)	No - A strategy offered by an emerging firm with the desired characteristics and open to investors was not available.

We note that the investment structure, i.e., the number and types of investment managers employed by ATRS, is driven by the asset allocation decision which is reviewed and approved regularly by the ATRS Board. Efficient implementation of the manager structure is critical to the success of the ATRS Trust Fund. AHIC's investment strategy recommendations focus on the ability to provide long-term value add and we do not promote nor advise frequent hiring and firing of investment managers.

AHIC continues to fully support ATRS's goal of seeking and considering retention of emerging managers and remains committed to pursuing appropriate emerging manager mandates for ATRS when opportunities arise. In order to support ATRS and our broader client-base, AHIC remains dedicated to staying apprised of the emerging manager opportunity set.

Appendix – AHIC Historical Projects and Participation/Speaking Engagements

Emerging manager-related projects our firm has completed over recent years include:

- Assisting a \$110 billion public pension fund build their direct fund Emerging Manager investment program. Provide investment recommendations across private equity sub-strategies
- Designed investment policy statement and guidelines for rapidly growing in-state private equity fund manager program (ETI)
- Reviewed and critiqued emerging manager in-state alternative assets program for large state plan through fiduciary audit
- Directed Emerging Manager selection process for in-state bioscience program
- Sourced and recommended venture capital Emerging Managers for in-state program
- Ran public pension fund RFP search for an in-state program
- A \$55 billion public pension fund retains AHIC to perform minority and emerging manager due diligence on traditional asset classes and report on trends in the emerging manager space.
- In early 2010 AHIC assisted a group of Illinois public pension plans with the creation of a special investment vehicle that specifically targets emerging and women and minority-owned real estate managers.
- Built an emerging manager program for a \$44 billion VEBA plan, recommending \$100 million commitments.

Historical participation and/or speaking engagements include:

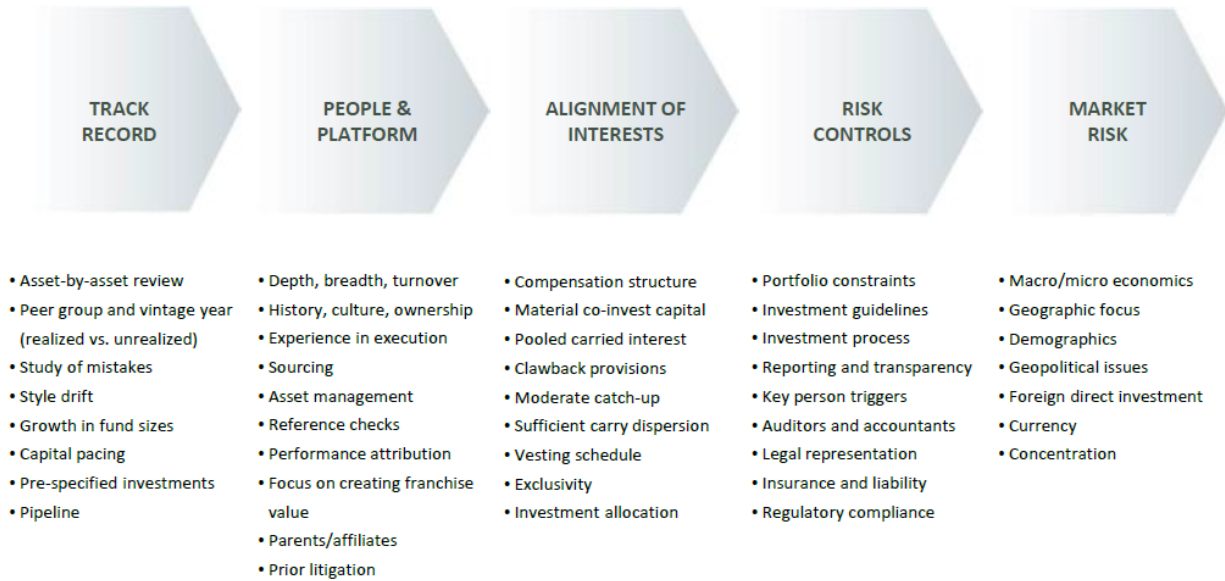
- Teacher Retirement System of Texas and Employees Retirement System of Texas Emerging Manager Conference
- New America Alliance, An American Latino Business Initiative Events
- Women in Private Equity Summits
- Opal Emerging Managers Summits
- NASP Baltimore and Washington Annual Emerging Manager Forums
- RG Associates Emerging Manager Consortium Conferences
- NASP Annual Pension and Financial Services Conferences
- Global Diversity Summit
- Women in Investments (sponsored by CalPERS & CalSTRS)

Appendix – The Townsend Group Emerging and MWBE Due Diligence Coverage



Appendix – The Townsend Group Due Diligence Methodology

RIGOROUS, SYSTEMATIC ANALYSIS YIELDS BETTER CLIENT OUTCOMES



Appendix – The Townsend Group Investment Process Overview and 2018 Underwriting Activity

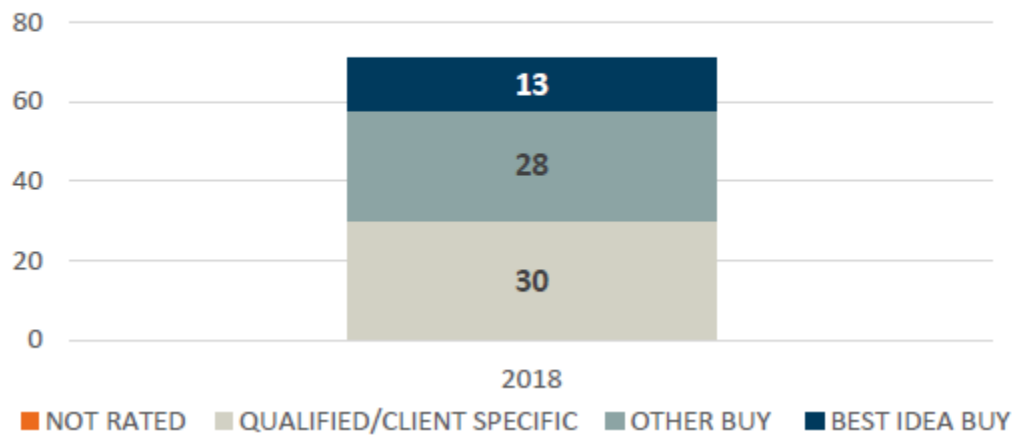
A STRUCTURED, MULTI-STAGE PROCESS INTEGRATED WITH INVESTMENT COMMITTEE



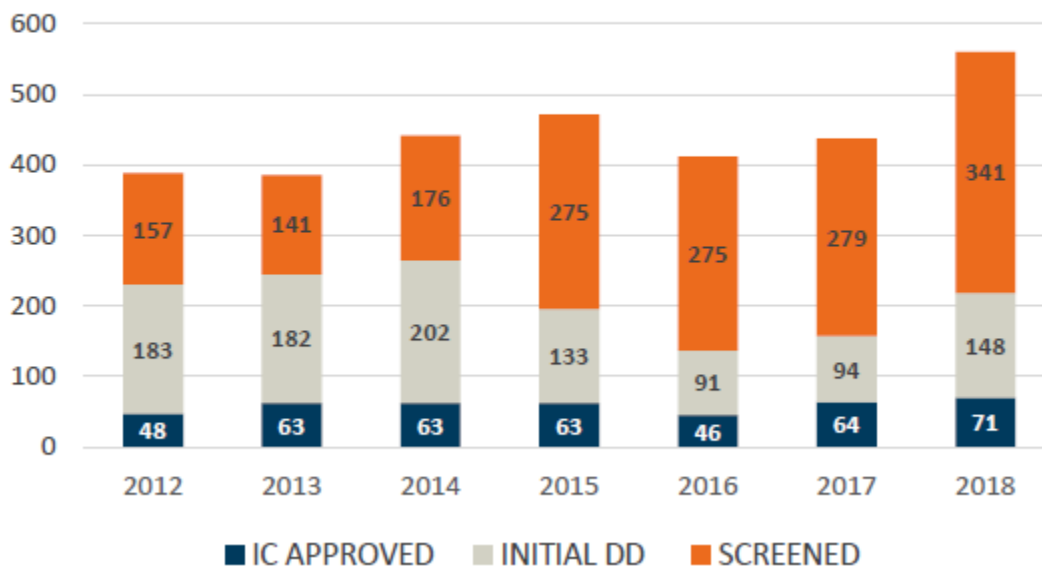
OF FUNDS UNDERWRITTEN/APPROVED

Fund Region	2011	2012	2013	2014	2015	2016	2017	2018
US/Global	24	34	34	28	34	27	39	42
Europe	7	3	13	10	14	7	15	9
Asia	5	3	8	8	7	3	5	10
Latin America	3	0	0	0	0	2	1	0
Infra/Timber/Ag	4	8	8	16	8	7	4	10
Total	43	48	63	63	63	46	64	71
<i>Best Ideas</i>	17	11	25	21	13	11	13	13

APPROVED FUNDS RANKINGS



SELECTION EFFICIENCY- # OF FUNDS



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Memo

To Arkansas Teacher Retirement System (ATRS) Board of Trustees

From PJ Kelly, CFA, CAIA, Katie Comstock

Date September 23, 2019

Re Aeolus January 2020 Renewal Recommendation

Recommendation

AHIC recommends ATRS commit an additional \$30 million to the Aeolus Property Catastrophe Keystone program. Due to the timing of the Aeolus January renewal cycle and the ATRS Board meetings, this recommendation is a conservative approach towards maintaining the intended ILS exposure and being efficient with the Trustees' time and resources. These assets will be used to maintain the desired \$110 million exposure to the Aeolus Keystone January 2020 portfolio. This allocation is consistent with the previously approved 1.25% allocation of Total Fund assets to insurance linked securities (ILS) and the approximately 1.0% allocation of Total Fund assets to ILS manager, Aeolus. Further, this allocation will maintain the desired split between the Aeolus January and Mid Year portfolios of 70% January (J) / 30% Mid Year (MY).

At the time of this memo, and assuming no further events unfold through October, Aeolus estimated Available Reinvestment Capital ("ARC" – representing capital available to roll from one portfolio to the next) of approximately 65% would be available to roll over from the January 2019 Portfolio to the January 2020 Portfolio. Using that estimate, ATRS would not need to approve additional capital for the January 2020 renewal cycle. The exact ARC amount will not be known until November 1, 2019.

Provided that there are six weeks remaining until the exact ARC is determined, and more importantly that a considerable stretch of the North Atlantic hurricane season is yet to unfold, Aeolus provided a much more conservative ARC estimate of 30%. This conservative approach allows ATRS flexibility to recapitalize with Aeolus without having to call a special Board meeting between October and December.

Aon and the ATRS Investment Team considered the options and recommend moving forward with the conservative approach to ensure a seamless renewal process with Aeolus and to be efficient with the Board members' time and resources.

The table below summarizes the figures supporting the recommended additional capital commitment.

Aeolus January Allocation Summary	January 2020 (J20)
Target % of Aeolus Keystone Program	70%
Target 2020 Portfolio Allocation (\$M)	\$110
<i>Estimated ARC*</i> for J20 Portfolio (\$M)	\$33
Available Holdover Capital for J20 Portfolio (\$M)	\$34
<i>Estimated Cash Subscription Needed for J20 (\$M)</i>	\$43
Unused Pre-Approved Commitment (\$M)**	\$20
<i>Estimated Add'l Commitment Needed (\$M)</i>	\$23

*Available Reinvestment Capital

**In December 2018 ATRS approved an additional \$70M commitment to Aeolus. Since then, approximately \$50M was needed to recapitalize with Aeolus, leaving \$20M of approved and unused to-date capital commitment.

We recommend a conservative \$30 million be approved to cover the uncertainty around these figures at this time.

Next Steps

The exact ARC for the January 2020 Portfolio will be known on November 1, 2019. At that time, ATRS will know the cash subscription amount needed or, if no cash subscription is needed and the available holdover capital will be sufficient to maintain the desired \$110M exposure to the January 2020 Portfolio. If the latter is the case (and assuming approval of this recommended \$30M), ATRS will have approximately \$50M (\$20M previously approved + \$30M currently recommended) of approved committed capital to Aeolus that can provide flexibility for future renewal cycles if needed.

We believe the ILS market is currently pricing attractively and thus continue to believe the approved ILS exposure is appropriate. Aeolus anticipates further rate rises again in January as supply/demand factors are moving in their favor due to an overall reduction in capital supply to the retro market while demand for retro covers increases. Further, AHIC continues to find both Aeolus and Nephila to be among the strongest ILS managers among those with higher expected risk and return profiles in the private reinsurance and retro-insurance space.

The Appendix of this memorandum has additional background and details on the Aeolus renewal process and definitions.



Appendix - Background

ATRS has an approved 1.25% allocation of Total Fund assets to insurance linked securities (ILS, or reinsurance), allocated between two strategies, the Aeolus Property Catastrophe Keystone Fund and the Nephila Rubik Fund. As of June 30, 2019, the allocation totaled \$325 million, split approximately \$281 million to Aeolus and \$44M to Nephila. ILS is intended to provide attractive returns that are uncorrelated to traditional markets. Returns are driven by insurance premiums and catastrophic natural events which are independent from general financial markets.

The Aeolus Keystone Fund is comprised of a January (J) and a Mid-Year (MY) portfolio that are renewed on an annual basis. Prior to renewal, Aeolus has a process to hold back a predetermined amount of capital in order to cover any claims from the prior year. Often times the exact amount of losses are unknown until 60-90 days after the portfolio renewal date. Therefore, Aeolus holds back an estimates dollar amount to ensure coverage of potential claims. At time of portfolio renewal, Aeolus communicates to investors the following values:

- **Available Reinvestment Capital (ARC):** amount of capital from the previous portfolio that is available for reinvestment in the next year's portfolio
- **Reserves Held in Holdover Account:** amount that is held at Aeolus and unavailable for reinvestment until final claims are known. The reserve amount includes estimated losses from the prior year, potential loss development on events that have already occurred, and estimates for the possibility of new catastrophic events from the calculation date through the end of the portfolio period. This amount is not available for reinvestment at the time of portfolio renewal and only becomes available if and when collateral is released (if not required to be held as a reserve to pay claims or other expenses).

In order for ATRS to maintain the desired ILS exposure with Aeolus during the renewal process, ATRS may need to contribute cash to account for the amount Aeolus is holding back to cover claims. The holdback amount is released back to ATRS if the assets are not used to pay claims, typically 60-90 days post renewal date. For this reason, the ATRS Board approved a total of \$315 million be committed to Aeolus, with the intention of maintaining \$150 million of exposure. The additional \$165 million was approved to cover the potential holdback amounts during the renewal process. Due to the recent very active hurricane seasons, the holdback amounts have been higher than typically expected.

The \$150 million allocation to Aeolus was approved in two waves. The first was an initial allocation to ILS and to Aeolus in 2016. The Board approved a total of \$100 million allocated to Aeolus, intended



to be split 2/3 to the January portfolio and 1/3 to the MY portfolio. This split provides strong diversification across the Aeolus Keystone program.

The second wave came in late 2017 after significant catastrophic events created an attractive opportunity for an additional investment in reinsurance. The Board approved an additional \$50 million investment in the Aeolus January 2018 portfolio to take advantage of attractive premiums.

Similar to 2017, events in 2018 and 2019 have caused a greater than normal amount of capital from the J18 portfolio to be held back for potential losses, as well as have created an attractive opportunity in the ILS market. In order for ATRS to maintain the approved 1.0% allocation to Aeolus, additional capital has been needed to fill the gap between the ARC (amount available to be reinvested) and the desired allocation, which has been the catalyst for these additional recommended capital commitments.

ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201

RESOLUTION
No. 2019-38

**Approving Investment in Aeolus Property Catastrophe Keystone
PF Fund, LP**

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 general investment consultant, Aon Hewitt Investment Consulting, Inc, along with the recommendation of the Investment Committee and ATRS staff regarding a potential investment in **Aeolus Property Catastrophe Keystone PF Fund, LP**, a fund which utilizes actuarial projections to create highly customized portfolios consisting of reinsurance or retrocession contracts focused on property catastrophe coverage.

THEREFORE, BE IT RESOLVED, that the ATRS Board approves an additional investment of up to **\$30 million dollars (\$30,000,000.00)** in **Aeolus Property Catastrophe Keystone PF Fund, LP** with recallable distributions to any tranche of **Aeolus Property Catastrophe Keystone PF Fund, LP**. The total investment amount is to be determined by the general investment consultant and ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the ATRS Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment, if acceptable terms are reached.

Adopted this 7th day of October 2019

Chair, Board of Trustees
Arkansas Teacher Retirement System



TOWNSEND[®]
GROUP

an Aon company

Arkansas Teachers Retirement System First Quarter 2019 Real Assets Performance Review

PROPRIETARY & CONFIDENTIAL

October 2019

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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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Real Assets Markets Performance and Overview

MARKET RETURN SUMMARY

As of 3/31/2019	Quarter	1 year	3 years	5 years	10 years
NFI-ODCE (Net)	1.2%	6.6%	7.0%	9.2%	7.7%
NPI	1.8%	6.8%	7.1%	9.1%	8.5%
NCREIF Timberland Index	0.1%	2.4%	3.3%	4.6%	3.7%
NCREIF Farmland Index	0.7%	6.1%	6.4%	8.2%	11.1%

Note: Please see Glossary for Index Definitions

- In the first quarter of 2019, the NFI-ODCE (net) returned 1.2%, down 30 basis points quarter-over-quarter. NFI-ODCE returns are holding up well, despite the maturity of the real estate cycle. Quarterly returns continue to moderate towards the long-term average with net income being a larger driver of the total return
- The NCREIF Timberland Index (“NTI”) returned 0.1% for the quarter. The NTI’s trailing one-year return was 2.4% and driven primarily by an income return of 3.07% while appreciation returned -0.67%. Regionally, the Northwest remains the NTI’s top performer while the U.S. Lakes region lagged
- The NCREIF Farmland Index returned 0.7% down 220 basis points from the prior quarter. Permanent and row crops notched similar performance at approximately 1.3% each. For the trailing one-year, permanent crops returned 6.4% compared to row crops’ 5.9%

Portfolio Funding Status and Composition

As of March 31, 2019	ATRS' Portfolio \$ in Millions
Number of Investments	59
Total Commitments	\$3,301.4
Unfunded Commitments	\$449.3
Total Paid-In Capital	\$3,132.9
Total Distributions	\$2,542.4
Net Asset Value	\$2,120.8
Gross Asset Value	\$2,696.3
DPI*	0.8x
TVPI*	1.5x
Since Inception IRR*	7.3%
<i>*Active and Liquidated</i>	

PORTFOLIO COMPOSITION TO TARGETS (As of 3/31/2019)		
	Target	Actual Funded
Target Real Asset Allocation	15%	12.3%
<u>Portfolio Style Composition</u>		
Real Estate	10%	8.1%
Core*	50%-70%	71.3%
Non-Core	30%-50%	28.7%
Value-Added**	N/A	15.1%
Opportunistic**	N/A	13.6%
Agriculture	1%	1.1%
Timber	2%	1.4%
Infrastructure	2%	1.7%
Leverage	50%	21.4%

* Includes Arkansas Investments

** No stated targets

- As of the first quarter of 2019, the real assets portfolio stands at 12.3% of ATRS' total assets
- Recent infrastructure, agriculture, and real estate commitments will help the portfolio continue to move towards its target allocation irrespective of the liquidating investments
- In general, the portfolio is in compliance with its Statement of Investment Policy leverage, geographic region, and property type diversification; there is a slight overweight to core real estate, but a significant amount of noncore commitments have yet to be drawn

ATRS' Real Assets Performance

ATRS TOTAL REAL ASSETS RETURN SUMMARY

As of 3/31/2019	Quarter	1 Year Ending	3 Year Ending	5 Year Ending	10 Year Ending
Total Real Assets Portfolio	1.3%	5.6%	7.4%	8.7%	7.1%
Real Assets Benchmark*	1.2%	5.7%	6.2%	8.0%	6.5%

- The table shows the returns for ATRS' Total Real Assets Portfolio and the Real Assets Benchmark. ATRS outperformed the real assets benchmark by 10 basis points for the third quarter and has outperformed over longer term periods

ATRS' Real Estate Performance

ATRS TOTAL REAL ESTATE RETURN SUMMARY

As of 3/31/2019	Quarter	1 Year Ending	3 Year Ending	5 Year Ending	10 Year Ending
Total Real Estate	1.2%	5.6%	7.9%	9.8%	8.5%
NFI-ODCE (Net)	1.2%	6.6%	7.0%	9.2%	7.7%

- The table shows the time-weighted, net of fee returns for ATRS' Total Real Estate Portfolio and the NFI-ODCE benchmark. ATRS matched the benchmark for the quarter and 100 basis points over the trailing one year; ATRS' portfolio is outperforming over all other time periods however
- There are a number of Non-Core Funds that have entered the J-curve and performance is expected to have a more meaningful impact as newer funds move out of the J-Curve and investments are realized
- For the quarter, PRISA was the primary driver of the real estate return with a 1.6% total return, while UBS TPF and JPMorgan SPF have been drags on return at 0.5% and 0.2% respectively

ATRS' Timberland and Agriculture Performance

As of 3/31/2019	Quarter	1 Year Ending	3 Year Ending	5 Year Ending	10 Year Ending
Total Timberland	-2.2%	-0.3%	2.9%	3.7%	2.0%
Timberland Property Benchmark*	0.1%	0.1%	2.1%	3.8%	2.4%
Total Agriculture	0.8%	3.5%	3.7%	4.7%	N/A
Agriculture Benchmark*	1.5%	5.4%	4.5%	5.1%	N/A
CPI + 500 BPS	2.4%	6.9%	7.3%	6.5%	6.9%

- The timber portfolio underperformed the benchmark over the quarter, returning a -2.2%. The portfolio underperforms the benchmark over the quarter, one-, five- and ten year periods, but outperforms over the trailing three-year time period
 - The negative performance can be attributed to a combination of factors. Four appraisals for four properties booked during the quarter experienced a reduction in value. Also, and compounding the reduction in appraisal unit value, there was a reduction in inventory volume on three properties
- The agriculture portfolio underperformed the benchmark over the quarter, returning a 0.8%. The portfolio underperforms over the trailing one, three and five-year time periods
- Both the Timber Property and Agriculture benchmarks are reported gross of fees. If ATRS managers were to account for fees, the portfolio would look better in comparison

ATRS' Infrastructure Performance

As of 3/31/2019

Asset Class	Total Commitment (\$)	Unfunded Commitment (\$)	Total Paid-In (\$)	Total Distributions (\$)	Net Asset Value (\$)	Total Value (\$)	DPI	TVPI	Net IRR
Total Infrastructure	345,413,930	78,068,633	276,823,914	57,502,415	287,065,771	344,568,186	0.21x	1.24x	13.61%

- ATRS' Infrastructure portfolio has been slowly moving out of the J-Curve and performance has been showing solid results to date
- First Reserve Energy Infrastructure Fund II is currently driving portfolio performance; the fund is achieving a 33.62% Net IRR

ATRS' Real Assets Portfolio Highlights

- Commitment activity update
 - ATRS made commitments to the following
 - Blackstone Real Estate Partners Europe VI: \$50 million
 - Rockwood Capital Real Estate Partners Fund XI: \$40 million
 - Walton Street Real Estate Debt Fund II: \$40 million

Significant Events

- UBS Trumbull Property Fund has been downgraded to Qualified from Buy. Due to TPF's continued struggles and lack luster forward prospects, it has been recommended that ATRS proceed in terminating from the partnership.
- During discussions with PGIM in August 2019, it was disclosed Alphonso Munk- CIO of Americas & Head of Latin America is leaving PGIM in September. While Alfonso was an important member of the PGIM senior management, his departure should not be viewed in a negative light as PGIM has a deep investment management team.
- JPMorgan SPF: JPMorgan has advised that there will be a number of staffing changes. Mostly, a number of individuals have been promoted to new roles while their positions have been backfilled. We view the changes at JPM as positive as members of the team were able to be elevated to new positions while the firm maintains continuity for SPF. We do not expect any material changes to SPF, however, we will continue to monitor the situation going forward.

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United States Real Estate Market Update (1Q19)

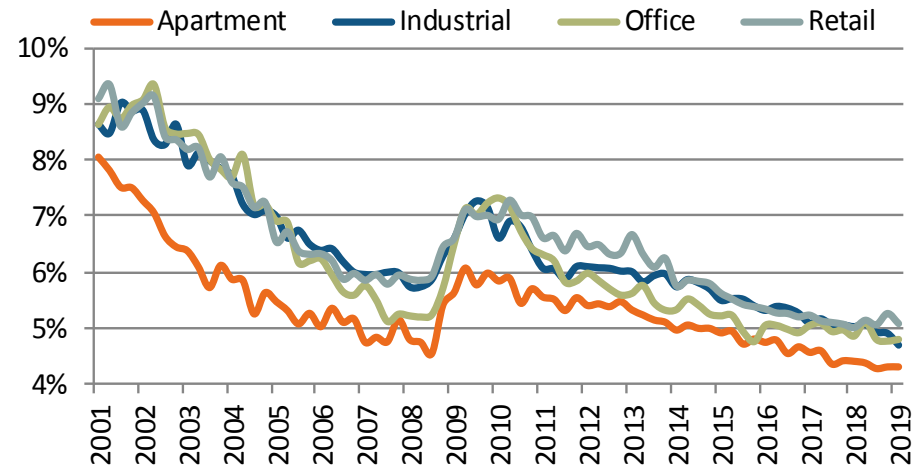
General

- The S&P 500 produced a gross total return of 13.6% during the Quarter, as markets rebounded from a poor fourth quarter (-13.1%). The MSCI US REIT index produced a return of 16.3%. Consumer Sentiment remained flat at 98.4, but rose subsequent to quarter end.
- Macro indicators for U.S. real estate continue to be positive; GDP grew at an annualized rate of 3.2% in the First Quarter and headline CPI rose by 1.7% YoY, below the Fed's 2% target. As of Quarter-end, the economy has now experienced 102 consecutive months of job growth. The Federal Reserve has paused its tightening of monetary policy, with the effective federal funds rate remaining around 2.4% at Quarter-end. Based on interest rate futures, the Market has begun pricing in the expectation of a cut by the Fed.

Commercial Real Estate

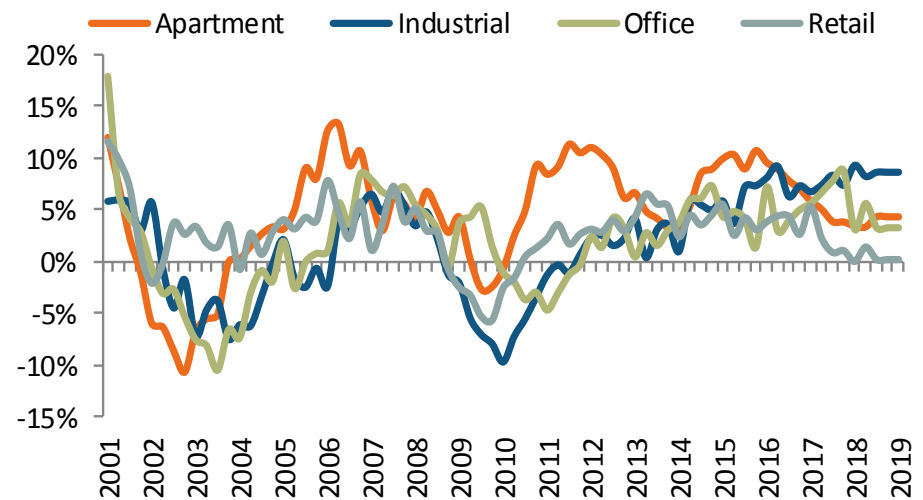
- Private real estate market carrying values remained flat over the Quarter. Transaction cap rates (5.4%) expanded 5 bps during the Quarter. While, current valuation cap rates remained flat across property sectors, with the exception of the industrial and retail sector cap rates which compressed by 20 bps.
- NOI growth by sector continued to deviate during the Quarter, with the industrial sector continuing to outpace the other traditional property types. While the industrial sector has faced increasing supply, it continues to benefit from outsized demand tailwinds (e-commerce and economic growth). On the other hand, retail experienced negative 20 bps of NOI growth during the Quarter.
- In the First Quarter of 2019, \$66 bn of aggregate capital was raised by real estate funds. In 2018, private equity real estate funds raised \$236 bn which is an increase of 9% YoY. Although, transaction volume declined during the 1st quarter by 18% year over year to \$28 bn.
- 10-year treasury bond yields dropped 28 bps to 2.4% during the Quarter, and, subsequent to Quarter-end, have dropped further to 2.1%. A combination of expansionary fiscal policy and tightening monetary policy have led to increasing short-term interest rates and a few temporary inversions of the yield curve.

Current Value Cap Rates by Property Type



Source: NCREIF

4 Qtr Rolling NOI Growth



Source: NCREIF

United States Property Matrix (1Q19)



INDUSTRIAL

MULTIFAMILY

- In 1Q19, industrial properties were the highest returning sector at 3.0% and outperformed the NPI by 122 bps.
- Transaction volumes reached \$17.6 billion in the first quarter of the year, marking a 15.6% year-over-year decrease. Large-scale portfolio sales increased year-over-year by 7.2%, individual portfolio sales were close to flat, while entity-level sales sharply declined.
- The industrial sector continued to experience steady NOI growth of 2.1% in the quarter, up from 1.9% in 4Q18. Market rent growth is expected to decelerate compared to the recent phenomenal pace, but still remains strong.
- Vacancy ticked slightly higher from 2018 levels to 3.5%, but continues to be close to all-time historic lows. E-commerce continues to boost demand.
- Industrial cap rates compressed approximately 33 bps from a year ago, to 4.7%. Industrial fundamentals still top all property sectors.

- The apartment sector delivered a 1.3% return during the Quarter, underperforming the NPI by 46 bps.
- Transaction volume in the first quarter of 2019 reached \$38.0 billion, an increase of 5.7% year-over-year. This volume continues to make multifamily the most actively traded sector for the eighth straight quarter.
- Debt levels in the sector were virtually unchanged from year end, at 65% loan-to-value. This remains close to historical lows over the past decade for the sector.
- Cap rates held steady at 4.3%, compressing close to 10 bps year-over-year. Robust job growth and improving wages have supported healthy operating fundamentals.
- Steady demand for the sector continues to keep occupancy close to 94.0%, a slight increase from a year ago. Delayed deliveries from construction labor bottlenecks have created a gap between permitting activity and starts volume.

OFFICE

RETAIL

- The office sector returned 1.6% in 1Q19, 18 bps below the NPI return over the period.
- Transaction volumes decreased by 13.5% year-over-year in Q1. Annual sales volumes of \$26.0 billion for the quarter. Single asset transactions accounted for 86% of volume.
- Occupancy growth within the office sector is relatively flat, increasing 0.7% year-over-year. Office continues to be the highest vacancy property type at close to 10.3%.
- NOI growth of 4.1% in the quarter is a positive as the sector remains in a low-growth mode. Sun Belt and tech-oriented West Coast office fundamentals screen healthiest.
- Office cap rates compressed slightly from a year ago to approximately 4.8% in the first quarter. Office-using job growth is positive, though decelerating as expected.
- Supply is moderate nation-wide. Although it is keeping a lid on net effective rent growth in NYC and D.C.

- As of 1Q19, the retail sector delivered a quarterly return of 1.7%, performing 7 bps below the NPI.
- Transaction volumes totaled \$12.1 billion in the first quarter, down 14.2% year-over-year. Individual-level transaction volume decreased slightly year-over-year, while portfolio-level transactions steeply declined by almost 60.0%.
- Slight year-over-year cap rate expansion of approximately 7 bps within the sector. Strong fundamental headwinds continue to effect the retail landscape.
- Growth in NOI declined in the quarter by 1.6%. Retail is expected to continue to suffer from the shift towards e-commerce.
- Retail vacancy has ticked up almost 60 bps over the past year. Many big box stores have closed as the need for retail space shrinks, meaning rent growth will likely be negative for many centers.

Global Real Estate Market Update (1Q19)

- Global investment activity during the first quarter of 2019 was elevated, but there are indications that momentum has begun to slow as compared to 2018. During the quarter, the three most active cities were New York City, London, and Los Angeles, respectively.

- Geopolitical uncertainty and its impact on the global real estate markets has remained at the forefront for investors, however, global commercial real estate is still positioned to steadily perform in 2019. Despite compressing yields, decreases in risk-free rates have kept real estate as an attractive investment option. Capital values and rents are expected to increase during the year, however, full-year global investment volumes are expected to decline by 5-10%.

- Investment volumes in the Americas decreased during the first quarter year-over-year, including the U.S., Canada, Brazil, and Mexico all showing declines.

- Asia-Pacific cross-border investment activity was up in 1Q19, specifically in China, South Korea, and Singapore, offsetting decreases in Hong Kong, Australia, and Japan. However domestic activity declined which signals that Asia-Pacific domestic investors are becoming increasingly cautious.

- In EMEA, the decline in investment volume is largely attributable to uncertainty over Brexit in the UK.

- In the office sector, global leasing vacancy rates continued to decrease through the first quarter of 2019. The U.S office market performed well with an increase in gross leasing activity up 6% year-over-year. Europe also started the year strong with gross leasing up 6% year-over-year, boosted by performance in Brussels and Stockholm. Asia Pacific's office market contracted due to economic uncertainty and restricted supply. Globally, aggregate rental growth for prime office locations is expected to stay positive in 2019.

- In the retail sector, the U.S. is experiencing trends such as shorter lease lengths, pop-up stores, and using brick and mortar stores as effective delivery hubs for retailers. Strengthening labor markets and wage growth in Europe has positively impacted consumer spending, and retailers continue to focus on rightsizing their store portfolios. Asia Pacific retailers are focusing efforts on tech-driven services to enhance the customer experience. Australia is experiencing challenging retailer market conditions.

- The multifamily market in the U.S. has continued to see growth in demand and increases in effective rental growth, specifically in the Sun Belt markets. There has been an increase in construction activity which is likely to lead to some near-term supply headwinds. Investment activity in European multifamily markets continued to be robust, specifically in France, Spain, and the UK.

- The global industrial market maintained momentum during the quarter, with vacancy rates in the U.S. and Asia Pacific at all-time lows as demand continues to be robust. Demand has been strong in the European logistics market as well, however, a slight deceleration in the rate of growth suggests the sector may be entering a stage of stabilization.

Global Total Commercial Real Estate Volume - 2018 - 2019

\$ US Billions	Q1 2019	Q1 2018	% Change Q1 19 - Q1 18	Full Year Ending 1Q19	Full Year Ending 1Q18	% Change Full Year
Americas	92	106	-13%	505	447	13%
EMEA	50	78	-36%	327	371	-12%
Asia Pacific	168	216	-22%	815	895	-9%
Total	310	400	-22%	1646	1713	-4%

Source: Real Capital Analytics, Inc., Q1' 19

Global Outlook - GDP (Real) Growth % pa, 2019-2021

	2019	2020	2021
Global	3.3	3.3	3.1
Asia Pacific	4.6	4.6	4.7
Australia	2.2	2.6	2.6
China	6.3	6.0	5.9
India	7.0	7.2	7.3
Japan	0.6	0.5	0.9
North America	2.5	1.9	1.9
US	2.6	1.9	1.9
MENA*	2.9	3.0	-
European Union	1.5	1.6	1.5
France	1.3	1.4	1.5
Germany	0.9	1.4	1.4
UK	1.3	1.4	1.6

*Middle East North Africa

Source: Bloomberg

Note: 2021 projections are not yet available for certain regions

Timberland – First Quarter 2019 Market Update

TIMBERLAND MARKETS

- Momentum in the US housing market continued to slow during the quarter with a 9.7% decrease in total starts, led by multifamily as single-family starts were down 3.6%; starts at quarter-end were at a SAAR of 1.13 million units, just below December 2018's 1.14 million. (FIGURE 1)
- Expectations remain optimistic for continued housing market improvement through the remainder of 2019 and into 2020 but slower than previously projected.
- Prices for logs in the US South increased with unfavorable weather creating difficult harvesting conditions, while prices in the PNW remained below average driven by slower domestic and export demand. (FIGURE 2)
- Lumber prices recovered slightly from the retreat in prices during 2H18; Southern yellow pine lumber increased 8% from last quarter and 15% from a year ago when lumber markets reached record prices.
- Brazilian timber markets were generally favorable driven by the improving economic conditions across most states.
- Australia's timber markets experienced a slight softening as slower housing demand and tighter credit conditions continued to impact pricing and demand.

FIGURE 1: Housing Starts 2018 and 2019, SAAR (000s)

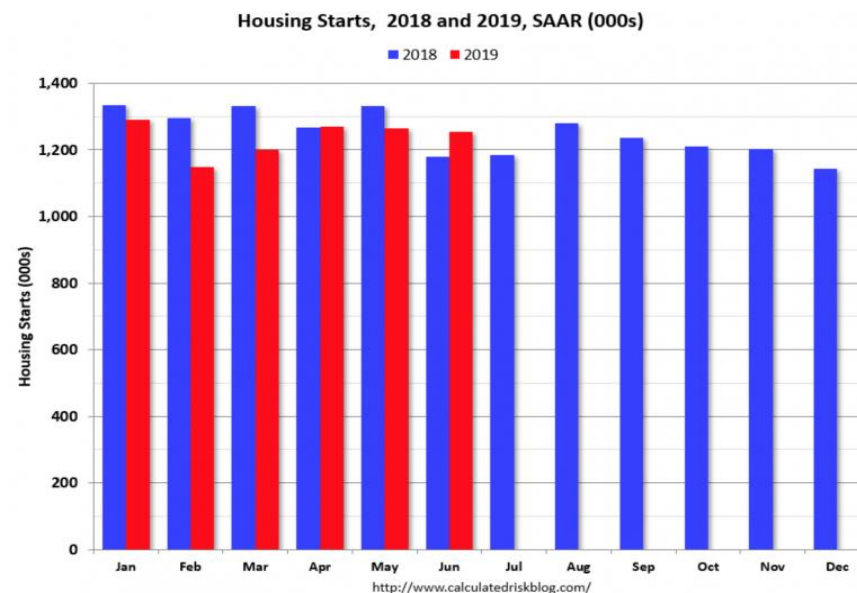
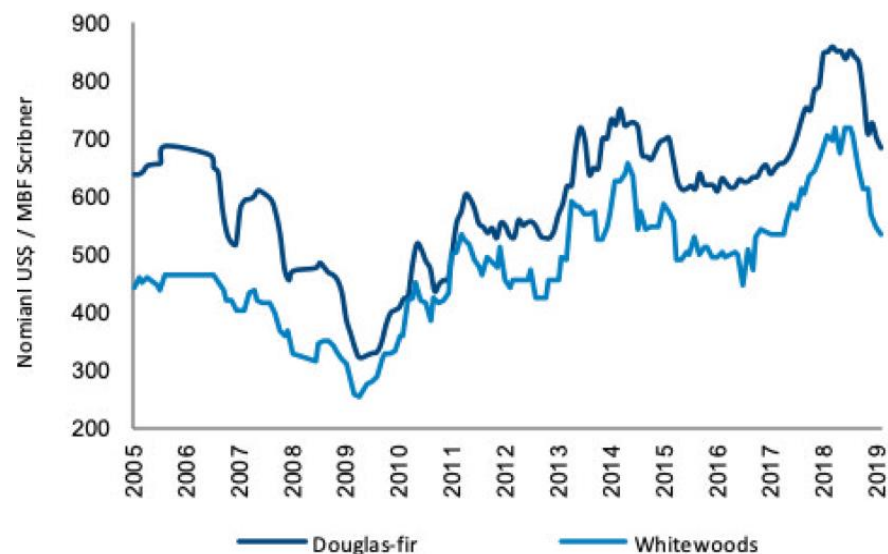


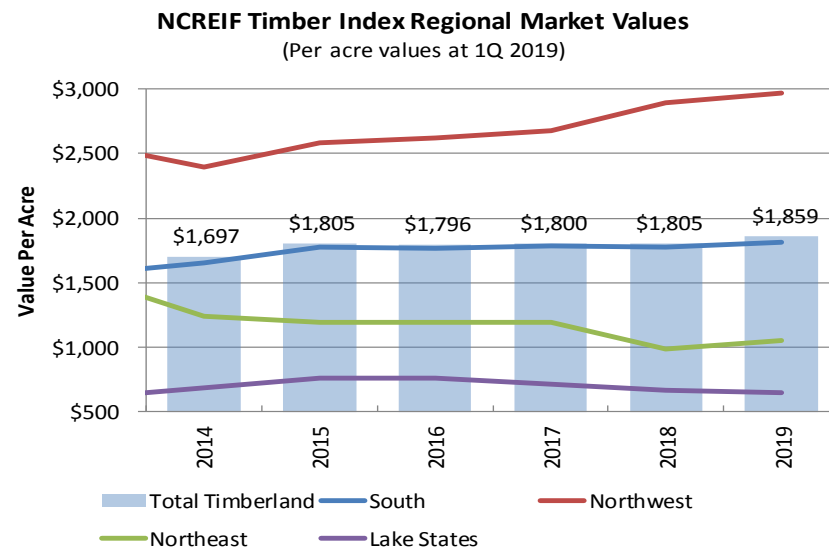
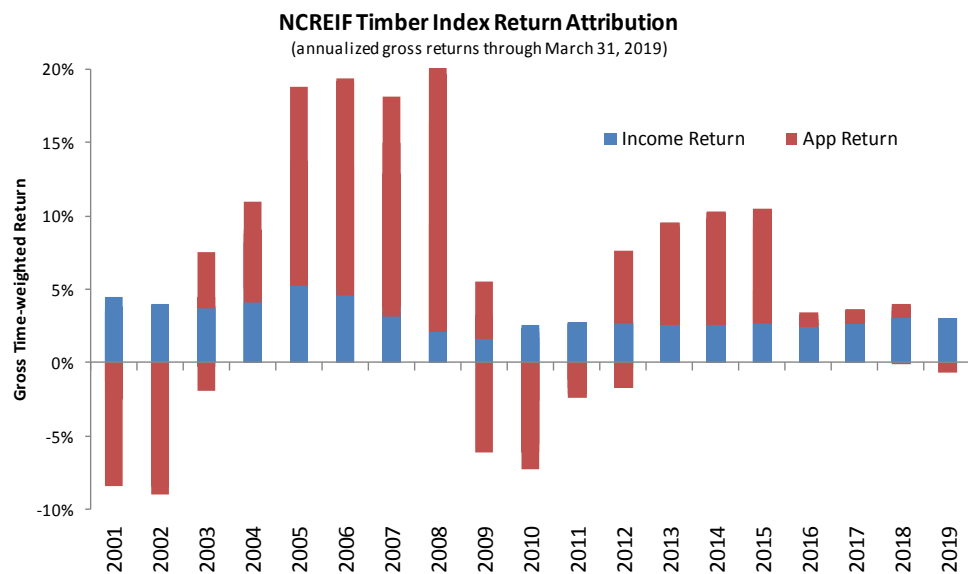
FIGURE 2: Douglas-fir and Mixed Whitewood Log Prices (monthly)



Timberland – First Quarter 2019 Market Update

TIMBERLAND PERFORMANCE

- The NCREIF Timberland Index (“NTI”) returned 0.1% for the quarter, down from 0.7% from last quarter and 0.9% from 1Q18.
 - The return consisted of a 0.7% income return and a - 0.6% appreciation return.
- The trailing twelve-month (“TTM”) return was 2.4%, which continued to be driven entirely by the NTI’s income return that was 3.1%; the appreciation return for the TTM continued to trend further into negative territory and was -0.7%.
- Regionally, the Lake States outperformed all other regions with a total return of 0.7%, followed by the Northwest’s 0.3% total return; the South was effectively flat with a 0.04% total return and the Northeast’s strong performance trend over recent quarter’s ended with a quarterly return of -0.4%.
- Timberland values increased slightly to \$1,859 per acre, up from last quarter’s per acre value of \$1,848. per acre, with the South region driving the slight value uplift with a modest 1.3% increase in value.
- Values in the Northwest were down slightly (6 bps), as the region may finally be cooling off after almost two years of quarterly gains; this is the first decrease in value since 1Q17, although values have increased by over 10% over that two-year stretch.

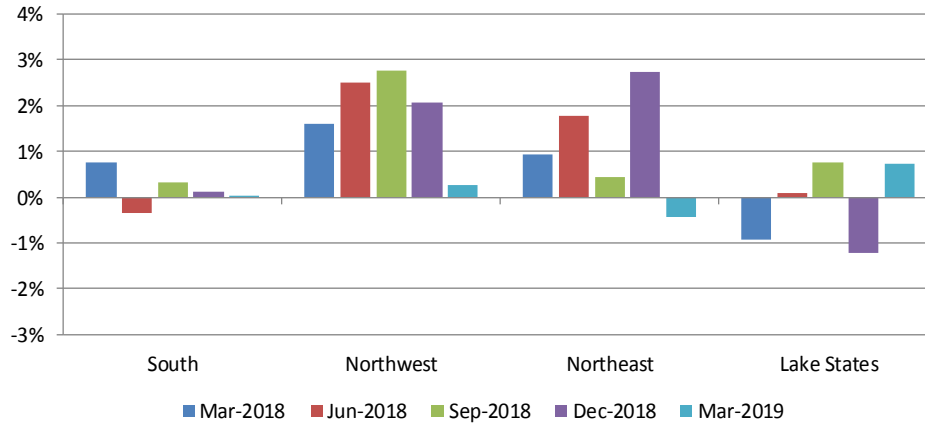


Timberland – First Quarter 2019 Market Update

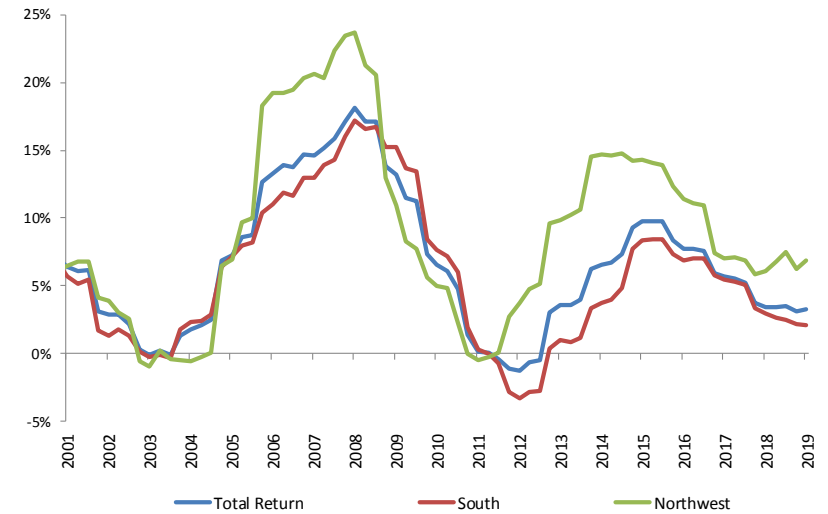
TIMBERLAND PERFORMANCE

NTI Regional Return Trends

(Quarterly total returns 1Q18-1Q19)

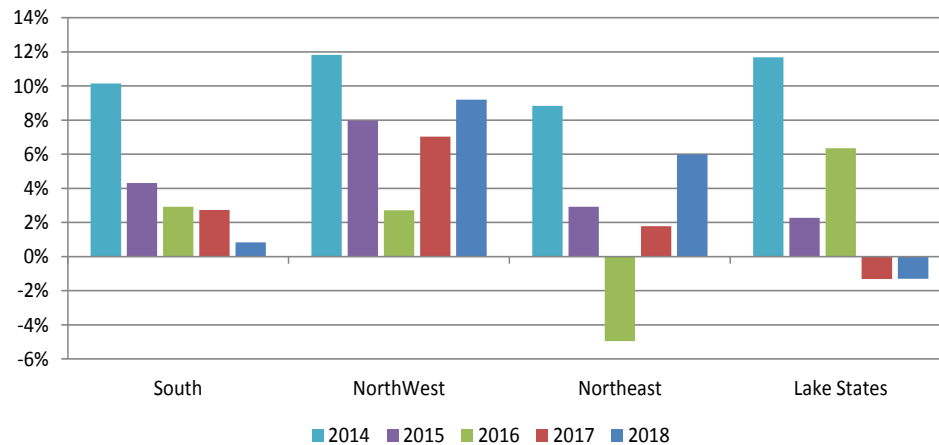


Total Returns by Region
(3-Year Rolling Return as of March 31, 2019)

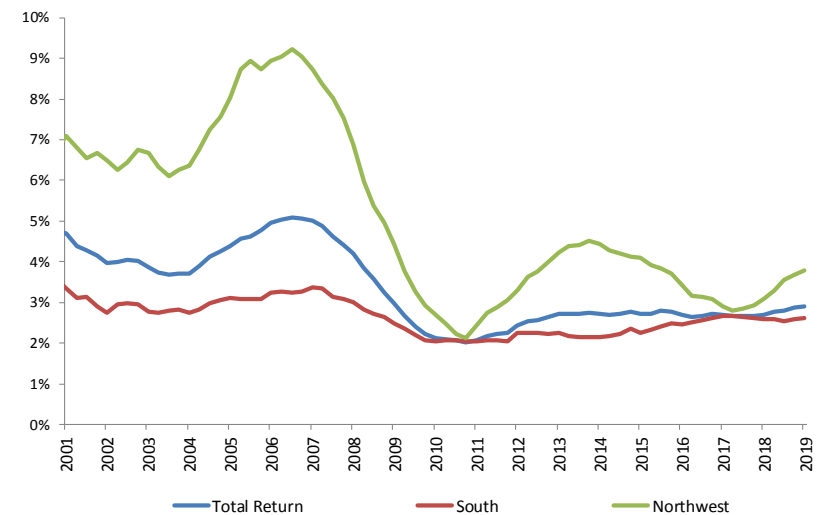


NTI Regional Return Trends

(Annual total returns 2014 - 2018)



EBITDA Returns by Region
(3-Year Rolling Return as of March 31, 2019)



Farmland - First Quarter 2019 Market Update

FARMLAND MARKETS

- Global commodity prices were mixed during the quarter with positive price movement across key grains and oilseeds to start the quarter but retreating to lower levels by quarter-end as uncertainties surrounding the U.S.-China trade discussions continued. **(FIGURE 1)**
- Lower prices across most major U.S. commodities are expected through 2019 due to a variety of factors, including ongoing record production levels and high ending stocks (e.g., high supply and low demand), ongoing trade issues, reduced imports by China due to the ongoing African swine fever outbreak impacting China's hog sector, and strong export competition from Brazilian and other Latin American producers. **(FIGURE 2)**
- The US-China trade dispute has led to a lower pricing environment in the US, while other countries have benefited from increased export demand to China and/or have experienced pricing premiums relative to the US, notably Brazil and Australia.
- While trade discussions continue between both countries, the US continues to support farmers with additional aid, and subsequent quarter end in May 2019, the US government announced that the aid package would be extended into 2019 with an additional \$16 billion in farm aid, the majority of which will benefit soybean farmers.

FIGURE 1: Quarterly Grains & Oilseeds Prices

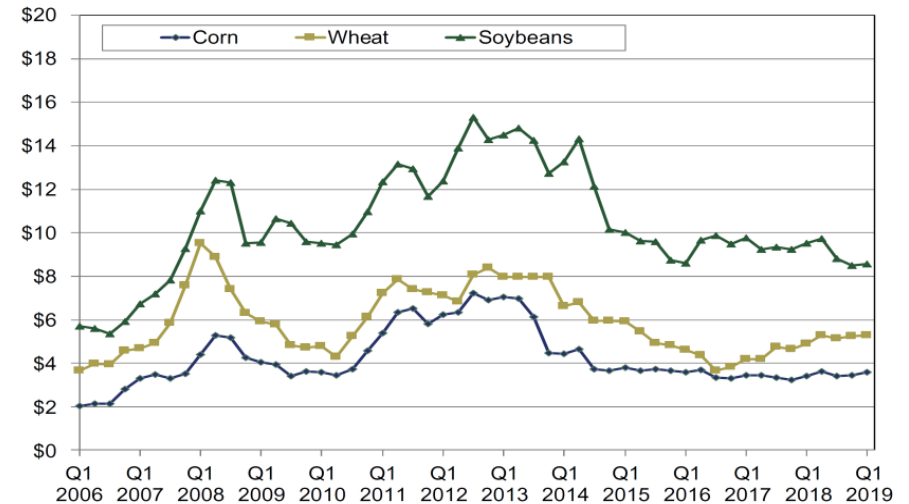
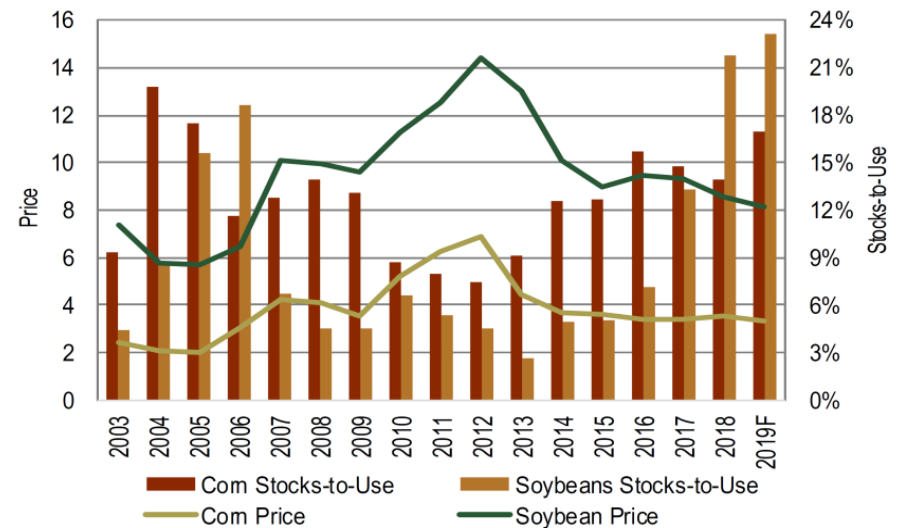


FIGURE 2: Soybean and Corn Prices and Stocks-to-Use



Farmland - First Quarter 2019 Market Update

FARMLAND MARKETS

- Most major nut prices have felt the impact of Chinese tariffs with decreased export demand to China and an overall softening of prices; however, Almond and pistachio prices remained resilient during the quarter, while Walnut prices remained depressed despite strong export demand, notably to Middle Eastern importers.
- Almond growers supplemented China's tariffs via increasing exports into other countries providing adequate price support. US Pistachio prices benefited from persistent below-average production levels out of Iran for the past two years along with shifting to higher export levels of roasted (vs. raw) as tariffs on roasted are 30% lower. **(FIGURE 3)**
- Brazilian crop markets remained relatively strong with soybean exports reaching record levels driven by the increased Chinese demand; however, local prices have moderated somewhat during the quarter as traders remained optimistic that a US-China trade resolution was in-sight; however, market sentiment has since reversed course. **(FIGURE 4)**
- Australian farmers remained pressured as drought conditions persisted in several production regions, expected to lead to lowered profitability through 2019.

FIGURE 3: Average US Grower Tree Nut Prices (\$US per lb.)

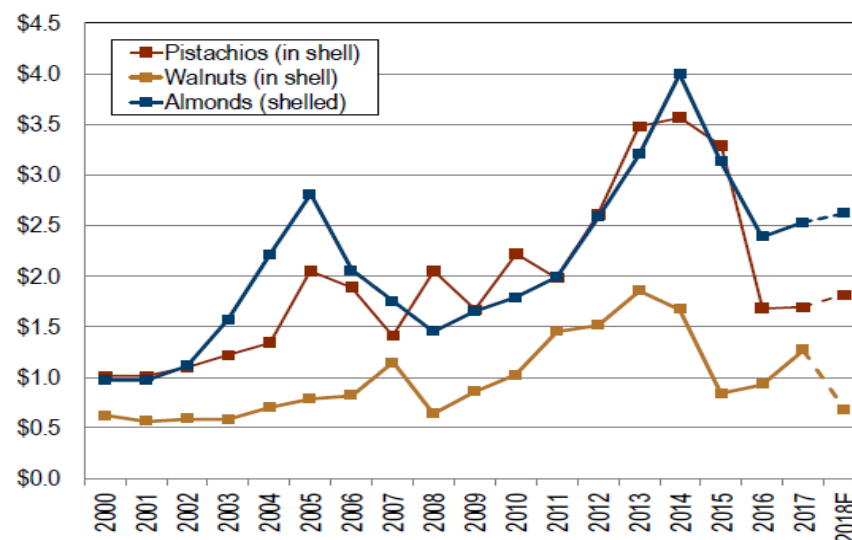
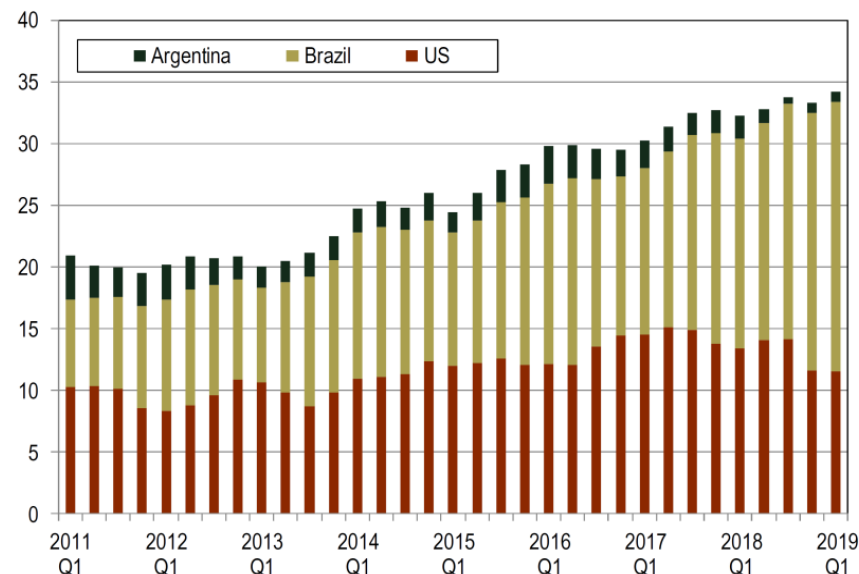


FIGURE 4: Average Soybean Exports, Major Producers (Mil Metric Tons)



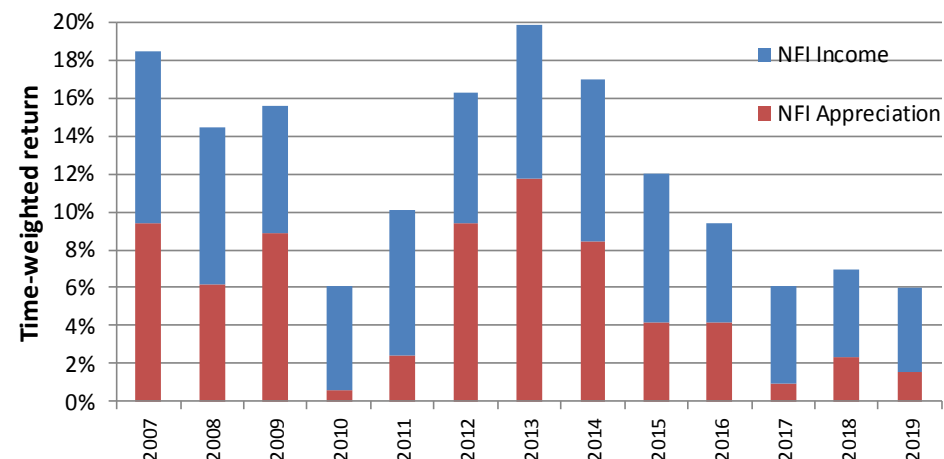
Farmland - First Quarter 2019 Market Update

FARMLAND PERFORMANCE

- The NCREIF Farmland Index (“NFI”) returned 0.7% for the quarter, decreasing 215 basis points from the prior quarter. The total return consisted of a 0.5% income return and a 0.2% appreciation return.
- Row crops drove the NFI’s quarterly return generating a 1.4% return during the quarter, while Permanent crops posted a -0.4% return for the quarter in the face of continuing pressure from softening valuations.
- The trailing twelve-month period (“TTM”) total farmland return was 6.1% through 1Q19, down from 7.1% for the same TTM period beginning 1Q18.
- The TTM total return was comprised of a 4.5% income return and 1.5% appreciation.
- Permanent crops total return for the TTM was 6.4% consisting of a 6.2% income return and a 0.3% appreciation return.
- Row crops total return for the TTM period was 5.9% and consisted of a 3.5% income return and a 2.3% appreciation return.
- Total returns for the two farm types have continued to converge since the NFI’s inception, with annualized returns for permanent crops of 12.1% and 10.2% for row crops.

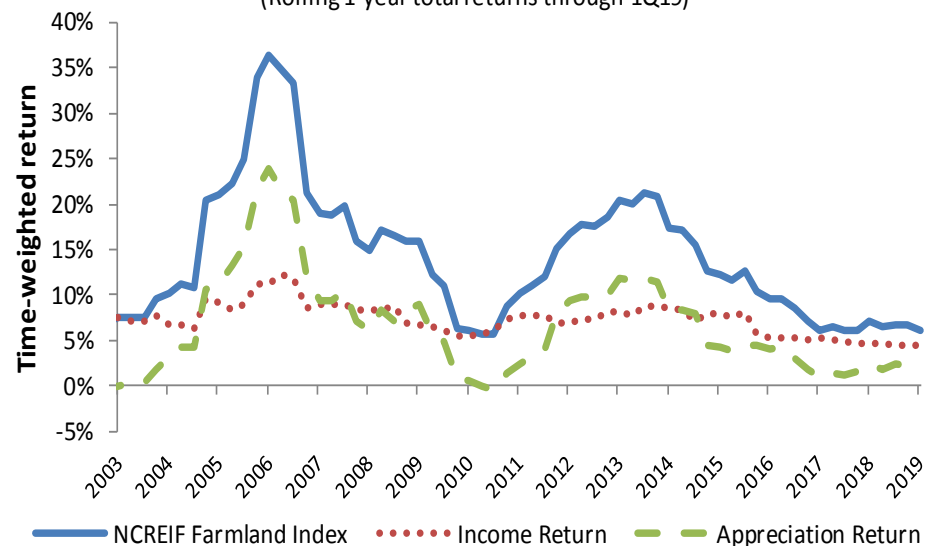
NCREIF Farmland Index Performance Attribution

(Trailing 12-month Return Attribution as of 03/31/19)



NCREIF Farmland Index Performance

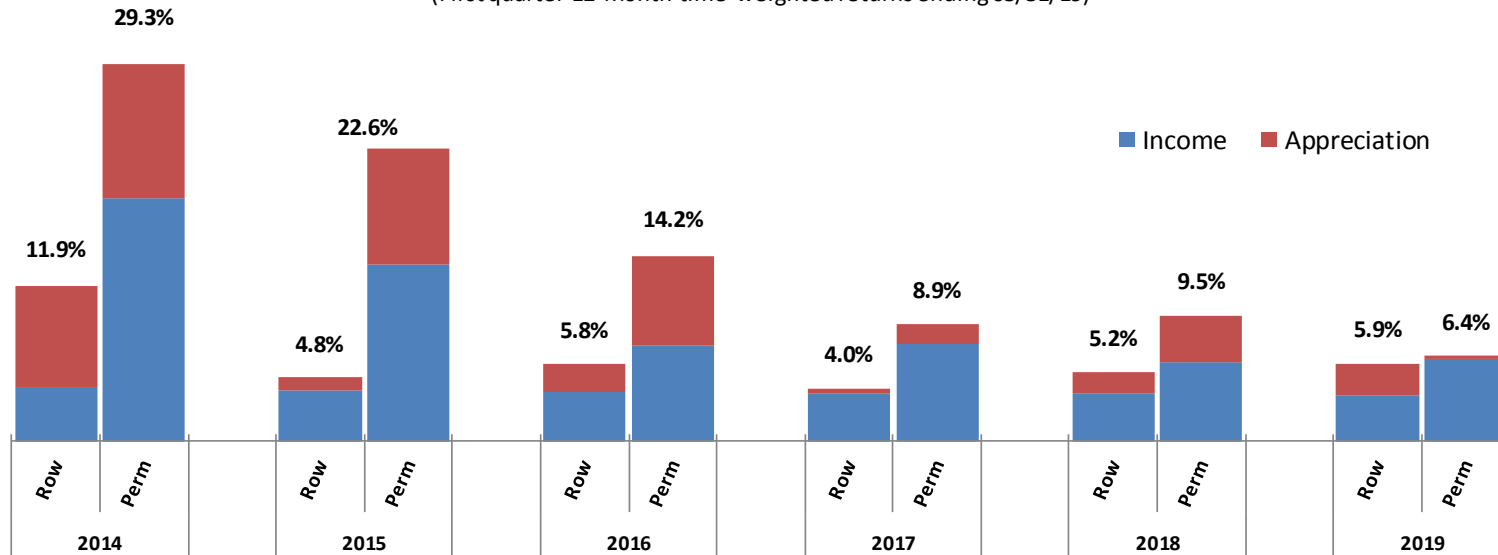
(Rolling 1-year total returns through 1Q19)



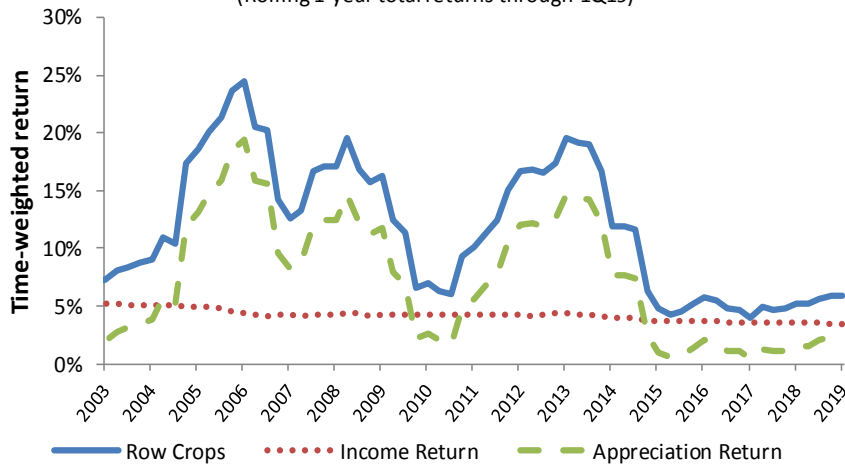
Farmland - First Quarter 2019 Market Update

FARMLAND PERFORMANCE

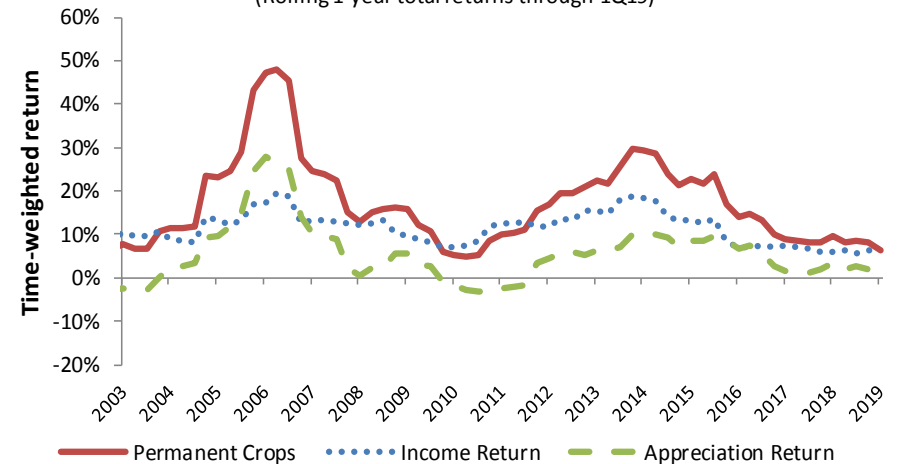
NCREIF Farm Type Performance Attribution
(First quarter 12-Month time-weighted returns ending 03/31/19)



NCREIF Row Crop Performance
(Rolling 1-year total returns through 1Q19)



NCREIF Permanent Crop Performance
(Rolling 1-year total returns through 1Q19)



Infrastructure – First Quarter 2019 Market Update

General

- Seven funds reached a final close in Q1 2019, securing US\$15.3bn in aggregate capital. For the 12 months ending Q1 2019, this represents a 25% drop in the number of funds holding a final close yet an increase of US\$34.6bn in aggregate capital raised.
- Deal value for the quarter up 1% in comparison to last quarter (est. aggregate value of US\$315bn) for 7% fewer deals. Average deal size increased by 8% quarter-on-quarter.

Europe

- A number of Greenfield and secondary projects closed in renewable energy, traditional energy, social infrastructure, transport and telecommunications. Notable brownfield secondary trades that closed in the quarter included the US\$2.1bn sale of a c.50% stake in SFT, a French fibre business by Altiice to a consortium of Allianz, AXA, OMERS and IST3. Another notable transaction was the US\$1.5bn acquisition of Eolia Renovables by Albertis. US\$5.4bn of renewable projects closed in the quarter which was driven by two mega-deals, firstly the acquisition of an 80% stake in a German offshore wind farm Veja Mate for US\$2.6bn and the acquisition of NovEnergia II for US\$1.1bn by Total Eren.

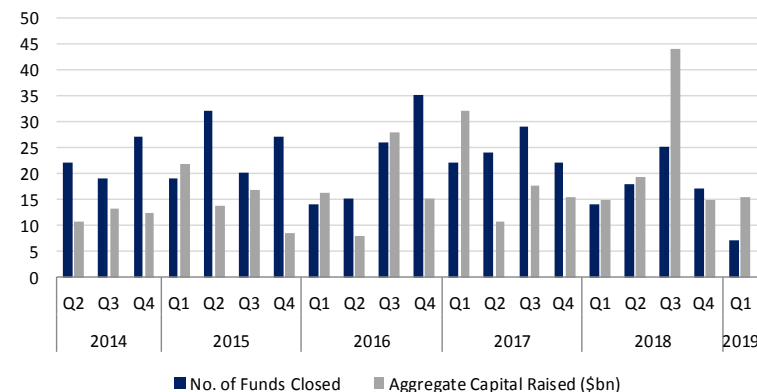
North America

- Deal flow was dominated by a number of energy transactions, notably the US\$3.2bn acquisition of a 44% stake in Tallgrass Energy by affiliates of Blackstone Infrastructure Partners and the financial close of Cheniere Energy's Midship Pipeline project for US\$1.2bn. Another notable transaction was the \$1.1bn acquisition of AT&T's data centres by Brookfield. Over the quarter, the Americas contributed US\$3.7bn of renewable asset M&A, dominated by seven large deals.

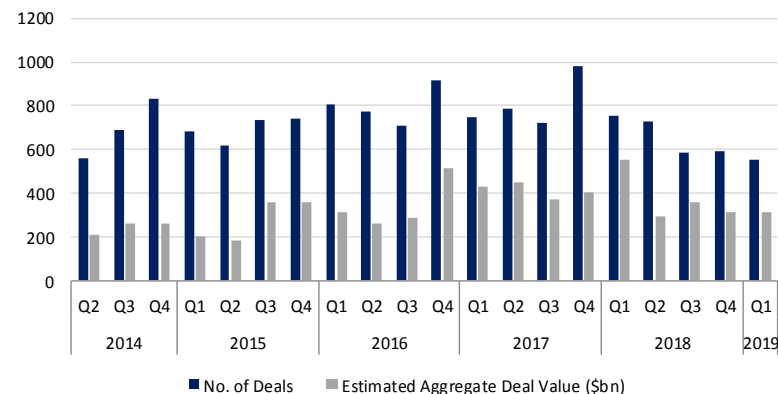
Asia Pacific

- Deal flow was dominated by a US\$6.0bn development of nine hybrid refinery-to-petrochemical complexes in India. Other notable transactions were the sale of a 69.1% stake in Glow Energy, a energy producer in Thailand for US\$2.9bn and the sale of the East West Pipeline, a gas pipeline in India for US\$1.9bn. Renewables dominated deal flow in Asia-Pacific, accounting for 88% of total deal value (US\$3.6bn), this was driven by the privatization of CP Clean Energy which accounted for 80% of all renewables deal value.

Unlisted Infrastructure Fundraising



Infrastructure Deals Completed



Source: Preqin

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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' Portfolio Overview

As of 3/31/2019	Quarter	1 Year Ending	3 Year Ending	5 Year Ending	10 Year Ending
Total Real Assets Portfolio	1.3%	5.6%	7.4%	8.7%	7.1%
Real Assets Benchmark*	1.2%	5.7%	6.2%	8.0%	6.5%

As of March 31, 2019	ATRS' Portfolio \$ in Millions
Number of Investments	59
Total Commitments	\$3,301.4
Unfunded Commitments	\$449.3
Total Paid-In Capital	\$3,132.9
Total Distributions	\$2,542.4
Net Asset Value	\$2,120.8
Gross Asset Value	\$2,696.3
DPI*	0.8x
TVPI*	1.5x
Since Inception IRR*	7.3%
<i>*Active and Liquidated</i>	

As of March 31, 2019	Market Value (\$ millions)	Current Allocation (%)	Target (%)
ATRS Total Assets	\$17,202.8		
Real Assets Portfolio:	2,120.8	12.3%	15%
Real Estate	1,391.1	8.1%	10%
Core*	991.3	71.3%	50-70%
Non-Core	399.8	28.7%	30-50%
Value-Added**	210.6	15.1%	N/A**
Opportunistic**	189.2	13.6%	N/A**
Agriculture	196.6	1.1%	1%
Timber	246.0	1.4%	2%
Infrastructure	287.1	1.7%	2%
Unfunded Commitments	449.3	2.6%	
Market Value + Unfunded	2,570.1	14.9%	

* Includes Arkansas Investments

** No stated targets

ATRS Real Estate Performance: Core Portfolio

As of 3/31/2019

Fund Name	Vintage Year	Total Commitment (\$)	Unfunded Commitment (\$)	Total Paid-In (\$)	Total Distributions (\$)	Net Asset Value (\$)	Total Value (\$)	DPI	TVPI	Net IRR
Arkansas Investments	2007	142,694,200	0	144,624,546	159,276,736	126,915,217	286,191,953	1.10x	1.98x	9.33%
JPMorgan Strategic Property Fund	2006	170,000,000	0	170,000,000	58,426,298	283,845,902	342,272,200	0.34x	2.01x	6.82%
MetLife Commercial Mortgage Income Fund, LP	2018	50,000,000	50,000,000	0	0	0	0	N/A	N/A	N/A
Prudential Property Investment Separate Account	2005	170,000,000	0	212,936,320	123,044,441	273,217,081	396,261,522	0.58x	1.86x	6.58%
UBS Trumbull Property Fund	2005	170,000,000	0	199,152,820	106,193,431	254,481,016	360,674,447	0.53x	1.81x	6.18%
UBS Trumbull Property Income Fund	2016	50,000,000	0	50,000,000	2,276,013	52,820,933	55,096,946	0.05x	1.10x	6.42%
Total Core		752,694,200	50,000,000	776,713,686	449,216,919	991,280,149	1,440,497,068	0.58x	1.85x	6.98%

Time Weighted Returns:

As of 3/31/2019 Partnership Name	Quarter	1 Year Ending	3 Year Ending	5 Year Ending	10 Year Ending
Arkansas Investments	1.6%	3.2%	17.9%	14.3%	10.6%
JPMorgan Strategic Property Fund	0.2%	5.3%	6.4%	8.6%	8.0%
MtLife Commercial Mortgage Income Fund, LP	N/A	N/A	N/A	N/A	N/A
Prudential Property Investment Separate Account	1.6%	7.3%	7.4%	9.8%	8.0%
UBS Trumbull Property Fund	0.5%	4.9%	5.5%	7.6%	7.0%
UBS Trumbull Property Income Fund	1.1%	6.3%	N/A	N/A	N/A
Total Core & Open-End Portfolio	0.9%	5.5%	7.7%	9.3%	8.2%
NFI-ODCE (Net)	1.2%	6.6%	7.0%	9.2%	7.7%

Note: Arkansas Investments are included in Core portfolio

ATRS' Real Estate Performance: Value-Add Portfolio

As of 3/31/2019

Fund Name	Vintage Year	Total Commitment (\$)	Unfunded Commitment (\$)	Total Paid-In (\$)	Total Distributions (\$)	Net Asset Value (\$)	Total Value (\$)	DPI	TVPI	Net IRR
Almanac Realty Securities Fund V, L.P.	2008	50,000,000	0	54,264,528	78,900,245	1,812,713	80,712,958	1.45x	1.49x	11.77%
Almanac Realty Securities Fund VI, L.P.	2012	30,000,000	0	18,829,376	17,807,005	8,138,205	25,945,210	0.95x	1.38x	12.32%
Almanac Realty Securities Fund VII, L.P.	2015	30,000,000	9,767,234	23,584,331	6,738,280	23,373,744	30,112,024	0.29x	1.28x	14.52%
Almanac Realty Securities Fund VIII, L.P.	2018	30,000,000	29,578,618	421,382	0	235,489	235,489	0.00x	0.56x	-79.75%
Calmwater Fund III	2017	30,000,000	14,027,922	26,058,117	10,618,571	16,579,350	27,197,921	0.41x	1.04x	6.80%
CBRE Strategic Partners U.S. Value 8, L.P.	2016	25,000,000	4,127,898	20,872,102	913,309	22,508,233	23,421,542	0.04x	1.12x	10.33%
Fidelity Real Estate Growth Fund III	2008	30,000,000	0	26,910,386	35,676,792	0	35,676,792	1.33x	1.33x	7.36%
FPA Core Plus Fund IV, L.P.	2018	30,000,000	15,900,000	14,100,000	116,548	13,837,706	13,954,254	0.01x	0.99x	-1.71%
Harbert European Real Estate Fund IV	2016	25,009,965	1,707,020	23,985,080	719,215	28,347,223	29,066,438	0.03x	1.21x	9.87%
JPMorgan Special Situations Property Fund	2006	50,000,000	0	50,000,000	64,229,336	0	64,229,336	1.28x	1.28x	2.96%
LaSalle Income & Growth Fund VI	2013	20,000,000	952,381	19,047,619	20,745,195	7,630,622	28,375,817	1.09x	1.49x	12.58%
LaSalle Income & Growth Fund VII	2017	20,000,000	7,195,044	15,734,750	3,321,875	15,361,267	18,683,142	0.21x	1.19x	13.19%
Long Wharf Real Estate Partners V	2015	30,000,000	-0	31,494,655	6,189,663	30,324,931	36,514,594	0.20x	1.16x	10.66%
New Boston Real Estate Investment Fund VII	2008	10,000,000	0	9,668,685	7,520,215	541,415	8,061,630	0.78x	0.83x	-2.69%
Rockwood Capital Real Estate Partners Fund IX, L.P.	2012	30,000,000	4,081,464	27,422,960	28,148,713	10,517,336	38,666,049	1.03x	1.41x	13.49%
Westbrook Real Estate Fund IX, L.P.	2012	40,000,000	3,603,488	45,919,600	41,994,913	17,642,080	59,636,993	0.91x	1.30x	11.44%
Westbrook Real Estate Fund X, L.P.	2015	25,000,000	13,189,279	14,745,384	2,868,421	13,776,789	16,645,210	0.19x	1.13x	11.67%
Total Value Added		505,009,965	104,130,347	423,058,955	326,508,296	210,627,103	537,135,400	0.77x	1.27x	7.27%

ATRS' Real Estate Performance: Opportunistic Portfolio

As of 3/31/2019

Fund Name	Vintage Year	Total Commitment (\$)	Unfunded Commitment (\$)	Total Paid-In (\$)	Total Distributions (\$)	Net Asset Value (\$)	Total Value (\$)	DPI	TVPI	Net IRR
Blackstone Real Estate Partners VII, L.P.	2011	50,000,000	7,342,119	62,441,576	68,560,811	33,353,592	101,914,403	1.10x	1.63x	16.79%
Carlyle Realty Partners VII, L.P.	2014	30,000,000	15,816,930	26,542,778	15,722,187	18,618,935	34,341,122	0.59x	1.29x	12.17%
Carlyle Realty Partners VIII, L.P.	2018	25,000,000	22,346,866	2,674,110	2,292	2,036,933	2,039,225	0.00x	0.76x	-34.93%
CB Richard Ellis Strategic Partners U.S. Opportunity Fund V, L.P.	2008	50,000,000	1,643,033	48,619,340	54,580,954	11,771,209	66,352,163	1.12x	1.36x	5.22%
Cerberus Institutional Real Estate Partners III, L.P.	2012	30,000,000	7,307,395	39,123,764	35,237,010	16,854,137	52,091,147	0.90x	1.33x	10.73%
Heitman European Property Partners IV	2009	50,000,000	2,268,106	34,448,111	24,292,222	3,573,477	27,865,699	0.71x	0.81x	-3.51%
Kayne Anderson Real Estate Partners V, L.P.	2018	25,000,000	13,750,000	11,457,799	0	10,455,645	10,455,645	0.00x	0.91x	-11.68%
Landmark Real Estate Partners VI, L.P.	2010	40,000,000	4,909,392	35,090,608	51,468,186	3,599,105	55,067,291	1.47x	1.57x	19.39%
Landmark Real Estate Partners VIII, L.P.	2017	25,000,000	21,038,653	6,611,028	2,726,785	5,377,154	8,103,939	0.41x	1.23x	29.12%
LaSalle Asia Opportunity Fund IV	2014	30,000,000	11,080,298	26,115,903	32,700,157	6,020,454	38,720,611	1.25x	1.48x	32.23%
LaSalle Asia Opportunity Fund V	2016	30,000,000	23,808,144	7,023,597	1,667,948	5,939,075	7,607,023	0.24x	1.08x	4.42%
Lone Star Real Estate Fund IV, L.P.	2015	24,260,817	5,204,622	20,812,524	15,940,659	12,956,163	28,896,822	0.77x	1.39x	18.47%
Metropolitan Real Estate Partners Co-Investments Fund, L.P.	2015	20,000,000	867,124	19,103,946	10,078,118	16,104,573	26,182,692	0.53x	1.37x	15.92%
O'Connor North American Property Partners II	2008	50,000,000	5,000,000	58,124,146	40,024,095	10,580,366	50,604,461	0.69x	0.87x	-2.62%
Olympus Real Estate Fund III, L.P.	2000	100,000,000	0	112,839,568	98,504,479	355,396	98,859,875	0.87x	0.88x	-3.67%
Torchlight Debt Opportunity Fund II	2007	55,000,000	0	55,000,000	47,309,259	486,332	47,795,591	0.86x	0.87x	-1.83%
Torchlight Debt Opportunity Fund III	2008	30,000,000	0	33,493,596	49,863,151	0	49,863,151	1.49x	1.49x	13.72%
Torchlight Debt Opportunity Fund IV	2013	30,000,000	0	32,937,974	35,553,497	10,283,017	45,836,514	1.08x	1.39x	10.47%
Torchlight Debt Opportunity Fund V	2015	25,000,000	7,500,000	17,501,134	2,463,027	19,469,279	21,932,306	0.14x	1.25x	12.35%
Torchlight Debt Opportunity Fund VI, LP	2017	25,000,000	23,740,710	1,434,224	174,934	1,327,430	1,502,364	0.12x	1.05x	3.47%
Total Opportunistic		1,207,298,178	173,623,393	1,150,395,081	1,362,571,410	189,162,273	1,551,733,683	1.18x	1.35x	10.25%

ATRS' Timberland, Agriculture, and Infrastructure Performance

As of 3/31/2019

Fund Name	Vintage Year	Total Commitment (\$)	Unfunded Commitment (\$)	Total Paid-In (\$)	Total Distributions (\$)	Net Asset Value (\$)	Total Value (\$)	DPI	TVPI	Net IRR
BTG Timber Separate Account	1998	316,000,000	24,891,933	322,642,586	315,072,909	245,987,394	561,060,303	0.98x	1.74x	5.03%
Total Timber		316,000,000	24,891,933	322,642,586	315,072,909	245,987,394	561,060,303	0.98x	1.74x	5.03%
HFMS Farmland Separate Account	2011	125,000,000	18,577,907	133,253,872	26,831,779	142,313,279	169,145,058	0.20x	1.27x	5.64%
UBS Agrivest Core Farmland Fund	2013	50,000,000	0	50,000,000	4,665,858	54,325,595	58,991,454	0.09x	1.18x	4.86%
Total Agriculture		175,000,000	18,577,907	183,253,872	31,497,637	196,638,874	228,136,511	0.17x	1.24x	5.47%

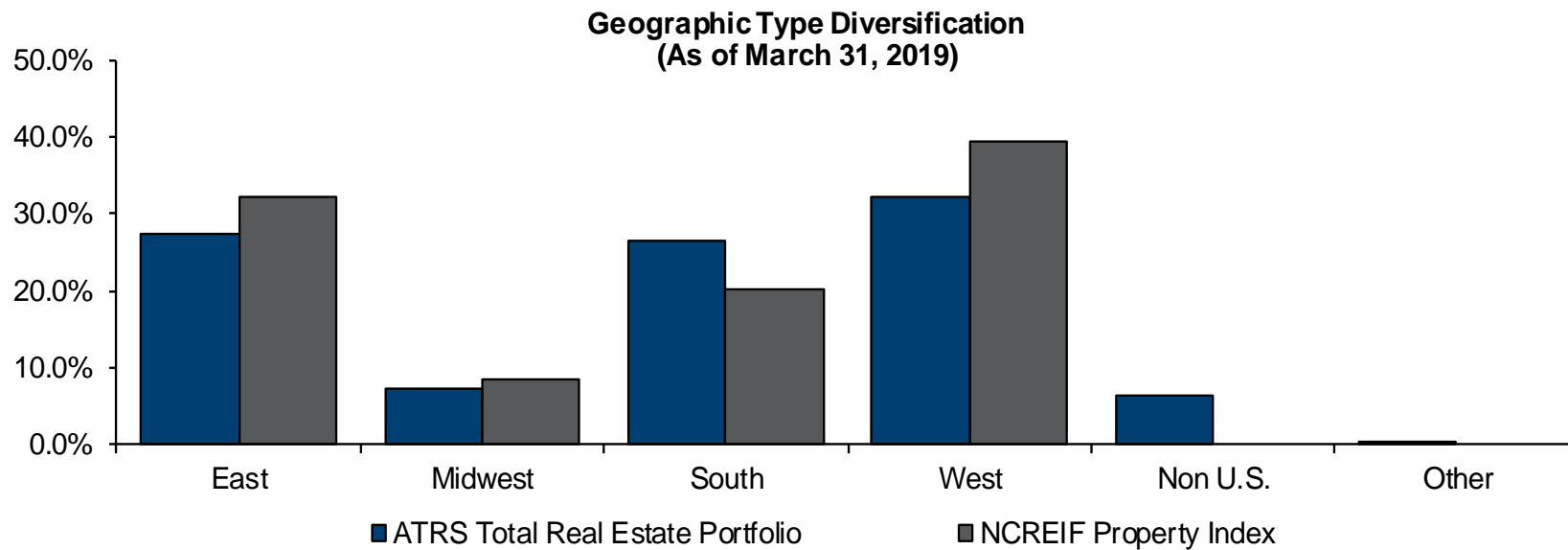
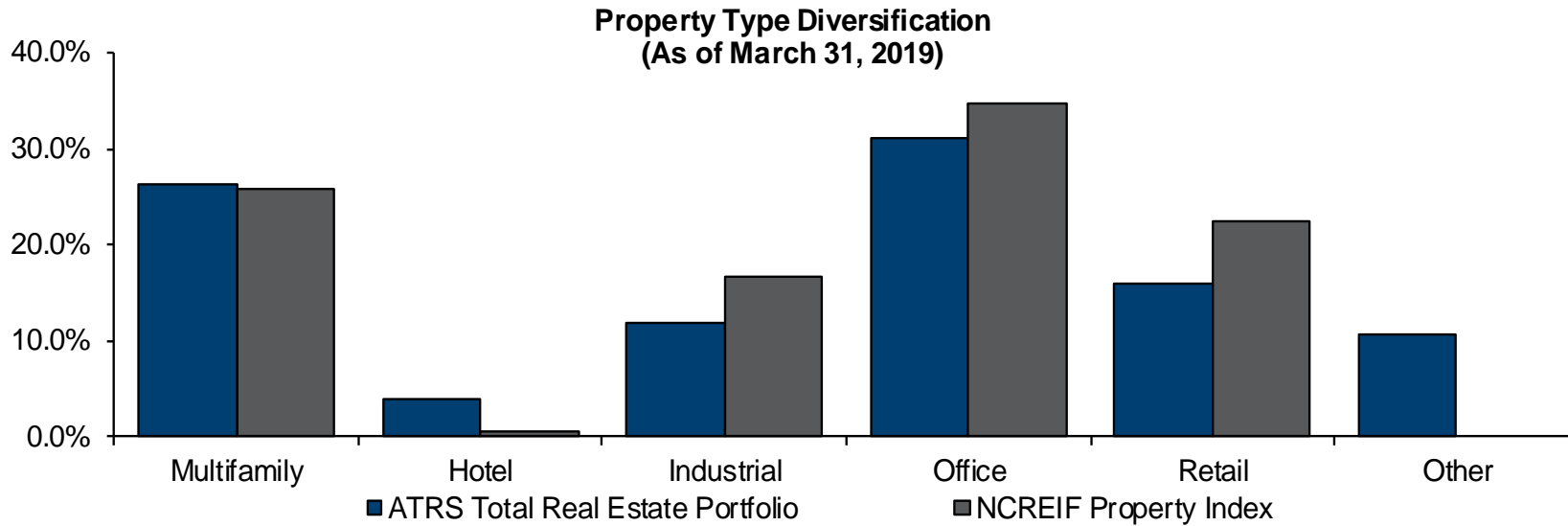
Fund Name	Vintage Year	Total Commitment (\$)	Unfunded Commitment (\$)	Total Paid-In (\$)	Total Distributions (\$)	Net Asset Value (\$)	Total Value (\$)	DPI	TVPI	Net IRR
Antin Infrastructure Partners II, L.P.	2014	47,647,600	5,339,768	35,754,093	2,856,268	50,717,250	53,573,518	0.08x	1.50x	11.48%
DIF Infrastructure Fund V	2018	47,766,330	31,708,523	14,428,203	634,634	13,662,793	14,297,427	0.04x	0.99x	-1.09%
First Reserve Energy Infrastructure Fund II, L.P.	2014	50,000,000	12,222,347	42,604,887	25,743,862	34,021,112	59,764,974	0.60x	1.40x	33.62%
Global Infrastructure Partners III, L.P.	2016	50,000,000	15,021,293	37,974,070	2,474,738	39,479,048	41,953,786	0.07x	1.10x	8.02%
IFM Global Infrastructure (US), L.P.	2017	50,000,000	0	50,000,000	299,038	52,468,554	52,767,591	0.01x	1.06x	5.58%
KKR Global Infrastructure Investors II, L.P.	2015	50,000,000	6,322,840	49,565,686	6,721,168	53,730,101	60,451,269	0.14x	1.22x	11.55%
Macquarie Infrastructure Partners III, L.P.	2013	50,000,000	7,453,861	46,496,975	18,772,707	42,986,914	61,759,621	0.40x	1.33x	13.17%
Total Infrastructure		345,413,930	78,068,633	276,823,914	57,502,415	287,065,771	344,568,186	0.21x	1.24x	13.61%

Portfolio Performance Detail: By Vintage Year

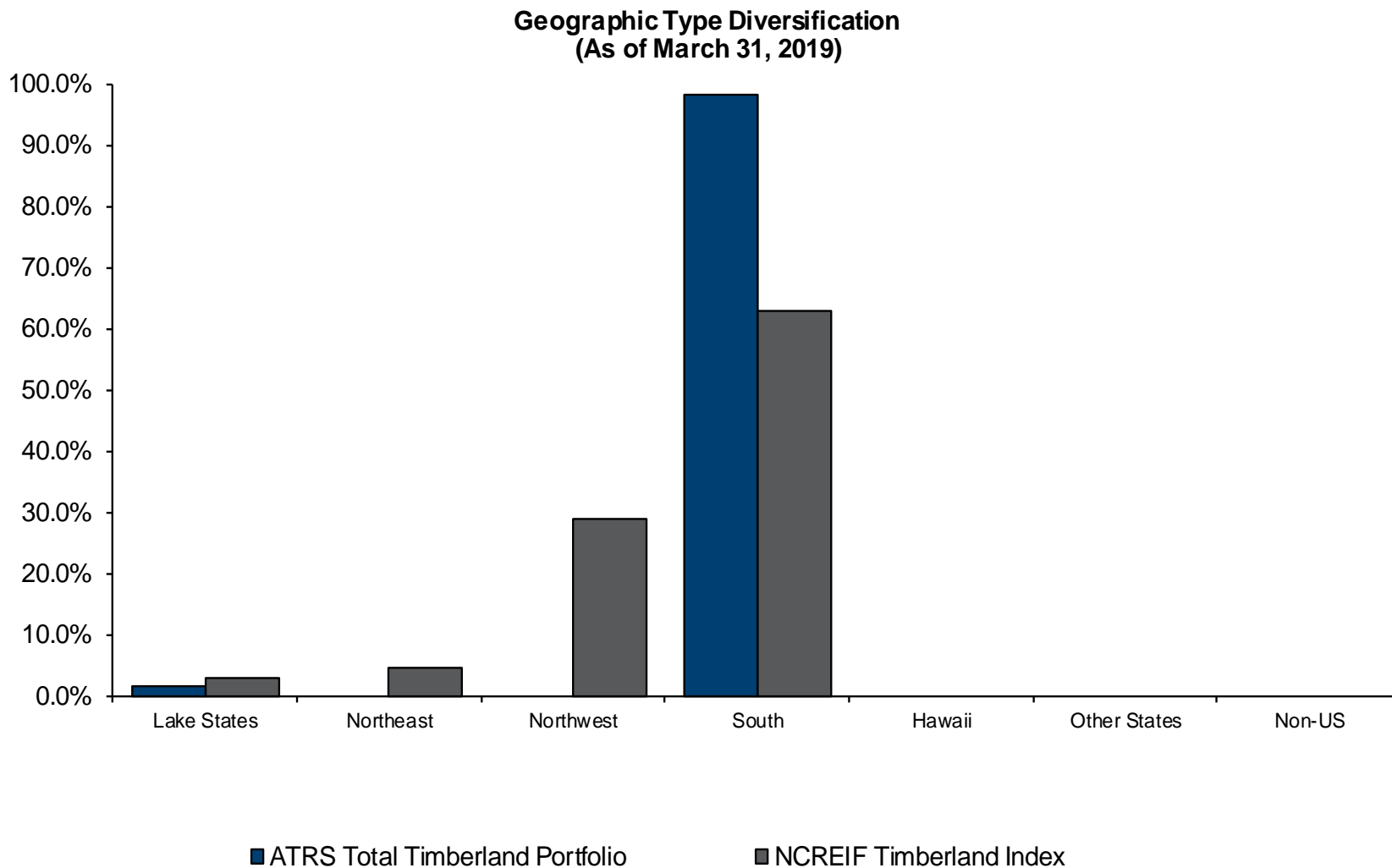
As of 3/31/2019

Vintage Year (ATRS)	Total Commitment	Unfunded Commitment	Total Paid-In	Total Distributions	Net Asset Value as of 3/31/2019	Total Value	DPI	TVPI	Net IRR
1997	75,000,000	0	80,737,536	120,795,230	0	120,795,230	1.50x	1.50x	13.42%
1998	416,000,000	24,891,933	435,505,235	463,012,686	245,987,394	709,000,080	1.06x	1.63x	5.43%
1999	178,794,401	0	189,842,518	316,052,650	0	316,052,650	1.66x	1.66x	15.90%
2000	209,242,960	0	228,396,220	289,418,462	355,396	289,773,858	1.27x	1.27x	8.51%
2005	340,000,000	0	412,089,139	229,237,872	527,698,097	756,935,969	0.56x	1.84x	6.39%
2006	220,000,000	0	220,000,000	122,655,633	283,845,902	406,501,535	0.56x	1.85x	6.13%
2007	197,694,200	0	199,624,547	206,585,995	127,401,549	333,987,544	1.03x	1.67x	6.92%
2008	220,000,000	6,643,033	231,080,681	266,565,452	24,705,703	291,271,156	1.15x	1.26x	5.20%
2009	50,000,000	2,268,106	34,448,111	24,292,222	3,573,477	27,865,699	0.71x	0.81x	-3.51%
2010	40,000,000	4,909,392	35,090,608	51,468,186	3,599,105	55,067,291	1.47x	1.57x	19.39%
2011	175,000,000	25,920,026	195,695,448	95,392,589	175,666,871	271,059,460	0.49x	1.39x	8.69%
2012	130,000,000	14,992,348	131,295,701	123,187,641	53,151,758	176,339,399	0.94x	1.34x	11.80%
2013	150,000,000	8,406,242	148,482,568	79,737,258	115,226,148	194,963,406	0.54x	1.31x	9.40%
2014	157,647,600	44,459,343	131,017,661	77,022,474	109,377,751	186,400,225	0.59x	1.42x	17.76%
2015	204,260,817	42,851,100	176,807,660	50,999,337	169,735,580	220,734,917	0.29x	1.25x	13.49%
2016	180,009,965	44,664,355	139,854,849	8,051,223	149,094,513	157,145,736	0.06x	1.12x	7.92%
2017	150,000,000	66,002,328	99,838,119	17,141,202	91,113,754	108,254,956	0.17x	1.08x	12.03%
2018	207,766,330	163,284,007	43,081,494	753,475	40,228,566	40,982,040	0.02x	0.95x	-7.54%
Grand Total(s):	3,301,416,273	449,292,212	3,132,888,093	2,542,369,587	2,120,761,565	4,663,131,151	0.81x	1.49x	7.32%

Portfolio Diversification – Real Estate

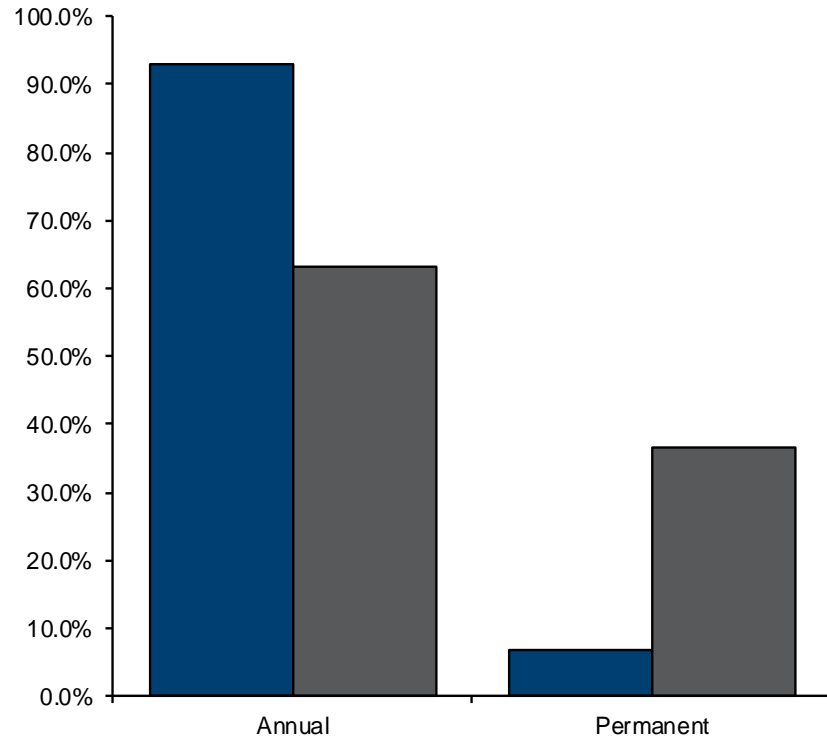


Portfolio Diversification - Timberland



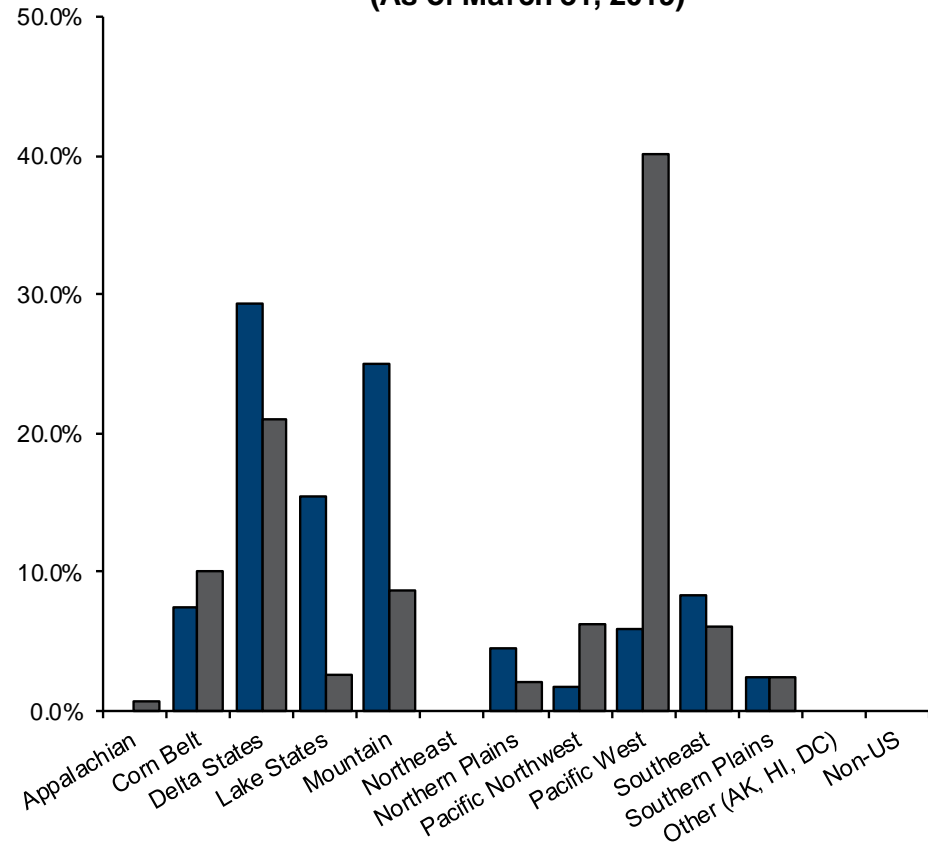
Portfolio Diversification - Agriculture

**Crop Type Diversification
(As of March 31, 2019)**



■ ATRS Total Farmland Portfolio ■ NCREIF Farmland Index

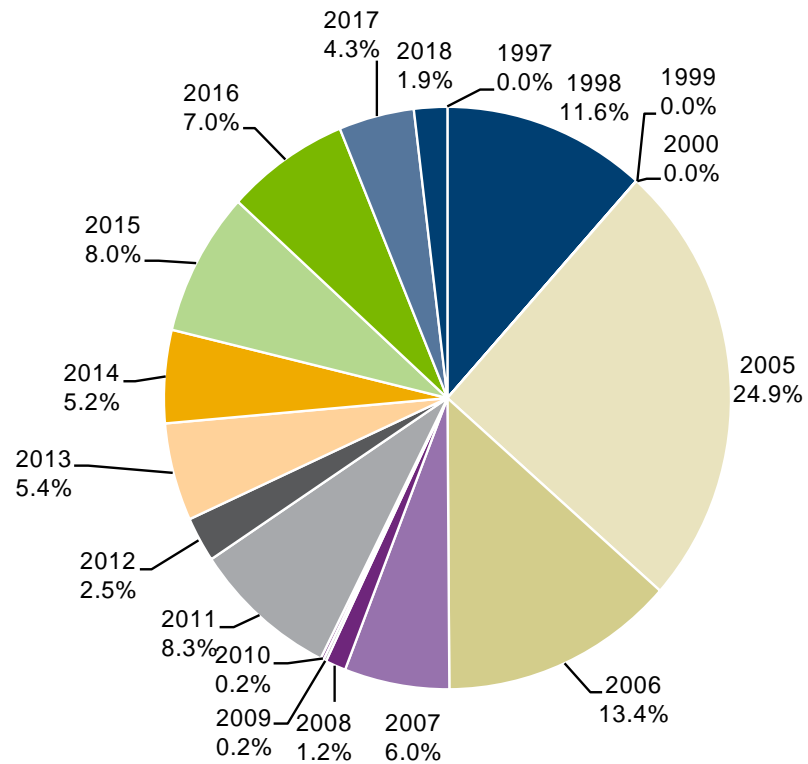
**Geographic Type Diversification
(As of March 31, 2019)**



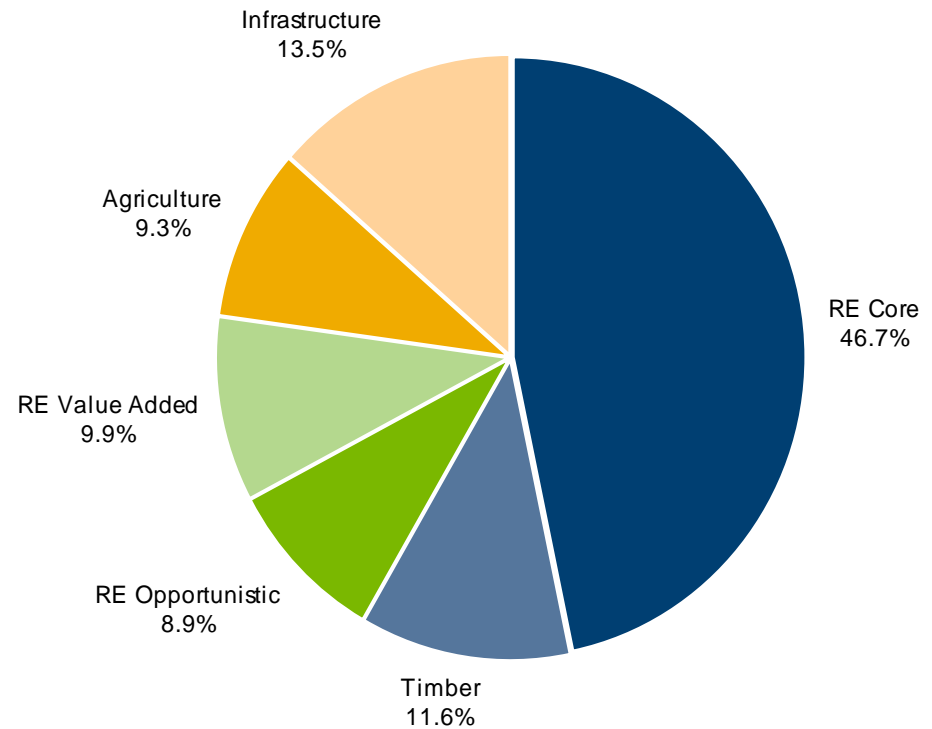
■ ATRS Total Farmland Portfolio ■ NCREIF Farmland Index

Portfolio Diversification (cont'd)

**Vintage Year Diversification by Net Asset Value
(As of 3/31/2019)**



**Style Diversification by Net Asset Value
(As of 3/31/2019)**



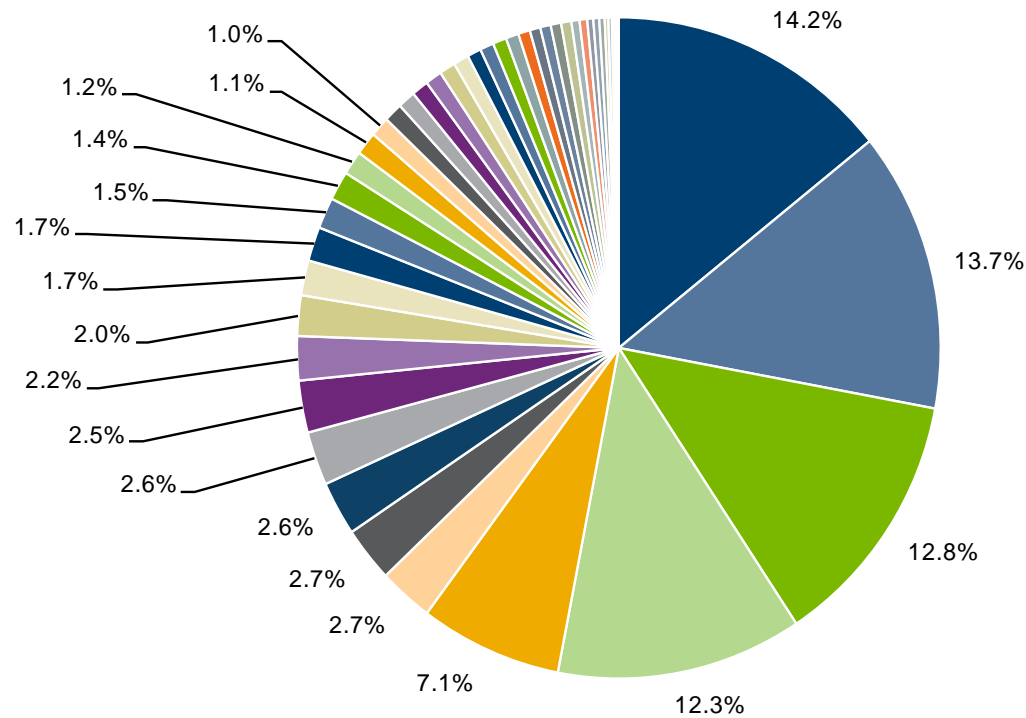
Note: Arkansas Investments are included in Core portfolio

Portfolio Funding Summary

Partnership Name	Funded Commitment (\$)	Unfunded Commitment (\$)	Total Commitment (\$)
Almanac Realty Securities Fund V, L.P.	50,000,000	0	50,000,000
Almanac Realty Securities Fund VI, L.P.	30,000,000	0	30,000,000
Almanac Realty Securities Fund VII, L.P.	20,232,766	9,767,234	30,000,000
Almanac Realty Securities Fund VIII, L.P.	421,382	29,578,618	30,000,000
Antin Infrastructure Partners II, L.P.	42,307,832	5,339,768	47,647,600
Blackstone Real Estate Partners VII, L.P.	42,657,881	7,342,119	50,000,000
BTG Timber Separate Account	291,108,067	24,891,933	316,000,000
Calmwater Fund III	15,972,078	14,027,922	30,000,000
Carlyle Realty Partners VII, L.P.	14,183,070	15,816,930	30,000,000
Carlyle Realty Partners VIII, L.P.	2,653,134	22,346,866	25,000,000
CB Richard Ellis Strategic Partners U.S. Opportunity Fund V, L.P.	48,356,967	1,643,033	50,000,000
CBRE Strategic Partners U.S. Value 8, L.P.	20,872,102	4,127,898	25,000,000
Cerberus Institutional Real Estate Partners III, L.P.	22,692,605	7,307,395	30,000,000
DIF Infrastructure Fund V	16,057,807	31,708,523	47,766,330
First Reserve Energy Infrastructure Fund II, L.P.	37,777,653	12,222,347	50,000,000
FPA Core Plus Fund IV, L.P.	14,100,000	15,900,000	30,000,000
Global Infrastructure Partners III, L.P.	34,978,707	15,021,293	50,000,000
Harbert European Real Estate Fund IV	23,302,945	1,707,020	25,009,965
Heitman European Property Partners IV	47,731,894	2,268,106	50,000,000
HFMS Farmland Separate Account	106,422,093	18,577,907	125,000,000
JPMorgan Strategic Property Fund	170,000,000	0	170,000,000
Kayne Anderson Real Estate Partners V, L.P.	11,250,000	13,750,000	25,000,000
IFM Global Infrastructure (US), L.P.	50,000,000	0	50,000,000
KKR Global Infrastructure Investors II, L.P.	43,677,160	6,322,840	50,000,000
Landmark Real Estate Partners VI, L.P.	35,090,608	4,909,392	40,000,000
Landmark Real Estate Partners VIII, L.P.	3,961,347	21,038,653	25,000,000
LaSalle Asia Opportunity Fund IV	18,919,702	11,080,298	30,000,000
LaSalle Asia Opportunity Fund V	6,191,856	23,808,144	30,000,000
LaSalle Income & Growth Fund VI	19,047,619	952,381	20,000,000
LaSalle Income & Growth Fund VII	12,804,956	7,195,044	20,000,000
Lone Star Real Estate Fund IV, L.P.	19,056,195	5,204,622	24,260,817
Long Wharf Real Estate Partners V	30,000,000	0	30,000,000
Macquarie Infrastructure Partners III, L.P.	42,546,139	7,453,861	50,000,000
MetLife Commercial Mortgage Income Fund, LP	0	50,000,000	50,000,000
Metropolitan Real Estate Partners Co-Investments Fund, L.P.	19,132,876	867,124	20,000,000
New Boston Real Estate Investment Fund VII	10,000,000	0	10,000,000
O'Connor North American Property Partners II	45,000,000	5,000,000	50,000,000
Olympus Real Estate Fund III, L.P.	100,000,000	0	100,000,000
Prudential Property Investment Separate Account	170,000,000	0	170,000,000
Rockwood Capital Real Estate Partners Fund IX, L.P.	25,918,536	4,081,464	30,000,000
Torchlight Debt Opportunity Fund II	55,000,000	0	55,000,000
Torchlight Debt Opportunity Fund III	30,000,000	0	30,000,000
Torchlight Debt Opportunity Fund IV	30,000,000	0	30,000,000
Torchlight Debt Opportunity Fund V	17,500,000	7,500,000	25,000,000
Torchlight Debt Opportunity Fund VI, LP	1,259,290	23,740,710	25,000,000
UBS Agrivest Core Farmland Fund	50,000,000	0	50,000,000
UBS Trumbull Property Fund	170,000,000	0	170,000,000
UBS Trumbull Property Income Fund	50,000,000	0	50,000,000
Westbrook Real Estate Fund IX, L.P.	36,396,512	3,603,488	40,000,000
Westbrook Real Estate Fund X, L.P.	11,810,721	13,189,279	25,000,000
	2,166,392,500	449,292,212	2,615,684,712

Manager Diversification

- JPMorgan Strategic Property Fund
- Prudential Property Investment Separate Account
- UBS Trumbull Property Fund
- BTG Timber Separate Account
- HFMS Farmland Separate Account
- UBS Agrivest Core Farmland Fund
- KKR Global Infrastructure Investors II, L.P.
- UBS Trumbull Property Income Fund
- IFM Global Infrastructure (US), L.P.
- Antin Infrastructure Partners II, L.P.
- Macquarie Infrastructure Partners III, L.P.
- Global Infrastructure Partners III, L.P.
- First Reserve Energy Infrastructure Fund II, L.P.
- Blackstone Real Estate Partners VII, L.P.
- Long Wharf Real Estate Partners V
- Harbert European Real Estate Fund IV
- Almanac Realty Securities Fund VII, L.P.
- CBRE Strategic Partners U.S. Value 8, L.P.
- Torchlight Debt Opportunity Fund V
- *Carlyle Realty Partners VII, L.P.
- *Westbrook Real Estate Fund IX, L.P.
- *Cerberus Institutional Real Estate Partners III, L.P.
- *Calmwater Fund III
- *Metropolitan Real Estate Partners Co-Investments Fund, L.P.
- *LaSalle Income & Growth Fund VII
- *FPA Core Plus Fund IV, L.P.
- *Westbrook Real Estate Fund X, L.P.
- *DIF Infrastructure Fund V
- *Lone Star Real Estate Fund IV, L.P.
- *CB Richard Ellis Strategic Partners U.S. Opportunity Fund V, L.P.
- *O'Connor North American Property Partners II
- *Rockwood Capital Real Estate Partners Fund IX, L.P.
- *Kayne Anderson Real Estate Partners V, L.P.
- *Torchlight Debt Opportunity Fund IV
- *Almanac Realty Securities Fund VI, L.P.
- *LaSalle Income & Growth Fund VI
- *LaSalle Asia Opportunity Fund IV
- *LaSalle Asia Opportunity Fund V
- *Landmark Real Estate Partners VIII, L.P.
- *Landmark Real Estate Partners VI, L.P.
- *Heitman European Property Partners IV
- *Carlyle Realty Partners VIII, L.P.
- *Almanac Realty Securities Fund V, L.P.
- *Torchlight Debt Opportunity Fund VI, LP
- *New Boston Real Estate Investment Fund VII
- *Torchlight Debt Opportunity Fund II
- *Olympus Real Estate Fund III, L.P.
- *Almanac Realty Securities Fund VIII, L.P.
- *Torchlight Debt Opportunity Fund III
- *MetLife Commercial Mortgage Income Fund, LP



*each manager represents less than 1% of NAV



Management Fees

ATRS Sub-Asset Class	ATRS Style	Partnership Name	Current Quarter Management Fees as of 3/31/2019	YTD Management Fees
Real Estate	Core	JPMorgan Strategic Property Fund	(614,055.93)	(614,055.93)
Real Estate	Core	MetLife Commercial Mortgage Income Fund, LP	0.00	0.00
Real Estate	Core	Prudential Property Investment Separate Account	(540,001.34)	(540,001.34)
Real Estate	Core	UBS Trumbull Property Fund	(479,647.82)	(479,647.82)
Real Estate	Core	UBS Trumbull Property Income Fund	(103,850.43)	(103,850.43)
Subtotal: Core			(1,737,555.52)	(1,737,555.52)
Real Estate	Opportunistic	Blackstone Real Estate Partners VII, L.P.	(89,352.00)	(89,352.00)
Real Estate	Opportunistic	Carlyle Realty Partners VII, L.P.	(64,438.00)	(64,438.00)
Real Estate	Opportunistic	Carlyle Realty Partners VIII, L.P.	(86,781.00)	(86,781.00)
Real Estate	Opportunistic	CB Richard Ellis Strategic Partners U.S. Opportunity Fund V, L.P.	(31,250.00)	(31,250.00)
Real Estate	Opportunistic	Cerberus Institutional Real Estate Partners III, L.P.	(24,999.00)	(24,999.00)
Real Estate	Opportunistic	Heitman European Property Partners IV	(29,529.53)	(29,529.53)
Real Estate	Opportunistic	Kayne Anderson Real Estate Partners V, L.P.	(109,375.00)	(109,375.00)
Real Estate	Opportunistic	Landmark Real Estate Partners VI, L.P.	(16,465.00)	(16,465.00)
Real Estate	Opportunistic	Landmark Real Estate Partners VIII, L.P.	(62,500.00)	(62,500.00)
Real Estate	Opportunistic	LaSalle Asia Opportunity Fund IV	(15,364.00)	(15,364.00)
Real Estate	Opportunistic	LaSalle Asia Opportunity Fund V	(76,552.00)	(76,552.00)
Real Estate	Opportunistic	Lone Star Real Estate Fund IV, L.P.	(12,343.00)	(12,343.00)
Real Estate	Opportunistic	Metropolitan Real Estate Partners Co-Investments Fund, L.P.	(32,934.97)	(32,934.97)
Real Estate	Opportunistic	O'Connor North American Property Partners II	(17,666.00)	(17,666.00)
Real Estate	Opportunistic	Olympus Real Estate Fund III, L.P.	0.00	0.00
Real Estate	Opportunistic	Torchlight Debt Opportunity Fund II	0.00	0.00
Real Estate	Opportunistic	Torchlight Debt Opportunity Fund III	0.00	0.00
Real Estate	Opportunistic	Torchlight Debt Opportunity Fund IV	(32,188.00)	(32,188.00)
Real Estate	Opportunistic	Torchlight Debt Opportunity Fund V	(75,000.00)	(75,000.00)
Real Estate	Opportunistic	Torchlight Debt Opportunity Fund VI, LP	(79,688.00)	(79,688.00)
Subtotal: Opportunistic			(856,425.50)	(856,425.50)
Real Estate	Value Added	Almanac Realty Securities Fund V, L.P.	(7,098.00)	(7,098.00)
Real Estate	Value Added	Almanac Realty Securities Fund VI, L.P.	(15,115.00)	(15,115.00)
Real Estate	Value Added	Almanac Realty Securities Fund VII, L.P.	(59,570.00)	(59,570.00)
Real Estate	Value Added	Almanac Realty Securities Fund VIII, L.P.	(92,466.00)	(92,466.00)
Real Estate	Value Added	Calmwater Fund III	(68,828.10)	(68,828.10)
Real Estate	Value Added	CBRE Strategic Partners U.S. Value 8, L.P.	(47,779.00)	(47,779.00)
Real Estate	Value Added	FPA Core Plus Fund IV, L.P.	(21,706.00)	(21,706.00)
Real Estate	Value Added	Harbert European Real Estate Fund IV	(82,015.46)	(82,015.46)
Real Estate	Value Added	LaSalle Income & Growth Fund VI	(17,333.18)	(17,333.18)
Real Estate	Value Added	LaSalle Income & Growth Fund VII	(54,313.36)	(54,313.36)
Real Estate	Value Added	Long Wharf Real Estate Partners V	(110,958.91)	(110,958.91)
Real Estate	Value Added	New Boston Real Estate Investment Fund VII	(5,637.00)	(5,637.00)
Real Estate	Value Added	Rockwood Capital Real Estate Partners Fund IX, L.P.	(68,104.52)	(68,104.52)
Real Estate	Value Added	Westbrook Real Estate Fund IX, L.P.	(51,932.00)	(51,932.00)
Real Estate	Value Added	Westbrook Real Estate Fund X, L.P.	(46,969.00)	(46,969.00)
Subtotal: Value Added			(749,825.53)	(749,825.53)
Subtotal: Real Estate			(3,343,806.55)	(3,343,806.55)

Management Fees

A TRS Sub-Asset Class	A TRS Style	Partnership Name	Current Quarter Management Fees as of 3/31/2019	YTD Management Fees
Agriculture		HFMS Farmland Separate Account	(424,350.12)	(424,350.12)
Agriculture		UBS Agrivest Core Farmland Fund	(136,010.89)	(136,010.89)
Subtotal:			(560,361.01)	(560,361.01)
Subtotal: Agriculture			(560,361.01)	(560,361.01)
Infrastructure		Antin Infrastructure Partners II, L.P.	(77,442.11)	(77,442.11)
Infrastructure		DIF Infrastructure Fund V	0.00	0.00
Infrastructure		First Reserve Energy Infrastructure Fund II, L.P.	(169,363.00)	(169,363.00)
Infrastructure		Global Infrastructure Partners III, L.P.	(202,182.00)	(202,182.00)
Infrastructure		IFM Global Infrastructure (US), L.P.	(98,099.23)	(98,099.23)
Infrastructure		KKR Global Infrastructure Investors II, L.P.	(103,052.00)	(103,052.00)
Infrastructure		Macquarie Infrastructure Partners III, L.P.	(124,952.32)	(124,952.32)
Subtotal:			(775,090.66)	(775,090.66)
Subtotal: Infrastructure			(775,090.66)	(775,090.66)
Timber		BTG Timber Separate Account	(540,285.99)	(540,285.99)
Subtotal:			(540,285.99)	(540,285.99)
Subtotal: Timber			(540,285.99)	(540,285.99)

Compliance Matrix

RISK MANAGEMENT						
Property Type	NFI-ODCE	Target/Constraint	Minimum	Maximum	Actual	Compliant?
Office	34.8%	NPI +/- 50%	17.4%	50.0%	31.1%	Yes
Retail	22.4%	NPI +/- 50%	11.2%	33.6%	16.0%	Yes
Industrial	16.7%	NPI +/- 50%	8.4%	25.1%	12.0%	Yes
Multifamily	25.7%	NPI +/- 50%	12.9%	38.6%	26.4%	Yes
Lodging/Hotel	0.5%	NPI +/- 50%	0.2%	0.7%	3.9%	No
Other1	0.0%	NPI +/- 50%	0.0%	0.0%	10.7%	No
Geography - Real Estate	NFI-ODCE	Target/Constraint	Minimum	Maximum	Actual	Compliant?
West	39.4%	NPI +/- 50%	19.7%	59.1%	32.3%	Yes
East	32.2%	NPI +/- 50%	16.1%	48.3%	27.4%	Yes
Midwest	8.3%	NPI +/- 50%	4.2%	12.5%	7.2%	Yes
South	20.0%	NPI +/- 50%	10.0%	30.0%	26.5%	Yes
Other2,3	0.0%	n/a	n/a	n/a	0.3%	Yes
Non-U.S.	0.0%	n/a	0.0%	40.0%	6.4%	Yes
Geography - Timber	NCREIF Timberland	Target/Constraint	Minimum	Maximum	Actual	Compliant?
Lake States	2.9%	NCREIF Timberland +/- 50%	1.5%	4.4%	1.7%	Yes
Northeast	4.6%	NCREIF Timberland +/- 50%	2.3%	6.9%	0.0%	No
Northwest	29.0%	NCREIF Timberland +/- 50%	14.5%	43.5%	0.0%	No
South	62.9%	NCREIF Timberland +/- 50%	31.5%	94.4%	98.3%	No
Geography - Agriculture	NCREIF Farmland	Target/Constraint	Minimum	Maximum	Actual	Compliant?
Appalachian	0.7%		0.0%	50.0%	0.0%	Yes
Corn Belt	10.1%		0.0%	50.0%	7.4%	Yes
Delta States	21.0%		0.0%	50.0%	29.3%	Yes
Lake States	2.6%		0.0%	50.0%	15.5%	Yes
Mountain	8.7%		0.0%	50.0%	25.0%	Yes
Northeast	0.0%		0.0%	50.0%	0.0%	Yes
Northern Plains	2.0%		0.0%	50.0%	4.5%	Yes
Pacific Northwest	6.2%		0.0%	50.0%	1.7%	Yes
Pacific West	40.2%		0.0%	50.0%	5.8%	Yes
Southeast	6.1%		0.0%	50.0%	8.4%	Yes
Southern Plains	2.4%		0.0%	50.0%	2.4%	Yes
Other	0.0%		0.0%	50.0%	0.0%	Yes
Non-U.S.	0.0%		0.0%	50.0%	0.0%	Yes
Manager	Target/Constraint		Minimum	Maximum	Max	Compliant?
			0.0%	30.0%	14.2%	Yes
Style	Target/Constraint		Minimum	Maximum	Actual	Compliant?
Core			50.0%	70.0%	71.3%	No
Non-Core			30.0%	50.0%	28.7%	No

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
- 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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Skylight Office Tower
1660 West Second Street, 4th Floor
Cleveland, Ohio 44113

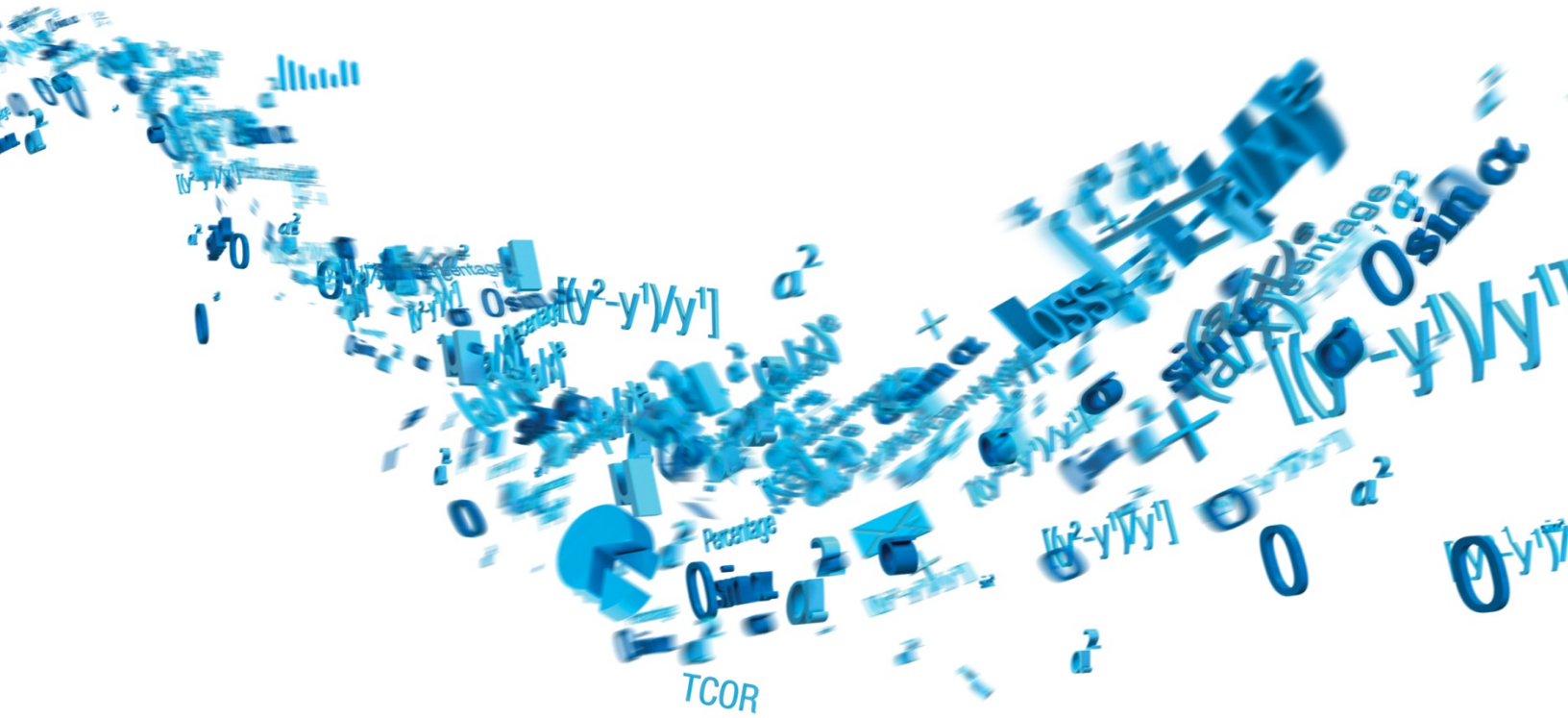
Memorandum

To: Arkansas Teacher Retirement System
From: Chae Hong
CC: PJ Kelly; Jack Dowd
Date: October 7, 2019
Re: AxInfra NA II, LP – Commitment Recommendation

Background and Recommendation

Axium Infrastructure Inc (“Axium” or the “Sponsor”) manages AxInfra NA II, LP (the “Fund”), a \$2.02 billion open-end commingled fund to be comprised mostly of contracted core infrastructure investments across renewable power, utilities, social infrastructure, transportation, and other sectors in the United States and Canada, and target similar new investments in the future. This strategy offers a complementary fit to ATRS’ infrastructure portfolio. The Fund targets to generate a net IRR of 9-12%.

AHIC 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. An InTotal is attached for reference. We recommend that ATRS invest \$50 million in the Fund to fulfill ATRS’ 2019 Infrastructure real estate allocation, in accordance with the previously approved 2019 ATRS Real Asset Pacing Schedule.



InTotal

Global Investment Management

Axiom Infrastructure North American Fund

June 2019

Executive Summary

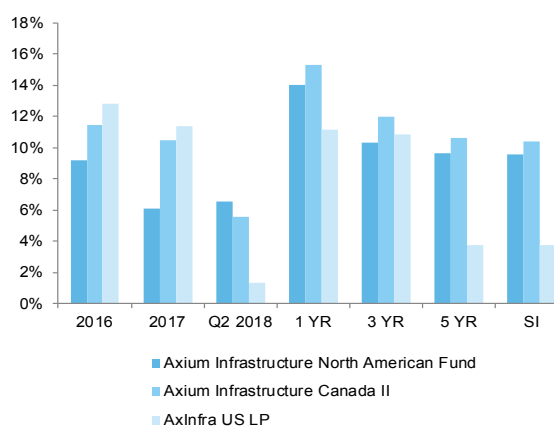
Overall Rating

Based on our due diligence, Axiom Infrastructure Inc. (“Axiom”, the “Manager”, or the “Firm”) appears to be a credible manager, capable of implementing its stated investment strategy in Axiom Infrastructure North America Fund (the “Fund”). The Fund provides immediate exposure to a portfolio of 29 underlying investments across Public Private Partnership (“PPP”), social infrastructure, renewable power, and other sectors. The Fund has been able to generate strong cash yield and overall performance since inception.

Component Ratings

	Current Rating	<i>Previous Rating</i>
Overall	Buy	<i>New Rating</i>
Business	3	<i>n/a</i>
Staff	3	<i>n/a</i>
Process	3	<i>n/a</i>
Risk	2	<i>n/a</i>
ODD	A2 Pass	<i>n/a</i>
Performance	3	<i>n/a</i>
T&C	2	<i>n/a</i>

Historical Performance



Firm Summary

Head Office Location	Montréal, Canada	Parent Name	Axiom Infrastructure Inc.
Firm / Strategy AUM	C\$3.7 billion	Total Staff	56

Strategy Summary

Team Location	Montréal, Toronto, New York and Vancouver	Lead Manager	Pierre Anctil
Strategy Inception	December 2012	Strategy Inv. Staff	19
Investment Type	Operating assets (≥60%) & late-stage greenfield projects (≤40%)	Ownership Target	Ownership positions of 20%–100% with influence in minority situations
Liquidity / Structure	Open-Ended	Valuation Frequency	Quarterly
Target Geography	Canada & US	# Holdings	29
Fundraising Status¹	Subscriptions will be accepted on dates to be set by the Manager usually every 6 months)	Current Fund Size/ Hard Cap	C\$2.9 billion / None

¹ Limited Partners purchase Fund units at a price equal to the NAV per unit in effect at the time a capital contribution is made.

Strategy Summary (continued)

Performance Objective	9 - 12% p.a.	Expected Loss	n/a ¹
	<p>Mgt. Fee: No fees on undrawn capital</p> <ul style="list-style-type: none"> • 1.40% p.a. on commitments <C\$60 million (based on NAV) • 1.30% p.a. on commitments >C\$60 million 		
Fee Schedule	<p>Performance Fee:</p> <ul style="list-style-type: none"> • 15% over 8% per annum • 50% catch-up <p>Preferred Return: 8% hurdle</p> <p>Carry: 15% (50/50 catchup); Incentive fees are incurred only once but calculated and paid over three installments in year 10, year 11, and the breakeven year.</p>		
<u>Country Funds</u>			
	<p>Axium Infrastructure Canada II (the “Canadian Fund”)</p> <ul style="list-style-type: none"> • Inception: 2012 • CAD denominated and hedged • 100% exposure to Canada 		
	<p>AxInfra US LP (the “US Fund”)</p> <ul style="list-style-type: none"> • Inception: 2013 • USD denominated and hedged • 100% exposure to U.S. 		
Vehicles²			
<u>North American Feeder Funds</u>			
	<p>Axium Infrastructure NA LP</p> <ul style="list-style-type: none"> • CAD denominated and hedged • 70% exposure to Canada and 30% to U.S. 		
	<p>Axium Infrastructure NA IV LP</p> <ul style="list-style-type: none"> • USD denominated and hedged • 85-90% exposure to U.S. and 10-15% to Canada • For non-Canadian investors only 		

¹ Axium does not forecast an expected loss; however, performance will range between 9% and 12% p.a (net IRR), depending on the stage of the market cycle.

² The portfolio assets and composition of all vehicles and feeders can differ from that of the Fund

Ratings Sheet

Factor	Rating	Comments
Business	3	Headquartered in Montréal, Canada with offices in Toronto, Vancouver, and New York, Axiom is a specialist infrastructure investment firm that has approximately C\$3.5 billion in total assets under management across two funds, a closed-end infrastructure fund and an open-ended infrastructure fund. Axiom Infrastructure is an employee owned, independent firm with 56 employees, 35 of which hold interests in the ownership of the Manager. Axiom employees own 85% of the Manager (on a fully diluted basis) and Maxsa Holding (passive financial investor) owns the remaining 15%.
Investment Staff	3	The Axiom Infrastructure investment team is led by Pierre Anctil, Stephane Mailhot, Juan Caceres and Thierry Vandal and is comprised of 19 investment professionals and 10 asset management professionals, indicating a good mix of complementary skills set across investment, finance, and asset management as well as engineering and operations functions. There has been only one senior level departure at Axiom over the last five years.
Investment Process	3	Axiom's investment process is well defined and has remained consistent since inception in 2010. The team at Axiom has demonstrated strong underwriting discipline that is evidenced in the consistent performance across all underlying investments, strong cash yield component of the total returns, and average discount rates paid at entry. The investment process involves a well-defined and strict definition of core infrastructure characteristics for each deal underwriting. The team attempts to target long-term, contracted, and availability assets and avoid market, volume, or price risk. Axiom only invests in projects whose management demonstrates a principle of strong and healthy labour relations with their employees and labour unions to the extent that employees are unionized.
Risk Management	2	Senior leadership of the firm is deeply involved in the risk management process and the application of all corporate policies established to organize such process. Pierre Anctil and Stéphane Mailhot, respectively CEO and Chief Operating Officer (COO), Thierry Vandal, president of Axiom Infrastructure US, Anick Sivret, VP Finance, and Jean Éric Laferrière, Senior Vice President, General Counsel, Corporate Secretary and Chief Compliance Officer (CCO), are all actively involved in overseeing the policies listed hereafter and communicating to all team members the importance of the Firm's compliance policies. The CCO is responsible for ensuring that the policies are updated as required and that the compliance certification processes are effective at all times. The Investment Committee approval process is in line with market and there are reasonable investment limitations in place.

Factor	Rating	Comments
Operational Due Diligence	A2	Axium is a specialty investment manager focused on private infrastructure investments. The firm has established a range of operating procedures that align with best practice. The Fund in scope is an open-ended fund that invests in illiquid assets, which creates an asset liability mismatch and also a hybrid structure in regard to certain constructs that align more closely with market practice for closed-end structures than for open-end structures. Investors should be aware of these constructs and the associated risks (such as internal administration and the potential for material limitations on interim liquidity). In addition, Axium's cyber security program could benefit from some additional policies that would bring it closer in alignment with best practice. Aon Hewitt believes an operational due diligence rating of A2 would be appropriate for Axium.
Performance Analysis	3	Axium Infrastructure North American Fund (the "Fund") has a track-record going back to December 2012 for the CAD denominated hedged vehicle and to November 2013 for USD denominated hedged vehicle. Overall, the Fund has been able to consistently generate since inception net IRR in the target range of 9% to 12% p.a.
Terms & Conditions	2	The Fund charges 1.4% in management fees on net asset value (decreases in later years implying average management fee of 1.16% over 20-year period) and 15% carried interest over 8% hurdle rate payable after 10 years and only once. Aon believes the fee structure is more expensive than other open-ended infrastructure funds in the market. The fund also charges 0.4% commitment fee on committed but not invested capital during the first year, however Aon has negotiated removal of such commitment fee for all its clients.
Overall Rating	Buy	Based on our due diligence, Axium Infrastructure Inc. ("Axium", the "Manager", or the "Firm") appears to be a credible manager, capable of implementing its stated investment strategy in Axium Infrastructure North America Fund (the "Fund"). The Fund provides immediate exposure to a portfolio of 30 underlying investments across Public Private Partnership ("PPP"), social infrastructure, renewable power and other sectors. The Fund has been able to generate strong cash yield and overall performance since inception.

Investment Evaluation

Fund Overview

Axiom Infrastructure North America Fund (the “Fund”)¹ is structured as an open-ended limited partnership composed of two feeder funds (“North American Feeder Funds”) to invest, either directly or indirectly, in limited partnership units of two separate country funds (the “Country Funds”). Investors have the option to invest in any of the Country Funds, North American Feeder Funds, or in a combination to get their desired exposure.

The Fund typically seeks to invest in Canadian and U.S. mid-sized assets defined as requiring equity investments of C\$20 million to C\$100 million in energy assets (such as power generation, renewables, transmission and distribution systems, pipelines, and gas collection), transportation assets (such as roads, bridges, air, sea ports, and massive transit systems), and social infrastructure assets (such as hospitals, schools, courthouses, and other institutional buildings). Further, the strategy will invest in a mix of operational (≥60%) and late-stage greenfield infrastructure assets (≤40%).

The Canadian Fund has invested approximately C\$1,592.5 million across 19 investments that had an aggregate value C\$1,702.4 million as of March 31, 2019. The US Fund has deployed US\$797.6 million across ten investments that have a combined value of US\$834.0 million as of March 31, 2019.

The open-ended fund structure provides significant visibility into the portfolio that is currently composed of 29 investments that, in aggregate, own 125 individual infrastructure assets, of which 121 are operating assets and 4 are in development stages. The weighted average discount rates of the Canadian Fund and US Fund portfolios, as of March 31, 2019, stand at 9.6% and 10.5%, respectively.

Depending on which vehicle new investors commit to, they buy into the relevant existing portfolio of assets at current NAV, which is determined at the vintage closing date.

The Fund currently² has approximately C\$1.05 billion of capital in the queue, of which approximately C\$130.0 million relates to transactions already executed and is expected to be drawn shortly, and another C\$410.0 million relates to pending transactions. This suggests a total dry powder for new transactions to be approximately C\$520 million which should be deployed in the next 12 to 24 months (estimated queue).

¹

Country Funds		North American Feeder Funds	
Axiom Infrastructure Canada II	AxInfra US LP	Axiom Infrastructure NA LP	Axiom Infrastructure NA IV LP
CAD	USD	CAD	USD
100% Canada	100% U.S.	70% Canada 30% U.S.	85-90% U.S. and 10-15% Canada ³

² As of June 2019

³ The U.S. and Canada split may change in future with the long-term target being 70% U.S. and 30% Canada.

Business

History

Axiom Infrastructure (“Axiom” or the “Firm” or the “Manager”) was established legally under the name Fiera Axiom Infrastructure in late 2008 as an independent portfolio management firm dedicated to investing in core infrastructure assets. In July 2015, the firm changed its name from Fiera Axiom Infrastructure Inc. to Axiom Infrastructure Inc., notably to comply with the Volcker Rule adopted pursuant to the U.S. Dodd-Frank Act, as the banking regulation applied to its former shareholder, Fiera Capital. In January 2016, Axiom acquired 35% of Fiera Capital’s interest in the Firm, and now its employees collectively own 84% of the Firm’s equity interest with the remaining 16% held by Maxsa Holding.

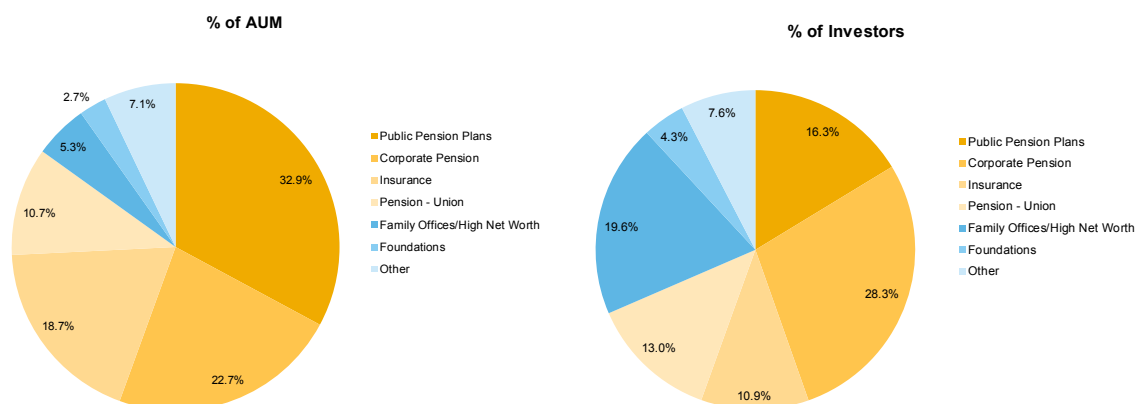
The Firm is headquartered in Montréal, Canada, and has offices in Toronto, Vancouver, and New York.

Axiom held the final close of its inaugural fund, Axiom Infrastructure Canada LP (“Fund I”), in 2011 with aggregate capital commitments of C\$460 million. Fund I is an exclusively-Canadian focused, 10 year closed-end partnership. Fund I is now fully invested, having assembled a portfolio of seven investments (23 underlying individual infrastructure assets) across renewable, transportation, and social infrastructure sectors.

The Firm’s second fund, Axiom Infrastructure North America Fund (the “Fund”), is structured as an open-ended limited partnership composed of two feeder funds (“North American Feeder Funds”) to invest, either directly or indirectly, in limited partnership units of two separate country funds (the “Country Funds”).

Client Base

The charts below provide a breakdown of Axiom’s investor base across funds (based on committed capital). The Firm’s investor base is predominantly institutional and North American, however the portion of Asian and European clients is expected to grow.



Source: Axiom

1) “Other” represents First Nations, General Partners and financial institutions.

Investment Staff

Axiom Infrastructure's investment team (the "Investment Team") is led by Pierre Anctil, Stéphane Mailhot, Juan Caceres and Thierry Vandal and comprises 19 investment professionals and ten asset management professionals. In addition, the Firm employs 28 other members in support functions (finance, compliance, investor relations and legal). While the Investment Team is spread across Montreal, Toronto, and New York offices, the support staff is primarily based in Montreal.

The investment committee of the Fund currently comprises six members: Internal Axiom Infrastructure management members including, Pierre Anctil (Chairman), Stéphane Mailhot, Thierry Vandal, and Juan Caceres and external, non-management members including, James R. Gillis and Graham Wilson.

Key Staff Biographies

Professionals	Title	Years at Axiom	Years of Infra. Experience	Relevant Work Experience
Pierre Anctil*	President & CEO	9	>30	<ul style="list-style-type: none"> ▪ SNC-Lavalin ▪ Pellemon ▪ Mechanical Engineer Polytechnique Montréal, MBA HEC Montréal
Stéphane Mailhot*	President & COO	9	>25	<ul style="list-style-type: none"> ▪ SNC-Lavalin ▪ Raymond Chabot ▪ Université de Sherbrooke, CPA, CGA
Thierry Vandal*	President, Axiom Infrastructure US	3	>30	<ul style="list-style-type: none"> ▪ Hydro Quebec ▪ Gaz Metro, Shell ▪ Civil Engineering, MBA
Juan Caceres*	VP & Senior Investment Director	9	>15	<ul style="list-style-type: none"> ▪ Babcock & Brown ▪ CIT Financial ▪ Civil Engineering, MBA
Dominic Chalifoux	VP & Senior Asset Operations Director	9	20	<ul style="list-style-type: none"> ▪ Macquarie ▪ Trane ▪ Mechanical Engineer, MBA
Paulo Arencibia	VP & Senior Investment Director	5	>20	<ul style="list-style-type: none"> ▪ BN Paribas ▪ Citigroup ▪ BA, MBA
Cyrille Vittecoq	VP & Senior Investment Director	1	>25	<ul style="list-style-type: none"> ▪ Further Capital ▪ CDPQ ▪ BA & Engineering Services
Elio Gatto	Vice President & Investment Director	9	15	<ul style="list-style-type: none"> ▪ Babcock & Brown ▪ BMO Capital markets ▪ BBA

Professionals	Title	Years at Axium	Years of Infra. Experience	Relevant Work Experience
Alexandre Galarneau-Micone	Vice President & Investment Director	4	8	<ul style="list-style-type: none"> ▪ Shell Canada ▪ JP Morgan ▪ Chemical Engineer, MBA
Eric St-Pierre	Vice President, Asset Management	1	25	<ul style="list-style-type: none"> ▪ Johnson Controls ▪ Trane ▪ Mechanical Engineering, MBA
Janis Weir	Vice President, Valuation and Fund Performance	1	8	<ul style="list-style-type: none"> ▪ KPMG LLP ▪ Bank of Canada
Dominic Chalifoux	Vice President & Senior Asset Operations Director	9	20	<ul style="list-style-type: none"> ▪ Macquarie ▪ Trane
Jean-Francois Poisson	Vice President, Asset Management	6	>35	<ul style="list-style-type: none"> ▪ Bell Canada ▪ SNC-Lavalin
Suzanne Leblanc	Vice President, Engineering & Construction	7	30	<ul style="list-style-type: none"> ▪ SNC-Lavalin ▪ Mechanical Engineering
Jean-Daniel Langlois	Technical Director, Engineering & Construction	4	15	<ul style="list-style-type: none"> ▪ Repower Systems ▪ Mechanical & Electrical Engineering
Joseph Watchi	Technical Director, Engineering & Construction	6	15	<ul style="list-style-type: none"> ▪ Enercon ▪ Enel ▪ Green Power

*Denotes member of the Investment Committee

Turnover

The following employees have left the Firm over the last five years:

Name	Position	Year Joined / Departed	Reason for departure
Jocelyn Côté	VP, Legal Affairs	2013 / 2016	Departed to pursue a new opportunity
Frédéric Brassard	VP, Corporate Development & Legal Affairs	2009 / 2016	Departed to pursue a new opportunity

Investment Process

Investment Strategy

Philosophy

The investment philosophy has not changed from previous offerings. Axiom Infrastructure focuses on core middle-market assets (defined as requiring equity investments of C\$20 million to C\$100 million per asset, investments in portfolios may require more capital) both in operating and late-stage greenfield development opportunities. Axiom Infrastructure seeks assets supported by robust market demand, under long-term contract with creditworthy counterparties, within concession-based structures or protected under an established regulated framework. Axiom Infrastructure invests in joint or majority control situations.

Axiom Infrastructure seeks to invest in energy, transportation, and social infrastructure assets which include, but are not limited to, the following:

- Energy assets (such as power generation, transmission and distribution systems, pipelines and gas collection, as well as utilities);
- Transportation assets (such as roads, bridges, air and sea ports, and mass transit systems); and
- Social assets (such as hospitals, schools, courthouses, water treatments, and other institutional buildings)

There is no specific target for the number of investments the Fund expects to make as it is open-ended in structure with an indefinite term. The Funds being open-ended, their level of diversification by geography, stage of development, and sector will expand over time.

Further, the Fund employs a long-term investment strategy that is inherently aligned with the long-term nature and investment horizon of infrastructure investments. Assets are sought to be held for their full lifecycle over the long term, with no requirement to divest, thereby allowing the Fund to seek to generate perpetual cash distributions and benefit from enhanced diversification over time as assets are added to the portfolio. Although no definitive requirement or timeframe exists to divest portfolio investments, the Fund may seek to create liquidity and maximize targeted returns to investors through selectively and opportunistically exiting certain investments to the extent that prevailing market conditions and other factors permit.

Process

Axiom has developed a well-defined process for identifying, selecting, analyzing, executing, and managing investments. The investment process is aimed at ensuring that all investment decisions are completed in compliance with the overall investment strategy of the Funds. The investment process may vary in its application to specific investments and may be modified from time to time.

Initial opportunity identified

Axiom's management team members have developed valuable relationships with a wide range of participants in local infrastructure markets including industrial partners, developers, operators, financial institutions, government entities, and regulatory authorities. The Manager believes that these longstanding relationships and partner networks provide the Fund with privileged access to high-quality deal flow. The Manager further believes that the Fund is uniquely positioned to partner with both North

American and international infrastructure companies seeking equity capital and local market support. In addition, the ability to leverage existing partner networks cross-border between Canada and the U.S. may provide for synergies in facilitating deal flow.

Investment opportunities will primarily be sourced through the following channels:

- Existing partner networks;
- Relationships with industry participants;
- Financial institutions and advisors;
- Formal sale processes initiated by sellers; and
- Government initiated processes.

Initial investment review

Subsequent to the identification of a sourced opportunity, the Team will conduct a preliminary transaction review to determine whether or not the investment should be pursued further. A critical first step in this process involves thoroughly assessing the strategic fit of an investment opportunity in the portfolio. The Team will place specific emphasis on evaluating the interests and objectives of all parties involved, with an aim to ensure that a strong alignment of interest exists between potential partners, eventual contractual parties, management teams, and any other relevant stakeholders who may be involved.

The transaction selection process will specifically take into consideration the following:

- nature of the competitive landscape and market environment, including the existence and features of any regulated framework or contractual arrangement with a creditworthy counterparty;
- relevant technical, commercial, and legal matters;
- quality and duration of underlying cash flow profile;
- risk/return profile including preliminary analysis of potential returns (IRRs);
- preliminary assessment of potential capital structure and impact on investment returns;
- probability of success and estimated magnitude of development/pursuit costs; and
- ability to implement operational improvements and enhance asset value

Environmental, Social and Governance (ESG) – Approach to responsible investing

As a matter of policy, the Canadian and US Funds will only invest in projects whose management demonstrates a principle of strong and healthy labour relations with their employees and labour unions to the extent that employees are unionized. Investment will not be made in assets that are considered not to have favourable relations with employee groups, or which do not support fair wage and employment practices. Specifically, with respect to greenfield projects, the Canadian and US Funds will only invest in projects where the Managers expect that the management thereof will not purposely or actively exclude or reduce the number of unionized employees. Furthermore, Axium is committed to ensuring workplace safety on all its projects, and particular focus and attention is placed on health and safety initiatives in greenfield projects under construction.

The Principles of Responsible Investment (“PRI”) published by the Secretariat of the Principles for Responsible Investment Initiative are used by the Canadian and US Funds, for guidance purposes, in complying with the policies outlined above in relation to infrastructure asset investment and management. Institutional investors have a duty to act in the long-term interests of their beneficiaries. Environmental, social, and corporate governance issues have an impact on the performance of investment portfolios.

Through the application of PRI, the Managers seek to ensure that investors' interests are aligned with the broader objectives of society.

Decision to proceed

Formal investment memorandum summarizing the outcome and results will be prepared for submission to the Investment Committee. This comprehensive document will provide Investment Committee members with a summary of all key aspects of the investment, including a detailed description of the asset, market dynamics, investment size, anticipated capital structure, risk analysis, technical analysis, financial valuation and sensitivity analysis, and operational review. The memorandum will identify expected investment returns under a base case scenario, as well as reasonable upside and downside cases. The Investment Committees will be called to approve investment proposals based on the merits of the information contained in the memorandum, as well as any other relevant analysis or due diligence material presented to them by the management team.

The investment committee of the Funds currently comprises six members: Internal Axiom Infrastructure management members including, Pierre Anctil (Chairman), Stéphane Mailhot, Thierry Vandal and Juan Caceres and external, non-management members including, James R. Gillis and Graham Wilson.

Detailed Due Diligence

If it is determined at the end of the investment screening stage that an investment opportunity is deemed to be of interest to the Fund, the relevant members of the Team will conduct a systematic due diligence process based on the following:

- detailed risk assessment including thorough commercial, technical, legal and financial review;
- thorough evaluation of management teams;
- comprehensive financial analysis and capital structure optimization; and
- determination of investment terms and pricing.

This stage of the investment process also involves a thorough evaluation of the management teams that are in place for a given investment opportunity, particularly in the case of mature operating assets. The relevant Manager will seek to ensure that existing management team members have the requisite skills and experience to manage day-to-day operations, achieve performance expectations, and aptly execute on established business plans. In addition, the relevant Manager will also evaluate the potential to supplement existing management resources with their own technical, financial, and operational expertise where applicable.

Detailed financial analysis also forms an important element of the due diligence process related to all investment opportunities. Financial analysis conducted for all potential investments will involve detailed financial modelling. A comprehensive financial model will be developed based on a series of underlying cash flow forecasts including key revenue and cost drivers. Sensitivities will be performed on key business plan assumptions to assess the volatility of cash flows and performance of the investment under various operating scenarios. Specific emphasis will be placed on evaluating the financial resilience of assets under certain stress scenarios, and the resulting impact on expected returns. Financial models will incorporate a discounted cash flow analysis that will serve as the primary means of assessing value and projecting investor returns. The analytical process will also take into consideration relevant valuation multiples and comparable precedent transactions.

Based on the due diligence performed during this stage, the relevant members of the Team will seek to arrive at an assessed valuation range for the investment which will form the basis upon which to negotiate

the terms and conditions of a potential transaction. The relevant members of the Team will engage in negotiations with the ultimate goal of resolving all material issues that may have the potential to arise during the final execution and investment stages of the process. Individual interests will be taken into consideration, so as to arrive at agreements that are satisfactory to all parties, including partners, counterparties, public bodies, regulators, etc.

Asset Management

Axiom employs an active asset management approach centered on the implementation of business plans consistent with original investment cases, best practices, and operational improvement. Post-investment monitoring forms a critical component of the asset management process and represents what the Managers believe to be a distinguishing factor from many others in the sector. The relevant member(s) of the Team will participate in all major decisions of investment oversight and will work to undertake activities that optimize value for the Fund. While the Fund will not systematically seek a majority controlling interest in respect of all of its investments, significant influence on the board of such investments is considered to be critical, particularly regarding issues relating to strategy, management, capital spending and finance. Where possible, the relevant Manager will appoint its employees to the boards of portfolio assets, to monitor performance and support implementation of strategic and operational improvements.

Axiom's active asset management approach seeks to optimize value creation for its managed funds. Post-investment activities with the goal of achieving operational, strategic, and financial enhancements at the asset level include, but are not limited to:

- ensuring that best practices are implemented, and operational improvements are carried out;
- ensuring appropriate management incentive plans;
- implementing efficient financial controls and rigorous budgeting regimes;
- executing asset expansions and/or follow-on acquisitions, where applicable; and
- periodic review of capital structure optimization opportunities.

Axiom benefits from an in-house team of asset management professionals dedicated to ensuring that the interests of the Funds will be preserved throughout the life of investments. Where appropriate, employees of the Firm may also be appointed to the management team of a portfolio investment.

Risk Management

Senior leadership of the firm are deeply involved in the risk management process and the application of all corporate policies established to organize such process. Pierre Anctil and Stéphane Mailhot, respectively CEO and Chief Operating Officer (COO), Thierry Vandal, president of Axiom Infrastructure US, Anick Sivret, VP Finance and Jean Éric Laferrière, Senior Vice President, General Counsel, Corporate Secretary and Chief Compliance Officer (CCO) are all actively involved in overseeing the policies listed hereafter and communicating to all team members the importance of the Firm's compliance policies. The CCO is responsible for ensuring that the policies are updated as required and that the compliance certification processes are effective at all times.

Axiom has adopted the following policies which contain written policies and procedures for back-office and/or accounting functions:

- Compliance Policy;

- Cash Management Policy;
- Distribution Policy;
- Valuation Policy;
- Custody Policy;
- Portfolio Management Policy;
- Privacy Policy
- Books and Records Policy; and
- Anti-Money Laundering Policy.

Investment Limitations

The Investment Limitations are as follows. The Fund shall not:

- Invest more than the greater of 20% of the total commitments or \$75 million in a single asset;
- Invest more than 40% of the total commitments to greenfield projects;
- Invest in companies whose shares or equity ownership interests are publicly traded;
- Invest in senior debt securities of infrastructure companies;
- Invest in projects and companies whose management does not demonstrate a principle of strong and healthy labour relations;
- Invest in projects and companies where union member rights or collective agreements are negatively affected;
- Allocate any capital to projects considered by the Manager to be non-environmentally friendly (e.g. coal power plants);
- Generally allocate capital to projects considered by the Manager to have high technological risk elements;

Compliance

The Compliance function is headed by the SVP, General Counsel, Chief Compliance Officer (“CCO”), and Corporate Secretary, who is assisted by a paralegal. The CCO reports to the President and Chief Operating Officer and also reports on a quarterly basis to the Board of Directors of Axiom.

Axiom maintains a broad range of policies and procedures within a comprehensive manual. The manual was reviewed while on site. Axiom noted that there was a sizeable revamp of the policies when the firm moved to US SEC registration. In addition, it recently revised its gift policy in response to feedback from another ODD group, bringing the limit down from \$1k to \$250.

Axiom does not have an external review of its internal controls or an internal audit function. While it is common for firms of Axiom’s size focused on private investments to operate without these assurance programs, controls testing and audit functions help to ensure that policies and procedures are implemented consistently.

Operational Due Diligence

Axium is a specialty investment manager focused on private infrastructure investments. The firm has established a range of operating procedures that align with best practice. The Fund in scope is an open-ended fund that invests in illiquid assets, which creates an asset liability mismatch and also a hybrid structure in regard to certain constructs that align more closely with market practice for closed-end structures than for open-end structures. Investors should be aware of these constructs and the associated risks (such as internal administration and the potential for material limitations on interim liquidity). In addition, Axium's cyber security program could benefit from some additional policies that would bring it closer in alignment with best practice.

Valuation Methodology

Asset valuation is done quarterly by the Manager. On a quarterly basis, the investment financial modeler (Analyst or Associate in the investment team) obtains the required information from the asset manager and the project accountant, and performs a discounted future cash flow by updating the investment financial model. The valuation methodology is static and largely objective (rather than changing from period to period) and any changes must be approved by the PAC; this approach is an important control given the open-ended nature of the Fund.

A valuation paper is prepared and reviewed with the Investment Director responsible of the investment. All investments valuation papers are then provided to the VP Senior Asset Operations and Investment Director for his review, after which he presents them to the President and COO for a final approval. Once approved, the investments' valuations are given to the Fund accounting department for the preparation of the financial statements.

Every quarter, valuations can be adjusted to reflect possible changes in risk profile (key construction milestone has been achieved, for instance), or material changes in market conditions impacting comparable assets.

The inputs of the valuation have been automated in the accounting software to help minimize the risk of human error. All entries into the system are revised by a CPA and subsequently authorized in the general ledger by the accounting Director. Each investment valuation presented in the financial statements is balanced to each valuation report.

An independent valuation agent (currently Ernst & Young) values underlying portfolio investments annually (at June 30) on a rotational basis; a public-private partnership with a Governmental Authority is evaluated every three years and an investment involving a Governmental Authority that does not constitute a public-private partnership every two years. Other investments are done every year.

Headline Risk & Litigation

Axium represented that it is not currently the subject of any regulatory investigation, business litigation, legal or disciplinary action that might adversely impact its ability to provide services to any of its funds.

Additional Opinions

The Fund has a concentrated investor base; approximately 22% of assets are from the top five investors, with 8% from the largest investor. The risk of a concentrated investor base is that redemption by one or two key clients may impact the firm's ability to operate at current levels. In the case of the Fund, there are limitations to interim liquidity, which helps to minimize this risk of a concentrated investor base.

Axium has developed a cyber security program in conjunction with its outsourced IT provider, Noxent. The program includes certain key features such as requiring users to rotate passwords, mobile device management, and controlled access to internal folders and applications using Active Directory. However, Axium does not currently encrypt user laptops, does not restrict or monitor use of removable media such as USB ports, and allows users to access its network without secondary authentication. While Axium has established a baseline cyber security program that is reasonable for a firm of its size, best practice is to implement these additional requirements in order to help prevent unauthorized access to the Firm's network or systems.

Performance Analysis

Historical Performance

Axiom Infrastructure North American Fund (the “Fund”) has a track-record going back to December 2013 for the CAD denominated hedged vehicle and to November 2013 for USD denominated hedged vehicle.

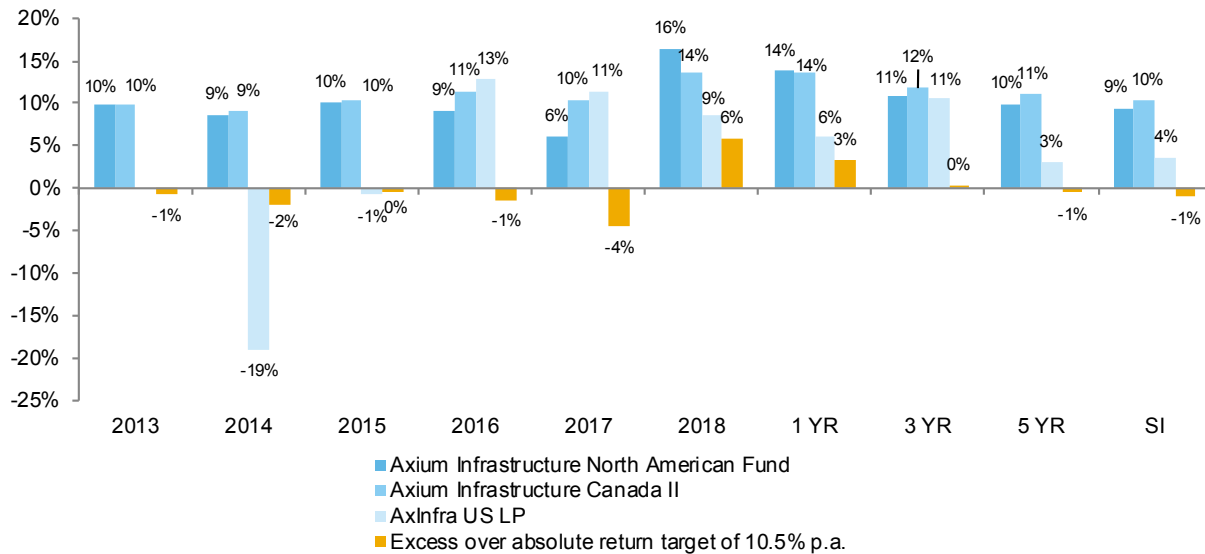
As of March 31, 2019, the Fund has achieved since inception annualized returns as follows;

- Axiom Infrastructure North America (CAD): Net time weighted return (TWR) of 9.5% and a net IRR of 9.5% (Inception Dec 2012)
- Axiom Infrastructure Canada II CAD): Net TWR of 10.4% and a net IRR of 11.3% (Inception Dec 2012)
- AxInfra US LP (USD): Net TWR of 4.0% and a net IRR of 10.5% (Inception November 2013)

Overall, the Fund has been able to consistently generate since inception net IRR in the target range of 9% to 12% p.a.

The chart below displays TWR for each calendar year as well as annualized for 1, 3, 5 year and since inception periods.

Time Weighted Returns



Active Portfolio Investments

The open-ended fund structure provides significant visibility into the portfolio that is currently composed of 29 investments that, in aggregate, own 125 individual infrastructure assets, of which 121 are operating assets and 4 are in development stages.

CAD million

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
Axiom Western Energy	Dec-12	<ul style="list-style-type: none"> ▪ Operational ▪ 235 MW from 2 run-of-river hydroelectric facilities, and 144 MW wind farm ▪ 100% power sold to BC Hydro, average 20 years remaining life of contract 	GE & Alterra	32.5	80.2	55.3	102.8	8.0
Axiom Wind	Dec-12	<ul style="list-style-type: none"> ▪ Operational ▪ 683.2 MW from 12 assets (10 wind with 658.8 MW and 2 solar with 24.4 MW) ▪ 100% power sold to BC Hydro, OPA, NB Power, and PEI Energy, average 14 years of remaining life of contract 	International Power (ENGIE, formerly GDF Suez)	49.7	107.8	63.3	112.4	10.0
BorealisSolar	Mar-14	<ul style="list-style-type: none"> ▪ Operational ▪ 108 MW from 10 Solar PV facilities ▪ 100% power sold to Ontario Power Authority, average 15 years remaining life of contract 	Recurrent Energy	50 / 100	99.5	61.1	116.0	9.3
Northern Solar	Jun-13	<ul style="list-style-type: none"> ▪ Operational ▪ 42 MW from 4 Solar PV facilities ▪ 100% of power produced is sold to Ontario Power Authority, average 17 years remaining life of contract 	Ontario Solar PV Fields Inc. (Q-Cells SE / Photowatt)	100.0	42.8	79.5	39.3	9.5
Sorel-Tracy Detention Centre	Jul-13	<ul style="list-style-type: none"> ▪ Operational ▪ ~23,400m² provincial detention centre 	Axiom Infrastructure	100.0	14.5	77.7	22.5	7.5

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
		<ul style="list-style-type: none"> 100% Availability, average 24 years remaining life of contract 						
ABW Solar	Nov-13	<ul style="list-style-type: none"> Operational 65.7 MW from 3 Solar PV facilities 100% of power produced is sold to Ontario Power Authority, average 17 years remaining life of contract 	First Solar and GE Energy	31.1	28.3	57.1	35.7	9.0
Jimmie Creek Hydro Project	Oct-14	<ul style="list-style-type: none"> Operational 62 MW run-of-river hydro facility 100% of power produced is sold to BC Hydro and Hydro-Québec, average 39 years remaining life of contract 	Alterra Power Corp.	49.0	25.0	65.0	45.6	8.3
FAD Wind	Sep-14	<ul style="list-style-type: none"> Operational 80 MW wind farm 100% of power produced is sold to Hydro-Québec, average 15 years remaining life of contract 	EDF EN Canada	50.0	21.7	31.2	20.9	10.5
De l'Érable Wind Farm	Nov-14	<ul style="list-style-type: none"> Operational 100 MW wind farm 100% of power produced is sold to Hydro-Québec, average 16 years remaining life of contract 	Eolectric/Enefin	46.0	34.5	67.8	24.2	10.3
Montreal Gateway Terminals	Mar-15	<ul style="list-style-type: none"> Operational Operates two of the Port of Montreal's four international terminals 90% of the revenue generated through container handling and 10% ancillary services, 33 year remaining lease with the Port of Montreal 	N/A	27.7	111.8	36.2	149.0	12.5

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
CE Sebastopol (AMT Train Maintenance Centre)	Jun-15	<ul style="list-style-type: none"> ▪ Under construction ▪ 130,000m² commuter train maintenance facility ▪ 100% availability-based (no exposure to market volume/ market risk), 30 year remaining life of contract with government of Québec agency that coordinates public transportation services across Montreal region) 	Axiom Infrastructure	100.0	18.2	85.6	23.9	9.0
Etobicoke General Hospital	May-16	<ul style="list-style-type: none"> ▪ Under construction ▪ Approx. 250,000sq.ft. patient care wing ▪ 100% availability-based (no exposure to market volume/ market risk), 30 year remaining life of contract with The William Osler Health System 	Axiom Infrastructure and Dutch Infrastructure Fund (DIF)	50.0	6.0	86.5	6.4	9.0
K2 Wind	Aug-16	<ul style="list-style-type: none"> ▪ Operational ▪ 270 MW portfolio of wind farms ▪ 100% of power produced is sold to OPA and IESO under 18 years remaining life of contract 	Samsung Renewable Energy, Pattern Energy & Capital Power	33.3	179.1	74.3	185.6	10.3
Axiom Solarlights	Nov-16	<ul style="list-style-type: none"> ▪ Operational ▪ 41 MW from 3 solar PV portfolio facilities ▪ 100% of power produced is sold to Ontario Power Authority under 17 years remaining life of contract 	Canadian Solar Solutions	100.0	62.7	70.1	61.5	9.1

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
Axiom LTC	Dec 2017 to Nov 2018	<ul style="list-style-type: none"> ▪ Operational ▪ Portfolio of 35 Long-Term Care Facilities ▪ The provincial governments subsidize the care, programs, supplies and accommodation costs of the residents, who are also typically subject to a co-payment 	Revera	75.0	161.2	51.6	175.9	11.5
Axiom Infinity Solar	Dec-17	<ul style="list-style-type: none"> ▪ Operational ▪ 105 MW solar PV portfolio ▪ 100% of power produced is sold to IESO 	Canadian Solar Inc. and TransCanada	100.0	90.0	84.5	80.9	10.0
Northwestern Hydro	Jun-18	<ul style="list-style-type: none"> ▪ Operational ▪ 303 MW from 3 run-of-river hydro facility ▪ 100% of power produced is sold to BC Hydro under a fully inflation indexed 60-year PPA 	AltaGas	21.0	404.5	73.0	398.1	8.3
Axiom Quatro Nation Rise Wind	Dec-18	<ul style="list-style-type: none"> ▪ In Construction ▪ 98 MW wind farm ▪ 100% of power produced is sold to IESO with 20 years of PPA term 	EDP Renewables	40.0	48.7	73.2	49.5	10.0
Aurora Solar	Feb-19	<ul style="list-style-type: none"> ▪ Operational ▪ 101.5 MW across 9 facilities ▪ 100% of power produced is sold to IESO with average term of 15 years remaining 	Recurrent Energy	50.0	51.4	75.8	52.2	9.0
Total					1,592.5		1,702.4	9.6

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
USD million								
Axium US Wind Class A-1	Nov 2013 to Jan 2016	<ul style="list-style-type: none"> ▪ Operational ▪ 1,600 MW wind portfolio consisting of 12 assets in 7 U.S. states ▪ 100% of power produced is sold under PPA with American Electric Power (various subsidiaries), Southern California Edison, Pacific Gas & Electric, with average 14 years remaining life of contract 	EDP Renewables	51.9	150.1	52.7	182.4	10.0
Axium US Wind Class A-2	Dec-18	<ul style="list-style-type: none"> ▪ Multiple locations 	EDP Renewables	68.0	10.0	0.0	8.7	10.0
Axium Slate Creek	Oct-16	<ul style="list-style-type: none"> ▪ Operational ▪ 150 MW wind farm ▪ 100% of power produced is sold under a 20 year term PPA with Kansas City Power & Light with 17 years remaining life of contract 	EDF Renewables	76.5	32.6	0.0	30.0	9.5
Axium US Solar	Nov-16	<ul style="list-style-type: none"> ▪ Operational ▪ 69 MW from 5 solar PV portfolio facilities ▪ 100% of power produced is sold under a 15, 20 and 25 year term PPA with Georgia Power, Imperial Irrigation District and Modesto Irrigation District; average 16 years remaining life of contract 	SunPower, Omat Technologies and Origis Energy	100.0	52.8	54.3	56.1	9.1

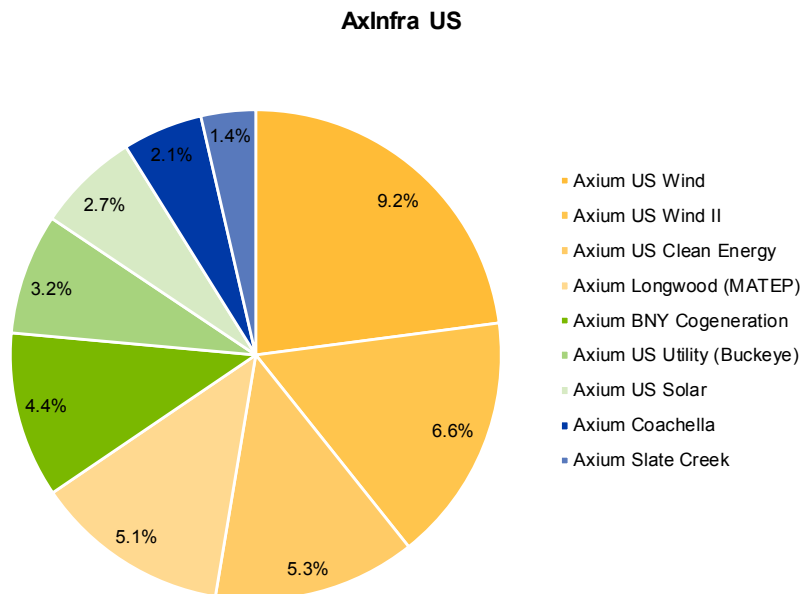
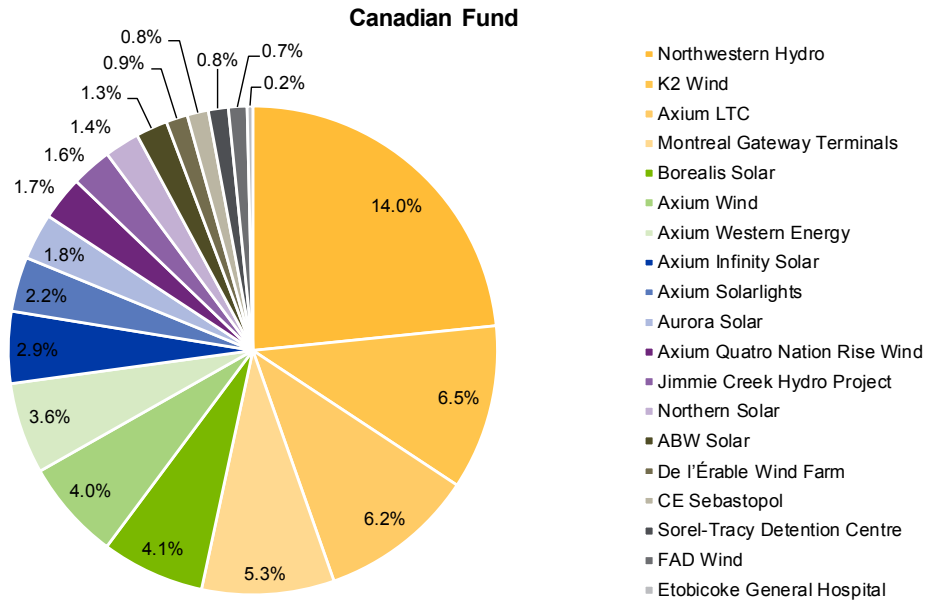
Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
Axiom US Clean Energy	Mar-17	<ul style="list-style-type: none"> ▪ Operational ▪ 948 MW from 2 natural-gas power generation facilities (Kings Mountain Energy Centre and Middletown Energy Centre) ▪ Kings Mountain Energy: Approximately 80% of project revenues are derived from long-term, fixed-price contracts with PJM ISO, Morgan Stanley Capital Group, investment-grade municipal utilities under 20 years remaining life of contract, with balance sold under short-term / bilateral agreements; ▪ Middletown Energy: Project revenues secured through three-years of fixed forward-looking capacity payments and minimum plant gross margins supported through 5-year instruments. 	NTE Energy	100.0	99.4	53.1	111.3	12.0
Axiom US Utility (Buckeye)	Jul-17	<ul style="list-style-type: none"> ▪ Operational ▪ District energy system, including the production and /or distribution of steam, chilled water, natural gas, and electricity across the 485-building Columbus campus and implementation of a comprehensive energy conservation program designed to increase 	Axiom Infrastructure and Engie North America	63.0	67.8	81.3	66.4	9.1

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
		<ul style="list-style-type: none"> system efficiency by 25% or greater ▪ 100% contracted with Ohio State University under 49 years remaining life of contract 						
Axium Longwood (MATEP)	Mar-18	<ul style="list-style-type: none"> ▪ Operational ▪ Medical Area Total Energy Plan (MATEP) provides 100 MW of electricity capacity, 1,000,000lbs/hr of steam capacity, and 41,000 tons chilled water to Boston's Longwood Medical and Academic Area. ▪ Revenues derived from long-term utilities contracts with hospitals and medical institutions located in the LMA, including six hospitals affiliated with Harvard University; 33 years remaining life of contract 	Axium Infrastructure and Engie North America	100.0	104.0	66.7	107.3	12.0
Axium BNY Cogeneration (Brooklyn Navy Yard)	Jul-18	<ul style="list-style-type: none"> ▪ Operational ▪ 286 megawatt operating project located in Brooklyn, NY ▪ Contracted with Consolidated Edison Company of New York (ConEd) and the Brooklyn Navy Yard Development Corporation under long term contract. 	York Research, Edison Mission Energy	100.0	101.7	81.6	91.2	11.1
Axium US Wind II (Axium Quatro Acquisition Co)	Dec-18	<ul style="list-style-type: none"> ▪ Under construction ▪ 400 MW wind portfolio consisting of 2 wind farms in 2 states 	EDP Renewables	100.0	136.0	36.9	136.6	9.4

Portfolio Company	Date of Initial Investment	Company Description	Partner / Operator	Ownership (%)	Invested Capital (million)	Leverage (Debt/EV) (%)	Unrealized Value (Fair Market Value)	Valuation Discount Rate (%)
		<ul style="list-style-type: none"> ▪ 100% of the projects' production is contracted to be sold to investment-grade counterparties under 15-to 20-year PPA 						
Axium Coachella	Feb-19	<ul style="list-style-type: none"> ▪ Under construction ▪ Option to acquire a 50% leasehold interest at value of asset construction cost upon completion of a project which will replace an existing transmission line with a new double circuit 220kV line along a 48-mile corridor in Southern California; project will increase the line capacity from 1,600 to 4,800 MW, allowing California to unlock more solar generation and meet its renewable portfolio standards ▪ 30-year PPA term 	SCE and Morongo Band of Mission Indians	100.0	43.4	45.7	44.0	11.4
Total					797.6		834.0	10.5

Asset Allocation by AUM

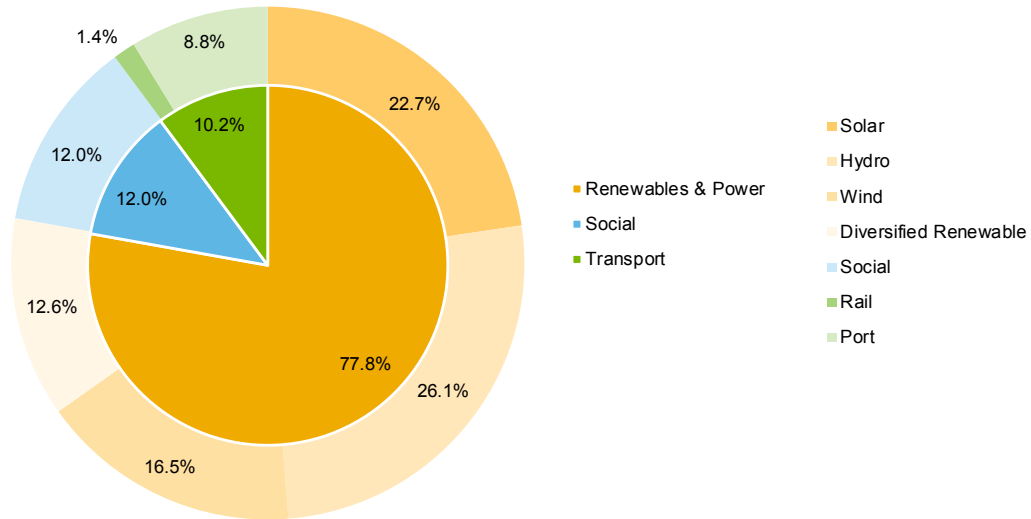
As of March 31, 2019



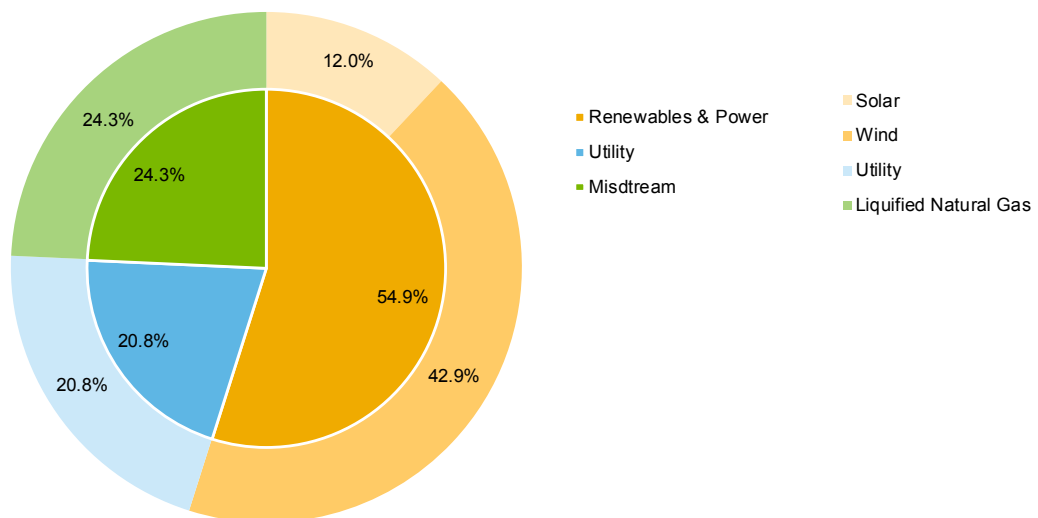
Sector Allocation by AUM

As of March 31, 2019

Canadian Fund

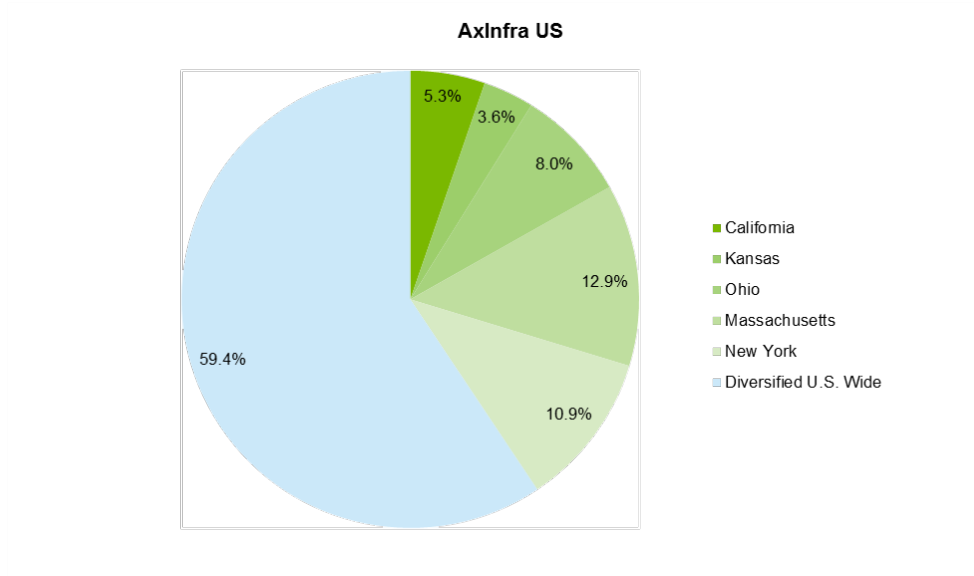
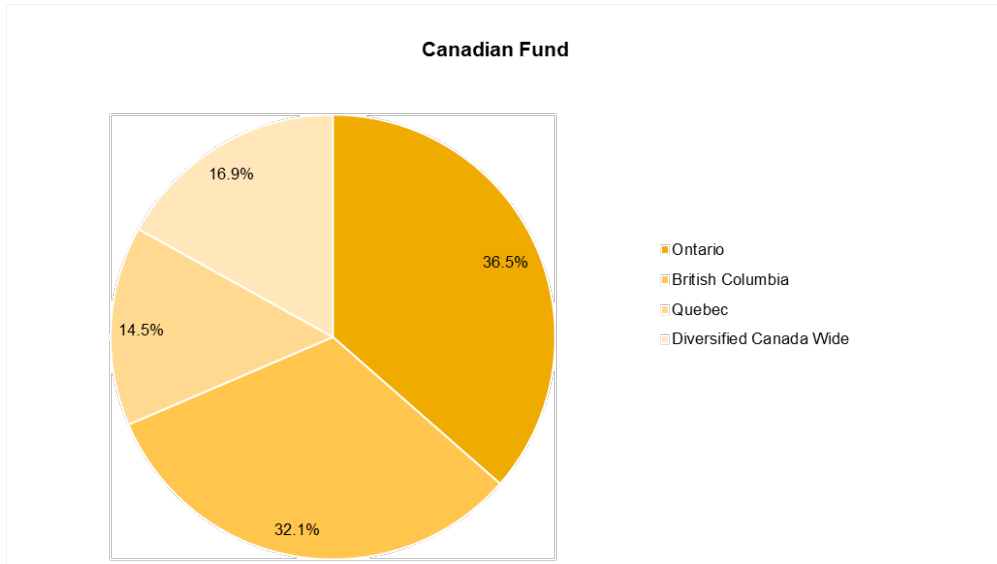


AxInfra US



Geographic Allocation by AUM

As of March 31, 2019



Terms and Conditions

Fund Structure	<p>Investors can access the Fund via a range of feeder funds, each established to accommodate certain investor characteristics (taxable/non-taxable, jurisdiction, etc.), as follows (together, the “Feeder Funds”):</p> <p>AINA L.P.; AINA IV L.P.; AICII L.P.; AICII (intl) L.P.; AxInfra US L.P., AxInfra US II L.P.; AxInfra US III L.P.</p> <p>All Fund and Feeder Funds structures are limited partnerships. Generally, Feeder Funds designated with “NA” are Funds which invest in both the Canadian and US Funds; Feeder Funds designated with “C” invest in just the Canadian Fund; and Feeder Funds designated with “US” invest in just the US Fund.</p>
General Partner	<p>Each limited partnership has a dedicated General Partner; each of these is a wholly owned affiliate of Axiom; these include the following:</p> <ul style="list-style-type: none">▪ Axiom Canada II Partner Inc.; Axiom Canada II (intl) Partner Inc.; Axiom NA Partner Inc.; Axiom NA IV Partner Inc.; Axiom US III Partner Inc.; Axiom NA II Partner LLC; AxInfra US Partner LLC.
Custodian	Computershare
Target Fund Size	N/A
Minimum Commitment	The minimum Commitment for a Limited Partner is \$10 million (\$5 million in a single fund / vehicle). Commitments of lesser amounts may be accepted at the discretion of the General Partner.
General Partner Commitment	At least 0.5% of the total commitments. No Management Fee or Carried Interest will be assessed with respect to the General Partner Commitment.
Investment Objective	<p>The Fund’s objective is to generate attractive risk-adjusted returns from infrastructure assets located in Canada or the U.S. through direct or indirect investments in the Canadian and the US Fund through one or more holding vehicles.</p> <p>The Fund targets an internal rate of return (“IRR”) to investors of 9% to 12%, after payment of all management and commitment fees, carried interest and other Fund expenses.</p>

Investment Limitations

The Fund shall not:

- Invest more than the greater of 20% of the total commitments or \$75 million in a single asset;
- Invest more than 40% of the total commitments to greenfield projects;
- Invest in companies whose shares or equity ownership interests are publicly traded;
- Invest in senior debt securities of infrastructure companies;
- Invest in projects and companies whose management does not demonstrate a principle of strong and healthy labour relations;
- Invest in projects and companies where union member rights or collective agreements are negatively affected;
- Allocate any capital to projects considered by the Manager to be non-environmentally friendly (e.g. coal power plants);
- Generally allocate capital to projects considered by the Manager to have high technological risk elements

Reinvestment of proceeds

The Undrawn Capital Commitments of a Limited Partner of the Fund will be increased, inter alia, (i) by the amount of any capital contributed by such Limited Partner to the Fund for the funding of a Portfolio Investment to be made by the Canadian Fund or the US Fund, that was not completed, to the extent that the amount of such capital has been ultimately returned to such Limited Partner, (ii) by the amount of any capital contributed by such Limited Partner to the Fund for the funding of a Portfolio Investment to be made by the Canadian Fund or the US Fund, to the extent that the amount required for completion is reduced and the excess amount of capital contributed by such Limited Partner has been ultimately returned to it, (iii) by the amount of any capital contributed by such Limited Partner to the Fund that has been invested by the Canadian Fund or the US Fund in a Portfolio Investment that is sold or refinanced in a way that generates cash flow distributions indirectly to the Fund within twelve (12) months from the investment in that Portfolio Investment, in the aggregate not to exceed a cumulative amount equal to 50% of such Limited Partner's Capital Commitment, and (iv) as otherwise described in the Limited Partnership Agreement of the Fund. Notwithstanding the foregoing, the Fund will not be required to return any capital contributed and may apply such amounts to other uses permitted under the Limited Partnership Agreement of the Fund.

Gearing

The Fund's borrowing shall not exceed 20% of the aggregate committed capital. Borrowed funds may be utilized to temporarily fund new investment of construction projects, however such borrowing must be repaid within 100 days.

**Commitment and
Subscription
Procedure**

Subscriptions will be accepted on dates to be set by the Manager (usually every 6 months).

All Capital Commitments made to the Fund on the same acceptance date constitute a single “Vintage” of the Fund. All Capital Commitments accepted on the Initial Closing date constitute the first Vintage of Capital Commitments.

Limited Partners will purchase LP Units of the Fund or the Country Fund at a subscription price per LP Unit equal to the NAV per LP Unit in effect on the applicable Drawdown Date calculated in the manner described under the heading “Valuation”.

**Redemption
Procedure**

Each calendar year, beginning on the first business day of April and ending on the last business day of June, a Limited Partner may at any time, by submitting the prescribed redemption request form to the General Partner (a “Redemption Request”) during the applicable period (the “Redemption Notice Period”), request that on the next redemption date determined by the General Partner (the “Redemption Date”) all or a portion of its LP Units be redeemed by the Fund subject to maximum 20% of the Fund NAV per year) subject to a redemption discount in the first 5 years of subscription. The redemption discount to NAV for units sold will be 7.5% in year 1, 6.0% in year 2, 4.5% in year 3, 3.0% in year 4, 1.5% in year 5, and 0.0% in year 6 and thereafter).

Investment Period

5 years for each vintage

Fund Term

Indefinite

**For Cause or No
Fault Removal of
the General
Partner**

If the General Partner is found to have engaged in certain disabling conduct, Limited Partners of the Fund may by majority resolution elect to remove the General Partner.

Limited Partners of the Fund may elect, by Extraordinary Resolution without having to demonstrate “cause”, to remove the General Partner.

Except as permitted by Limited Partners of the Fund by Special Resolution, or except if the Canadian General Partner and the US General Partner are removed without cause, the General Partner will not be entitled to resign as general partner of the Fund.

Upon the General Partner being removed as general partner, other than for disabling conduct, the Fund shall pay to the removed General Partner, an exit carried interest calculated as described under the heading “Carried Interest” as of such date using the Undrawn Capital Commitment of the Limited Partners or if it is insufficient, all cash generated from any Portfolio Investment. If after one year from the removal of the General Partner any portion of the exit carried interest remains unpaid, the successor general partner shall cause the Country Funds to dispose of Portfolio Investments to pay any such remaining portion plus, in all cases, an interest of 8% per annum from the date of removal of the General Partner.

Drawdowns Capital commitments will generally be drawn by giving a minimum of 10 business days' prior notice to the Limited Partners.

Hurdle Rate 8%

Carried Interest 15%

Distributions All exit and income proceeds will be distributed as follows;

1. first, 100% of actual and deemed distributions in respect of such Capital Commitment (including deemed distributions to which such Limited Partner would be entitled as a result of such hypothetical liquidation and including such distributions it would have received had no past distributions been re-allocated to the payment of the Carried Interest), in both cases notwithstanding any withholding tax required to be made on such distributions, will be allocated to such Limited Partner, until the cumulative amount of such actual and deemed distributions will be equal to its outstanding capital contributions made with respect to such Capital Commitment, through and including such deemed liquidation;
2. second, 100% of any additional actual and deemed distributions in respect of such Capital Commitment (including deemed distributions to which such Limited Partner would be entitled as a result of such hypothetical liquidation and including such distributions it would have received had no past distributions been re-allocated to the payment of the Carried Interest), in both cases notwithstanding any withholding tax required to be made on such distributions, in excess of amounts allocated in sub-section (i) above, will be allocated to Limited Partner, until the cumulative amount of all actual and deemed distributions would provide such Limited Partner with an IRR of 8% on its outstanding capital contributions made with respect to such Capital Commitment, through and including such deemed liquidation;
3. third, the amount of any additional actual and deemed distributions in respect of such Capital Commitment in excess of amounts allocated in sub-section (ii) above will be allocated 50% to the General Partner and 50% to such Limited Partner until the cumulative amount allocated to the General Partner pursuant to this sub-section (iii) is equal to 15% of the aggregate of all actual and deemed distributions made to such Limited Partner under sub-section (ii) above and to such Limited Partner under this sub-section (iii); and
4. lastly, all other actual and deemed distributions in respect of such Capital Commitment in excess of the amount of actual and deemed distributions referred to in sub-sections (i), (ii) and (iii) above will be allocated 85% to such Limited Partner and 15% to the General Partner.

**General Partner
Clawback /
Carried Interest
Hold-back** No clawback or hold-back

Commitment Fee Axiom will charge 0.4% on part of LP commitment not yet invested and only during the first year following acceptance of subscription by the Manager. If the total commitment by an LP is at least \$100 million, no commitment fee will be charged. Aon has successfully negotiated with Axiom the removal of this commitment fee for all its clients.

Management Fees The management fee schedule is as follows:

Commitment Amount	Years 1-5	Years 6-10	Beyond Year 10
< C\$60 MM	1.40% on NAV	1.25% on NAV	1.00% on NAV
≥ C\$60 MM	1.30% on NAV	1.20% on NAV	0.75% on NAV

Aon Hewitt believes the management fee is higher than the median fee charged by open-ended managers. However, with the step down structure, average management fee over long term would be lower (1.16% over 20 years).

Fee Offset 100% of transaction fees, monitoring fees and break-up fees earned by the GP or the management company will be offset against management fees.

**Offering and
Organizational
Expenses and
Organizational
Cost-Sharing
Contribution**

Axiom will bear all costs, disbursements, fees and expenses incurred in connection with the formation and offering of any Axiom Investment Funds (up to a maximum amount of \$1,100,000 with respect to expenses incurred in connection with the formation of the Fund and the offering of the vintage of the Fund) (collectively the “Offering and Organizational Expenses”) including, without limitation, all expenses and fees incurred in connection with the preparation and filing of organizational documents (including fees and expenses of legal and tax counsel), and the offering, sale and issuance of securities.

Limited Partner with less than \$100 million in aggregate capital commitments to the Fund will pay an organizational cost-sharing contribution (the “Organizational Cost-Sharing Contribution”) to the Fund equal to 0.5% of any new capital commitment made on or after October 1, 2016.

Limited Partner with at least \$100 million in aggregate capital commitments to the Fund will pay an Organizational Cost-Sharing Contribution to the Fund equal to 0.4% of any new capital commitment made on or after October 1, 2016.

Limited Partner with at least \$130 million in aggregate capital commitments to the Fund will pay an Organizational Cost-Sharing Contribution to the Fund equal to 0.3% of any new capital commitment made on or after May 10, 2017.

The Organizational Cost-Sharing Contribution will be used to (i) reimburse the Axiom Affiliates for Offering and Organizational Expenses assumed by them (up to \$ 1,100,000 with respect to fees and expenses incurred in connection with the formation of the Fund and the offering of the first Vintage) and (ii) cover the costs and expenses associated with the completion of a Limited Partner’s Capital Commitment. The balance of such Organizational Cost-Sharing Contribution will be kept by the Fund for general partnership purposes.

**Fund and
Partnership
Expenses**

The Fund will bear all expenses related to the operations including, without limitation, out-of-pocket and travel expenses incurred by Affiliates of Axiom; fees, costs and expenses of directors, counsel, accountants and deposit trustees; insurance; taxes; expenses of the advisory committee of each fund; and all costs and expenses incurred in connection with pursuing and evaluating investment opportunities including legal, bidding and transaction expenses.

The General Partner is responsible for its expenses in providing its services to the Fund (such as compensation for employees, rent, utilities, office expenses and certain expenses related to the administration of the Fund).

Limited Partner Advisory Committee

The Fund has constituted and will maintain a fund advisory committee (the "Fund Advisory Committee").

The Fund Advisory Committee will, among other things, (i) review any potential conflict of interest and, in the event it determines that such a conflict exists, approve or refuse any applicable transaction, (ii) review each quarterly valuation of the securities held by the Fund and each year-end valuation submitted by the General Partner, the audited annual financial statements, the quarterly unaudited financial statements and the annual budget of the Fund's expenses, (iii) review those actions and transactions provided to be reviewed by the Fund Advisory Committee pursuant to the Fund's Limited Partnership Agreement and (iv) upon the request of the General Partner, advise on certain specific matters as provided for in the Limited Partnership Agreement of the Fund.

The Fund Advisory Committee is made up of members representing various Limited Partners. Each Limited Partner that has made Capital Commitments to the Fund which represent in the aggregate at least \$50 million is entitled to appoint one member to the Fund Advisory Committee.

Valuation of Investments

- The General Partner will prepare a fair market valuation of the NAV on a quarterly basis, which will be confirmed as acceptable by a partner of the corporate finance group of a major accounting firm appointed by the General Partner as a third-party "Independent Valuator" upon the recommendation of the Fund Advisory Committee and the respective fund advisory committee of each of the other Funds.
- On an annual basis (as at June 30), the General Partner and the Manager will prepare a fair market valuation of the NAV of the Fund using a methodology that shall have been approved by the Fund Advisory Committee and will submit such NAV to the Independent Valuator for confirmation. The Independent Valuator shall review the fair market valuation calculated and reported by the General Partner and the Manager using the same methodology mentioned above and shall, prior to September 30 of each year, provide an independent valuation report addressed to the Limited Partners confirming whether the said valuation is acceptable as being within a range of acceptable values.
- The Fund's independent auditors will also audit the year-end NAV.

Reporting

Within 90 days following the end of each fiscal year, the Fund will provide audited financial statements to all of its Limited Partners, and a valuation report summarizing the fair market value of the NAV of the Fund.

- Within 45 days following the end of each fiscal quarter, the Fund will provide unaudited financial statements to all of its Limited Partners, and an operational review of each Portfolio Investment (as defined in this Memorandum) and valuation report prepared by the Manager.
- All financial statements for the Fund will be prepared in accordance with a framework which requires that financial statements be prepared in accordance with International Financial Reporting Standards (IFRS), except for specific exceptions provided in the relevant Limited Partnership Agreement to allow the Fund's investment to be measured and accounted for at fair value.

Key Person

The ability of the Fund to make new investments will be suspended if (a) before the tenth (10th) anniversary of the first Vintage¹, (i) Mr. Pierre Anctil or (ii) Mr. Stéphane Mailhot and either Messrs. Juan Caceres or Thierry Vandal or (b) thereafter, if any two of Messrs. Pierre Anctil, Stéphane Mailhot, Juan Caceres and Thierry Vandal, cease to be actively involved with the Fund or do not spend substantially all of his/their business time attending to the business of the Axium funds, Axium Affiliates, Axium Canada LP, any successor funds, their respective general partners, managers and portfolio investments, as is necessary to meet the investment objective of the Fund (a "Key Person Event"), provided that the Fund will be permitted to respond to a capital call made by any Country Fund or any Feeder Fund in which it owns an interest to transact any investment transaction in progress as of the date of such Key Person Event occurred or to make any follow-on investments in existing Portfolio Entity for the purpose of protecting an existing Portfolio Investment and to pay on-going expenses of the Country Funds or the Feeder Fund.

Transfer of Limited Partnership Interest

LPs will require consent of the GP to sell or transfer units to any other investor

Co-investment Rights

Available. No management fees or carried interest will be payable by Limited Partners on amounts co-invested alongside the Fund.

Placement Agent

None

Principal Legal Counsel

Morrison & Foerster, LLP, New York, New York, USA.
Lavery, de Billy, L.L.P., Montréal, Québec, Canada.
Maples and Calder, Grand Cayman, Cayman Islands.

Valuation Firm

Ernst & Young

Auditor

KPMG

¹ The closing of the initial Vintage of the Canadian Fund was held on November 29, 2012 (the "Initial Closing"). Each Capital Commitment accepted or deemed to be accepted by the Canadian General Partner on the Initial Closing date constitutes the initial Vintage of the Canadian Fund.

Ratings Explanation

Below we describe the criteria which we use to rate fund management organizations and their specific investment products. With the exception of Operational Due Diligence ("ODD"), each component is assessed as follows:

Qualitative Outcome

1 = Weak

2 = Average

3 = Above
Average

4 = Strong

The ODD factor can be assigned a Pass, Conditional Pass, or Fail rating and can be interpreted as follows:

- **Pass** – Our research indicates that the manager has acceptable operational controls and procedures in place.
- **Conditional Pass** – We have specific concerns that the manager needs to address within a reasonable established timeframe.
- **Fail** – Our research indicates that the manager has critical operational weaknesses and we recommend that clients formally review the appointment.

The overall rating can be interpreted as follows:

Overall Rating	What does this mean?
Buy	We recommend clients invest with or maintain their existing allocation to our Buy rated high conviction products
Buy (Closed)	We recommend clients invest with or maintain their existing allocation to our Buy rated high conviction products, however it is closed to new investors
Qualified	A number of criteria have been met and we consider the investment manager to be qualified to manage client assets
Sell	We recommend termination of client investments in this product
In Review	The rating is under review as we evaluate factors that may cause us to change the current rating

The comments and assertions reflect our views of the specific investment product and our opinion of its quality.

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**ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201**

**RESOLUTION
No. 2019-39**

Approving Investment in AxInfra NA II LP

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 investment consultant, Aon Hewitt Investment Consulting, Inc., along with the recommendation of the Investment Committee and ATRS staff regarding a potential investment in **AxInfra NA II LP**, an open-end infrastructure fund specializing in U.S. and Canadian energy and transportation assets.

THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment of up to **\$50 million dollars (\$50,000,000)** in **AxInfra NA II LP**. The total investment amount is to be determined by the real assets consultant and ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the ATRS Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment, if acceptable terms are reached.

Adopted this 7th day of October, 2019.

**Chair, Board of Trustees
Arkansas Teacher Retirement System**

Memorandum

To: Arkansas Teacher Retirement System
From: Chae Hong
CC: PJ Kelly; Jack Dowd
Date: October 7, 2019
Re: BTG Pactual Open Ended Core U.S. Timberland Fund – Commitment Recommendation

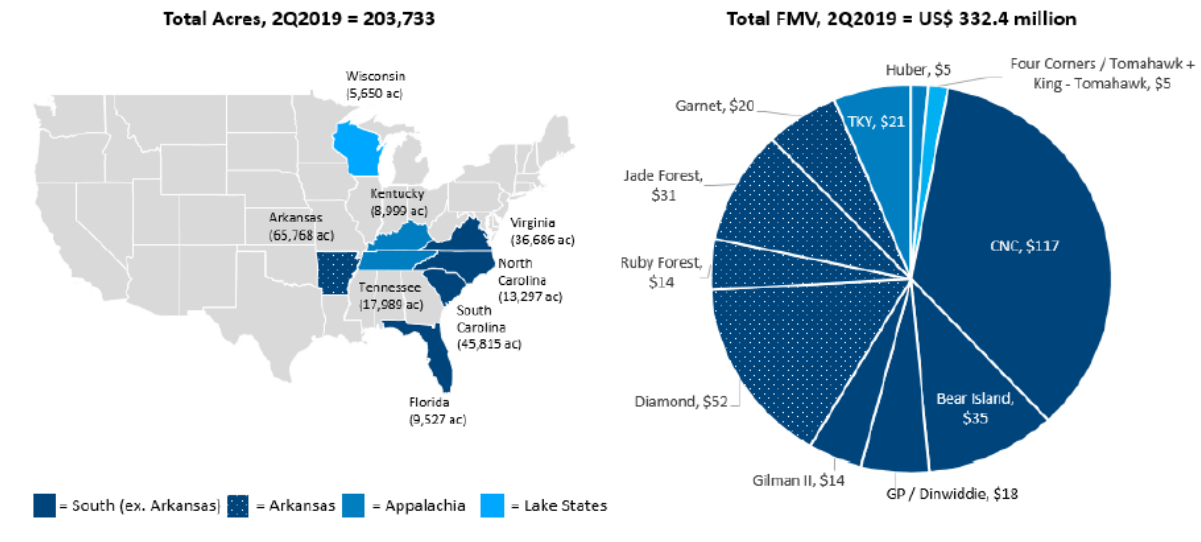
Recommendation

BTG Pactual has proposed that ATRS transfer assets from ATRS' Timber separate account in exchange for units of its open-end fund while maintaining a smaller Arkansas-centric separate account. We find this beneficial to ATRS' Timber portfolio as it will be accretive to returns, administratively less burdensome, and increase diversification. Please note that Operational Due Diligence ("ODD") on the fund is still in process and the recommendation is contingent on successful ODD completion.

Overview

The Arkansas Teacher Retirement System "ATRS" has had an Investment Management Agreement "IMA" with BTG Pactual Timberland Investment Group, LLC ("TIG") since December 1997. This original timberland allocation of \$100.0 million was designated to invest in a diversified timberland portfolio with investment goals of; competitive returns, liquidity, and reduced risk. The strategy has been implemented via the acquisition of 18 separate properties since inception. Four of the properties have now been liquidated from the portfolio and some of the remaining properties have been combined for efficiency purposes leaving a residual portfolio of 11 properties (Figure 1). Total Fund contributions have been \$295.9 million. \$9.4 million in unfunded commitments remain with an additional U\$171.0 million available via recallable distributions. The ATRS timberland portfolio had a 2Q2019 Fair Market Value ("FMV") of \$332.4 million and has distributed \$311.5 million since inception. The portfolio consists of 203,733 acres across eight states and has a since-inception TWR of 6.0%, net of fees.

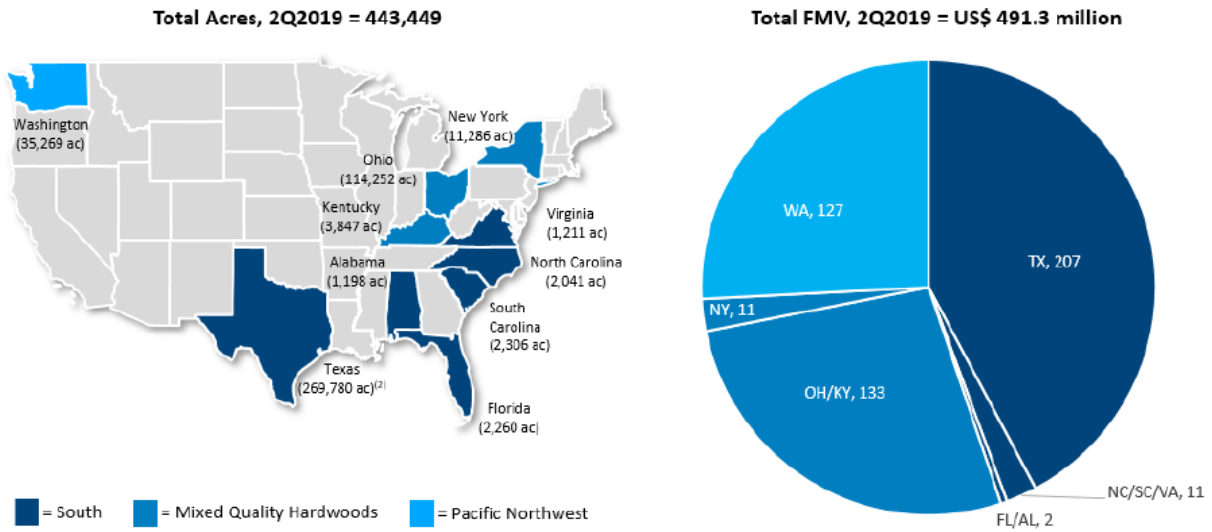
Figure 1: ATRS Separate Account Portfolio



Due to TIG’s inability to acquire a well-diversified separate account of timberland assets, they have proposed that ATRS transfer, in-kind, select assets to BTG’s Open Ended Core U.S. Timberland Fund, L.P. (“OEF”) in exchange for units of the fund. A more detailed breakdown of this may be found in the Proposal section of the memo.

TIG created OEF to invest in U.S. core timberland investments focusing on key characteristics of scale, stability and diversification. The Fund Investment Strategy delineates the U.S. into three major timberland geographies; South, Pacific Northwest, and Mixed Quality Hardwood. The strategy further defines the target allocation for each region as follows; 45% for South, 25% for Pacific Northwest, and 30% Mixed Quality Hardwood. OEF currently has an FMV of \$491 million across 443,450 acres covering 10 states, three regions and a variety of species (Figure 2). OEF is structured with quarterly contributions, a two-year initial lock-up period and quarterly liquidity thereafter. OEF achieved a 2018 TWR of 13.3%, net of fees and a since-inception TWR of 6.5%, net of fees.

Figure 2: OEF Portfolio



TIG has been actively implementing a strategic plan for the ATRS IMA portfolio since 2015 and has identified assets that should be liquidated from the portfolio while seeking acquisitions to increase diversification of a predominately U.S. South portfolio. Attempts to acquire Pacific Northwest assets have been unsuccessful to date, with eight bids made by TIG on behalf of ATRS falling short of seller expectations. During the December 2018 ATRS portfolio review, there was a discussion centered around using OEF to introduce better diversification to the portfolio with less administrative burdens.

ATRS has a history of making significant investments within Arkansas, when possible. In 2008, ATRS committed capital to their timberland portfolio to make such investments and four properties (Diamond, Jade, Ruby and Garnet) were acquired from 2009-2012. ATRS, Aon, and TIG agreed that those direct investments in Arkansas should remain in a separately-managed account with direct ownership by ATRS.

Proposal

1. Contribute balance of timberland assets (FMV of \$184.3 million) to OEF, in exchange for OEF units. Operational steps:
 - a. Third-party valuation to be confirmed effective November 30, 2019 for a December 1, 2019 contribution date, subject to TIG valuation policy and valuation assurance from Duff & Phelps. It should be noted that Duff & Phelps also provides valuation assurance for OEF
 - b. TIG has offered to discuss with ATRS and Townsend (client team) the key elements of the appraisal and their change in value (if any) giving ATRS and Townsend granular insight into any potential changes. We recommend that ATRS accept this offer, however, it would be in ATRS' best interest to consider the engagement of an

independent entity to oversee the selection of the chosen appraisers in order to mitigate a potential conflict of interest.

2. Create an Arkansas-centric Separate Account including all Arkansas assets plus two assets that are in disposition; Four Corners and Huber, along with TKY (FMV of \$172.3 million).

Operational steps:

- a. Prepay a portion of the existing MetLife loan to remain in compliance with loan covenants of 35% LTV
- b. Loan allows for prepayment of 10% per year, with an accrual of up to 25% with no penalty

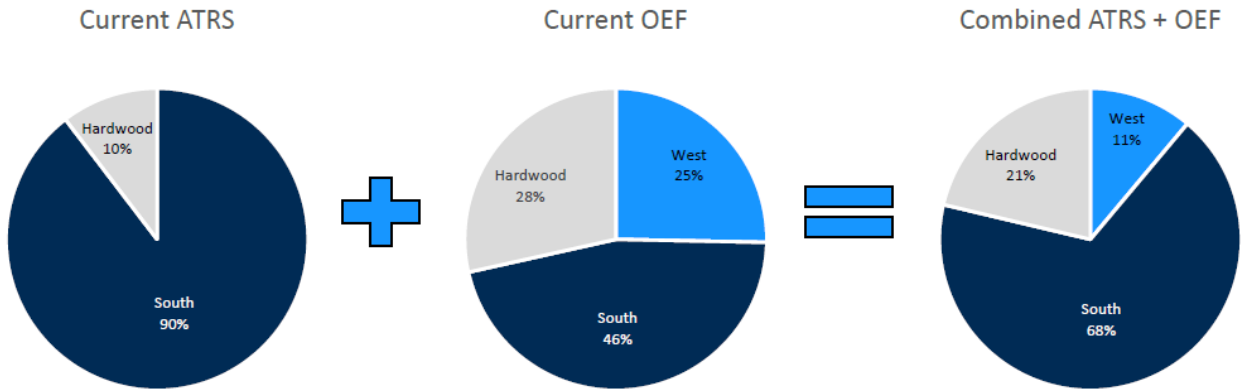
This proposal would result in ATRS having a fully diversified, \$353.2 million U.S. timberland portfolio (NAV of \$294.5 million considering residual MetLife loan balance). The benefits of this proposal are:

- Exposure to a commingled fund structure that is administratively less burdensome than a separate account
- Maintain exposure to Arkansas timber through the creation of an Arkansas-centric Separate Account
- Zero incremental cost to ATRS (TIG will adjust the Arkansas-centric Separate Account fee such that, when combined with the OEF fee of 90 bps, ATRS' blended fee would remain at their current 69 bps)

As of most recent appraisal date:

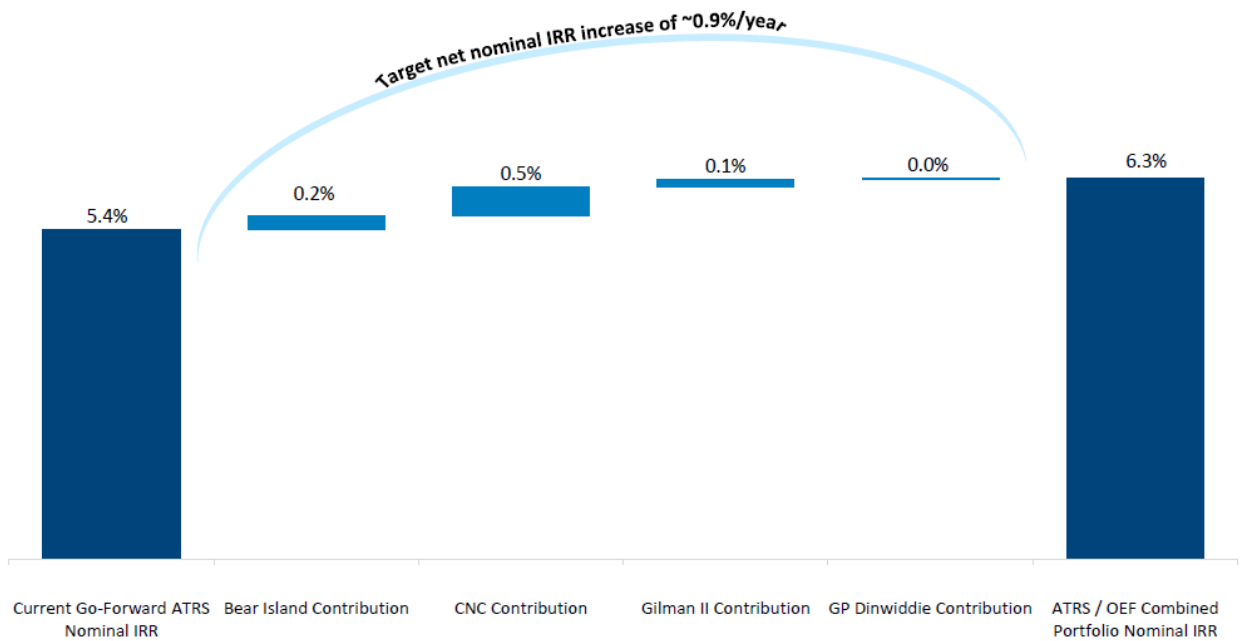
Timberland Investment Account	Current Appraisal	Fund Fee (%)	Total Fee (\$)
ATRS Separate Account:	\$ 172,325,000.00	0.46%	\$ 791,100.90
ATRS Investment in OEF:	\$ 189,496,000.00	0.90%	\$ 1,705,464.00
Total ATRS timberland investments:	\$ 361,821,000.00	0.69%	\$ 2,496,564.90

The combination of ATRS' current portfolio and OEF would result in greater geographic diversification through reduction in overall exposure to US South and increased exposure to US West and Hardwood. After the transfer in exchange for units, ARTS' Timber portfolio will be compliant as it pertains to its exposure to the South. Pro forma exposure to the west, 11%, will remain slightly below compliant, however will significantly improve from no current exposure.



Target Returns:

By contributing assets into OEF and retaining an Arkansas centric Separate Account, TIG estimates that ATRS could have a combined target net nominal IRR increase of approximately 90bps per year (from 5.4% to 6.3%) over the next 10 years.



Recommendation

With all things considered, AHIC is satisfied with TIG’s proposal and OEF’s strategy and its appropriateness for ATRS. Additionally, we believe that the merits of this proposal and Fund outweigh their risks. A BTG Pactual Open Ended Core U.S. Timberland Fund InTotal is attached for reference. We recommend, contingent on successful ODD completion, that ATRS proceed.



Real Estate InTotal

BTG Pactual Timberland Investment Group

Open Ended Core U.S. Timberland Fund

September 2019

EXECUTIVE SUMMARY

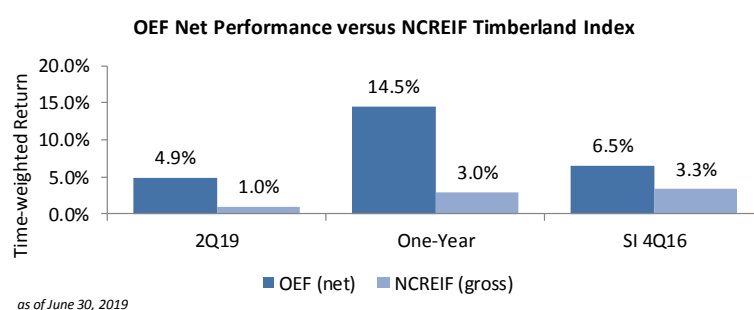
OVERVIEW

Review Date	Current Rating	Previous Rating
September 2019	BUY	

The BTG Pactual Timberland Investment Group (“TIG” or the “Manager”) has established the BTG Pactual Open Ended Core U.S. Timberland Fund, L.P. (“OEF” or the “Fund”) to acquire and manage a diverse portfolio of timberland properties located throughout the major timberland regions in the U.S. The Fund was formed in December of 2016 as an open ended, evergreen fund and has a current gross asset value of \$496.8 million (NAV-\$327.9 million), including a \$25 million co-investment from the General Partner. The Fund is comprised of a diversified portfolio of eight investments (the “Portfolio”), and has reached a relatively reasonable level of scale and diversification since its formation. The Portfolio is diversified across its target regions and by major timber-type, including exposure to most major softwoods and a variety of major hardwoods.

Historical Fund Level Performance

Time-weighted Return	2Q2019	12-Months	Inception 4Q16
OEF Net Return	4.93%	14.49%	6.52%
NCREIF Gross Return	1.04%	2.95%	3.34%



Strategy Summary

Fund Structure	Open-Ended	Risk Segment	Core
Fund Size	NAV: \$327.9 million GAV: 496.9 million	Strategy Inception	2016
Current / Max Leverage	33.1% ¹ (bridge-financing) / 25.0% of GAV	Current/Max Non-Core Exposure	42% ² / no limit
Valuations	Annual, with 25% appraised each quarter / Duff & Phelps	Minimum Commitment	\$5 million
Investment Guidelines	US only; Targets: South: 45%; PNW: 25%; HWs: 30%	Number of Holdings	8 investments
Performance Objective	7% gross nominal IRR; 6% net nominal IRR		

Firm Summary

Headquarters	Atlanta, GA	Parent Company	Banco BTG Pactual
Fund Sponsor	BTG Pactual	Year Founded	TIMO est. 1981/2012
TIG Employees	80 (U.S. – 40)	Investment Staff	22
AUM timberland	\$3.5 Billion	RIA	Yes

¹ Per the offering documents, the 25% limitation will not apply until the Fund has reached an overall GAV of US\$ 500 million.

² The Fund’s non-core exposure consists of a single investment made into a preferred equity structure backed by a large-scale portfolio of core timberlands located across the Southwestern US; i.e.) Caddo

INVESTMENT MANAGER EVALUATION

Factor	Comments
Strategy	The Fund has a long-term, core investment timberland strategy targeting investments in U.S. commercial timberland assets. The Fund is targeting an unlevered nominal, net IRR of 6%. The Fund will seek to diversify among three investment areas: 45% U.S. South, 25% Pacific Northwest and 30% to Mixed Quality hardwood.
Sponsor	The Manager is one of the oldest timberland investment management organizations (“TIMO”) with roots dating back to 1981 when its predecessor group was established. Today, TIG manages over 2.2 million acres across four continents, representing assets and commitments of nearly \$3.5 billion.
Operational Due Diligence	Townsend has initiated a review of TIG’s operations by way of our Operational Due Diligence (“ODD”) process. A complete report will be made available upon request after ODD is complete.
Investment Process	Investments are subject to a formal oversight process that encompasses multi-level management reviews and controls. Prior to the commitment of significant resources to a prospective investment, a preliminary evaluation of the opportunity will be prepared by the Fund’s investment professionals, analyzed by technical professionals and evaluated by the Investment Team; on approval by these groups, any additional questions are researched and addressed and an investment memorandum is then prepared by the Investment Team and presented to the Investment Committee. Throughout the investment process, the Investment Team will coordinate with other Company personnel on legal, compliance tax, financing and accounting issues.
Fund Structure	The Open-end fund organized as Delaware limited partnership. The Fund will invest through one or more REIT subsidiaries or non-REIT corporations or LLCs, as appropriate. The Fund expects to form an operating partnership under each REIT subsidiary and may form an Operating Partnership under each Non-REIT subsidiary
Performance	The Fund has reached a relatively attractive level of scale and diversification with a portfolio consisting of over 430,000 acres across multiple states and regional sub-markets. The Portfolio has generated strong performance to-date with since inception and trailing twelve-month net Fund-level IRRs of 6.5% and 14.5%, respectively (as of 06/30/19); the Fund has outperformed the industry benchmark NTI Over all time periods.

Overall Rating

Buy

BTG Pactual Timberland Investment Group is led by veteran timberland investors and professional staff with deep investment experience and forestry expertise averaging over 20 years. The Manager is one of the oldest TIMOs with the formation of its predecessor dating back to 1981, providing a deep foundation of institutional knowledge and a track record of investing through multiple cycles. The Fund’s Portfolio provides investors with near-term exposure to an established portfolio of high-quality timberland reaching a relatively attractive level of scale and diversification, which is difficult to replicate in the current market environment. Performance has been strong to-date, with significant outperformance relative to the industry standard NCREIF Timberland benchmark, providing attractive risk-adjusted returns that are expected to remain above market over the near-term.

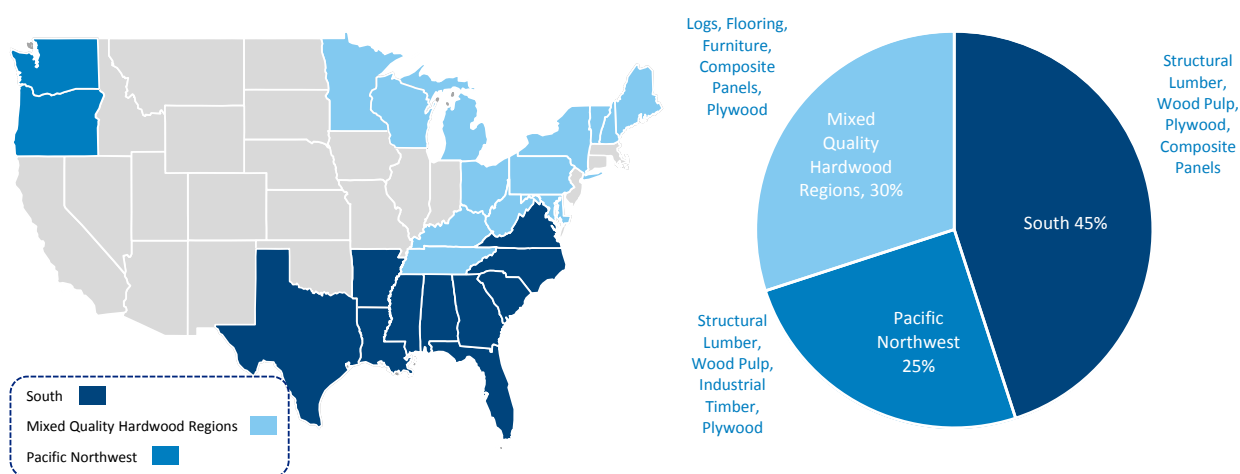
STRATEGY

OVERVIEW

The Fund has a long-term, core investment timberland strategy targeting investments in U.S. commercial timberland assets. The Fund is targeting an unlevered nominal, gross IRR of 7% (net IRR of 6%). The Fund will seek to diversify among three investment areas: 45% U.S. South, 25% Pacific Northwest and 30% to Mixed Quality hardwoods.

The Fund's target regions, portfolio allocation, and proforma regional returns are provided in the table below:

Target Regions and Potential Allocation			
Regions	Age/Type	% of Portfolio (MV)	Target Gross Return ⁽¹⁾
South	Pre-merchantable Pine	45.0%	7.0%
Pacific Northwest	Pre-merchantable Conifer	25.0%	7.5%
Mixed Quality Hardwood Regions	Mixed quality Hardwoods	30.0%	7.0%
Total		100.0%	-
Weighted Average			7.1%



U.S. South - Acquisitions will target pre-merchantable pine forests. TIG believes that sawtimber prices in the U.S. South will be slow to recover due to the current inventory overhang and an uneven recovery in U.S. housing starts. TIG anticipates relatively stronger demand for pulpwood and small sawlogs and, as a result, the pulp and pellet industries. Accordingly, TIG plans to position the portfolio to take advantage of future timber price increases by emphasizing pre-merchantable pine plantation properties. This will allow the Fund to harvest pulpwood in the near term to feed the biomass and pulp markets, while the properties mature. As market demand reduces the supply overhang over time, the Fund's maturing timber should be well positioned to take advantage of improved timber pricing.

Pacific Northwest - Acquisitions will target Douglas Fir and white wood properties with a maturing age-class structure 5-10 years from significant cash flow. TIG will focus the portfolio on younger, but mature plantation forests in order to capture the export trade to the Pacific Rim, which the Manager believes will be driven more by sawnwood exports than the export of round logs. Historically, Western Canada has played a significant role in the Pacific Rim and western U.S. sawnwood market, but will increasingly be limited by timber supply constraints primarily from the Canadian Pine Beetle. The PNW is well-positioned to substitute for Canada in both the Pacific Rim export and U.S. western domestic sawnwood markets in the years ahead.

Mixed Quality Hardwoods - Hardwood acquisitions will focus primarily on "utility" species such as Red Oak, White Oak and Yellow Poplar located with the ability to reach ports along the east coast. Timberland investment in U.S. hardwoods has traditionally been focused on high value hardwood (such as cherry, ash, and maple) exported to the European market. However, global demand has shifted to more commodity hardwood (oak and yellow poplar) as demand has surged in Asian markets. Hardwood lumber exports to Asia are increasingly sourced from the sustainable hardwood lumber producers of North America and decreasingly sourced from tropical hardwood lumber suppliers where sustainability is in question. Given the species mix, proximity to export ports, and the potential to participate in small tract land sales, TIG will concentrate its acquisition efforts in the Appalachian and eastern hardwood regions.

PORTFOLIO

The Fund currently owns eight investments with a total gross asset value of \$491.3 million and net asset value of \$327.9 million as of 06/30/19. The Portfolio consists of over 430,000 acres located in nine states and various sub-markets within each state. The Portfolio's weighted average real discount rate (excluding Caddo) is approximately 5.2% based on the 4Q18 third-party valuations conducted for each asset. The Portfolio's asset-level relative cost to current market value is included in the table below:

Asset	Year	Region	2Q2019 Cost	2Q2019 FMV
Hale Brook - seed	2015	NE	10,667,266	11,156,907
Piedmont - seed	2012	South	9,936,094	9,406,409
Fico-Wewa - seed	1996	South	2,017,733	2,249,986
Evergreen D - seed	1996	South	1,566,332	1,340,099
Tilton ¹	17/18	NW	65,556,205	78,663,809
Caddo ²	3Q18	South	179,043,567	207,357,712
Scioto	4Q18	NE	123,340,183	132,992,954
Green River	4Q18	NW	45,605,009	48,185,202
Total			437,732,389	491,353,078

Footnotes:

¹ Includes "bolton" investment made during 4Q18 for \$26.3 million

² Preferred equity value is adjusted quarterly, then reviewed for suitability by Duff & Phelps

SPONSOR

OVERVIEW

The Manager is one of the oldest timberland investment management organizations ("TIMO") with roots dating back to 1981 when its predecessor group was established. The group was formed at the First National Bank of Atlanta, which eventually became Wachovia Bank. In 2004, the predecessor was acquired by Regions Financial Corporation and renamed the Regions Morgan Keegan Timberland Group, and eventually Regions Timberland Group ("RTG") when it was sold in 2012. Separately, in 2007, TIG Brasil was formed to focus on managing commercial timberland in Latin America. BTG Pactual subsequently purchased TIG Brasil in 2012, forming TIG, and in 2013 TIG acquired RTG in conjunction with its \$2 billion in managed global timberland assets.

Today, TIG manages over 2.2 million acres across four continents, representing assets and commitments of nearly \$3.5 billion. Since acquiring RTG, the Manager has raised the OEF (2016) and a Brazilian timberland fund (2015).

INVESTMENT PROCESS

OVERVIEW

Investments are subject to a formal oversight process that encompasses multi-level management reviews and controls. Prior to the commitment of significant resources to a prospective investment, a preliminary evaluation of the opportunity will be prepared by the Fund's investment professionals, analyzed by technical professionals and evaluated by the Investment Team; on approval by these groups, any additional questions are researched and addressed and an investment memorandum is then prepared by the Investment Team and presented to the Investment Committee. Throughout the investment process, the Investment Team will coordinate with other Company personnel on legal, compliance tax, financing and accounting issues.

FUND STRUCTURE

OVERVIEW

Open-end fund organized as Delaware limited partnership. The Fund will invest through one or more REIT subsidiaries or non-REIT corporations or LLCs, as appropriate. The Fund expects to form an operating partnership under each REIT subsidiary and may form an Operating Partnership under each Non-REIT subsidiary.

- Sponsor: BTG Pactual Timberland Investment Group, LLC, a Delaware LLC.
 - SEC registered investment adviser
- General Partner: BTG Pactual Open Ended Core U.S. Timberland Fund GP, LLC, a Delaware LLC.
- Manager: BTG Pactual Timberland Investment Group, LLC, a Delaware LLC.

ENTRY AND EXIT PROCESS

At any time after the second anniversary of the closing at which an Investor was issued Units, such Investor may elect to have some or all of such Units redeemed. Redemptions will be made quarterly, at NAV. To the extent that liquid assets are insufficient during any quarter to satisfy all outstanding redemption requests, redemptions will be made on a pro rata basis as liquid assets become available based on the year in which the redemption requests would have originally been effective. The General Partner will have the discretion to determine the extent to which liquid assets are available for redemption.

INVESTMENT MANAGEMENT FEES

A valid generalization regarding the average total fee load (management fee, incentive fee if any, and fund expenses) for core timberland strategies range from 100 to 150 basis points. The Fund's pro forma fee load, not accounting for property/forestry management costs and expenses, is in-line with the market but on the high-end of the range.

PERFORMANCE

OVERVIEW

The Manager's overall track record consists of over 230 transactions made since its predecessor's formation in 1981, with investments made across various separate account programs, commingled funds, and co-investments.

- \$3.8 billion in total invested capital
 - \$1.7 billion realized and distributed to investors
 - \$2.9 billion of unrealized value remaining
- 6.65% gross nominal return for TIG's total performance composite since inception
 - U.S. performance - 7.78%
 - OEF performance - 7.77%
 - Brazil Timberland Fund I performance
 - BTF I (local currency) - 14.4%
 - BTF I (USD) - 1.96%

NEAR-TERM PERFORMANCE DRIVERS

Portfolio Scale and Performance

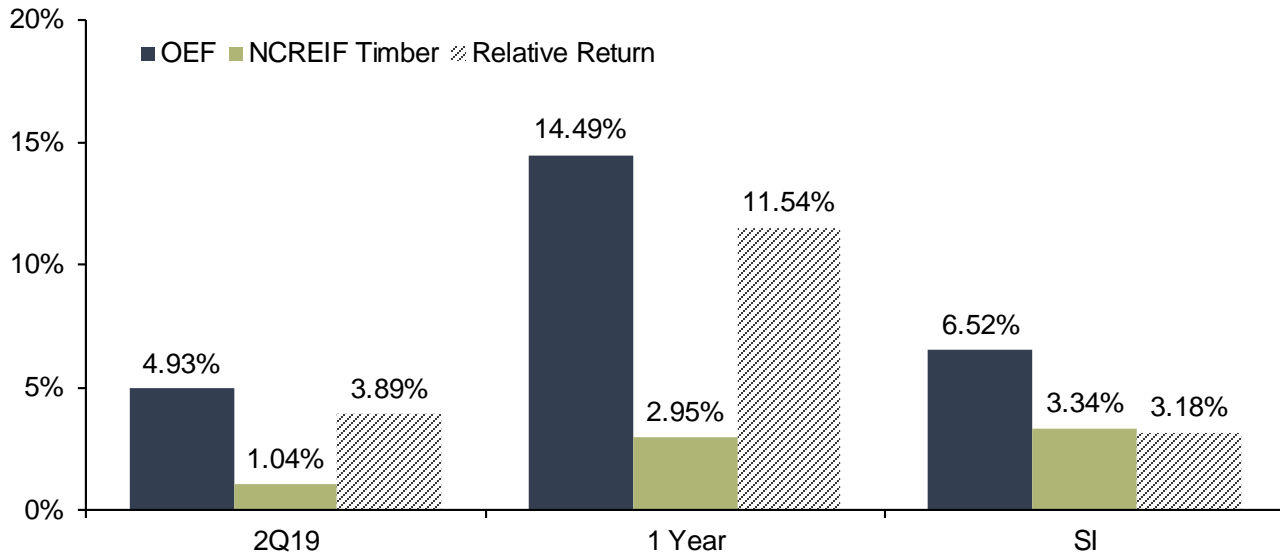
The Fund's largest investment is a preferred equity investment ("Caddo") that comprises approximately 41% of the Fund's gross asset value. There are several issues to highlight, including: i) the Fund has a greater level of investment concentration than typical in a broadly diversified timberland fund, which is further compounded by the meaningful incremental return that Caddo is contributing to the Fund, and ii) the preferred equity structure is not typical for timberland investments as they tend to be shorter-duration investments and with less control rights than more traditional fee simple ownership. The investment in Caddo secures a guaranteed double-digit return to the Fund over its five-year term, with a full or partial sale to the common equity expected in year five.

Experienced Sponsor

TIG has a long history as a TIMO dating back to 1981 when its predecessor was established and credited with raising the first institutional timberland fund. The Manager has a track record of investing through multiple cycles and is comprised of an experienced group of investment personnel and forestry professionals averaging 20 years of timberland investment and forestry operations experience. TIG has a global footprint with timberland investments across seven countries and a global timberland portfolio consisting of 2.3 million acres. The Manager, and its predecessor, have been involved in most aspects of forestry and timberland management, developing expertise in a variety of specialized areas such as forest growth and yield forecasting, silvicultural technology, harvest optimization modeling and planning, as well as forest finance. The Manager currently manages assets (including commitments) of nearly \$3.5 billion and has returned approximately \$1.7 billion to investors since its predecessor's inception.

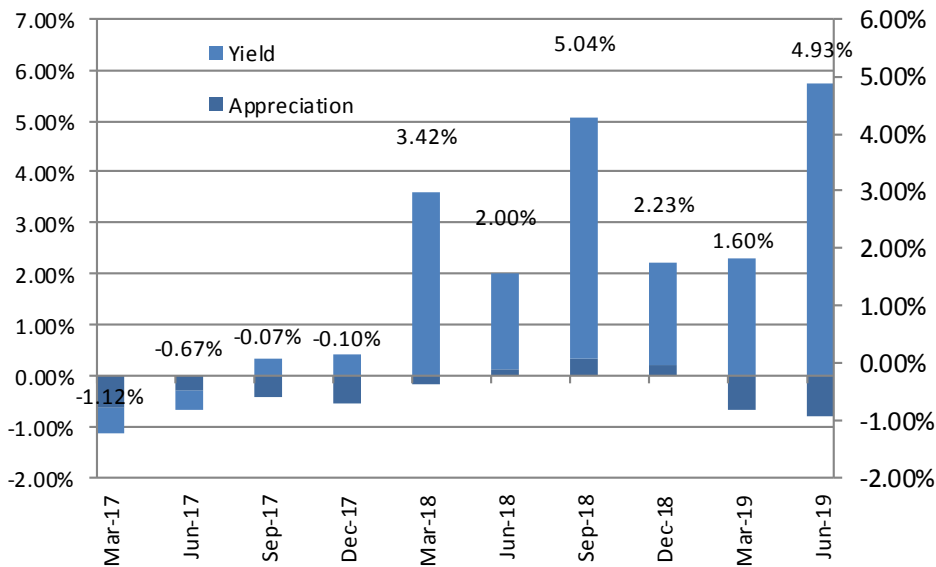
APPENDIX

Historical Relative Fund Performance – As of June 30, 2019



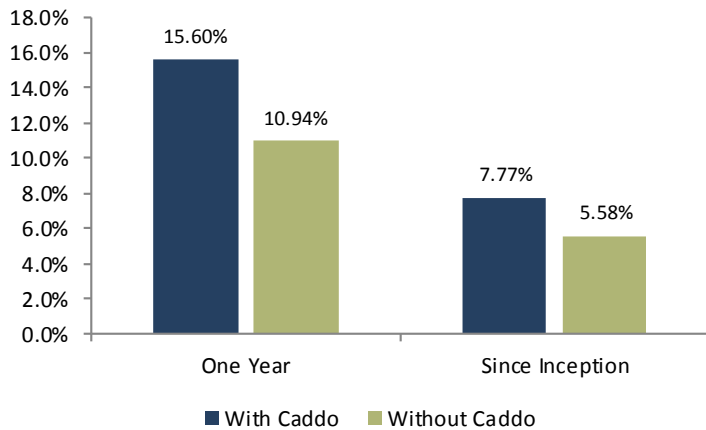
OEF Performance Attribution

OEF Quarterly Performance Attribution June 30, 2019



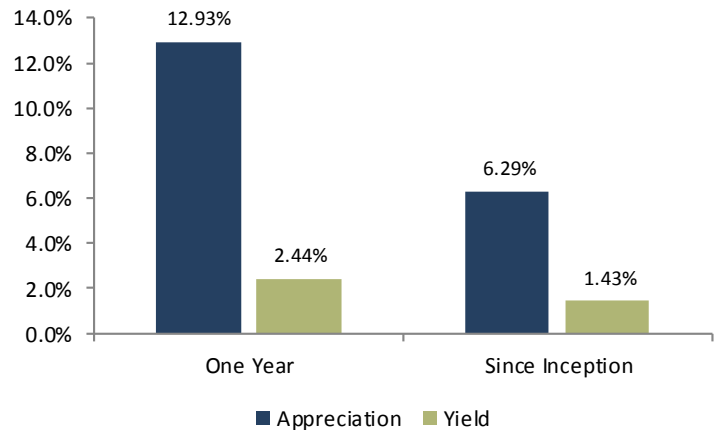
Caddo Contribution to OEF Performance

(Property level Time-weighted returns as of 12/31/18)



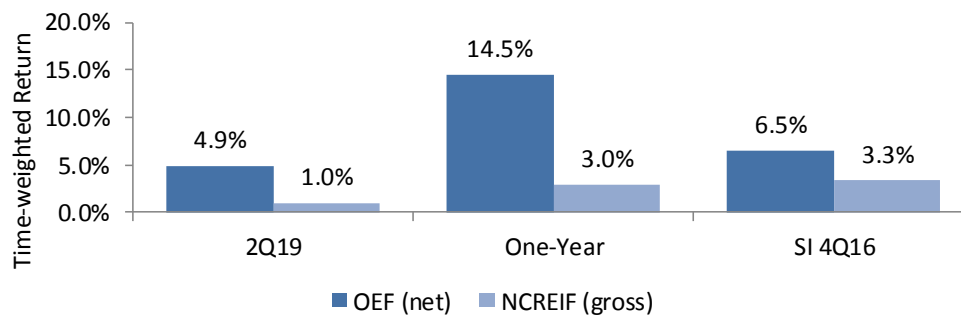
Caddo Performance Attribution for OEF

(Property level Time-weighted returns as of 12/31/18)



Fund Performance – As of June 30, 2019

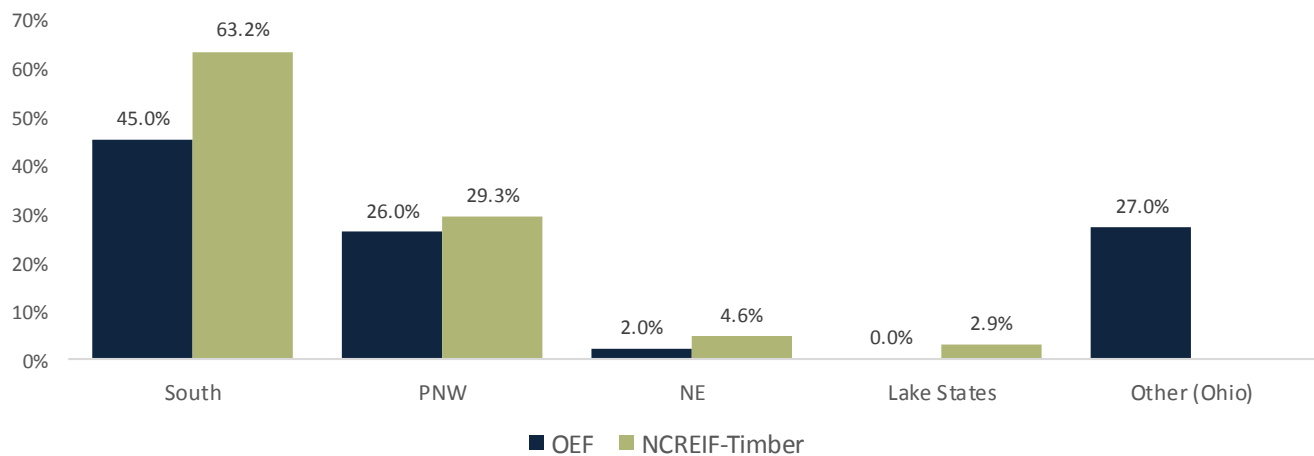
OEF Net Performance versus NCREIF Timberland Index



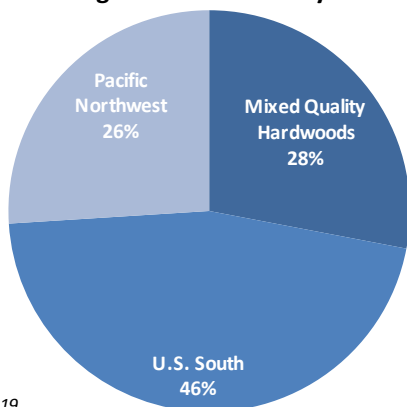
as of June 30, 2019

Fund Regional Relative Diversification – As of June 30, 2019

Geographic Type



OEF Regional Allocation by Value



as of June 30, 2019

RATINGS EXPLANATION

The overall rating can be interpreted as follows:

Overall Rating	What does this mean?
Buy	We recommend clients invest with or maintain their existing allocation to our Buy rated high conviction products
Qualified	A number of criteria have been met and we consider the investment manager to be qualified to manage client assets

Rating Rationale

<i>Strategy</i>	Focused on non-traditional property types, specifically those less correlated to the US macro business cycle that also have identifiably above-average demand tailwinds.
<i>Sponsor</i>	Cohesive and self-sufficient team newly operating out of a new parent organization has pros and cons, but considering the strength and success of each entity pre-transaction, the risks are significantly reduced and a typically low for a first-time fund.
<i>Investment Process</i>	Successful investment process being wholly transferred into a new organization that can augment with shared resources.
<i>ESG Policy & Practices</i>	BTG Pactual has a dedicated ESG Governance & Risk Management team to guide ESG integration through all business units. OEF's assets, which are all based in the U.S., are certified to either the American Tree Farm Group Certification Program ("ATF") or the Sustainable Forestry Initiative ("SFI").
<i>Fund Structure</i>	Can accommodate many investor types sensitivities to various tax, ERISA, etc issues, and, sponsor has significant resources and legal structuring experience.
<i>Performance</i>	Consistently strong over time, absolute and relative to the broad peer set and particularly to the most relevant peer sub-set.
<i>Operational Due Diligence</i>	Strength of the long-established and very successful parent organization.
<i>Overall</i>	The comparative advantages described in the report far outweigh those issues/concerns raised for this vintage, producing an overall Buy rating.

ABOUT THE 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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ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201

RESOLUTION
No. 2019-40

**Approving Investment in BTG Pactual Open Ended Core U.S.
Timberland Fund, LP**

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 investment consultant, Aon Hewitt Investment Consulting, Inc., along with the recommendation of the Investment Committee and ATRS staff regarding the rebalancing of the ATRS timber portfolio through a potential investment in **BTG Pactual Open Ended Core U.S. Timberland Fund, LP**, an open-end, domestic, timber fund focused on a diversified portfolio of commercial timber properties; and

WHEREAS, the proposed investment in **BTG Pactual Open Ended Core U.S. Timberland Fund, LP** is intended to be funded by exchanging (in whole or in part) the following ATRS directly owned timber properties known as: Bear Island and GP/Dinwiddle in Virginia, CNC in North and South Carolina, and Gilman II in Florida for a similar amount of shares in **BTG Pactual Open Ended Core U.S. Timberland Fund, LP**.

NOW, THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment in **BTG Pactual Open Ended Core U.S. Timberland Fund, LP** by contributing the following ATRS owned timber assets (in whole or in part) known as: Bear Island and GP/Dinwiddle in Virginia, CNC in North and South Carolina, and Gilman II in Florida for a similar value of shares of **BTG Pactual Open Ended Core U.S. Timberland Fund, LP**. The total investment amount is to be determined by the real assets consultant and ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the ATRS Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment, if acceptable terms are reached.

Adopted this 7th day of October, 2019.

**Chair, Board of Trustees
Arkansas Teacher Retirement System**

Arkansas Teacher Retirement System Private Equity Portfolio Review

June 30, 2019

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Executive Summary

Portfolio Summary

Since establishing the private equity program in 1996, Arkansas Teacher Retirement System (“ATRS”) has committed approximately \$4.8 billion to 77 primary funds, 23 fund-of-funds, 1 co-investment fund, and 15 direct investments through June 30, 2019. Of the \$4.8 billion committed, 86% has been contributed, 102% of contributed capital has been returned, and a total value of 1.6 times contributed capital has been generated. ATRS’ portfolio has outperformed the Dow Jones U.S. Total Stock Market Index equivalent (“PME”) by 410 basis points since inception.

Investment Activity

For the six months ended June 30, 2019, ATRS made capital contributions of approximately \$239.4 million and received distributions of \$213.7 million, for net contributions of \$25.7 million.

Commitment Activity

Since January 1, 2019, ATRS closed on commitments totaling \$205.0 million to the following seven funds:

- FP International 2019 (\$30.0 million)
- American Industrial VII (\$30.0 million)
- Arlington V (\$25.0 million)
- FP Venture 2019 (\$30.0 million)
- JF Lehman V (\$30.0 million)
- DW Healthcare V (\$30.0 million)
- FP CF Access (\$30.0 million)

Further, in 2019 ATRS closed on an additional \$58.0 million direct investment in Big River Steel and an additional \$12.0 million commitment to Highland LLC. The previously approved \$30 million commitment to ATRS/FP Private Equity was instead committed directly to FP CF Access Fund, following board approval in June 2019. ATRS has also approved \$30.0 million commitments to each of KPS Mid-Market I and KPS V, which remain pending.

Market Commentary

U.S. Private Equity: Since 2014, U.S. Private Equity investment activity has remained relatively steady around an average of nearly 1,150 deals per quarter. After a slight downtick in Q1, U.S. LBO pricing increased to post-crisis peak levels during Q2 2019. U.S. Buyout fundraising accelerated during Q2 2019 after a slow start to the year. Fundraising is on pace to exceed 2018 levels by more than 20%.

U.S. Venture Capital: A red-hot U.S. Venture fundraising market reached new highs during 2018. Fundraising is slightly behind the 2018 pace but still on track to exceed \$40 billion. From 2013 to 2015, the number of Mega-Rounds for both Early and Late Stage financings grew by 3x. Those totals doubled from 2015-2018 and are on pace to increase again during 2019.

Franklin Park

September 19, 2019

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	1,639,739,921	447,112	0.0%	447,112	1.5 x	1.5 x	9.2%
2005-2006: CSFB Portfolio	2	654,300,000	688,015,299	67,638,339	908,717,524	165,173,614	7.3%	232,811,953	1.3 x	1.6 x	8.8%
Post 2006 Fund Portfolio	86	2,718,323,718	2,013,479,250	957,476,253	1,524,646,820	1,621,944,253	71.3%	2,579,420,506	0.8 x	1.6 x	15.4%
Big River Steel	9	257,880,449	257,940,356	0	132,006,068	403,564,375	17.7%	403,564,375	0.5 x	2.1 x	27.3%
Blue Oak Arkansas	1	18,000,000	19,740,000	0	4,717,993	0	0.0%	0	0.2 x	0.2 x	-50.5%
Highland LLC	4	61,000,000	76,870,000	8,638	31,022,387	64,665,236	2.8%	64,673,874	0.4 x	1.2 x	16.6%
GTLA Holdings	1	20,000,000	20,000,000	0	0	20,000,000	0.9%	20,000,000	0.0 x	1.0 x	NMF
Total	116	4,835,894,628	4,146,721,145	1,025,123,230	4,240,850,712	2,275,794,589	100.0%	3,300,917,820	1.0 x	1.6 x	10.9%
By Fund Type											
Co-Investment Fund	1	263,823,718	223,152,703	130,642,131	110,815,429	192,812,896	8.5%	323,455,027	0.5 x	1.4 x	13.6%
Fund-of-Funds	23	1,184,300,000	996,064,706	284,140,233	1,050,809,222	597,520,784	26.3%	881,661,017	1.1 x	1.7 x	10.6%
Operating Company	15	356,880,449	374,550,356	8,638	167,746,448	488,229,611	21.5%	488,238,248	0.4 x	1.8 x	23.3%
Primary Fund	77	3,030,890,461	2,552,953,379	610,332,228	2,911,479,613	997,231,299	43.8%	1,607,563,527	1.1 x	1.5 x	10.5%
Total	116	4,835,894,628	4,146,721,145	1,025,123,230	4,240,850,712	2,275,794,589	100.0%	3,300,917,820	1.0 x	1.6 x	10.9%

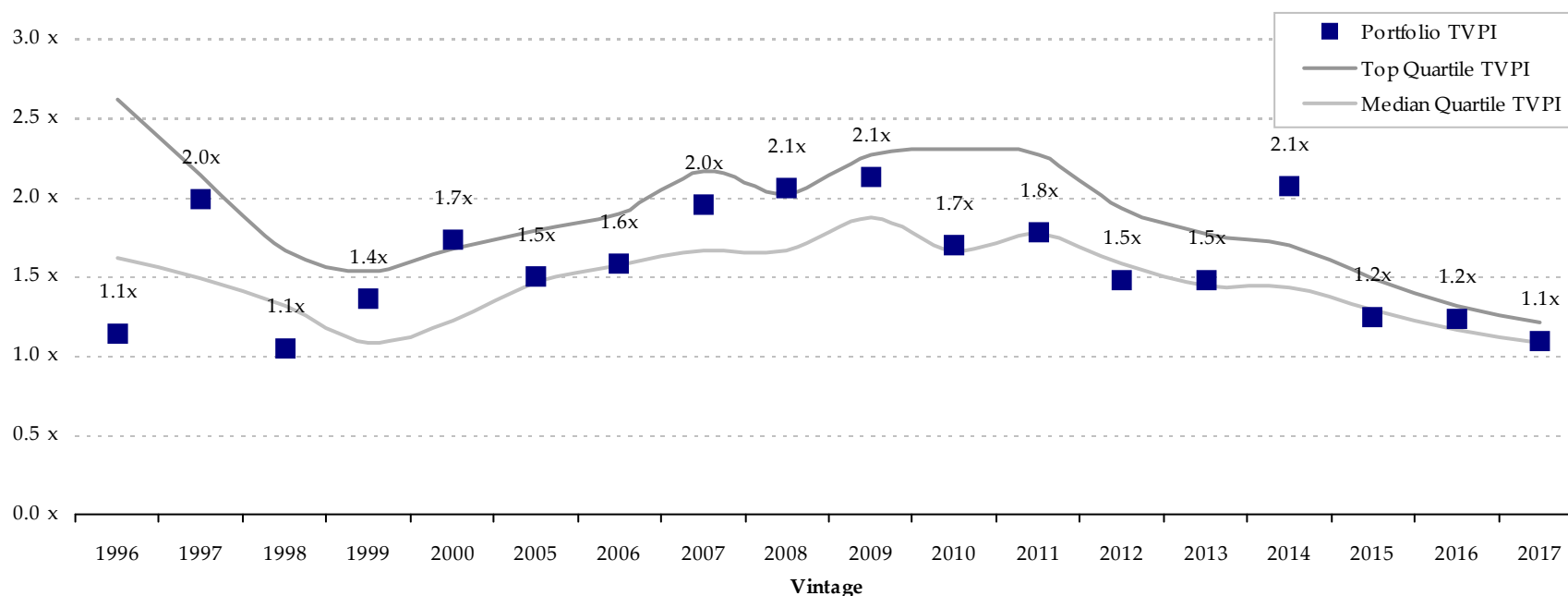
Portfolio Summary



Group	Num.	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	Remaining Value (%)	Exposure (\$)	DPI	TVPI	Net IRR
By Strategy											
Buyout	54	2,182,390,461	1,786,763,273	496,361,609	2,179,520,744	712,511,111	31.3%	1,208,872,720	1.2 x	1.6 x	11.1%
Distressed Debt	3	100,000,000	93,881,464	21,222,420	75,795,869	50,431,917	2.2%	71,654,337	0.8 x	1.3 x	6.9%
Growth Equity	2	90,000,000	87,804,590	5,057,033	151,881,721	39,192,838	1.7%	44,249,871	1.7 x	2.2 x	18.3%
Hard Assets	14	388,500,000	359,363,242	66,638,995	200,113,174	220,485,088	9.7%	287,124,083	0.6 x	1.2 x	6.7%
Infrastructure	9	270,880,449	272,676,670	0	128,498,770	403,564,375	17.7%	403,564,375	0.5 x	2.0 x	24.3%
Mezzanine	6	250,000,000	175,891,819	17,396,065	201,749,202	29,179,841	1.3%	46,575,906	1.1 x	1.3 x	10.1%
Multi-Strategy	6	974,123,718	978,156,036	198,763,470	1,046,316,759	364,477,049	16.0%	563,240,519	1.1 x	1.4 x	7.5%
Special Assets	1	30,000,000	1,069,690	28,930,310	0	381,559	0.0%	29,311,869	0.0 x	0.4 x	NMF
Structured Capital	3	85,000,000	63,668,879	34,300,986	20,390,000	49,863,528	2.2%	84,164,514	0.3 x	1.1 x	5.8%
Turnaround	6	160,000,000	123,455,354	61,883,301	119,475,784	83,354,182	3.7%	145,237,483	1.0 x	1.6 x	17.0%
Venture Capital	12	305,000,000	203,990,126	94,569,041	117,108,691	322,353,102	14.2%	416,922,143	0.6 x	2.2 x	20.8%
Total	116	4,835,894,628	4,146,721,145	1,025,123,230	4,240,850,712	2,275,794,589	100.0%	3,300,917,820	1.0 x	1.6 x	10.9%
By Sub-Asset Class											
Corporate Finance	89	4,174,014,179	3,568,180,662	930,545,551	3,955,995,574	1,465,211,877	64.4%	2,395,757,428	1.1 x	1.5 x	10.2%
Direct Investments	15	356,880,449	374,550,356	8,638	167,746,448	488,229,611	21.5%	488,238,248	0.4 x	1.8 x	23.3%
Venture Capital	12	305,000,000	203,990,126	94,569,041	117,108,691	322,353,102	14.2%	416,922,143	0.6 x	2.2 x	20.8%
Total	116	4,835,894,628	4,146,721,145	1,025,123,230	4,240,850,712	2,275,794,589	100.0%	3,300,917,820	1.0 x	1.6 x	10.9%

- 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

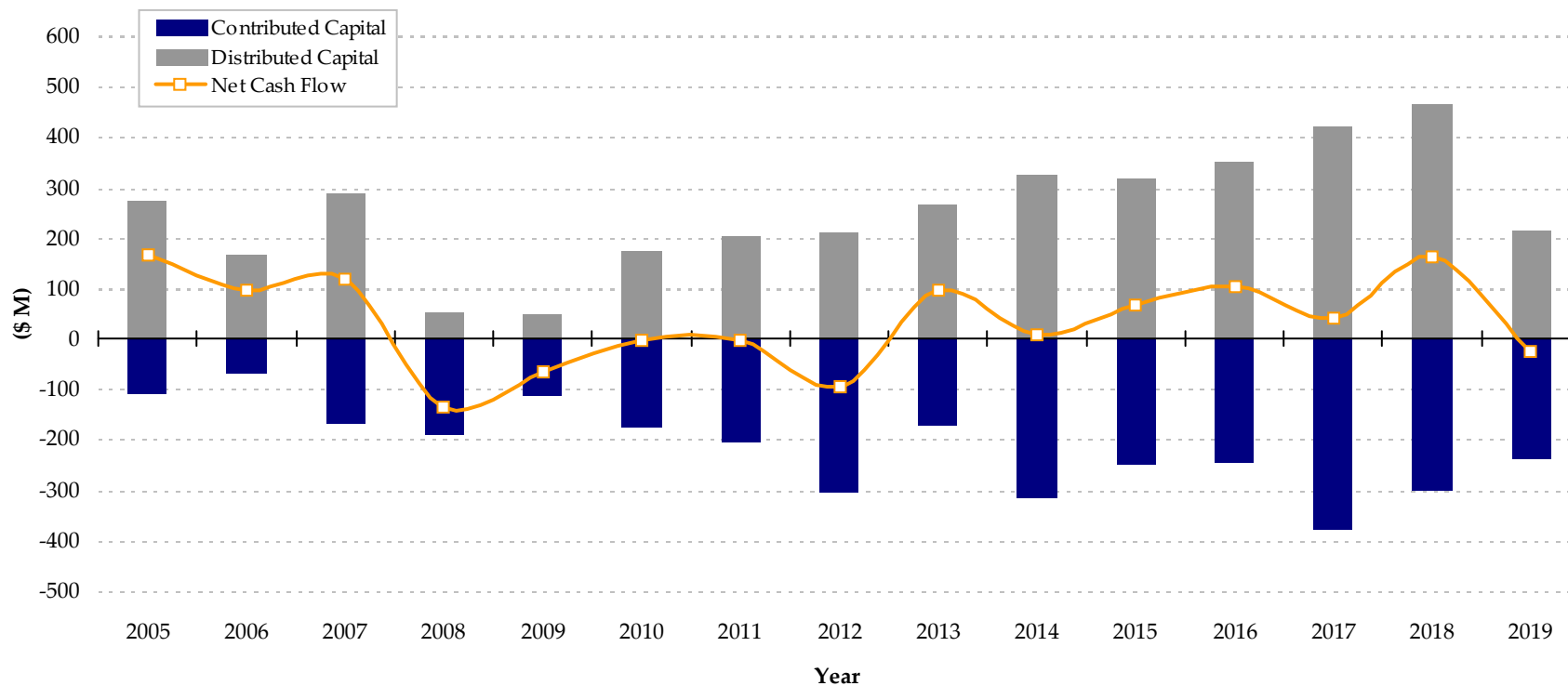


Net IRR vs. PME vs. Cambridge Associates: U.S. All Private Equity

Calculation Set	1-Year	3-Year	5-Year	10-Year	Inception
Aggregate Portfolio	12.7%	17.9%	14.5%	14.4%	10.9%
DJ US TSM TR Index* Public Market Equivalent (Aggregate Portfolio)	3.6%	12.3%	8.8%	14.2%	6.8%
Cambridge Associates: U.S. All Private Equity	15.0%	14.8%	12.7%	15.5%	N/A
Post 2006 Fund Portfolio	14.5%	16.5%	14.3%	16.0%	15.4%
DJ US TSM TR Index* Public Market Equivalent (Post 2006 Fund Portfolio)	3.5%	12.1%	8.9%	12.9%	11.9%

* 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 March 31, 2019. 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 March 31, 2019.
 - Benchmark data is not available (N/A).

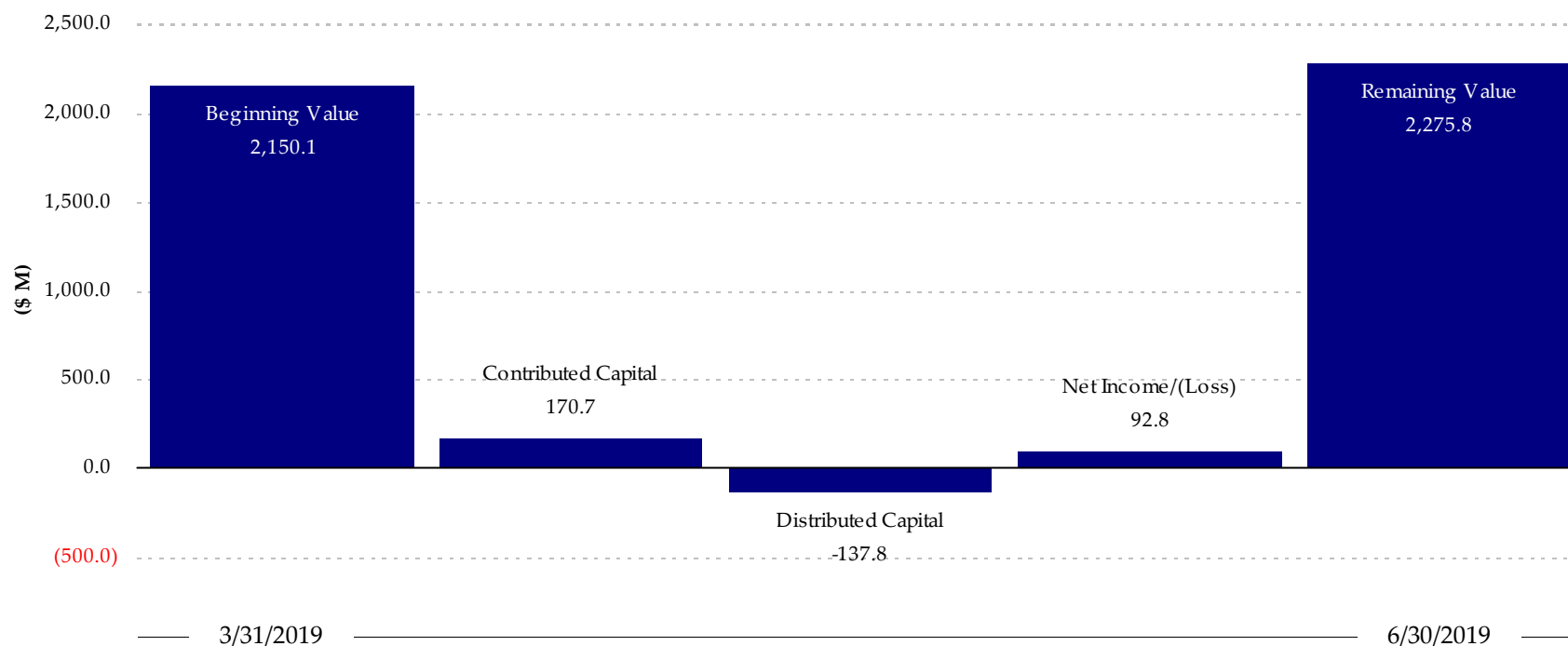


2019 (\$)		
Distributed	Contributed	Net Cash Flow
213,696,424	-239,434,942	-25,738,517

▫ Cash flow data was compiled through the Report Date.

Capital Account Change Since Prior Quarter

Quarterly Portfolio Activity



Percent Change in Value	4.3%
-------------------------	------

- 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, 2018

Fund	Strategy	Date	Commitment (\$)
Clearlake V	Buyout	Jan 2018	30,000,000
FP Intl 2018	Buyout	Feb 2018	25,000,000
Big River - Holdings Note 2023	Infrastructure	Mar 2018	12,000,000
FP Venture 2018	Venture Capital	Mar 2018	25,000,000
WNG II	Special Assets	Jun 2018	30,000,000
Riverside VI	Buyout	Jul 2018	30,000,000
SK Capital V	Buyout	Jul 2018	30,000,000
Highland Contingent Note	Hard Assets	Jul 2018	0
GTLA Holdings	Hard Assets	Aug 2018	20,000,000
Big River - Holdings Note 2023-2	Infrastructure	Sep 2018	5,150,000
Thoma Bravo XIII	Buyout	Sep 2018	30,000,000
Total			237,150,000

Year to Date Commitments as of September 19, 2019

Fund	Strategy	Date	Commitment (\$)
FP Intl 2019	Buyout	Mar 2019	30,000,000
American Industrial VII	Buyout	Mar 2019	30,000,000
Arlington V	Buyout	May 2019	25,000,000
Big River - Equity Phase II	Infrastructure	May 2019	58,000,000
FP Venture 2019	Venture Capital	Jun 2019	30,000,000
Highland Note 2020	Hard Assets	Jun 2019	12,000,000
JF Lehman V	Buyout	Jun 2019	30,000,000
DW Healthcare V	Buyout	Jul 2019	30,000,000
FP CF Access	Buyout	Jul 2019	30,000,000
Total			275,000,000

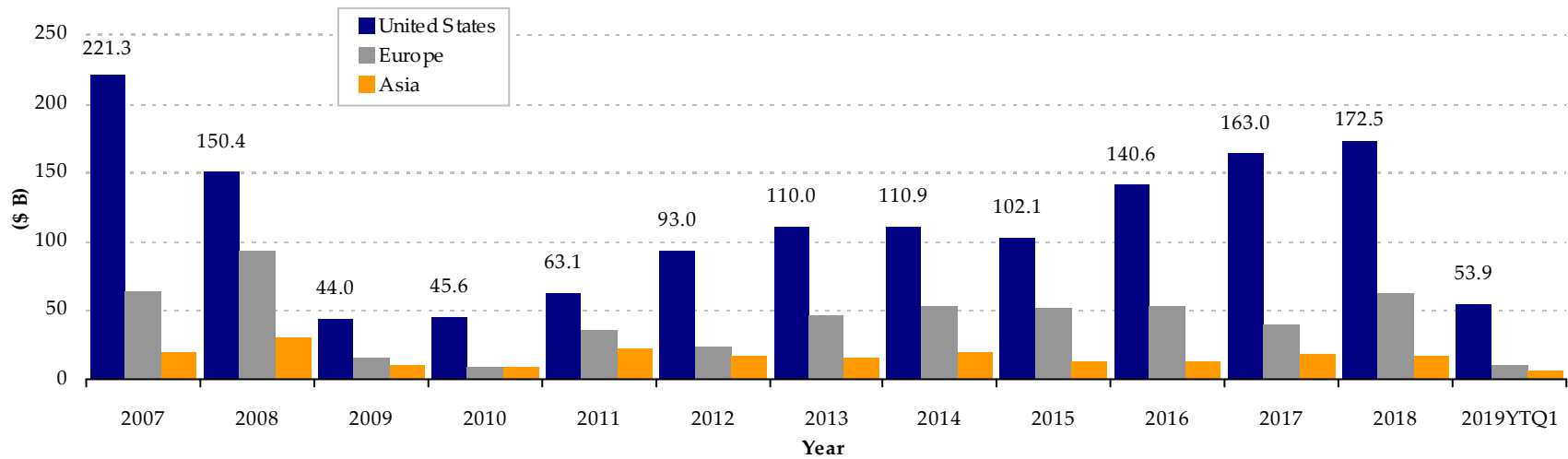
Approved and Pending Commitments as of September 19, 2019

Fund	Strategy	Date	Target Commitment (\$)
KPS Mid-Market I	Turnaround	N/A	30,000,000
KPS V	Turnaround	N/A	30,000,000

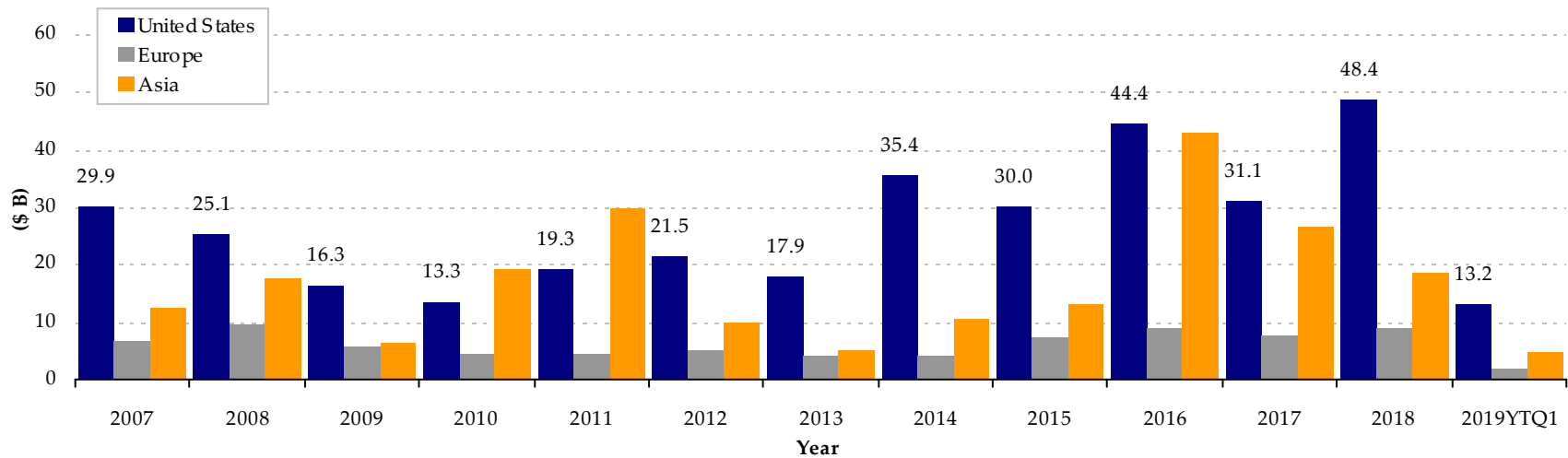
- Commitments made in a foreign currency have been converted into U.S. dollars using an exchange rate as of the Report Date, if applicable.
- ATRS committed an additional \$30.0 million to ATRS/FP Private Equity Fund as as part of the 2019 allocation, which was reversed subsequent to year end 2018.

Market Update

Buyout Funds

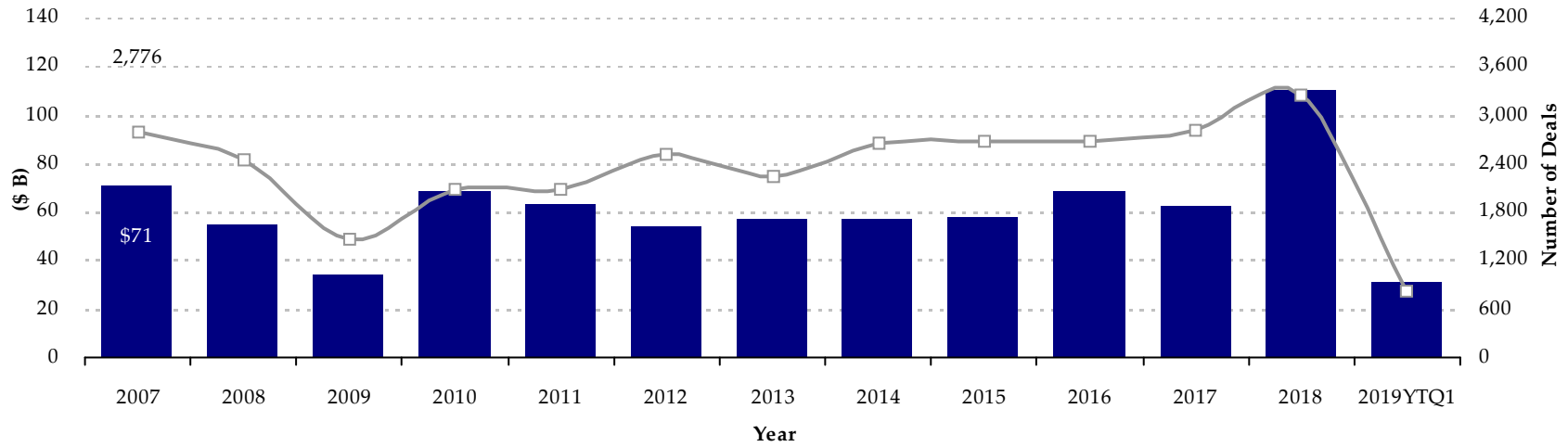


Venture Funds

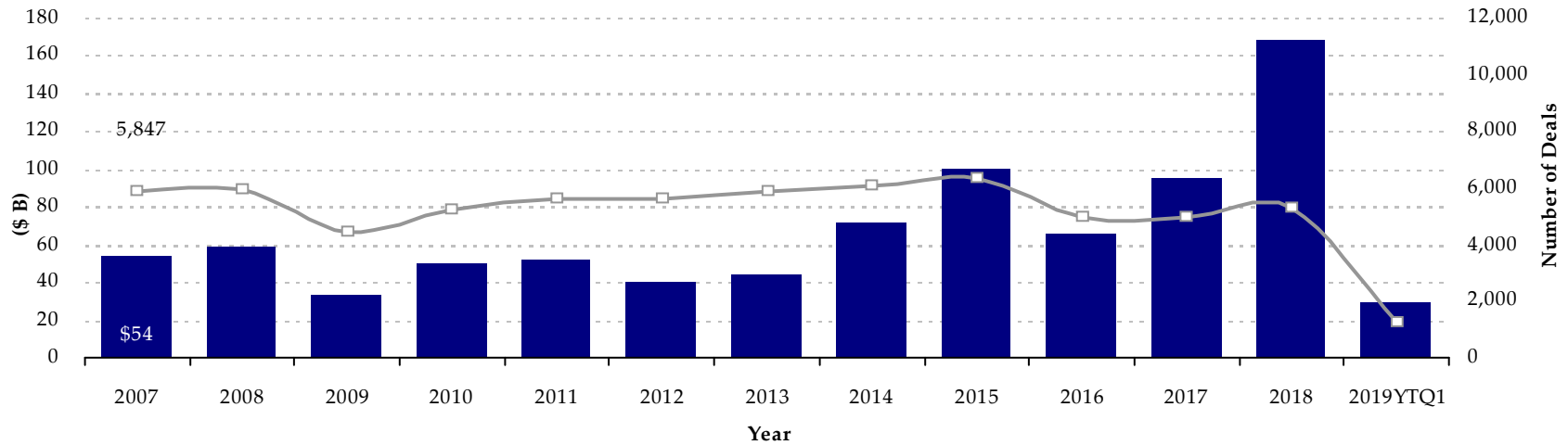


Source: Thomson One Private Equity.
Data compiled through 1Q 2019.

U.S. Buyout

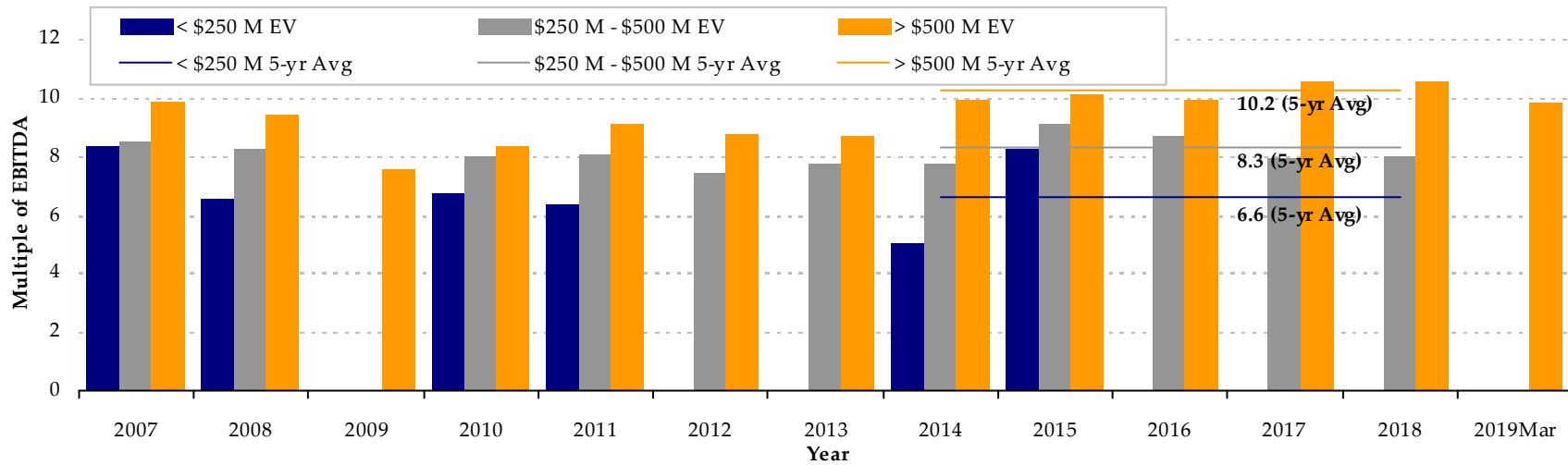


U.S. Venture

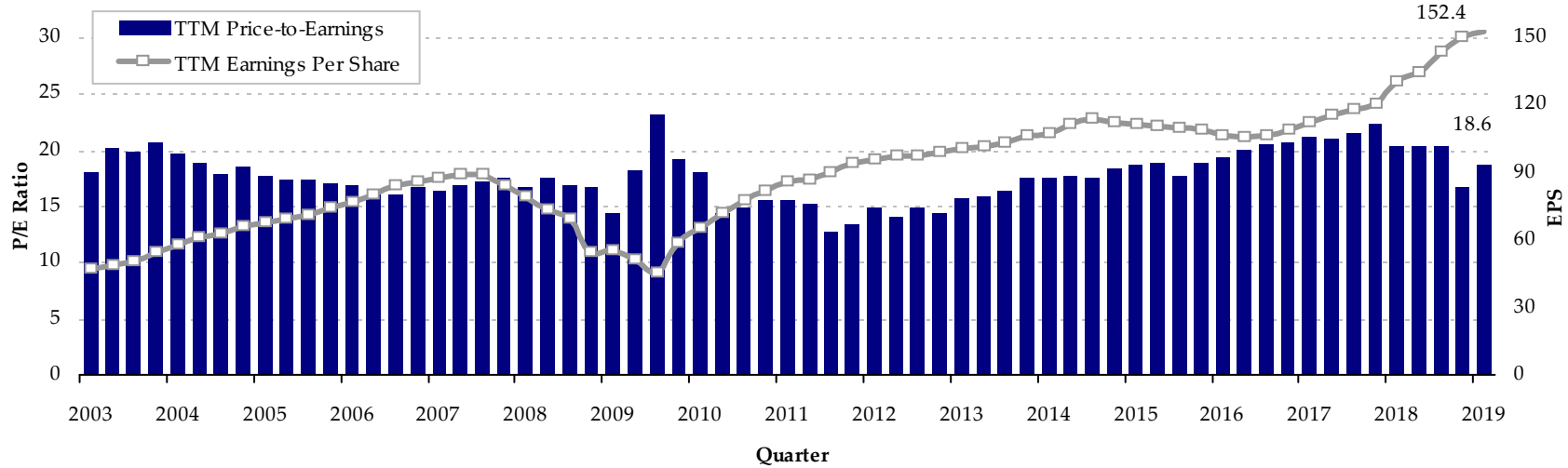


- Source: Thomson One Private Equity.
- Data compiled through 1Q 2019.

U.S. LBO Pricing Multiples

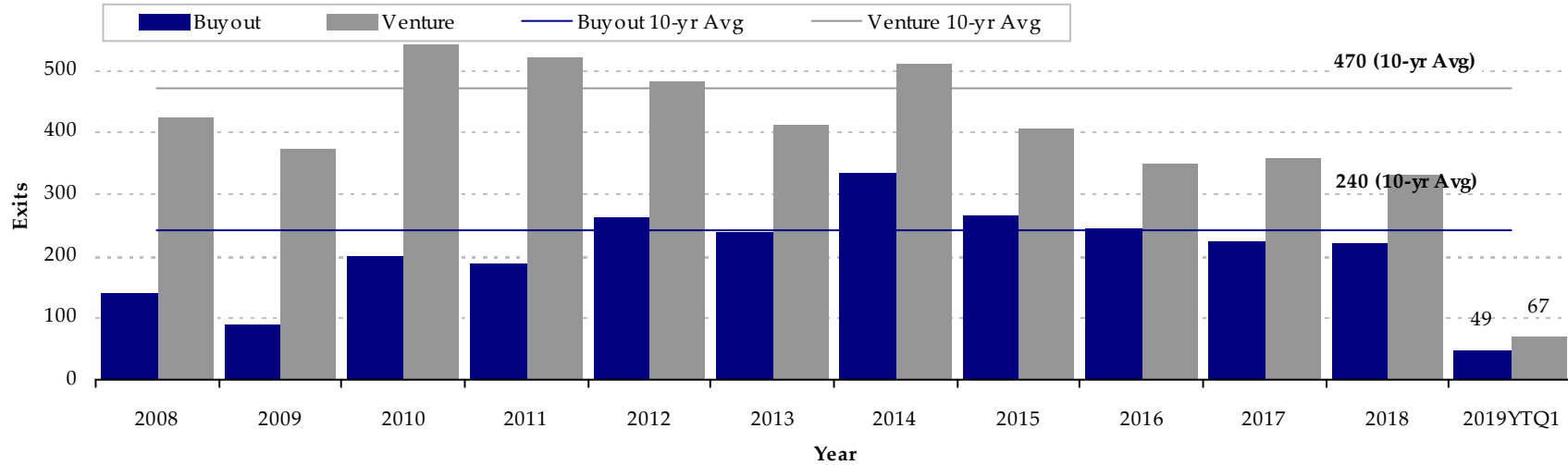


S&P 500 Valuation and Earnings

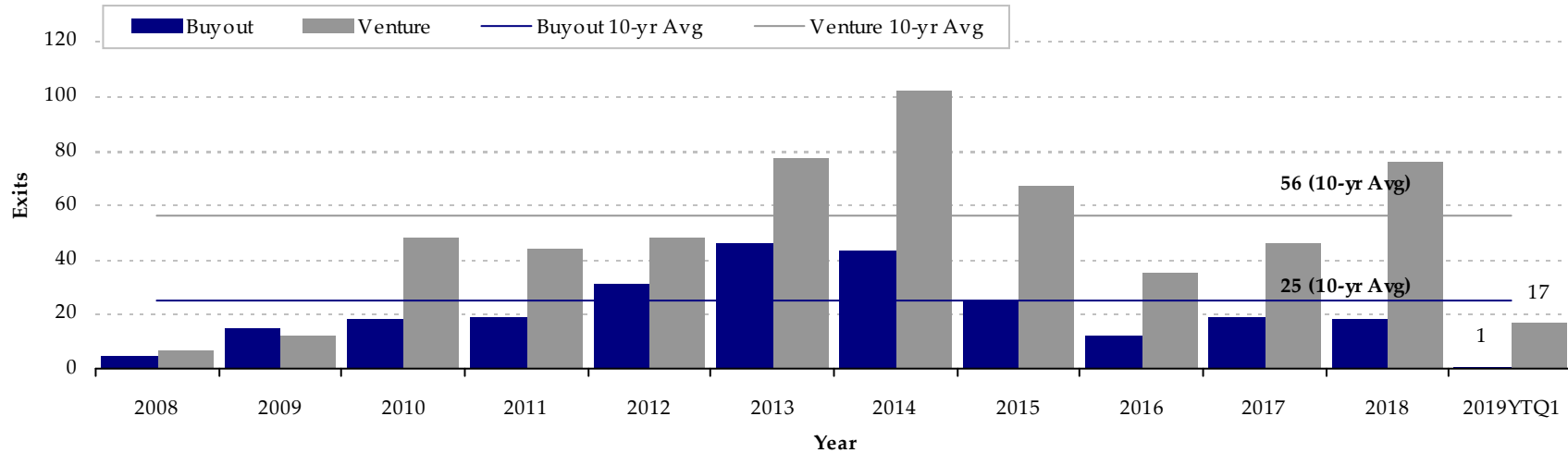


Source: Standard & Poor's Leveraged Commentary.

U.S. Mergers and Acquisitions



U.S. Initial Public Offerings



- Source: Thomson One Private Equity.
- Data compiled through 1Q 2019.

Vintage Returns

Group	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
U.S. All PE Median	11.7%	15.4%	13.8%	15.6%	14.0%	13.4%	14.7%	13.4%	12.4%	8.9%
U.S. All PE Top Quartile	17.0%	22.8%	19.2%	20.9%	19.4%	18.9%	23.2%	21.1%	20.8%	23.5%
U.S. Buyout Median	13.6%	20.3%	16.7%	17.5%	16.3%	15.7%	16.4%	16.6%	9.9%	10.5%
U.S. Buyout Top Quartile	20.9%	26.1%	21.9%	22.5%	24.5%	19.2%	25.1%	24.4%	20.7%	26.5%
U.S. Energy Median	4.4%	8.8%	11.2%	4.3%	4.3%	7.8%	12.6%	13.5%	9.4%	10.4%
U.S. Energy Top Quartile	6.9%	17.9%	28.1%	8.8%	12.8%	22.3%	19.0%	19.8%	14.2%	16.0%
U.S. Natural Resources Median	5.2%	10.4%	2.7%	2.7%	4.9%	10.8%	12.7%	15.6%	10.3%	7.5%
U.S. Natural Resources Top Quartile	8.8%	15.1%	8.6%	12.6%	13.2%	18.8%	13.7%	19.9%	15.2%	18.3%
U.S. Real Estate Median	10.3%	15.2%	13.9%	16.7%	12.5%	13.0%	12.0%	11.4%	11.0%	6.5%
U.S. Real Estate Top Quartile	13.1%	19.8%	19.1%	21.2%	17.8%	15.1%	14.8%	15.4%	14.5%	12.1%
U.S. Venture Median	6.0%	13.5%	15.1%	17.1%	14.3%	14.0%	14.4%	13.2%	14.3%	10.2%
U.S. Venture Top Quartile	16.6%	21.6%	24.6%	24.8%	21.4%	22.7%	24.8%	22.3%	28.9%	21.8%

▫ Source: Cambridge Associates.
 ▫ Data compiled through March 31, 2019.

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	77,066,905	7,510,643	2.1 x	16.9%
Altaris Constellation	2017	\$165,000,000	20,000,000	16,225,389	4,766,723	991,694	19,913,069	1.3 x	16.4%
Altaris IV	2018	\$1,085,000,000	24,000,000	6,326,439	17,673,561	0	6,788,703	1.1 x	NMF
Altus Capital II	2010	\$200,000,000	20,000,000	17,977,469	4,806,151	19,060,271	8,832,286	1.6 x	12.5%
American Industrial VI	2016	\$1,845,000,000	20,000,000	20,879,219	1,813,211	2,692,432	20,824,223	1.1 x	8.2%
American Industrial VII	2019	\$3,075,000,000	30,000,000	0	30,000,000	0	-80,424	N/A	NMF
Arlington IV	2016	\$700,000,000	23,000,000	19,337,926	3,662,074	0	22,598,972	1.2 x	14.4%
Arlington V	2019	\$1,692,000,000	25,000,000	0	25,000,000	0	-168,063	N/A	NMF
Boston Ventures VII	2006	\$434,507,010	50,000,000	43,016,769	8,258,947	44,373,737	17,192,678	1.4 x	6.1%
BV IX	2017	\$750,000,000	30,000,000	14,122,398	15,877,603	0	14,992,620	1.1 x	12.3%
BV VIII	2012	\$486,800,000	30,000,000	26,447,466	3,833,720	30,098,320	26,005,132	2.1 x	61.1%
Clearlake V	2018	\$3,623,125,000	30,000,000	14,416,511	15,853,306	452,836	21,441,261	1.5 x	NMF
Court Square III	2012	\$3,173,449,997	40,000,000	42,660,428	3,114,194	22,208,826	40,699,917	1.5 x	18.9%
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	35,694,363	4,305,637	40,738,290	20,348,957	1.7 x	17.7%
DW Healthcare IV	2016	\$294,274,000	30,000,000	25,957,390	5,571,576	11,273,132	28,510,360	1.5 x	42.4%
FP Intl 2011	2011	\$45,000,000	25,000,000	21,946,200	3,321,102	12,345,430	19,452,753	1.4 x	8.9%
FP Intl 2012	2012	\$70,000,000	25,000,000	16,426,600	8,735,156	6,323,845	14,885,401	1.3 x	8.9%
FP Intl 2013	2013	\$97,000,000	20,000,000	12,887,500	7,229,296	914,343	16,127,176	1.3 x	9.5%
FP Intl 2014	2014	\$97,000,000	25,000,000	14,304,015	10,788,604	4,704,494	17,472,365	1.6 x	20.9%
FP Intl 2015	2015	\$113,000,000	25,000,000	13,053,160	12,020,833	439,802	14,438,242	1.1 x	8.0%
FP Intl 2016	2016	\$97,000,000	25,000,000	13,144,330	11,938,648	255,094	15,043,749	1.2 x	11.1%
FP Intl 2017	2017	\$98,000,000	25,000,000	7,908,163	17,173,481	0	8,637,126	1.1 x	9.9%
FP Intl 2018	2018	\$65,500,000	25,000,000	4,389,313	20,725,733	0	3,937,256	0.9 x	NMF
FP Intl 2019	2019	\$70,500,000	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%
JF Lehman III	2011	\$575,500,000	39,000,000	43,494,645	503,401	36,058,155	34,002,766	1.6 x	13.6%
JF Lehman IV	2016	\$833,000,000	30,000,000	22,832,944	7,167,056	9,199,648	25,546,171	1.5 x	26.3%
JF Lehman V	2019	\$1,000,000,000	30,000,000	0	30,000,000	0	0	N/A	NMF
Mason Wells III	2010	\$525,000,000	30,000,000	28,553,580	1,446,420	48,281,292	26,028,368	2.6 x	19.1%
Oak Hill I *	1999	\$1,600,000,000	50,000,000	50,786,497	0	91,264,962	0	1.8 x	10.6%

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
One Rock II	2017	\$964,000,000	30,000,000	18,304,614	11,695,386	0	17,473,967	1.0 x	-5.9%
Riverside IV	2009	\$406,091,370	40,000,000	31,433,665	10,099,013	72,706,965	3,537,844	2.4 x	21.7%
Riverside V	2013	\$561,224,490	35,000,000	32,625,595	4,168,822	18,659,770	24,687,877	1.3 x	8.7%
Riverside VI	2019	\$600,000,000	30,000,000	4,843,536	25,156,464	0	3,637,633	0.8 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	26,920,457	7,446,733	16,184,624	15,279,842	1.2 x	10.6%
Siris IV	2019	\$3,452,454,000	30,000,000	4,577,426	25,422,574	0	4,512,889	1.0 x	NMF
SK Capital V	2018	\$2,013,000,000	30,000,000	3,613,689	26,386,311	10,490	3,240,604	0.9 x	NMF
Thoma Bravo Discover	2016	\$1,074,000,000	10,000,000	11,350,409	1,767,370	4,168,807	14,520,757	1.6 x	31.3%
Thoma Bravo Discover II	2018	\$2,402,685,000	17,000,000	3,967,701	13,032,299	0	3,743,822	0.9 x	NMF
Thoma Bravo XI	2014	\$3,662,000,000	20,000,000	20,634,595	2,286,609	13,935,717	32,307,836	2.2 x	25.5%
Thoma Bravo XII	2016	\$7,603,860,000	30,000,000	28,836,037	2,083,171	921,362	35,352,903	1.3 x	13.9%
Thoma Bravo XIII	2019	\$12,575,745,000	30,000,000	10,717,375	19,282,625	0	10,592,993	1.0 x	NMF
Vista Equity III	2007	\$1,287,129,725	50,000,000	54,209,051	4,021,631	127,483,122	5,034,007	2.4 x	28.7%
Vista Foundation II	2013	\$1,145,000,000	15,000,000	15,208,684	7,925,952	10,905,347	15,494,296	1.7 x	17.1%
Vista Foundation III	2016	\$2,950,561,226	30,000,000	21,127,391	8,910,324	4,739	23,795,476	1.1 x	9.1%
Wellspring V	2011	\$1,194,387,756	40,000,000	44,267,510	15,997,643	51,403,217	17,794,629	1.6 x	16.6%
Wicks IV	2011	\$414,000,000	40,000,000	41,715,427	5,092,249	36,714,154	30,522,029	1.6 x	17.6%
Total Buyout			2,182,390,461	1,786,763,273	496,361,609	2,179,520,744	712,511,111	1.6 x	11.1%
Distressed Debt									
Castlelake II	2011	\$996,762,000	35,000,000	32,656,036	2,625,461	27,450,725	17,469,546	1.4 x	6.9%
Castlelake III	2014	\$1,421,000,000	25,000,000	23,149,741	1,864,884	12,889,249	19,032,994	1.4 x	8.2%
Tennenbaum VI	2010	\$530,000,000	40,000,000	38,075,687	16,732,075	35,455,895	13,929,377	1.3 x	6.3%
Total Distressed Debt			100,000,000	93,881,464	21,222,420	75,795,869	50,431,917	1.3 x	6.9%
Growth Equity									
LLR III	2008	\$803,000,000	50,000,000	48,504,590	4,357,033	85,370,014	9,006,734	1.9 x	15.2%
TA XI	2010	\$4,000,100,000	40,000,000	39,300,000	700,000	66,511,707	30,186,104	2.5 x	23.1%
Total Growth Equity			90,000,000	87,804,590	5,057,033	151,881,721	39,192,838	2.2 x	18.3%

Investment Performance by Strategy



Investment	Vintage	Fund Size	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
Hard Assets									
EnCap IX	2013	\$5,154,639,175	25,000,000	28,060,297	1,576,907	20,906,127	16,095,530	1.3 x	12.0%
EnCap VIII	2010	\$3,608,247,422	47,500,000	52,059,909	2,281,089	30,574,380	14,388,096	0.9 x	-4.8%
EnCap X	2015	\$6,701,030,928	30,000,000	25,278,615	6,627,075	4,921,287	25,601,405	1.2 x	10.4%
EnCap XI	2017	\$6,961,190,722	35,000,000	6,346,352	28,653,648	0	5,290,861	0.8 x	-19.8%
GTLA Holdings	2018	\$20,000,000	20,000,000	20,000,000	0	0	20,000,000	1.0 x	NMF
Highland Contingent Note	2018	\$150,000,000	0	0	0	15,000,000	0	N/A	NMF
Highland Equity	2016	\$25,000,000	25,000,000	25,000,000	0	143,750	25,420,000	1.0 x	0.8%
Highland Note	2017	\$26,000,000	26,000,000	41,870,000	8,638	15,878,637	29,245,236	1.1 x	8.0%
Highland Note 2020	2019	\$10,000,000	10,000,000	10,000,000	0	0	10,000,000	1.0 x	NMF
Lime Rock Resources III	2014	\$762,000,000	25,000,000	25,449,542	447,078	4,355,750	25,918,635	1.2 x	4.3%
NGP IX	2007	\$4,000,000,000	50,000,000	54,166,654	250,302	76,124,968	1,268,787	1.4 x	10.8%
NGP X	2012	\$3,586,000,000	35,000,000	35,305,152	1,388,578	26,279,743	11,409,092	1.1 x	2.1%
NGP XI	2014	\$5,325,000,000	30,000,000	27,200,433	4,031,968	5,829,399	27,448,640	1.2 x	10.2%
NGP XII	2017	\$4,304,081,633	30,000,000	8,626,288	21,373,712	99,132	8,398,805	1.0 x	-1.2%
Total Hard Assets			388,500,000	359,363,242	66,638,995	200,113,174	220,485,088	1.2 x	6.7%
Infrastructure									
Big River - Equity	2014	\$93,090,000	93,090,000	93,090,000	0	19,160,000	327,000,000	3.7 x	30.3%
Big River - Equity Phase II	2019	\$58,000,000	58,000,000	58,000,000	0	0	58,295,562	1.0 x	NMF
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	12,871,433	1.1 x	NMF
Big River - Holdings Note 2023-2	2018	\$5,150,000	5,150,000	5,150,000	0	62,323	5,397,380	1.1 x	NMF
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	4,717,993	0	0.2 x	-50.5%
Total Infrastructure			270,880,449	272,676,670	0	128,498,770	403,564,375	2.0 x	24.3%

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	23,657,638	6,825,000	26,173,966	4,608,539	1.3 x	9.5%
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	60,455,204	0	1.4 x	10.3%
Greyrock IV	2017	\$275,000,000	30,000,000	20,337,103	10,048,941	386,044	20,823,087	1.0 x	4.1%
Insight Mezzanine I	2009	\$94,678,011	10,000,000	9,928,853	522,124	9,779,671	3,748,215	1.4 x	7.0%
Total Mezzanine			250,000,000	175,891,819	17,396,065	201,749,202	29,179,841	1.3 x	10.1%
Multi-Strategy									
ATRS-FP PE	2012	\$265,516,382	263,823,718	223,152,703	130,642,131	110,815,429	192,812,896	1.4 x	13.6%
CSFB-ATRS 2005-1 Series	2005	\$252,525,253	250,000,000	279,843,295	8,170,232	358,501,431	62,119,689	1.5 x	7.4%
CSFB-ATRS 2006-1 Series	2006	\$406,331,658	404,300,000	408,172,005	59,468,107	550,216,093	103,053,925	1.6 x	10.0%
DH Tech I	2000	\$236,700,000	50,000,000	61,471,034	0	20,514,606	447,112	0.3 x	-22.8%
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	\$27,861,350	4,000,000	3,517,000	483,000	3,172,000	6,043,427	2.6 x	11.9%
Total Multi-Strategy			974,123,718	978,156,036	198,763,470	1,046,316,759	364,477,049	1.4 x	7.5%
Special Assets									
WNG II	2019	\$438,350,000	30,000,000	1,069,690	28,930,310	0	381,559	0.4 x	NMF
Total Special Assets			30,000,000	1,069,690	28,930,310	0	381,559	0.4 x	NMF
Structured Capital									
Bison V	2017	\$384,132,653	35,000,000	19,451,357	18,695,542	3,146,899	17,895,456	1.1 x	8.3%
Levine Leichtman V	2013	\$1,644,081,633	20,000,000	24,322,342	3,684,269	15,337,819	17,283,462	1.3 x	11.7%
PineBridge Structured III	2016	\$600,000,000	30,000,000	19,895,180	11,921,175	1,905,281	14,684,610	0.8 x	-12.2%
Total Structured Capital			85,000,000	63,668,879	34,300,986	20,390,000	49,863,528	1.1 x	5.8%

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	16,390,721	6,932,375	11,567,591	12,722,850	1.5 x	24.7%
Insight Equity II	2009	\$429,735,291	30,000,000	30,218,108	1,694,547	24,807,229	27,469,676	1.7 x	11.4%
KPS III Supplemental	2009	\$816,326,531	40,000,000	37,761,582	16,010,148	69,742,260	10,240,053	2.1 x	22.9%
KPS IV	2014	\$3,571,428,571	25,000,000	14,163,230	11,041,202	5,448,993	12,725,182	1.3 x	20.2%
Sycamore Partners II	2014	\$2,700,000,000	25,000,000	21,711,127	4,415,615	7,909,711	17,741,269	1.2 x	9.0%
Sycamore Partners III	2018	\$4,870,000,000	25,000,000	3,210,586	21,789,414	0	2,455,152	0.8 x	NMF
Total Turnaround			160,000,000	123,455,354	61,883,301	119,475,784	83,354,182	1.6 x	17.0%
Venture Capital									
FP Venture 2008	2008	\$102,000,000	30,000,000	29,704,100	444,302	35,889,844	28,279,580	2.2 x	15.6%
FP Venture 2009	2009	\$58,000,000	25,000,000	24,286,850	890,647	32,747,890	29,614,786	2.6 x	19.1%
FP Venture 2010	2010	\$80,000,000	25,000,000	15,703,125	1,909,261	9,084,414	23,191,450	2.1 x	14.7%
FP Venture 2011	2011	\$70,000,000	25,000,000	23,929,050	1,217,950	17,685,894	80,960,501	4.1 x	35.6%
FP Venture 2012	2012	\$80,000,000	25,000,000	21,562,500	3,540,830	11,467,842	36,747,712	2.2 x	21.1%
FP Venture 2013	2013	\$87,000,000	20,000,000	16,896,915	3,167,225	6,359,603	29,272,043	2.1 x	24.9%
FP Venture 2014	2014	\$93,000,000	25,000,000	22,849,700	2,216,556	3,143,229	35,749,825	1.7 x	18.7%
FP Venture 2015	2015	\$113,000,000	25,000,000	21,239,040	3,829,106	363,891	28,167,197	1.3 x	16.7%
FP Venture 2016	2016	\$82,000,000	25,000,000	13,567,073	11,498,446	342,267	16,187,521	1.2 x	15.2%
FP Venture 2017	2017	\$113,000,000	25,000,000	6,084,071	18,958,212	0	6,413,296	1.1 x	7.3%
FP Venture 2018	2018	\$80,500,000	25,000,000	4,813,665	20,238,951	217	4,473,301	0.9 x	NMF
FP Venture 2019	2019	\$80,500,000	30,000,000	3,354,037	26,657,555	23,600	3,295,890	1.0 x	NMF
Total Venture Capital			305,000,000	203,990,126	94,569,041	117,108,691	322,353,102	2.2 x	20.8%
Total Portfolio			4,835,894,628	4,146,721,145	1,025,123,230	4,240,850,712	2,275,794,589	1.6 x	10.9%

- 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.

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	60,455,204	0	1.4 x	10.3%
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	302,386,613	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	20,514,606	447,112	0.3 x	-22.8%
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	880,205,696	447,112	1.7 x	14.8%
2005								
CSFB-ATRS 2005-1 Series	Multi-Strategy	250,000,000	279,843,295	8,170,232	358,501,431	62,119,689	1.5 x	7.4%
Total 2005		250,000,000	279,843,295	8,170,232	358,501,431	62,119,689	1.5 x	7.4%

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	44,373,737	17,192,678	1.4 x	6.1%
CSFB-ATRS 2006-1 Series	Multi-Strategy	404,300,000	408,172,005	59,468,107	550,216,093	103,053,925	1.6 x	10.0%
Total 2006		454,300,000	451,188,774	67,727,054	594,589,830	120,246,603	1.6 x	9.6%
2007								
Diamond State II	Multi-Strategy	4,000,000	3,517,000	483,000	3,172,000	6,043,427	2.6 x	11.9%
NGP IX	Hard Assets	50,000,000	54,166,654	250,302	76,124,968	1,268,787	1.4 x	10.8%
Vista Equity III	Buyout	50,000,000	54,209,051	4,021,631	127,483,122	5,034,007	2.4 x	28.7%
Total 2007		104,000,000	111,892,705	4,754,933	206,780,090	12,346,221	2.0 x	20.6%
2008								
Advent GPE VI-A	Buyout	40,000,000	40,167,228	0	77,066,905	7,510,643	2.1 x	16.9%
FP Venture 2008	Venture Capital	30,000,000	29,704,100	444,302	35,889,844	28,279,580	2.2 x	15.6%
LLR III	Growth Equity	50,000,000	48,504,590	4,357,033	85,370,014	9,006,734	1.9 x	15.2%
Total 2008		120,000,000	118,375,918	4,801,335	198,326,763	44,796,957	2.1 x	15.9%
2009								
FP Venture 2009	Venture Capital	25,000,000	24,286,850	890,647	32,747,890	29,614,786	2.6 x	19.1%
Insight Equity II	Turnaround	30,000,000	30,218,108	1,694,547	24,807,229	27,469,676	1.7 x	11.4%
Insight Mezzanine I	Mezzanine	10,000,000	9,928,853	522,124	9,779,671	3,748,215	1.4 x	7.0%
KPS III Supplemental	Turnaround	40,000,000	37,761,582	16,010,148	69,742,260	10,240,053	2.1 x	22.9%
Riverside IV	Buyout	40,000,000	31,433,665	10,099,013	72,706,965	3,537,844	2.4 x	21.7%
Total 2009		145,000,000	133,629,058	29,216,479	209,784,015	74,610,574	2.1 x	18.2%
2010								
Altus Capital II	Buyout	20,000,000	17,977,469	4,806,151	19,060,271	8,832,286	1.6 x	12.5%
EnCap VIII	Hard Assets	47,500,000	52,059,909	2,281,089	30,574,380	14,388,096	0.9 x	-4.8%
FP Venture 2010	Venture Capital	25,000,000	15,703,125	1,909,261	9,084,414	23,191,450	2.1 x	14.7%
Mason Wells III	Buyout	30,000,000	28,553,580	1,446,420	48,281,292	26,028,368	2.6 x	19.1%
TA XI	Growth Equity	40,000,000	39,300,000	700,000	66,511,707	30,186,104	2.5 x	23.1%
Tennenbaum VI	Distressed Debt	40,000,000	38,075,687	16,732,075	35,455,895	13,929,377	1.3 x	6.3%
Total 2010		202,500,000	191,669,770	27,874,996	208,967,959	116,555,681	1.7 x	13.2%

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	23,657,638	6,825,000	26,173,966	4,608,539	1.3 x	9.5%
Castlelake II	Distressed Debt	35,000,000	32,656,036	2,625,461	27,450,725	17,469,546	1.4 x	6.9%
FP Intl 2011	Buyout	25,000,000	21,946,200	3,321,102	12,345,430	19,452,753	1.4 x	8.9%
FP Venture 2011	Venture Capital	25,000,000	23,929,050	1,217,950	17,685,894	80,960,501	4.1 x	35.6%
JF Lehman III	Buyout	39,000,000	43,494,645	503,401	36,058,155	34,002,766	1.6 x	13.6%
Wellspring V	Buyout	40,000,000	44,267,510	15,997,643	51,403,217	17,794,629	1.6 x	16.6%
Wicks IV	Buyout	40,000,000	41,715,427	5,092,249	36,714,154	30,522,029	1.6 x	17.6%
Total 2011		229,000,000	231,666,506	35,582,806	207,831,541	204,810,763	1.8 x	16.4%
2012								
ATRS-FP PE	Multi-Strategy	263,823,718	223,152,703	130,642,131	110,815,429	192,812,896	1.4 x	13.6%
BV VIII	Buyout	30,000,000	26,447,466	3,833,720	30,098,320	26,005,132	2.1 x	61.1%
Court Square III	Buyout	40,000,000	42,660,428	3,114,194	22,208,826	40,699,917	1.5 x	18.9%
DW Healthcare III	Buyout	40,000,000	35,694,363	4,305,637	40,738,290	20,348,957	1.7 x	17.7%
FP Intl 2012	Buyout	25,000,000	16,426,600	8,735,156	6,323,845	14,885,401	1.3 x	8.9%
FP Venture 2012	Venture Capital	25,000,000	21,562,500	3,540,830	11,467,842	36,747,712	2.2 x	21.1%
NGP X	Hard Assets	35,000,000	35,305,152	1,388,578	26,279,743	11,409,092	1.1 x	2.1%
Total 2012		458,823,718	401,249,212	155,560,246	247,932,295	342,909,107	1.5 x	15.7%
2013								
EnCap IX	Hard Assets	25,000,000	28,060,297	1,576,907	20,906,127	16,095,530	1.3 x	12.0%
FP Intl 2013	Buyout	20,000,000	12,887,500	7,229,296	914,343	16,127,176	1.3 x	9.5%
FP Venture 2013	Venture Capital	20,000,000	16,896,915	3,167,225	6,359,603	29,272,043	2.1 x	24.9%
Levine Leichtman V	Structured Capital	20,000,000	24,322,342	3,684,269	15,337,819	17,283,462	1.3 x	11.7%
Riverside V	Buyout	35,000,000	32,625,595	4,168,822	18,659,770	24,687,877	1.3 x	8.7%
Vista Foundation II	Buyout	15,000,000	15,208,684	7,925,952	10,905,347	15,494,296	1.7 x	17.1%
Total 2013		135,000,000	130,001,334	27,752,471	73,083,010	118,960,384	1.5 x	13.6%

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	16,390,721	6,932,375	11,567,591	12,722,850	1.5 x	24.7%
Big River - Equity	Infrastructure	93,090,000	93,090,000	0	19,160,000	327,000,000	3.7 x	30.3%
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	4,717,993	0	0.2 x	-50.5%
Castlelake III	Distressed Debt	25,000,000	23,149,741	1,864,884	12,889,249	19,032,994	1.4 x	8.2%
FP Intl 2014	Buyout	25,000,000	14,304,015	10,788,604	4,704,494	17,472,365	1.6 x	20.9%
FP Venture 2014	Venture Capital	25,000,000	22,849,700	2,216,556	3,143,229	35,749,825	1.7 x	18.7%
KPS IV	Turnaround	25,000,000	14,163,230	11,041,202	5,448,993	12,725,182	1.3 x	20.2%
Lime Rock Resources III	Hard Assets	25,000,000	25,449,542	447,078	4,355,750	25,918,635	1.2 x	4.3%
NGP XI	Hard Assets	30,000,000	27,200,433	4,031,968	5,829,399	27,448,640	1.2 x	10.2%
Sycamore Partners II	Turnaround	25,000,000	21,711,127	4,415,615	7,909,711	17,741,269	1.2 x	9.0%
Thoma Bravo XI	Buyout	20,000,000	20,634,595	2,286,609	13,935,717	32,307,836	2.2 x	25.5%
Total 2014		331,090,000	303,686,790	44,024,891	101,887,416	528,119,596	2.1 x	21.4%
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	25,278,615	6,627,075	4,921,287	25,601,405	1.2 x	10.4%
FP Intl 2015	Buyout	25,000,000	13,053,160	12,020,833	439,802	14,438,242	1.1 x	8.0%
FP Venture 2015	Venture Capital	25,000,000	21,239,040	3,829,106	363,891	28,167,197	1.3 x	16.7%
Siris III	Buyout	25,000,000	26,920,457	7,446,733	16,184,624	15,279,842	1.2 x	10.6%
Total 2015		131,910,000	113,457,494	29,923,747	57,609,169	83,486,686	1.2 x	12.7%
2016								
American Industrial VI	Buyout	20,000,000	20,879,219	1,813,211	2,692,432	20,824,223	1.1 x	8.2%
Arlington IV	Buyout	23,000,000	19,337,926	3,662,074	0	22,598,972	1.2 x	14.4%
DW Healthcare IV	Buyout	30,000,000	25,957,390	5,571,576	11,273,132	28,510,360	1.5 x	42.4%
FP Intl 2016	Buyout	25,000,000	13,144,330	11,938,648	255,094	15,043,749	1.2 x	11.1%
FP Venture 2016	Venture Capital	25,000,000	13,567,073	11,498,446	342,267	16,187,521	1.2 x	15.2%
Highland Equity	Hard Assets	25,000,000	25,000,000	0	143,750	25,420,000	1.0 x	0.8%
JF Lehman IV	Buyout	30,000,000	22,832,944	7,167,056	9,199,648	25,546,171	1.5 x	26.3%
PineBridge Structured III	Structured Capital	30,000,000	19,895,180	11,921,175	1,905,281	14,684,610	0.8 x	-12.2%
Thoma Bravo Discover	Buyout	10,000,000	11,350,409	1,767,370	4,168,807	14,520,757	1.6 x	31.3%
Thoma Bravo XII	Buyout	30,000,000	28,836,037	2,083,171	921,362	35,352,903	1.3 x	13.9%
Vista Foundation III	Buyout	30,000,000	21,127,391	8,910,324	4,739	23,795,476	1.1 x	9.1%
Total 2016		278,000,000	221,927,900	66,333,051	30,906,512	242,484,742	1.2 x	13.5%

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	16,225,389	4,766,723	991,694	19,913,069	1.3 x	16.4%
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	19,451,357	18,695,542	3,146,899	17,895,456	1.1 x	8.3%
BV IX	Buyout	30,000,000	14,122,398	15,877,603	0	14,992,620	1.1 x	12.3%
EnCap XI	Hard Assets	35,000,000	6,346,352	28,653,648	0	5,290,861	0.8 x	-19.8%
FP Intl 2017	Buyout	25,000,000	7,908,163	17,173,481	0	8,637,126	1.1 x	9.9%
FP Venture 2017	Venture Capital	25,000,000	6,084,071	18,958,212	0	6,413,296	1.1 x	7.3%
Greyrock IV	Mezzanine	30,000,000	20,337,103	10,048,941	386,044	20,823,087	1.0 x	4.1%
Highland Note	Hard Assets	26,000,000	41,870,000	8,638	15,878,637	29,245,236	1.1 x	8.0%
NGP XII	Hard Assets	30,000,000	8,626,288	21,373,712	99,132	8,398,805	1.0 x	-1.2%
One Rock II	Buyout	30,000,000	18,304,614	11,695,386	0	17,473,967	1.0 x	-5.9%
Total 2017		343,730,449	217,006,184	147,251,886	89,361,296	149,083,523	1.1 x	8.6%
2018								
Altaris IV	Buyout	24,000,000	6,326,439	17,673,561	0	6,788,703	1.1 x	NMF
Big River - Holdings Note 2023	Infrastructure	12,000,000	12,000,000	0	0	12,871,433	1.1 x	NMF
Big River - Holdings Note 2023-2	Infrastructure	5,150,000	5,150,000	0	62,323	5,397,380	1.1 x	NMF
Clearlake V	Buyout	30,000,000	14,416,511	15,853,306	452,836	21,441,261	1.5 x	NMF
FP Intl 2018	Buyout	25,000,000	4,389,313	20,725,733	0	3,937,256	0.9 x	NMF
FP Venture 2018	Venture Capital	25,000,000	4,813,665	20,238,951	217	4,473,301	0.9 x	NMF
GTLA Holdings	Hard Assets	20,000,000	20,000,000	0	0	20,000,000	1.0 x	NMF
Highland Contingent Note	Hard Assets	0	0	0	15,000,000	0	N/A	NMF
SK Capital V	Buyout	30,000,000	3,613,689	26,386,311	10,490	3,240,604	0.9 x	NMF
Sycamore Partners III	Turnaround	25,000,000	3,210,586	21,789,414	0	2,455,152	0.8 x	NMF
Thoma Bravo Discover II	Buyout	17,000,000	3,967,701	13,032,299	0	3,743,822	0.9 x	NMF
Total 2018		213,150,000	77,887,904	135,699,575	15,525,866	84,348,912	1.3 x	NMF

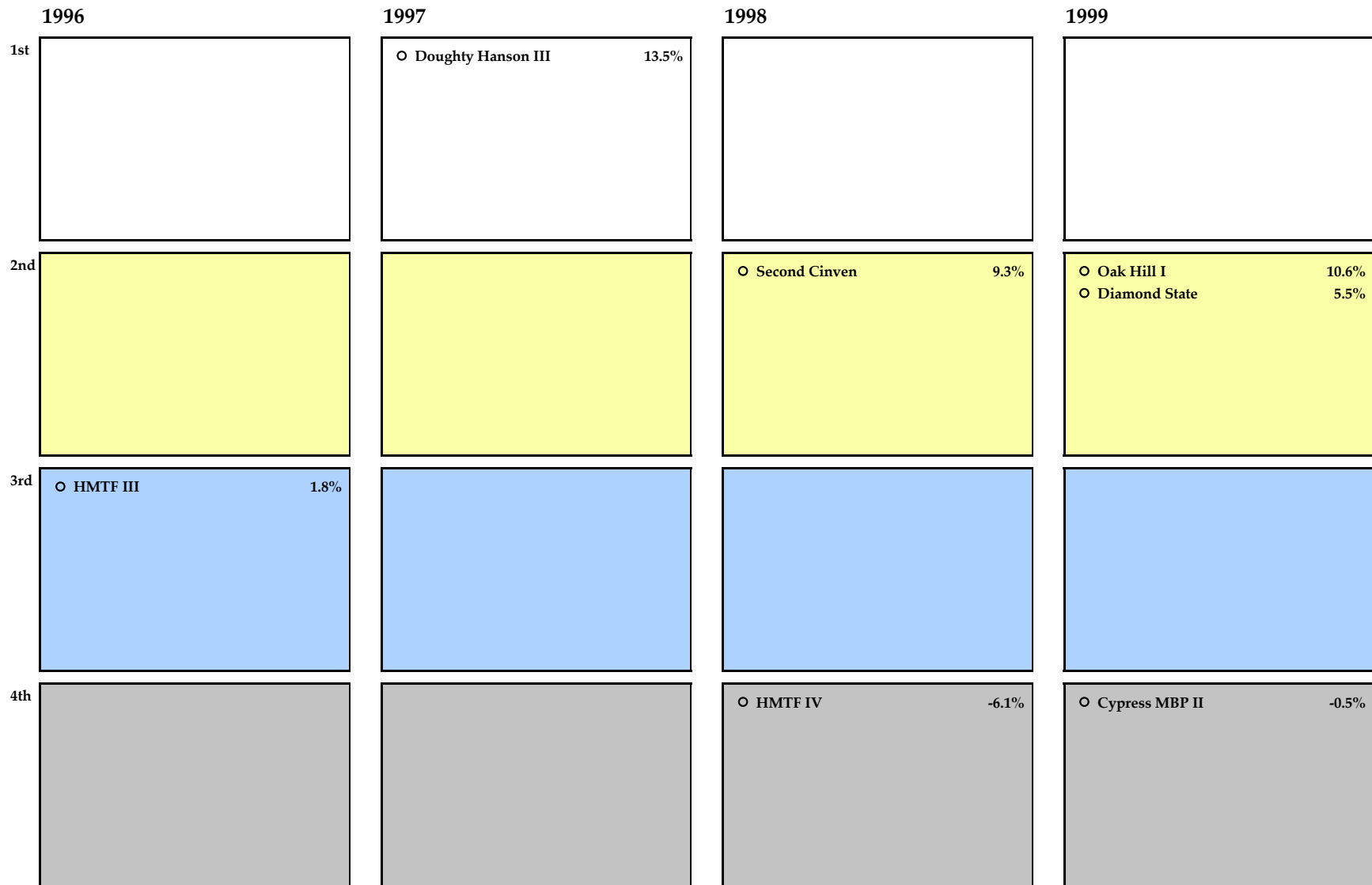
Investment Performance by Vintage Year



Investment	Strategy	Committed Capital (\$)	Contributed Capital (\$)	Unfunded Commitment (\$)	Distributed Capital (\$)	Remaining Value (\$)	TVPI	Net IRR
2019								
American Industrial VII	Buyout	30,000,000	0	30,000,000	0	-80,424	N/A	NMF
Arlington V	Buyout	25,000,000	0	25,000,000	0	-168,063	N/A	NMF
Big River - Equity Phase II	Infrastructure	58,000,000	58,000,000	0	0	58,295,562	1.0 x	NMF
FP Intl 2019	Buyout	30,000,000	0	30,000,000	0	0	N/A	NMF
FP Venture 2019	Venture Capital	30,000,000	3,354,037	26,657,555	23,600	3,295,890	1.0 x	NMF
Highland Note 2020	Hard Assets	10,000,000	10,000,000	0	0	10,000,000	1.0 x	NMF
JF Lehman V	Buyout	30,000,000	0	30,000,000	0	0	N/A	NMF
Riverside VI	Buyout	30,000,000	4,843,536	25,156,464	0	3,637,633	0.8 x	NMF
Siris IV	Buyout	30,000,000	4,577,426	25,422,574	0	4,512,889	1.0 x	NMF
Thoma Bravo XIII	Buyout	30,000,000	10,717,375	19,282,625	0	10,592,993	1.0 x	NMF
WNG II	Special Assets	30,000,000	1,069,690	28,930,310	0	381,559	0.4 x	NMF
Total 2019		333,000,000	92,562,064	240,449,528	23,600	90,468,038	1.0 x	NMF
Total Portfolio		4,835,894,628	4,146,721,145	1,025,123,230	4,240,850,712	2,275,794,589	1.6 x	10.9%

- 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.

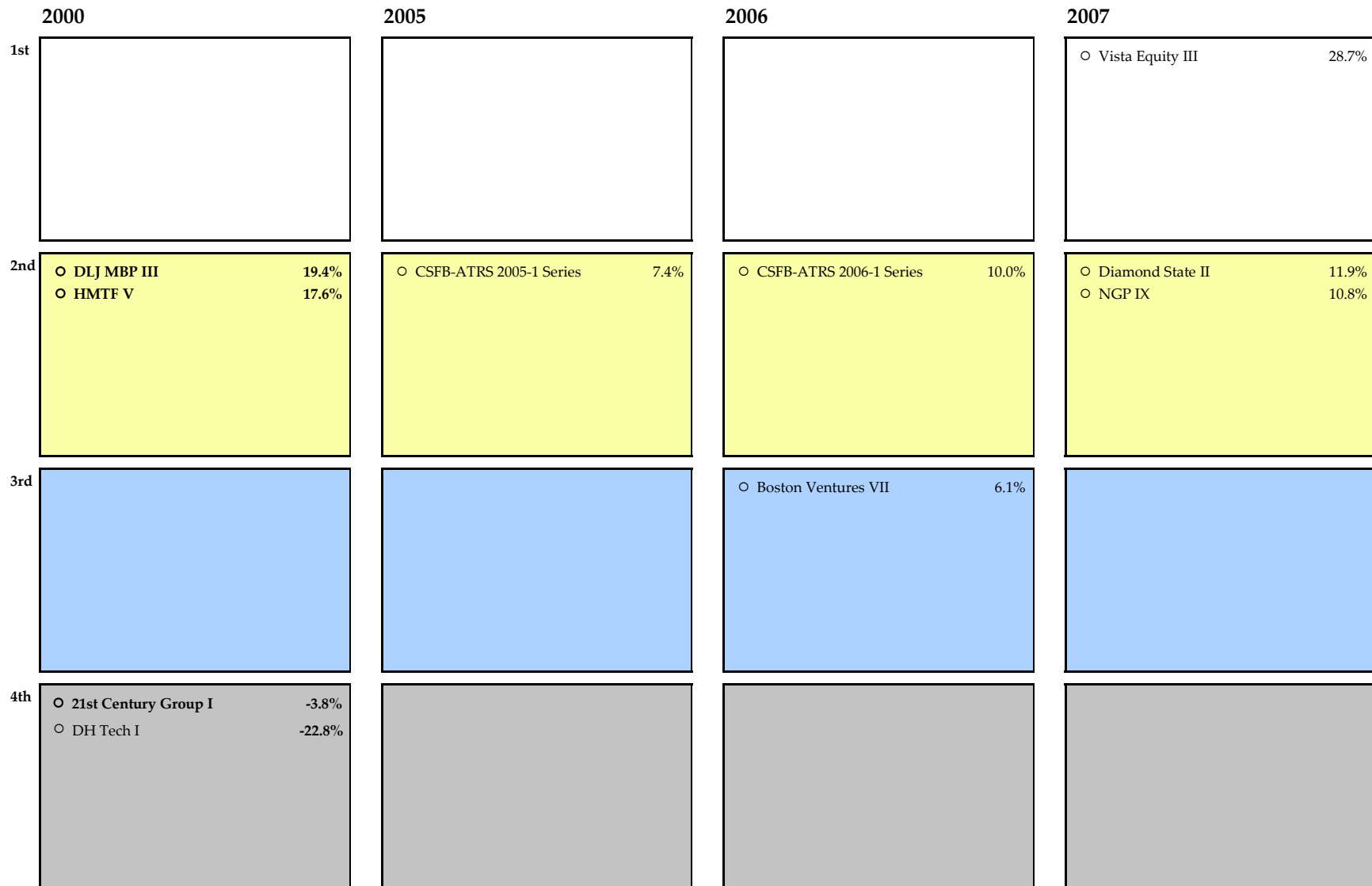
Performance by Vintage Year and Quartile Group



● 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 23.1%	● FP Venture 2011 35.6%
2nd	○ Advent GPE VI-A 16.9% ● FP Venture 2008 15.6% ○ LLR III 15.2%	○ KPS III Supplemental 22.9% ○ Riverside IV 21.7% ● FP Venture 2009 19.1%	○ Mason Wells III 19.1%	○ Wicks IV 17.6%
3rd			● FP Venture 2010 14.7% ○ Altus Capital II 12.5%	○ Wellspring V 16.6%
4th		○ Insight Equity II 11.4%	○ EnCap VIII -4.8%	○ JF Lehman III 13.6% ○ FP Intl 2011 8.9%

● 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 61.1% 	<ul style="list-style-type: none"> ● FP Venture 2013 24.9% 	<ul style="list-style-type: none"> ○ Thoma Bravo XI 25.5% 	
2nd	<ul style="list-style-type: none"> ● FP Venture 2012 21.1% ○ Court Square III 18.9% ○ DW Healthcare III 17.7% 	<ul style="list-style-type: none"> ○ Vista Foundation II 17.1% ○ EnCap IX 12.0% 	<ul style="list-style-type: none"> ○ Atlas Capital II 24.7% ○ FP Intl 2014 20.9% ○ KPS IV 20.2% ● FP Venture 2014 18.7% 	<ul style="list-style-type: none"> ● FP Venture 2015 16.7%
3rd	<ul style="list-style-type: none"> ○ ATRS-FP PE 13.6% ○ NGP X 2.1% 		<ul style="list-style-type: none"> ○ NGP XI 10.2% 	<ul style="list-style-type: none"> ○ EnCap X 10.4%
4th	<ul style="list-style-type: none"> ○ FP Intl 2012 8.9% 	<ul style="list-style-type: none"> ○ FP Intl 2013 9.5% ○ Riverside V 8.7% 	<ul style="list-style-type: none"> ○ Sycamore Partners II 9.0% ○ Lime Rock Resources III 4.3% 	<ul style="list-style-type: none"> ○ Siris III 10.6% ○ FP Intl 2015 8.0%

● Venture ○ Non-venture

BOLD = Realized

Performance by Vintage Year and Quartile Group

	2016	2017
1st	<ul style="list-style-type: none"> ○ DW Healthcare IV 42.4% ○ Thoma Bravo Discover 31.3% ○ JF Lehman IV 26.3% 	
2nd	<ul style="list-style-type: none"> ● FP Venture 2016 15.2% ○ Arlington IV 14.4% ○ Thoma Bravo XII 13.9% ○ FP Intl 2016 11.1% 	<ul style="list-style-type: none"> ○ Altaris Constellation 16.4% ○ BV IX 12.3%
3rd	<ul style="list-style-type: none"> ○ Vista Foundation III 9.1% ○ American Industrial VI 8.2% 	<ul style="list-style-type: none"> ○ FP Intl 2017 9.9% ● FP Venture 2017 7.3% ○ NGP XII -1.2%
4th		<ul style="list-style-type: none"> ○ One Rock II -5.9% ○ EnCap XI -19.8%

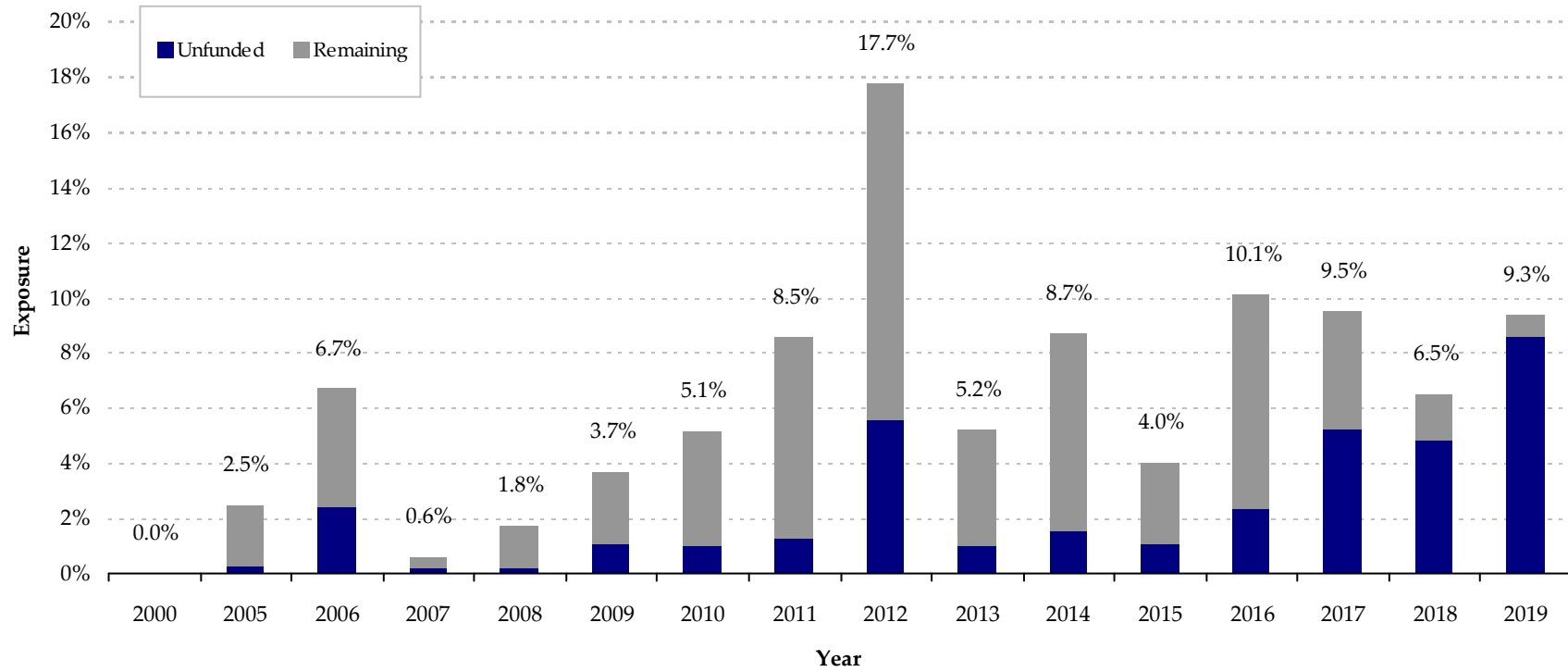
● Venture ○ Non-venture

BOLD = Realized

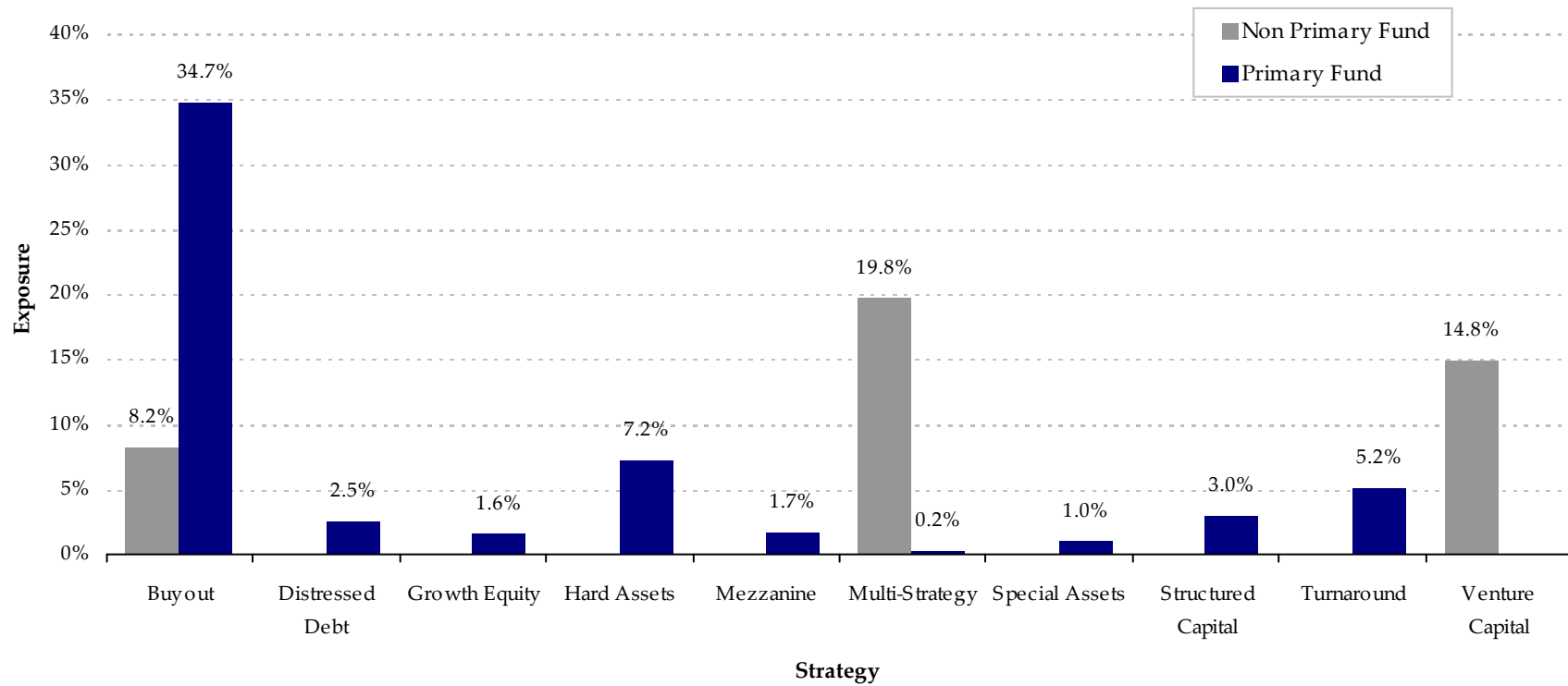
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- The analysis compares each fund's Net IRR versus its respective peer group by vintage year and strategy. Funds with a corporate finance strategy, excluding private debt, are compared to Cambridge Associates, U.S. Buyout. Funds with a venture capital 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 March 31, 2019. Hard Assets benchmark data for Vintage Years prior to 2005 is not available.

Diversification Analysis

Exposure By Vintage Year



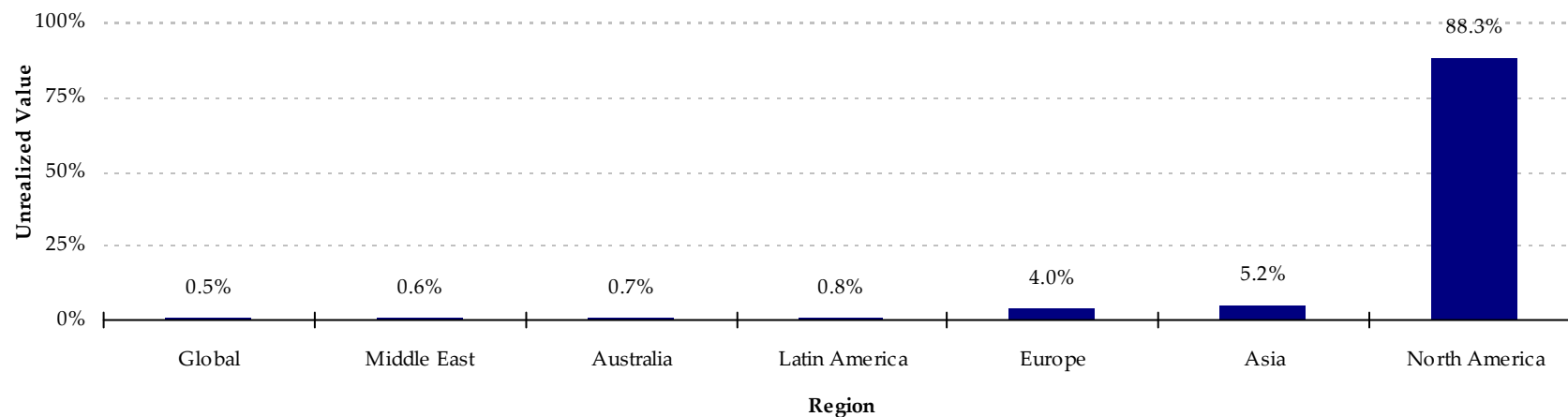
- Exposure is defined as the sum of the investor's Remaining Value plus Unfunded Commitment.
- Data includes commitments through the Report Date.



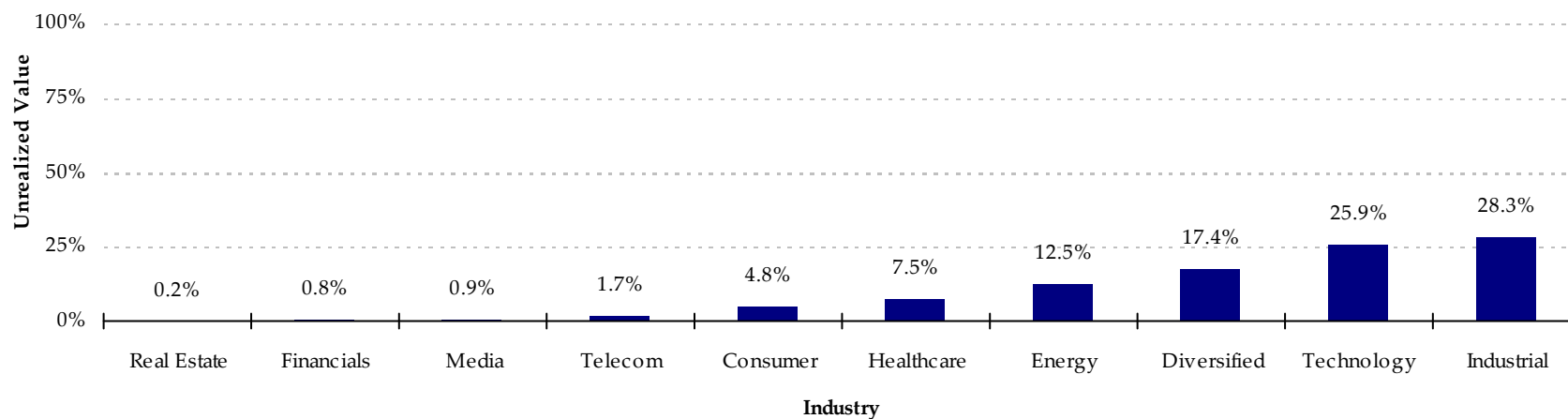
◦ Exposure is defined as the sum of the investor's Remaining Value plus Unfunded Commitment.

◦ 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.

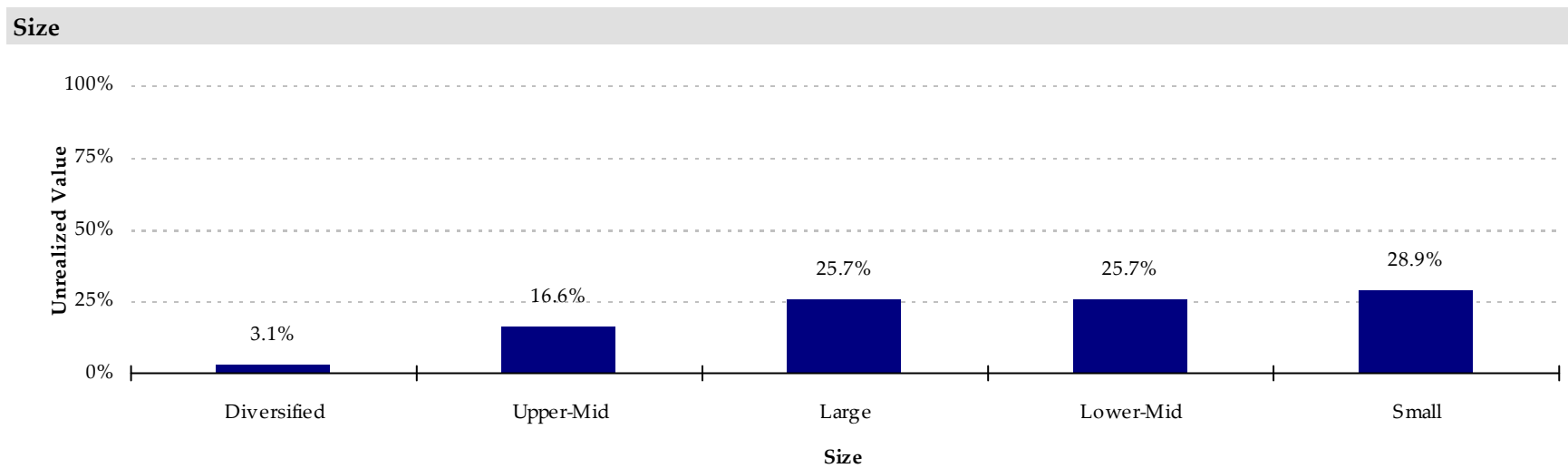
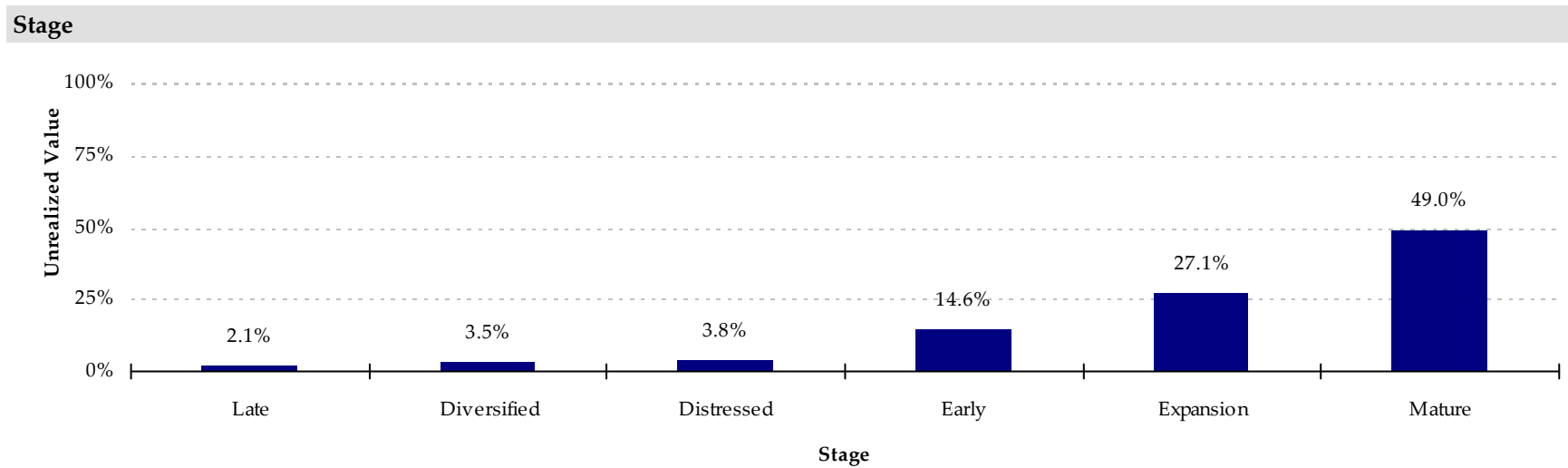
Region



Industry



- 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.

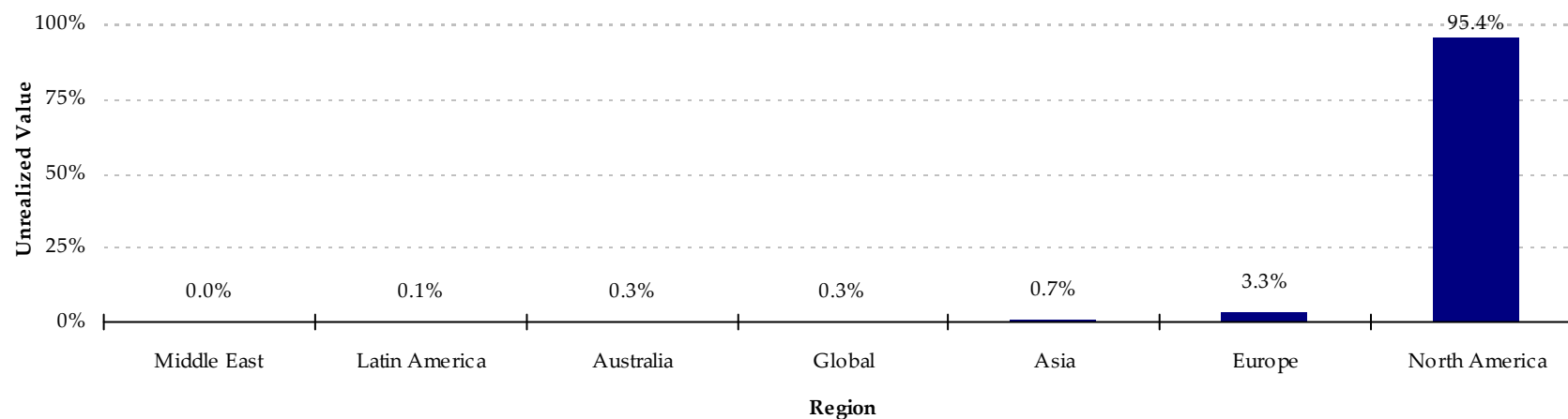


- Unrealized Value is the value of portfolio holdings as reported by the fund manager.
- Values are estimated based on the investor's percent interest in each fund's portfolio holdings.
- Values converted to the investor's currency, when applicable, as of the Report Date.

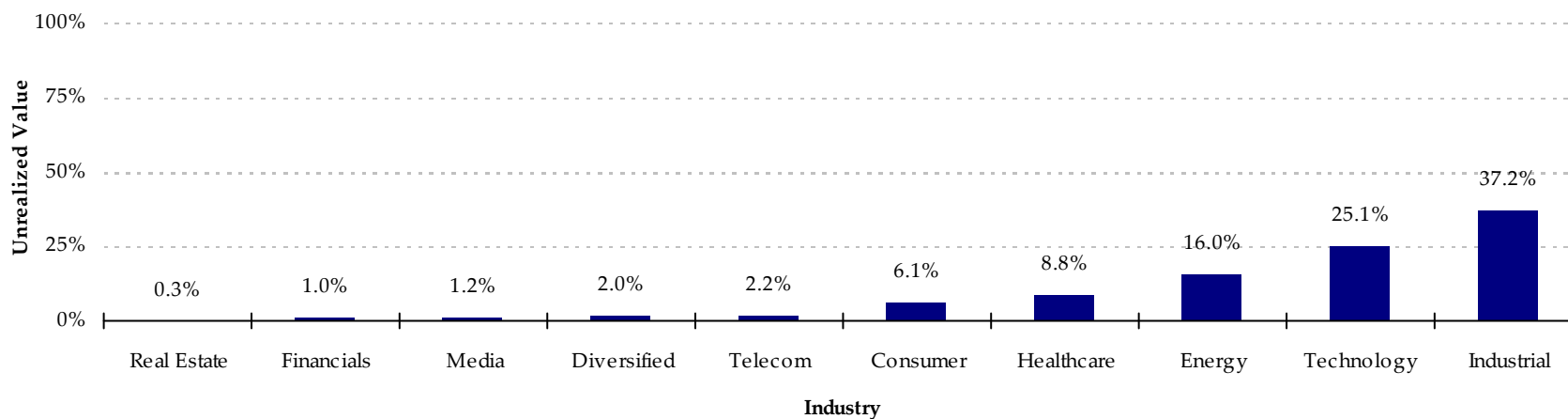
Holdings by Region and Industry (ex Fund Holdings)



Region

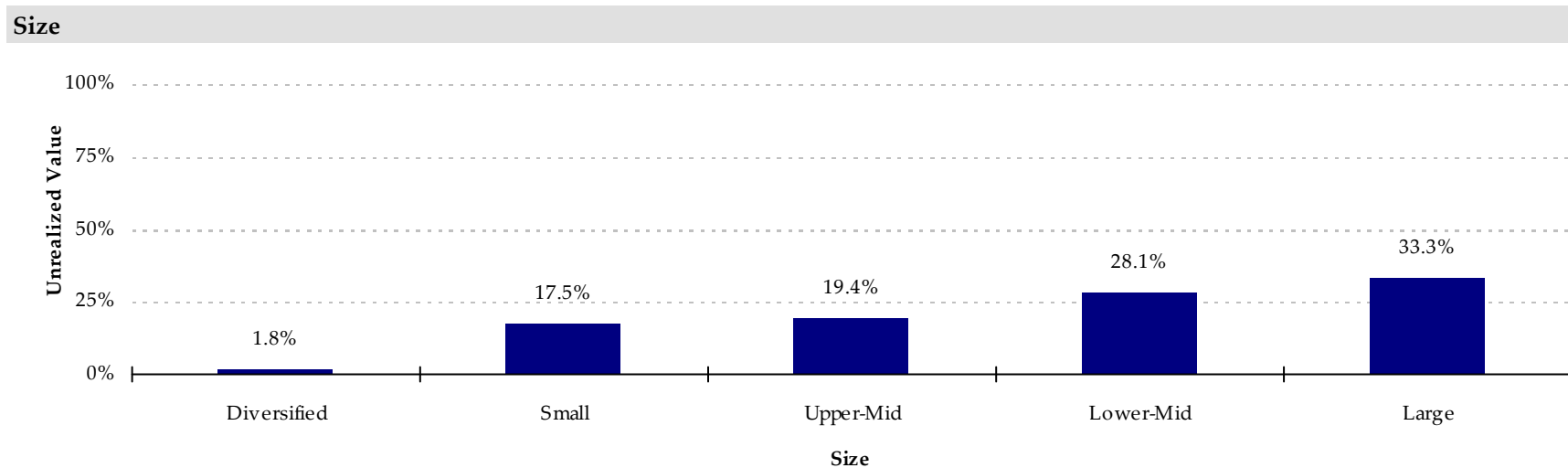
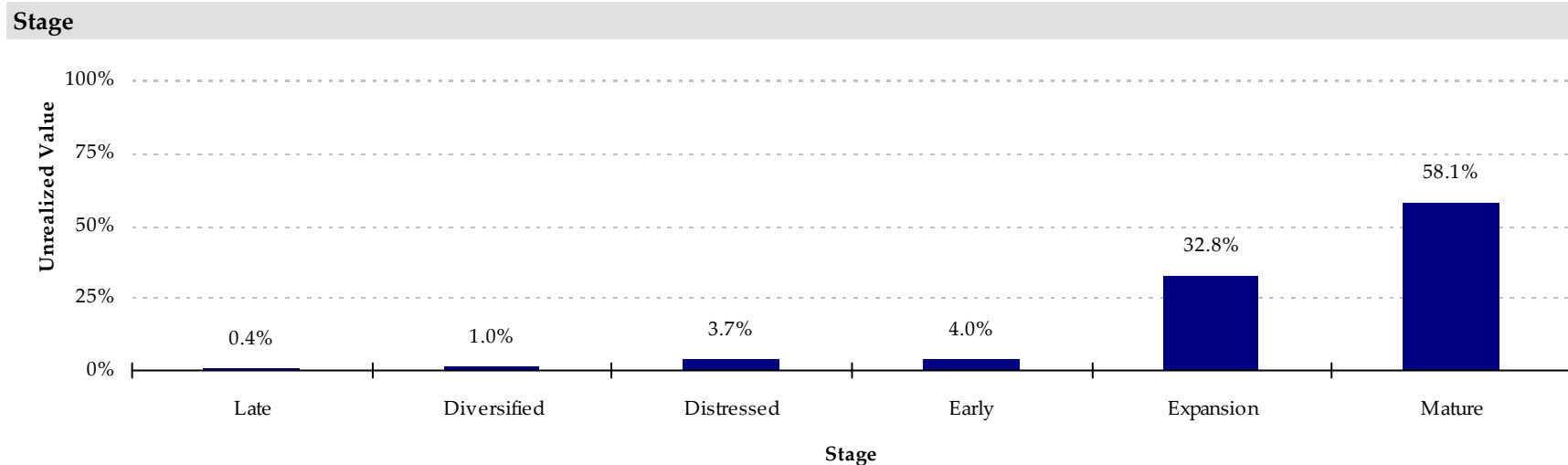


Industry



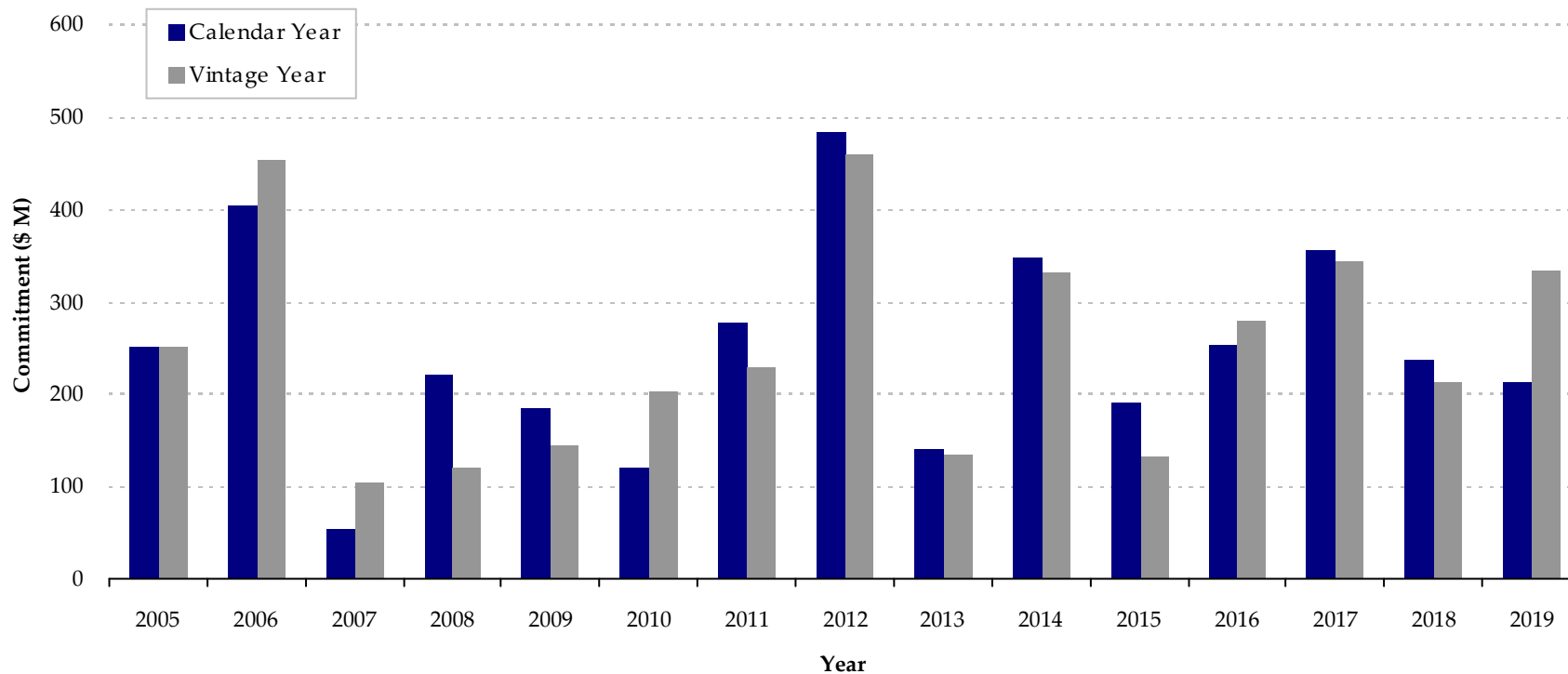
- Fund investments in other funds were excluded from this analysis.
- Unrealized Value represents the value of portfolio holdings as reported by fund managers.
- Values are estimated based on the investor's percent interest in each fund's portfolio holdings.
- Values are converted to the investor's currency, when applicable, as of the Report Date.

Holdings by Stage and Size (ex Fund Holdings)



- 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.



Arkansas Teacher Retirement System Emerging Manager Update

July 2019

Franklin Park's Manager Coverage

Broad coverage of the private equity and private debt manager universe

Emerging Manager Coverage

- Franklin Park maintains dialogue with the universe of minority-owned/ led private equity and private debt managers and has done so since inception
- Franklin Park actively pursues due diligence on top minority-owned/ led managers

Emerging Manager Database

- Franklin Park's database includes information on 220 funds¹ raised by minority-owned/ led private equity and private debt managers
 - Since inception, Franklin Park has reviewed 168 private equity and private debt funds¹ raised by minority-owned/ led managers
-

Manager Reviews

Due diligence activity from July 1, 2018 to June 30, 2019

13 minority-owned/ led managers were reviewed by Franklin Park during the period

- Offering documents were analyzed by our team
- Each opportunity was discussed during our weekly internal Investment Committee meeting
- Many of these firms have been tracked by our team for numerous years

The minority-owned/ led managers reviewed during the period are listed below

- Astra Capital Management
- B Capital Group
- Brightwood Capital
- Centre Lane Partners
- Clearlake Partners Opportunity
- Diverse Communities Impact Fund
- Estancia Capital Partners
- Falcon Investment Advisors
- Grain Management
- Sunstone Partners
- Veritas Capital
- Vista Credit
- Vista Endeavor

Manager Meetings

Due diligence activity from July 1, 2018 to June 30, 2019

Meetings were held with 11 of the 13 minority-owned/led managers reviewed during the period

- Meetings were held with senior professionals of each manager
- Following the meeting, a memo was written and discussed during our weekly internal Investment Committee meeting

The minority-owned/led managers that Franklin Park met with during the period are listed below

- Astra Capital Management
- B Capital Group
- Centre Lane Partners
- Clearlake Partners Opportunity
- Estancia Capital Partners
- Falcon Investment Advisors
- Grain Management
- Sunstone Partners
- Veritas Capital
- Vista Credit
- Vista Endeavor

Manager Analysis

Due diligence activity from July 1, 2018 to June 30, 2019

Detailed analysis was conducted on 5 of the 13 minority-owned/ led managers reviewed during the period

- Due diligence included one or more of the following: track record analysis, reference calls, site visits, and operational and legal reviews
- Following this analysis, a memo was written and discussed during our weekly internal Investment Committee meeting

The minority-owned/ led managers that Franklin Park analyzed during the period are listed below

- Centre Lane Partners
- Clearlake Partners Opportunity
- Sunstone Partners
- Veritas Capital
- Vista Endeavor

Manager Commitments

Due diligence activity from July 1, 2018 to June 30, 2019

ATRS did not commit to any minority-owned/ led funds during the period

- During the period, ATRS made 8 commitments, all of which were with existing managers
- Franklin Park continues to seek to review minority-owned/ led managers for consideration for the ATRS portfolio
- 2 minority-owned/ led managers in ATRS' existing portfolio will be raising new funds in 2020, including One Rock Capital Partners and BV

Minority-owned/ led managers that ATRS has committed to since 2013 are listed below

- Vista Foundation II (\$15m, 2013)
- Lime Rock Resources III (\$25m, 2014)
- Sycamore Partners II (\$25m, 2014)
- Vista Foundation III (\$30m, 2016)
- One Rock Capital Partners II (\$30m, 2017)
- BV IX (\$30m, 2017)
- Sycamore Partners III (\$25m, 2017)
- Clearlake Capital V (\$30m, 2018)

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Franklin Park Associates, LLC is an SEC registered investment advisor pursuant to the Investment Advisors Act of 1940



Recommendation Report
Clearlake Capital Partners VI, L.P.



Executive Summary

Fund	Clearlake Capital Partners VI, L.P. (the "Fund")
General Partner	Clearlake Capital Group (the "General Partner" or "Clearlake")
Report Date	September 2019
Fundraising	The General Partner is targeting capital commitments of \$5 billion with an expected cap of \$7 billion, including the General Partner's commitment of at least \$150 million. The General Partner will hold a first close on December 10 th . The Fund's available capital is expected to be fully allocated by the first close, but a second close will be held in early 2020.
Source	Franklin Park sourced the offering directly from the General Partner. The General Partner has retained Credit Suisse to assist with fundraising.
Key Terms	<p>Management Fee: During the Fund's proposed 6-year investment period, the General Partner is proposing an annual management fee of 1.75% of commitments. Upon termination of the investment period, the Fund will charge an annual management fee equal to 1.75% on actively invested capital. Management fees will be reduced by 100% of transaction fees.</p> <p>Carried Interest: Generally, after the limited partners receive a return of their aggregate capital contributions and an 8% preferred return, the General Partner will be entitled to 20% of the Fund's profits as carried interest. However, the General Partner will be entitled to take an "advance" of 6% of such carried interest each time an investment is realized before the full return of capital contributions and preferred return. The Fund has a clawback provision.</p> <p>Termination Provisions: A majority in interest of the limited partners can vote to terminate the investment period for cause. The investment period may be terminated at any time upon the vote of at least 77.5% in interest of the limited partners.</p> <p>Key Person: If both Behdad Eghbali and José Feliciano depart, the investment period shall be automatically suspended. If one of Behdad Eghbali or José Feliciano departs, a 66 2/3% interest of the limited partners may vote to suspend the Fund's investment period.</p> <p>Additional legal terms are summarized in Appendix III.</p>
Investment Strategy	The General Partner invests in special situations, distressed and private equity investments in the middle market. The General Partner pursues a value-oriented strategy and opportunistically targets distressed debt, rescue financing, growth capital, buyout, and turnaround investments. Target companies will often require



financial, operational or structural change where market inefficiencies and mispricing of assets can be exploited. The General Partner invests for control or significant influence to affect change post-investment. The Fund is expected to primarily focus on the software and technology-enabled services, and industrials and energy sectors.

Management Team

Headquartered in Santa Monica, California, the General Partner was established in December 2006 by Steve Chang, José Feliciano and Behdad Eghbali, with sponsorship from Reservoir Capital ("Reservoir"). In 2017, the General Partner partnered with Landmark Partners ("Landmark") to acquire Reservoir's ownership stake. In 2018, the General Partner completed another transaction in which a minority stake is now held by Landmark, Dyal Capital ("Dyal") and Goldman Sachs.

The Fund will be managed by Messrs. Feliciano and Eghbali as well as Prashant Mehrota, Colin Leonard and James Pade (collectively, the "Partners"). The overall team consists of nearly 60 professionals today including 17 additional investment professionals, two dedicated sourcing professionals, and a 4-person full-time operations team. Biographical information for the Partners is provided in Appendix II.

Track Record

The General Partner has raised five prior funds ("Funds I-V") with \$182 million, \$415 million, \$789 million, \$1.4 billion, and \$3.6 billion in respective capital commitments. The following chart summarizes the performance of Funds II-V, as of June 30, 2019 (\$000).

Fund (Vintage)	Rtzd Deals / # Deals	Invested	Realized	Unrealized	Gross ROI	Gross IRR
Fund II (2009)	13 / 15	580,387	939,495	105,224	1.8x	22.4%
Fund III (2012)	13 / 20	1,190,382	2,900,281	625,979	3.0x	48.6%
Fund IV (2015)	5 / 19	1,654,365	1,026,226	1,942,787	1.8x	39.8%
Fund V (2017)	1 / 12	2,214,867	78,931	3,385,870	1.6x	73.9%
Total	32 / 66	5,640,001	4,944,933	6,059,860	2.0x	38.9%

Gross of fees and carried interest expenses. The unrealized investments were valued by the General Partner.

The General Partner also manages two non-control debt and structured equity funds, Clearlake Opportunity Partners I and II (the "Opportunity Funds"), the most recent of which was formed in 2019 with \$1.4 billion of capital commitments. As of March 31, 2019, Clearlake Opportunity Partners I (2015 vintage) has generated net returns of 1.2x and 13.1%.

Investment Evaluation

1. **The Fund's strategy is compelling.** The General Partner's flexible, opportunistic approach may enhance returns. The investment strategy is sufficiently broad, allowing the General Partner to opportunistically select investments across a variety of market conditions.



Further, the General Partner remains value-oriented and its focus on market dislocations, out-of-favor industries, or companies in transition should lend to less competition and result in relatively attractive entry pricing for the Fund which can serve to augment returns.

2. The General Partner's fund sizes and capital under management have grown substantially in recent years. The Fund size at a potential cap of \$7 billion represents a significant step-up from its predecessor, which was a 75% increase in size from Fund III. Further, recent funds have been invested relatively quickly.

The larger fund size may encourage the General Partner to pursue larger transactions, which tends to be a more competitive market segment; however, the General Partner indicated that it will continue to predominantly focus on middle market businesses, and the General Partner has been investing \$1.5-\$2.5 billion annually over the last few years.

3. The Partners are seasoned special situations and private equity investors. The Partners average 15 years of relevant experience, including tenures with other private equity firms. Three of the five Partners have been working together for 10 years.

However, there are some team concerns:

- The General Partner's team lacks significant depth at the senior level. The team will rely heavily on Messrs. Feliciano and Eghbali, who are Clearlake's most seasoned investors.
- The Fund's team will also be responsible for investing and managing the Opportunity Funds.

Several factors serve to mitigate this team concern.

- In the last several years, the General Partner's team has nearly doubled in size. The General Partner has added significant resources to support the senior partners in areas such as deal origination, firm management and portfolio support.
 - The General Partner continues to promote from within, and the number of capable lead deal professionals has grown to 7-8 today, with the expectation that this will continue to double over the life of the Fund.
4. In 2018, Clearlake sold a minority interest in the firm to several third party investors. While the interest carries no governance rights, the transaction raises team and alignment of interest concerns. However, the General Partner has had third party participation since inception of the firm, which helps to mitigate this concern.



5. The General Partner has an attractive track record. Over the last decade, the General Partner has invested over \$5.5 billion that has generated a gross IRR of 39%. Realizations have been strong, with recent exits in particular returning more than 3x invested capital. Funds III-V have generated net IRRs in excess of 30% and each rank in the first quartile for all metrics relative to U.S. buyout peers.

Recommendation Franklin Park recommends a commitment of up to \$30 million to the Fund, subject to completion of operational due diligence and satisfactory negotiation of final documentation, based on the following:

- The General Partner's strategy is compelling;
- The Partners are seasoned private equity investors; and
- The General Partner has generated attractive returns.

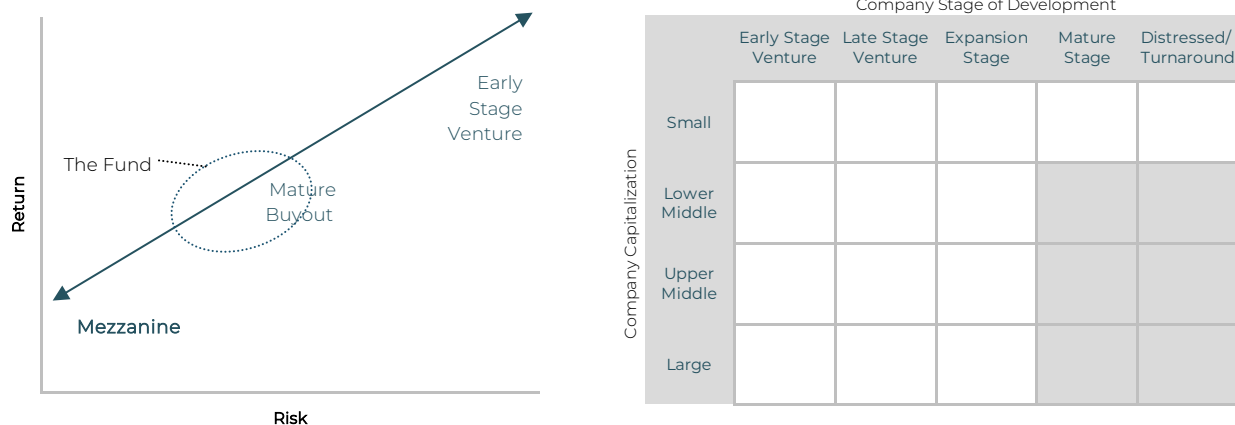
Investment Strategy

The General Partner invests in special situations, distressed and private equity investments in the middle market. The General Partner pursues a value-oriented strategy and opportunistically targets distressed debt, rescue financing, growth capital, buyout, and turnaround investments. Target companies will often require financial, operational or structural change where market inefficiencies and mispricing of assets can be exploited. The General Partner invests for control or significant influence to affect change post-investment. The Fund is expected to primarily focus on the software and technology-enabled services, and industrials and energy sectors.

The General Partner's approach is flexible, investing across the capital structure in debt or equity securities, targeting private market and capital market transactions where Clearlake can obtain control or has significant influence. In private investments, potential securities and instruments used may include a combination of common equity, preferred equity, unsecured debt, secured debt, DIP loans and bilateral credit facilities and specific investments may make use of features such as convertibility, earn-outs, warrants and make-whole premiums. In capital markets investments, the Fund will concentrate on acquiring material stakes in debt instruments or claims, including control or blocking positions in certain classes of debt or other claims.

Portfolio Characteristics and Limitations

With a focus on special situation equity and debt investments in mature and distressed companies, the Fund has a moderate risk profile relative to other private equity strategies. The charts below provide Franklin Park's subjective illustration of the expected risk profile of the Fund. The characteristics (region, size, stage, sector, security) of the companies targeted by the Fund are also described below:



Region: The Fund will invest primarily in U.S. based companies.

Size: The Fund will target investments in companies with a wide range of enterprise values from \$300 million to more than \$1.5 billion. The General Partner expects to make 20-25 core investments.

Stage: The Fund will invest in mature and distressed businesses.



Sector: The Fund will focus primarily on the industrials and energy, and software and technology-enabled services sectors. The General Partner may opportunistically invest in the consumer space.

Security Type: The Fund will invest in both debt and equity securities.

Competition

Competitiveness of Strategy: The General Partner focuses on companies that are distressed, undermanaged or under-capitalized, as well as situations where value is obscured as a result of transaction complexity or industry sentiment. As a result, there is typically less competition from other private equity firms.

Competitors: For technology deals, the General Partner may compete with other software and technology-focused buyout groups such as Thoma Bravo, Vista, Francisco and Silver Lake. For industrial deals, the General Partner is more likely to compete with generalist and specialist middle market buyout groups such as H.I.G. Capital, Sun Capital, Marlin Equity, or American Industrial Partners. The General Partner may also compete with distressed debt firms including Tennenbaum Capital Partners and Angelo Gordon.

Competitive Advantages: The General Partner employs a research-driven, proactive approach to sourcing. The Partners have individual responsibility for each of the Fund's target sectors and are accountable for coverage of related third parties (e.g. industry bankers, consultants, etc.) as well as the identification of sub-sector themes that may present unique investment opportunities.



Evaluation of the Strategy

1. There are several compelling attributes of the Fund’s strategy:

- The Fund will target an attractive market segment. The Fund will predominantly invest in middle market companies facing complex financial, operational or structural change where mispricing of assets can be exploited and private equity competition is generally lower.
- The General Partner employs a flexible investment approach. This flexibility should enable Clearlake to structure transactions to achieve attractive returns while providing downside protection in a variety of market environments.

2. The General Partner's fund sizes and capital under management have grown substantially in recent years. The Fund size at a potential cap of \$7 billion represents a significant step-up from its predecessor, which was a 75% increase in size from Fund III.

The larger fund size may encourage the General Partner to pursue larger transactions, which tends to be a more competitive market segment; however, the General Partner indicated that it will continue to predominantly focus on middle market businesses. Further, the General Partner has been investing \$1.5-\$2.5 billion annually over the last few years.

3. Recent funds have been invested quickly, and the General Partner’s strategy has evolved over time. The General Partner’s last two funds have been initially committed over a 2-year period. Further, since Fund II, the General Partner has been less active in the distressed space, which is at least partially a function of the current market opportunity, and has had an increased focus on technology and software businesses, which tend to trade at higher purchase multiples, as summarized in the table below.

	% Inv. Tech	Median Entry Mult.
Fund II	27%	8.6x
Fund III	32%	5.8x
Fund IV	55%	8.7x
Fund V	55%	13.9x

However, given its ability to recycle 130% of committed capital, and its belief that recycling enhances returns, the General Partner has indicated that it typically aims to deploy ~60% of fund capital within two years. Further, while the General Partner has had an increased focus on technology investments, it continues to seek less competitive opportunities or generate value through structured positions. For example, the General Partner highlights creation value multiples at entry, which reflect the enterprise value needed for the General Partner to return its invested capital and represents the enterprise value through the purchase price of the General Partner’s security and those securities senior to Clearlake. The average and median creation value at entry for Fund V is 10.4x and 9.9x EBITDA respectively.

Management Team

Headquartered in Santa Monica, California, the General Partner was established in December 2006 by Steve Chang, José Feliciano and Behdad Eghbali, with sponsorship from Reservoir Capital (“Reservoir”). In 2017, the General Partner partnered with Landmark Partners (“Landmark”) to acquire Reservoir’s ownership stake. In 2018, the General Partner completed another transaction in which a minority stake is now held by Landmark, Dyal Capital (“Dyal”) and Goldman Sachs.

The Fund will be managed by Messrs. Feliciano and Eghbali as well as Prashant Mehrota, Colin Leonard, and James Pade (collectively, the Partners”), whose backgrounds are summarized below.

Professional	Age	Years at GP	Years Experience	Relevant Experience
José Feliciano	46	13	23	Tennenbaum, govWorks, Goldman Sachs
Behdad Eghbali	43	13	21	TPC, Venus Capital
Prashant Mehrotra	41	9	17	Silver Lake, Tennenbaum
Colin Leonard	37	12	15	HBK Investments
James Pade	35	6	11	TowerBrook Capital

Note: Additional biographical information for the team is provided in Appendix II.

Composition of Remaining Team

In addition to the Partners, the overall team consists of approximately 60 professionals, organized into three groups: (1) 28 investment professionals; (2) four Investor Relations and Client Service professionals, and (3) 27 Operations professionals (finance, legal, compliance, human resources and IT). The 28 investment professionals include two dedicated sourcing professionals and four professionals (the “OPS team”) with functional operations expertise in areas such as IT, human resources and finance.

Additionally, Clearlake uses an Executive Council, consisting of current and former industry executives, for sourcing, diligence, post-investment advice, management consulting and portfolio company executive roles.

Historical Turnover

Steve Chang, a founder and senior investment professional, departed the firm in 2014.

Future Team Growth

The General Partner will continue to add to its more junior investment professionals. Additionally, the General Partner expects to grow the OPS team to 5-7 professionals.

Incentives/ Succession Planning

All employees receive a base salary and are eligible for a discretionary bonus based on performance. The Partners will share in approximately 60% of the Fund’s carry, the majority of which will be allocated to Messrs. Feliciano and Eghbali. Dyal Capital Management (“Dyal”), Goldman Sachs, and Landmark Partners



("Landmark") will be allocated approximately 22.5% of the Fund's carry¹ and the remainder will be distributed among permanent professionals, VP-level and above.

None of the Partners are near retirement, so succession planning is not a concern at this time.

Investment Process and Investment Committee Composition

Upon sourcing an opportunity, Clearlake begins initial diligence with an analysis of: industry trends, qualitative and quantitative analysis of the company's business, an evaluation of the existing management and business operations, and an analysis of the company's capital structure, financial results and projections.

In its evaluation, the General Partner engages operating executives and industry contacts to gain key insights into the outlook for the industry and operating dynamics of the underlying business. Clearlake also engages financial advisory or accounting firms to conduct financial and accounting diligence and attorneys to conduct legal diligence.

The due diligence process may take several months and involves multiple visits with company management, discussions with customers, suppliers, competitors and other participants in the industry or supply chain and analyses to uncover areas of potential stress and opportunities in operations.

Clearlake's due diligence and analysis typically include the following focus areas:

- Understanding of industry dynamics and outlook
- Competitive advantages and barriers to entry for industry and business
- Vulnerability to macroeconomic and cyclical downturns
- Strength of existing management and directors and Clearlake's ability to enhance the team
- Analysis of governance and other contractual provisions
- Evaluation of financial, free cash flow and liquidity profile
- Credit quality including balance sheet and potential contingent liabilities
- Strategic value and quality of assets (tangible and intangible)
- Intrinsic value of the enterprise and, if applicable, analysis of fulcrum security
- Clearlake's ability to impact and drive operating and financial transformation
- Evaluation of situation, incentives and behavior of constituents across the capital structure

Final investment decisions will be made by Messrs. Feliciano and Eghbali.

¹ Until 2017, Reservoir Capital owned a 22.5% stake in the General Partner, which entitled them to share in the carry of the prior funds. In April 2017, the General Partner acquired Reservoir's stake. Landmark provided preferred equity financing as part of the acquisition, which entitled Landmark to the carry formerly allocated to Reservoir. In 2018, the General Partner completed a second transaction with Goldman Sachs and Dyal, in which Landmark was refinanced. Goldman Sachs and Dyal now each own a 10% stake in the firm and Landmark continues to hold 2.5%; ownership stakes are commiserate with carry share.

Conflicts of Interest

The Opportunity Funds may create conflicts of interest. While both the Fund and Opportunity Funds will pursue a similar investment strategy, the Fund will focus on control-oriented investments, while the Opportunity Funds will focus on non-control investments. However, there are potential for conflicts associated with allocating investment opportunities, particularly for debt investments that originate in the secondary capital markets, in which case Clearlake may allocate such investments to both the Fund and the Opportunity Funds through an allocation process. The allocation process will take into consideration both available capital and additional factors (e.g., sector exposure, expected investment duration, expected return, among other factors) when making any allocation determination.

Litigation Involving the General Partner or Principals

There is no current threatened or outstanding material litigation involving the Principals or Clearlake. In the ordinary course of investing in financially distressed companies, the General Partner is involved in bankruptcy and restructuring judicial processes, which can take the form of litigated disputes in the context of Chapter 11 proceedings and enforcement of creditor rights.

Public Domain Search

News runs were conducted on the General Partner and its Principals for a time-period spanning the last five years. There were no material adverse findings.

References

In its evaluation of Clearlake Capital V in late 2017, Franklin Park conducted a number of reference calls on the General Partner. These calls included discussions with limited partners, portfolio company executives, and other individuals familiar with the General Partner's team. Reference results were generally favorable and uncovered no materially adverse findings. The General Partner is using a third party firm to complete updated references of its portfolio company executives to be reviewed in the near-term. Franklin Park is also in process on completing a number of reference calls with other existing limited partners.



Evaluation of the Management Team

1. The Partners are seasoned special situations and private equity investors. The Partners average 15 years of relevant experience, including tenures with other private equity firms. Three of the five Partners have been working together for 10 years.

In particular, the firm's founders are seasoned investors with complementary experience summarized below:

- José Feliciano has 19 years of special situations investment experience from Tennenbaum Capital Partners and Goldman Sachs. He also gained operating experience as a CFO in between Goldman Sachs and Tennenbaum Capital Partners.
- Behdad Eghbali has 16 years of private equity experience with the General Partner and TPG, and M&A experience through his tenure as VP of Business Development with Turbolinux and, prior, with Jefferies and Morgan Stanley.

However, there are some team concerns:

- The General Partner's team lacks significant depth at the senior level. The team will rely heavily on Messrs. Feliciano and Eghbali, who are Clearlake's most seasoned investors.
- The Fund's team will also be responsible for investing and managing the Opportunity Funds.

Several factors serve to mitigate this team concern.

- While less deep, the other Partners also bring other private equity experience to bear, each having previously spent time at well-known firms including Silver Lake Partners and TowerBrook Capital.
 - In the last several years, the General Partner's team has nearly doubled in size. The General Partner has added significant resources to support the senior partners in areas such as deal origination, firm management and portfolio support.
 - The General Partner continues to promote from within, and the number of capable lead deal professionals has grown to 7-8 today, with the expectation that this could double over the life of the Fund.
2. Third parties will share in the Fund's carried interest, which could impact team stability. External investors (Dyal Capital Partners, Goldman Sachs, and Landmark Partners) own minority interests in the management company and, through their ownership, will be entitled to 22.5% of the Fund's carry. While the outside investors carry no governance rights, the ownership does raise concerns around team stability and alignment of interests. However, the General Partner has had third party participation since inception of the firm, which helps to mitigate this concern.



3. There are potential conflicts between the Fund and the Opportunity Funds. While both funds will pursue a similar investment strategy, the Fund will focus on control-oriented investments, while the Opportunity Funds target non-control opportunities. However, there are potential for conflicts associated with allocating investment opportunities, particularly for debt investments that originate in the secondary capital markets, in which case Clearlake may allocate such investments to both the Fund and the Opportunity Funds through an allocation process. The allocation process will take into consideration both available capital and additional factors (e.g., sector exposure, expected investment duration, expected return, among other factors) when making any allocation determination.

Track Record

The General Partner has raised five prior funds. The following chart summarizes the performance of the prior funds, as of June 30, 2019 (\$000).

Aggregate Performance Summary¹

Fund (Vintage)	Rlzd Deals / # Deals	Invested	Realized	Unrealized	Gross ROI	Gross IRR
Fund II (2009)	13 / 15	580,387	939,495	105,224	1.8x	22.4%
Fund III (2012)	13 / 20	1,190,382	2,900,281	625,979	3.0x	48.6%
Fund IV (2015)	5 / 19	1,654,365	1,026,226	1,942,787	1.8x	39.8%
Fund V (2017)	1 / 12	2,214,867	78,931	3,385,870	1.6x	73.9%
Total	32 / 66	5,640,001	4,944,933	6,059,860	2.0x	38.9%

Performance vs. Benchmark^{2,3}

Fund (Vintage)	General Partner			vs. First Quartile Benchmarks		
	Net IRR	DPI	TVPI	Net IRR	DPI	TVPI
Fund I (2006)	8.5%	N/A	1.3x	14.2%	1.8x	2.1x
Fund II (2009)	15.9%	N/A	1.8x	26.1%	2.1x	2.4x
Fund III (2012)	41.3%	2.2x	2.6x	24.5%	1.1x	1.9x
Fund IV (2015)	31.8%	0.6x	1.6x	24.4%	0.3x	1.5x
Fund V (2017)	63.9%	0.0x	1.5x	26.5%	0.0x	1.3x

Benchmark Analysis

Fund (Vintage)	General Partner			Quartile Ranking		
	Net IRR	DPI	TVPI	Net IRR	DPI	TVPI
Fund I (2006)	8.5%	1.3x	1.3x	3rd	3rd	4th
Fund II (2009)	15.9%	N/A	1.8x	3rd	N/A	3rd
Fund III (2012)	41.3%	2.2x	2.6x	1st	1st	1st
Fund IV (2015)	31.8%	0.6x	1.6x	1st	1st	1st
Fund V (2017)	63.9%	0.0x	1.5x	1st	1st	1st

¹ Gross of fees and carried interest expenses. The unrealized investments are valued by the General Partner based on market comparables.

² Net of fees and carried interest expense data provided by the General Partner.

³ Benchmark data provided by Cambridge Associates: (Buyout Funds) at March 31, 2019.



Evaluation of the Track Record

1. The General Partner's recent funds have generated attractive returns.
 - Since 2009, the prior funds have invested \$5.6 billion and generated an aggregate gross IRR of 38.9%.
 - 32 realized core investments have generated a gross IRR of 46.7% and a 3.4x ROI.
 - Each of Funds III, IV and V have generated net IRRs in excess of 30% and rank in the top quartile for all metrics relative to U.S. buyout peers.
 - While Fund V is a relatively young portfolio, it has already generated an exit for 5.5x invested capital.

However, Funds I and II underperformed expectations.

- Now fully realized, Fund I, a 2006 vintage, generated a single digit net IRR and 1.3x TVPI. Reservoir was the sole investor in Fund I and required an 18-month investment period. As a result, Fund I was fully invested prior to the 2008 financial crisis and performance suffered.
 - Fund II has generated a net multiple of 1.8x but ranks in the third quartile relative to buyout peers.
2. The financial and operating performance of the prior funds has been compelling. The table below presents median entry and operating performance statistics for the last three fund portfolios.

	At Investment				
	Hold (yrs)	TEV (\$M)	Entry Mult.	Rev. CAGR	EBITDA CAGR
Fund III	3.2	161.8	5.8x	14.8%	20.4%
Fund IV	1.7	342.7	8.7x	10.7%	15.1%
Fund V	1.0	757.0	13.9x	31.5%	24.2%



Fundraising

The General Partner is targeting limited partner capital commitments of \$5 billion for the Fund, with an expected cap approaching \$7 billion. A first close, which could comprise the Fund's target, is planned for December 10, 2019. A second and final close will be held early in 2020.

Select prior fund limited partners include:

CalPERS
CalSTRS
Connecticut Retirement Plan and Trust Fund
Credit Suisse
Houston Police Officers' Pension System
Illinois State Board of Investment
Illinois Teachers
L.A. Fire & Police
Montgomery County Employees Retirement System
Neuberger Berman
New York State Common Retirement Fund
West Virginia Investment Management Board



Appendix I Summary of Due Diligence Performed

As part of its review of the Fund offering, Franklin Park completed the following:

- Reviewed the Fund's preliminary offering materials in August 2019;
- Held a conference call with the General Partner in August 2019;
- Conducted initial due diligence on the Fund in August and September 2019;
- Conducted a site visit at the General Partner's office in Santa Monica in September 2019;
- Confirmed there were no material changes to operational due diligence that was previously completed with the CFO and CCO in December 2018 (in process);
- Reviewed reference calls completed by an independent third party in September 2019 and completed additional reference call with a number of existing limited partners (in process); and
- Prepared this memo summarizing our findings.



Appendix II Principals' Biographies

José Feliciano (46) was a Partner and member of the investment committee at Tennenbaum Capital Partners prior to co-founding the General Partner. Before joining Tennenbaum, Mr. Feliciano served as the CFO of govWorks, Inc., a payment and services provider to the public sector. He started his career in investment banking with Goldman Sachs & Co, where he also was a private equity investor in the Latin America Enterprise Fund. Mr. Feliciano graduated from Princeton University, where he received a B.S. in Mechanical and Aerospace Engineering. He earned an MBA from the Graduate School of Business at Stanford University.

Behdad Eghbali (43) was investing with TPG Capital prior to co-founding the General Partner. At TPG, Mr. Eghbali was focused on investments in the business services, communications/media and technology sectors. Before joining TPG, he was a Partner at Venus Capital Management, a multi-strategy hybrid fund, where he focused on private investments. Mr. Eghbali also has operational and banking experience in the technology sector through tenure with Turbolinux, Jefferies & Co., and Morgan Stanley. He graduated with a B.S. in Business Administration with an emphasis on Finance from the Haas School of Business at the University of California, Berkeley.

Prashant Mehrotra (41) was an investment professional with Silver Lake Partners prior to joining Clearlake in 2010. Before joining Silver Lake, he worked at Tennenbaum Capital Partners and, before that, Goldman Sachs. He received a BS and an MS from Stanford University and an MBA from Northwestern University.

Colin Leonard (37) joined Clearlake in 2007. Prior to Clearlake, he was an investment professional at HBK Investments where he focused on distressed investments in the industrials and transportation/logistics sectors. Mr. Leonard graduated with a B.S. in Economics (Wharton School) and a minor in Mathematics from the University of Pennsylvania.

James Pade (35) joined Clearlake in 2013. Prior to joining Clearlake, he was an investment professional at TowerBrook Capital Partners, where he focused on leveraged buyouts and distressed debt investments. Before that, Mr. Pade was an investment banker at Credit Suisse, and he started his career at Google. He graduated with a B.A. in Economics, with Honors in Science, Technology & Society from Stanford University.

Appendix III
Summary of Terms

Term	Fund's Proposed Term	Negotiation Recommendation
Fund Size		
Target Size	\$5 billion	None
Minimum Size	Not stated	None
Maximum Size	Not expected to exceed \$7 billion	Incorporate into the LPA
Duration		
Investment Period	The investment period will expire on the sixth anniversary of the later of the activation of the Fund or the final closing. The Investment Period may be extended for up to two additional one-year periods by the General Partner, with the consent of the Advisory Committee, as defined below, in the case of the first additional one-year period, and with the consent of a majority in interest of limited partners in the case of the second additional one-year period.	None
Capital Reinvestment	The Fund may recycle returns of capital attributed to either (i) temporary investments, or investments disposed of prior to the termination of the investment period; (ii) capital used to pay fees and expenses; and (iii) returns of capital due to subsequent closings.	None
Term	The Fund's term will be 10 years from activation of the Fund with two one-year extensions with consent from the Advisory Committee.	None
Limitations on Investment Activities		
Single Portfolio Company	The Fund will generally not invest more than 15% of the capital in a single portfolio company. However, the Fund may invest up to 20% of commitments in any one, but only one, portfolio company.	None
Geographic Limitations	The Fund may not invest more than 25% of total commitments in companies doing business outside the U.S. & Canada.	None
Public Securities	The Fund may invest up to 12.5% of the capital in publicly traded securities.	None

Fees and Carried Interest

Management Fee	During the Fund's investment period, the Fund will charge an annual management fee of 1.75% of commitments. Upon termination of the investment period, the Fund will charge an annual management fee equal to 1.75% of net invested capital.	Consider step-down with successor fund
Transaction Fees	The management fee shall be reduced by 100% of all transaction fees received by the General Partner and its affiliates.	None
Organizational Expenses	The Fund is responsible for paying up to \$7.5 million in organizational expenses.	None
Carried Interest	After the limited partners receive their aggregate capital contributions, write-downs and an 8% preferred return, the General Partner will be entitled to 20% of the Fund's profits. The General Partner shall be entitled to a "6% Carried Interest Advance" after the return of capital on all realized investments and investments that have been written off, plus management fees and other expenses allocated to such investments.	None
Clawback Provision	If the General Partner receives more than 20% of the Fund's profits, the General Partner will refund such excess.	None

Management of the Fund

GP Commitment	The General Partner will commit at least \$150 million to the Fund.	None
Key-Person Provision	If both Behdad Eghbali and José Feliciano cease to be actively involved in the Fund, the investment period shall automatically be suspended. If one of Behdad Eghbali or José Feliciano departs, a 66 2/3% interest of the limited partners may vote to suspend the Fund's investment period.	None
Advisory Committee	The Fund will have an advisory board comprised of at least three limited partners. The advisory board will review certain conflicts of interest matters and the General Partner's valuation of portfolio companies that are not readily marketable.	None

Evaluation of the Investment Terms

The Fund's terms are generally consistent with market terms for similar funds, except we propose negotiating for the following:

- The Fund's management fee should reduce with the formation of a successor fund.

Appendix IV
Operational Due Diligence

In process

ARKANSAS TEACHER RETIREMENT SYSTEM
1400 West Third Street
Little Rock, Arkansas 72201

RESOLUTION
No. 2019- 41

Approving Investment in Clearlake Capital Partners VI, L.P.

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 **Clearlake Capital Partners VI, L.P.**, a fund that seeks to make opportunistic debt and equity investments in middle market companies in North America.

THEREFORE, BE IT RESOLVED, that the ATRS Board approves an investment of up to **\$30 million dollars (\$30,000,000.00)** in **Clearlake Capital Partners VI, L.P.** The total investment amount is to be determined by the private equity consultant and ATRS staff based upon the allocation available to ATRS and the overall investment objectives set by the ATRS Board; and

FURTHER, BE IT RESOLVED, that the ATRS staff is hereby authorized to take all necessary and proper steps to implement this investment, if acceptable terms are reached.

Adopted this 7th day of October 2019.

Chair, Board of Trustees
Arkansas Teacher Retirement System

ATRS Board Policy 1
BOARD GOVERNANCE
A.C.A. § 24-7-301 et seq., A.C.A. § 24-7-401 et seq.,
and A.C.A. § 25-16-901 et seq.

I. Board Plan Administration

A. The authority and responsibility for the administration, management, and control of the Retirement System, and for the construing and carrying out the provisions of the plan is vested in the Board of Trustees (hereinafter the “Board”). The Board is responsible for the governance of ~~the System.~~ ATRS. It is accountable for establishing policies and for supervising the implementation of those policies in compliance with all applicable legal mandates.

B. The function of the Board is to make certain contributions that lead the Retirement System toward the desired performance and ensure that it occurs. The Board’s specific contributions are unique to its trusteeship role and necessary for appropriate governance and management. Board decisions are to be based on facts and expert opinions.

C. The Board will approach its task with a style that emphasizes outward vision rather than an internal preoccupation; encouragement of diversity of viewpoints; strategic leadership more than administrative detail; clear distinction of Board and staff roles; future rather than past or present; and proactive rather than reactive.

D. Consequently, the contributions of the Board shall be:

1. The link between the Retirement System and its members.¹

2. Written governing policies that, at the broadest levels, address:

a. Governance Process

Specification of how the Board conceives, carries out, and monitors its own task.

b. Board-Staff Relationship

How authority is delegated and its appropriate use is monitored.

c. Ends

Retirement system products, impacts, benefits, and outcomes (what good for which needs at what cost).

d. Limitations

Constraints on executive authority that establish the prudence and ethics boundaries within which executive activity, decisions, and organizational matters shall be carried out.

3. The assurance of Executive Director performance against ~~policies in Nos. 2G~~ Ends and ~~2D~~ Limitations policies above.

II. Board Guiding Principles

- A. The Board of Trustees is dedicated to the proposition that its paramount purpose is that of providing an adequate and equitable retirement plan for the members of the teaching profession, to protect this group in the event total and permanent disability causes them to be unable to continue employment in their profession, and to provide in part for their dependents in case of death.
- B. The Board is responsible for the prudent investment of System funds. The two paramount considerations in fund investment are safety and yield, with yield being of first importance, provided such investments comply with legally mandated safeguards.
- C. The Board should be fully informed of its financial liabilities, not only to the retirants and beneficiaries, but also to active members of the teaching profession, and to make those liabilities known to members of the state legislature, to other state officials, and to education-related organizations.
- D. The Board should provide all interested citizens with information regarding ~~the System's ATRS's~~ procedures for investing system funds, as well as the budgeting, control, and disbursement of those funds.
- E. The Board will actively promote the enactment of state and federal legislation that may improve the economic welfare of ATRS members.
- F. The Board endorses programs of counseling and information designed to assist members who are approaching retirement.
- G. The Board should be knowledgeable of the most current information regarding effective, efficient governance and operation of state retirement systems that could augment prudent decisions for the benefit of members. To this end, Board members are encouraged to participate actively in regional and national retirement organization programs that offer such information and training.

III. Board Code Of Conduct

The Board expects of itself and its members ethical and business-like conduct.

- A. Board members, as fiduciaries, shall discharge their duties solely in the best interest of ~~the system ATRS~~ members for the exclusive purpose of providing optimum benefits.
- B. Board members must avoid any conflict of interest with respect to their fiduciary responsibility. Board members must not use their positions to obtain favorable treatment for themselves, family members, or close employees.
- C. Board members who desire specific information from firms employed by ~~the System ATRS~~ should make the request through the Executive Director.
- D. Board members shall not, directly or indirectly, solicit or accept any gift of value as defined by the Arkansas Ethics Commission.
- E. Board members shall decline any offer and shall not have any contact with anyone associated with a firm that the Board is considering employing after

requests for proposals (RFP's) or requests for qualifications (RFQ's) have been sent.

F. Board members shall not attempt to exercise individual authority over the operation of the retirement system or staff members except as explicitly set forth in Board policies. Board members' interaction with the staff, public, press, or other entities must recognize the inability of any Board member or Board members to speak for the Board.

G. Board members shall report violations of any of these policies of conduct in writing to the Board Chair.

IV. Board Member Development

The ~~Teacher Retirement~~ Board is responsible for its own readiness for Board work and the performance of that work.

A. The Board determines appropriate issues for Board work and appropriate issues to be addressed, as well as the education and data required to address those issues wisely.

B. The Board determines the need and mechanisms for Board development.

1. Among the mechanisms will be membership in the National Council on Teacher Retirement, Board-approved consultants, and seminars provided by employees of ~~the Retirement System~~: ATRS.

2. The Board's annual plan will include expected outcomes, costs, and scheduling of the Board development effort.

3. The Board will set forth the educational experiences it determines appropriate for a new Board member.

C. The Board may enlist assistance from the Executive Director in any phase of its own development.

V. Board Meetings

The Board shall hold regular meetings at least quarterly. Additional meetings may be called by the Chair or scheduled by action of the Board in a regular meeting. The Board shall adopt its own rules of procedure, which shall be subject to the following:

A. The Board shall elect a Chair and Vice Chair from its own membership. The election will be in the odd numbered years at the first regular meeting after the beginning of the fiscal year. The Chair and Vice Chair shall be elected for a term of two years and may be reelected for two additional two-year terms. The Chair and Vice Chair shall be either an active member or retirant trustee. A Board member must have served at least one full year as a member of the Board to be eligible for election to the position of Chair or Vice Chair.

B. In the event a vacancy of the Chair or Vice Chair occurs for any reason other than completion of a term, the Board shall fill said vacancy by election from the existing Board members for the remainder of the unexpired term at its next

regular meeting. A trustee elected to fill an unexpired term of the Chair or Vice Chair shall be eligible for two additional two-year terms.

C. ~~Quorum~~

Quorum: Eight trustees shall constitute a quorum at any meeting of the Board.

D. Each trustee shall be entitled to one vote on each question before the Board, and at least eight affirmative votes shall be required for a decision by the Board at any meeting.

E. *Robert's Rules of Order* shall be followed in the conduct of all meetings except when a departure from Robert's is authorized by action of the Board.

F. Agenda

The Board shall adopt an agenda at the beginning of each meeting. By a majority vote of the Board, items may be added to the agenda before it is adopted.

1. The Executive Director shall prepare a tentative agenda and submit it to all trustees at least ~~30~~ ten (10) days prior to a regularly scheduled meeting. The meeting ~~brochure and~~ agenda and materials will be mailed submitted to trustees ~~not no~~ later than ~~five~~ three (3) days before the regularly scheduled meeting.

2. Trustees who want item(s) to be considered for the agenda should notify the Executive Director no later than ~~20~~ seven (7) days prior to a regularly scheduled meeting.

3. Members or individuals who wish to have an item placed on the agenda at a regularly scheduled Board meeting should submit their request in writing to the Executive Director no later than ~~20~~ twenty (20) days prior to the meeting.

4. Members or individuals who wish to make comments during a regularly scheduled Board meeting should indicate on forms provided the subject on which they intend to speak.

5. A time limit of five (5) minutes will be allowed members and individuals for presentation, unless extended by majority vote of the Board.

G. Minutes

The Board shall keep an official record of the proceedings of each meeting, the final draft of which must be approved by the Board and signed by the Chair and the Executive Director. The Board minutes are to contain only the action of the Board, information required by case law, and the vote thereon.

H. Public Meetings

All meetings of the Board shall be public and in compliance with the Freedom of Information Act. Representatives of the Little Rock news media shall be notified of each meeting.

VI. Duties Of Chair And Vice Chair

A. Duties of the Chair

The duty of the Chair is to ensure the integrity of the Board's process and to

represent the Board to outside parties.

1. The Chair will see that the Board operates consistent with its own rules and those legitimately imposed on it from outside ~~the retirement system~~. ATRS.

a. Meeting discussion content will be only those issues that, according to Board policy, clearly belong to the Board to decide.

b. Deliberation will be timely, fair, orderly, and thorough, but also efficient, limited in time, and kept to the point.

2. The authority of the Chair consists only in making decisions on behalf of the Board that fall within and are consistent with Board policies.

a. The Chair is empowered to chair Board meetings with all the commonly accepted power of that position (e.g., ruling, recognizing, etc.).

b. The Chair may also:

i. Convene meetings of the Board, or committees thereof, as prescribed by law.

ii. Certify actions taken by the Board.

iii. Serve as the official spokesperson for the Board.

iv. Name Board members to committees.

v. Perform other duties specifically requested by the Board that are deemed necessary and appropriate for the Board to fulfill its duties and responsibilities under law.

B. Duties of the Vice Chair

The duties of the Vice Chair are to act as temporary chair in the absence of the regular chair.

VII. Reimbursement Of Expenses

A. The Board, by majority vote of the total membership cast at the first regularly scheduled meeting of each calendar year, may authorize expense reimbursement for each trustee for performing official Board duties. Official Board duties are defined as follows:

1. Attending regular and called Board meetings.

2. Attending committee meetings of the Board or any specially appointed committee comprised in whole or in part of Board members.

3. Attending conferences approved by the Board of Trustees.

4. Attending legislative committee meetings when acting as spokesperson for the Board.

5. Attending legislative sessions at the request of the Board or Executive Director.

B. Board members are subject to the same reimbursable expenses as state employees.

C. Board officers are authorized payment for personal expenses, not otherwise reimbursed, incurred in the performance of their ATRS related duties. Such reimbursement is to cover (1) any losses in salary or compensation that would otherwise result from their attendance at Board or committee meetings, and will be paid to the officer's employer; and (2) the costs of communication (long-distance telephone calls, postage, etc.) with other trustees or staff members.

VIII. Procurement of Services

A. ATRS shall utilize an equitable and open system of awarding contracts to providers of all contractual, management, and consultant services, including, but not limited to: (1) construction architects, engineers, and contractors; (2) building managers; (3) real estate, legal, and investment consultants; and (4) actuaries and auditors.

B. The system of awarding contracts will assure that all bona fide providers of such services will have equal opportunity to submit competitive bids or competitive proposals for consideration.

1. Consistent with the Prudent Investor Rule and pursuant to ~~Act 304 of 2013, the system~~ A.C.A. § 24-2-618, ATRS has a statutory goal to recruit and hire emerging managers and emerging investment funds.

2. For purposes of this Rule, "emerging managers" and "emerging investment funds" means a managing group or fund that is predominately owned by black or African American, Hispanic American, American Indian or Native American, Asian, or Pacific Islander.

3. Each investment consultant retained by ATRS to recommend investment managers or investment funds shall submit an annual report to ~~the system~~ ATRS consistent with the requirements in ~~Act 304 of 2013~~ A.C.A. § 24-2-618 that addresses the goal of ~~the system~~ ATRS to recruit and hire emerging managers and emerging investment funds.

C. The Executive Director shall develop procurement procedures and a plan for implementing the process of awarding contracts.

D. The Board of Trustees shall approve all procedures and contracts related to the procurement of services.

IX. Board Self-Evaluation

The Board will regularly evaluate its own performance, taking whatever action is necessary to govern with excellence. The Board will review these policies of conduct at least annually and discuss the degree to which it complies.

X. Board Committee Principles

The Board may establish committees to help carry out its responsibilities.

A. Board committees may not speak or act for the Board except when formally given such authority.

B. Committees ordinarily will assist the Board by preparing policy alternatives

and implications for Board deliberation.

C. Board committees may not exercise authority over staff.

D. All members of the **ATRS** Board shall be notified as to the time and place of all committee meetings. A Board member may attend any committee meeting, but only committee members may vote on committee matters.

E. Appointments to committees shall be for four-year terms unless otherwise noted. Initial appointments for less than four years may be reappointed to one full four-year term.

F. A quorum of each committee and the number of affirmative votes needed for a motion to carry shall be a majority of the designated size of the committee.

G. Board committees shall elect their own Chair and Vice Chair unless otherwise indicated by Board policy.

H. The Executive Director shall serve as secretary and ex officio nonvoting member of Board committees or shall delegate another member of the staff to serve in this capacity.

I. Committees shall report to the Board following each of their meetings.

XI. Investment Committee Charter

A. There shall be an Investment Committee composed of eight members. The ~~chair of the~~ Board **Chair** shall appoint five members from the Board, and the ~~chair of the~~ Board **Chair** shall serve as an ex officio voting ~~members, and two at-large~~ member. The remaining two members shall be the State Treasurer and the State Bank Commissioner upon their acceptance of the position.

B. The committee shall meet on call by the committee chair and/or the Executive Director, but not less than on a quarterly basis.

C. The purposes of the committee shall be:

1. To consider investment policies and procedures for recommendation to the Board for adoption.

2. To consider asset allocations for recommendation to the Board for adoption.

3. To consider all investment proposals for approval or rejection, unless the Board assigns the proposals to other committees.

4. To monitor all phases of the investment program and to recommend any changes that need to be made to the full Board.

D. The agenda will be set by the committee chair after conferring with the Executive Director and will be furnished in advance when practical.

E. The committee may act by majority consent of all the committee members.

F. The actions taken by the committee shall be reported at the next regularly scheduled meeting of the Board.

G. All public Board disclosures and the Code of Ethics are applicable to all

members of this committee.

XII. Operations Committee Charter

A. There shall be an Operations Committee composed of up to eight members. The ~~chair-of-the~~ Board Chair shall appoint five members from the Board, and the ~~chair-of-the~~ Board Chair shall serve as an ex officio voting member. The remaining two members shall be the State Auditor and the Commissioner of Education upon their acceptance of the position.

B. The committee shall meet on call by the committee chair and/or the Executive Director.

C. The purposes of the committee shall be:

1. To receive and consider proposals for the adoption of new or revised policy to recommend to the Board for adoption.

2. To receive and consider legislative proposals to recommend to the Board for adoption.

3. To suggest and develop legislative proposals for the benefit of ~~the Retirement-System~~ ATRS and its members to recommend to the Board for adoption.

4. To make recommendations to the Board for initiating, supporting, or opposing legislation.

5. To recommend and oversee the Board and Executive Director evaluation process.

6. To recommend and oversee the Board's training and conference schedules.

D. All matters that are not within the jurisdiction/purposes of the Investment or Audit Committees shall be within the jurisdiction/purposes of the Operations Committee.

E. The agenda will be set by the committee chair after conferring with the Executive Director and will be furnished in advance when practical.

F. The committee may act by majority consent of all the committee members.

G. The actions taken by the committee shall be reported at the next regularly scheduled meeting of the Board.

H. All public Board disclosures and the Code of Ethics are applicable to all members of this committee.

XIII. Audit Committee Charter

A. There shall be an Audit Committee composed of three members of the ATRS Board of Trustees appointed by the Board Chair and two at-large members from the public with extensive auditing experience approved by the Board. The at-large members must be independent and have no affiliation with ~~the system.~~ ATRS.

B. The committee shall meet as needed on call by either the committee chair or the ATRS Internal Auditor. Actions taken by the committee shall be reported to

the ATRS Board of Trustees.

C. The committee has authority to conduct or authorize investigations into any matters within its scope of responsibility and to seek any information it requires from employees, all of who are directed to cooperate with the committee's request. In the event the committee has difficulty obtaining the necessary information from an employee or employees, the committee may seek assistance from the Executive Director or the Board of Trustees as the circumstances dictate.

D. The committee may invite members of management, auditors, employees, or others to attend meetings and provide pertinent information as necessary.

E. The committee will assist the Board of Trustees in fulfilling the Board's oversight responsibility relating to:

1. The financial reporting processes
2. The system of internal controls
3. The internal audit process
4. ~~The System's~~ ATRS's compliance with laws and regulatory requirements and ethics policies

F. Meeting agendas will be prepared and provided in advance to committee members , along with appropriate briefing material when practical.

G. The committee may act by majority consent of all the members of the committee.

H. Minutes of the meeting will be prepared and presented at the next scheduled Audit Committee meeting for review and approval.

I. The committee will carry out the following responsibilities:

1. Financial Statements

a. Review with management and auditors the results of audits which have significant findings and recommendations, together with management's responses to findings and follow up on corrective actions.

2. Internal Control

a. Review the risk assessment to consider the effectiveness of ~~the system's~~ ATRS's internal controls.

b. Review with management and auditors any significant findings and recommendations on internal controls over financial reporting, together with management's responses.

3. Internal Audit

a. Review with management and the Internal Auditor the charter, activities, staffing, and organizational structure of the internal audit function.

b. Review and approve the audit plan and all major changes to the plan.

c. Review Internal Audit's reports and follow up on findings and recommendations.

4. Compliance

a. Review the findings of any examinations by regulatory agencies, and any auditor observations.

5. Reporting Responsibilities

a. Regularly report to the Board of Trustees on the committee's activities and issues that arise with respect to the quality or integrity of ~~the system's~~ ATRS's financial statement, compliance with legal or regulatory requirements, and the performance of the internal audit function.

6. Other Responsibilities

a. Perform other activities related to this charter or the audit functions as requested by the Board of Trustees.

b. Resolve any disagreements between management and the Internal Auditor regarding financial reporting.

c. Review and assess the adequacy of the committee charter, and propose recommended changes as needed, and request Board of Trustees approval for recommended changes.

d. Approve administrative decisions regarding the appointment and removal of the Internal Auditor. Approval of appointment or termination of the Internal Auditor by the Audit Committee is not final until confirmed by the Board of Trustees.

e. Perform an annual employee evaluation of the Internal Auditor of ATRS. The audit committee shall:

i. Meet in executive session, with or without the Internal Auditor, for the purpose of conducting, reviewing, and discussing an employee evaluation of the internal auditor;

ii. Gather information as it deems necessary, including input from the Executive director or other persons with direct knowledge of the Internal Auditor's performance, for the purpose of conducting a fair and thorough annual employee evaluation of the Internal Auditor;

iii. Report to the Board of Trustees when the Committee has completed the annual evaluation that the evaluation has been completed. If a Trustee requests by motion and second to learn the specific results of the Internal Auditor evaluation, and the majority of the Board votes in favor of such motion, the Board of Trustees may meet in executive session to hear the Committee's findings and recommendation on the employee evaluation.

J. The committee may periodically evaluate itself and report the results to the Board of Trustees. The effective date for the start of any evaluation process and frequency of evaluations may be determined by the committee.

1 "Members" as used in the Board policies means plan participants of the Arkansas Teacher Retirement System.

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ATRS Rule 6

MEMBERSHIP RULES

A.C.A. §§ 24-2-202, 24-2-401 — 24-2-408, 24-7-202, 24-7-406, 24-7-501, 24-7-502, 24-7-1601 — 24-7-1607

I. Definitions

- A. "Administrator" shall mean 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 ATRS that is employed in a position grade GS13 or above or its equivalent.
- B. "Alternate Retirement Plans" refers to the retirement plan(s) of a public college or university, or the Department of Higher Education provided for under A.C.A. § 24-7-801 et seq., or for a vocational-technical school or the Department of Workforce Education (formerly the Division of Vocational and Technical Education) provided for under A.C.A. § 24-7-901 et seq.
- C. "Contributory service" is service on which a member makes or made member contributions to ATRS.
- D. A "contributory election" is a written election by a member to make member contributions to ATRS. To be valid, an election must be on an election form provided by ATRS and signed by both the member and the employer.
- E. "Noncontributory service" is service on which a member does not make member contributions to the ATRS and accepts a reduced retirement annuity for the years of service for which the member does not contribute.
- F. "Nonteacher" means any member that is not a teacher or administrator.
- G. "Organization" means (i) any private entity providing services for a public school district and whose employees were formerly employed by the school district and had been members of ATRS, and (ii) any educational nonprofit corporation licensed and regulated by the Division of Developmental Disabilities Services of the Department of Human Services.
- H. "Preceding System" is a previous reciprocal retirement system of record as defined above.
- I. "Reciprocal System" means ATRS operations as of June 30, 1957, and

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continued by statutes; the Arkansas State Highway Employees' Retirement System, established by A.C.A. § 24-5-103; the Arkansas Public Employees' Retirement System established by A.C.A. § 24-4-103; the Arkansas State Police Retirement System established by A.C.A. § 24-6-203; the Arkansas Judicial Retirement System established by A.C.A. § 24-8-201; the Arkansas District Judge Retirement System established by A.C.A. §§ 24-8-801--824; the Arkansas Local Police and Fire Retirement System provided for under A.C.A. § 24-10-101; or an alternate retirement plan for a public college or university, or the Arkansas Department of Higher Education provided for under A.C.A. § 24-7-801 *et seq.*, or for a vocational-technical school or the Department of Workforce Education (formerly the Division of Vocational and Technical Education) provided for under A.C.A. § 24-7-901 *et seq.* and agencies that may be assigned the duties under the agencies listed above through a state reorganization or transformation plan.

J. "State Employer" means the public employer whose employees are covered under ATRS, the Arkansas State Highway Employees' Retirement System (A.C.A. § 24-5-103), the Arkansas Public Employees' Retirement System (A.C.A. § 24-4-103), the Arkansas State Police Retirement System (A.C.A. § 24-6-203), the Arkansas Judicial Retirement System (A.C.A. § 24-8-201), or the Arkansas District Judge Retirement System (A.C.A. §§ 24-8-801—824). "State employer" also includes a public employer that is a college, university, or the Arkansas Department of Higher Education (A.C.A. § 24-7-801 *et seq.*), or a vocational-technical school or the Department of Workforce Education (formerly the Division of Vocational and Technical Education (A.C.A. § 24-7-901 *et seq.*) and agencies that may be assigned the duties under the agencies listed above through a state reorganization or transformation plan.

K. "Succeeding System" is the current reciprocal retirement system of record, following membership in a retirement system covered above.

L. "Teacher" means any person employed by a school for the purpose of giving instructions and whose employment requires state licensure.

II. Membership Rules

A. Effective July 1, 2001, those employees whose nonteaching service began before July 1, 1989, and whose nonteaching service is covered or coverable by the Arkansas Public Employees Retirement System may elect to be covered by the ATRS. The elections shall be made prior to May 31 on a form provided by ATRS and shall be effective the following July 1 as provided by A.C.A. § 24-7-501(a)(2)(C).

B. Employees who are eligible for membership in ATRS are ineligible for

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membership in another state retirement system while employed in a position covered by ATRS, excluding service in the Arkansas General Assembly.

C. The ATRS Executive Director shall monitor, from time to time, employers that participate in ATRS to ensure that only employers that meet both the federal and state requirements for participation and continued participation remain employers in ATRS. If the Executive Director determines that an employer no longer meets the requirements for continued participation in ATRS, the Executive Director shall notify the Board of Trustees to allow appropriate review and action by the Board.

III. Contributory/Noncontributory Service Rules

A. A contributory member may not elect to become a non-contributory member.

B. Whether or not a member is considered contributory or non-contributory depends upon the year the member entered the system.

C. All service rendered before July 1, 1986, is contributory service.

D. All new members under contract for 181 or more days will make member contributions to ATRS.

E. New members under contract for 180 days or less:

1. Until June 30, 2007, all new members under contract for 180 days or less will have one (1) year from their hire date to make an irrevocable election to make member contributions.

2. Effective July 1, 2007, all new members under contract for 180 days or less may elect to become contributory members.

F. Change from nonteacher to teacher under contract for 181 days or more:

1. Effective July 1, 2005, any active member whose status later changes from nonteacher status to teacher status under contract for 181 days or more shall make the member contributions regardless of an earlier election to be noncontributory.

2. If the change of status from nonteacher to teacher occurs during a year in which service has already been reported as noncontributory, and the member is under contract for 181 days or more, the change to contributory will occur beginning with the next fiscal year.

G. New members not under contract:

1. Until June 30, 2007, new members who are not under contract will not make member contributions.

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2. Effective July 1, 2007, all new members who are not under contract may elect to become contributory members.

H. Contributory member election:

1. Until June 30, 2007, active members who have previously elected to be noncontributory may make an irrevocable election to become contributory members.

2. Effective July 1, 2007, any noncontributory member may elect to become a contributory member.

a. If the election is made before the preparation of the first salary payment to the member in the fiscal year, the election will become effective immediately. If the election is after the preparation of the first payroll containing the first salary payment to the member in the fiscal year, the election shall become effective July 1 of the next fiscal year.

b. Any member's election to become contributory is irrevocable. All service rendered after the election is filed with ATRS shall be contributory.

c. All active members, as of July 1, 1999, were required to make an irrevocable election to be contributory or noncontributory on or before June 30, 2000. An election to become contributory remains in effect for the remainder of the member's career. If no election was made by June 30, 2000, the member remained in the plan he/she was in as of that date.

I. Noncontributory inactive members or noncontributory rescinding retirees who reenter ATRS after June 30, 2007, may elect to become contributory members. If no election is made, the member will be enrolled in the plan that he/she was in prior to reentry.

J. Employees of state agencies:

1. Full-time employees of state agencies covered by ATRS shall be contributory.

2. Part-time employees of state agencies covered by ATRS shall be noncontributory. Effective July 1, 2007, part-time employees of state agencies covered by ATRS may elect to become contributory.

K. Inactive members who had been contributory on a maximum salary of \$7,800.00, return to work on or after July 1, 1995, and elect to become contributory will make contributions on their full salary.

L. If a member enters ATRS and is reported incorrectly by the employer for

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- the first year as a noncontributory member, ATRS will accept the member the first year as a noncontributory member. ATRS shall notify the employer of the member's contributory status. Effective the next July 1, the member shall make member contributions to ATRS.
- M. If an inactive member returns to covered employment as an active member after July 1, 1999, and is reported incorrectly by the employer as a noncontributory member for the first year, ATRS will accept the member the first year as a noncontributory member. ATRS shall notify the employer of the member's contributory status. Effective the next July 1, the member shall make member contributions to ATRS.

IV. Erroneous Membership Rules

- A. Employees erroneously enrolled in a state retirement system on or after January 1, 1979, may elect to remain a member of the system of record or may become a member of the eligible retirement system.
- B. After July 1, 1979, ATRS will make no further effort to correct the retirement system membership of persons who were erroneously enrolled in another state retirement system before January 1, 1979. ATRS will not accept as members persons who were erroneously enrolled in another state retirement system before January 1, 1979, unless that person's contributions were refunded prior to July 1, 1979.
- C. If an employee was erroneously enrolled in the ATRS before January 1, 1979, and if his/her contributions were not refunded prior to July 1, 1979, the employee shall continue to be a member of ATRS. The member shall receive service credit for all paid membership service in ATRS and any free service creditable under Act 427 of 1973 as amended. He shall also be entitled to reciprocal service credit as provided by § 24-7-401 through 408.
- D. If ATRS discovers that an employee became erroneously enrolled in a state retirement system on or after January 1, 1979, ATRS will notify both the employer and employee that the membership is erroneous and that it may be corrected as prescribed by Act 13 of 1991.
- E. If a person who is employed before July 1, 1989, as a school janitor, bus driver, or cafeteria worker is enrolled in the Arkansas Public Employees Retirement System under the provision of Act 63 of 1965, and later is promoted to a position of school maintenance worker or supervisor, bus mechanic or transportation supervisor, or cafeteria manager, respectively, the employee shall continue to be a member of the Arkansas Public Employees Retirement System as long as they are employed in one of these respective capacities.

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F. If ATRS discovers that an employee became erroneously enrolled in a state retirement system on and after January 1, 1979, ATRS will notify both the employer and employee that the membership is erroneous and that it should be corrected as prescribed by A.C.A. § 24-2-302 et seq.

V. Summary of Reciprocal Service

If a member leaves state employment and their position is covered by any of the retirement systems listed above and enters the employ of another state employer whose position is covered by any of these retirement systems, the member shall be entitled to a deferred annuity according to A.C.A. § 24-2-401 et seq.

A. Age and Service Retirement with Reciprocal Service Credit

1. If ATRS is the preceding system, the member's annuity begins the first day of the month following the month the application was filed or after attainment of age 60 years, whichever is later. However, should the member have combined service of at least 25 years, the age limitation shall not apply. The deferred annuity shall not begin prior to the date of leaving the employ of the last state employer unless the member reaches age 65.

2. If ATRS is the preceding system, the member is eligible to apply for benefits without leaving the employ of the last state employer upon reaching age 65. The member's annuity will begin the first day of the month following the month the application was filed or after attainment of age 65, whichever is later. Only service credited and salaries earned prior to the ATRS effective date of benefits will be used in the ATRS benefit calculation.

B. Disability Retirement with Reciprocal Service Credit

1. A member is eligible to apply for disability benefits under A.C.A. § 24-2-405 from each reciprocal system in which the member has credited service according to rules for eligibility promulgated by that system.

2. The member's annuity for disability retirement payable by the preceding reciprocal system shall begin the first day of the month following the month the application was filed with the preceding system, but not prior to the date of leaving the employ of the last state employer.

VI. Reciprocal Service Rules

A. A member who leaves a position covered by the Teacher Retirement System, becomes employed by a reciprocal system, and files a reciprocal service agreement becomes an inactive member and may become eligible

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- for the benefit formula in effect at the time of retirement.
- B.
1. Benefits will not be paid under reciprocity from ATRS as the preceding system until the member has ceased to be in the employ of a state employer unless the member reaches age 65.
 2. If ATRS is the preceding system, the member is eligible to apply for benefits without leaving the employ of the last state employer upon reaching age 65. The member's annuity will begin the first day of the month following the month the application was filed or after attainment of age 65, whichever is later. Only service credited and salaries earned prior to the ATRS effective date of benefits will be used in the ATRS benefit calculation.
- C. Benefits will not be paid to a member under reciprocity from ATRS as the preceding system earlier than age 60 unless the member has 25 or more years of combined service.
- D. No minimum benefits apply under Act 488 of 1965 [A.C.A. § 24-2-402(5)(E)], as amended, for reciprocal service unless the member has five (5) or more years of credited service in ATRS.
- E. If survivor benefits are payable by more than one reciprocal system to eligible survivors of a deceased member, the survivors shall not receive more, as a percentage of the deceased member's final pay or as a minimum dollar amount than the largest amount payable by a single reciprocal system. ATRS will prorate minimum benefits payable with other reciprocal systems that have a minimum benefit provision in their plans. Each reciprocal system shall pay a proportionate share of the minimum amount based on the ratio of service in that system to the total service in all reciprocal systems. If the reciprocal system is an alternate retirement plan, survivor benefits shall be contingent upon provisions of that benefit having been provided by the alternate retirement plan and having been selected by the member as a benefit. [A.C.A § 24-2-402 (5)]
- F. If an employee of the Department of Human Services who becomes a member of the Public Employees Retirement System under the provisions of Act 793 of 1977, as amended, leaves employment with the Department of Human Services and becomes employed in another position covered by ATRS, the benefits for service, both before and after any service under Act 793, shall be subject to the benefit provisions of the Teacher Retirement law. Such member shall be eligible to establish reciprocity under the provisions of Act 488 of 1965 as amended.
- G. If an ATRS member has service credited during the same fiscal year with

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another reciprocal system and the combined service is greater than one year of service credit, ATRS will credit service as follows:

1. If credit by the reciprocal system is less than three (3) months, ATRS will credit service for one (1.00) year.
2. If credit by the reciprocal system is three (3) or more months but less than six (6) months, ATRS will credit service for three-fourths (3/4) year.
3. If credit by the reciprocal system is six (6) or more months but less than nine (9) months, ATRS will credit service for one-half (1/2) year.
4. If credit by the reciprocal system is for nine (9) months but less twelve (12) months, ATRS will credit service for one-fourth (1/4) year.

H. While participating in a reciprocal system, back contributions, additional contributions, and repayment of refund payments made to ATRS shall be made according to payment methods contained in Rule 8 - Purchase Payment Rules, except employer pick-up is prohibited while working for a noncovered ATRS employer.¹

I. A member may elect to waive all or part of concurrent service credited to the member in ATRS and have the waived concurrent service credited under a reciprocal system by submitting their intention to ATRS on an ATRS approved form (A.C.A. § 24-7-601 (g)).

VII. Privatized Employers and Nonprofit Corporations Rules

A.C.A. § 24-2-202(17)(E)-(F) allows the employees of certain privatized employers performing services for public school districts and certain educational nonprofit corporations to become members of ATRS.

A. Effective July 1, 1997, under certain conditions, membership in ATRS shall include employment in an enterprise privatized by a public school district. If a public school district should privatize any of its services, any individual who is or was employed by the school district in one of those services and who is or has been a member of ATRS may elect to remain a member, provided the Board of Trustees determines by adopting rules and regulations that participation of these employees in ATRS will not in any way impair any legal status of ATRS, including, but not limited to, its status as a governmental plan, pursuant to the federal Internal Revenue Code and ERISA, or its tax-qualified status under the Internal Revenue Code; will not subject the plan to additional federal requirements and will not have a substantial adverse impact on the actuarial soundness of ATRS. In addition, the private provider must assume all responsibility for the required employer contributions and any fees for obtaining IRS rulings

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or ERISA opinions.

B. Effective July 1, 1997, under certain conditions, membership in ATRS shall include employment in positions with educational nonprofit corporations licensed and regulated by the *Division of Developmental Disabilities Services of the Department of Human Services*, provided the nonprofit corporation has elected to participate in ATRS, and the Board of Trustees determines by adopting rules and regulations that participation of these employees in ATRS will not in any way impair any legal status of ATRS, including, but not limited to, its status as a governmental plan, pursuant to the Internal Revenue Code and the Employee Retirement Income Security Act of 1974, or its tax-qualified status under the Internal Revenue Code; will not subject the plan to additional federal requirements; and will not have a substantial adverse impact on the actuarial soundness of ATRS. Such employment shall be related to the training of public school employees or school board members, teaching public school students, or in adult education programs. The employment shall not be related in any manner to private schools. Each educational nonprofit corporation shall be approved according to rules and regulations established by the Board of Trustees to be considered an employer, and such nonprofit corporation assumes all responsibility for the required employer contributions and any fees for obtaining IRS rulings or ERISA opinions.

C. Application for Membership.

Any organization that desires its employees to become members of ATRS shall make written application to the Executive Director of ATRS, specifying the proposed effective date for such participation.

D. Information Provided to ATRS.

Each application for membership shall contain the following information and materials:

1. A certified copy of the Articles of Incorporation, Bylaws, and other organizational documents of the organization;
2. A copy of the most recent three (3) years' annual financial statements, including balance sheet, financial statements, and statement of cash flows, or if such organization does not have audited financial statements, the year-end compilation reports or internal balance sheet and income statements for the organization;
3. A copy of the most recent three (3) years' federal and state income tax returns;
4. A description of the sources of funding of the organization, including the percentage of such funds provided by federal or state government

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and the type of such government funds;

5. A description of how the board of directors or board of trustees is selected, and whether any governmental agency has input in the selection of board members;

6. A description of the types of persons served by the organization, and which government agency or agencies would be responsible for providing such services if the organization did not do so.

E. Tax Ruling.

After counsel for ATRS has reviewed the above information provided to ATRS, such counsel shall determine whether a ruling should be requested from the Internal Revenue Service that the participation of the employees of the organization will not jeopardize the status of ATRS as a "governmental plan." If counsel determines that such a ruling should be requested, the organization shall provide any additional information and statements requested by counsel in connection with such ruling request.

F. Fees.

If counsel for ATRS determines that a ruling should be requested, the organization shall pay to ATRS not less than the sum of \$3,000.00 or the actual cost for the fees and costs associated with such ruling request.

VIII. Confidentiality of Member Accounts

A. In compliance with the ATRS Code of Ethics, ATRS shall keep all members' salary, employment history, retirement account, and other personal data or information compiled by ATRS for purposes of establishing and maintaining a member's retirement account confidential. Such information shall not be disclosed to any third party without the express written consent of the member or other valid legal process.

B. Individual member's records which are kept for the purpose of compiling information for the member's retirement or social security records shall not be open to the public under A.C.A. § 24-4-1003.

IX. College Plan Rules

A. Generally, an ATRS member who became employed by a non-mandatory employer prior to July 1, 2011, may continue to participate in ATRS instead of an alternative program offered by the non-mandatory employer if the ATRS member continues providing consistent service to the non-mandatory employer. For new employees after July 1, 2011, participation is governed by A.C.A. § 24-7-1601 et seq.

B. A post-secondary or higher education employer may elect to offer ATRS

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participation to its employees by fulfilling the requirements under A.C.A. § 24-7-1605.

- C. If an eligible non-mandatory employer college elects to offer ATRS participation to its employees, then the employer must regularly report information to ATRS on forms developed by ATRS as allowed by ATRS law. In addition to standard ATRS reporting forms, a post-secondary or higher education employer shall provide supplemental reports on any form approved and adopted by the ATRS Board as a required form.

1 From July 1, 1991, until December 31, 1991, an active member of the Arkansas Public Employees Retirement System who was an active member of ATRS prior to January 1, 1978, and who became a member of the Arkansas Public Employees Retirement System within thirty (30) days of departure from ATRS may establish reciprocity between the two systems and purchase out-of-state service rendered prior to January 1, 1978, in accordance with the provisions and conditions contained in A.C.A § 24-7-601 and § 24-7-603. Effective July 1, 1993, for a ninety (90) day period, employees of the Arkansas Rehabilitation Services may transfer from the Arkansas Public Employees Retirement System to ATRS under Act 574 of 1993. Any employee making the change will establish reciprocity between the two systems, and Act 793 of 1977 shall no longer apply.

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Contributory/Non-Contributory Service Chart by Year of Entry into System (Elections and Re-entry may affect Individual Member Service Status)

All Members		
1937 - 1986	All Members	Contributory
1986-1991	All Members	Contributory unless elect Non-Contributory
1991-1999	All Members	Non-contributory unless elect Contributory
School District Employees		
1999-2007	Active	One time election to be Contributory or Non-Contributory, no election made by 6/30/2000, status on 6/30/2000
	Inactive	One time election to be Contributory or Non-Contributory upon reentering system, no election then status
	New	Contract 181 days or more - Contributory
		Contract 180 days or less - Non-Contributory, may elect Contributory, election must be made one year from hire date
	No contract, member must be non-contributory	
2005 -	Non-teacher to Teacher or Administrator	Contract 181 days or more - Contributory. If position change happens during the year, election is effective first of next fiscal year
		All Non-Contributory members may elect to be Contributory
2007 -	All Members	May elect Contributory
	New	Contract 181 days or more - Contributory
		Contract 180 days or less - Non-Contributory, may elect Contributory
		No contract - Non-Contributory, may elect Contributory
Inactive	May elect Contributory	
State Agency Employees		
1999 - 2007	Full-Time Employment	Must be Contributory
	Part-Time Employment	Must be Non-Contributory
2007 -	Full-Time Employment	Must be Contributory
	Part-Time Employment	Non-Contributory, may elect to be Contributory

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Once you are a contributory member of ATRS, your contributory status is irrevocable.

If election to be contributory is made before the preparation of the first salary payment to the member in the fiscal year, the election will become effective immediately. If the election is after the preparation of the first payroll containing the first salary payment to the member in the fiscal year, the election shall become effective July 1 of the next fiscal year.

If a member enters ATRS and is reported incorrectly by an employer for the first year, ATRS will accept the election reported by the employer the first year. ATRS shall notify the employer of the member's correct status. Effective the next July 1, the member shall be reported with the correct status.

Inactive members who had been contributory on a maximum salary of \$7,800.00, return to work on or after July 1, 1995, and elect to become contributory will make contributions on their full salary.

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ATRS Rule 7

REPORTING AND ELIGIBILITY

A.C.A. §§ 24-7-103, 24-7-202, 24-7-401, 24-7-406, 24-7-411,
24-7-601 — 24-7-611, 24-7-705, 24-7-708, 24-7-736, 24-7-1303, 24-2-701

I. Calculation of Final Average Salary

A. Definitions

1. "~~Participating~~ 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.
2. "Full service year" means employment by a covered employer for one hundred sixty (160) days or more in a fiscal year.
- ~~23. "Partial Year service year" means service in a fiscal year that constitutes less than a full service year of credited service in a fiscal year due to less than the required service days at an ATRS employer due to a reduction in service credit caused by an adjustment in ATRS service credit because reciprocal service credit occurs in the same fiscal year, due to a member retiring prior to the end of a fiscal year, or due to any other law or policy that provides a member less than a full year of service in a fiscal year.~~

B. Rules Salary Limitations

1. ~~For purposes of calculating a member's~~ To calculate final average salary, ATRS will include salary received during a fiscal year from all participating ATRS employers during a fiscal year.
2. ~~For purposes of determining if a salary year constitutes a full service year, the following shall be excluded from the limits under A.C.A. § 24-7-736:~~
 - ~~a. Any salary year which constitutes member service during two (2) or fewer quarters in a fiscal year; or~~
 - ~~b. Any salary year that constitutes less than one (1) year of service credit under the schedule set forth in ATRS Rule 7.II. Proof of Service Credit. Partial service years are excluded from the calculation of final average salary unless the partial service year is higher than a full service year, or if the member has less than the required numbers of years to calculate a final average salary.~~
3. Regardless of any provision in a State statute, rule, or regulation to the

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contrary, salary or other compensation paid which exceeds the limitations set forth in Section 401(a)(17) of the Internal Revenue Code shall be disregarded. The limitation on compensation for "eligible employees" shall not be less than the amount allowed under ATRS in effect on July 1, 1993. For this purpose, an "eligible employee" is an individual who was a member of ATRS before the first plan year beginning after December 31, 1995.

4. Certain remuneration paid by an ATRS employer to ATRS members shall not be treated as salary in the calculation of ATRS benefits although it would otherwise meet the definition of salary ~~prior to the adoption of this Rule by the ATRS Board.~~

a. Paid or unpaid accrued, unused sick leave shall not be credited as service unless the member dies while an active member, in which case it shall be credited as service in the fiscal year of the member's death.

~~a.b.~~ Any remuneration or salary paid as an incentive payment, bonus, separation payment, additional salary or a special payment made in return for or in consideration of an ATRS member's agreement to separate from the ATRS employer, retire, or not renew the member's contract with the ATRS employer shall not be treated as salary by ATRS.

i. This salary limitation applies if:

1. ~~The offering by the The ATRS employer~~ employer's offer applies to two (2) or more ATRS members;
2. ~~The offering is proposed as an~~ The ATRS employer offers a voluntary early retirement incentive plan, staff reduction plan, or buyout plan ~~that is offered to ATRS members to either directly retire or separate employment from the ATRS employer as a condition of participating in the plan;~~
3. ~~The offering is made in return for the voluntary decision of the ATRS member to participate~~ voluntarily participates in the program in return for the additional remuneration or salary.

ii. This salary limitation does not apply if:

1. ~~It is an offering to one (1) ATRS member by the ATRS employer;~~ It is payment to purchase service credit or additional salary as a part of a separation agreement and as a result of the resolution of a claim of wrongful termination, and the member continues to work on-site for the employer; or
2. ~~It is part of a standing offer to all ATRS members at the time~~

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~~of retirement for the payment of annual time, sick time, or related retirement payment; It is payment made for accumulated, unused sick leave in excess of the number of sick days that a member's employer allows them to carry forward, and that are accrued during years immediately prior to termination of covered employment.~~

~~3. It is a payment or bonus made to all members or specific categories of members that is not dependent or conditioned upon the member's separation from or retirement from the employer;~~

~~4. It is a payment made in the settlement of litigation or paid to avoid threat of litigation.~~

~~bc.~~ ATRS employers shall not withhold member contributions or pay employer contributions from the remuneration paid that is subject to the salary limitation established by this Rule.

~~ed.~~ Any ATRS employer ~~offering of~~ who offers an early retirement plan, separation plan, or contract non-renewal plan, that ~~would result in remuneration being paid by the employer~~ pays remuneration that would be limited from treatment of salary by this Rule subject to the salary limitation shall notify ATRS of the plan prior to ~~payment of any remuneration that is subject to this salary limitation~~ any payment under such plan.

~~de.~~ Upon At the request of an ATRS employer, ~~the~~ ATRS staff shall review any potential plan or payment that could be subject to this salary limitation ~~in order to~~ and provide guidance as to whether the salary limitation would apply ~~to the remuneration paid by the proposed plan or payment.~~

~~ef.~~ Any decision by ATRS staff on a particular plan or payment may be appealed to the ATRS Board using the ATRS appeal procedure as set forth in Rule 13.

5. If a conflict exists ~~between the statute or policy governing the treatment of a member's salary between~~ ATRS's calculation of final average salary and the participating ATRS employer's laws or policies relating to the compensation of final average salary and the calculating of a member's final average salary for benefits, ATRS's laws and rules shall control.

6. Effective July 1, 2018, ~~when calculating a member's final average salary,~~ ATRS shall calculate final average salary using the five (5) years in which the member received the highest salary from a participating ATRS employer subject to the foregoing limitations.;

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- a. For active members as of July 1, 2018 who have three (3) or more full service years, ATRS shall determine the benchmark final average salary using the highest salary from a member's three (3) separate full service years through fiscal year 2018, as if the member were retiring or entering T-DROP as of June 30, 2018.
- b. If, at the time of actual retirement, a five (5) year calculation of the final average salary of a member who qualifies for the three (3) year calculation is higher, the five (5) year calculation will be used.
- c. The three (3) year final average salary calculation above is a permanent benchmark for comparison to a five (5) year average salary calculation.
7. ~~A one-time benchmark final average salary will be computed on service attained as of June 30, 2018. The benchmark final average salary is not provided to inactive ATRS members unless proof is provided to ATRS indicating the member was active in a reciprocal or alternative system in fiscal year 2018. The benchmark final average salary will be calculated using the three (3) years in which the member received the highest salary from a participating employer. This benchmark final average salary will be used at the time of retirement if it is higher than the five (5) year final average salary calculated above.~~
8. The final average salary used for members with reciprocal service shall be the highest salary years credited by either the ATRS ~~participating~~ employer or the reciprocal system under A.C.A. § 24-2-402.
9. For members who are retiring and who are employed in agencies or other institutions that use the state 26-week payroll, employers should report to ATRS the salary, contributions, and actual days worked through the current year payroll period. Contributions should not be withheld on any salary earned after the close of the current year's payroll, nor should any salary or days of service be reported for that period.
10. For members who are retiring and who are employed by employers using a fiscal year ending June 30, employers should report to ATRS the salary contributions, and actual days worked through the current fiscal years ending June 30. Contributions should not be withheld on any salary earned after the end of the current fiscal year, nor should any salary or days of service be reported for that period.
11. For retiring members, employee contributions remitted on salary paid after the end of the current fiscal year or current year payroll period, whichever applied, will be refunded as promptly as possible.

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II. Proof of Service Credit

- A. The Board shall determine the number of years and fractions thereof for paid service credited to members of ATRS. No fewer than one hundred sixty (160) days of employee service in a fiscal year (ending June 30) shall be credited as a full ~~year of service~~ year.
- B. Members employed less than ~~one-fourth (1/4) of~~ forty (40) days during a fiscal year are not eligible for credit or benefits in ATRS for that fiscal year; ~~provided however, a contributory member's service days beginning in the 2011-2012 fiscal year, a contributory member's service days~~ are carried forward from previous fiscal years until at least ~~one-quarter year~~ forty (40) days of service is obtained are earned by the member. ~~If~~ When a contributory member obtains at least ~~a quarter year~~ forty (40) days of service in a fiscal year, whether using regular service days or accumulated service days, or both, the member begins the next fiscal year with no days of service carried forward.
- C. ~~FOR MEMBERS WITH SERVICE AFTER JULY 1, 1971~~

- ~~4. Actual~~ For members with service after July 1, 1971, actual service credited to a member's account shall be determined in accordance with the following table:

Number of Days Worked in a Fiscal Year	Service Credit Earned
1 -39	None
40-79	0.25 year
80-119	0.50 year
120-159	0.75 year
160 days or over	1.00 year

- ~~2.D. All contracts~~ ATRS shall utilize the days specified in a contract between an ATRS employer and member that specify the number of days worked by the member shall be used by ATRS to establish the number of days of service worked.

- E. If a member is employed in a position that for which a regular and typical work day includes eight (8) hours or more of work time (full-day position), then at least four (4) hours of work in a day shall be required for a "day" of service. For "full-day" members

- F. A member who is not employed in specialized support positions and who ~~de~~ does not work four (4) hours or more a day, will earn service

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credit by dividing by four (4) the total number of hours worked in a fiscal quarter divided by four (4) will determine the number of days to arrive at the number of days to be credited.

- G. ATRS employers have specialized support positions that include bus drivers, custodial workers, cafeteria workers, and similar positions ~~for which a typical day of service by the member will be~~ that may require less than eight (8) hours of work a day. Effective for the 2011-2012 fiscal year Beginning July 1, 2011, a member employed, without a contract specifying the number of days of service to be worked, in a specialized support position that has been certified to ATRS as a specialized support position shall receive a full day of service credit, even if the member works less than four (4) hours in a service day, if the ATRS employer reasonably determines that the member performed the regular and usual service expected of a member in that position during the service day.
- H. A specialized support employee who is employed without a contract specifying the numbers of days of serviced shall be credited a full service day for each day worked, regardless whether the member works fewer than four (4) hours during the day.
- ~~3.~~ For purposes of days counted toward service credit, absences shall be counted as service if for paid leave including sick leave. However, for administrative leave, the member must be on call by the employer for the service to be counted.
- ~~4.~~ ATRS shall not give service credit to a member until all required contributions and interest, if any, are remitted to ATRS.
- ~~5.~~ The participating ATRS employers shall certify proof of service on such forms and with any documentation required by ATRS.
- ~~6.~~ J. If a member is retiring with an effective date other than October 1, January 1, April 1, or July 1, service credited for the year in which a member retires shall not exceed one-fourth (1/4) year for each full calendar quarter worked during the fiscal year has accrued a full service year credit for a fiscal year and then retires, the member's annuity shall no begin earlier than on the July 1 of the following fiscal year.
- ~~7.~~ K. In any case of question as to service credit of a member, the The Board of Trustees has the final authority to decide the amount of service creditable to a member for any particular circumstance.

III. Employee (Member) Contributions

- ~~A.~~ After June 30, 1997, each Each employer will remit the member

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- contributions by employer "pick up" from the salary earned by contributory members, and those member contributions will then be treated as are treated as employer contributions in determining tax treatment under the provision applicable provisions of the federal Internal Revenue Code and the Arkansas Income Tax Act. The employer may pay these contributions by a reduction in the cash salary of the member, or by a setoff against future salary increases, or by a combination of ~~a reduction in salary and a setoff against future salary increases~~ both.
- B. ~~Member~~ The rate of member contributions shall be is set by the Board by resolution.
- C. Overpayments or underpayments of member contributions in an amount determined by the Board to be "de minimus" shall be pursuant to the following:
1. ~~If ATRS shall not collect an~~ underpayment of member contributions ~~of~~ for an amount less than \$25 twenty-five dollars (\$25.00) occurs, ATRS shall not collect the difference of this underpayment and no adjustment to or adjust member service credit ~~will be made~~ for such amount.
 2. ~~If ATRS will refund~~ an overpayment of member contributions of less than \$25 twenty-five dollars (\$25.00) occurs, a refund will not be issued unless requested by if the member requests.
 3. ~~Should~~ If an underpayment of member contributions ~~occur~~ occurs as a result of a member's changing because the member changed status from noncontributory to contributory, the member must remit to ATRS the contributions due based on gross salary earned retroactive to the beginning of that fiscal year. Service ~~credit~~ will not be credited until the total amounts due are underpayment is fully paid in full to ATRS.
 4. ~~Should~~ If an overpayment of member contributions ~~occur~~ occurs as a result of erroneous reporting, ATRS will refund the overpayment of member contributions to the employer, subject to the de minimus amount.
- D. If ATRS is owed member contributions ~~and~~ with accrued interest ~~by a member,~~ the interest ~~owed by the member~~ may be waived by the Board or its designee under ATRS Rules.

IV. Employer Contribution Rate

- A. The Board shall annually set the employer contribution rate ~~shall be the rate established by the Board of Trustees of the Arkansas Teacher Retirement System prospectively for each~~ the following fiscal year.
- B. ATRS shall annually notify participating ATRS employers of the employer contribution rate established set by the Board ~~for the upcoming fiscal year~~.

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~~C. Participating employers shall pay ATRS employer contributions for eligible employees in accordance with these rules.~~

V. Employee and Employer Remittances and Reports

- A. Remittances of employee and employer contributions are due monthly.
- B. Employer reports required by ATRS are due on a monthly and quarterly basis.
- C. ~~The employer reports required by ATRS~~ must remit reports and required supporting documentation to ATRS electronically ~~be on ATRS-approved forms or electronic media either furnished by ATRS or approved by ATRS,~~ and shall be accompanied by supporting documentation as determined by ATRS.
- D. An employer report or remittance ~~by an employer~~ shall not be delinquent if received by ATRS on the 15th day of the month in which it is due or postmarked by the 14th day of the month. If the 14th falls on Saturday, Sunday, or a holiday, the postmarked date is extended to the next business day.
- E. A ~~\$150~~ one-hundred and fifty dollar (\$150) late report penalty will be assessed on any required employer report not received by its due date.
- F. If an employer fails to remit employee or employer contributions by the date due above, an interest penalty of ~~8%~~ eight percent (8%) shall be assessed with daily interest accrual until paid.
- G. The Board or its designee may, ~~but is not required,~~ to waive penalties and interest due from an employer if in its discretion it finds:
1. The delinquency was not the result of the employer's nondisclosure, fraud, or other misrepresentation; and
 2. Based on the facts and circumstances, the required payment of the penalties and/or interest would be unduly penal, burdensome, or manifestly unjust.
- H. The Board designates the Executive Director to waive penalties and interest from an employer in an amount not to exceed ~~\$1,000~~ one thousand dollars (\$1000) per fiscal year. The Executive Director shall report to the Board any amounts ~~excused~~ waived under this section. Any request to waive employer penalties and interest exceeding ~~\$1,000~~ one thousand dollars (\$1000) per fiscal year shall be submitted to the ATRS Board for consideration.
- ~~I. Annual billings for underpayments of employee or employer contributions that result in a balance of \$25 or less may be written off by ATRS.~~

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VI. Reporting Employer Contributions

- A. The employer contributions to be paid each fiscal year by ~~participating~~ ATRS employers shall be the current employer contribution rate multiplied by the employees' total salaries.
- B. The Department of Education shall pay from the Public School Fund, in accordance with rules established by the Board, the ATRS employer contributions due for eligible employees of certain State agencies as allowed under the Transformation and Efficiencies Act of 2019, and for eligible employees of Cooperative Education Services Areas, Vocational Centers, Arkansas Easter Seals, and the school operated by the Department of Correction. ATRS shall certify to the Department of Education at the close of each quarterly report the amount of employer contributions due. The amount will be based on the employers' reported salaries.
- C. ATRS may certify to the state's Chief Fiscal Officer the names of ~~participating~~ ATRS employers who are delinquent in reporting and remitting contributions under this rule. Upon notification, the Chief Fiscal Officer may direct a transfer of funds on deposit in the State Treasurer's Office for any delinquent employer payments plus the eight percent (8%) interest penalty to ATRS. (A.C.A. § 19-5-106)
- D. Supplemental salary payment reports for previous years will be accompanied by the employer contributions due.
- E. The Arkansas Teacher Retirement System shall return to ~~participating~~ ATRS employers overpaid contribution amounts due to erroneous submission of payments or incorrect reporting of Salary Option 2 (first \$7,800) member salaries. If an overpayment of a contribution amount is less than \$25, the refund will not be issued to the employer unless requested in writing by the employer.
- F. The Arkansas Teacher Retirement System shall not collect from ~~participating~~ ATRS employers an underpayment of employer contribution amount if less than \$25.
- G. For members retiring and who are employed by agencies or other institutions that use the state's 26-week payroll schedule, employers should adhere to and report the salary, contributions, and actual days worked through the state's fiscal year payroll schedule and for the termination date of employment. Contributions should not be withheld on any salary earned after the close of the current year's payroll, nor should any salary or days of service be reported for that period of time.
- H. A public school employer shall pay any additional employer contributions above fourteen percent (14%) from funds appropriated by the State for the

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purpose of paying ATRS employer contributions.

ATRS Rule 8

PURCHASES AND REFUNDS

A.C.A §§ 24-7-406, 24-7-601, 24-7-602, 24-7-607, 24-7-711, 24-7-719, 24-7-735,
24-1-107

I. Definitions

- A. "Back Contributions" means mandatory contributions payable for service and salary rendered in a covered position within the ATRS look-back period.
- B. "Private School Service" as defined in A.C.A. § 24-7-607, additionally, employment under the Head Start Programs will also be considered private school service and will have the same requirements for the issuance of teaching licenses by the Arkansas State Department of Education as determined by ATRS staff.

II. Purchase of Service Credit/Repayment of Refunds - General

- A. ~~The Arkansas Code § 24-7-601 et seq. allows a member to purchase various types of service and credit that service to the member under certain circumstances sets forth the service purchases available and the cost mechanism to be used in service purchases. The various types of service that can be purchased and the definitions for these are in the Arkansas Code. Unless greater explanation is required, the code's provisions are self-effecting without the need to be placed in the policy.~~
- B. Actuarial cost for purchase of service does not include adjustments to salary and service that are made in order to properly reflect the member's mandatory salary and service records. In addition, the actuarial cost of service does not apply to free military service credit that is established with ATRS.
- C. The actuarial cost for purchase of service shall use the member's highest salary year as the formula's "base year." The base year shall always be the member's highest salary year unless the highest salary year is more than 150% greater than the next highest salary year; In in that case event, the best two (2) salary years shall be added together and divided by two (2) to establish the base year for the formula.
- D. If a member does not have sufficient full service years to establish the base year for the purchase formula, then each partial year's service percentage shall be divided into each partial year's salary to establish a full year salary from the partial year salary to determine the base year for the formula.

- E. Salaries for actuarially purchased service shall not be used in the calculation of final average salary except for repaid refunds for mandatorily reported service within the refunded service.
- F. All actuarially purchased service shall be purchased as contributory.
- G. Members seeking to purchase service with ATRS shall use forms developed by ATRS staff to establish the service.
- ~~H. All service purchases must be accompanied by a service purchase commitment statement. Once the service purchase stated on the service purchase commitment statement is paid in full, the service purchase is final and may not be cancelled by the member.~~
- I. If an active member with an active purchase account dies, the member's spouse, ATRS beneficiary, or legal representative shall have up to six (6) months to pay the balance of the purchase account. If the purchase account is not paid in full within six (6) months of the date of death, the purchase account is cancelled and any payments shall be treated as part of the member's residual account balance. ATRS may extend the six (6) month period for good cause shown.

III. Special Provisions for the Repayment of Refunded Member Contributions

- A. To be eligible to repay a refund, a person must be an active member of ATRS. ~~A person who has received a refund may reestablish active membership~~ by completing forty (40) days or more after reemployment by an ATRS covered employer.
- B. A member must purchase the total credited service forfeited by the refund in order to purchase the refunded service.
- C. If a member has received more than one refund, repayment must be made in inverse order. The most recent refund account must be paid in full before a previous refund account can be purchased.

IV. Refunds of Member Contributions

- A. ~~Should an overpayment of contributions of less than \$25.00 be reported from the local level, no ATRS will not refund of an overpayment of a member's or employer's contribution that is equal or less than the de minimus this amount remitted to ATRS will be made to the member, except upon the written request from the member. The total amount reported by the employing authority shall be credited to contributions. The board shall periodically set the de minimus amount by board resolution, which shall remain until adjusted by the board.~~
- B. On refunded contributions, the rate of interest compounded annually after

the first year of contributions is credited as follows:

Service	Interest Rate
Before July 1, 1984	3%
For July 1, 1984 through June 30, 2009	6%
For July 1, 2010, through June 30, 2011	2%
For July 1, 2012, through June 30, 2017	1%
For July 1, 2017 and after	0.08%

- C. Payable interest shall be computed on each member's individual account on June 30 each year by multiplying the balance in the member's individual account as of July 1 (including all contributions and interest credit from previous years) plus one-half (1/2) of the contributions for the year ending on June 30 by the annual applicable interest percentage rate.
- D. The Board may by board resolution change the interest rate on refunded contributions for future years by ~~Resolution~~ stating the new interest rate, the date that the new interest rate will become effective, and any other features of the interest rate's implementation.
- E. Regular interest is not paid on contributions made in the year in which a refund is paid.
- F. ~~As of July 1, 2012, ATRS no longer requires a hardship in order to pay a refund in no more than two payments on a direct payment to the member. Upon receipt of a properly completed refund application, ATRS will issue a refund for all any member contributions that have been closed on the books of ATRS upon receipt of a properly completed refund application. Any amount due in If a second payment is required to complete the refund, the payment will be made when all quarters of service the member worked are closed on the books of ATRS. Rollovers will be made in one payment when all quarters of service worked have been closed on the books of ATRS.~~
- G. The effective date of a refund is the date that ATRS first issues payment of a refund.

V. Rollover Acceptance and Distribution

A. Accepting Rollovers for Payment on ATRS Purchase Accounts

ATRS will accept participant rollover contributions and/or direct rollovers for the purchase of service credit from—qualified retirement plans as set forth in the Arkansas Code.

B. Rollover Eligibility of ATRS Distributions

The depository trustee from the qualified retirement plan shall certify to ~~the System~~ ATRS that the rollover deposit account is "qualified" and eligible to receive rollover distributions prior to a distribution ~~being rolled over~~ of a member's account monies. If the depository trustee cannot certify the eligibility status, ATRS will accept a certification from a currently licensed certified public accountant who has an active certified public accountant's license. The certification may not be made by a certified public accountant if the certified public accountant has an interest in the account as a member, spouse, or designated beneficiary.

VI. Purchase Payment Rules

- A. ~~Prior to July 1, 2011, any service purchase commitment statement provided by a member to ATRS constitutes an agreement between ATRS and the member for ATRS to allow the member to complete the service purchase stated on the commitment form unless withdrawn or cancelled by the member. A purchase account established prior to July 1, 2011 must have an approved Purchase Account Commitment Statement on file with ATRS that details the member's payment plan. The Purchase Account Commitment Statement may be modified by agreement of ATRS and the member. Failure of a A member who fails to complete the terms of the service purchase agreement authorizes ATRS to cancel the agreement. However, a service purchase commitment may be modified in terms of Modifications of the Purchase Account Commitment Statement may include types of payment, duration, and the a decrease of the service being purchased, consistent with ATRS law and policy. , except the The service being purchased under a Purchase Account Commitment Statement cannot be increased and any decrease must otherwise be in compliance with ATRS law and policy.~~
- B. An agreement to complete payment of purchase account shall exist upon ~~acceptance~~ tender of the initial payment to ATRS.

VII. Cancellation of Purchase Service Accounts

- A. An established purchase account may be cancelled if the request is submitted in writing by the member and approved by ATRS. The amount of payments to date will be returned to the member without interest unless the payment of interest is statutorily mandated. ~~Purchase account payments through employer pick-up cannot be cancelled until (a) the number of payments on IPA is completed, (b) the member terminates employment, or (c) the member retires.~~
- B. The cancelled purchase account may be refunded under certain conditions:
1. Accounts paid only with after-tax contributions can be returned to the

member.

2. Accounts paid only with employer pick-up contributions cannot be returned to the member unless the member terminates employment or retires.
3. Accounts paid only with rollover/transfer contributions, after deduction and payment of federal taxes, may be rolled to another qualified plan or refunded to the member ~~minus federal taxes~~.
4. ~~Accounts paid with a combination of after-tax and rollover/transfer may be refunded.~~

C. Purchase account payments made through employer pick-up (Irrevocable Payroll Authorization) cannot be canceled until:

1. The number of payments on the Irrevocable Payroll Authorization is completed; or
2. The member terminates employment; or
3. The member retires.

D. A purchase account that has been paid in full upon the tender of a final payment cannot be canceled.

VIII. Free Military Service

A member of ATRS who entered the Armed Forces of the United States between July 1, 1937, and June 30, 1973, or during a period that a federal military draft is in effect, may establish that military active duty service as service in ATRS without cost, provided the following conditions are met:

- A. ~~Service~~ Established active duty service must be based upon the service required for the initial enlistment. Reenlistment or voluntary extension of the initial enlistment is not considered compulsory and shall not be allowed as service credit.
- B. Military service credit shall not exceed five (5) years, and the years to be credited shall be those chronologically closest to the ~~teaching~~ ATRS-covered employer service.
- C. ~~Crediting of ATRS will credit~~ military service ~~will require~~ upon the completion of Form M-1, provided by ATRS, and official military documents listing the entry and discharge dates of the first enlistment or induction.
- D. The member must have received an honorable discharge.
- E. All military service credited prior to July 1, 1986, is contributory service.
- F. Military service credit may be established at any time after becoming a

member of ATRS but official crediting shall be effective upon completion of five (5) years of actual service ATRS, excluding military service credit.

IX. Purchase of Federal Retirement Service

- A. An active member shall be eligible to purchase federal retirement service credit under the following conditions:
 - 1. Federal retirement service eligible for credit purchase is limited to service for which no benefit is payable from the federal retirement system in which he or she had previously been a member.
 - 2. Federal retirement service credit purchased shall be limited to ten (10) years.
- B. The cost to purchase federal retirement service credit is actuarial cost determined by ATRS.
- C. The federal retirement service will become credited service in ATRS when:
 - 1. The member payments have been paid in full; and
 - 2. The member has established five (5) or more years of actual service exclusive of federal retirement service.
- D. Should a member cease to be an active member before the federal retirement service has been established as ATRS credited service, the member payments contributed, together with regular interest shall be refundable, ~~together with regular interest; however, due to IRS regulations, purchase~~ Purchase account payments made through employer pick-up are subject to the restrictions as stated in this rule and applicable IRC code or regulations.
- E. To be eligible to establish one (1) year of federal retirement service credit, a minimum of one hundred sixty (160) days must have been worked by the member. Fractional years of federal service may be purchased in accordance with A.C.A. §§ 24-7-601 and 24-1-107. A month of federal service shall be considered as twenty (20) days.
- F. Certification of federal retirement service must be submitted to ATRS on a form provided by ATRS.
- G. All federal retirement service credit shall be counted as contributory service.
- H. Purchased federal retirement ~~credited~~ service shall be credited to the fiscal year in which it was rendered.
- ~~I. ATRS will accept participant rollover contributions and/or direct rollovers of distributions for the purchase of service credit under certain~~

~~circumstances under this rule.~~

X. ~~Service Credit Accrual~~ Contract Buyouts, Settlements, and Court Ordered Payments

- A. ~~For contract buyouts and settlements or court ordered payments to a member, service credit is only allowed to accrue for actual on-site work for the covered employer by the member.~~ A member may only accrue service credit for actual, on-site work for a covered employer for any period of time represented in a contract buyout, settlement, or court ordered payment. However, if the member is not subject to either a contract buyout, settlement, or court ordered payment, salary paid to the member as a regular employee, ~~as if the member were providing services,~~ shall be credited for salary and service purposes to the member if the member is on call to the employer; ~~however, such on-~~ On call credit may not be stacked with salary at another ATRS employer.
- B. ~~In order to accrue service credit during a period of time that is redressed in a contract buyout or other court-ordered payment of salary, or salary and benefits, the member shall perform on-site work for the covered employer.~~ ATRS shall not adjust a benefit or benefit calculation for a member until the covered employer or benefit participant provides a copy of the court order or settlement, or a certified copy of the contract buyout, to ATRS.

XI. ~~Adjustment of Benefit~~

~~ATRS shall not adjust a benefit or benefit calculation for a member until the covered employer or benefit participant provides a certified copy of the court-order payment or settlement to ATRS, or if a contract buyout, a certified copy of the contract buyout.~~

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 ATRS (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 ATRS (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

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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.

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% 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

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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.

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 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 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:

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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, that ATRS will pay the monthly benefits.

G. APERS will certify monthly to ATRS the amount of monthly benefits paid and ATRS will transfer that amount 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 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.

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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

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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 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, such as employment as a independent contractor, or for a corporation, or partnership. See A.C.A. § 24-7-704.*
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 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*

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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 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).
 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 for further disability annuities due to a 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.

J. If a member applies for disability retirement and is disapproved, he/she has the right to file a new disability application submitting additional information for review as long as the member remains active.

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, service, or disability may elect an option to receive an annuity payable as provided in one of the following (Disability retirement option rights are modified as set forth in policy 9-4):

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,

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- 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

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- A. A copy 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.

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The following table shows examples of the "windows" for filing a retirement application:

<u>EXAMPLE OF RETIREMENT FILING DATES</u>			
<u>Effective Date of Retirement</u>	<u>Retirement Application Must be Filed In:</u>	<u>Last Date of Employment</u>	<u>First Retirement Check</u>
<u>January 1</u>	<u>September, October or November</u>	<u>December 31</u>	<u>End of January</u>
<u>February 1</u>	<u>October, November or December</u>	<u>January 31</u>	<u>End of February</u>
<u>March 1</u>	<u>November, December or January</u>	<u>Feb 28/29 (Leap year)</u>	<u>End of March</u>
<u>April 1</u>	<u>December, January or February</u>	<u>March 31</u>	<u>End of April</u>
<u>May 1</u>	<u>January, February or March</u>	<u>April 30</u>	<u>End of May</u>
<u>June 1</u>	<u>February, March or April</u>	<u>May 31</u>	<u>End of June</u>
<u>July 1</u>	<u>March, April or May</u>	<u>June 30</u>	<u>End of July</u>
<u>August 1</u>	<u>April, May or June</u>	<u>July 31</u>	<u>End of August</u>
<u>September 1</u>	<u>May, June or July</u>	<u>August 31</u>	<u>End of September</u>
<u>October 1</u>	<u>June, July or August</u>	<u>September 30</u>	<u>End of October</u>
<u>November 1</u>	<u>July, August or September</u>	<u>October 31</u>	<u>End of November</u>
<u>December 1</u>	<u>August, September or October</u>	<u>November 30</u>	<u>End of December</u>

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The following table is the only "window" for filing a T-DROP application:

<u>Effective Date of Retirement</u>	<u>Retirement Application Must be Filed In:</u>
<u>July 1</u>	<u>March, April or May</u>

ATRS Rule 11
SURVIVORS AND DOMESTIC RELATIONS
ORDERS

A.C.A. §§ 24-7-710, 24-7-713, 24-7-720, 24-7-734, 9-18-101 — 9-18-103

I. Definitions

- A. "Alternate payee" means a spouse, former spouse, child, or other dependent of a member under Arkansas law.
- B. "Lump-sum death beneficiary" means the person(s) or entity(s) designated in writing by the member to receive payment of the lump-sum death benefit under A.C.A. § 24-7-720.
- C. "Lump-sum death benefit" means a monetary amount set by the Board, and paid by ATRS to lump-sum beneficiaries as provided for under A.C.A. § 24-7-720.
- D. "QDRO" means a court order that meets the definition of a "Qualified Domestic Relations Order" under A.C.A. § 9-18-101.

II. Survivors General

- A. Benefits may be provided to dependents of qualifying members after the death of the member. To qualify, a member must have five (5) years of actual service and be an active member at the time of death.
- B. ATRS considers a member to be active for the purpose of qualifying for survivor benefits under A.C.A. § 24-7-710 if:
 - 1. The member has at least ten (10) days of service credit in each prior quarter of the fiscal year from the time the fiscal year began or the member was employed by an ATRS employer, whichever occurs last, provided however, the member must have at least one quarter with ten (10) days of service; or
 - 2. The member has at least ten (10) days of service in the quarter of the member's death, or, ten (10) working days have not elapsed in the quarter of the member's death.

III. Spousal Benefits or Alternative Residual Beneficiaries

- A. Unless the member directs an alternative residual beneficiary or beneficiaries by written form approved by ATRS, the benefits provided for in A.C.A. § 24-7-710, shall be paid to the spouse of the qualifying member if the spouse survives the member and was married to the member for at least two (2) years immediately prior to the member's death.

B. Waiver of Spousal Annuity

1. If at the time of the member's death there are no dependent children eligible to receive a dependent child annuity, a surviving spouse who qualifies to receive a surviving spouse annuity may file with ATRS a waiver of any rights to the spousal annuity.
2. If the surviving spouse files a waiver of the spousal annuity, then the spouse may receive the member's accumulated contributions plus interest, if any, in a lump-sum distribution.

C. Spousal Annuity Generally

1. The spousal annuity is payable for the spouse's lifetime, regardless of remarriage, pursuant to A.C.A. § 24-7-710.
2. The spouse may defer receipt of the annuity, if applicable, under the deferred retirements provisions of A.C.A. § 24-7-707.

D. Alternative Residual Beneficiaries Generally

1. A member may select one or more alternative beneficiaries to receive a lump sum payment of the member's residue in lieu of the member's surviving spouse (called "alternative residual beneficiary or beneficiaries"), documented on forms provided and approved by ATRS, and no spousal benefit or other monthly benefits shall be paid.
2. If the member is a participant in T-DROP and chooses an alternative residual beneficiary or beneficiaries in lieu of the surviving spouse, and the member dies before retiring, then the designated alternative residual beneficiary or beneficiaries shall receive the T-DROP deposits as a lump sum and no spousal benefit or other monthly benefit shall be paid.

E. A member may change an alternative residual beneficiary or beneficiaries designation and revert to a spousal annuity designation by documenting the change on a form provided and approved by ATRS.

IV. Dependent Children Benefits

A. A surviving dependent child of the qualifying member may receive an annuity under A.C.A. § 24-7-710.

B. "Child of a member" as defined under A.C.A. § 24-7-202, is considered a dependent child for purposes of receiving a survivor annuity under § 24-7-710 from ATRS, if:

1. The child is younger than eighteen (18) years of age; or
2. The child is younger than twenty-three (23) years of age and has been a full time student without interruption since reaching age eighteen (18)

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consistent with § 24-7-710(c)(2); or

3. The child is adjudged physically or mentally incapacitated by a court of competent jurisdiction.

C. To be considered a full-time student, the dependent child shall carry twelve (12) semester hours or eight (8) trimester hours in college, four (4) hours per day in a secondary or postsecondary school, or engage full-time in a curriculum or field of study based upon verifiable indices from an accredited institution. After the dependent child reaches eighteen (18) years of age, the dependent child may self-report their Certification of Attendance to ATRS, in the absence of a parent or legal guardian.

D. For a dependent child who is not a full-time student to continue receiving benefits after reaching eighteen (18) years of age, a doctor shall certify that the child is temporarily physically or mentally incapacitated to attend school for the current semester or term. At the beginning of the next semester or term, if the child does not reenter school full-time, the dependent child annuity will terminate.

E. A child who is adjudged physically or mentally incapacitated by a court of competent jurisdiction and for whom a guardian has been appointed shall continue to be eligible to receive a dependent child annuity as long as the incapacity exists, regardless of age. A.C.A. § 24-7-710.

F. A dependent child annuity is established according to the formula set out in A.C.A. §24-7-710. The dependent child annuity remains at its initial monthly amount, adjusted by an annual COLA increase, as may be designated by the board. If more than one dependent child in a member's family receives an annuity, each child's annuity remains at its initial monthly amount and is not readjusted when the member's other dependent children's annuities terminate.

G. A deposit account designated to receive a survivor annuity payment for the benefit of a child under age eighteen (18) shall conform with the Arkansas Uniform Transfers to Minors Act or with a court order in a guardianship proceeding for the benefit of the ward. Each survivor annuity payment is made as a separate payment to the eligible child in the appropriate deposit account, and shall not be co-mingled with payments to other family members.

H. The total salary that the member would have received in the fiscal year in which the member died, or the member's highest member salary in another fiscal year, whichever is higher, will be used to calculate a dependent child survivor benefit.

V. General Rules Regarding Survivor Annuities

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- A. Survivors are required to produce sufficient proof of eligibility under these provisions prior to receiving benefit payments.
- B. ATRS will notify survivors who may be eligible for a survivor's benefit at the last address on file at ATRS. (See also ATRS Rule 11.VIII below).
- C. If the member dies before receipt of the first disability retirement check but after receiving final approval for disability retirement, the benefits will be paid under the disability retirement option, alternative residual beneficiary designation, or to the beneficiaries as selected by the member.
- D. 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 may be paid if no alternative residual beneficiary or beneficiaries designation has been made by the member.
- E. Salary payments made after the death of a member that were earned prior to death are subject to ATRS deductions and shall be reported in total salary and days of service in the employer's quarterly report. Payments made by an employer after the death of an active member that are made as a mere gratuity and were not earned by the member shall not be included in the member's salary reported to ATRS and are not subject to contributions.
- F. If survivor benefits are payable by more than one reciprocal system to eligible survivors of a deceased member, the survivors shall not receive more (as a percentage of the deceased member's final pay or as a minimum dollar amount) than the largest amount payable by a single, reciprocal system. ATRS will prorate minimum benefits payable with any other reciprocal systems that have a minimum benefit provision. Each reciprocal system shall pay only its proportionate share of the minimum amount based on the ratio of service in its system to the total service in all reciprocal systems.
- G. When the member elects to transfer from ATRS to APERS under the provisions of Act 793 of 1977, APERS' law governs the survivors' eligibility for a payment of residue or survivor benefits upon the member's death.

VI. Lump Sum Death Benefit Rules

- A. The amount of the lump-sum death benefit may be set pursuant to rules adopted by the board in an amount up to ten thousand dollars (\$10,000) per member. The board may adjust the amount of the lump-sum death benefit each year and, as actuarially appropriate, prorate the amount of the lump-sum benefit based on the ratio of the member's contributory and noncontributory service credit.

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1. The amount of the lump-sum death benefit has been set by the Board of Trustees at \$10,000 for eligible contributory members and eligible members who have a combination of contributory and non-contributory with at least fifteen (15) years of contributory service. For eligible noncontributory members the amount of the lump-sum death benefit has been set at \$6,667, or a prorated amount at a ratio of 3:2 based upon the eligible member's contributory and noncontributory service credit.
 2. The lump-sum death benefit will be paid as a single amount to the beneficiary designated by the eligible member. If the eligible member failed to designate a beneficiary or a designated beneficiary did not survive, the lump-sum death benefit will be paid to the member's estate.
 3. However, on or after July 1, 2011, if a member has accrued a minimum of fifteen (15) years of actual, contributory service, but has also accrued noncontributory service, the member is eligible for his or her survivors to receive the maximum lump sum death benefit as determined by the board.
 4. Under Act 1323 of 2009, all lump-sum death benefit distributions made after June 30, 2009, shall be tax exempt, and no federal or state income tax shall be withheld by ATRS. After June 30, 2009, the lump-sum death benefit shall not be eligible for a direct rollover.
- B. Only members who are active or retired at the time of their death qualify for the lump-sum death benefit. Inactive members shall not be entitled to a lump-sum death benefit. A member is considered active for an additional fiscal year following the last fiscal year that the member renders at least one-fourth (1/4) year of actual service to a covered employer, credited as the total days of service.
- C. A member must have accrued the required amount of actual service at the time of his or her death to qualify for the lump-sum death benefit.
- D. A member may designate any natural person(s) or duly formed legal entity as his or her lump-sum death beneficiary, including a corporation, trust, partnership, or other recognized legal entity.
- E. In order for a lump-sum death benefit to be paid, the member must complete and sign an ATRS approved lump-sum death beneficiary form and clearly designate an eligible lump-sum death beneficiary.
- F. The completed lump-sum death beneficiary form must be received by ATRS prior to the member's death to be effective.
- G. The member's most recently executed and filed lump-sum death

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- beneficiary form supersedes all prior lump-sum death beneficiary forms that may have been filed by the member.
- H. If the member is eligible for the lump-sum death benefit at their death, the lump-sum death benefit payment shall be made within a reasonable amount of time to the member's proper beneficiary upon receipt of a written application, acceptable proof of the beneficiary's identification, and proof of the member's death.
- I. Lump-sum death beneficiary forms signed by a member's agent (such as an attorney-in-fact under a power of attorney) will not be processed until the document appointing the agent is filed with and accepted by ATRS. The document must authorize the agent to transact retirement plan business on behalf of the member, and specifically authorize the agent to change beneficiary designations.
- J. ATRS will not accept a lump-sum death beneficiary form signed by a guardian of the member's estate or other court-appointed conservator without an accompanying court order authorizing the guardian's designation of beneficiary(s).
- K. A lump-sum death beneficiary may waive his or her rights to payment of the lump-sum death benefit by submitting a waiver and relinquishment form acceptable to ATRS. Upon receipt of a valid waiver, ATRS will pay the remaining eligible beneficiary(s).
- L. A lump-sum death beneficiary may not assign payment of a lump-sum death benefit to another person or entity.
- M. ATRS reserves the right to deduct from the lump-sum death benefit any amounts owed to ATRS by the member under A.C.A. § 24-7-205.
- N. ATRS reserves the right to collect any overpayments or other amounts owed to ATRS by the lump-sum death beneficiary(s).
- O. ATRS shall comply with all applicable laws relating to the distribution of the lump-sum death benefit including federal and state tax laws and the Uniform Transfer to Minors Act.

VII. Qualified Domestic Relations Orders (QDRO) for ATRS Members

- A. *A QDRO is a court order that assigns a portion of a member's retirement benefit to be paid to an alternate payee (the divorced spouse) upon the member's retirement or upon a refund of the member's contributions.*
- B. Under A.C.A. § 9-18-103(b), ATRS adopted a model QDRO to be utilized by its members when dividing an ATRS retirement benefit. A QDRO issued by a court must substantially follow the form and content of the ATRS model QDRO.

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- C. ATRS shall accept QDRO issued by a circuit court of the State of Arkansas or other court of competent jurisdiction regarding a member, subject to the following:
1. Benefits to the alternate payee shall begin when the member retires or when the member ceases employment with a covered employer and receives a refund of contributions.
 2. ATRS shall:
 - a. Promptly notify the member and the alternate payee upon receipt of a QDRO, and
 - b. Within a reasonable time after receipt of the QDRO, determine whether the QDRO complies with ATRS's model QDRO and ATRS laws and regulations.
 3. A member or alternate payee may file a QDRO with ATRS prior to the member's retirement or termination of covered employment, but the alternate payee's portion is held in the member's account until payable under paragraph VII.C.1 above.
 4. A QDRO shall not require ATRS to:
 - a. Provide an alternate payee any type or form of benefit or option not otherwise available to the member;
 - b. Provide the alternate payee actuarial benefits not available to the member; or
 - c. Pay any benefits to an alternate payee that are required to be paid to another alternate payee under an existing QDRO.
 5. If alternate payee dies prior to the receipt of benefits under the QDRO, any amount or benefit that would be due to the alternate payee reverts to the member.
 6. If the member dies prior to retirement, the alternate payee shall receive the same portion of the member's contributions, if any, as was assigned by the QDRO. In no case shall the alternate payee receive monthly annuity benefits from ATRS if the member has not received his/her retirement annuity at the time of his/her death.
 7. ATRS computes the alternate payee's monthly annuity benefit under a QDRO on the benefit formula in effect at the time of the member's retirement and includes only service credit earned by the member during the marriage.
 8. If the QDRO assigns a marital portion or other part of a member's interest in his/her T-DROP plan deposits and interest, the benefits in the T-DROP account shall be computed as a separate calculation

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under the provisions in the model order.

9. ATRS shall have the right to make any necessary correction to the monthly benefit amount paid under a QDRO and to recover from either the member or the alternate payee any overpayments due to ATRS.
10. If the alternate payee fails at any time to notify ATRS of a change of mailing address, ATRS shall not be required to make restitution for payments not made prior to receipt of a change of address.
11. Any benefit enhancements enacted by the Legislature or the Board of Trustees after entry of a QDRO shall not be assigned to the alternate payee but shall inure to the sole benefit of the member.
12. ATRS shall not accept a QDRO for a member who does not have five (5) years of actual service with ATRS at the time the QDRO is issued by a court.
13. If ATRS determines that the alternate payee's monthly benefits are less than twenty dollars (\$20.00), ATRS shall pay the member the total benefit due and the member shall be responsible for paying the alternate payee their portion under the QDRO.
14. QDRO shall not require ATRS to provide any benefit that is an actuarial cost to ATRS and is not otherwise contemplated in the ATRS' law and rules.
15. No provision in this rule or in a QDRO accepted by ATRS shall require ATRS to violate any plan qualification requirement in IRS Code § 401(a) or otherwise affect the ATRS requirement to operate as a governmental plan under IRS Code § 414(d).

VIII. Lost Payees Rules

- A. Each member of ATRS, as well as each beneficiary of a deceased member, is responsible for filing with ATRS in writing a current post office address and each change of post office address of the member or beneficiary.
- B. The last filed address, or, if no address has been filed, the last address indicated on the records of the employer of the member or the beneficiary shall be the official address for ATRS communications to the member or beneficiary. Under A.C.A. § 24-7-734, ATRS has no obligation to determine the current address for any member or beneficiary.
- C. Member payments in the possession of ATRS are excluded from the definition of property under the Arkansas Unclaimed Property Act (A.C.A. § 18-28-201 et seq.). A.C.A. § 24-7-734 supersedes any conflict with the Arkansas Unclaimed Property Act.

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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 1:00 p.m. on July 3, 2019. Those members present were Dr. Eddie Phillips and Dr. Hoyte Pyle. Anne Marie Lehman Berardi of the Teacher Retirement System was also in attendance.


A total of twenty disability applications were considered. Of the twenty applicants, ten were approved. Eight were denied. Two 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 August 7, 2019. Those members present were Dr. Eddie Phillips and Dr. Hoyte Pyle. Anne Marie Lehman Berardi of the Teacher Retirement System was also in attendance.

A total of twenty-one disability applications were considered. Of the twenty-one applicants, sixteen were approved. Two were denied. Three 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 1:00 p.m. on September 4, 2019. 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 thirteen disability applications were considered. Of the thirteen applicants, seven were approved. Three were denied. Three had more information requested.

Respectfully Submitted,



Eddie Phillips, CMO
Medical Committee Chairman

Respectfully Submitted,



Anne Marie Lehman Berardi
Retirement Benefits Counselor