



Alameda County Employees' Retirement Association
BOARD OF RETIREMENT

INVESTMENT COMMITTEE/BOARD MEETING

ACERA MISSION:

To provide ACERA members and employers with flexible, cost-effective, participant-oriented benefits through prudent investment management and superior member services.

Wednesday, December 11, 2019
 9:30 a.m.

LOCATION	COMMITTEE MEMBERS	
ACERA C.G. "BUD" QUIST BOARD ROOM 475 14 TH STREET, 10 TH FLOOR OAKLAND, CALIFORNIA 94612-1900 MAIN LINE: 510.628.3000 FAX: 510.268.9574	ELIZABETH ROGERS, CHAIR	ELECTED GENERAL
	TARRELL GAMBLE, VICE CHAIR	APPOINTED
	DALE AMARAL	ELECTED SAFETY
	OPHELIA BASGAL	APPOINTED
	KEITH CARSON	APPOINTED
	JAIME GODFREY	APPOINTED
	LIZ KOPPENHAVER	ELECTED RETIRED
	HENRY LEVY	TREASURER
	GEORGE WOOD	ELECTED GENERAL
	NANCY REILLY	ALTERNATE RETIRED ¹
	DARRYL L. WALKER	ALTERNATE SAFETY ²

Should a quorum of the Board attend this meeting, this meeting shall be deemed a joint meeting of the Board and Committee. The order of agenda items is subject to change without notice. Board and Committee agendas and minutes are available online at www.acera.org.

Note regarding public comments: Public comments are limited to four (4) minutes per person in total.

Note regarding accommodations: The Board of Retirement will provide reasonable accommodations for persons with special needs of accessibility who plan to attend Board meetings. Please contact ACERA at (510) 628-3000 to arrange for accommodation.

¹ Alternate Retired Member (Votes in the absence of the Elected Retired Member, or, if the Elected Retired Member is present, then votes if both Elected General Members, or the Elected Safety Member and an Elected General Member, are absent.

² Alternate Safety Member (Votes in the absence of (1) the Elected Safety, (2) either of the two Elected General Members, or (3) both the Retired and Alternate Retired Members).

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Call to Order: 9:30 a.m.

Public Input (Time Limit: 4 minutes per speaker)

Action Items: Matters for discussion and possible motion by the Committee

There are no action items

Information Items: These items are not presented for Committee action but consist of status updates and cyclical reports

1. Review of State Street Bank and Trust Company (“SSB”) – Custodian Bank

Brenda Dulger-Sheikin, Senior Vice President, SSB
Grant Danner, Vice President, SSB
Margaret Allen, ACERA
Thomas Taylor, ACERA
Betty Tse, ACERA

2. Semiannual Performance Review for the Period Ending September 30, 2019 – Equities and Fixed Income

Barry Dennis, Verus Advisory Inc.
Margaret Jadallah, Verus Advisory Inc.
Clint Kuboyama, ACERA
Thomas Taylor, ACERA
Betty Tse, ACERA

3. Semiannual Performance Review for the Period Ending September 30, 2019 – Absolute Return

Margaret Jadallah, Verus Advisory Inc.
Clint Kuboyama, ACERA
Betty Tse, ACERA

4. Semiannual Performance Review for the Period Ending June 30, 2019 – Private Equity

Faraz Shooshani, Verus Advisory Inc.
Clint Kuboyama, ACERA
John Ta, ACERA
Betty Tse, ACERA

5. Semiannual Performance Review for the Period Ending June 30, 2019 – Real Assets

INVESTMENT COMMITTEE/BOARD MEETING

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John Nicolini, Verus Advisory Inc.
Clint Kuboyama, ACERA
Betty Tse, ACERA

6. Semiannual Performance Review for the Period Ending September 30, 2019 – Real Estate

Avery Robinson, Callan LLC
Jonathan Gould, Callan LLC
Thomas Taylor, ACERA
Betty Tse, ACERA

7. CA Gov. Code § 7514.7 Alternative Investment Vehicles Information Report

John Ta, ACERA
Betty Tse, ACERA

Adjournment into Closed Session

1. Consider the Purchase or Sale of Particular, Specific Pension Fund Investments (2 matters)(CA Gov. Code §§ 54956.81 and 6254.26)

Reconvene into Open Session to Report on Action Taken in Closed Session

Trustee Remarks

Future Discussion Items

Establishment of Next Meeting Date

January 8, 2020 at 9:30 a.m.



475 14TH STREET, SUITE 1000, OAKLAND, CA 94612 800/838-1932 510/628-3000 FAX: 510-268-9574 WWW.ACERA.ORG

TO: Members of the Investment Committee
FROM: Betty Tse, Chief Investment Officer *BTC*
Margaret Allen, Fiscal Services Officer *EBH*
DATE: December 11, 2019
SUBJECT: Review of State Street Bank and Trust Company ("SSB") – Custodian Bank

Recommendation:

Not applicable – this is a standard review of the custodial services provided by State Street Bank and Trust Company.

Background

State Street Bank and Trust Company ("SSB") has been ACERA's custodian bank since April 1999. As a key service provider, ACERA regularly monitors the service relationship and has conducted a number of reviews over the years. In the last three years, SSB has been through two reviews and contract extensions as (ACERA) staff evaluated service levels during times of high turnover at SSB, in particular regard to service levels affecting Primary Contacts and Core Custodial Services¹. Each time, staff has recommended extending the custody contract because of service improvements observed. Accordingly, the Board approved staff's recommendation to extend the Custody Contract on June 20, 2018, for another 18-month period, or until February 7, 2020.

Discussion

Since June 2018, staff believes that SSB has improved its services and has fulfilled its contractual obligations to meet ACERA's minimum service quality requirements. Though its current overall average scores are lower than that previously recorded in 2012², State Street Bank has addressed staff concerns and improved its services in both Primary Contact Service, as well as, Core Custodial service levels with newly assigned individuals. Under the direction of the CIO Betty Tse and SSB's Senior Vice President Brenda Dulger-Sheikin, staff and SSB had successfully concluded a new Service Level Document (SLD) detailing the day-to-day scope of services and expectations. Accordingly, over the past 18-months, SSB's new client service team has improved and enhanced services to ACERA. Using a scale of 1 to 5 --with five the maximum score, staff conducted a self-survey as well as its investment managers. Please see below for the overall results and Attachment #2 & #3.

¹ Additional to the reviews, staff made two onsite due diligence trips i) to the Kansas City Center in May 2014, ii) to the Boston headquarters in May 2016, and iii) to the Sacramento Center in 2019.

² The most recent in-depth review ACERA was conducted was May 2012 with ACERA extending the Custody Contract with SSB until for a 5-year term.

Results of Evaluation

SSB received an overall average score of 3.8 (75.1% of total points possible) for the 2019 evaluation, which is slightly below the previous 4.0 score received in 2012. There were no official survey evaluations conducted for the 2017 and 2018 interim reviews. Consequently, comparing 2019 to 2012 is less relevant for this review for the following reasons: 1) Seven years have passed and the old scores are dated; 2) ACERA staff members have changed –including the addition of the Fiscal Services Department; 3) The Total Fund is more diversified and complicated to monitor; and, 4) SSB now has new client-service team and middle management professionals.

The following is a summary of staff's 2019 evaluation of SSB's custodial services. Some of the guidelines in the SLD are integrated into the sections below.

I. Investment Staff's Evaluation of SSB

1. Overall Master Custodial Services

In general, investment and fiscal services staff are satisfied with SSB's overall service quality exemplified by giving SSB an average score of 3.9. Accordingly, the overall score remains above average. Please see below for detailed assessments of various categories.

2. Primary Contacts at SSB

SSB earned an average 3.3 score. Over the past 7-years, SSB has experienced turnover at the client service level, as well as, the senior leadership level. In part, the turnover was due to attrition, but also corporate restructuring. Consequently, SSB assigned a knowledgeable Client Service Team, which has been bifurcated into operations (documentation processing) and client services (communications). In an effort to improve timely resolution of open items, SSB and staff continue to conduct bi-weekly calls to resolve outstanding issues. SSB and staff have solidified the SLD to outline the day-to-day scope of expected services.

3. Core Custodial Services

SSB earned an average 3.9 score. Core custody services, security valuations, cash flow management, and month-end reporting have been accurate and timely. There have been no issues (unlike previous reviews) with wire- and funds-transfer, or with transaction origination procedures.

4. Value-Added Services

SSB earned an average 3.5 score. Overall staff is satisfied with SSB's Value-Added Services. Technology improvements (MyStateStreet.com, eCFM) and performance measurement rated above average; however, global market services scored below average. At issue are foreign account opening and documentations that are initiated by (new) investment managers or the emerging market countries themselves. These issues are now being addressed and resolved.

- a) The Performance Measurement Analytics Group, in particular, continue to demonstrate above average execution to meet ACERA's reporting requirements (see #5 below). An example of SSB's commitment toward timely delivery of reports, on multiple occasions, the performance measurement team worked beyond regular business hours to ensure reports were delivered by agreed to

dates. The Performance Measurement Team also demonstrated great willingness to cater to ACERA's ad-hoc reporting requirements as new managers and asset classes have been adopted by the Board.

- b) The Securities Lending Group is responsive when staff has inquiries. SSB's Securities Lending Team also impressed the investment staff as knowledgeable and resourceful regarding lending activities and market participants in general. This team has also been timely in generating ACERA's quarterly securities lending reports. Over the past couple of years, the utilization rate (loaned shares divided by available shares in the securities lending market) has averaged 11.4% vs. 8% industry average³.

5. Reports

SSB earned an average score of 4.0. This score is above average as many reports are now online (MyStateStreet) and staff can easily access these records. Examples of such reports, which are noted in the SLD, are Accounting, Trial Balances, Analytics and Monthly Performance Reporting, Custody and Transaction Information Reporting, Monthly Performance Report, Monthly Reporting, Net Asset Value, Trades and Transactions, Securities Litigation, etc. For annual reporting, SSB also provides information for GASB reporting (i.e., GASB 28, 31, 40, 53, and 72), and audit reporting (FASB Statement, Year-end Investment Manager Reconciliations).

6. Communications

SSB earned an average score of 3.7. Staff is encouraged with SSB's communication efforts with ACERA. SSB's Client Services, Performance Analytics, and Private Edge teams respond timely to ACERA's requests. MyStateStreet.com, SSB's now more mature portal, contains an abundance of information—all the data and statistics to running a Total Fund, and is generally available 24 hours a day, 7 days a week. Furthermore, SSB provides investment research as a resource available to ACERA as one of its clients. State Street Global Markets and Investment Research, Recommendations and Resources (IR³) provide information on investor behavior, portfolio and risk management.

7. Custody Fees

The Fee Schedule, which the Board approved on 2/16/12, is an annual flat fee structure and provides for a cap on the upside for ACERA, which continues to yield current savings and additional potential savings in the future, because the number of accounts, transactions, and holdings in custody continues to grow. This flat fee structure also provides the additional benefit of saving staff time that was previously spent verifying and reconciling detailed quarterly invoices from SSB.

II. Traditional Investment Manager's Evaluation of SSB

Similar to the evaluation form used by staff, a separate survey was distributed to all of ACERA's investment managers and consultants to whom SSB provides ancillary account services. This survey used the same one-to-five-point evaluation scale. Managers and

consultants gave SSB an overall 3.1 average score, this compared to SSB's previous overall 4.4 average score. On the plus side, SSB has scored slightly above average in its overall master custodial services, core custody services and value-added services; however, areas for improvement exist in the areas of primary contacts and communications. Investment managers were split in their comments depending on their experiences. Most of ACERA's older investment managers typically have established good working relationships with SSB while newer investment managers were in the nascent stage of working with SSB. (Please see Attachment #3 for the Investment Manager's Evaluation of SSB).

III. Survey of other 1937 Act County Plans

Separate from the surveys given to staff and Investment managers, ACERA surveyed the other '37 Act county plans. Out of the 19 other plans, four counties responded with two of the four working with SSB (both 20+ years). On a scale of "very dissatisfied", "dissatisfied", "neutral", "satisfied", and "very satisfied", the two plans scored SSB with a "neutral" or "satisfied" ranking. The other two counties scored their respective custodial bank relationships (other than SSB) with a similar "neutral" or "satisfied" ranking. With a small sample size, it is difficult to garner any significant information from the survey.

IV Other Observations

In comparing this 2019 review of SSB to 2016 review, there are additional details about SSB in the Executive Summary (see Attachment #1). ACERA's assets have grown from \$6.7 billion to \$8.32 billion over the 5-year period. For SSB, total assets under custody have declined from \$27.0 to \$25.0 trillion and total number of institutional clients from 994 to 542. The total number of public clients, a subset, have declined from 109 to 102. Lastly, SSB has expanded number of hours covered by its service center(s) in India which has grown from 40 hours (or 23.5% of the time) to 60 HRS (or 33.33% of the time). Fees for custodial services has remained relatively flat, but incrementally more because of the increase in our commitments in private placements.

Conclusion

ACERA has negotiated a fresh start with the new Client Service Team and the oversight of Brenda Dulger-Sheikin. As with any change there is a learning curve; nevertheless, SSB has made good strides in building out its Client Service Team and its technology, i.e., MyStateStreet platform. ACERA staff, investment managers, and consultants believe that SSB has provided satisfactory custodial and administrative services with acknowledgement for continued improvement. With the affirmation of the Committee, staff will bring to the January 8, 2020 Investment Committee Meeting an action item recommending another 5-year extension to the SSB custody contract – including the separate securities lending contract.

Attachments:

1. Executive Summary of State Street Bank prepared by Investment Department Staff
2. Evaluation of State Street Bank, Investment and Fiscal Services Department Staff Survey
3. Evaluation of State Street Bank, Investment Manager's Evaluation
4. Presentation Report by State Street Bank



Executive Summary

Attachment # 1

State Street Bank and Trust Company

Organization: Founded in 1792, State Street Bank and Trust Company (SSB) is one of the largest master trust and custodial service providers worldwide. SSB headquarters are in Boston, MA with service locations globally, and is the primary custody provider for ACERA. The relationship is serviced out of the Kansas City, MO office, where seven of the other 1937 Act retirement systems are also serviced.

<u>Inception Date with ACERA:</u>	July 1999
Name of ACERA's Relationship Manager:	Chris Vokolek, Grant Danner
Total ACERA's Assets:	\$8.32 billion
ACERA's Custodian Fees ¹ Paid 2018/2019 YTD:	\$554,826.54/\$273,410.43 (a/o 6/30/19)

State Street Bank & Trust Company

Total Assets under Custody:	\$25 trillion
Total Number of Custody Clients:	1,841
Total Number of Institutional Clients:	542

State Street Public Funds

Total Assets:	\$2.18 trillion
Total Number of Public Clients:	102
Total Number of Endowment Clients:	150
Asset Turnover in 2019 Gained/Lost:	\$1.24 billion/\$7.89billion
Client Turnover in 2019 Gained/Lost:	0/9 (0/8 public, 0/1 endowment)
Average Asset Size of Public Client:	\$ 21.37 billion
State Street Kansas City Servicing Team	
Ratio of Client Relationship Managers to Clients:	1 Manager / 7 Clients ²
Average Years of Experience of Relationship Managers:	15.5 years
Turnover since Last Review Addition/Reduction:	2/2 (Vokolek, Danner / Tonya Cordray; Kris Auer in 2019)

¹ Flat Rate: \$125,000/ quarter plus miscellaneous fees for private placements and foreign custody.

² Ratio in 2016 was 1 client relationship manager / 6 clients

ACERA

ACERA Staff's Evaluation of SSB (2019)

The following is Investment Staff's evaluation of the investment related master custodial services that SSB provided to ACERA since SSB's last review. Investment Staff used a 5-point scale for the evaluation where "5" means "extremely satisfied" and "1" means "not at all satisfied".

Category	<u>Aggregate</u>
<u>1. Overall Master Custodial Services</u>	
a) Demonstrates in-depth knowledge and experience about the institutional custodian business	3.9
b) Clearly demonstrates the role of a fiduciary towards ACERA	3.9
c) Places a high priority on ACERA's interests and works hard to address ACERA's needs and concerns	3.9
d) Provides master custodial services with integrity, effectiveness and efficiency	3.8
<u>Average:</u>	<u>3.9</u>
<u>2. Primary Contacts at SSB</u>	
a) Effectively addresses ACERA's unique requirements and needs in a timely fashion	3.5
b) Clearly demonstrates the knowledge about all available services at SSB and how those services can enhance the value of ACERA's portfolio	3.2
c) Clearly demonstrates the knowledge about the organization and business of ACERA	3.3
d) Effectively and efficiently plays a role as liaison to support an on going, three-way relationship among ACERA, SSB and ACERA's investment vendors	3.3
<u>Average:</u>	<u>3.3</u>
<u>3. Core Custodial Services</u>	
a) Core Custody	3.6
b) Security Valuation	4.0
c) Short-Term Cash Management	4.5
d) Cash Flow Management	4.3
e) Month-End Reporting / Reconciliation	3.3
<u>Average:</u>	<u>3.9</u>
<u>4. Value -Added Services</u>	
a) Performance Measurement Analytics (Monthly Snapshot)	3.5
b) Securities Lending	4.3
c) Global Market Services (Foreign Opening Documents, Tax Reclamation)	2.8
d) Technology (MyStateStreet.com, eCFM)	3.5
e) Charles River Development (Monthly Investment Manager Compliance Review)	3.5
<u>Average:</u>	<u>3.5</u>
<u>5. Reports</u>	
a) Measures the performance of ACERA's portfolio and of each investment manager in the portfolio accurately and timely	4.3
b) Reconciles each ACERA's investment manager's monthly report accurately and timely	3.8
c) Delivers the required reports accurately and timely	3.8
d) Accommodates ACERA's special report needs and ad-hoc report needs	4.1
<u>Average:</u>	<u>4.0</u>
<u>6. Communications</u>	
a) Keeps ACERA updated about any changes of its investment portfolio in a timely fashion	3.8
b) Keeps ACERA updated about any changes within SSB itself in a timely fashion	3.3
c) Attends ACERA's investment committee meeting as needed	4.1
d) Accommodates ACERA's ad-hoc meeting/review requests	4.1
e) Promptly replies ACERA's inquires	3.4
<u>Average:</u>	<u>3.7</u>
<u>7. Fees</u>	
a) Charges reasonable fees	4.3
<u>Average:</u>	<u>4.3</u>
<u>Total Average:</u>	<u>3.8</u>

ACERA Traditional Investment Manager's Evaluation of SSB (2019)

The following is the evaluation of the investment related master custodial services provided by SSB to ACERA since SSB's last review by ACERA's investment managers and investment consultants. A 5-point scale is used for the evaluation where "5" means "extremely satisfied" and "1" means "not at all satisfied".

Category	<u>Score</u>
<u>1. Overall Master Custodial Services</u>	
a) Demonstrates in-depth knowledge and experience about the institutional custodian business	3.2
b) Clearly demonstrates the role of a fiduciary with respect to the safekeeping and custody of ACERA's assets	3.4
c) Places a high priority on ACERA's interests	3.3
d) Works diligently to address ACERA's needs and concerns	3.1
e) Provides general custodial services with integrity, effectiveness and efficiency	2.9
	<u>Average:</u> 3.2
<u>2. Primary Contacts at SSB</u>	
a) Effectively addresses my firm's unique requirements and needs in a timely fashion	2.4
b) Clearly demonstrates knowledge about all available services at SSB and how those services can help my firm to enhance the value of my firm's product to ACERA	3.0
c) Clearly demonstrates knowledge about my firm's product and relationship with ACERA	2.9
d) Plays effective and efficient roles as liaison to support an ongoing, three-way relationship among SSB, ACERA and my firm	2.8
	<u>Average:</u> 2.8
<u>3. Core Custodial Services</u>	
a) Core Custody	3.4
b) Security Valuation	3.7
c) Short-Term Cash Management	3.2
d) Month-End Reporting / Reconciliation	3.3
	<u>Average:</u> 3.4
<u>4. Value -Added Services</u>	
a) Performance Measurement Analytics	3.3
b) Securities Lending	3.3
c) Global Market Services (Foreign Opening Documents, Tax Reclamation, etc.)	3.5
d) Transition Management	2.8
e) Charles River Development	3.0
	<u>Average:</u> 3.2
<u>5. Communications</u>	
a) Keeps my firm updated about any changes pertaining to ACERA in a timely fashion	3.0
b) Proactively keeps my firm updated about organizational or operational changes of SSB	3.1
c) Informs my firm about ACERA's needs in a timely fashion	3.0
d) Promptly replies to my inquires	2.4
	<u>Average:</u> 2.9
	<u>Total Average:</u> 3.1

Alameda County Employees' Retirement Association

December 11, 2019

**ACERA
Investment
Committee &
Board Meeting**

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Information Classification: Limited Access

A global enterprise built for your success...

Global Services

- \$32.90 trillion AUC/A¹
- One of the world's leading investment service providers
- Fund accounting and administration, custody, investment operations outsourcing

Global Advisors

- \$2.95 trillion AUM²
- One of the largest ETF providers in the world
- Investment strategies across risk / return spectrum

Global Exchange

- Information, analytics and data solutions
- Leveraging big data and advanced technology to offer investment indicators and analytics

Global Markets

- \$18.49 trillion in foreign exchange and interbank volume traded³
- Investment research, foreign exchange trading and securities lending



Responsible for more than **10%** of the world's assets⁴

No. 1 in alternative asset servicing⁷

Servicing more than **40%** of all US mutual funds⁵

No. 1 in ETF servicing⁸

Third-Largest money manager globally⁶

No. 1 service provider of fund administration and transfer agency⁹ in Luxembourg and Ireland

1. As of September 30, 2019
 2. This figure is presented as of September 30, 2019 and includes approximately \$44 billion of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated.
 3. YTD as of September 30, 2019
 4. Source: State Street and McKinsey Global Institute, Global Capital Markets, June 30, 2017*
 *Updated in March 2019 per bespoke McKinsey report. This represents State Street's Q2 2017 AUCA (\$31t) as a proportion of total global financial assets (\$289t).

5. Source: Investment Company Institute, as of June 30 2019. This statistic is based on assets under custody and administration.
 6. Source: P&I Research Center, as of December 31, 2018, Published May 27, 2019. This online data resource aggregates data collected by P&I's editorial team through surveys and day-to-day reporting on thousands of money managers and institutional asset owners.
 7. Source: eVestment Alternative Fund Administration Survey 2019. Includes private equity and real assets under portfolio administration. This annual industry survey gathers AuA data from service providers.
 8. Source: ETFGI Global ETF Industry Insights September 30, 2019 (61.1% share of Global ETFs)
 9. Source: Monterey Insight Ireland Fund Report, June 2019

Strong Global Presence*



*December 31, 2018
**Employees as of September 30, 2019

Client Service & Delivery

Service Enhancements

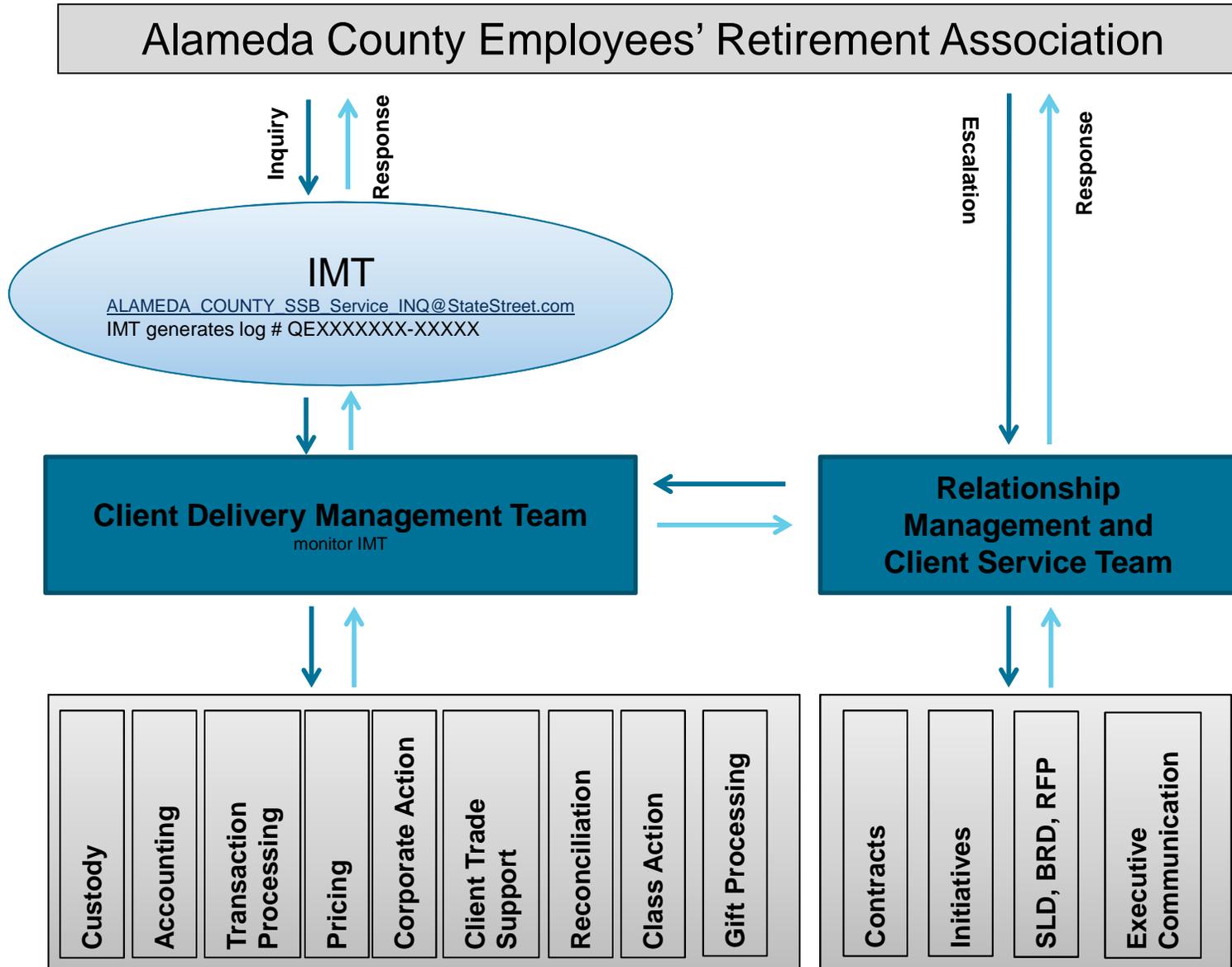
Remediation

Themes	Actions Taken	Date
Resource Enhancements	•Introduced Client Delivery Management (CDM) as additional resources to the client service team.	Q2 2019
	•Created dotted line reporting structure for client delivery team	Q2 2019
Enhanced Internal Oversight	•Implemented additional key control review of the daily NAV process for fund HI1A	Q3 2019
	•Implemented statement tracking across operational organization to ensure timely accounting close process	Q3 2019
Technology	•Developed eCFM procedure to automate accounting only transfers related to LP activity	Q3 2019
	•Implemented Inquiry Management Tool (IMT) to streamline and track inquiries	Q2 2019
Governance	•Bi-weekly operations call to discuss current and upcoming initiatives	Ongoing
	•Executed a Service Level Agreement (SLA) that outlines all services provided to ensure optimal service	Q3 2019
Transition Management	•Provided transition services for multi-date reallocation including fund setups/closings, security and cash transitions across multiple managers, and opening of foreign markets	May-19
	•Provided transition services for multi-date reallocation across a two month period of September and October	Q3 2019

Relationship and Service Model

Executive Leadership				
Mark Schafer– SVP Brenda Dulger-Sheikin - SVP				<ul style="list-style-type: none"> • ACERA’s executive advocate • Access to senior decision makers
Client Service and Delivery				
US Asset Owners				<ul style="list-style-type: none"> • Conversion and Implementation • Senior client advocate driving continuous improvement for ACERA • Manage business to business issues • Strategic planning • Contract and service level negotiations • Day to day servicing • Management of negotiated business requirements • Primary contact to disseminate news and impact to ACERA regarding day to day client direction • Primary contact for operational requests
Kate Hubbard – Vice President – Client Service Department Lead				
Grant Danner – Vice Present – Client Service Team Lead				
Chris Vokolek– Assistant Vice President – Client Service Owner				
Lauren Atkins–Vice President – Client Delivery Management Sharon Honeyman – Officer– Client Delivery Management				
Functional Expertise of Extended Team				
Global Network	Corporate Actions	Class Action	Trade Processing	<ul style="list-style-type: none"> • Delivery of services • Subject matter expertise • Measure impact of regulatory change on clients
Global Custody	Securities Pricing	Income Collections	Information Technology and Integration	
Reconciliations	FX Trading	Performance & Analytics	State Street Global Advisors	

Inquiry Management Tool (IMT): Flow of Information



Our Objective

Mission

Coordinate all aspects of the relationship and be your advocate within State Street

- Share best practices and new ideas from extensive relationship network
- Rise to the occasion to meet all challenges and work collaboratively to ensure we are exceeding your expectations
- Formalize engagement structure

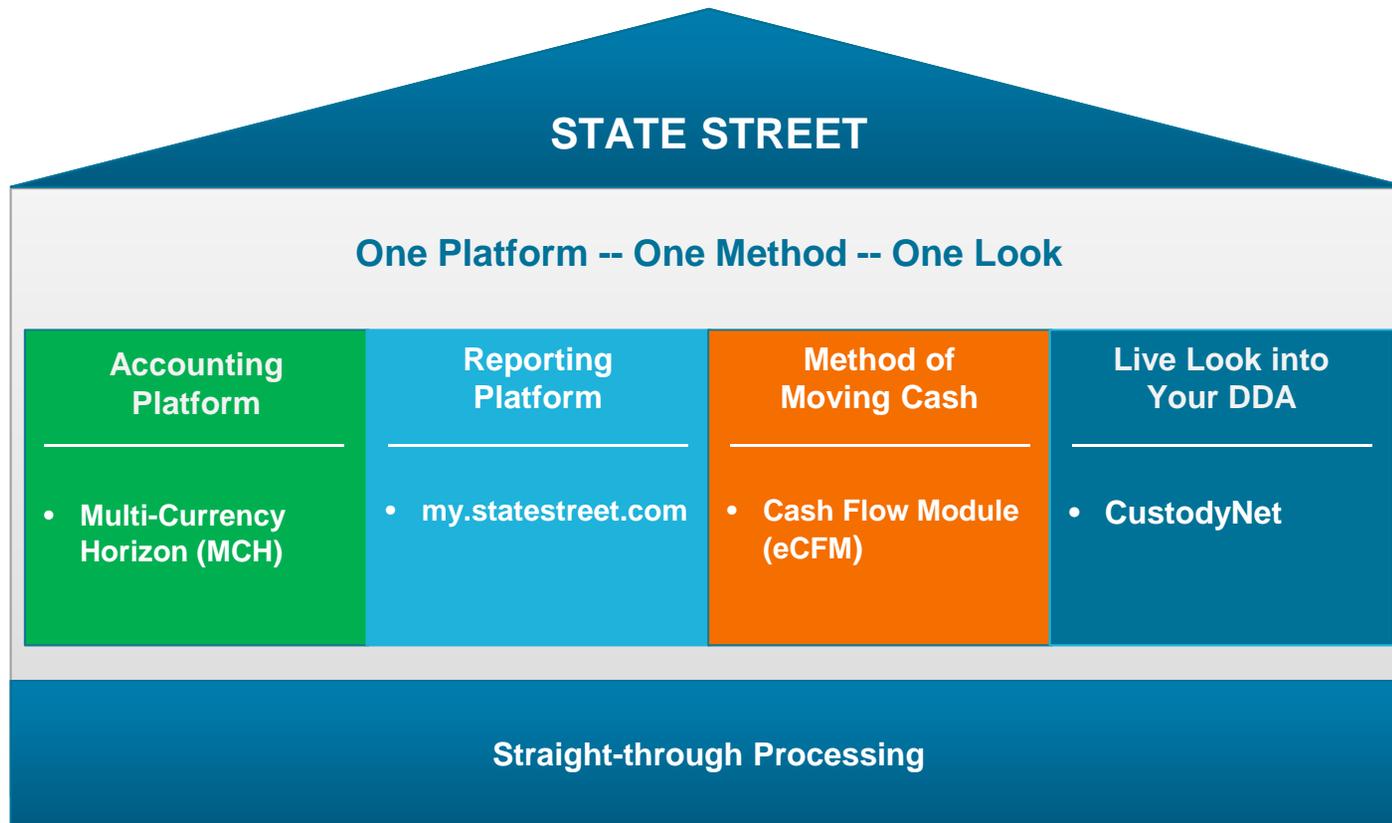
Provide Consistent, Proactive Client Service

- Be responsive — “Sunset Rule”
- Solicit client feedback — annual client survey
- Ensure backup assistance is always available
- Provide timely and accurate reporting
- Ensure deliverables are met
- Get the core right ensuring all downstream reporting is accurate
- Provide cutting edge tools and technology that deliver information that you can use

Systems and Technology, Client Delivery and Access

State Street's Suite of Technology Working for ACERA

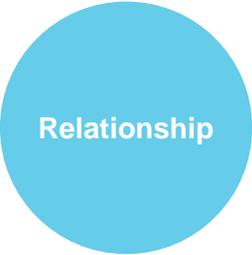
Industry Expertise At Your Fingertips



Custody and Accounting

Alameda County Employees' Retirement Association

At a Glance



Relationship

Legal Entity

Alameda County Employees'
Retirement Association

Client Since: 1999

Year End: 12/31



Contacts

Betty Tse

Margaret Allen

Tom Taylor

Clint Kuboyama

Uzair Khan

Robin Chen

Noe Reynoso

Agnes Ducanes



Reporting

Monthly Accounting Reporting

- Completed 6th BD or sooner based on timing of the ACERA Monthly Board Meeting

Monthend Accounting Reports

- Available on 7th BD via MyStateStreet.com or sooner based on timing of the ACERA Monthly Board Meeting

Year End Reporting:

- Audit requests completed as required

Our Fully Integrated System

Global Horizon		
A single platform which is the foundation for many critical business decisions		
Global Horizon	Client Service Workstation	my.statestreet.com
<ul style="list-style-type: none"> • Real-time • Base and local currency reporting • Trade date calculation • Full accrual and “as of” capabilities 	<ul style="list-style-type: none"> • Automated daily processing • Exceptions identified daily • 13 automated audits • Cost and Share • Price Tolerance • Price Consistency • Unrealized gain / loss • Realized gain / loss • Income Verification • Income Activity • Open Trades • Pending Foreign Exchange • Payable and Receivable • Local cash • Base Equivalent Cash • Trial Balance 	<ul style="list-style-type: none"> • Web-based • 24-hour access from work or home • Reporting • Standard • Customized • Performance • Private assets • Sophisticated Dashboards

Limited Partnership Services

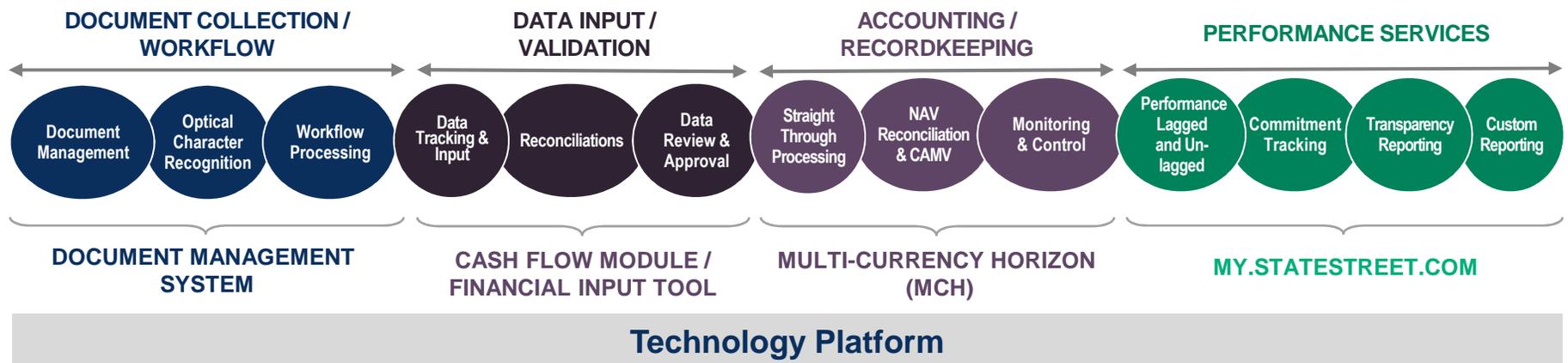
Limited Partner Services

Our experienced teams are focused on extracting information from the General Partners (GPs) reports to get investment data back to our clients in a controlled and timely manner. Our proprietary tools and global support model create a fully integrated platform for data collection, input, and review, and our online portal allows client users to access their information at any time.

Key Facts

- Specialized unit dedicated to the focused needs of servicing asset owners with alternative investments
- Over 70 clients, including Endowments, Foundations, Pension Funds, Sovereign Wealth and other institutional investors
- Servicing provided to over 15,000 funds/investments representing over \$900 billion in commitments
- Collection and processing of over 700,000 documents annually
- Delivered on an integrated proprietary technology platform designed to support the unique data gathering and reporting requirements for asset owners with alternative assets
- Expert client support provided through service centers in North America, Europe and Asia

Alternative Investments Servicing Value Chain



STATE STREET

Performance & Analytics

Performance and Analytics Services

Current Operating Model

Deliverables

- Monthly Deliverable – On a Monday after second Thursday.

Performance Reports

- Four monthly PDF reports including: Performance Summary Consecutive Quarter DB report, Performance Summary Defined Benefit report, Board Performance Summary Defined Benefit report, and Board Consecutive Quarter DB report.
- Excel version of monthly Snapshot report.
- Monthly Bivium report. (excel)
- Monthly Financial Sector Exposure report. (excel)
- All of the above reports are posted on performance and analytics dashboard in Reports section.

Investment Compliance Services

Investment Compliance Services

Breach Awareness and Management

- Investment guidelines and regulatory requirements monitoring
- Flexible solution includes transparency into commingled assets
- Simple investment restrictions to the most complex quantitative guidelines across single or multiple portfolios
- Core Capabilities Include:
 - Asset allocation and issuer concentration
 - Duration, risk characteristics, and leverage restrictions
 - Country and regional exposures and investment rules
 - Asset mix, tracking error, quality ratings
 - Environmental and social governance
 - Corporate governance and industry regulations
- Client service expertise
- Rapid exception research and resolution



Securities Lending

Relationship Summary

ACERA Current Lending Program

Assets

Overall Securities Finance relationship with ACERA commenced in 1999:

- Currently **22 funds** enrolled in the Agency Lending program
- Most recent Securities Lending Authorization Agreement extension through February 2020

Revenue Sharing

Fee Split:

- 80% ACERA / 20% State Street

Borrowers

- ACERA uses State Street's program approved borrowers list
- Indemnified against borrower default

Collateral

- Cash (US and foreign currency)
- Securities issued or guaranteed by the US Government, its agencies or instrumentalities
- Sovereign Debt
- Irrevocable bank letters of credit

Program Summary (as-of 10/31)

- ACERA has earned \$43.7 million since joining the Agency Lending program
- Lendable Market Value = \$2.4 Billion
- On Loan Market Value = \$163 Million

Notes:

- (1) Data represents past performance and is not a guarantee of future results
- (2) Enrolled funds as of: November 30, 2019
- (3) Earnings data through October 2019
- (4) Lendable and Loan data as of October 31, 2019
- (5) Data Source: Securities Finance Business Intelligence & my.statestreet.com

Bios



Brenda Dulger-Sheikin

Senior Vice President

State Street US Asset Owners

Brenda currently leads the US Asset Owner West enhanced asset owner business focused on providing innovative custodian solutions to asset owners undergoing dynamic change. Safekeeping over a trillion dollars in customer assets, providing the highest quality accounting book of records and solution strategies to address gaps in the sector through technology, data and premium analytical service delivery. Highly specialized servicing unit focused on bringing world class investment management servicing through a 40's Act mutual fund daily valuation heritage to the most sophisticated asset owner clients.

Brenda joined State Street in July 2007 as part of the acquisition of Investor's Bank and Trust (IFIN). Prior to joining State Street, Brenda spent seven years at IBT and Barclays Global Investors (BGI) where she held various positions, including manager of accounting and relationship management.

Brenda earned a Bachelor of Science business degree in strategic management from the California State University of Sacramento



Grant Danner
Vice President

State Street US Asset Owners

Grant Danner is a Vice President within the US Asset Owner division at State Street. He is responsible for leading the client service team which oversees asset owner relationships for public, corporate, Taft-Hartley, and not for profits. He works directly with clients and client leads to develop and strengthen partnerships through communication and keeping up on industry initiatives. Grant began his career in the financial services industry in 2002 and has provided excellent levels of service to a variety of State Street clients. Grant has played key roles in various organizational initiatives across State Street to strengthen the service provided to our clients.

Grant is also active with many of the volunteer opportunities offered by State Street. He has participated in hosting young professionals for PREP-KC, which helps prepare urban youth for college and professional careers in the fields of business and finance. Additionally he has volunteered to build houses for the Veterans Community Project, which helps serve homeless veterans. Grant has earned Bachelor of Science degrees in accounting and finance from Kansas State University and a Master's of Business Administration degree from Baker University.



Chris Vokolek
Assistant Vice President,
State Street US Asset Owners

Chris brings over 16 years of State Street experience to his position. During this timeframe, Chris has gained experience in custody and accounting services, mutual funds, cash processing and pension plans.

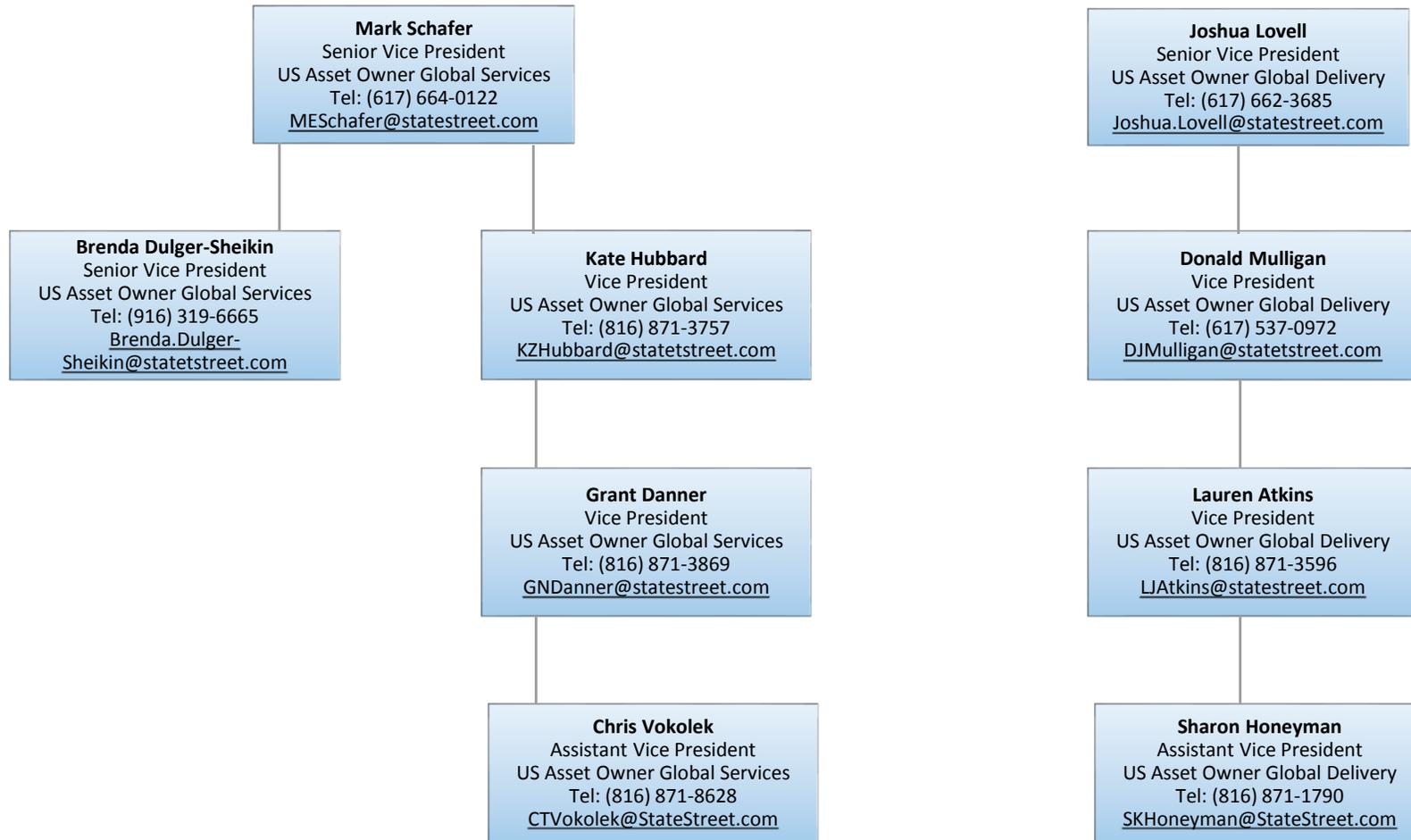
He began his career in 2003, assisting the fund accounting area in providing market value and NAV calculations to clients. Promoted to Fund Accountant shortly thereafter, Chris has spent a good portion of his early career in the fund and portfolio accounting areas.

Within these areas, Chris also served in a management role, responsible for maintaining client relationships, reconciliation of accounting operations and the development of staff personnel.

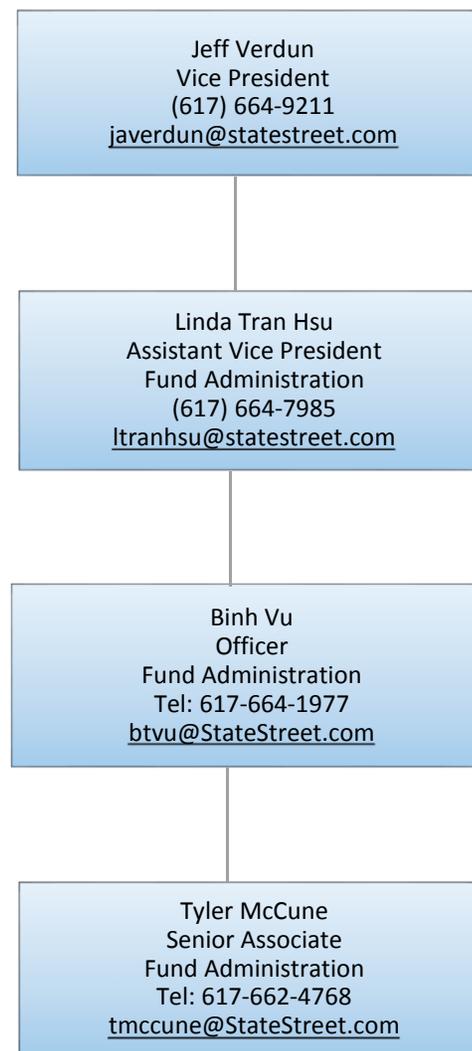
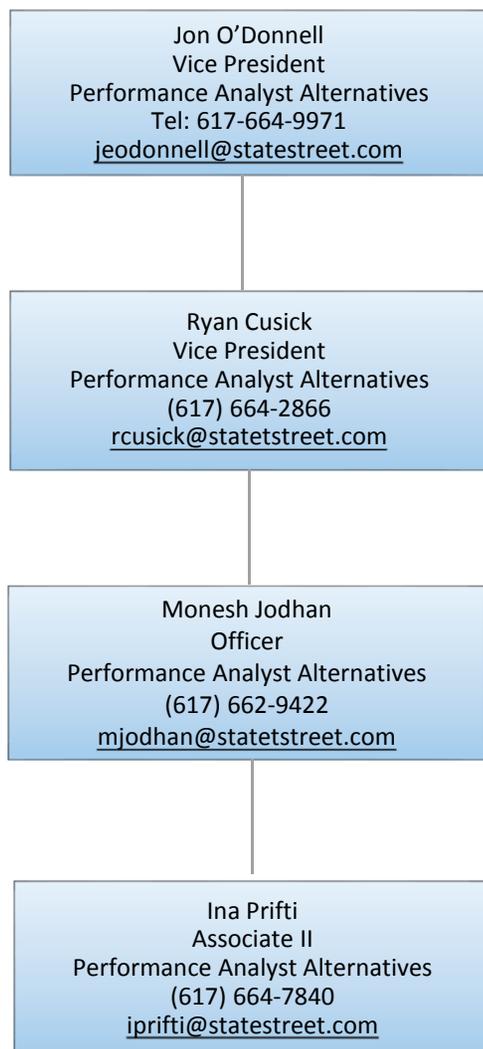
After also utilizing his experience in the Cash Team area, Chris accepted a Client Service Manager position on the Client Service team in July of 2012. In September of 2013, Chris was promoted to Officer. In early 2016, Chris was promoted to his current position of AVP.

Chris is a graduate of DeVry University with a Bachelor of Science degree in Business Administration.

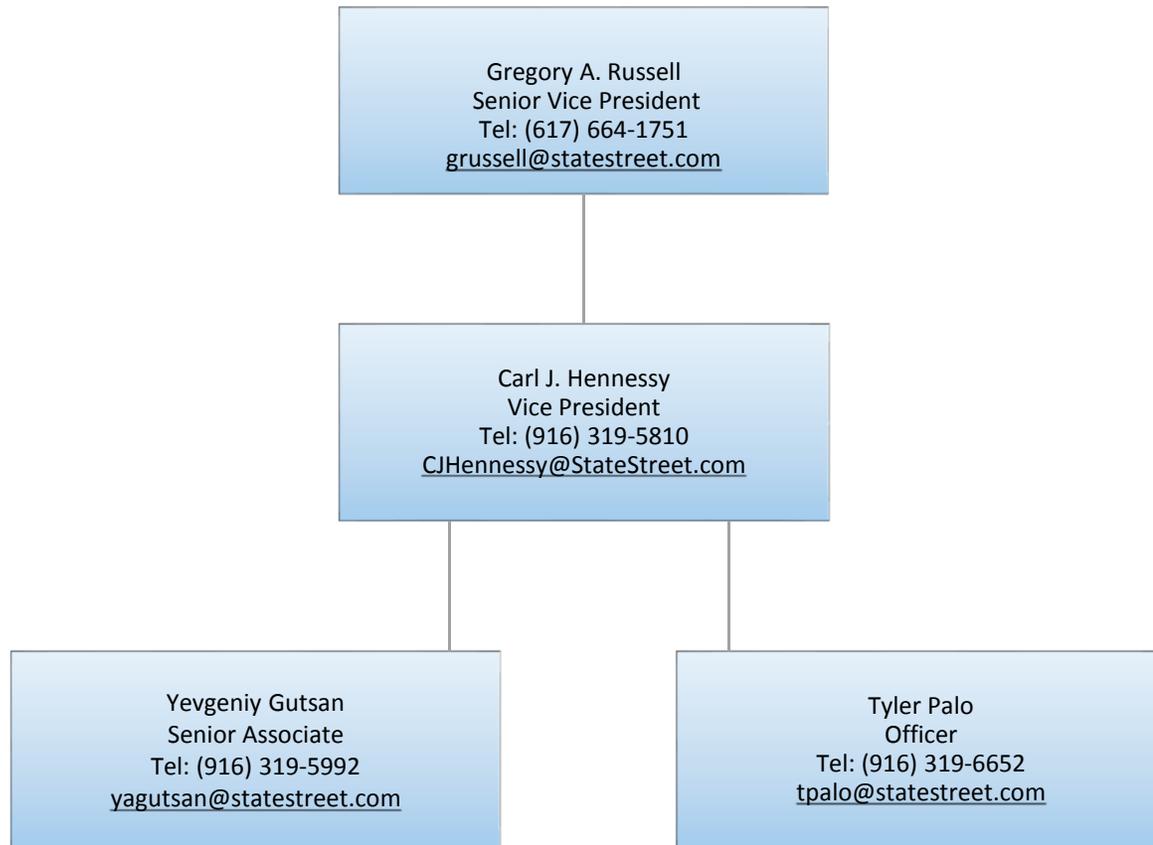
ACERA's Client Service and Delivery Team



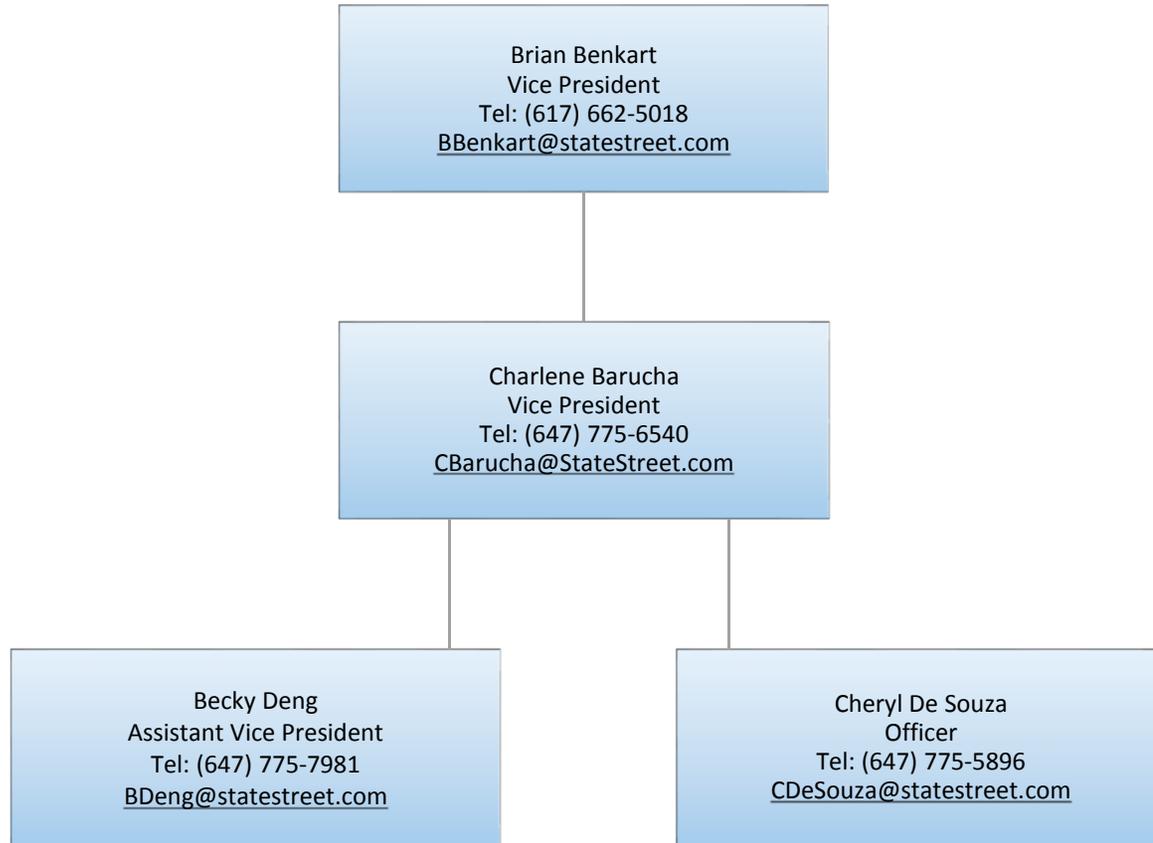
ACERA's Limited Partner Service (LPS) Team



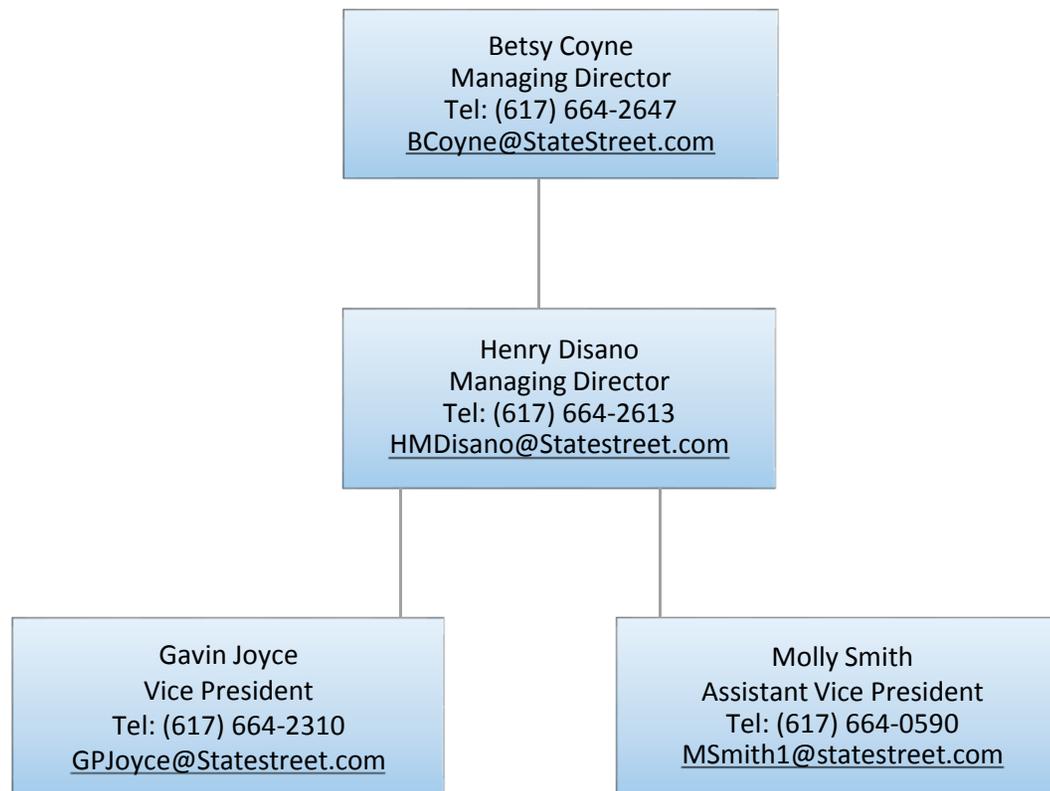
ACERA's Performance and Analytics Team



ACERA's Compliance Team



ACERA's Securities Finance Team



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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2019

Investment Performance Review for

Alameda County Employees' Retirement Association

3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag.
- Trade policies and conflict likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to hinder growth in the future.

PORTFOLIO IMPACTS

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter.
- Core inflation has crept up to cycle-highs in 2019, increasing to 2.4% YoY in September. Headline inflation rose 1.7% YoY, dragged down by falling energy prices. Neither the media nor investors appear to be concerned about rising inflation, as of yet. Investors remain focused on deflationary forces in the global economy.

THE INVESTMENT CLIMATE

- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%.
- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.

ASSET ALLOCATION ISSUES

- Risk assets were flat over the quarter. Global equities gained 0.0% and U.S. Treasuries gained 2.4% as domestic interest rates fell. Longer duration exposures continued to outperform.
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Emerging market currencies fell -4.0% in Q3 on the back of U.S. dollar strength. These currencies remain depressed relative to history.

A neutral risk stance may be appropriate in today's environment

U.S. economics summary

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag.
- U.S-China trade remained a major story in Q3. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Trade conflict has likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to act as a drag on growth in the future.
- Core inflation has crept up to cycle-highs, rising 2.4% YoY in September. Headline inflation increased 1.7% YoY, dragged down by falling energy prices.
- The U.S. unemployment rate reached a 50-year low of 3.5% in September. Historically, the rate of unemployment has risen prior to the beginning of each U.S. recession, which suggests the U.S. expansion may still have room to run.
- Despite record unemployment, wage growth remains lukewarm, decelerating from a cycle high of 3.4% achieved in February, to 2.9% in September.
- In October, the IMF cut its 2019 global economic growth forecast from 3.2% to 3.0%, referencing global trade friction as a primary driver.

	Most Recent	12 Months Prior
GDP (YoY)	2.3% <i>6/30/19</i>	3.2% <i>6/30/18</i>
Inflation (CPI YoY, Core)	2.4% <i>9/30/19</i>	2.3% <i>9/30/18</i>
Expected Inflation (5yr-5yr forward)	1.7% <i>9/30/19</i>	2.2% <i>9/30/18</i>
Fed Funds Target Range	1.75 – 2.00% <i>9/30/19</i>	2.00 – 2.25% <i>9/30/18</i>
10 Year Rate	1.7% <i>9/30/19</i>	3.1% <i>9/30/18</i>
U-3 Unemployment	3.5% <i>9/30/19</i>	3.7% <i>9/30/18</i>
U-6 Unemployment	6.9% <i>9/30/19</i>	7.5% <i>9/30/18</i>

International economics summary

— The Organization for Economic Development cut its 2019 calendar year forecast for global growth from 3.2% to 2.9% and its 2020 calendar year forecast from 3.4% to 3.0%. Driving the downward revisions were trade tensions, which the OECD estimated would reduce 2019 global growth by 0.6%,

— A major theme in the third quarter was the global manufacturing slowdown, which was illuminated by gloomy European manufacturing PMI data. The Markit Eurozone Manufacturing PMI fell to 45.7, further into contractionary territory indicated by a reading below 50. The German reading fell to 41.7. It has yet to be seen whether manufacturing weakness will spill into the larger services sector, where PMIs still indicate business expansion.

— Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a

cue for central banks to step in and attempt to bolster economic growth through more accommodative policy.

— Unemployment rates continued to tick lower around the globe. In the U.S., unemployment hit a 50-year low at 3.5%.

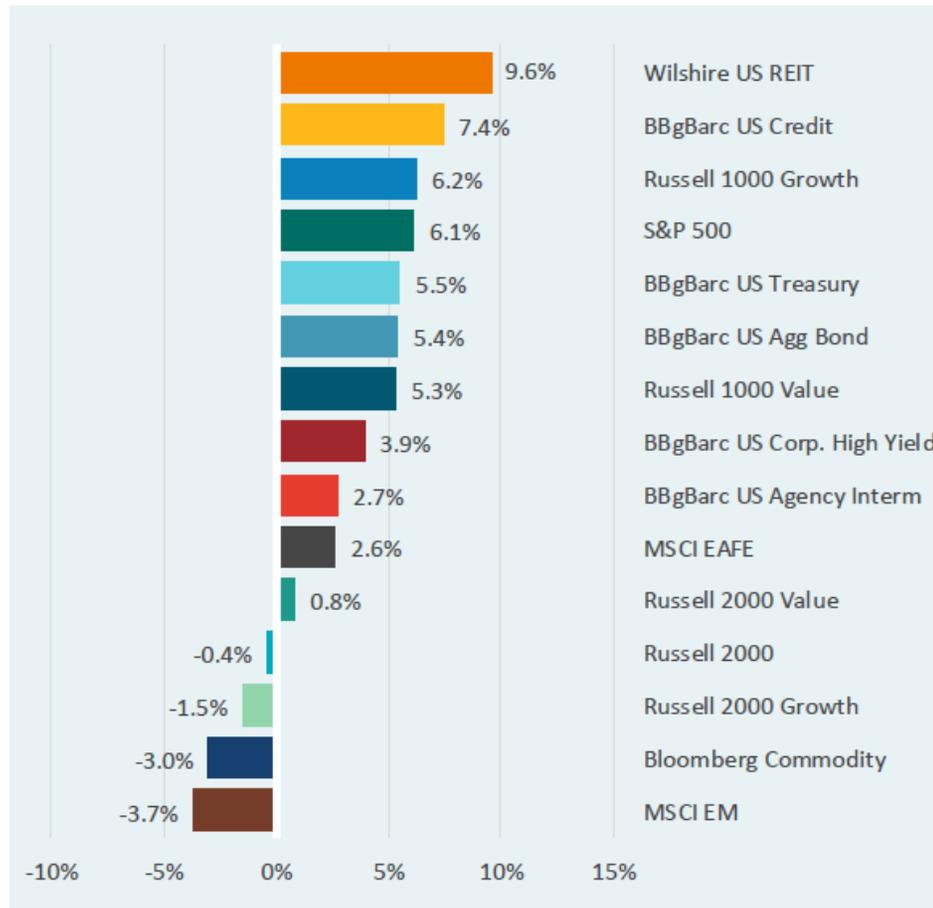
— U.S-China negotiations will likely continue to impact trade around the world. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.

— Dormant trade tensions between the U.S. and the E.U. saw a resurgence over the quarter – the U.S. applied tariffs between 10-25% on \$7.5B of imports from the E.U.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.3% <i>6/30/19</i>	1.7% <i>9/30/19</i>	3.5% <i>9/30/19</i>
Eurozone	1.2% <i>6/30/19</i>	0.8% <i>9/30/19</i>	7.4% <i>8/31/19</i>
Japan	1.0% <i>6/30/19</i>	0.4% <i>9/30/19</i>	2.3% <i>5/31/19</i>
BRICS Nations	5.0% <i>6/30/19</i>	3.1% <i>9/30/19</i>	5.1% <i>6/30/19</i>
Brazil	1.0% <i>6/30/19</i>	2.9% <i>9/30/19</i>	11.8% <i>8/31/19</i>
Russia	0.9% <i>6/30/19</i>	4.0% <i>9/30/19</i>	4.3% <i>8/31/19</i>
India	5.8% <i>3/31/19</i>	4.0% <i>9/30/19</i>	8.5% <i>12/31/17</i>
China	6.2% <i>6/30/19</i>	3.0% <i>9/30/19</i>	3.6% <i>6/30/19</i>

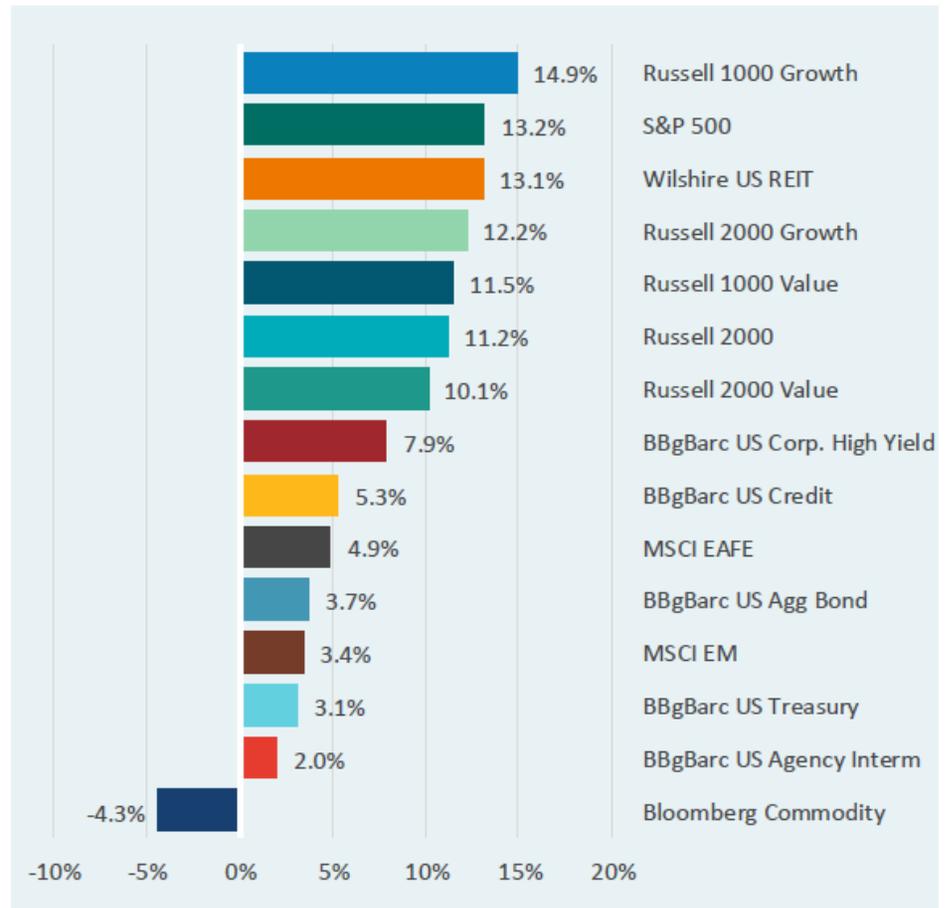
Major asset class returns

SIX MONTHS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

- The composite fund returned 0.33% for the third quarter of 2019 and ranked in the 76th percentile among public funds greater than \$1 billion (median of 0.6%). The fund matched its policy index return of 0.29% during this time period. Longer term, the five (7.0%), and ten-year (9.02%) returns ranked in the 27th and 19th percentile of large public plans respectively.
- Third quarter results were enhanced by the following factors:
 1. Newton lost 2.71% beating the MSCI Emerging Markets index (-4.11%). The biggest contributor to performance came from stock selection within the consumer discretionary sector, lead by china's New Oriental Education position.
- Third quarter results were hindered by the following factors:
 1. TCW Lost -1.86% for the quarter trailing the Russell 1000 Growth by 3.35% and ranked in the bottom of its peer group. The portfolio's weakest performance came from security specific holdings in the healthcare and consumer discretionary sectors. The Fund's overweight to IT and healthcare also contributed to relative underperformance.
 2. Pzena trailed the Russell 1000 Value (-0.87% vs 1.36%) and ranked in the bottom of its peers. Value started to come back in the beginning of September, but security selection in consumer discretionary, energy, and producer durables sectors hurt relative performance.
 3. Brandywine trailed the FTSE WGBI (-2.65%vs 0.85%). The strategies weak performance during the third quarter was due almost entirely to currency contribution. Performance suffered because of a strong US dollar during the third quarter.

Total Fund
 Manager Allocation Analysis (One Quarter)

Period Ending: September 30, 2019

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return ¹	\$730,035,694	\$1,105,068	\$9,360,863	\$740,501,625
Alta	\$4,213	\$0	\$0	\$4,213
Applied Research Investments	\$16,992,761	\$0	-\$12,669	\$16,980,092
AQR	\$422,831,549	-\$522,805	-\$12,954,762	\$409,353,982
Arga Investment Management	\$16,516,617	\$0	\$390,350	\$16,906,967
Baird Advisors	\$652,571,483	-\$135,581	\$15,507,606	\$667,943,508
Bivium Cash	\$658	\$0	\$4	\$662
BlackRock MSCI World ex-US Index Fd A	\$436,842,598	\$0	-\$3,887,149	\$432,955,449
BlackRock Russell 1000 Index Fund	\$2,021,534,482	-\$83,000,000	\$28,783,975	\$1,967,318,457
Brandywine	\$345,836,536	-\$233,108	-\$9,157,515	\$336,445,913
Capital Group	\$436,952,447	-\$970,471	-\$5,938,439	\$430,043,538
Cash Account	\$27,002,949	-\$13,451,284	\$61,871	\$13,613,537
Denali Advisors	\$16,608,604	\$0	-\$596,009	\$16,012,595
Dundas Partners	\$17,138,293	\$0	-\$99,044	\$17,039,249
Global Alpha Capital Management	\$6,148,515	\$0	-\$107,803	\$6,040,712
Huber	\$1,768	\$0	-\$4	\$1,763
Kennedy	\$113,983,752	-\$223,283	-\$953,641	\$112,806,828
Loomis Sayles	\$355,774,577	-\$278,627	\$5,296,057	\$360,792,007
Mondrian	\$428,706,424	-\$449,989	-\$11,603,166	\$416,653,270
Newton Emerging Mkt	\$216,731,811	\$0	-\$5,866,677	\$210,865,134
Next Century-SCG	\$135,662,881	-\$132,659,442	-\$2,955,117	\$48,322
OakBrook	\$13	\$66	\$0	\$79
Private Equity	\$521,269,148	\$22,228,743	\$30,863,628	\$574,361,518
Pzena	\$156,113,691	-\$34,193,088	-\$527,179	\$121,393,423
Radin Capital Partners	\$6,046,251	\$0	-\$450,046	\$5,596,205
RVX Asset Management	\$4,128,563	\$1,802	-\$165,760	\$3,964,605
Real Assets	\$293,108,397	\$121,797,120	-\$6,689,272	\$408,216,245
Real Estate	\$588,248,548	-\$13,777,600	\$7,930,235	\$582,401,182
Sec. Lending	\$0	-\$340,053	\$340,053	\$0
TCW	\$158,116,323	-\$38,164,367	-\$1,028,711	\$118,923,246
Templeton	\$228,287,206	\$0	-\$4,048,375	\$224,238,830
Transition Account (Macquarie Capital)	\$1,625,111	\$118,416,610	-\$3,683,931	\$116,357,789
Total	\$8,354,821,862	-\$54,850,287	\$27,809,371	\$8,327,780,947

¹ Preliminary ending market value

Bivium

Manager Allocation Analysis (One Quarter)

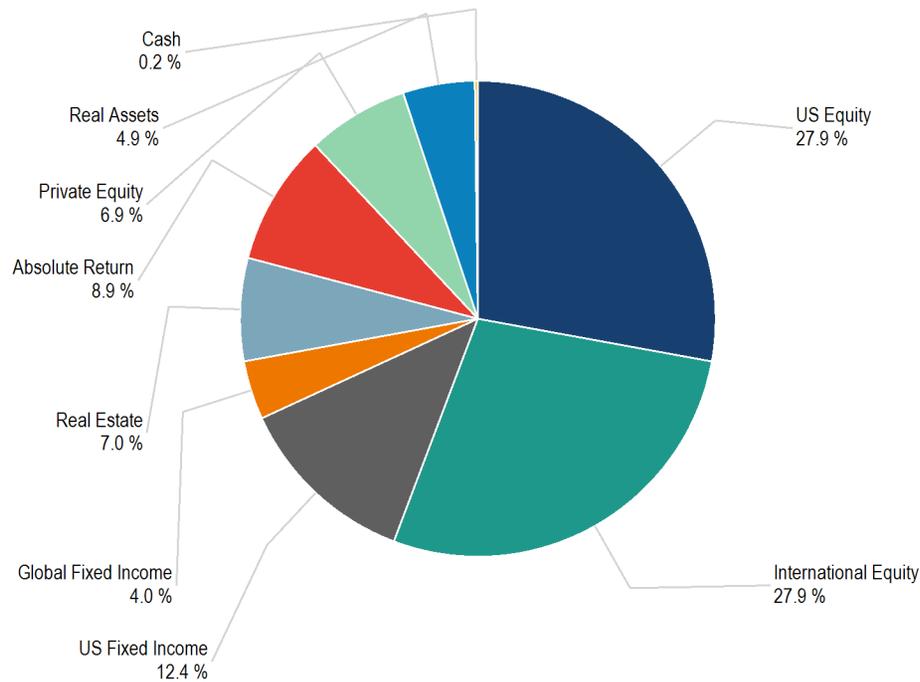
Period Ending: September 30, 2019

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$4,213	\$0	\$0	\$4,213
Bivium Cash	\$658	\$0	\$4	\$662
Huber	\$1,768	\$0	-\$4	\$1,763
OakBrook	\$13	\$66	\$0	\$79
Total	\$6,651	\$66	-\$1	\$6,717

Applied Research Investments	\$16,992,761	\$0	-\$12,669	\$16,980,092
Arga Investment Management	\$16,516,617	\$0	\$390,350	\$16,906,967
Denali Advisors	\$16,608,604	\$0	-\$596,009	\$16,012,595
Dundas Partners	\$17,138,293	\$0	-\$99,044	\$17,039,249
Global Alpha Capital Management	\$6,148,515	\$0	-\$107,803	\$6,040,712
Radin Capital Partners	\$6,046,251	\$0	-\$450,046	\$5,596,205
RVX Asset Management	\$4,128,563	\$1,802	-\$165,760	\$3,964,605
Total	\$83,579,604	\$1,802	-\$1,040,981	\$82,540,425

Total Fund Asset Allocation Analysis

Period Ending: September 30, 2019



	Actual	Actual
US Equity	\$2,320,496,992	27.9%
International Equity	\$2,323,008,417	27.9%
US Fixed Income	\$1,028,735,515	12.4%
Global Fixed Income	\$336,445,913	4.0%
Real Estate	\$582,401,184	7.0%
Absolute Return	\$740,501,626	8.9%
Private Equity	\$574,361,518	6.9%
Real Assets	\$408,216,245	4.9%
Private Credit	\$0	0.0%
Cash	\$13,613,537	0.2%
Total	\$8,327,780,947	100.0%

	Actual	Target
US Equity	27.9%	25.0%
International Equity	27.9%	25.0%
US Fixed Income	12.4%	13.0%
Global Fixed Income	4.0%	3.0%
Real Estate	7.0%	8.0%
Absolute Return	8.9%	9.0%
Private Equity	6.9%	8.0%
Real Assets	4.9%	5.0%
Private Credit	0.0%	4.0%
Cash	0.2%	0.0%
Total	100.0%	100.0%

Bivium Portfolio Liquidated U.S. Equities and invested in International Equities

Total Fund Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Fund (Gross)	0.33	76	3.45	72	3.16	69	8.92	14	7.00	27	8.61	21	9.02	19	9.53	Sep-85
Total Fund (Net)	0.28	81	3.33	73	2.99	73	8.70	17	6.73	34	8.31	32	8.71	34	9.33	
<i>Policy Index¹</i>	0.29	81	3.16	77	2.66	81	8.45	27	7.00	27	8.80	18	9.02	19	9.79	Sep-85
<i>Allocation Index</i>	0.26	81	3.38	73	2.65	81	8.36	31	6.83	31	8.50	23	8.69	35	--	Sep-85
<i>InvMetrics Public DB > \$1B Gross Median</i>	0.60		3.88		3.92		8.02		6.49		7.94		8.34		8.78	Sep-85
US Equity (Gross)	0.88	54	5.43	35	2.74	41	13.86	10	10.81	19	13.19	21	13.26	21	11.60	Sep-85
US Equity (Net)	0.86	54	5.32	38	2.59	43	13.60	14	10.50	29	12.86	41	12.94	39	--	
<i>Russell 3000</i>	1.16	36	5.31	41	2.92	37	12.83	36	10.44	34	13.00	31	13.08	31	11.12	Sep-85
<i>InvMetrics All DB US Eq Gross Median</i>	0.93		5.16		2.14		12.48		10.12		12.70		12.77		10.79	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	1.43	60	5.74	53	3.93	47	--	--	--	--	--	--	--	--	10.54	Apr-18
BlackRock Russell 1000 Index Fund (Net)	1.43	60	5.74	53	3.92	47	--	--	--	--	--	--	--	--	10.53	
<i>Russell 1000</i>	1.42	60	5.73	53	3.87	48	13.19	43	10.62	42	13.21	42	13.23	44	10.48	Apr-18
Large Cap Active Equity (Gross)	-1.36	--	3.45	--	0.13	--	12.90	--	10.02	--	12.81	--	12.77	--	7.75	Mar-00
Large Cap Active Equity (Net)	-1.51	--	2.96	--	-0.44	--	12.38	--	9.56	--	12.35	--	12.34	--	7.31	
<i>Russell 1000</i>	1.42	--	5.73	--	3.87	--	13.19	--	10.62	--	13.21	--	13.23	--	5.76	Mar-00
Pzena (Gross)	-0.87	97	2.70	92	-4.15	94	8.75	80	6.87	77	11.55	57	10.37	88	5.33	Jan-06
Pzena (Net)	-1.03	97	2.27	93	-4.71	95	8.20	85	6.36	83	11.04	70	9.90	91	4.88	
<i>Russell 1000 Value</i>	1.36	62	5.25	51	4.00	40	9.43	71	7.79	64	11.30	64	11.46	65	7.00	Jan-06
TCW (Gross)	-1.86	88	4.18	72	4.71	43	17.10	36	13.35	36	14.12	66	14.70	43	7.54	Jun-99
TCW (Net)	-1.99	89	3.65	77	4.18	48	16.63	44	12.95	43	13.74	74	14.33	57	--	
<i>Russell 1000 Growth</i>	1.49	29	6.20	41	3.71	53	16.89	40	13.39	35	15.02	38	14.94	35	5.56	Jun-99

¹ See Policy Index and Benchmark History.

Total Fund
Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Small Cap Equity (Gross)	-1.21	--	4.70	--	-3.37	--	12.42	--	10.27	--	12.30	--	12.84	--	13.34	Jul-85
Small Cap Equity (Net)	-1.36	--	4.12	--	-4.18	--	11.44	--	9.33	--	11.33	--	11.94	--	--	--
<i>Russell 2000</i>	-2.40	--	-0.36	--	-8.89	--	8.23	--	8.19	--	10.43	--	11.19	--	9.31	Jul-85
Kennedy (Gross)	-0.83	63	1.49	55	-8.11	61	6.38	68	6.68	65	11.24	36	--	--	11.38	Sep-10
Kennedy (Net)	-1.03	67	0.89	62	-8.89	69	5.46	81	5.77	79	10.30	63	--	--	10.49	--
<i>Russell 2000 Value</i>	-0.57	59	0.79	64	-8.24	63	6.54	65	7.17	57	9.35	82	10.06	87	9.86	Sep-10
International Equity (Gross)	-2.22	80	0.50	75	0.91	18	8.07	12	4.76	18	6.87	19	5.97	24	8.05	Dec-90
International Equity (Net)	-2.33	84	0.28	80	0.55	20	7.73	16	4.38	27	6.47	29	5.57	38	--	--
<i>MSCI ACWI ex USA IMI Gross</i>	-1.62	48	1.31	51	-1.35	50	6.60	41	3.52	51	5.64	60	5.01	61	6.14	Dec-90
<i>InvMetrics All DB ex-US Eq Gross Median</i>	-1.66		1.32		-1.38		6.30		3.54		5.89		5.30		6.57	Dec-90
Bivium Intl Equity (Gross)	-1.25	23	2.41	30	--	--	--	--	--	--	--	--	--	--	7.64	Oct-18
Bivium Intl Equity (Net)	-1.25	23	2.41	30	--	--	--	--	--	--	--	--	--	--	7.55	--
<i>MSCI ACWI ex USA Gross</i>	-1.70	46	1.47	51	-0.72	42	6.85	51	3.39	86	5.50	89	4.93	92	8.06	Oct-18
AQR (Gross)	-3.06	91	-2.17	93	-5.90	94	4.84	89	3.14	70	5.98	57	5.36	79	1.62	Oct-07
AQR (Net)	-3.19	93	-2.42	95	-6.28	97	4.35	93	2.63	84	5.48	80	4.87	90	1.14	--
<i>MSCI ACWI ex USA Gross</i>	-1.70	45	1.47	60	-0.72	43	6.85	34	3.39	65	5.50	80	4.93	88	1.12	Oct-07
BlackRock MSCI World ex-US Index Fd A (Gross)	-0.89	39	--	--	--	--	--	--	--	--	--	--	--	--	5.04	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	-0.89	39	--	--	--	--	--	--	--	--	--	--	--	--	5.04	--
<i>MSCI World ex US Gross</i>	-0.85	38	3.19	31	-0.40	25	7.04	35	3.59	70	6.29	77	5.29	80	5.08	May-19
<i>eV All EAFE Equity Gross Median</i>	-1.21		2.25		-2.87		6.48		4.48		7.11		6.63		4.59	May-19
Capital Group (Gross)	-1.36	35	2.11	45	6.24	5	11.70	5	6.88	20	8.26	24	6.66	53	8.51	Dec-90
Capital Group (Net)	-1.56	39	1.76	51	5.87	7	11.47	5	6.59	22	7.94	30	6.32	61	--	--
<i>MSCI ACWI ex USA Gross</i>	-1.70	48	1.47	55	-0.72	42	6.85	50	3.39	69	5.50	82	4.93	83	6.14	Dec-90
<i>MSCI ACWI ex USA Growth Gross</i>	-0.79	20	3.72	24	2.43	16	7.77	35	5.25	36	6.71	57	6.18	62	--	Dec-90

Total Fund Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Mondrian (Gross)	-2.70	91	-1.38	74	-1.78	41	5.17	58	2.49	45	5.05	68	4.82	48	6.73	Nov-03
Mondrian (Net)	-2.81	94	-1.68	77	-2.34	45	4.76	72	2.09	60	4.67	81	4.47	78	6.41	
MSCI ACWI ex USA Gross	-1.70	51	1.47	29	-0.72	36	6.85	14	3.39	14	5.50	57	4.93	44	6.64	Nov-03
MSCI ACWI ex USA Value Gross	-2.66	89	-0.85	66	-3.89	55	5.87	31	1.48	78	4.23	92	3.64	94	6.27	Nov-03
Newton Emerging Mkt (Gross)	-2.71	27	--	--	--	--	--	--	--	--	--	--	--	--	2.61	May-19
Newton Emerging Mkt (Net)	-2.74	28	--	--	--	--	--	--	--	--	--	--	--	--	2.57	
MSCI Emerging Markets Gross	-4.11	59	-3.40	67	-1.63	64	6.37	50	2.71	63	2.79	79	3.73	83	1.96	May-19
eV Emg Mkts Equity Gross Median	-3.76		-2.31		0.03		6.34		3.41		4.03		4.94		2.06	May-19
Templeton (Gross)	-1.78	31	-0.02	67	-3.03	35	6.46	56	4.90	70	7.31	74	--	--	5.71	Apr-11
Templeton (Net)	-1.92	34	-0.47	73	-3.64	38	5.80	67	4.21	76	6.56	82	--	--	5.00	
MSCI ACWI ex US Small Cap Gross	-1.09	17	0.29	62	-5.24	49	5.04	73	4.37	76	6.61	82	6.51	96	3.70	Apr-11
Total Fixed Income (Gross)	0.86	84	4.23	56	8.25	54	3.74	54	3.91	37	4.01	27	5.94	20	7.31	Sep-86
Total Fixed Income (Net)	0.81	86	4.12	60	8.02	60	3.54	57	3.72	46	3.80	32	5.74	22	--	--
Fixed Income Blend ¹	1.73	47	5.02	36	9.38	34	2.91	79	3.29	64	2.64	75	3.81	83	6.45	Sep-86
InvMetrics All DB Total Fix Inc Gross Median	1.66		4.52		8.39		3.84		3.62		3.24		4.62		7.25	Sep-86
US Fixed Income (Gross)	2.06	46	5.30	39	9.88	38	4.16	37	4.45	31	4.56	25	6.23	19	7.25	Sep-86
US Fixed Income (Net)	2.02	48	5.22	41	9.70	39	3.99	41	4.28	33	4.38	27	6.05	22	--	--
BBgBarc US Aggregate TR	2.27	35	5.42	36	10.30	34	2.92	75	3.38	68	2.72	76	3.75	76	6.22	Sep-86
InvMetrics All DB US Fix Inc Gross Median	1.92		4.83		9.13		3.62		3.78		3.38		4.68		6.46	Sep-86
Baird Advisors (Gross)	2.38	44	5.68	42	10.65	41	3.68	22	4.25	9	3.87	9	5.29	8	5.23	Oct-01
Baird Advisors (Net)	2.36	48	5.64	48	10.56	45	3.60	28	4.17	13	3.78	10	5.21	10	5.14	
BBgBarc US Aggregate TR	2.27	69	5.42	69	10.30	65	2.92	91	3.38	87	2.72	90	3.75	92	4.38	Oct-01

¹ See Policy Index and Benchmark History.

Total Fund
Performance Summary

Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Loomis Sayles (Gross)	1.49	97	4.60	94	8.39	96	5.06	3	4.82	3	5.83	1	7.91	1	8.22	Dec-00
Loomis Sayles (Net)	1.41	98	4.44	95	8.05	97	4.73	3	4.48	5	5.48	1	7.56	1	7.87	
<i>BBgBarc US Credit BAA TR</i>	3.26	1	8.22	1	13.49	1	5.12	3	4.89	3	4.40	4	6.17	2	6.52	Dec-00
Global Fixed Income (Gross)	-2.65	92	1.10	92	3.47	90	2.31	86	2.23	69	2.37	71	5.04	69	7.14	Nov-01
Global Fixed Income (Net)	-2.72	93	0.89	93	3.11	92	2.03	91	1.94	75	2.07	75	4.73	73	6.83	
<i>FTSE WGBI TR</i>	0.85	48	4.45	33	8.13	34	1.19	99	1.80	80	0.59	91	1.69	99	4.57	Nov-01
<i>InvMetrics All DB Gbl Fix Inc Gross Median</i>	0.75		3.62		7.55		4.05		3.51		3.15		5.36		6.45	Nov-01
Brandywine (Gross)	-2.65	95	1.10	89	3.47	79	2.31	68	2.23	68	2.37	60	5.04	34	7.14	Nov-01
Brandywine (Net)	-2.72	95	0.89	89	3.11	82	2.03	75	1.94	74	2.07	65	4.73	37	6.83	
<i>FTSE WGBI TR</i>	0.85	61	4.45	45	8.13	39	1.19	87	1.80	76	0.59	89	1.69	89	4.57	Nov-01
Absolute Return (Gross)	1.28	22	1.18	56	0.43	53	2.45	74	1.93	69	3.95	67	--	--	3.21	Sep-11
Absolute Return (Net)	1.28	22	1.18	56	0.43	53	2.45	74	1.93	69	3.95	67	--	--	3.21	
<i>HFRI Fund of Funds Composite Index</i>	-0.90	77	0.58	71	0.01	57	3.15	68	1.95	69	3.18	75	2.67	82	3.15	Sep-11
<i>InvMetrics All DB Hedge Funds Gross Median</i>	0.00		1.81		0.62		4.47		3.11		4.67		4.63		4.97	Sep-11
Private Equity (Gross)	5.92	--	12.16	--	12.22	--	14.63	--	14.57	--	15.23	--	14.63	--	4.06	Nov-08
Private Equity (Net)	5.92	--	12.16	--	12.22	--	14.63	--	14.57	--	15.23	--	14.63	--	4.06	
<i>Thomson Reuters C A Global All PE 1 Qtr Lag</i>	2.45	--	5.99	--	4.12	--	10.62	--	7.44	--	9.78	--	11.10	--	7.70	Nov-08
Real Assets (Gross)	-1.32	--	-2.87	--	-12.38	--	-2.17	--	-5.95	--	-6.41	--	--	--	-5.16	Sep-11
Real Assets (Net)	-1.32	--	-2.87	--	-12.38	--	-2.17	--	-5.95	--	-6.41	--	--	--	-5.16	
<i>Real Asset Blend¹</i>	-3.09	--	-0.76	--	-1.80	--	6.22	--	5.93	--	5.59	--	--	--	5.51	Sep-11

Total Fund
Performance Summary

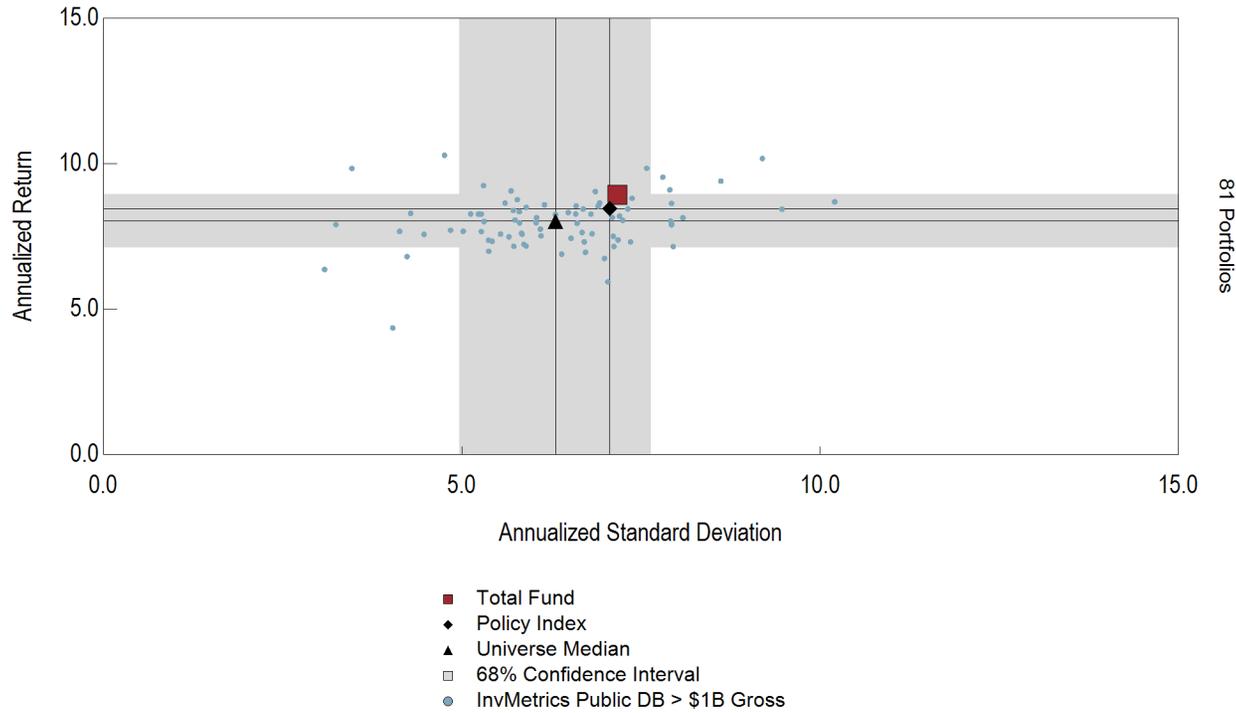
Period Ending: September 30, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Cash (Gross)	0.33	--	0.82	--	1.92	--	1.44	--	0.93	--	0.68	--	0.52	--	3.15	Sep-85
Cash (Net)	0.33	--	0.82	--	1.92	--	1.44	--	0.93	--	0.68	--	0.52	--	3.15	
91 Day T-Bills	0.50	--	1.08	--	2.26	--	1.54	--	0.97	--	0.71	--	0.52	--	3.25	Sep-85
Real Estate (Gross)	1.37	54	3.10	37	6.71	43	7.89	31	10.37	22	11.33	15	11.00	43	7.10	Mar-86
Real Estate (Net)	1.37	54	3.10	37	6.71	43	7.81	33	9.90	29	10.68	32	10.25	60	6.05	
NCREIF-ODCE	1.31	55	2.31	64	5.59	66	7.30	51	9.34	50	10.29	39	10.86	47	7.28	Mar-86
InvMetrics All DB Real Estate Pub+Priv Gross Median	1.45		2.87		6.15		7.33		9.30		10.06		10.71		7.48	Mar-86

1 See Policy Index and Benchmark History.

Total Fund
Risk vs. Return (3 Years)

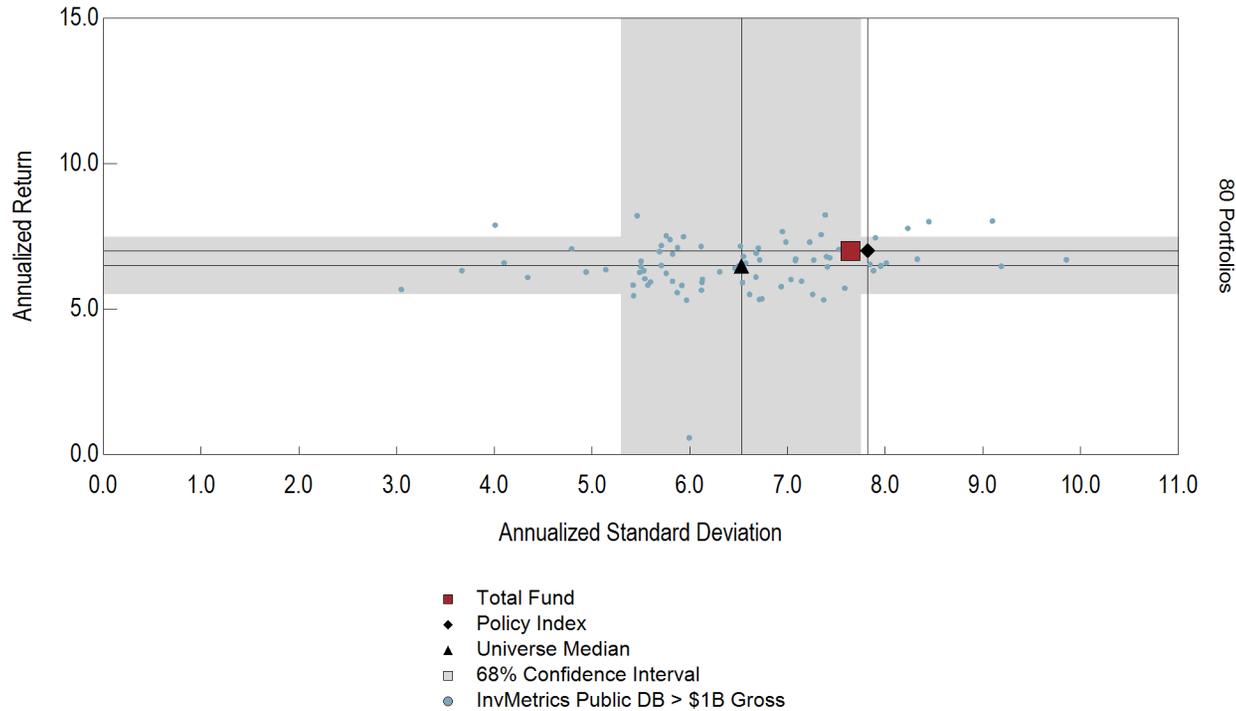
Period Ending: September 30, 2019



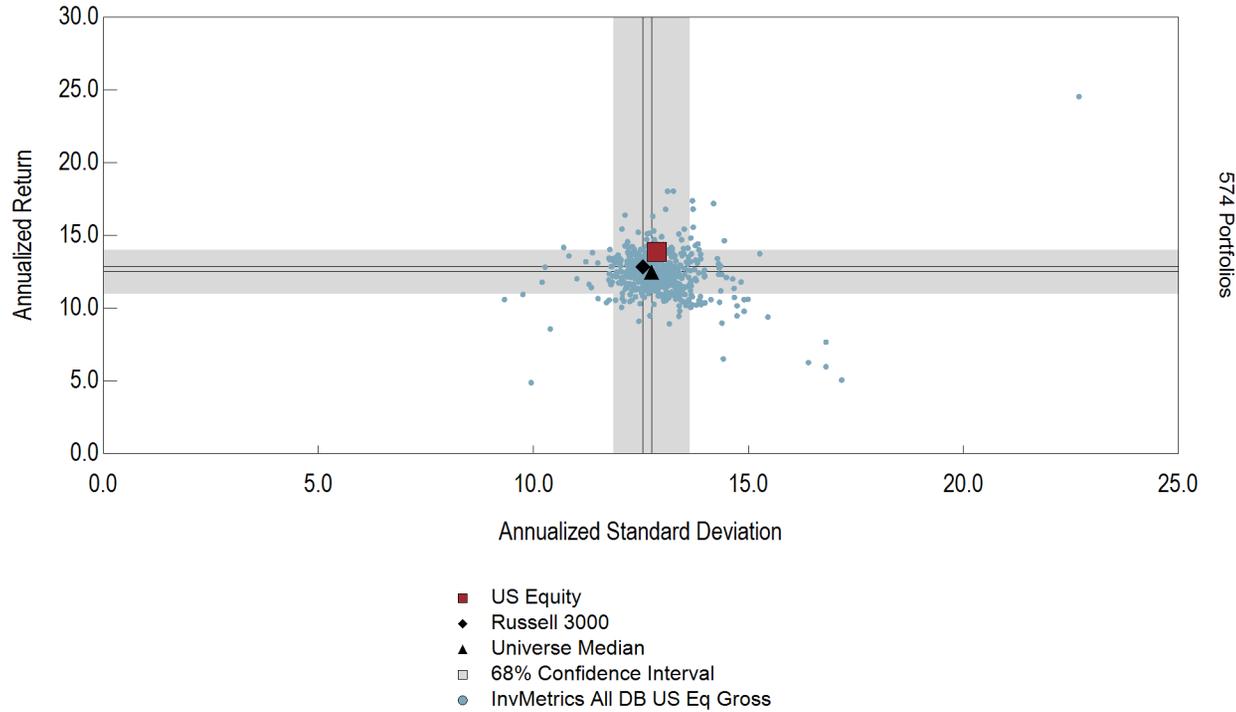
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	8.92%	14	7.18%	78	1.03	50	0.39	39	1.20%	63
Policy Index	8.45%	27	7.06%	72	0.98	62	--	--	0.00%	1
Allocation Index	8.36%	31	7.44%	85	0.92	73	-0.17	79	0.56%	5
InvMetrics Public DB > \$1B Gross Median	8.02%	--	6.31%	--	1.03	--	0.20	--	1.04%	--

Total Fund
Risk vs. Return (5 Years)

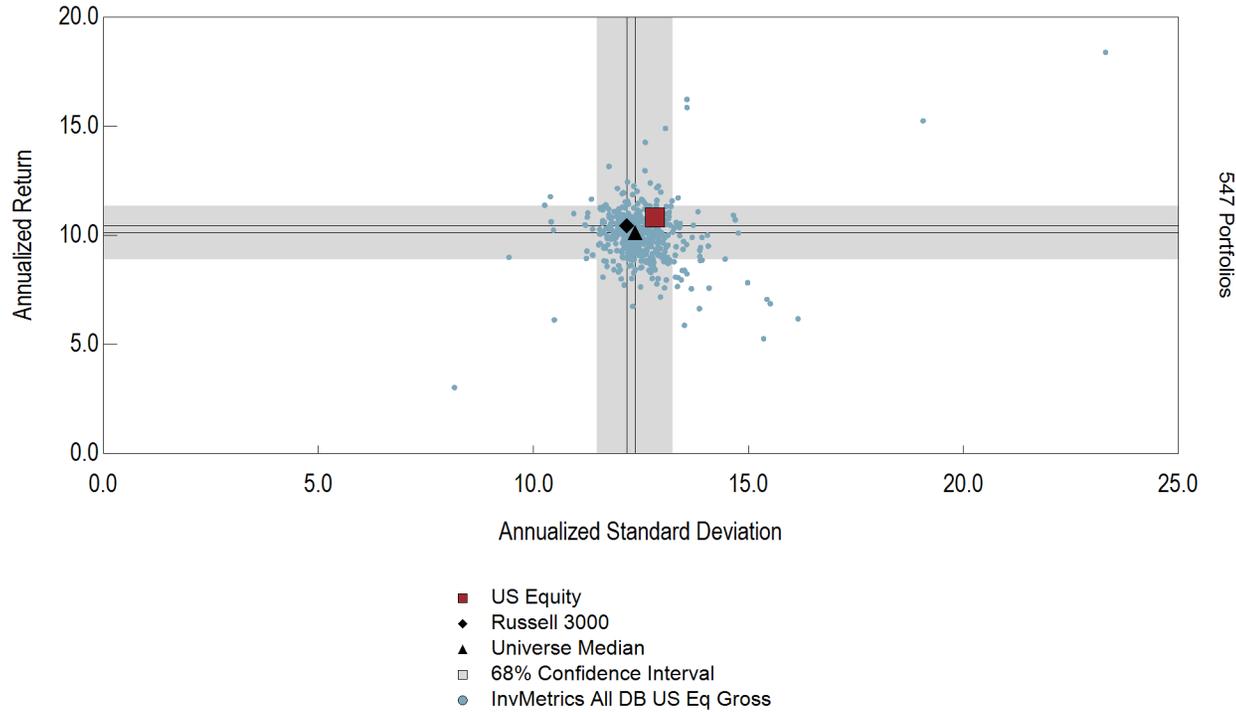
Period Ending: September 30, 2019



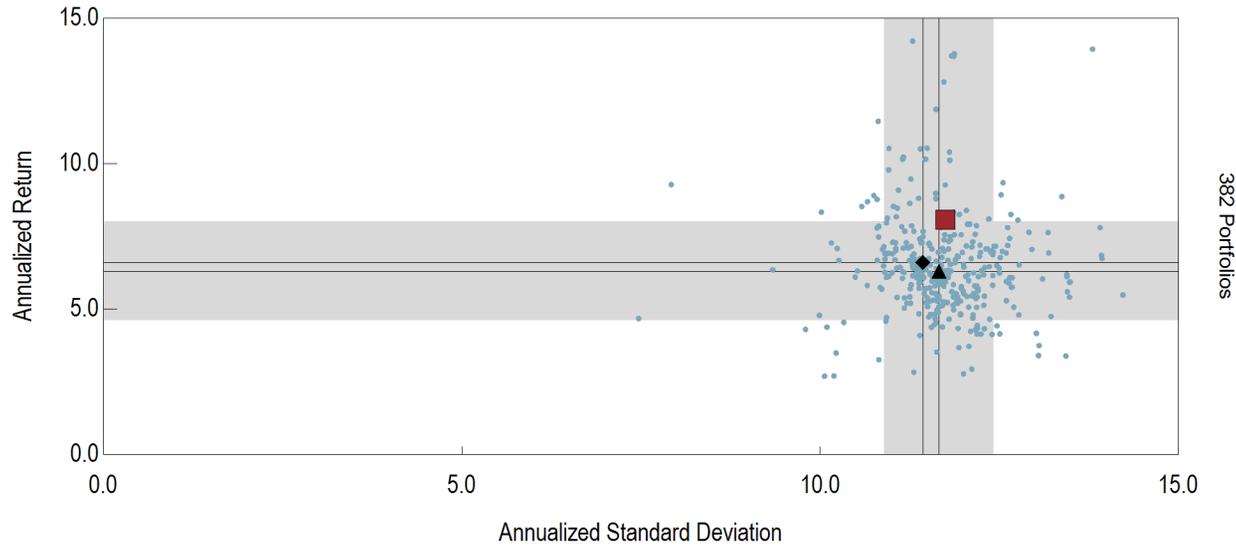
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	7.00%	27	7.65%	86	0.79	66	0.00	68	1.22%	53
Policy Index	7.00%	27	7.82%	86	0.77	72	--	--	0.00%	1
Allocation Index	6.83%	31	7.96%	92	0.74	77	-0.39	84	0.46%	3
InvMetrics Public DB > \$1B Gross Median	6.49%	--	6.53%	--	0.84	--	0.19	--	1.19%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	13.86%	10	12.87%	59	0.96	16	0.77	9	1.35%	34
Russell 3000	12.83%	36	12.54%	36	0.90	35	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	12.48%	--	12.75%	--	0.86	--	-0.23	--	1.85%	--

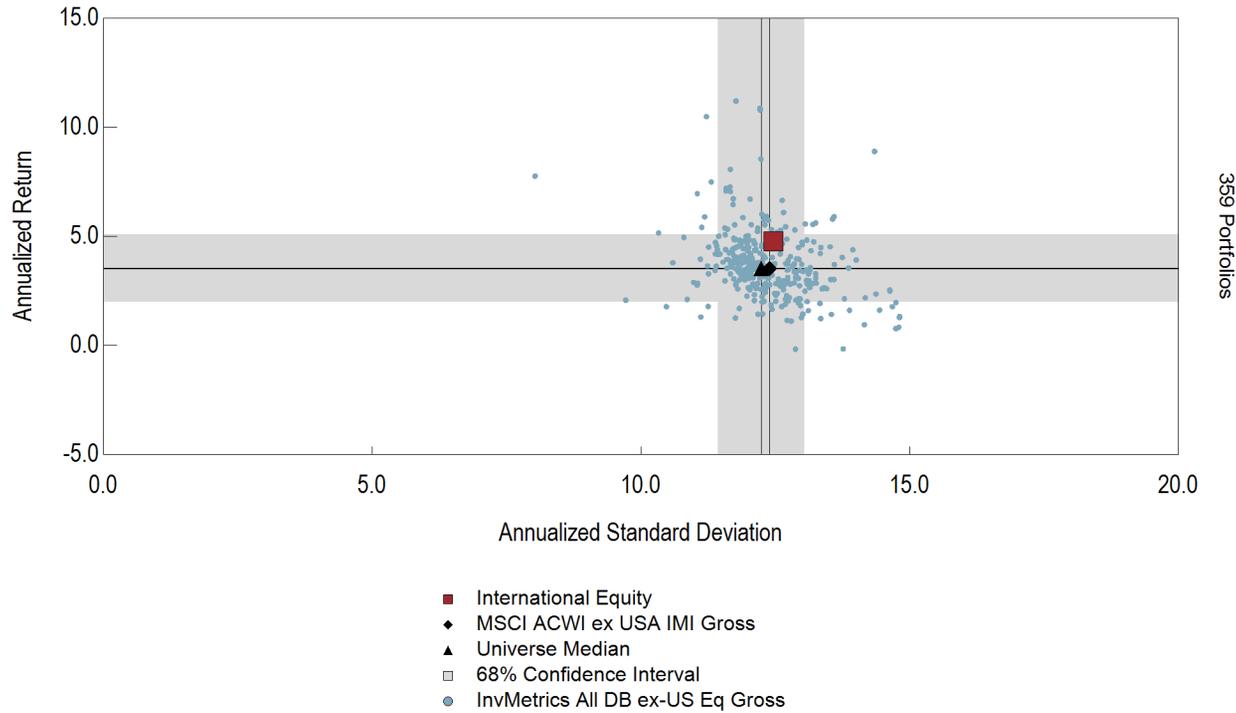


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	10.81%	19	12.83%	78	0.77	38	0.18	25	1.96%	51
Russell 3000	10.44%	34	12.17%	34	0.78	31	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	10.12%	--	12.37%	--	0.74	--	-0.22	--	1.93%	--

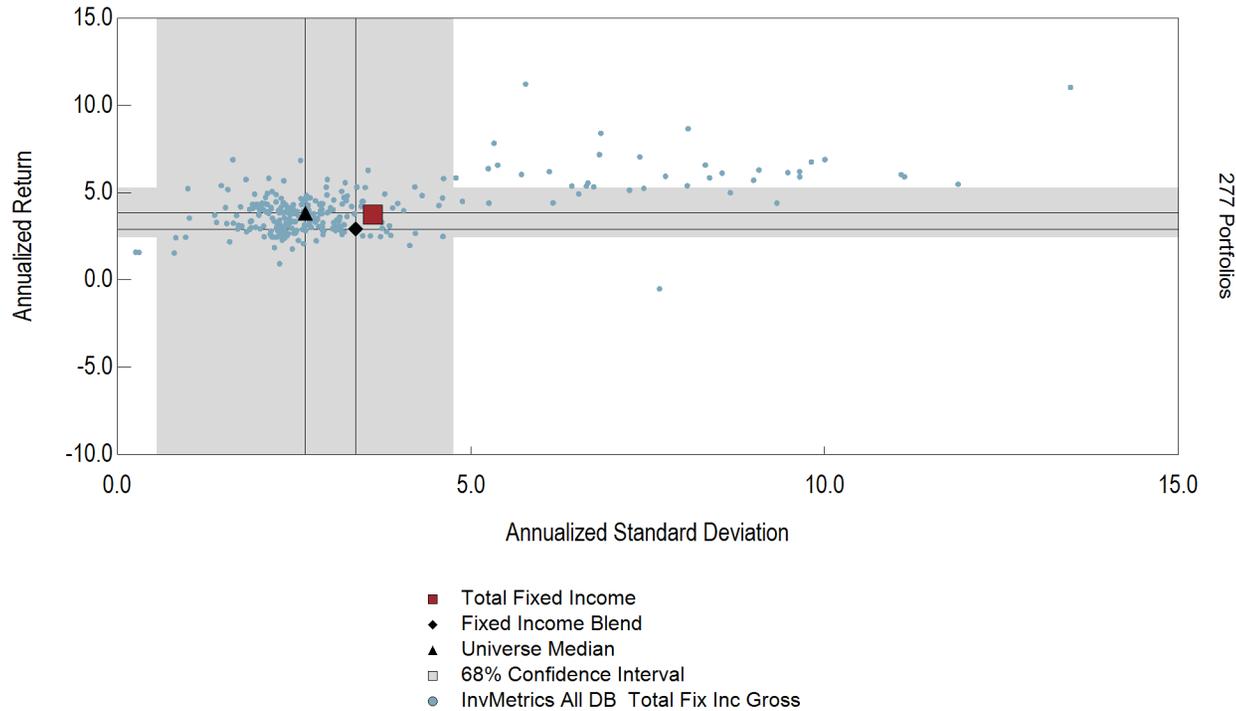


- International Equity
- ◆ MSCI ACWI ex USA IMI Gross
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics All DB ex-US Eq Gross

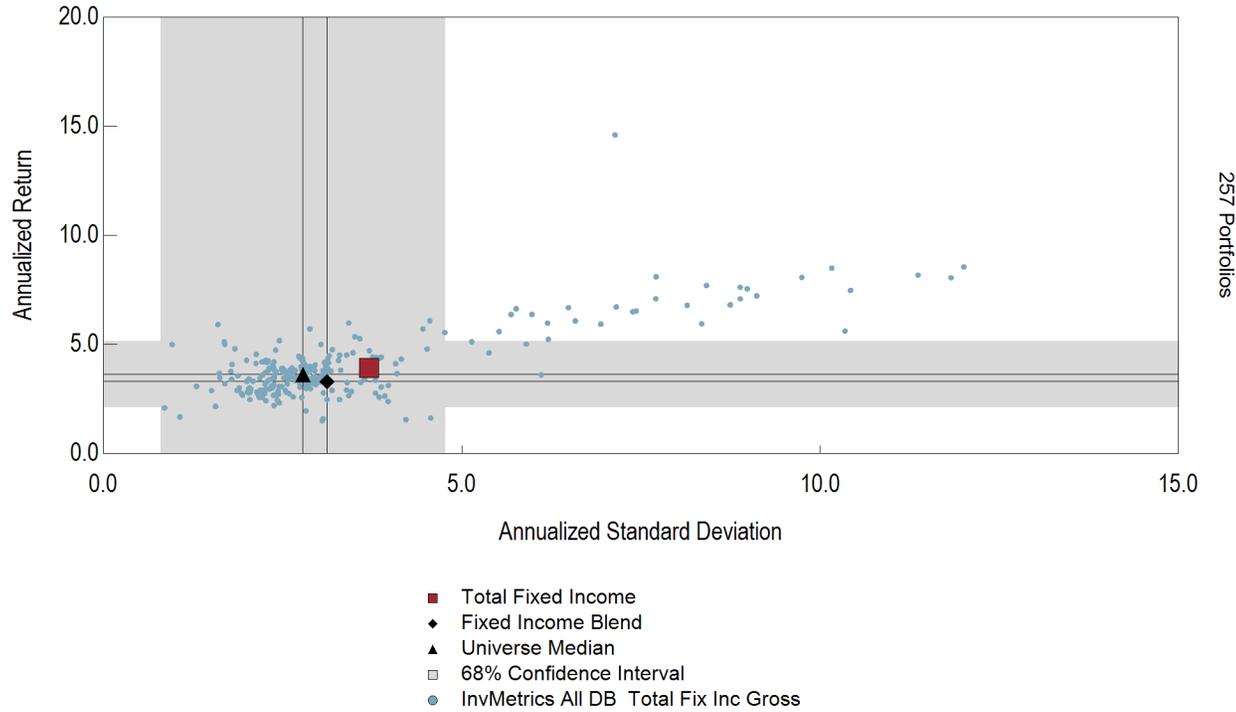
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	8.07%	12	11.75%	57	0.56	13	1.01	6	1.46%	13
MSCI ACWI ex USA IMI Gross	6.60%	41	11.44%	35	0.44	37	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	6.30%	--	11.66%	--	0.41	--	-0.06	--	2.50%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	4.76%	18	12.47%	64	0.30	20	0.87	9	1.43%	6
MSCI ACWI ex USA IMI Gross	3.52%	51	12.39%	61	0.21	52	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	3.54%	--	12.24%	--	0.21	--	0.16	--	2.81%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.74%	54	3.61%	80	0.61	61	0.50	54	1.66%	51
Fixed Income Blend	2.91%	79	3.37%	76	0.40	89	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	3.84%	--	2.66%	--	0.73	--	0.52	--	1.64%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.91%	37	3.71%	78	0.79	68	0.35	38	1.79%	53
Fixed Income Blend	3.29%	64	3.12%	69	0.74	77	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	3.62%	--	2.79%	--	0.89	--	0.23	--	1.73%	--

Equity environment

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.
- The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by flat earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S. equities on track for three consecutive quarters of earnings loss.
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted

basket of currencies, which created volatility and currency losses for unhedged investors.

- A large rotation from momentum stocks into value stocks occurred in Q3. The selloff was a multi-standard deviation event, with performance of the prior five months largely reversed in several days. The fall was likely due to a combination of better than expected economic news, monetary/fiscal stimulus expectations, and extreme positioning in these factors.
- Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have continued their run of underperformance.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	1.7%		4.3%	
US Small Cap (Russell 2000)	(2.4%)		(8.9%)	
US Large Value (Russell 1000 Value)	1.4%		4.0%	
US Large Growth (Russell 1000 Growth)	1.5%		3.7%	
International Large (MSCI EAFE)	(1.1%)	2.3%	(1.3%)	4.2%
Eurozone (Euro Stoxx 50)	(1.4%)	3.8%	1.3%	11.5%
U.K. (FTSE 100)	(2.2%)	1.4%	(2.7%)	5.4%
Japan (NIKKEI 225)	2.9%	3.6%	(8.2%)	(5.9%)
Emerging Markets (MSCI Emerging Markets)	(4.2%)	(2.2%)	(2.0%)	(0.4%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/19

Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.

The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by slow earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S.

equities on track for three consecutive quarters of earnings loss. Revenue growth in Q3 is expected to be 2.8% YoY. Investors may point to seemingly lofty earnings growth expectations for 2020 as reason for optimism, though in reality this is a fairly average forecast. Growth expectations are typically high initially, and then fall to a more realistic level as time passes.

U.S. equities offer lower yields and less attractive valuations relative to other markets around the world, which suggests domestic equities might underperform over the long-term. However, U.S. may continue to outperform over the shorter-term due to relative economic and market strength.

U.S. EQUITIES



Source: Standard & Poor's, as of 9/30/19

Q3 2019 EARNINGS EXPECTATIONS



Source: FactSet, as of 10/11/19

RELATIVE YIELDS



Source: Standard & Poor's, as of 9/30/19

Domestic equity size & style

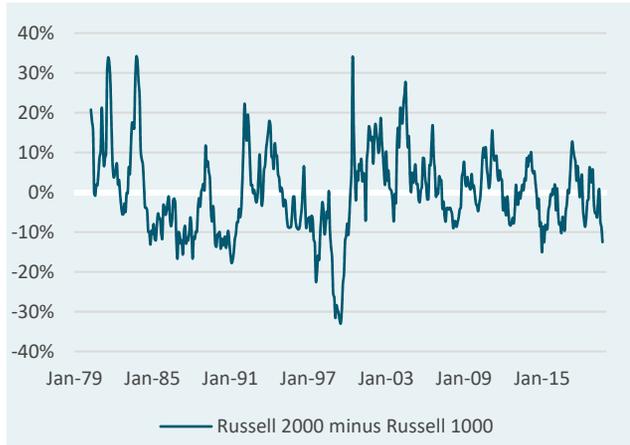
Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have extended their run of weakness.

The impact of sector performance on the value premium was mixed in the third quarter. Financials (+2.0%) and Utilities (+9.3%) outperformed the overall index (S&P 500 +1.7%) which boosted value, but poor Energy (-6.3%) performance counteracted these effects. Information Technology beat the

overall index (+3.3%) which acted as a headwind for value stocks.

Value stocks have exhibited a long run of underperformance over the past decade. Our view has been that value stocks did not appear attractive, despite persistent performance pain. This was because value stocks had underperformed due to fundamental reasons rather than due to prices becoming stretched. Now, for the first time in this cycle it appears value prices are becoming unusually cheap, as indicated by a large disparity between Russell 1000 Value and Russell 1000 Growth P/E multiples.

SMALL CAP VS LARGE CAP (YOY)



Source: FTSE, as of 9/30/19

VALUE VS GROWTH (YOY)



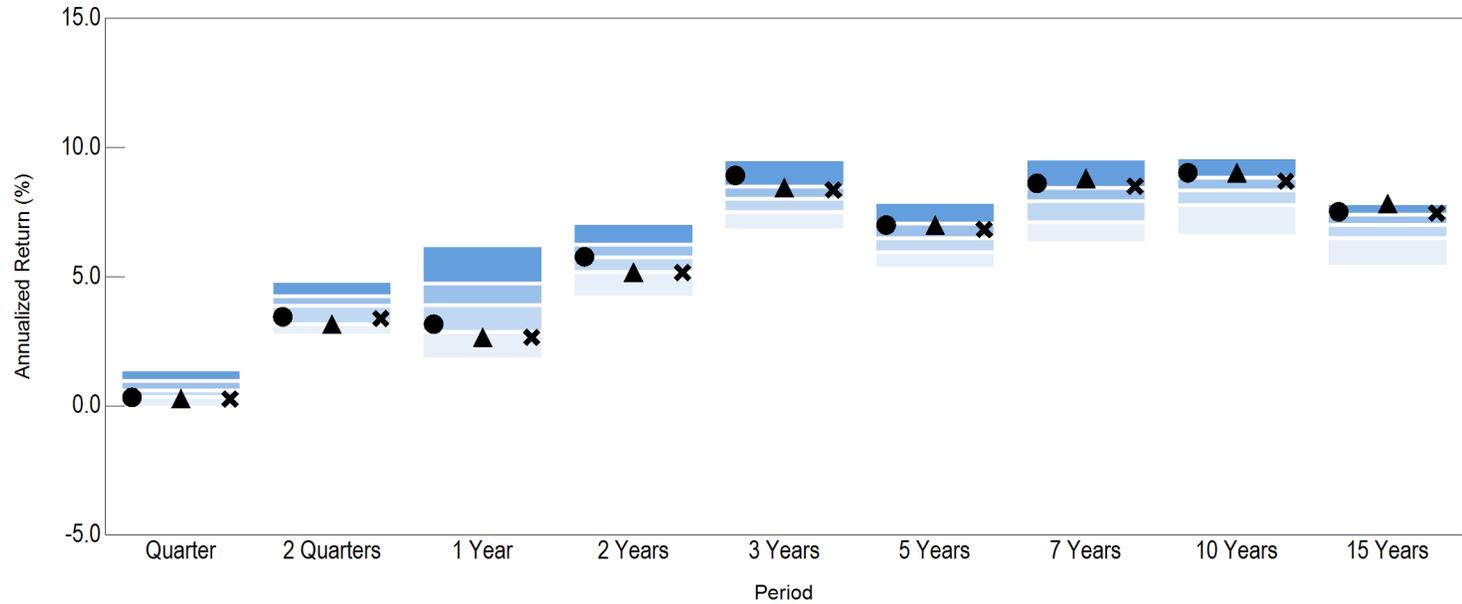
Source: FTSE, as of 9/30/19

VALUE STARTING TO LOOK CHEAP



Source: Russell, Bloomberg, as of 9/30/19

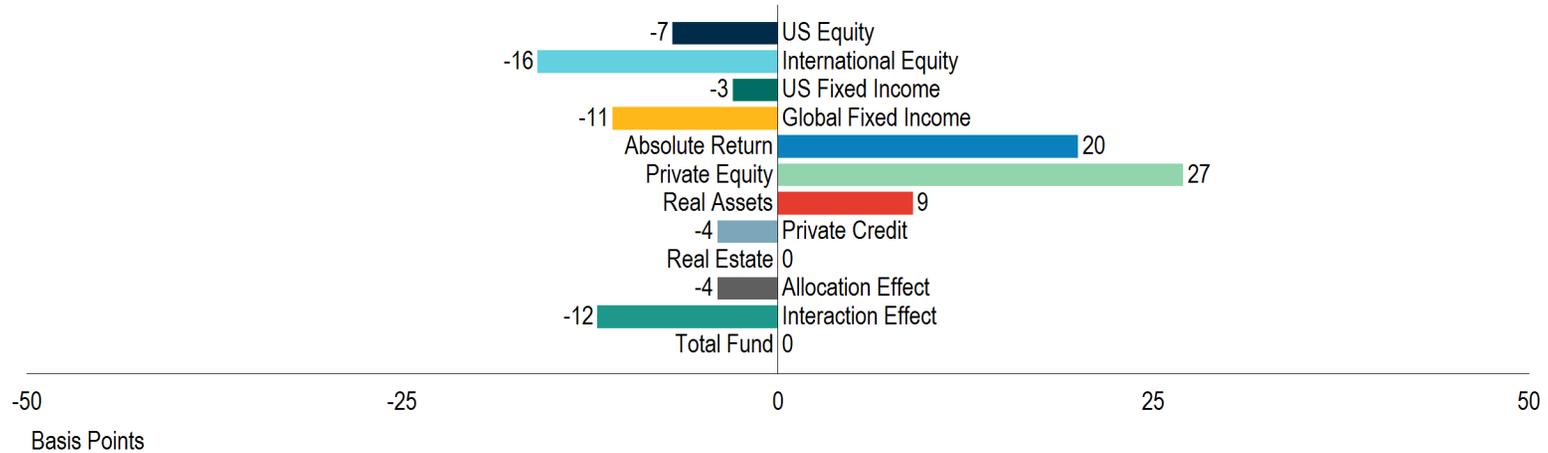
InvMetrics Public DB > \$1B Gross Return Comparison



	Return (Rank)								
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	15 Years
5th Percentile	1.40	4.82	6.19	7.07	9.53	7.89	9.55	9.62	7.84
25th Percentile	0.97	4.26	4.75	6.25	8.50	7.05	8.46	8.83	7.41
Median	0.60	3.88	3.92	5.77	8.02	6.49	7.94	8.34	7.01
75th Percentile	0.36	3.18	2.87	5.20	7.50	5.96	7.11	7.78	6.50
95th Percentile	-0.05	2.72	1.83	4.20	6.80	5.35	6.29	6.60	5.39
# of Portfolios	81	81	81	81	81	80	79	74	70
● Total Fund	0.33 (76)	3.45 (72)	3.16 (69)	5.77 (50)	8.92 (14)	7.00 (27)	8.61 (21)	9.02 (19)	7.51 (18)
▲ Policy Index	0.29 (81)	3.16 (77)	2.66 (81)	5.18 (76)	8.45 (27)	7.00 (27)	8.80 (18)	9.02 (19)	7.82 (6)
✕ Allocation Index	0.26 (81)	3.38 (73)	2.65 (81)	5.16 (77)	8.36 (31)	6.83 (31)	8.50 (23)	8.69 (35)	7.46 (22)

Total Fund
Performance Attribution (One Quarter)

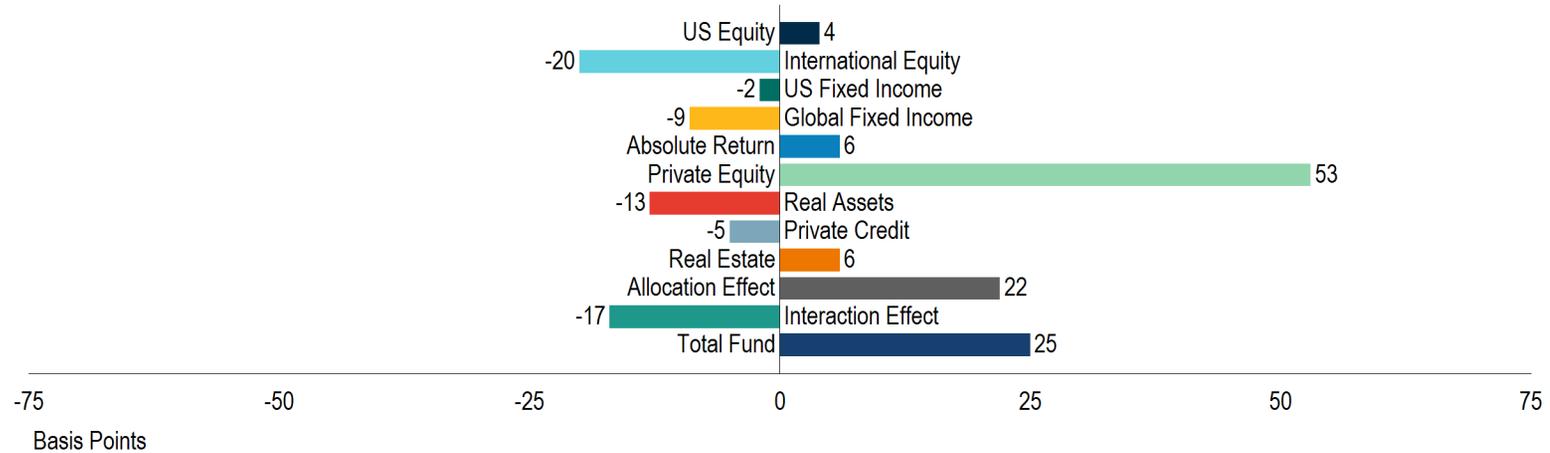
Period Ending: September 30, 2019



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	0.88%	1.16%	-0.28%	-0.07%	0.06%	-0.01%	-0.02%
International Equity	-2.22%	-1.62%	-0.61%	-0.16%	-0.04%	-0.01%	-0.21%
US Fixed Income	2.06%	2.27%	-0.21%	-0.03%	-0.03%	0.00%	-0.05%
Global Fixed Income	-2.65%	0.85%	-3.50%	-0.11%	0.01%	-0.04%	-0.14%
Absolute Return	1.28%	-0.90%	2.18%	0.20%	0.00%	0.00%	0.19%
Private Equity	5.92%	2.45%	3.47%	0.27%	-0.03%	-0.07%	0.17%
Real Assets	-1.32%	-3.09%	1.77%	0.09%	0.03%	-0.03%	0.09%
Private Credit	0.00%	0.99%	-0.99%	-0.04%	-0.03%	0.04%	-0.03%
Real Estate	1.37%	1.31%	0.06%	0.00%	-0.01%	0.00%	-0.01%
Total	0.34%	0.33%	0.00%	0.17%	-0.04%	-0.12%	0.00%

Total Fund
Performance Attribution (6 Months)

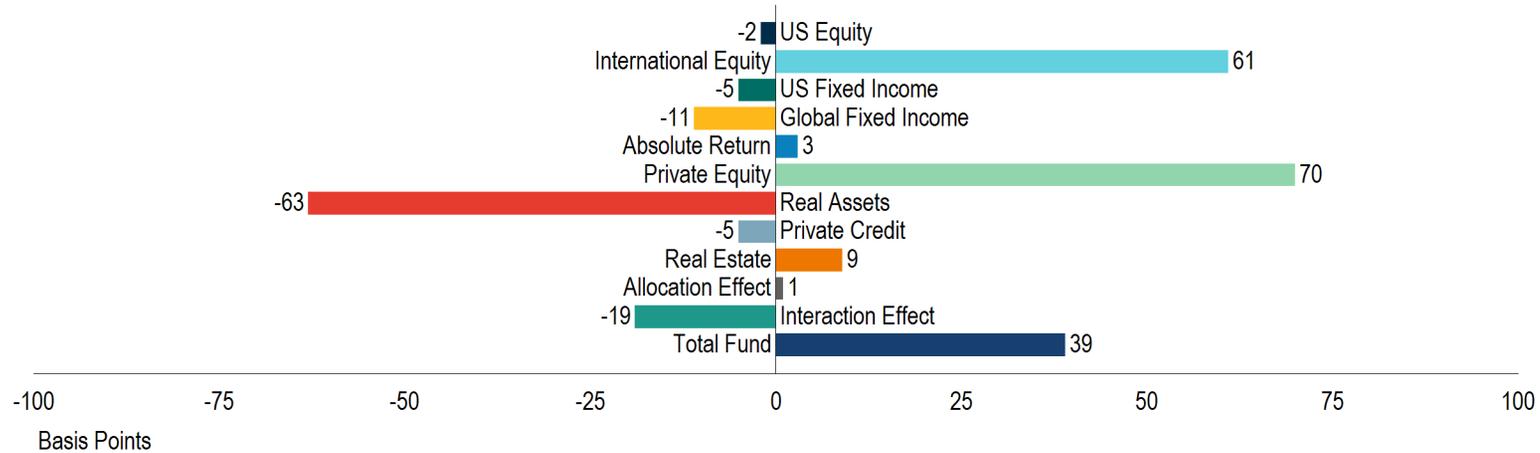
Period Ending: September 30, 2019



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	5.43%	5.31%	0.13%	0.04%	0.16%	0.00%	0.20%
International Equity	0.50%	1.31%	-0.81%	-0.20%	-0.04%	-0.01%	-0.25%
US Fixed Income	5.30%	5.42%	-0.12%	-0.02%	-0.04%	0.00%	-0.06%
Global Fixed Income	1.10%	4.45%	-3.35%	-0.09%	0.03%	-0.05%	-0.11%
Absolute Return	1.18%	0.58%	0.60%	0.06%	-0.01%	0.00%	0.04%
Private Equity	12.16%	5.99%	6.17%	0.53%	-0.05%	-0.19%	0.29%
Real Assets	-2.87%	-0.76%	-2.10%	-0.13%	0.03%	0.03%	-0.06%
Private Credit	0.00%	2.69%	-2.69%	-0.05%	0.14%	0.05%	0.14%
Real Estate	3.10%	2.31%	0.79%	0.06%	0.00%	-0.01%	0.06%
Total	3.45%	3.20%	0.25%	0.20%	0.22%	-0.17%	0.25%

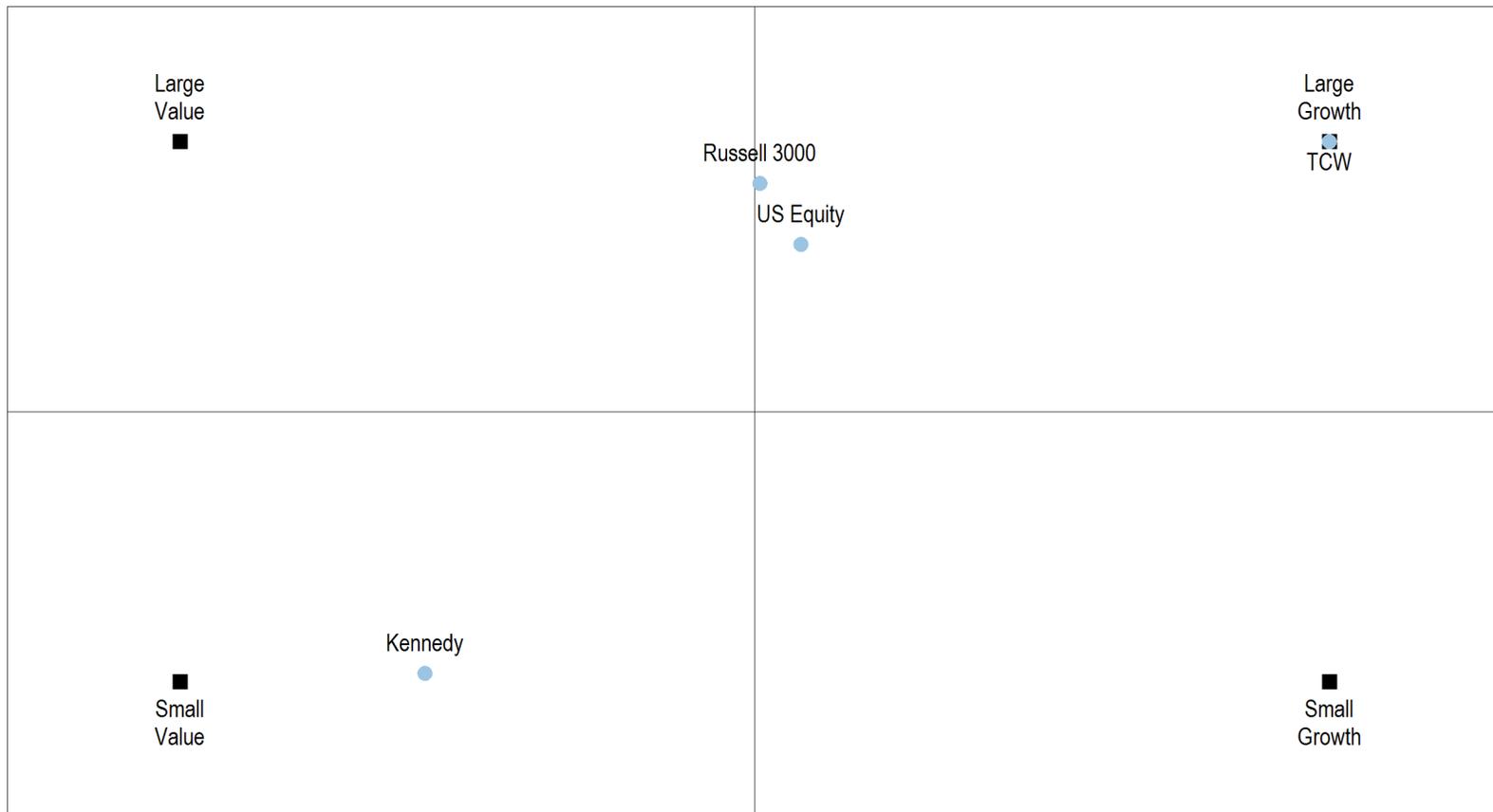
Total Fund
Performance Attribution (One Year)

Period Ending: September 30, 2019

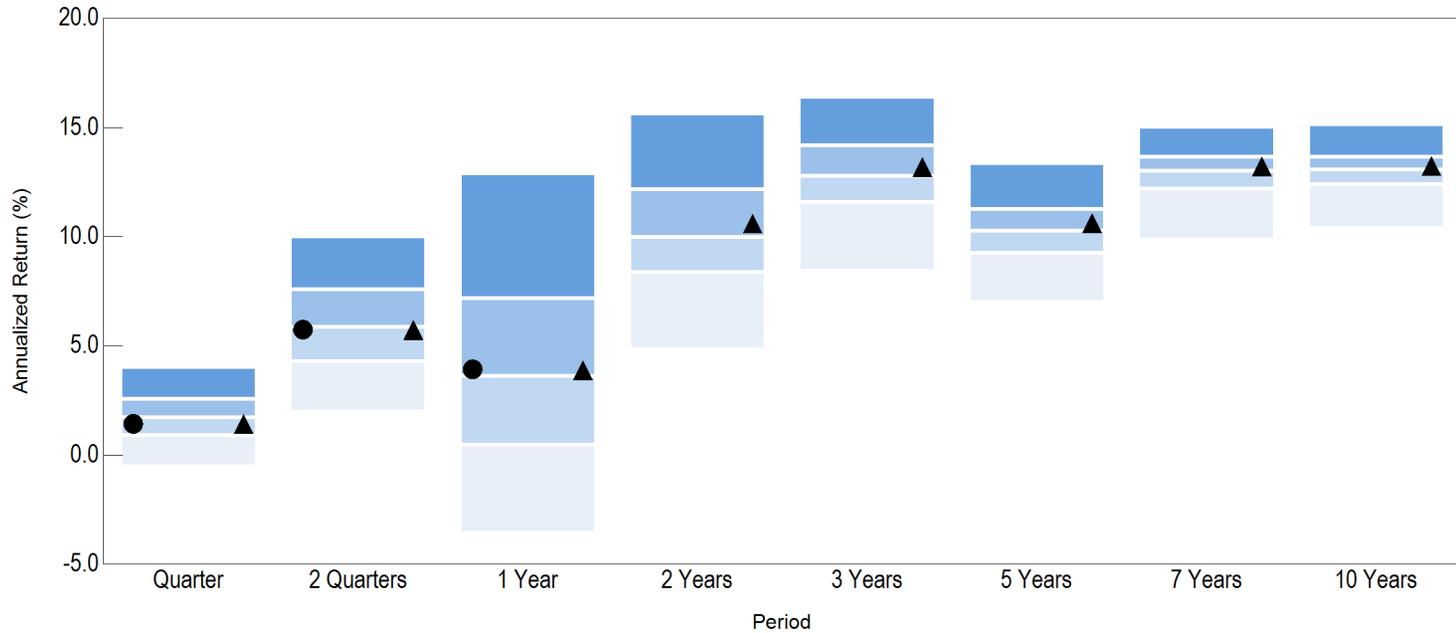


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	2.74%	2.92%	-0.18%	-0.02%	0.01%	-0.02%	-0.03%
International Equity	0.91%	-1.35%	2.26%	0.61%	-0.04%	0.01%	0.58%
US Fixed Income	9.88%	10.30%	-0.42%	-0.05%	-0.09%	0.01%	-0.14%
Global Fixed Income	3.47%	8.13%	-4.66%	-0.11%	0.07%	-0.06%	-0.10%
Absolute Return	0.43%	0.01%	0.42%	0.03%	-0.03%	-0.02%	-0.02%
Private Equity	12.22%	4.12%	8.10%	0.70%	-0.03%	-0.29%	0.39%
Real Assets	-12.38%	-1.80%	-10.58%	-0.63%	0.03%	0.15%	-0.45%
Private Credit	0.00%	3.10%	-3.10%	-0.05%	0.14%	0.05%	0.14%
Real Estate	6.71%	5.59%	1.12%	0.09%	-0.07%	-0.01%	0.01%
Total	3.15%	2.76%	0.39%	0.57%	0.01%	-0.19%	0.39%

US Effective Style Map



eV US Large Cap Core Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	4.03		10.01		12.90		15.63		16.39		13.35		15.03		15.15	
25th Percentile	2.61		7.62		7.20		12.18		14.19		11.29		13.66		13.69	
Median	1.73		5.88		3.64		10.00		12.79		10.30		13.05		13.09	
75th Percentile	0.94		4.33		0.49		8.39		11.60		9.28		12.23		12.42	
95th Percentile	-0.49		2.02		-3.55		4.87		8.46		7.03		9.89		10.41	
# of Portfolios	294		294		294		290		282		266		241		206	
● BlackRock Russell 1000 Index Fund	1.43	(60)	5.74	(53)	3.93	(47)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 1000	1.42	(60)	5.73	(53)	3.87	(48)	10.60	(44)	13.19	(43)	10.62	(42)	13.21	(42)	13.23	(44)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,000	997
Weighted Avg. Market Cap. (\$B)	209.4	208.9
Median Market Cap. (\$B)	9.7	9.8
Price To Earnings	20.8	20.7
Price To Book	3.6	3.6
Price To Sales	2.1	2.1
Return on Equity (%)	24.7	24.6
Yield (%)	1.9	1.9
Beta (holdings; domestic)	1.0	1.0

Top Holdings

MICROSOFT	3.8%
APPLE	3.7%
AMAZON.COM	2.6%
FACEBOOK CLASS A	1.5%
BERKSHIRE HATHAWAY 'B'	1.5%
JP MORGAN CHASE & CO.	1.4%
ALPHABET 'C'	1.3%
ALPHABET A	1.3%
JOHNSON & JOHNSON	1.3%
PROCTER & GAMBLE	1.1%

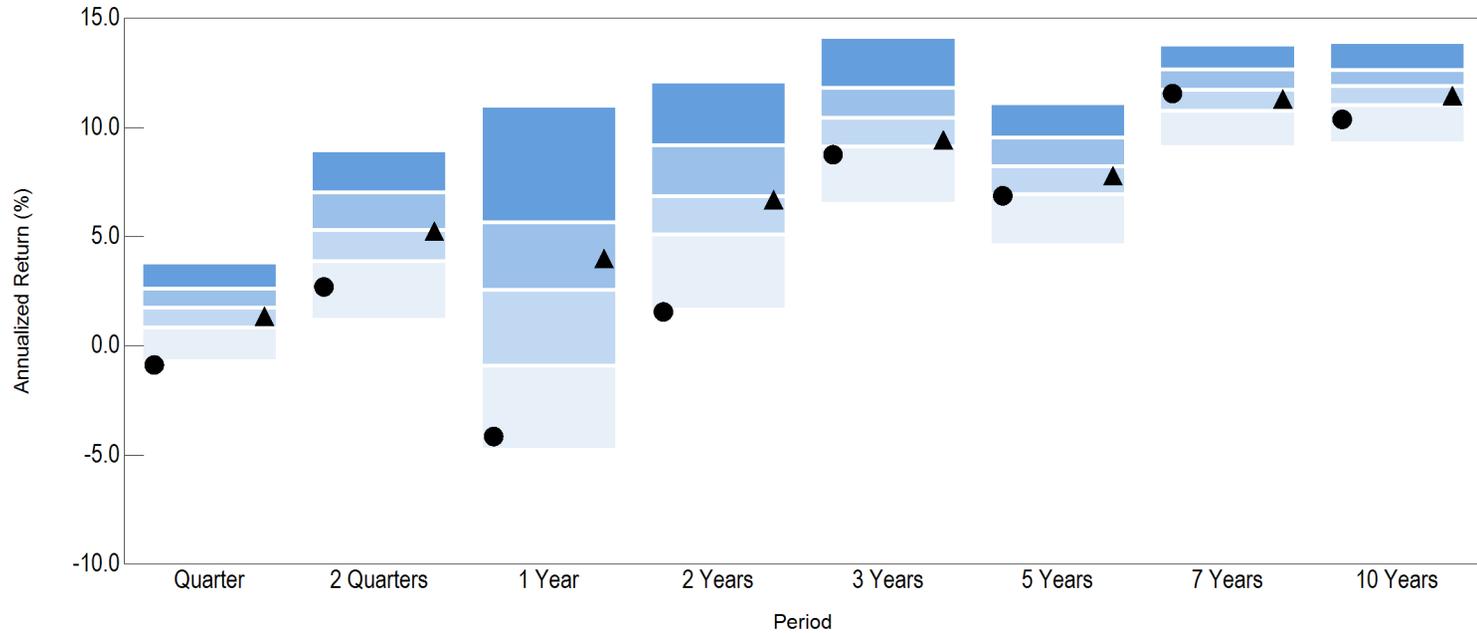
Best Performers

	Return %
INSULET (PODD)	38.2%
CYRUSONE (CONE)	37.9%
KLA (KLAC)	35.7%
NEW YORK COMMUNITY BANCORP (NYCB)	27.6%
ENTEGRIS (ENTG)	26.3%
PILGRIMS PRIDE (PPC)	26.2%
WESTERN DIGITAL (WDC)	25.4%
DOCUSIGN (DOCU)	24.6%
TARGET (TGT)	24.4%
XPO LOGISTICS (XPO)	23.8%

Worst Performers

	Return %
2U (TWOU)	-56.7%
PG&E (PCG)	-56.4%
COVETRUS (CVET)	-51.4%
SAREPTA THERAPEUTICS (SRPT)	-50.4%
NEKTAR THERAPEUTICS (NKTR)	-48.8%
DXC TECHNOLOGY (DXC)	-46.2%
ANTERO RESOURCES (AR)	-45.4%
RANGE RES. (RRC)	-45.0%
PLURALSIGHT A (PS)	-44.6%
FLUOR (FLR)	-42.5%

eV US Large Cap Value Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.80	8.95	10.98	12.10	14.12	11.10	13.79	13.90
25th Percentile	2.64	7.04	5.66	9.20	11.84	9.56	12.68	12.65
Median	1.77	5.31	2.57	6.88	10.46	8.23	11.73	11.91
75th Percentile	0.85	3.90	-0.89	5.11	9.15	6.96	10.78	11.05
95th Percentile	-0.68	1.20	-4.75	1.68	6.52	4.61	9.11	9.30
# of Portfolios	314	314	314	313	309	304	289	258
● Pzena	-0.87 (97)	2.70 (92)	-4.15 (94)	1.55 (96)	8.75 (80)	6.87 (77)	11.55 (57)	10.37 (88)
▲ Russell 1000 Value	1.36 (62)	5.25 (51)	4.00 (40)	6.69 (53)	9.43 (71)	7.79 (64)	11.30 (64)	11.46 (65)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	39	760
Weighted Avg. Market Cap. (\$B)	61.9	114.2
Median Market Cap. (\$B)	20.8	9.0
Price To Earnings	13.2	16.7
Price To Book	1.6	2.2
Price To Sales	0.7	1.5
Return on Equity (%)	6.8	14.9
Yield (%)	2.6	2.6
Beta (holdings; domestic)	1.3	1.0

Top Holdings

AMERICAN INTL.GP.	4.1%
CAPITAL ONE FINL.	4.1%
CITIGROUP	4.0%
GENERAL ELECTRIC	3.9%
WELLS FARGO & CO	3.9%
LEAR	3.7%
NATIONAL OILWELL VARCO	3.5%
PVH	3.5%
NEWELL BRANDS (XSC)	3.3%
HEWLETT PACKARD ENTER.	3.2%

Best Performers

	Return %
NEWELL BRANDS (XSC) (NWL)	23.1%
EDISON INTL. (EIX)	13.8%
AXIS CAPITAL HDG. (AXS)	11.9%
WELLS FARGO & CO (WFC)	7.8%
AXA EQUITABLE HOLDINGS (EQH)	6.8%
KKR AND A (KKR)	6.8%
CENOVUS ENERGY (NYS) (CVE)	6.8%
JP MORGAN CHASE & CO. (JPM)	6.0%
AMGEN (AMGN)	5.8%
AMERICAN INTL.GP. (AIG)	5.1%

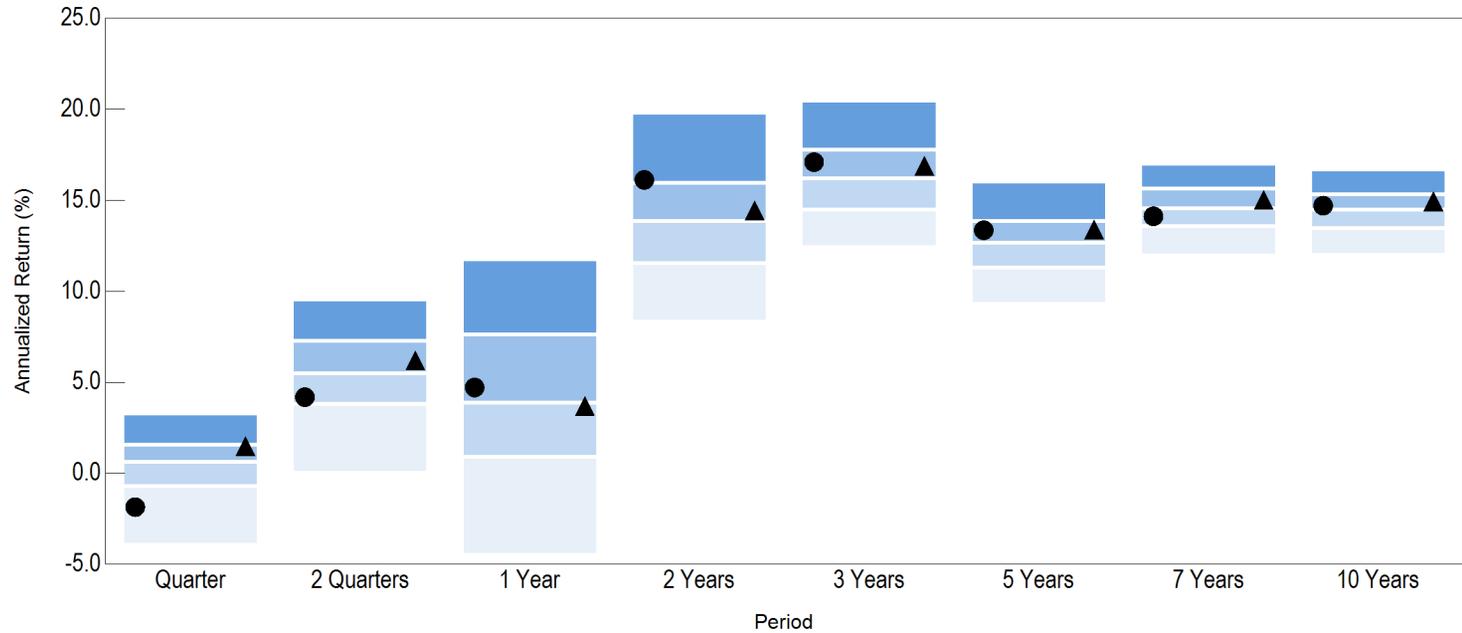
Worst Performers

	Return %
HALLIBURTON (HAL)	-16.3%
MOHAWK INDUSTRIES (MHK)	-15.9%
GENERAL ELECTRIC (GE)	-14.8%
LEAR (LEA)	-14.7%
FORD MOTOR (F)	-9.1%
ROYAL DUTCH SHELL A ADR 1:2 (RDS.A)	-8.0%
GILDAN ACTIVEWEAR SBVTG. 'A' (NYS) (GIL)	-7.9%
PVH (PVH)	-6.7%
BAKER HUGHES COMPANY (BKR)	-5.1%
COGNIZANT TECH.SLTN.'A' (CTSH)	-4.6%

Pzena Performance Attribution vs. Russell 1000 Value

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.30%	0.01%	-0.32%	0.00%	-6.60%	-6.70%	12.76%	8.84%			
Materials	0.15%	--	0.15%	--	--	-2.26%	0.00%	4.04%			
Industrials	-0.42%	-0.37%	-0.02%	-0.03%	-6.39%	-1.76%	8.60%	7.89%			
Consumer Discretionary	-1.29%	-0.43%	0.03%	-0.88%	-6.54%	1.65%	16.11%	5.30%			
Consumer Staples	-0.43%	--	-0.43%	--	--	6.85%	0.00%	7.81%			
Health Care	0.66%	0.79%	0.26%	-0.39%	3.14%	-2.05%	7.72%	15.21%			
Financials	0.22%	0.04%	0.15%	0.03%	2.51%	2.33%	38.80%	22.56%			
Information Technology	-0.11%	-0.18%	0.03%	0.04%	-1.60%	0.20%	7.49%	9.76%			
Communication Services	-0.53%	-0.65%	-0.11%	0.23%	-3.51%	5.75%	4.61%	7.07%			
Utilities	-0.09%	0.36%	-0.25%	-0.20%	13.81%	8.25%	2.86%	6.45%			
Real Estate	-0.34%	--	-0.34%	--	--	8.07%	0.00%	5.06%			
Cash	-0.01%	0.00%	-0.01%	0.00%	0.50%	--	1.05%	0.00%			
Portfolio	-2.49%	=	-0.43%	+	-0.85%	+	-1.21%	-1.11%	1.38%	100.00%	100.00%

eV US Large Cap Growth Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.28	9.55	11.76	19.79	20.44	16.01	16.98	16.68
25th Percentile	1.61	7.29	7.64	15.97	17.79	13.89	15.67	15.34
Median	0.63	5.50	3.90	13.86	16.23	12.70	14.57	14.50
75th Percentile	-0.70	3.85	0.91	11.57	14.50	11.31	13.61	13.51
95th Percentile	-3.90	0.06	-4.45	8.34	12.46	9.32	12.00	12.03
# of Portfolios	239	239	239	237	231	226	212	202
● TCW	-1.86 (88)	4.18 (72)	4.71 (43)	16.12 (24)	17.10 (36)	13.35 (36)	14.12 (66)	14.70 (43)
▲ Russell 1000 Growth	1.49 (29)	6.20 (41)	3.71 (53)	14.45 (44)	16.89 (40)	13.39 (35)	15.02 (38)	14.94 (35)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	33	526
Weighted Avg. Market Cap. (\$B)	185.0	300.6
Median Market Cap. (\$B)	58.1	12.2
Price To Earnings	39.0	26.7
Price To Book	8.2	8.0
Price To Sales	5.1	3.1
Return on Equity (%)	28.5	35.4
Yield (%)	0.5	1.2
Beta (holdings; domestic)	1.1	1.0

Top Holdings

VISA 'A'	7.0%
AMAZON.COM	6.2%
ALPHABET 'C'	5.8%
AMERICAN TOWER	5.8%
ADOBE (NAS)	5.4%
FACEBOOK CLASS A	4.9%
SERVICENOW	4.8%
SALESFORCE.COM	4.3%
PAYPAL HOLDINGS	3.8%
MASTERCARD	3.6%

Best Performers

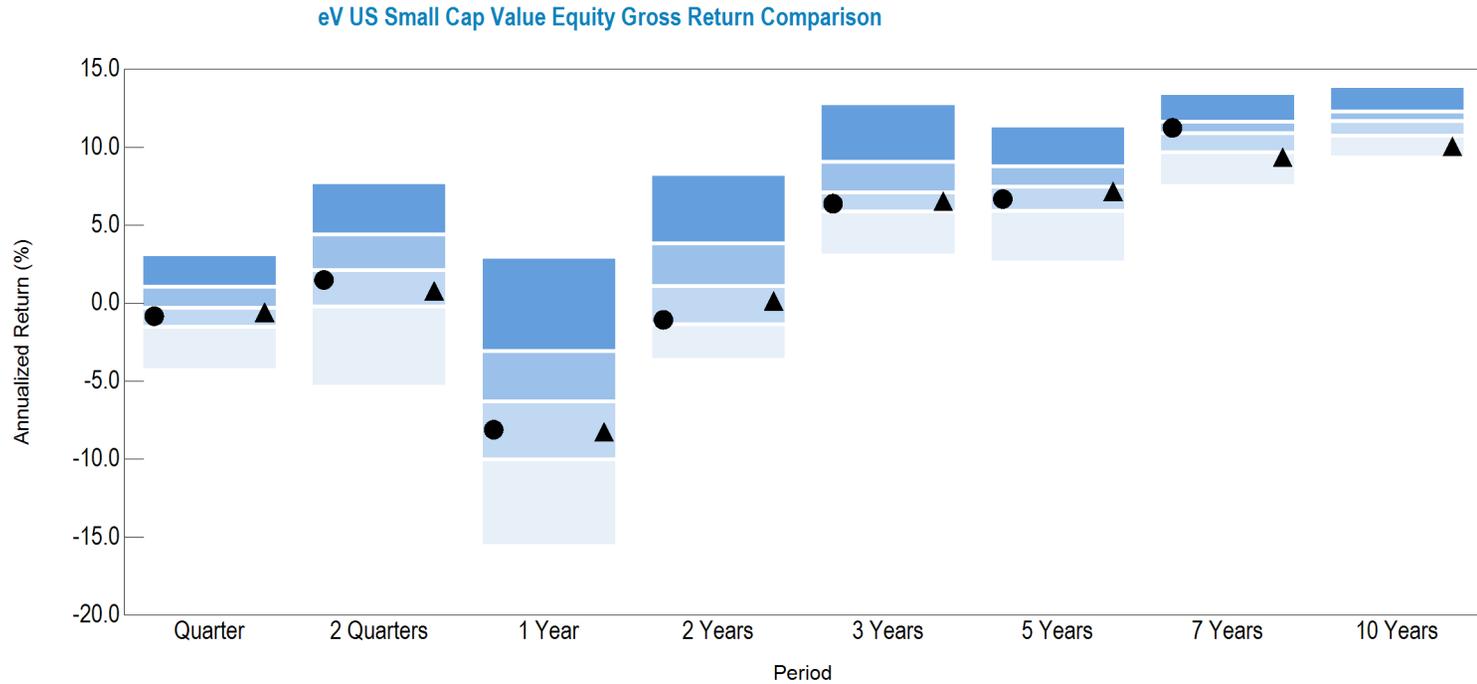
	Return %
ASML HLDG.ADR 1:1 (ASML)	19.5%
EQUINIX REIT (EQIX)	14.9%
ALPHABET 'C' (GOOG)	12.8%
HOME DEPOT (HD)	12.2%
TRANSUNION (TRU)	10.4%
CHUBB (CB)	10.1%
ZOETIS A (ZTS)	9.9%
COSTCO WHOLESALE (COST)	9.3%
AMERICAN TOWER (AMT)	8.6%
S&P GLOBAL (SPGI)	7.8%

Worst Performers

	Return %
CONCHO RESOURCES (CXO)	-34.1%
ALIGN TECHNOLOGY (ALGN)	-33.9%
ULTA BEAUTY (ULTA)	-27.7%
ALEXION PHARMS. (ALXN)	-25.2%
BIOMARIN PHARM. (BMRN)	-21.3%
TRADE DESK CL.A (TTD)	-17.7%
ILLUMINA (ILMN)	-17.4%
PAYPAL HOLDINGS (PYPL)	-9.5%
MONSTER BEVERAGE (MNST)	-9.0%
AMAZON.COM (AMZN)	-8.3%

TCW Performance Attribution vs. Russell 1000 Growth

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.19%	-0.12%	-0.03%	-0.04%	-34.08%	-13.70%	0.80%	0.61%			
Materials	-0.05%	--	-0.05%	--	--	4.17%	0.00%	1.88%			
Industrials	-0.04%	-0.02%	-0.02%	0.00%	2.35%	2.55%	9.33%	11.60%			
Consumer Discretionary	-0.90%	-1.15%	0.04%	0.22%	-7.10%	0.43%	12.44%	15.33%			
Consumer Staples	-0.24%	-0.25%	-0.03%	0.04%	0.58%	4.85%	4.82%	5.78%			
Health Care	-1.10%	-1.45%	0.11%	0.24%	-14.90%	-3.51%	10.64%	12.71%			
Financials	0.42%	0.31%	-0.02%	0.13%	7.72%	0.82%	6.34%	4.48%			
Information Technology	-2.22%	-2.18%	0.02%	-0.07%	-2.84%	3.72%	34.21%	33.18%			
Communication Services	0.24%	0.26%	0.03%	-0.04%	2.37%	0.25%	10.12%	12.07%			
Utilities	0.00%	--	--	--	--	--	0.00%	0.00%			
Real Estate	0.60%	0.09%	0.30%	0.21%	10.81%	7.06%	7.93%	2.37%			
Cash	-0.04%	0.00%	-0.04%	0.00%	0.50%	--	3.38%	0.00%			
Portfolio	-3.52%	=	-4.52%	+	0.31%	+	0.69%	-1.86%	1.66%	100.00%	100.00%



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	3.14		7.74		2.96		8.27		12.79		11.36		13.47		13.90	
25th Percentile	1.09		4.44		-3.02		3.87		9.07		8.78		11.68		12.33	
Median	-0.24		2.15		-6.25		1.14		7.13		7.50		10.91		11.70	
75th Percentile	-1.50		-0.18		-9.97		-1.33		5.88		5.95		9.70		10.76	
95th Percentile	-4.25		-5.31		-15.55		-3.61		3.08		2.64		7.53		9.36	
# of Portfolios	217		217		217		215		213		204		197		181	
● Kennedy	-0.83	(63)	1.49	(55)	-8.11	(61)	-1.06	(73)	6.38	(68)	6.68	(65)	11.24	(36)	--	(--)
▲ Russell 2000 Value	-0.57	(59)	0.79	(64)	-8.24	(63)	0.16	(63)	6.54	(65)	7.17	(57)	9.35	(82)	10.06	(87)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	294	1,387
Weighted Avg. Market Cap. (\$B)	2.4	2.0
Median Market Cap. (\$B)	1.3	0.6
Price To Earnings	16.5	14.9
Price To Book	1.8	1.6
Price To Sales	1.0	0.9
Return on Equity (%)	8.3	5.4
Yield (%)	1.8	2.2
Beta (holdings; domestic)	1.1	1.2

Top Holdings

COUSINS PROPERTIES INC	1.0%
IBERIABANK	0.9%
LUMENTUM HOLDINGS	0.9%
SJW GROUP	0.9%
SOUTH JERSEY INDUSTRY	0.9%
BLACK HILLS	0.8%
SPIRE	0.8%
STERLING BANCORP	0.8%
CENTRAL GDN.& PET 'A' NV.	0.8%
MERCURY SYSTEMS	0.8%

Best Performers

	Return %
INFINERA (INFN)	87.3%
ONE STOP SYSTEMS (OSS)	72.2%
PALOMAR HOLDINGS (PLMR)	64.0%
NEOPHOTONICS (NPTN)	45.7%
INVACARE (IVC)	44.9%
CORINDUS VASC.ROBOTICS (CVRS)	43.6%
AMBARELLA (AMBA)	42.4%
CYRUSONE (CONE)	37.9%
CHIPMOS TECHS.ADR 1:20 (IMOS)	37.6%
SYNAPTICS (SYNA)	37.1%

Worst Performers

	Return %
MALLINCKRODT (MNK)	-73.7%
FLUIDIGM (FLDM)	-62.4%
PROPETRO HOLDING (PUMP)	-56.1%
CARS COM (CARS)	-54.5%
CONCERT PHARMACEUTICALS (CNCE)	-51.0%
IMAGEWARE SYSTEMS (IWSY)	-49.2%
ANCHIANO THERAPEUTICS ADR 1:5 (ANCN)	-48.7%
RANGE RES. (RRC)	-45.0%
TRIPLE-S MANAGEMENT 'B' (GTS)	-40.9%
BRIGGS & STRATTON (BGG)	-40.4%

Kennedy Performance Attribution vs. Russell 2000 Value

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.65%	-0.28%	-0.28%	-0.09%	-23.79%	-18.15%	6.52%	4.95%			
Materials	-0.15%	0.00%	-0.15%	0.00%	-6.18%	-6.14%	6.64%	4.26%			
Industrials	-0.07%	-0.02%	-0.04%	-0.01%	-1.71%	-1.51%	14.42%	11.67%			
Consumer Discretionary	-0.43%	-0.44%	-0.03%	0.04%	-1.59%	3.58%	7.68%	8.47%			
Consumer Staples	0.07%	0.06%	0.01%	0.01%	6.48%	4.13%	2.63%	2.40%			
Health Care	-0.17%	-0.18%	0.00%	0.00%	-12.27%	-7.92%	4.05%	4.09%			
Financials	-0.06%	-0.06%	-0.02%	0.02%	0.03%	0.22%	21.22%	29.62%			
Information Technology	-0.38%	-0.38%	0.04%	-0.05%	-0.24%	3.01%	13.05%	11.61%			
Communication Services	0.24%	0.22%	0.17%	-0.14%	-1.14%	-8.39%	0.98%	2.97%			
Utilities	-0.21%	-0.18%	-0.06%	0.03%	3.14%	5.45%	6.63%	7.74%			
Real Estate	0.59%	0.59%	0.00%	0.00%	9.93%	5.08%	12.15%	12.22%			
Cash	0.02%	0.00%	0.02%	0.00%	0.50%	--	4.03%	0.00%			
Portfolio	-1.21%	=	-0.67%	+	-0.34%	+	-0.20%	-1.26%	-0.05%	100.00%	100.00%

International developed equity

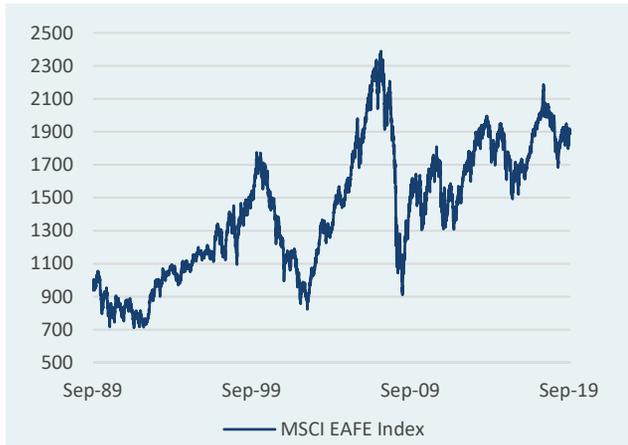
International equity performance was impacted heavily by currency movements in the third quarter. In local terms, the MSCI EAFE Index delivered a total return of 1.8%, bringing year-to-date performance to 15.7%. For unhedged U.S. investors however, the MSCI EAFE Index generated a quarterly return of -1.1%, dragging the year-to-date figure to 12.8%. Dollar strength reemerged as a powerful force driving returns due in part to widening interest rate differentials between the U.S. and the rest of the world.

Japanese equities outperformed over the period, delivering a

Q3 return of 3.5% in local terms. Unhedged U.S. investors in the MSCI Japan Index received only 3.1%, as the yen depreciated slightly vs. the U.S. dollar over the period.

The British pound weakened in July as the new Prime Minister Boris Johnson signaled a much harder line on Brexit than his predecessor's. Toward the end of the quarter, the pound strengthened as markets began pricing a lower likelihood of a "no-deal" Brexit, which many market participants viewed as unfriendly to markets.

INTERNATIONAL DEVELOPED EQUITIES



Source: MSCI, as of 9/30/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/19

U.K. EQUITY PERFORMANCE (YTD)



Source: Bloomberg, as of 9/30/19

Emerging market equity

Emerging market equities (MSCI Emerging Markets -4.2%) lagged developed markets (MSCI EAFE -1.1%) over the quarter, while U.S. equities outperformed (S&P 500 +1.7%).

Equity multiples have expanded year-to-date, recovering to the levels of September 2018. Developed and emerging markets continue to appear cheap relative to domestic equity valuations.

We see two opposing forces impacting emerging markets in

the current environment. The first force is decelerating global growth and a rising probability of recession, which likely bodes poorly for emerging market performance. However, the second force of widespread central bank dovishness may boost emerging market performance in the near term. Specifically, if global growth levels out while central banks unleash another round of easing, there may be material upside to emerging market equities. On balance, we remain moderately bullish on emerging markets, though we are watching developments closely.

EQUITY PERFORMANCE (3-YR ROLLING)



Source: Standard & Poor's, MSCI, as of 9/30/19

FORWARD P/E



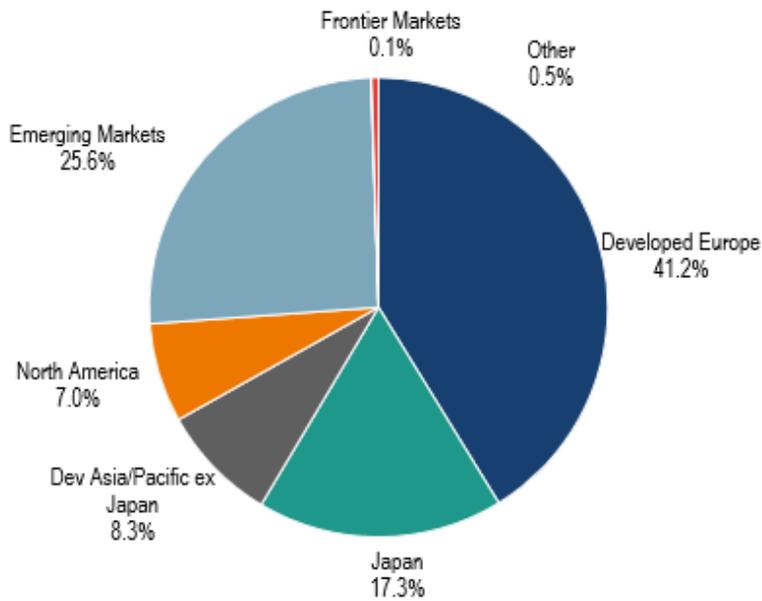
Source: MSCI, as of 9/30/19

CHINA & EM: ROLLING 1-YEAR PERFORMANCE (USD)

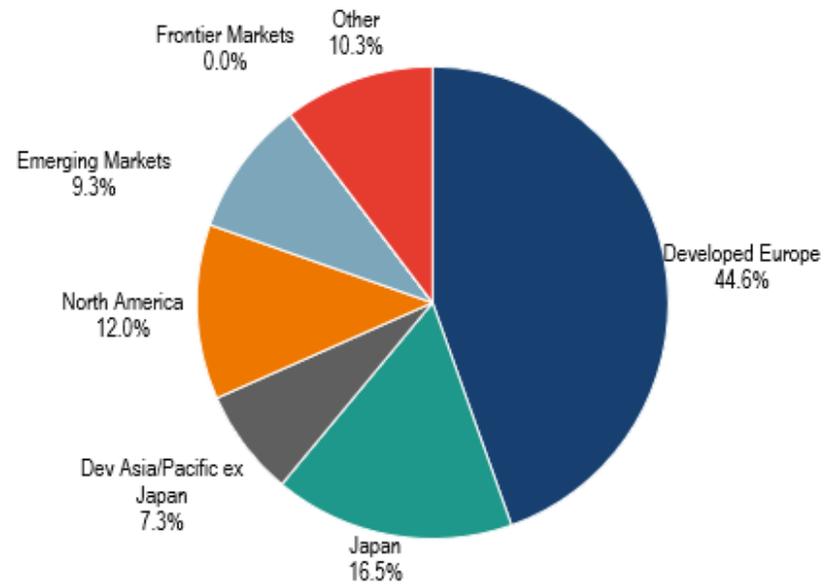


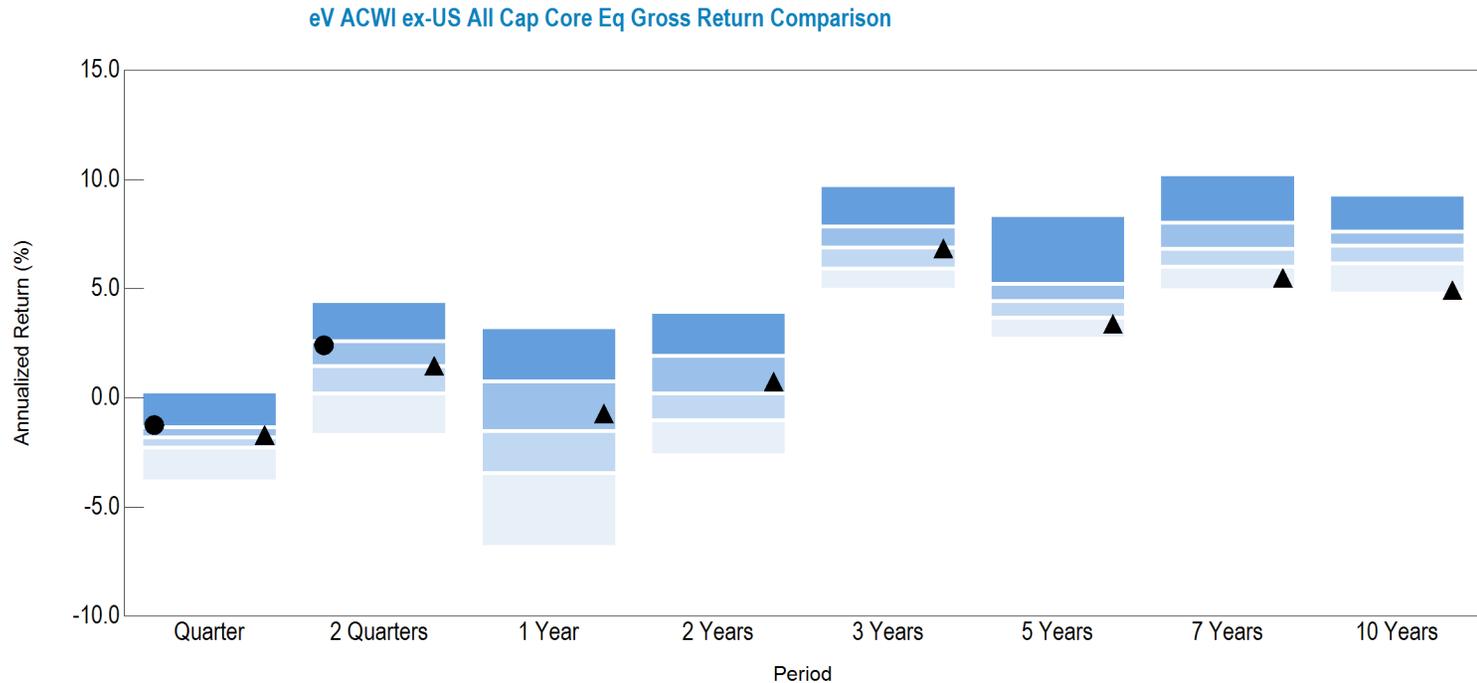
Source: MSCI, as of 9/30/19

International Equity



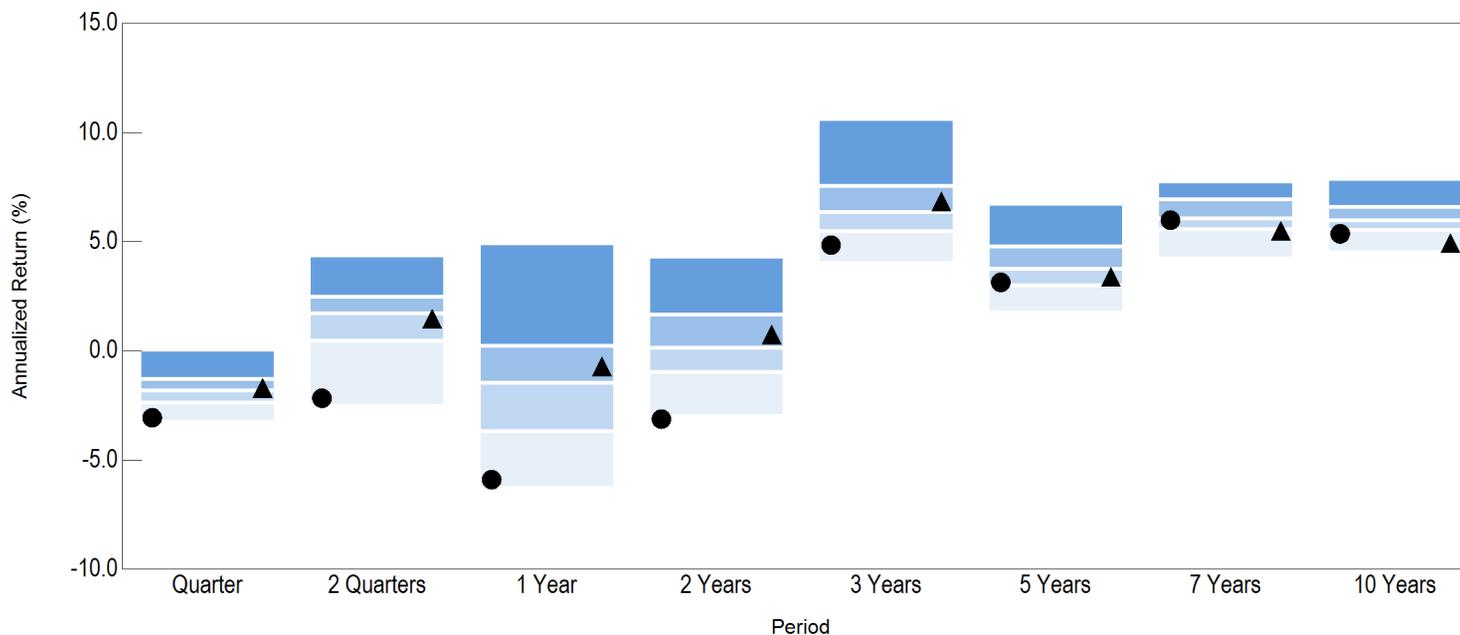
MSCI ACWI ex US IMI





	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.28	4.42	3.24	3.93	9.74	8.35	10.21	9.30								
25th Percentile	-1.32	2.62	0.78	1.94	7.87	5.24	8.04	7.63								
Median	-1.80	1.49	-1.49	0.23	6.89	4.44	6.83	6.99								
75th Percentile	-2.26	0.21	-3.43	-1.02	5.93	3.68	6.02	6.18								
95th Percentile	-3.80	-1.68	-6.81	-2.61	4.96	2.74	4.95	4.79								
# of Portfolios	47	47	47	47	47	43	42	29								
● Bivium Intl Equity	-1.25 (23)	2.41 (30)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)								
▲ MSCI ACWI ex USA Gross	-1.70 (46)	1.47 (51)	-0.72 (42)	0.76 (43)	6.85 (51)	3.39 (86)	5.50 (89)	4.93 (92)								

eV ACWI ex-US Large Cap Core Eq Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.04	4.37	4.92	4.31	10.60	6.71	7.74	7.86								
25th Percentile	-1.26	2.49	0.24	1.69	7.57	4.80	6.95	6.59								
Median	-1.80	1.72	-1.45	0.15	6.36	3.78	6.07	6.00								
75th Percentile	-2.34	0.47	-3.66	-0.95	5.50	3.01	5.58	5.54								
95th Percentile	-3.22	-2.50	-6.26	-2.97	4.03	1.77	4.25	4.54								
# of Portfolios	60	60	60	59	58	52	43	36								
● AQR	-3.06 (91)	-2.17 (93)	-5.90 (94)	-3.12 (96)	4.84 (89)	3.14 (70)	5.98 (57)	5.36 (79)								
▲ MSCI ACWI ex USA Gross	-1.70 (45)	1.47 (60)	-0.72 (43)	0.76 (40)	6.85 (34)	3.39 (65)	5.50 (80)	4.93 (88)								

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	752	2,206
Weighted Avg. Market Cap. (\$B)	51.2	64.0
Median Market Cap. (\$B)	17.1	7.3
Price To Earnings	13.2	15.0
Price To Book	2.3	2.3
Price To Sales	1.0	1.2
Return on Equity (%)	15.3	15.0
Yield (%)	3.5	3.3
Beta (holdings; global)	1.0	0.9

Top Holdings

NESTLE 'R'	3.1%
ROCHE HOLDING	1.9%
ENEL	1.7%
SAP	1.6%
RIO TINTO	1.6%
ALLIANZ	1.6%
NOVO NORDISK 'B'	1.6%
BHP GROUP	1.5%
KONINKLIJKE AHOLD DELHAIZE	1.4%
CONSTELLATION SOFTWARE	1.3%

Best Performers

	Return %
ADVANTEST (J:AB@N)	60.5%
TOKYO ELECTRON (J:RG@N)	36.9%
LENDLEASE GROUP STAPLED UNITS (A:LLCX)	32.2%
RENASAS ELECTRONICS (J:RENE)	30.8%
LONDON STOCK EX.GROUP (UKIR:LSE)	29.4%
BANDAI NAMCO HDG. (J:N@MB)	28.7%
HULIC (J:HULI)	27.2%
OLYMPUS (J:OLYC)	21.4%
VODAFONE GROUP (UKIR:VOD)	21.3%
TREASURY WINE ESTATES (A:TWEX)	20.9%

Worst Performers

	Return %
MICRO FOCUS INTL. (UKIR:MCRO)	-44.4%
AURORA CANNABIS (C:ACB)	-44.0%
CRONOS GROUP (C:CRON)	-43.8%
CANOPY GROWTH (C:WEED)	-43.3%
YANGZIJIANG SHIPBUILDING (HOLDINGS) (T:YSHL)	-38.6%
CIMIC GROUP (A:CIMX)	-31.0%
BLACKBERRY (C:BB)	-29.8%
TECK RESOURCES SUBORDINATE VOTING B (C:TECK.B)	-29.7%
EVRAZ (UKIR:EVR)	-28.0%
KERRY PROPERTIES (K:KERP)	-25.5%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.08%	-0.19%	0.01%	0.10%	-7.60%	-4.35%	5.99%	7.08%			
Materials	-0.57%	-0.57%	0.01%	0.00%	-13.78%	-6.31%	7.15%	7.66%			
Industrials	-0.74%	-0.52%	-0.03%	-0.19%	-6.85%	-2.53%	15.01%	12.01%			
Consumer Discretionary	0.50%	0.68%	-0.03%	-0.15%	4.87%	-0.80%	7.43%	11.26%			
Consumer Staples	0.14%	0.19%	-0.08%	0.03%	3.54%	1.48%	7.14%	9.78%			
Health Care	-0.49%	-0.28%	0.23%	-0.44%	-2.21%	1.17%	15.37%	8.26%			
Financials	0.81%	0.84%	0.10%	-0.13%	0.17%	-3.36%	15.21%	21.91%			
Information Technology	-0.36%	-0.31%	0.05%	-0.10%	-1.67%	2.25%	8.55%	8.53%			
Communication Services	0.20%	0.12%	0.08%	0.01%	-1.19%	-2.70%	3.02%	6.88%			
Utilities	-0.13%	-0.01%	0.16%	-0.28%	0.02%	1.36%	9.07%	3.39%			
Real Estate	-0.30%	-0.16%	-0.04%	-0.10%	-7.42%	-2.94%	5.22%	3.23%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	-0.13%	0.00%	-0.10%	-0.04%	-13.86%	--	0.86%	0.00%			
Portfolio	-1.15%	=	-0.22%	+	0.35%	+	-1.28%	-2.89%	-1.74%	100.00%	100.00%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-2.99%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Belgium	-5.22%	3.44%	1.48%	0.65%	-0.06%	0.06%	-0.03%	-0.08%	-0.11%
Czech Republic*	--	-9.42%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	2.96%	-0.89%	2.35%	1.15%	0.05%	0.03%	-0.06%	0.05%	0.07%
Finland	-3.12%	-1.77%	1.16%	0.67%	-0.01%	0.01%	-0.02%	-0.01%	-0.03%
France	-2.52%	-1.63%	8.08%	7.61%	-0.07%	0.01%	-0.02%	0.00%	-0.08%
Germany	-7.40%	-3.97%	8.24%	5.83%	-0.21%	-0.01%	-0.09%	-0.09%	-0.40%
Greece*	--	-2.87%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-3.88%	0.00%	0.08%	--	0.00%	0.01%	--	0.00%
Ireland	--	-0.55%	0.00%	0.36%	--	-0.01%	0.02%	--	0.00%
Italy	5.07%	0.19%	2.56%	1.55%	0.08%	0.04%	-0.05%	0.05%	0.12%
Luxembourg	16.45%	-1.70%	0.32%	0.00%	0.00%	0.00%	-0.02%	0.07%	0.05%
Netherlands	3.20%	3.65%	3.37%	1.98%	0.00%	0.10%	-0.07%	0.00%	0.02%
Norway	--	-3.30%	0.00%	0.45%	--	-0.01%	0.03%	--	0.02%
Poland*	--	-11.74%	0.00%	0.30%	--	0.02%	0.02%	--	0.04%
Portugal	--	1.88%	0.00%	0.10%	--	-0.01%	0.00%	--	0.00%
Russia*	--	-1.09%	0.00%	1.06%	--	-0.01%	0.03%	--	0.02%
Spain	1.22%	-3.80%	3.14%	1.99%	0.10%	0.00%	-0.06%	0.06%	0.10%
Sweden	-8.82%	-4.84%	2.56%	1.78%	-0.08%	0.00%	-0.04%	-0.03%	-0.15%
Switzerland	2.67%	0.28%	8.66%	6.22%	0.15%	0.04%	-0.06%	0.06%	0.19%
United Kingdom	-5.64%	-2.47%	12.41%	11.22%	-0.37%	0.00%	-0.03%	-0.04%	-0.43%

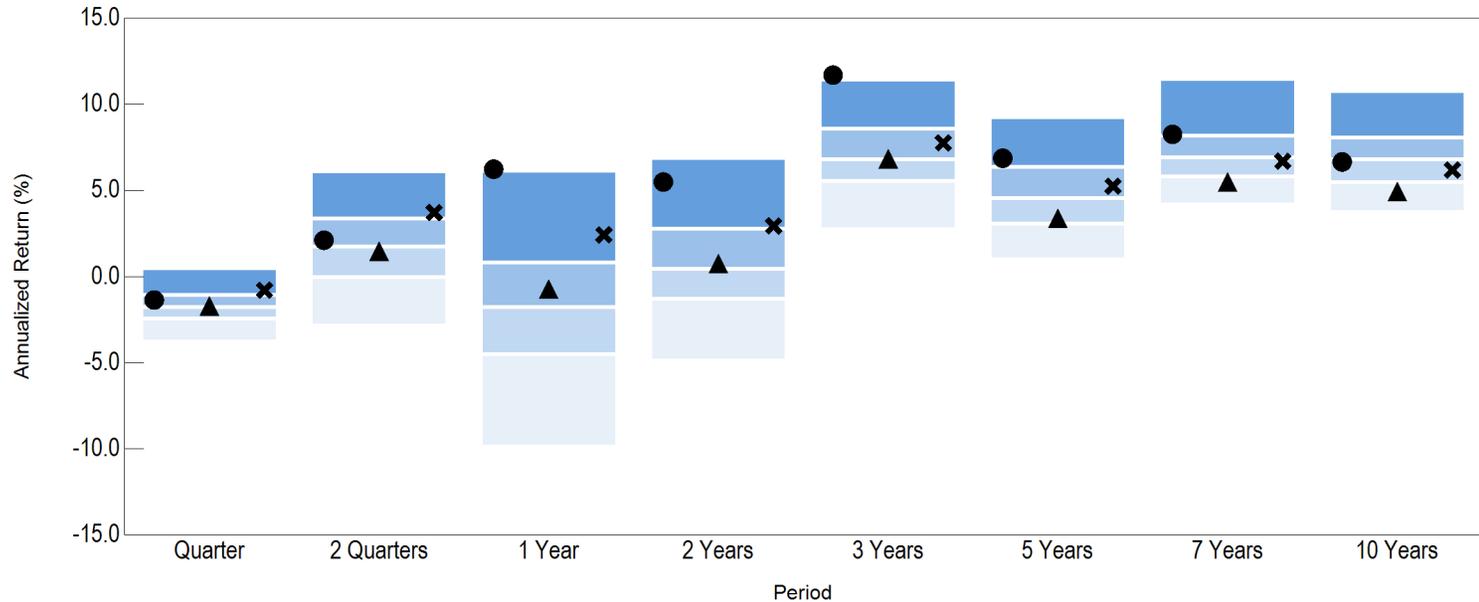
AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-8.12%	-1.33%	4.93%	4.82%	-0.34%	0.00%	0.01%	-0.01%	-0.34%
China*	--	-4.66%	0.00%	8.38%	--	0.42%	0.04%	--	0.46%
Hong Kong	-13.23%	-11.94%	3.81%	2.70%	-0.03%	-0.14%	0.00%	-0.01%	-0.19%
India*	--	-5.23%	0.00%	2.39%	--	0.08%	0.06%	--	0.15%
Indonesia*	--	-5.30%	0.00%	0.56%	--	0.03%	0.00%	--	0.03%
Japan	1.25%	3.17%	17.91%	15.97%	-0.31%	0.05%	-0.01%	-0.04%	-0.30%
Korea*	--	-4.72%	0.00%	3.28%	--	0.07%	0.11%	--	0.18%
Malaysia*	--	-6.37%	0.00%	0.57%	--	0.03%	0.01%	--	0.04%
New Zealand	--	-2.73%	0.00%	0.17%	--	-0.01%	0.01%	--	0.01%
Pakistan*	--	1.22%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-4.53%	0.00%	0.30%	--	0.01%	0.00%	--	0.02%
Singapore	-26.17%	-5.78%	0.93%	0.91%	-0.19%	0.00%	0.00%	0.00%	-0.19%
Taiwan*	--	5.81%	0.00%	2.89%	--	-0.14%	0.00%	--	-0.14%
Thailand*	--	-5.91%	0.00%	0.80%	--	0.06%	0.00%	--	0.05%
Americas									
Argentina*	--	-46.71%	0.00%	0.09%	--	0.04%	0.00%	--	0.04%
Brazil*	--	-4.65%	0.00%	2.01%	--	-0.06%	0.17%	--	0.11%
Canada	-3.83%	0.69%	7.54%	6.82%	-0.31%	0.01%	-0.01%	-0.03%	-0.34%
Chile*	--	-7.47%	0.00%	0.25%	--	0.00%	0.02%	--	0.02%
Colombia*	--	-6.10%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	--	-1.56%	0.00%	0.68%	--	0.00%	0.02%	--	0.02%
Peru*	--	-9.25%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	7.44%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Israel	--	-3.60%	0.00%	0.39%	--	0.02%	-0.01%	--	0.02%
Qatar*	--	-0.66%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-9.73%	0.00%	0.38%	--	0.04%	0.00%	--	0.04%
South Africa*	--	-12.21%	0.00%	1.56%	--	0.10%	0.10%	--	0.20%
Turkey*	--	11.59%	0.00%	0.13%	--	-0.01%	0.00%	--	-0.01%
United Arab Emirates*	--	0.69%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	-3.83%	-1.34%	7.54%	10.07%	-0.42%	-0.02%	0.21%	0.11%	-0.13%
Europe	-2.25%	-1.79%	54.34%	43.26%	-0.20%	0.13%	-0.42%	-0.05%	-0.54%
Asia/Pacific	-3.34%	-1.30%	27.58%	43.74%	-0.97%	0.16%	0.23%	0.36%	-0.22%
Other	--	-7.62%	0.00%	2.93%	--	0.16%	0.09%	--	0.25%
Cash	0.50%	--	10.54%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-2.38%	-1.70%	100.00%	100.00%	-1.59%	0.39%	0.11%	0.42%	-0.68%
Totals									
Developed	-2.72%	-0.85%	89.46%	73.47%	-1.33%	0.16%	-0.48%	-0.29%	-1.94%
Emerging*	--	-4.06%	0.00%	26.53%	--	0.71%	0.58%	--	1.30%
Cash	0.50%	--	10.54%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%

eV All ACWI ex-US Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.49	6.11	6.13	6.88	11.43	9.23	11.46	10.77
25th Percentile	-1.03	3.41	0.86	2.80	8.61	6.38	8.21	8.10
Median	-1.75	1.78	-1.73	0.48	6.84	4.60	6.95	6.84
75th Percentile	-2.43	-0.01	-4.47	-1.27	5.56	3.09	5.83	5.51
95th Percentile	-3.75	-2.82	-9.85	-4.84	2.77	1.02	4.22	3.77
# of Portfolios	286	286	286	281	277	246	213	164
● Capital Group	-1.36 (35)	2.11 (45)	6.24 (5)	5.49 (10)	11.70 (5)	6.88 (20)	8.26 (24)	6.66 (53)
▲ MSCI ACWI ex USA Gross	-1.70 (48)	1.47 (55)	-0.72 (42)	0.76 (47)	6.85 (50)	3.39 (69)	5.50 (82)	4.93 (83)
✕ MSCI ACWI ex USA Growth Gross	-0.79 (20)	3.72 (24)	2.43 (16)	2.95 (24)	7.77 (35)	5.25 (36)	6.71 (57)	6.18 (62)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	191	2,206
Weighted Avg. Market Cap. (\$B)	63.4	64.0
Median Market Cap. (\$B)	17.2	7.3
Price To Earnings	18.4	15.0
Price To Book	3.1	2.3
Price To Sales	1.9	1.2
Return on Equity (%)	17.6	15.0
Yield (%)	2.1	3.3
Beta (holdings; global)	1.0	0.9

Top Holdings

AIRBUS	2.7%
OCADO GROUP	2.7%
HDFC BANK ADR 1:3	2.4%
ENEL	2.3%
ASTRAZENECA	2.3%
AIA GROUP	2.3%
TAIWAN SEMICON.MNFG.	2.1%
PING AN INSURANCE (GROUP) OF CHINA 'H'	2.1%
ICICI BK.ADR 1:2	2.1%
SAMSUNG ELECTRONICS	1.9%

Best Performers

	Return %
ALTICE EUROPE (H:ATC)	45.5%
INTELLIGENT SYSTEMS (INS)	44.3%
GREENE KING (UKIR:GNK)	38.3%
TOKYO ELECTRON (J:RG@N)	36.9%
CAPITA (UKIR:CPI)	33.0%
NAGACORP (K:NAGA)	30.0%
LONDON STOCK EX.GROUP (UKIR:LSE)	29.4%
HDFC LIFE INSURANCE COMPANY (IN:HDS)	26.2%
TMX GROUP (C:X)	24.5%
AKBANK (TK:AKB)	22.3%

Worst Performers

	Return %
LOMA NEGRA SPN.ADR 1:5 (LOMA)	-50.9%
BORR DRILLING (N:BDRR)	-46.4%
MICRO FOCUS INTL. (UKIR:MCRO)	-44.4%
VALARIS A (VAL)	-43.6%
NOAH HOLDINGS 'A' 2:1 ADR (NOAH)	-31.4%
GOLAR LNG (NAS) (GLNG)	-29.7%
DISCOVERY (R:DSYJ)	-28.9%
SURYA CITRA MEDIA (ID:SCM)	-28.3%
AIB GROUP (UKIR:A5G)	-27.5%
MODERN TIMES GROUP MTG B (W:MOTB)	-26.0%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.18%	-0.28%	0.11%	0.35%	-7.33%	-4.37%	2.33%	7.11%			
Materials	0.36%	-0.04%	0.19%	0.21%	-4.86%	-6.29%	3.34%	7.69%			
Industrials	0.17%	0.26%	0.00%	-0.09%	-1.08%	-2.48%	12.23%	12.07%			
Consumer Discretionary	-0.28%	-0.09%	0.03%	-0.22%	-2.20%	-0.74%	15.26%	11.32%			
Consumer Staples	0.11%	0.21%	-0.07%	-0.04%	3.29%	1.68%	7.54%	9.40%			
Health Care	0.09%	0.14%	-0.03%	-0.02%	2.44%	1.15%	7.47%	8.30%			
Financials	-0.05%	-0.32%	-0.01%	0.27%	-3.53%	-3.36%	22.34%	22.00%			
Information Technology	-0.07%	-0.09%	0.12%	-0.09%	1.35%	2.35%	11.86%	8.54%			
Communication Services	0.10%	0.08%	0.02%	0.00%	-1.72%	-2.74%	5.69%	6.92%			
Utilities	0.23%	0.27%	0.01%	-0.04%	7.84%	1.38%	3.60%	3.40%			
Real Estate	-0.18%	-0.06%	-0.05%	-0.07%	-4.73%	-2.97%	5.48%	3.25%			
Cash	-0.01%	0.00%	-0.01%	0.00%	0.50%	--	2.86%	0.00%			
Portfolio	0.64%	=	0.07%	+	0.31%	+	0.26%	-1.06%	-1.70%	100.00%	100.00%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

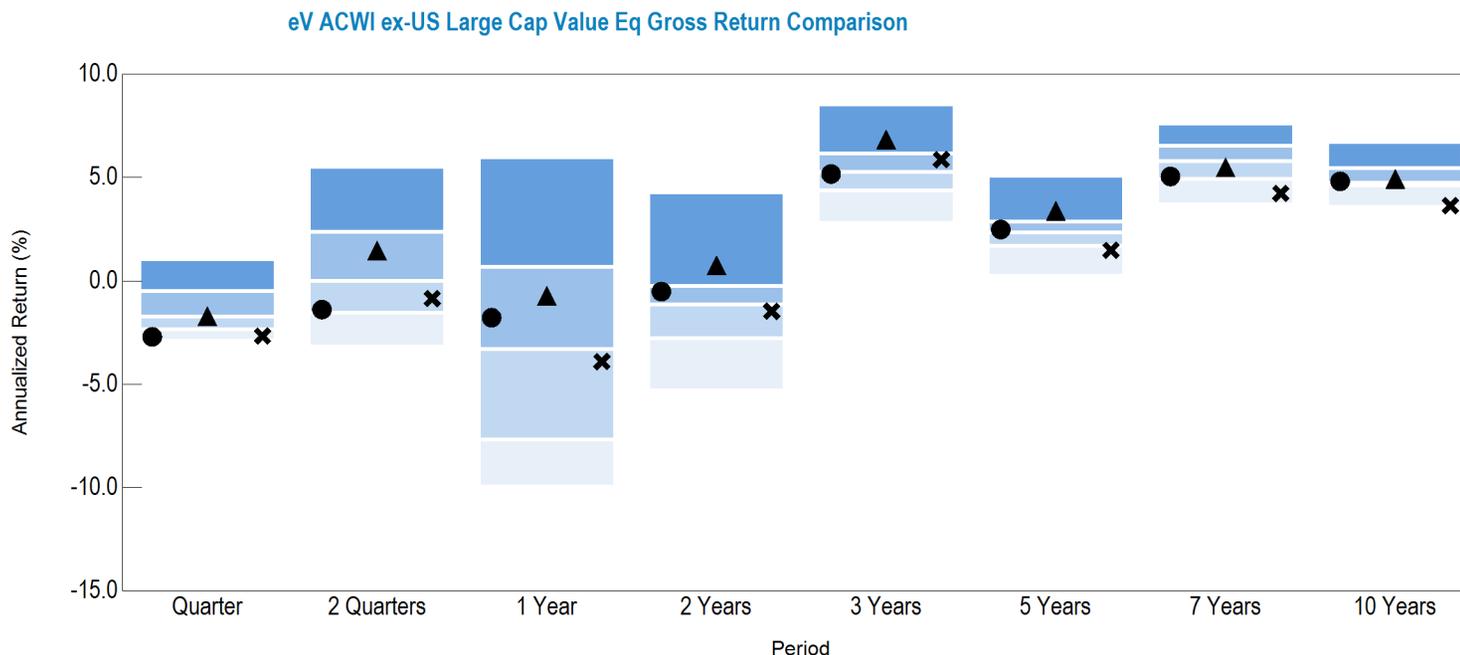
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-2.99%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Belgium	18.73%	3.44%	0.12%	0.65%	0.10%	-0.04%	0.02%	-0.09%	0.00%
Czech Republic*	--	-9.42%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	7.21%	-0.89%	3.30%	1.15%	0.10%	0.06%	-0.11%	0.18%	0.23%
Finland	--	-1.77%	0.00%	0.67%	--	-0.01%	0.03%	--	0.02%
France	-2.72%	-1.63%	11.49%	7.61%	-0.09%	0.08%	-0.16%	-0.04%	-0.22%
Germany	-1.76%	-3.97%	6.63%	5.83%	0.14%	0.00%	-0.04%	0.02%	0.11%
Greece*	--	-2.87%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-3.88%	0.00%	0.08%	--	0.00%	0.01%	--	0.00%
Ireland	-19.00%	-0.55%	0.28%	0.36%	-0.07%	0.00%	0.01%	0.02%	-0.05%
Italy	9.20%	0.19%	2.11%	1.55%	0.15%	0.02%	-0.03%	0.05%	0.19%
Netherlands	13.88%	3.65%	2.10%	1.98%	0.22%	0.01%	-0.03%	0.01%	0.22%
Norway	-7.21%	-3.30%	0.55%	0.45%	-0.02%	0.00%	0.00%	0.00%	-0.03%
Poland*	--	-11.74%	0.00%	0.30%	--	0.02%	0.02%	--	0.04%
Portugal	--	1.88%	0.00%	0.10%	--	-0.01%	0.00%	--	0.00%
Russia*	-6.09%	-1.09%	1.03%	1.06%	-0.08%	0.00%	0.03%	0.00%	-0.05%
Spain	6.27%	-3.80%	1.33%	1.99%	0.21%	0.00%	0.02%	-0.07%	0.16%
Sweden	-2.41%	-4.84%	1.04%	1.78%	0.05%	0.00%	0.04%	-0.02%	0.07%
Switzerland	-1.93%	0.28%	2.94%	6.22%	-0.14%	-0.06%	0.08%	0.07%	-0.05%
United Kingdom	2.41%	-2.47%	13.70%	11.22%	0.56%	0.00%	-0.09%	0.12%	0.59%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-6.87%	-1.33%	0.27%	4.82%	-0.28%	-0.08%	0.18%	0.26%	0.08%
China*	-7.31%	-4.66%	6.48%	8.38%	-0.24%	0.10%	0.02%	0.05%	-0.07%
Hong Kong	-9.14%	-11.94%	8.67%	2.70%	0.08%	-0.75%	-0.03%	0.18%	-0.52%
India*	-4.47%	-5.23%	5.20%	2.39%	0.00%	-0.10%	-0.03%	0.00%	-0.13%
Indonesia*	-4.20%	-5.30%	2.65%	0.56%	0.01%	-0.12%	-0.01%	0.02%	-0.10%
Japan	1.29%	3.17%	10.33%	15.97%	-0.30%	-0.15%	0.02%	0.11%	-0.33%
Korea*	0.28%	-4.72%	1.95%	3.28%	0.17%	0.03%	0.04%	-0.07%	0.17%
Malaysia*	--	-6.37%	0.00%	0.57%	--	0.03%	0.01%	--	0.04%
New Zealand	-1.22%	-2.73%	0.12%	0.17%	0.00%	0.00%	0.00%	0.00%	0.00%
Pakistan*	--	1.22%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	-5.00%	-4.53%	0.26%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%
Singapore	-5.86%	-5.78%	0.86%	0.91%	0.00%	0.00%	0.00%	0.00%	0.00%
Taiwan*	14.29%	5.81%	3.09%	2.89%	0.25%	0.01%	0.00%	0.02%	0.27%
Thailand*	7.10%	-5.91%	0.14%	0.80%	0.10%	0.05%	0.00%	-0.09%	0.06%
Americas									
Argentina*	--	-46.71%	0.00%	0.09%	--	0.04%	0.00%	--	0.04%
Brazil*	-7.82%	-4.65%	3.48%	2.01%	-0.16%	0.04%	0.04%	-0.11%	-0.19%
Canada	10.10%	0.69%	0.86%	6.82%	0.65%	-0.07%	0.08%	-0.57%	0.09%
Chile*	--	-7.47%	0.00%	0.25%	--	0.00%	0.02%	--	0.02%
Colombia*	--	-6.10%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	3.38%	-1.56%	0.54%	0.68%	0.01%	0.00%	0.02%	0.00%	0.03%
Peru*	--	-9.25%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
United States	-6.74%	1.60%	2.52%	0.00%	0.00%	0.02%	0.00%	-0.21%	-0.19%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	7.44%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Israel	1.37%	-3.60%	1.13%	0.39%	0.02%	-0.04%	0.02%	0.03%	0.02%
Qatar*	--	-0.66%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-9.73%	0.00%	0.38%	--	0.04%	0.00%	--	0.04%
South Africa*	-15.63%	-12.21%	1.51%	1.56%	-0.06%	0.00%	0.01%	0.00%	-0.05%
Turkey*	22.32%	11.59%	0.44%	0.13%	0.01%	0.02%	0.01%	0.03%	0.08%
United Arab Emirates*	--	0.69%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	-4.57%	-1.34%	7.40%	10.07%	-0.43%	-0.02%	0.16%	0.12%	-0.18%
Europe	1.06%	-1.79%	46.63%	43.26%	1.30%	0.04%	-0.20%	0.10%	1.24%
Asia/Pacific	-2.76%	-1.30%	40.03%	43.74%	-0.82%	0.04%	0.21%	0.07%	-0.51%
Other	-3.97%	-7.62%	3.08%	2.93%	0.07%	-0.01%	0.04%	0.00%	0.10%
Cash	0.50%	--	2.86%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-1.06%	-1.70%	100.00%	100.00%	0.10%	0.04%	0.21%	0.29%	0.64%
Totals									
Developed	-0.35%	-0.85%	70.37%	73.47%	0.43%	-0.03%	0.03%	-0.02%	0.41%
Emerging*	-3.10%	-4.06%	26.77%	26.53%	0.06%	-0.01%	0.19%	0.00%	0.25%
Cash	0.50%	--	2.86%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.03	5.50	5.96	4.27	8.53	5.07	7.61	6.72
25th Percentile	-0.48	2.38	0.70	-0.24	6.18	2.87	6.55	5.47
Median	-1.69	0.01	-3.26	-1.11	5.28	2.36	5.83	4.76
75th Percentile	-2.33	-1.51	-7.64	-2.75	4.39	1.72	4.95	4.64
95th Percentile	-2.88	-3.15	-9.92	-5.27	2.84	0.26	3.71	3.61
# of Portfolios	22	22	22	22	22	21	17	13
● Mondrian	-2.70 (91)	-1.38 (74)	-1.78 (41)	-0.51 (45)	5.17 (58)	2.49 (45)	5.05 (68)	4.82 (48)
▲ MSCI ACWI ex USA Gross	-1.70 (51)	1.47 (29)	-0.72 (36)	0.76 (19)	6.85 (14)	3.39 (14)	5.50 (57)	4.93 (44)
✕ MSCI ACWI ex USA Value Gross	-2.66 (89)	-0.85 (66)	-3.89 (55)	-1.47 (53)	5.87 (31)	1.48 (78)	4.23 (92)	3.64 (94)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	52	2,206
Weighted Avg. Market Cap. (\$B)	47.4	64.0
Median Market Cap. (\$B)	29.1	7.3
Price To Earnings	15.0	15.0
Price To Book	1.6	2.3
Price To Sales	0.7	1.2
Return on Equity (%)	8.4	15.0
Yield (%)	4.5	3.3
Beta (holdings; global)	1.0	0.9

Top Holdings

UNITED OVERSEAS BANK	3.1%
TELIA COMPANY	3.0%
GLAXOSMITHKLINE	3.0%
SAINT GOBAIN	2.9%
CK HUTCHISON HOLDINGS	2.9%
SANOFI	2.9%
SSE	2.9%
ALLIANZ	2.9%
ROYAL DUTCH SHELL A	2.9%
LLOYDS BANKING GROUP	2.9%

Best Performers

	Return %
FUJITSU (J:FT@N)	15.9%
OTSUKA HOLDINGS (J:OTHD)	14.5%
SSE (UKIR:SSE)	14.3%
KONINKLIJKE AHOLD DELHAIZE (H:AD)	12.7%
KYUSHU RAILWAY (J:KRWC)	10.8%
ZURICH INSURANCE GROUP (S:ZURN)	9.9%
ENEL (I:ENEL)	9.2%
TOKIO MARINE HOLDINGS (J:MIHO)	8.4%
GLAXOSMITHKLINE (UKIR:GSK)	8.4%
SOCIETE GENERALE (F:SGE)	8.3%

Worst Performers

	Return %
ISS (DK:ISS)	-18.1%
WOOD GROUP (JOHN) (UKIR:WG.)	-16.5%
EVONIK INDUSTRIES (D:EVK)	-15.0%
FUJIFILM HOLDINGS (J:FP@N)	-12.6%
BANCO SANTANDER (E:SAN)	-12.3%
CONTINENTAL (D:CON)	-11.9%
COCA-COLA BOTTLERS JAPAN HOLDINGS (J:KITK)	-11.5%
DAIMLER (D:DAI)	-11.1%
BMW PREF. (D:BMW3)	-10.6%
SINGAPORE TELECOM (T:TELC)	-10.5%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.53%	-0.20%	-0.06%	-0.26%	-8.49%	-4.35%	9.66%	7.08%			
Materials	0.28%	-0.56%	0.25%	0.58%	-15.04%	-6.31%	1.67%	7.66%			
Industrials	-0.42%	-0.28%	-0.02%	-0.11%	-4.69%	-2.53%	15.18%	12.01%			
Consumer Discretionary	-0.55%	-0.47%	0.01%	-0.08%	-5.07%	-0.80%	12.35%	11.26%			
Consumer Staples	-0.14%	-0.25%	-0.16%	0.27%	-1.20%	1.48%	5.00%	9.78%			
Health Care	0.28%	0.16%	0.10%	0.02%	3.48%	1.17%	11.38%	8.26%			
Financials	0.58%	0.60%	0.07%	-0.09%	-1.09%	-3.36%	18.14%	21.91%			
Information Technology	-0.33%	-0.57%	-0.09%	0.32%	-2.79%	2.25%	5.66%	8.53%			
Communication Services	0.01%	0.21%	-0.05%	-0.15%	-1.45%	-2.70%	10.11%	6.88%			
Utilities	0.65%	0.30%	0.17%	0.18%	10.03%	1.36%	8.36%	3.39%			
Real Estate	0.12%	0.12%	0.03%	-0.03%	0.79%	-2.94%	2.21%	3.23%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	-0.01%	0.00%	0.00%	0.00%	-1.43%	--	0.30%	0.00%			
Portfolio	-0.07%	=	-0.94%	+	0.23%	+	0.64%	-1.81%	-1.74%	100.00%	100.00%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-2.99%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Belgium	--	3.44%	0.00%	0.65%	--	-0.05%	0.03%	--	-0.02%
Czech Republic*	--	-9.42%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Denmark	-18.12%	-0.89%	1.86%	1.15%	-0.21%	0.02%	-0.02%	-0.13%	-0.33%
Finland	--	-1.77%	0.00%	0.67%	--	-0.01%	0.03%	--	0.02%
France	4.70%	-1.63%	7.02%	7.61%	0.50%	-0.01%	0.01%	-0.04%	0.46%
Germany	-8.07%	-3.97%	11.18%	5.83%	-0.25%	-0.03%	-0.21%	-0.23%	-0.72%
Greece*	--	-2.87%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-3.88%	0.00%	0.08%	--	0.00%	0.01%	--	0.00%
Ireland	--	-0.55%	0.00%	0.36%	--	-0.01%	0.02%	--	0.00%
Italy	2.35%	0.19%	6.02%	1.55%	0.04%	0.17%	-0.21%	0.10%	0.10%
Netherlands	-4.86%	3.65%	3.81%	1.98%	-0.16%	0.13%	-0.08%	-0.15%	-0.27%
Norway	--	-3.30%	0.00%	0.45%	--	-0.01%	0.03%	--	0.02%
Poland*	--	-11.74%	0.00%	0.30%	--	0.02%	0.02%	--	0.04%
Portugal	--	1.88%	0.00%	0.10%	--	-0.01%	0.00%	--	0.00%
Russia*	--	-1.09%	0.00%	1.06%	--	-0.01%	0.03%	--	0.02%
Spain	-6.03%	-3.80%	4.06%	1.99%	-0.05%	-0.01%	-0.08%	-0.05%	-0.19%
Sweden	0.84%	-4.84%	2.79%	1.78%	0.11%	0.00%	-0.07%	0.06%	0.10%
Switzerland	0.06%	0.28%	6.39%	6.22%	-0.01%	0.00%	0.00%	0.00%	-0.01%
United Kingdom	-0.59%	-2.47%	21.48%	11.22%	0.22%	-0.01%	-0.34%	0.20%	0.06%

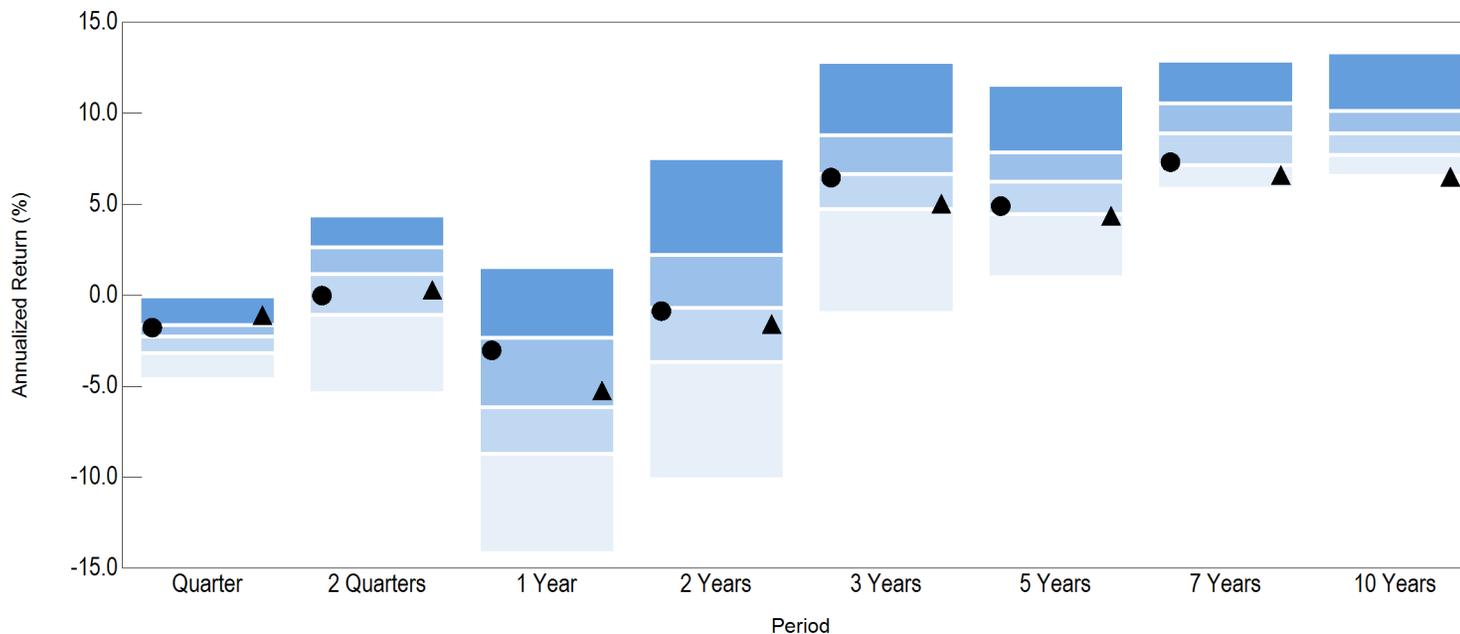
Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	4.12%	-1.33%	1.22%	4.82%	0.27%	-0.07%	0.14%	-0.20%	0.14%
China*	--	-4.66%	0.00%	8.38%	--	0.42%	0.04%	--	0.46%
Hong Kong	-9.27%	-11.94%	2.64%	2.70%	0.07%	0.01%	0.00%	0.00%	0.08%
India*	--	-5.23%	0.00%	2.39%	--	0.08%	0.06%	--	0.15%
Indonesia*	--	-5.30%	0.00%	0.56%	--	0.03%	0.00%	--	0.03%
Japan	0.42%	3.17%	22.80%	15.97%	-0.44%	0.18%	-0.02%	-0.19%	-0.47%
Korea*	--	-4.72%	0.00%	3.28%	--	0.07%	0.11%	--	0.18%
Malaysia*	--	-6.37%	0.00%	0.57%	--	0.03%	0.01%	--	0.04%
New Zealand	--	-2.73%	0.00%	0.17%	--	-0.01%	0.01%	--	0.01%
Pakistan*	--	1.22%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-4.53%	0.00%	0.30%	--	0.01%	0.00%	--	0.02%
Singapore	-4.26%	-5.78%	5.28%	0.91%	0.01%	-0.20%	-0.09%	0.07%	-0.21%
Taiwan*	--	5.81%	0.00%	2.89%	--	-0.14%	0.00%	--	-0.14%
Thailand*	--	-5.91%	0.00%	0.80%	--	0.06%	0.00%	--	0.05%
Americas									
Argentina*	--	-46.71%	0.00%	0.09%	--	0.04%	0.00%	--	0.04%
Brazil*	--	-4.65%	0.00%	2.01%	--	-0.06%	0.17%	--	0.11%
Canada	1.47%	0.69%	1.52%	6.82%	0.05%	-0.06%	0.07%	-0.04%	0.02%
Chile*	--	-7.47%	0.00%	0.25%	--	0.00%	0.02%	--	0.02%
Colombia*	--	-6.10%	0.00%	0.11%	--	0.00%	0.01%	--	0.01%
Mexico*	--	-1.56%	0.00%	0.68%	--	0.00%	0.02%	--	0.02%
Peru*	--	-9.25%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	7.44%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Israel	--	-3.60%	0.00%	0.39%	--	0.02%	-0.01%	--	0.02%
Qatar*	--	-0.66%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-9.73%	0.00%	0.38%	--	0.04%	0.00%	--	0.04%
South Africa*	--	-12.21%	0.00%	1.56%	--	0.10%	0.10%	--	0.20%
Turkey*	--	11.59%	0.00%	0.13%	--	-0.01%	0.00%	--	-0.01%
United Arab Emirates*	--	0.69%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	1.47%	-1.34%	1.52%	10.07%	0.12%	-0.07%	0.28%	-0.10%	0.23%
Europe	-2.01%	-1.79%	64.61%	43.26%	-0.08%	0.25%	-0.83%	-0.04%	-0.70%
Asia/Pacific	-1.01%	-1.30%	31.95%	43.74%	-0.04%	0.12%	0.26%	0.01%	0.34%
Other	--	-7.62%	0.00%	2.93%	--	0.16%	0.09%	--	0.25%
Cash	0.50%	--	1.92%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-1.59%	-1.70%	100.00%	100.00%	0.00%	0.45%	-0.20%	-0.13%	0.11%
Totals									
Developed	-1.63%	-0.85%	98.08%	73.47%	-0.47%	0.24%	-0.79%	-0.16%	-1.18%
Emerging*	--	-4.06%	0.00%	26.53%	--	0.71%	0.58%	--	1.30%
Cash	0.50%	--	1.92%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%

eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	-0.09		4.37		1.54		7.53		12.80		11.55		12.87		13.34	
25th Percentile	-1.62		2.65		-2.33		2.23		8.80		7.86		10.58		10.15	
Median	-2.26		1.19		-6.15		-0.67		6.68		6.24		8.92		8.91	
75th Percentile	-3.17		-1.07		-8.69		-3.65		4.76		4.46		7.16		7.73	
95th Percentile	-4.58		-5.36		-14.15		-10.09		-0.95		0.99		5.87		6.57	
# of Portfolios	51		51		51		49		48		40		31		24	
● Templeton	-1.78	(31)	-0.02	(67)	-3.03	(35)	-0.87	(55)	6.46	(56)	4.90	(70)	7.31	(74)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	-1.09	(17)	0.29	(62)	-5.24	(49)	-1.57	(60)	5.04	(73)	4.37	(76)	6.61	(82)	6.51	(96)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	105	4,168
Weighted Avg. Market Cap. (\$B)	2.3	2.3
Median Market Cap. (\$B)	1.4	0.8
Price To Earnings	15.4	15.0
Price To Book	2.1	2.1
Price To Sales	1.0	0.9
Return on Equity (%)	12.2	11.7
Yield (%)	2.6	2.8
Beta (holdings; global)	1.0	0.9

Top Holdings

TECHNOGYM	2.1%
ONESPAWORLD HOLDINGS	2.1%
HUHTAMAKI	2.0%
BARCO NEW	1.9%
TECHTRONIC INDS.	1.9%
INTERPUMP GROUP	1.8%
RATIONAL	1.8%
GREGGS	1.7%
MEITEC	1.7%
FUJI OIL HOLDINGS	1.7%

Best Performers

	Return %
IDOM (J:GULL)	64.1%
ASICS (J:FD@N)	57.6%
SQUARE ENIX HOLDINGS (J:ENIX)	52.0%
KING YUAN ELTN. (TW:KYE)	36.0%
POSTNL (H:PNL)	34.5%
NISSEI ASB MACHINE (J:NASB)	33.4%
ZOJIRUSHI (J:ZOJR)	23.8%
CHICONY ELECTRONICS (TW:CHY)	19.8%
SAO PAULO ALPARGATAS PN (BR:AL4)	16.8%
BELLWAY (UKIR:BWY)	16.3%

Worst Performers

	Return %
GOODBABY INTL.HOLDINGS (K:GBIH)	-33.6%
MAISONS DU MONDE (F:MDM)	-32.2%
MATAS (DK:MAT)	-32.1%
CHINA ZHENG TONG AUTO SVS. (K:CZTA)	-27.8%
XXL (N:XXL)	-25.5%
DE LA RUE ORD (UKIR:DLAR)	-25.1%
DESCENTE (J:DCNT)	-24.7%
VALUE PARTNERS GROUP (K:VALP)	-24.4%
CCC (PO:CCC)	-23.4%
THULE GROUP (W:THULE)	-23.3%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Total Effects	Attribution Effects				Returns		Sector Weights					
		Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark				
Energy	0.01%	-0.30%	0.08%	0.05%	0.18%	-13.59%	-5.10%	1.42%	3.48%				
Materials	0.30%	0.11%	0.15%	0.09%	-0.05%	-3.61%	-4.25%	5.58%	10.22%				
Industrials	0.17%	0.36%	-0.14%	-0.18%	0.13%	-1.21%	-3.06%	26.73%	19.58%				
Consumer Discretionary	-1.28%	-0.45%	0.09%	-0.42%	-0.50%	-4.36%	-0.34%	25.86%	12.26%				
Consumer Staples	-0.40%	-0.22%	-0.01%	-0.12%	-0.06%	-5.75%	-1.32%	8.00%	6.36%				
Health Care	0.08%	-0.14%	0.05%	0.12%	0.05%	-4.19%	-3.29%	4.68%	7.19%				
Financials	0.13%	0.04%	0.00%	0.08%	0.00%	-2.41%	-3.56%	10.56%	10.73%				
Information Technology	0.19%	0.07%	0.08%	0.03%	0.02%	3.94%	2.66%	12.73%	10.21%				
Communication Services	0.50%	1.49%	-0.05%	0.13%	-1.07%	33.87%	0.06%	1.33%	4.73%				
Utilities	0.03%	--	-0.10%	0.13%	--	--	0.53%	0.00%	3.40%				
Real Estate	-0.37%	-0.17%	-0.58%	0.23%	0.14%	3.26%	4.91%	2.05%	11.83%				
Cash	0.00%	--	--	--	--	--	--	0.00%	0.00%				
Unclassified	-0.02%	0.00%	0.00%	0.00%	-0.02%	-0.30%	-1.08%	1.05%	0.00%				
Portfolio	-0.66%	=	0.80%	+	-0.42%	+	0.14%	+	-1.18%	-1.74%	-1.08%	100.00%	100.00%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-3.12%	0.00%	0.64%	--	0.00%	0.03%	--	0.03%
Belgium	-0.79%	4.16%	2.81%	1.52%	-0.08%	0.09%	-0.05%	-0.07%	-0.10%
Czech Republic*	--	0.60%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Denmark	-22.99%	-7.28%	1.48%	1.30%	-0.21%	-0.01%	0.00%	-0.03%	-0.25%
Finland	-1.01%	-5.72%	2.36%	0.98%	0.05%	-0.04%	-0.06%	0.07%	0.01%
France	-11.11%	-2.59%	1.21%	2.49%	-0.22%	0.00%	0.06%	0.11%	-0.05%
Germany	-3.69%	-4.71%	6.67%	4.23%	0.05%	-0.05%	-0.11%	0.03%	-0.08%
Greece*	--	-0.95%	0.00%	0.16%	--	0.00%	0.01%	--	0.00%
Hungary*	--	-7.22%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Ireland	--	-7.84%	0.00%	0.33%	--	0.02%	0.01%	--	0.03%
Italy	1.56%	-1.40%	3.91%	2.53%	0.08%	0.02%	-0.07%	0.04%	0.08%
Luxembourg	-2.26%	-1.08%	1.20%	0.00%	0.00%	0.00%	-0.05%	0.01%	-0.04%
Netherlands	0.54%	-2.55%	6.04%	1.98%	0.07%	-0.01%	-0.20%	0.15%	0.02%
Norway	-25.50%	-6.29%	0.26%	1.61%	-0.33%	0.02%	0.09%	0.28%	0.06%
Poland*	-23.42%	-17.63%	0.68%	0.23%	-0.01%	-0.06%	-0.02%	-0.03%	-0.12%
Portugal	--	-14.95%	0.00%	0.27%	--	0.03%	0.01%	--	0.04%
Russia*	--	-6.72%	0.00%	0.24%	--	0.01%	0.01%	--	0.02%
Spain	0.48%	-6.47%	1.42%	1.61%	0.12%	0.01%	0.00%	-0.01%	0.11%
Sweden	-17.04%	-3.89%	5.69%	4.23%	-0.59%	0.01%	-0.04%	-0.20%	-0.83%
Switzerland	-2.22%	-1.49%	3.68%	3.46%	-0.04%	0.00%	0.02%	0.00%	-0.03%
United Kingdom	-1.62%	-1.07%	7.01%	12.65%	-0.07%	-0.04%	0.19%	0.03%	0.10%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	--	-0.64%	0.00%	5.62%	--	-0.11%	0.23%	--	0.12%
China*	-11.46%	-7.74%	0.51%	2.28%	-0.08%	0.16%	0.00%	0.07%	0.14%
Hong Kong	-10.86%	-7.69%	8.13%	1.42%	-0.05%	-0.59%	-0.02%	-0.21%	-0.87%
India*	-16.14%	-9.67%	1.23%	3.23%	-0.21%	0.17%	0.05%	0.13%	0.14%
Indonesia*	14.89%	-6.17%	0.65%	0.52%	0.11%	-0.01%	0.00%	0.03%	0.13%
Japan	6.88%	4.06%	20.68%	21.85%	0.62%	-0.03%	0.00%	-0.03%	0.55%
Korea*	-9.96%	-10.01%	1.96%	3.43%	0.00%	0.12%	0.05%	0.00%	0.17%
Malaysia*	--	-2.36%	0.00%	0.68%	--	0.02%	0.01%	--	0.03%
New Zealand	--	-1.67%	0.00%	0.73%	--	-0.03%	0.05%	--	0.02%
Pakistan*	--	-1.83%	0.00%	0.11%	--	0.01%	0.00%	--	0.00%
Philippines*	--	-8.69%	0.00%	0.21%	--	0.02%	0.00%	--	0.02%
Singapore	--	-1.62%	0.00%	1.29%	--	0.01%	0.03%	--	0.04%
Taiwan*	9.81%	4.84%	7.29%	4.08%	0.20%	0.11%	0.00%	0.16%	0.47%
Thailand*	--	-7.35%	0.00%	1.08%	--	0.10%	0.00%	--	0.09%
Americas									
Argentina*	--	-39.07%	0.00%	0.17%	--	0.07%	0.00%	--	0.07%
Brazil*	-3.84%	0.98%	3.84%	1.67%	-0.09%	0.18%	-0.17%	-0.11%	-0.20%
Canada	-3.27%	1.74%	5.85%	6.85%	-0.35%	-0.02%	0.02%	0.05%	-0.30%
Chile*	--	-9.53%	0.00%	0.33%	--	0.01%	0.02%	--	0.04%
Colombia*	--	-1.87%	0.00%	0.06%	--	0.00%	0.01%	--	0.00%
Mexico*	--	-0.71%	0.00%	0.60%	--	0.00%	0.02%	--	0.01%
United States	-3.99%	1.60%	5.42%	0.00%	0.00%	0.01%	0.00%	-0.30%	-0.29%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	-0.56%	0.00%	0.13%	--	0.01%	0.00%	--	0.00%
Israel	--	8.08%	0.00%	1.15%	--	-0.05%	-0.03%	--	-0.08%
Qatar*	--	-1.09%	0.00%	0.24%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	7.09%	0.00%	0.25%	--	-0.01%	0.00%	--	-0.01%
South Africa*	--	-3.26%	0.00%	1.14%	--	-0.03%	0.08%	--	0.05%
Turkey*	--	9.26%	0.00%	0.26%	--	-0.01%	-0.01%	--	-0.02%
United Arab Emirates*	--	6.78%	0.00%	0.13%	--	-0.01%	0.00%	--	-0.01%
Totals									
Americas	-3.67%	0.33%	15.11%	9.68%	-0.41%	0.10%	-0.12%	-0.23%	-0.67%
Europe	-4.69%	-2.81%	44.44%	40.51%	-0.74%	-0.01%	-0.18%	-0.07%	-1.00%
Asia/Pacific	2.23%	-0.16%	40.45%	46.52%	0.74%	0.02%	0.40%	-0.10%	1.06%
Other	--	3.11%	0.00%	3.29%	--	-0.10%	0.04%	--	-0.05%
Total	-1.74%	-1.08%	100.00%	100.00%	-0.41%	0.01%	0.14%	-0.40%	-0.66%
Totals									
Developed	-2.14%	-0.20%	83.83%	78.73%	-1.74%	0.05%	0.10%	-0.11%	-1.71%
Emerging*	0.33%	-4.33%	16.17%	21.27%	1.09%	0.18%	0.04%	-0.26%	1.05%

Interest rate environment

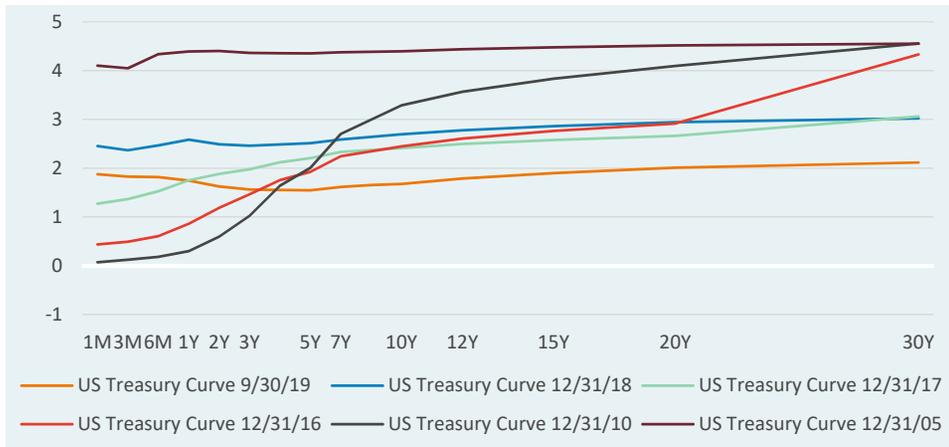
- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.
- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%.
- FOMC members appear divided on the likely future path of interest rates. Per the September dot plot, 8 of 17 members expect one further 0.25% cut by the end of 2020, 2 expect no change, and 7 expect either one or two 0.25% rate hikes.
- The European Central Bank delivered a fresh stimulus package in September, in line with expectations. The ECB cut its main deposit rate from -0.40% to -0.50% and announced it would restart asset purchases of €20 billion per month, beginning November 1st.
- Global sovereign yields continued to plummet. In Germany, 10-year bond yields touched fresh all-time lows, and the entire German sovereign curve moved below 0%. In Italy, 10-year bond yields fell 1.28% to 0.82%, boosted by the formation of a new coalition government between the Democratic Party and the Five-Star Movement.
- Repo rates, which represent the overnight rate paid by short-term borrowers of cash, surged as overnight liquidity was constrained. The New York Fed intervened, injecting over \$300 billion into money markets over the course of a few weeks. Fed officials viewed the brief spike in repo rates as a financial “plumbing” issue, which could justify an “organic resumption of balance sheet growth”, not to be confused with crisis-era QE policy.

Area	Short Term (3M)	10-Year
United States	1.81%	1.66%
Germany	(0.57%)	(0.57%)
France	(0.59%)	(0.27%)
Spain	(0.54%)	0.15%
Italy	(0.28%)	0.82%
Greece	0.65%	1.35%
U.K.	0.78%	0.49%
Japan	(0.32%)	(0.21%)
Australia	1.06%	1.02%
China	2.33%	3.14%
Brazil	5.04%	7.05%
Russia	6.58%	7.01%

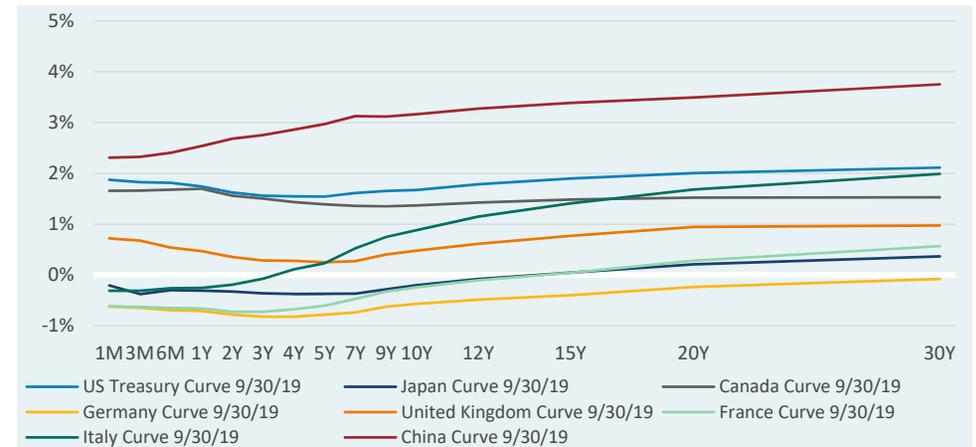
Source: Bloomberg, as of 9/30/19

Yield environment

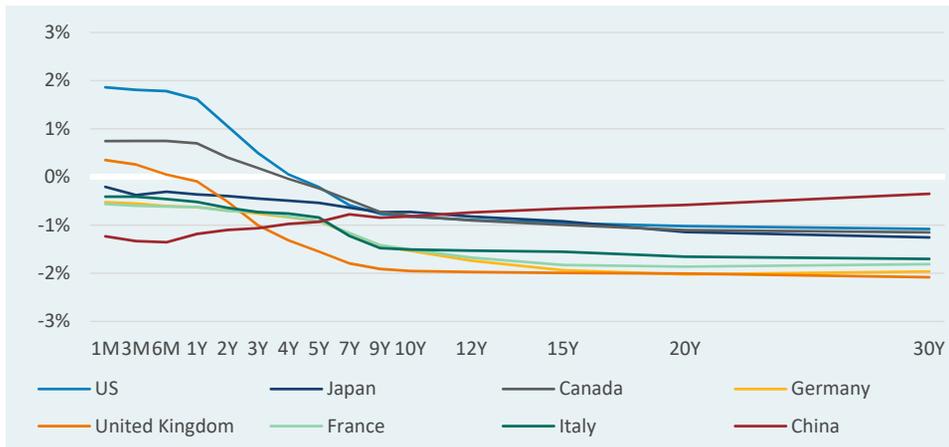
U.S. YIELD CURVE



GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/19

Currency

The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Investors are pricing in a 78% chance of one more 0.25% rate cut by the end of 2019, and a 25% chance of 0.50% in rate cuts. The market continues to price in more aggressive easing than what the Federal Reserve has indicated, which may contribute to volatility if actual easing measures underwhelm the market.

A variety of market scenarios may lead to U.S. dollar

weakness in the short-term, including: aggressive easing by the Federal Reserve which leads to a convergence of U.S. and international interest rates levels, further upside surprise to U.S. inflation, and/or weakening U.S. economic conditions which brings the U.S. more in line with other developed economies.

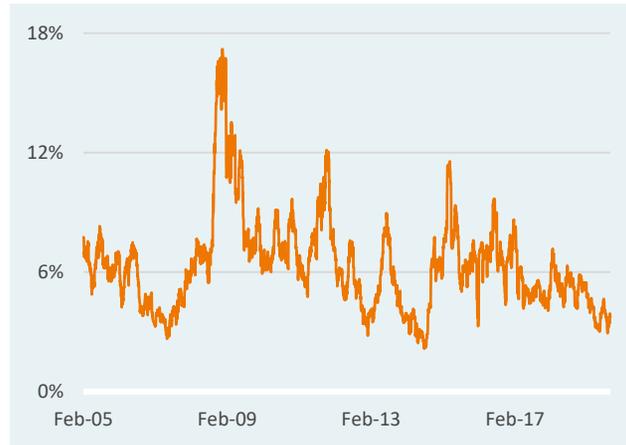
Emerging market currencies fell -4% quarter, on the back of U.S. dollar strength. These currencies remain very depressed relative to history.

U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 9/30/19

BLOOMBERG DOLLAR SPOT INDEX REALIZED 30-DAY VOLATILITY



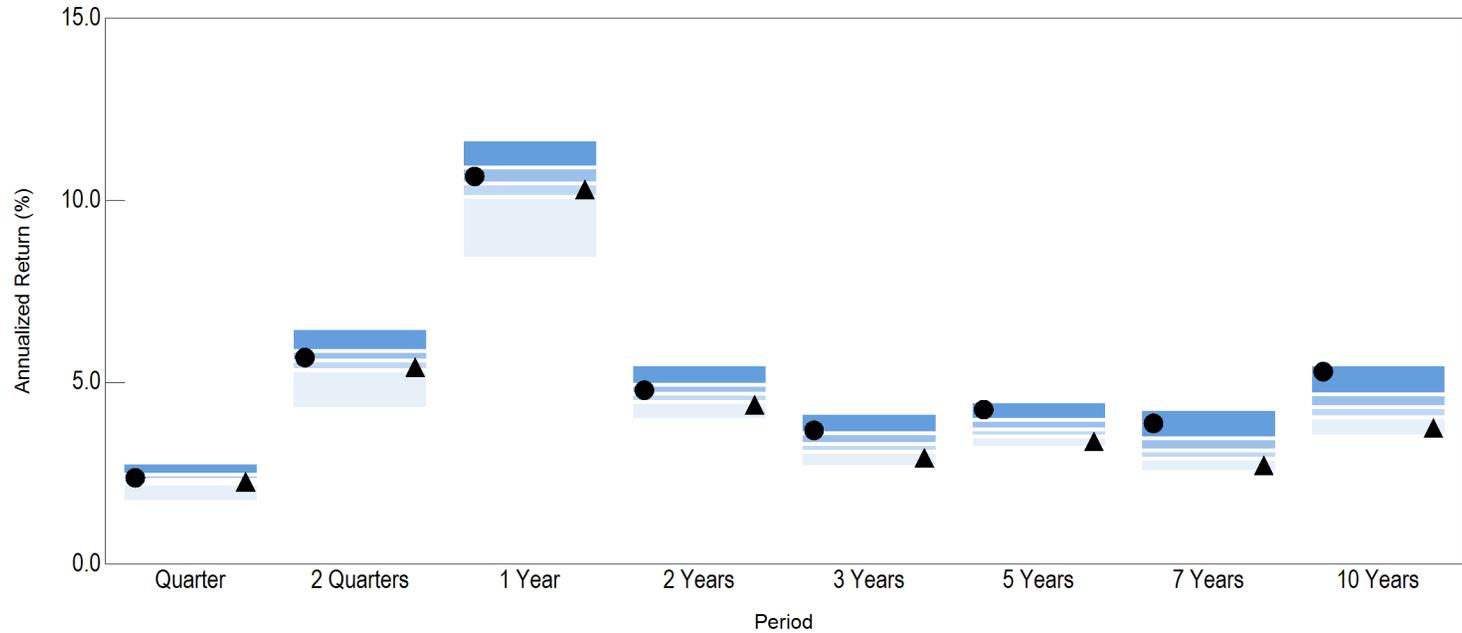
Source: Bloomberg, as of 9/30/19

JPM EMERGING MARKET CURRENCY INDEX



Source: Bloomberg, JPMorgan, as of 9/30/19

eV US Core Fixed Inc Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.79	6.48	11.67	5.49	4.15	4.47	4.25	5.48
25th Percentile	2.48	5.87	10.92	4.94	3.62	3.98	3.47	4.69
Median	2.34	5.61	10.48	4.70	3.32	3.72	3.14	4.33
75th Percentile	2.23	5.34	10.10	4.46	3.10	3.53	2.90	4.04
95th Percentile	1.71	4.28	8.41	3.98	2.68	3.20	2.54	3.52
# of Portfolios	216	216	216	215	214	211	209	195
● Baird Advisors	2.38 (44)	5.68 (42)	10.65 (41)	4.78 (39)	3.68 (22)	4.25 (9)	3.87 (9)	5.29 (8)
▲ BBgBarc US Aggregate TR	2.27 (69)	5.42 (69)	10.30 (65)	4.38 (81)	2.92 (91)	3.38 (87)	2.72 (90)	3.75 (92)

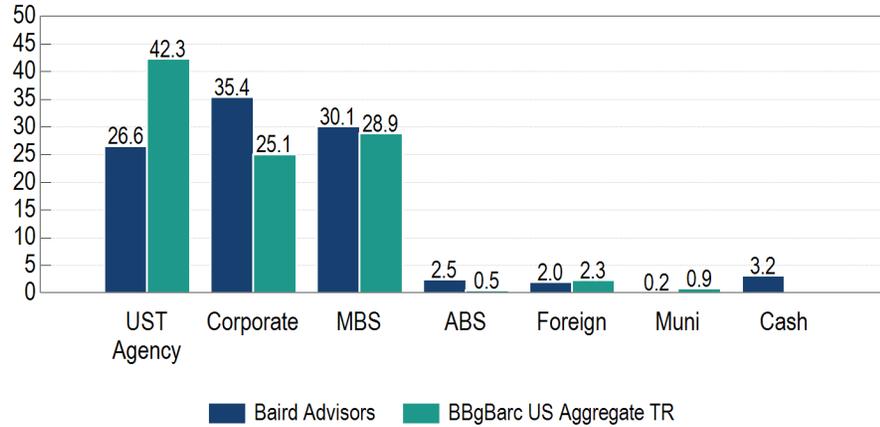
PERFORMANCE BY QUALITY

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Cash & Equiv	1	21,374	3.2	0.54	0.02
Govt & Agency	104	343,991	51.5	2.47	1.27
AAA	23	57,443	8.6	2.24	0.19
AA	7	9,351	1.4	1.94	0.03
A	36	74,810	11.2	2.54	0.28
BAA	62	143,608	21.5	2.95	0.63
Below BAA	17	17,367	2.6	1.30	0.03
Other	0	-	0.0	0.00	0.00
Total Account	250	\$667,944	100.0	2.46	2.46

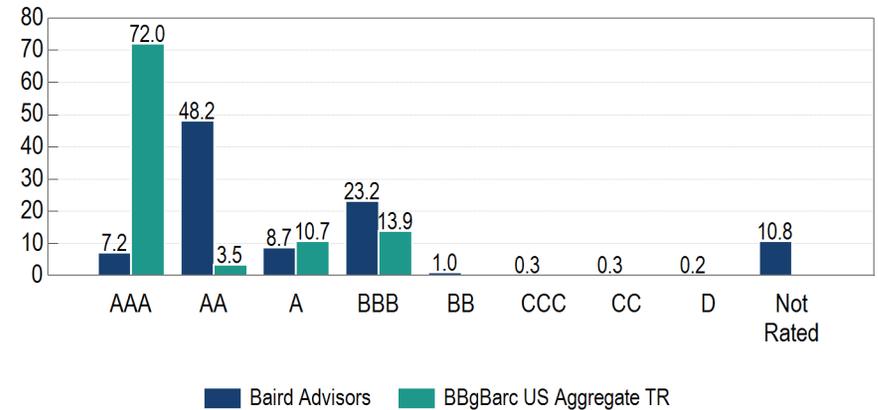
PERFORMANCE BY DURATION

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Under 1 Year	27	45,420	6.8	0.64	0.04
1 - 3 Years	77	199,715	29.9	0.99	0.30
3 - 6 Years	86	219,085	32.8	1.47	0.48
Over 6 Years	60	203,723	30.5	5.36	1.63
Total Account	250	\$667,944	100.0	2.46	2.46

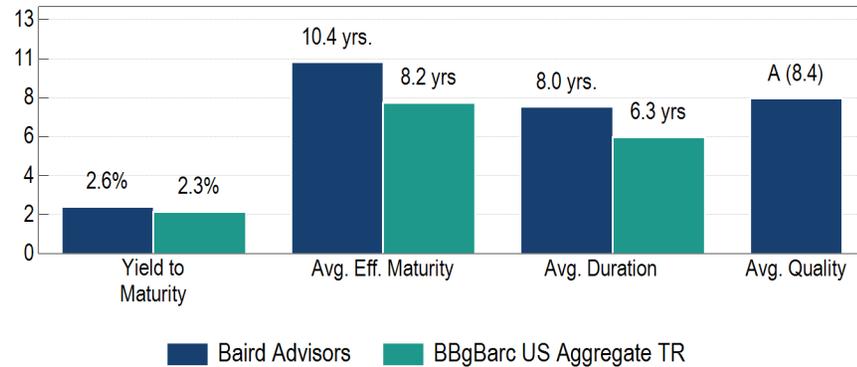
US Sector Allocation
Baird Advisors

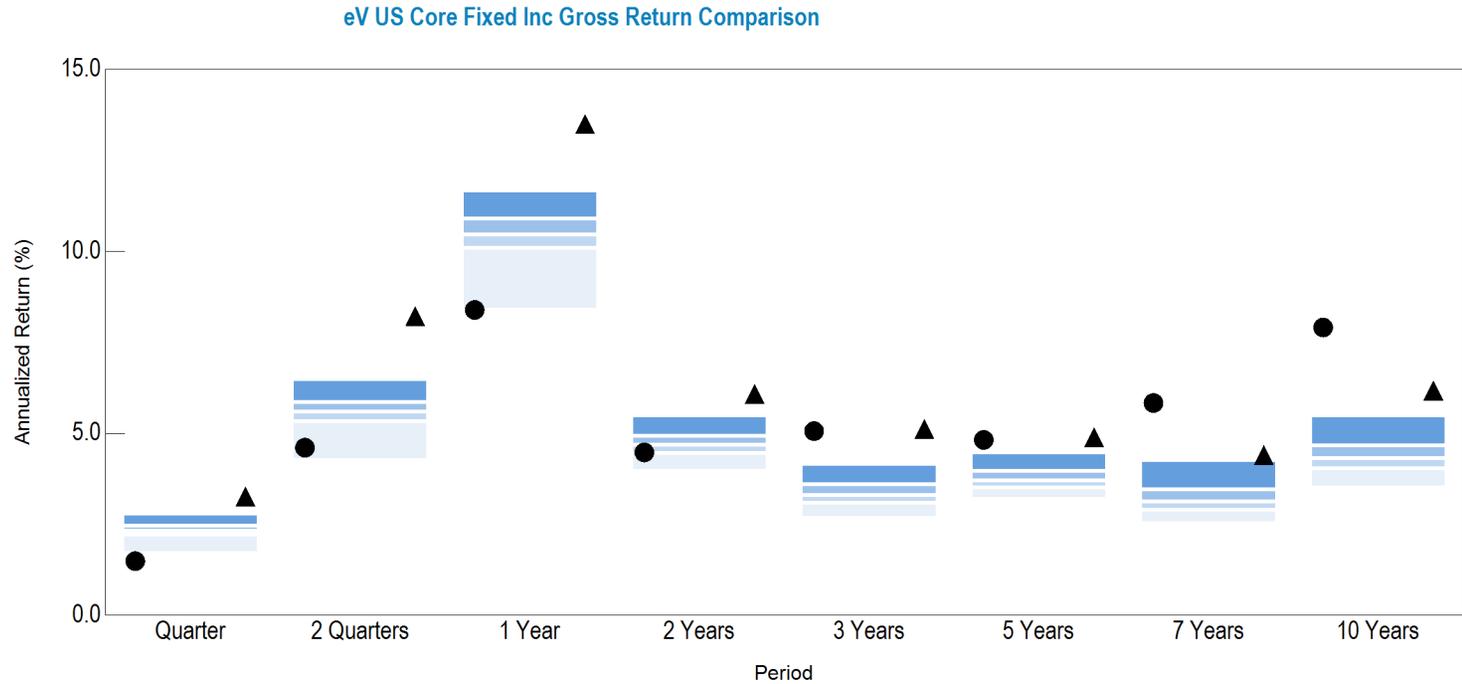


Credit Quality Allocation
Baird Advisors



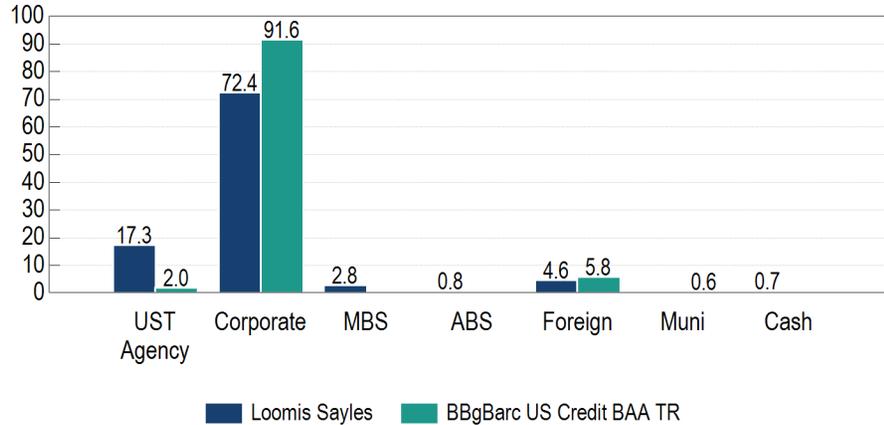
Characteristics
Baird Advisors



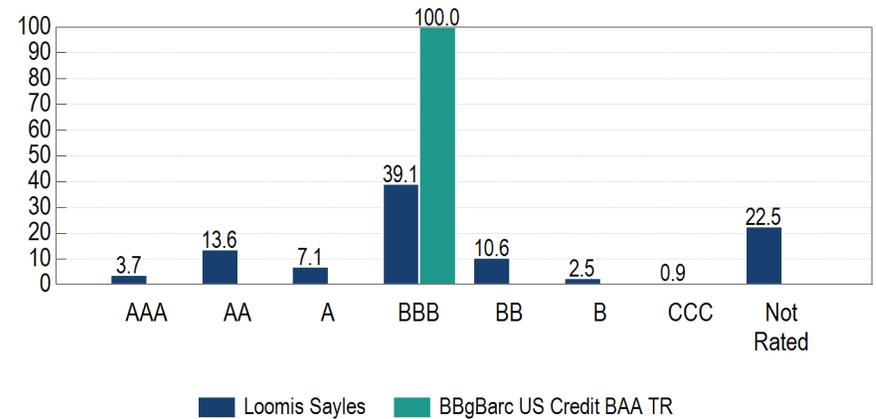


	Return (Rank)															
5th Percentile	2.79	6.48	11.67	5.49	4.15	4.47	4.25	5.48								
25th Percentile	2.48	5.87	10.92	4.94	3.62	3.98	3.47	4.69								
Median	2.34	5.61	10.48	4.70	3.32	3.72	3.14	4.33								
75th Percentile	2.23	5.34	10.10	4.46	3.10	3.53	2.90	4.04								
95th Percentile	1.71	4.28	8.41	3.98	2.68	3.20	2.54	3.52								
# of Portfolios	216	216	216	215	214	211	209	195								
● Loomis Sayles	1.49	(97)	4.60	(94)	8.39	(96)	4.48	(74)	5.06	(3)	4.82	(3)	5.83	(1)	7.91	(1)
▲ BBgBarc US Credit BAA TR	3.26	(1)	8.22	(1)	13.49	(1)	6.08	(3)	5.12	(3)	4.89	(3)	4.40	(4)	6.17	(2)

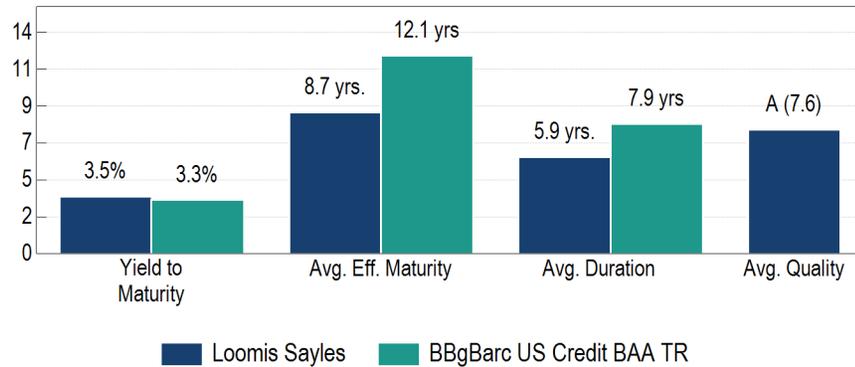
US Sector Allocation
Loomis Sayles



Credit Quality Allocation
Loomis Sayles



Characteristics
Loomis Sayles



Summary

Account Return	1.42
Benchmark Return	3.25
Excess Return	-1.83
Sector Allocation	0.00
Security Selection	-1.88
Trading	0.04
Pricing Differences	0.00
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect
Total	100.00	100.00	1.38	3.26	1.38	3.26	0.00	-1.88	-1.88
Argentine Peso	0.41	0.00	-54.89	3.26	-0.31	0.00	0.00	-0.33	-0.33
Canadian Dollar	0.02	0.00	-1.66	3.26	0.00	0.00	0.00	0.00	0.00
Hungarian Forint	0.18	0.00	-2.28	3.26	-0.01	0.00	0.00	-0.02	-0.02
Malaysian Ringgit	0.70	0.00	-0.36	3.26	0.00	0.00	0.00	-0.03	-0.03
Mexican Peso	0.00	0.00	0.70	3.26	0.00	0.00	0.00	0.00	0.00
Norwegian Krone	0.66	0.00	-5.77	3.26	-0.04	0.00	0.00	-0.06	-0.06
Polish Zloty	0.18	0.00	-3.12	3.26	-0.01	0.00	0.00	-0.02	-0.02
South African Rand	0.00	0.00	0.00	3.26	0.00	0.00	0.00	0.00	0.00
US Dollar	97.84	100.00	1.80	3.26	1.76	3.26	0.00	-1.42	-1.42

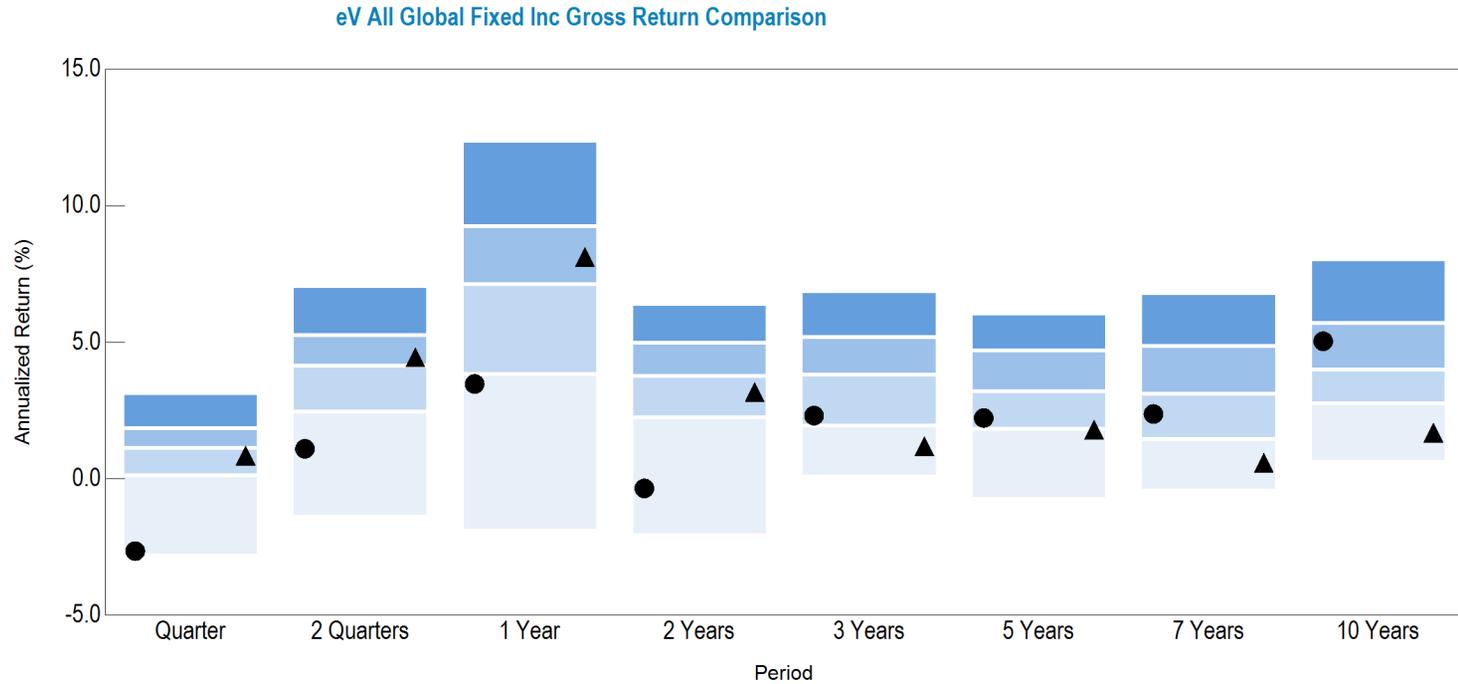
Summary

Account Return	1.42
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Details

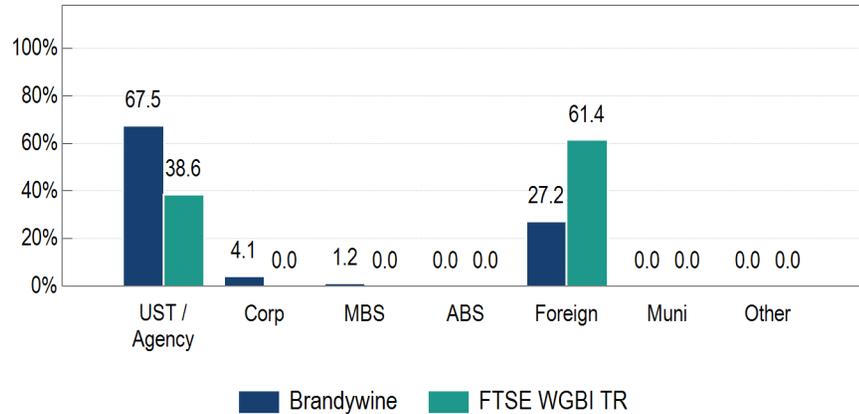
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect
Total	100.00	100.00	1.38	3.26	1.38	3.26	-0.85	-1.03	-1.88
No Value	0.09	0.00	-8.72	3.26	-0.07	0.00	0.00	-0.07	-0.07
Less than 1.0	11.08	0.61	-0.78	1.09	-0.10	0.01	-0.24	-0.22	-0.47
1.0 - 2.0	16.03	7.76	0.18	0.97	0.03	0.08	-0.21	-0.13	-0.35
2.0 - 3.0	8.89	8.27	-1.01	1.19	-0.09	0.10	-0.01	-0.20	-0.21
3.0 - 4.0	6.34	8.14	-0.36	1.45	-0.02	0.12	0.04	-0.11	-0.08
4.0 - 5.0	11.19	7.87	0.60	1.78	0.06	0.14	-0.06	-0.14	-0.19
5.0 - 6.0	6.03	7.03	0.28	1.96	0.02	0.14	0.01	-0.11	-0.10
6.0 - 7.0	5.05	6.91	0.85	2.52	0.04	0.17	0.01	-0.08	-0.07
7.0 - 8.0	5.89	5.85	0.76	2.81	0.05	0.17	0.00	-0.12	-0.12
8.0 - 9.0	6.62	6.02	2.82	2.99	0.17	0.18	0.00	-0.01	-0.01
9.0 - 10.0	6.24	4.88	3.27	3.26	0.13	0.16	-0.01	0.00	-0.01
10.0 - 11.0	0.37	1.33	6.04	3.45	0.03	0.05	0.00	0.01	0.01
11.0 - 12.0	0.00	0.95	0.00	3.15	0.00	0.03	0.00	0.00	0.00
12.0 - 13.0	0.00	0.87	0.00	2.95	0.00	0.03	0.00	0.00	0.00
13.0 - 14.0	0.25	0.46	1.01	4.15	0.01	0.02	0.00	-0.02	-0.02
14.0 - 15.0	1.47	0.76	5.78	3.96	0.08	0.03	0.01	0.00	0.01
15.0 - 16.0	0.09	1.59	1.83	5.19	0.00	0.08	-0.03	0.00	-0.03
16.0 - 17.0	0.74	1.40	7.50	5.85	0.02	0.08	-0.02	0.00	-0.02
17.0 - 18.0	0.88	1.31	3.96	4.82	0.07	0.06	0.00	0.01	0.01

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect
18.0 - 19.0	0.10	2.53	-1.02	5.15	0.00	0.13	-0.05	0.00	-0.05
19.0 - 20.0	0.24	0.92	14.92	5.98	0.03	0.06	-0.02	0.01	-0.01
20.0 - 21.0	1.36	1.80	8.61	5.15	0.11	0.08	0.00	0.04	0.04
21.0 - 22.0	0.57	1.41	4.02	4.96	0.02	0.07	-0.02	-0.01	-0.02
22.0 - 23.0	0.02	1.68	-18.55	5.40	0.00	0.09	-0.03	0.00	-0.04
23.0 - 24.0	0.90	1.71	7.68	5.40	0.07	0.09	-0.02	0.02	0.00
24.0 - 25.0	0.09	2.48	10.02	5.60	0.01	0.14	-0.06	0.01	-0.05
25.0 - 26.0	0.45	3.39	4.79	5.88	0.02	0.20	-0.08	-0.01	-0.08
26.0 - 27.0	0.42	2.42	13.91	6.31	0.06	0.14	-0.05	0.03	-0.02
27.0 - 28.0	0.46	2.48	-2.84	5.69	-0.01	0.14	-0.05	-0.04	-0.09
28.0 - 29.0	4.03	3.72	9.14	6.59	0.31	0.25	-0.01	0.09	0.07
29.0 - 30.0	4.29	2.17	7.81	6.56	0.33	0.13	0.09	0.03	0.13
30.0 - 31.0	0.02	0.11	0.13	5.38	0.00	0.01	0.00	0.00	-0.01
31.0 - 32.0	0.00	0.29	0.00	7.45	0.00	0.02	-0.01	0.00	-0.01
32.0 - 33.0	0.00	0.05	0.00	6.73	0.00	0.00	0.00	0.00	0.00
34.0 - 35.0	0.00	0.17	0.00	6.96	0.00	0.01	0.00	0.00	0.00
35.0 - 36.0	0.00	0.22	0.00	6.62	0.00	0.02	-0.01	0.00	-0.01
37.0 - 38.0	0.00	0.04	0.00	6.93	0.00	0.00	0.00	0.00	0.00
38.0 - 39.0	0.00	0.18	0.00	7.52	0.00	0.01	-0.01	0.00	-0.01
39.0 - 40.0	0.00	0.09	0.00	9.37	0.00	0.01	-0.01	0.00	-0.01
45.0 - 46.0	0.00	0.03	0.00	8.01	0.00	0.00	0.00	0.00	0.00
46.0 - 47.0	0.00	0.02	0.00	6.65	0.00	0.00	0.00	0.00	0.00
48.0 - 49.0	0.00	0.03	0.00	4.55	0.00	0.00	0.00	0.00	0.00
91.0 - 92.0	0.00	0.10	0.00	6.61	0.00	0.01	0.00	0.00	0.00
95.0 - 96.0	0.00	0.04	0.00	9.46	0.00	0.00	0.00	0.00	0.00
Greater than 98.0	0.00	0.03	0.00	8.51	0.00	0.00	0.00	0.00	0.00
44.0 - 45.0	0.00	0.01	0.00	5.25	0.00	0.00	0.00	0.00	0.00
47.0 - 48.0	0.00	0.02	0.00	8.23	0.00	0.00	0.00	0.00	0.00
58.0 - 59.0	0.00	0.02	0.00	1.58	0.00	0.00	0.00	0.00	0.00
36.0 - 37.0	0.00	0.01	0.00	-0.71	0.00	0.00	0.00	0.00	0.00

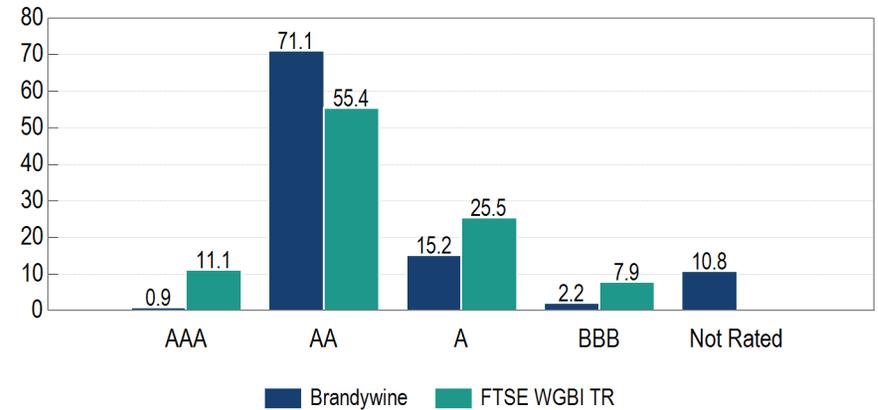


	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	3.14	7.05	12.38	6.40	6.86	6.05	6.78	8.03
25th Percentile	1.86	5.27	9.27	5.00	5.20	4.73	4.89	5.72
Median	1.15	4.16	7.14	3.79	3.83	3.22	3.14	4.02
75th Percentile	0.14	2.48	3.85	2.27	1.97	1.84	1.47	2.77
95th Percentile	-2.81	-1.37	-1.90	-2.06	0.08	-0.72	-0.43	0.64
# of Portfolios	452	452	451	440	429	386	328	221
● Brandywine	-2.65 (95)	1.10 (89)	3.47 (79)	-0.35 (89)	2.31 (68)	2.23 (68)	2.37 (60)	5.04 (34)
▲ FTSE WGBI TR	0.85 (61)	4.45 (45)	8.13 (39)	3.19 (62)	1.19 (87)	1.80 (76)	0.59 (89)	1.69 (89)

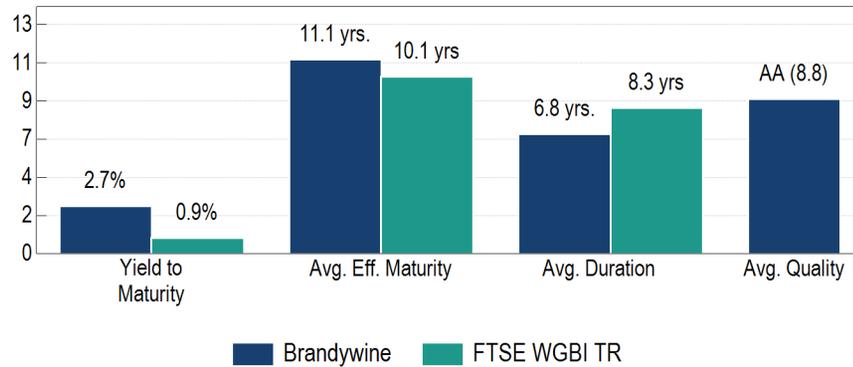
Sectors
Brandywine



Credit Quality Allocation
Brandywine

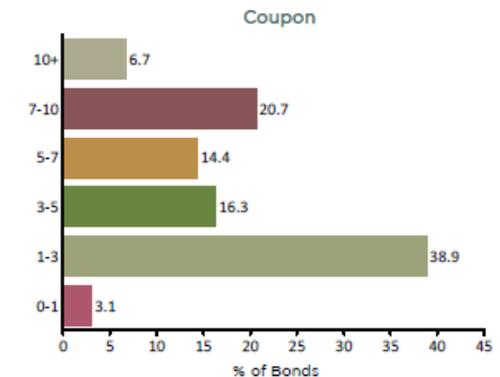
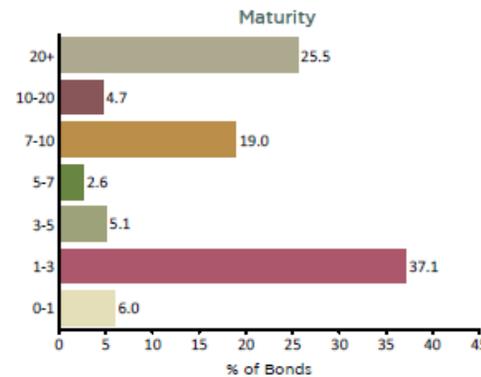


Characteristics
Brandywine



Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	4.48	0.81
Yield to Worst (%)	4.43	0.81
Modified Duration	6.02	8.43
Effective Duration	5.93	8.55
Average Maturity	10.45	9.27
Average Market Price	104.19	-
Average Coupon (%)	4.63	2.30
Current Yield (%)	4.40	-
# of Issues	150	1,035



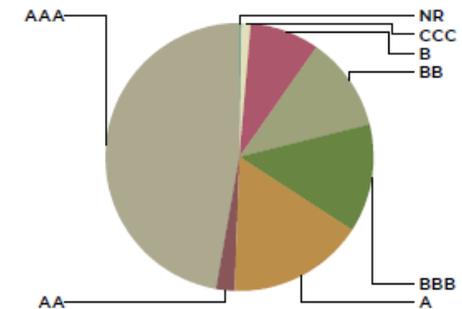
Sector Breakdown

	Market Value (%)	Duration Contribution (In Years)
Government Sovereign	82.91	5.26
Government Owned - No Guarantee	2.18	0.24
Corporate Bond - High Yield	6.93	0.18
Corporate Bond - Investment Grade	3.20	0.18
Government Regional Agencies	2.56	0.04
Mortgage Backed Securities	0.68	0.04
Cash	2.12	-
Derivatives	(0.59)	0.07
Total:	100.00	6.02

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	47.2	47.2
AA	2.3	49.5
A	16.5	66.0
BBB	13.0	79.0
BB	11.4	90.4
B	8.2	98.6
CCC	1.3	99.9
NR	0.1	100.0

Average Quality: A



PRIMARY BENCHMARK is FTSE WGBI (USD)

All Averages are US DOLLAR - weighted by the net market value. Average Market Price includes accrued interest. The "Blended Weighted Average Rating" is determined as follows: in line with the methodology used by Barclays Global indices, the middle rating from the three major NRSROs (S & P, Moody's, and Fitch) will be assigned to each security. In the event that ratings are provided by only two agencies, the lowest rating will be assigned. If only one agency assigns a rating, that rating will be applied. If the security is not rated by one of the three major agencies, U.S. treasuries and certain U.S. agencies are given the U.S. issuer rating. Sovereign treasuries are given the sovereign issuer rating. All other unrated securities are given a rating equivalent to a defaulted bond. The equivalent numerical rating is assigned to each security based on the Security Level scale. A Portfolio Level scale is applied on the weighted average calculation to round for fractional numerical ratings and then converted to an alpha weighted average rating. Cash is included and received the highest rating.

Data included on this page show the aggregate holdings of the Brandywine Emerging Markets Debt Fund ("EMD Fund"), in which the portfolio is invested. Holdings in the EMD Fund are not subject to ACERA's Investment Guidelines. Please note that ACERA owns units of the EMD Fund, not the underlying holdings. Data and characteristics shown are for illustrative purposes only.

Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.

Global Opportunistic Fixed Income

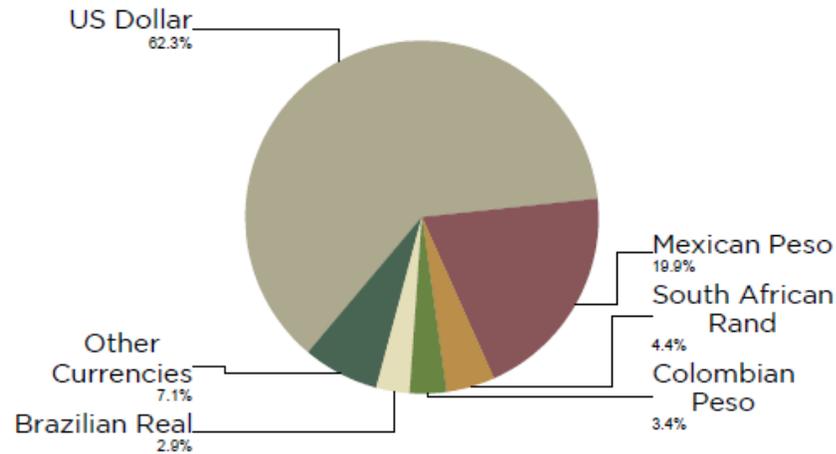
September 30, 2019

Country Allocation	9/30/2019			6/30/2019		Currency Allocation	9/30/2019			6/30/2019	
	Portfolio	Index	Active	Portfolio	Change		Portfolio	Index	Active	Portfolio	Change
*Mexico	14.26	0.67	13.59	12.73	1.53	Euro	0.47	30.80	(30.33)	5.84	(5.37)
United States	52.28	39.16	13.12	49.96	2.32	US Dollar	10.14	39.16	(29.02)	2.03	8.12
*Brazil	6.09	-	6.09	5.97	0.13	Japanese Yen	-	18.66	(18.66)	-	-
United Kingdom	0.25	5.09	(4.84)	0.13	0.12	British Pound Sterling	15.96	5.09	10.87	5.09	10.87
Spain	0.60	4.61	(4.01)	0.62	(0.02)	*Mexican Peso	10.42	0.67	9.76	10.37	0.05
*Colombia	3.88	-	3.88	4.96	(1.08)	Australian Dollar	10.19	1.62	8.57	10.30	(0.11)
Australia	4.85	1.62	3.23	4.89	(0.04)	Norwegian Krone	6.22	0.19	6.03	9.23	(3.01)
*Indonesia	2.72	-	2.72	2.61	0.11	*Brazilian Real	5.15	-	5.15	5.97	(0.82)
*Egypt	2.42	-	2.42	2.19	0.23	*Chilean Peso	5.04	-	5.04	5.63	(0.59)
*Malaysia	2.77	0.38	2.39	4.90	(2.14)	Swedish Krona	5.20	0.27	4.93	8.28	(3.07)
*South Africa	2.82	0.45	2.37	4.29	(1.47)	*Indonesian Rupiah	4.36	-	4.36	4.72	(0.35)
*Turkey	1.80	-	1.80	-	1.80	South Korean Won	3.94	-	3.94	3.97	(0.03)
Canada	0.19	1.50	(1.31)	0.18	0.01	*Colombian Peso	3.88	-	3.88	4.96	(1.08)
*Poland	1.72	0.47	1.25	2.13	(0.41)	New Zealand Dollar	3.85	-	3.85	4.02	(0.16)
*Argentina	1.09	-	1.09	1.75	(0.66)	*Russian Ruble	3.21	-	3.21	3.53	(0.31)
*Russian Federation	0.72	-	0.72	-	0.72	*Malaysian Ringgit	3.12	0.38	2.74	5.34	(2.22)
Ireland	0.07	0.59	(0.52)	-	0.07	*Polish Zloty	2.97	0.47	2.50	3.11	(0.14)
*Chile	0.37	-	0.37	-	0.37	*Egyptian Pound	2.42	-	2.42	2.19	0.23
*Zambia	0.28	-	0.28	0.08	0.19	*Czech Koruna	1.93	-	1.93	2.00	(0.06)
*Kuwait	0.23	-	0.23	-	0.23	Canadian Dollar	-	1.50	(1.50)	-	-
Israel	0.21	-	0.21	0.07	0.15	*Hungarian Forint	0.72	-	0.72	0.97	(0.25)
*Ghana	0.18	-	0.18	0.07	0.12	Danish Krone	-	0.43	(0.43)	-	-
*Saudi Arabia	0.18	-	0.18	-	0.18	*Argentine Peso	0.34	-	0.34	-	0.34
*Peru	0.15	-	0.15	2.11	(1.96)	Singapore Dollar	-	0.32	(0.32)	-	-
*United Arab Emirates	0.15	-	0.15	-	0.15	*South African Rand	0.16	0.45	(0.29)	0.37	(0.22)
Macao	0.11	-	0.11	-	0.11	*New Turkish Lira	0.15	-	0.15	-	0.15
*Vietnam	0.09	-	0.09	-	0.09	*Peruvian Nuevo Sol	0.15	-	0.15	2.11	(1.96)
*Ecuador	0.08	-	0.08	-	0.08						
Other Countries	0.04	45.47	(45.44)	0.02	0.01	Total:	100.00	100.00	-	100.00	-
Derivative P/L	(0.59)	-	(0.59)	0.33	(0.92)						
Total:	100.00	100.00	-	100.00	-						

Global Opportunistic Fixed Income

September 30, 2019

Source of Portfolio Duration by Currency Denomination



Modified Duration Contribution by Currency
(In Years)

Currency	9/30/2019					6/30/2019	
	0-3	>3-10	>10-20	>20+	Total	Total	Change
US Dollar	0.05	0.79	0.14	2.78	3.75	0.04	
*Mexican Peso	-	0.10	0.35	0.74	1.20	0.00	
*South African Rand	-	-	-	0.27	0.27	(0.14)	
*Colombian Peso	0.00	0.20	-	-	0.21	(0.07)	
*Brazilian Real	0.02	0.15	-	-	0.18	(0.02)	
*Indonesian Rupiah	-	0.16	-	-	0.16	(0.01)	
*Malaysian Ringgit	0.03	0.07	-	-	0.10	(0.04)	
Australian Dollar	0.04	-	-	-	0.04	0.00	
Euro	-	-	-	0.03	0.03	0.00	
*Polish Zloty	0.01	-	0.02	-	0.03	0.01	
*Russian Ruble	-	0.03	-	-	0.03	0.03	
*Peruvian Nuevo Sol	-	0.01	-	-	0.01	(0.18)	
*Egyptian Pound	0.01	-	-	-	0.01	(0.00)	
*Chilean Peso	0.00	-	-	-	0.00	0.00	
*Argentine Peso	0.00	-	-	-	0.00	0.00	
Total	0.17	1.52	0.51	3.82	6.02	(0.35)	

Modified Duration Contribution by Country

vs. FTSE WGBI (USD)

(In Years)

Country	9/30/2019					6/30/2019		
	0-3	>3-10	>10-20	>20+	Total	Index	Active	Change
*Mexico	0.00	0.10	0.41	0.94	1.44	0.04	1.41	0.18
United Kingdom	-	0.01	-	-	0.01	0.74	(0.73)	0.00
United States	0.02	0.63	0.07	2.51	3.23	2.54	0.69	(0.30)
Spain	-	-	-	0.03	0.03	0.38	(0.34)	0.00
*South Africa	-	-	-	0.27	0.27	0.03	0.24	(0.14)
*Brazil	0.02	0.18	0.01	-	0.22	-	0.22	0.02
*Colombia	0.00	0.20	-	-	0.21	-	0.21	(0.07)
*Indonesia	0.01	0.16	-	-	0.17	-	0.17	(0.00)
*Turkey	-	0.05	-	0.08	0.12	-	0.12	0.12
Canada	0.00	-	-	-	0.00	0.11	(0.11)	(0.00)
*Malaysia	0.03	0.07	-	-	0.10	0.03	0.07	(0.04)
Australia	0.04	-	-	-	0.04	0.11	(0.07)	0.00
Ireland	-	0.00	-	-	0.00	0.05	(0.05)	0.00
*Russian Federation	-	0.04	-	-	0.04	-	0.04	0.04
*Argentina	0.00	0.04	-	-	0.04	-	0.04	(0.06)
*Saudi Arabia	-	0.01	-	-	0.01	-	0.01	0.01
*Peru	-	0.01	-	-	0.01	-	0.01	(0.18)
*Poland	0.01	-	0.02	-	0.03	0.02	0.01	0.01
*Egypt	0.01	-	-	-	0.01	-	0.01	(0.00)
*Kuwait	0.00	0.01	-	-	0.01	-	0.01	0.01
*Chile	0.01	0.00	-	-	0.01	-	0.01	0.01
*Zambia	0.01	-	-	-	0.01	-	0.01	0.00
*Vietnam	-	0.00	-	-	0.00	-	0.00	0.00
*Ecuador	-	0.00	-	-	0.00	-	0.00	0.00
Israel	0.00	-	-	-	0.00	-	0.00	0.00
*United Arab Emirates	0.00	-	-	-	0.00	-	0.00	0.00
*Ghana	0.00	-	-	-	0.00	-	0.00	0.00
*Uruguay	0.00	-	-	-	0.00	-	0.00	0.00
Macao	0.00	-	-	-	0.00	-	0.00	0.00
Other Countries	-	-	-	-	-	4.39	(4.39)	-
Total	0.17	1.52	0.51	3.82	6.02	8.43	(2.41)	(0.35)

Manager Compliance Checklist

Period Ending: September 30, 2019

MANAGER	INDEX OUTPERFORMANCE						DATABASE BENCHMARK		MANAGER TO BE PLACED ON WATCH LIST
	AFTER FEE VS. INDEX		BEFORE FEE VS. INDEX		RISK ADJUSTED (SHARPE RATIO)		MEDIAN		
	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	
AQR (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO	NO	YES
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	YES	YES	YES	YES	NO
BRANDYWINE FIXED INCOME (FTSE WGBI)	YES	YES	YES	YES	YES	NO	NO	NO	YES
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	NO
KENNEDY (RUSSELL 2000 VALUE)	NO	NO	NO	NO	NO	NO	NO	NO	YES
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	NO	NO	NO	NO	YES	YES	YES	YES	NO
MONDRIAN (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO	YES	YES
PZENA (RUSSELL 1000 VALUE)	NO	NO	NO	NO	NO	NO	NO	NO	YES
TCW (RUSSELL 1000 GROWTH)	YES	YES	YES	YES	NO	NO	YES	YES	YES
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	YES	YES	YES	YES	YES	NO	NO	NO	YES

1 Next Century will be replaced by William Blair

Policy Index and Benchmark History

Period Ending: September 30, 2019

Total Plan Policy Index	As of:														
	6/1/19	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day US T-Bill											1%	1%	1%	1%	2%
BBgBarc Aggregate	11.40%	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
BBgBarc High Yield	1.60%	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%					
Bloomberg Commodity	0.75%	0.75%	0.75%												
FTSE WGBI	3.00%	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)				5.00%	5%										
MSCI ACWI ex US							23%	22%	22%	22%					
MSCI ACWI ex US IMI	25.00%	26.00%	26.00%	27.00%	25%	23%									
MSCI EAFE											10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia											3%				
MSCI World net															10%
NCREIF						6%	6%	9%	9%	9%					
NCREIF ODCE	8.00%	8.00%	8.00%	6.00%	6%										
Russell 3000	25.00%	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoF Composite	9.00%	9.00%													
Thomson Reuters CJA Global All PE	8.00%	9.00%													
Russell 3000 +1% (PE)			18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)						10%	10%								
Russell 3000 +4% (AI)											2%				
S&P 500															55%
S&P Global Infrastructure	1.75%	1.75%	1.75%												
S&P Global Natural Resources	2.50%	2.50%	2.50%												
S&P/LSTA Leveraged Loan	4.00%														
Wilshire RE											9%	11%	10%	12%	3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of:	
	1/1/92	1/1/80
Russell 3000	100%	0%
S&P 500	0%	100%
	100.0%	100.0%

International Equity Benchmark	As of:				
	4/1/11	6/1/01	10/1/97	1/1/92	1/1/80
MSCI ACWI ex US		100%			
MSCI ACWI ex US IMI	100%				
MSCI EAFE			77%	100%	
MSCI Emg Mkts Free ex Malaysia			23%		
MSCI World net					100%
	100.0%	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of:		
	6/1/19	6/1/01	1/1/80
BBgBarc Aggregate	71.25%	75%	100%
BBgBarc High Yield	10.00%	10%	
FTSE WGBI	18.75%	15%	
	100.0%	100.0%	100.0%

Real Estate Benchmark	As of:
	1/1/80
NCREIF ODCE	100%
	100.0%

Real Assets Benchmark	As of:	
	7/1/16	10/1/11
CPI-U +3%		100%
Bloomberg Commodity	15%	
S&P Global Infrastructure	35%	
S&P Global Natural Resources	50%	
	100.00%	100.0%

Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - Risk-free Rate)].

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: Portfolio Excess Return / Portfolio Standard Deviation.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2019

Absolute Return Performance Report

Alameda County Employees' Retirement Association

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Hedge Fund Environment

The return of beta, dispersion, and CTAs

Outlook

Our hedge fund outlook combines our views of macroeconomic, geopolitical, and capital market conditions along with hedge fund industry metrics and trends across the strategy set. Key observations include:

- **Yield curve dispersion** – as central banks continue to ease, and economic conditions remain positive but muted while indicators send mixed messages. Yield curves in the US inverted in the middle of the year but have since normalized. While overall interest rate levels remain low, yield curves should remain sensitive to economic situations straddling growth or contraction.
- **Dispersion under the surface is picking up** – A rising tide lifts all boats, usually. But as markets move ever later into the cycle there are small cracks appearing in certain parts, even as broad market indexes continue to perform well. Assets like bank loans are seeing pickup in defaults, and sectors like energy and healthcare are seeing increased bifurcation amongst issuers.
- **Quant struggles continue outside of trend following** – Factor swings continue to present difficult trading environment for factor-based market neutral strategies, particularly within equity markets. However, strong trends (directional momentum) in fixed income markets allowed systematic macro (CTA's) to have one of their best six-month periods since 2014/2015.

Summary of findings

Strategy	Role in HF allocation	Outlook/Implementation	View
Equity Hedge Funds	Return Driver	The beta rebound early in 2019 has given way to more relative stock dispersion within equity markets later in the year. The terrible performance of IPOs has also led to some questioning of the growth environment and whether the return of Value stocks are imminent, but nothing sustainable has presented itself. Factor or style-agnostic strategies should offer some protection from these factor swings while allowing for opportunistic moves into “Value” should it return to favor. Outside of the US, activism seems to be gaining traction in Japan while European markets continue to kick the can down the road on slowing European growth.	Neutral
Fixed Income Hedge Funds	Diversifier	More dispersion in credit markets, especially in the loan and high yield space, should present significant opportunities for long/short credit hedge funds in the near term and distressed funds later on. With interest rates back near lows, the ability to manage duration profiles while being able to harvest attractive credit premiums should continue to support fixed income hedge funds from a risk/return perspective. Structured credit markets may also be better positioned to avoid overlevered corporate credit and capitalize on strong consumer fundamentals.	Positive
Asymmetric Hedge Funds	Diversifier	Relatively shallow yield curves and synchronized lower global interest rates could hamper some macro strategies that were beginning to capitalize on more relative value dispersion across rate markets. Quantitative funds remain susceptible to significant moves in factors, particularly in equities, and this factor volatility looks more likely to continue rather than disappear, if anything. However, top managers have still been able to generate strong returns by market timing and trends.	Neutral
Diversifying Alternative Strategies	Diversifier	Cheaper quantitative strategies such as Alternative Beta have underperformed our expectations by some margin over the past 24 months. This dispersion between the comparable hedge fund universe and these newer strategies may be signs that the alpha-seeking hedge funds have evolved or moved away from the more well-known factors popularized by the emergence of alternative beta strategies. The dispersion within the alt beta universe means there is significant value in diversifying exposure across managers. Thoughtful and ongoing research into Alt Beta subfactors becomes increasingly important in our vetting of these strategies.	Neutral

Hedge fund allocation trends & flows

Outflows continue

- Hedge fund capital fell slightly in the end the third quarter with flows mixed across strategies. There were some capital inflows generated by new fund launches by the industries most established firms, but those were offset by investor redemptions in small-mid sized firms.
- New capital tended to be driven to fixed income and credit- based Relative Value Arbitrage and Event- Driven hedge funds strategies, as investors position for low interest rates in the short term.
- Liquid alternative funds saw a decrease in fund count in Q3 2019 continuing a trend from the beginning of 2019.

NET FLOWS TO HFR SUB-STRATEGIES, LAST 4 QUARTERS



Source: HFR

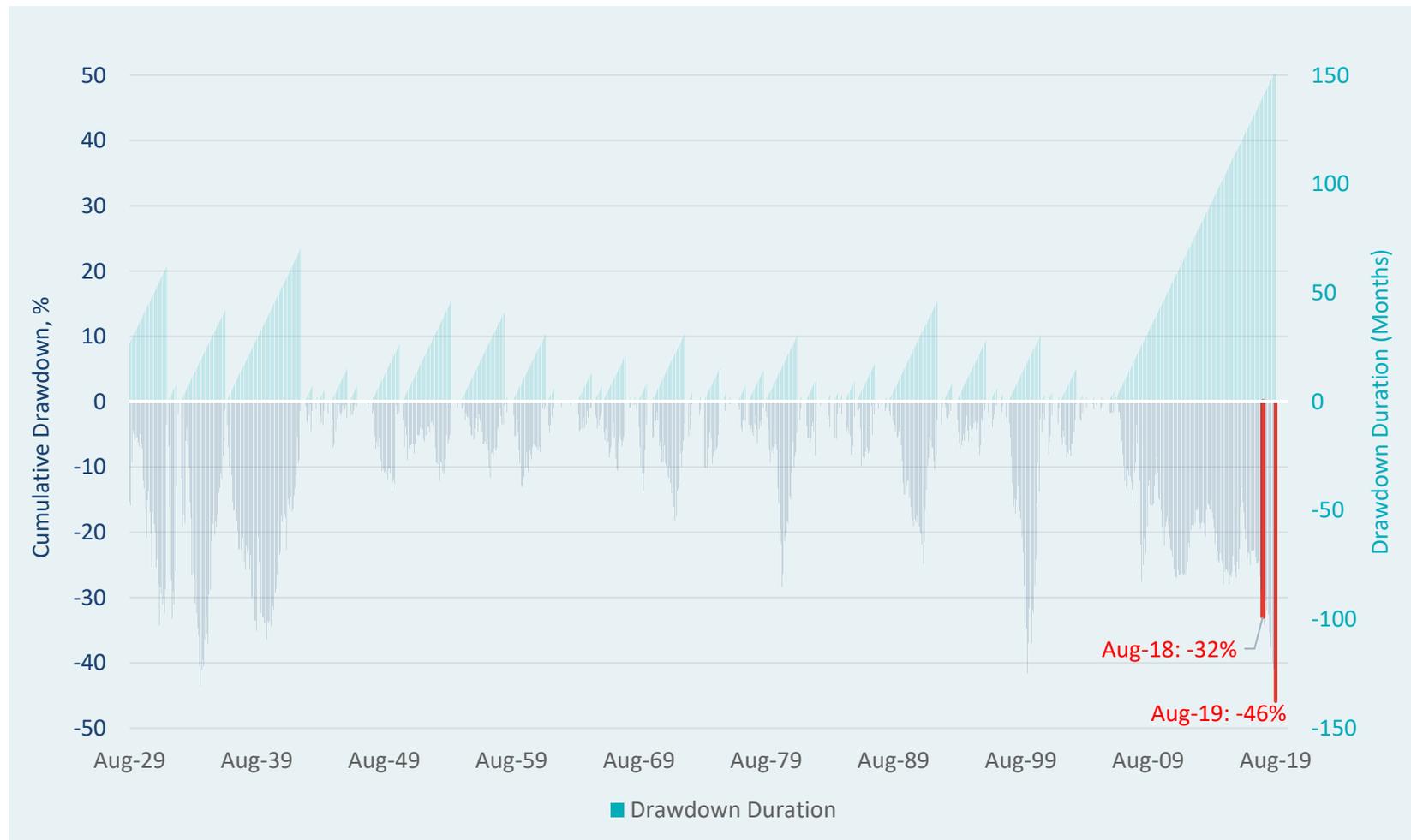
QUARTERLY NET FLOWS TO HEDGE FUNDS



Source: HFR

Long-term perspective on value

HISTORICAL DRAWDOWNS FOR FAMA-FRENCH HML FACTOR 1926-AUGUST 2019

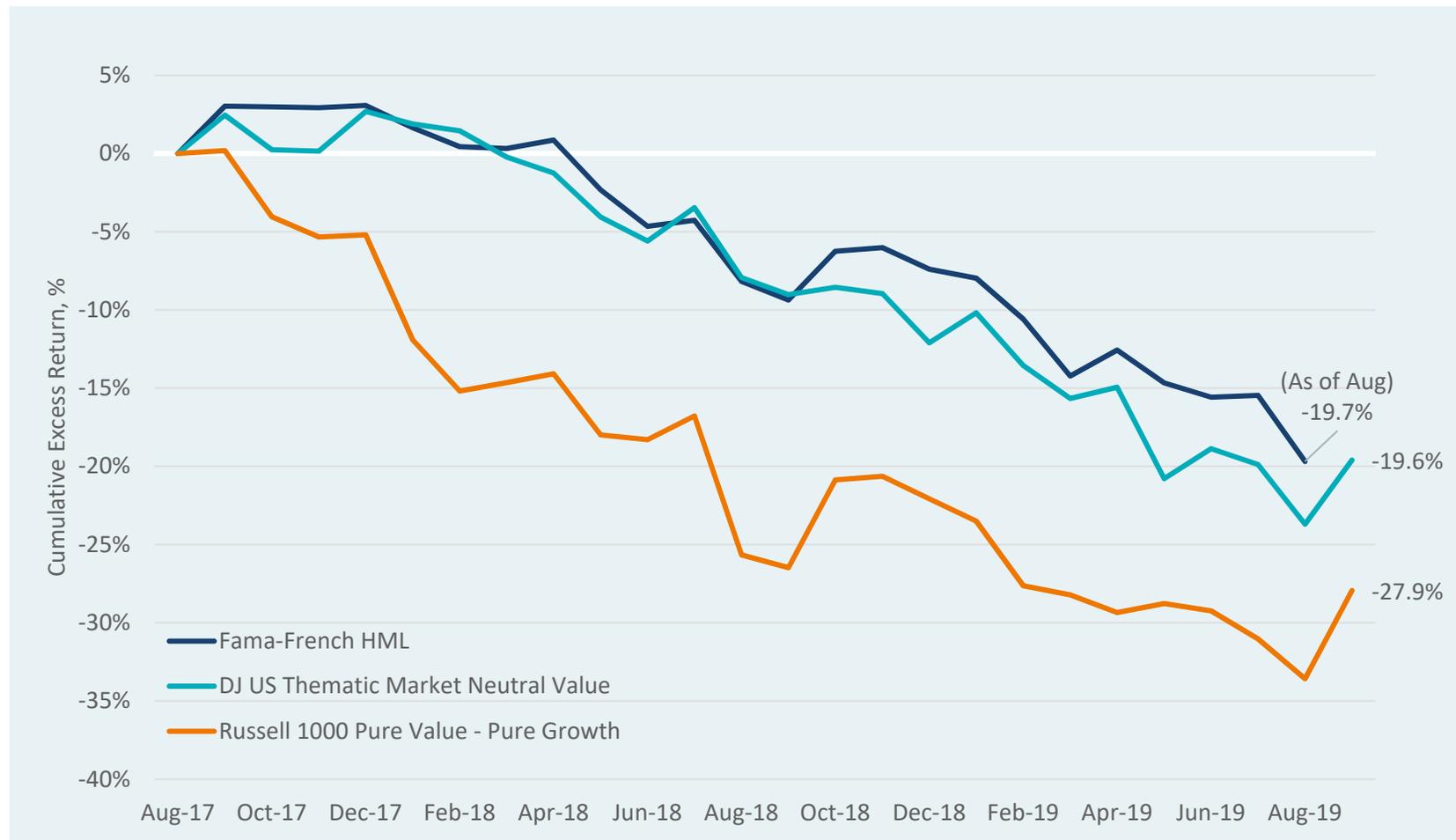


One year ago, the magnitude of the Value drawdown was still less than several previous historical drawdowns. Now, through August 2019, its magnitude is unmatched going back almost a century.

Source: MPI

Value equity underperformance accelerated

CUMULATIVE PERFORMANCE, AUG-17 TO SEP-19

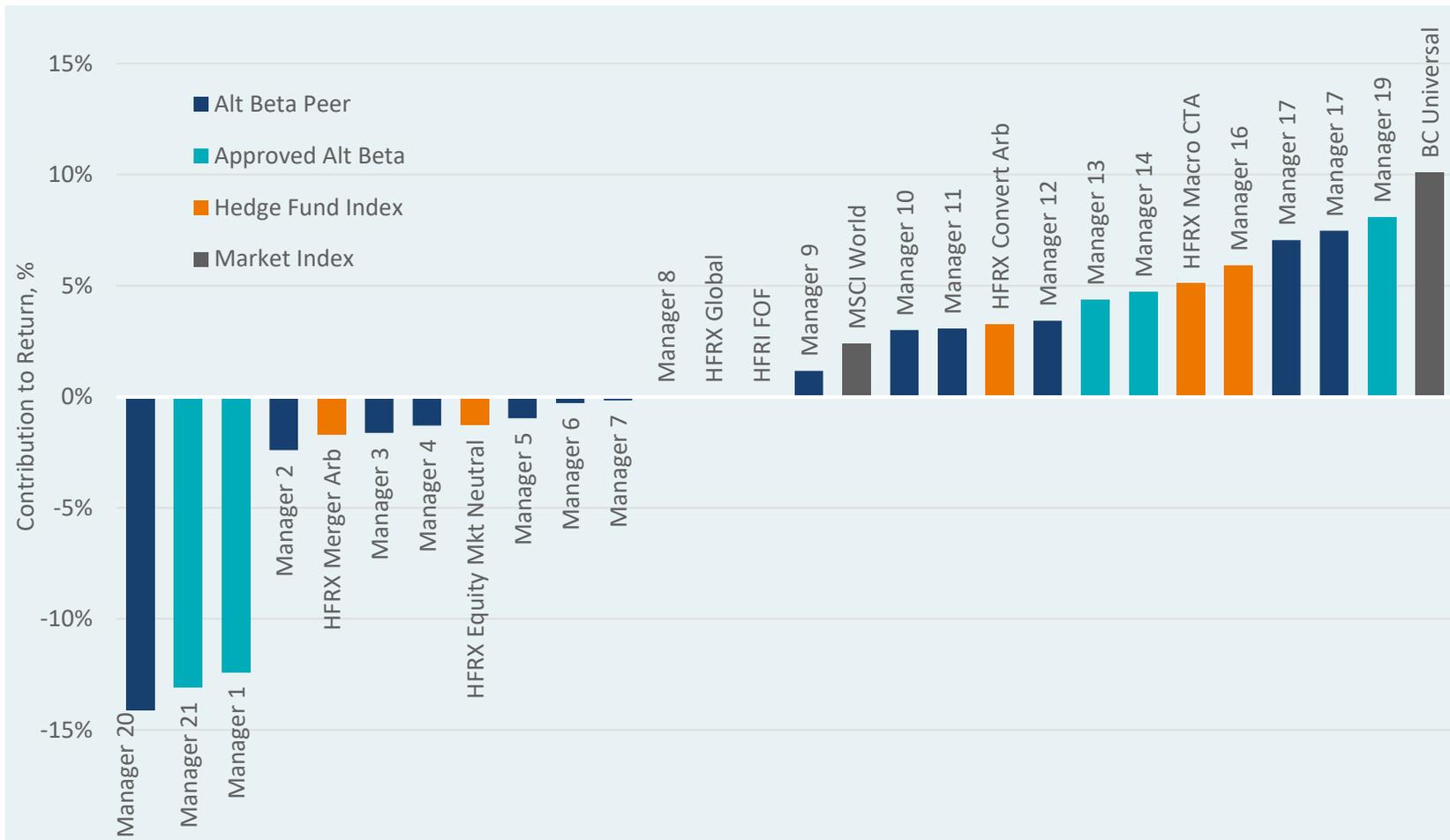


All definitions and constructs of Value have suffered consistently over the last 24 months. The rally in September has only put a small dent in the drawdown, and is similar in magnitude to the move in October 2018.

Source: MPI, S&P DowJones

Alt beta peer comparison of recent returns

12 MONTH RETURN, OCTOBER 2018 – SEPTEMBER 2019



From October through September of 2019, performance for the alt beta space hasn't been that bad – except for a few outliers – compared to hedge funds and equities.

Source: Managers, Verus, MPI

ACERA Performance

Allocations

Target

Sub-categories	Target Allocations	Min./Max. Ranges
AR Portfolio	9.0%	5% to 10.5%
▪ <i>Alternative Premia Strategies</i>	4.5%	2% to 6%
▪ <i>Fund of Funds</i>	3.6%	2% to 6%
▪ <i>Other Alternatives/Oppportunistic</i>	0.9%	0% to 4.5%

Current (as of 9/30/2019)

Sub-categories	Current Allocations	Min./Max. Ranges
AR Portfolio	9.2%	5% to 10.5%
▪ <i>Alternative Premia Strategies</i>	2.1%	2% to 6%
▪ <i>Fund of Funds</i>	3.6%	2% to 6%
▪ <i>Other Alternatives/Oppportunistic</i>	3.1%	0% to 4.5%

Performance Summary

	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	Fiscal YTD (%)	Ending September 30, 2019					2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	Inception (%)	Inception Date
						1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)								
Absolute Return*	740,501,626	100.0	1.3	2.1	2.1	0.4	2.4	1.9	--	-2.2	3.3	5.4	0.7	6.7	3.2	Sep-11	
* AG Opportunistic Whole Loan	9,827,000	1.3	3.3	9.9	9.9	10.4	17.9	11.4	--	22.5	18.6	7.3	2.2	--	9.9	Apr-14	
* AG STAR	2,642,000	0.4	2.2	14.5	14.5	17.3	19.0	13.5	--	21.8	18.6	6.0	5.2	14.9	14.7	Dec-12	
AQR GSS	131,645,872	17.8	0.0	-9.9	-9.9	-13.0	--	--	--	--	--	--	--	--	-15.7	Mar-18	
Blackstone Strategic Opportunity	57,036,177	7.7	1.0	4.2	4.2	4.4	--	--	--	--	--	--	--	--	5.2	Feb-18	
** CFM ISDiversified	177,842,489	24.0	1.4	4.3	4.3	5.1	--	--	--	--	--	--	--	--	3.1	Jun-18	
* Dyal Capital II	19,779,597	2.7	0.0	2.4	2.4	-14.4	-8.8	--	--	-25.0	0.5	-12.9	-14.1	--	-10.9	Dec-14	
LHP Strategic Alpha	302,204,959	40.8	0.5	4.5	4.5	2.3	4.4	--	--	2.4	5.2	4.8	--	--	4.6	Oct-15	
PIE Investments	39,523,531	5.3	12.6	16.2	16.2	23.5	12.7	8.5	--	18.5	-18.6	11.1	7.8	32.5	7.2	May-13	

* IRRs provide more realistic since inception returns for these vehicles, which are modeled as privates (due to frequent cash flows)

AG Opportunistic Whole Loan since inception IRR is 6.9%

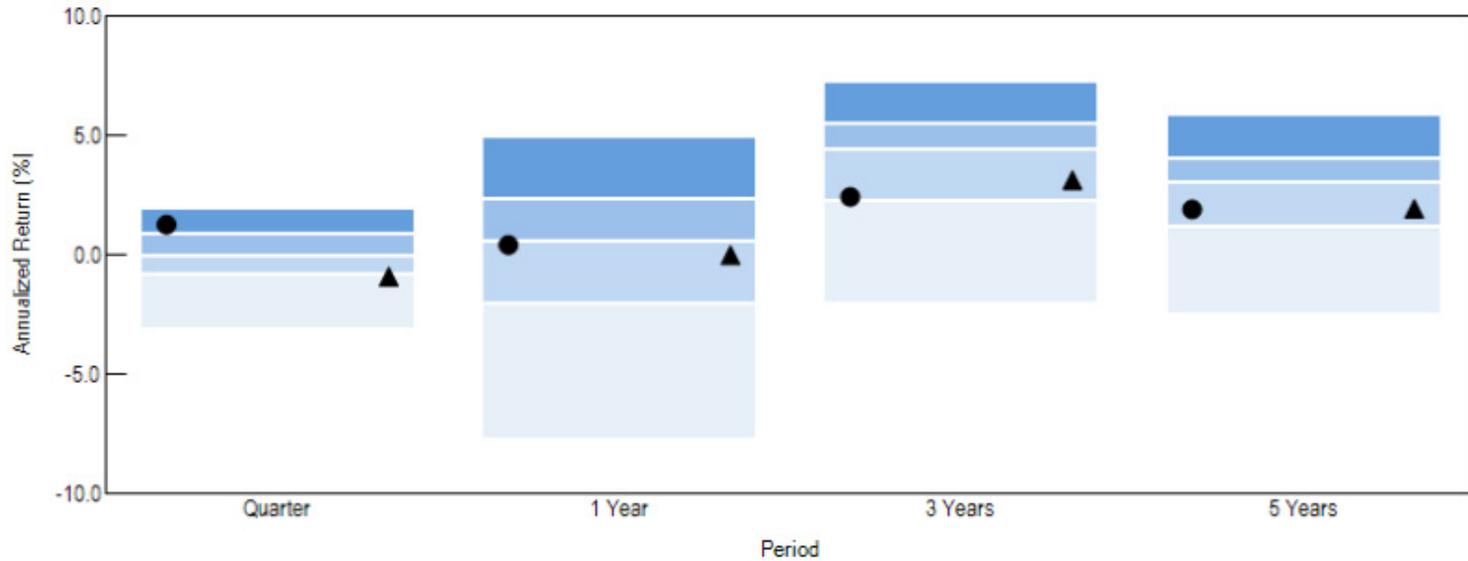
AG STAR since inception IRR is 12.1%

Dyal II since inception IRR is -12.4%

** Manager added in second half of 2018

Relative Performance

InvMetrics All DB Hedge Funds Gross Return Comparison
Ending September 30, 2019



	Return (Rank)			
	Quarter	1 Year	3 Years	5 Years
5th Percentile	1.9	5.0	7.2	5.8
25th Percentile	1.0	2.4	5.6	4.1
Median	0.0	0.6	4.5	3.1
75th Percentile	-0.7	-2.0	2.4	1.3
95th Percentile	-3.0	-7.7	-2.0	-2.5
# of Portfolios	217	211	202	189
● Absolute Return	1.3 (22)	0.4 (53)	2.4 (74)	1.9 (69)
▲ HFRI Fund of Funds Composite Index	-0.9 (77)	0.0 (57)	3.2 (68)	1.9 (69)

Portfolio Statistics* (as of 9/30/19)

	Benchmark	
	HFRI FoF Composite	Absolute Return Portfolio
Max Drawdown	-7.6	-7.0
Sharpe Ratio	0.36	0.58
Beta	0.27	0.05
Correlation to MSCI ACWI	0.84	0.17
Annualized StDev	3.6	3.1

*Since inception of AR Portfolio (9/2011)

Portfolio performance and risk targets are:

AR portfolio returns to exceed benchmark

Correlation to global equities less than or equal to 0.5

Correlations

	HFRI FoF Composite	AG STAR	AG OWL	P/E FX	Dyal II	Lighthouse Strategic Alpha	AQR GSS	CFM	BSOF
HFRI FoF Composite	1.00	0.00	0.01	-0.29	0.27	0.69	0.00	0.16	0.17
AG STAR	0.00	1.00	0.74	-0.02	-0.08	0.05	0.06	0.00	-0.01
AG OWL	0.01	0.74	1.00	-0.11	0.08	0.06	-0.06	0.00	0.02
P/E FX	-0.29	-0.02	-0.11	1.00	0.19	-0.24	-0.07	-0.11	0.11
Dyal II	0.27	-0.08	0.08	0.19	1.00	0.05	-0.33	-0.18	0.15
LHP Strategic Alpha	0.69	0.05	0.06	-0.24	0.05	1.00	0.25	0.24	0.21
AQR GSS	0.00	0.06	-0.06	-0.07	-0.33	0.25	1.00	0.48	-0.07
CFM	0.16	0.00	0.00	-0.11	-0.18	0.24	0.48	1.00	0.10
BSOF	0.17	-0.01	0.02	0.11	0.15	0.21	-0.07	0.10	1.00

Correlations from 10/2015 – 9/2019 corresponding with the inception of Lighthouse. Backfilled longer-term track records for AQR GSS, BSOF and CFM.

Manager Reviews

AG Opportunistic Whole Loan Fund

Partnership Review – Other/Opportunistic

Period Ending: September 30, 2019

Fund Strategy

The Angelo Gordon Opportunistic Whole Loan (OWL) Fund invests primarily in a portfolio of non-performing loans and re-performing loans. AG sees operational inefficiency in the market place. By acquiring these loans at a discounted price and replacing original servicers with better-focused special servicers, AG believes it can improve operational efficiency and generate attractive returns. In addition, OWL can include investments in new residential mortgage loans and excess mortgage servicing rights. Opportunistic investments in commercial mortgage loans and other mortgage related investments may also be included in the Fund's portfolio. The Opportunistic Whole Loan Fund initially targeted a net IRR of 15% but reduced its expectations.

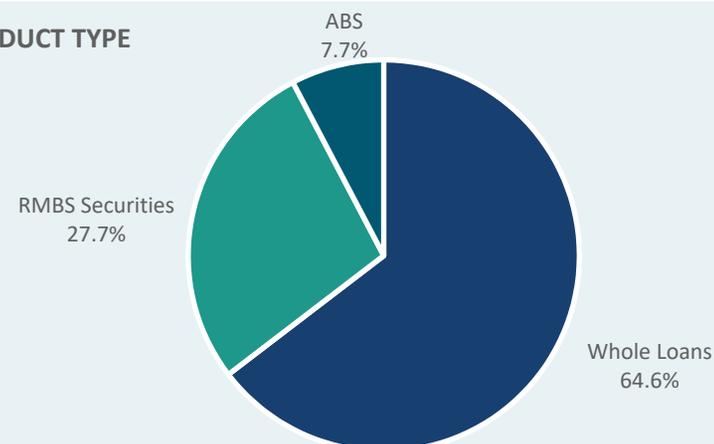
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2014
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	March 13, 2014
Commitment:	\$50,000,000
Contributions:	\$50,000,000
Distributions:	\$52,143,016
Fair Market Value:	\$11,812,042
Unfunded Commitment:	\$0

PRODUCT TYPE



Portfolio Update

Angelo, Gordon OWL fund is continuing to sell down the fund's holdings and distributing proceeds to LPs. They distributed just over \$3.5 million to ACERA in the six months ending September 2019.

AG reduced its net IRR target in 2016 to 4-6% after underperformance stemming from REOs (real estate owned properties) in the portfolio. Since then, AG has revised expected IRR for the fund upwards to 6.5-8% as performance improved.

Performance

Net IRR:	6.9%	Performance: Below Expectations
Net Multiple:	1.2x	

AG Securitized Asset Recovery Fund

Partnership Review – Other/Opportunistic

Period Ending: September 30, 2019

Fund Strategy

The Fund focuses on CMBS and non-Agency RMBS pools priced between 25 – 75% of par, which AG believes are mispriced due to their complex nature and a dearth of natural buyers capable of accurately valuing these assets. AG targets securities that are well-positioned to benefit from home and commercial property price stabilization and recovery, and/or borrower credit quality improvement. The STAR Fund targets securities that are geared to a recovery of the commercial and residential real estate markets. AG can make tactical allocation shifts between RMBS and CMBS as market conditions change and investment opportunities arise.

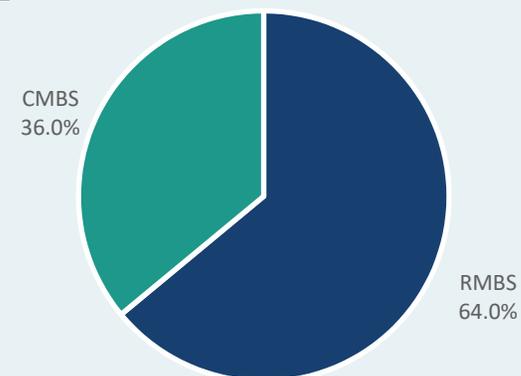
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2012
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	December 26, 2012
Commitment:	\$25,000,000
Contributions:	\$25,134,858
Distributions:	\$36,151,718
Fair Market Value:	\$3,401,655
Unfunded Commitment:	\$0

PRODUCT TYPE



Portfolio Update

Angelo, Gordon STAR fund is continuing to sell down the fund's holdings and distributing proceeds to LPs. AG Star has distributed \$1.4 million in the 6 months ending September 2019.

Performance

Net IRR:	12.1%	Performance: Meeting Expectations
Net Multiple:	1.5x	

Fund Strategy

AQR Global Stock Selection (GSS) employs a quantitative, multi-factor, market neutral investment process based on AQR's stock selection capabilities in the U.S., U.K, Europe, Japan, Australia, Canada and Asia ex-Japan. Model enhancements have since added emerging markets and small cap exposure to the fund. Factor-based risk premia are primary drivers of alpha for GSS with value and momentum as a core part of the approach. Alpha signals are also incorporated into GSS. The strategy seeks to identify differences in expected returns among individual stocks within each market while attempting to maintain a zero beta with respect to local market indices.

While AQR GSS is a diversified, equity market neutral hedge fund, the fund is currently functioning as an Alternative Premia substitute in the ACERA Absolute Return portfolio.

Investment Characteristics

Currency:	Global
Region:	Global
Fund Inception:	December 2000
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	March, 2018
Commitment:	\$170,000,000
Contributions:	\$170,000,000
Distributions:	\$0
Fair Market Value:	\$134,023,338
Unfunded Commitment:	\$0

Portfolio Update

AQR GSS's performance was reviewed at the investment committee in October. The Board decided to redeem \$40 million to diversify the Alt Premia program exposures. Verus and Staff will continue to monitor AQR's performance.

AQR has increased exposure to the value factor in its model by a small percentage, as they see a major dislocation in the market. The target risk budget to value is 30% but can now extend to 36% based on this dislocation. The value decision incorporates 25 underlying value signals.

Performance

Net since inception return: -14.7% Performance: Below Expectations

Fund Strategy

Blackstone has a history of working closely with managers to identify and create custom exposures targeting idiosyncratic investment opportunities which have been an important source of differentiated returns. The frequency and quality of these special situation opportunities in the marketplace have increased since the global financial crisis. The Blackstone Strategic Opportunity Fund (BSOF) was launched to capitalize on this opportunity for investors with unconstrained, flexible capital who can target special situation investments across liquidity profiles, durations, asset classes, and geographies. The Blackstone Alternative Solutions (“BAS”) Special Situations Investing Group (“SSIG”), a subset of BAAM’s Investment Team, focuses on this effort. While a fully flexible approach, absent major dislocations the fund seeks to be beta neutral and shorter duration.

Investment Characteristics

Currency:	USD
Region:	Global
Fund inception:	August, 2011
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	May 1, 2018
Commitment:	\$80,000,000
Contributions:	\$54,925,838
Distributions:	\$0
Fair Market Value:	\$57,036,177
Unfunded Commitment:	\$25,074,162

Portfolio Update

BSOF currently has a 42% credit allocation, towards the high end of its historical range. They are significantly underweight in equities (8% of the portfolio,) their historical range is from 7% to 40%.

Performance

Net Since Inception IRR: 4.8% Performance: Meeting Expectations

Fund Strategy

Capital Fund Management's (CFM's) ISDiversified Fund is a factor driven, multi-strategy fund with four alternative premia sub-strategies: long-term trend following, equity market neutral, risk premia and universal value. The sub-strategies gain long and short exposure to liquid instruments that are diversified across asset classes (equity, fixed income, commodities and currencies) and geographic markets. The fund seeks returns that are uncorrelated to traditional asset classes.

Investment Characteristics

Currency:	Global
Region:	Global
Fund inception:	January 1, 2014
Sub-Asset Class:	Alt Premia

Funding

Commitment Date:	June, 2018
Commitment:	\$170,000,000
Contributions:	\$170,000,000
Distributions:	\$0
Fair Market Value:	\$ 177,842,489
Unfunded Commitment:	\$0

Portfolio Update

Strategy performance has been mixed with long-term trend following and universal carry adding to performance year-to-date, whereas quality, value and momentum detracted. Trend following seeks to extract returns from momentum across different asset classes. Universal value seeks to exploit value from the mean-reversion of prices; in other words, the program buys/sells cheap/expensive instruments relative to both price- and fundamental-based value metrics.

Performance

Net Since Inception return: 3.1% Performance: Meeting Expectations

Fund Strategy

Dyal II focuses on acquiring minority equity interests in institutional hedge fund and private equity managers with AUM between \$1.5 billion and \$10.0 billion that are positioned for sustained earnings stability with potential upside growth and seeking a “liquidity event.” The Fund primarily focuses institutional managers because those managers have the resources and infrastructure to attract asset inflows from large sophisticated investors who tend to build lasting business relationships. The manager attempts to own no more than 25% of each portfolio company's equity to ensure that the managers maintain sufficient “skin in the game.”

Investment Characteristics

Currency:	USD
Region:	Global
Vintage Year:	2014
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	July 31, 2014
Commitment:	\$40,000,000
Contributions:	\$31,849,809
Distributions:	\$5,813,069
Fair Market Value:	\$19,331,597
Unfunded Commitment:	\$11,357,728

Portfolio Update

The Fund anticipates a gross distribution of \$39 million in October.

Many of the Strategy's underlying companies are raising new capital. Atalaya, Dragoneer, Round Hill, and Chenavari are all currently fundraising for new funds. Dragoneer held a final closing for Dragoneer Opportunities Fund IV at \$1.1 billion.

Performance

Net IRR:	-12.4%	Performance: Below Expectations
Net Multiple:	0.79x	

Lighthouse Alpha Fund

Partnership Review – Fund of funds

Period Ending: September 30, 2019

Fund Strategy

Fund of one with concentrated, customized hedge fund strategies targeting low beta and correlation to the global equity markets. Diversified exposure to fundamental equity strategies across geographies and sectors, relative value strategies (event driven, merger arbitrage, options trading, convertible bonds), and fixed income (credit, emerging debt, rates). Use of external, niche specialists, including newer addition of AI, and internal North Rock and Lighthouse long/short funds. Focus on greater liquidity and less directionality than HFRI benchmark. LHP's managed account structure offers greater transparency than many other hedge fund of funds.

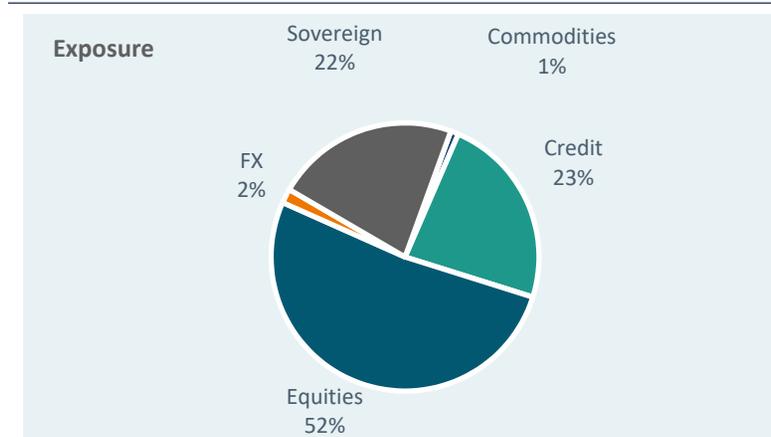
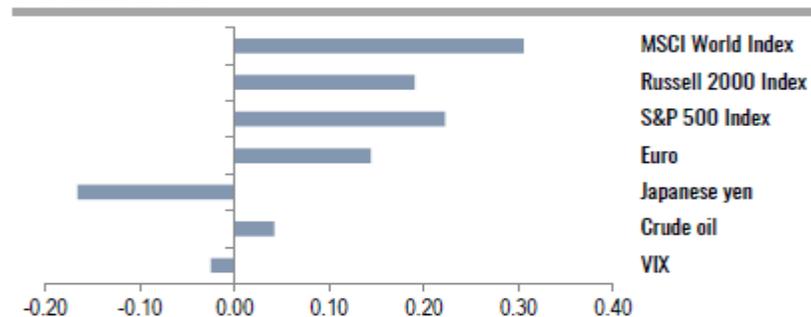
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2015
Sub-Asset Class:	Absolute Return

Funding

Subscription Date:	November 1, 2015
Subscription Amount:	\$278,000,000
Additional Contributions:	\$0
Redemption Date(s):	NA
Redemption Amount(s):	NA
Fair Market Value:	\$302,204,959

Portfolio Betas^{2,3}



Portfolio Update

Lighthouse has been reducing its U.S. equity allocations in favor of relative value and quantitative macro strategies. The fund has modest betas to equity markets but within expectations. Recent returns have been driven by relative value and fixed income exposures.

Performance

Net Since Inception Return: 4.1% Performance: Meeting Expectation

Fund Strategy

The Global FX strategy invests on a long/short basis in the 15 largest developed currencies: Australian Dollar, Brazilian Real, Canadian Dollar, Czech Koruna, Euro, Japanese Yen, Mexican Peso, New Zealand Dollar, Norwegian Krone, Polish Zloty, South African Rand, Swedish Krona, Swiss Franc, British Pound, and United States Dollar. Although the opportunity set is very broad, about 90% of the risk is normally in G-7 currencies. Other currencies were added in 2010 (Brazilian Real, Czech Koruna, Mexican Peso, Polish Zloty and South African Rand) and remain relatively minor components of the portfolio.

P/E utilizes a quantitative approach based on fundamental macroeconomic and financial factors. The firm uses statistical models to predict both the returns and volatilities of the currencies. These return and volatility forecasts are then fed into an optimization routine in order to produce target position weights for each currency, both long and short. The strategy offers daily liquidity and transparency.

Investment Characteristics

Currency:	Global
Region:	Global
Inception date:	October 2003
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	May 1, 2013
Commitment:	\$25,000,000
Contributions:	\$25,000,000
Distributions:	\$0
Fair Market Value:	\$39,523,531
Unfunded Commitment:	\$0

Portfolio Update

P/E Global FX strategy maintains a slightly negative correlation to the S&P 500 and US Treasuries. The FX strategy posted positive performance for the quarter, benefiting from the US Dollar strength and from decreased expectation for additional Fed rate cuts before the end of the year.

Performance

Net Since Inception Return: 7.2% Performance: Meets Expectations

Appendix

Manager descriptions

Angelo Gordon Opportunistic Whole Loan (OWL) – OWL was established to make investments primarily in a portfolio of mispriced non-performing and re-performing mortgage loans and create value through increased efficiency of servicing. The Fund is expected to mature in 2021.

Angelo Gordon Securitized Asset Recovery (STAR) – AG STAR focuses on CMBS and non-Agency RMBS pools priced between 25-75% of par which are mispriced due to their complex nature. The Fund is expected to be completely distributed by the end of 2018.

AQR Global Stock Selection – AQR Global Stock Selection (“GSS”) employs a quantitative, multi-factor, market-neutral investment process based on AQR’s stock selection capabilities in the U.S., U.K., Europe, Japan, Australia, Canada, and Asia ex -Japan. Factor-based risk premia (value, momentum) are the primary drivers of return for GSS.

Blackstone Strategic Opportunity Fund – BSOF works closely with hedge fund managers to identify and create custom exposures targeting idiosyncratic investment opportunities which have been an important source of differentiated returns while minimizing market exposures.

CFM ISDiversified – ISDiversified Fund is a factor driven, multi-strategy fund with four alternative premia sub-strategies (Long-Term Trend Following, Equity Market Neutral, Risk Premia and Universal Value). The sub-strategies gain long and short exposure to liquid instruments that are diversified across asset classes (equity, fixed income, commodities and currencies) and geographic markets. The Fund seeks returns that are uncorrelated to traditional asset classes.

Dyal II– Dyal II is a diversified fund containing a portfolio of minority equity interests in hedge fund and private equity fund managers diversified by investment strategy and geography.

Manager descriptions (continued)

Lighthouse Strategic Alpha— Strategic Alpha is a fund of hedge funds that seeks to provide idiosyncratic alpha with low sensitivity to equity markets. The ACERA custom account was created in November 2015 and was realigned in 2018 to better meet ACERA's revised Absolute Return policy objectives. Strategic Alpha uses both external and internal hedge fund teams with a mix of quantitative and fundamental strategies diversified across styles and regions.

P/E Investments FX strategy – P/E's FX strategy invests in long and short currencies utilizing a highly quantitative approach based on fundamental macroeconomic and financial factors. The strategy invests in liquid G-15 currencies. The P/E fund has a low correlation to public markets.

Glossary

Beta - A measure of systematic (undiversifiable) or market risk, the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Correlation – A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help optimize the benefits of diversification when constructing an investment portfolio.

Internal Rate of Return (IRR) – the interest rate which is the net present value of all the cash flows (both positive and negative) of an investment.

Maximum Drawdown – the maximum loss from a peak to a trough of a portfolio before a new peak attained. Maximum drawdown measures the downside risk over a specified time period.

Standard Deviation - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Glossary

Sharpe Ratio - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

Time Weighted Return – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2019

Private Equity Performance Review

Alameda County Employees' Retirement Association

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DEBT RELATED

- **HY issuance was up and leveraged loan issuance was down.** During the first half of 2019, US high yield issuance of \$130.7 billion¹ was up 21.0% compared to 1H 2018. Leveraged loan issuance has been very weak in 2019. 1H 2019 volume was \$315.6 billion¹, down 57.2% versus 1H 2018.
- **Spreads widened across the board.** US HY Credit Index loosed by 38 bps or 9.9%² versus the same period last year. BB, B and CCC index loosed by 16 bps, 67 bps and 175 bps respectively, a 5.8%², 15.9%² and 17.0%² increases versus the same period last year.
- **Slight increase in LBO debt, with deterioration in interest coverage.** US total leverage (Debt / EBITDA) for 1H 2019 at 6.0x³ up 5.8% from the same time last year. Interest coverage (EBITDA / Cash Interest) of 1H 2019 was 2.3x³, down 22.6% from 1H 2018.

GLOBAL

- **PE dry powder keeps surging globally.** For Q1 2019, global total PE dry powder was at \$1.50 trillion⁴, up 14.2% from Q1 2018. US total PE was up by 17.2% to \$790.9 billion⁴; Europe total PE was up by 6.3% to \$298.4 billion⁴; Asia total PE was up by 15.8% to \$358.0 billion⁴; and the rest of world total PE was up by 10.5% to \$49.5 billion⁴.
- **Investment activity was down.** During 1H 2019, global PE firms invested in \$295.1 billion^{6&12} worth of deals, down 22.8% from the same time prior year and closed on 9,861 transactions^{6&12}, down 0.6% from the first half of 2018.

US BUYOUTS

- **Dry powder was up.** For Q1 2019, US buyout was \$437.4 billion⁴, up by 25.6% from the same time in 2018.
- **Less fundraising activity, but with significantly larger fund sizes.** In the first 6 months of 2019, US buyout firms across all buyout strategies raised \$106.5 billion⁵, up by 195.8% from same time prior year.
- **Investment activity was down.** During 1H 2019, US buyout firms invested in \$105.8 billion⁶ worth of deals, down 27.4% from the same time last year and closed on 1,338 transactions⁶, down 16.4% versus the same time in 2018.

- **LBO price multiples were up.** As of June 30, 2019, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 11.2x⁷, a 14.3% increase from the first half of 2018.
- **Exit activity slowed down but large transactions.** During 1H 2019, US buyout firms exited 441 companies¹², representing \$72.8 billion¹² in total transaction value. This represented a 63.9% decrease in the number of exits and a 53.7% increase in total transaction value compared to the same time last year.

US VENTURE CAPITAL

- **Dry powder increasing.** For Q1 2019, US VC dry powder was at \$118.2 billion⁴, up 12.5% from the last year.
- **Fundraising activity slowed down a bit, but average fund size increased.** US VC firms raised \$24.9 billion⁵ during 1H 2019, a 29.7% increase from the same period last year. 206 funds⁵ closed in 1H 2019, an 8.8% decrease from the same period last year. The average US VC fund size increased by 42.3% at \$120.9 million⁵ versus the same period last year.
- **Investment activity up.** US VC firms deployed \$62.9 billion¹² in capital during the first half of 2019, a 42.6% increase from 1H 2018. The number of rounds closed at 2,761¹², a 21.5% decrease from the same time last year. The average investment per deal increased to \$22.8 million¹², a 30% increase from prior year.
- **All stages valuations were up, except Series C flat.** Compared to 1H 2018, the average pre-money valuations increased across almost all stages in the first half of 2019: up 7.1% at \$7.5 million⁸ for Seed stage, 12% at \$22.4 million⁸ for Series A, 18.2% at \$65.0 million⁸ for Series B, and 50.2% at \$417.5 million⁸ for Series D. Series C pre-money valuation stayed flat \$115.0 million⁸. Over the past 3 years, the average pre-money valuations of Seed stage, Series A, Series B, Series C and Series D investments were up 27.1%, 58.5%, 72.9%, 27.8% and 108.8%, respectively⁹.
- **Exit activity increased with large transactions.** US VC firms exited 304 companies¹² in 1H 2019, up by 4.1% from the same period last year, representing \$46.0 billion¹² in transaction value, up 15.6% from the same period last year.

EX US

- **Ex US dry powder grew but less than dry powder in the US.** PE dry powder outside the US grew to \$706.1 billion⁴ for Q1 2019, a 10.9% increase versus last year. Dry powder outside the US was still 10.7% less than the dry powder in the US (\$790.9 billion⁴).
 - **Europe buyout and VC dry powders were up.** For Q1 2019, Europe buyout dry power was \$203.5 billion⁴, up by 7.6% from last year. Same time, VC dry powder in Europe grew to \$30.8 billion⁴, a 16.7% increase from prior year.
 - **Dry powder of buyout, VC and growth equity in Asia kept increasing.** At the end of Q1 2019, Asia buyout dry power was \$85.9 billion⁴, up by 6% from last year. VC dry powder in Asia increased to \$103.5 billion⁴, up by 24.0% from prior year. Growth equity dry powder grew to \$149.4 billion⁴, a 21.3% increase from 2018.
- **Fundraising outside of US was down.** For 1H 2019, Ex US fundraising was down 19.4% to \$103.3 billion⁵ compared to same time prior year. The decrease was led by European funds which raised \$58.8 billion⁵, down 21.2% from same time last year. Fundraising was down in Asia as well, down by 17.2% from \$46.5 billion in 1H 2018 to \$38.5 billion⁵ in 1H 2019. Fundraising in the rest of the world was down 15.5% to \$6.0 billion⁵ compared to 1H 2018.
- **Investments activity was up except for Asia VC.** Both buyout and venture capital firms in Europe and Asia buyout firms increased number of deals and aggregate deal volume in the first half of 2019.
 - **Europe buyout and VC investment activities decreased.** In 1H 2019, Europe buyout firms transacted on \$46.0 billion⁶ in aggregate value, down by 47.1% from 1H 2018. VC investment activity was up from \$11.3 billion during 1H 2018 to \$17.2 billion¹² during the first half of 2019, an increase of 52.3%.
 - **Asia buyout activity was up, while VC investment activities was down significantly.** During 1H 2019, Asia buyout firms closed on \$17.9 billion⁶ in aggregate value, up by 2.4% from the same time of last year's \$17.5 billion⁶. VC investment activity was up from \$60.8 billion during 1H 2018 to \$32.5 billion¹², a decrease of 46.6%.
- **Global purchase price multiples increased.** As of June 30, 2019, global median purchase price multiples (Enterprise Value / EBITDA) was 12.6x¹, an 21.2% increase from the same time last year. This was driven by a 14.3% increase in US purchase multiples at 11.2x⁷, a 2.1% increase in purchase price multiples in Europe at 9.5x¹¹, and a 20.9% decrease in the rest of the world at 11.5x¹¹.
- **Leverage multiples in Europe moved up.** European LBO leverage multiples (Debt / EBITDA) averaged 5.6x¹⁰ during 1H 2019, an increase of 3.0% from the same time last year and an 8.5% decrease from the peak (6.1x¹¹) in 2007. European LBO Loan volume at \$27.5 billion¹¹ is down 41.4% versus 1H 2018, a decrease of 74.4% versus the peak of \$107.3 billion¹¹ in the first half of 2007.
- **Exit activity weaker in Europe, but stronger in Asia.** During the first half of 2019, Europe PE firms aggregate exit value amounted to \$45.1 billion^{6&12}, a 35.7% decrease from the same time last year, while Asia PE firms' exits were up 24.5% from 1H 2018 to \$61.4^{6&12} billion in the same time.

Outlook

- **PE allocations likely to increase slightly.** A recent survey of institutional investors conducted on June 30, 2019 indicated that 40%¹³ intend to increase their allocation for private equity compared to 29%¹³ during the same period last year. 47%¹³ intend to maintain their allocation for private equity compared to 57%¹³ during the same period last year. 13%¹³ intend to commit less capital to private equity compared to 14%¹³ during the same period last year.
- **Institutional investors most interested in investing in North America and like small- to mid-market buyouts.** Based on the survey conducted on June 30, 2019, Institutional investors view North America as the most attractive location to invest in the current economic climate with 88%¹³ choosing it as their preferred developed market investment destination. This compares favorably versus West Europe (60%¹³) and Asia (29%¹³). China (49%)¹³ and India (39%)¹³ are the top two desired countries in the emerging markets for investors. In the same survey, 68%¹³ of institutional investors also cited the small to mid-market buyout strategy as presenting the best opportunities in the current financial climate. Venture capital strategy was mentioned next with 54%¹³ of institutional investors believing it presented the best opportunities.

Notes

1. *Leveraged Loan Monthly Thomson Reuters LPC*
2. *Guggenheim High-Yield Bank Loan Outlook*
3. *LCD's Leveraged Buyout Review*
4. *Preqin Dry powder by Geography (Preqin Website) Dry powder includes Buyout, Distressed PE, Growth, Mezzanine, Co-investments, Balanced, and Venture Strategies.*
5. *Preqin Private Equity Historical Fundraising Statistics*
6. *Preqin Quarterly Update: Private Equity & Venture Capital*
7. *US LBO Review*
8. *PitchBook-NVCA Venture Monitor*
9. *PitchBook's VC Valuations*
10. *LCD European Leveraged Buyout Review*
11. *European Leveraged Lending Review*
 - a. *Ex US Multiples were estimated utilizing a number of sources including Preqin Private Equity-Backed Buyout Deals and Exits Factsheet, LCD's Leveraged*
 - b. *Buyout Review, Pitchbook Europe M&A and Leveraged Loan Monthly Thomson Reuters LPC.*
12. *Preqin Pro Buyout and Venture Deals*
13. *Preqin Investor Update: Alternative Assets*

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
ACERA Plan Assets - Total				\$8,354,082		
Private Equity:	9.0%	0-13%	6.7%	\$563,700	\$556,676	\$1,120,376
Buyouts	60.0%	30-80%	56.2%	\$316,600	\$311,401	\$628,001
Venture Capital	20.0%	0-40%	32.1%	\$180,689	\$53,727	\$234,416
Debt-Related/Special Situations	20.0%	0-70%	11.8%	\$66,411	\$191,548	\$257,959

Portfolio Summary

- As of June 30, 2019, the Private Equity portfolio had a total market value of \$563.7 million, with \$316.6 million in Buyouts, \$180.7 million in Venture Capital, and \$66.4 million in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed \$764.8 million towards its Private Equity commitments, with \$416.1 million to Buyouts, \$154.6 million to Venture Capital, and \$194.0 million in Debt-Related / Special Situations. Unfunded commitments total \$556.7 million.

Portfolio Activity

- ACERA made two new commitments to Private Equity in the first half of 2019: \$60.0 million to Great Hill Equity Partners VII, L.P. (\$35.0 million in Buyout and \$25.0 million in Venture Capital) and \$25.0 million to Genstar Capital Partners IX, L.P. (Buyout).

Private Equity Portfolio Performance

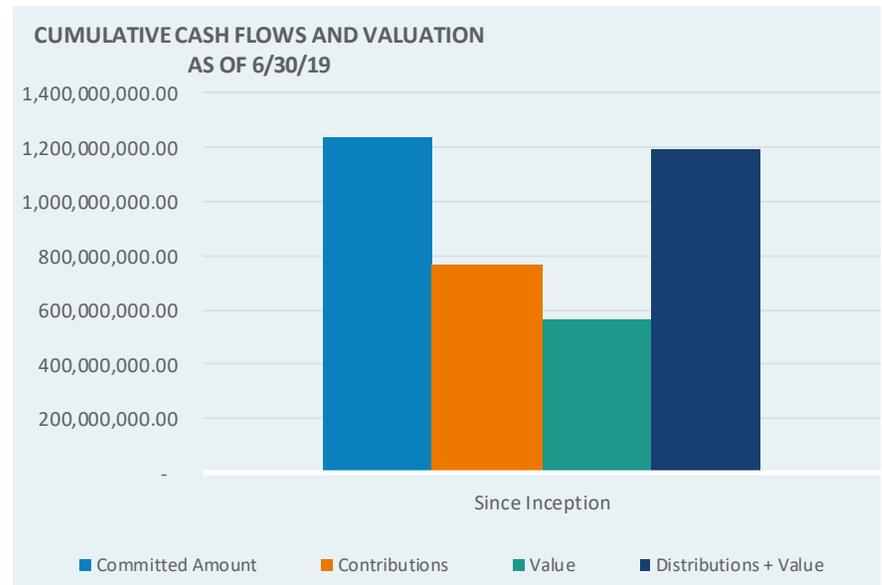
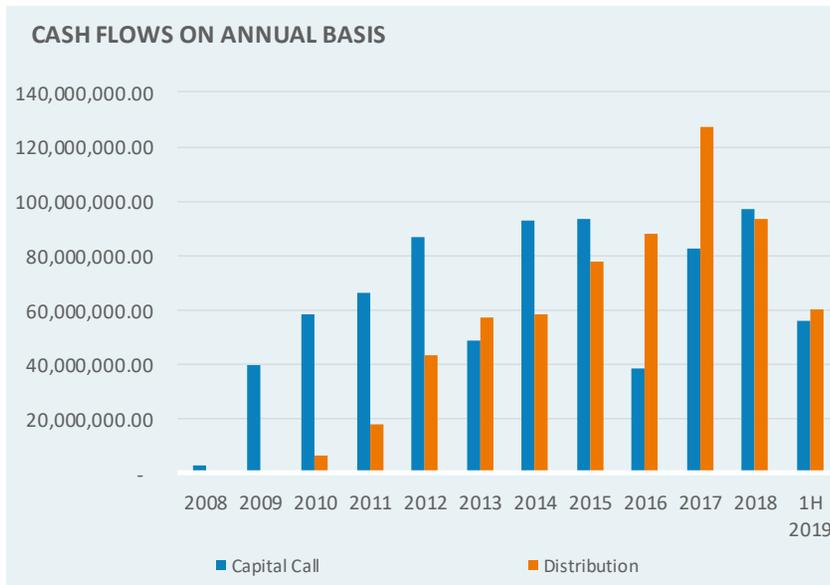
Period Ending: June 30, 2019

Performance

- Current Private Equity portfolio is valued at \$563.7 million. Portfolio investments have a capital-weighted average life of 4.6 years.
 - Since inception, the portfolio has produced +15.08% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 13.75% by 133 basis points. Portfolio returns rank above Median on net IRR, Total Value Multiple (TVPI); and Distribution Multiple (DPI).
 - Relative to the global benchmark peers in the same Vintage Years since inception (2008), the net IRR, TVPI, and DPI of the Buyout and Debt-Related / Special Situations portfolios rank above Median; and Venture Capital ranks above Top-Quartile on TVPI and DPI, and above Median on IRR.
- Together with \$630.4 million in realized distributions (0.82x cost), Private Equity's Total Value at \$1,194.1 million is approximately \$429.3 million above \$764.8 million cost (1.56x cost), net of fees. Return drivers include:
 - Venture Capital up \$177.99 million / +115.1% versus cost (General Catalyst VI, Third Rock II & III, Great Hill IV, Khosla Ventures IV & Seed B, and NEA 13

& 14 leading), with 98.3% of called capital realized and distributed. Since inception, this portfolio produced 21.00% net IRR versus its peer global benchmark of 17.36% pooled IRR.

- Buyouts up \$187.14 million / +45.0% versus cost (Sycamore I, Great Hill V, Insight Equity II, and ABRY Partners VII leading), with 68.9% of called capital realized and distributed. Since inception, the Buyouts portfolio produced 14.13% net IRR versus its peer global benchmark of 14.98% pooled IRR.
 - Debt-Related / Special Situations was up \$64.17 million/+33.1% versus cost (ABRY Advanced Securities II, Centerbridge, ABRY Senior Equity IV, and OHA Strategic Credit IB leading), with 98.8% of called capital realized and distributed. Since inception, this portfolio produced 10.50% net IRR versus its peer global benchmark of 10.93% pooled IRR.
- Within Private Equity, the current allocation of invested capital is 56% to Buyouts, 32% to Venture Capital and 12% to Debt / Special Situations. Of \$630.4 million in cash distributions, 45% were from Buyouts, 30% from Debt-Related/Special Situations, and 24% from Venture Capital.



Private Equity – Portfolio Performance vs. Pooled Benchmark IRR

Period Ending: June 30, 2019

	1-Year	3-Year	5-Year	10-Year	Since Inception ²
Buyout	7.07%	11.54%	12.95%	14.34%	14.13%
<i>Thomson Reuters C/A Global Buyout Benchmark¹</i>	12.55%	18.33%	15.14%	15.94%	14.98%
Venture Capital	23.23%	21.95%	22.40%	21.16%	21.00%
<i>Thomson Reuters C/A Global Venture Capital & Growth Equity Benchmark¹</i>	19.30%	18.58%	17.41%	17.74%	17.36%
Debt-Related / Special Situation	-3.65%	9.07%	6.32%	11.00%	10.50%
<i>Thomson Reuters C/A Global Mezzanine & Distressed Benchmark¹</i>	5.01%	10.46%	7.73%	11.13%	10.93%
Total Private Equity	10.77%	14.78%	14.95%	15.37%	15.08%
<i>Thomson Reuters C/A Global All Private Equity Benchmark¹</i>	11.91%	16.02%	13.03%	14.34%	13.75%

Identical cash flows from portfolio inception through 6/30/2019 invested in Russell 3000 Total Return index would yield 13.49% (Long Nickels). The result is an over performance of the portfolio of 1.59% relative to the index. Analysis provided by Solovis.

¹ Benchmarks: Thomson Reuters C/A as of 6/30/19, vintage 2008 through present.

² ACERA's inception date of November 21, 2008 vs. Thomson Reuters C/A's inception date of January 1, 2008.

Private Equity – Fund & Portfolio Performance vs. Peer Benchmark

Period Ending: June 30, 2019

Investment Name	Vintage	Contributed	Reported			Net IRR	Upper	Median	Lower	TVPI ¹²	Upper	Median	Lower	DPI ¹³	Upper	Median	Lower	
	Year	Percentage ¹¹	Commitment	Contributions	Distributions		Value	Quartile*	Quartile*		Quartile*	Quartile*	Quartile*		Quartile*	Quartile*	Quartile*	Quartile*
Buyout Funds¹																		
ABRY Partners VII, L.P.	2011	95%	12,500,000	13,730,372	18,251,194	4,419,427	14.25	20.79	15.14	12.72	1.65	2.08	1.73	1.53	1.33	1.46	1.02	0.76
ABRY Partners VIII, L.P.	2015	91%	18,000,000	19,107,492	6,710,122	16,929,266	8.93	21.73	17.42	8.42	1.24	1.50	1.36	1.20	0.35	0.34	0.15	0.04
Angeles Equity Partners I, L.P.	2016	28%	35,000,000	10,144,948	931,170	6,366,218	-23.59	18.64	9.94	6.83	0.72	1.28	1.17	1.10	0.09	0.19	0.03	0.00
Audax Private Equity Fund VI-A, L.P.**	2019	0%	25,000,000	0	0	N/A	N/A	-5.84	-9.81	-23.01	N/A	0.95	0.85	0.47	N/A	0.00	0.00	0.00
Avista Capital Partners II, L.P.	2010	86%	30,000,000	39,204,703	54,609,531	5,686,380	13.15	20.56	16.63	10.85	1.54	2.45	1.91	1.59	1.39	1.79	1.06	0.80
Bernhard Capital Partners Fund II, LP	2018	8%	44,000,000	3,665,774	0	1,989,160	-70.42	5.98	-7.34	-20.81	0.54	1.04	0.96	0.90	0.00	0.00	0.00	0.00
CapVest Equity Partners IV, L.P.**	2019	0%	32,975,900	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Genstar Capital Partners IX, L.P.**	2019	0%	25,000,000	0	0	N/A	N/A	-10.14	-15.16	-19.24	N/A	0.91	0.85	0.81	N/A	0.00	0.00	0.00
Great Hill Equity Partners V, L.P. ⁴	2014	99%	25,000,000	24,737,500	13,850,000	31,194,558	21.12	21.70	14.42	10.18	1.82	1.80	1.50	1.27	0.56	0.49	0.31	0.15
Great Hill Equity Partners VI, L.P. - BO ⁵	2017	57%	30,000,000	17,090,999	8,512,660	17,351,339	89.27	33.70	18.97	5.91	1.51	1.36	1.21	1.05	0.50	0.06	0.00	0.00
Great Hill Equity Partners VII, L.P. - BO ^{5**}	2019	0%	35,000,000	0	0	N/A	N/A	-5.97	-15.00	-22.92	N/A	0.94	0.85	0.77	N/A	0.00	0.00	0.00
Insight Equity II, L.P.	2009	94%	16,875,000	16,984,783	13,953,515	15,451,008	11.36	26.45	22.59	15.81	1.73	2.41	2.12	1.88	0.82	2.27	1.73	1.35
JLL Partners Fund VII, L.P.	2015	80%	47,250,000	38,739,039	1,321,338	48,516,694	14.95	21.73	17.42	8.42	1.29	1.50	1.36	1.20	0.03	0.34	0.15	0.04
KPS Special Situations Fund IV, L.P.	2014	55%	14,580,000	8,497,938	3,269,396	7,635,109	20.24	25.28	17.84	14.38	1.28	1.76	1.51	1.31	0.38	0.54	0.43	0.26
Lindsay Goldberg III L.P.	2008	96%	45,000,000	43,564,452	58,351,293	791,662	8.15	20.89	14.42	10.16	1.36	2.15	1.79	1.42	1.34	1.82	1.47	1.24
Peak Rock Capital Fund II LP	2017	33%	35,000,000	11,668,370	3,702,232	10,452,216	35.87	30.02	12.36	3.42	1.21	1.37	1.13	1.03	0.32	0.03	0.00	0.00
Sycamore Partners, L.P. (Combined)	2011	58%	30,000,000	39,216,993	44,644,653	29,033,948	31.19	20.79	15.14	12.72	1.88	2.08	1.73	1.53	1.14	1.46	1.02	0.76
Sycamore Partners II, L.P.	2014	82%	42,500,000	36,538,600	13,062,716	30,160,151	8.98	25.28	17.84	14.38	1.18	1.76	1.51	1.31	0.36	0.54	0.43	0.26
Sycamore Partners III, L.P.	2018	13%	44,000,000	5,650,633	0	4,321,072	-34.86	11.64	1.79	-8.42	0.76	1.08	1.01	0.92	0.00	0.01	0.00	0.00
Warburg Pincus Private Equity XI, L.P. - BO ²	2012	100%	60,000,000	60,701,573	43,990,244	54,911,672	14.04	21.01	15.53	7.51	1.63	2.10	1.69	1.31	0.72	0.90	0.54	0.24
Warburg Pincus Private Equity XII, L.P. - BO ²	2015	78%	34,400,000	26,883,600	1,507,511	31,389,629	12.59	23.68	16.03	8.86	1.22	1.64	1.37	1.20	0.06	0.23	0.06	0.00
Subtotal Buyouts⁷			682,080,900	416,127,769	286,667,576	316,599,509	14.13	20.05	13.41	5.25	1.45	1.76	1.40	1.12	0.69	1.13	0.39	0.02
Venture Capital Funds¹																		
General Catalyst Group VI, L.P.	2012	99%	10,000,000	9,850,000	8,966,212	26,878,400	29.94	22.75	15.21	6.82	3.64	2.51	1.87	1.28	0.91	0.71	0.39	0.18
Great Hill Equity Partners IV, L.P. ⁴	2008	100%	10,000,000	10,009,292	22,685,843	5,397,111	26.73	8.56	4.95	1.71	2.81	1.59	1.31	1.11	2.27	1.31	0.83	0.55
Great Hill Equity Partners VI, L.P. - VC ⁴	2017	57%	20,000,000	11,393,999	5,675,107	11,567,559	89.27	33.34	19.27	6.39	1.51	1.32	1.22	1.07	0.50	0.13	0.00	0.00
Great Hill Equity Partners VII, L.P. - VC ^{4**}	2019	0%	25,000,000	0	0	N/A	N/A	-10.14	-15.16	-19.24	N/A	0.91	0.85	0.81	N/A	0.00	0.00	0.00
Khosla Ventures III, L.P.	2009	99%	12,000,000	11,833,157	15,998,908	5,822,820	10.41	21.53	12.97	7.62	1.84	2.48	1.94	1.43	1.35	1.54	1.13	0.64
Khosla Ventures IV, L.P.	2011	98%	15,000,000	14,715,000	12,672,210	29,753,520	22.96	23.34	16.62	8.53	2.88	2.53	2.19	1.47	0.86	1.12	0.55	0.12
Khosla Ventures V, L.P.	2014	91%	10,000,000	9,100,000	506,399	11,659,684	11.46	26.34	16.06	10.79	1.34	2.12	1.57	1.34	0.06	0.28	0.09	0.02
Khosla Ventures VI, L.P.	2018	23%	7,000,000	1,596,000	0	1,569,667	-2.59	14.48	-4.34	-14.22	0.98	1.09	0.97	0.91	0.00	0.00	0.00	0.00
Khosla Ventures Seed, L.P.	2009	100%	3,000,000	3,000,555	624,210	3,557,091	4.82	21.53	12.97	7.62	1.39	2.48	1.94	1.43	0.21	1.54	1.13	0.64
Khosla Ventures Seed B, L.P.	2012	100%	5,000,000	4,985,000	1,716,777	10,480,839	18.91	22.75	15.21	6.82	2.45	2.51	1.87	1.28	0.34	0.71	0.39	0.18
Khosla Ventures Seed D, L.P.	2018	21%	3,000,000	630,000	0	617,395	-3.31	14.48	-4.34	-14.22	0.98	1.09	0.97	0.91	0.00	0.00	0.00	0.00

* Sources: Thomson Reuters C/A as of 6/30/19.

** New investments - no cash flow activities yet.

¹ Thomson Reuters C/A universe: US and Global Private Equity Funds sub asset classes as of 6/30/19.

² Thomson Reuters C/A universe: Global Buyout, Venture Capital, and Growth Equity as of 6/30/19.

³ Thomson Reuters C/A universe: Global Secondary (EUR) as of 6/30/19.

⁴ Thomson Reuters C/A universe: Global Growth Equity as of 6/30/19.

⁵ Thomson Reuters C/A universe: US Buyout and Growth as of 6/30/19.

⁶ Thomson Reuters C/A universe: Global Mezzanine and Distressed as of 6/30/19.

⁷ Thomson Reuters C/A universe: Global Buyout Since 2008 Benchmark as of 6/30/19.

⁸ Thomson Reuters C/A universe: Global Venture Capital & Growth Equity Since 2008 Benchmark as of 6/30/19.

⁹ Thomson Reuters C/A universe: Global Mezzanine and Distressed Since 2008 Benchmark as of 6/30/19.

¹⁰ Thomson Reuters C/A universe: Global All Private Equity Since 2008 Benchmark as of 6/30/19.

¹¹ Contributions as a percentage of Commitment.

¹² Total value over paid-in (TVPI). The gross TVPIs are calculated as follows: [unrealized value + realized proceeds]/[capital drawn down].

¹³ Distributions over paid-in (DPI). The gross DPIs are calculated as follows: [realized proceeds]/[capital drawn down].

* Shaded areas represent the partnership quartile rankings against the appropriate Thomson Reuters C/A Universe.

Analysis provided by Solovis. All amounts in U.S. dollars.

All mezzanine funds will be compared against the Global Mezzanine and Distressed Universe due to lack of sample size in the Mezzanine only Universe.

Private Equity – Fund & Portfolio Performance vs. Peer Benchmark

Period Ending: June 30, 2019

Investment Name	Vintage Contributed		Commitment	Contributions	Distributions	Reported		Upper Quartile*	Median Quartile*	Lower Quartile*	TVPI ¹²	Upper Quartile*	Median Quartile*	Lower Quartile*	DPI ¹³	Upper Quartile*	Median Quartile*	Lower Quartile*
	Year	Percentage ¹¹				Value	Net IRR											
New Enterprise Associates 13, L.P.	2009	99%	11,000,000	10,842,739	12,968,373	7,876,614	13.88	21.53	12.97	7.62	1.92	2.48	1.94	1.43	1.20	1.54	1.13	0.64
New Enterprise Associates 14, L.P.	2012	94%	11,000,000	10,343,976	9,414,723	13,354,828	18.10	22.75	15.21	6.82	2.20	2.51	1.87	1.28	0.91	0.71	0.39	0.18
New Enterprise Associates 15, L.P.	2015	89%	5,000,000	4,425,000	1,065,150	6,619,856	22.77	24.67	15.99	8.31	1.74	1.69	1.35	1.17	0.24	0.16	0.04	0.00
New Enterprise Associates 16, L.P.	2017	52%	15,000,000	7,762,500	0	8,702,938	12.39	21.12	11.62	2.45	1.12	1.26	1.12	1.03	0.00	0.00	0.00	0.00
Third Rock Ventures II, L.P.	2010	100%	12,500,000	12,500,000	42,178,304	2,358,831	39.24	25.81	16.07	6.56	3.56	3.32	1.92	1.35	3.37	1.46	0.78	0.43
Third Rock Ventures III, L.P.	2013	97%	10,000,000	9,700,000	6,036,802	12,896,956	25.32	21.48	14.69	9.20	1.95	2.12	1.66	1.37	0.62	0.38	0.22	0.08
Warburg Pincus Private Equity XI, L.P. - VC ²	2012	100%	15,000,000	15,175,393	10,997,461	13,727,918	14.04	21.01	15.53	7.51	1.63	2.10	1.69	1.31	0.72	0.90	0.54	0.24
Warburg Pincus Private Equity XII, L.P. - VC ²	2015	78%	8,600,000	6,720,900	376,878	7,847,407	12.59	23.68	16.03	8.86	1.22	1.64	1.37	1.20	0.06	0.23	0.06	0.00
Subtotal Venture Capital⁸			208,100,000	154,583,511	151,883,357	180,689,434	21.00	22.50	12.99	3.87	2.15	1.90	1.39	1.09	0.98	0.59	0.15	0.00
Debt-Related/Special Situations Funds⁶																		
ABRY Advanced Securities Fund II, L.P.	2011	56%	25,000,000	18,380,418	27,980,188	2,688,133	13.70	11.65	7.82	5.55	1.67	1.47	1.32	1.22	1.52	1.17	0.95	0.66
ABRY Advanced Securities Fund III, L.P.	2014	52%	20,000,000	13,327,099	2,991,341	14,162,548	9.33	12.83	9.86	5.79	1.29	1.37	1.30	1.18	0.22	0.61	0.28	0.08
ABRY Advanced Securities Fund IV, L.P.	2019	8%	33,000,000	2,671,672	0	2,421,018	-38.76	5.51	1.00	-4.87	0.91	1.04	1.01	0.96	0.00	0.00	0.00	0.00
ABRY Senior Equity IV, L.P.	2012	90%	7,500,000	7,670,015	6,774,437	5,600,697	15.83	12.65	9.16	6.36	1.61	1.55	1.30	1.21	0.88	1.21	0.87	0.50
ABRY Senior Equity V, L.P.	2017	28%	8,250,000	2,689,360	812,111	2,247,844	13.46	15.44	7.93	4.73	1.14	1.19	1.08	1.04	0.30	0.20	0.07	0.00
Catalyst Fund Limited Partners V	2015	33%	50,000,000	18,750,000	4,524,760	14,175,695	-0.16	14.59	10.57	6.49	1.00	1.39	1.24	1.12	0.24	0.58	0.33	0.12
Centerbridge Special Credit Partners, L.P.	2009	85%	35,000,000	33,250,000	52,328,709	1,499,240	13.55	15.41	11.08	10.38	1.62	1.67	1.47	1.36	1.57	1.55	1.34	1.21
Cerberus Offshore Levered Loan Opp Fund I, Ltd.	2011	50%	22,317,073	34,476,622	36,447,199	937,670	4.17	11.65	7.82	5.55	1.08	1.47	1.32	1.22	1.06	1.17	0.95	0.66
EQT Credit Opportunities III, L.P.	2017	26%	39,798,500	11,828,371	1,318,774	8,443,136	-24.39	15.44	7.93	4.73	0.83	1.19	1.08	1.04	0.11	0.20	0.07	0.00
Insight Equity Mezzanine, L.P.	2009	95%	5,625,000	5,577,013	5,508,486	2,110,145	7.04	15.41	11.08	10.38	1.37	1.67	1.47	1.36	0.99	1.55	1.34	1.21
OHA Strategic Credit Fund IB, L.P.	2009	90%	20,000,000	17,902,850	26,998,570	159,384	12.68	15.41	11.08	10.38	1.52	1.67	1.47	1.36	1.51	1.55	1.34	1.21
OHA Strategic Credit Fund II, L.P.	2017	15%	50,000,000	7,500,000	0	9,010,561	24.59	15.44	7.93	4.73	1.20	1.19	1.08	1.04	0.00	0.20	0.07	0.00
Partners Group Secondary 2008, L.P. ³	2008	87%	17,955,878	18,650,571	25,508,474	2,352,998	8.95	16.46	13.98	12.22	1.49	1.76	1.68	1.55	1.37	1.64	1.53	1.46
Peak Rock Capital Credit Fund II LP	2017	16%	8,750,000	1,369,803	606,040	602,323	-32.23	15.44	7.93	4.73	0.88	1.19	1.08	1.04	0.44	0.20	0.07	0.00
Subtotal Debt-Related/Special Situations⁹	Total		343,196,451	194,043,795	191,799,090	66,411,391	10.50	13.65	9.59	6.12	1.33	1.45	1.26	1.10	0.99	1.20	0.58	0.14
Total Private Equity¹⁰	Total		1,233,377,351	764,755,075	630,350,023	563,700,334	15.08	19.29	12.12	4.72	1.56x	1.74	1.36	1.10	0.82x	0.86	0.28	0.00

* Sources: Thomson Reuters C/A as of 6/30/19.

** New investments - no cash flow activities yet.

¹ Thomson Reuters C/A universe: US and Global Private Equity Funds sub asset classes as of 6/30/19.

² Thomson Reuters C/A universe: Global Buyout, Venture Capital, and Growth Equity as of 6/30/19.

³ Thomson Reuters C/A universe: Global Secondary (EUR) as of 6/30/19.

⁴ Thomson Reuters C/A universe: Global Growth Equity as of 6/30/19.

⁵ Thomson Reuters C/A universe: US Buyout and Growth as of 6/30/19.

⁶ Thomson Reuters C/A universe: Global Mezzanine and Distressed as of 6/30/19.

⁷ Thomson Reuters C/A universe: Global Buyout Since 2008 Benchmark as of 6/30/19.

⁸ Thomson Reuters C/A universe: Global Venture Capital & Growth Equity Since 2008 Benchmark as of 6/30/19.

⁹ Thomson Reuters C/A universe: Global Mezzanine and Distressed Since 2008 Benchmark as of 6/30/19.

¹⁰ Thomson Reuters C/A universe: Global All Private Equity Since 2008 Benchmark as of 6/30/19.

¹¹ Contributions as a percentage of Commitment.

¹² Total value over paid-in (TVPI). The gross TVPIs are calculated as follows: [unrealized value + realized proceeds]/[capital drawn down].

¹³ Distributions over paid-in (DPI). The gross DPIs are calculated as follows: [realized proceeds]/[capital drawn down].

* Shaded areas represent the partnership quartile rankings against the appropriate Thomson Reuters C/A Universe.

Analysis provided by Solovis. All amounts in U.S. dollars.

All mezzanine funds will be compared against the Global Mezzanine and Distressed Universe due to lack of sample size in the Mezzanine only Universe.

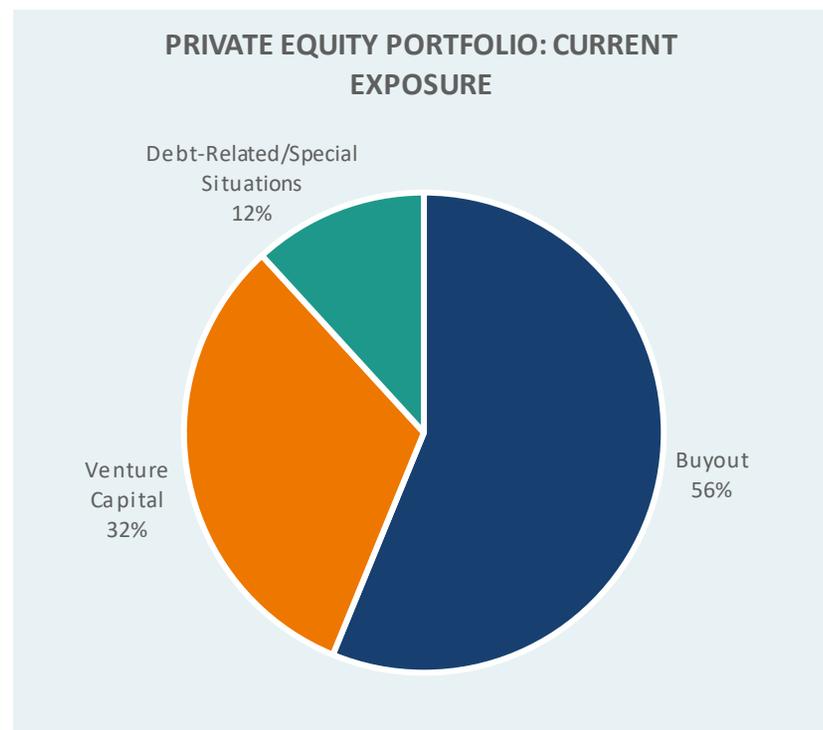
Strategy

Portfolio Diversification

Period Ending: June 30, 2019

Investment Type	Commitment	Current Exposure	Current Exposure as % of Private Equity
Buyout	682,080,900	316,599,509	56.2%
Venture Capital	208,100,000	180,689,434	32.0%
Debt-Related/Special Situations	343,196,451	66,411,391	11.8%
Total Private Equity	1,233,377,351	563,700,334	100.0%

Investment Type	Target Range	Target Exposure	Current Exposure as % of Target	Difference
Buyout	4%-8%	5.4%	3.8%	-1.6%
Venture Capital	0%-3%	1.8%	2.1%	0.3%
Debt-Related/Special Situations	1%-3%	1.8%	0.8%	-1.0%
Total Private Equity	0%-13%	9.0%	6.7%	-2.3%

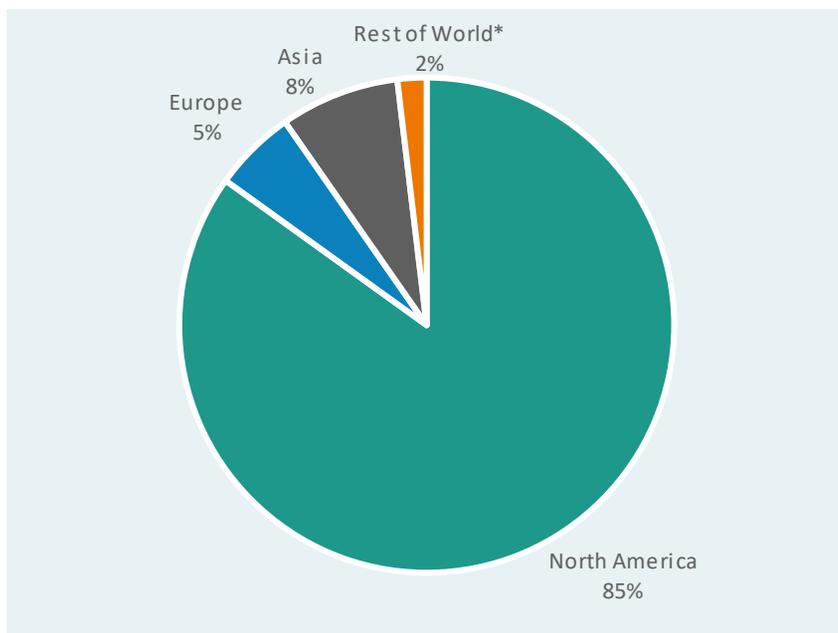


Geography

Private Equity Portfolio Diversification

Period Ending: June 30, 2019

Geography	Current Exposure
North America	463,783,780
Europe	29,036,836
Asia	42,044,595
Rest of World*	10,267,670
Total Private Equity	545,132,880



Based on the value of private equity portfolio companies as of June 30, 2019, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

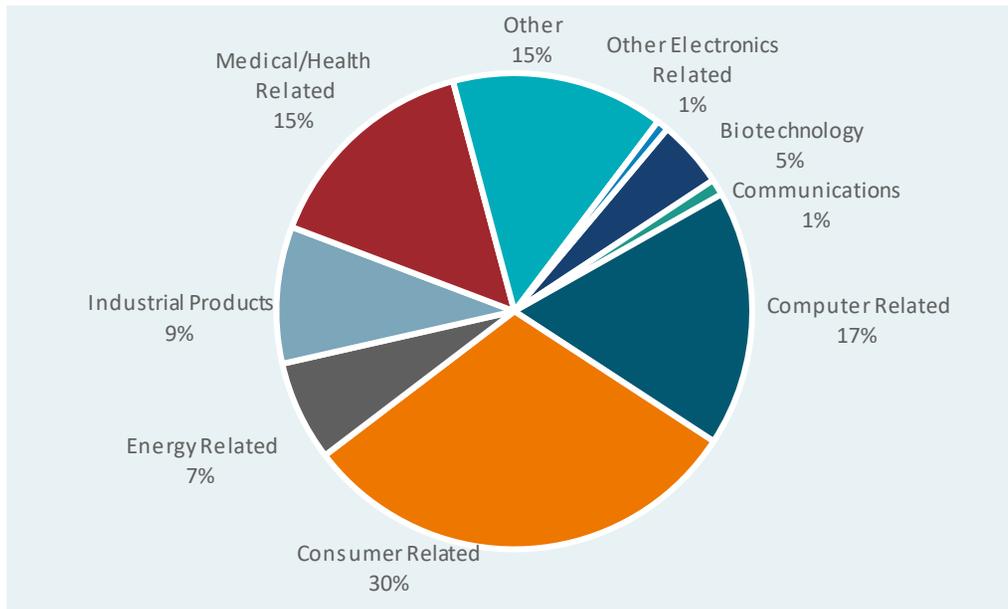
* Rest of World includes: Brazil, New Zealand, Kenya, Israel, United Arab Emirates, Australia, and Turkey.

Industry

Private Equity Portfolio Diversification

Period Ending: June 30, 2019

Industry	Current Exposure
Biotechnology	25,178,623
Communications	5,970,791
Computer Related	94,708,857
Consumer Related	165,986,638
Energy Related	37,124,150
Industrial Products	50,690,888
Medical/Health Related	82,292,678
Other	78,848,212
Other Electronics Related	4,332,043
Total Private Equity	545,132,880

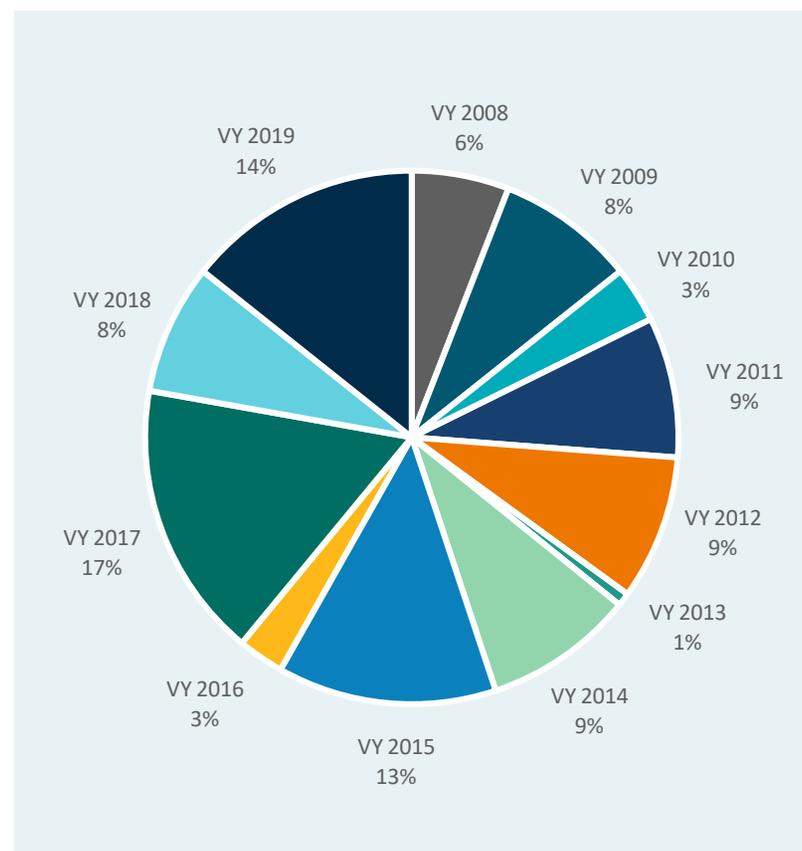


Based on the value of private equity portfolio companies as of June 30, 2019, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

Vintage Year Private Equity Portfolio Diversification

Period Ending: June 30, 2019

Vintage Year	Commitment as of 6/30/19	% of Portfolio Commitment	Reported Value as of 6/30/19
2008	72,955,878	5.9%	8,541,771
2009	103,500,000	8.4%	36,476,302
2010	42,500,000	3.4%	8,045,211
2011	104,817,073	8.5%	66,832,698
2012	108,500,000	8.8%	124,954,354
2013	10,000,000	0.8%	12,896,956
2014	112,080,000	9.1%	94,812,050
2015	163,250,000	13.3%	125,478,547
2016	35,000,000	2.8%	6,366,218
2017	206,798,500	16.8%	68,377,916
2018	98,000,000	7.9%	8,497,294
2019	175,975,900	14.3%	2,421,018
Total Private Equity	1,233,377,351	100%	563,700,334



ABRY Partners VII

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

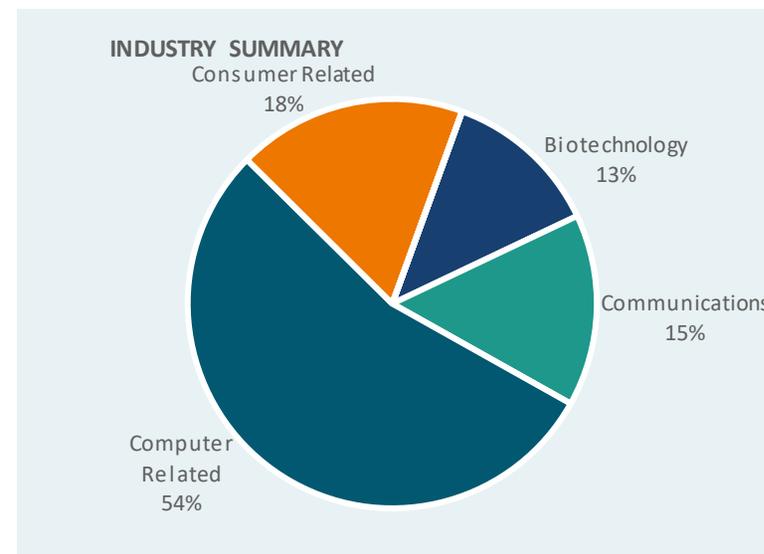
ABRY's strategy is investing in privately negotiated equity and related investments primarily in the media, communications, and business services industries. The Fund will target 15–20 control-oriented investments within the mid-market space in transaction types involving leveraged acquisitions, growth investments, consolidation strategies, and cost reductions and turnarounds. Investments will be primarily based in North America.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2011
Sub-Asset Class:	Buyout

Funding

Commitment Date:	April 29, 2011
Commitment:	\$ 12,500,000
Contributions:	\$ 13,730,372
Distributions:	\$ 18,251,194
Market Value:	\$ 4,419,427
Unfunded Commitment:	\$ 661,416



Portfolio Update

In the first half of 2019, ABRY VII experienced a 1.9% increase in equity value as Inmar's highly accretive acquisition of YouTech and strong equity value appreciation at KORE was largely offset by declines in valuations at Aegis, Confie, and EMC, which are facing short-to-intermediate-term business challenges.

1. Portfolio companies completed six add-on acquisitions in the first half of 2019. In total, 2019 add-on acquisitions represented a combined enterprise value of \$441.0 million, with ABRY contributing no additional equity.
2. The portfolio experienced a 1.4% decline in EBITDA weighted by Fair Market Value. This was driven by declines from three companies: Aegis, Confie and Rackspace.
3. During the first quarter of 2019, Aegis retained an investment bank to advise them on exploring potential exit options. ABRY expects to initiate contact with potential buyers later in the year.

Performance

NET IRR:	14.25%	Performance: Meeting Expectation
NET Multiple:	1.65x	

ABRY Partners VIII

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

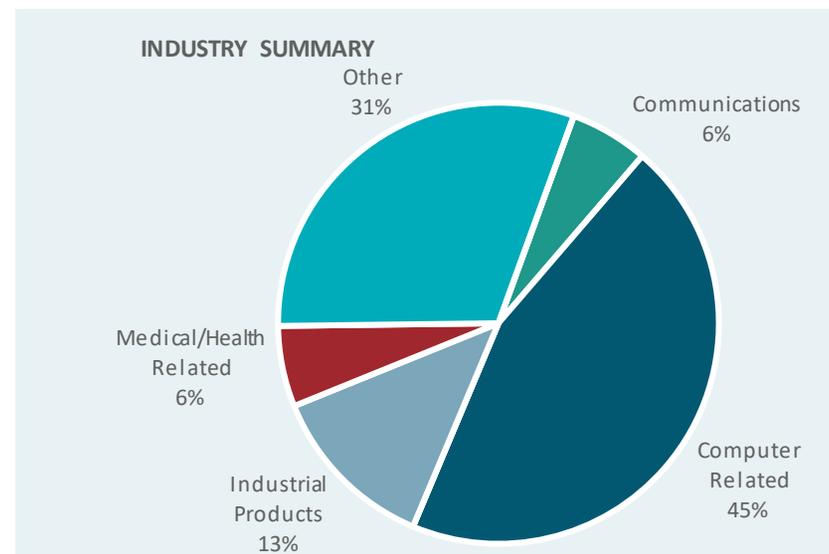
ABRY VIII will continue to implement the same investment strategy as prior Buyout funds, generally targeting 15-20 primarily control-oriented investments, each expected to range between \$40-175 million and held over a 3-7 year period. The Fund targets companies which ABRY believes are well positioned within its Target Sector from a top-down perspective; as well as those which possess strong bottom-up fundamentals, including high barriers to entry, recurring revenues, scalable operating profits, and strong management teams. Due to their mid-market size and historically attractive characteristics, strategic buyers have most often acquired ABRY's portfolio companies.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2015
Sub-Asset Class:	Buyout

Funding

Commitment Date:	August 11, 2014
Commitment:	\$ 18,000,000
Contributions:	\$ 19,107,492
Distributions:	\$ 6,710,122
Market Value:	\$ 16,929,266
Unfunded Commitment:	\$ 1,532,695



Portfolio Update

In the first half of 2019, the vast majority of companies in the ABRY VIII portfolio continued to grow cash flow, repay debt and increase equity value, resulting in a 3.6% increase in the fund's value.

1. In March, ABRY successfully closed on the previously announced acquisition of Millennium Trust at a valuation of \$1.7 billion, or 12.2x run-rate EBITDA. This resulted in ABRY VIII becoming fully invested.
2. Portfolio companies completed 53 add-on acquisitions in the first half of 2019. In total, 2019 add-on acquisitions represented a combined enterprise value of \$660.1 million, with ABRY contributing just \$4.0 million in additional equity.

Performance

NET IRR:	8.93%	Performance: On Track
NET Multiple:	1.24x	

Angeles Equity Partners I

Partnership Review - Buyout

Period Ending: June 30, 2019

Fund Strategy

Founded in 2014, Angeles Equity Partners (“AEP” or the “Fund”) is a Los Angeles based private equity firm that makes control-oriented investments primarily in US lower middle market industrial companies that are underperforming their full potential, undergoing financial or operational stress or possessing some form of transactional complexity. The Fund expects to invest between \$20 million and \$40 million in special situations where AEP believes a significant return on invested capital can be generated through an operational transformation and strategic repositioning of the acquired businesses.

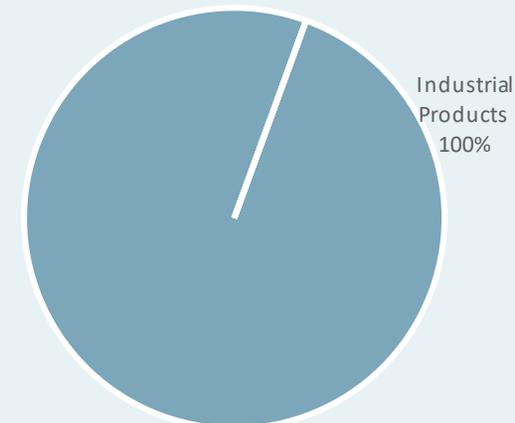
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2016
Sub-Asset Class:	Buyout

Funding

Commitment Date:	September 9, 2016
Commitment:	\$ 35,000,000
Contributions:	\$ 10,144,948
Distributions:	\$ 931,170
Market Value:	\$ 6,366,218
Unfunded Commitment:	\$ 25,178,696

INDUSTRY SUMMARY



Portfolio Update

As of June 30, 2019, the Partnership has completed five platform investments. The Partnership has called \$102 million of capital (28% of total capital commitments) and made \$8 million of distributions as of Q2 2019. Unfunded commitment: \$259 million (inclusive \$0.8 million recallable distributions). New investments in the first half of 2019:

1. APCT – In May 2019, the Partnership acquired APCT, a manufacturer of high complexity, quick-turn printed-circuit-board prototypes with global production management capabilities. As of June 30, 2019, LTM revenue and EBITDA were \$77 million and \$12 million, respectively, and the Partnership’s investment in APCT was held at 1.0x gross MOIC.
2. Mini Pharmacy Enterprises - In June 2019, the Partnership closed on its investment in Mini Pharmacy Enterprises. Mini is a distributor of diabetic supplies, primarily to the California market. Since acquisition, a new management team put in place by Angeles has been focused on efforts to stabilize and improve the business, including modernizing systems, improving the patient experience, strengthening front-end operations and upgrading IT functions. As of June 30, 2019, the Partnership’s investment in Mini is marked at 1.0x MOIC.

Performance

NET IRR:	-23.59%	Performance: Too Early / Slow to Deploy
NET Multiple:	0.72x	

Audax Private Equity Fund VI

Partnership Review - Buyout

Period Ending: June 30, 2019

Fund Strategy

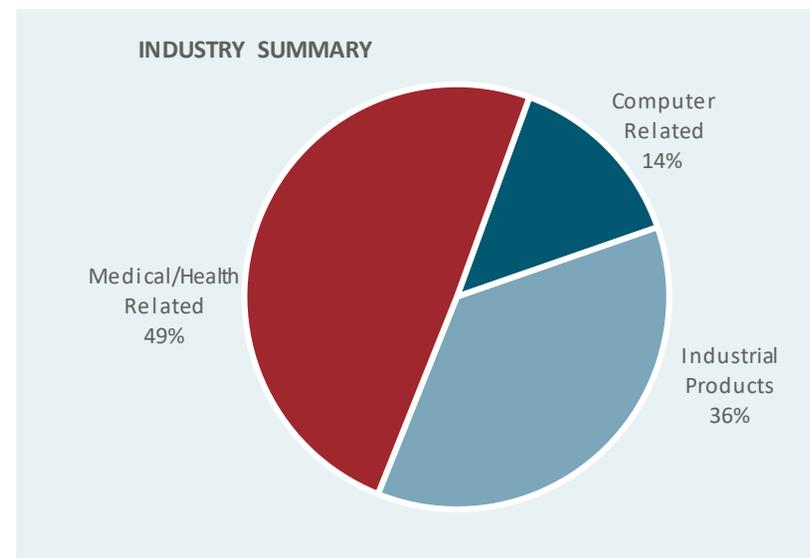
Audax Private Equity Fund VI focuses on middle market, buy-and-build opportunities in the industrials, healthcare, business services, consumer, and technology sectors. The Fund will target 30 North American-based platforms with EBITDA of \$10-40 million, enterprise value of \$100-400 million and equity investment opportunities of \$50-150 million.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2019
Sub-Asset Class:	Buyout

Funding

Commitment Date:	August 29, 2018
Commitment:	\$ 25,000,000
Contributions:	\$ -
Distributions:	\$ -
Market Value:	\$ -
Unfunded Commitment:	\$ 25,000,000



Portfolio Update

The Fund closed on a total of \$3.5 billion capital commitments from Limited Partners in 2018.

Including the investments activity and realizations through September 30, 2019, the Fund has invested \$790.8 million in 11 platforms and 7 add-on, with total portfolio fair value of \$793.9 million.

1. In February, the Fund acquired Reedy Industries (“Reedy”), a leading provider of HVAC services, mechanical services and energy solutions to the commercial market. Reedy was acquired for \$187.0 million, investing \$59.3 million from the Fund. Since March, the Fund has completed 4 add-on transactions.
2. In March, the Fund Acquired Englert, Inc (“Englert”), a direct-to consumer provider of specialty gutters under the LeafGuard brand name and a manufacturer of metal roofing products, for \$280.0 million, investing \$90.1 million from the Fund. Since March, the Fund has added 2 add-ons to the platform.

Performance

NET IRR:	N/A	Performance: N/A
NET Multiple:	N/A	

Fund Strategy

Avista’s strategy is making industry-focused controlling and influential minority investments primarily in U.S. based companies, with each investment approximately \$50–300 million in size. The GP will consider a wide variety of transactions, including leveraged buyouts, build-ups, and growth financings, tailoring investment structures and controlling positions to the needs of each opportunity. The Firm focuses on three industries primarily– energy (exploration and services), healthcare (proven pharmaceuticals, devices, and medical services), and media (subscription based and new media).

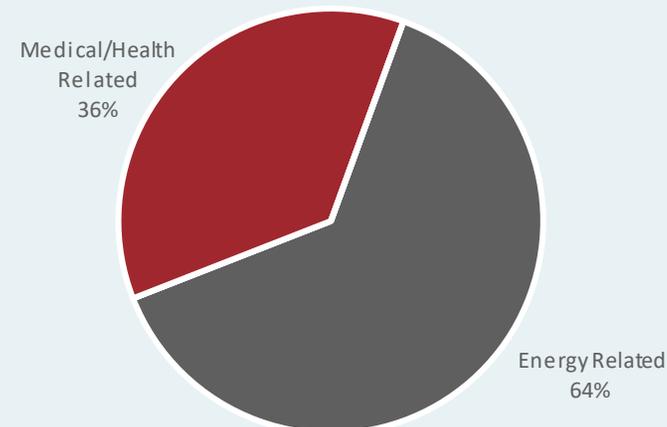
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2010
Sub-Asset Class:	Buyout

Funding

Commitment Date:	May 27, 2010
Commitment:	\$ 30,000,000
Contributions:	\$ 39,204,703
Distributions:	\$ 54,609,531
Market Value:	\$ 5,686,380
Unfunded Commitment:	\$ 4,124,543

INDUSTRY SUMMARY



Portfolio Update

As of June 30, 2019, Fund II is fully committed with \$2.1 billion invested in 16 companies with a total value of \$4.3 billion. Since inception, the Fund has returned approximately \$4.0 billion, representing 189% of invested capital.

In June 2019, the Fund made its final disposition of its remaining interest in Hi-Crush Partners (NYSE: HCR) (“Hi-Crush”), via a distribution-in-kind of approximately 6.3 million shares of common stock. In total, Fund II received \$554 million of proceeds and value on its investment in Hi-Crush, representing an 8.0x gross MOIC and an 164% gross IRR.

The Fund’s remaining four investments are comprised of three energy investments representing approximately \$191.0 million of remaining value and one healthcare investment representing approximately \$110.0 million of remaining value. The Fund’s value was decreased by \$61.0 million, or 1%, from its valuation in March. The decrease was driven largely by declines in the stock prices of one publicly traded company, OptiNose (NASDAQ: OPTN).

Performance

NET IRR:	13.15%	Performance: On Track
NET Multiple:	1.54x	

Bernhard Capital Partners II Partnership Review - Buyout

Period Ending: June 30, 2019

Fund Strategy

Founded in 2013, Bernhard Capital Partners (“BCP” or the “Fund”) is a Baton Rouge based private equity firm that makes control, private-only investments in mid-size service companies, with a specific focus on the energy services, industrial services, and infrastructure services. The Fund will look to target eight platform investments with average equity checks of \$75M to \$200M in the following verticals: i) data collection for asset management purposes, ii) midstream services, iii) non-destructive testing and inspection, iv) vegetation management; v) energy efficiency; vi) regulated transmission and distribution; vii) geotechnical engineering and materials testing; and viii) management engineering consulting. Fund II seeks to raise \$1.5b in capital commitments.

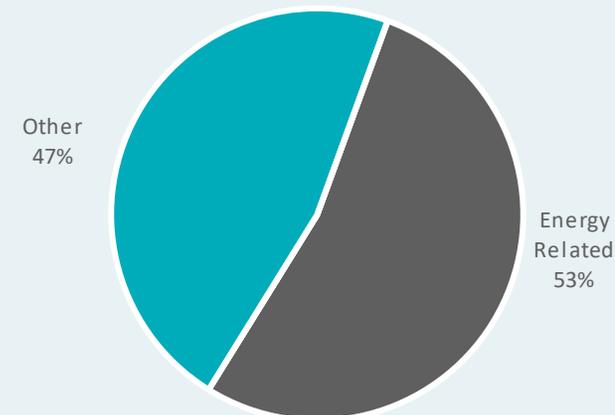
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2018
Sub-Asset Class:	Buyout

Funding

Commitment Date:	November 21, 2017
Commitment:	\$ 44,000,000
Contributions:	\$ 3,665,774
Distributions:	\$ -
Market Value:	\$ 1,989,160
Unfunded Commitment:	\$ 40,337,274

INDUSTRY SUMMARY



Portfolio Update

The Fund has called \$96.5m of capital commitments and invested \$109.2 into two portfolio companies, currently valued at cost:

1. The Fund made its first investment, \$58.0 million, in United Utility Services, LP in February 2018 through the acquisition of W.A. Chester. As of June 30, 2019, the investment was reported at cost of \$58.0 million. BCP is currently seeking strategic acquisitions for United Utility Services to add capabilities that will complement the company’s leadership in underground transmission and distribution services.
2. The Fund established community resiliency and disaster recovery investment platform with a \$51.2M investment in Lemoine Services, LP in May 2019. The transaction was funded mainly through Credit Facility. The Fund anticipates acquiring additional companies under the Lemoine Services platform to expand its geographical footprint and core service offerings, drive cost and revenue synergies and serve clients through the complete emergency life cycle.

Performance

NET IRR:	-70.42%	Performance: Too Early
NET Multiple:	0.54x	

Fund Strategy

CapVest's edge since 2001's foray into technology investments has been a focus on 3 silos: food, healthcare, and essential business services. It's ability to identify middle market, national champions as platform anchors that can be grown via acquisition in partnership with management has produced strong, easily understood companies that can be monetized through trade or secondary sales.

Investment Characteristics

Currency:	Euro
Region:	Europe
Vintage Year:	2019
Sub-Asset Class:	Buyout

Funding

Commitment Date:	June 29, 2018
Commitment:	€ 29,000,000 / \$32,975,900
Contributions:	€ 0 / \$0
Distributions:	€ 0 / \$0
Market Value:	€ 0 / \$0
Unfunded Commitment:	€ 29,000,000 / \$32,975,900

Portfolio Update

The Fund had four closings in 2018: June 29, July 11, August 2, and October 29. As of December 31, 2018, The Fund's total commitment was €996.7 million and no capital has been called from Limited Partners.

Performance

NET IRR:	N/A / N/A	Performance:	N/A
NET Multiple:	N/A / N/A		

Genstar Capital Partners IX, L.P.

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Genstar's private equity strategy focuses on North American upper middle market opportunities, where the GP can be a catalyst for change through its investment model of acquiring complimentary companies and bolstering portfolio company management teams through talent recruitment in the Financial Services, Healthcare, Industrial Technology, and Software sectors. A key part of Genstar's investment thesis is the pursuit of add-on acquisitions that will allow enable platforms to broaden product lines, consolidate fragmented industries, develop distribution channels, or expand geographically. Consistent with prior funds, Fund IX will target 12-16 platforms with a minimum EBITDA of \$25 million and enterprise values of \$250 million to \$1.25 billion.

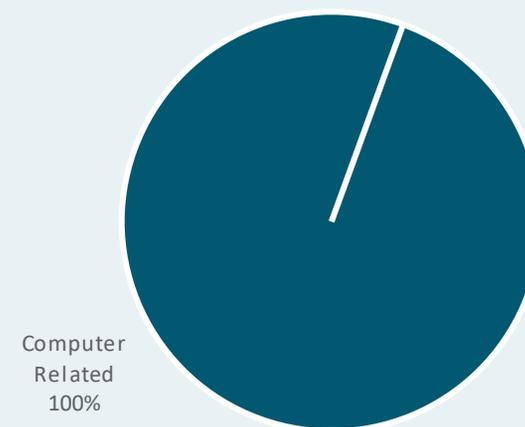
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2019
Sub-Asset Class:	Buyout

Funding

Commitment Date:	February 21, 2019
Commitment:	\$ 25,000,000
Contributions:	\$ -
Distributions:	\$ -
Market Value:	\$ -
Unfunded Commitment:	\$ 25,000,000

INDUSTRY SUMMARY



Portfolio Update

The Fund had its final close in February 2019 with \$5.5 billion in Limited Partner commitments. The Fund had invested in Prometheus Group, a leading provider of specialized third party asset management software, in the first half of 2019. No capital has been called from Limited Partners.

Performance

NET IRR:	N/A	Performance: N/A
NET Multiple:	N/A	

Great Hill Equity Partners V Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Great Hill seeks to utilize its proprietary research programs to identify and build relationships with middle market growth businesses in Business and Consumer Services sector that have the potential to become strategically important to larger enterprises. The strategy emphasizes value creation through the combination of organic growth, accretive acquisitions, and improved business practices. Sub-sectors of interest include business processing (payroll, logistics, bill payment, transactions, bankruptcy); internet (online, advertising and media); education; financial technology; media and communications; healthcare; and software. Great Hill targets companies with enterprise values below \$500 million, each requiring equity investments between \$25-100 million.

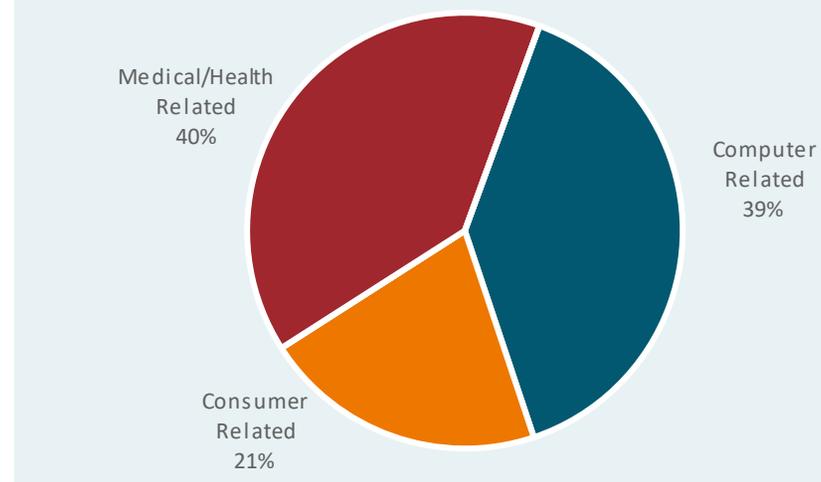
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2014
Sub-Asset Class:	Growth Equity

Funding

Commitment Date:	November 26, 2013
Commitment:	\$ 25,000,000
Contributions:	\$ 24,737,500
Distributions:	\$ 13,850,000
Market Value:	\$ 31,194,558
Unfunded Commitment:	\$ 262,500

INDUSTRY SUMMARY



Portfolio Update

As of June 30, 2019, the Fund is 99% drawn and invested \$1.1 billion across 18 portfolio companies currently valued at \$2.3 billion. During the first half of 2019, the Fund had fully realized two investments. As of the end of first half 2018, the Fund had distributed \$629 million to the limited partners, representing 56% of limited partners' contributed capital.

1. The Fund completed its third full exit with the sale of Chrome River to Certify, representing a 2.0x return on invested capital during the first quarter.
2. During the second quarter, the Fund completed its fourth full exit with the sale of PlanSource to Vista Equity, representing a 2.7x return on invested capital and a 32% IRR.
3. Subsequent to quarter end, the Fund sold Capital Confirmation to Thomson Reuters, marking the Fund's fifth full exit, and representing a 2.7x return on invested capital and a 43% IRR. In connection with the receipt of the Confirmation proceeds as well as proceeds from a dividend at AffiniPay, the Fund made a \$136.3 million distribution to the limited partners in August, bringing the Fund's DPI to 0.68x.

Performance

NET IRR:	21.12%	Performance: Meeting Expectation
NET Multiple:	1.82x	

Great Hill Equity Partners VI Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

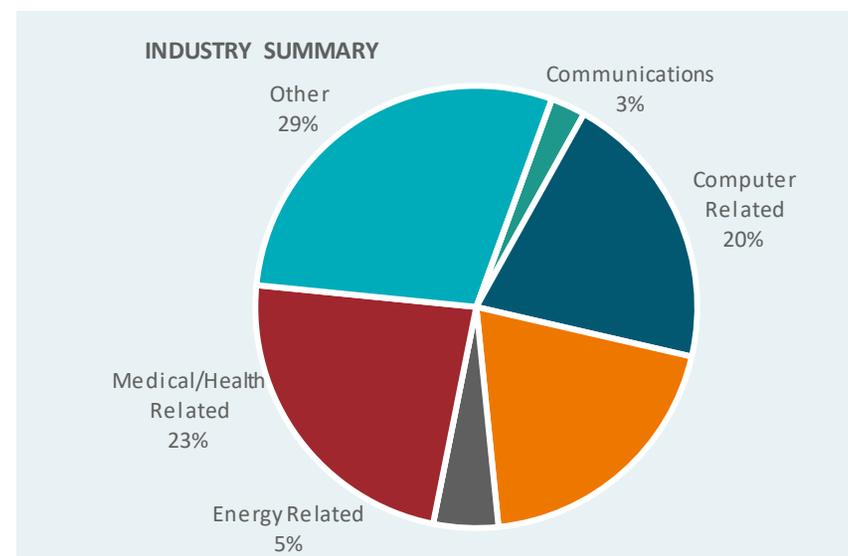
Great Hill seeks to utilize its proprietary research programs to identify and build relationships with middle market growth businesses in Business and Consumer Services sector that have the potential to become strategically important to larger enterprises. The strategy emphasizes value creation through the combination of organic growth, accretive acquisitions, and improved business practices. Sub-sectors of interest include business processing (payroll, logistics, bill payment, transactions, bankruptcy); internet (online, advertising and media); education; financial technology; media and communications; healthcare; and software. Great Hill targets companies with enterprise values below \$500 million, each requiring equity investments between \$25-100 million.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2017
Sub-Asset Class:	Growth Equity

Funding

Commitment Date:	February 1, 2017
Commitment:	\$ 50,000,000
Contributions:	\$ 28,484,998
Distributions:	\$ 14,187,767
Market Value:	\$ 28,918,898
Unfunded Commitment:	\$ 21,515,002



Portfolio Update

As of June 30, 2019, the Fund was 75% invested but only 57% drawn given the use of the \$450 million capital call credit facility. In the first half of 2019, the Fund added several new investments. To date, the Fund has distributed \$426 million to the limited partners, representing 50% of limited partners' contributed capital.

1. Fund VI received proceeds of \$448.6 million in the February closing of ZoonInfo. Including the Fund's share of approximately \$35 million of deferred payments, this represents a 5.9x return on invested capital over an 18-month hold period, and a 216% IRR.
2. In April, the Fund invested \$34.9 million in G\O Media, Inc. to purchase the business for \$27.5 million and to provide working capital to transition the business to profitability.
3. In April, the Fund invested \$90.5 million to acquire a 64% ownership stake in Examity at a \$135 million enterprise value.
4. The Fund invested \$108.0 million for a 21% ownership stake in Custom Ink at a \$725 million enterprise value. Including the co-invest GHP offered on this transaction, GHP led a \$325 million equity syndicate (combined 67% ownership).
5. In May, the Fund invested \$72.3 million TodayTix for a 74% ownership stake.
6. The Fund invested \$92.4 million for a 44% stake at an enterprise value of \$220 million (4.9x Q2'19E ARR) to EnterpriseDB, a leading database management system .

Performance

NET IRR:	89.27%	Performance: On Track
NET Multiple:	1.51x	

Fund Strategy

Great Hill seeks to utilize its proprietary research programs to identify and build relationships with middle market growth businesses in Business and Consumer Services sector that have the potential to become strategically important to larger enterprises. The strategy emphasizes value creation through the combination of organic growth, accretive acquisitions, and improved business practices. Sub-sectors of interest include business processing (payroll, logistics, bill payment, transactions, bankruptcy); internet (online, advertising and media); education; financial technology; media and communications; healthcare; and software. Great Hill targets companies with enterprise values below \$500 million, each requiring equity investments between \$40-250 million.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2019
Sub-Asset Class:	Growth Equity

Funding

Commitment Date:	June 28, 2019
Commitment:	\$ 60,000,000
Contributions:	\$ -
Distributions:	\$ -
Market Value:	\$ -
Unfunded Commitment:	\$ 60,000,000

Portfolio Update

The Fund closed on June 28, 2019 with total commitment of \$2.5 billion. As of June 30, 2019, no capital has been called from Limited Partners.

Performance

NET IRR:	N/A	Performance: N/A
NET Multiple:	N/A	

Insight Equity II

Partnership Review –Buyout

Period Ending: June 30, 2019

Fund Strategy

Seeks to invest, typically gain control in, and transform strategically viable middle-market companies which are underperforming, operationally-challenged, or financially-distressed. Primary investment selection criteria include companies which:

1. Are based in North America, with \$50 million–1 billion in revenue and \$50 million–750 million in enterprise value;
2. Are strategically viable with sustainable competitiveness, and possess “transformational” potential; and
3. Typically operate in asset-intensive industries where Insight has significant experience, including but not limited to oil and gas services, aerospace and defense, automotive and transportation, distributions services, and low-to-medium technology manufacturing businesses.

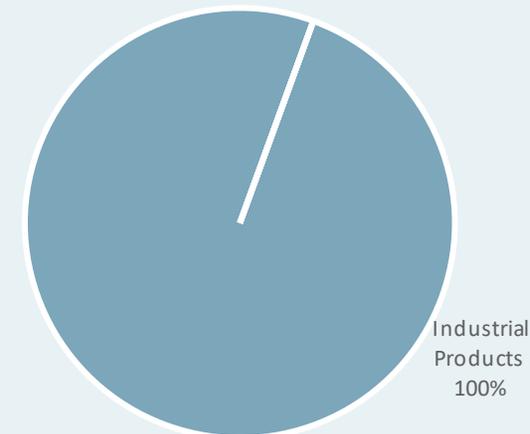
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Buyout

Funding

Commitment Date:	April 8, 2009
Commitment:	\$ 16,875,000
Contributions:	\$ 16,984,783
Distributions:	\$ 13,953,515
Market Value:	\$ 15,451,008
Unfunded Commitment:	\$ 964,014

INDUSTRY SUMMARY



Portfolio Update

The Fund invested in a total of six companies, three of which have been fully realized, and three which report unrealized value. The realized and unrealized value of Fund II increased to \$827.9 million from \$ 782.4 million as of June 30, 2019.

1. APP Holdings LP – invested \$41.7 million, with bulk of invested capital realized. Remaining position is valued at \$217.1 million, representing MOIC of 5.2x.
2. Micross Solutions LLC – invested \$62.3 million and reported value of \$150.8 million. Insight is starting a sale process for Micross and expect to have the Company sold by end of year or end of January 2020. As of June 30, 2019, the investment represents 2.4x MOIC.
3. Versatile Processing Group – invested \$51.2 million, reported value at \$121.6 million, with 2.2x MOIC.

Performance

NET IRR:	11.36%	Performance: Below Expectation
NET Multiple:	1.73x	

JLL Partners VII

Partnership Review –Buyout

Period Ending: June 30, 2019

Fund Strategy

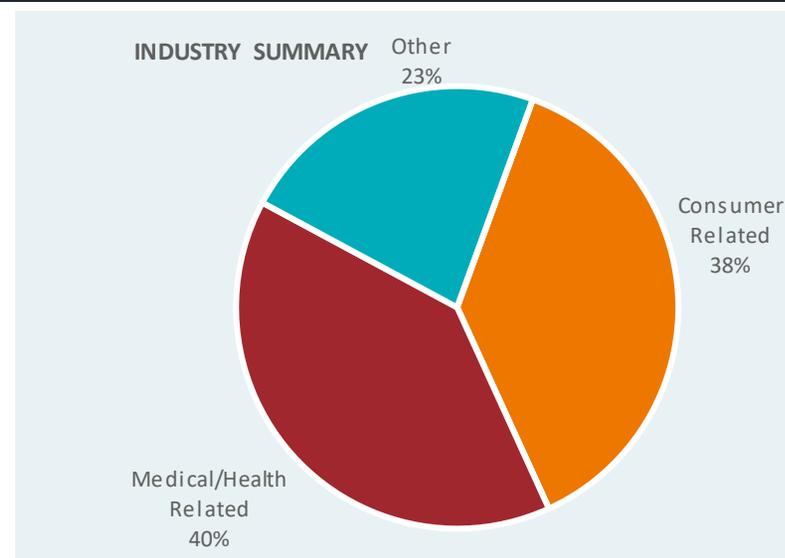
JLL Partners intends to pursue a strategy of investing in value-oriented, control investments with experienced management teams, strong competitive position within their industry, sustainable competitive advantages relative to competitors and good growth prospects. Growth of the businesses will be both through organic means and via acquisitions. Specifically, JLL focuses on buying control of fundamentally sound companies in complicated and challenged situations, including restructurings & bankruptcies and backing exceptional managers in building strong companies through a series of acquisitions. The Firm applies this approach across all industries.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2015
Sub-Asset Class:	Growth / Buyout

Funding

Commitment Date:	March 19, 2015
Commitment:	\$ 47,250,000
Contributions:	\$ 38,739,039
Distributions:	\$ 1,321,338
Market Value:	\$ 48,516,694
Unfunded Commitment:	\$ 9,509,668



Portfolio Update

As of June 30, 2019, the Fund invested in eight platform acquisitions, with total commitment of \$952.8 million, of which \$743.2 million has been invested and valued at \$1,129.1 million. At the half-year end, the gross MOIC was 1.5x. A few highlights on investment activities are:

1. In May 2019, Eversana completed its fifth acquisition, acquiring Alamo Pharma Services (“Alamo”). Alamo is a leader in field sales, marketing and clinical solutions for pharmaceutical and biotech companies.
2. In June 2019, Xact Data Discovery (“Xact”) completed add-on acquisition of Qdiscovery, a provider of electronic discovery services to law firm and corporate customers, with a particular focus on clients in the Midwest.

Performance

NET IRR:	14.95%	Performance: Meeting Expectation
NET Multiple:	1.29x	

KPS Special Situation IV

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

KPS seeks to invest in companies across a diverse range of manufacturing industries experiencing a period of transition or challenged by the need to effect immediate and significant change. KPS concentrates on turning around the operations of non-core, underperforming, or distressed assets or businesses.

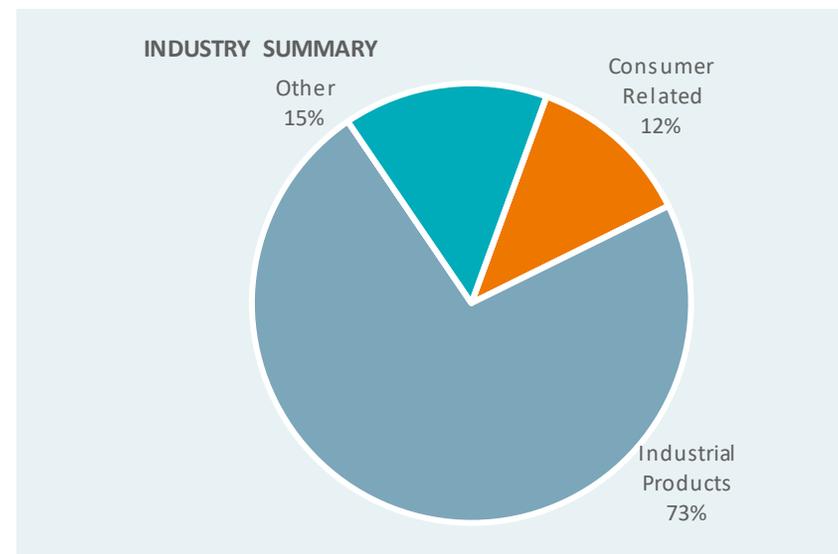
A typical investment involves creating a company to either (i) acquire non-core assets or businesses divested by large corporations in connection with highly complex carve-out transactions, or (ii) purchase underperforming or distressed assets/businesses or businesses operating in bankruptcy, in default of obligations to creditors, or with a history of recurring operating losses.

Investment Characteristics

Currency:	USD
Region:	Global
Vintage Year:	2014
Sub-Asset Class:	Buyout

Funding

Commitment Date:	April 18, 2013
Commitment:	\$ 14,580,000
Contributions:	\$ 8,497,938
Distributions:	\$ 3,269,396
Market Value:	\$ 7,635,109
Unfunded Commitment:	\$ 6,624,721



Portfolio Update

Since its commencement on May 30, 2014, Fund IV continues its investment in new companies. As of June 30, 2019, Fund IV's current six investments of \$1,555 million cost was valued at \$1,800 million. Since inception, the Fund has distributed approximately \$965.9 million of cash.

In June 2019, KPS acquired the fitness business of Brunswick Corporation, including the Life Fitness brand ("Life Fitness" or the "Company") in a complex global carve-out transaction. Life Fitness' \$490 million purchase price represents a multiple of 6.6x LTM March 2019 adjusted EBITDA, whereas its publicly-traded pure-play competitor trades at over 15.0x LTM adjusted EBITDA.

In May 2019, KPS signed a definitive agreement to acquire a new platform investment (Howden from Colfax Corporation) for \$450.0 million to \$550.0 million, which is expected to close later this year.

Performance

NET IRR:	20.24%	Performance: Slow to Deploy
NET Multiple:	1.28x	

Lindsay Goldberg III

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

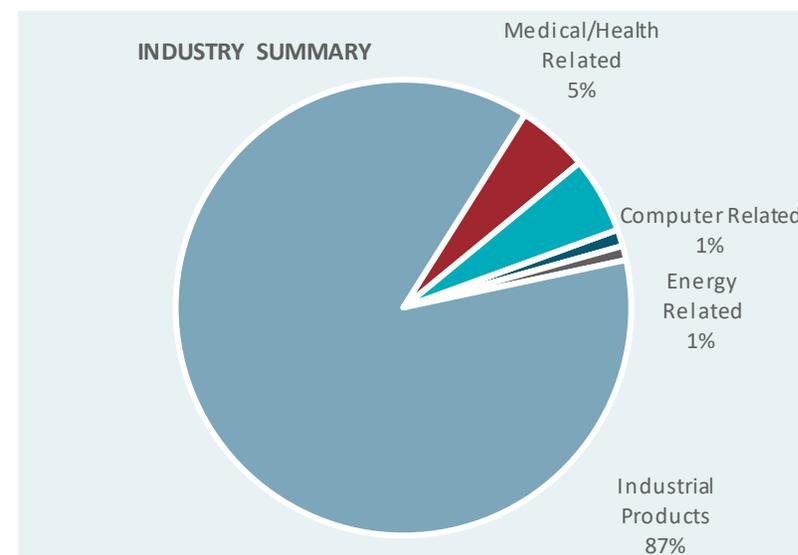
Lindsay Goldberg III seeks to make investments in small to mid-market companies with \$100–500 million of equity in each portfolio company, either in an initial transaction or in multiple transactions over time. The Fund seeks opportunities where portfolio companies can be built with strategic acquisitions and provide advice on excellent business practices with the end desired result of producing market-leading enterprises with exceptional management.

Investment Characteristics

Currency:	USD
Region:	Global
Vintage Year:	2008
Sub-Asset Class:	Buyout

Funding

Commitment Date:	March 31, 2009
Commitment:	\$ 45,000,000
Contributions:	\$ 43,564,452
Distributions:	\$ 58,351,293
Market Value:	\$ 791,662
Unfunded Commitment:	\$ 2,020,982



Portfolio Update

As of June 30, 2019, Fund III invested \$3,819.5 million in 18 portfolio companies. The Fund has realized \$6,193.7 million of investment proceeds and has an unrealized value of \$259.5 million.

During the first half of 2019, the Fund received \$165.5 million in proceeds from Odfjell Terminals BV (\$97.6M), Intermodal Holdings, L.P. (\$51.9M), Dealer Tire, LLC (\$12.7M), and PSC Holdings I, LLC (\$3.3 million).

The Fund closed on the sale of the Odfjell Terminals Jiangyin (OTJ) China Terminal. In connection with the sale, Fund III received Investment Proceeds of \$19.1 million which were distributed to the Partners in August 2019.

Performance

NET IRR:	8.15%	Performance: Below Expectation
NET Multiple:	1.36x	

Peak Rock Capital Fund II

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Peak Rock Capital is an Austin, Texas-based private equity investor targeting lower middle market (“LMM”) leveraged buyouts. The firm sources its transactions through LMM M&A, distressed-for-control, and corporate carveouts.

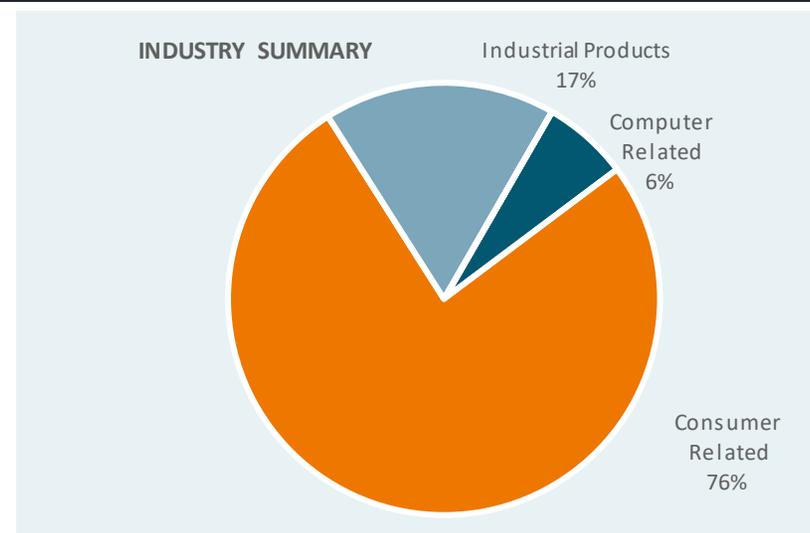
The Fund had its final close end of 2017, with total commitments of \$1.04 billion.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2017
Sub-Asset Class:	Buyout

Funding

Commitment Date:	December 13, 2017
Commitment:	\$ 35,000,000
Contributions:	\$ 11,668,370
Distributions:	\$ 3,702,232
Market Value:	\$ 10,452,216
Unfunded Commitment:	\$ 23,347,979



Portfolio Update

The Fund has called 33.3% of committed capital and continues to make new investments. As of June 30, 2019, the Fund has invested in six companies, with total cost of \$311.0 million and combined value of \$316.5 million.

The Fund invested \$120 million in Turkey Hill Holdings LLC, in April. Based in Columbia, PA, Turkey Hill is a leading manufacturer and distributor of branded ice cream and refrigerated drinks for the retail, foodservice, and alternative channels. In June, given progress across a number of key strategic initiatives and the completion of a saleleaseback transaction Turkey Hill Holdings LLC returned \$44.0 million. These proceeds represent a return of approximately 37% of invested capital in approximately two months.

In April, based on its continued strong financial performance, Hasa Holdings, Inc. returned \$3.8 million. With this transaction and prior distributions, Hasa Holdings Inc. has now returned a total of \$31.3 million which represents a return of approximately 89% of invested capital.

In June, based on the success in the execution of the 100-day plan and carve-out initiatives which resulted in strong financial performance, TNT Crust Holdings LLC increased its senior credit facility resulting in a return of \$35.0 million. These proceeds represent a return of approximately 88% of invested capital in less than ten months.

Performance

NET IRR:	35.87%	Performance: Too Early
NET Multiple:	1.21x	

Sycamore Partners

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Sycamore's primary focus is on consumer and retail investments, with opportunistic exposure to adjacent sectors. The Funds will seek to acquire companies at attractive values by targeting typically underperforming businesses sold in complex situations (e.g. corporate extractions, bankruptcy / distressed situations), and those that allow the GP to have sufficient control to implement restructuring initiatives and operating improvements.

Main fund (75% of total commitments) will invest in 100% of deals requiring less than \$50 million capital. Side-Car fund (25% of total commitments) will invest 25% of \$50-75M investments, 85% of \$75-100M investments, and 95% of \$100M+ investments.

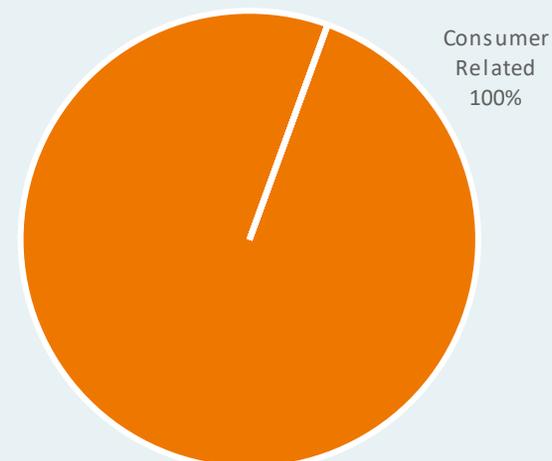
Investment Characteristics

Currency:	USD
Region:	US
Vintage Year:	2011
Sub-Asset Class:	Buyout

Funding

Commitment Date:	April 30, 2012
Commitment:	\$ 30,000,000
Contributions:	\$ 39,216,993
Distributions:	\$ 44,644,653
Market Value:	\$ 29,033,948
Unfunded Commitment:	\$ 12,579,591

INDUSTRY SUMMARY



Portfolio Update

During the first half of 2019, Fund distributed proceeds of \$23.9 million (\$146.1 million of realized loss and \$170.0 million of return of capital). The Fund held the total value of the portfolio at \$2.7 billion. The Fund has distributed \$1.6 billion since inception, representing 161% of total commitments and 132% of capital invested in portfolio companies.

1. In March 2019, the Fund made a deemed distribution of \$24 million (all dividend income) in proceeds related to its investment in MGF. These proceeds, together with prior distributions, represent a return of approximately 157% of the Fund's \$114 million investment in MGF. As of June 30, 2019, the Fund is holding its investment in MGF at \$178 million, which represents a multiple of 6.4x LTM EBITDA.
2. On February 3, 2019, Talbots purchased the equity of Coldwater Creek in exchange for preferred equity in the combined entity. Talbots will leverage its experience growing a multi-channel retailer in order to accelerate Coldwater Creek's growth.

Performance

NET IRR:	31.19%	Performance: Meeting Expectation
NET Multiple:	1.88x	

Sycamore Partners II

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Sycamore’s primary focus is on consumer and retail investments, with opportunistic exposure to adjacent sectors. The Funds will seek to acquire companies at attractive values by targeting typically underperforming businesses sold in complex situations (e.g. corporate extractions, bankruptcy / distressed situations), and those that allow the GP to have sufficient control to implement restructuring initiatives and operating improvements.

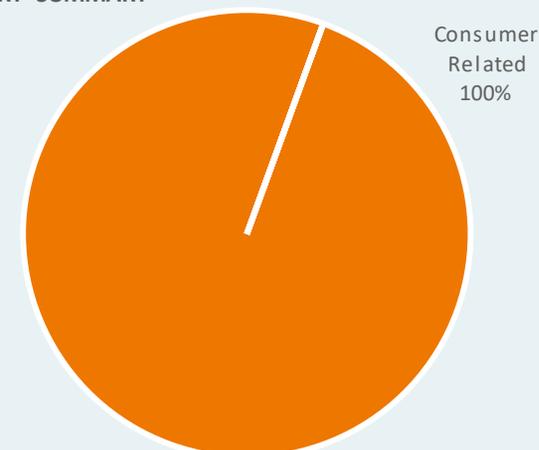
Investment Characteristics

Currency:	USD
Region:	US
Vintage Year:	2014
Sub-Asset Class:	Buyout

Funding

Commitment Date:	May 30, 2014
Commitment:	\$ 42,500,000
Contributions:	\$ 36,538,600
Distributions:	\$ 13,062,716
Market Value:	\$ 30,160,151
Unfunded Commitment:	\$ 7,506,554

INDUSTRY SUMMARY



Portfolio Update

To date, the Fund has invested \$2.0 billion in eleven investments. Including reserves for add-on investments and expenses, the Fund is now approximately 97% deployed. During the first half of 2019, the Fund distributed proceeds of \$390.6 million, bringing total distributions to \$839.5 million since inception, representing 26% of capital invested in portfolio companies.

1. Staples – as the largest investment, the \$811.8 million total cost of Staples is 40.8% of the Fund. As of June 30, 2019, Staples has realized a total of \$118.3 million (14.6% of total cost realized); gross MOIC 2.0x. The cost of Staples North American Delivery (“Staple NAD”) is 71.6% of Staples. The Fund received \$391 million from the Staple NAD refinancing transaction and distributed the proceeds to investors on April 17th, 2019. As of June 30, 2019 Staples NAD was valued at \$803.2 million, which represents a multiple of 2.1x original cost.
2. SP Fund II Liquid Opportunities - in the first half of 2019, Sycamore purchased debt holdings of \$24 million face value using the line of credit guaranteed by the Fund and later sold debt holdings with a cost basis of \$90 million, realizing total proceeds of \$107.2 million on the sale. Additionally, Sycamore invested in debt holdings of \$80 million face value, using the line of credit guaranteed by the fund. To date Sycamore has sold equity opportunities with a cost basis of \$117.9 million realizing total proceeds of \$135.7 million, representing a 1.51x MOIC.

Performance

NET IRR:	8.98%	Performance: On Track / Slow to Deploy
NET Multiple:	1.18x	

Sycamore Partners III

Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Sycamore's primary focus is on consumer and retail investments, with opportunistic exposure to adjacent sectors. The Funds will seek to acquire companies at attractive values by targeting typically underperforming businesses sold in complex situations (e.g. corporate extractions, bankruptcy / distressed situations), and those that allow the GP to have sufficient control to implement restructuring initiatives and operating improvements.

The Fund has aggregate limited partner commitments of \$4.75 billion.

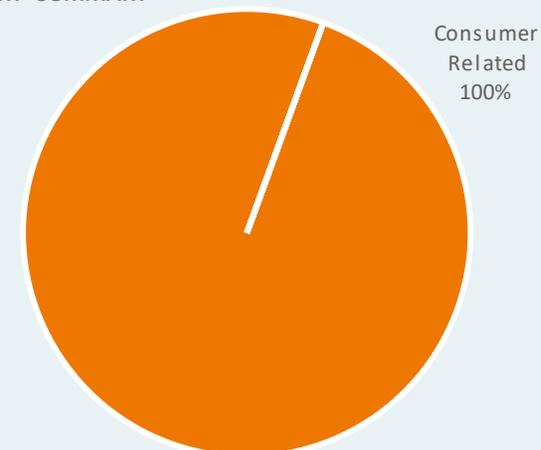
Investment Characteristics

Currency:	USD
Region:	US
Vintage Year:	2018
Sub-Asset Class:	Buyout

Funding

Commitment Date:	December 18, 2017
Commitment:	\$ 44,000,000
Contributions:	\$ 5,650,633
Distributions:	\$ -
Market Value:	\$ 4,321,072
Unfunded Commitment:	\$ 38,349,367

INDUSTRY SUMMARY



Portfolio Update

As of June 30, 2019, the Fund has aggregate limited partner commitments of \$4.75 billion. To date, the Fund has invested \$465 million in one investment. The Fund is approximately 10% committed to investments.

1. Pure Fishing – a global designer, marketer, and wholesaler of fishing equipment including rods, reels, combos, line, bait, and accessories. The Fund invested \$465 million to the company, which was valued at cost as of December 31, 2018.
2. SP Fund III Liquid Opportunities – During the first quarter of 2019, Sycamore purchased equity opportunities with a cost basis of \$11 million and sold securities with a cost basis of \$3.7 million realizing total proceeds of \$4.0 million. In the second quarter of 2019, Sycamore purchased equity opportunities with a cost basis of \$10 million and sold securities with a cost basis of \$21.0 million realizing total proceeds of \$15.8 million. To date Sycamore has sold equity opportunities with a cost basis of \$27.7 million realizing total proceeds of \$23.3 million.

Performance

NET IRR:	-34.86%	Performance: Too Early
NET Multiple:	0.76x	

Warburg Pincus Private Equity XI Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

Since its founding, Warburg Pincus has followed a growth oriented investment strategy that the Firm continues to pursue today. As well, the Firm emphasized global investing early in its history and was one of the first U.S. firms to begin investing in Europe (1983) and then in India and China (via the Hong Kong office that opened in 1994).

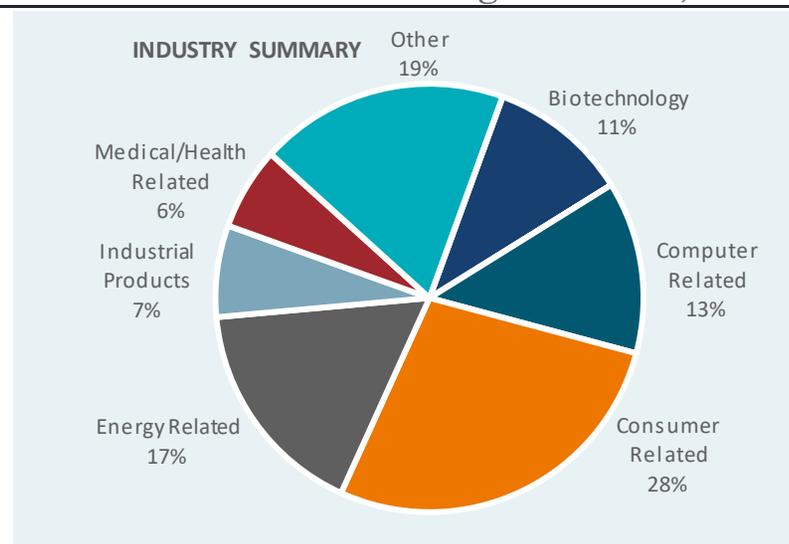
The Fund offers the opportunity to participate in a broadly diversified portfolio of growth-oriented investments across investment stage, sector, and region with a longstanding GP.

Investment Characteristics

Currency:	USD
Region:	Global
Vintage Year:	2012
Sub-Asset Class:	Buyout / Venture Capital

Funding

Commitment Date:	September 24, 2012
Commitment:	\$ 75,000,000
Contributions:	\$ 75,876,966
Distributions:	\$ 54,987,705
Market Value:	\$ 68,639,590
Unfunded Commitment:	\$ -



Portfolio Update

As of June 30, 2019, WP XI has fully invested its committed capital of \$11.2 billion, investing in 77 companies. The Fund has distributed \$8.3 billion to their partners, of which \$5.3 billion was returned as base capital and \$3.9 billion was paid from the limited partners' earnings accounts. During the first half of the year, the Fund continues to have realizations.

1. Avalara, Inc. – On June 10, 2019, Avalara closed a follow-on offering of 4.1 million shares at \$69.40 per share and raised \$287 million. In May and June 2019, the Fund sold 5.6 million shares in a block trade at the price of \$69.625 per share and \$66.50 per share, respectively, and distributed 2 million shares at a price of \$69.04 per share. Total proceeds after distribution was \$107 million. Avalara currently represents a gross MOIC of 4.8x.
2. Brigham Minerals, Inc. - On April 17, 2019, Brigham priced its IPO at \$18.00 per share, the top end of its filing range. Brigham currently represents a gross MOIC of 2.0x.
3. Dude Solutions, Inc. - In June 2019, WP XI and other shareholders closed a transaction to sell 100% of Dude Solutions for a TEV of \$527.5M, which represented ~6.1x Q1'19 current ARR and ~4.2x 2019E total cash revenue. Dude Solutions currently represents a gross MOIC of 2.5x.
4. PayScale, Inc. - On April 4, 2019, WP XI and other shareholders agreed to sell 100% of PayScale for a TEV of \$325 million. WP XI received \$199M on May 3, 2019. Additionally, WP XI had previously received \$13.7 million from a prior secondary sale and expects to receive \$2.7 million from escrow in late June for a total of \$216 million of proceeds. The purchase price represents a multiple of ~4x in ARR and ~28x in 2019B cash EBITDA. PayScale currently represents a gross MOIC of 1.8x.

Performance

NET IRR:	14.04%	Performance: Below Expectation
NET Multiple:	1.63x	

Warburg Pincus Private Equity XII Partnership Review – Buyout

Period Ending: June 30, 2019

Fund Strategy

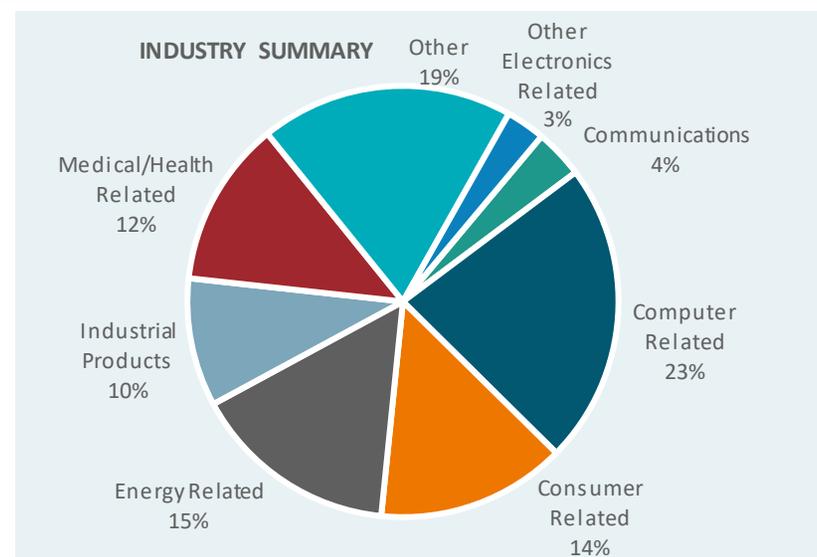
WP XII will continue to invest in both startup and growing companies. Across the range of investments, the aim is to build lasting businesses with increasing operating earnings in growing industries and to generate returns without significant reliance on product or market risk or financial engineering. WP XII will seek to execute its growth-oriented strategy across investment stage (venture capital startups, later stage growth capital, and leveraged buyouts), sector (Technology Media Telecommunications, Consumer and Industrial, Financial Services, Life Sciences, Natural Resources, Real Estate and Other), and region (U.S., Europe, and Asia).

Investment Characteristics

Currency:	USD
Region:	Global
Vintage Year:	2015
Sub-Asset Class:	Buyout / Venture Capital

Funding

Commitment Date:	October 29, 2015
Commitment:	\$ 43,000,000
Contributions:	\$ 33,604,500
Distributions:	\$ 1,884,389
Market Value:	\$ 39,237,036
Unfunded Commitment:	\$ 9,395,500



Portfolio Update

As of June 30, 2019, WP XII has called 78.1%, \$10.5 billion of its committed capital of \$13.4 billion, to invest in 107 companies, which were valued at \$13.6 billion (1.4x gross MOIC). The Fund has generated cumulative net income of \$3.0 billion and has distributed \$582.5 million. The Fund continues to make new and follow-on investments. The two largest new holdings are:

1. Apollo Tyres Ltd. - leading Indian tire manufacturer with a portfolio of strong brands spanning primarily truck, bus and passenger car tires with a focus on the replacement segment. The Fund invested \$80.3 million to acquire a 4.9% ownership interest in the company in June 2019 .
2. IndiaFirst Life Insurance Company Limited – one of the fastest growing life insurance companies in India and was initially established as a JV between Legal & General, Bank of Baroda and Andhra Bank. The Fund invested \$51.1 million to acquire 26.0% ownership interest in the company in February 2019.

Performance

NET IRR:	12.59%	Performance: On Track
NET Multiple:	1.22x	

General Catalyst Group VI Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

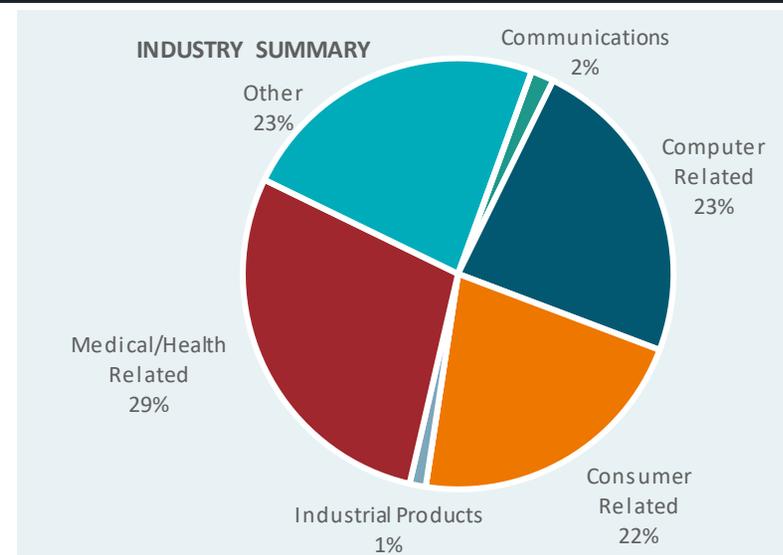
General Catalyst makes investments in innovative, high-growth companies with leading entrepreneurs and brilliant technical founders and visionaries. Specifically, GC seeks to identify and help build companies that will develop breakthrough technologies, establish disruptive business models, and transform industries. GC expects to invest in three spaces: 1) Consumer internet/new media; 2) Software, IT-based technology; and 3) Disruptive technology. While GC expects that a majority of the investments will fall into the above three categories, it also understands and anticipates that commercially significant new technology and other interesting developments will originate in other spaces (e.g. Cleantech). Therefore, the Firm remains active in pursuing high-growth investment opportunities in other creative areas.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2012
Sub-Asset Class:	Early Stage

Funding

Commitment Date:	December 23, 2011
Commitment:	\$ 10,000,000
Contributions:	\$ 9,850,000
Distributions:	\$ 8,966,212
Market Value:	\$ 26,878,400
Unfunded Commitment:	\$ 150,000



Portfolio Update

As of June 30, 2019, the cumulative value of Limited Partners' capital was \$1.8 billion, which represents 364% of contributed capital to date of \$487.6 million. The Fund has distributed \$443.8 million to its Limited Partners, representing 91% of contributed capital.

During the first half of 2019, the Fund made two new investments for \$5.5 million, bringing the total amount invested for the Fund through June 30, 2019 to \$549.1 million.

Livongo successfully commenced trading on July 25, 2019 (the ticker symbol is NASDAQ: LVGO) after its IPO priced above its range at \$28.00 per share, which equates to a market cap of approximately \$3.5 billion. General Catalyst increased its valuation of the Fund's existing holdings in Livongo to the offering price of \$28.00 per share (following a reverse 2-for-1 stock split at the IPO), resulting in an increase of \$289.45 million from \$165.36 million to \$454.81 million.

Performance

NET IRR:	29.94%	Performance: Exceeding Expectation
NET Multiple:	3.64x	

Great Hill Equity Partners IV Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

Great Hill seeks to utilize its proprietary research programs to identify and build relationships with middle market growth businesses in Business and Consumer Services sector that have the potential to become strategically important to larger enterprises. The strategy emphasizes value creation through the combination of organic growth, accretive acquisitions, and improved business practices. Sub-sectors of interest include business processing (payroll, logistics, bill payment, transactions, bankruptcy); internet (online, advertising and media); education; financial technology; media and communications; healthcare; and software. Great Hill targets companies with enterprise values below \$500 million, each requiring equity investments between \$25-100 million.

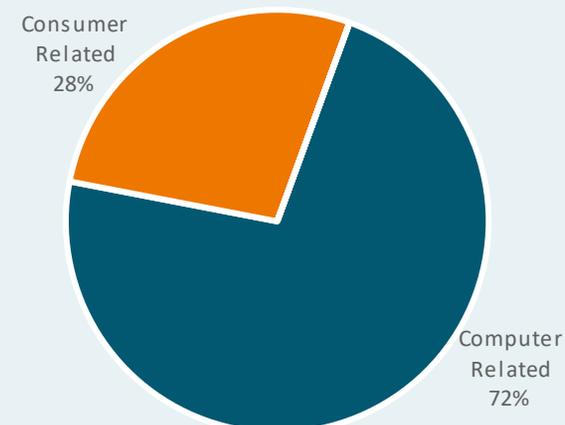
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2008
Sub-Asset Class:	Growth Equity

Funding

Commitment Date:	November 21, 2008
Commitment:	\$ 10,000,000
Contributions:	\$ 10,009,292
Distributions:	\$ 22,685,843
Market Value:	\$ 5,397,111
Unfunded Commitment:	\$ 0

INDUSTRY SUMMARY



Portfolio Update

The Fund has invested \$1.04 billion in 19 portfolio companies which are currently valued at \$3.84 billion. Great Hill IV has fully realized fourteen companies. Including proceeds from partial realizations, the Fund has distributed \$2.6 billion to Limited Partners, representing 227% of contributed capital as of June 30, 2019.

In the second quarter, the \$10.0 million escrow established in relation to the sale of Ascenty to Digital Realty was released, plus an additional \$13.6 million as a result of overages against the capex budget assumed in estimated closing amounts. Net of the Brazilian tax withholding, the common unit members received \$18.3 million, of which Fund IV's pro rata share was \$13.8 million. The Fund made a \$21.0 million distribution to the limited partners in June, which included Ascenty escrow proceeds as well as cash on the balance sheet.

Performance

NET IRR:	26.73%	Performance: Exceeding Expectation
NET Multiple:	2.81x	

Khosla Ventures III

Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

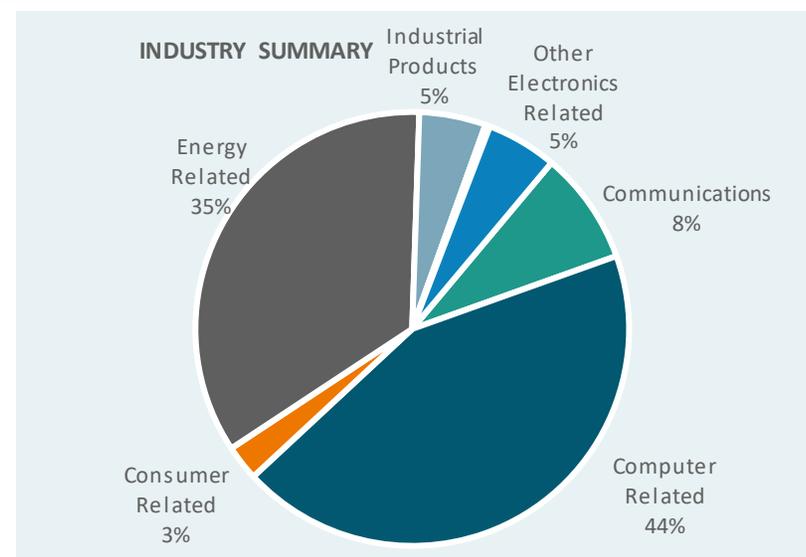
Focus on early stage companies with disruptive technologies capable of impacting multi-billion-dollar markets. Anticipates two-thirds of the fund to be invested in Cleantech companies and the balance committed to the traditional Information Technology segment. Anticipates making 35–40 investments at roughly \$20 million per investment in KV III.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Early/Seed Stage

Funding

Commitment Date:	August 20, 2009
Commitment:	\$ 12,000,000
Contributions:	\$ 11,833,157
Distributions:	\$ 15,998,908
Market Value:	\$ 5,822,820
Unfunded Commitment:	\$ 180,000



Portfolio Update

As of June 30, 2019, KV III has called 98.5% of its \$1.0 billion committed capital. The Fund invested in 53 companies and has 14 active companies remaining. Since inception to date, the Fund has distributed \$1.5 billion, of which \$1.2 billion to its Limited Partners.

1. Square, Inc. (Ticker:SQ) – The Fund distributed 2.3M shares to the Partners at an 11 day average of \$65.12 per share for a total value of \$149.8M. Combined with previously realized proceeds of \$1.1B, the Fund has generated a total value of \$1.5B on the \$30.0M investment, resulting in a 50x Gross MOIC.
2. Boku, Inc. (Ticker: BOKU) – The Fund sold 291K shares at an average price of \$1.51 per share for proceeds of \$440K. Combined with previously realized proceeds of \$5.2M, the Fund has generated a total value of \$12.5M on the \$7.5M investment, resulting in a 1.7x Gross MOIC.

Performance

NET IRR:	10.41%	Performance: Below Expectation
NET Multiple:	1.84x	(Cleantech challenges)

Khosla Ventures IV

Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

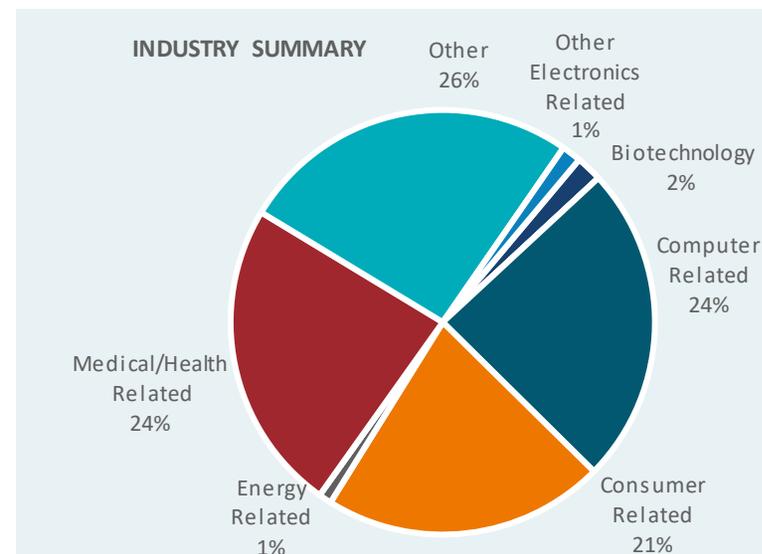
The Fund will invest primarily in Cleantech and Information Technology startups. The Fund will invest in a mix of early through late-stage startups, generally seeking value in early-stage companies and to fund growth of existing portfolio companies as they mature through the late-stage. Emphasis will be placed on investments in new technologies that have the potential to disrupt multi-billion-dollar markets. Anticipates two-thirds of the fund to be invested in Cleantech companies and the balance committed to the Information Technology segment. Fund IV will be making 35-40 investments at roughly \$25 million per investment.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2011
Sub-Asset Class:	Early/Late Stage

Funding

Commitment Date:	June 30, 2011
Commitment:	\$ 15,000,000
Contributions:	\$ 14,715,000
Distributions:	\$ 12,672,210
Market Value:	\$ 29,753,520
Unfunded Commitment:	\$ 285,000



Portfolio Update

As of June 30, 2019, KV IV has called 98.1% of its \$1.0 billion committed capital. The Fund invested in 63 companies and has 40 active companies remaining. Since inception to date, the Fund has distributed \$855.7 million, of which \$758.4 million was distributed to Limited Partners.

1. Nutanix, Inc. (Ticker: NTNX)– The Fund distributed 4.0M shares to the Partners at an 11 day average of \$37.32 per share for a total value of \$149.3M. Combined with previously realized proceeds of \$338.0M, the Fund has a total value of \$526.6M on the \$30.0M investment, resulting in a 17.6x Gross MOIC.

Performance

NET IRR:	22.96%	Performance: Meeting Expectation
NET Multiple:	2.88x	

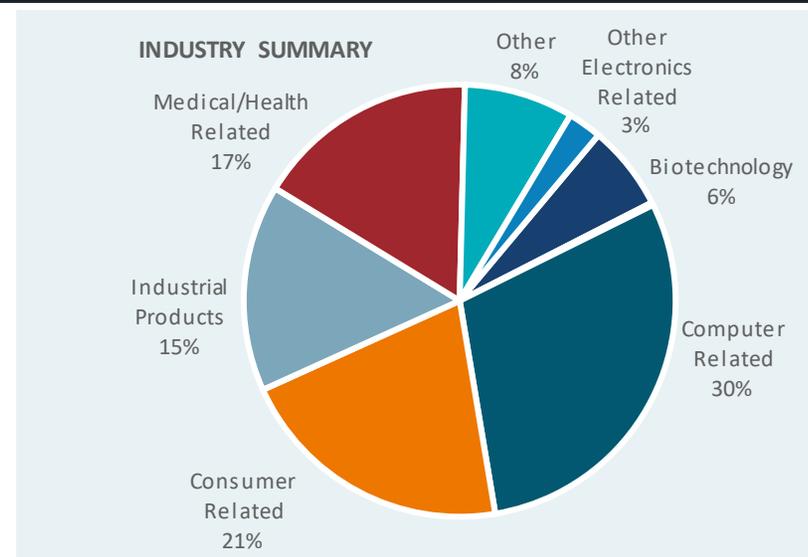
Khosla Ventures V

Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

KV's platform has evolved over time. In addition to ongoing areas strength, enterprise IT and mobile internet, the first two funds primarily emphasized Cleantech investments initially. Over time the Firm broadened its focus on other nascent areas of venture investing by defining new categories such as digital health, robotics, data science/cognitive computing, and food/agriculture.



Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2014
Sub-Asset Class:	Early/Late Stage

Funding

Commitment Date:	August 15, 2014
Commitment:	\$ 10,000,000
Contributions:	\$ 9,100,000
Distributions:	\$ 506,399
Market Value:	\$ 11,659,684
Unfunded Commitment:	\$ 900,000

Portfolio Update

As of June 30, 2019, KV V has called 91.0% of its \$947.9 million committed capital. The Fund invested in 89 companies and has 78 active companies remaining. The Fund continues to make new and follow-on investments and has distributed \$48.0 million, of which \$42.9 million was distributed to LPs.

1. TightDB, Inc. (dba Realm): Acquired by MongoDB, Inc. for \$39.0M. The Fund received \$16.6M in total proceeds. Total invested was \$18.4M, resulting in a 0.9x Gross MOIC.

Performance

NET IRR:	11.46%	Performance: On Track
NET Multiple:	1.34x	

Khosla Ventures VI

Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

KV's platform has evolved over time. In addition to ongoing area strengths, enterprise IT and mobile internet, the first two funds primarily emphasized Cleantech investments initially. Over time the Firm broadened its focus on other nascent areas of venture investing by defining new categories such as digital health, robotics, data science/cognitive computing, and food/agriculture.

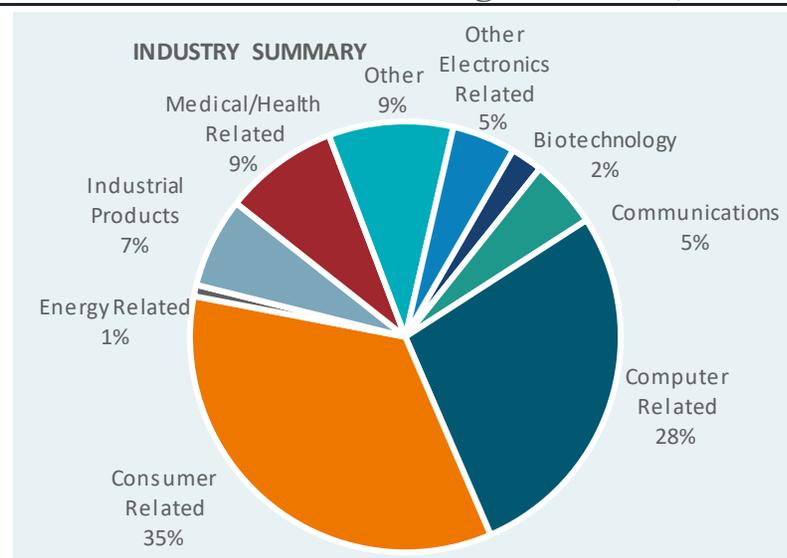
Like prior funds, KV VI and Seed D will invest in primarily early stage companies with some exceptions for mid-stage companies. There is no hard allocation to sectors and the breakdown will depend on the nature of the opportunities that present themselves. Sectors of recent focus include: artificial intelligence / data science, healthtech, financial services, sustainability, 3D printing/manufacturing/robotics. Similar to prior funds, the GP expects to make a large number of investments in each fund, then make highly selective follow-on investments to support its most successful companies. KV has also indicated that while no definitive plans are in place, the GP may form a new series of funds for LPs interested in co-investments in specific portfolio companies. Should such funds materialize, details will be shared at a future date.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2018
Sub-Asset Class:	Early/Late Stage

Funding

Commitment Date:	March 21, 2018
Commitment:	\$ 7,000,000
Contributions:	\$ 1,596,000
Distributions:	\$ -
Market Value:	\$ 1,569,667
Unfunded Commitment:	\$ 5,404,000



Portfolio Update

As of June 30, 2019, the Fund has called \$228.0 million or 22.8% of \$1.0 billion commitments. The Fund invested in 35 companies, 12 of which were invested in the first half of 2019. To name a few largest investments in 2019:

1. OpenAI, L.P. – is building a machine learning system for robotics tasks. The Fund invested \$50.0 million in the company in March 2019.
2. Jetty National Inc. – a financial services company for everyday renter. The Fund invested \$15.0 million in the company's in January 2019.
3. Uhnder, Inc. – a semi-conductor start-up created to disrupt the tremendous sensing functionality required in the self-driving automotive space as well as in its current predecessor, the ADAS (Automatic Driver Assistance Systems) space. The Fund invested \$12.5 million in the company in May 2019.

Performance

NET IRR:	-2.59%	Performance: Too Early
NET Multiple:	0.98x	

Khosla Ventures Seed Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

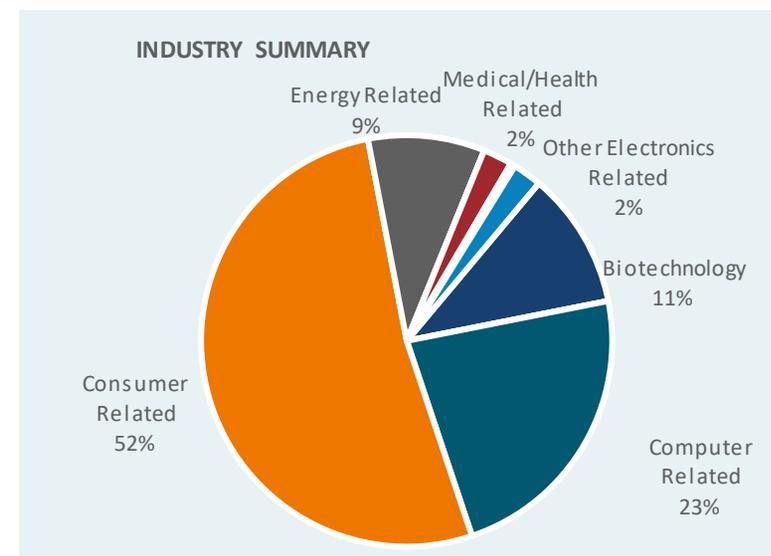
Focus on early stage companies with disruptive technologies capable of impacting multi-billion-dollar markets. Anticipates two-thirds of the fund to be invested in Cleantech companies and the balance committed to the traditional Information Technology segment. Anticipates making approximately 50 investments in KV Seed Fund, focused on higher risk, concept investments, where there is no product and the technology is not proven.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Early/Seed Stage

Funding

Commitment Date:	August 20, 2009
Commitment:	\$ 3,000,000
Contributions:	\$ 3,000,555
Distributions:	\$ 624,210
Market Value:	\$ 3,557,091
Unfunded Commitment:	\$ -



Portfolio Update

As of June 30, 2019, KV Seed has called 100.0% of its \$300.0 million committed capital. The Fund invested in 62 companies and has 18 active companies remaining. The Fund continues to make follow-on investments and has distributed \$69.1 million, of which \$41.6 million to its Limited Partners.

1. Boku, Inc. (Ticker: BOKU) – the Fund sold 277K shares at an average price of \$1.51 per share for proceeds of \$418K. Combined with previously realized proceeds of \$5.0M, the Fund has a total value of \$11.9M on the \$2.0M investment, resulting in a 6.0x gross MOIC.

Performance

NET IRR:	4.82%	Performance: Below Expectation
NET Multiple:	1.39x	(Cleantech challenges)

Khosla Ventures Seed B Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

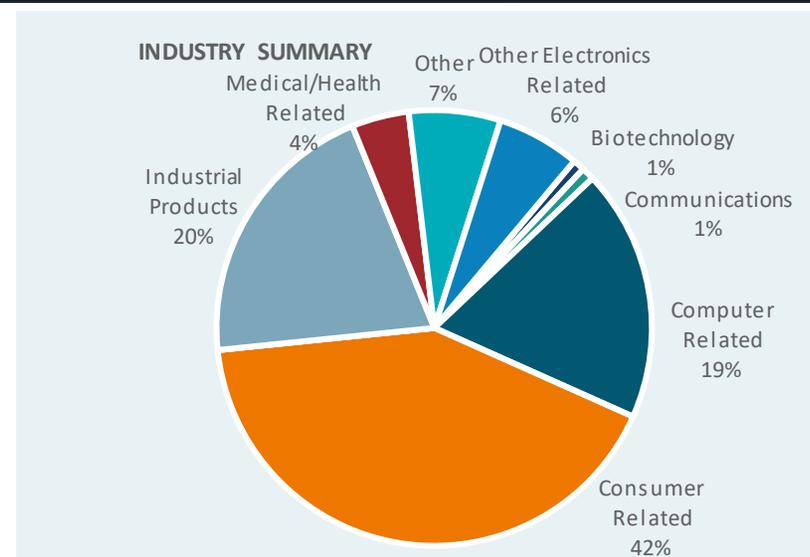
KV seeks to pursue potential opportunities early and make value-oriented investments in startup companies that can disrupt the competitive dynamics in large, multi-billion dollar markets. Discrete investments in companies raising \$10 million or less in a given financing round are allocated to KV's Seed funds, while those in companies raising more than \$10 million are allocated to KV's Main funds. Primary sectors targeted by both types of KV funds include Cleantech (approximately 50% of deals / 75% of invested dollars) and Information Technology (approximately 50% of deals / 25% of invested dollars).

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2012
Sub-Asset Class:	Early/Seed Stage

Funding

Commitment Date:	June 11, 2012
Commitment:	\$ 5,000,000
Contributions:	\$ 4,985,000
Distributions:	\$ 1,716,777
Market Value:	\$ 10,480,839
Unfunded Commitment:	\$ 15,000



Portfolio Update

As of June 30, 2019, KV Seed B has called 99.7% of its \$396.6 million committed capital. The Fund invested in 108 companies and has 61 active companies remaining. The Fund continues to make follow-on investments and has distributed \$136.3 million, of which \$100.1 million was distributed to Limited Partners.

1. Webflow, Inc. – the Fund sold 2.0 million shares on the secondary market for \$20.8 million and distributed proceeds of \$20.0M during the quarter. The Fund had invested \$691.3K, resulting in a 30.1x gross MOIC.
2. Feetz, Inc. - Acquired by Casca Designs, Inc. in the second quarter of 2019. The Fund received 1.4M shares of Series B Preferred Stock in Casca Designs, Inc.
3. TightDB, Inc. - Acquired by MongoDB, Inc. for \$39.0M. The Fund received \$6.0M in total proceeds. Total invested was \$7.0M, resulting in a 0.9x gross MOIC.
4. Wim Yogurt Inc. – In the first quarter of 2019, the company dissolved, and the Fund received \$0.16M in total proceeds resulting in a \$1.6M realized loss.

Performance

NET IRR:	18.91%	Performance: Meeting Expectation
NET Multiple:	2.45x	

Khosla Ventures Seed D Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

KV's platform has evolved over time. In addition to ongoing area strengths, enterprise IT and mobile internet, the first two funds primarily emphasized Cleantech investments initially. Over time the Firm broadened its focus on other nascent areas of venture investing by defining new categories such as digital health, robotics, data science/cognitive computing, and food/agriculture.

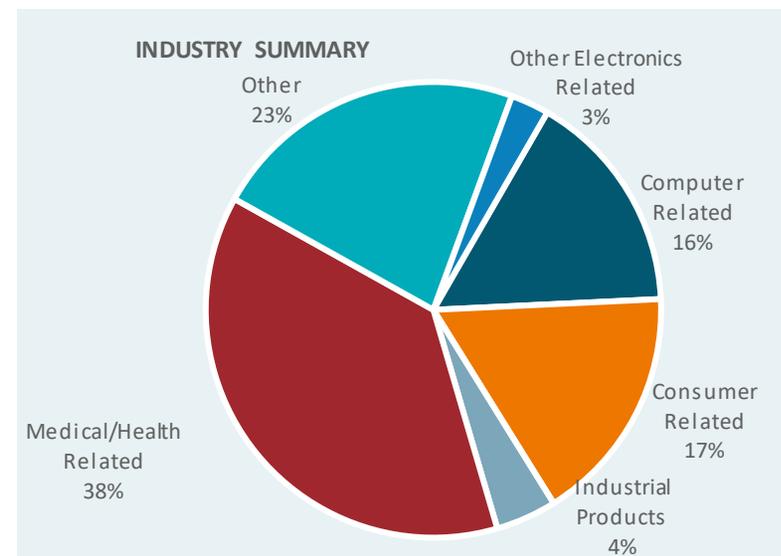
Like prior funds, KV VI and Seed D will invest in primarily early stage companies with some exceptions for mid-stage companies. There is no hard allocation to sectors and the breakdown will depend on the nature of the opportunities that present themselves. Sectors of recent focus include: artificial intelligence / data science, healthtech, financial services, sustainability, 3D printing/manufacturing/robotics. Similar to prior funds, the GP expects to make a large number of investments in each fund, then make highly selective follow-on investments to support its most successful companies. KV has also indicated that while no definitive plans are in place, the GP may form a new series of funds for LPs interested in co-investments in specific portfolio companies. Should such funds materialize, details will be shared at a future date.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2018
Sub-Asset Class:	Early/Seed Stage

Funding

Commitment Date:	March 21, 2018
Commitment:	\$ 3,000,000
Contributions:	\$ 630,000
Distributions:	\$ -
Market Value:	\$ 617,395
Unfunded Commitment:	\$ 2,370,000



Portfolio Update

As of June 30, 2019, the Fund has called \$64.3 million or 21.0% of \$306.0 million commitments and invested \$74.4 in 36 companies and has 35 active companies remaining. In the first half of 2019, the Fund made 19 new investments. To name a few largest investments in 2019:

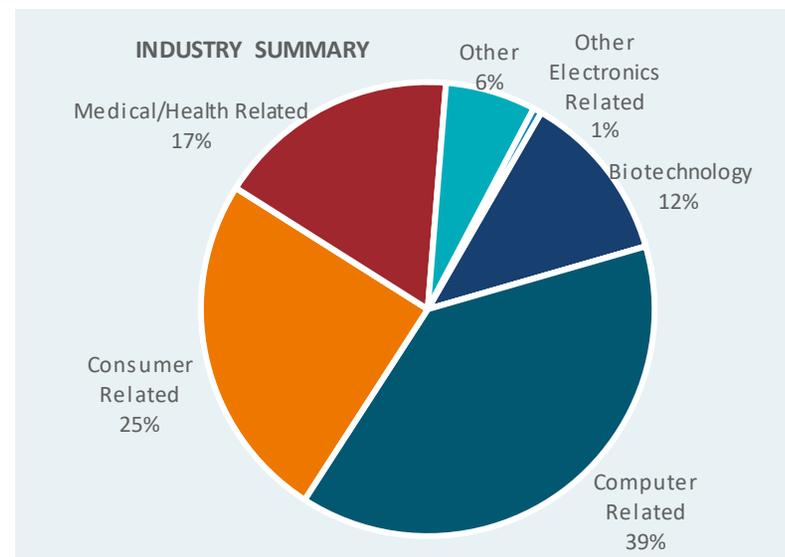
1. Sword Health Technologies, Inc. – develops small motion tracking sensors, easy to set up in the home, intuitive software for the patients to increase adherence, building out a team of physical therapists in the backend to provide coaching/feedback/guidance. The Fund invested \$5.0 million in the company in April 2019.
2. Canopy Labs, Inc. (dba Journal) – organizes all your content and ideas together in one place. Write, save for later, research, and plan projects big and small. The Fund invested \$3.0 million in the company in April 2019.
3. Prellis Biologics, Inc. makes 3D printing tissue and organs. The Fund invested \$3.0 million in the company in March 2019.

Performance

NET IRR:	-3.31%	Performance: Too Early
NET Multiple:	0.98x	

Fund Strategy

NEA seeks to invest across all stages of a company’s formation, from seed through growth. In seed and early-stage deals, NEA seeks companies that have disruptive innovations and game-changing technology, unlimited upside, world class technical talent, and large emerging markets. In later stage companies, NEA looks for clear evidence of market traction, world class management teams, and lower technical and business model risk.



Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Growth / Venture Capital

Funding

Commitment Date:	April 17, 2009
Commitment:	\$ 11,000,000
Contributions:	\$ 10,842,739
Distributions:	\$ 12,968,373
Market Value:	\$ 7,876,614
Unfunded Commitment:	\$ 165,000

Portfolio Update

As of June 30, 2019, The Fund’s remained investments of 48 companies, in aggregate, carrying a value of \$2.5 billion at a cost of \$1.3 billion.

The portfolio continues to find exit opportunities and make distributions to its Limited Partners. To name the two distributions in the first half of 2019:

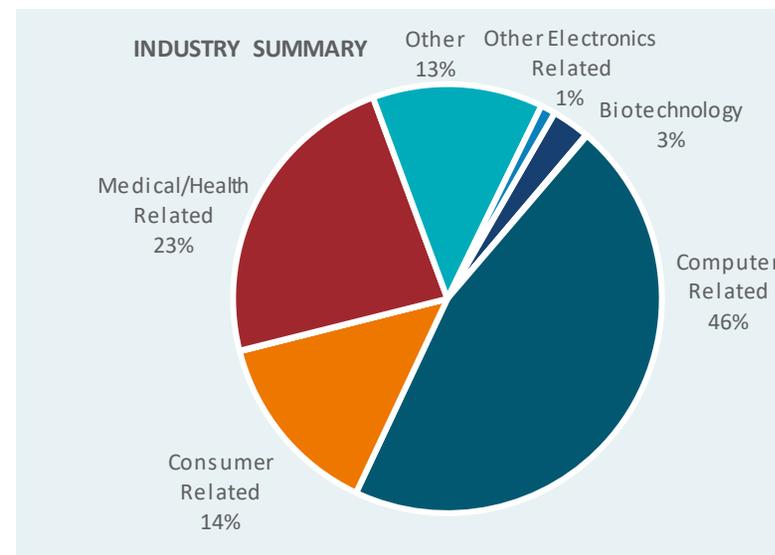
1. On March 5 and May 14, the Partnership distributed 1,105,212 shares of Elastic N.V. (NYSE: ESTC) ordinary shares to the partners in total. The value of the distribution was \$95.0 million. This investment represented a gross MOIC of 2.5x.
2. On June 24, the Partnership distributed 2,500,000 shares of Epizyme, Inc (NASDAQ: EPZM) common stock to the partners. The value of the distribution was \$37.8 million. This investment yielded a gross MOIC of 1.8x.

Performance

NET IRR:	13.88%	Performance: Meeting Expectation
NET Multiple:	1.92x	

Fund Strategy

NEA seeks to invest across all stages of a company’s formation, from seed through growth. In seed and early-stage deals, NEA seeks companies that have disruptive innovations and game-changing technology, unlimited upside, world class technical talent, and large emerging markets. In later stage companies, NEA looks for clear evidence of market traction, world class management teams, and lower technical and business model risk.



Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2012
Sub-Asset Class:	Growth / Venture Capital

Funding

Commitment Date:	June 15, 2012
Commitment:	\$ 11,000,000
Contributions:	\$ 10,343,976
Distributions:	\$ 9,414,723
Market Value:	\$ 13,354,828
Unfunded Commitment:	\$ 660,000

Portfolio Update

As of June 30, 2019, The Fund’s remaining 92 companies, in aggregate, carrying a value of \$4.2 billion at a cost of \$1.9 billion. The portfolio continues to find exit opportunities. To name two:

1. On May 9, the Partnership’s investment in Nginx, Inc. was acquired by F5 Networks, Inc. for \$139.1 million received at closing in cash and another \$1.8 million of estimated realizable cash proceeds in escrow. The transaction represented a 3.8x gross multiple on investment.
2. During the second quarter of 2019, the Partnership received \$4.1 million in cash and 85,874 shares of Guidewire Software, Inc (NYSE:GWRE) common stock related to the prior acquisition of Cyence, Inc. The Partnership sold the shares of common stock on the open market. The transaction represented a 2.0x gross multiple on investment.

Performance

NET IRR:	18.10%	Performance: Meeting Expectation
NET Multiple:	2.20x	

Fund Strategy

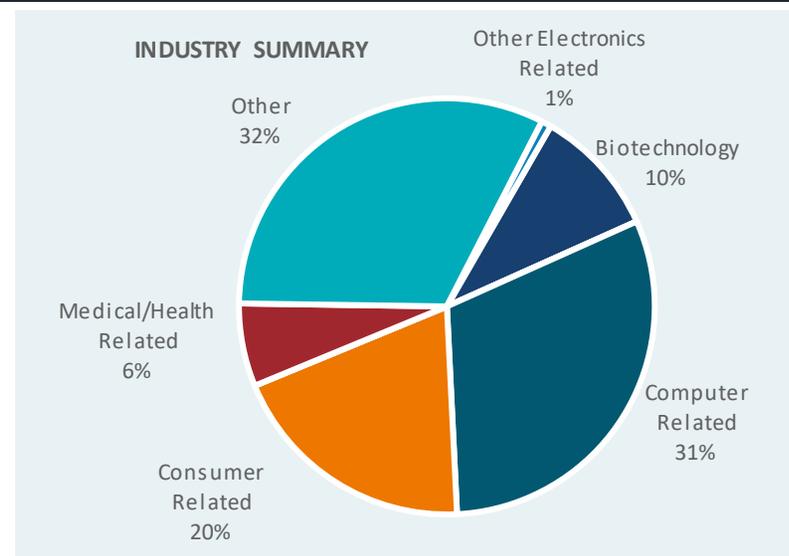
NEA seeks to invest across all stages of a company’s formation, from seed through growth. In seed and early-stage deals, NEA seeks companies that have disruptive innovations and game-changing technology, unlimited upside, world class technical talent, and large emerging markets. In later stage companies, NEA looks for clear evidence of market traction, world class management teams, and lower technical and business model risk.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2015
Sub-Asset Class:	Growth / Venture Capital

Funding

Commitment Date:	March 19, 2015
Commitment:	\$ 5,000,000
Contributions:	\$ 4,425,000
Distributions:	\$ 1,065,150
Market Value:	\$ 6,619,856
Unfunded Commitment:	\$ 575,000



Portfolio Update

The Fund continues to make new and follow-on investments. As of June 30, 2019, the Fund invested in 111 investments, in aggregate, carrying a total value of \$4.5 billion at a cost of \$2.1 billion. The portfolio continues to find exit opportunities and make distributions to its Limited Partners:

1. On May 8, the Partnership distributed \$67.7 million (or 100%) received at closing from the acquisition of Clementia Pharmaceuticals, Inc. by Ipse S.A.. This transaction represented a gross MOIC of 2.3x.
2. On June 19, the Partnership distributed \$127.4 million (or 75%) received at closing from the acquisition of Nightstar Therapeutics plc by Biogen Switzerland Holdings GmbH. This investment represented a gross MOIC of 3.2x.
3. On June 28, the Partnership distributed \$81.1 million (or 75%) received at closing from the acquisition of Genesis Supply Holdings, LLC by Court Square Capital Partners. This investment yielded a gross MOIC of 2.7x.

Performance

NET IRR:	22.77%	Performance: Meeting Expectation
NET Multiple:	1.74x	

Fund Strategy

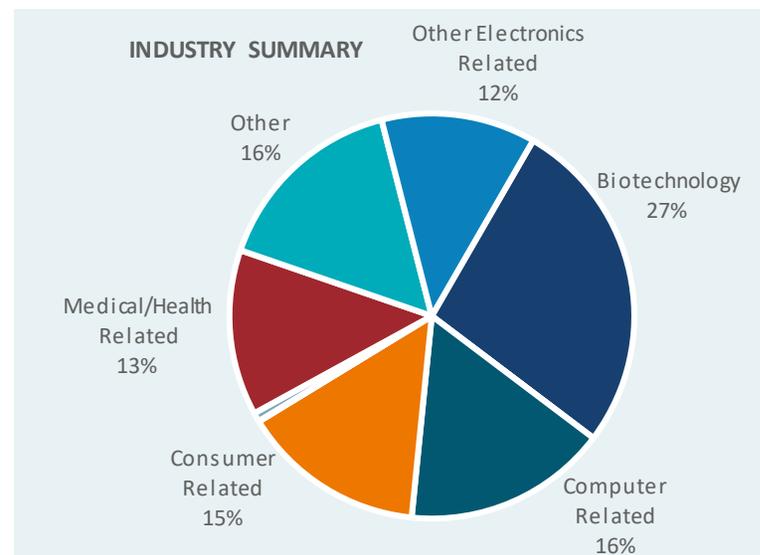
NEA seeks to invest across all stages of a company’s formation, from seed through growth. In seed and early-stage deals, NEA seeks companies that have disruptive innovations and game-changing technology, unlimited upside, world class technical talent, and large emerging markets. In later stage companies, NEA looks for clear evidence of market traction, world class management teams, and lower technical and business model risk.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2017
Sub-Asset Class:	Growth / Venture Capital

Funding

Commitment Date:	May 2, 2017
Commitment:	\$ 15,000,000
Contributions:	\$ 7,762,500
Distributions:	\$ -
Market Value:	\$ 8,702,938
Unfunded Commitment:	\$ 7,237,500



Portfolio Update

As of June 30, 2019, the Fund invested a total of \$1.5 billion in 105 companies, carrying a value of \$2.1 billion.

1. On March 22, the Partnership received \$1.8 million in cash accounted for as return of capital from its Partnership investment in Xiang He Fund I, L.P.
2. On May 7, Trevi Therapeutics, Inc. completed its IPO, at an offering price of \$10.0 per share, on the NASDAQ Exchange under the symbol TRVI. On April 22, prior to the offering, the company completed a 1:9.5 reverse stock split. In conjunction with the IPO, the Partnership purchased an additional 1,000,000 shares of common stock at \$10.0 per share. Additionally, the Partnership exercised a call option to purchase an additional 1,500,000 shares at the IPO price from an existing investor. After the offering and exercised option, the Partnership holds 4,438,562 shares of common stock which are subjected to a 180 day underwriter’s lock-up agreement.

Performance

NET IRR:	12.39%	Performance: Too Early
NET Multiple:	1.12x	

Third Rock Ventures II

Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

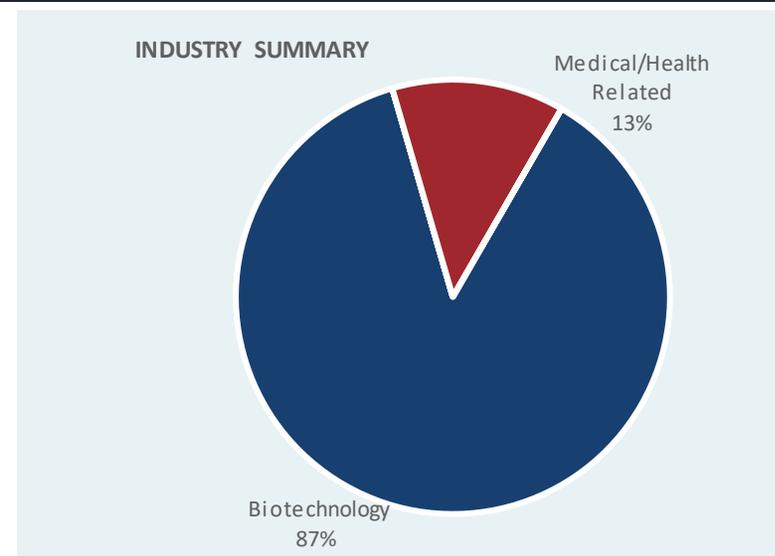
Third Rock Ventures will seek to launch, invest in, and develop transformative healthcare companies, primarily through the Firm's integrated hands-on process. TRV will focus on the creation of high potential, game-changing companies whose unique combination of disruptive science, technology, research and management teams, and overall value make for compelling acquisition targets by the large pharmaceutical, biotech, and device companies.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2010
Sub-Asset Class:	Early / Seed Stage

Funding

Commitment Date:	July 27, 2010
Commitment:	\$ 12,500,000
Contributions:	\$ 12,500,000
Distributions:	\$ 42,178,304
Market Value:	\$ 2,358,831
Unfunded Commitment:	\$ -



Portfolio Update

As of June 30, 2019, the Fund had called 100.0% of its \$426.7 million committed capital and distributed a total of \$1.8 billion to Limited Partners. The Fund's current investments carried a value of \$110.3 million at a cost of \$140.1 million.

Performance

NET IRR:	39.24%	Performance: Exceeding Expectation
NET Multiple:	3.56x	

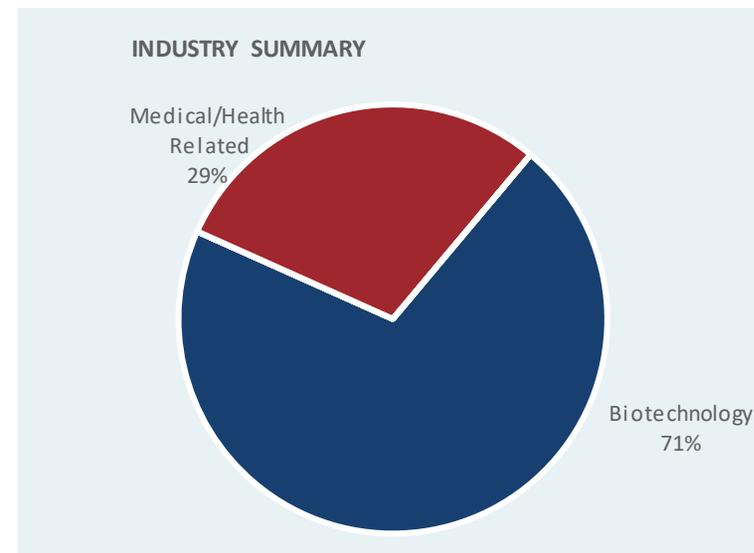
Third Rock Ventures III

Partnership Review – Venture

Period Ending: June 30, 2019

Fund Strategy

Third Rock Ventures will seek to launch, invest in, and develop transformative healthcare companies, primarily through the Firm’s integrated hands-on process. TRV will focus on the creation of high potential, game-changing companies whose unique combination of disruptive science, technology, research and management teams, and overall value make for compelling acquisition targets by the large pharmaceutical, biotech, and device companies.



Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2013
Sub-Asset Class:	Early / Seed Stage

Funding

Commitment Date:	March 11, 2013
Commitment:	\$ 10,000,000
Contributions:	\$ 9,700,000
Distributions:	\$ 6,036,802
Market Value:	\$ 12,896,956
Unfunded Commitment:	\$ 300,000

Portfolio Update

As of June 30, 2019, The Fund had called 97% of committed capital, or \$501.0 million. The Fund continues to make follow-on investments and has distributed \$311.0 million to Limited Partners.

No distribution in the first half of 2019.

Performance

NET IRR:	25.32%	Performance: Exceeding Expectation
NET Multiple:	1.95x	

ABRY Advanced Securities Fund II

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

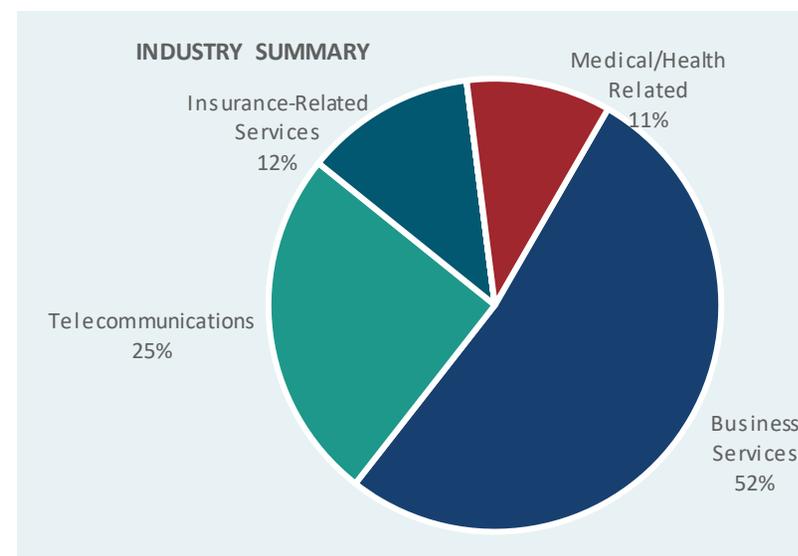
ABRY's Advanced Securities Fund will seek to build a diversified portfolio of performing floating rate senior debt securities issued primarily by high quality, non-investment grade companies in the Firm's target sectors – media, communications, and business services. The GP seeks to finance investments through a combination of Fund capital and external financing, usually in the form of total return swaps with one or more creditworthy banks and financial institutions. The Fund expects to create a diversified portfolio comprising over 100 companies across multiple sub-sectors and acquired over three-plus years to capture vintage diversification.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2011
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	March 31, 2011
Commitment:	\$ 25,000,000
Contributions:	\$ 18,380,418
Distributions:	\$ 27,980,188
Market Value:	\$ 2,688,133
Unfunded Commitment:	\$ 11,042,648



Portfolio Update

As of June 30, 2019, the Fund held \$158.3 million of bank loans at cost in its portfolio, which carried an unrealized market value of \$136.0 million and a par value of \$165.0 million.

The Fund continues to distribute cash proceeds from its total return swap investments. Since inception, ASF II has realized \$945.0 million of cash on net gains.

In the period, the Fund's loan portfolio decreased 28.7% sequentially due to both substantial repayments (e.g. Livingston, Moneygram) and opportunistic sales (e.g. Confie Seguros, Liberty P.R.). There were no additions to the portfolio during the period. At the end of the second quarter, ASF II held positions in 21 companies, down from 30 discrete holdings at the start of the year. The Fund's largest holdings of second lien debt are positions in Crossmark Holdings and HealthPort (a former Abris Partners portfolio company).

Performance

NET IRR:	13.70%	Performance: Exceeding Expectation
NET Multiple:	1.67x	

ABRY Advanced Securities Fund III

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

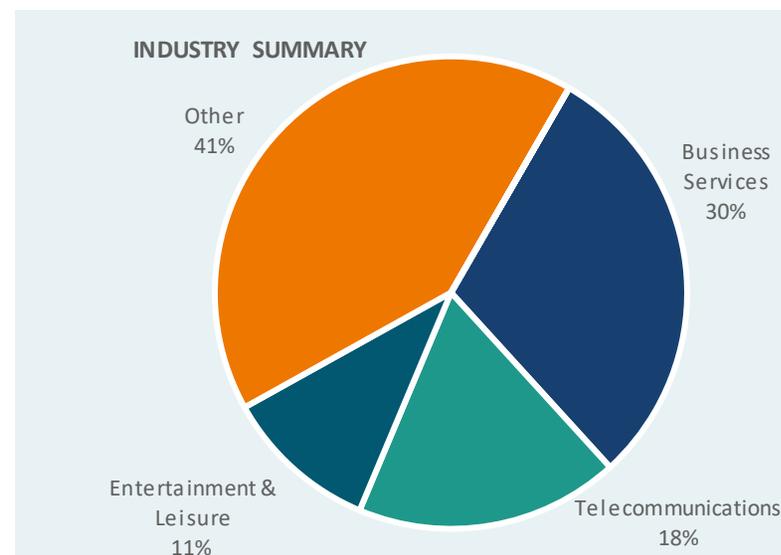
ABRY's Advanced Securities Fund III will continue to implement the same investment strategy as prior Advanced Securities funds, targeting interests in non-investment grade, senior debt securities of over 150 high quality Target Sector companies which ABRY believes will, in aggregate, produce a gross annual IRR of over 20% while maintaining the preservation of capital. The Fund will seek to build a diversified portfolio of performing floating rate senior debt securities issued primarily by high quality, non-investment grade companies in the Firm's target sectors – media, communications, and business services. The GP seeks to finance investments through a combination of Fund capital and external financing, usually in the form of total return swaps with one or more creditworthy banks and financial institutions.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2014
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	April 17, 2014
Commitment:	\$ 20,000,000
Contributions:	\$ 13,327,099
Distributions:	\$ 2,991,341
Market Value:	\$ 14,162,548
Unfunded Commitment:	\$ 9,664,242



Portfolio Update

As of June 30, 2019, the Fund was 75.3% invested, holding \$5,446.3 million of loans at cost, and these positions had an unrealized market value of \$5,383.3 million and a par value of \$5,511.9 million. The Fund held debt positions in 330 separate issuers, down slightly from 341 holdings at the start of 2018.

Since inception, ASF III has realized \$589.4 million of cash basis net gains.

Approximately 96.9% of the ASF III portfolio was invested in first lien senior secured debt positions at the end of June 2019. Most of the non-first lien amount is comprised of second lien secured holdings in the ABRY's core sectors. In the second quarter, the Fund's long-held position in the second lien debt of Livingston International was repaid at par. The Fund's largest holdings of second lien debt now are positions in Confie Seguros and Inmar. The Fund continues to carry a small position in fixed-rate high yield bonds, primarily in the telecommunications sector.

Performance

NET IRR:	9.33%	Performance: Meeting Expectation
NET Multiple:	1.29x	

ABRY Advanced Securities Fund IV

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

ABRY (the “Firm”) was formed as a dedicated and independent private equity investment organization in 1989, focused on the media, communications, information and business services industries and related businesses (the “Target Sector”). ABRY’s Advanced Securities Fund IV will continue to implement the same investment strategy as prior Advanced Securities funds, targeting interests in non-investment grade, senior debt securities of over 200 high quality Target Sector companies which ABRY believes will, in aggregate, produce a gross annual IRR of over 20% while maintaining the preservation of capital and good visibility of prospective returns. The Fund’s investments will be financed through a combination of Fund capital and external financing, usually in the form of total return swaps (“TRS”) with one or more creditworthy banks and financial institutions.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2019
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	September 12, 2018
Commitment:	\$ 33,000,000
Contributions:	\$ 2,671,672
Distributions:	\$ -
Market Value:	\$ 2,421,018
Unfunded Commitment:	\$ 30,328,328

Portfolio Update

As of June 30, 2019, ASF IV held \$592.3m of bank loans at cost in its portfolio, which carried an unrealized market value of \$592.1m and a par value of \$600.9m. In the 2nd quarter, the Fund’s loan portfolio increased by approximately \$350m, which is attributable to secondary trades and newly syndicated loan transactions. ASF IV holds position in 102 discrete loan issues, up from 61 last quarter.

Performance

NET IRR:	-38.76%	Performance: Too Early
NET Multiple:	0.91x	

ABRY Senior Equity IV Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

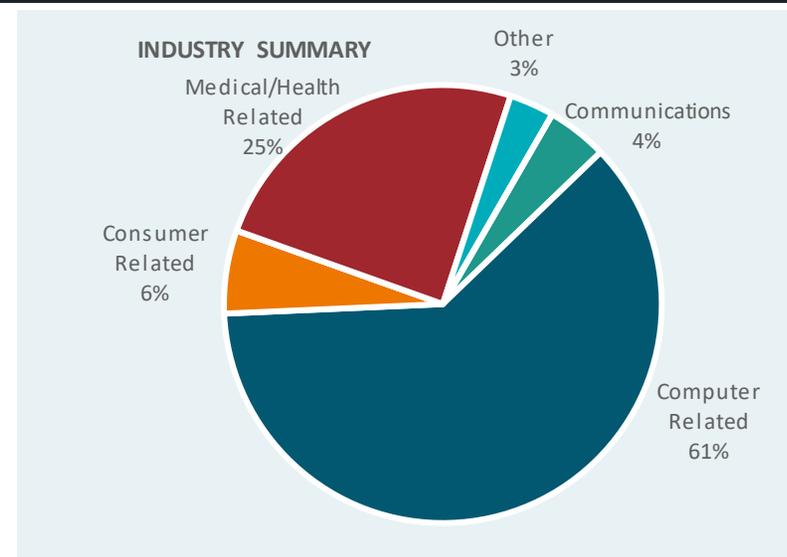
ABRY Senior Equity IV will make investments in high quality companies with equity-like returns (18-25% gross) while assuming risks more characteristic of debt investments. The GP expects the Fund to typically structure investments as preferred stock with a contractual minimum preferred-return in the form of a coupon (typically partial cash pay or payment in kind plus warrants (37% of investments in prior Senior Equity funds), but it may also invest in subordinated debt with warrants (21%), convertible securities (16%), common stock conjunction with senior equity (9%), subordinated debt (8%), and publicly-traded subordinated debt (2%) or other instruments (6%, including senior notes). In addition, because ASE IV's investments are expected to generally receive compensation in the form of upfront fees, quarterly coupon payments, and zero strike-price warrants in the underlying common stock.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2012
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	November 30, 2012
Commitment:	\$ 7,500,000
Contributions:	\$ 7,670,015
Distributions:	\$ 6,774,437
Market Value:	\$ 5,600,697
Unfunded Commitment:	\$ 714,993



Portfolio Update

The Fund includes 28 companies, of which 19 companies are unrealized. In the first six months of 2018, the Fund returned \$147.3 million in proceeds to limited partners through one realization, as well as through escrow proceeds, cash fees, interest, dividends and other proceeds received. To-date, we have realized \$1.0 billion, representing 97% of ASE IV's invested capital. There remains an additional \$961 million of unrealized value in the portfolio.

1. In March, HealthSCOPE was sold to UMR, Inc., a subsidiary of United HealthCare Services, Inc. The purchase price of \$210.0 million, inclusive of a \$20.0 million escrow, represents a multiple of 13.6x LTM EBITDA. The transaction results in total proceeds to ASE IV (including release of all escrows) of \$141.4 million representing a realized gross IRR of 20.8% and a 2.4x multiple on ASE IV's \$59.9 million investment.
2. In July, ROOT Data Center was sold to Compass Data Centers. The purchase price of C\$464.0 million represents a multiple of 31.2x LQA EBITDA. The transaction closed on July 22, 2019, resulting in proceeds and escrow value to ASE IV of \$51.1 million. The total proceeds of \$82.5 million (inclusive of \$31.4 million from the August 2017 recapitalization) represents a 4.3x multiple on \$18.9 million of invested capital and a realized gross IRR of 92.7% IRR.

Performance

NET IRR:	15.83%	Performance: Exceeding Expectation
NET Multiple:	1.61x	

ABRY Senior Equity V Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

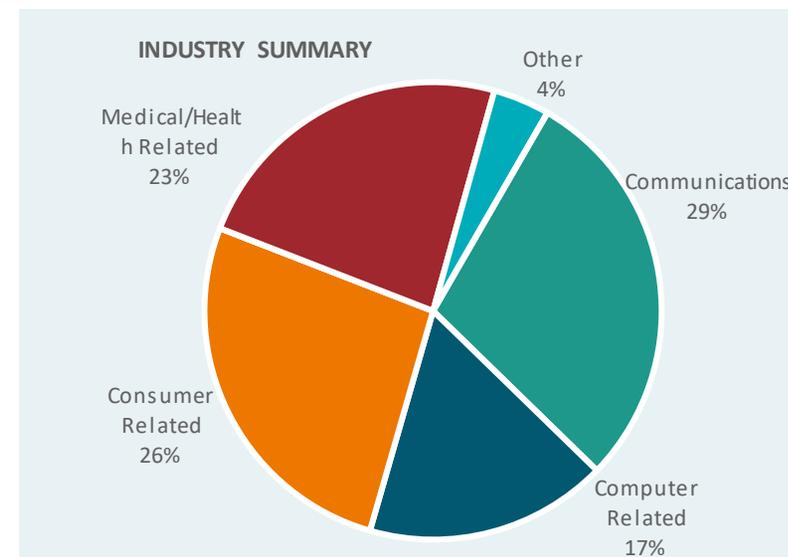
ABRY Senior Equity V will make investments in high quality companies with equity-like returns (18-25% gross on each deal) while assuming risks more characteristic of debt investments. The GP expects the Fund to typically structure investments as preferred stock with a contractual minimum preferred-return in the form of a coupon (typically partial cash pay or payment in kind plus warrants (44% of investments in prior Senior Equity funds), but it may also invest in subordinated debt with warrants (15.2%), convertible securities (22.5%), common stock conjunction with senior equity (6.5%), subordinated debt (5.7%), senior notes (4.4%), and publicly-traded subordinated debt (1.5%). In addition, because ASE V's investments are expected to generally receive compensation in the form of upfront fees, quarterly coupon payments, and zero strike-price warrants in the underlying common stock, ABRY believes a high level of visibility exists as to the minimum expected return of each investment (13-15% gross).

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2017
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	January 19, 2017
Commitment:	\$ 8,250,000
Contributions:	\$ 2,689,360
Distributions:	\$ 812,111
Market Value:	\$ 2,247,844
Unfunded Commitment:	\$ 5,965,839



Portfolio Update

As of June 30, 2019, the Fund included nine portfolio companies. In the first six months of 2019, ASE V made four new investments, deploying \$131.3 million of capital. The Fund signed one new investment in March 2019, which is expected to close in Q4 2019. Currently, the Fund is 32.7% invested. In the first six months of 2019, the equity value of ASE V increased 14.4% compared to year-end 2018, largely driven by strong equity value appreciation at AdSwerve and Screenvision.

In the first six months of 2019, there was \$3.2 million of dividends, interest and fees received.

Performance

NET IRR:	13.46%	Performance: Too Early
NET Multiple:	1.14x	

Catalyst Fund Limited Partners V Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

Founded in 2002, Catalyst Capital Group, Inc. is a Toronto based private equity manager that specializes in control and/or influence investments in distressed and under-valued Canadian situations.

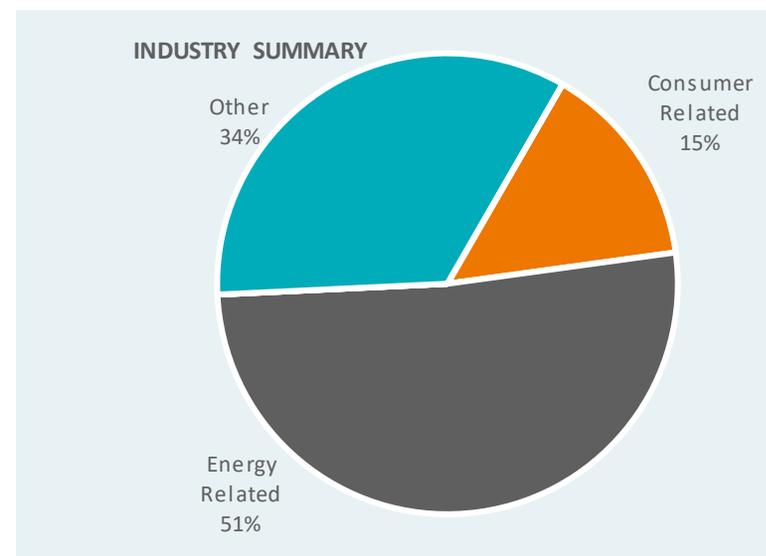
The Fund targets distressed special situation investments ranging from \$20 to \$200 million per underperforming situation similar to Fund IV.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2015
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	September 8, 2015
Commitment:	\$ 50,000,000
Contributions:	\$ 18,750,000
Distributions:	\$ 4,524,760
Market Value:	\$ 14,175,695
Unfunded Commitment:	\$ 33,450,017



Portfolio Update

As of June 30, 2019, there are 4 active investments with a current cost of \$451.7 million and are being valued at \$495.4 million.

Some Updates:

1. Frontera Energy Corporation - In Q1, the company won production sharing contracts with its 50% joint venture partners, GeoPark Ltd., on two blocks in Ecuador. This marks the company's entry into Ecuador, following its entry in Guyana in December 2018.
2. ADVANZ PHARMA Corporation - Revenue and Adjusted EBITDA for Q1 19 have both decreased. Revenue for the quarter was \$136m compared to \$152m last year, and EBITDA for the quarter was \$65m compared to \$72m last year.
3. Callidus Capital Corporation - In January 2019, the company successfully closed the previously announced sale of the commodity division of C&C Resources Inc. for all-cash consideration of approximately \$100m.

Performance

NET IRR:	-0.16%	Performance: Below Expectation / Slow to Deploy
NET Multiple:	1.00x	

Centerbridge Special Credit Partners Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

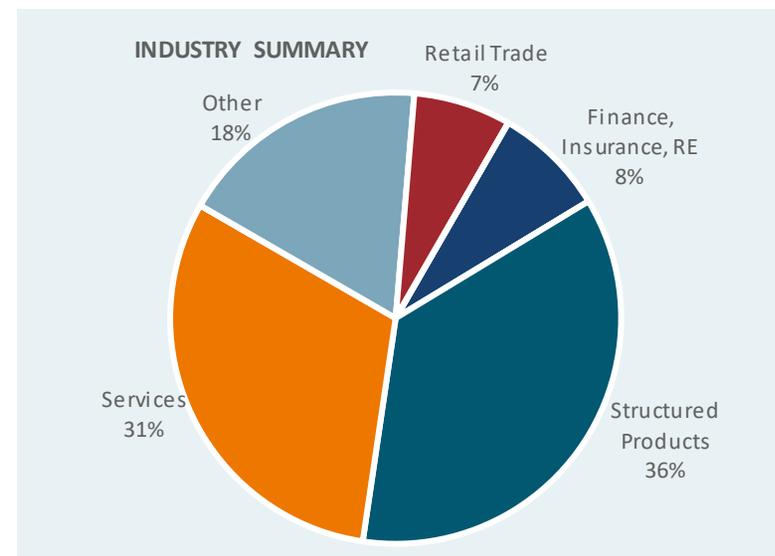
The Fund invests across the spectrum of primarily debt instruments, seeking to identify securities and assets that have been overlooked, misunderstood, or otherwise represent attractive returns potential relative to comparable investment opportunities. The Fund generally targets non-control opportunities, although controlling positions in operating companies may be acquired as warranted from time to time. The focus is on senior or secured debt instruments issued by U.S. domiciled companies primarily, and secondarily on those outside the U.S., particularly in Canada and Europe. Investments may include issuers who are subject of corporate reorganizations, restructurings, Chapter 11 proceedings, liquidity crises, mergers, spin-offs, leveraged buyouts or credit rating changes, or situations when the market may, in the GP's assessment, be mispricing an asset's intrinsic value.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	October 27, 2009
Commitment:	\$ 35,000,000
Contributions:	\$ 33,250,000
Distributions:	\$ 52,328,709
Market Value:	\$ 1,499,240
Unfunded Commitment:	\$ 5,250,000



Portfolio Update

The Fund continues to actively harvest and distribute since the end of its investment period in 2013. To date, Special Credit I has returned \$3.1 billion to Limited Partners, representing 163% of capital contributed. The harvest period of the Fund has been further extended through December 31, 2022.

As of June 30, 2019, the Fund's remaining estimated Net Asset Value was approximately \$114.4 million. The General Partners will not charge additional management fees for period subsequent to December 31, 2018.

The General Partners has formally engaged Lazard Freres & Co. LLC to lead the liquidation process for the Fund. Investors will have option to retain their interest or participate in follow-on investments whereby additional callable amount would not exceed the previously identified follow-on reserves that existed during the Fund's extension period.

Performance

NET IRR:	13.55%	Performance: Meeting Expectation
NET Multiple:	1.62x	

Cerberus Offshore Levered Loan Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

Cerberus seeks to invest in loans to companies which exhibit some or many of the following characteristics: (i) an established operating history; (ii) at least \$75 million in annual revenue; (iii) market leadership with defensible positions; (iv) predictable cash flows; (v) substantial asset or enterprise value relative to loan size; (vi) experienced and incentivized management team; and (vii) a well-capitalized and committed sponsor/equity owner. Debt financing size is generally expected to be between \$25–50 million. A typical loan is expected to be senior or junior secured, with a 3–5 year term and with yield generated from generally floating rate coupons, potential additional PIK components, fees (including upfront, syndication, amendment, and administrative) and equity-linked securities.

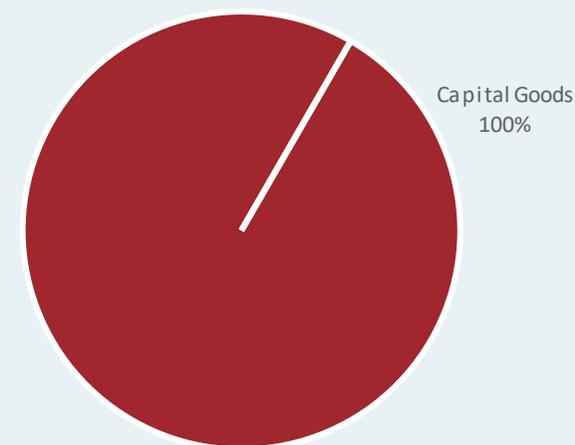
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2011
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	October 28, 2011
Commitment:	\$ 22,317,073
Contributions:	\$ 34,476,622
Distributions:	\$ 36,447,199
Market Value:	\$ 937,670
Unfunded Commitment:	\$ 11,072,663

INDUSTRY SUMMARY



Portfolio Update

As of June 30, 2019, the Fund had 4 loans to 1 borrowers for a total aggregate loan commitments of \$4.1 million. The Fund's net asset total was \$8.1 million. Since inception to date, \$233.8 million or 113.5% of capital called has been distributed to investors. The remaining issuer is:

S&N Communications, Inc. - \$4.1 million, which is marked at cost.

Performance

NET IRR:	4.17%	Performance: Below Expectation
NET Multiple:	1.08x	

EQT Credit Opportunities III

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

EQT Partners was established in 1994 with the backing of the Wallenberg family (prominent Swedish family), AEA Investors and others to leverage the founders' connections in Northern Europe (defined as the Nordic Region, German-speaking Europe and the Benelux Region.)

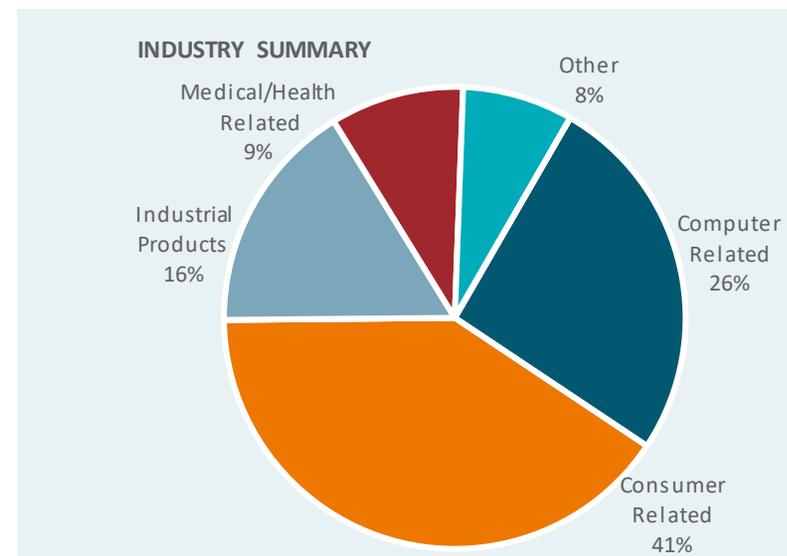
The Fund targets European mid-market companies with EBITDA of €10 million and above. Targeted companies are mostly sponsor led, with strong reason to exist but experiencing some form of complexity or distress. The Fund invests €10M to €15M per company. The portfolio is allocated with 70% focused on purchasing debt with deep value (senior loans, mezzanine and HY) in the secondary market, 15% in bespoke capital where they originate primary sub debt, and 15% in other special situations including originating distressed debt loans for balance sheet transformation (they may undergo distressed for control transaction).

Investment Characteristics

Currency:	EURO
Region:	Europe
Vintage Year:	2017
Sub-Asset Class:	Debt-Related

Funding

Commitment Date:	December 16, 2016
Commitment:	€ 35,000,000 / \$39,798,500
Contributions:	€ 10,262,548 / \$11,828,371
Distributions:	€ 1,166,034 / \$1,318,774
Market Value:	€ 7,425,148 / \$8,443,136
Unfunded Commitment:	€ 25,889,179 / \$29,438,585



Portfolio Update

As of June 30, 2019, the Fund has called €322.0 million, or 25.3% of its €1.272 billion total commitments. With capital calls and its line of credit, the Fund invested €650.9 million in 23 companies, 4 of them have been realized. Including prior realizations, the portfolio was valued at €671.6 million as of June 30, 2019. The Fund continues to make new investments and find opportunities to exit.

In June 2019, the Fund made a distribution to Limited Partners for an amount of €16.5 million.

In December 2018, TPG entered into an agreement to sell TES Global to Providence. The transaction completed in February 2019 and resulted in the full repayment of the Fund's investment, generating total proceeds of approximately EUR 17.8 million and a return on capital deployed of 1.47x.

Following 30 June 2019, the Fund committed to sell a portion of its investment in Project Ferry via the secondary market.

Performance

NET IRR:	-23.13% / -24.39%	Performance:	Slow To Deploy
NET Multiple:	0.84x / 0.83x		

Insight Equity Mezzanine Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

Targeting equity-like total returns (mid- to high-teens) with a more favorable risk profile than equity, seeks to invest in generally unsecured, subordinated debt and senior equity securities issued solely by companies in which Insight has an equity interest—i.e. buyouts, spinouts, and recapitalizations of strategically viable middle-market companies which are initially underperforming, operationally-challenged, or financially-distressed, and subsequently transformed on a path towards growth.

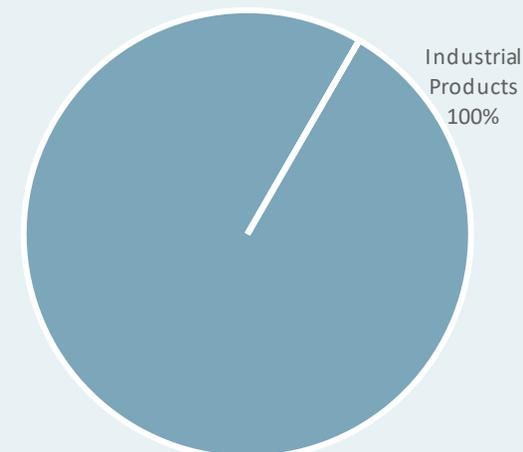
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Mezzanine

Funding

Commitment Date:	April 8, 2009
Commitment:	\$ 5,625,000
Contributions:	\$ 5,577,013
Distributions:	\$ 5,508,486
Market Value:	\$ 2,110,145
Unfunded Commitment:	\$ 296,839

INDUSTRY SUMMARY



Portfolio Update

As of June 30, 2019, The Fund had two remained investments, carrying fair value of \$27.6 million.

1. Micros Solutions LLC – invested \$13.5 million, with a gross proceeds of \$8.5 million realized. The unrealized investment was valued at \$17.9 million.
2. VPG Holdings LLC – invested \$6.0 million, realized \$2.6 million in gross proceeds. The unrealized investment was valued at \$7.6 million.

On October 10, 2018, the Fund distributed 100% of escrow from the sale of Flanders Holdings LLC. Including prior distributions, the investment of \$24.2 million in the company yielded 1.7x gross MOIC.

Performance

NET IRR:	7.04%	Performance: Below Expectation
NET Multiple:	1.37x	

OHA Strategic Credit Fund IB

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

Principal investment targets include both stressed (discounted, lower-risk) and distressed (more discounted, higher-risk) debt securities that may be secured or unsecured. These securities are expected to be actively traded as market conditions and credit qualities change. The GP may also actively participate in reorganization and liquidation proceedings as necessary, thus taking minority or controlling equity stakes in companies—such positions to likely constitute no more than 15-25% of the peak investment portfolio according to the GP.

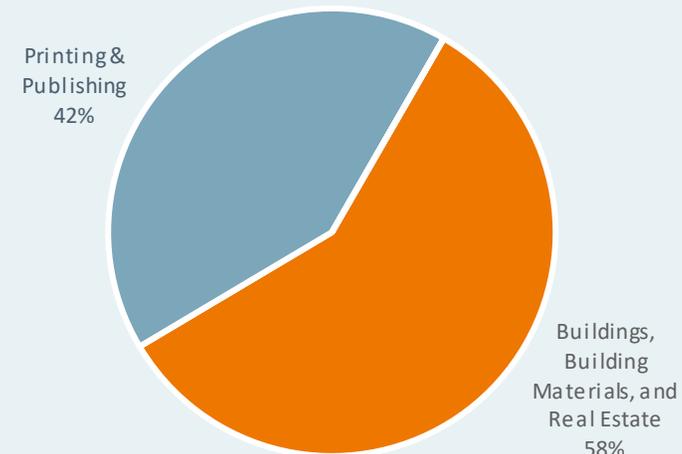
Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2009
Sub-Asset Class:	Opportunistic

Funding

Commitment Date:	August 1, 2009
Commitment:	\$ 20,000,000
Contributions:	\$ 17,902,850
Distributions:	\$ 26,998,570
Market Value:	\$ 159,384
Unfunded Commitment:	\$ 2,097,150

INDUSTRY SUMMARY



Portfolio Update

The Fund continues to focus on liquidating the remaining investments and distributing capital to Limited Partners. As of June 30, 2019, the Fund has distributed \$351.5 million or 160.3% of peak drawn capital. The remaining investments are:

1. Pfeleiderer Germany (Building & Real Estate) – FMV of \$1.1 million, as compared to cost of \$1.8 million.
2. Cengage Learning (Printing & Publishing) – FMV of \$0.8 million, as compared to cost of \$2.1 million.

Performance

NET IRR:	12.68%	Performance: Meeting Expectation
NET Multiple:	1.52x	

OHA Strategic Credit Fund II

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

Oak Hill Advisors (“OHA”) is an independent investment firm specializing in distressed investments, leveraged loans, high yield bonds, structured products, non-performing and performing mortgages, private debt and special situations.

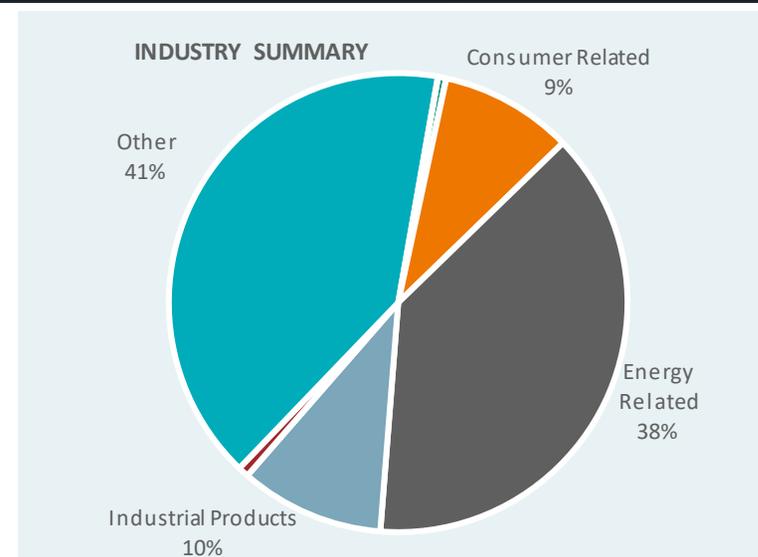
OHA Strategic Credit Fund II will invest in trading, influence, and control opportunities across the capital structure. The portfolio will be constructed based on opportunities across issuer, industry, geography, and risk profile. Individual positions will be approximately 3-5% of the Fund and the portfolio will be comprised of 25-35 core investments.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2017
Sub-Asset Class:	Special Situations

Funding

Commitment Date:	May 24, 2016
Commitment:	\$ 50,000,000
Contributions:	\$ 7,500,000
Distributions:	\$ -
Market Value:	\$ 9,010,561
Unfunded Commitment:	\$ 42,500,000



Portfolio Update

The Fund continues to make new and follow-on investments. In the first half of 2019, the Fund deployed \$461.3 million of capital, bringing total invested capital since inception (including recycling) to \$1.2 billion.

Realization activity was limited during the first half, totaling \$20.9 million of proceeds. As of June 30, 2019, the Fund’s market value of investments was \$935.8 million. Pro forma for the capital call issued on July 18th, 2019, drawn capital was \$675.0 million and subscription financing debt totaled \$53.0 million.

Top-3 contributors to performance during the second quarter of 2019 included:

	Total Gains (in million)
1. Bristow	\$23.7
2. PG&E	\$6.7
3. Revlon	\$3.9

Performance

NET IRR:	24.59%	Performance: Exceeding Expectation
NET Multiple:	1.20x	

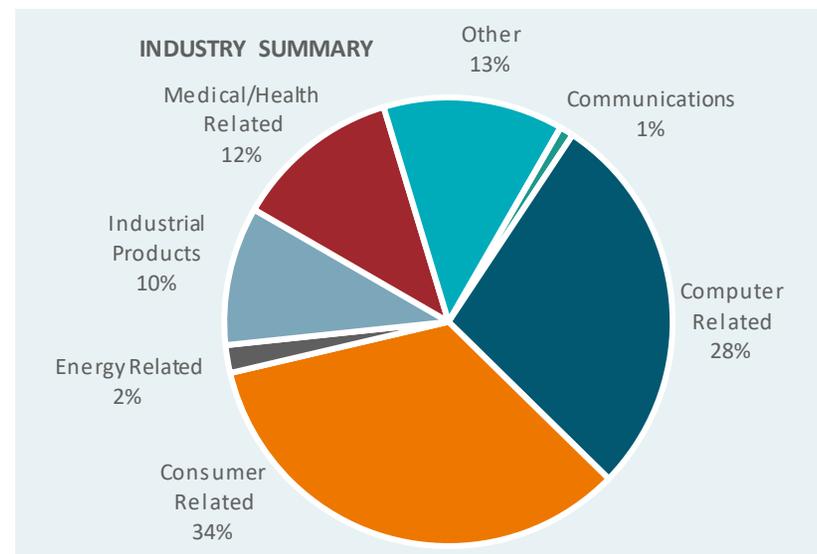
Partners Group Secondary 2008

Partnership Review – Special Situation

Period Ending: June 30, 2019

Fund Strategy

Partners Group seeks to acquire interests in Manager Secondaries (younger private equity funds with substantial undrawn commitments) and Financial Secondaries (mature funds, typically more than 70% invested and holding a number of portfolio companies). The Fund's fundamental principle is to make investments at attractive discounts to intrinsic value, which the Firm provides may be substantially higher or lower than their reported net asset value.

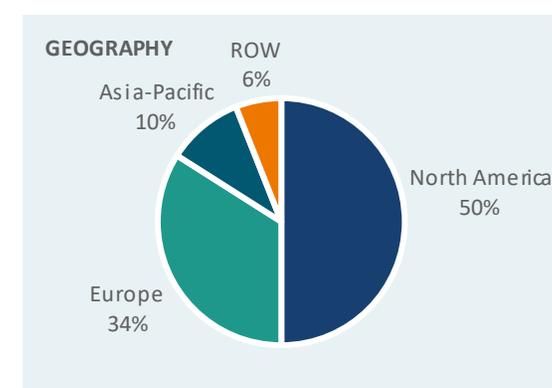
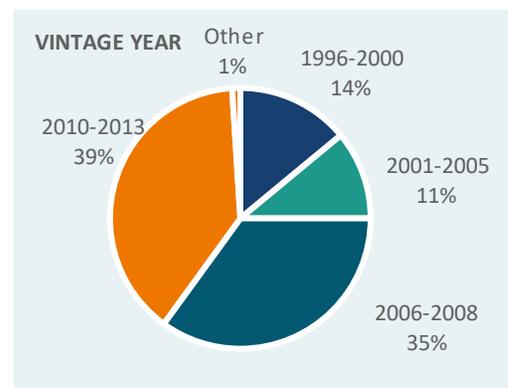


Investment Characteristics

Currency:	Euro
Region:	Global
Vintage Year:	2008
Sub-Asset Class:	Special Situation / Secondaries

Funding

Commitment Date:	December 29, 2008
Commitment:	€ 15,790,940 / \$17,955,878
Contributions:	€ 13,783,565 / \$18,650,571
Distributions:	€ 21,048,586 / \$25,508,474
Market Value:	€ 2,069,297 / \$2,352,998
Unfunded Commitment:	€ 2,062,974 / \$2,345,807



Performance

NET IRR:	11.44% / 8.95%
NET Multiple:	1.68x / 1.49x

Performance: Below Expectation

Peak Rock Capital Credit Fund II

Partnership Review – Debt-Related

Period Ending: June 30, 2019

Fund Strategy

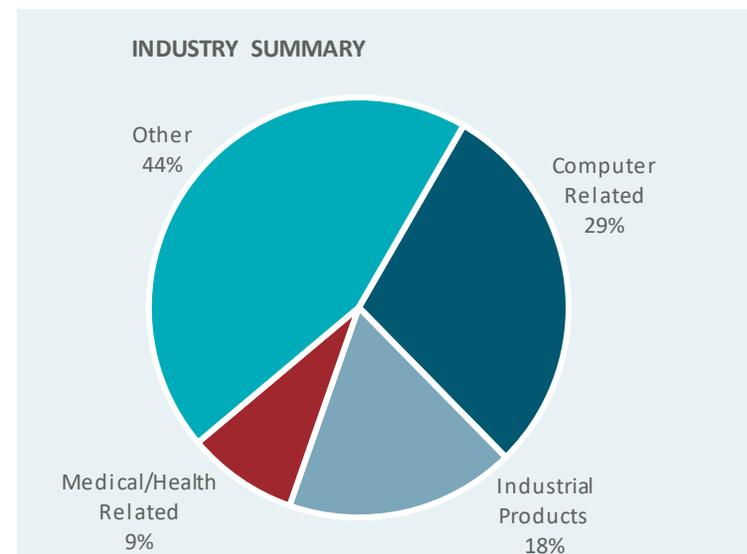
Peak Rock Capital is an Austin, Texas-based private equity investor that is seeking to raise its maiden standalone fund for not-for-control debt investments, Peak Rock Capital Credit Fund II (“Credit Fund II”). The not-for-control debt strategy will focus on both secondary market purchases of distressed and stressed debt (primarily 1st lien bank debt) and the origination of special situations debt (on both a 1st and 2nd lien basis). Peak Rock’s not-for-control investments are currently represented in Capital Fund I as “Other Debt Investments”. The firm sources its debt opportunities transactions through direct sourcing relationships with bank workout groups, BDCs, and institutional lenders. Peak Rock also sources debt opportunities through sell-side distressed debt brokers, as well as investment bankers representing the debt issuers.

Investment Characteristics

Currency:	USD
Region:	North America
Vintage Year:	2017
Sub-Asset Class:	Special Situations

Funding

Commitment Date:	December 13, 2017
Commitment:	\$ 8,750,000
Contributions:	\$ 1,369,803
Distributions:	\$ 606,040
Market Value:	\$ 602,323
Unfunded Commitment:	\$ 7,380,965



Portfolio Update

As of June 30, 2019, the Fund has invested \$61.2 million across 1 Healthcare loan, Information Services loan, 5 Real Estate loans, 1 Logistics loan, and 1 Technology loan. The GP has received \$10.8 million from the technology loan.

NET IRR:	-32.23%	Performance:	Below Expectation
NET Multiple:	0.88x		(Slow to Deploy)

- **As of June 30, 2019, the Private Equity Portfolio is below its neutral target allocation of 9.0%, as commitments continue to be made to various funds. The allocation target increased from 6.0% to 9.0% in September 2017.**



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2019

Real Assets Review

Alameda County Employees' Retirement Association

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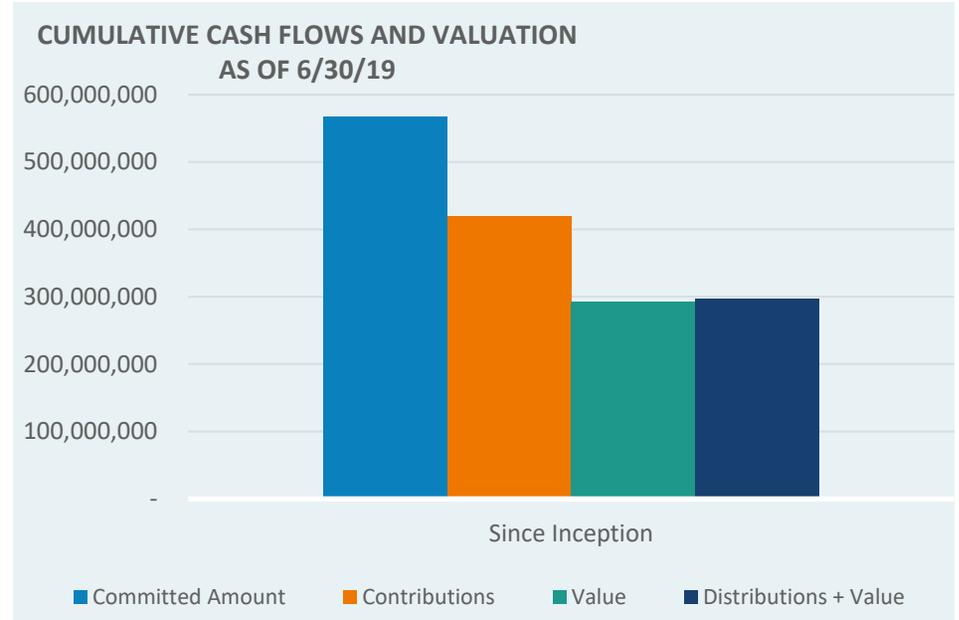
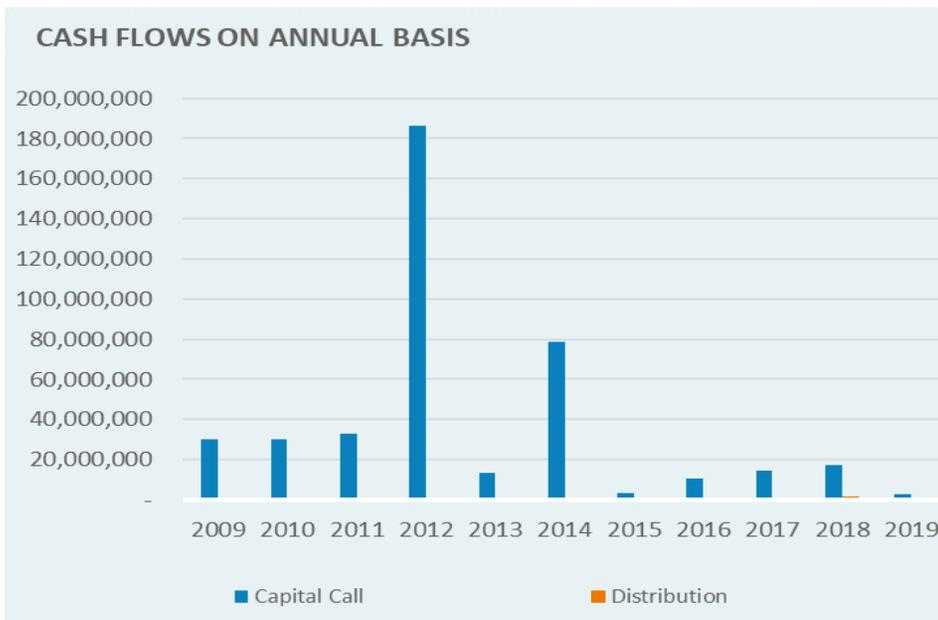
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- RA Portfolio Diversification by Strategy
- RA Portfolio Diversification by Geography
- RA Portfolio Diversification by Vintage Year

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Performance

- ACERA’s Real Asset Pool has produced a -5.26% IRR since inception. The portfolio’s poor performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and from earlier investments in energy (Sheridan). More recent investments in CIM Infrastructure, Quantum Energy, and ISQ Global Infrastructure have emerged from their j-curve but are still too early in their fund life to gauge performance.
- The commitment to Taurus Mining Finance II is ACERA’s first mining investment. Taurus’ strategy also helps to mitigate the broader portfolio’s j-curve due to the unique cash flow structure within project finance loans.



Real Assets Performance vs. Pooled Benchmark IRR

Period Ending: June 30, 2019

	1-Year	3-Year	5-Year	10-Year	Since Inception
Natural Resources Funds	-28.20%	-19.68%	-15.79%	N/A	-15.43%
<i>S&P Global Natural Resources Index¹</i>	-4.20%	8.52%	1.91%	2.09%	2.09%
Infrastructure Funds	7.10%	N/A	N/A	N/A	5.29%
<i>S&P Global Infrastructure Index¹</i>	18.30%	9.02%	9.02%	9.02%	9.02%
Liquid Pool Funds	-11.73%	-1.27%	-7.10%	-4.95%	-4.82%
<i>Bloomberg Commodity Index¹</i>	-6.75%	-2.18%	-9.14%	-6.89%	-6.78%
Total Real Assets	-12.41%	-2.59%	-7.34%	-5.38%	-5.26%

¹ Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 6/30/2019. Analysis provided by Solovis.

Real Assets Performance vs. Peer Benchmark

Period Ending: June 30, 2019

Investment Name	Vintage Year	Contributed Percentage ³	Commitment	Contributions	Distributions	Reported Value	Net IRR	Upper Quartile*	Median Quartile*	Lower Quartile*	TVPI ⁴	Upper Quartile*	Median Quartile*	Lower Quartile*	DPI ⁵	Upper Quartile*	Median Quartile*	Lower Quartile*
Natural Resources Funds¹																		
Energy Funds																		
Quantum Energy Partners VII	2017	41%	31,818,182	13,391,512	213,055	13,588,796	2.72	21.03	4.08	-8.46	1.03	1.30	1.05	0.91	0.02	0.12	0.01	0.00
Quantum Energy Partners VII Co-Investment Fund, LP	2017	28%	3,181,818	882,121	1,285	870,552	-0.82	21.03	4.08	-8.46	0.99	1.30	1.05	0.91	0.00	0.12	0.01	0.00
Sheridan Production Partners II-B, L.P.	2010	100%	24,000,000	24,840,000	1,680,000	0	0.00	10.64	1.75	-4.38	0.07	1.60	1.12	0.84	0.07	0.89	0.53	0.16
Warburg Pincus Energy, L.P.	2014	73%	15,000,000	10,860,000	936,542	12,058,281	8.18	15.06	9.74	2.75	1.20	1.34	1.23	1.09	0.09	0.48	0.35	0.10
Mining Funds																		
Taurus Mining Finance Fund No.2**	2019	0%	30,000,000	0	0	0	0.00	N/A	-6.70	N/A	0.00	N/A	0.93	N/A	0.00	N/A	0.00	N/A
Subtotal Natural Resources Funds			104,000,000	49,973,633	2,830,881	26,517,629	-15.43%				0.59x				0.06x			
Subtotal Natural Resources Funds ex. Sheridan			80,000,000	25,133,633	1,150,881	26,517,629	6.04%				1.10x				0.19x			
Infrastructure Funds²																		
CIM Infrastructure Fund II, L.P.	2016	23%	35,000,000	8,649,221	1,013,449	9,039,276	4.58	N/A	8.19	N/A	1.16	N/A	1.14	N/A	0.12	N/A	0.06	N/A
ISQ Global Infrastructure Fund II, L.P.	2018	25%	40,000,000	11,016,787	1,028,624	10,965,884	13.50	N/A	-4.38	N/A	1.09	N/A	0.97	N/A	0.09	N/A	0.00	N/A
EQT Infrastructure IV (No.2) USD SCSp	2019	4%	40,000,000	1,629,942	0	1,275,567	N/A	N/A	N/A	N/A	0.78	N/A	N/A	N/A	0.00	N/A	N/A	N/A
Subtotal Infrastructure Funds			115,000,000	21,295,950	2,042,073	21,280,727	5.29%				1.10x				0.10x			
Liquid Pool Funds																		
Commodities Funds																		
Gresham Onshore ETAP Fund	2011	100%	60,800,000	60,800,000	0	38,204,004	-6.92				0.63				0.00			
Gresham TAP Fund LLC Class C	2009	100%	62,900,000	62,900,000	0	49,821,337	-2.45				0.79				0.00			
Risk Parity																		
AQR Customized Real Return Offshore Fund, L.P.	2012	100%	223,979,858	223,979,858	0	156,198,951	-5.21				0.70				0.00			
Subtotal Liquid Pool Funds			347,679,858	347,679,858	0	244,224,292	-4.82%				0.70x				0.00x			
Total Real Assets			566,679,858	418,949,441	4,872,954	292,022,648	-5.26%				0.71x				0.01x			

* Source: Thomson Reuters C/A universes as of 6/30/19

** New commitment - no cash flow activity yet.

¹ Thomson Reuters C/A universe: Global Natural Resources Funds as of 6/30/19.

² Thomson Reuters C/A universe: Global Infrastructure Funds as of 6/30/19.

³ Contributions as a percentage of Commitment.

⁴ Total value over paid-in (TVPI). The gross TVPIs are calculated as follows: [unrealized value + realized proceeds]/[capital drawn down].

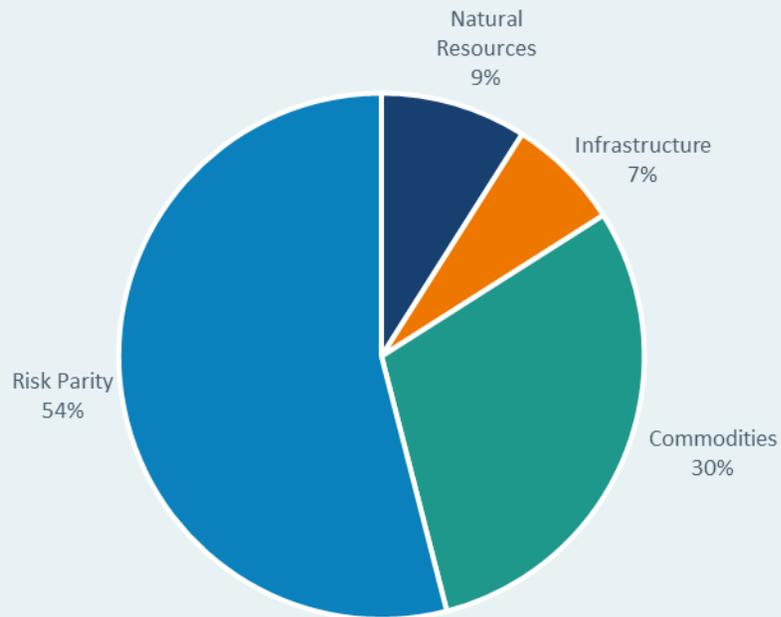
⁵ Distributions over paid-in (DPI). The gross DPIs are calculated as follows: [realized proceeds]/[capital drawn down].

Shaded areas represent the partnership quartile rankings against the appropriate Venture Economic Universe.

Analysis provided by Solovis. All amounts in U.S. dollars.

Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Natural Resources	104,000,000	26,517,629	9.1%
Infrastructure	115,000,000	21,280,727	7.3%
Commodities	123,700,000	88,025,341	30.1%
Risk Parity	223,979,858	156,198,951	53.5%
Total Portfolio	566,679,858	292,022,648	100.0%

REAL ASSETS PORTFOLIO: CURRENT EXPOSURE

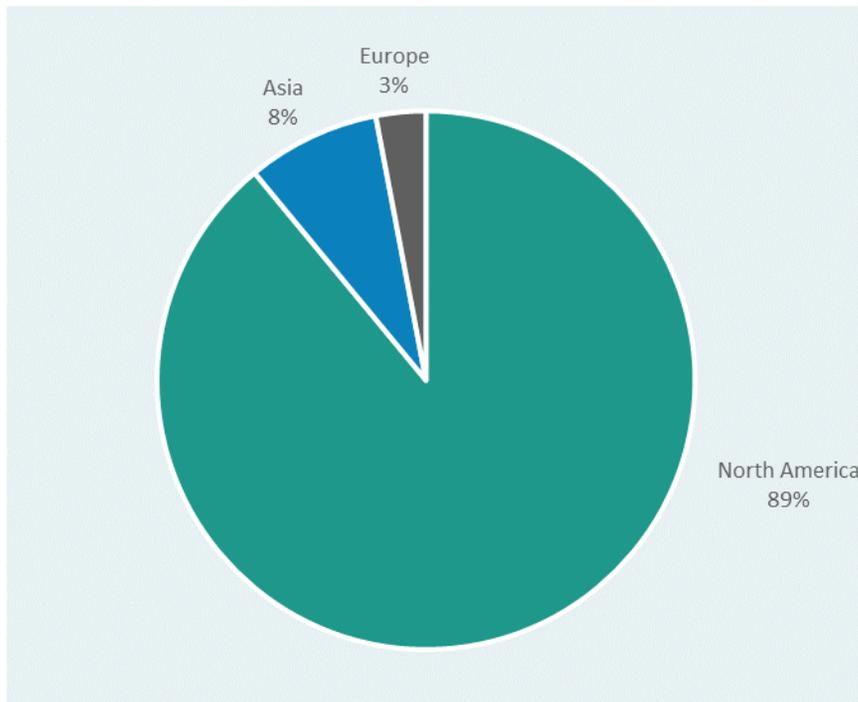


Geography Portfolio Diversification

Period Ending: June 30, 2019

Geography	Reported Fair Value
North America	42,581,745
Asia	3,744,075
Europe	1,472,536
Total Portfolio*	47,798,356

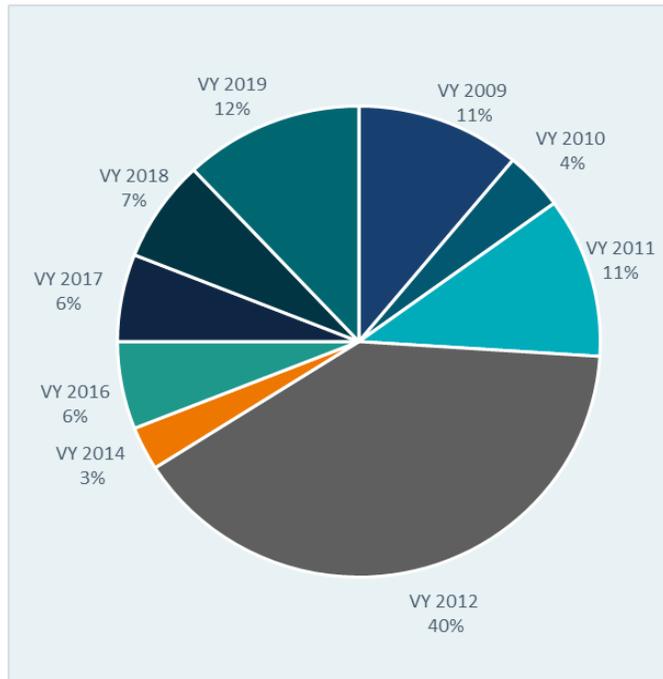
* Excludes Liquid assets.



Vintage Year Portfolio Diversification

Period Ending: June 30, 2019

Vintage Year	Commitment as of 6/30/19	% of Portfolio Commitment	Reported Value as of 6/30/19
2009	62,900,000	11.1%	49,821,337
2010	24,000,000	4.2%	0
2011	60,800,000	10.7%	38,204,004
2012	223,979,858	39.5%	156,198,951
2014	15,000,000	2.6%	12,058,281
2016	35,000,000	6.2%	9,039,276
2017	35,000,000	6.2%	14,459,348
2018	40,000,000	7.1%	10,965,884
2019	70,000,000	12.4%	1,275,567
Total Portfolio	566,679,858	100%	292,022,648

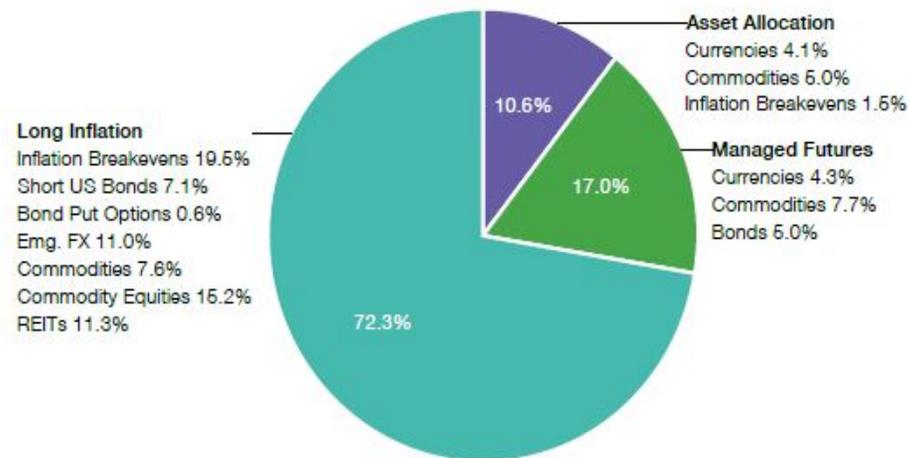


AQR Real Return Partnership Review – Risk Parity

Period Ending: June 30, 2019

Fund Strategy

AQR Real Return Strategy seeks to provide high return in periods of rising inflation. The Fund seeks to maintain strategic diversified risk allocations through time utilizing inflation-sensitive assets. The strategy focuses on liquid investments which include exchange-traded equities, futures, government bonds, currency forwards and swaps.



*provided by AQR

Investment Characteristics

Currency:	USD
Region:	Global
Sub-Asset Class:	Risk Parity

Funding

Commitment Date:	February 1, 2012
Commitment:	\$ 223,979,858
Contributions:	\$ 223,979,858
Distributions:	\$ -
Market Value:	\$ 156,198,951
Unfunded Commitment:	\$ -

Performance:	
NET IRR:	-5.21%
NET Multiple:	0.70x

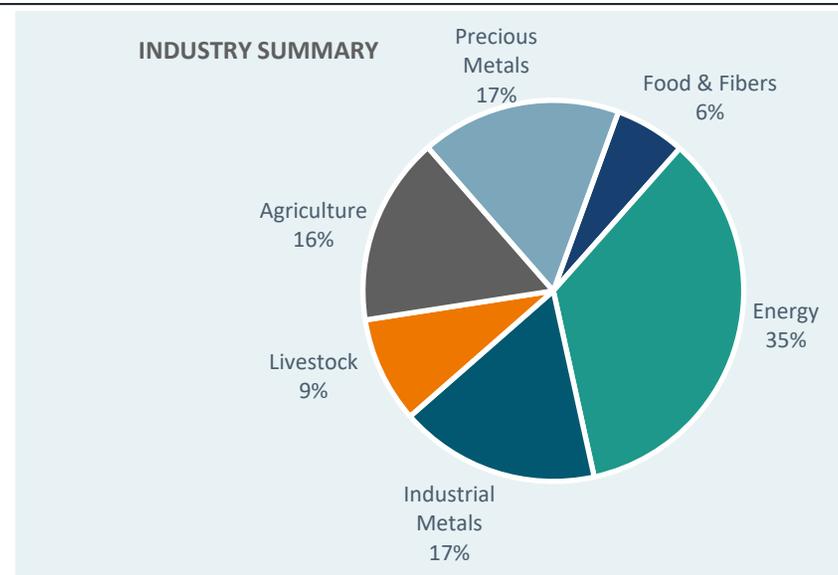
Gresham Onshore ETAP

Partnership Review - Commodities

Period Ending: June 30, 2019

Fund Strategy

Gresham's ETAP strategy is a more flexible and dynamic version of their flagship TAP strategy. ETAP is a long-only, diversified commodity product that utilizes term structure monetization, calendar spread trades, and relative value trades among commodity contracts to extract value from the commodity markets. ETAP rolls futures contracts forward and backward to maximize risk-adjusted returns, factoring in seasonality, fungibility and prevailing interest rates. All trades are executed using liquid commodity futures contracts. Commodity sectors are constrained as part of the overall program, and individual commodities are also constrained within their sectors. No single sector can represent more than 35% and no two sectors can represent more than 60% of the portfolio.



Investment Characteristics

Currency:	USD
Region:	Global
Vintage Year:	2011
Sub-Asset Class:	Commodities

Funding

Commitment Date:	September 30, 2011
Commitment:	\$ 60,800,000
Contributions:	\$ 60,800,000
Distributions:	\$ -
Market Value:	\$ 38,204,004
Unfunded Commitment:	\$ -

Performance:

NET IRR:	-6.92%
NET Multiple:	0.63x

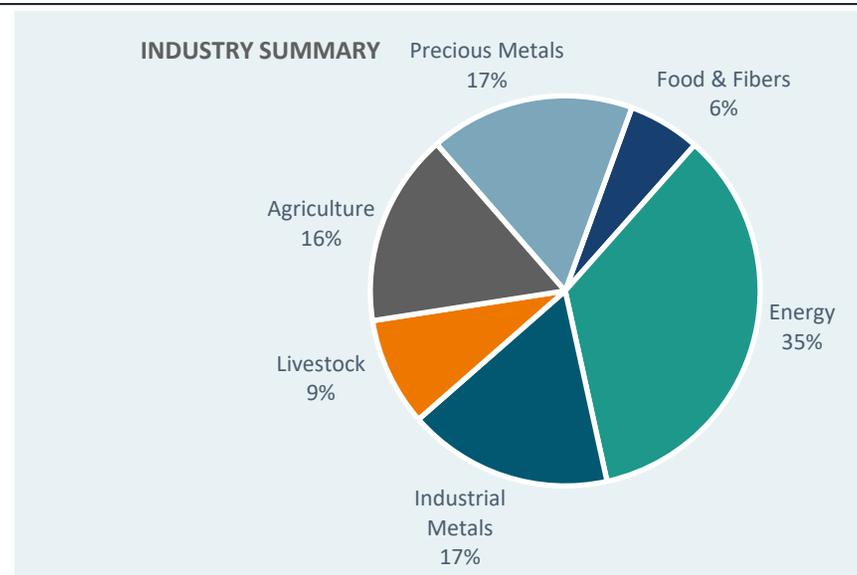
Gresham Onshore TAP

Partnership Review - Commodities

Period Ending: June 30, 2019

Fund Strategy

Gresham developed a custom "index" that utilizes the methodology Henry Jarecki created to provide long-only exposure to commodity futures. The strategy is expected to provide better risk-adjusted returns than the current, widely-followed GSCI and Bloomberg Commodity indices. Tangible Asset Program ("TAP") is a systematic rules-based active approach that is designed to maximize investability, scalability, and transparency. TAP, at the beginning of each year, selects the top four commodities from each of six commodity sectors based on world production, volume, and dollar volume of exchange-traded futures (liquidity).



Investment Characteristics

Currency:	USD
Region:	Global
Fund Inception:	2009
Sub-Asset Class:	Commodities

Funding

Commitment Date:	April 30, 2009
Commitment:	\$ 62,900,000
Contributions:	\$ 62,900,000
Distributions:	\$ -
Market Value:	\$ 49,821,337
Unfunded Commitment:	\$ -

Performance:

NET IRR:	-2.45%
NET Multiple:	0.79x

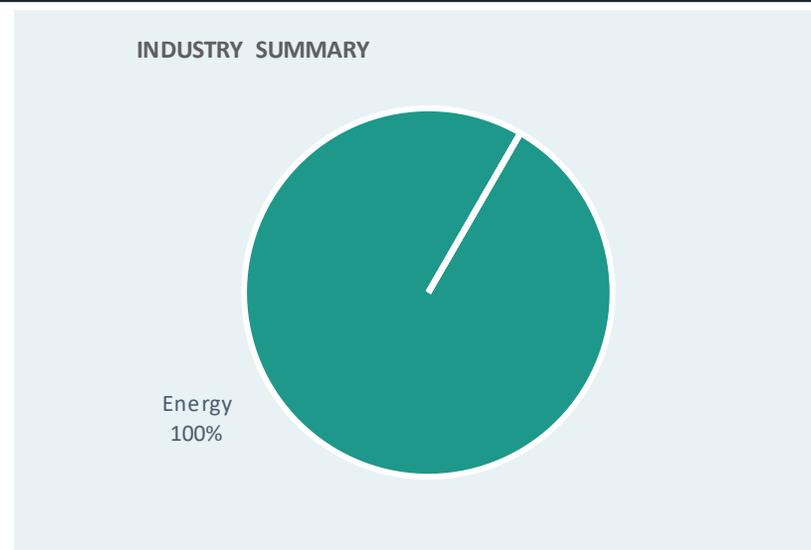
Quantum Energy Partners VII

Partnership Review – Energy

Period Ending: June 30, 2019

Fund Strategy

Quantum has formed their seventh North American energy focused fund, with a target of \$3.5 billion. The strategy seeks to deploy capital in upstream, midstream and power investments run by experienced management teams. Fund VII will seek to deploy 60-70% of the Fund’s capital in upstream energy opportunities in on-shore North America oil/gas plays with midstream, oil-field services and power deals comprising the fund’s balance. Quantum’s process begins with a top-down assessment of the macro and micro fundamentals, trends and themes in each sector of the energy industry. They will then leverage their brand and networks to back management teams to manage their projects. Afterwards, the GP plans to work diligently to support and add value to these management teams and thereby forge long-term relationships so that Quantum has the ability to work with the same team in another venture.



Investment Characteristics

Currency:	USD
Region:	North America
Fund Inception:	2017
Sub-Asset Class:	Energy

Funding

Commitment Date:	October 2, 2017
Commitment:	\$ 31,818,182
Contributions:	\$ 13,391,512
Distributions:	\$ 213,055
Market Value:	\$ 13,588,796
Unfunded Commitment:	\$ 18,647,444

Portfolio Update

As of June 30, 2019, the Fund invested \$2.0 billion across 20 energy-related investments, which were valued at \$2.2 billion. There is one new investment:

1. CRP XII Holding, LLC – an Oklahoma City-based oil and gas team focused on acquiring non-operated development opportunities alongside leading, large-cap independent E&Ps in top quartile resource plays. The Company’s strategy includes participating in low-risk development wells where there is significant asset delineation and available geological and offset production data to thoroughly understand the risk profile of the investments. As a non-operated working interest owner, CRP is able to diversify its investment exposure by participating in a large number of gross wells in multiple basins with an assortment of large, well-capitalized operators.

Performance:

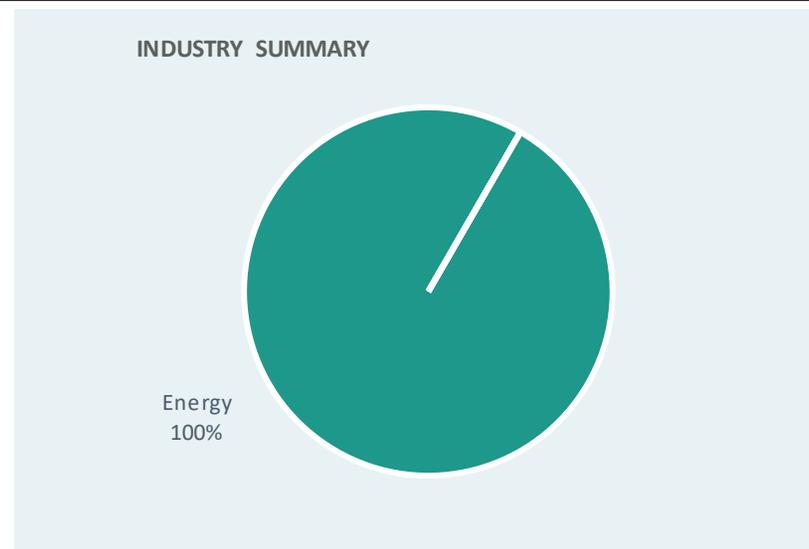
NET IRR:	2.72%	Performance: Too Early
NET Multiple:	1.03x	

Quantum Energy Partners VII Co-Invest Partnership Review – Energy

Period Ending: June 30, 2019

Fund Strategy

Quantum has formed their seventh North American energy focused fund, with a target of \$3.5 billion. The strategy seeks to deploy capital in upstream, midstream and power investments run by experienced management teams, whom the GP will source and then support. Fund VII will include a \$750 million co-investment vehicle run on a no-fee, no-carry basis that will selectively invest alongside deals in Fund VII that exceed concentration limits. Around 10% of a LP's overall commitment to Fund VII will be available for investment in the co-investment vehicle.



Investment Characteristics

Currency:	USD
Region:	North America
Fund Inception:	2017
Sub-Asset Class:	Energy

Funding

Commitment Date:	October 2, 2017
Commitment:	\$3,181,818
Contributions:	\$882,121
Distributions:	\$1,285
Market Value:	\$870,552
Unfunded Commitment:	\$2,299,697

Portfolio Update

As of June 30, 2019, the Fund invested \$228.1 million across six portfolio companies, all of which are primarily engaged in the energy industry. The portfolio was valued at \$228.5m. There were no new investments so far in 2019.

Performance:

NET IRR:	-0.82%	Performance: Too Early
NET Multiple:	0.99x	

Sheridan Production Partners II-B

Partnership Review – Energy

Period Ending: June 30, 2019

Fund Strategy

Sheridan will pursue a strategy of (i) acquiring a portfolio of currently producing properties characterized by primarily proved reserves and a balance between oil and gas in geographically diverse areas onshore in the United States and on the Gulf of Mexico shelf; (ii) optimizing the operation of those properties through production acceleration and recovery enhancement, appropriate use of capital reinvestment and aggressive cost control; and (iii) providing investors with relatively low risk, long-term cash distributions through prudent hedging and leverage strategies.

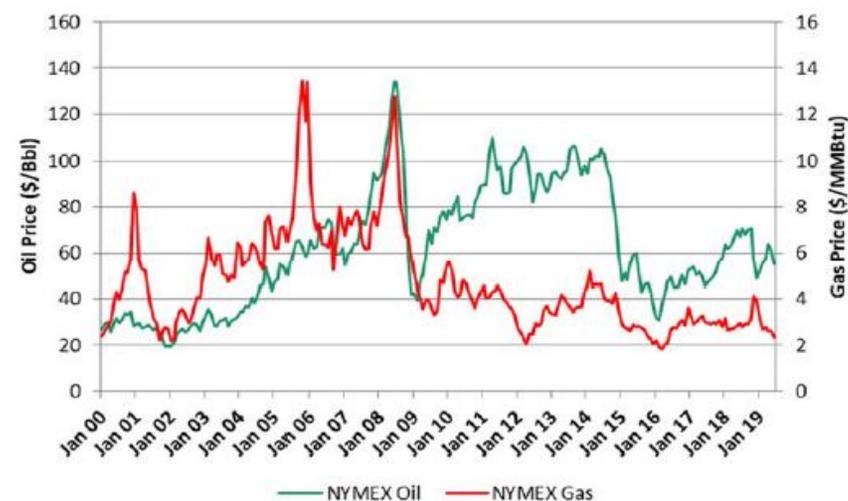
Investment Characteristics

Currency:	USD
Region:	North America
Fund Inception:	2010
Sub-Asset Class:	Energy

Funding

Commitment Date:	August 26, 2010
Commitment:	\$ 24,000,000
Contributions:	\$ 24,840,000
Distributions:	\$ 1,680,000
Market Value:	\$ -
Unfunded Commitment:	\$ -

Historical Oil and Gas Prices



Portfolio Update

On September 15th, 2019, Sheridan II filed for chapter 11 bankruptcy protection. The prepackaged plan of reorganization would result in new common equity being issued with senior debt holders assuming control of the company.

The reorganization plan is subject to change should Sheridan achieve a full sale of Fund II's assets before the reorganization plan is approved by the court. Based on indicative bids received by Sheridan, the value of Fund II's assets in a sales process would be well below the company's outstanding debt.

Sheridan has indicated that they plan to winddown the Fund by year-end with limited partners having no remaining obligations, rights or value in the newly formed company.

Performance:

NET IRR:	0.00%	Performance: Below Expectation
NET Multiple:	0.07x	

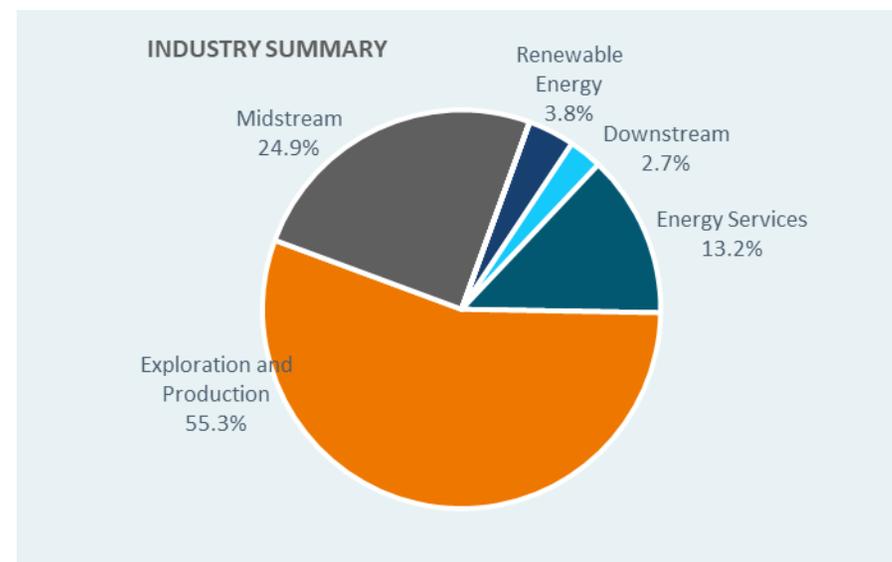
Warburg Pincus Energy Fund Partnership Review – Energy

Period Ending: June 30, 2019

Fund Strategy

WPE expects to invest on a global basis across the energy sector with an emphasis on all types of oil and natural gas exploration and production. The Fund will invest in various parts of the oil and gas value chain, including transportation, storage infrastructure, and oilfield services. WPE will also look at opportunistic investments in energy sub-sectors, such as power, energy services, renewable energy, and mining, which may be control or minority deals.

A majority of the investments will be in the growth capital stage, typically through a “line of equity” structure to scale the capital as a portfolio company grows. The geographic focus is 50% of the capital deployed in the U.S., 15-20% in Canada, 10% in Asia, 10% in Europe, and 10% in Latin America and Africa.



Investment Characteristics

Currency:	USD
Region:	Global
Fund Inception:	2014
Sub-Asset Class:	Energy

Funding

Commitment Date:	April 17, 2014
Commitment:	\$ 15,000,000
Contributions:	\$ 10,860,000
Distributions:	\$ 936,542
Market Value:	\$ 12,058,281
Unfunded Commitment:	\$ 4,005,000

Portfolio Update

As of June 30, 2019, WP Energy has called 73.4%, or \$3.0 billion, of its total committed capital of \$4.0 billion. Since inception, WP Energy has generated cumulative net income of \$683.8 million and distributed \$251.8 million. The Fund has invested across 25 deals in Energy E&P, Renewable, Midstream, Downstream and Energy Services.

1. In April 2019, Brigham Minerals, Inc. priced its IPO at \$18.00 per share, the top end of its filing range. The company raised ~\$300M of gross primary proceeds, which it used to fully repay debt and fund future mineral acquisitions. In May 2019, Brigham received a cash distribution pursuant to its 5% interest in Oryx I, which sold alongside Oryx II for \$3.6B. This represents the final monetization of Brigham's last remaining asset in its upstream vehicle. Collectively, WP XI and WPE received \$20.1M in proceeds from the sale.

NET IRR:	8.18%	Performance: On Track
NET Multiple:	1.20x	

Taurus Mining Finance Fund II

Partnership Review - Mining

Period Ending: June 30, 2019

Fund Strategy

Taurus formed their second Mining Debt Fund in 2018, a \$1.6 billion target fund with a cap of \$1.8 billion to implement its investment strategy of making loans to late stage mining projects around the globe. The Fund seeks to selectively finance those projects that have completed the multitude of hurdles required to commence construction and subsequently move into production thereby being able to generate sufficient cash flow to repay their loans. In addition, the loans will carry an additional return through an attached structured equity instrument such as a gross revenue royalty, off-take agreement, warrants/options, or some other structure. To avoid any direct conflicts or the appearance of a conflict, Taurus Equity Funds will not cross invest in companies with the Debt Fund and vice versa.

Investment Characteristics

Currency:	USD
Region:	Global
Fund Inception:	2019
Sub-Asset Class:	Mining

Funding

Commitment Date:	April 19, 2019
Commitment:	\$ 30,000,000
Contributions:	\$ -
Distributions:	\$ -
Market Value:	\$ -
Unfunded Commitment:	\$ 30,000,000

Portfolio Update:

New investment. No activity yet.

Performance

NET IRR:	0.00%	Performance: Too Early
Net Multiple:	0.00x	

CIM Infrastructure II

Partnership Review - Infrastructure

Period Ending: June 30, 2019

Fund Strategy

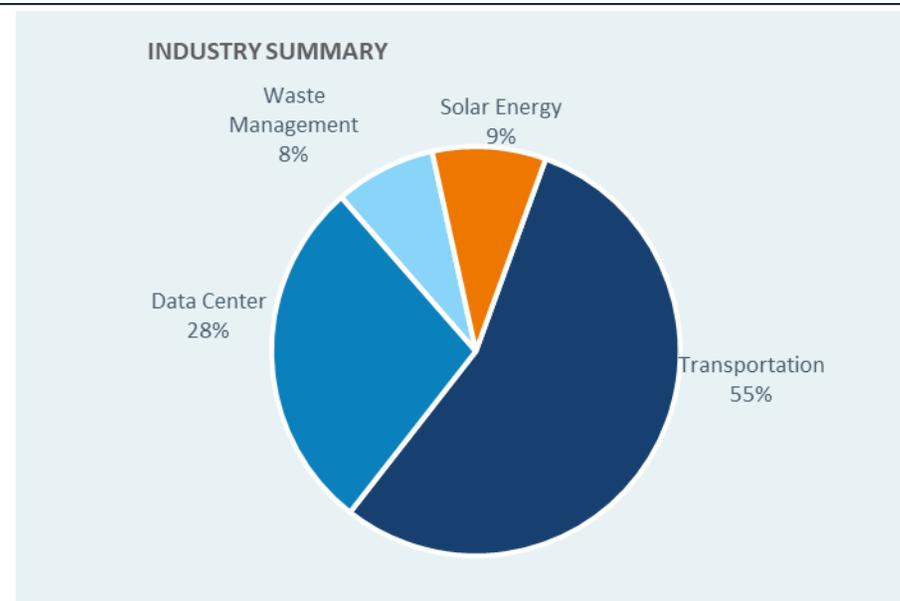
CIM Infrastructure Fund II was formed with a \$1.0B target fund size and a hard cap of \$1.75B. The fund will primarily target equity and debt positions in what CIM considers to be high quality core-plus and value-added infrastructure assets that offer potential upside opportunity and are projected to produce long-term reliable cash flows. Note that debt investments will only be made to support an eventual control position. The Fund may invest in a range of “brownfield” infrastructure assets as well as “greenfield” infrastructure assets. CIM intends to focus on the following North American infrastructure sectors: (i) energy and utilities, including renewable energy generation; (ii) water management, including water storage and treatment facilities; (iii) transportation, including parking and urban transportation facilities; (iv) waste management, including recycling and waste-to-energy facilities; and (v) communications and social infrastructure, including healthcare facilities and wireless communications sites.

Investment Characteristics

Currency:	USD
Region:	Global
Fund Inception:	2016
Sub-Asset Class:	Infrastructure

Funding

Commitment Date:	February 2, 2016
Commitment:	\$ 35,000,000
Contributions:	\$ 8,649,221
Distributions:	\$ 1,013,449
Market Value:	\$ 9,039,276
Unfunded Commitment:	\$ 26,852,471



Portfolio Update:

As of June 30, 2019, CIM Infrastructure II is invested in 12 existing assets, most recently closing on Ramland Datacenter:

Ramland Datacenter - Located in Orangeburg, New York, this is an existing 232,000 square foot datacenter, which currently provides 12 MW of critical IT load capacity as well as approximately 60,000 square feet of business-continuity / disaster-recovery office space. CIM’s business plan is to continue to lease the property, which currently has Green House Data and Altice/Cablevision as the largest tenants. The Property is also approved for an expanded load capacity of 24 MW in total, and approximately 200,000 square feet of additional mission-critical space.

Performance:

NET IRR:	4.58%	Performance: Too Early
NET Multiple:	1.16x	

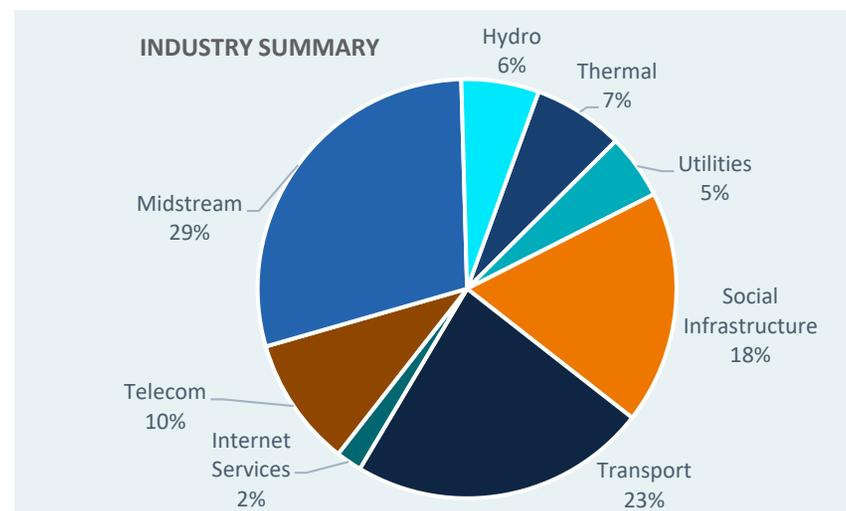
ISQ Global infrastructure Fund II

Partnership Review - Infrastructure

Period Ending: June 30, 2019

Fund Strategy

ISquared Capital is a New York based private equity firm that seeks to make mid-market investments principally in energy, utility and transportation infrastructure assets in North America, Europe and selected growth economies in Asia and Latin America. ISQ focuses on targeting smaller assets, resulting in favorable pricing due to reduced competition, and will aggregate these into a large portfolio which will become large enough to attract strategic or financial interests, which results in an EBITDA-multiple increase at exit. The rest of the portfolio consists of opportunistic investments, where the GP looks globally to capitalize on mispriced assets to make attractive, dollar-hedge investments. Furthermore, the GP believes its “on-the-ground” teams present in the US, Europe, and Asia allow ISQ to source opportunistic investments alongside local relationship while measuring risk appropriately based on local knowledge, and managing assets appropriately utilized local operational and policy expertise.



Investment Characteristics

Currency:	USD
Region:	Global
Fund Inception:	2018
Sub-Asset Class:	Infrastructure

Funding

Commitment Date:	January 12, 2018
Commitment:	\$ 40,000,000
Contributions:	\$ 11,016,787
Distributions:	\$ 1,028,624
Market Value:	\$ 10,965,884
Unfunded Commitment:	\$ 30,002,126

Portfolio Update: As of June 30, 2019, ISQ II has invested \$2.6 billion across 10 assets. During the first half of 2019, the Fund made 2 new investments:

1. Cube Highways III - Cube Highways is a platform in partnership with the International Finance Corporation, the private investment arm of the World Bank, and other marquee institutional investors to acquire and operate a portfolio of toll roads and related infrastructure assets in India. ISQ I had invested in Cube Highways I & II, and will continue investing in India’s growing highways and transportation sector with Cube Highways III.
2. Venture Global LNG - On June 26th, the Fund contributed \$460 million in convertible securities in Venture Global LNG (“Falcon LNG”), a company focused on the development of LNG export liquefaction facilities on the Gulf Coast of the United States. Venture Global employs a novel, comprehensive process solution from Baker Hughes, a GE company, that uses highly efficient mid-scale, modular, factory-fabricated liquefaction trains leading to one of the industry’s lowest construction and operating LNG liquefaction costs.

Performance:

NET IRR:	13.50%	Performance: Too Early
NET Multiple:	1.09x	

Real Assets Program Update

- ACERA committed to Taurus Mining Finance II in February which marked the portfolio's first mining investment and the first dedicated debt fund.
- We are actively looking at an opportunity in Core Infrastructure which we may bring to the Board in early 2020.
- Valuations across most asset classes has made it challenging to find attractive opportunities. Fundraising within natural resources is daunting for GPs and mirrors our difficulty in finding investment strategies that meet risk/return hurdles. Infrastructure fundraising has the opposite problem as institutions increasingly look to deploy capital in defensive, yield-oriented strategies like infrastructure.
- As the shift away from commodity-oriented sectors continues, we will look opportunistically for strategies in the space, but we expect infrastructure to occupy a larger share of real asset portfolios going forward.



December 2019

**Semiannual Real Estate
Performance Measurement Review**

Callan

PUBLIC VERSION

Avery Robinson, CAIA
Senior Vice President

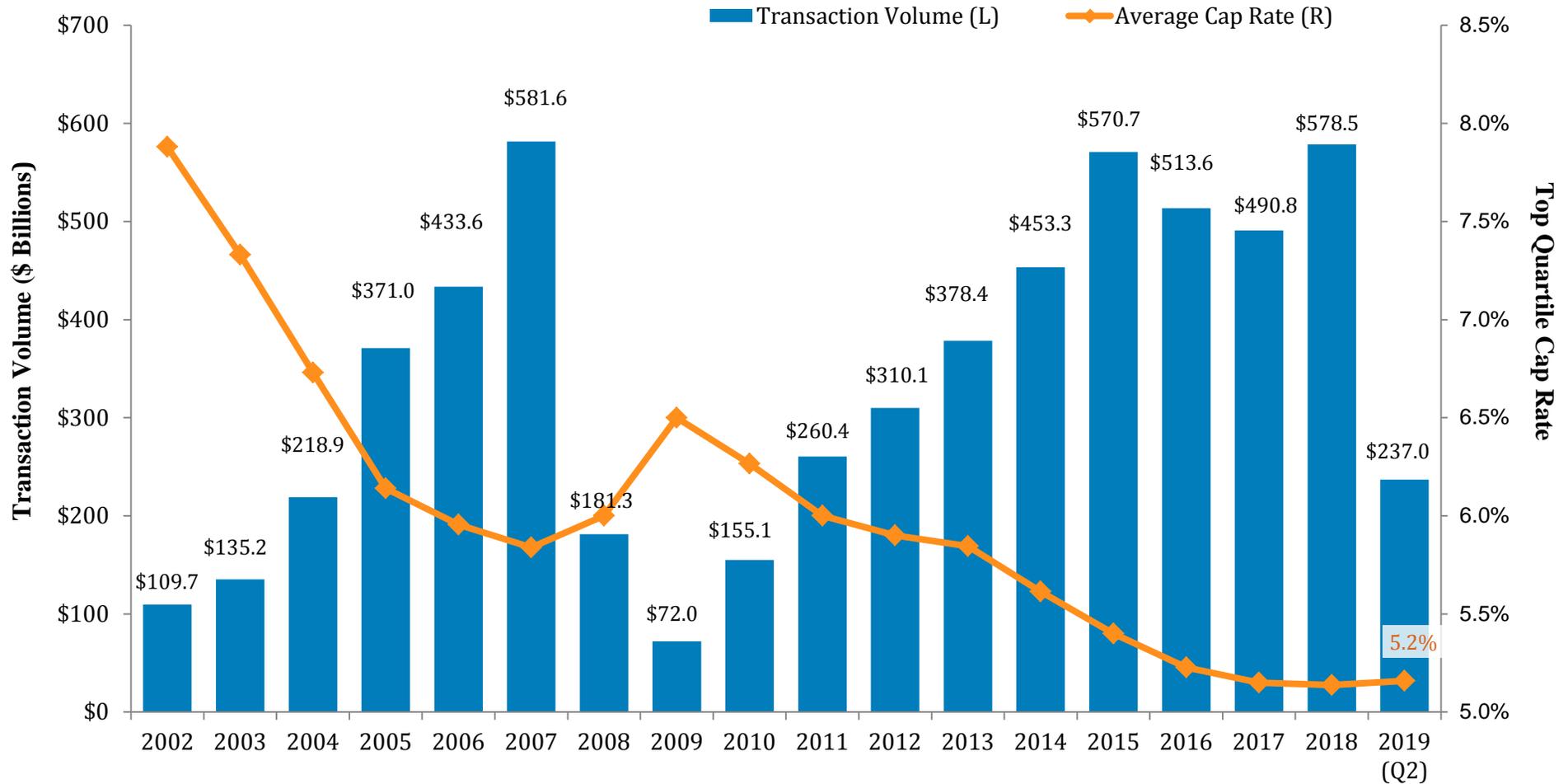
Real Estate Market Overview

- 2018 represented a robust year for global capital flows into real estate. In the first half of 2019, flows remained substantial, however, cross border investment in the US slowed with certain sovereigns, as deals are getting tougher to pencil primarily due to historically low cap rates and the stronger US dollar.
- US Real estate fundamentals are healthy:
 - Within the NPI, the vacancy rate for U.S. property was 5.7% in the second quarter of 2019, its lowest level since 2000.
 - Vacancies were below their 20-year average in every major sector.
 - Net operating income is growing annually and it is expected to be the primary driver of returns going forward as the real estate cycle is in a mature phase with moderating appreciation; however, overall appreciation has not been slowing as quickly as investors predicted, driven primarily by the industrial markets.
 - Not all markets are created equal. Northeast primary markets have generally underperformed the Southeast and certain West Coast markets driven by affordability options in the Southeast and tech driven growth on the West Coast.
 - There is also dispersion within the property sectors as suburban office has outperformed central business district office over the last year. Neighborhood retail has been a relative bright spot in comparison to regional malls and power centers. Garden and low rise apartments lead the strong multifamily sector while high rise has lagged, albeit with stable rents that have just not experienced the rent growth in the suburban markets.
 - Industrial continues to be strong across all subsectors with warehouse, R&D and flex space performing equally well.

2019 Volume Matches 2017 and 2018 With Capitalization Rates at Historic Lows

Transaction volume through the first half of 2019 remains strong

All Property Types Transaction Volume And Top Quartile Cap Rates US 2002-2019 Q2

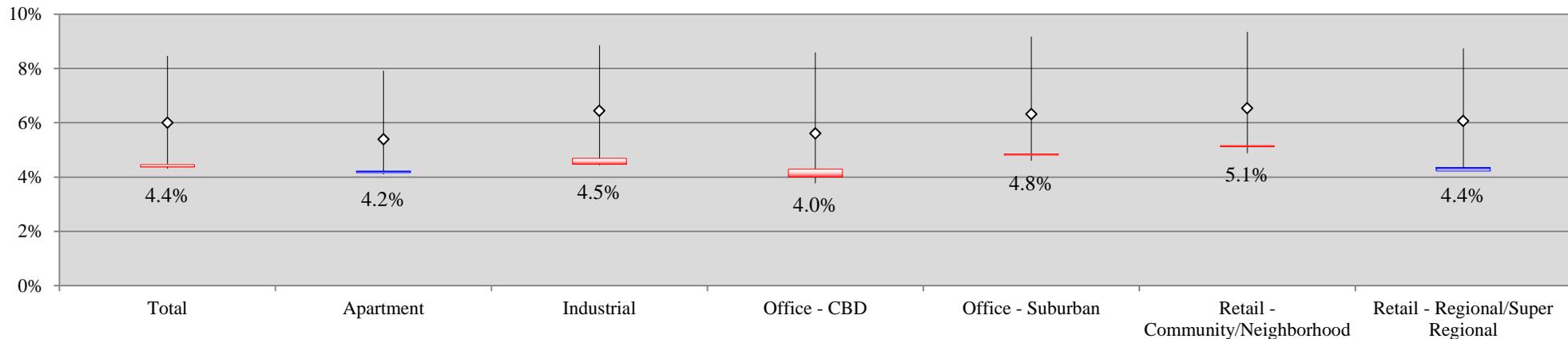


Source: Real Capital Analytics; Heitman Research

Returns Are Expected to Continue to Moderate

September 2019 Survey	Actual 2018	Actual YTD 2019	2019	2020	2021	2019 to 2023
NPI Total Return	6.7%	3.3%	6.5%	5.3%	4.5%	5.5%
Income Return	4.6%	2.2%	4.5%	4.5%	4.6%	4.6%
Capital Appreciation	2.1%	1.1%	2.0%	0.8%	-0.1%	0.9%

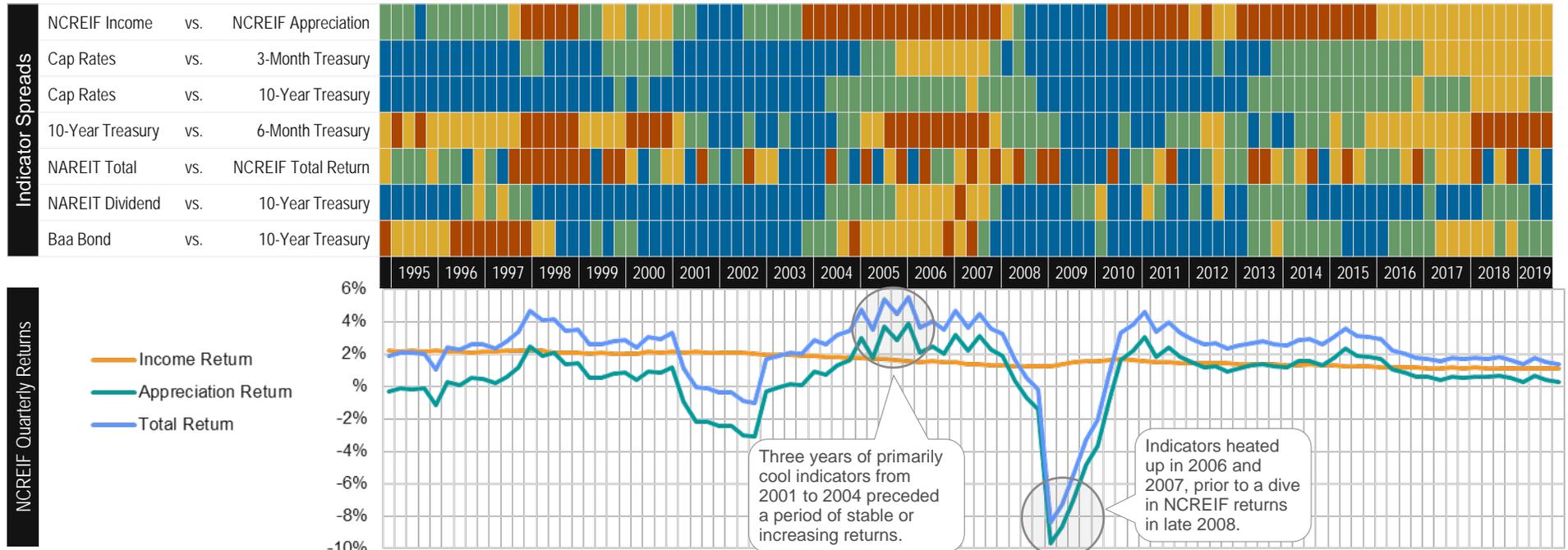
NCREIF Appraisal Cap Rates By Property Type 1999-2019 Q2



Source: PREA, NCREIF, AEW Capital Management. Note: Retail definitions in appendix. Cap rate levels chart shows historic range (hi to low) with the average indicated by the diamond and the current cap rates shown as the numeric value. Red indicates cap rates have decreased over last year. Blue indicates cap rates have increased over the past year. The width of band represents the range in cap rates over the last year.

Real Estate Indicators: Too Hot to Touch or Cool Enough to Handle?

Quartile Results as of September 30, 2019



The seven indicator spreads reveal multiple instances when wide spreads (cool indicators) preceded stable or increasing performance, and narrow spreads (hot indicators) were more prevalent before declining market periods.

Alameda County Employees' Retirement Association Performance Measurement Report Summary

Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") Quarter ending September 30, 2019 ("Quarter").

Funding Status as of September 30, 2019

	(\$) Millions	(%)
ACERA Plan Assets	8,327.781	100.00%
Real Estate Target ⁽¹⁾	666.222	8.00%
Plan's Real Estate Market Value	583.195	7.00%
Net Unfunded Commitments	76.041	0.91%
RE Market Value & Unfunded Commitments	659.236	7.92%
Remaining Allocation	83.028	1.00%

Portfolio Composition

	Target	Funded	Funded & Committed
Core	70.00%	68.87%	63.84%
Non-Core	30.00%	31.12%	36.16%

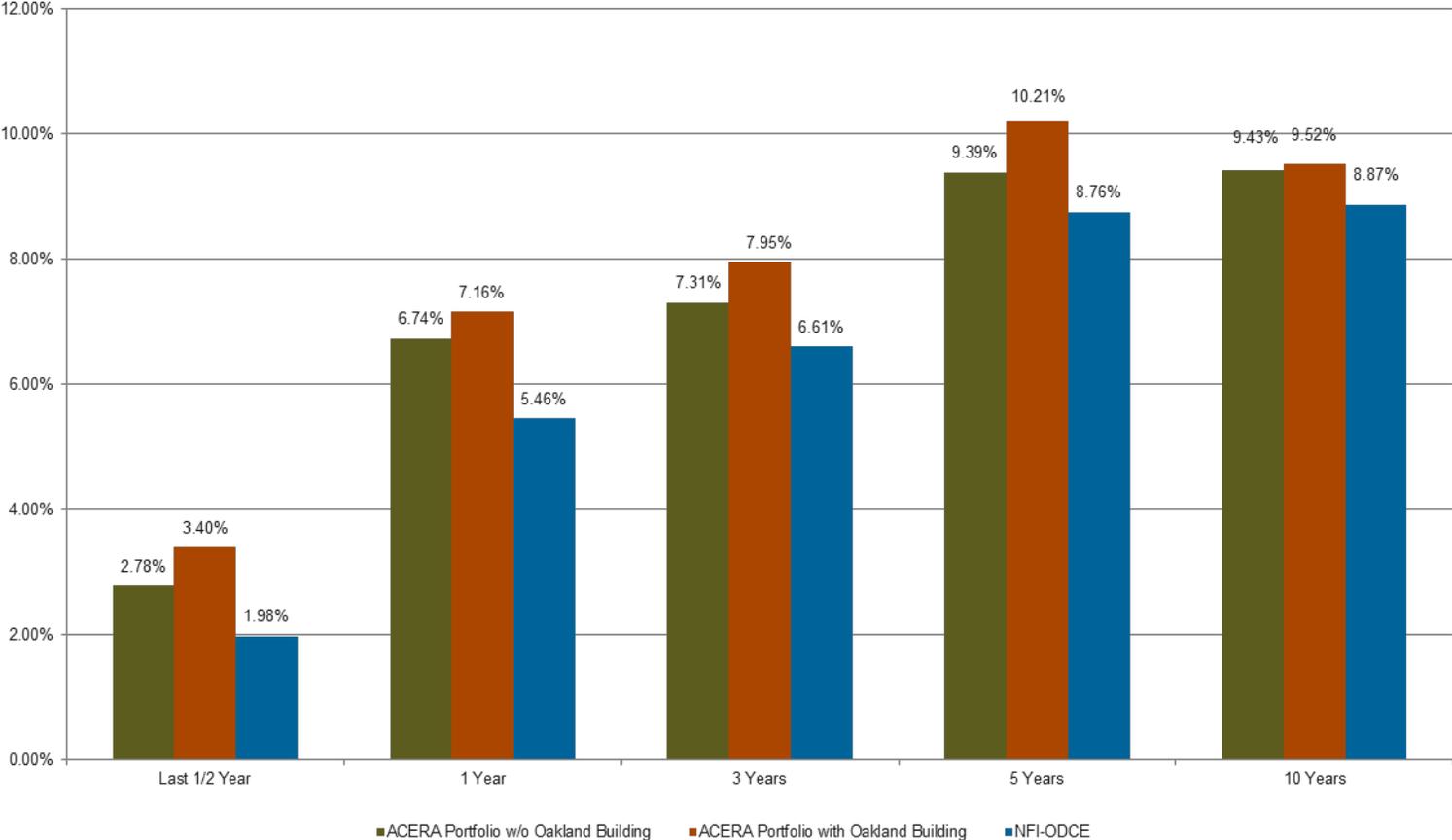
1. The Real Estate Target increase from 6% to 8% was adopted in August 2015.

2. In July 2018 the Board adopted the recommendation to invest \$35 million in Angelo Gordon Realty Value Fund X. The initial contribution into the fund occurred on 6/10/2019.

Portfolio Net Returns

For Period Ended June 30, 2019

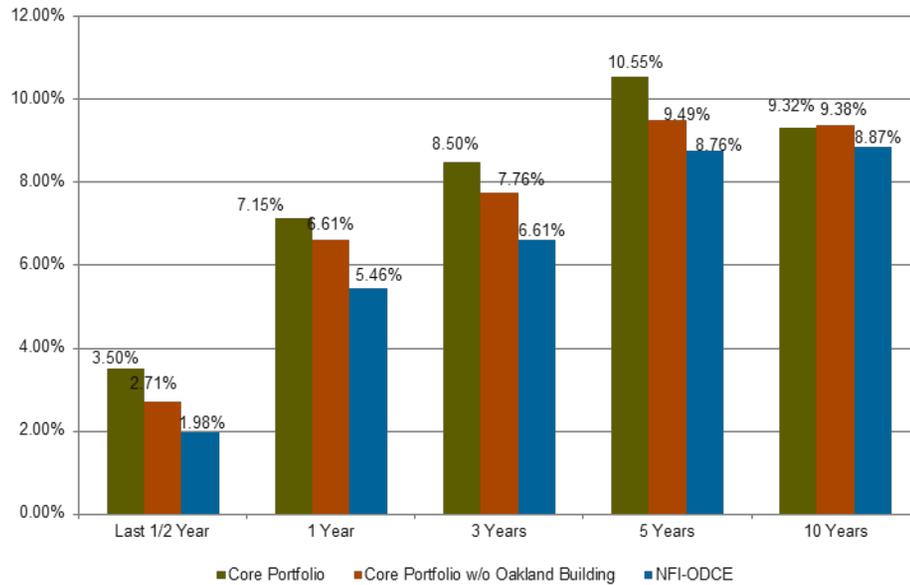
Total Net Real Estate Portfolio Returns



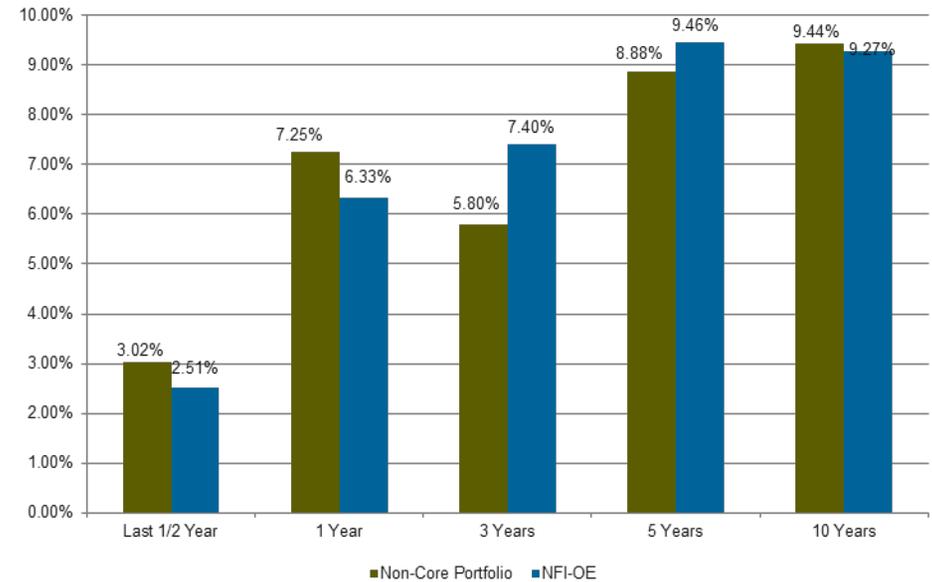
Portfolio Returns by Style

For Period Ended June 30, 2019

Net Core Returns



Net Non-Core Returns



Net Portfolio w/o Oakland Building	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	2.71%	6.61%	7.76%	9.49%	9.38%
Non-Core Portfolio	3.02%	7.25%	5.80%	8.88%	9.44%
Total Portfolio w/o Oakland Building	2.78%	6.74%	7.31%	9.39%	9.43%

Net Total Portfolio	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio	3.50%	7.15%	8.50%	10.55%	9.32%
Non-Core Portfolio	3.02%	7.25%	5.80%	8.88%	9.44%
Total Portfolio	3.40%	7.16%	7.95%	10.21%	9.52%

Performance Drivers and Detractors by Style

Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio has outperformed the benchmark during every period over the last ten years and it continued that trend this quarter beating the benchmark by 14 bps.
- The Lion Industrial Trust once again was a performance leader during the first half of the year.
- The Oakland building also continued its strong performance recording a 8.20% return during the first half of the year.
- The UBS Trumbull Property Fund was a material detractor during the quarter as a result of property valuation write-downs.

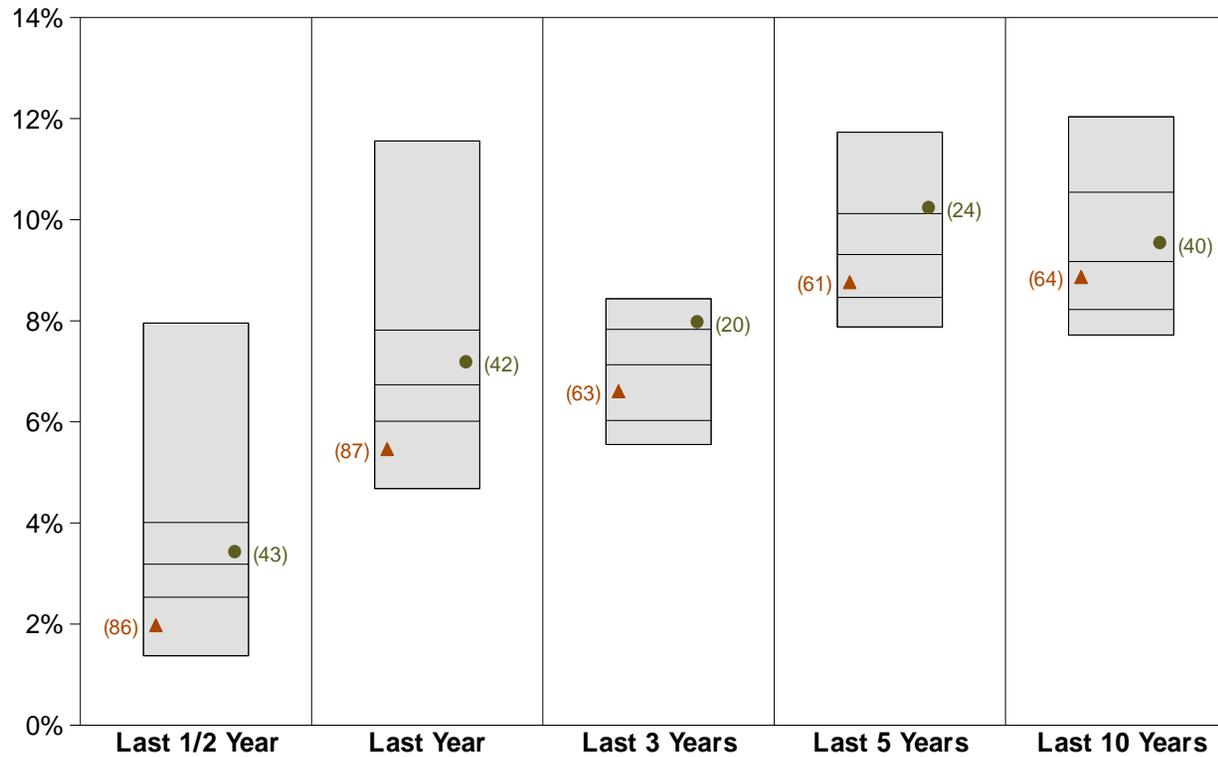
Non-Core Portfolio

- The Non-Core portfolio's outperformance drivers were wide spread with AEW Partners VIII and Heitman Value Partners IV leading the way.
- The CIM VI account was the worst performer for the Non-Core Portfolio.

Performance vs. Peer Group

For Period Ended June 30, 2019

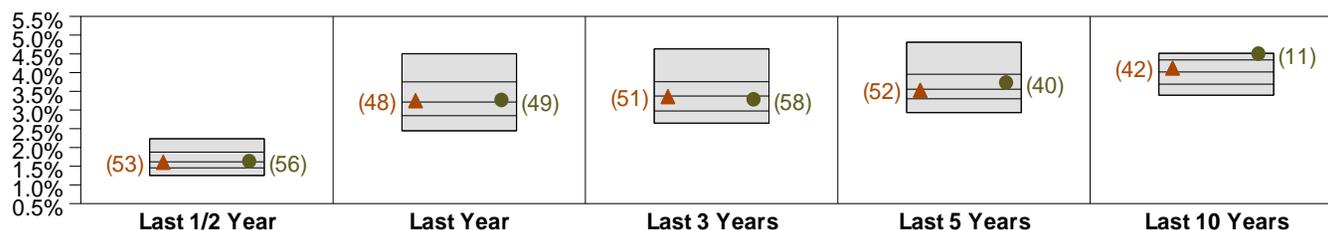
Performance vs Callan Open End Core Cmmingled Real Est



	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	7.95	11.56	8.44	11.73	12.03
25th Percentile	4.01	7.82	7.83	10.12	10.54
Median	3.18	6.73	7.13	9.31	9.17
75th Percentile	2.53	6.01	6.03	8.46	8.22
90th Percentile	1.37	4.68	5.55	7.88	7.72
ACERA Total RE Portfolio ●	3.40	7.16	7.95	10.21	9.52
NCREIF NFI-ODCE Val Wt Nt ▲	1.98	5.46	6.61	8.76	8.87

Performance vs. Peer Group

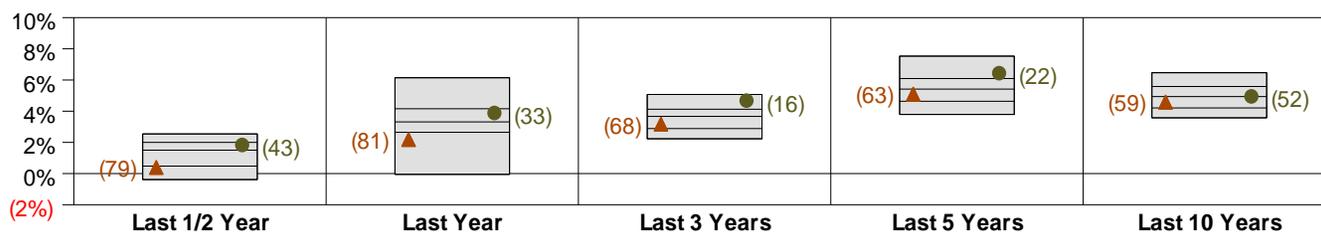
Income Rankings vs Callan OE Core Cmngld RE Periods ended June 30, 2019



10th Percentile	2.23	4.50	4.63	4.81	4.51
25th Percentile	1.88	3.75	3.76	3.95	4.34
Median	1.62	3.21	3.38	3.56	4.02
75th Percentile	1.46	2.85	2.97	3.30	3.69
90th Percentile	1.25	2.45	2.65	2.93	3.39

ACERA Total RE Portfolio	●	1.59	3.23	3.25	3.69	4.46
NCREIF NFI-ODCE Val Wt Nt	▲	1.61	3.25	3.36	3.53	4.12

Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended June 30, 2019



10th Percentile	2.55	6.15	5.07	7.53	6.47
25th Percentile	2.00	4.16	4.12	6.10	5.58
Median	1.50	3.32	3.67	5.42	4.94
75th Percentile	0.48	2.65	2.89	4.64	4.21
90th Percentile	(0.38)	(0.05)	2.23	3.79	3.57

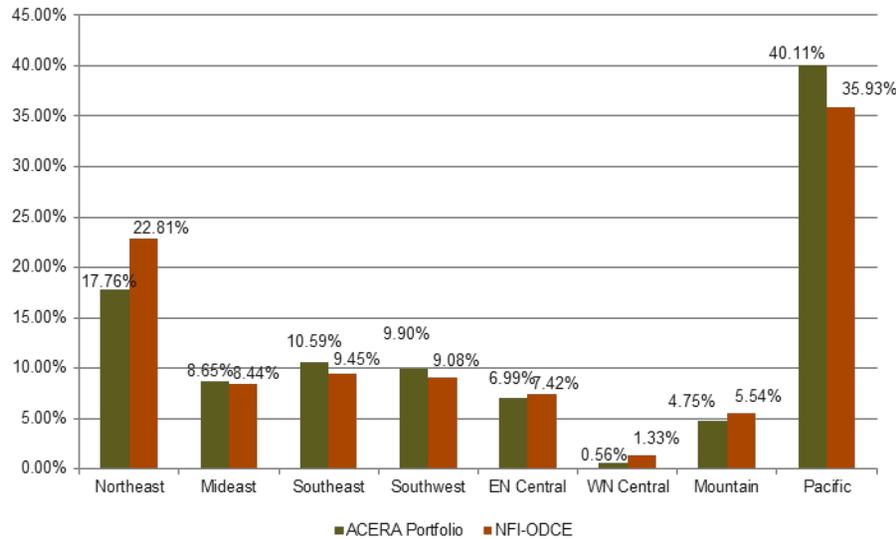
ACERA Total RE Portfolio	●	1.74	3.78	4.58	6.34	4.85
NCREIF NFI-ODCE Val Wt Nt	▲	0.40	2.19	3.18	5.10	4.59

Diversification & Debt

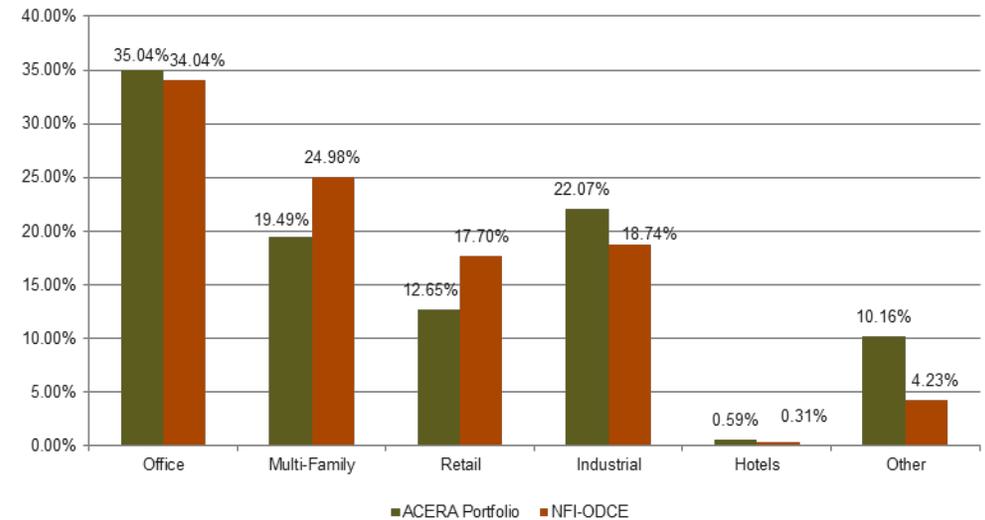
Diversification – Total Portfolio (excluding Oakland Building)

- The ACERA Portfolio is well diversified by both property type and region.

Geographic Diversification



Property Type Diversification



Debt Compliance

- The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of June 30, 2019, the loan-to-value (“LTV”) ratio of the Portfolio was 24.66%.

ACERA Real Estate Portfolio Snapshot – 2Q2019

Portfolio Composition (\$)								
Total Plan Assets	Allocation		Market Value		Unfunded Commitments		Remaining Allocation	
8,131,848,009	650,547,841	8.00%	588,248,080	7.23%	74,837,138	0.92%	62,299,761	0.77%

Performance Summary	Quarter (%)		1 Year		3 Years		5 Years		10 Years	
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
ACERA	1.94%	1.71%	8.19%	7.16%	9.10%	7.95%	11.32%	10.21%	10.59%	9.52%
NFI-ODCE	1.00%	0.77%	6.41%	5.46%	7.57%	6.61%	9.76%	8.76%	9.88%	8.87%

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Amount	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded Commitments (%)	Net IRR	Equity Multiple
Core Portfolio										
ACERA Oakland Building Portfolio	2002	31,700,000	31,700,000	\$0	42,695,934	73,547,029	12.50%	11.09%	9.57%	2.31x
Core Portfolio	1986	336,700,000	336,700,000	\$0	128,615,180	471,186,268	80.11%	71.06%		1.49x
Non-Core Portfolio										
Non-Core Portfolio	1987	200,936,048	126,098,910	74,837,138	38,823,887	117,013,140	19.89%	28.94%		1.34x
Total Current Portfolio	1986	537,636,048	462,798,910	74,837,138	167,439,067	588,199,408	100.00%	100.00%		1.18x
ALAMEDA County Employees' Retirement Association										

ACERA Property Type Diversification – 2Q2019

Property Type Diversification	Office	Multi-Family	Retail	Industrial	Hotel	Other
Oakland Building Portfolio	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Heitman HART	19.40%	20.10%	20.10%	10.60%	0.00%	29.80%
Jamestown Premier Property Fund	64.30%	0.00%	26.70%	0.00%	0.00%	9.00%
JP Morgan Strategic Property Fund	35.02%	0.00%	24.73%	14.41%	0.00%	25.84%
Lion Industrial Trust 2007	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%
Metlife Core Property Fund	33.70%	33.80%	16.80%	15.70%	0.00%	0.00%
PRISA SA	35.91%	24.86%	15.35%	16.00%	0.00%	7.88%
UBS Trumbull Property Fund	27.02%	33.31%	19.26%	17.53%	2.88%	0.00%
Core Portfolio	38.11%	13.62%	13.55%	25.75%	0.29%	8.69%
Core Portfolio w/o Oakland Bldg.	26.66%	16.13%	16.06%	30.51%	0.34%	10.30%
AEW Partners VIII	6.00%	40.00%	4.00%	45.00%	0.00%	5.00%
Artemis REP Healthcare	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
CIM Commercial Trust Corporation	82.00%	0.00%	0.00%	0.00%	15.00%	3.00%
CIM VI - 2 (Urban REIT), LLC	21.50%	61.90%	16.60%	0.00%	0.00%	0.00%
Heitman Value Partners IV	0.00%	14.20%	0.00%	4.70%	0.00%	81.10%
PRISA III	16.01%	59.03%	10.74%	5.98%	0.00%	8.24%
Non-Core Portfolio	22.42%	43.63%	8.94%	6.97%	1.83%	16.21%
Total Fund	35.04%	19.49%	12.65%	22.07%	0.59%	10.17%
Total Fund w/o Oakland Building	25.71%	22.29%	14.46%	25.24%	0.67%	11.62%

ACERA Geographic Diversification – 2Q2019

Geographic Diversification	North East	Mid West	South East	South West	EN Central	WN Central	Mountain	Pacific	Other
Oakland Building Portfolio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Heitman HART	19.90%	3.70%	13.10%	8.60%	16.10%	1.50%	10.60%	26.50%	0.00%
Jamestown Premier Property Fund	34.24%	35.51%	2.73%	0.00%	0.00%	0.00%	0.00%	27.52%	0.00%
JP Morgan Strategic Property Fund	22.24%	6.39%	5.94%	14.81%	4.29%	0.07%	3.38%	42.88%	0.00%
Lion Industrial Trust 2007	20.54%	1.87%	15.57%	14.39%	7.52%	1.93%	5.84%	32.34%	0.00%
Metlife Core Property Fund	9.00%	11.00%	15.00%	13.00%	9.00%	0.00%	9.00%	34.00%	0.00%
PRISA SA	26.85%	12.15%	13.31%	4.76%	6.61%	1.08%	1.60%	33.64%	0.00%
UBS Trumbull Property Fund	22.06%	10.94%	8.55%	8.10%	12.98%	0.76%	7.53%	29.07%	0.00%
Core Portfolio	17.30%	7.52%	9.75%	8.91%	7.15%	0.70%	4.98%	43.68%	0.00%
Core Portfolio w/o Oakland Bldg.	20.50%	8.91%	11.55%	10.56%	8.48%	0.83%	5.90%	33.26%	0.00%
AEW Partners VIII	19.00%	9.00%	28.00%	8.00%	18.00%	0.00%	10.00%	8.00%	0.00%
Artemis REP Healthcare	4.95%	0.00%	20.46%	12.53%	10.40%	0.00%	0.00%	8.64%	43.02%
CIM Commercial Trust Corporation	0.00%	15.00%	0.00%	10.00%	0.00%	0.00%	0.00%	75.00%	0.00%
CIM VI - 2 (Urban REIT), LLC	58.00%	10.50%	0.00%	21.00%	0.00%	0.00%	0.00%	10.50%	0.00%
Heitman Value Partners IV	6.40%	14.10%	54.70%	11.50%	3.50%	0.00%	6.10%	3.70%	0.00%
PRISA III	2.97%	18.78%	18.25%	12.31%	9.35%	0.00%	6.73%	31.61%	0.00%
Non-Core Portfolio	19.64%	13.30%	14.04%	13.96%	6.30%	0.00%	3.81%	25.44%	3.51%
Total Fund	17.76%	8.65%	10.59%	9.90%	6.99%	0.56%	4.75%	40.11%	0.69%
Total Fund w/o Oakland Building	20.31%	9.89%	12.11%	11.32%	7.99%	0.64%	5.44%	31.51%	0.78%

Definitions

Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. $\text{Cap rate} = \text{Net operating income} / \text{Current market value (Sale price) of the asset}$.

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property, taking into account all income collected from operations, and deducting all expenses incurred from operations.

Real Estate Appraisal: The act of estimating the value of a property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

Income Return ("INC"): Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

Appreciation Return ("APP"): Increase or decrease in an investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value, uncollectible accrued income, or realized gain or loss from sales.

Total Gross Return ("TGRS"): The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

Total Net Return ("TNET"): Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.

Inception Returns: The total net return for an investment or portfolio over the period of time the client has had funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.

Net IRR: IRR after advisory fees, incentive, and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

Equity Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

Definitions

Style Groups

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

Definitions

Indices

Stylized Index: Weights the various style group participants so as to be comparable to the investor's portfolio holdings for each period.

Open-End Diversified Core Equity Index ("ODCE"): A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (24 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.

NCREIF Fund Index Open-End Index ("OE"): NFI-OE is an aggregate of open-end, commingled equity real estate funds with diverse investment strategies. Funds comprising NFI-OE have varied concentrations of sector and region, core and non-core, leverage, and life cycle.

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

Definitions

Cash Flow Statements

Beginning Market Value: Value of real estate, cash, and other holdings from prior period end.

Contributions: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Distributions: Actual cash returned from the investment, representing distributions of income from operations.

Withdrawals: Cash returned from the investment, representing returns of capital or net sales proceeds.

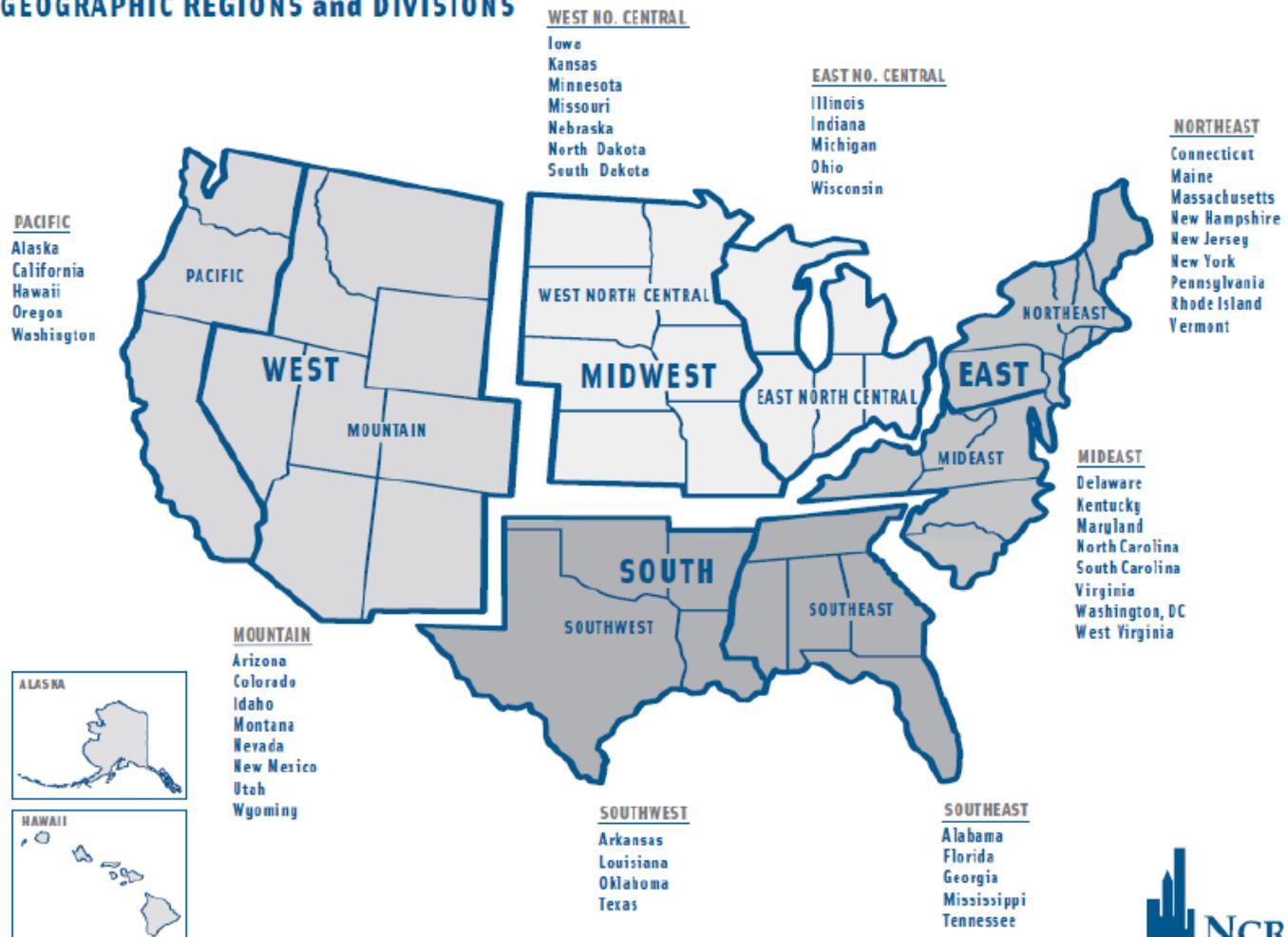
Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Unfunded Commitments: Capital allocated to managers which has not yet been called for investment. Amounts are as reported by managers.

Remaining Allocation: The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

NCREIF Region Map

GEOGRAPHIC REGIONS and DIVISIONS





**INVESTMENT MANAGER,
CONSULTANT, AND CUSTODIAN FEES**
For Quarter Ending September 30, 2019

**INVESTMENT NET ASSET VALUE AND INVESTMENT MANAGER FEES
FOR THE QUARTER ENDED SEPT 30, 2019**

For the Quarter Ended June 30, 2019	NAV² (\$) As of 3/31/19	Q1 - Total Fees (\$)	bps of NAV	NAV² (\$) As of 6/30/19	Q2 - Total Fees (\$)	bps of NAV	NAV² (\$) As of 9/30/19	Q3 - Total Fees (\$)	bps of NAV
Name of Fund									
Domestic Equity¹									
BlackRock R1000 Index Fund	1,939,070,552	41,228	0.21	2,021,534,482	43,180	0.21	1,967,318,457	43,180	0.22
Kennedy Capital	111,814,917	216,630	19.37	113,983,752	223,283	19.59	112,806,828	225,933	20.03
NCG Small Cap	124,705,518	274,682	22.03	135,662,881	295,017	21.75	48,322*	284,244	58,822.99
Pzena	165,287,966	198,098	11.99	156,113,691	193,088	12.37	121,393,423	163,304	13.45
Trust Co. of the West	173,887,228	175,117	10.07	158,116,323	164,367	10.40	118,923,246	143,216	12.04
Total Domestic Equity	2,514,766,181	905,756	3.60	2,585,411,129	918,936	3.55	2,320,490,276	859,878	3.71
International Equity¹									
AQR International Equity	410,575,792	503,946	12.27	422,831,549	522,805	12.36	409,353,982	528,878	12.92
BlackRock MSCI World ex-US	N/A	N/A	N/A	436,952,447	11,631	0.27	432,955,449	11,631	0.27
Bivium International Equity	71,048,187	144,248	20.30	83,579,604	152,005	18.19	82,540,425	169,428	20.53
Capital Group	888,788,327	1,237,979	13.93	436,952,447	887,045	20.30	430,043,538	765,716	17.81
Franklin Templeton Inv.	202,371,196	307,674	15.20	228,287,206	338,416	14.82	224,238,830	354,130	15.79
Mondrian	655,384,429	552,109	8.42	428,706,424	449,989	10.50	416,653,270	376,890	9.05
Newton Emerging Market Equity Fund	N/A	N/A	N/A	216,731,808	69,865	3.22	210,865,134	131,791	6.25
Total International Equity	2,228,167,931	2,745,955	12.32	2,254,041,485	2,431,755	10.79	2,206,650,628	2,338,463	10.60
Fixed Income¹									
Baird Advisors	661,837,829	132,102	2.00	652,587,446	135,581	2.08	667,943,508	136,332	2.04
Loomis Sayles	345,442,633	268,531	7.77	335,733,885	278,627	8.30	360,792,007	278,627	7.72
Brandywine Global FI	333,487,201	229,383	6.88	345,836,536	233,108	6.74	336,445,913	239,117	7.11
Total Fixed Income	1,340,767,663	630,016	4.70	1,334,157,867	647,315	4.85	1,365,181,428	654,076	4.79
Real Estate^{5,6}									
Total Real Estate	575,212,636	1,400,965	24.36	585,932,080	1,399,136	23.88	583,194,695	1,676,855	28.75
Private Equity^{4,5,6}									
Total Private Equity	540,589,978	6,216,208	114.99	521,649,514	6,123,619	117.39	586,145,047	4,510,014	76.94
Absolute Return^{5,6}									
Total Absolute Return	703,082,609	1,992,651	28.34	731,409,738	2,258,210	30.87	742,112,287	2,617,220	35.27
Real Assets^{4,5,6}									
Total Real Assets	284,468,018	1,143,159	40.19	292,408,769	1,290,753	44.14	411,139,597	1,744,114	42.42
Cash	10,082,991			27,002,949			129,971,988*		
TOTAL⁷	8,197,138,008	15,034,710	18.34	8,332,013,531	15,069,724	18.09	8,344,885,945	14,400,619	17.26

Notes:

*The 3Q 2019 cash total includes the transition account NAV which was used to transfer assets from NCG Small Cap to William Blair Small Cap at the end of 3Q 2019.

1. Domestic, International Equity, and Fixed Income managers' fees are based on staff validated manager invoices.

2. NAVs may use estimates at the time of this report's production.

3. Some accounts contain submanaged funds; the fees shown include all assets in the account.

4. Sometimes fees may be estimates. According to the Limited Partnership Agreements, management fees are based on committed amounts and/or assets under management.

5. Detailed records regarding these investments of public pension funds are exempt from disclosure under California Government Code Section 6254.26

6. Fees may include management, incentive fees, and expenses as applicable.

7. Previous quarter's amounts may change as estimates are trueed up to actual amounts. Each true up is made using the most recent information.

**CONSULTANT/CUSTODIAN FEES
FOR THE QUARTER ENDED SEPT 30, 2019**

	Q1 - Fees (\$)	Q2 - Fees (\$)	Q3 - Fees (\$)
Consultant			
Doug McCalla	12,367	11,973	11,973
Callan Associates	56,250	56,250	56,250
Verus Advisory, Inc.	165,000	171,250	171,250
Institutional Shareholders Services	13,575	13,575	13,575
Zeno Consulting Group	11,250	11,250	11,250
Sub-total Consultant	258,442	264,298	264,298
Custodian			
State Street Bank	136,646	136,764	136,764
TOTAL OF CONSULTANT / CUSTODIAN FEES ¹	395,088	401,062	401,062

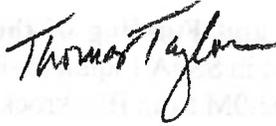
Notes:

1. Previous quarter's amounts may change as estimates are trued up to actual amounts. Each true up is made using the most recent information.



ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

475-14th Street, Suite 1000, Oakland, CA 94612 800/838-1932 510/628-3000 fax: 510/268-9574 www.acera.org

TO: Members of the Investment Committee
FROM: Thomas Taylor, Investment Officer 
DATE: December 11, 2019
SUBJECT: Summary of Rebalancing and Cash Activities Completed in 3Q2019

Recommendation:

Not Applicable – This is an information item.

Background/Discussion:

1. There was no action required to rebalance the Total Fund for the quarter ending September 30, 2019. In accordance with ACERA's General Investment Guidelines, Policies and Procedures, Section V: Asset Allocation and Rebalancing, Schedule IA: Asset Allocation Targets, and Schedule IC: Asset Allocation Portfolio Rebalancing, there were no rebalancing signals received during 3Q2019 as all traditionally managed accounts remained within their respective target ranges.
2. Regarding significant cash-flows for 3Q2019, Staff implemented the following changes to manage excess cash, make the supplemental month-end retiree benefits and administrative payroll, and to meet the capital calls and provide operating funds:
 - a. **Month-end payroll:** Staff withdrew a net \$51.0 million from the Total Fund¹ to supplement for month-end payroll for the three-months ending September 30, 2019. Staff wired out \$16.5M in July, \$17.5M in August, and \$18.0M in September to ACERA'S Wells Fargo Bank account. Fiscal Services wired-in \$1.0M from Wells Fargo Bank back to State Street Bank (#HI1A). Year-to-date withdrawals total \$136.5 million net.
 - b. **Capital Calls and Distributions:** In general, wire-payments of \$191.7M in aggregate were made to meet capital calls and new investments to ACERA's Private Equity, Absolute Return, Real Assets, and Real Estate funds and to pay quarterly management fees. Cash and in-kind distributions and recyclable capital received from ACERA's investments totaled \$194.0M. This dollar amount does not include other incidental income².

¹ To meet month-end payroll, Staff withdrew from the ACERA's Blackrock Russell 1000 Index in accordance with the most overweight asset class according to policy and procedures.

² Securities Lending Income (\$227.7K), and Commission Recapture Income (\$16.9K) totaled \$244.6K. Incremental income does not include dividend and interest income from traditional managed accounts, which are reinvested.



c. Restructuring and Funding of the Real Assets Asset Class: In the 3Q2019, Staff funded \$196.0M in SSgA Liquid Pool (Board approved: 11/8/2018). To fund the position, Staff raised \$102.0M from Blackrock Russell 1000 Index, Next Century, Pzena and TCW; and subsequently, fully liquidated Gresham TAP and eTAP. As of 9/30/2019, the Real Asset allocation was 4.9% of ACERA's Total Fund, or \$408.2M.

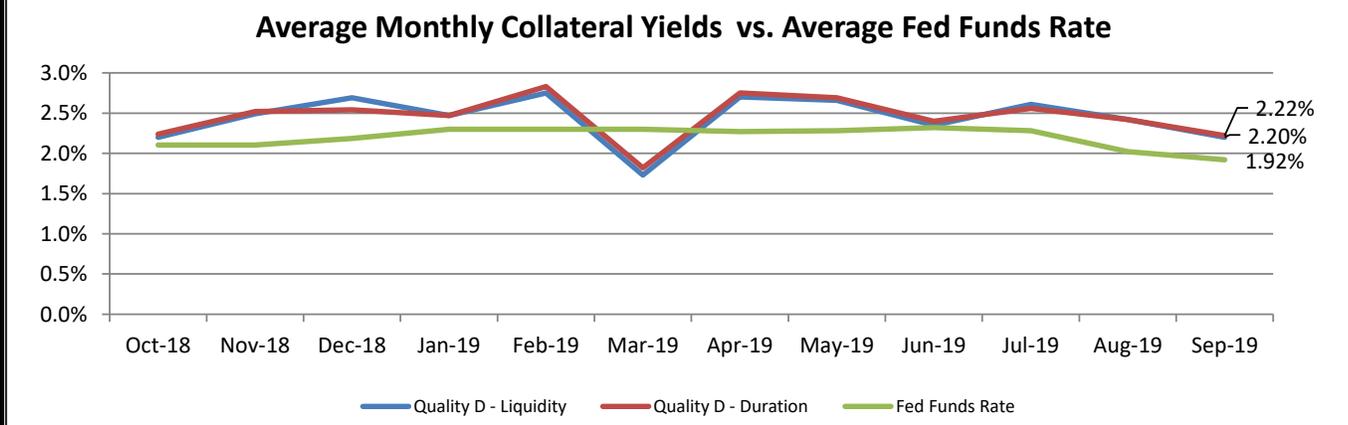
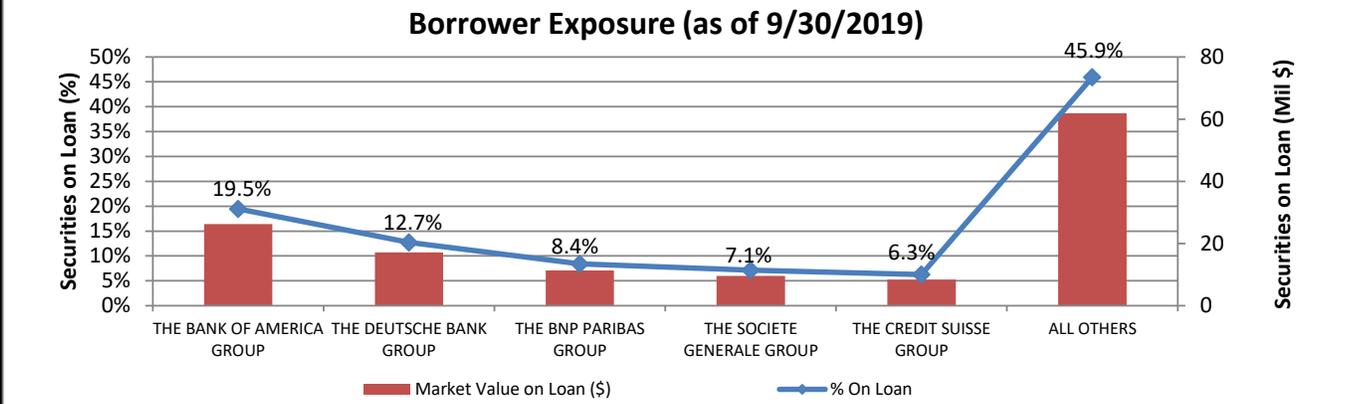
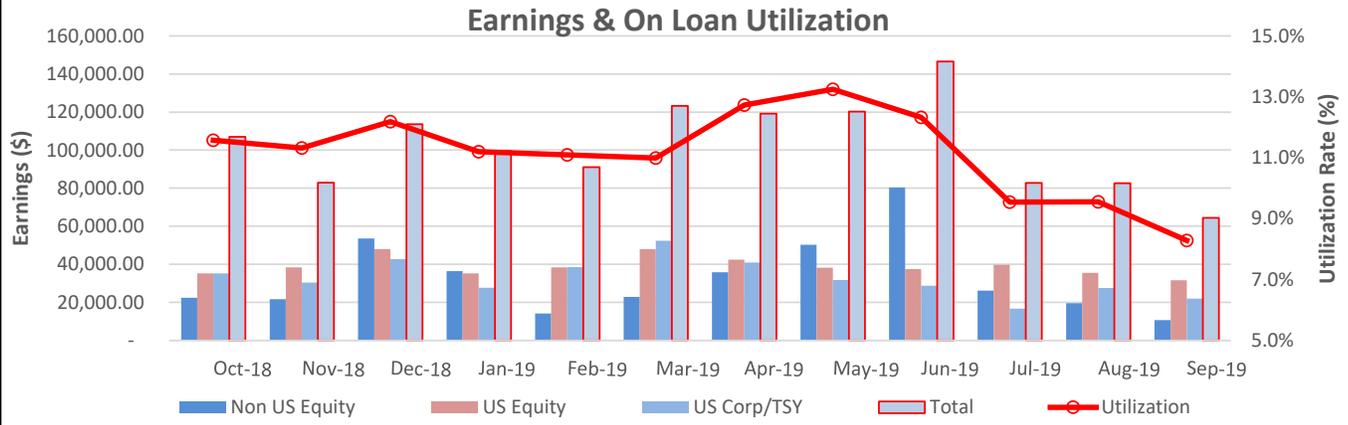
Reporting of rebalancing activities will continue to be submitted to the Investment Committee on a quarterly basis.

Alameda County Employees' Retirement Association

3rd Quarter 2019 Securities Lending Report

Quarterly Summary

In 3Q2019, ACERA's earnings from Securities Lending activities were \$229,833.55. US Equity generated the highest earnings of \$106,955.00. As of September 30, 2019, the average market value of securities on loan was \$134,717,187.39. Bank of America was the largest borrower of ACERA's securities with 19.5% as of the last day of the quarter.



Notes:

- (1) Quality D Liquidity and Quality D Duration Funds are managed by an affiliate of State Street Bank (SSB); these funds are common pools in which many securities lending clients of SSB invest their cash collateral generated from their security lending activities. ACERA invests the cash collateral received from its security lending activities into Quality D Liquidity and Quality D Duration Funds. As of 9/30/2019, ACERA's combined NAV per unit of the Quality D Liquidity (99.211) and Quality D Duration Funds (0.7890) was \$1.00. As of 9/30/2019, Quality D Liquidity had 121,205,465.20 units and Quality D Duration had 969,272.75 units.
- (2) Data represents past performance and is not necessarily indicative of future results.
- (3) Data Source: my.statestreet.com and Securities Finance Business Intelligence

Securities Lending Report Provided by Staff

ICM 12/11/2019

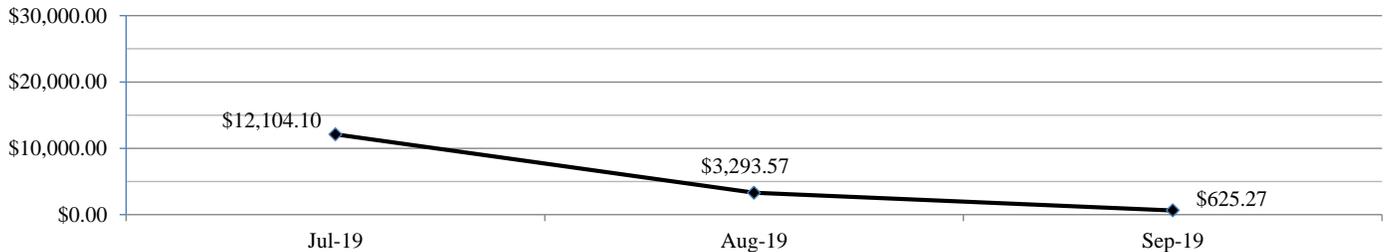


Alameda County Employees' Retirement Association Third Quarter 2019 Directed Brokerage Report

Quarterly Commentary

In 3Q19, the total recaptured dollar amount for ACERA's Directed Brokerage (DB) Program was \$16,022.94. Since inception¹, ACERA has recaptured \$2,043,038.60. For the quarter, TCW directed the highest percentage (68.5%) of trading volume and Pzena generated the largest recaptured directed commission dollar amount (\$15,998.92). CAPIS received the majority of ACERA's directed trades (71.8%) among all correspondent brokers within the network. The program continues to operate in compliance with ACERA's DB Policy.

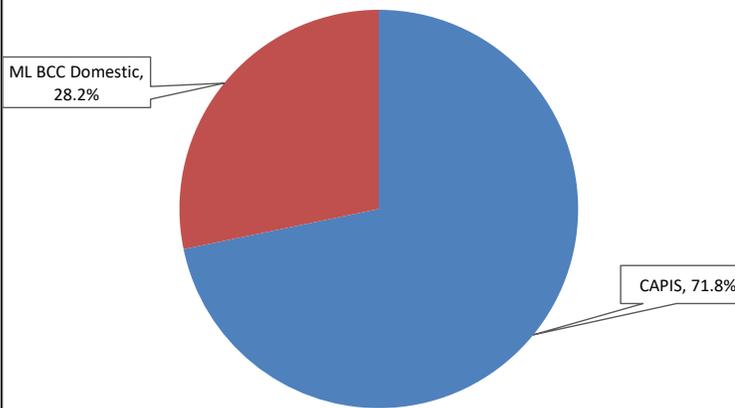
Monthly Recaptured



Directed Commission \$ ²			Directed % ³	
Manager	3Q2019	YTD		
Capital Group	11.11	378.40	0.00	10.00
Kennedy	13,157.98	17,023.19	9.20	10.00
NCG Small Cap	0.00	0.00	0.00	10.00
Pzena	15,998.92	25,936.30	15.90	30.00
TCW	8,115.60	8,273.12	68.50	25.00
Total	\$37,283.61	\$51,611.01		



Directed % to Correspondent Brokers⁴



- Andes Capital Group
- B. Riley & Co.
- Barclays (US Algo/DMA)
- BIDS Trading
- Bley Investment Group
- Cabrera Capital Markets
- CAPIS
- CAPIS Step Out
- CF Global Trading
- Commission Direct, Inc.
- Cowen Securities (U.S.)
- Drexel Hamilton
- HSBC James Capel
- ICAP (U.S.)
- Imperial Capital
- Instinet LLC
- ITG, Inc.
- Kota Global Securities
- LAM Securities
- Liquidnet
- Merrill Lynch (U.S.)
- Mischler Financial Group
- Northeast Securities
- O'Neil Securities
- Penserra Securities, LLC
- Pershing, LLC
- Piper Jaffray & Co.
- Societe Generale
- State Street Global Markets (Europe)
- Virtu Securities
- Weeden & Co LP

Brokers are selected at the discretion of the Investment Managers, pursuant to Best Execution and ACERA's DB Policy.

1. ACERA's DB Program began in September 2006. AQR Int'l, Mondrian, Bivium do not participate in Commission Recapture; Blackrock, Newton, and Templeton are not SMA.
 2. Data provided by CAPIS. Directed Commission \$ - Dollar amount of commissions from directed trades - this amount is split among ACERA (42.98% for 3Q2019), CAPIS, & the Correspondent Brokers.
 3. Data provided by Zeno Consulting Group (Zeno). Directed % - Calculated by dividing Manager's directed trading volume by its total trading volume and compared to its assigned target. Target percentages are ranges (e.g. up to 30% for Pzena).
 4. Data provided by CAPIS.



ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

475 14th Street, Suite 1000, Oakland, CA 94612 800/838-1932 510/628-3000 fax: 510/268-9574 www.acera.org

TO: Members of the Investment Committee

FROM: Agnes Ducanes – Administrative Specialist II 

DATE: December 11, 2019

SUBJECT: Quarterly report on ACERA's Investment Products and Services
Introductions (IPSI) Program

In the third quarter of 2019, Staff received 91 investment products and services inquiries from prospective providers. We met with 8 managers who presented through the IPSI process. Since we had staff turnovers, the IPSI meetings has been scheduled according to staff's availabilities.

The purpose of IPSI is to provide prospective vendors an opportunity to gain a better understanding of ACERA's investment objectives and for Staff to learn about the vendors' investment products/services through face-to-face meetings, teleconferences, or video conferences. Staff has designated the morning of the third Wednesday of every month as ACERA's IPSI day. Each introductory session is approximately 45 minutes.

Below please find a chart depicting the types of IPSI sessions that were held in the third quarter of 2019.

ASSET CLASS	Q1 '19	Q2 '19	Q3 '19	Q4'19	TOTAL
U.S. Equities	1	0	0	0	1
Int'l Equities	0	0	0	0	0
Fixed Income	0	0	0	0	0
Real Estate	0	0	0	0	0
Private Equities	0	0	0	0	0
Absolute Return	0	1	2	0	3
Real Assets	1	0	0	0	1
Private Credit			6		6
Other Services	1	0	0	0	1
TOTAL:	3	1	8	0	12



Proposed Investment Committee Workplan for 2019

December 11, 2019

Action Items	Information Items
January 9 1. Interview of the Finalists for ACERA’s U.S. Small Cap Growth Manager Search – Domestic Equities and Possible Motion by the Investment Committee to Recommend one Finalist to the Board	1. Discussion on Asset – Liability Introduction and Enterprise Risk Tolerance 2. Proposed Investment Committee Workplan for 2019
February 13 1. Discussion of and Possible Motion to Recommend to the Board to Approve an up to \$33 million Investment in Genstar Capital Partners IX as part of ACERA’s Private Equity Portfolio – Buyouts 2. Discussion of and Possible Motion to Recommend that the Board Approve an up to \$30 million Investment in Taurus Mining Finance Fund No. 2 as part of ACERA’s Real Assets Portfolio – Natural Resources	1. 2019 Capital Market Assumptions 2. Investment Committee Workplan 2019
March 13 (meeting cancelled)	1. <i>Report of ACERA’s Proxy Voting Activities in 2018</i> 2. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the fourth quarter of 2018</i> 3. <i>Quarterly report on ACERA’s rebalancing activities for the fourth quarter of 2018</i> 4. <i>Quarterly report on ACERA’s securities lending activities for the fourth quarter of 2018</i> 5. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the fourth quarter of 2018</i> 6. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the fourth quarter of 2018</i> 7. <i>Updated Investment Committee Workplan 2019</i>

Notes:

1. This workplan is subject to change without prior notice. Periodic rearrangements of agenda items will be made to the workplan to provide a reasonable length of time for each meeting.
2. Meeting date is assumed to be the second Wednesday of each month.
3. Educational sessions may be added to the Agenda from time-to-time e.g., Portable Alpha, Market and Currency Overlay, Equity Overlay, and Emerging Managers in Private Equity investments. Recommendations and reports on ACERA’s Real Estate, Private Equity, Absolute Return, and Real Assets investments will be added to the Agenda from time-to-time.



Proposed Investment Committee Workplan for 2019

December 11, 2019

Action Items	Information Items
<p>April 17</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio – Core Plus Debt (JP Morgan Mezzanine Debt) 	<ol style="list-style-type: none"> 1. Asset – Liability Integration 2. Discussion of an establishment of a working group to evaluate a possible ESG Policy 3. Closed Session: Govt. Code section 54956.81 – Consider the purchase or sale of a specific pension fund investment, and Govt. Code section 54957.1(d) (4) – Anticipated litigation (1 matter)
<p>May 15 (meeting moved to third Wednesday due to SACRS Conference)</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$60 million Investment in Great Hill Equity Partners VII as part of ACERA’s Private Equity Portfolio – Buyouts and Venture Capital 2. Discussion of and Possible Motion to Recommend to the Board to Adopt Alternative #2 in the Asset – Liability Integration Study 	<ol style="list-style-type: none"> 1. Education Session: Timberland 2. Real Assets Policy Update: Modification of Index Name in Benchmark Composite
<p>June 12</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$33 million Investment in Altas Partner Holdings II as part of ACERA’s Private Equity Portfolio – Buyouts 	<ol style="list-style-type: none"> 1. Review of Pzena Investment Management, LLC (Traditional Manager – Large Cap Value) 2. Semiannual Performance Review for the Period Ending March 31, 2019 – Equities and Fixed Income 3. Semiannual Performance Review for the Period Ending December 31, 2018 – Private Equities 4. Semiannual Performance Review for the Period Ending March 31, 2019 – Absolute Return 5. Semiannual Performance Review for the Period Ending December 31, 2018 – Real Assets 6. Semiannual Performance Review for the Period Ending March 31, 2019 – Real Estate 7. Closed Session: Govt. Code section 54956.81 – Consider the purchase or sale of a specific pension fund investment, and Govt. Code section 54957.1(d) (4) – Anticipated litigation (1 matter) 8. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian fees for the first quarter of 2019</i>

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Proposed Investment Committee Workplan for 2019

December 11, 2019

Action Items

Information Items

	Action Items	Information Items
		<ol style="list-style-type: none"> 9. <i>Quarterly report on ACERA's rebalancing activities for the first quarter of 2019</i> 10. <i>Quarterly report on ACERA's securities lending activities for the first quarter of 2019</i> 11. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the first quarter of 2019</i> 12. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2019</i> 13. <i>Updated Investment Committee Workplan 2019</i>
July 10	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt Private Credit Investment Policy 2. Discussion of and Possible Motion to Recommend to the Board to Adopt Private Credit Investment Plan 3. Discussion of and Possible Motion to Recommend to the Board to Adopt Private Equity Investment Plan 	<ol style="list-style-type: none"> 1. Review of Trust Company of the West (Traditional Manager – Large Cap Growth)
August 14	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Adopt the proposed timeline, search criteria, and evaluation matrix for ACERA's U.S. Large Cap Value Manager Search 	<ol style="list-style-type: none"> 1. Review of the Emerging Investment Manager Policy

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Proposed Investment Committee Workplan for 2019

December 11, 2019

Action Items	Information Items
<p>September 11</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$80 million Investment in Owl Rock First Lien Fund, L.P. as part of ACERA’s Private Credit Portfolio 2. Discussion of and Possible Motion to Recommend to the Board to Adopt Amendments on ACERA’s Emerging Investment Manager Policy 	<ol style="list-style-type: none"> 1. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the second quarter of 2019</i> 2. <i>Quarterly report on ACERA’s rebalancing activities for the second quarter of 2019</i> 3. <i>Quarterly report on ACERA’s securities lending activities for the second quarter of 2019</i> 4. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the second quarter of 2019</i> 5. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2019</i> 6. <i>Updated Investment Committee Workplan for 2019</i>
<p>October 9</p>	<ol style="list-style-type: none"> 1. Report on ACERA’s Private Equity Investment – Buyouts
<p>November 6 (meeting moved to first Wednesday due to SACRS Conference)</p>	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio (Artemis REP Income and Growth Fund)

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Proposed Investment Committee Workplan for 2019

December 11, 2019

Action Items	Information Items
December 11	<ol style="list-style-type: none"> 1. Review of State Street Bank and Trust Company 2. Semiannual Performance Review for the Period Ending September 30, 2019 – Equities and Fixed Income 3. Semiannual Performance Review for the Period Ending June 30, 2019 – Private Equity 4. Semiannual Performance Review for the Period Ending September 30, 2019 – Absolute Return 5. Semiannual Performance Review for the Period Ending June 30, 2019 – Real Assets 6. Semiannual Performance Review for the Period Ending September 30, 2019 – Real Estate 7. CA Gov. Code § 7514.7 Information Report 8. Closed Session: Govt. Code section 54956.81 – Consider the Purchase or Sale of Particular, Specific Pension Fund Investments (2 matters)(CA Gov. Code §§ 54956.81 and 6254.26) 9. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the third quarter of 2019</i> 10. <i>Quarterly report on ACERA’s rebalancing activities for the third quarter 2019</i> 11. <i>Quarterly report on ACERA’s securities lending activities for the third quarter of 2019</i> 12. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the third quarter of 2019</i> 13. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2019</i> 14. <i>Updated Investment Committee Workplan for 2019</i>

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