



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, September 12, 2018
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
	GEORGE WOOD, VICE CHAIR	ELECTED GENERAL
	DALE AMARAL	ELECTED SAFETY
	OPHELIA BASGAL	APPOINTED
	KEITH CARSON	APPOINTED
	TARRELL GAMBLE	APPOINTED
	JAIME GODFREY	APPOINTED
	LIZ KOPPENHAVER	ELECTED RETIRED
	HENRY LEVY	TREASURER
	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).

INVESTMENT COMMITTEE/BOARD MEETING

NOTICE and AGENDA, Page 2 of 3 – Wednesday, September 12, 2018

Call to Order: 9:30 a.m.

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

1. Discussion of and Possible Motion to Recommend to the Board to Approve an up to \$33 million Investment in ABRY Advanced Securities Fund IV as a part of ACERA's Private Equity Portfolio – Debt-Related/Special Situations³

9:30 – 10:15 Erik Brooks, ABRY
Faraz Shooshani, Verus Advisory, Inc.
Philip Wogsberg, ACERA
Betty Tse, ACERA

2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Amended ACERA General Investment Guidelines, Policies and Procedures

10:15 – 10:45 Barry Dennis, Verus Advisory, Inc.
Margaret Jadallah, Verus Advisory, Inc.
Betty Tse, ACERA

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

1. Discussion of Proposed Revisions to ACERA's Real Assets Policy

John Nicolini, Verus Advisory, Inc.
Faraz Shooshani, Verus Advisory, Inc.
Grant Hughs, ACERA
Betty Tse, ACERA

2. Education Session: Portable Alpha

Barry Dennis, Verus Advisory, Inc.
Margaret Jadallah, Verus Advisory, Inc.
Philip Wogsberg, ACERA
Betty Tse, ACERA

3. Quarterly Performance Review for the Second Quarter of 2018 – Equities and Fixed Income

Barry Dennis, Verus Advisory, Inc.
Stephen Quirk, Verus Advisory, Inc.
Thomas Taylor, ACERA
Betty Tse, ACERA
Philip Wogsberg, ACERA

³ Written materials and investment recommendations from the consultants, fund managers and ACERA Investment Staff relating to this alternative investment are exempt from public disclosure pursuant to CA Gov. Codes § 6254.26 and § 6255.

INVESTMENT COMMITTEE/BOARD MEETING

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4. Quarterly Performance Review for the Second Quarter of 2018 – Real Estate

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

Trustee Remarks

Public Input (Time Limit: 4 minutes per speaker)

Future Discussion Items

Establishment of Next Meeting Date


October 10, 2018 at 9:30 a.m.



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: Betty Tse, Chief Investment Officer 

DATE: September 12, 2018

SUBJECT: Discussion of and Possible Motion to Recommend to the Board to Adopt an Amended ACERA General Investment Guidelines, Policies and Procedures

Recommendation:

Adopt the proposed amendments to ACERA's General Investment Guidelines, Policies and Procedures (Policy).

Background / Discussion:

On August 8, 2018, Staff and Verus provided the Investment Committee with a version of the General Investment Guidelines, Policies and Procedures which was updated in red-line to reflect all of the Board actions taken since the last update to the Policy on May 20, 2013. In addition, Staff and Verus discussed several proposed changes for the Policy for consideration by the Committee.

Based on these discussions and an ongoing dialogue with the Consultant, Staff is proposing the following revisions to the Policy. The Board actions which were adopted by the Board since the last update on May 20, 2013 and shown as a red-line to the Investment Committee on August 8, 2018, have been incorporated in to the Policy ("blacklined"). In this action item, the newly proposed revisions for your consideration have been added as a "red-line". (See attachment).

The following identifies and explains key proposed revisions for your consideration:

Watchlist and Probation
(Section XX, p.19-26, 33-36)

1. Simplify the Watchlist and Probation language to reflect current best practices. Examples of some of the proposed changes are listed, as follows:
 - a. Rename Section XX: From Contract Review Process to Manager Watchlist Process.
 - b. Delete the Probation status and its related language in the current policy.
 - c. Remove the rules-based Watchlist/Probation Criteria for Underperformance (e.g., Schedule IIA and IIB on Pages 33-36 have been deleted)
 - d. List examples of reasons leading to placement on Watchlist.

Benchmark
(Schedule III, p.38)

2. Remove all benchmark premiums from the U.S Equity managers, which is the only asset class that contained benchmark premiums. (e.g. Pzena's benchmark is proposed to change from the "Russell 1000 Value + 200bps" to the "Russell 1000 Value")

Derivatives Investment Criteria
(Section XIII, p.13; Schedule II, p.30-32)

3. Add Schedule II describing ACERA's Derivative Investment Criteria.

Goals and Policy Language
(Section VI, p.7; Section VII p. 7-9; Section VIII, p.9-10; Section IX, p.11-12; Section XIX, p.17)

4. Add a new section titled "Section VI: Program Investment Goals"
5. Update and reconcile the goals and objectives language in Policy to be consistent with the language in the Real Estate, Real Assets, Private Equity and Absolute Return policies.
6. Change the in-depth performance reporting provided by the General Investment and Real Estate Consultants from a quarterly basis to a semi-annual basis, to be consistent with the reporting schedule for the Private Equity, Absolute Return and Real Asset portfolios.

Other Ideas
(Section IX, p.11-12)

7. Update the Traditional Asset Classes (U.S. Equity, International Equity and Fixed Income) to state the returns will be in the upper 33rd percentile in the short to intermediate term and in the top quartile over longer periods of time.

Attachment:

- 1) Proposed ACERA's 2018 Amended General Investment Guidelines, Policies and Procedures (red-line copy)

**Alameda County Employees'
Retirement Association**

ACERA

**GENERAL INVESTMENT GUIDELINES, POLICIES
AND PROCEDURES**

AMENDED September 20, 2018~~TBD~~

ACERA

GENERAL INVESTMENT GUIDELINES, POLICIES AND PROCEDURES

201~~8~~³

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¹ Prepared for ACERA by Cortex Consulting; adopted by the Board of ACERA on March 8, 2000; revised in May, 2013.

ACERA

GENERAL INVESTMENT GUIDELINES, POLICIES AND PROCEDURES

SECTION I: MISSION AND PURPOSE

The Alameda County Employees' Retirement Association (ACERA) exists for the purposes of providing accurate, timely benefits to its members and their beneficiaries and defraying reasonable expenses of administration.

The Board of Retirement (the Board), having exclusive authority and exclusive fiduciary responsibility for the investment and administration of the Trust Fund (the Fund), hereby establishes the following "General Investment Guidelines, Policies and Procedures" (the Policy) for the investment of ACERA's assets. The Board reserves the right to amend, supplement, or rescind this Policy at any time.

The Board is directed by law and given discretion to prudently invest the ~~Fund's retirement plan~~ assets. The purpose of this statement of Policy is to assist ACERA in effectively supervising ~~the Funds said investments~~ and to encourage effective communication between ACERA and its investment managers (Manager(s)) and investment consultants (Consultant(s)).

~~ACERA's investment goal is to operate at a level of performance in the upper quartile of comparable pension funds on a risk-adjusted basis and to be as fully funded as possible so that ACERA's benefit costs do not become a burden upon future generations of members and taxpayers.~~

SECTION II: CONSTITUTIONAL REQUIREMENTS

Article 16 §17 of the California State Constitution provides in pertinent part as follows:

"Notwithstanding any other provisions of law or this Constitution to the contrary, the retirement board of a public pension or retirement system shall have plenary authority and fiduciary responsibility for investment of moneys and administration of the system, subject to all the following:

- a. The retirement board of a public pension or retirement system shall have the sole and exclusive fiduciary responsibility over the assets of the public pension or retirement system. The retirement board shall also have sole and exclusive responsibility to administer the system in a manner that will assure prompt delivery of benefits and related services to the participants and their beneficiaries. The assets of a public pension or retirement system are trust funds and shall be held for the exclusive purposes of providing benefits to participants in the pension or retirement system and their beneficiaries and defraying reasonable expenses of administering the system.
- b. The members of the retirement board of a public pension or retirement system shall discharge their duties with respect to the system solely in the interest of, and for the exclusive purposes of providing benefits, to participants and their beneficiaries, minimizing employer contributions thereto, and defraying reasonable expenses of

administering the system. A retirement board's duty to its participants and their beneficiaries shall take precedence over any other duty.

- c. The members of the retirement board of a public pension or retirement system shall discharge their duties with respect to the system with the care, skill, prudence, and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with these matters would use in the conduct of an enterprise of a like character and with like aims.
- d. The members of the retirement board of a public pension or retirement system shall diversify the investments of the system so as to minimize the risk of loss and to maximize the rate of return, unless under the circumstances it is clearly not prudent to do so.
- e. The retirement board of a public pension or retirement system, consistent with the exclusive fiduciary responsibilities vested in it, shall have the sole and exclusive power to provide for actuarial services in order to assure the competency of the assets of the public pension or retirement system.
- f. With regard to the retirement board of a public pension or retirement system which includes in its composition elected employee members, the number, terms, and method of selection or removal of members of the retirement board which were required by law or otherwise in effect on July 1, 1991, shall not be changed, amended, or modified by the Legislature unless the change, amendment, or modification enacted by the Legislature is ratified by a majority vote of the electors of the jurisdiction in which the participants of the system are or were, prior to retirement, employed.
- g. The Legislature may by statute continue to prohibit certain investments by a retirement board where it is in the public interest to do so, and provided that the prohibition satisfies the standards of fiduciary care and loyalty required of a retirement board pursuant to this section.
- h. As used in this section, the term "retirement board" shall mean the board of administration, board of trustees, board of directors, or other governing body or board of a public employees' pension or retirement system; provided, however, that the term "retirement board" shall not be interpreted to mean or include a governing body or board created after July 1, 1991 which does not administer pension or retirement benefits, or the elected legislative body of a jurisdiction which employs participants in a public employees' pension or retirement system."

SECTION III: ROLES AND PRINCIPAL DUTIES

The Fund investments shall be prudently planned, implemented, managed, monitored and guarded. The Board, Investment Committee (Committee), Investment Staff (Staff), Consultant, Custodian Bank (Custodian), and Manager shall coordinate this process. See the defined roles and principal duties of the above-mentioned parties below:

- A. THE BOARD shall review and approve Committee recommendations. The Board also reviews, adopts and monitors all investment policies, guidelines and procedures required to prudently administer the Fund and to effectively mitigate risk to the Fund.

- B. THE COMMITTEE shall identify issues pertinent to the effective investment and administration of the Fund and initiate analysis of such issues by Staff, Consultant or Managers. It also reviews Staff's and Consultant's recommendations regarding all investment policies and investment Fund management. The Committee provides recommendations to the Board for adoption, oversees implementation, and monitors the investment programs in accordance with all applicable laws and Board-established policies, guidelines and procedures. Refer to Schedule VII – Charter of ACERA's Investment Committee of the Board for detailed Committee responsibilities.
- C. STAFF shall oversee the Fund's investment program activities, implement the Board/Committee's decisions, make recommendations to the Committee regarding Fund management, and recommend investment-related policies and procedures to the Committee. Additionally, Staff monitors the performance and compliance of Managers in accordance with all applicable laws, Board-established policies, guidelines and procedures, as well as "Specific Investment Guidelines"² set out in the investment agreement between ACERA and each Manager (Agreement or Contract). Staff also facilitates the Committee meetings and completes activity as directed by the Board/Committee.
- D. CONSULTANT shall review, analyze and evaluate the Fund's effectiveness and efficiency and make fund management related recommendations. Consultant assists Staff in implementing the Board/Committee's decisions and developing all investment-related policies. Consultant's responsibilities are detailed in the service agreement between ACERA and Consultant.
- E. CUSTODIAN shall provide custody of ACERA's investment assets. Custodian's responsibilities are detailed in the service agreement between ACERA and Custodian.
- F. MANAGER shall prudently manage its Managed Account (defined in Section VII – Eligible Asset Categories) in accordance with all applicable laws, Board-established policies, guidelines and procedures, as well as Specific Investment Guidelines. Manager's responsibilities are detailed in the Agreement.

SECTION IV: INVESTMENT PHILOSOPHY

The following is a summary of ACERA's investment philosophy. For the complete statement, please refer to Schedule VI of this document, "ACERA Investment Philosophy."

The Board believes that its investment policies, in aggregate, are the most important determinants of its investment success. Compliance with investment policies should, therefore, be monitored rigorously. The Board also believes that performance of the total portfolio, individual asset classes, and Managers should be monitored and compared to appropriate, predetermined benchmarks.

The Board believes that prudent management of risk is a central element of the investment function and that diversification among asset classes will reduce risk and enhance returns of the overall

² Includes the Objectives/Guidelines of all comingled funds.

investment portfolio in the long term. Further, the Board believes that strategic asset allocation has the greatest impact on long-term investment returns and volatility.

The Board believes that market efficiency and opportunities vary among asset classes and may change over extended periods of time; therefore, the Board believes that ACERA's portfolio management strategies should adapt over time to reflect the changing nature of capital markets.

The Board's primary goals in managing the Fund are

1. To ensure that sufficient funds are available to pay vested benefits and maintain supplemental benefits;
2. To comply with all applicable fiduciary standards; and
3. To add marginal value that will help reduce the costs of the plan and/or to increase benefits for the beneficiaries.

The Board believes that, to achieve its goals, ACERA must invest the necessary resources to build and maintain an appropriate organizational infrastructure.

SECTION V: ASSET ALLOCATION AND REBALANCING

Asset allocation targets, a function of the returns and risks from various asset classes and the nature of the plan's liabilities, are set forth in Schedule I. A goal of asset allocation is balancing asset growth versus liability growth considering time horizons, liabilities and risk tolerance. ACERA's objective is to conduct an asset/liability study once every five (5) years and an asset allocation study once every three (3) years or more often if necessary.

Rebalancing is the ~~risk control~~ process of returning an allocation back to the desired target level after having drifted away from its targeted position. ACERA will maintain a disciplined methodology to rebalance back to its Equal probability bands, as defined by standard deviation factors, shall be used to define the acceptable ranges around the asset allocation targets as set forth in Schedule IA. The objective of rebalancing is to enhance the risk-adjusted performance of the asset allocation structure.

Staff shall be responsible for maintaining the relative weights of asset classes and allocations within the acceptable rebalancing ranges. Should an asset class or allocation fall outside its target range, Staff shall rebalance the asset class or allocation back to the target weights as specified in the asset allocation targets in Schedule IA.

Staff shall:

1. Monitor the Fund's asset allocation portfolio;
2. Determine whether or not any asset category is out of balance with its target asset allocation in excess of the specified tolerance range;
3. Determine whether or not any Manager within each asset category is out of balance with its target allocation in excess of the specified tolerance range;
4. And, if this is determined, either
 - (a) instruct the relevant Managers to redirect cash income (interest coupon and dividends) in concert with an evaluation of pending commitments and other cash flows (employer

- and employee contributions), in order to bring the allocation(s) back to the adopted strategic target; and/or
- (b) instruct the relevant Managers to liquidate or acquire the appropriate dollar value of securities to reach the target and reallocate the cash thus generated or required to the other category(s) or Manager(s), as necessary.

Staff shall report to the Board on a regular basis the status of the Fund with respect to how categories are tracking relative to their allowable ranges, as well as any actions taken to rebalance the portfolio.

SECTION VI: PROGRAM INVESTMENT GOALS

The goal of ACERA's investment program is to seek to provide alpha to the Fund in a risk aware framework such that ACERA's benefit costs do not become a burden upon future generations of members, participating employers, and taxpayers. Other goals include:

1. Diversify the Fund's assets as its main defense against large market drawdowns, while maintaining reasonable risk exposure to meet return requirements.
2. Preserve a degree of liquidity ample to meet benefit payments and capital calls, without incurring substantial transaction costs of illiquid holdings.
3. Achieve net-of-fee returns in excess of policy benchmarks at the Fund and asset class levels over rolling five-year periods.
4. Achieve risk-adjusted, net-of-fee returns at the Fund level that rank in the top half of a competitive, institutional peer group.
5. Achieve returns at or above ACERA's actuarial rate of return over complete market cycles measured over rolling five-year periods.

SECTION VII: INVESTMENT STRATEGY AND MANAGER STRUCTURE

- A. U.S. EQUITY will be structured to capture exposure to the broad U.S. equity market as represented by the Russell 3000 Index. Passively managed (index) portfolios will be used in portions of the markets that are reasonably efficient and in managing Manager expenses (e.g. Domestic Large Cap Equities). These portfolios are intended to provide broadly diversified market exposure with controlled (market) risk and minimal cost.

Actively managed portfolios will be used when the Board determines that a Manager possesses special skills or abilities that enable that Manager to capture excess returns relative to the market, adjusted for risk and fees; or to exploit specialty markets that provide enhanced return with acceptable risk.

A great part of the Russell 3000 Index, on a market value basis, is comprised of large-cap stocks. The Board has adopted a policy of obtaining overall exposure to this segment of the market via passively managed indexed products. In addition, some active Managers have been employed to enhance overall portfolio return on a risk- and fee-adjusted basis.

The remainder of the Russell 3000 Index is comprised of small to mid-cap companies. Some opportunities for active management enhancement exist in these securities due to market inefficiencies. ACERA will attempt to capture these opportunities through a mix of Managers

who have the special skills required to identify smaller companies that may be undervalued or possess substantial growth potential.

The U.S. equity portfolio shall be allocated among the various styles and Managers. The U.S. equity asset allocation and manager structure targets are outlined in Schedules IA and IB.

- B. INTERNATIONAL EQUITY represents an opportunity to diversify risk and capture enhanced returns within markets generally less efficient than the U.S. domestic equity market. ~~Eighty percent of the international equity portion of the Fund will be invested in actively managed portfolios.~~ Passively managed (index) portfolios will be used in portions of the markets that are reasonably efficient. Actively managed portfolios will be used when the Board determines that a Manager possesses special skills or abilities that enable that Manager to capture excess returns relative to the market, adjusted for risk and fees; or to exploit specialty markets that provide enhanced return with acceptable risk.

The international equity portfolio shall be allocated among the various styles and Managers. The international equity asset allocation and manager structure targets are outlined in Schedules IA and IB.

- C. FIXED INCOME represents a means of reducing overall portfolio risk and capturing incremental returns either domestically or globally. Inefficiencies in the pricing and trading of fixed income securities create opportunities to add value through active management. 100% of the fixed income portion of the portfolio will be invested in actively managed portfolios.

The fixed income portfolio shall be allocated among the various styles and Managers. The fixed income asset allocation and manager structure targets are outlined in Schedules IA and IB.

- D. REAL ESTATE ~~represent will be used as~~ a means for diversifying the portfolio and lowering correlations to traditional asset classes, capturing additional returns due to the low correlation between returns on real estate and financial assets. ~~Due~~Owing to the illiquid nature of real estate assets, distinctions between active and passive management are not applicable. Detailed information regarding real estate investments is included in ACERA's "Real Estate Guidelines, Policies and Procedures," which is maintained as a separate document.

The real estate portfolio shall consist primarily of commingled funds and will be ~~allocated diversified between among~~ the various property types and categories (Core, Value-Added and Opportunistic) styles and Investment Managers. The real estate portfolio asset allocation target is outlined in Schedules IA and IB.

- E. PRIVATE EQUITY ("PE") investments represent a means of generating returns superior to those available in the public equity market to compensate the Fund for the long term, illiquid commitments. The Private Equity portfolio is intended to enhance ACERA's overall returns on a risk-adjusted basis.

The private equity portfolios shall be allocated among the various sub-categories and Managers. The private equity portfolios' asset allocation targets are outlined in Schedules IA and IB. Specific details on the strategic allocation to the private equity investment portfolios

are outlined in ACERA's Private Equity Investment Policy, which is maintained as a separate document.

~~F. ABSOLUTE RETURN ("AR") strategies represent a means where the Fund's overall returns can be enhanced, on a risk-adjusted basis, by investing a portion of its assets in AR strategies, which have a low correlation to equity markets. of further diversifying the portfolio and generating a return stream that has a low correlation to equity markets. The Absolute Return portfolio is intended to enhance ACERA's overall returns on a risk-adjusted basis.~~ The Absolute Return portfolio shall be allocated among the various sub-categories and Managers.

The absolute return portfolio's asset allocation targets are outlined in Schedules IA and IB. Specific details on the strategic allocation to the absolute return investment portfolio are outlined in ACERA's Absolute Return Policy, which is maintained as a separate document.

~~F.G. REAL ASSETS ("RA") investments consist of assets that exhibit positive correlation to inflation and positive returns over the long run. expected to produce positive returns with a secondary goal of protecting the Fund against unexpected U.S. inflation and increasing U.S. inflation expectations.~~

The ~~RA~~real assets portfolio shall be allocated among the specific types of Managers. The real assets total portfolio allocation target is outlined in Schedules IA and IB. Detailed information regarding real assets investments is included in ACERA's Real Assets Policy which is maintained as a separate document.

~~In aggregate, investments in non-U.S. markets across all asset classes shall not exceed 45% of the market value of the total Fund.~~

SECTION VII: ELIGIBLE ASSET CATEGORIES

The Fund shall hold assets in categories established by the Board. Any asset category may be held in direct form, in pooled/commingled form, or in both. Asset categories managed by one or more "Qualified Investment Managers" are called "Managed Accounts or Funds." Eligible asset categories are listed and defined below.

- A. CASH AND CASH EQUIVALENT shall consist of, but not be limited to, cash, short term (12 months or less) interest bearing investments of high quality such as U.S. Treasury issues, insured certificates of deposit of U.S. banks (fixed and/or variable), commercial paper rated A-1, P-1 or both, or other instruments of equal or better quality, and money market funds available through the Custodian.
- B. U.S. EQUITY shall consist of, but not be limited to, common stocks and other securities which are convertible into common stocks, and ADRs (American Depositary Receipts), as well as cash (per "A" above) and fixed income (per "D" below) when used as temporary substitutes for common stocks.
- C. INTERNATIONAL EQUITY shall consist of, but not be limited to, common stocks and other securities convertible into common stocks of companies domiciled outside of the U.S., GDRs (Global Depositary Receipts), IDRs (International Depositary Receipts) and other depository

receipts as well as cash/cash equivalents (per “A” above) and fixed income (per “D” below), domestic or international, which are being used as temporary substitutes for common stock.

- D. FIXED INCOME shall consist of investments in, but not be limited to, U.S. taxable bonds, debentures, notes and other evidences of debt. Fixed income may also include, but not be limited to, non-dollar denominated bonds issued by corporations or governments domiciled outside of the U.S. Other eligible investments shall include cash/cash equivalents (per “A” above), convertible bonds, and preferred stock.
- E. REAL ESTATE shall consist of investments in real estate and equity real estate through the use of commingled or direct investments. Detailed information about real estate investments is included in ACERA’s “Real Estate Guidelines, Policies and Procedures,” which is maintained as a separate document.
- F. PRIVATE EQUITY investments shall consist of investments including venture capital, corporate buyouts, debt-related and special situations,. Private equity investments may be denominated in U.S. dollars or other currencies. Detailed information about private equity investments is included in ACERA’s “Private Equity Investment Policy” which is maintained as a separate document.
- G. ABSOLUTE RETURN shall consist of investments which are intended to generate a return stream that has a low correlation to equity markets. Eligible Absolute Return investments include alternative premia³ strategies, hedge fund-of-funds, and other alternatives/opportunistic strategies. These investments are privately placed investments, premia strategies, funds of hedge funds, and other opportunistic absolute return strategies that are uncorrelated with equity markets. Absolute return investments may be denominated in U.S. dollars or other currencies. Detailed information about absolute return investments is included in ACERA’s “Absolute Return Policy” which is maintained as a separate document.
- H. REAL ASSETS investments shall consist of, but not be limited to, commodities, natural resources, and infrastructure investments. In addition, the RA portfolio will invest in private limited partnerships and secondaries in sectors with inflation sensitive assets, investments including, but not be limited to, natural resources, infrastructure, commodities, TIPS, Inflation Break evens, and REITs. All Real Assets investments/ strategies are Alternative Investments. Detailed information regarding Real Assets investments is included in ACERA’s Real Assets Policy which is maintained as a separate document.

~~In aggregate, non U.S. currency exposure (net) across all asset classes shall not exceed 45% of the market value of the total Fund.~~

³ Alternative premi are empirically-tested, sources of return that can be systematically harvested through dynamic strategies. They can be thought of as returns that underlie “classic” hedge fund strategies (hedge fund risk premia) or the returns from “classic” styles (style premia), such as value, momentum, and carry.

SECTION VIII: ASSET CATEGORIES' OBJECTIVES

The general objective of the Board is to preserve capital and to earn a return from appreciation and income, as described herein:

- ~~1. To ensure the integrity of ACERA's actuarial funding plan, one minimum return objective for the Fund shall be the current actuarial interest assumption rate plus 25 basis points per year over a full market cycle. Returns shall be calculated net of all fees (both administrative and investment fees).~~
- ~~2. To ensure that ACERA's assets grow appropriately to match salary increases which directly impact benefit levels, an additional minimum return objective for the Fund over a full market cycle (up to five (5) years) shall also be 400 basis points (4.00%) per year over the national Core Consumer Price Index, published by the U.S. Department of Commerce. Returns shall be calculated gross of investment management fees.~~
- ~~3. To ensure that ACERA's external investment manager structure, in the aggregate, is performing satisfactorily, an additional minimum return objective for the Fund over a market cycle (up to five (5) years) shall be to achieve annualized investment returns equivalent to the Fund's Policy Index on a gross of investment management fees basis.~~

The objectives of each asset category are:

A. CASH AND CASH EQUIVALENT

1. An annualized rate of return in excess of 90-Day U.S. Treasury Bills, and
2. An annualized rate of return within the upper one half of a universe of like short-term funds.

B. U.S. EQUITY

1. An annualized rate of return in excess of the annualized U.S. equity market returns as measured by the Russell 3000 Index, ~~and~~
2. An annualized rate of return within the upper 33rd percentile of the InvestorForce database or similar database of the annualized returns of diversified domestic equity portfolios over the short to intermediate term which should result in a top quartile return over longer periods of time.

C. INTERNATIONAL EQUITY

1. An annualized rate of return in excess of the Morgan Stanley Capital International All Country World Investable Market Index Ex U.S. (MSCI ACWI Ex U.S. IMI), ~~and~~
2. An annualized rate of return within the upper 33rd percentile top quartile of the InvestorForce database or similar database of the annualized returns of diversified international equity portfolios over the short to intermediate term which should result in a top quartile return over longer periods of time.

D. FIXED INCOME

1. An annualized rate of return in excess of the Barclay's Aggregate Bond Index, Citigroup World Government Bond Ex. U.S. and Barclay's High Yield Index in a ratio of 75/15/10, ~~and~~
2. An annualized rate of return within the upper 33rd percentile top quartile of the InvestorForce database or similar database of the annualized returns of diversified international equity portfolios over the short to intermediate term which should result in a top quartile return over longer periods of time.

E. REAL ESTATE

1. Total Net Return – equivalent to the National Council of Real Estate Investment Fiduciaries Open-End Diversified Core Equity Index (NFI ODCE) as a minimum return for the total portfolio over rolling five-year periods, and
2. Income Return – ~~Income, which is defined as cash distributed to ACERA, should comprise generally 50% of the total expected return over rolling five year periods for all Core (as defined in Please refer to~~ ACERA's "Real Estate Guidelines, Policies and Procedures") ~~products, which is maintained as a separate document, for detailed information.~~

F. PRIVATE EQUITY

1. For Private Equity: An annualized rate of return in excess of the Thomson Reuters C/A Global All Private Equity Benchmark net of all fees and expenses over a full market cycle. Please refer to ACERA's Private Equity Investment Policy, which is maintained as a separate document, for detailed information.

G. ABSOLUTE RETURN

1. Generate total AR Portfolio returns at or above the HFRI Fund of Funds Composite Index (net of all fees and expenses). ~~Achieve (a) a low correlation to equity markets and (b) an annualized rate of return at or above the HFRI Fund of Funds Composite Index net of all fees and expenses.~~ Please refer to ACERA's Absolute Return Policy, which is maintained as a separate document, for detailed information.

H. REAL ASSETS

1. The performance of the ~~r~~Real ~~a~~Assets portfolio will be measured against the following blended benchmark: S&P Global Natural Resources Index, S&P Global Infrastructure Index, and Bloomberg Commodity Index in the ratio of 50/35/15. Please refer to ACERA's Real Assets Policy, which is maintained as a separate document, for detailed information.

In addition, objectives that reflect a particular investment strategy or style employed by an individual Manager shall be outlined in the Specific Investment Guidelines attached to the Manager's Contract.

SECTION IX: ALLOCATION OF CASH FLOW

Cash flow not needed for benefit payments or administrative expenses shall be allocated to Managed Accounts in a ratio that best funds the overall targeted asset allocation as reflected in Schedules IA and IB.

If cash flow is insufficient for the payment of benefits or to cover administrative expenses, then Managed Accounts shall be debited in a ratio that best satisfies the target allocation shown in Schedules IA and IB. Such debits, if necessary, will be carried out as needed and with timely notice to Managers to facilitate effective funds transitions and performance measurement.

For all planned investments which may not need to be funded immediately, a reserve may be budgeted and invested in appropriate accounts in accordance with the asset allocation targets until such moneys are required. Alternatively, Managed Accounts within “overfunded” asset classes may be called upon to provide the required moneys.

SECTION XI: PROHIBITED INVESTMENTS

Managers shall exercise prudent ~~person~~^{expert} standards in defining prohibited investments. For example, prohibited investments include, but are not limited to, securities issued by the County of Alameda or any agency thereof.

SECTION XII: DIRECTED BROKERAGE

ACERA has established an open Directed Brokerage (DB) Program designed to maximize the recapture of brokerage commissions by enforcement of the target percentages of direction. ACERA’s DB Program is governed by ACERA’s DB Policy, which is maintained as a separate document.

The strategic objective of the DB Program is to take advantage of the industry-accepted recapture of a portion of trade commissions paid to brokers. The primary goals of the DB Program are to 1) recapture 50% or more of commissions paid on a specific percentage of trades sent to correspondent brokers on a timely basis; 2) construct the percentage of trades subject to recapture so as to allow ~~investment-m~~Managers to have access to the research they need; 3) seek “Best Execution” through third-party administration and outside consultant monitoring; and 4) encourage local and emerging broker participation through the use of an open correspondent network program.

SECTION XIII: DERIVATIVES INVESTMENT CRITERIA ~~INSTRUMENT USAGE~~

Exposure to risk by use of derivative instruments must be consistent with ACERA’s overall investment policy as well as an individual Manager’s Specific Investment Guidelines. The Derivatives Investment Criteria (See Schedule II) allows ACERA’s separate account managers to exercise prudent professional judgement in alignment with their investment mandates, while minimizing the possibility of adverse implications for the Fund. In general, derivatives shall not be used to establish a leveraged position (i.e., offsetting Cash positions must be maintained against all delayed settlement transactions). Should there be any conflict between an individual Manager’s Specific Investment Guidelines and this Policy statement regarding the use of derivative instruments, the Specific Investment Guidelines shall control.

SECTION XI~~V~~^H: SELECTION OF ~~INVESTMENT~~ MANAGERS

The Investment Committee shall direct Staff and/or a Consultant to initiate searches for Managers. Staff and/or the Consultant shall research for qualified candidates and present a list of finalists to the Investment Committee for its approval. Upon approval of the list, the finalists shall be interviewed by Staff and the Consultant (if applicable). Staff and the Consultant (if applicable) shall evaluate the interviews, rank the finalists, and make a recommendation to the Investment Committee to hire one or more firms attaining the highest rankings in a publicly noticed meeting at which no less than five (5) Investment Committee members shall be present. It is possible that none of the firms will be recommended for hire.

The above-mentioned procedures are developed for the convenience and benefit of ACERA, and shall not bind ACERA or invalidate the selection of a Manager, if different processes are used subsequent to the promulgation of this Policy. ACERA recognizes that some investments by their nature present unique opportunities and there may not be suitable competitors for a unique investment opportunity. ACERA also recognizes that due to inherent features of some investments, time constraints may require ACERA to use a different investment manager selection process.

SECTION XI~~V~~^V: EMERGING ~~INVESTMENT~~ MANAGERS

The Board has established the ACERA Emerging Investment Manager Policy (EM Policy), which is maintained as a separate document. The purpose of the EM Policy is to establish a framework for the development and administration of ACERA's Emerging Investment Manager Program (EM Program), consistent with the Board's fiduciary responsibilities in the investment of the Fund. The EM Policy states that the initial investment of the EM Program is not to exceed 1% of the total Fund.

The strategic objective of the EM Program is to add incremental value to the Fund through the hiring of the most talented Emerging Investment Managers (EMs) to manage ACERA's assets.

The primary goals of the EM Program are to 1) identify and gain early access to the most talented investment managers in their early business stages; 2) generate superior Fund return performance through the EM Program; 3) identify superior EMs and/or investment opportunities in the State of California and Alameda County that are equal to or superior to comparable available investments; and 4) further diversify the Fund's overall investment program, so as to enhance risk-adjusted returns of the Fund.

SECTION XVI^I: AUTHORITY OF ~~INVESTMENT~~ MANAGERS

Subject to the laws of the United States and the State of California, and to the terms and conditions of this Policy, Managers shall have full discretion to direct the purchase, exchange, sale and reinvestment of the assets of the Managed Accounts. The Board expects that Managers will recommend changes to this Policy when any part of this Policy appears to be at variance with overall market and economic conditions.

Managers shall place orders to buy and sell securities and, by notice to the Custodian, shall cause the Custodian to deliver and receive securities on behalf of the Fund. Managers shall, upon Board

inquiry, report placement of ACERA brokerage activities such that the Board shall be assured commissions were placed for the sole and exclusive benefit of the Fund.

Separate account Managers shall not vote proxies. Proxies shall be voted by ACERA, via a proxy voting service vendor, in accordance with "ACERA Proxy Voting Guidelines and Procedures" which is maintained as a separate document.

Securities lending shall be performed under the oversight of Staff, in accordance with Board-established procedures.

SECTION XVII: INVESTMENT GUIDELINES FOR THE MANAGED ACCOUNTS

Individual Manager discretion shall be governed by the Investment Guidelines for the Managed Accounts as well as the Specific Investment Guidelines for each Manager. Should there be any conflict between the Specific Investment Guidelines of an individual Manager and the Investment Guidelines for the Managed Accounts, the Specific Investment Guidelines shall prevail.

A. GENERAL

1. All investments shall comply with all applicable laws of the U.S. and the State of California governing the investment of pension trusts.
2. All securities transactions shall be executed by reputable broker/dealers, banks, or the Custodian, and shall be on a best-price and best-execution basis, and shall be reported to ACERA as is called for elsewhere in this Policy.
3. All Managers shall refrain from investing in a tobacco producer investment opportunity when, in their expert opinion, an alternative non-tobacco producer investment opportunity is available that will satisfy the same ACERA portfolio guidelines, instructions and objectives for risk, return and diversification.

B. EQUITY

Managers have full discretion to invest solely in readily marketable and diversified equity securities subject to the following:

1. For Managed Accounts, no more than 10% of the value (at time of purchase) of the account shall be invested in the securities of a single issuer.
2. ACERA shall not hold more than 10% of the equity securities of any issuer.
3. Equity securities shall possess value and quality corroborated by generally accepted techniques and standards of fundamental securities analysis.
4. Assets in a Managed Account not invested in equity securities shall be kept with interest in appropriate money market instruments, including any money market fund available through the Custodian.
5. A Managed Account shall be subject to ACERA's Policy statement on the use of derivatives in Section XII.
6. All Managers shall endeavor to be fully invested in stocks at all times unless they have received specific authorization to the contrary from the Board. Cash holdings, as defined in this Policy, shall generally not exceed 5% of the ~~Fund portfolio~~ on a market value basis.

C. FIXED INCOME

Managers have full discretion to invest solely in readily marketable and diversified securities including, but not limited to

1. Obligations of the U.S. and/or eligible foreign government treasuries.
2. Obligations guaranteed by agencies of the U.S. and/or eligible foreign governments.
3. Insured certificates of deposit and banker's acceptances of credit worthy banks.
4. Corporate and other evidences of debt. At least 80% of this debt must be rated by Moody's Investor's Services or by Standard & Poors Corporation.
5. Commercial paper and banker's acceptances of issuers rated P-1 by Moody's Investor's Service or A-1 by Standard & Poors Corporation.
6. Excepting direct obligations of the U.S. and/or eligible foreign governments, and those explicitly guaranteed by the U.S. and/or eligible governments, no account shall hold more than 5%, at cost, of the obligations of any single issuer.
7. Excepting direct obligations of the U.S. and/or eligible foreign governments, and those explicitly guaranteed by the U.S. and/or eligible governments, no security shall comprise more than 5% of the account, as determined at the time of purchase.
8. A Managed Account shall be subject to ACERA's Policy on the use of derivatives as stated in Section XIII.

SECTION XVIII: ~~INVESTMENT~~ MANAGER SPECIFICATIONS

- A. Managers must be registered as investment advisers under the Investment Adviser's Act of 1940, a bank (as defined in that Act) or an insurance company qualified to perform investment management services under state law in more than one state, including the State of California. Unless an exception is granted by the Board, by accepting appointment as ACERA's Managers, Managers shall acknowledge that they are "Plan Fiduciaries" and "Qualified Investment Managers" as defined by the Employees' Retirement Income Security Act (ERISA) of 1974 (see or reference United States Code Title 29 Section 1001 et. seq.).
- B. Managers shall maintain fiduciary insurance in the amount of 10% of the total assets managed in the ACERA account or \$25 million, whichever is higher, unless the Contract specifies otherwise.
- C. Managers shall promptly notify ACERA of changes that occur in any of the following:
 1. The investment strategy used in managing the subject product.
 2. The key personnel involved in managing ACERA's account.
 3. The ownership, key personnel, or organizational structure of the Manager's company.
 4. The Manager company's financial condition.
 5. The number of clients invested in the subject product and firm wide.
 6. The market value of the total assets managed in the subject product and firm-wide.
- D. Managers shall promptly notify ACERA if they are subject to censure or disciplinary action by a regulatory agency.
- E. Managers shall provide to ACERA all required documents and reports as set forth in Schedule V – ACERA's Compliance Schedule.

F. Managers shall not make contributions ~~or~~; provide gifts, reimbursements ~~of expenses or~~ ~~provide~~ personal benefits exceeding \$4~~7040~~.00⁴ in the aggregate within any 12-month period to any Trustee, fiduciary, employee or Consultant of ACERA. Invitations to ~~Donations of~~ educational conferences and similar events ~~and benefits, (including offers of~~ travel, meals and/or accommodations) ~~will~~shall be made to ACERA and not directed to individuals. The Board will determine whether to accept ~~any such donations~~invitations and will be solely responsible for selection of the Trustee, Staff, or other individual, who will attend or otherwise participate on behalf of ACERA.

SECTION ~~XVI~~XIX: MANAGER MONITORING PROCEDURE

The Board has contracted with a number of external Managers to invest ACERA assets in the capital markets. As part of the Board's fiduciary duties to prudently select, monitor and supervise these Managers, the Board has adopted this Procedure. The intent of this Procedure is to notify Managers of the standards by which they will be evaluated and to establish a structure which the Investment Committee and the Board can use to monitor the performance of the Managers.

Managers will be monitored to:

1. Evaluate how well they achieve their investment objectives.
2. Ensure that they adhere to their established investment approach/style and do not attempt to index returns to preserve stellar performance or take extraordinary risk to overcome poor performance.
3. Identify issues or trends that have the potential to result in intermediate and long-term capital losses to the Fund.
4. Alert the Board when Managers are not performing to expectations so that appropriate remedial action can be taken.

Managers will be evaluated on the basis of the following: performance, style integrity, organizational stability, compliance, client service, and fees described in greater detail below.

A. PERFORMANCE

On a monthly basis Staff will monitor Manager holdings, activity, and performance.

On a ~~semi-annual~~quarterly basis Staff and/or a Consultant will furnish the Investment Committee and/or Board with an in-depth evaluation of each Manager which will include a comparison of the Manager to its Contract benchmark and a peer universe of Managers using a similar investment style. This report shall include an analysis of the sources of Managers' returns and risks and provide(~~stock selection, industry selection, asset allocation, attribution for both, identifying information, geometric and omega ratios etc.)~~ and shall identify which decisions enhanced or diminished performance.

On a ~~semi-annual~~quarterly basis, trading costs will be evaluated in terms of commissions paid and execution of trades. Staff and/or Consultants shall furnish a report to the Investment Committee and/or Board regarding trading costs on an annual basis.

⁴ Updated annually by the California Fair Political Practices Commission.

B. STYLE INTEGRITY

Each Manager will be analyzed ~~every two years at least annually~~ to ensure that the Manager is continuing to invest the portfolio in the style for which it was originally hired. Style integrity is essential to maintain the Board's asset allocation policy. Any significant deviation in style will result in the overall ~~portfolio~~Fund having a different characteristic, in some measure, from the broad market ~~and underlying indexes that comprise ACERA's policy index which is represented by the Russell 3000 Index~~. Significant variations in the portfolio characteristics from the style anticipated in the management Contract may indicate a change in its investment style.

This review also provides the Investment Committee and/or Board an opportunity to evaluate the Manager's continuing "fit" with the goals of the overall Fund. By monitoring the Manager style integrity, the Investment Committee and/or Board can assure that its Manager mix takes advantage of opportunities to increase diversification through lower correlation of returns and differentiated approaches among individual Managers.

C. ORGANIZATIONAL STABILITY

Managers' organizations will be monitored to ensure continuity of the intellectual and philosophical processes that went into developing the particular investment approach contracted for by ACERA. In addition, Managers will be monitored for business risk, quality of staff, departures of key investment personnel, change in ownership or acquisition, and potential conflicts of interest.

It is ACERA's intent that its portfolio comprises no more than 25% of the Manager's total assets under management (AUM)⁵ at any time. Therefore, ACERA will monitor the Managers' assets, firm-wide, as well as in the subject product.

D. COMPLIANCE

Managers will be monitored to ensure they are adhering to federal and state laws regarding securities and the management of investment portfolios, trading, and pension investments; ethical practices of the investment professions; the Contract governing their relationship with ACERA; this Policy; and any other written directives issued by ACERA.

Each ACERA Contract will specify which investment vehicles a Manager is authorized to use, which markets the Manager is authorized to transact business in and any limitations within a market (small or large capitalization, value or growth orientation). The assets in each Manager's portfolio shall be reviewed monthly to ensure compliance with Contract guidelines.

All required documents and reports, set forth in Schedule V, must be submitted in a timely manner and in the format specified by ACERA, unless otherwise agreed to.

Managers must provide Staff with prior notification and justification for failure to comply with rules, regulations, Contract provisions, deadlines or other directives. Managers must provide a time frame for curing any deficiencies. Staff shall evaluate each incident on a case-by-case basis and determine whether an exception may be granted.

⁵ ACERA defines total AUM as the total market value of assets a Manager manages on behalf of investors under discretionary management where the client delegates responsibility to the Manager.

E. CLIENT SERVICE

Managers are required to comply with routine portfolio investment guidelines and reporting deadlines and are also expected to cooperate with special requests for information. ACERA will establish reasonable time frames for all requests and reporting and will provide feedback to all external Managers regarding the perceived quality of their client service.

F. FEES

Managers are expected to charge ACERA investment management fees no greater than the fees charged for other clients with a similar investment style, investment objective, and account type, size and services. Should a Manager enter into a more favorable fee schedule with a similar client, the manager is expected to modify ACERA's fee schedule to reflect the more favorable terms.

ACERA Staff will endeavor to meet with each Manager at least twice a year by telephone or in person to review performance and other issues.

SECTION XIX: MANAGER CONTRACT REVIEW PROCESS WATCHLIST PROCESS

A. PLACEMENT ON WATCHLIST

~~If during the course of regular monitoring, ACERA determines that a Manager's performance, style integrity, organizational stability, compliance, client service, and/or fees have reached to unacceptable levels, ACERA may, at its discretion, subject the Manager to ACERA's Contract Review Process. As part of the Board's fiduciary duties to prudently select, monitor and supervise their Managers, the Board has approved this process. The purpose of this process is to ensure as little disruption as possible in the event that concerns or problems arise with respect to a Manager's performance. The Board does not confer any additional rights or protections to its Managers by the promulgation of this Policy and/or this process.~~

ACERA recognizes that Managers may be reviewed for the Manager Watchlist Process and/or removed from the Fund from time to time for a variety of reasons. ACERA has established a Watchlist Process through which managers with deficiencies, as determined by Staff and Consultant, will be placed. Short term under-performance alone will not necessarily result in an initiation of the Manager Watchlist Process. Typical examples of reasons leading to placement on the Watchlist may include:

- 1) Insufficient net of fee, longer-term returns versus the benchmark and peer group,
- 2) Changes to style and/or the risk profile of the portfolio,
- 3) Organizational instability,
- 4) The loss of key investment professionals,
- 5) Significant asset loss,
- 6) Violations of the Manager's Investment Management Agreements with ACERA,

Investment Staff and Consultants determine whether to subject a Manager to a Manager Watchlist Process. Decisions to add or remove an investment manager to/from the Watchlist will be less rules-based and more a function of analyzing both quantitative and qualitative factors related to the investment manager. Investment manager additions and removals from the Watchlist will be communicated to ACERA's Investment Committee and Board semi-annually.

Managers on the Watchlist will be subject to enhanced scrutiny and are subject to termination upon Board approval of Staff/Consultant's recommendation. Enhanced Scrutiny on a Manager on Watchlist may include conducting a Service Review by the Investment Committee, and may include site visits as part of the due diligence.

~~There are generally three stages of review: Watchlist, Probation, and Termination (described below). ACERA reserves the right to terminate an investment management contract at any time, with or without thirty (30) calendar days' notice, for any reason, and without resort to this Contract Review Process.~~

The ~~Manager Contract Watchlist Review~~ p-Process may result in one or more of the following:

- ~~1. Placement on Watchlist or Probation status~~
- ~~2. Movement from one stage of review to another, or removal from the Contract Review Process~~
- ~~3.1 Reduction of Assets Under Management~~
- ~~4.2 Revision of investment Contract guidelines for that Manager~~
- ~~5.3 Re-negotiation of fees~~
- ~~6.4 Termination of a Manager's Contract~~
- ~~7.5 Any other actions deemed appropriate by the Board~~

Each situation is unique. Action by the Board will vary depending on the type of Manager, the style/strategy, and the deficiency involved. ~~The following describes the Contract Review Process:~~

ACERA reserves the right to terminate an investment manager at any time, with or without thirty (30) calendar days' notice, for any reason, and without resort to the manager being placed on Watchlist.

~~A. INITIAL REVIEW~~

~~Prior to a Manager being considered for informal, heightened monitoring by Staff, formal Watchlist, Probation or Termination, ACERA may take the following steps:~~

~~1. Analysis~~

~~Staff will conduct in-depth analyses of the perceived deficiency to verify that a deficiency exists, form an initial assessment of the severity of the deficiency, and make an initial determination of possible causes.~~

~~2. Discussion with the Manager~~

~~Staff will contact the Manager to discuss the situation and the results of Staff's analysis.~~

~~3. Consultant Input~~

~~ACERA may seek the services of Consultant to provide additional assessment and advice regarding the situation, depending on the severity of the deficiency.~~

~~All phases of account compliance may be reviewed during this step, in addition to the specific issue that originated the Review Process. Staff, in conjunction with Consultant, may determine that the Manager has a deficiency that warrants additional monitoring to ascertain if it is temporary and/or significant enough to add the Manager to ACERA's Watchlist.~~

~~Typical deficiencies subject to review include insufficient net of fee, longer term returns versus the benchmark and peer group, changes to style and/or the risk profile of the portfolio, organizational instability, the loss of key investment professionals, significant asset loss, or violations of the Manager's investment guidelines. Short term performance shortfalls alone will not necessarily result in an initiation of the Contract Review Process.~~

~~Should the noted deficiency be determined to be temporary and short term in nature, Staff will initiate an internal, heightened review of the Manager. Staff will communicate required areas of improvement to the Manager, and Staff and Consultant will assess whether the deficiency is addressed successfully after a period of heightened monitoring. Staff will communicate to the Board when a Manager has been identified as one that requires additional monitoring and will complete a detailed due diligence process on the Manager within a 12 month timeframe.~~

~~B. FORMAL ACTION~~

~~After completing the initial Review, Staff may recommend to the Investment Committee and/or Board that the Manager be either placed on Watchlist or Probation or, in certain cases, Terminated. The Committee and/or Board will approve or reject the recommendation. However, if a Manager's deficiency satisfies the criteria as listed under Watchlist and Probation in this Review Process, Staff may place a Manager on Watchlist or Probation without the Committee and/or Board's prior approval. In that case, Staff will be required to report to the Committee on the action taken in this Review Process as soon as possible. The specific criteria for determining which stage of Contract Review to recommend is outlined later in this Policy section and summarized in tabular form in Schedule H.~~

~~Upon approval of a Watchlist or Probation recommendation:~~

- ~~1. Staff will notify the Manager of the Board's decision and will provide the Manager with a statement of concerns which outlines the areas which need improvement.~~
- ~~2. The Manager will be asked to respond in writing with an explanation of the issues and a proposed action plan to resolve the issues within thirty (30) calendar days of receipt of the statement of concerns.~~
- ~~3. Staff, a Consultant and the Manager will collectively draft a Plan of Action. The plan will identify the specific steps to be taken to correct the problem; the time frames for further review; and what additional monitoring may be required.~~

~~At the end of the time period specified in the Plan of Action, the Manager will be evaluated and one of the following actions may be taken:~~

- ~~(a) Removal from Watchlist/Contract Review: if the Manager successfully resolves the issues/deficiencies and demonstrates continued success in all other areas of its relationship with ACERA.~~
- ~~(b) Remain on/Movement from Probation to Watchlist (after 3 years): if the Manager has satisfied all or most of the issues/deficiencies that caused it to be placed on~~

~~Watchlist~~ Probation, yet Staff continues to have some concerns about the Manager. If circumstances warrant, a Manager may also be moved from Watchlist to Probation at any time during the Contract Review Process. Manager will be given additional time to satisfy the conditions of its Plan of Action if reasonable progress is being made. Extensions may be granted if unfavorable market conditions or stylistic headwinds are a cause of the deficiency.

- ~~— Extension of Manager Contract Review (after 5 years): a Manager may be given additional time to satisfy the conditions of its Plan of Action if reasonable progress is being made. Extensions may also be granted if unfavorable market conditions or high costs make reallocation of assets inadvisable in the short term.~~
- ~~(e) Initiate a new search (focused list, RFP) or possibly change the mandate.~~
- ~~(d) Termination: if the Manager has not satisfactorily resolved the issues/deficiencies, Staff may recommend termination as described below. Termination may be recommended at any time during the Manager Contract Review Process if circumstances warrant.~~

WATCHLIST

~~Watchlist status indicates an increased level of concern due to what are perceived to be temporary issues, but does not indicate major deficiencies of a long term nature. The Watchlist will be determined and monitored by the Investment Committee, Staff and Consultant, focusing on longer-term, relative performance, organizational/personnel instability, and any/or other areas of deficiency that have been identified. Decisions to add or remove the Manager to/from the Watchlist will be a function of analyzing both quantitative and qualitative factors related to the investment manager. Managers may be placed on ACERA's Watchlist for one or more reasons stated below. The Watchlist period is typically one year but can vary depending on the nature of the deficiency. Staff shall conduct a comprehensive evaluation of the Manager by at the end of the one-year Watchlist status period to determine whether the Manager may be removed from Watchlist status.~~

Any of the following may result in a Watchlist status:

~~— a. — UNDERPERFORMANCE~~

~~Please refer to Schedule IIA for specific Watchlist criteria for each Manager. A Manager may be removed from ACERA's Watchlist if the Manager's performance has improved to a level where all applicable specific performance criteria as set forth in Schedule IIB of this Policy have been met.~~

~~— b. — STYLE DEVIATION~~

~~Managers are expected to adhere to the style of investment management for which they were originally hired. Changes in portfolio characteristics or style drift may lead to a Watchlist status.~~

~~— c. — ORGANIZATIONAL CHANGE~~

~~1. New Ownership~~

~~Even relatively benign ownership changes, which impact personnel key to ACERA's portfolio management may be cause for a Watchlist status.~~

~~2. Turnover~~

~~Significant turnover or reassignment in top management, portfolio Managers, research or trading staff, or marketing personnel may warrant Watchlist status.~~

~~3. Reorganization~~

~~Changes which signal management deterioration, departures or reassignment of key investment personnel, a change in ownership that increases risk to ACERA's investments, or hasty, uncontrolled growth in the firm with potential to disrupt the investment team hired for management of ACERA's account will mandate Watchlist status.~~

~~4. Assets Under Management (AUM)~~

~~If the market value of ACERA's portfolio rises above 25% of the Manager's total AUM, Watchlist status may be warranted.~~

~~d. NON COMPLIANCE~~

~~1. Contracts and Other Agreements~~

~~Managers are expected to comply with the investment management Contract, investment guidelines, or other directives. Non- or partial compliance may result in a Watchlist status.~~

~~2. Reporting~~

~~Staff will contact Managers to request past due reports. If the Manager's reports are consistently delinquent, the payment of fees may be delayed. If a Manager cannot comply with reporting deadlines, ACERA should be given prior notification. If warranted, a variance may be allowed. Managers are expected to resolve reporting problems immediately upon notification by ACERA. Repeated delinquency in reporting may result in a Watchlist status.~~

~~e. POOR CLIENT SERVICE~~

~~If a Manager is uncooperative and demonstrates a poor client service attitude, Watchlist status is appropriate. Managers are expected to resolve client service issues immediately upon notification by ACERA.~~

~~f. HIGH FEES~~

~~Watchlist status may be appropriate if a Manager~~

- ~~1. Charges ACERA unreasonably high fees relative to what it charges its other clients with a similar investment style, investment objective, and account type, size and service, and/or~~
- ~~2. Charges ACERA unreasonably high fees relative to the current market fee rate.~~

~~PROBATION~~

~~Probation indicates a level of serious deficiency and signals a need for closer contact with the firm. Probation necessitates a cautious, observant relationship with the Manager.~~

~~Managers may be placed on Probation with or without first being placed on Watchlist status for one or more reasons stated below. The probation period is typically one year. Staff shall conduct a comprehensive evaluation of the Manager at the end of the one-year Probation period to determine whether the Manager may be removed from Probation status.~~

~~The following may result in Probation:~~

~~a. UNDERPERFORMANCE~~

~~Please refer to Schedule IIA for specific Probation criteria for each Manager. A Manager may be removed from ACERA's Probation if its performance has improved to a level where all applicable specific performance criteria as set forth in Schedule IIB of this Policy have been met.~~

~~b. STYLE DEVIATION~~

~~Probation may be warranted when a Manager's portfolio characteristics are significantly different from its contractually specified style. In general, a Manager will be placed on Probation after four or more consecutive quarters of deviating from its style benchmark. In effect, if the Manager is no longer the same Manager that was retained for ACERA's account, Probation and perhaps even Termination is appropriate.~~

~~c. ORGANIZATIONAL CHANGE~~

~~Changes in ownership, organizational assignments, departures of key investment personnel, a change in ownership that poses substantial risk to ACERA's investments, or turnover that have the potential to seriously disrupt or destroy the investment management team that was hired to manage the ACERA account may result in Probation or Termination. When key personnel, such as top management, portfolio Managers, research and trading staff are no longer available for use on the ACERA portfolio and do not appear to be replaced or replaceable, Probation and perhaps even Termination is appropriate.~~

~~d. NON COMPLIANCE~~

~~If a Manager does not comply with securities laws, industry regulations, standards of professional conduct or contractual provisions, Probation is appropriate. Certain circumstances may warrant Termination.~~

~~e. POOR CLIENT SERVICE~~

~~Failure to correct any issues that previously resulted in the Watchlist status shall result in Probation. Managers will generally be given one calendar quarter to resolve client service issues.~~

~~f. HIGH FEES~~

~~Failure to reduce unreasonably high investment management fees shall result in Probation.~~

B. REMOVAL FROM WATCHLIST

A manager may be removed from the Watchlist with satisfaction by and recommendation from the Staff and Consultant.

C. TERMINATION

Upon determining that the Manager has not made adequate improvement in the areas outlined in the Manager Watchlist Process (Reference Section XX)Plan of Action, Staff may recommend to the Investment Committee and/or Board that the Manager be terminated. Prior to making the final decision to terminate the Manager, the Investment Committee may invite the Manager to make a presentation at the meeting in which the Termination recommendation is to be discussed. Staff will have analyzed the liquidity of the Manager's portfolio and will have a recommendation and plan for disposition of the assets.

Upon the Investment Committee's decision to terminate, Staff will notify the relevant ACERA ManagerStaff regarding this decision (See Scheduleection IV). All outstanding issues between the Manager and ACERA's Master Custodian, brokers, Consultant, or other parties shall be resolved prior to closing out the Contract. The Manager Termination checklist is attached as Schedule IV.

The Manager WatchlistContract Review PPolicyroecesspProcess described in this Policy does not provide any additional rights or protections to Managers, beyond what is provided in the contract. The Board reserves the right to terminate an investment management contract without resort to the Contract ReviewManager Watchlist Process, at any time, with or without thirty (30) calendar days' notice, for any reason or no reason.

In the event of an emergency or crisis, such as an imminent, foreseeable threat to a Managed Account within the Fund, the following procedure shall be followed to protect the portfolio (with the advice and assistance of the appropriate ACERA consultant(s):

- (a) Staff shall make a concerted attempt to arrange a special meeting (in person and/or by telephone) of the Board to consider and to resolve the matter.
- (b) If (a) is not practicable within the time necessary to protect the portfolio, the Board delegates temporary authority to the Board Chair (and/or Vice Chair) and the Committee Chair (and/or Vice Chair) to consider and to resolve the matter.

The temporary authority delegated under subsection (b) shall be strictly limited to the matter itself and any related actions that may be necessary and appropriate. Under subsection (b), at least two (2) persons of the four persons identified would be required to consider and resolve the matter. The temporary delegated authority shall be as full and complete as the Board's authority which means that Managed Accounts and funds may be terminated and/or redeemed.

Staff and the consultants shall prepare and submit a full report on any and all actions taken under this section for presentation at the next scheduled Investment Committee meeting.

SCHEDULE IA

ACERA

ASSET ALLOCATION TARGETS⁶

<u>Asset Class</u>	<u>Target Allocation %</u>
U.S. Equity	28
International Equity	26
Fixed Income	15
Real Estate	8
Private Equity	9
Absolute Return	9
Real Assets	5
Cash	<u>0</u>
TOTAL	<u>100</u>

⁶ The target asset allocation to each asset class was adopted by the Board in September 2012.

SCHEDULE 1B

ACERA MANAGER STRUCTURE TARGETS

<u>Managers</u>		<u>Target Allocation % Within</u>	
		<u>Asset Class</u>	<u>Total Fund</u>
U.S. Equity			
Large Cap (Core Index)	BlackRock	80.0	22.4
Large Cap (Growth)	T C W	5.0	1.4
Large Cap (Value)	Pzena	5.0	1.4
Small Cap (Growth)	TBD ⁷	5.0	1.4
Small Cap (Value)	Kennedy Capital	5.0	1.4
International Equity			
MSCI All World	BlackRock	20.0	5.2
Large Cap(Growth) ⁷	Capital Group	18.8 20.0	4.95 2
Large Cap (Value) ⁷	Mondrian	18.8 20.0	4.95 2
Large Cap (Quantitative) ⁷	AQR	18.8 20.0	4.95 2
Non-U.S. Equity (Small Cap)	Franklin Templeton	10.0	2.6
Non-U.S. Equity (Emerging Markets Manager)	Legal DD in process (Newton)	10.0	2.6
International Equities EIM Mandate ⁸	Bivium	-3.65	-1.0
Fixed Income			
Enhanced Index	Baird	50.0	7.5
Aggressive Core Plus	Loomis Sayles	25.0	3.8
Global Bond	Brandywine	25.0	3.8
Real Estate ⁹			
			8.0
Private Equity ⁸			
			9.0
Absolute Return ⁸			
			9.0
Real Assets ⁸			
			5.0
Cash			
			0.0

⁷ Small Cap (Growth) RFP Search in process.

⁸ Bivium percentage not included in the schedule calculation and is expected to have a 1% allocation to the Total Fund per the Emerging Investment Manager Policy (EIM). Accordingly, each of the Large Cap International Equity manager structure targets would be subject to slight reductions to fund the International Equities EIM mandate at a 1% allocation.

⁹ ACERA's real estate, private equity, absolute return, and real assets manager structure targets are specified in ACERA's "Real Estate Guidelines, Policies and Procedures, Private Equity Investment Policy, Absolute Return Policy, and Real Assets Policy," respectively.

SCHEDULE IC

ACERA

ASSET ALLOCATION PORTFOLIO REBALANCING

The objective of rebalancing is to control risk and enhance the risk-adjusted return of the asset allocation strategy. For purposes of enhancing the risk-adjusted return of the asset allocation structure, the relative deviation of any liquid sub asset class away from its target weight (or liquidity-adjusted target weight) shall be no more than plus or minus 2.20 standard deviation factors of each allocation's expected volatility, relative to the other allocations in the asset mix. This standard deviation factor shall be used to define the range of allowable deviation from Policy target asset allocations. If any sub asset class reaches its allowable deviation from its target allocation, all sub asset classes will be evaluated.

The actual reallocation will be at the discretion of Staff (with oversight by the rebalancing Consultant) after reviewing the following: the relative magnitude of deviation from target for all other sub asset classes; the available cash liquidity of sub asset classes that could be used to fund rebalancing; pending cash flows (employer and employee contributions, or proceeds from a terminated Manager's portfolio); pending liquidity windows with commingled investment pools; pending investment commitments (real estate transactions and/or new funding commitments); and pending interest coupon and dividend cash flows.

Asset allocation and rebalancing status reports, and any rebalancing activity taken toward attaining the objective of the rebalancing program will be reported to the Board quarterly.

Significant modifications to the asset allocation strategy shall be cause to review the appropriateness of maintaining this rebalancing parameter or revising it to a parameter more suitable to the revised asset allocation structure.

SCHEDULE II

Derivatives Investment Criteria

1) Introduction

There is a need to allow ACERA's separate account managers to evaluate new securities and introduce them into their portfolios, for both risk and return purposes, and as relevant to their respective investment mandates. These criteria allow ACERA's separate account managers to exercise reasonable investment freedom, while minimizing the possibility of adverse implications for the Fund.

2) Derivative Definition

A 'derivative' commonly is defined as a financial instrument whose performance is derived, at least in part, from the performance of one or more underlying assets (such as a security, index of securities, or currency).

3) Types of Securities Included or Excluded

Since the derivative sector of the market is likely to experience change over time, provisions must be made for the general characteristics of a derivative security, its evaluation and monitoring. Therefore, it is appropriate not to attempt to list all of the derivative securities that are covered by this Policy. Instead, what will be explicitly stated is the investment process that governs derivative investments and the evaluation and monitoring requirements required by this Policy.

4) Approach to Policy

Derivative instruments must be evaluated in accordance with the following section entitled Derivative Investment Process. If the instrument meets these provisions and the spirit of this Policy, the manager may establish a prudent position in the instrument. However, the manager must be able to demonstrate the appropriateness of such an investment in light of the Policy and the manager's specific mandate.

5) Counter-Party Evaluation

When entering into a non-exchange traded derivative investment, the manager must fully evaluate the other side of the derivative transaction—the counter-parties to the trade. Owing to the possibility of counter-party default, managers must evaluate the risks associated with the counter-party as if an investment were being made in the traditional securities issued by the counter-party.

Furthermore, the manager must monitor individual investment and total portfolio exposure to counter-parties. Individual counter-party exposures must be diversified and not overly concentrated such that there is undue counter-party risk in the Fund.

6) Purposes for Derivatives

Acceptable investment purposes for the use of derivatives follow:

- a. Futures, options, and forward currency contracts (over-the-counter or exchange-traded) to assist investment managers in mitigating and/or extending portfolio risks.
- b. Substitute for an existing, traditional investment. In certain circumstances it may be cheaper, quicker, or easier to invest in a derivative instrument rather than transacting in the cash or traditional security market (e.g., a single stock futures contract or a total

- return swap).
- c. Provide investment value to the portfolio, while being consistent with ACERA's asset class investment policies.
- d. Obtain investment exposures that fit with the manager's investment strategy and the governing Investment Management Guidelines, but could not be made through traditional investment securities (e.g., credit default swaps).

Given that one or more of these investment purposes are achieved, it is the responsibility of the manager to explain and demonstrate how derivative investments impact specific strategy/account risk and the overall Fund.

If a manager develops an investment purpose other than those listed above which he/she feels is legitimate and consistent with the spirit of the governing Investment Management Guidelines, this purpose must be explained in writing to Staff and communicated to the Investment Committee/Board.

7) Risk Analyses and Monitoring of Derivatives

The investment managers are required to test and measure derivative investment sensitivities to changes in key risk factors. These risk factors include extreme changes in interest rates, price volatility, liquidity, and credit quality. These risk factors will be assessed prior to initial investment and on an ongoing basis while in the Fund.

8) Derivative Investment Process

Investment managers are expected to consider the following issues before purchasing any derivative instrument:

- a. Determine if the purpose for investing in a derivative security is consistent with one or more of the purposes in the previous section entitled Purposes for Derivatives.
- b. Evaluate, at a minimum, the counter-party risk and the risks stated in the Risk Analysis and Monitoring section of the derivatives criteria.
- c. Evaluate the derivative in a comparably thorough manner as the firm would any other traditional investment opportunity.

9) Reporting Requirements

It is the responsibility of ACERA's investment managers to certify and demonstrate that their portfolios/accounts comply with the Policy, the applicable asset class policy, and the criteria that apply specifically to derivative instruments. ACERA's investment managers will provide the following minimum monitoring information on all derivative instruments:

- a. A general statement from the investment manager that its portfolio/account is in compliance with this Derivatives Investment Criteria.
- b. When stating the market value of the derivative(s) exposure, the manager will specify the security pricing sources used. The pricing source must be an exchange-listed price.
- c. A statement of the risks (credit risk—an evaluation of potential counter-party default on obligations, market risk—percent of portfolio invested in derivatives, and any other relevant risks) associated with the derivative instruments.
- d. Potential adverse impact on market values if extreme adverse market movements occur.

e. A statement regarding the liquidity of the derivative instruments.

f. Summary comments and the manager's list of approved counter-parties, ratings, and a statement regarding any changes to this list.

An overall statement discussing the legal and regulatory risks associated with the portfolio manager's investments in derivatives.

SCHEDULE IIA

ACERA

Watchlist/Probation Criteria for Underperformance⁷

Watchlist Criteria	Probation Criteria
<p style="text-align: center;">U.S. Equity</p> <ul style="list-style-type: none"> • Large Cap Core Index: negative tracking error exceeds 5 bps on an annualized basis in any 1 year period. • Large Cap (Growth/Value): cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Small/Micro Cap Growth: cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Small Cap Value: cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Large Cap Enhanced Core: cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. 	<p style="text-align: center;">U.S. Equity</p> <ul style="list-style-type: none"> • Large Cap Core Index: negative tracking error exceeds 5 bps on an annualized basis in any period greater than 1 year, or negative tracking error exceeds 10 bps for any 2 consecutive quarters. • Large Cap (Growth/Value): cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Small/Micro Cap Growth: cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Small Cap Value: cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Large Cap Enhanced Core: cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below the median for 3 or more consecutive quarters in a cumulative 5 year rolling period.

⁷ If the Fund history is less than 5 years, ACERA will use a rolling 3 year period.

Watchlist Criteria	Probation Criteria
<p>International Equity</p> <ul style="list-style-type: none"> • Core Non-U.S. Equity (growth/ value/ quant/ small cap): cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below median for 2 consecutive quarters in a cumulative 5 year rolling period. 	<p>International Equity</p> <ul style="list-style-type: none"> • Core Non-U.S. Equity (growth/value/quant/small cap): cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below median for 3 or more consecutive quarters in a cumulative 5 year rolling period.
<p>Fixed Income</p> <ul style="list-style-type: none"> • Aggressive Core Plus: cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Global Bond: cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Enhanced Index: cumulative 5 year rolling return is below the benchmark for 2 consecutive quarters, or the Manager's peer ranking falls below the median for 2 consecutive quarters in a cumulative 5 year rolling period. 	<p>Fixed Income</p> <ul style="list-style-type: none"> • Aggressive Core Plus: cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Global Bond: cumulative 5 year rolling return is below the benchmark for 3 more consecutive quarters, or the Manager's peer ranking falls below the median for 3 more consecutive quarters in a cumulative 5 year rolling period. • Enhanced Index: cumulative 5 year rolling return is below the benchmark for 3 or more consecutive quarters, or the Manager's peer ranking falls below the median for 3 or more consecutive quarters in a cumulative 5 year rolling period.

SCHEDULE IIB

ACERA

Performance Criteria for Watchlist/Probation Removal⁸

Watchlist Removal	Probation Removal
U.S. Equity	U.S. Equity
<ul style="list-style-type: none"> • Large Cap Core Index: negative tracking error falls below 5 bps on an annualized basis in any 1 year period. • Large Cap (Growth/Value): cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Small/Micro Cap Growth: cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Small Cap Value: cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Large Cap Enhanced Core: cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. 	<ul style="list-style-type: none"> • Large Cap Core Index: negative tracking error falls below 5 bps on an annualized basis in any period greater than 1 year, and negative tracking error falls below 10 bps for any 2 consecutive quarters. • Large Cap (Growth/Value): cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Small/Micro Cap Growth: cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Small Cap Value: cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Large Cap Enhanced Core: cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period.

⁸ If the Fund history with a Manager is less than 5 years, ACERA will use a rolling 3 year period. ACERA reserves the right not to remove a Manager from its Watchlist/Probation status even though the Manager may qualify for removal based on the Performance Criteria for Watchlist/Probation Removal.

Watchlist Removal	Probation Removal
<p>International Equity</p> <ul style="list-style-type: none"> • Core Non-U.S. Equity (growth/value/quant./small cap): cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. 	<p>International Equity</p> <ul style="list-style-type: none"> • Core Non-U.S. Equity (growth/value/quant./small cap): cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period.
<p>Fixed Income</p> <ul style="list-style-type: none"> • Aggressive Core Plus: cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Global Bond: cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. • Enhanced Index: cumulative 5 year rolling return exceeds the benchmark for 2 consecutive quarters, and the Manager's peer ranking exceeds the median for 2 consecutive quarters in a cumulative 5 year rolling period. 	<p>Fixed Income</p> <ul style="list-style-type: none"> • Aggressive Core Plus: cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Global Bond: cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period. • Enhanced Index: cumulative 5 year rolling return exceeds the benchmark for 3 or more consecutive quarters, and the Manager's peer ranking exceeds the median for 3 or more consecutive quarters in a cumulative 5 year rolling period.

SCHEDULE III

ACERA

POLICY INDEX FOR TOTAL FUND AND BENCHMARKS FOR ASSET CLASSES AND ~~INVESTMENT~~ MANAGERS

POLICY INDEX FOR TOTAL FUND

28% Russell 3000/ 26% MSCI All Country World Index Ex U.S. IMI/ 11.25% Bloomberg Barclay's Aggregate/ 2.25% Citigroup World Government Bond Ex. U.S./ 1.5% Bloomberg Barclay's High Yield/ 8% NCREIF ODCE/ 9% Thomson Reuters C|A Global All Private Equity Benchmark/ 9% HFRI FOF Composite Index/ 2.5% of S&P Global Natural Resources/ 1.75% of S&P Global Infrastructure Index/ 0.75% Bloomberg Commodities Index

BENCHMARKS FOR ASSET CLASSES*

<u>Asset Class</u>	<u>Benchmark</u>
U.S. Equity	Russell 3000
International Equity	MSCI ACWI Ex. U.S. IMI
Fixed Income	Bloomberg Barclay's Aggregate /Citigroup World Government Bond Ex U.S./ Bloomberg Barclay's High Yield in the ratio of 75/15/10
Real Estate	NCREIF ODCE
Private Equity	Thompson Reuters C A Global All Private Equity Benchmark
Absolute Return	HFRI Fund of Funds Composite Index
Real Assets	S&P Global Natural Resources Index/S&P Global Infrastructure Index/Bloomberg Commodities Index in the ratio of 50/35/15

*Benchmarks are net of all Fees

SCHEDULE III (cont.)

ACERA

POLICY INDEX FOR TOTAL FUND AND BENCHMARKS FOR ASSET CLASSES AND ~~INVESTMENT~~ MANAGERS

BENCHMARKS FOR ~~INVESTMENT~~ MANAGERS¹⁰

<u>Manager</u>	<u>Benchmark</u>
U.S. Equity	
BlackRock	Russell 1000
Kennedy Capital	Russell 2000 Value +250 bps
TBD ¹¹ (small growth)	Russell 2000 Growth +250 bps
Pzena	Russell 1000 Value +200 bps
Trust Company of the West	Russell 1000 Growth +200 bps
International Equity	
AQR	MSCI ACWI Ex U.S.
BlackRock	MSCI World Ex U.S.
Capital Group	MSCI ACWI Ex U.S.
Franklin Templeton	MSCI ACWI Ex U.S. Small Cap
Mondrian	MSCI ACWI Ex U.S.
RFP in Process (Newton)	MSCI Emerging Markets
Bivium ¹²	TBD <u>MSCI ACWI Ex U.S</u>
Fixed Income	
Baird	Bloomberg Barclay's Aggregate Index
Brandywine (Global Bond)	Citigroup World Gov. Bond Index
Loomis Sayles (Boston)	Bloomberg Barclay's Baa Credit Index
Real Estate ¹³	NFI ODCE
Private Equity ¹²	Thomson Reuters CJA Global All Private Equity Benchmark
Absolute Return ¹²	HFRI Fund of Funds Composite Index
Real Assets ¹²	S&P Global Natural Resources Index/S&P Global Infra-structure Index/Bloomberg Commodity Index in the ratio of 50/35/15

¹⁰ Individual Manager's Contract contains more specific information about each Manager's benchmark.

¹¹ Small Cap (Growth) Search RFP in process.

¹² Bivium would have a 1% allocation to the Total Fund per the Emerging Investment Manager Policy (EIM).

¹³ ACERA's real estate, private equity, absolute return, and real assets benchmarks are specified in ACERA's "Real Estate Guidelines, Policies and Procedures, Private Equity Investment Policy, Absolute Return Policy, and Real Assets Policy," respectively.

SCHEDULE IV

ACERA

MANAGER TERMINATION CHECKLIST

This checklist is used to ensure that all details are covered when terminating investment management services.

- 1) Officially notify the Manager in question of the Board's decision to terminate.
- 2) Establish a plan of action for reallocating assets from the terminated portfolio; transfer assets to other portfolios or prepare for liquidation.
- 3) Review department files and logs to identify any outstanding issues.
- 4) Notify ACERA Administration, Fiscal Services Department, Legal Counsel, Consultant, Custodian and any other vendors of the termination. Identify and resolve all outstanding issues with these parties.
- 5) Have Manager and Custodian review and sign off on monthly market values and performance figures produced during the Contract period.
- 6) Hold payment of last invoice until all issues are resolved.
- 7) Retain terminated Manager files in the ACERA office for a minimum of one year; then send to ACERA archives.
- 8) Hold terminated Manager files in ACERA archives in accordance with the ACERA Record Retention Policy and Schedule or applicable securities laws and accounting practice.

SCHEDULE V¹²
ACERA
COMPLIANCE SCHEDULE

REQUEST

DUE DATE

MONTHLY

Soft Dollar Commission Report (if applicable) (Submit each month regardless of activity.)	By the 20 th calendar day of the month following the reported month
Broker Commission Report (Submit each month regardless of activity.)	By the 20 th calendar day of the month following the reported month
Accounting Report/Portfolio Valuation (Provide transaction data – buys/sells, a portfolio listing including cost and market values, and performance returns.)	By the 20 th calendar day of the month following the reported month
Derivative Report (if applicable) (Submit each month regardless of whether any derivative instruments were used.)	By the 20 th calendar day of the month following the reported month
Confirmation that monthly reconciliation with Custodian is performed. (Reconciliation should include market values, transactions, and performance.)	By the 20 th calendar day of the month following the reported month
ACERA overall compliance checklist	By the 20 th calendar day of the month following the reported month

¹² This schedule is designed for all investment Managers of ACERA. However, Managers may be required to provide additional compliance reports based on their individual Investment Agreements with ACERA. Should there be any conflict between individual Investment Agreements with ACERA and ACERA's "General Guidelines, Policies and Procedures," the individual Investment Management Agreements shall prevail.

REQUEST**DUE DATE****QUARTERLY**

Fee Billings (Provide all pertinent backup documentation for fee calculations)	Within 30 calendar days following the end of the quarter
Confirmation of compliance with limitations on investment vehicles and investment markets ¹³	Within 30 calendar days following the end of the quarter
Confirmation of compliance with % limitations on cash holdings, on equity investment and on fixed-income investment ¹³	Within 30 calendar days following the end of the quarter
Confirmation that ACERA's assets under management do not exceed 25% of the Total assets under management firm-wide	Within 30 calendar days following the end of the quarter
Market and Portfolio Analyses and Commentaries	Within 45 calendar days following the end of the quarter

Additional requirements applicable to Real Estate Program

Operations Report/Financial Statements	Within 60 calendar days following the end of the quarter
Preliminary Investment Packages (Applicable to Individually Managed Account)	Within 30 calendar days following the completion of the report, if applicable
Valuation Adjustments Memo (Applicable to Individually Managed Account)	Within 90 calendar days following the anniversary date of asset acquisition
Property Valuation Report (Applicable to Individually Managed Account)	Within 90 calendar days following the anniversary date of asset acquisition

¹³ Detailed information can be found in "Specific Investment Guideline" section of each Manager's Investment Contract.

REQUEST**DUE DATE****ANNUAL**

Annual Performance Fee Billing (if applicable)
(Provide all backup documentation/
reconciliation sign-offs.)

Within 30 calendar days following the
end of the performance fee
period

Organization Chart

Within 30 calendar days following the
end of the year or as soon as updated,
whichever is earlier

Fidelity Bond/
Errors and Omissions Insurance
(Submit an original certificate.)

Within 30 calendar days of renewal

Audited Financial Statements

Within 90 calendar days following the
end of the year

Form ADV, Parts 1 and 2A and 2B (Brochures)
(as applicable)

Within 30 calendar days of filing

Statement or Summary of Code of Ethics

Within 30 calendar days of any
change

SEC Examination Reports

Within 30 calendar days of receipt

Fair Political Policies Commission Form 700

On or before March 31st of each year

Placement Agent Policy Update

Within 30 calendar days, provide an
update of any change to the information
included in the most recently filed
Placement Agent Information
Disclosure Form.

Additional requirements applicable to Real Estate Program

Tactical Plans/Management Investment Plans¹⁴
(applicable to Individually Managed Account)

Within 30 calendar days of completion

Asset Management and Budget Plan¹⁴
(applicable to Individually Managed Account)

Within 30 calendar days prior to fiscal
year end

Audited Financial Statement for ACERA's Fund
(applicable to Individually Managed Account)

Within 90 calendar days following the
end of the year

¹⁴ Seven copies of this report shall be submitted to Staff.

SCHEDULE VI

ACERA

INVESTMENT PHILOSOPHY (REVISED MAY 2013)

This document describes the investment philosophy of the Alameda County Employees' Retirement Association (ACERA). Its purpose is to enunciate the basic principles and beliefs that underlie ACERA's investment policy and impact the overall management of the pension Fund. The Investment Philosophy (Philosophy) is designed to complement rather than replace the specific investment policies of ACERA. It is expected that ACERA's approach to investments, as reflected in its policies and strategies, will be consistent with the Philosophy over time. Though the Philosophy allows significant flexibility, it also raises some constraints or implications. Where these were deemed to be significant, they have been explicitly identified and labeled as *Implications*.

Future Boards may choose to amend the investment Philosophy, as their experiences and circumstances will almost certainly differ. The initial document and any subsequent changes will provide staff, advisors and future trustees with a frame of reference to help them understand how the investment program has evolved as well as the rationale behind its design. Future Boards may modify the Philosophy as their experiences and circumstances suggest is prudent.

The major sections of the Philosophy are:

1. Mission
2. Risk Management
3. Diversification
4. Market Efficiency
5. Organizational Infrastructure and Communications
6. Performance Monitoring and Time Horizon

1. MISSION

a) The Board's primary goals in managing the Fund are:

- i) To ensure that sufficient funds are available to pay vested benefits and maintain supplemental benefits;

- ii) To comply with all applicable fiduciary standards; and
- iii) To add value, where feasible, that will help reduce the costs of the plan, increase benefits, or both.

2. RISK MANAGEMENT

- a) The Board believes that prudent management of risk is a central element of the investment function.
- b) Though there are numerous risks involved in the management of a pension investment program, ACERA believes that the following warrant particular attention:

- i) ***Funding-related Risk*** - The risk that the funds available in the Plan will be insufficient to pay the promised benefits, both vested and supplemental, or that contribution volatility will be unacceptably high. The primary methods for managing funding risk include regularly conducting integrated asset/liability studies, and establishing appropriate and prudent investment and funding policies.

0.1 In managing the relationship between assets and liabilities, the approved asset allocation of the Fund should provide an adequate level of certainty of meeting the projected liabilities of the Plan over a time period, as determined by the actuary.

- ii) ***Benchmark-related Risk*** – The risk that the investment benchmarks adopted by the Fund are inappropriate, or that the aggregate of the individual Manager benchmarks within an asset class do not adequately reflect the benchmark for the asset class as a whole. The latter risk is a specific risk generally referred to as *benchmark misfit risk* (i.e. *style risk*). Inappropriate benchmarks or excessive benchmark misfit risk could result in investment performance different than expected and could adversely impact decisions concerning the hiring or firing of investment managers.

0.1 The primary methods for effectively managing benchmark-related risk are

- (a) regular review of the Fund's benchmarks; and
- (b) regular measurement and monitoring of misfit risk using proper methodologies.

- iii) ***Manager Risk*** - The risk of aberrant performance on the part of individual investment Managers, and the related active management risk for asset classes as a whole.

0.1 The primary methods for mitigating Manager risk are:

- (a) Prudent processes for selecting and monitoring investment Managers;
- (b) Competent internal investment Staff;
- (c) Effective investment consulting support; and
- (d) Clear communication to investment Managers of ACERA's objectives, expectations, and investment time horizons.

0.2 The primary method for mitigating active management risk for asset classes include:

- (a) Establishment of appropriate asset class benchmarks;
- (b) Careful monitoring of asset class performance relative to the benchmarks; and
- (c) Prudent use of passive management.

iv) **Fortitude Risk** - The risk that the Board or Staff will fail to exercise the patience, judgment, or fortitude required to support long-term policies and strategies for the investment and funding program.

0.1 The keys to managing fortitude risk are believed to include:

- (a) Effective orientation and education with respect to institutional investing and actuarial science; and
- (b) A commitment to continually refining, confirming, and communicating the investment philosophy and funding policy of the Association.

3. DIVERSIFICATION

- a) ACERA acknowledges the basic tenets of modern portfolio theory, which suggest that diversification, or combining assets that are not perfectly correlated with each other, will reduce the long-term volatility of the overall portfolio.
- b) It is generally desirable however to avoid overly complex asset structures, provided the allocation selected can reasonably be expected to meet the objectives of the Plan. ACERA believes that the benefits of diversification must be weighed against the costs involved, which may include fees, liquidity, complexity, communication, internal staff resources and expertise and trustee knowledge and effort.
- c) The following asset classes are appropriate candidates for inclusion in its portfolio:
 - i) Domestic equity
 - ii) International equity (including emerging markets)

- iii) Fixed income, including high yield fixed income and international fixed income
- iv) Real estate
- v) ~~Private Equity and Alternatives~~
- vi) Absolute Return
- vii) ~~Real Assets Return Pool~~

Implications

- A systematic methodology for re-balancing the investment portfolio is required to ensure proper implementation and adequate risk control concerning ACERA's asset allocation.
- Adding or deleting asset classes or investment Managers should be considered in light of the impact such decisions are likely to have on the general complexity and cost structure of the portfolio, as well as ACERA's ability to prudently achieve its investment and funding goals over the long run.

4. MARKET EFFICIENCY

- a) ACERA does not believe in the viability of active management strategies that rely on market timing.
- b) ACERA does not believe in the viability of management strategies that call for over weighting or under weighting styles or sectors within an asset class; i.e., benchmark misfit risk will not generate long-term alpha. Accordingly, ACERA generally believes that it should maintain exposures within an asset class (such as style or capitalization weightings) that are consistent with the broad benchmark for the asset class as a whole.
- c) ACERA does believe that market efficiency varies among asset classes, creating opportunities for successful active management strategies based on securities selection.
- d) Asset classes that can be demonstrated to be efficient should be managed passively in order to reduce active management risk and lower the costs of managing the portfolio.
- e) For inefficient asset classes, ACERA believes that it has the ability and a duty to prudently exploit such inefficiencies through active securities selection strategies.

Implications

- ACERA should be conscious of any subtle forms of market timing that may arise in the course of managing the Fund, or that may be implicit in investment strategies presented to ACERA for inclusion in the investment program.
- ACERA must determine appropriate methodologies for determining whether an asset class is efficient or presents appropriate opportunities, thus providing insight to the Board on the use of particular strategies.

5. ORGANIZATIONAL INFRASTRUCTURE AND COMMUNICATIONS

a) ACERA believes that, in order for the investment program to achieve its goals, ACERA must invest the necessary resources to build and maintain an appropriate organizational infrastructure, key elements of which include:

i) A competent, internal investment staff comprised of a sufficient number of investment professionals possessing appropriate leadership, technical, and administrative skills.

0.1 Attracting a competent staff. ACERA recognizes that it competes with the private sector. It must therefore continually strive to create a total work environment that is challenging, rewarding, and competitive.

ii) A strong relationship with outside general investment Consultant(s) who are able to provide ACERA with the following:

0.1 A high degree of investment expertise;

0.2 Innovative and proactive advice and counsel;

0.3 Strong research support; and

0.4 Strong reporting capabilities.

iii) A broad-based information gathering and reporting system to present well- researched, relevant and timely data in a manner that is easily understood and that supports rigorous and consistent monitoring of critical investment activities.

- iv) An open channel of communication among the Board, management, and ACERA's external investment professionals.
- b) By providing the Board with timely, accurate, and thorough information, the organizational infrastructure will give the Board the high level of comfort it needs to set policy, make investment decisions, oversee the performance of the investment program, and maintain the fortitude necessary to support its investment philosophy, policies, and strategies.

Implications

- ACERA must determine what constitutes an appropriate internal investment staff structure, given the nature of the current investment program.
- ACERA must, over time, take concrete steps toward creating a work environment that will allow the Association to attract and retain needed staff.
- ACERA must recognize that developing the organizational infrastructure it needs – staffing, consulting support, information systems, and communication channels cannot be achieved overnight, but rather will require an ongoing commitment of time and resources.

6. PERFORMANCE MONITORING AND TIME HORIZON

- a) ACERA holds the following basic beliefs concerning performance monitoring practices and methodologies:
 - i) The various investment policies of the Fund, in the aggregate, are the most important determinants of investment success; compliance with investment policies should, therefore, be monitored rigorously;
 - ii) The performance of the total portfolio, individual asset classes, and investment Managers should be compared to appropriate, predetermined benchmarks;
 - iii) Peer comparisons are an additional valid tool in assessing individual Manager performance (supplementing the use of benchmarks), given that ACERA aims to select superior Managers within particular investment styles or mandates. Peer comparisons,

or performance rankings, are also valid tools for measuring the performance of asset class portfolios; and

- iv) Peer group comparisons may not be an appropriate means of assessing the performance of the total Fund, given that sponsors have different objectives and risk tolerance levels, and therefore may have different asset allocation policies.
 - v) Benchmark misfit risk, or the risk that the aggregate of individual investment Manager benchmarks in an asset class do not adequately reflect the benchmark for the asset class as a whole, should be explicitly measured on a regular basis.
 - vi) Investment Managers are generally hired to fulfill a specific role in a portfolio. Accordingly, ACERA believes it is important that ACERA monitor the extent to which Managers comply with their stated style and mandates.
- b) ACERA believes that successful funding and investment decisions require a long-term perspective on the part of the Board and management:
- i) It is the intention of the Retirement Board that commitments to asset classes and investment strategies should involve long time horizons that may include more than one business cycle (3-5 years each). Relatively illiquid asset classes may require even longer time horizons.
 - ii) The Board acknowledges that commitments to individual investment Managers also require a long time horizon of at least one business cycle (3-5 years).
 - iii) ACERA believes that proper reporting and monitoring systems; and clear communication among Consultants, management, investment Managers and the Board will enable the Board to maintain the necessary long term perspective on all investment decisions.

Implications

- Assessing the investment performance relative to appropriate, pre-determined, benchmarks is as applicable to the total portfolio and to individual asset classes as it is for individual

investment Managers and, therefore, warrants a commensurate share of the Board's time and attention.

- The Board will spend relatively little time assessing the performance of the Fund relative to that of comparable pension funds.
- ACERA will need either to develop in-house capabilities to measure benchmark-related risk regularly or to purchase such capabilities from external investment Consultants.
- ACERA will monitor all investment Managers to ensure they are complying with their stated investment style, regardless of whether they are performing well or poorly. Strongly performing Managers who are found not to be following their stated styles will be carefully scrutinized and may be subject to disciplinary action.
- ACERA will monitor all investment providers to ensure compliance with ACERA's "General Investment Guidelines, Policies and Procedures."

SCHEDULE VII

CHARTER OF ACERA'S INVESTMENT COMMITTEE OF THE BOARD

To identify issues pertinent to the effective management of the investment portfolio, initiate analysis of such issues by management or consultants, review all policy recommendations by staff and consultants, provide recommendations to the Board for adoption, and oversee the implementation of the investment program. Specific responsibilities include:

1. The Investment Committee shall review recommendations of staff and consultants and in turn provide its own recommendations to the Board on all investment policies, including investment philosophy, requiring Board approval. Said policies shall normally be contained in, or appended to, the *ACERA General Investment Guidelines, Policies and Procedures*.
2. The Investment Committee shall review and recommend additional policies for the Board's approval as requested by the Board and in accordance with the Policy Development Process.
3. The Investment Committee shall review recommendations of staff and consultants and in turn provide its own recommendation for Board approval on the following matters:
 - a) Appointment of Investment Managers;
 - b) Appointment of the Investment Consultants;
 - c) Appointment of the Custodian Bank.
4. The Investment Committee shall monitor the investment program of ACERA in accordance with all relevant policies of the Board. In general, the Investment Committee shall monitor:
 - a) Compliance with and continued appropriateness of all ACERA investment policies;
 - b) Progress towards achievement of investment goals;
 - c) Progress towards implementation of the ACERA budget and Business Plan with respect to investments; and
 - d) Cost effectiveness of the ACERA investment program.
5. In accordance with the provisions of the Open Meeting Law, the Investment Committee shall allow adequate opportunity for input from the public and shall respond to such input in a manner that reflects the Committee members' fiduciary duties as trustees of the Plan.

Frequency of Meetings

The Investment Committee shall generally meet monthly on the second Wednesday of the month, but may meet more or less frequently as required.

Committee Composition

The Investment Committee shall be composed of all Board members, one of whom shall serve as Committee Chair. Alternate members shall serve on the Investment Committee as provided by law.

Staff Contact

The Chief Investment Officer shall serve as a staff contact to the Investment Committee.

SCHEDULE VIII

ACERA

TABLE OF AMENDMENT DATES

AMENDING RESOLUTIONS

Jun.	27,	1985	May	20,	1999
Oct.	10,	1985	Jan.	31,	2000*
Jan.	9,	1986	Apr.	19,	2001
Jan.	16,	1986	Jul.	18,	2002
Mar.	13,	1986	Feb.	21,	2003
May	22,	1986	Feb.	19,	2004
Sep.	11,	1986	Feb.	17,	2005
Oct.	9,	1986	Jul.	20,	2006
Nov.	20,	1986	Jun.	21,	2007
May	14,	1987	Sep.	18,	2008
Aug.	13,	1987	May	20,	2013
Oct.	8,	1987	<u>Sep 20, 2018</u>		
Apr.	21,	1988			
Jul.	28,	1988			
Jan.	29,	1989(4)			
Apr.	13,	1989(5)			
May	18,	1989			
Jul.	13,	1989			
Aug.	10,	1989			
Nov.	16,	1989(2)			
Jul.	11,	1991			
Jun.	11,	1992			
Jun.	10,	1993			
Jul.	8,	1993			
Nov.	18,	1993			
May	14,	1994			
Aug.	18,	1994			
Nov.	20,	1994			
Feb.	16,	1995			
May	18,	1995			
Jan.	16,	1997			
Aug.	20,	1998			

* Verus (fka Strategic Investment Solutions) was hired as the General Investment Consultant for ACERA in 2000.



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: Betty Tse, Chief Investment Officer 

DATE: September 12, 2018

SUBJECT: Discussion of Proposed Revisions to ACERA's Real Assets Policy

Recommendation:

N/A. This is an Information Item.

Background / Discussion:

The Real Assets Policy (RA Policy) (fka Real Return Pool Policy (RRP Policy)) asset class was approved in September, 2011, when the Board established the original RRP. The asset class was created to protect against the risks of unexpected and trending inflation using the most inflation-sensitive investments -- commodities, and other inflation-sensitive investments (e.g., TIPS). However, inflation never materialized, therefore, the long-term performance of the asset class has been disappointing.

In response to anticipated inflation and in an effort to improve asset class performance, an alternative structure for the asset class was presented to, and approved by, the Board in October, 2015. This alternative structure was to improve the return/risk profile of the asset class while maintaining sensitivity to inflation. Private investments (65% of the new proposed target) were to gain exposure to the natural resources/infrastructure markets, and the portfolio's exposure to commodities would decrease. To accomplish this alternative structure, an investment plan (the 2016-2017 Real Assets Investment Plan) was recommended to and approved by the Board in March, 2016. While the asset class's name was changed from Real Return Pool (RRP) to Real Assets (RA) when the Board approved the amended policy then, the concept of using a liquid pool (publicly-traded) as a strategic allocation in the RA asset class was not clearly stated or explained in the policy (updated in 2016). As a result, Staff is proposing to add and explain the liquid pool in the next revision of the RA Policy. (See attached red-line copy)

The following identifies and explains the key proposed revisions for your consideration:

Strategic Allocation To and Types Of Real Assets **(Section IV, V, VI - Pages 4-7)**

1. Modify the strategic allocations to real assets to include both liquid and illiquid investments with specific asset allocation targets.
2. Clarify the strategic objective of the Real Assets portfolio.
3. Better define the types of real assets investments to allow for investments in both liquid and illiquid strategies.

Addendum Regarding Interim Asset Allocation Targets
(Addendum - Pages 18-19)

4. The Addendum was added to describe the transition of the RA Portfolio until it reaches the portfolio's strategic asset allocation target.

Attachment:

1. Proposed Amended ACERA Real Assets Policy (red-line copy)

**Alameda County Employees'
Retirement Association**

ACERA

REAL ASSETS POLICY

Amended March 17, 2016

Amended: TBD

ACERA REAL ASSETS POLICY

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Real Assets Policy

I. SCOPE

This Real Assets Policy ("RA Policy" ~~or "Policy"~~) governs all investments in the Real Assets ("RA") asset class made by Alameda County Employees' Retirement Association ("ACERA"). Established in April, 2011 the RA Policy is subject to all provisions of applicable law and applicable limitations and requirements of ACERA's General Investment Guidelines, Policies and Procedures. If there is any conflict between this RA Policy and ACERA's General Investment Guidelines, Policies and Procedures pertaining to investments in the RA asset class, the Policy prevails. The ACERA Board (Board) reserves the right to amend, supplement, and/or rescind the Policy at any time.

II. PURPOSE

The purpose of the RA Policy is to:

1. Set forth the RA investment policies and guidelines which are deemed to be appropriate and prudent;
2. Establish criteria against which RA investment opportunities are to be measured; and
3. Serve as a review document to guide the ongoing oversight of ACERA's Real Assets Portfolio on a consistent basis.

The Policy also defines roles and responsibilities of the Board, the ACERA Investment Committee (IC), the ACERA Staff (Staff), the ACERA RA Consultant (Consultant), and the RA Investment Managers hired by ACERA to manage its assets (Managers).

It is expected that the Policy will be a living document and that changes will be made from time-to-time to reflect experience, evolving investment products, and opportunities and changes in the economic and capital market environment.

RA investments consist of assets that exhibit ~~generally~~ positive correlation to inflation and positive returns over the long run.

The RA asset class is designed to produce positive expected returns and secondly, to, protect against domestic inflation.

The RA investments portfolio isare principally intended to provide:

1. An attractive risk-adjusted return over a full market cycleExceed the RA pPolicy benchmark on a net of fees basis.
2. Protection against domestic inflation and trending inflation, especially during periods of unexpected inflation.
3. Low correlations to equity and fixed income assets
4. Additional alpha and diversificationty to the ACERA portfolio.

The RA asset class is designed to produce returns and to, secondlysecondly, to, protect against inflation.

III. LEGAL AUTHORITY

The Policy is established in accordance with Article XVI, Section 17 of the California Constitution and California Government Code sections 31594 and 31595, which establish the exclusive authority and fiduciary responsibility of the Board for the investment and administration of the ACERA Trust Fund ("Fund").

IV. TYPES OF REAL ASSETS INVESTMENTS

~~RA investments consist of assets that exhibit positive correlation to inflation and positive returns over the long run. The RA portfolio will invest in both liquid and illiquid strategies that will seek to provide a positive expected return and exhibit a positive correlation to domestic inflation. These investments will be targeted to perform during periods of unexpected U.S. inflation and increasing U.S. inflation expectations. The strategy is to be implemented using a diverse set of exposures to inflation sensitive instruments; hedges intended to reduce various risk exposures; and active strategies intended to provide additional sources of returns through active management. Instruments and securities employed include, but are not limited to, commodity futures and options and swaps on commodity futures, global exchange traded equities issued by publicly held entities in natural resource related sectors, infrastructure, publicly traded real estate investment trusts (REITs), Treasury inflation protected securities (TIPS) and currency forwards. Liquid strategies in the liquid pool may consist of publicly traded equities, commodities, inflation protected bonds (TIPS) and other exchange listed securities that are believed to provide an appropriate hedge to inflation. In addition, the RA portfolio will invest in private limited partnerships and secondaries in sectors with inflation sensitive assets including, but not limited to, energy, mining, infrastructure, timberland, and farmland. In some cases, the RA portfolio will also implement short positions in equity index futures and currency forwards used to partially hedge the equity exposure of the underlying investments. Limited leverage may be utilized to combine short positions and long investment positions to build certain hedging strategies in the RA portfolio.~~

All RA investments/strategies made through privately-placed funds are considered Alternative Investments.

RA investments may include, but are not limited to, the following:

Publicly traded securities and funds investing in such securities, that securities, which provide exposure to:

1. Commodities
2. Treasury Inflation Protected Securities (TIPS), Inflation Break-evens
3. Developed and Emerging Market Currencies
4. Natural Resources - Related Equities
5. Infrastructure - Related Equities
6. Gold, Other Precious Metals
7. Publicly traded Real Estate Investment Trusts (REITs)
8. Energy Master Limited Partnerships (MLP's)

Private limited partnerships investing in the following assets and companies:

- 7.9. Privately placed Energy Funds,
- 8.10. Privately placed Mining Funds
- 9.11. Privately placed Infrastructure Funds,
12. Farmland,

~~10.13. Timber~~

~~Publicly-traded Energy Master Limited Partnerships (MLP's)~~

~~11. Other Inflation Hedging Assets~~

V. STRATEGIC OBJECTIVE OF THE REAL ASSETS STRATEGIES PORTFOLIO

~~The RA will invest in a broad, diverse set of of inflation sensitive and return seeking instrumentsreturn seeking and inflation sensitive instruments. The RA portfolio is expected to provide return and risk above bonds but below equitya return above the RA policy index., with generally low correlations to both asset categories. The strategic objective of real assets strategiesinvestments is to generate a positive, domestic inflation-sensitive return in excess of itsthe asset class's assigned benchmark. that, when pooled with the other real assets strategies, combine to outperform the composite benchmark for the asset class.~~ The Board believes the Fund's overall returns can be enhanced, on a risk-adjusted basis, by investing a portion of its assets in RA assets.

The RA asset class is expected to produce returns that:

1. Exceed the RA Policy benchmark on a net of fees basis.
2. Protect against domestic inflation, as measured by CPI, especially during periods of unexpected inflation.
3. Add diversification to the ACERA portfolio.

VI. STRATEGIC ALLOCATIONS TO REAL ASSETS PORTFOLIO

The long-term target allocation to the Real Assets Asset Class is 5.0% of the total ~~Fund~~Fund, as measured by the NAV of the portfolio and not by dollars committed. The RA target portfolio will consist of both liquid and illiquid investments with a target allocation between the two pools of capitalinvestments, as follows:

<u>Strategic RA Portfolio¹</u>	<u>Target Allocations</u>	<u>Min/Max Ranges</u>
<u>Liquid Pool (publicly-traded)</u>	<u>Up to 35%</u>	<u>10-50%</u>
<u>Commodities</u>	<u>15%</u>	<u>10-20%</u>
<u>Natural Resources</u>	<u>1-150%</u>	<u>0-15%</u>
<u>Infrastructure</u>	<u>10%</u>	<u>0-15%</u>

¹ Please see the Addendum to this RA Policy for the interim asset allocation ~~targets~~ranges.

<u>Illiquid Pool (privately-placed)</u>	<u>Up to 65%</u>	<u>0-85%</u>
<u>Natural Resources</u>	<u>40%</u>	<u>0-50%</u>
<u>Infrastructure</u>	<u>25%</u>	<u>0-35%</u>

The Liquid pPool serves four purposes:

1. Provide a high betacorrelation to inflation.
2. To allow ACERA to flexibly to gain and maintain exposure to real assets in line with fund their RA target allocations, providing the Total Fund with RA risk exposures to the private real asset strategies.
3. To act as a drawdown vehicle to fund commitments made by ACERA within the illiquid portfolio pool.
- 2.4. Provide sufficient ongoing liquidity sufficient to either to fund other obligations within 1-3 business days.

The Illiquid pPool serves two purposes:

1. Provide a return premium above the publicly-listed infrastructure and natural resource equity markets.
2. Enhance portfolio diversification by reducing the RA portfolio's public equity correlation
The strategic allocations to the RA Portfolio, as measured by actual dollars invested and not by dollars committed to underlying Investment Managers of Funds, as follows:

<u>Sub-categories</u>	<u>Target Allocations</u>	<u>Min./Max. Ranges</u>
Commodities	15%	-0-20%
Publicly-traded Natural Resource Equities	10%	-0-15%
Publicly-traded Infrastructure Equities	10%	-0-15%
Privately-placed Natural Resources	40%	-0-50%
Privately-placed Infrastructure	25%	-0-35%
Other RA Assets	0%	-0-20%

It is expected that the RA assets will be managed on a discretionary basis by investment managers, who are evaluated and monitored by Staff and Consultant. All investment managers will adhere to specific investment guidelines which are generally consistent with the intent of the Policy. Portfolio construction will be designed to produce a diversified mix of returns, subject to the guidelines and constraints outlined under each sub-category above. ACERA may take on over- and under-weights to

sub-asset classes within the RA Portfolio to improve its risk/return posture based upon an assessment of the relative attractiveness of all available opportunities. –While specific investments may incur losses of all or part of the capital invested, it is expected that a diversified RA Portfolio will produce a net positive return that exceeds the RA Policy benchmark with risk characteristics between public equities and fixed income. ~~Diversifiable risks associated with this Portfolio include position in the capital structure, the timing and amounts of cash flows, the size of the individual investments, and their sensitivities to business cycles.~~ The risks associated with RA investments will be viewed within the context of the entire Fund. ~~ACERA may take on over and under weights to sub-asset classes within the RA Portfolio to improve its risk/return posture based upon an assessment of the relative attractiveness of all available opportunities. As commitments and investments are expected to be made over time, the Portfolio is designed to reach its target allocations in 4-6 years.~~

VII. SPECIFIC GUIDELINES FOR REAL ASSETS PORTFOLIO

ACERA will gain exposure to RA investments by hiring external investment managers either directly or through participation in secondary RA markets. It is expected that the RA Portfolio will produce returns approximately equal to or greater than approximately 130 basis points above exceed the custom, blended benchmark² net of all fees and expenses over a ~~7-5-10-~~year period (full market cycle).

The RA Portfolio is to be implemented over 3 to 5 years and diversified as follows:

By sub-asset class: Among natural resources, infrastructure, commodities, and other similar investments.

By vintage year: Roughly equal amounts of new funding will be invested or committed in each calendar year, with significant deviations permitted to accommodate market opportunities and to facilitate initial entry into the asset class.

By Investment Manager: No more than twenty (20) percent of the ~~Fund's total~~ Total Fund's five (5) percent target allocation to the RA Portfolio may be invested/committed to any one illiquid private investment vehicle.

By geography: Through investments/commitments to funds ~~located in or outside of North America and/or investing both in and outside of North America~~ on a global basis to provide protection against domestic inflation.

By industry sector: As a result of the diversified investments/commitments outlined above, it is expected that the RA Portfolio will be generally generally be diversified by sector/industry.

VIII. ROLES AND RESPONSIBILITIES

The delineation of roles and responsibilities is important for effective administration of ACERA's RA Portfolio. The duties and responsibilities of the Board, IC, Staff, Consultant, and Managers are stated below:

A. Board

² The custom benchmark is: S&P Global LargeMidCap Natural Resources Index, S&P Global Infrastructure Index, and Bloomberg Commodity Index in the ratio of 50/35/15.

The Board shall be responsible for approving the Policy that governs the RA Portfolio and approving the Investment Plans for ACERA's RA Portfolio. From time-to-time the Board, with input from the IC, shall review the Policy to determine whether amendments are advisable. The Board shall also be responsible for reviewing and approving all RA commitments/investments that are recommended by the IC, Staff, and Consultant.

B. Investment Committee

The IC shall be responsible for the following:

1. Recommending to the Board a Policy to govern all investments in or commitments to the RA asset class;
2. Reviewing the Policy, evaluating proposals for amendments, if any, and making recommendations to the Board;
3. Reviewing and approving Investment Plans for ACERA's RA Portfolio;
4. Reviewing RA investments/commitments recommended by Staff and Consultant and recommending them to the Board for approval.

C. Staff

Staff shall be responsible for oversight of ACERA's RA Portfolio. Staff's responsibilities shall include, but not be limited to the following:

1. Developing and recommending all necessary changes to the Policy with input from Consultant;
2. Developing and maintaining specific procedures, if necessary, to comply with the approved Policy with input from Consultant;
- ~~3. Developing the annual investment plan of ACERA's RA Portfolio and making recommendations to the IC for adoption with input from Consultant;~~
- ~~4.~~3. Reviewing, conducting due diligence, and, if satisfied, recommending RA investment/commitment proposals to the IC. Staff and Consultant shall provide the IC all required reports;
- ~~5.~~4. Monitoring the RA Portfolio for performance and compliance with the Policy;
- ~~6.~~5. Monitoring the performance of the underlying Managers and their compliance with a) the investment guidelines as set forth in their respective contracts; b) the Policy; and c) applicable requirements of ACERA's General Investment Guidelines, Policies and Procedures;
- ~~7.~~6. Conducting comprehensive annual reviews of ACERA's RA Portfolio and the individual investments in the Portfolio;
- ~~8.~~7. Reporting to the IC any violations of the Policy with appropriate recommendations;
- ~~9.~~8. Assisting ACERA's legal department in contract negotiations with the selected Managers;
- ~~10.~~9. Evaluating RA investment opportunities with Consultant's input on an ongoing basis; and
- ~~11.~~10. Evaluating and making recommendations for retention and termination of Managers.

D. Consultant

Consultant hired by the Board is a fiduciary to ACERA and its Board. Consultant shall independently and continuously monitor and analyze the performance of ACERA's RA Portfolio and make related recommendations to serve the best interests of the plan members. Consultant shall assist Staff in developing the Policy and recommending all necessary changes to the Policy. In addition, Consultant shall be responsible for:

1. Analyzing the asset allocation of the RA Portfolio by type, implementation vehicle, geography, industry, and vintage year, and making recommendations for reallocation of assets, as appropriate;
2. Developing an investment plan for ACERA's RA Portfolio annually;
3. Developing a search strategy for highly qualified RA investments and maintaining a robust database containing information on qualifying Managers;
4. Recommending highly qualified investments to Staff and/or the Investment Committee upon completion of a thorough due diligence process and providing the required reports to Staff and/or the IC;
5. Ongoing monitoring of the investment performance of ACERA's RA Portfolio and individual investments in the Portfolio;
6. Conducting ongoing due diligence on Managers, notifying ACERA of any significant developments and adverse events and providing analysis and advice on such issues;
7. Monitoring Managers' compliance with a) their respective investment guidelines as set forth in their contracts; b) the Policy; and c) applicable requirements of ACERA's General Investment Guidelines, Policies and Procedures;
8. Assisting Staff in contract negotiations with the selected Managers;
9. Submitting performance evaluation reports and conducting comprehensive reviews of the RA Portfolio and individual Managers ~~when appropriate, quarterly semi-annually~~ to the IC, ~~in conjunction with the regular quarterly performance report and review;~~
10. Making recommendations for retention or termination of Managers;
11. Attending IC and Board meetings as needed; and
- ~~12. Performing other duties in accordance with the terms of its contract and applicable State and Federal law, in particular, the California law requiring public plans to report annual performance and fee disclosures on alternative investments.~~
- ~~13.~~12.

E. Managers

Managers are fiduciaries and shall manage ACERA's assets prudently and in the best interests of ACERA and its members. Managers shall abide by all applicable policies and procedures established by ~~ACERA,~~ ~~and ACERA and~~ comply with applicable law. Managers shall be responsible for compliance with a) the specific investment guidelines as set forth in their respective contracts; b) the Policy; and c) applicable requirements of ACERA's General Investment Guidelines, Policies and Procedures. They shall also:

1. Communicate with Staff and/or Consultant promptly regarding investment strategy, investment results, and any non-conforming issues that may have significant and/or negative impact on the portfolio;
2. Cooperate fully with Staff, Consultant, ACERA's custodian, and other ACERA vendors concerning requests for information;
3. Submit reports to Staff and Consultant in accordance with their contract terms; and
4. Attend meetings as needed.

IX. DUE DILIGENCE PROCESS FOR RA INVESTMENT SELECTION

ACERA recognizes that a proper due diligence process is essential to control the risks associated with RA investments and, therefore, hereby establishes the following due diligence processes for both its Consultant and Staff:

A. Consultant

Consultant shall conduct extensive, documented due diligence before making any RA investment recommendations to Staff and the IC. Consultant shall involve Staff in the due diligence process when appropriate. Consultant shall, but not be limited to:

1. Assessing the reputation of the individuals who manage the RA investments. Consider background checks, internet searches, and in-person meetings with these individuals, etc.;
2. Conducting on-site visits to the offices of the Managers;
3. Checking references from other investors that have invested in these RA investments, and, when advisable, from competitors;
4. Determining that the RA investment funds are audited, at least annually, by a reputable and recognized external auditing firm;
5. Reviewing Managers' investment strategies, policies, operating procedures, and historical performances;
6. Reviewing and understanding the valuation procedures employed by the Managers;
7. Reviewing business terms of all legal agreements and other related documents for the RA investments under consideration, such as offering memorandum, legal agreements, and SEC Forms ADV;
8. Assessing what exit strategies exist to avoid future investments in or liquidate exiting investments from strategies exhibiting poor performance; and
9. Reviewing the investments for potential exposure to Unrelated Business Taxable Income (UBTI).

B. Staff

Staff shall ensure that Consultant has conducted extensive, documented due diligence on all RA investment proposals recommended to Staff and the IC. Staff shall participate in Consultant's due diligence process when appropriate and shall also:

1. Review the comprehensive analysis report prepared by Consultant on its recommended RA investments;
2. Conduct independent internal due diligence on the recommended investment, including, but not limited to: meeting with Managers and their proposed management teams, performing background checks on related parties, review of the offering materials and proposed investment contracts, and attending onsite diligence meetings at the Managers' offices.
3. Verify the appropriateness of each recommended RA investment with consideration to the Policy, the investment plan for ACERA's RA Portfolio and other applicable investment policies;
4. Discuss all issues related to the recommended RA investments with Consultant and if necessary, with the Managers; and
5. Arrange presentations to the IC for all recommended RA investments to allow the IC to make recommendations to the Board for approval.

X. PERFORMANCE EVALUATION CRITERIA

When appropriate, the specific performance evaluation criteria, including, but not limited to benchmarks, for Managers will be established in the investment agreements between ACERA and individual Managers.

Performance of the RA portfolio will be measured against the following blended benchmark:

S&P Global <u>LargeMidCap</u> Natural Resources Index	50%
S&P Global Infrastructure Index	35%
Bloomberg Commodity Index	15%

Individual managers will be measured against their respective benchmarks as governed by the above chart

XI. MONITORING AND REPORTING

Consultant and Staff will monitor and analyze the RA Portfolio closely so that the strategic objective(s) of the Portfolio can be met.

Managers shall submit all reports to Staff, Consultant, ACERA's custodian, and other ACERA vendors in accordance with their respective contracts.

Consultant shall submit all reports to Staff in accordance with its contract terms and the Policy.

Consultant, in conjunction with Staff, shall perform evaluations of ACERA's RA Portfolio and the underlying Managers annually and, when appropriate, semiannually. Consultant shall report the findings to Staff and the IC.

XII. REAL ASSETS INFORMATION DISCLOSURE POLICY

ACERA is a public agency subject to the California Public Records Act (Cal. Gov. Code §6250 *et seq.*), which provides generally that all records relating to a public agency's business are open to public inspection, disclosure and copying, unless specifically exempted. The investment of the ACERA Fund is a matter of legitimate public interest; however, the Legislature has determined that the public interest requires that certain information regarding privately-placed funds remain exempt from disclosure. (Cal. Gov. Code §6254.26.) Therefore, regarding RA investments, it shall be the policy of ACERA to disclose only those records described in California Government Code Section 6254.26, subdivision (b). Specifically, ACERA will disclose the following categories of documents:

1. The name, address, and vintage year of each RA investment;
2. The dollar amount of the commitment made to each RA investment vehicle by ACERA since inception;
3. The dollar amount of cash contributions made by ACERA to each RA investment vehicle since inception;
4. The dollar amount, on a fiscal year-end basis, of cash distributions received by ACERA from each RA investment vehicle;
5. The dollar amount, on a fiscal year-end basis, of cash distributions received by ACERA plus remaining value of fund assets (or interest in) attributable to ACERA's investment in each RA investment vehicle;
6. The net internal rate of return of each RA investment vehicle since inception;
7. The investment multiple of each RA investment vehicle since inception;
8. The dollar amount of the total management fees and costs paid on an annual fiscal year-end basis, by ACERA to each RA investment vehicle; and
9. The dollar amount of cash profit received by ACERA from each RA investment vehicle on a fiscal year-end basis.

All other records regarding such RA investments shall be exempt from disclosure to the fullest extent permitted under applicable law. Notwithstanding the preceding, ACERA reserves the right to withhold any record on the basis that the public interest in disclosure is clearly outweighed by the public interest in withholding the record (Cal. Gov. Code §6255).

XIII. Table of Amendment Dates

March 17, 2016

Appendix I

List of Reports Required for Each Investment Recommendation/Approval

Name of Report	Source
Recommendation/Approval memo	Staff
Recommendation/Approval memo	Consultant
Executive Summary of the Fund	Consultant and Staff <u>(separately prepared)</u>
Compliance Checklist	Staff
Comprehensive Due Diligence Report (Available to Trustees upon request owing to <u>confidentiality</u>)	Consultant
Manager Pitchbook	Manager

Appendix II

Executive Summary Report Template

Fund Name

Section I: General Information

Fund Name; Total AUM of the Firm; Current Target Fund Size; Previous Fund Size; Fund Focus; etc.

Section II: Investment Management

Organizational Structure; Management Group; Experience; Personnel Turnover; etc.

Section III: Investment Strategy

Investment Philosophy; Investment Strategy; Investment Process; Investment Objective; etc.

Section IV: Risk Management

Risk Control Methodology; Exit Strategy; etc.

Section V: Investment Rationale

Section VI: Investment Concerns

Section VII: Performance (example)

Benchmark:

Net Returns (%):

Periods Ending Dates	YTD	1Year	3Years	5Years	Since Inception
<u>Gross Fund/Account Results</u>					
<u>Net Fund/Account Results</u>					
<u>Benchmark (See Section X)</u>					
Relative Performance: Account – Benchmark					
<u>Gross Fund/Account -- Benchmark</u>					
<u>Net Fund/Account -- Benchmark</u>					

Section VIII: Key Terms

Fund Term; Preferred Return; Investment Period; Management Fee; Other Fees; Fee Discounts; General Partner Carry; GP Commitment; Advisory Board; Clawbacks; No-Fault Divorce; Key-Person Events; Closing Schedule; Drawdown Schedule; etc.

Appendix III

Compliance Checklist Template for RA Investment/Commitment

Target allocation to RA asset class: 5% of the **€**Total Fund

RA Policy

Investment Fund

In Compliance

1. Permissible Legal Structures

Any legally permissible vehicle will be allowed including, but not limited to, separate accounts, commingled funds, joint ventures, limited partnerships, corporations, and limited liability companies.	<i>Specific legal structure.</i>	<i>Yes, No, or N/A</i>
--	----------------------------------	------------------------

2. Investment Methods

Individual limited partnership funds Primary and/or Secondary Separate accounts Discretionary Separate Accounts Commingled Funds ETF's Fund-of-funds Direct investments/Co-Investments Combination of the above	<i>Specific investment methods.</i>	<i>Yes, No, or N/A</i>
--	-------------------------------------	------------------------

3. Investment Characteristics

RA may include, but not be limited to, commodities, energy, mining, timberland, farmland (natural resources), infrastructure, renewables, and debt-related / special situations.	<i>Specific investment type.</i>	<i>Yes, No, or N/A</i>
<u>Commodities:</u> typically typically, futures, options on futures, and/or swaps on exchange-traded commodity instruments. <u>Natural Resources:</u> typically purchase assets/companies in the energy, mining, timberland, and/or farmland industries. <u>Infrastructure:</u> typically purchase privately-held assets and/or companies in the infrastructure sector <u>Other RA Assets:</u> investments include debt-like instruments, sub-industry investments (e.g. renewables) or any asset which exhibits an inflation protection component with an attractive risk/return characteristic.	<i>Specific investment characteristics.</i>	<i>Yes, No, or N/A</i>
RA Investments may be denominated in USD or other currencies.	<i>Specific currency denomination.</i>	<i>Yes, No, or N/A</i>

RA Policy**Investment Fund****In Compliance****4. Portfolio Diversification**

By sub-asset class: among commodities natural resources, infrastructure, and debt-related/special situations.	<i>Specific investment type.</i>	<i>Yes, No, or N/A</i>
By vintage year: roughly equal amounts of new funding may be committed in each calendar year with deviations permitted.	<i>Specific vintage year.</i>	<i>Yes, No, or N/A</i>
By Investment Fund: <=20% of the target allocation to total RA may be committed to any one private illiquid private investment vehicle.	<i>Specific commitments to the Investment Fund.</i>	<i>Yes, No, or N/A</i>
By geography: commitments to funds located and/or investing both inside and outside of the U.S.	<i>Specific location.</i>	<i>Yes, No, or N/A</i>

5. Return Expectation

Custom Benchmark or Blend (see Primary Benchmark in Policy) (net of all fees) in aggregate.	<i>Specific return target(s).</i>	<i>Yes, No, or N/A</i>
---	-----------------------------------	------------------------

6. Strategic Investment Allocations³

RA Portfolio: range 0-5% of the total Fund. <u>Liquid Pool (publicly-traded): range 10-50%</u> <u>Commodities: range 10-20%</u> <u>Natural Resources: range 0-15%</u> <u>Infrastructure: range 0-15%</u> <u>Illiquid Pool (privately-placed): range 0-85%</u> <u>Natural Resources: range 0-50%</u> <u>Infrastructure: range 0-35%</u> Commodities: target 15%; range 0%-25% Natural Resources: target 50%; range 10%-60%. Infrastructure: target 35%; range 10%-45%. Other RA Assets: Target 0%; Range 0%-20%.	<i>Expected allocations to the RA Portfolio and to the underlying portfolios including specific commitment to the Investment Fund.</i>	<i>Yes, No, or N/A</i>
--	--	------------------------

RA Investment Plan for YEARS**Approved: DATE****Investment Fund****In compliance**

Specific Investment Plan.	<i>Specific commitment to the Investment Fund.</i>	<i>Yes, No, or N/A</i>
---------------------------	--	------------------------

³ Please see the Addendum for pertinent, interim asset allocation ranges.

APPENDIX IV

Details of Disclosure Policy For Real Assets Investments ("RA Funds")

1. Upon request, ACERA shall disclose : (i) the name, address and vintage year of each RA Fund; (ii) the dollar amount of capital committed to each RA Fund by ACERA since inception; (iii) the dollar amount of cash contributions made to each RA Fund by ACERA since inception; (iv) the dollar amount of distributions received by ACERA from each RA Fund on a fiscal yearend basis; (v) the market value of ACERA's investment in each RA Fund on a fiscal yearend basis; (vi) each RA Fund's net internal rate of return ("IRR") since inception; (vii) the investment multiple of each RA Fund since inception; (viii) the dollar amount of total management fees and expenses paid on an annual fiscal yearend basis, by ACERA to each RA Fund; and (ix) the dollar amount of cash profit received by ACERA from the RA Fund on a fiscal yearend basis. (See Cal. Govt. Code § 6254.26(b).)

2. ACERA shall disclose at least once annually in a report presented at a meeting open to the public : (i) the fees and expenses that ACERA pays directly to the RA Fund, the RA Fund manager or related parties; (ii) ACERA's pro rata share of fees and expenses not included in (i) that are paid from the RA Fund to the RA Fund manager or related parties; (iii) ACERA's pro rata share of carried interest distributed by the RA Fund to the RA Fund manager or related parties; (iv) ACERA's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held by the RA Fund to the RA Fund manager or related parties; (v) the information outlined in Section 1. above, and (vi) the gross and net IRR of the RA Fund, since inception. (See Cal. Govt. Code § 7514.7.)

All other records regarding such RA Funds shall be exempt from disclosure to the fullest extent permitted under applicable law.

Notwithstanding the preceding, or anything else in this Policy, ACERA reserves the right to withhold any record when "on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." (See Cal. Govt. Code §6255(a).) This weighing process contemplates a case-by-case balancing test between competing public interests based on the facts presented as the statute has been interpreted by the courts.⁴

⁴ Michaelis, Montanari & Johnson v Superior Court, 38 Cal.4th 1065, 1071 (2006).

ADDENDUM

Interim Asset Allocation Ranges (expected 5-8 Years)

For Real Assets Portfolio

To facilitate the transition of the Real Assets Portfolio from one that is highly exposed to exchange-traded commodities into an investment structure that has a better expected return profile and is better aligned with the target RA Asset Allocation, and the asset class's purpose, the RA portfolio will include interim asset allocation ranges, as listed below. This interim asset allocation range temporarily accommodates higher-than-target capital to the Liquid Pool, which permits immediate investments, and lower-than-target capital to the Illiquid Pool.

The Illiquid Pool (65% of the RA Asset Allocation target) is comprised of illiquid, privately-placed investment vehicles that typically cannot be invested in all at once. These vehicles must first be committed to, then, over their investment periods (typically 3 – 7 years), the funds call investors' capital to fund investors' long-term commitments. As a result, it is expected that the process of building out the Illiquid Pool with these vehicles will take several years.

In the meantime, to rapidly alter the RA Portfolio's investment exposure from one that is highly exchange-traded commodity-focused into one that is better aligned with the asset class's purpose and objectives, the Liquid Pool will temporarily (over the next 5 – 8 years) be over-weighted allocated to. This over-weighting allocation to the Liquid Pool will, over time, be reduced as the Illiquid Pool is built out and rises towards its asset allocation target.

As commitments are made to the illiquid, privately-placed vehicles in the Illiquid Pool and the associated capital is called, the Liquid Pool will be used as a draw-down vehicle to fund the Illiquid Pool capital calls dollar-for-dollar. Over time, both the Liquid and Illiquid Pools will increasingly move towards their target asset allocations until finally reaching them. This Addendum and the below Interim Asset Allocation Ranges demonstrate the wide allocation ranges these sub-asset classes are expected to assume during this process and over the interim period.

<u>Interim RA PortfolioRA Asset Sub Class</u>	<u>Interim Asset Allocation Ranges</u>
<u>Liquid Pool (publicly-traded)</u>	<u>20-100%</u>
Commodities	<u>10-20%</u>
Natural Resources	<u>5-45%</u>
Infrastructure	<u>5-35%</u>
<u>Illiquid Pool (privately-placed)</u>	<u>0-80%</u>

<u>Natural Resources</u>	<u>0-50%</u>
<u>Infrastructure</u>	<u>0-30%</u>



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



JULY 2018

Portable Alpha

ACERA

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VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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ACERA's Portfolio **PAGE 15**

***Past performance is no guarantee of future results.** This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other "forward-looking statements." No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. and Verus Investors, LLC ("Verus") file a single form ADV under the United States Investment Advisors Act of 1940, as amended. Additional information about Verus Advisory, Inc. and Verus Investors, LLC is available on the SEC's website at www.adviserinfo.sec.gov. Verus – also known as Verus Advisory™ or Verus Investors™.*

Introduction

Why consider portable alpha?

- Provide a more efficient structure for pursuing total returns from both a portfolio and cost perspective
- Allow for the construction of greater risk balance in the total portfolio without sacrificing return expectations

Why now?

- Need to generate more alpha (excess return) to meet funding objectives
- BlackRock index relationship potentially provides a solid “beta partner”
- ACERA has a low risk absolute return portfolio in place to use as the alpha engine

Getting started - definitions

Beta – Market exposure or benchmark exposure. Beta is cheap!

Alpha – Excess return over the benchmark. Also referred to as active return, the potential reward for being different than the benchmark

Portability – Alpha from one source can be “ported” to another

Overlay - A process of layering, or adding one source of return to another, typically using synthetic instruments (futures or swaps.)

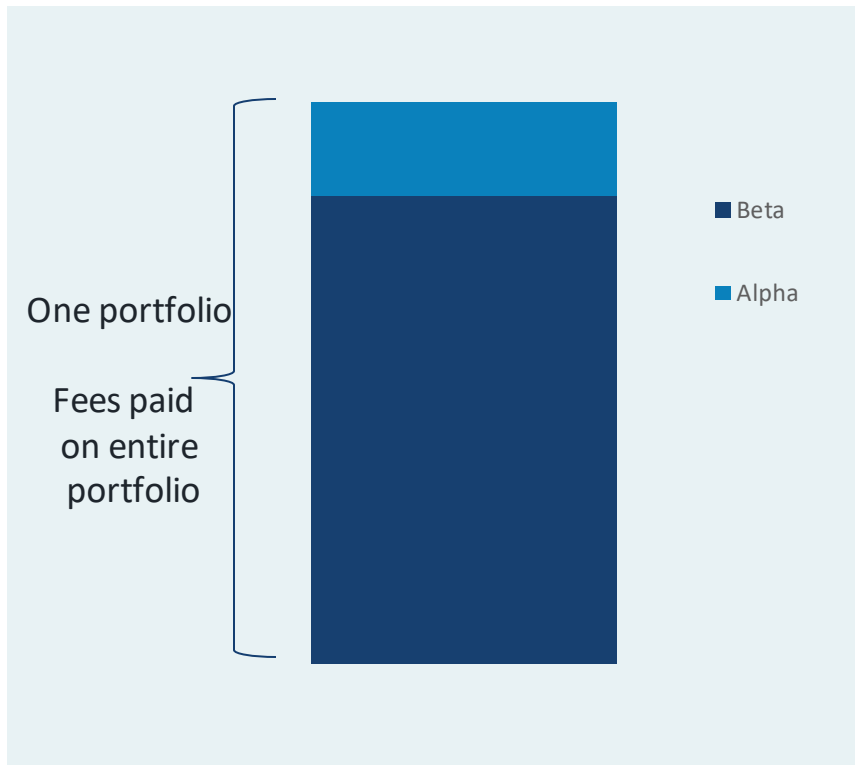
History of portable alpha

- Original application was PIMCO's StockPlus Index, which added short-term fixed income returns (minus LIBOR) to S&P 500 returns from futures contracts.
- In the mid-2000's, pension funds began "porting" Hedge Fund returns on top of index returns. This ended badly as it was typical to port "beta on top of Beta"
- Post Financial Crisis, the advent of low beta, low risk "absolute return" funds provided a more stable solution

The Approach

The traditional active (long only) approach

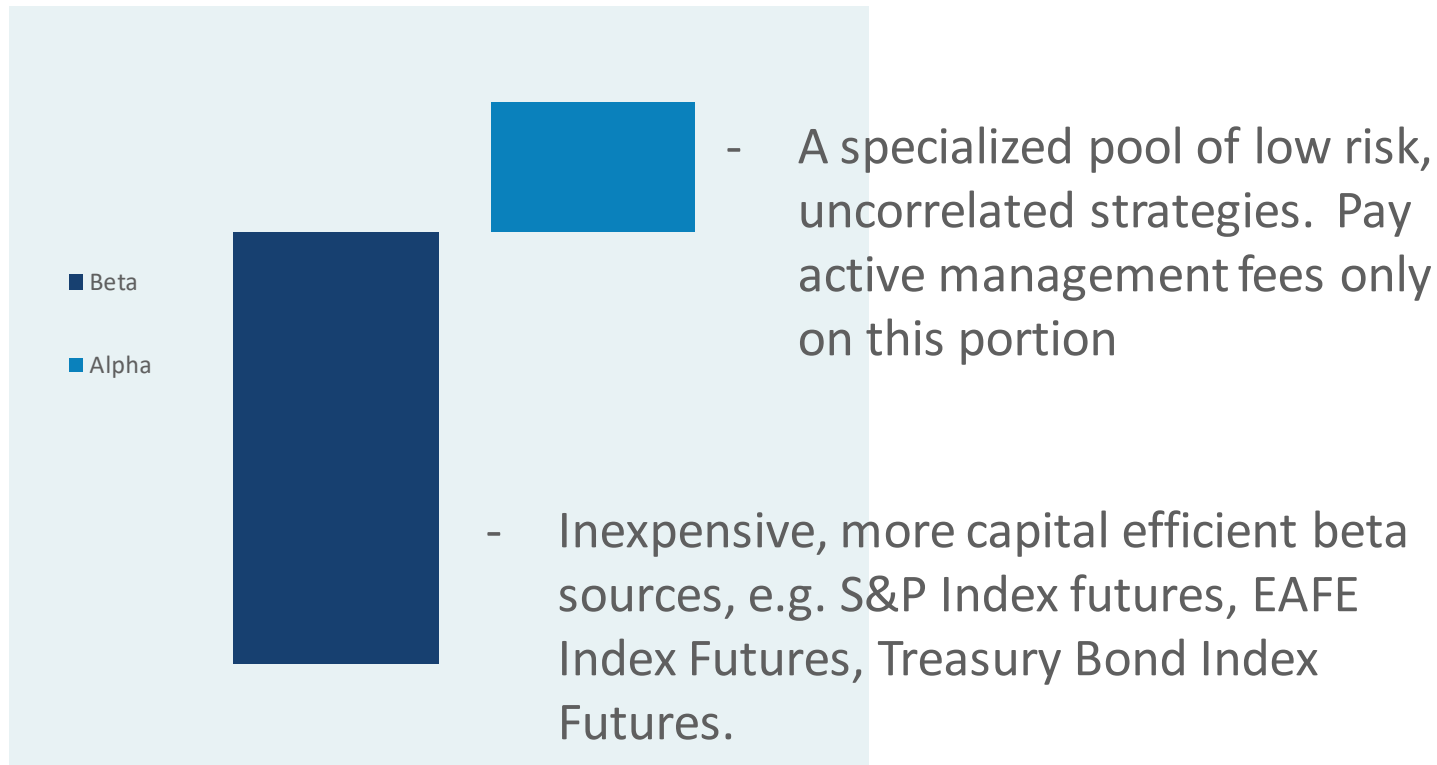
- The traditional portfolio is asked to deliver both alpha and beta



- Excess returns have proven difficult, especially in US Large Cap
- We pay high fees for the Beta, which is available to ACERA for 1 bp
- The Beta tends to be “dead weight”

A more efficient approach

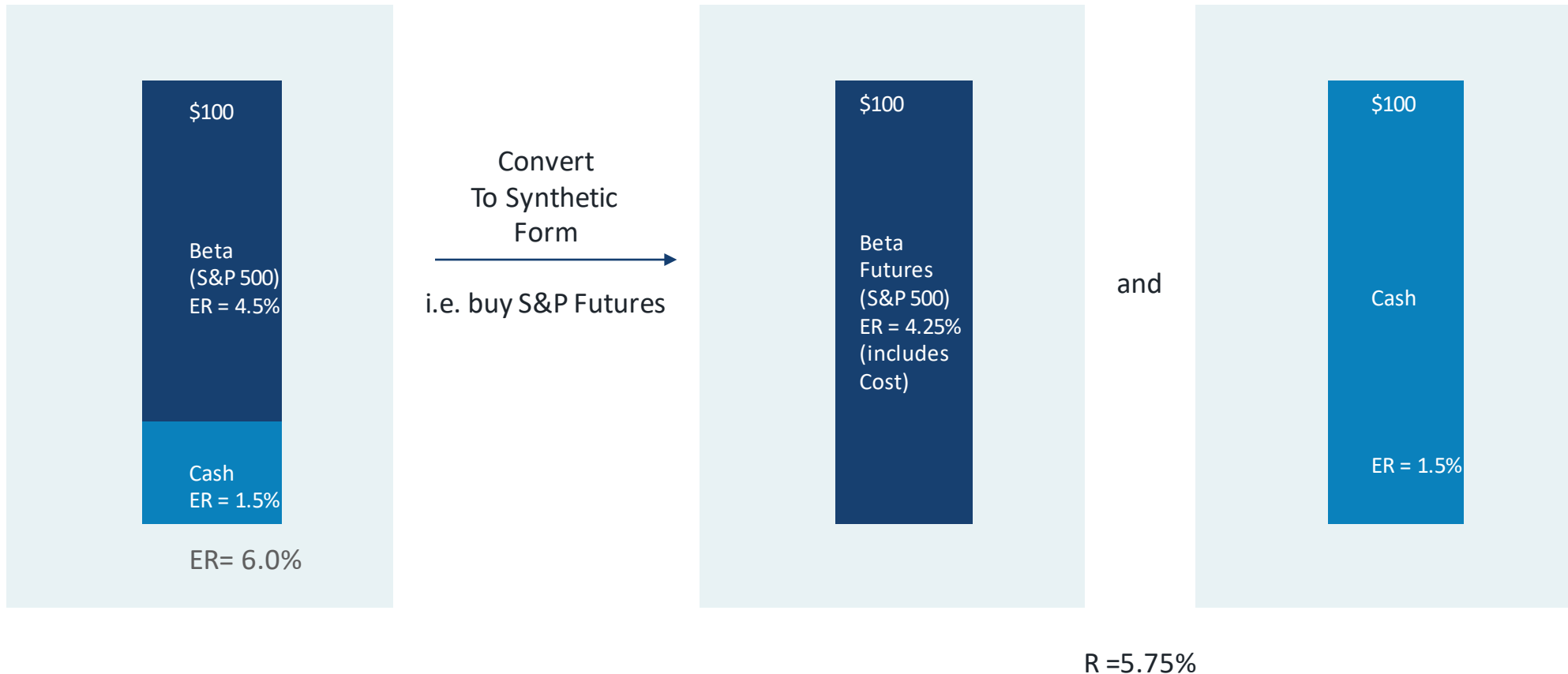
- What if we disaggregate and utilize both a beta and an alpha portfolio?



Alpha/Beta (portable alpha) mechanics

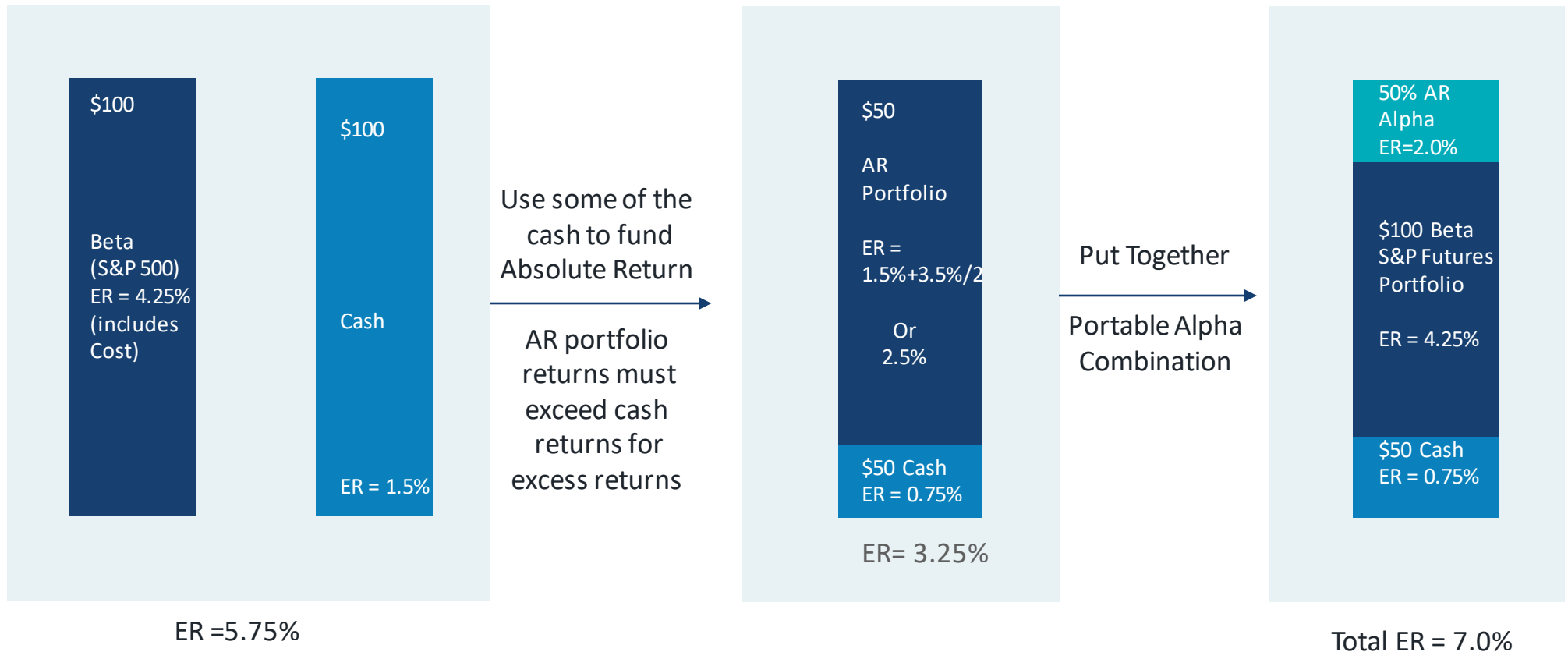
Step One: Create Synthetic Beta Portfolio

Index Fund



Alpha/Beta (Portable Alpha) mechanics

Step Two: Integrating Alpha



Total return equation

Total Return = Cash + Beta + Alpha

ACERA Return with Overlay = 0.75% + 4.25% + 2.0% = 7.0%

VS

6.0% Expected Return with Physical Index Funds

Is this leverage?

1. If ACERA were to buy S&P Futures and kept all the cash in riskless money market, it would NOT be leverage, i.e. there would be a 1 to 1 relationship between the futures exposure and the cash being held as collateral
2. If ACERA were to invest half of the cash in risk assets (i.e. absolute return funds), it would be considered economic leverage as the risk assets will perform differently from cash
3. ACERA would lose versus the pure index if the AR portfolio underperforms cash.

So... Why consider portable alpha?

- Enhanced Return to the Pure Beta Portfolio
- More Efficient use of fees
- More reliable alpha engines
- Ability to use excess return from the strategy to balance the Total Fund risk

ACERA's Portfolio

Legend

In the following Examples:

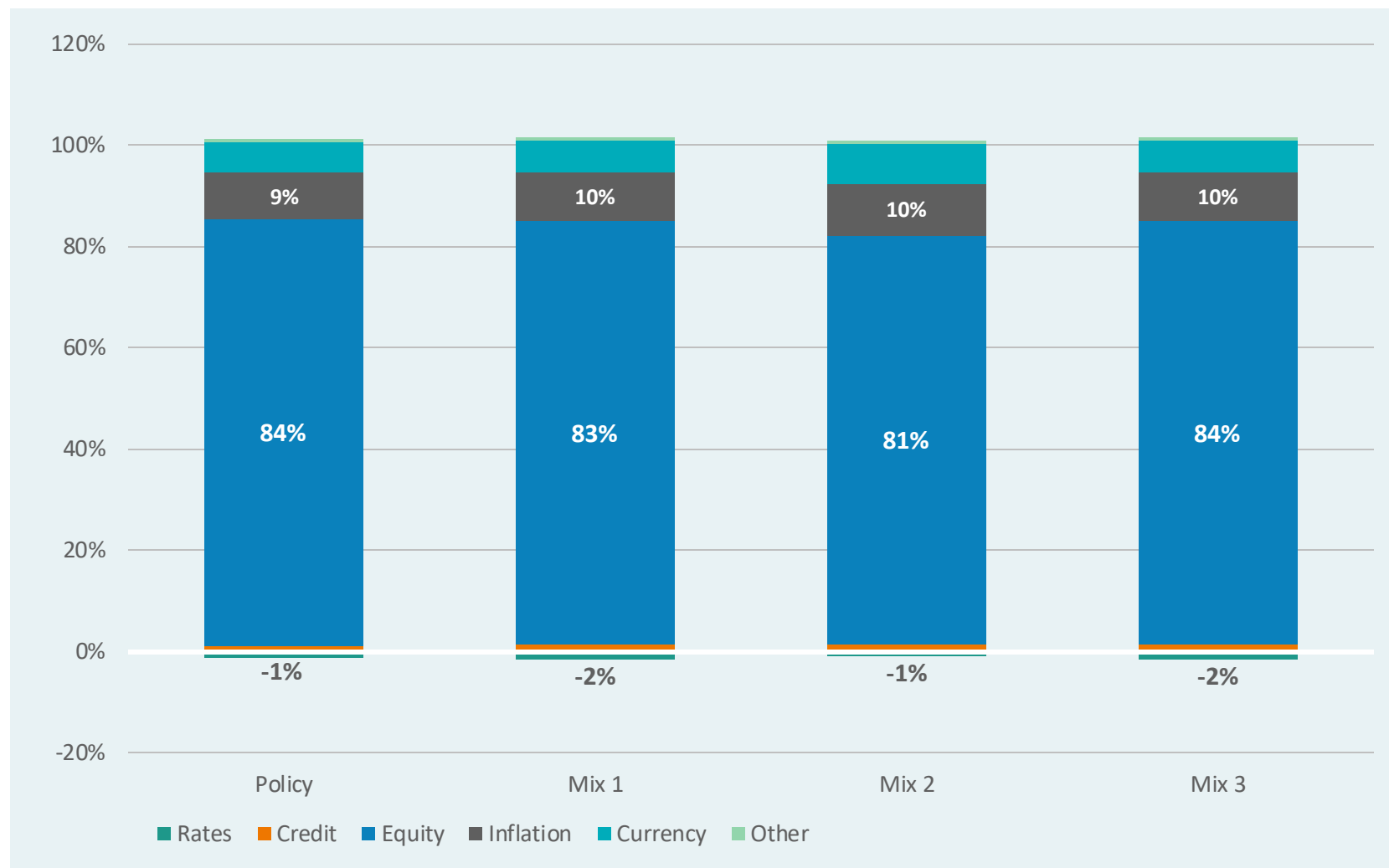
- “Policy” is ACERA’s current policy
- “Mix One” has a 5% allocation to the alpha portfolio overlayed on the S&P 500 and EAFE index funds
- “Mix Two” has a 10% allocation to the alpha portfolio overlayed on the S&P 500 and EAFE index funds, with more International than US Equity.
- “Mix Three” has a 10% allocation to the alpha portfolio overlayed on the S&P 500 and EAFE index funds and the US Treasury portfolio
- Alpha Pool expected return is 4.0%
- Cash (both investing and borrowing) is at 2.2%
- Assuming 50% cash margins at initiation

Effects on portfolio

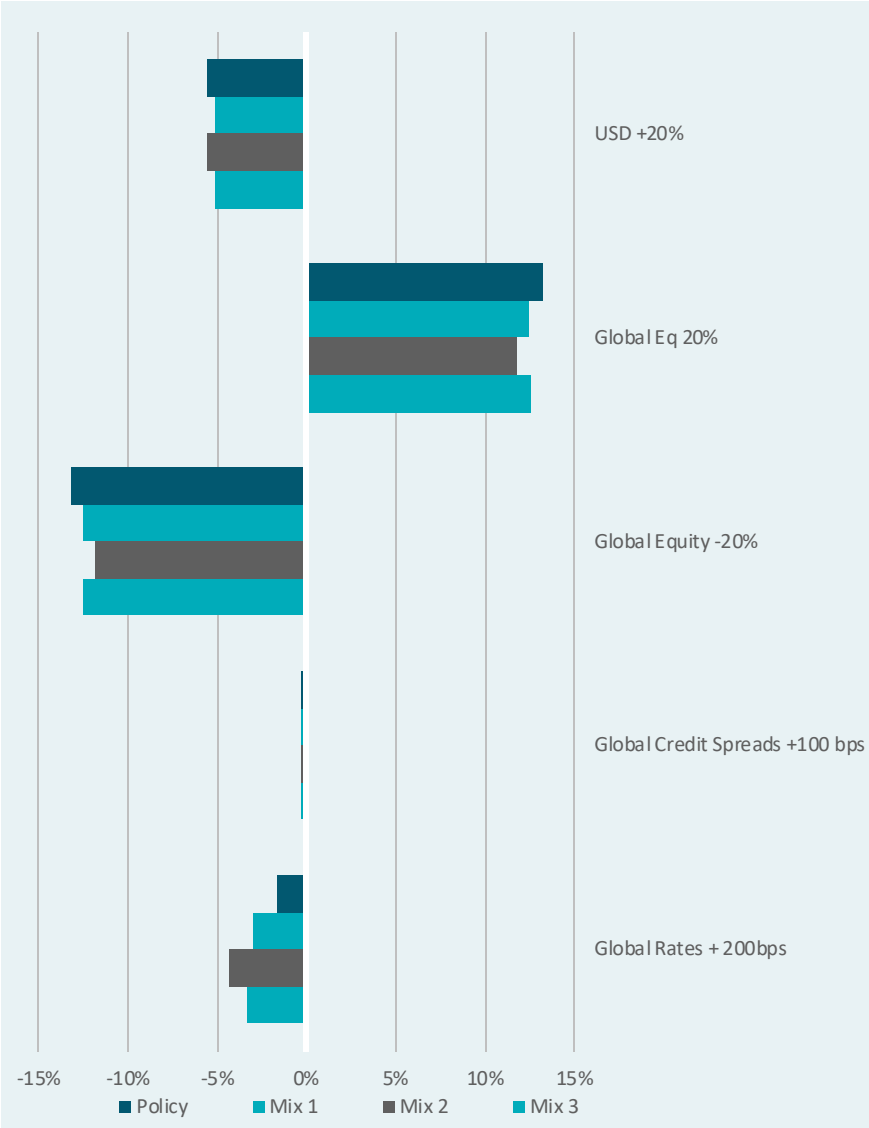
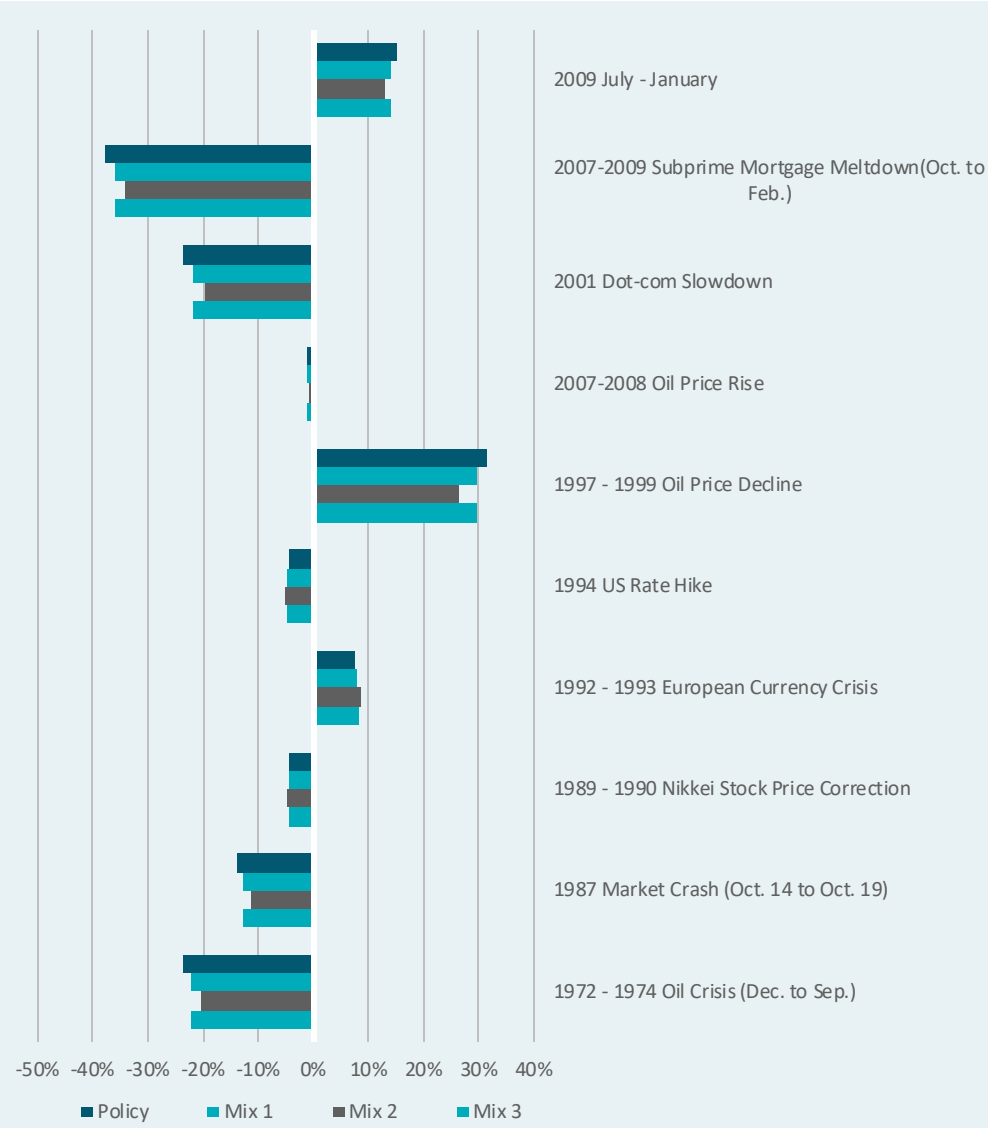
	50th Percentile	StdDev Rtn, %	Policy	Mix 1	Mix 2	Mix 3
Domestic Equity			28	25	18	24
International	8.6	18.1	26	24	26	24
BBgBarc US Treasury Long TR USD	2.9	12	0	5	10	6
Private Equity	6.4	26.1	10.25	10.25	10.25	10.25
Fixed Income			15	15	15	15
Hedge Fund	4	8.1	9	9	9	9
Real Return			11.75	11.75	11.75	11.75
Portable Alpha	4	8.1	0	5	10	10
Cash	2.2	1.2	0	-5	-10	-10

50th Percentile	6.1	6.1	6.2	6.1
Risk (StdDev Rtn), %	13.1	12.5	12	12.7
Sharpe Ratio	0.36	0.37	0.39	0.37

Effects on portfolio



Effects on portfolio



Observations

In the preceding Examples:

- The Portable Alpha strategies maintain return expectations while lowering risk expectations
- They also allow for greater risk balance (less equity risk) and moderate drawdowns in both historical and prospective negative equity environments

Next steps

- As Verus conducts the next Asset/Liability study, would you want us to incorporate a portable alpha alternative?



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: JUNE 30, 2018

Investment Performance Review for

Alameda County Employees' Retirement Association

2nd quarter summary

THE ECONOMIC CLIMATE

- U.S. economic data generally surprised to the upside in Q2, leading to a strong quarterly GDP growth estimate of 3.4%. Economic growth in the second and third quarters will likely see the biggest boost from fiscal stimulus. The U.S. is currently outshining other developed economies.
- The synchronized global growth story of the past year has shifted somewhat as economies have displayed more disparate performance. The change has not been too dramatic – growth continues to be positive, but at a more moderate pace.

PORTFOLIO IMPACTS

- Emerging market equity and local debt delivered losses of 8.0% and 10.4% in Q2 (MSCI Emerging Markets Index, JPM GBI-EM Global Diversified). Much of the losses were due to currency movement. We believe emerging market assets offer attractive value – recent movements appear to have been driven by a shift in short-term sentiment and currency depreciation.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6th, which impacted \$34 billion worth of goods. So far, only a small portion of the discussed tariffs have been enacted.

THE INVESTMENT CLIMATE

- Strong corporate earnings growth is expected again in the second quarter. According to FactSet, the bottom-up analyst forecast for the S&P 500 is 20.0% YoY.
- Short-term U.S. Treasury yields rose, resulting in a flatter yield curve. The spread between the 10- and 2-year yield was 27 bps, a new cycle low.
- Fears were raised over Italy's role in the European Union after a coalition of the anti-establishment Five Star Movement and League Party formed a new government. Italian sovereign bond yields spiked severely during the move, but have since moderated somewhat.

ASSET ALLOCATION ISSUES

- Following the February selloff equity markets have been range bound. As corporate earnings rise further equity valuations have been pushed down to more attractive levels closer to the long-term historical average.
- While we believe trade negotiations and geopolitical uncertainty are potential causes for concern, the backdrop of positive global growth and strong corporate earnings may allow for healthy risk-asset performance.

A neutral to mild risk overweight may be warranted in today's environment

U.S. economics summary

- GDP growth was 2.8% year-over-year in the first quarter (2.0% quarterly annualized rate). The slightly slower pace of expansion was influenced by more conservative consumer spending than in previous quarters.
- The rate of inflation picked up moderately throughout the quarter. Core CPI rose 2.3% over the past year, reaching the upper end of its range during the current cycle. The year-over-year rate was impacted by a low base effect – the 3-month annualized core inflation rate was only 1.7%.
- Job gains during the quarter were strong, despite traditional employment measures indicating a tight labor market. Additions to nonfarm payrolls averaged 211,000 per month and the U-3 unemployment rate fell slightly from 4.1% to 4.0%.
- The broadest measure of labor market health, the ratio of employed individuals to the total population, indicates there may still be room for further improvement. More narrow indicators, such as the U-3 unemployment rate, may be overstating labor market tightness.
- The back and forth on trade between the U.S. and much of the rest of the world intensified. The White House has threatened to enact tariffs on up to \$550 billion of Chinese goods over unfair trade practices and intellectual property theft. To this point, tariffs have only been implemented on around \$40 billion of Chinese goods.
- The Fed raised interest rates for a second time this year in June to a target rate of 1.8% to 2.0%. Two more rate hikes are expected by the end of the year based on the Fed dot plot.

	Most Recent	12 Months Prior
GDP (YoY)	2.8% 3/31/18	2.0% 3/31/17
Inflation (CPI YoY, Core)	2.3% 6/30/18	1.7% 6/30/17
Expected Inflation (5yr-5yr forward)	2.2% 6/30/18	1.8% 6/30/17
Fed Funds Target Range	1.75 – 2.00% 6/30/18	1.00 – 1.25% 6/30/17
10 Year Rate	2.9% 6/30/18	2.3% 6/30/17
U-3 Unemployment	4.0% 6/30/18	4.3% 6/30/17
U-6 Unemployment	7.8% 6/30/18	8.5% 6/30/17

International economics summary

- The synchronized global growth story of the past year has shifted somewhat as greater performance disparity is visible across global economies. Growth continues to be positive but is more moderate in places.
- Developed market economies are expected to grow less quickly in the coming years while emerging economy growth rates are expected to rise.
- The U.S. implemented a first round of tariffs on Chinese imports on July 6th, which impacted \$34 billion of goods. So far, only a small portion of the discussed tariffs have been enacted.
- In June, Mario Draghi officially announced the end of Europe's bond buying program. Asset purchases are scheduled to end in December, and it was promised that interest rates will remain unchanged through the summer of 2019. This message was seen by markets as more dovish than expected.
- Fears were raised over Italy's uncertain role in the EU, following a new coalition of the anti-establishment Five Star Movement and League Party taking over the government. Italian bond yields spiked severely during the move, but have since moderated.
- The Eurozone Composite PMI rose for the first time in five months to 54.8 in June. PMIs in most developed and emerging markets remain above 50, indicating expansion.
- The U.S. dollar appreciated 5% during the quarter. Certain emerging market currencies have devalued sharply, such as the Argentine peso, which is down more than 35% against the USD on the year.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.8% 3/31/18	2.8% 5/31/18	4.0% 6/30/18
Eurozone	2.5% 3/31/18	2.0% 6/30/18	8.6% 3/31/18
Japan	1.1% 3/31/18	0.7% 5/31/18	2.2% 5/31/18
BRICS Nations	5.8% 3/31/18	2.5% 6/30/18	5.6% 3/31/18
Brazil	1.2% 3/31/18	4.4% 6/30/18	12.8% 6/30/18
Russia	1.3% 3/31/18	2.3% 6/30/18	4.7% 5/31/18
India	7.7% 3/31/18	5.0% 6/30/18	8.8% 12/31/17
China	6.8% 3/31/18	1.9% 6/30/18	3.9% 3/31/18

- The composite fund returned 0.28% for the second quarter of 2018 and ranked in the 79th percentile among public funds greater than \$1 billion (median of 1.00%). The fund lagged its policy index return of 0.98% during this time period. Longer term, the five (8.98%), seven (8.57%), and ten- year (7.47%) returns ranked in the top quarter of large public plans.
- Second quarter results were enhanced by the following factors:
 1. Next Century Growth rose 10.25% beating the Russell 2000 Growth + 2.50% (7.40%). Stock selection in healthcare and technology sectors contributed to performance.
 2. TCW beat the Russell 1000 Growth +2.00% (7.79% vs 6.23%). The primary driver of relative outperformance was positive security selection in the information technology, industrials and healthcare sectors.
- Second quarter results were hindered by the following factors:
 1. Brandywine lost -6.71%, lagging the Citi WGBI by 3.36% and ranked in the bottom decile of its peers. The strengthening US dollar contributed to 80% of the quarter's underperformance.
 2. Kennedy lagged the Russell 2000 Value + 2.50% (5.29% vs 8.62%). There were two primary drivers that provided headwinds in Q2; first, an inversion in expected response to the risking interest rate environment, and second, a reversed signal from valuations.
 3. AQR International Equity lost -5.03% trailing the MSCI ACWI ex US (-2.39%). Overweights to Hong Kong and Japan detracted from performance. Stock selection also contributed negative performance in all core regions.
 4. Pzena ranked in the bottom of its peer group losing -0.85% vs the Russell 1000 Value + 2.00% (1.36%). The largest detracting sectors were financials, technology and durables.

Total Fund
Manager Allocation Analysis (One Quarter)

Period Ending: June 30, 2018

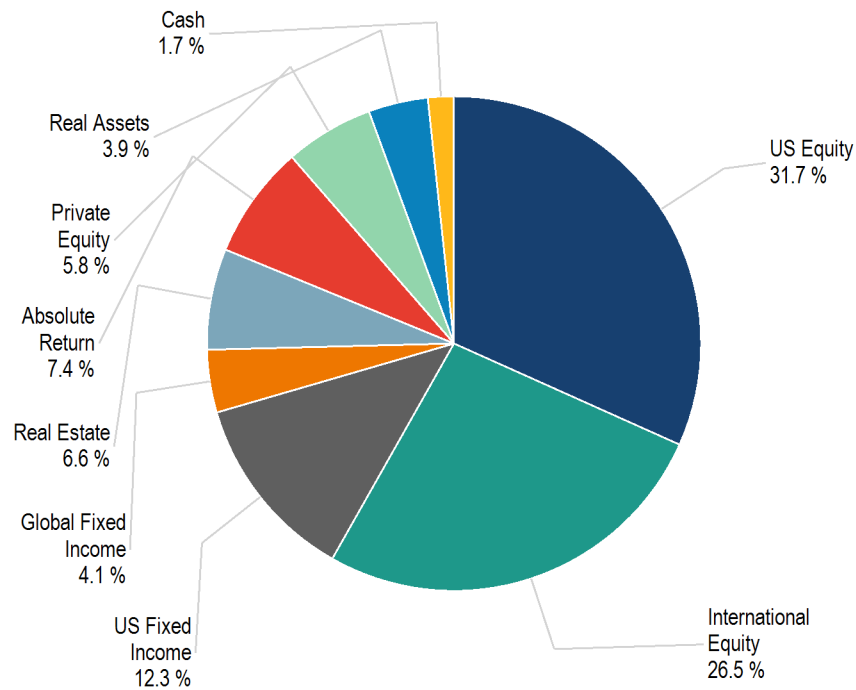
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return ¹	\$349,754,630	\$257,370,119	-\$9,748,745	\$597,376,004
Alta	\$13,572,140	\$0	\$496,275	\$14,068,415
AQR	\$498,904,298	-\$49,272,668	-\$23,900,093	\$425,731,537
Baird Advisors	\$663,746,512	-\$133,730	-\$998,924	\$662,613,858
Bivium Cash	\$3	\$0	\$199	\$201
BlackRock Russell 1000 Index Fund	\$0	\$1,775,311,116	\$48,818,577	\$1,824,129,693
Brandywine	\$352,081,970	-\$239,886	-\$23,622,105	\$328,219,978
Capital Group	\$1,000,586,870	-\$128,813,724	-\$10,995,872	\$860,777,274
Cash Account	\$24,621,782	\$116,512,308	\$111,351	\$141,245,441
Huber	\$9,593,564	\$0	\$84,300	\$9,677,864
Kennedy	\$135,861,165	-\$18,500,000	\$7,126,525	\$124,487,689
Loomis Sayles	\$334,073,610	-\$264,746	-\$2,519,802	\$331,289,062
Matarin	\$10,417,200	-\$11,126,795	\$720,458	\$10,863
Mondrian	\$696,303,125	-\$22,614,797	-\$23,834,520	\$649,853,808
Next Century-SCG	\$135,233,140	-\$27,933,794	\$13,932,640	\$121,231,986
Next Century-USCG	\$27	\$0	\$0	\$27
OakBrook	\$14,652,368	-\$3,500,000	\$561,875	\$11,714,243
Private Equity	\$458,770,496	-\$2,312,438	\$11,011,203	\$467,469,261
Pzena	\$255,502,657	-\$37,006,655	-\$506,604	\$217,989,398
Quest	\$14,466,843	-\$873,205	\$717,875	\$14,311,513
Real Assets	\$306,599,405	\$2,107,521	\$10,226,495	\$318,933,421
Real Estate	\$523,552,701	\$82,147	\$11,430,975	\$535,065,820
Sec. Lending	\$0	-\$642,675	\$642,675	\$0
TCW	\$265,430,392	-\$70,000,000	\$19,764,493	\$215,194,885
Templeton	\$269,917,462	-\$48,000,000	-\$7,784,098	\$214,133,364
Transition Account	\$1,774,920,976	-\$1,776,419,299	\$2,085,556	\$587,233
Vulcan Value	\$17,203,764	\$0	\$498,140	\$17,701,904
Total	\$8,125,767,100	-\$46,271,201	\$24,318,849	\$8,103,814,742

¹ Preliminary ending market value.

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$13,572,140	\$0	\$496,275	\$14,068,415
Bivium Cash	\$3	\$0	\$199	\$201
Huber	\$9,593,564	\$0	\$84,300	\$9,677,864
Matarin	\$10,417,200	-\$11,126,795	\$720,458	\$10,863
OakBrook	\$14,652,368	-\$3,500,000	\$561,875	\$11,714,243
Quest	\$14,466,843	-\$873,205	\$717,875	\$14,311,513
Vulcan Value	\$17,203,764	\$0	\$498,140	\$17,701,904
Total	\$79,905,881	-\$15,500,000	\$3,079,123	\$67,485,003

Total Fund Asset Allocation Analysis

Period Ending: June 30, 2018



	Current Balance	Current Allocation
US Equity	\$2,571,105,915	31.7%
International Equity	\$2,150,495,983	26.5%
US Fixed Income	\$993,902,920	12.3%
Global Fixed Income	\$328,219,978	4.1%
Real Estate	\$535,065,821	6.6%
Absolute Return	\$597,376,003	7.4%
Private Equity	\$467,469,261	5.8%
Real Assets	\$318,933,421	3.9%
Cash	\$141,245,441	1.7%
Total	\$8,103,814,742	100.0%

	Policy	Current Allocation	Difference
US Equity	28.0%	31.7%	3.7%
International Equity	26.0%	26.5%	0.5%
US Fixed Income	12.8%	12.3%	-0.5%
Global Fixed Income	2.3%	4.1%	1.8%
Real Estate	8.0%	6.6%	-1.4%
Absolute Return	9.0%	7.4%	-1.6%
Private Equity	9.0%	5.8%	-3.2%
Real Assets	5.0%	3.9%	-1.1%
Cash	--	1.7%	1.7%
Total	100.0%	100.0%	

Total Fund Performance Summary

Period Ending: June 30, 2018

	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)	0.28	79	1.19	42	10.07	8	7.98	15	8.98	20	8.57	16	7.47	9	9.72	Sep-85
Total Fund (Net)	0.23	81	1.10	46	9.84	12	7.69	21	8.66	32	8.23	28	7.14	21	9.52	
<i>Policy Index¹</i>	0.98	53	0.97	51	9.90	11	8.44	5	9.56	5	8.91	8	7.78	6	10.02	Sep-85
<i>Allocation Index</i>	0.85	56	0.57	64	9.67	13	8.20	9	9.25	16	8.57	16	7.24	14	--	Sep-85
<i>InvestorForce Public DB > \$1B Gross Median</i>	1.00		1.00		8.65		7.18		8.26		7.79		6.63		8.73	Sep-85
US Equity (Gross)	3.55	65	4.97	15	17.39	13	11.58	39	13.27	41	13.04	26	10.77	15	11.75	Sep-85
US Equity (Net)	3.50	67	4.86	17	17.09	15	11.25	53	12.92	62	12.68	48	10.44	30	--	
<i>Russell 3000</i>	3.89	49	3.22	57	14.78	54	11.58	39	13.29	39	13.01	28	10.23	43	11.23	Sep-85
<i>InvestorForce All DB US Eq Gross Median</i>	3.88		3.33		14.85		11.32		13.09		12.66		10.08		11.00	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.22	Apr-18
BlackRock Russell 1000 Index Fund (Net)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.22	
<i>Russell 1000</i>	3.57	30	2.85	33	14.54	42	11.64	34	13.37	42	13.12	41	10.20	49	3.22	Apr-18
<i>eV US Large Cap Core Equity Gross Median</i>	2.80		1.98		13.88		10.91		13.09		12.88		10.18		2.42	Apr-18
Large Cap Active Equity (Gross)	3.55	65	4.94	15	17.47	12	12.04	17	13.56	20	13.28	15	11.47	5	7.97	Mar-00
Large Cap Active Equity (Net)	3.43	69	4.73	18	17.04	16	11.62	37	13.16	46	12.85	37	11.05	8	7.55	
<i>Russell 1000</i>	3.57	64	2.85	70	14.54	59	11.64	35	13.37	32	13.12	22	10.20	44	5.53	Mar-00
<i>InvestorForce All DB US Eq Gross Median</i>	3.88		3.33		14.85		11.32		13.09		12.66		10.08		6.19	Mar-00

Total Fund and asset class composites are ranked against InvestorForce universes. Managers are ranked against eVestment Alliance style universes.

Ranking of 1 is a top ranking and a ranking of 100 is a bottom ranking. The InvestorForce Public DB> \$1B Gross universe consists of 63 members with a total market value of \$723 Billion.

Effective 1/1/2017, only traditional asset class (public equity, public fixed income, public real estate) investment management fees will be included in the gross of fee return calculation.

* Effective Q1 2014, inception to date returns are as of the managers first full month. Prior was managers first full quarter.

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Bivium (Gross)	3.83	36	4.44	23	15.15	31	9.61	59	12.07	54	12.22	42	--	--	10.01	Jul-08
Bivium (Net)	3.71	39	4.22	24	14.70	38	9.14	66	11.60	63	11.75	50	--	--	9.58	
Russell 3000 +1% ¹	4.09	26	3.77	29	15.78	26	12.59	17	14.30	21	14.30	15	--	--	--	Jul-08
Russell 3000	3.89	34	3.22	37	14.78	38	11.58	27	13.29	33	13.01	30	10.23	41	10.41	Jul-08
Pzena (Gross)	-0.85	99	-2.33	86	10.00	51	10.26	30	11.72	38	11.85	49	9.95	38	6.05	Jan-06
Pzena (Net)	-1.07	99	-2.65	92	9.42	58	9.75	42	11.24	51	11.34	63	9.48	51	5.61	
Russell 1000 Value +2%	1.36	61	-0.70	53	8.77	67	10.26	30	12.36	22	13.28	14	10.53	24	8.95	Jan-06
Russell 1000 Value	1.18	66	-1.69	71	6.77	86	8.26	73	10.34	72	11.27	65	8.49	79	6.92	Jan-06
TCW (Gross)	7.79	9	12.55	14	25.75	25	14.14	44	15.68	55	14.13	52	12.48	21	7.34	Jun-99
TCW (Net)	7.79	9	12.47	15	25.49	26	13.83	47	15.37	61	13.80	59	12.12	32	--	
Russell 1000 Growth +2% ¹	6.23	32	8.37	46	24.51	31	16.98	8	18.36	12	17.03	5	14.12	4	7.68	Jun-99
Russell 1000 Growth	5.76	43	7.25	55	22.51	46	14.98	29	16.36	44	14.88	33	11.83	40	5.25	Jun-99
Small Cap Equity (Gross)	7.76	1	9.13	1	22.79	1	10.74	70	12.71	69	12.07	73	10.19	44	13.83	Jul-85
Small Cap Equity (Net)	7.57	1	8.72	1	21.83	1	9.84	89	11.78	91	11.14	95	9.35	84	--	
Russell 2000	7.75	1	7.66	2	17.57	11	10.96	63	12.46	77	11.83	80	10.60	21	9.87	Jul-85
InvestorForce All DB US Eq Gross Median	3.88		3.33		14.85		11.32		13.09		12.66		10.08		10.80	Jul-85
Kennedy (Gross)	5.29	58	2.55	67	13.39	45	10.65	49	12.75	32	12.84	30	--	--	14.57	Sep-10
Kennedy (Net)	5.29	58	2.33	70	12.73	51	9.84	65	11.91	56	11.94	56	--	--	13.72	
Russell 2000 Value +2.5%	8.62	16	6.42	19	15.60	29	13.73	11	13.69	20	13.61	17	--	--	15.08	Sep-10
Russell 2000 Value	8.30	19	5.44	29	13.10	47	11.22	42	11.18	69	11.10	77	9.88	84	12.56	Sep-10

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Next Century-SCG (Gross)	10.25	34	17.49	18	35.91	14	10.33	75	11.90	89	9.92	96	8.39	97	12.17	Oct-02
Next Century-SCG (Net)	9.85	39	16.84	22	34.64	17	9.36	85	10.91	92	8.99	96	7.43	98	11.19	
Russell 2000 Growth +2.5%	7.40	73	10.59	62	24.36	55	13.13	41	16.17	25	15.02	22	13.78	31	14.42	Oct-02
Russell 2000 Growth	7.23	75	9.70	71	21.86	70	10.60	72	13.65	69	12.50	70	11.24	72	11.88	Oct-02
International Equity (Gross)	-2.82	46	-2.89	39	9.11	24	7.04	20	7.44	33	5.71	31	4.19	29	8.40	Dec-90
International Equity (Net)	-2.93	50	-3.03	42	8.79	27	6.65	30	7.03	46	5.30	43	3.78	41	--	
MSCI ACWI ex USA IMI Gross ¹	-2.40	36	-3.34	50	8.24	36	5.94	47	6.86	52	4.54	66	3.18	60	6.46	Dec-90
InvestorForce All DB ex-US Eq Gross Median	-2.96		-3.38		7.35		5.76		6.92		5.02		3.54		6.91	Dec-90
AQR (Gross)	-5.03	90	-4.96	76	6.32	71	6.47	27	7.30	42	5.17	58	3.93	70	2.34	Oct-07
AQR (Net)	-5.28	94	-5.22	79	5.78	76	5.94	48	6.76	55	4.66	76	3.41	85	1.85	
MSCI ACWI ex USA Gross	-2.39	35	-3.44	48	7.79	46	5.56	53	6.48	67	4.28	84	3.01	91	1.25	Oct-07
Capital Group (Gross)	-1.18	31	-1.02	31	13.52	23	8.95	29	8.24	48	6.21	52	4.14	66	8.70	Dec-90
Capital Group (Net)	-1.21	32	-1.05	31	13.42	24	8.71	30	7.94	53	5.86	57	3.78	75	--	
MSCI ACWI ex USA Gross	-2.39	49	-3.44	63	7.79	63	5.56	69	6.48	80	4.28	85	3.01	86	6.42	Dec-90
MSCI ACWI ex USA Growth Gross	-1.23	32	-2.02	39	10.30	40	6.95	44	7.56	61	5.20	69	3.36	80	--	Dec-90
Mondrian (Gross)	-3.43	42	-4.62	38	4.30	63	4.30	65	5.76	69	4.44	63	3.43	52	7.35	Nov-03
Mondrian (Net)	-3.52	51	-4.79	46	3.95	69	3.93	71	5.39	83	4.09	75	3.10	59	7.04	
MSCI ACWI ex USA Gross	-2.39	19	-3.44	20	7.79	17	5.56	38	6.48	62	4.28	70	3.01	62	7.22	Nov-03
MSCI ACWI ex USA Value Gross	-3.59	53	-4.90	49	5.26	39	4.12	67	5.33	83	3.32	96	2.61	66	6.98	Nov-03

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Templeton (Gross)	-3.27	72	-1.53	59	10.55	71	8.06	76	9.09	73	8.04	77	--	--	7.59	Apr-11
Templeton (Net)	-3.43	75	-1.85	62	9.88	80	7.37	81	8.35	91	7.29	86	--	--	6.86	
MSCI ACWI ex US Small Cap Gross	-2.44	59	-2.71	69	10.96	66	8.33	71	9.37	62	6.24	99	6.14	90	5.35	Apr-11
Total Fixed Income (Gross)	-2.01	95	-1.74	78	0.57	51	3.43	33	3.85	28	4.61	21	6.06	20	7.34	Sep-86
Total Fixed Income (Net)	-2.06	96	-1.84	78	0.38	60	3.24	37	3.65	31	4.40	26	5.84	22	--	
Fixed Income Blend ¹	-0.79	68	-1.31	67	0.47	57	2.44	64	2.44	72	2.58	90	3.94	82	6.42	Sep-86
InvestorForce All DB Total Fix Inc Gross Median	-0.18		-0.93		0.58		2.84		3.00		3.58		4.88		6.93	Sep-86
US Fixed Income (Gross)	-0.35	70	-1.34	65	0.71	33	3.18	37	4.15	28	4.79	24	6.20	21	7.22	Sep-86
US Fixed Income (Net)	-0.39	71	-1.42	67	0.55	38	3.01	41	3.98	29	4.62	26	6.02	25	--	
BBgBarc US Aggregate TR	-0.16	59	-1.62	72	-0.40	81	1.72	78	2.27	76	2.57	81	3.72	79	6.15	Sep-86
InvestorForce All DB US Fix Inc Gross Median	-0.05		-1.00		0.20		2.61		3.08		3.55		4.77		6.83	Sep-86
Baird Advisors (Gross)	-0.15	62	-1.50	56	0.07	37	2.72	14	3.47	9	4.07	7	5.18	11	4.98	Oct-01
Baird Advisors (Net)	-0.17	68	-1.54	59	-0.01	46	2.64	16	3.38	11	3.98	9	5.09	12	4.89	
BBgBarc US Aggregate TR	-0.16	63	-1.62	70	-0.40	82	1.72	88	2.27	89	2.57	93	3.72	92	4.10	Oct-01
Loomis Sayles (Gross)	-0.75	99	-1.03	15	1.97	2	4.01	3	5.44	1	6.07	1	7.86	1	8.28	Dec-00
Loomis Sayles (Net)	-0.83	99	-1.19	22	1.65	4	3.68	3	5.11	1	5.72	2	7.50	1	7.93	
BBgBarc US Credit BAA TR	-1.22	99	-3.35	99	-0.57	91	3.25	5	3.81	5	4.42	4	6.16	2	6.14	Dec-00
Global Fixed Income (Gross)	-6.71	88	-2.93	81	0.02	60	4.05	30	2.92	57	3.98	50	5.42	29	7.51	Nov-01
Global Fixed Income (Net)	-6.78	88	-3.06	81	-0.26	63	3.76	40	2.63	64	3.66	59	5.09	40	7.20	
Citi WGBI	-3.35	61	-0.94	33	1.90	18	2.81	71	1.11	93	0.51	99	2.07	99	4.53	Nov-01
InvestorForce All DB Gbl Fix Inc Gross Median	-2.05		-1.89		0.57		3.38		3.41		3.97		5.00		6.55	Nov-01

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

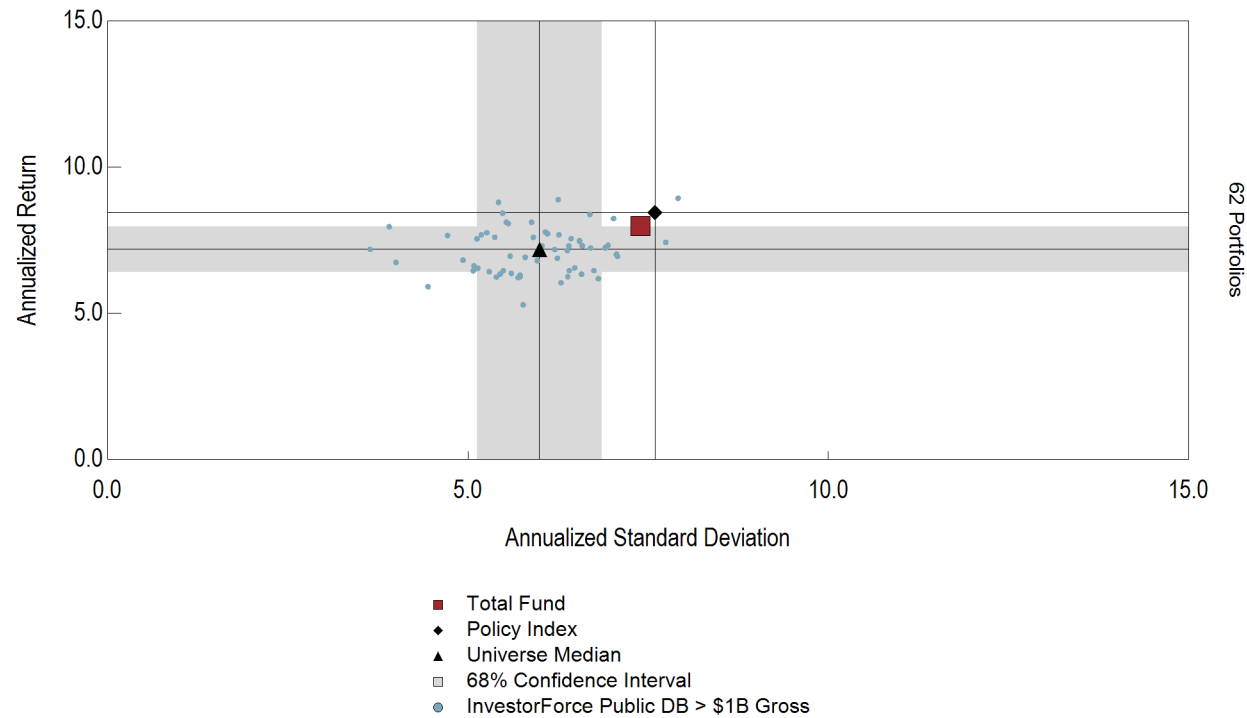
Period Ending: June 30, 2018

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Brandywine (Gross)	-6.71	96	-2.93	81	0.02	87	4.05	30	2.92	52	3.98	34	5.42	27	7.51	Nov-01
Brandywine (Net)	-6.78	97	-3.06	82	-0.26	89	3.76	36	2.63	59	3.66	39	5.09	31	7.20	
<i>Citi WGBI</i>	-3.35	74	-0.94	42	1.90	40	2.81	65	1.11	85	0.51	90	2.07	90	4.53	Nov-01
Absolute Return (Gross)	-1.34	94	0.18	78	2.14	80	2.38	56	3.90	56	--	--	--	--	3.88	Sep-11
Absolute Return (Net)	-1.34	94	0.18	78	2.14	80	2.38	56	3.90	56	--	--	--	--	3.88	
<i>HFRI Fund of Funds Composite Index</i>	0.41	74	0.68	71	5.13	57	1.93	66	3.45	69	2.81	76	1.40	87	3.69	Sep-11
<i>InvestorForce All DB Hedge Funds Gross Median</i>	1.46		1.65		5.73		2.70		4.20		4.18		2.95		5.11	Sep-11
Private Equity (Gross)	2.40	--	6.66	--	11.42	--	12.54	--	15.72	--	13.97	--	--	--	2.69	Nov-08
Private Equity (Net)	2.40	--	6.66	--	11.42	--	12.54	--	15.72	--	13.97	--	--	--	2.69	
<i>Thomson Reuters CJA Global All PE 1 Qtr Lag</i>	2.79	--	7.22	--	16.20	--	11.36	--	12.47	--	11.47	--	8.84	--	9.25	Nov-08
Real Assets (Gross)	3.33	--	4.40	--	10.45	--	-0.54	--	-4.08	--	--	--	--	--	-4.16	Sep-11
Real Assets (Net)	3.33	--	4.40	--	10.45	--	-0.54	--	-4.08	--	--	--	--	--	-4.16	
<i>Real Asset Blend¹</i>	3.71	--	0.80	--	13.78	--	9.99	--	7.56	--	--	--	--	--	6.88	Sep-11
Cash (Gross)	0.40	--	0.59	--	1.05	--	0.76	--	0.47	--	0.37	--	0.42	--	3.20	Sep-85
Cash (Net)	0.40	--	0.59	--	1.05	--	0.76	--	0.47	--	0.37	--	0.42	--	3.20	
<i>91 Day T-Bills</i>	0.46	--	0.84	--	1.40	--	0.70	--	0.43	--	0.32	--	0.30	--	3.29	Sep-85
Real Estate (Gross)	2.18	36	4.17	31	8.44	29	10.29	15	12.03	11	12.25	12	5.66	30	7.11	Mar-86
Real Estate (Net)	2.18	36	4.17	31	8.44	29	9.80	24	11.31	31	11.43	32	4.83	54	6.02	
<i>NCREIF-ODCE</i>	2.05	44	4.30	22	8.44	29	9.36	38	11.03	37	11.39	33	5.29	37	7.32	Mar-86
<i>InvestorForce All DB Real Estate Pub+Priv Gross Median</i>	1.95		3.84		7.73		9.02		10.67		10.99		4.96		7.33	Mar-86

¹ See Policy Index and Benchmark History.

Total Fund
Risk vs. Return (3 Years)

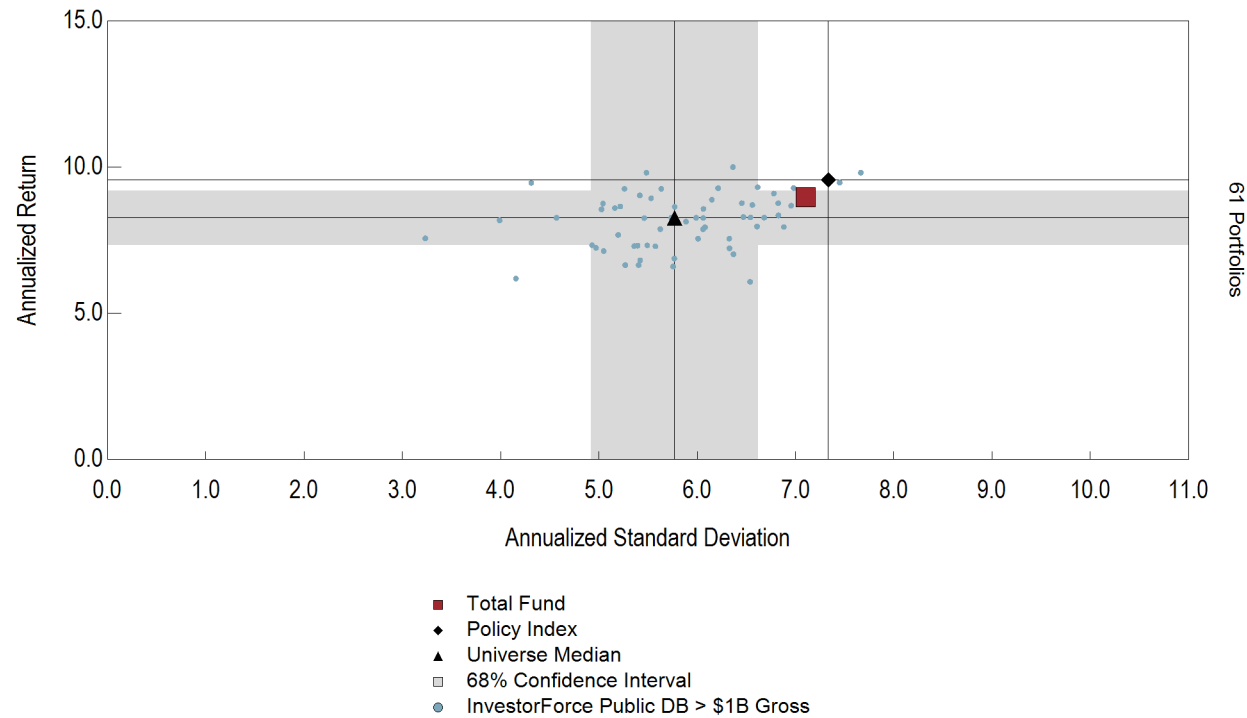
Period Ending: June 30, 2018



	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	7.98%	15	7.39%	98	0.98	70	-0.36	91	1.29%	79
Policy Index	8.44%	5	7.60%	98	1.02	63	--	--	0.00%	1
Allocation Index	8.20%	9	7.62%	99	0.98	70	-0.57	98	0.43%	4
InvestorForce Public DB > \$1B Gross Median	7.18%	--	5.99%	--	1.05	--	0.29	--	1.12%	--

Total Fund
Risk vs. Return (5 Years)

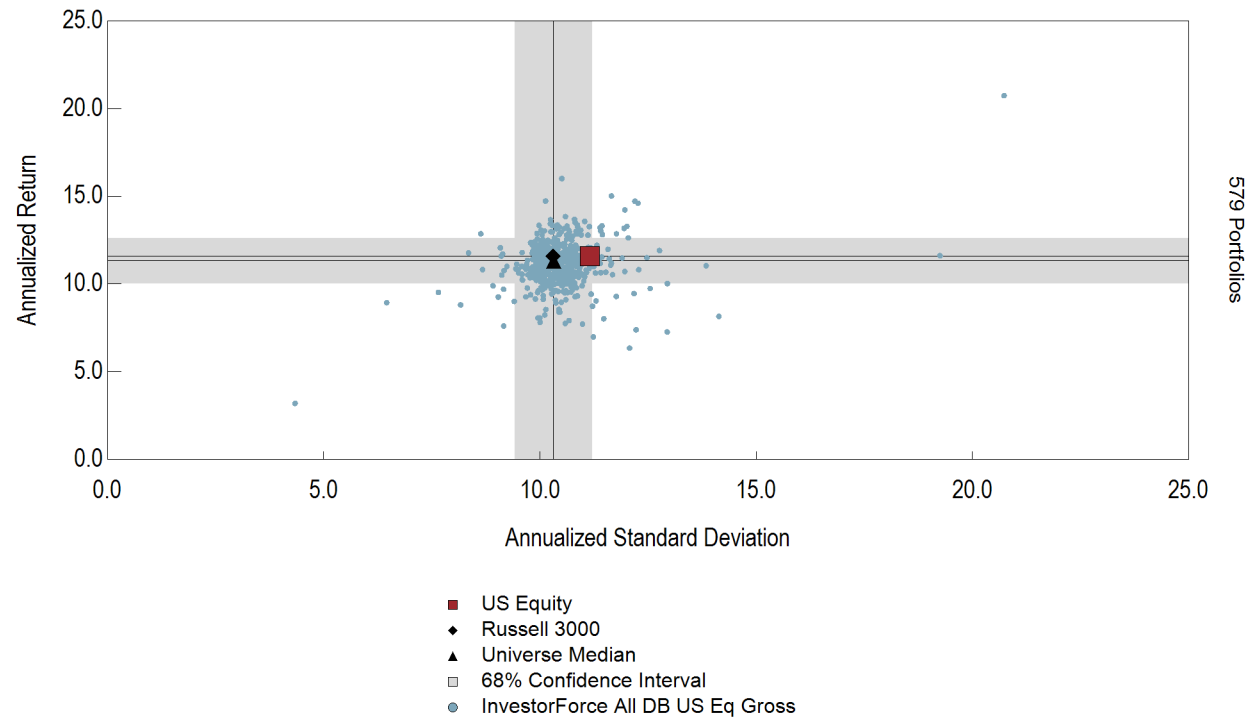
Period Ending: June 30, 2018



	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	8.98%	20	7.10%	98	1.20	73	-0.48	98	1.21%	66
Policy Index	9.56%	5	7.33%	98	1.25	61	--	--	0.00%	1
Allocation Index	9.25%	16	7.34%	98	1.20	74	-0.86	99	0.36%	3
InvestorForce Public DB > \$1B Gross Median	8.26%	--	5.77%	--	1.29	--	0.37	--	1.10%	--

US Equity Risk vs. Return (3 Years)

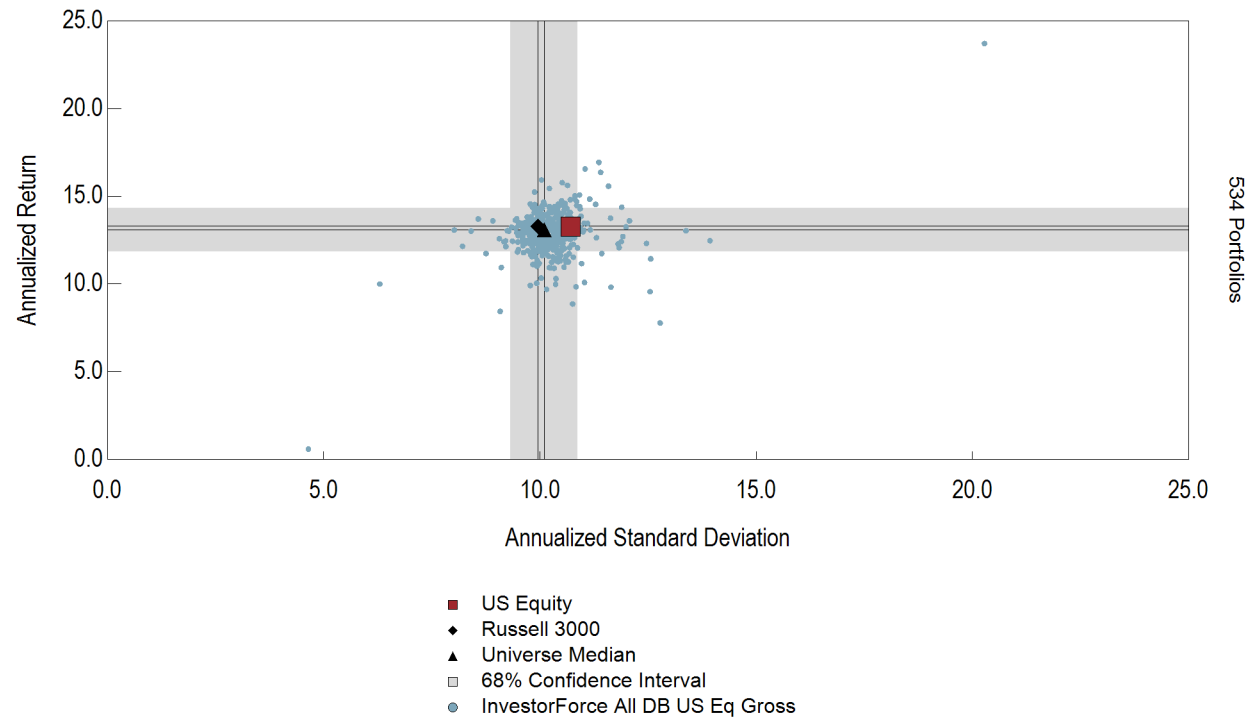
Period Ending: June 30, 2018



	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	11.58%	39	11.15%	92	0.98	65	0.00	37	2.23%	64
Russell 3000	11.58%	39	10.30%	49	1.06	39	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	11.32%	--	10.32%	--	1.03	--	-0.23	--	1.92%	--

US Equity Risk vs. Return (5 Years)

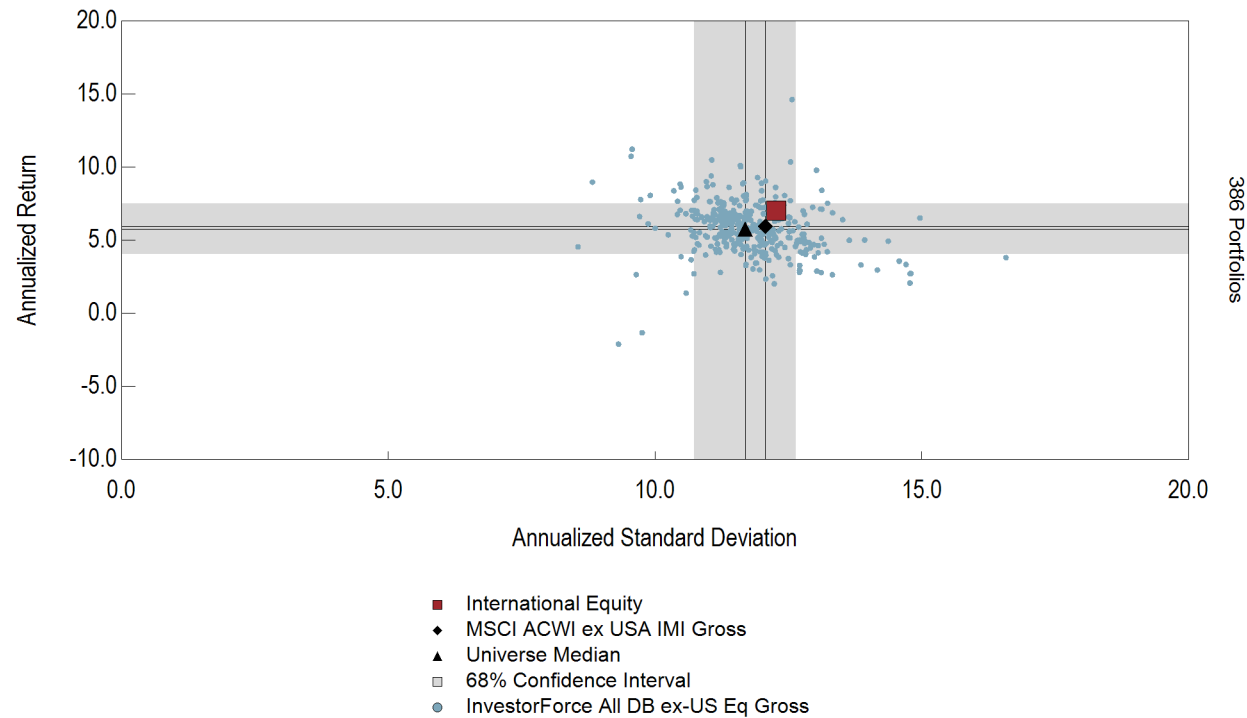
Period Ending: June 30, 2018



	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	13.27%	41	10.71%	88	1.20	70	-0.01	41	2.35%	66
Russell 3000	13.29%	39	9.96%	35	1.29	33	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	13.09%	--	10.10%	--	1.25	--	-0.13	--	1.94%	--

International Equity Risk vs. Return (3 Years)

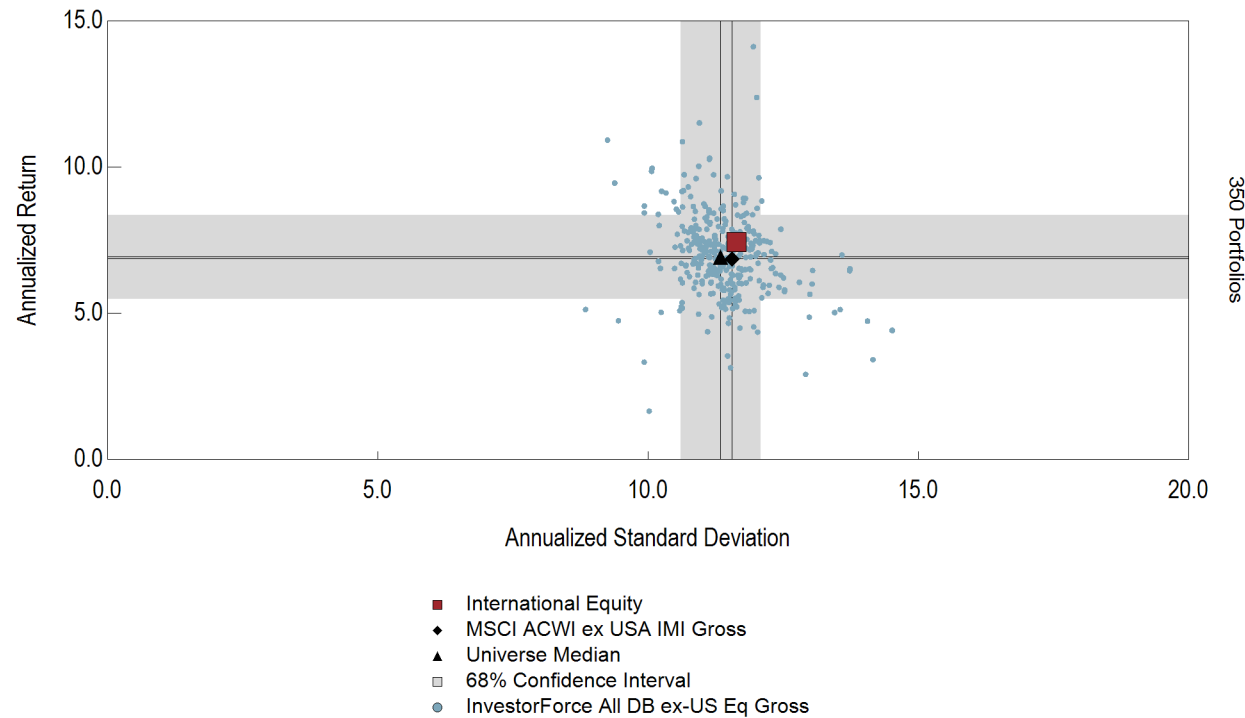
Period Ending: June 30, 2018



	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	7.04%	20	12.27%	78	0.52	29	0.80	15	1.37%	7
MSCI ACWI ex USA IMI Gross	5.94%	47	12.06%	70	0.43	50	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	5.76%	--	11.69%	--	0.43	--	0.21	--	2.93%	--

International Equity Risk vs. Return (5 Years)

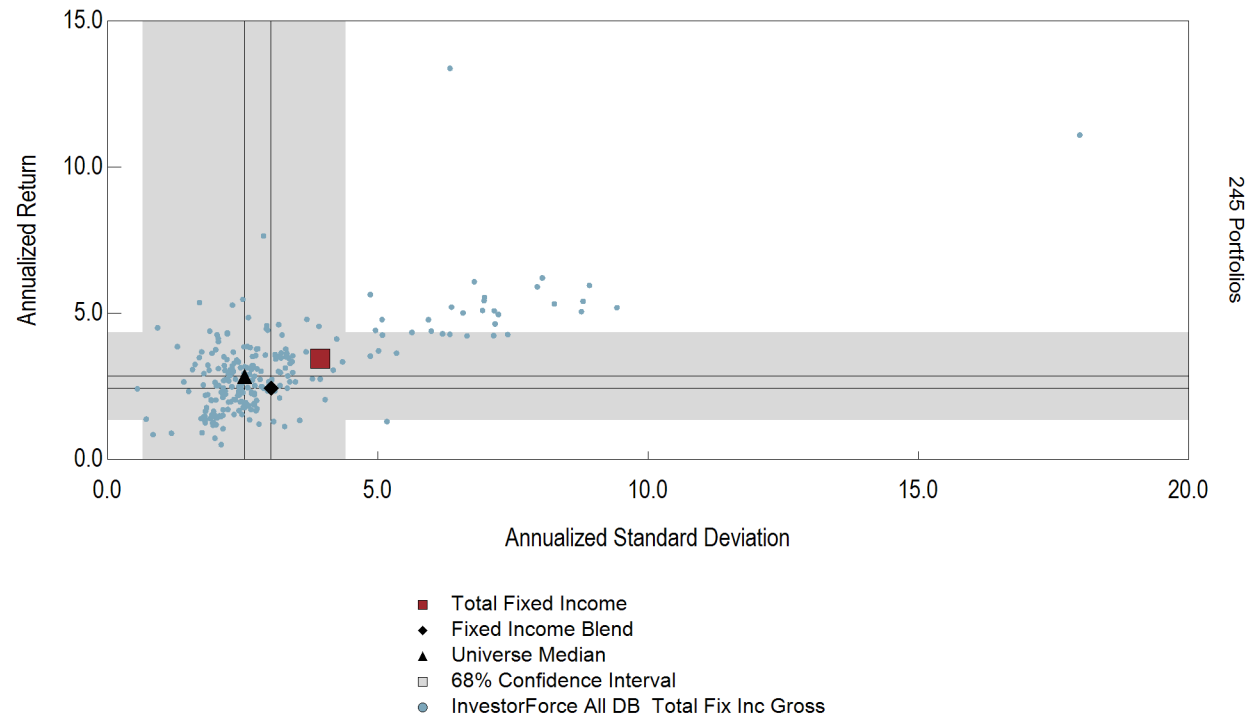
Period Ending: June 30, 2018



	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	7.44%	33	11.63%	72	0.60	37	0.42	36	1.37%	6
MSCI ACWI ex USA IMI Gross	6.86%	52	11.55%	66	0.56	54	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	6.92%	--	11.34%	--	0.57	--	0.25	--	2.85%	--

Total Fixed Income Risk vs. Return (3 Years)

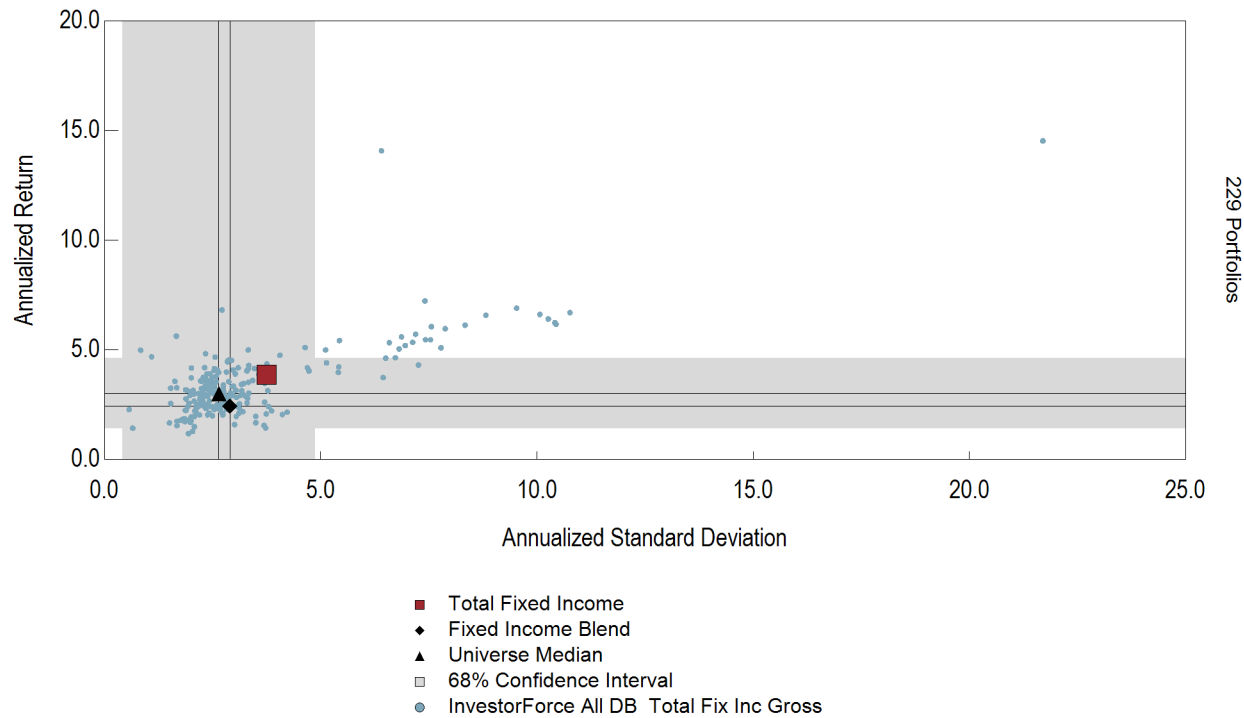
Period Ending: June 30, 2018



	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	3.43%	33	3.93%	84	0.70	49	0.52	58	1.93%	59
Fixed Income Blend	2.44%	64	3.02%	69	0.57	68	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	2.84%	--	2.54%	--	0.69	--	0.60	--	1.51%	--

Total Fixed Income Risk vs. Return (5 Years)

Period Ending: June 30, 2018



	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	3.85%	28	3.75%	83	0.91	49	0.80	16	1.77%	58
Fixed Income Blend	2.44%	72	2.90%	63	0.69	77	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	3.00%	--	2.64%	--	0.89	--	0.45	--	1.44%	--

Equity environment

- We maintain an overweight position to equities through a positive tilt to emerging markets. We do not believe recent price swings reflect any major fundamental change to the trajectory of emerging markets. Equity bull runs in these markets have typically incurred a 10% or larger drawdown sometime during the rally.
- Outside of emerging markets, equities have remained fairly range bound following the February selloff. As corporate earnings rise and prices stay flat, equity valuations have been pushed down to more attractive levels closer in line with the historical average.
- Concerns over global trade contributed to a choppy month for equities, although no major breakthroughs or setbacks occurred. Global equities were up +2.9% on a hedged basis but currency depreciation acted as a drag (+0.5% unhedged).
- The value premium has delivered anomalously poor performance – the worst 10-year return on record (since 1926). However, because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained fairly normal. A tactical opportunity to overweight value is not yet apparent - we believe investors should stay the course.
- Equity volatility moved to below-average levels once again, following February's spike. The VIX averaged 15.3 during Q2.
- Currency volatility has frequently been greater than equity market volatility in recent years, causing return disparity for investors with unhedged international assets. A hedging program could allow investors to significantly reduce or eliminate this uncompensated risk.

	QTD TOTAL RETURN		YTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (Russell 1000)	3.6%		2.9%		14.5%	
US Small Cap (Russell 2000)	7.8%		7.7%		17.6%	
US Large Value (Russell 1000 Value)	1.0%		-2.0%		6.0%	
US Large Growth (Russell 1000 Growth)	5.8%		7.3%		22.5%	
International Large (MSCI EAFE)	(1.2%)	3.9%	(2.7%)	0.0%	6.8%	7.9%
Eurozone (Euro Stoxx 50)	(2.3%)	3.6%	(3.7%)	0.5%	3.7%	3.7%
U.K. (FTSE 100)	(3.1%)	9.8%	(0.9%)	2.2%	10.2%	9.9%
Japan (NIKKEI 225)	0.2%	4.4%	0.5%	(1.1%)	15.1%	13.2%
Emerging Markets (MSCI Emerging Markets)	(8.0%)	(3.6%)	(6.7%)	(3.0%)	8.2%	9.5%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/18

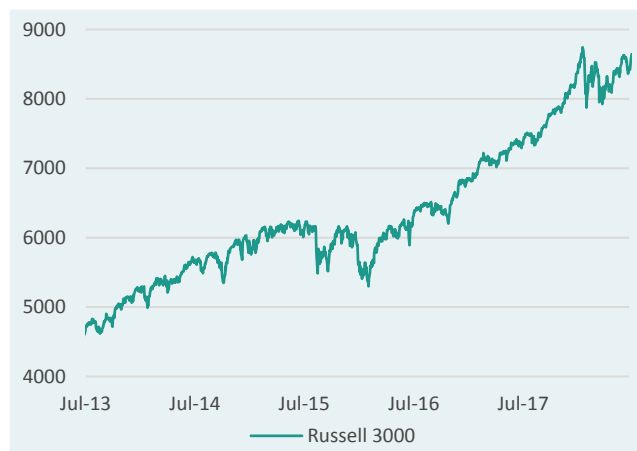
Domestic equity

U.S. equities were range bound over the quarter – the S&P 500 Index posted a positive return of 3.4% and traded within a tight range between 2600 and 2800. The ups and downs of trade negotiations, particularly those between the U.S. and China, impacted equity markets during the quarter. However, considerable uncertainty surrounding the outcome of these negotiations likely helped keep equities from breaking out of their range in either direction.

Strong year-over-year earnings growth is expected to continue for the second quarter. According to FactSet, the bottom-up analyst earnings growth forecast for the S&P 500 is 19.9%. Forward 12-month earnings growth expectations were revised higher throughout the quarter while equity prices leveled out. Given that prices tend to follow earnings, there may be potential upside to prices if the expected high growth is realized. Alternatively, higher discount rates from Fed tightening may offset the impact of strong earnings growth.

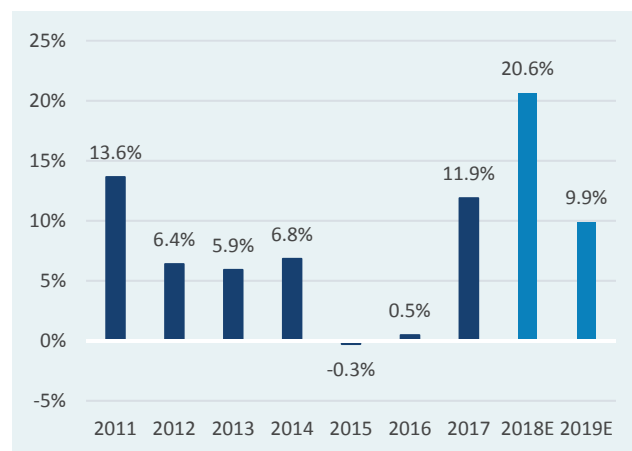
Fundamentals appear unchanged despite falling prices

U.S. EQUITIES



Source: Russell Investments, as of 6/30/18

CALENDAR YEAR EARNINGS GROWTH



Source: FactSet, as of 7/6/18

S&P 500 PRICE & EARNINGS



Source: Bloomberg, as of 6/30/18

Domestic equity size & style

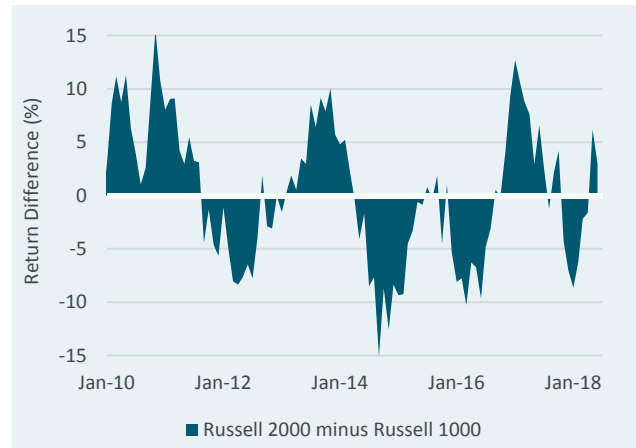
Large cap equities (Russell 1000 3.6%) underperformed small cap (Russell 2000 7.8%) during the quarter. Value stocks continued to lag growth (Russell 1000 Value 1.2% vs. Russell 1000 Growth 5.8%).

Value has delivered anomalously negative returns – the worst 10-year run on record (since 1926). Because performance differences were due to earnings growth disparity rather than moves in valuation, the price difference between value and growth stocks has remained normal. Earnings trends can be somewhat attributed to the global financial crisis where financials lagged considerably, followed by a bull market for

technology stocks (value is concentrated in financials while growth is concentrated in tech). In other words, much of value's underperformance was macroeconomic in nature.

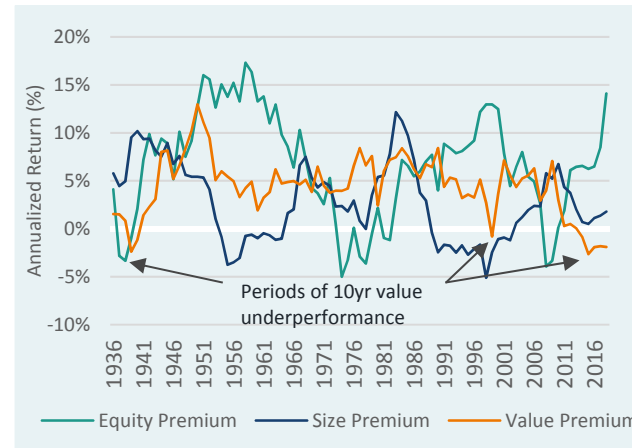
We do not yet see a catalyst for a value comeback, and it is possible that when value bounces back there will not be obvious signals beforehand. Poor recent performance is not always a solid standalone indicator of future reversal. Relative valuations are fairly in line with history, and the economic environment is positive (growth often performs well during later stages of economic cycles). We recommend that value investors stay the course.

SMALL CAP VS LARGE CAP (YOY)



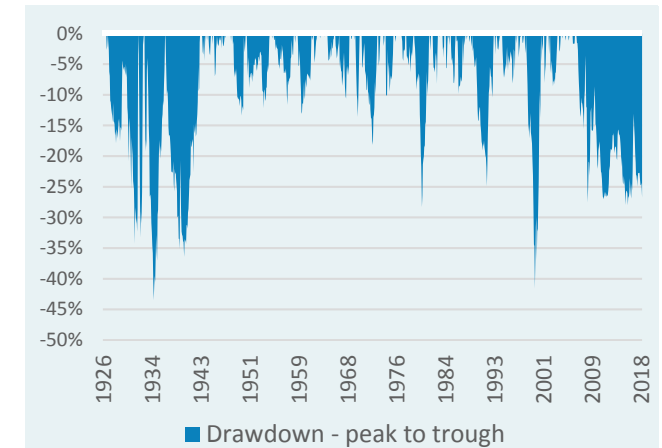
Source: FTSE, as of 6/30/18

FACTOR PERFORMANCE (10YR ROLLING)



Source: Kenneth French Library, as of 5/30/18

VALUE - PEAK TO TROUGH

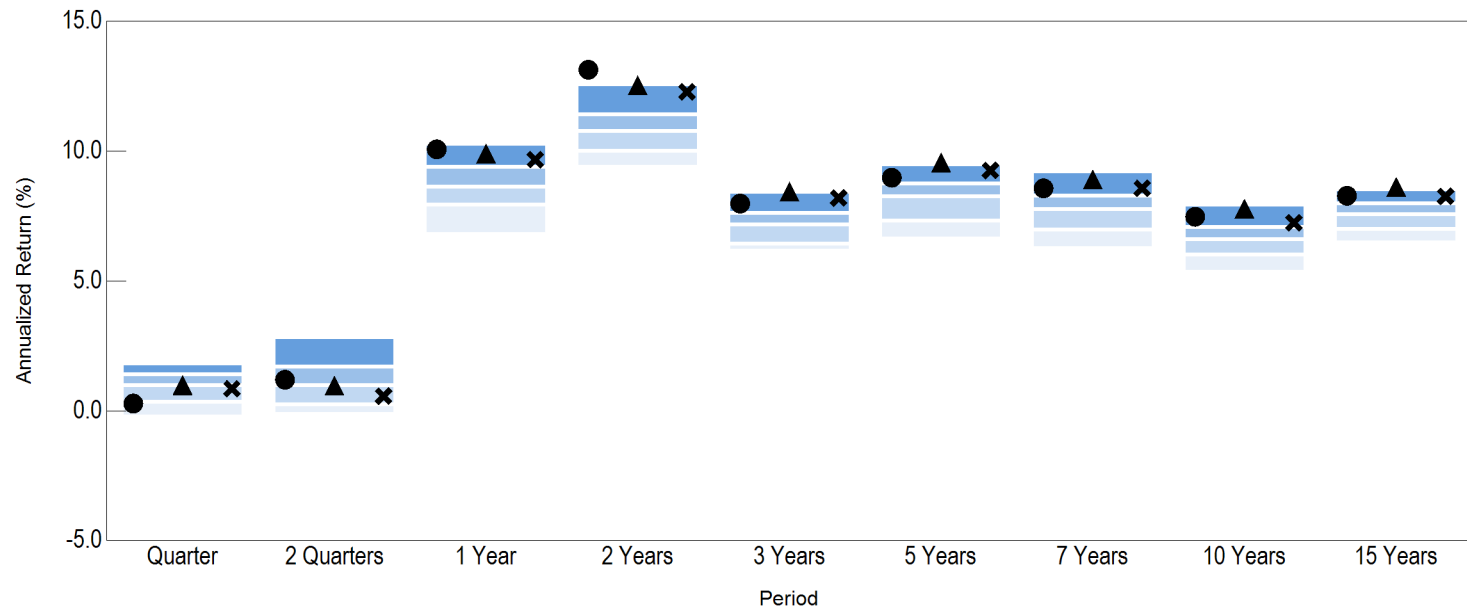


Source: Kenneth French Library, as of 5/30/18

Total Fund Peer Universe Comparison

Period Ending: June 30, 2018

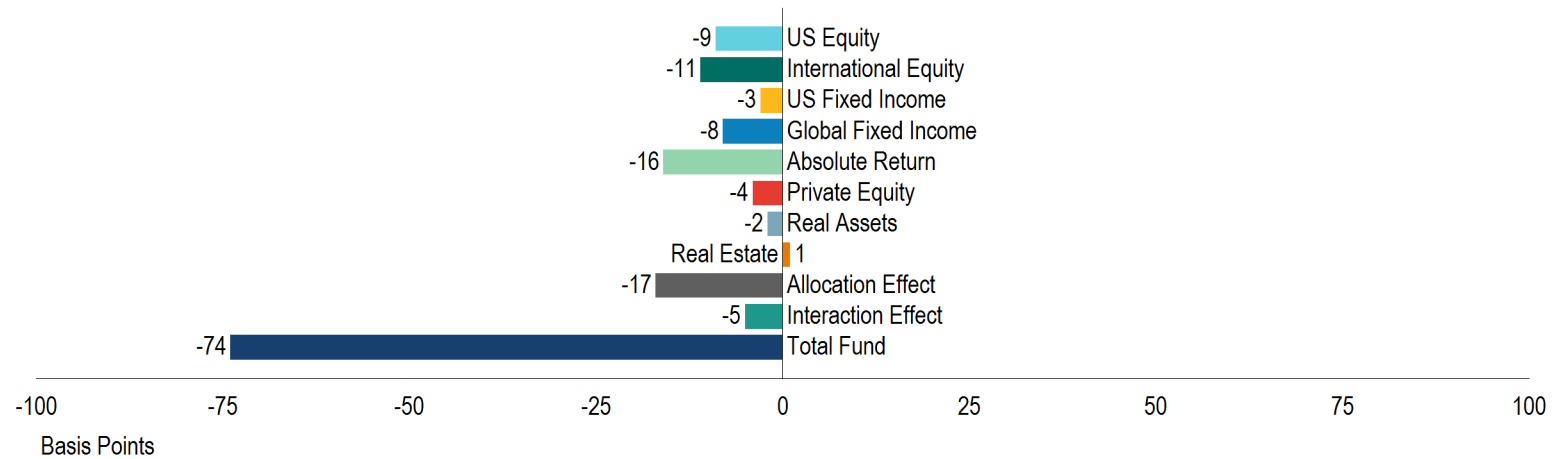
InvestorForce Public DB > \$1B Gross Return Comparison



	Return (Rank)								
5th Percentile	1.82	2.83	10.27	12.56	8.42	9.47	9.22	7.93	8.52
25th Percentile	1.43	1.72	9.40	11.43	7.64	8.76	8.31	7.08	8.00
Median	1.00	1.00	8.65	10.80	7.18	8.26	7.79	6.63	7.59
75th Percentile	0.36	0.25	7.96	10.02	6.46	7.33	7.00	6.02	7.02
95th Percentile	-0.22	-0.11	6.82	9.40	6.18	6.65	6.28	5.37	6.51
# of Portfolios	63	62	62	62	62	61	61	58	54
● Total Fund	0.28 (79)	1.19 (42)	10.07 (8)	13.13 (2)	7.98 (15)	8.98 (20)	8.57 (16)	7.47 (9)	8.28 (11)
▲ Policy Index	0.98 (53)	0.97 (51)	9.90 (11)	12.54 (6)	8.44 (5)	9.56 (5)	8.91 (8)	7.78 (6)	8.61 (3)
✕ Allocation Index	0.85 (56)	0.57 (64)	9.67 (13)	12.28 (8)	8.20 (9)	9.25 (16)	8.57 (16)	7.24 (14)	8.26 (11)

Total Fund
Performance Attribution (One Quarter)

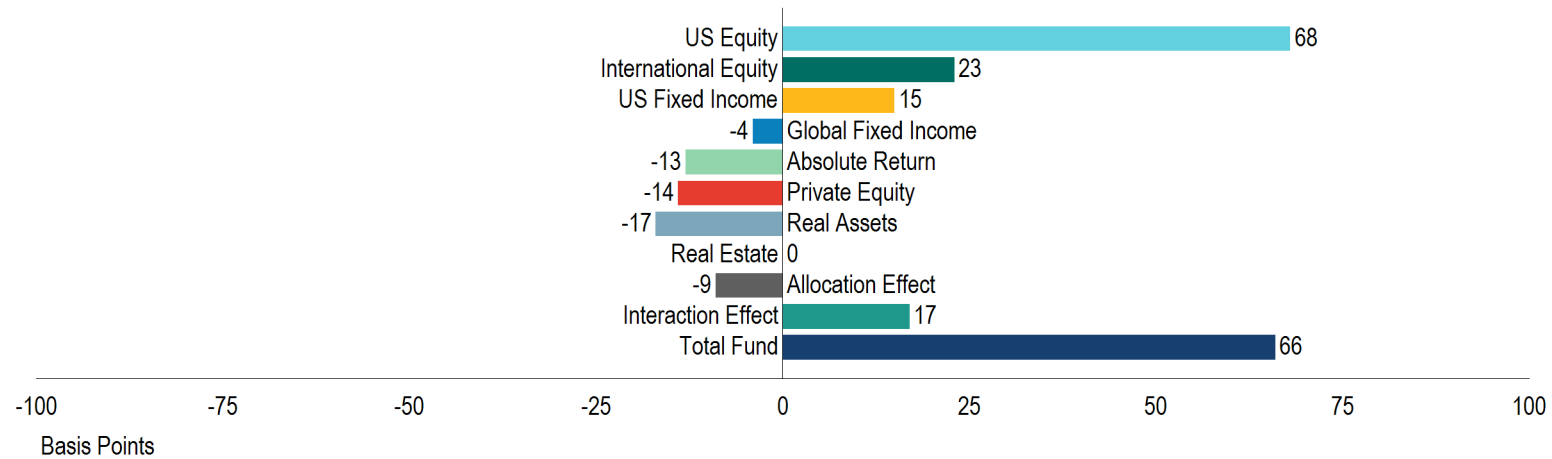
Period Ending: June 30, 2018



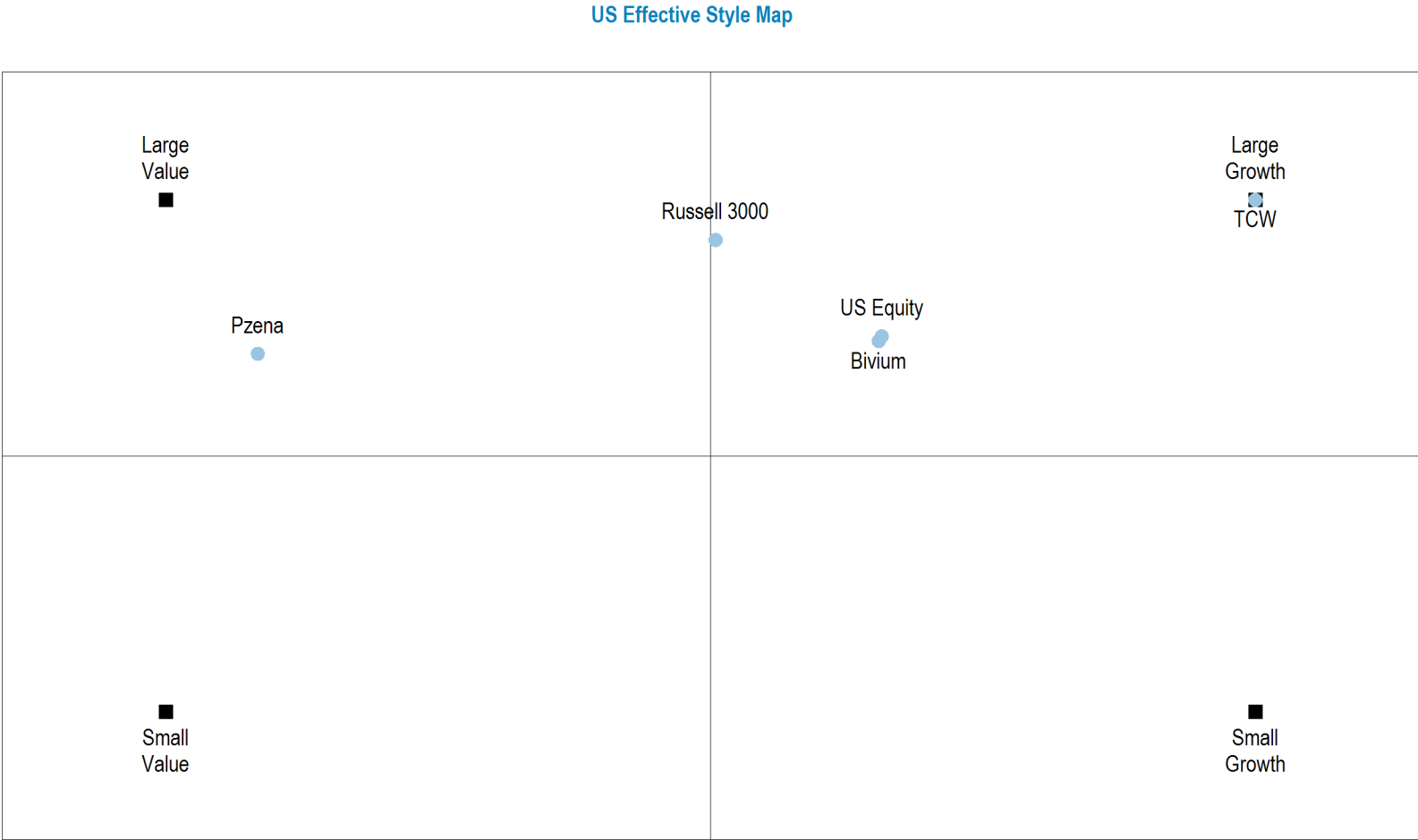
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	3.55%	3.89%	-0.34%	-0.09%	0.13%	-0.01%	0.02%
International Equity	-2.82%	-2.40%	-0.42%	-0.11%	-0.12%	-0.02%	-0.25%
US Fixed Income	-0.35%	-0.16%	-0.19%	-0.03%	0.00%	0.00%	-0.02%
Global Fixed Income	-6.71%	-3.35%	-3.36%	-0.08%	-0.09%	-0.07%	-0.24%
Absolute Return	-1.34%	0.41%	-1.74%	-0.16%	0.02%	0.03%	-0.11%
Private Equity	2.40%	2.79%	-0.39%	-0.04%	-0.06%	0.01%	-0.08%
Real Assets	3.33%	3.71%	-0.38%	-0.02%	-0.03%	0.00%	-0.05%
Real Estate	2.18%	2.05%	0.13%	0.01%	-0.02%	0.00%	-0.01%
Total	0.27%	1.01%	-0.74%	-0.51%	-0.17%	-0.05%	-0.74%

Total Fund
Performance Attribution (One Year)

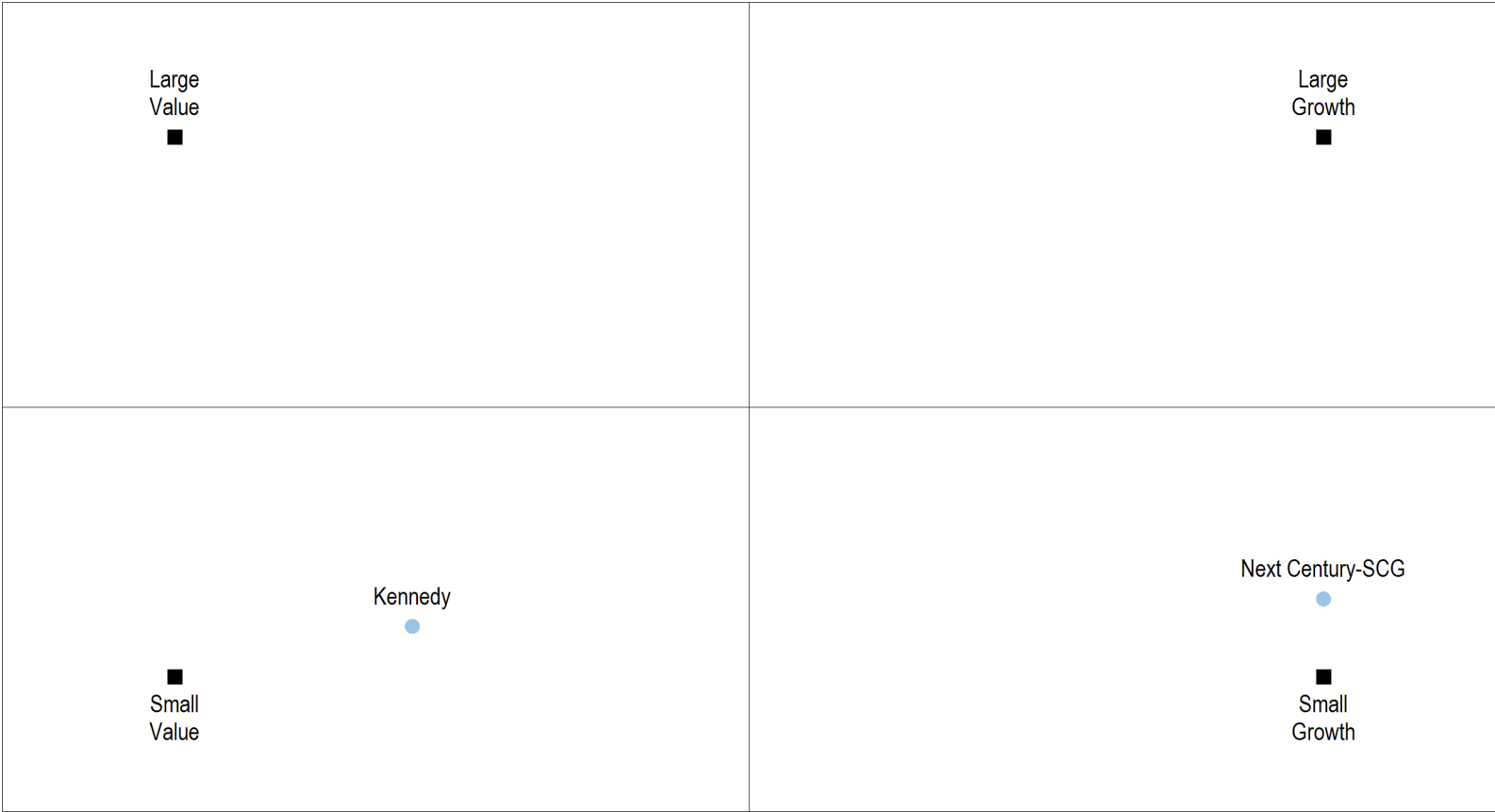
Period Ending: June 30, 2018

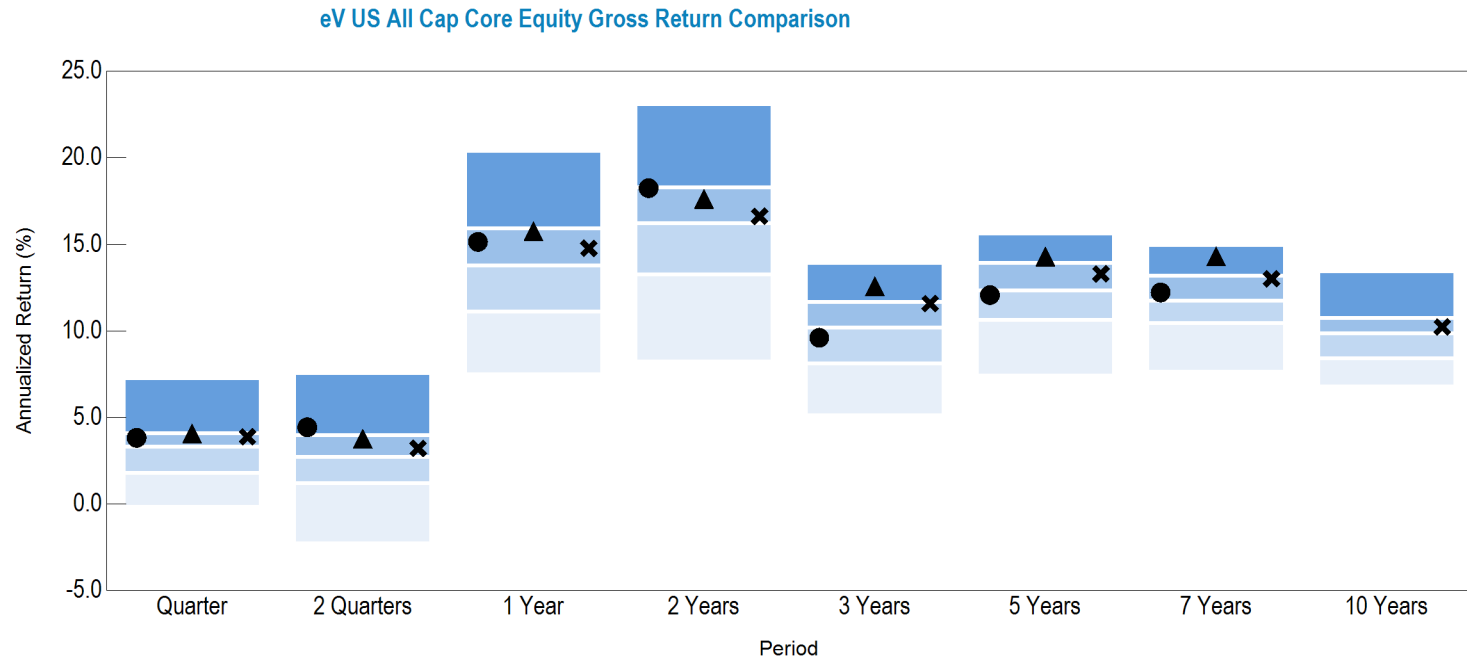


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	17.39%	14.78%	2.61%	0.68%	0.24%	0.13%	1.05%
International Equity	9.11%	8.24%	0.87%	0.23%	-0.03%	0.05%	0.25%
US Fixed Income	0.71%	-0.40%	1.10%	0.15%	0.04%	-0.01%	0.18%
Global Fixed Income	0.02%	1.90%	-1.89%	-0.04%	-0.14%	-0.04%	-0.23%
Absolute Return	2.14%	5.13%	-2.99%	-0.13%	0.10%	-0.06%	-0.09%
Private Equity	11.42%	16.20%	-4.78%	-0.14%	-0.21%	0.04%	-0.30%
Real Assets	10.45%	13.78%	-3.33%	-0.17%	-0.07%	0.05%	-0.19%
Real Estate	8.44%	8.44%	-0.01%	0.00%	-0.01%	0.00%	-0.01%
Total	10.01%	8.94%	1.07%	0.57%	-0.09%	0.17%	0.66%



US Effective Style Map





	Return (Rank)													
5th Percentile	7.26		7.57		20.39		23.08		13.92		15.63		14.95	
25th Percentile	4.10		3.99		15.96		18.30		11.70		13.95		13.20	
Median	3.34		2.74		13.80		16.25		10.21		12.38		11.75	
75th Percentile	1.83		1.23		11.15		13.30		8.16		10.64		10.46	
95th Percentile	-0.15		-2.26		7.51		8.25		5.16		7.44		7.68	
# of Portfolios	121		121		120		119		118		108		102	
● Bivium	3.83	(36)	4.44	(23)	15.15	(31)	18.25	(27)	9.61	(59)	12.07	(54)	12.22	(42)
▲ Russell 3000 +1%	4.09	(26)	3.77	(29)	15.78	(26)	17.63	(33)	12.59	(17)	14.30	(21)	14.30	(15)
✕ Russell 3000	3.89	(34)	3.22	(37)	14.78	(38)	16.63	(45)	11.58	(27)	13.29	(33)	13.01	(30)
													10.23	(41)

Characteristics

	Portfolio	Russell 3000
Number of Holdings	146	3,008
Weighted Avg. Market Cap. (\$B)	155.2	164.7
Median Market Cap. (\$B)	59.1	1.8
Price To Earnings	35.6	22.8
Price To Book	6.2	4.6
Price To Sales	4.3	4.0
Return on Equity (%)	20.2	19.4
Yield (%)	1.7	1.8
Beta (holdings; domestic)	1.0	1.0

Top Holdings

ORACLE	5.7%
NATIONAL OILWELL VARCO	4.7%
SKYWORKS SOLUTIONS	3.3%
QORVO	3.2%
MASTERCARD	3.2%
FACEBOOK CLASS A	2.6%
VISA 'A'	2.6%
CVS HEALTH	2.6%
SWISS RE SPN.ADR 1:4	2.6%
ALPHABET 'C'	2.6%

Best Performers

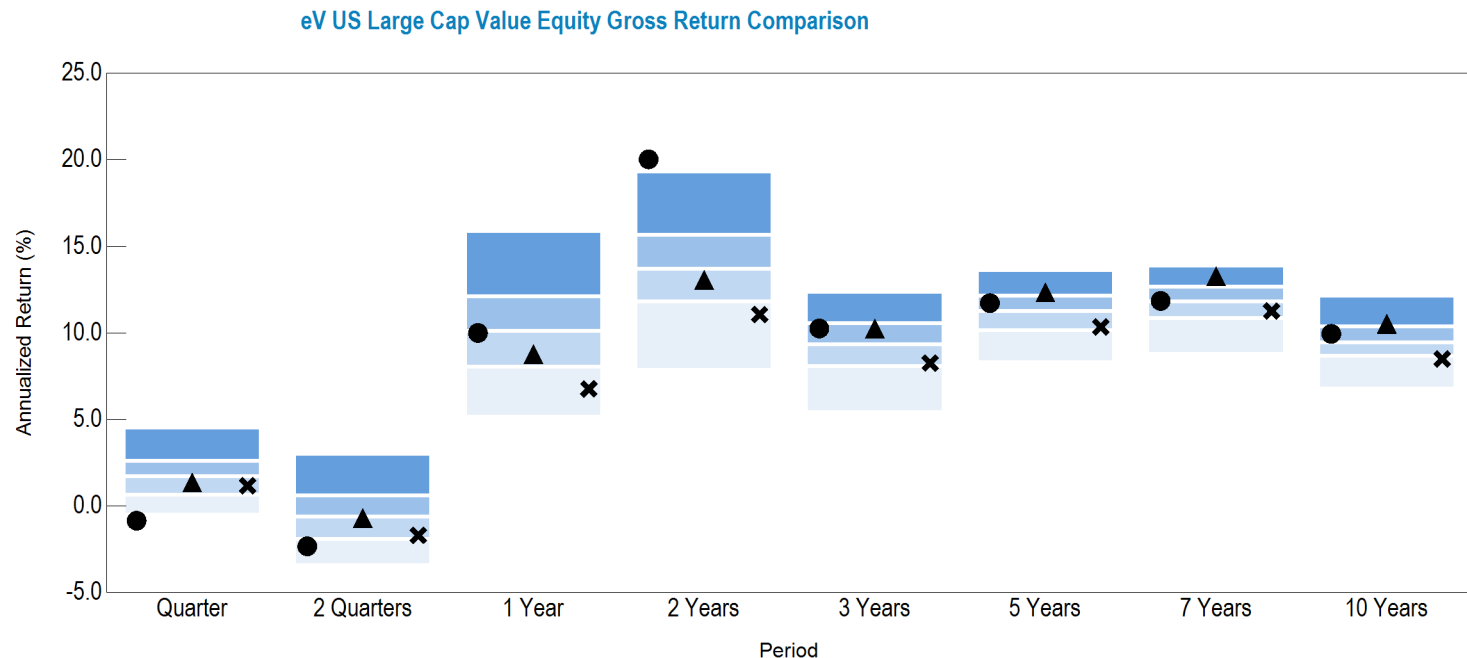
	Return %
NETFLIX (NFLX)	32.5%
OCCIDENTAL PTL. (OXY)	30.0%
FACEBOOK CLASS A (FB)	21.6%
VALERO ENERGY (VLO)	20.3%
NIKE 'B' (NKE)	20.3%
BOSTON SCIENTIFIC (BSX)	19.7%
BAKER HUGHES A (BHGE)	19.5%
KROGER (KR)	19.4%
AUTOMATIC DATA PROC. (ADP)	18.8%
KINDER MORGAN (KMI)	18.8%

Worst Performers

	Return %
BRIGHTHOUSE FINANCIAL (BHF)	-22.0%
CARDINAL HEALTH (CAH)	-21.3%
APPLIED MATS. (AMAT)	-16.6%
TERADYNE (TER)	-16.5%
HEWLETT PACKARD ENTER. (HPE)	-16.1%
GENERAL DYNAMICS (GD)	-15.3%
STARBUCKS (SBUX)	-15.2%
GOLDMAN SACHS GP. (GS)	-12.1%
LOCKHEED MARTIN (LMT)	-12.0%
BRISTOL MYERS SQUIBB (BMY)	-11.9%

Bivium Performance Attribution vs. Russell 3000

	Attribution Effects							Returns		Sector Weights	
	Total	Selection	Allocation		Interaction	Portfolio	Benchmark	Portfolio	Benchmark		
	Effects	Effect	Effect		Effects						
Energy	-0.03%	0.10%	-0.11%		-0.02%	16.37%	14.46%	4.43%	5.48%		
Materials	0.02%	-0.03%	0.03%		0.02%	1.40%	2.34%	1.27%	3.13%		
Industrials	0.15%	0.02%	0.14%		0.00%	-1.93%	-2.09%	8.64%	10.93%		
Consumer Discretionary	-0.25%	-0.14%	-0.16%		0.04%	7.10%	8.17%	8.98%	12.62%		
Consumer Staples	0.34%	0.33%	0.12%		-0.11%	3.52%	-1.52%	4.43%	6.63%		
Health Care	-0.53%	-0.49%	0.01%		-0.05%	0.79%	4.38%	15.05%	13.64%		
Financials	-0.45%	-0.10%	-0.32%		-0.03%	-3.09%	-2.41%	20.26%	15.24%		
Information Technology	0.14%	-0.04%	0.18%		-0.01%	6.74%	6.89%	30.02%	24.00%		
Telecommunication Services	0.03%	0.03%	0.00%		0.00%	0.94%	-0.52%	1.68%	1.79%		
Utilities	-0.02%	-0.03%	-0.01%		0.02%	3.57%	4.54%	0.78%	2.86%		
Real Estate	-0.16%	-0.18%	-0.11%		0.12%	3.12%	8.08%	1.18%	3.69%		
Cash	-0.11%	0.00%	-0.11%		0.00%	0.46%	--	3.27%	0.00%		
Portfolio	-0.89%	=	-0.52%	+	-0.34%	+	-0.03%	2.98%	3.87%	100.00%	100.00%



	Return (Rank)													
5th Percentile	4.52		3.00		15.87		19.31		12.36		13.61		13.86	
25th Percentile	2.65		0.63		12.14		15.70		10.57		12.16		12.68	
Median	1.74		-0.60		10.15		13.73		9.38		11.29		11.83	
75th Percentile	0.69		-1.86		8.07		11.84		8.12		10.18		10.89	
95th Percentile	-0.47		-3.39		5.18		7.89		5.46		8.34		8.81	
# of Portfolios	336		336		336		335		333		323		297	
● Pzena	-0.85	(99)	-2.33	(86)	10.00	(51)	20.03	(4)	10.26	(30)	11.72	(38)	11.85	(49)
▲ Russell 1000 Value +2%	1.36	(61)	-0.70	(53)	8.77	(67)	13.07	(61)	10.26	(30)	12.36	(22)	13.28	(14)
✕ Russell 1000 Value	1.18	(66)	-1.69	(71)	6.77	(86)	11.06	(84)	8.26	(73)	10.34	(72)	11.27	(65)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	43	729
Weighted Avg. Market Cap. (\$B)	88.8	110.7
Median Market Cap. (\$B)	41.4	9.6
Price To Earnings	16.1	20.1
Price To Book	1.9	2.6
Price To Sales	1.8	3.0
Return on Equity (%)	10.3	12.3
Yield (%)	2.6	2.5
Beta (holdings; domestic)	1.2	1.0

Top Holdings

FORD MOTOR	4.3%
ROYAL DUTCH SHELL A ADR 1:2	3.6%
ORACLE	3.5%
CITIGROUP	3.5%
EDISON INTL.	3.4%
COGNIZANT TECH.SLTN.'A'	3.3%
AMERICAN INTL.GP.	3.3%
CAPITAL ONE FINL.	3.2%
WELLS FARGO & CO	3.2%
INTERPUBLIC GROUP	3.2%

Best Performers

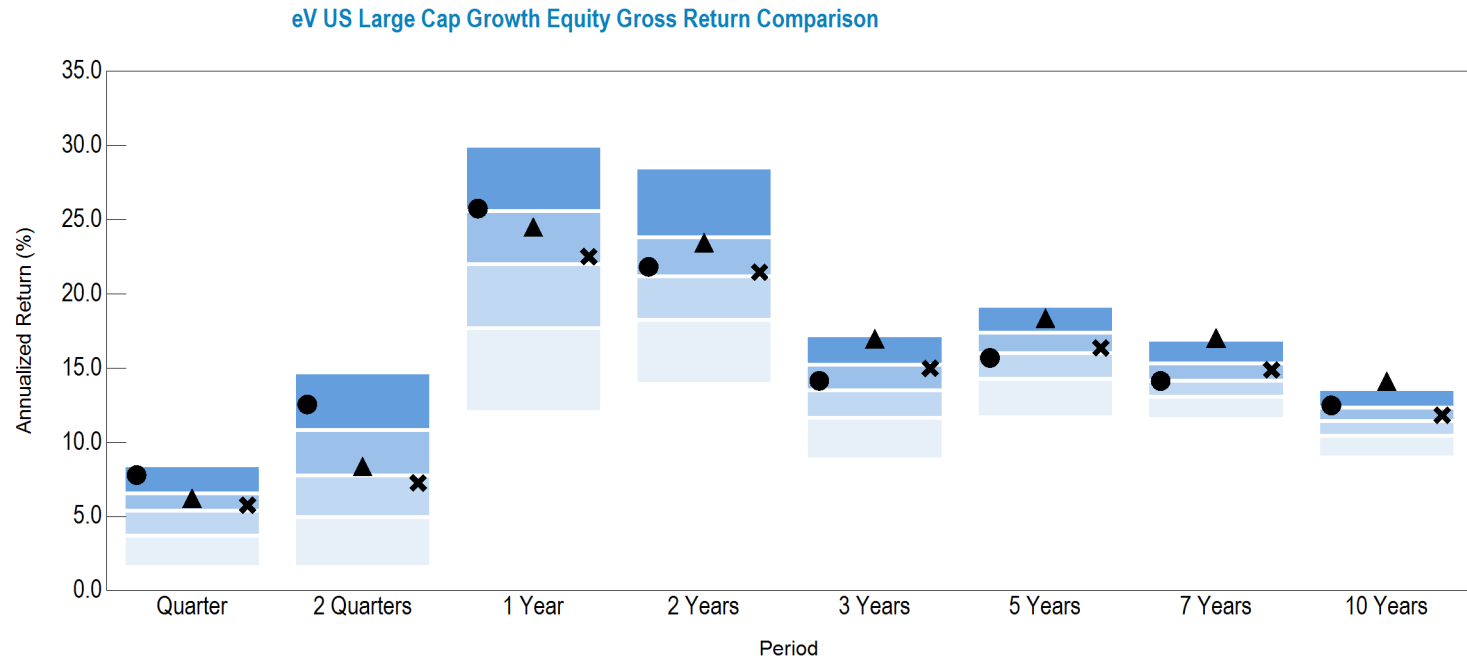
	Return %
MURPHY OIL (MUR)	31.8%
MICRO FOCUS INTL.SPN.ADR 1:1 (MFGP)	23.0%
CENOVUS ENERGY (NYS) (CVE)	22.0%
NATIONAL OILWELL VARCO (NOV)	18.0%
BP SPN.ADR 1:6 (BP)	14.1%
MERCK & COMPANY (MRK)	12.3%
EXXON MOBIL (XOM)	12.0%
EXPRESS SCRIPTS HOLDING (ESRX)	11.8%
ROYAL DUTCH SHELL A ADR 1:2 (RDS.A)	9.9%
AMGEN (AMGN)	9.1%

Worst Performers

	Return %
BRIGHTHOUSE FINANCIAL (BHF)	-22.0%
CARDINAL HEALTH (CAH)	-21.3%
HEWLETT PACKARD ENTER. (HPE)	-16.1%
MYLAN (MYL)	-12.2%
GOLDMAN SACHS GP. (GS)	-12.1%
MORGAN STANLEY (MS)	-11.7%
UBS GROUP (NYS) (UBS)	-9.6%
DOVER (DOV)	-7.1%
FRANKLIN RESOURCES (BEN)	-6.9%
VOYA FINANCIAL (VOYA)	-6.9%

Pzena Performance Attribution vs. Russell 1000 Value

	Attribution Effects						Returns		Sector Weights		
	Total Effects	Selection Effect	Allocation Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark		
Energy	0.26%	-0.20%	0.54%		-0.08%	12.56%	14.46%	14.86%	10.80%		
Materials	-0.02%	--	-0.02%		--	--	1.95%	0.00%	2.95%		
Industrials	0.09%	-0.35%	0.21%		0.22%	-7.12%	-2.92%	2.98%	8.23%		
Consumer Discretionary	-0.02%	-0.10%	0.17%		-0.10%	2.43%	4.05%	12.20%	6.17%		
Consumer Staples	0.33%	0.07%	0.31%		-0.06%	-3.13%	-4.05%	1.62%	7.62%		
Health Care	-0.64%	-0.66%	-0.01%		0.03%	-2.22%	2.40%	13.58%	14.27%		
Financials	-1.23%	-0.40%	-0.63%		-0.20%	-4.94%	-3.45%	40.86%	27.31%		
Information Technology	-0.46%	-0.35%	-0.04%		-0.07%	-4.83%	-1.11%	11.23%	9.29%		
Telecommunication Services	0.12%	--	0.12%		--	--	-2.98%	0.00%	2.92%		
Utilities	-0.19%	-0.22%	-0.11%		0.14%	0.34%	4.19%	2.10%	5.84%		
Real Estate	-0.33%	--	-0.33%		--	--	8.40%	0.00%	4.61%		
Cash	0.00%	0.00%	0.00%		0.00%	0.46%	--	0.57%	0.00%		
Portfolio	-2.11%	=	-2.22%	+	0.21%	+	-0.11%	-0.95%	1.16%	100.00%	100.00%



	Return (Rank)							
5th Percentile	8.44	14.68	29.95	28.48	17.19	19.18	16.88	13.56
25th Percentile	6.60	10.85	25.60	23.82	15.24	17.39	15.32	12.35
Median	5.43	7.79	22.03	21.20	13.51	16.02	14.15	11.44
75th Percentile	3.72	4.97	17.72	18.25	11.67	14.31	13.08	10.45
95th Percentile	1.60	1.60	12.06	13.95	8.85	11.70	11.60	9.01
# of Portfolios	256	256	256	253	250	246	229	219
● TCW	7.79 (9)	12.55 (14)	25.75 (25)	21.82 (46)	14.14 (44)	15.68 (55)	14.13 (52)	12.48 (21)
▲ Russell 1000 Growth +2%	6.23 (32)	8.37 (46)	24.51 (31)	23.46 (28)	16.98 (8)	18.36 (12)	17.03 (5)	14.12 (4)
✕ Russell 1000 Growth	5.76 (43)	7.25 (55)	22.51 (46)	21.46 (48)	14.98 (29)	16.36 (44)	14.88 (33)	11.83 (40)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	34	542
Weighted Avg. Market Cap. (\$B)	178.6	247.3
Median Market Cap. (\$B)	57.6	12.0
Price To Earnings	59.8	27.4
Price To Book	12.0	8.1
Price To Sales	8.2	5.5
Return on Equity (%)	26.2	30.4
Yield (%)	0.5	1.2
Beta (holdings; domestic)	1.1	1.1

Top Holdings

AMAZON.COM	7.0%
VISA 'A'	6.3%
FACEBOOK CLASS A	6.2%
ALPHABET 'C'	6.1%
ADOBE SYSTEMS	5.6%
SALESFORCE.COM	5.1%
AMERICAN TOWER	4.3%
SERVICENOW	4.1%
PAYPAL HOLDINGS	3.7%
HOME DEPOT	3.1%

Best Performers

	Return %
ALIGN TECHNOLOGY (ALGN)	36.2%
TRANSUNION (TRU)	26.3%
FACEBOOK CLASS A (FB)	21.6%
ILLUMINA (ILMN)	18.1%
AMAZON.COM (AMZN)	17.4%
SALESFORCE.COM (CRM)	17.3%
BIOMARIN PHARM. (BMRN)	16.2%
ULTA BEAUTY (ULTA)	14.3%
ADOBE SYSTEMS (ADBE)	12.8%
WEST PHARM.SVS. (WST)	12.6%

Worst Performers

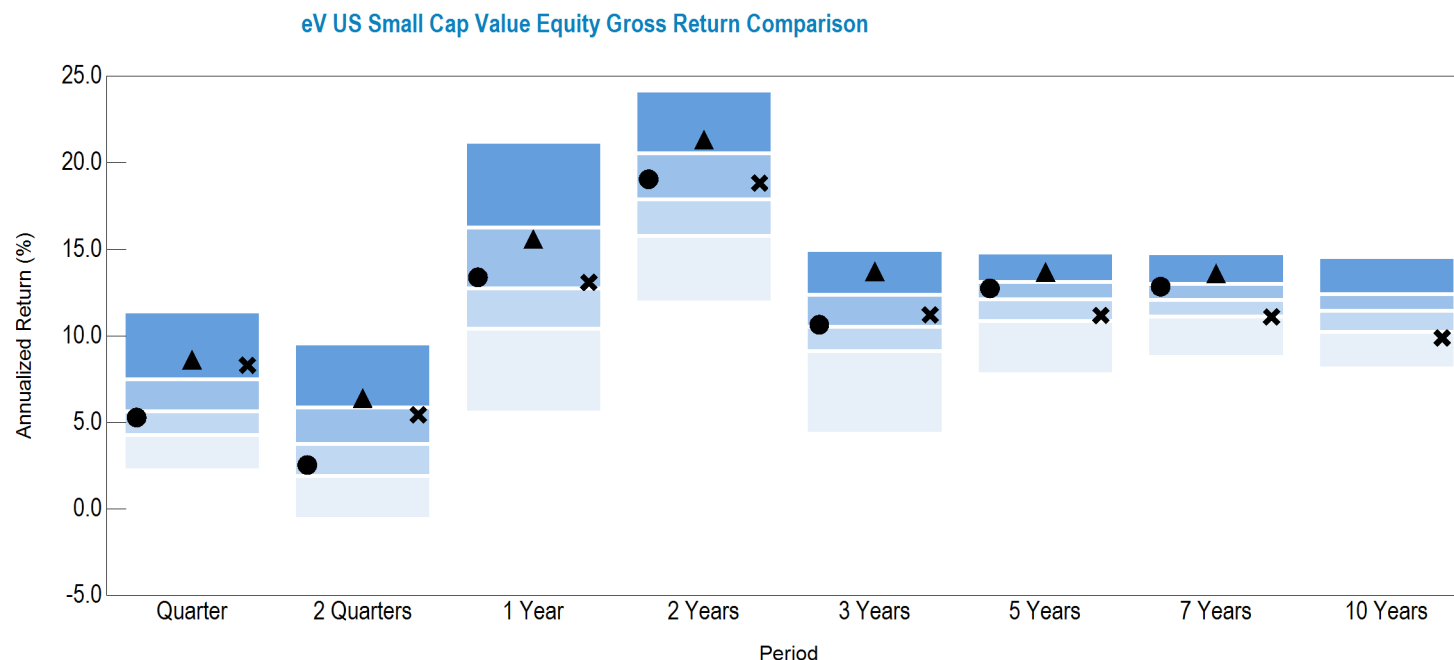
	Return %
STARBUCKS (SBUX)	-15.2%
FASTENAL (FAST)	-11.2%
CELGENE (CELG)	-11.0%
CONCHO RESOURCES (CXO)	-8.0%
CHUBB (CB)	-6.6%
BOOKING HOLDINGS (BKNG)	-2.6%
CHARLES SCHWAB (SCHW)	-2.0%
AIR PRDS.& CHEMS. (APD)	-1.4%
MONSTER BEVERAGE (MNST)	0.2%
AMERICAN TOWER (AMT)	0.3%

TCW Performance Attribution vs. Russell 1000 Growth

	Attribution Effects						Returns		Sector Weights		
	Total	Selection	Allocation		Interaction	Portfolio	Benchmark	Portfolio	Benchmark		
	Effects	Effect	Effect	Effects							
Energy	-0.24%	-0.15%	0.03%		-0.11%	-7.97%	9.97%	1.46%	0.83%		
Materials	0.01%	-0.12%	0.06%		0.07%	-1.38%	2.40%	1.36%	3.10%		
Industrials	1.15%	1.24%	0.56%		-0.64%	7.11%	-2.59%	6.15%	12.77%		
Consumer Discretionary	-0.49%	-0.47%	-0.08%		0.06%	6.80%	9.30%	16.46%	18.71%		
Consumer Staples	0.31%	0.30%	0.08%		-0.07%	5.23%	0.49%	4.95%	6.37%		
Health Care	0.42%	0.42%	0.00%		-0.01%	8.82%	5.45%	12.29%	12.58%		
Financials	-0.36%	-0.05%	-0.24%		-0.06%	-1.70%	-0.17%	7.53%	3.51%		
Information Technology	1.25%	1.13%	0.06%		0.06%	11.54%	8.63%	40.86%	38.78%		
Telecommunication Services	0.00%	--	0.00%		--	--	5.56%	0.00%	0.92%		
Utilities	0.00%	--	0.00%		--	--	0.65%	0.00%	0.01%		
Real Estate	-0.31%	-0.09%	-0.02%		-0.19%	1.50%	5.34%	7.48%	2.41%		
Cash	-0.08%	0.00%	-0.08%		0.00%	0.46%	--	1.46%	0.00%		
Portfolio	1.67%	=	2.21%	+	0.36%	+	-0.90%	7.47%	5.80%	100.00%	100.00%

Small Cap Value Equity Peer Universe Comparison

Period Ending: June 30, 2018



	Return (Rank)													
5th Percentile	11.38		9.56		21.20		24.18		14.94		14.79		14.77	
25th Percentile	7.50		5.89		16.28		20.55		12.39		13.12		13.01	
Median	5.66		3.79		12.76		17.92		10.54		12.13		12.10	
75th Percentile	4.28		1.93		10.44		15.78		9.16		10.87		11.13	
95th Percentile	2.27		-0.53		5.58		11.96		4.38		7.80		8.81	
# of Portfolios	223		223		223		221		215		207		199	
● Kennedy	5.29	(58)	2.55	(67)	13.39	(45)	19.05	(36)	10.65	(49)	12.75	(32)	12.84	(30)
▲ Russell 2000 Value +2.5%	8.62	(16)	6.42	(19)	15.60	(29)	21.34	(20)	13.73	(11)	13.69	(20)	13.61	(17)
✕ Russell 2000 Value	8.30	(19)	5.44	(29)	13.10	(47)	18.83	(40)	11.22	(42)	11.18	(69)	11.10	(77)
													9.88	(84)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	310	1,364
Weighted Avg. Market Cap. (\$B)	2.8	2.1
Median Market Cap. (\$B)	1.5	0.8
Price To Earnings	18.5	15.6
Price To Book	2.6	1.7
Price To Sales	2.9	2.6
Return on Equity (%)	7.7	7.2
Yield (%)	1.4	1.8
Beta (holdings; domestic)	1.2	1.1

Top Holdings

IBERIABANK	0.9%
VERITEX HOLDINGS	0.8%
G-III APPAREL GROUP	0.8%
ALLEGHENY TECHS.	0.8%
LIVANOVA	0.8%
FNB	0.8%
AMERIS BANCORP	0.8%
OCEANFIRST FINL.	0.8%
STERLING BANCORP	0.7%
BRINK'S	0.7%

Best Performers

	Return %
TANDEM DIABETES CARE (TNDM)	344.0%
VERASTEM (VSTM)	130.9%
REATA PHARMS.CL.A (RETA)	70.5%
DMC GLOBAL (BOOM)	67.9%
AVID BIOSERVICES (CDMO)	62.3%
OASIS PETROLEUM (OAS)	60.1%
NUVECTRA (NVTR)	57.7%
FRANCESCA'S HOLDINGS (FRAN)	57.3%
EVOLENT HEALTH CL.A (EVH)	47.7%
SM ENERGY (SM)	42.8%

Worst Performers

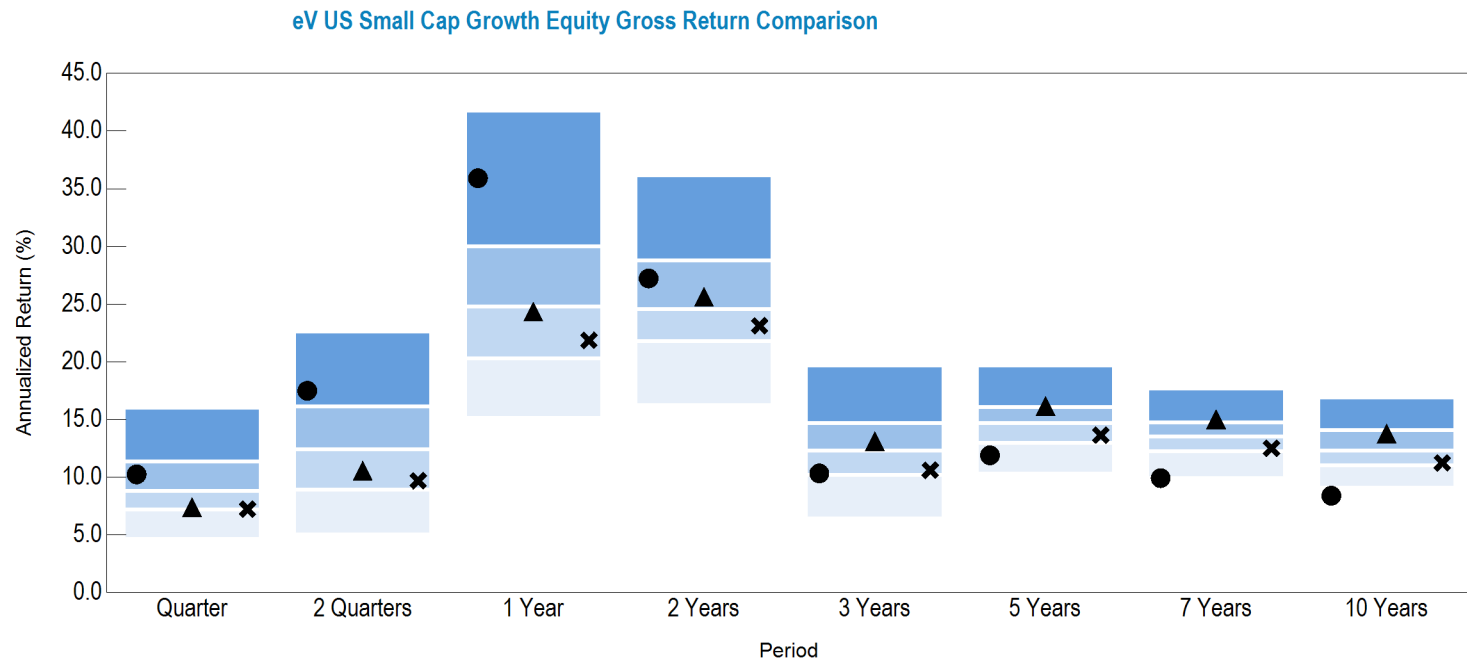
	Return %
PETROQUEST ENERGY (PQUE)	-60.7%
RECRO PHARMA (REPH)	-54.4%
UNIVERSAL ELECTRONICS (UEIC)	-36.5%
MDC PARTNERS 'A' (NAS) (MDCA)	-36.1%
SMART GLOBAL HOLDINGS (SGH)	-36.1%
R R DONNELLEY & SONS (RRD)	-32.6%
ANAPTYSBIO (ANAB)	-31.7%
MAXLINEAR (MXL)	-31.5%
HORIZON GLOBAL (HZN)	-27.7%
TRIUMPH GROUP NEW (TGI)	-22.1%

Kennedy Performance Attribution vs. Russell 2000 Value

	Attribution Effects							Returns		Sector Weights	
	Total	Selection	Allocation		Interaction	Portfolio	Benchmark	Portfolio	Benchmark		
	Effects	Effect	Effect		Effects						
Energy	-1.02%	-1.09%	-0.34%		0.41%	4.86%	22.89%	3.77%	6.04%		
Materials	-0.39%	-0.15%	-0.09%		-0.15%	2.71%	6.11%	8.81%	4.33%		
Industrials	-0.75%	-0.44%	-0.12%		-0.19%	2.07%	5.66%	17.44%	12.27%		
Consumer Discretionary	-0.44%	-0.50%	0.00%		0.05%	3.52%	8.05%	9.80%	10.94%		
Consumer Staples	-0.12%	-0.20%	0.01%		0.07%	-2.25%	6.71%	1.45%	2.25%		
Health Care	0.47%	0.62%	-0.03%		-0.12%	19.36%	10.15%	5.45%	6.75%		
Financials	0.29%	0.01%	0.28%		0.00%	4.26%	4.23%	24.50%	31.74%		
Information Technology	-0.43%	-0.32%	-0.04%		-0.07%	2.65%	6.25%	11.01%	8.99%		
Telecommunication Services	-0.05%	-0.07%	-0.01%		0.02%	0.23%	14.53%	0.30%	0.46%		
Utilities	0.07%	0.09%	-0.01%		-0.01%	10.05%	8.61%	5.31%	6.20%		
Real Estate	-0.20%	-0.11%	-0.11%		0.02%	13.69%	14.76%	8.45%	10.05%		
Cash	-0.28%	0.00%	-0.28%		0.00%	0.46%	--	3.67%	0.00%		
Unclassified	0.00%	0.00%	0.00%		0.00%	2.17%	--	0.03%	0.00%		
Portfolio	-2.85%	=	-2.15%	+	-0.73%	+	0.03%	5.20%	8.04%	100.00%	100.00%

Small Cap Growth Equity Peer Universe Comparison

Period Ending: June 30, 2018



	Return (Rank)							
5th Percentile	16.02	22.62	41.76	36.16	19.65	19.68	17.65	16.91
25th Percentile	11.38	16.14	30.04	28.81	14.75	16.14	14.80	14.09
Median	8.84	12.45	24.84	24.60	12.33	14.73	13.53	12.34
75th Percentile	7.22	8.97	20.30	21.83	10.25	13.01	12.27	11.07
95th Percentile	4.71	5.06	15.18	16.26	6.45	10.36	9.97	9.11
# of Portfolios	168	168	168	165	163	156	150	138
● Next Century-SCG	10.25 (34)	17.49 (18)	35.91 (14)	27.23 (34)	10.33 (75)	11.90 (89)	9.92 (96)	8.39 (97)
▲ Russell 2000 Growth +2.5%	7.40 (73)	10.59 (62)	24.36 (55)	25.63 (45)	13.13 (41)	16.17 (25)	15.02 (22)	13.78 (31)
✕ Russell 2000 Growth	7.23 (75)	9.70 (71)	21.86 (70)	23.13 (65)	10.60 (72)	13.65 (69)	12.50 (70)	11.24 (72)

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	61	1,225
Weighted Avg. Market Cap. (\$B)	3.1	2.4
Median Market Cap. (\$B)	2.4	1.0
Price To Earnings	9.3	19.2
Price To Book	9.1	5.3
Price To Sales	5.7	3.6
Return on Equity (%)	3.9	5.6
Yield (%)	0.1	0.5
Beta (holdings; domestic)	1.1	1.3

Top Holdings

KINSALE CAPITAL GROUP	4.0%
DYCOM INDS.	3.2%
AT HOME GROUP	3.0%
RBC BEARINGS	2.9%
USA TECHNOLOGIES	2.9%
IRHYTHM TECHNOLOGIES	2.8%
HEALTHEQUITY	2.7%
TECHTARGET	2.5%
OLD DOMINION FGT.LINES	2.4%
GRANITE CON.	2.4%

Best Performers

	Return %
STAAR SURGICAL (STAA)	109.5%
TACTILE SYSTEMS TECH. (TCMD)	63.5%
USA TECHNOLOGIES (USAT)	55.6%
CAREDX (CDNA)	53.6%
INOGEN (INGN)	51.7%
EXACT SCIS. (EXAS)	48.3%
TECHTARGET (TTGT)	42.9%
ABIOMED (ABMD)	40.6%
AXOGEN (AXGN)	37.7%
NEW RELIC (NEWR)	35.7%

Worst Performers

	Return %
CUTERA (CUTR)	-19.8%
LGI HOMES (LGIH)	-18.2%
KNIGHT-SWIFT TRSP.HDG. 'A' (KNX)	-16.8%
COHERENT (COHR)	-16.5%
SUMMIT MATERIALS 'A' (SUM)	-13.3%
US CONCRETE (USCR)	-13.1%
DYCOM INDS. (DY)	-12.2%
CARGURUS (CARG)	-9.7%
MARKETAXESS HOLDINGS (MKTX)	-8.8%
BOINGO WIRELESS (WIFI)	-8.8%

Next Century-SCG Performance Attribution vs. Russell 2000 Growth

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.09%	--	-0.09%	--	--	14.72%	0.00%	1.15%			
Materials	-0.63%	-0.39%	-0.09%	-0.15%	-7.32%	1.49%	6.06%	4.40%			
Industrials	-0.58%	-0.07%	-0.48%	-0.03%	1.21%	1.62%	26.43%	17.89%			
Consumer Discretionary	-0.06%	0.40%	-0.24%	-0.22%	13.50%	10.50%	6.00%	13.26%			
Consumer Staples	-0.23%	--	-0.23%	--	--	16.44%	0.00%	2.48%			
Health Care	4.39%	5.06%	-0.06%	-0.61%	29.19%	9.11%	22.14%	25.20%			
Financials	-1.06%	-0.31%	-0.32%	-0.44%	-1.53%	3.52%	14.79%	6.17%			
Information Technology	1.17%	1.49%	-0.03%	-0.28%	13.90%	7.92%	20.11%	24.86%			
Telecommunication Services	-0.37%	-0.13%	0.03%	-0.27%	-8.80%	9.31%	2.21%	0.74%			
Utilities	0.00%	--	0.00%	--	--	6.47%	0.00%	0.63%			
Real Estate	-0.05%	--	-0.05%	--	--	8.84%	0.00%	3.23%			
Cash	-0.15%	0.00%	-0.15%	0.00%	0.46%	--	2.26%	0.00%			
Unclassified	0.00%	--	--	--	--	--	0.00%	0.00%			
Portfolio	2.33%	=	6.04%	+	-1.71%	+	-2.00%	9.53%	7.20%	100.00%	100.00%

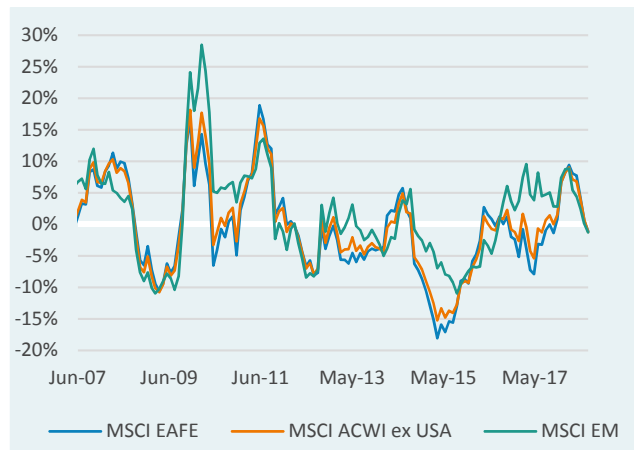
International developed equity

Unhedged international equities underperformed U.S. equities during Q1 (MSCI EAFE -1.2% vs. S&P 500 +3.4%). On a hedged basis, international equities delivered returns of 3.9%, outpacing the U.S. market. Currency volatility has frequently been greater than equity market volatility in recent years, causing considerable return disparity for investors with unhedged investments in international assets. Equity returns in most markets have been positive year-to-date on an ex-currency basis.

Earnings growth remains strong and will likely be supportive of equity prices going forward. The U.S. has taken back the lead in year-over-year earnings growth, alongside a large boost from U.S. tax reform and a relatively strong economy.

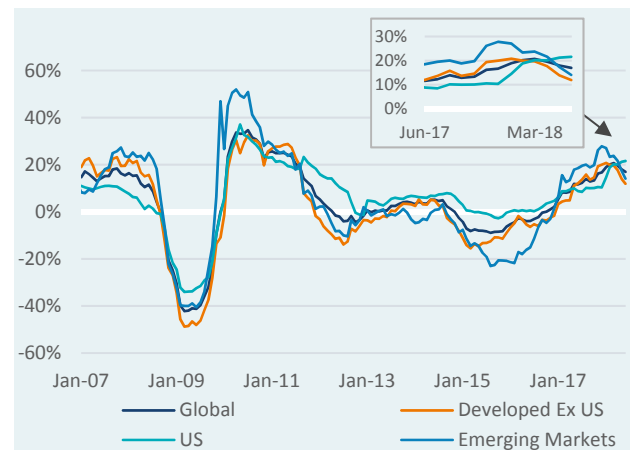
P/E multiples have moved lower as equity prices remain range bound and earnings grow at a brisk pace. Equity valuations are now closer to the longer-term average – a notable change from recent years.

EFFECT OF CURRENCY (1-YEAR ROLLING)



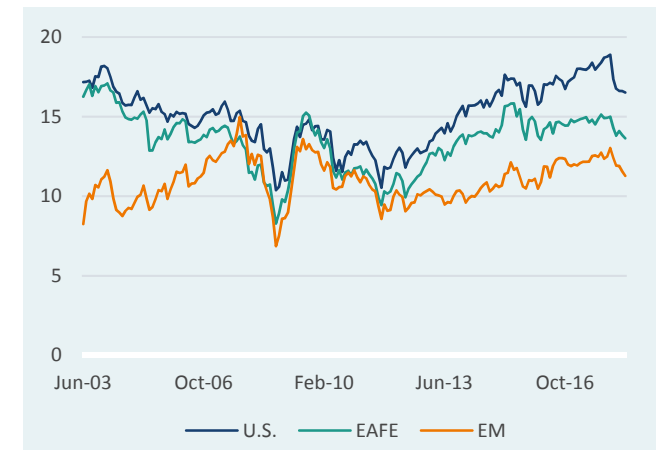
Source: MSCI, as of 6/30/18

EARNINGS GROWTH (YOY)



Source: MSCI, as of 6/30/18 – YoY growth in forward earnings

FORWARD P/E



Source: MSCI, as of 6/30/18

Emerging market equity

Emerging market equities delivered losses of -8.0% in Q2, but remain up +8.2% on a year-over-year basis. Currency movement caused -4.4% of losses during the quarter.

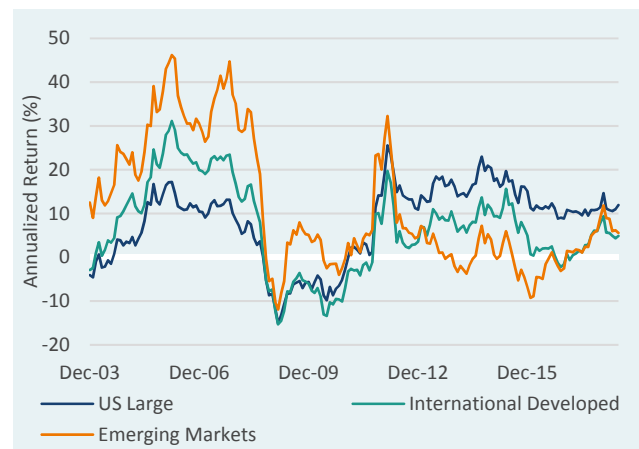
We maintain an overweight position to equities through a positive tilt to emerging markets. Equity bull runs in these markets through history typically incur at least a 10% drawdown sometime during the rally (see next page). Recent price swings were driven by valuation changes rather than by a fundamental change in earnings.

Developed markets are expected to grow less quickly in the coming years while emerging economic growth is expected to rise. A positive growth premium of emerging economies relative to developed economies has historically acted as a tailwind for EM outperformance.

We believe positive emerging economy growth trends, attractive valuations, a strong earnings environment, and depressed currencies should provide an environment of strong equity performance across these markets.

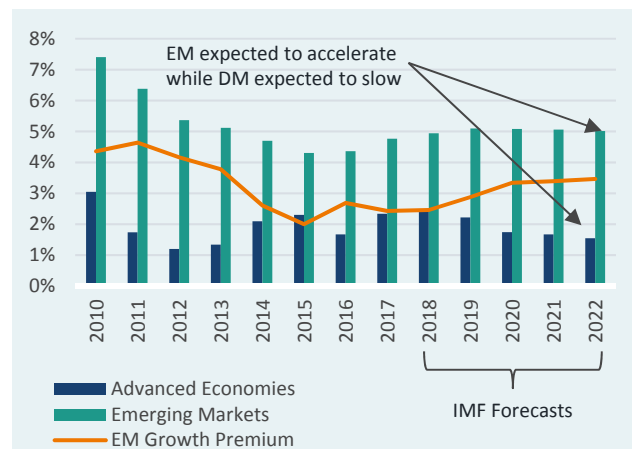
Conditions remain positive for EM equity

EQUITY PERFORMANCE (3YR ROLLING)



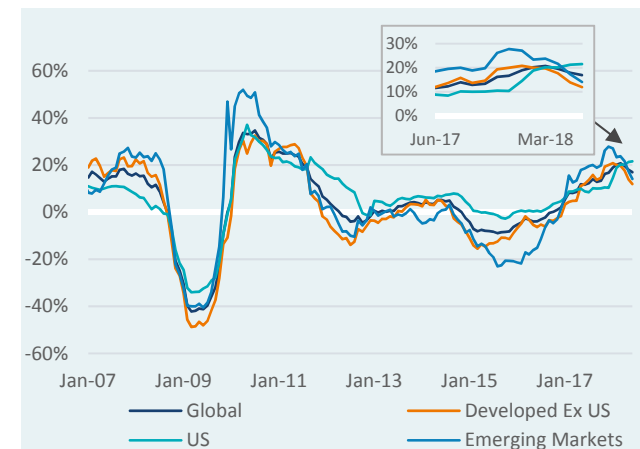
Source: Standard & Poor's, MSCI, as of 6/30/18

EM GROWTH PREMIUM



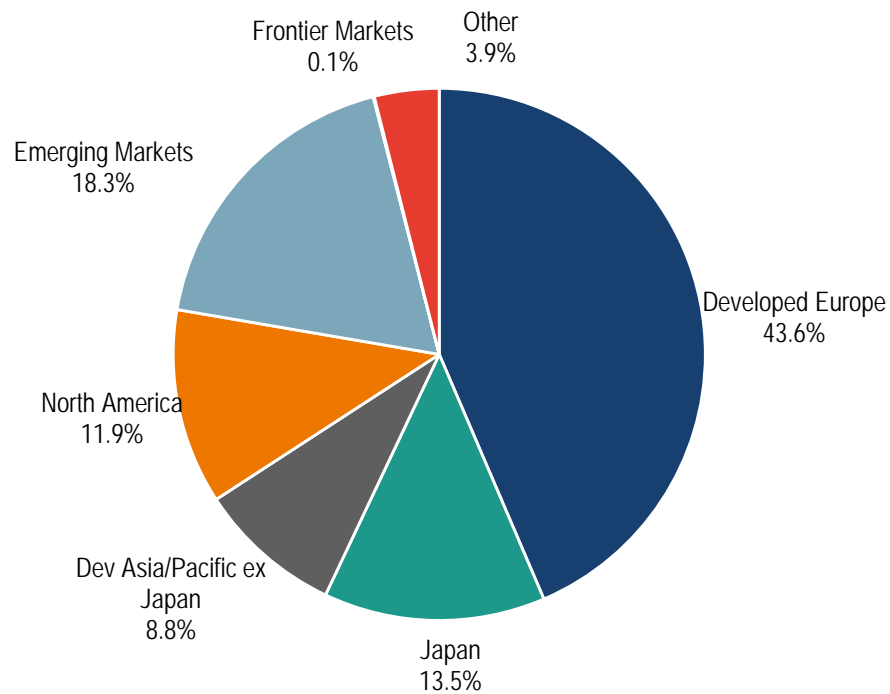
Source: IMF

EARNINGS GROWTH (YOY)

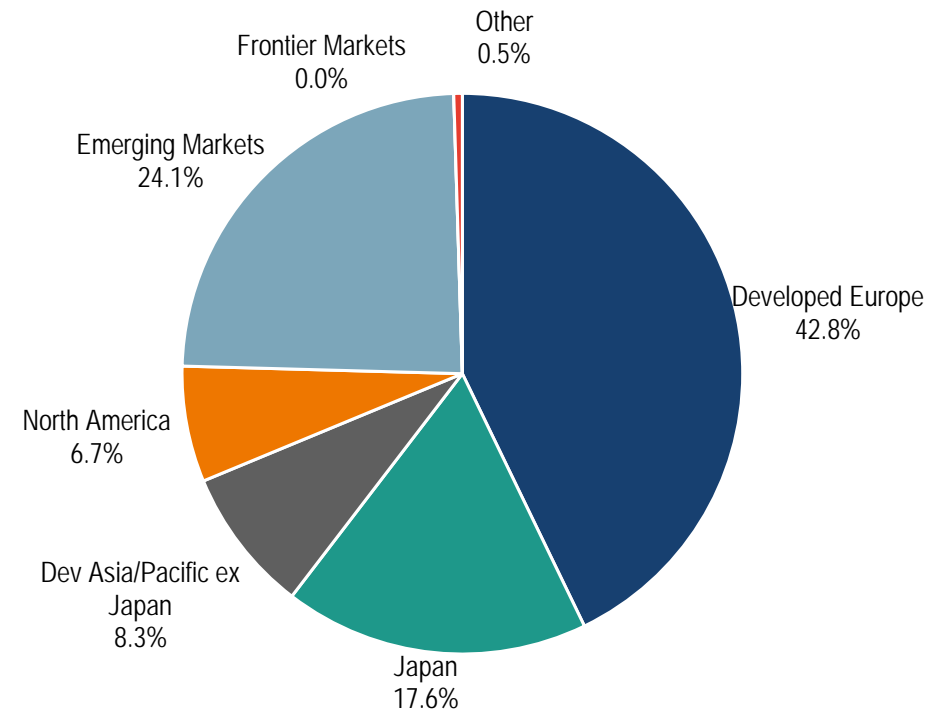


Source: MSCI, as of 6/30/18

International Equity

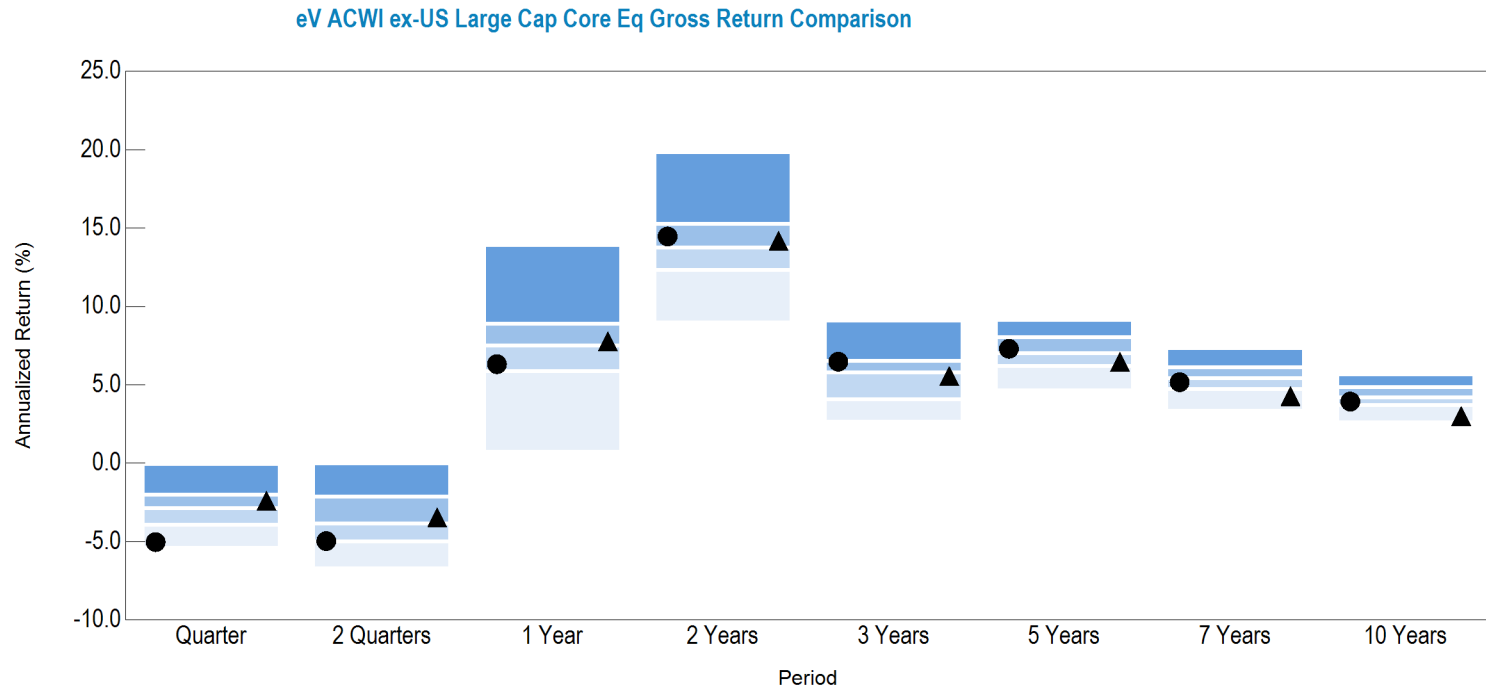


MSCI ACWI ex US IMI



ACWI ex-US Large Cap Core Equity Peer Universe Comparison

Period Ending: June 30, 2018



	Return (Rank)															
5th Percentile	-0.08		-0.02		13.88		19.84		9.09		9.12		7.31		5.65	
25th Percentile	-2.00		-2.10		8.92		15.28		6.55		8.08		6.14		4.86	
Median	-2.82		-3.83		7.52		13.79		5.80		7.05		5.44		4.21	
75th Percentile	-3.90		-4.96		5.89		12.35		4.12		6.21		4.74		3.74	
95th Percentile	-5.35		-6.69		0.74		8.98		2.69		4.66		3.36		2.62	
# of Portfolios	61		61		61		60		59		51		44		37	
● AQR	-5.03 (90)		-4.96 (76)		6.32 (71)		14.46 (37)		6.47 (27)		7.30 (42)		5.17 (58)		3.93 (70)	
▲ MSCI ACWI ex USA Gross	-2.39 (35)		-3.44 (48)		7.79 (46)		14.20 (40)		5.56 (53)		6.48 (67)		4.28 (84)		3.01 (91)	

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	766	2,154
Weighted Avg. Market Cap. (\$B)	49.1	63.2
Median Market Cap. (\$B)	15.8	7.9
Price To Earnings	17.8	19.0
Price To Book	2.8	2.5
Price To Sales	2.2	2.4
Return on Equity (%)	18.1	15.4
Yield (%)	3.0	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

NESTLE 'R'	2.6%
NOVO NORDISK 'B'	2.1%
ROCHE HOLDING	1.9%
TOTAL	1.9%
RIO TINTO	1.8%
COVESTRO (XET)	1.7%
BARCLAYS	1.5%
LLOYDS BANKING GROUP	1.3%
ROYAL DUTCH SHELL A(LON)	1.2%
THALES	1.2%

Best Performers

	Return %
BAUSCH HEALTH COMPANIES (C:BHC)	46.2%
BOMBARDIER 'B' (C:BBD.B)	35.9%
START TODAY (J:STRT)	35.6%
KAKAKU.COM (J:KAKA)	29.0%
KERING (F:KER)	28.1%
SUMITOMO DAINIPPON PHA. (J:DPPH)	26.1%
BANDAI NAMCO HDG. (J:N@MB)	25.5%
ARISTOCRAT LEISURE (A:ALLX)	24.5%
SHISEIDO (J:SHDO)	24.2%
ERICSSON 'B' (W:SL@G)	22.5%

Worst Performers

	Return %
OSRAM LICHT (D:OSR)	-44.5%
MIXI (J:MIXI)	-31.5%
THK (J:THAK)	-30.7%
SHIMAMURA (J:SHIM)	-29.7%
DAIFUKU (J:DFUK)	-26.8%
RENAULT (F:RENU)	-26.6%
ELECTROLUX 'B' (W:SE@G)	-26.1%
COMMERZBANK (D:CBK)	-26.0%
NINTENDO (J:NND0)	-25.8%
YUE YUEN INDL.HDG. (K:YUEN)	-25.5%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects						Returns		Sector Weights		
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.21%	0.29%	-0.10%	0.01%	12.40%	7.52%	4.88%	6.69%			
Materials	0.16%	0.14%	0.08%	-0.07%	2.15%	-0.14%	11.14%	7.99%			
Industrials	-0.88%	-0.52%	0.00%	-0.36%	-6.85%	-2.54%	16.52%	11.76%			
Consumer Discretionary	-0.71%	-0.46%	0.00%	-0.25%	-6.74%	-3.15%	15.51%	11.35%			
Consumer Staples	0.28%	0.29%	-0.08%	0.06%	2.95%	-0.41%	6.72%	9.43%			
Health Care	-0.13%	-0.11%	-0.01%	-0.02%	0.16%	1.66%	8.14%	7.71%			
Financials	0.65%	0.31%	0.22%	0.11%	-5.88%	-6.99%	18.60%	23.20%			
Information Technology	-0.15%	-0.09%	0.02%	-0.07%	-4.64%	-2.85%	9.73%	11.79%			
Telecommunication Services	0.14%	0.07%	0.03%	0.04%	-4.23%	-5.81%	2.86%	3.92%			
Utilities	0.00%	-0.02%	-0.02%	0.04%	-2.22%	-1.13%	1.23%	3.00%			
Real Estate	0.07%	0.05%	-0.02%	0.04%	0.45%	-2.51%	4.69%	3.17%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Portfolio	-0.36%	=	-0.02%	+	0.13%	+	-0.46%	-2.72%	-2.36%	100.00%	100.00%

AQR
Equity Performance Attribution

Period Ending: June 30, 2018

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	-10.33%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Belgium	-2.53%	-5.94%	1.40%	0.78%	0.03%	-0.02%	-0.03%	0.02%	0.00%
Czech Republic*	--	-3.14%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-6.65%	-6.89%	1.50%	1.22%	0.00%	-0.01%	-0.01%	0.00%	-0.02%
Finland	6.18%	2.18%	1.28%	0.70%	0.03%	0.03%	-0.03%	0.02%	0.05%
France	-1.70%	0.36%	9.13%	7.48%	-0.16%	0.06%	-0.08%	-0.04%	-0.22%
Germany	-6.00%	-3.59%	8.38%	6.58%	-0.17%	-0.01%	-0.08%	-0.05%	-0.31%
Greece*	--	-2.03%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.37%	0.00%	0.08%	--	0.01%	0.01%	--	0.01%
Ireland	--	1.90%	0.00%	0.32%	--	-0.02%	0.02%	--	0.00%
Italy	-9.62%	-6.76%	2.29%	1.73%	-0.05%	-0.02%	-0.02%	-0.02%	-0.12%
Netherlands	3.47%	-0.31%	3.99%	2.52%	0.12%	0.03%	-0.11%	0.07%	0.11%
Norway	--	3.00%	0.00%	0.48%	--	-0.02%	0.02%	--	0.00%
Poland*	--	-11.56%	0.00%	0.31%	--	0.02%	0.03%	--	0.04%
Portugal	--	2.32%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Russia*	--	-5.67%	0.00%	0.91%	--	0.00%	0.07%	--	0.07%
Spain	-2.58%	-4.13%	3.12%	2.22%	0.04%	-0.01%	-0.05%	0.01%	-0.01%
Sweden	-9.97%	-3.31%	2.69%	1.81%	-0.13%	0.01%	-0.05%	-0.06%	-0.23%
Switzerland	-1.99%	-2.23%	6.94%	5.38%	0.01%	-0.01%	-0.06%	0.00%	-0.05%
United Kingdom	-0.77%	2.92%	13.10%	11.86%	-0.46%	0.09%	-0.05%	-0.05%	-0.47%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

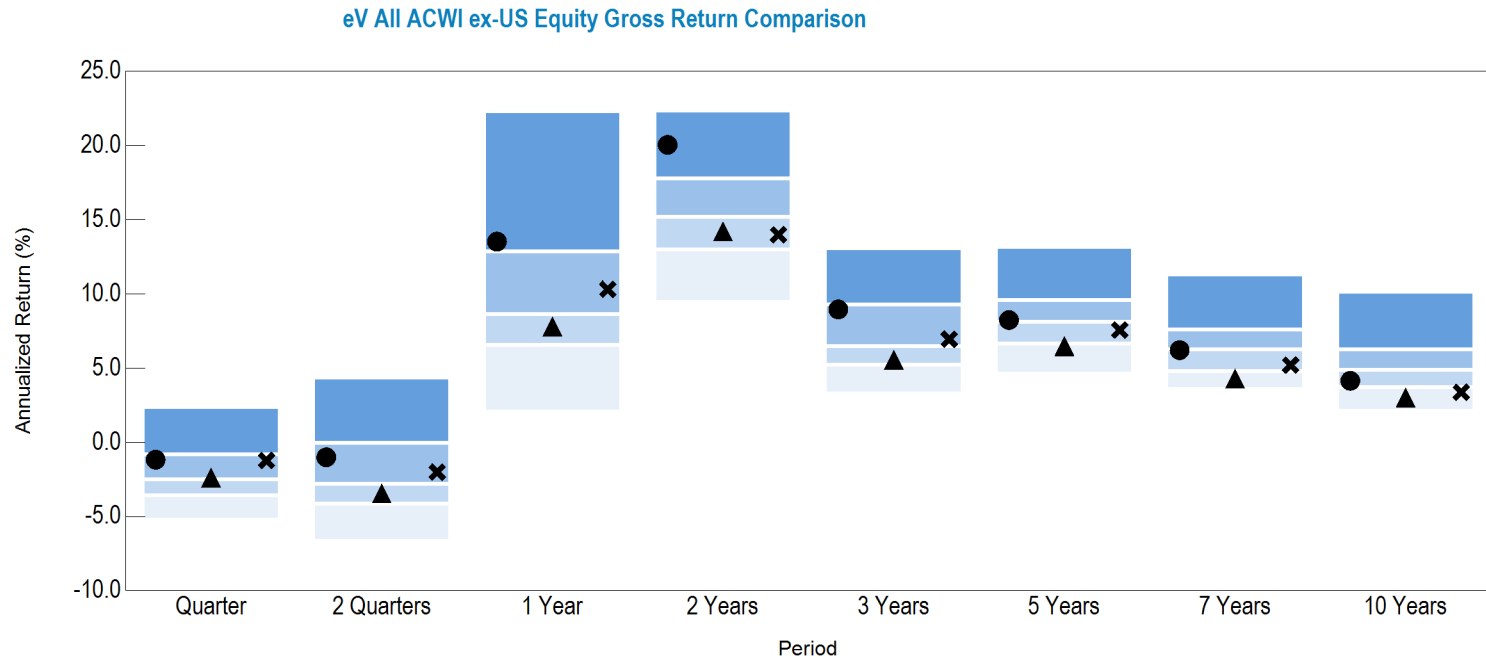
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	3.32%	5.31%	4.79%	4.47%	-0.09%	0.02%	-0.01%	-0.01%	-0.09%
China*	--	-3.24%	0.00%	7.65%	--	0.41%	0.00%	--	0.41%
Hong Kong	-1.64%	-1.29%	3.03%	2.46%	-0.01%	-0.02%	0.00%	0.00%	-0.03%
India*	--	-0.35%	0.00%	2.08%	--	-0.05%	0.10%	--	0.05%
Indonesia*	--	-12.20%	0.00%	0.52%	--	0.06%	0.02%	--	0.07%
Japan	-5.27%	-2.95%	20.05%	16.77%	-0.40%	-0.04%	-0.11%	-0.08%	-0.63%
Korea*	--	-9.35%	0.00%	3.83%	--	0.28%	0.16%	--	0.44%
Malaysia*	--	-11.60%	0.00%	0.64%	--	0.06%	0.03%	--	0.09%
New Zealand	--	5.76%	0.00%	0.12%	--	-0.01%	0.01%	--	0.00%
Pakistan*	--	-20.54%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-11.08%	0.00%	0.25%	--	0.03%	0.01%	--	0.03%
Singapore	-3.44%	-7.23%	0.80%	0.92%	0.04%	0.01%	0.00%	0.00%	0.04%
Taiwan*	--	-5.96%	0.00%	2.95%	--	0.11%	0.13%	--	0.24%
Thailand*	--	-14.86%	0.00%	0.63%	--	0.07%	0.03%	--	0.11%
Americas									
Brazil*	--	-26.50%	0.00%	1.88%	--	0.32%	0.22%	--	0.54%
Canada	3.21%	4.84%	7.08%	6.11%	-0.10%	0.05%	-0.02%	-0.02%	-0.09%
Chile*	--	-10.84%	0.00%	0.31%	--	0.02%	0.02%	--	0.04%
Colombia*	--	6.83%	0.00%	0.11%	--	-0.01%	0.01%	--	-0.01%
Mexico*	--	-3.41%	0.00%	0.75%	--	-0.01%	0.06%	--	0.04%
Peru*	--	-3.19%	0.00%	0.10%	--	0.01%	0.00%	--	0.01%

AQR
Equity Performance Attribution

Period Ending: June 30, 2018

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-7.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	10.75%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.03%
Qatar*	--	4.38%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
South Africa*	--	-11.27%	0.00%	1.73%	--	-0.01%	0.24%	--	0.23%
Turkey*	--	-25.86%	0.00%	0.25%	--	0.04%	0.03%	--	0.07%
United Arab Emirates*	--	-3.00%	0.00%	0.15%	--	0.01%	0.00%	--	0.01%
Totals									
Americas	3.21%	-2.78%	7.08%	9.26%	0.32%	0.01%	0.28%	-0.07%	0.53%
Europe	-2.57%	-1.06%	53.85%	44.82%	-0.74%	0.20%	-0.42%	-0.15%	-1.10%
Asia/Pacific	-3.40%	-3.24%	28.67%	43.30%	0.09%	0.33%	0.36%	-0.03%	0.74%
Other	--	-8.69%	0.00%	2.62%	--	0.01%	0.28%	--	0.28%
Cash	0.46%	--	10.41%	0.00%	0.00%	-0.18%	0.00%	0.00%	-0.18%
Total	-2.08%	-2.36%	100.00%	100.00%	-0.34%	0.36%	0.50%	-0.25%	0.28%
Totals									
Developed	-2.38%	-0.52%	89.59%	74.54%	-1.41%	0.28%	-0.65%	-0.28%	-2.06%
Emerging*	--	-7.73%	0.00%	25.46%	--	1.37%	1.15%	--	2.52%
Cash	0.46%	--	10.41%	0.00%	0.00%	-0.18%	0.00%	0.00%	-0.18%



	Return (Rank)							
5th Percentile	2.34	4.33	22.29	22.32	13.05	13.17	11.27	10.12
25th Percentile	-0.79	-0.03	12.87	17.80	9.30	9.59	7.63	6.29
Median	-2.49	-2.77	8.67	15.20	6.50	8.14	6.29	4.90
75th Percentile	-3.54	-4.10	6.57	13.01	5.25	6.69	4.83	3.72
95th Percentile	-5.18	-6.60	2.09	9.49	3.31	4.64	3.60	2.13
# of Portfolios	279	279	279	278	265	229	195	161
● Capital Group	-1.18 (31)	-1.02 (31)	13.52 (23)	20.04 (12)	8.95 (29)	8.24 (48)	6.21 (52)	4.14 (66)
▲ MSCI ACWI ex USA Gross	-2.39 (49)	-3.44 (63)	7.79 (63)	14.20 (60)	5.56 (69)	6.48 (80)	4.28 (85)	3.01 (86)
✕ MSCI ACWI ex USA Growth Gross	-1.23 (32)	-2.02 (39)	10.30 (40)	13.99 (65)	6.95 (44)	7.56 (61)	5.20 (69)	3.36 (80)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	218	2,154
Weighted Avg. Market Cap. (\$B)	52.9	63.2
Median Market Cap. (\$B)	17.1	7.9
Price To Earnings	25.2	19.0
Price To Book	4.1	2.5
Price To Sales	3.8	2.4
Return on Equity (%)	18.1	15.4
Yield (%)	2.2	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

AIRBUS	2.4%
OCADO GROUP	2.3%
VALE ON ADR 1:1	2.3%
AIA GROUP	2.1%
SAMSUNG ELECTRONICS	1.8%
ASTRAZENECA	1.7%
TAIWAN SEMICON.MNFG.	1.7%
ENEL	1.7%
CTRIIP.COM INTL.ADR 8:1	1.6%
SAP	1.4%

Best Performers

	Return %
ALTICE EUROPE (H:ATC)	92.6%
OCADO GROUP (UKIR:OCDO)	82.2%
CAPITA (UKIR:CPI)	71.2%
ENSCO CLASS A (ESV)	65.6%
AA (UKIR:AA.)	46.7%
INMARSAT (UKIR:ISAT)	46.3%
SES FDR (PAR) (F:SESG)	43.5%
UBISOFT ENTM. (F:UBI)	30.2%
KERING (F:KER)	28.1%
BCA MARKETPLACE (UKIR:BCA)	27.8%

Worst Performers

	Return %
HYPERMARCAS ON (BR:HYP)	-33.7%
ITAU UNIBANCO BANCO HLDG.ADR 1:1 (ITUB)	-33.4%
SEMEN INDONESIA (PERSERO) (ID:GSK)	-32.9%
AKBANK (TK:AKB)	-31.9%
CIELO ON (BR:VIS)	-31.0%
MR PRICE GROUP (R:MRPJ)	-30.1%
GENMAB (DK:GEN)	-27.9%
SURYA CITRA MEDIA (ID:SCM)	-27.0%
NINTENDO (J:NND)	-25.8%
DISCOVERY (R:DSYJ)	-25.2%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects				Returns		Sector Weights				
	Total	Selection	Allocation	Interaction	Portfolio	Benchmark	Portfolio	Benchmark			
	Effects	Effect	Effect	Effects							
Energy	-0.05%	0.63%	-0.51%	-0.17%	17.96%	7.47%	1.95%	6.71%			
Materials	-0.04%	-0.46%	-0.10%	0.51%	-2.79%	-0.26%	4.73%	8.00%			
Industrials	0.21%	0.21%	0.00%	-0.01%	-0.89%	-2.48%	11.05%	11.77%			
Consumer Discretionary	1.72%	1.46%	-0.01%	0.27%	8.97%	-2.96%	16.68%	11.33%			
Consumer Staples	0.10%	0.05%	-0.05%	0.10%	0.25%	-0.42%	7.42%	9.44%			
Health Care	-0.42%	-0.50%	-0.07%	0.15%	-5.33%	1.59%	6.13%	7.72%			
Financials	0.41%	0.16%	0.06%	0.19%	-5.62%	-6.98%	22.03%	23.25%			
Information Technology	-0.27%	-0.01%	-0.08%	-0.18%	-3.08%	-2.84%	16.35%	11.75%			
Telecommunication Services	0.17%	0.15%	0.01%	0.01%	-1.79%	-5.79%	3.65%	3.90%			
Utilities	-0.10%	-0.08%	0.00%	-0.02%	-4.67%	-1.15%	2.90%	3.01%			
Real Estate	-0.07%	-0.01%	-0.04%	-0.03%	-1.78%	-2.62%	5.56%	3.12%			
Cash	-0.03%	0.00%	-0.03%	0.00%	0.46%	--	1.53%	0.00%			
Portfolio	1.64%	=	1.63%	+	-0.81%	+	0.82%	-0.73%	-2.36%	100.00%	100.00%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	-10.33%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Belgium	-9.46%	-5.94%	0.40%	0.78%	-0.03%	0.01%	0.02%	0.01%	0.02%
Czech Republic*	--	-3.14%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-6.49%	-6.89%	3.40%	1.22%	0.01%	-0.09%	-0.11%	0.01%	-0.18%
Finland	--	2.18%	0.00%	0.70%	--	-0.04%	0.04%	--	0.00%
France	6.08%	0.36%	9.15%	7.48%	0.45%	0.06%	-0.12%	0.10%	0.49%
Germany	-2.29%	-3.59%	6.69%	6.58%	0.09%	0.00%	-0.01%	0.00%	0.08%
Greece*	--	-2.03%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.37%	0.00%	0.08%	--	0.01%	0.01%	--	0.01%
Ireland	-8.39%	1.90%	0.86%	0.32%	-0.04%	0.03%	0.00%	-0.07%	-0.09%
Italy	-9.13%	-6.76%	1.70%	1.73%	-0.04%	0.00%	0.00%	0.00%	-0.04%
Luxembourg	43.49%	-2.36%	0.28%	0.00%	0.00%	0.00%	-0.02%	0.14%	0.12%
Netherlands	26.14%	-0.31%	2.49%	2.52%	0.71%	0.00%	-0.05%	-0.01%	0.66%
Norway	3.36%	3.00%	0.49%	0.48%	0.00%	0.00%	0.00%	0.00%	0.00%
Poland*	--	-11.56%	0.00%	0.31%	--	0.02%	0.03%	--	0.04%
Portugal	--	2.32%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Russia*	--	-5.67%	0.00%	0.91%	--	0.00%	0.07%	--	0.07%
Spain	-1.66%	-4.13%	1.34%	2.22%	0.06%	0.01%	0.04%	-0.02%	0.09%
Sweden	-0.75%	-3.31%	0.67%	1.81%	0.05%	-0.01%	0.07%	-0.03%	0.08%
Switzerland	-3.09%	-2.23%	2.83%	5.38%	-0.05%	0.02%	0.09%	0.02%	0.09%
United Kingdom	11.24%	2.92%	13.46%	11.86%	1.03%	0.12%	-0.15%	0.14%	1.13%

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	8.35%	5.31%	0.58%	4.47%	0.14%	-0.28%	0.16%	-0.12%	-0.11%
China*	-4.66%	-3.24%	6.88%	7.65%	-0.11%	0.04%	0.00%	0.01%	-0.06%
Hong Kong	-3.35%	-1.29%	8.43%	2.46%	-0.04%	-0.21%	-0.03%	-0.10%	-0.38%
India*	-0.21%	-0.35%	6.84%	2.08%	-0.01%	0.12%	-0.20%	-0.02%	-0.11%
Indonesia*	-16.31%	-12.20%	2.49%	0.52%	-0.02%	-0.21%	-0.07%	-0.08%	-0.38%
Japan	-2.23%	-2.95%	11.14%	16.77%	0.13%	0.06%	0.22%	-0.04%	0.37%
Korea*	-10.38%	-9.35%	2.30%	3.83%	-0.04%	0.11%	0.06%	0.02%	0.15%
Malaysia*	--	-11.60%	0.00%	0.64%	--	0.06%	0.03%	--	0.09%
New Zealand	6.25%	5.76%	0.07%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%
Pakistan*	--	-20.54%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	-23.18%	-11.08%	0.18%	0.25%	-0.03%	0.01%	0.00%	0.01%	-0.01%
Singapore	-5.99%	-7.23%	0.92%	0.92%	0.00%	0.00%	0.01%	0.00%	0.01%
Taiwan*	-9.69%	-5.96%	3.49%	2.95%	-0.15%	-0.02%	0.02%	-0.03%	-0.17%
Thailand*	-7.12%	-14.86%	0.27%	0.63%	0.05%	0.04%	0.02%	-0.03%	0.08%
Americas									
Brazil*	-10.73%	-26.50%	3.89%	1.88%	0.14%	-0.34%	0.09%	0.15%	0.04%
Canada	14.71%	4.84%	0.61%	6.11%	0.62%	-0.27%	0.12%	-0.55%	-0.09%
Chile*	--	-10.84%	0.00%	0.31%	--	0.02%	0.02%	--	0.04%
Colombia*	--	6.83%	0.00%	0.11%	--	-0.01%	0.01%	--	-0.01%
Mexico*	-12.75%	-3.41%	0.73%	0.75%	-0.11%	0.00%	0.04%	0.00%	-0.07%
Peru*	--	-3.19%	0.00%	0.10%	--	0.01%	0.00%	--	0.01%
United States	-13.42%	3.40%	2.47%	0.00%	0.00%	0.03%	0.00%	-0.42%	-0.38%

Capital Group
Equity Performance Attribution

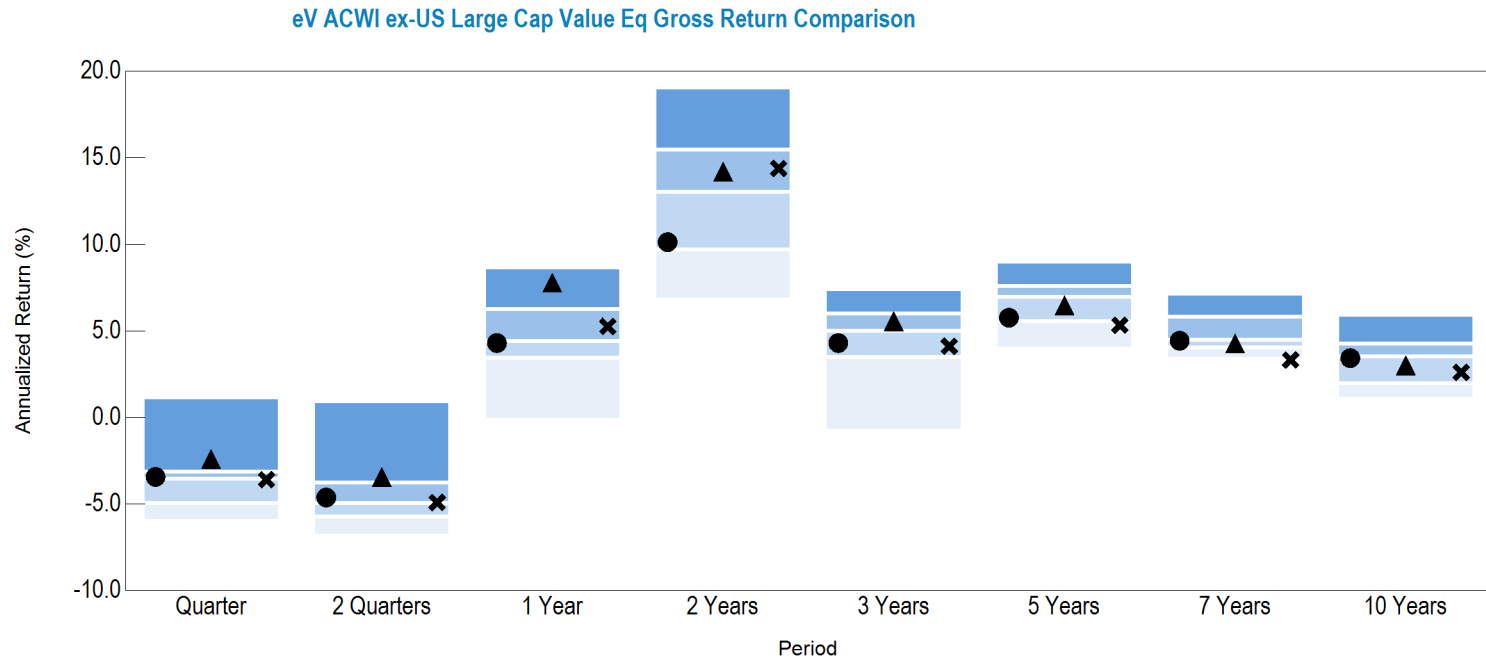
Period Ending: June 30, 2018

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-7.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	0.01%	10.75%	0.90%	0.31%	-0.03%	0.07%	-0.03%	-0.05%	-0.05%
Qatar*	--	4.38%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
South Africa*	-7.90%	-11.27%	2.33%	1.73%	0.07%	0.00%	-0.10%	0.02%	0.00%
Turkey*	--	-25.86%	0.00%	0.25%	--	0.04%	0.03%	--	0.07%
United Arab Emirates*	5.55%	-3.00%	0.19%	0.15%	0.01%	0.00%	0.00%	0.00%	0.01%
Totals									
Americas	-9.78%	-2.78%	7.70%	9.26%	-0.89%	0.00%	0.28%	0.15%	-0.46%
Europe	4.81%	-1.06%	43.75%	44.82%	2.75%	-0.02%	-0.06%	-0.07%	2.60%
Asia/Pacific	-4.38%	-3.24%	43.60%	43.30%	-0.72%	-0.01%	0.22%	0.00%	-0.52%
Other	-5.06%	-8.69%	3.42%	2.62%	0.10%	0.00%	-0.10%	0.03%	0.04%
Cash	0.46%	--	1.53%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-0.73%	-2.36%	100.00%	100.00%	1.24%	-0.05%	0.33%	0.11%	1.64%
Totals									
Developed	1.93%	-0.52%	68.88%	74.54%	1.81%	-0.10%	0.27%	-0.14%	1.84%
Emerging*	-6.97%	-7.73%	29.59%	25.46%	-0.02%	-0.22%	0.06%	0.00%	-0.18%
Cash	0.46%	--	1.53%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%

ACWI ex-US Large Cap Value Equity Peer Universe Comparison

Period Ending: June 30, 2018



	Return (Rank)							
5th Percentile	1.15	0.92	8.67	19.04	7.40	9.00	7.14	5.92
25th Percentile	-3.10	-3.75	6.29	15.49	6.04	7.61	5.83	4.28
Median	-3.51	-4.93	4.44	13.06	5.03	6.97	4.52	3.54
75th Percentile	-4.91	-5.69	3.47	9.74	3.53	5.59	4.06	2.00
95th Percentile	-5.94	-6.80	-0.11	6.83	-0.74	4.00	3.39	1.09
# of Portfolios	22	22	22	22	22	18	17	14
● Mondrian	-3.43 (42)	-4.62 (38)	4.30 (63)	10.13 (71)	4.30 (65)	5.76 (69)	4.44 (63)	3.43 (52)
▲ MSCI ACWI ex USA Gross	-2.39 (19)	-3.44 (20)	7.79 (17)	14.20 (42)	5.56 (38)	6.48 (62)	4.28 (70)	3.01 (62)
✕ MSCI ACWI ex USA Value Gross	-3.59 (53)	-4.90 (49)	5.26 (39)	14.39 (40)	4.12 (67)	5.33 (83)	3.32 (96)	2.61 (66)

Mondrian Equity Only Summary Statistics

Period Ending: June 30, 2018

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	28	2,154
Weighted Avg. Market Cap. (\$B)	67.0	63.2
Median Market Cap. (\$B)	46.1	7.9
Price To Earnings	14.7	19.0
Price To Book	1.8	2.5
Price To Sales	1.3	2.4
Return on Equity (%)	14.0	15.4
Yield (%)	4.8	3.0
Beta (holdings; global)	1.1	1.0

Top Holdings

DAIMLER	13.5%
ALLIANZ	12.6%
ZURICH INSURANCE GROUP	10.5%
WPP	9.4%
ABB LTD N	9.3%
NOVARTIS 'R'	7.6%
NATIONAL GRID	7.2%
GLAXOSMITHKLINE	5.2%
ISS AS	4.6%
HONDA MOTOR	3.4%

Best Performers

	Return %
ERICSSON 'B' (W:SL@G)	22.5%
TESCO (UKIR:TSCO)	18.3%
BP (UKIR:BP.)	15.1%
ROYAL DUTCH SHELL B (UKIR:RDSB)	13.6%
WOOD GROUP (JOHN) (UKIR:WG.)	12.6%
ROYAL DUTCH SHELL A(LON) (UKIR:RDSA)	12.2%
SAP (D:SAP)	12.0%
ROYAL DUTCH SHELL A (H:RDSA)	11.1%
ENI (I:ENI)	8.3%
IBERDROLA (E:IBE)	5.3%

Worst Performers

	Return %
DAIMLER (D:DAI)	-19.7%
SOCIETE GENERALE (F:SGE)	-17.8%
MITSUBISHI ELECTRIC (J:UM@N)	-16.8%
HONDA MOTOR (J:HO@N)	-13.9%
ISUZU MOTORS (J:IM@N)	-13.4%
TAKEDA PHARMACEUTICAL (J:TA@N)	-13.3%
SINGAPORE TELECOM 10 (T:ST10)	-12.6%
SAINT GOBAIN (F:SGO)	-12.6%
BMW (D:BMW)	-12.3%
SINGAPORE TELECOM (T:TELC)	-12.1%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects							Returns		Sector Weights	
	Total	Selection	Allocation		Interaction	Portfolio	Benchmark	Portfolio	Benchmark		
	Effects	Effect	Effect	Effects							
Energy	0.72%	0.38%	0.45%		-0.11%	11.96%	7.47%	10.92%	6.71%		
Materials	0.17%	0.08%	-0.20%		0.29%	0.69%	-0.26%	1.34%	8.00%		
Industrials	-0.55%	-0.53%	0.00%		-0.02%	-6.05%	-2.48%	13.36%	11.77%		
Consumer Discretionary	-1.10%	-0.72%	-0.01%		-0.37%	-9.05%	-2.96%	14.96%	11.33%		
Consumer Staples	0.83%	1.20%	-0.07%		-0.29%	11.13%	-0.42%	6.58%	9.44%		
Health Care	-0.44%	-0.27%	0.16%		-0.33%	-2.01%	1.59%	11.63%	7.72%		
Financials	1.09%	0.64%	0.38%		0.06%	-4.52%	-6.98%	15.43%	23.25%		
Information Technology	0.93%	1.64%	0.11%		-0.82%	8.53%	-2.84%	5.43%	11.75%		
Telecommunication Services	-0.30%	0.07%	-0.16%		-0.20%	-4.94%	-5.79%	8.57%	3.90%		
Utilities	-0.22%	0.02%	0.07%		-0.31%	-1.61%	-1.15%	8.55%	3.01%		
Real Estate	0.02%	-0.02%	0.01%		0.03%	-2.78%	-2.62%	2.65%	3.12%		
Cash	-0.01%	0.00%	-0.01%		0.00%	0.46%	--	0.59%	0.00%		
Portfolio	1.15%	=	2.49%	+	0.74%	+	-2.09%	-1.21%	-2.36%	100.00%	100.00%

Mondrian
Equity Performance Attribution

Period Ending: June 30, 2018

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	-10.33%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Belgium	--	-5.94%	0.00%	0.78%	--	0.02%	0.04%	--	0.06%
Czech Republic*	--	-3.14%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Denmark	-3.43%	-6.89%	1.36%	1.22%	0.04%	-0.01%	-0.01%	0.00%	0.03%
Finland	--	2.18%	0.00%	0.70%	--	-0.04%	0.04%	--	0.00%
France	-4.92%	0.36%	6.70%	7.48%	-0.42%	-0.03%	0.06%	0.04%	-0.34%
Germany	-5.67%	-3.59%	11.85%	6.58%	-0.14%	-0.03%	-0.26%	-0.12%	-0.55%
Greece*	--	-2.03%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.37%	0.00%	0.08%	--	0.01%	0.01%	--	0.01%
Ireland	--	1.90%	0.00%	0.32%	--	-0.02%	0.02%	--	0.00%
Italy	-0.82%	-6.76%	6.41%	1.73%	0.11%	-0.18%	-0.25%	0.29%	-0.04%
Netherlands	7.53%	-0.31%	4.45%	2.52%	0.22%	0.05%	-0.14%	0.17%	0.30%
Norway	--	3.00%	0.00%	0.48%	--	-0.02%	0.02%	--	0.00%
Poland*	--	-11.56%	0.00%	0.31%	--	0.02%	0.03%	--	0.04%
Portugal	--	2.32%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Russia*	--	-5.67%	0.00%	0.91%	--	0.00%	0.07%	--	0.07%
Spain	-2.28%	-4.13%	4.78%	2.22%	0.04%	-0.03%	-0.14%	0.05%	-0.07%
Sweden	8.38%	-3.31%	4.54%	1.81%	0.23%	0.03%	-0.22%	0.34%	0.38%
Switzerland	-4.87%	-2.23%	6.60%	5.38%	-0.15%	-0.01%	-0.04%	-0.03%	-0.23%
United Kingdom	6.42%	2.92%	23.51%	11.86%	0.44%	0.84%	-0.80%	0.43%	0.91%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-2.58%	5.31%	1.20%	4.47%	-0.37%	-0.23%	0.14%	0.27%	-0.20%
China*	--	-3.24%	0.00%	7.65%	--	0.41%	0.00%	--	0.41%
Hong Kong	-9.32%	-1.29%	2.67%	2.46%	-0.20%	-0.01%	0.00%	-0.02%	-0.22%
India*	--	-0.35%	0.00%	2.08%	--	-0.05%	0.10%	--	0.05%
Indonesia*	--	-12.20%	0.00%	0.52%	--	0.06%	0.02%	--	0.07%
Japan	-6.88%	-2.95%	17.84%	16.77%	-0.69%	-0.01%	-0.01%	-0.04%	-0.76%
Korea*	--	-9.35%	0.00%	3.83%	--	0.28%	0.16%	--	0.44%
Malaysia*	--	-11.60%	0.00%	0.64%	--	0.06%	0.03%	--	0.09%
New Zealand	--	5.76%	0.00%	0.12%	--	-0.01%	0.01%	--	0.00%
Pakistan*	--	-20.54%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-11.08%	0.00%	0.25%	--	0.03%	0.01%	--	0.03%
Singapore	-5.55%	-7.23%	6.05%	0.92%	0.02%	-0.29%	-0.19%	0.09%	-0.38%
Taiwan*	--	-5.96%	0.00%	2.95%	--	0.11%	0.13%	--	0.24%
Thailand*	--	-14.86%	0.00%	0.63%	--	0.07%	0.03%	--	0.11%
Americas									
Brazil*	--	-26.50%	0.00%	1.88%	--	0.32%	0.22%	--	0.54%
Canada	-4.63%	4.84%	1.44%	6.11%	-0.59%	-0.23%	0.10%	0.45%	-0.26%
Chile*	--	-10.84%	0.00%	0.31%	--	0.02%	0.02%	--	0.04%
Colombia*	--	6.83%	0.00%	0.11%	--	-0.01%	0.01%	--	-0.01%
Mexico*	--	-3.41%	0.00%	0.75%	--	-0.01%	0.06%	--	0.04%
Peru*	--	-3.19%	0.00%	0.10%	--	0.01%	0.00%	--	0.01%

Mondrian
Equity Performance Attribution

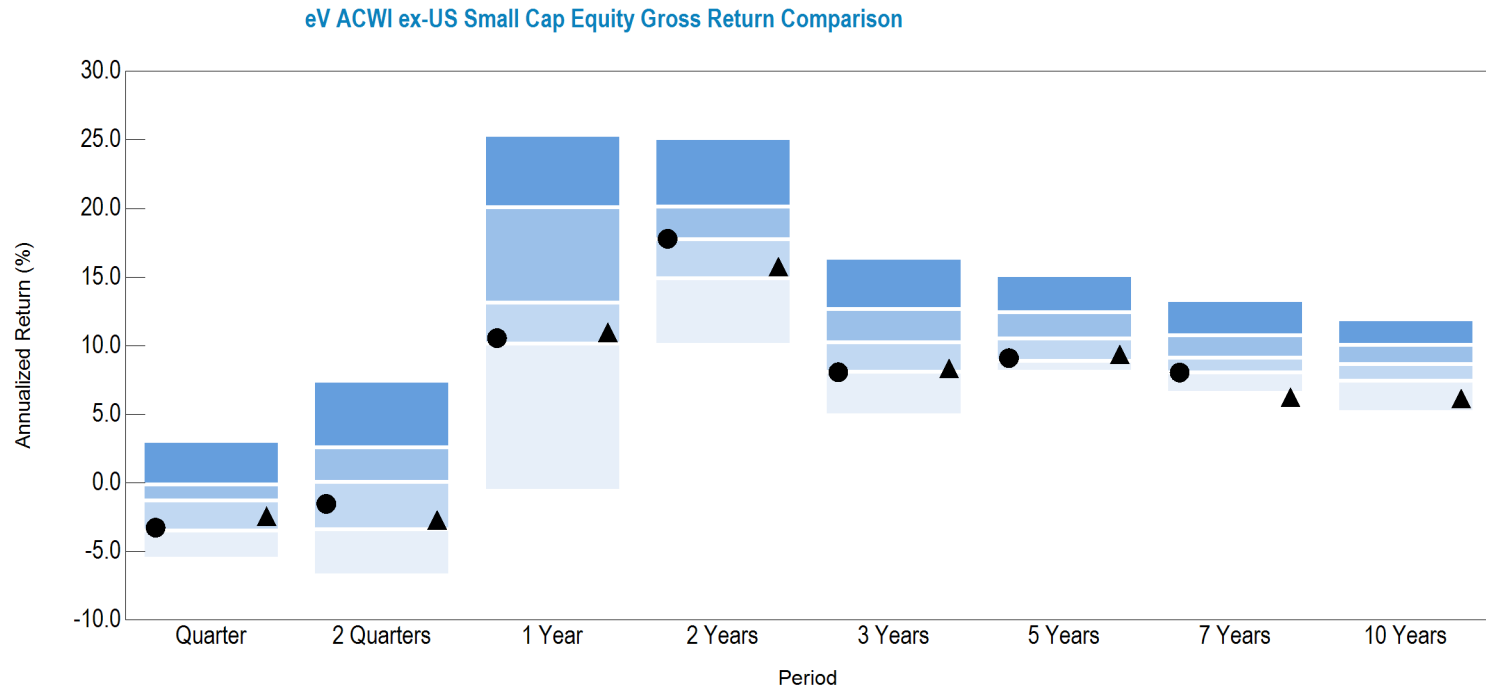
Period Ending: June 30, 2018

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-7.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	10.75%	0.00%	0.31%	--	-0.03%	0.01%	--	-0.03%
Qatar*	--	4.38%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
South Africa*	--	-11.27%	0.00%	1.73%	--	-0.01%	0.24%	--	0.23%
Turkey*	--	-25.86%	0.00%	0.25%	--	0.04%	0.03%	--	0.07%
United Arab Emirates*	--	-3.00%	0.00%	0.15%	--	0.01%	0.00%	--	0.01%
Totals									
Americas	-4.63%	-2.78%	1.44%	9.26%	-0.42%	0.02%	0.40%	0.36%	0.36%
Europe	0.99%	-1.06%	70.21%	44.82%	1.03%	0.56%	-1.55%	0.58%	0.62%
Asia/Pacific	-6.64%	-3.24%	27.76%	43.30%	-1.34%	0.35%	0.40%	0.48%	-0.11%
Other	--	-8.69%	0.00%	2.62%	--	0.01%	0.28%	--	0.28%
Cash	0.46%	--	0.59%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%
Total	-1.21%	-2.36%	100.00%	100.00%	-0.74%	0.93%	-0.46%	1.42%	1.15%
Totals									
Developed	-1.22%	-0.52%	99.41%	74.54%	-0.15%	0.46%	-1.61%	-0.05%	-1.36%
Emerging*	--	-7.73%	0.00%	25.46%	--	1.37%	1.15%	--	2.52%
Cash	0.46%	--	0.59%	0.00%	0.00%	-0.01%	0.00%	0.00%	-0.01%

ACWI ex-US Small Cap Equity Peer Universe Comparison

Period Ending: June 30, 2018



	Return (Rank)															
5th Percentile	3.04		7.43		25.34		25.11		16.38		15.13		13.29		11.91	
25th Percentile	-0.09		2.59		20.10		20.18		12.69		12.48		10.80		10.10	
Median	-1.26		0.12		13.16		17.77		10.27		10.55		9.15		8.67	
75th Percentile	-3.44		-3.36		10.16		14.93		8.12		8.90		8.06		7.49	
95th Percentile	-5.50		-6.71		-0.58		10.07		4.94		8.13		6.59		5.17	
# of Portfolios	54		54		54		54		49		37		30		26	
● Templeton	-3.27	(72)	-1.53	(59)	10.55	(71)	17.79	(50)	8.06	(76)	9.09	(73)	8.04	(77)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	-2.44	(59)	-2.71	(69)	10.96	(66)	15.76	(68)	8.33	(71)	9.37	(62)	6.24	(99)	6.14	(90)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	99	4,318
Weighted Avg. Market Cap. (\$B)	2.4	2.4
Median Market Cap. (\$B)	1.6	0.9
Price To Earnings	23.3	19.0
Price To Book	3.4	2.6
Price To Sales	1.8	2.5
Return on Equity (%)	15.4	12.9
Yield (%)	2.2	2.3
Beta (holdings; global)	0.9	0.9

Top Holdings

TECHNOGYM	2.2%
AMER SPORTS	2.1%
TSUMURA	2.1%
THULE GROUP	2.0%
HUHTAMAKI	2.0%
INTERPUMP GROUP	1.9%
BUCHER INDUSTRIES	1.9%
ANICOM HOLDINGS	1.9%
DEWAN HOUSING FINANCE	1.8%
GERRESHEIMER	1.8%

Best Performers

	Return %
CANADA GOOSE HOLDINGS	75.8%
SBNTD.VTG.SH\$. (C:GOOS)	
TETHYS OIL (W:TETY)	50.5%
OXFORD INSTRUMENTS (UKIR:OXIG)	27.0%
XTEP INTERNATIONAL HDG. (K:XREP)	26.9%
GRAN TIERRA ENERGY (TSE) (C:GTE)	24.6%
BADGER DAYLIGHTING (C:BAD)	21.0%
KOBAYASHI PHARMACEUTICAL (J:KOB\$)	20.0%
LOGITECH INTL. (NAS) (LOGI)	19.5%
DEWAN HOUSING FINANCE (IN:DWH)	19.5%
FUJI OIL HOLDINGS (J:ZF@N)	19.0%

Worst Performers

	Return %
SAO PAULO ALPARGATAS PN (BR:AL4)	-39.2%
MAVI GIYIM SANAYI VE TICARET (TK:MGV)	-36.8%
M DIAS BRANCO INDUSTRIA ON (BR:MDB)	-36.7%
BETER BED HOLDING (H:BET)	-29.2%
CAMIL ALIMENTOS (BR:CML)	-23.5%
GRENDENE ON (BR:GRN)	-22.6%
GREGGS (UKIR:GRG)	-22.4%
IDOM (J:GULL)	-21.7%
GIANT MNFG. (TW:GMC)	-19.9%
AZIMUT HOLDING (I:AZM)	-18.9%

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

	Attribution Effects				Returns		Sector Weights				
	Total	Selection	Allocation	Interaction	Portfolio	Benchmark	Portfolio	Benchmark			
	Effects	Effect	Effect	Effects							
Energy	0.20%	0.31%	-0.08%	-0.03%	19.68%	10.35%	2.73%	3.35%			
Materials	-0.01%	-0.64%	0.03%	0.60%	-7.98%	-3.13%	5.77%	10.93%			
Industrials	-0.04%	0.04%	-0.04%	-0.04%	-4.08%	-4.51%	21.38%	19.36%			
Consumer Discretionary	-0.76%	-0.07%	-0.04%	-0.64%	-3.40%	-3.02%	28.24%	15.40%			
Consumer Staples	-0.29%	-0.16%	0.00%	-0.13%	-4.72%	-0.53%	6.81%	6.71%			
Health Care	0.03%	-0.08%	-0.02%	0.13%	-1.47%	-1.32%	6.41%	7.67%			
Financials	0.10%	0.13%	-0.07%	0.03%	-3.50%	-5.57%	12.97%	10.70%			
Information Technology	0.26%	0.20%	0.00%	0.06%	0.79%	-1.39%	12.46%	12.09%			
Telecommunication Services	0.03%	--	-0.02%	--	--	-0.88%	0.00%	1.13%			
Utilities	0.14%	--	0.01%	--	--	-3.22%	0.00%	2.75%			
Real Estate	0.30%	0.11%	-0.02%	0.21%	-1.25%	-2.06%	3.22%	9.92%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	0.00%	--	--	--	--	--	0.00%	0.00%			
Portfolio	-0.03%	=	-0.17%	+	-0.23%	+	0.37%	-2.57%	-2.54%	100.00%	100.00%

Templeton
Equity Performance Attribution

Period Ending: June 30, 2018

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	--	-5.06%	0.00%	0.63%	--	0.01%	0.03%	--	0.04%
Belgium	-6.28%	-5.78%	2.68%	1.19%	-0.01%	-0.04%	-0.07%	-0.01%	-0.13%
Czech Republic*	--	-7.65%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Denmark	4.36%	10.75%	0.67%	1.16%	-0.08%	-0.07%	0.03%	0.03%	-0.09%
Finland	-6.17%	-2.16%	4.69%	1.09%	-0.05%	0.04%	-0.18%	-0.15%	-0.34%
France	--	-4.69%	0.00%	2.69%	--	0.04%	0.14%	--	0.18%
Germany	3.87%	-4.43%	7.83%	4.37%	0.38%	-0.05%	-0.21%	0.30%	0.43%
Greece*	--	-6.41%	0.00%	0.18%	--	0.01%	0.01%	--	0.02%
Hungary*	--	-15.45%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Ireland	--	6.08%	0.00%	0.75%	--	-0.07%	0.04%	--	-0.03%
Italy	-6.33%	-4.66%	5.62%	2.94%	-0.05%	-0.04%	-0.13%	-0.05%	-0.27%
Luxembourg	11.49%	-2.54%	1.24%	0.00%	0.00%	0.00%	-0.07%	0.19%	0.12%
Netherlands	-8.23%	-3.79%	2.78%	1.83%	-0.08%	-0.01%	-0.05%	-0.04%	-0.18%
Norway	-5.53%	12.32%	1.90%	1.28%	-0.24%	0.09%	-0.01%	-0.11%	-0.28%
Poland*	-18.79%	-14.72%	0.79%	0.21%	-0.01%	-0.05%	-0.04%	-0.03%	-0.13%
Portugal	--	-0.45%	0.00%	0.28%	--	-0.01%	0.01%	--	0.01%
Russia*	--	-15.59%	0.00%	0.16%	--	0.02%	0.01%	--	0.03%
Spain	-5.88%	-3.03%	1.78%	1.88%	-0.06%	0.00%	0.01%	0.00%	-0.05%
Sweden	13.14%	0.72%	4.84%	3.55%	0.47%	0.07%	-0.13%	0.17%	0.58%
Switzerland	-3.22%	-2.10%	3.24%	3.45%	-0.07%	0.00%	0.04%	0.00%	-0.03%
United Kingdom	-4.14%	1.99%	5.40%	12.85%	-0.84%	-0.47%	0.49%	0.48%	-0.33%

Templeton
Equity Performance Attribution

Period Ending: June 30, 2018

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

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	--	2.75%	0.00%	4.63%	--	-0.22%	0.18%	--	-0.03%
China*	1.13%	-2.33%	0.67%	4.49%	0.15%	0.17%	0.00%	-0.13%	0.19%
Hong Kong	-1.37%	-6.49%	8.25%	1.41%	0.07%	-0.58%	0.00%	0.35%	-0.16%
India*	19.45%	-8.80%	1.82%	3.02%	0.90%	0.07%	0.03%	-0.36%	0.64%
Indonesia*	--	-11.04%	0.00%	0.53%	--	0.05%	0.02%	--	0.07%
Japan	-2.75%	-3.06%	22.30%	22.25%	0.07%	0.00%	-0.01%	0.00%	0.07%
Korea*	-14.31%	-9.50%	3.97%	3.77%	-0.19%	-0.01%	0.00%	-0.01%	-0.21%
Malaysia*	--	-6.03%	0.00%	0.74%	--	0.03%	0.03%	--	0.06%
New Zealand	--	-2.37%	0.00%	0.72%	--	-0.01%	0.05%	--	0.03%
Pakistan*	--	-10.11%	0.00%	0.18%	--	0.01%	0.01%	--	0.02%
Philippines*	-7.64%	-17.21%	0.55%	0.19%	0.02%	-0.06%	-0.01%	0.03%	-0.02%
Singapore	--	-11.22%	0.00%	1.21%	--	0.12%	0.04%	--	0.16%
Taiwan*	-11.29%	-2.64%	5.79%	3.99%	-0.36%	0.00%	-0.06%	-0.16%	-0.58%
Thailand*	-5.61%	-17.81%	0.53%	0.83%	0.11%	0.05%	0.01%	-0.04%	0.13%
Americas									
Brazil*	-29.62%	-23.68%	3.43%	1.24%	-0.09%	-0.30%	-0.23%	-0.15%	-0.77%
Canada	11.84%	6.00%	6.35%	6.32%	0.36%	0.00%	0.00%	0.00%	0.37%
Chile*	--	-13.28%	0.00%	0.28%	--	0.02%	0.02%	--	0.04%
Colombia*	--	-6.33%	0.00%	0.08%	--	0.00%	0.00%	--	0.01%
Mexico*	--	-6.97%	0.00%	0.63%	--	0.01%	0.05%	--	0.06%
Peru*	--	-33.48%	0.00%	0.03%	--	0.01%	0.00%	--	0.01%
United States	5.71%	3.40%	2.35%	0.00%	0.00%	0.03%	-0.02%	0.07%	0.09%

Templeton
Equity Performance Attribution

Period Ending: June 30, 2018

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

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-7.28%	0.00%	0.12%	--	0.01%	0.00%	--	0.01%
Israel	--	-1.09%	0.00%	1.09%	--	0.00%	0.03%	--	0.03%
Qatar*	--	-2.53%	0.00%	0.09%	--	0.00%	0.00%	--	0.00%
South Africa*	--	-20.17%	0.00%	1.23%	--	0.12%	0.15%	--	0.27%
Turkey*	-36.79%	-23.33%	0.54%	0.30%	-0.05%	-0.03%	-0.02%	-0.04%	-0.13%
United Arab Emirates*	--	-6.99%	0.00%	0.12%	--	0.01%	0.00%	--	0.01%
Totals									
Americas	-1.08%	-0.11%	12.13%	8.57%	-0.06%	0.07%	-0.18%	-0.03%	-0.19%
Europe	-1.42%	-0.60%	43.46%	40.53%	-0.41%	0.09%	-0.08%	-0.03%	-0.43%
Asia/Pacific	-3.78%	-4.03%	43.88%	47.97%	-0.05%	0.10%	0.30%	0.00%	0.36%
Other	-36.79%	-11.83%	0.54%	2.94%	-0.66%	0.15%	0.17%	0.54%	0.20%
Total	-2.60%	-2.54%	100.00%	100.00%	-1.18%	0.41%	0.21%	0.49%	-0.07%
Totals									
Developed	-0.38%	-0.78%	81.92%	77.55%	-0.09%	0.08%	0.23%	-0.01%	0.20%
Emerging*	-12.69%	-8.61%	18.08%	22.45%	-0.65%	0.27%	-0.01%	0.13%	-0.27%

Interest rate environment

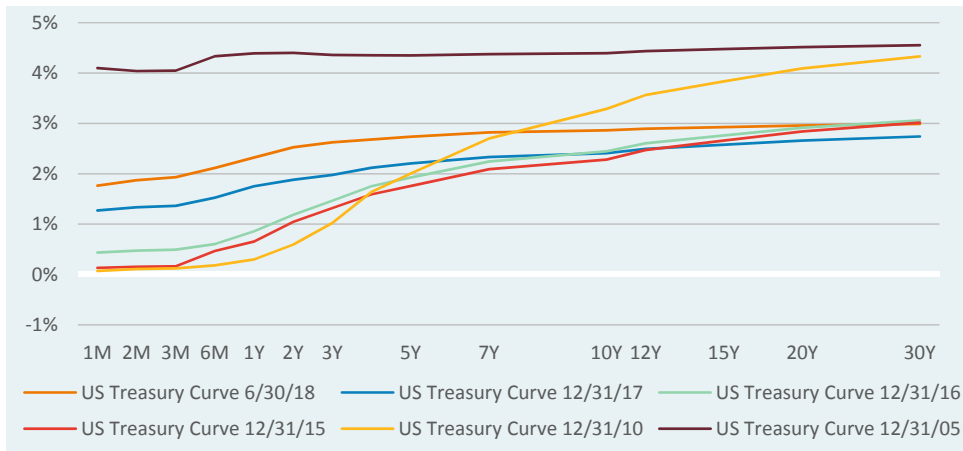
- The Fed raised interest rates in June for the second time this year to a target range of 1.8-2.0%. The balance sheet unwind continued as planned with approximately \$18 billion in Treasuries and \$12 billion in MBS coming off each month during the quarter.
- According to the Fed dot plot, officials are expecting two additional rate hikes this year, while market pricing suggests only one more hike. Quicker than expected Fed tightening would represent a key risk to the economy and asset prices.
- The 10-year U.S. Treasury yield ticked up modestly during the quarter to 2.9% while the short-end of the curve rose further. The spread between the 2- and 10-year yields fell to a cycle low of 33 bps at quarter end. By another measure of curve shape, the 10-year yield minus 3-month yield, the curve remains at a level of steepness closer to the longer-term average (92 bps vs. 184 bps average).
- Historically, an inverted yield curve has preceded recessions, but the timing between inversion and recession has been anywhere from one to three years.
- In June, Mario Draghi officially announced the end of the Eurozone's bond buying program. The ECB stated that purchases will end in December, and interest rates will remain unchanged through summer of 2019. The markets interpreted this as dovish and yields fell on the news.
- Italian sovereign yields spiked after it appeared the country was headed for new elections later in the year. The 2-year yield jumped 186 bps in one day to 2.8% as risk premiums rose. In the end, a coalition government was formed between the Five Star and League parties and the country avoided going back to the polls.
- Emerging market local and hard yields moved higher, influenced by a general risk-off sentiment towards EM as well as idiosyncratic risks in several vulnerable countries, such as Turkey and Argentina.

Area	Short Term (3M)	10 Year
United States	1.91%	2.86%
Germany	(0.59%)	0.30%
France	(0.63%)	0.67%
Spain	(0.42%)	1.32%
Italy	(0.12%)	2.68%
Greece	1.04%	3.96%
U.K.	0.61%	1.28%
Japan	(0.14%)	0.04%
Australia	1.92%	2.63%
China	3.01%	3.48%
Brazil	6.45%	11.68%
Russia	6.62%	7.81%

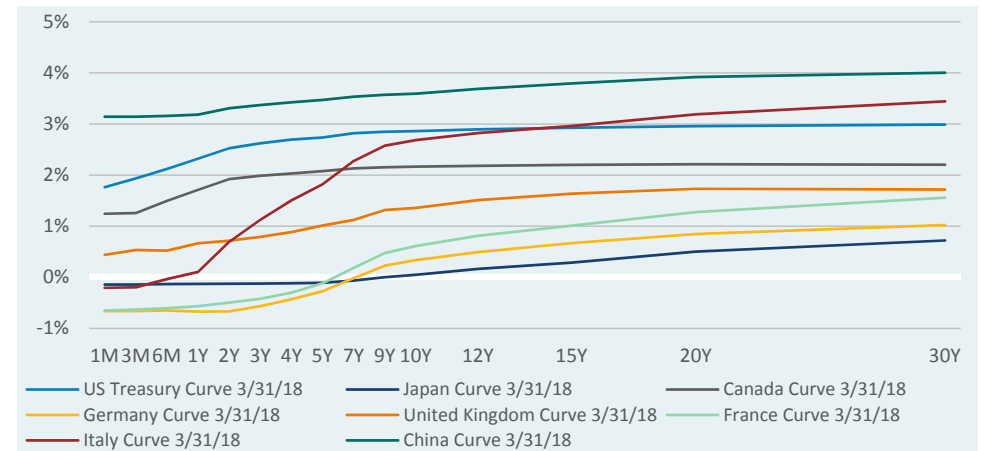
Source: Bloomberg, as of 6/30/18

Yield environment

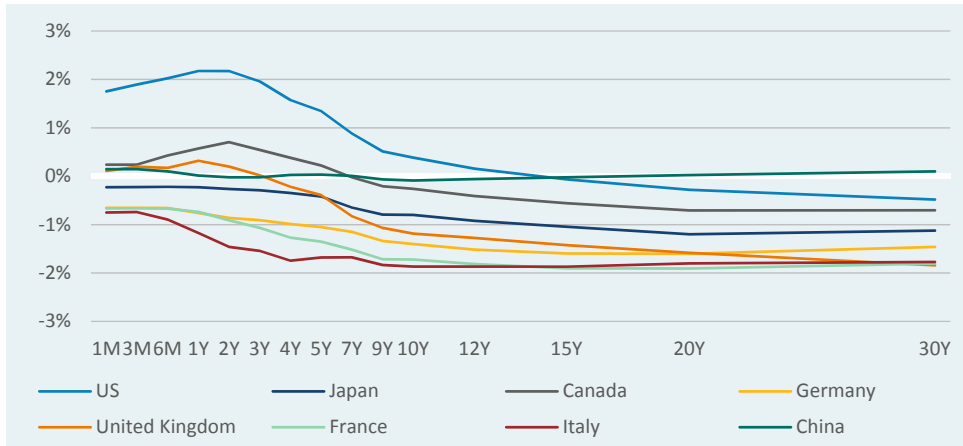
U.S. YIELD CURVE



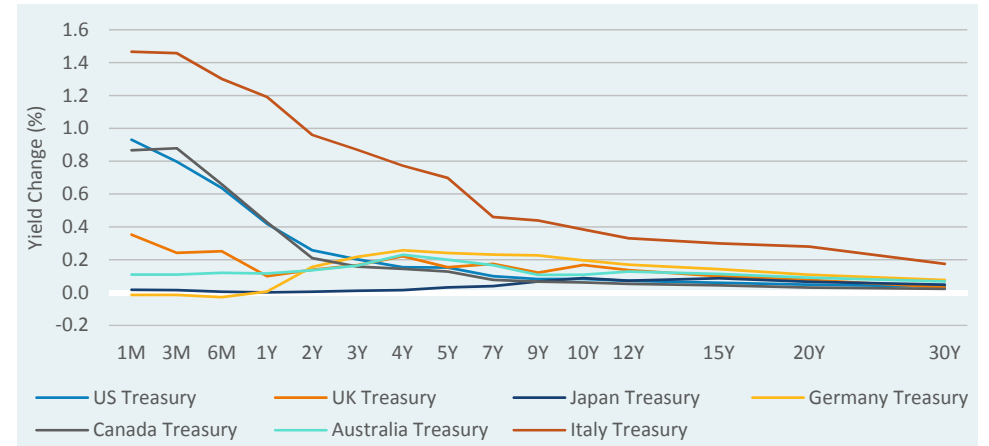
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/18

Currency

The U.S. dollar appreciated 5% during the quarter, which erased the positive equity returns of many international markets. Relative strength of the U.S. economy, paired with Federal Reserve tightening, likely helped lead the U.S. dollar higher.

Interest rate differentials between the U.S. and the rest of the developed world have been steadily widening over the past 10 months. The spread between the U.S. 10-year Treasury yield and the yield on a basket of developed sovereign debt rose approximately 80 bps to 2.3% during this

time. Higher relative interest rates has historically been a short-term driver of currencies.

Emerging market currencies fell 9.1% in Q2, based on the JPM EM Currency Index. The performance of most currencies were in line with expectations based on U.S. dollar appreciation against developed market currencies. Several countries with large current account deficits that are heavily reliant on dollar funding, such as Argentina and Turkey, saw their currencies fall sharply. As a whole, emerging market currencies are significantly undervalued based on purchasing power parity.

The U.S. dollar materially appreciated, reversing a multi-year downtrend

U.S. DOLLAR TRADE WEIGHTED INDEX



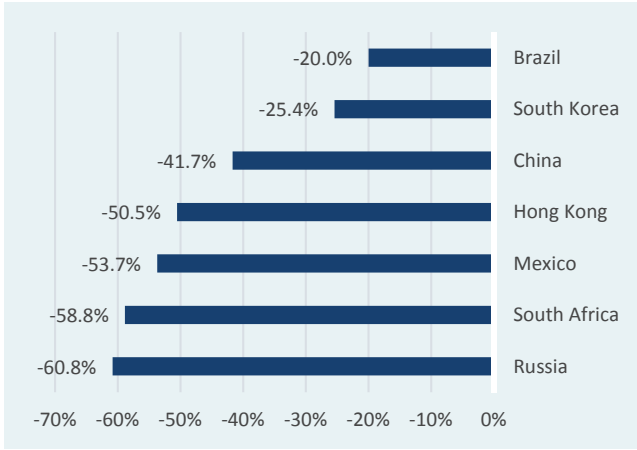
Source: Federal Reserve, as of 6/30/18

U.S. VS. DEVELOPED INTEREST RATE SPREAD



Source: Verus, Bloomberg, as of 6/30/18

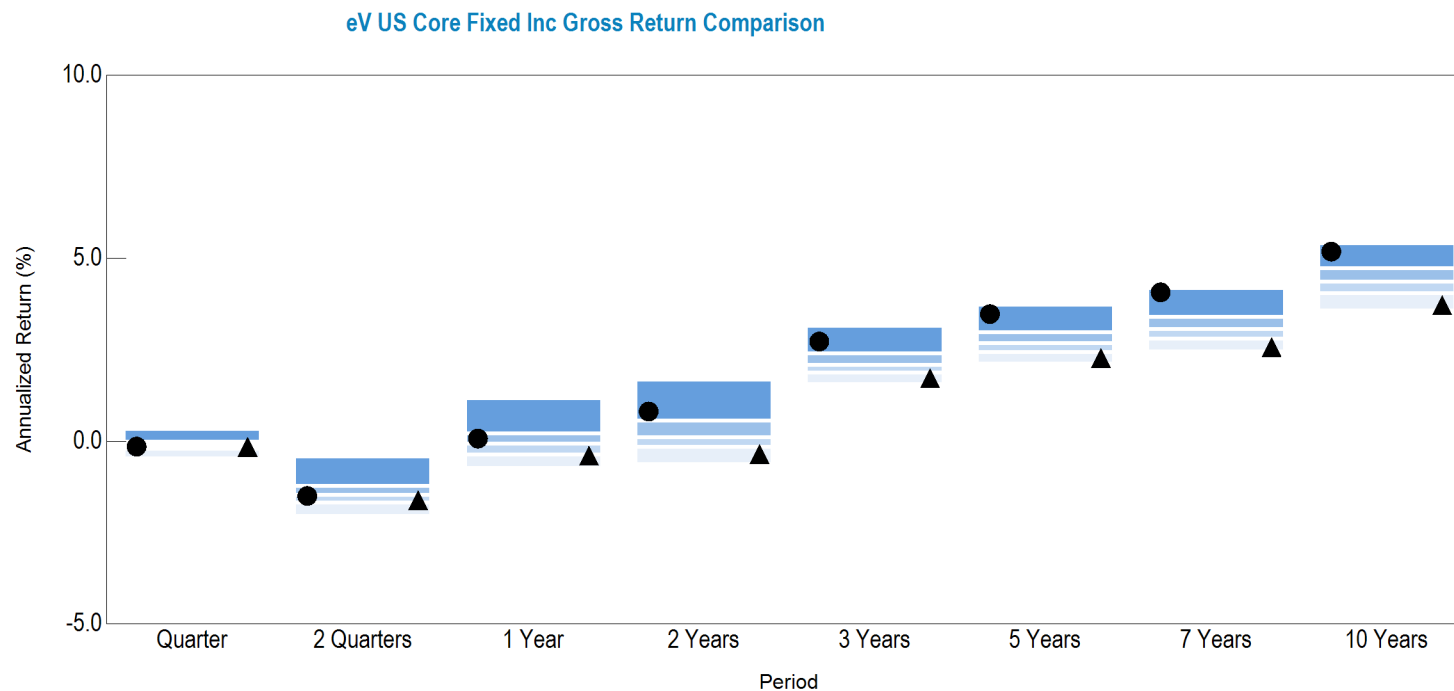
PURCHASING POWER PARITY VALUATIONS VS. U.S. DOLLAR (BIG MAC INDEX)



Source: Bloomberg, as of 6/30/18

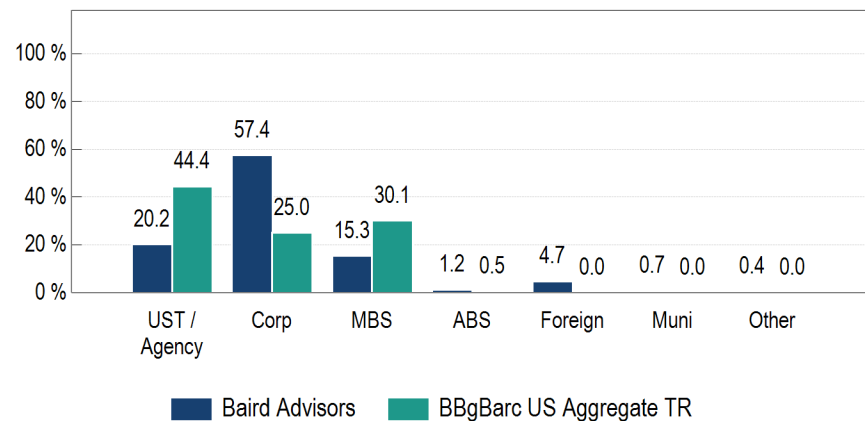
Core Fixed Income Peer Universe Comparison

Period Ending: June 30, 2018

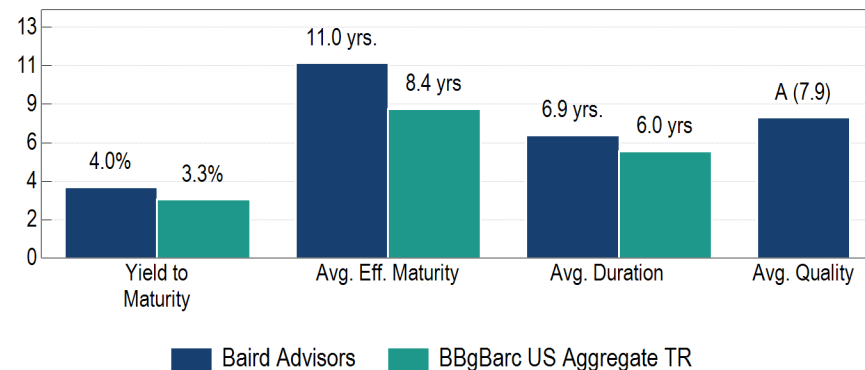


	Return (Rank)							
5th Percentile	0.32	-0.42	1.16	1.68	3.15	3.73	4.17	5.40
25th Percentile	0.00	-1.22	0.22	0.58	2.41	2.98	3.41	4.73
Median	-0.11	-1.46	-0.06	0.12	2.10	2.70	3.07	4.38
75th Percentile	-0.20	-1.67	-0.35	-0.14	1.88	2.45	2.81	4.06
95th Percentile	-0.45	-2.04	-0.72	-0.62	1.57	2.13	2.46	3.59
# of Portfolios	230	230	230	228	226	223	219	202
● Baird Advisors	-0.15 (62)	-1.50 (56)	0.07 (37)	0.81 (17)	2.72 (14)	3.47 (9)	4.07 (7)	5.18 (11)
▲ BBgBarc US Aggregate TR	-0.16 (63)	-1.62 (70)	-0.40 (82)	-0.36 (86)	1.72 (88)	2.27 (89)	2.57 (93)	3.72 (92)

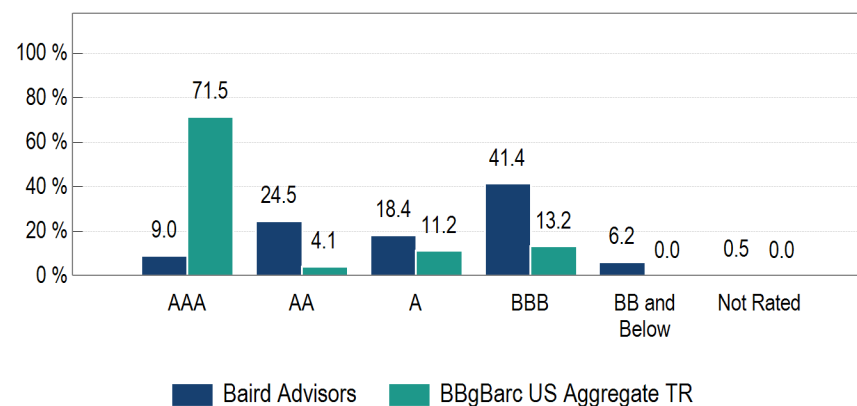
Sectors
Baird Advisors



Characteristics
Baird Advisors



Quality Ratings
Baird Advisors



PERFORMANCE BY QUALITY

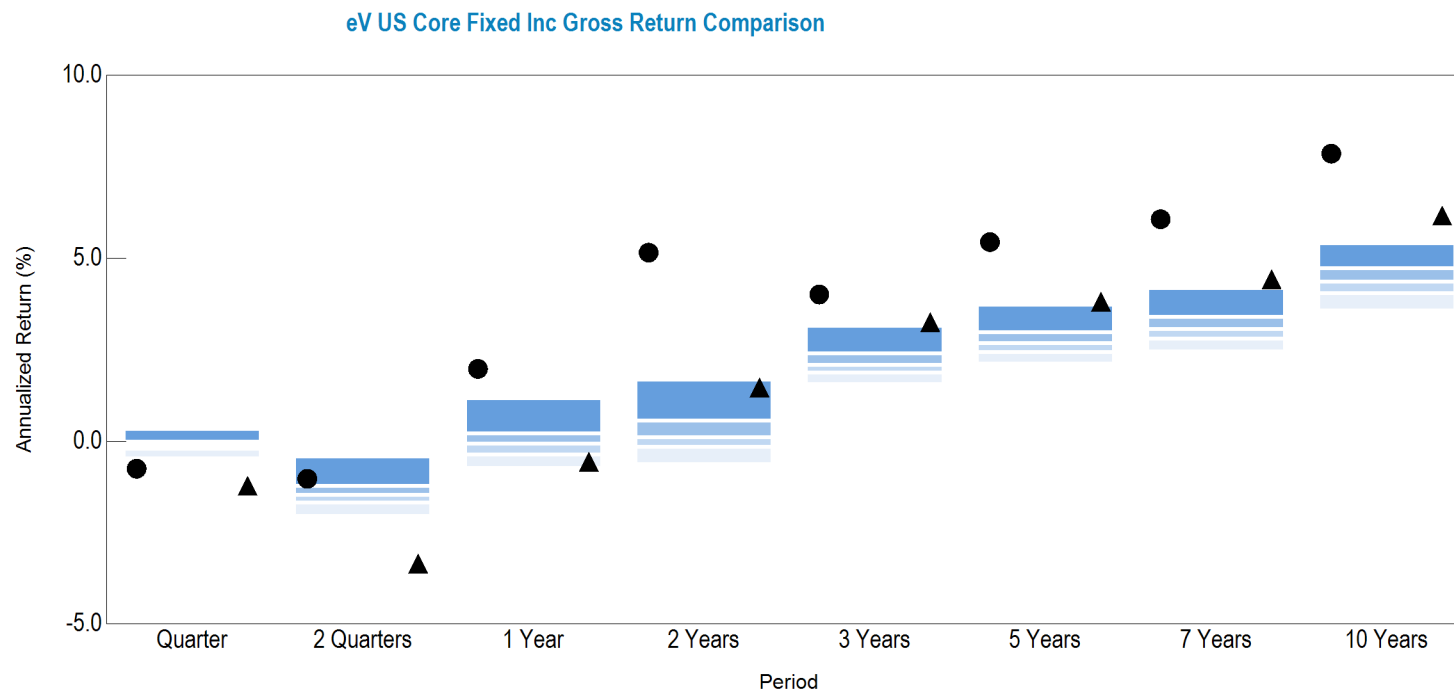
	NUMBER OF ISSUES	FINAL MARKET VALUE (\$000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Cash & Equiv	1	5,964	0.9	0.47	0.00
Govt & Agency	99	335,283	50.6	0.13	0.07
AAA	22	60,960	9.2	0.09	0.01
AA	13	13,915	2.1	0.15	0.00
A	44	87,465	13.2	-0.18	-0.02
BAA	65	135,173	20.4	-0.93	-0.19
Below BAA	21	23,854	3.6	-0.50	-0.02
Other	0	-	0.0	0.00	0.00
Total Account	265	\$662,614	100.0	-0.15	-0.15

PERFORMANCE BY DURATION

	NUMBER OF ISSUES	FINAL MARKET VALUE (\$000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Under 1 Year	29	36,444	5.5	0.35	0.02
1 - 3 Years	51	94,091	14.2	0.40	0.06
3 - 6 Years	115	324,018	48.9	0.25	0.12
Over 6 Years	70	208,061	31.4	-1.10	-0.35
Total Account	265	\$662,614	100.0	-0.15	-0.15

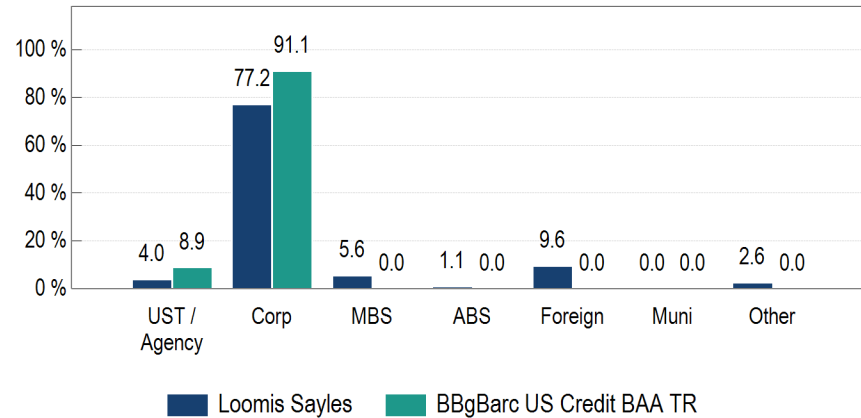
Core Fixed Income Peer Universe Comparison

Period Ending: June 30, 2018

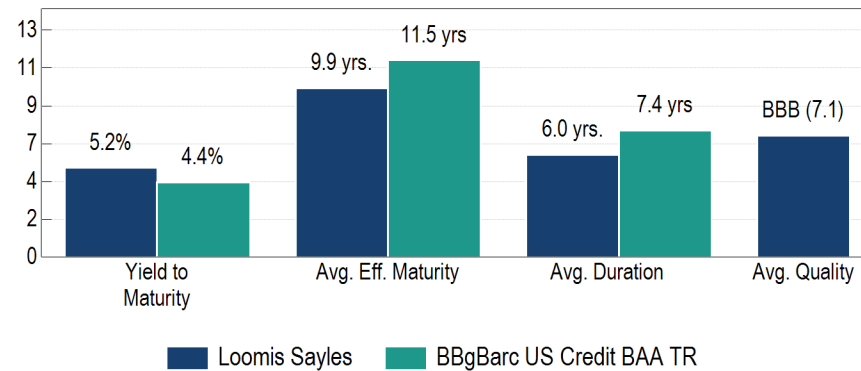


	Return (Rank)															
5th Percentile	0.32	-0.42	1.16	1.68	3.15	3.73	4.17	5.40								
25th Percentile	0.00	-1.22	0.22	0.58	2.41	2.98	3.41	4.73								
Median	-0.11	-1.46	-0.06	0.12	2.10	2.70	3.07	4.38								
75th Percentile	-0.20	-1.67	-0.35	-0.14	1.88	2.45	2.81	4.06								
95th Percentile	-0.45	-2.04	-0.72	-0.62	1.57	2.13	2.46	3.59								
# of Portfolios	230	230	230	228	226	223	219	202								
● Loomis Sayles	-0.75	(99)	-1.03	(15)	1.97	(2)	5.15	(1)	4.01	(3)	5.44	(1)	6.07	(1)	7.86	(1)
▲ BBgBarc US Credit BAA TR	-1.22	(99)	-3.35	(99)	-0.57	(91)	1.47	(7)	3.25	(5)	3.81	(5)	4.42	(4)	6.16	(2)

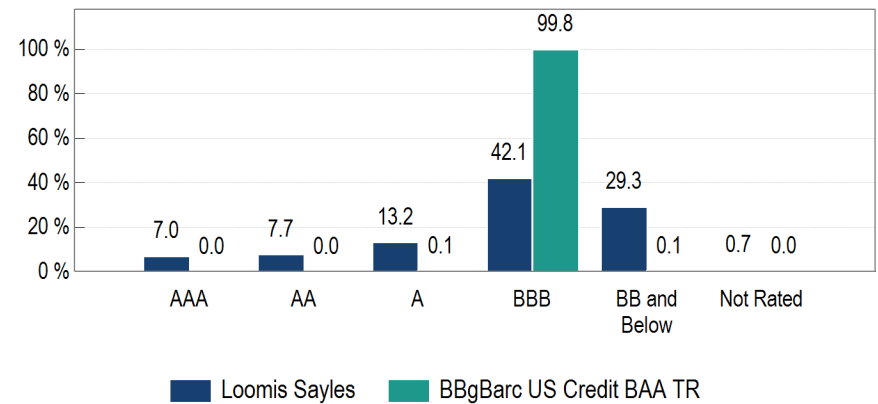
Sectors
Loomis Sayles



Characteristics
Loomis Sayles



Quality Ratings
Loomis Sayles



Loomis Sayles
Performance Attribution Analysis

Period Ending: June 30, 2018

Attribution Summary

Returns	
Account Return	-0.79
Benchmark Return	-1.22
Excess Return	0.43
Excess Due To:	
Sector Allocation	-0.03
Security Selection	0.47
Trading	-
Pricing Differences	-
Compounding	-

Attribution Details

Name	Acct Avg Weight	Acct Return	Acct Contrib	Bench Avg Weight	Bench Return	Bench Contrib	Quality Alloc	Security Selection	Total Effect
Quality	100.00	-0.79	-0.79	100.00	-1.22	-1.22	-0.03	0.47	0.44
CASH	2.04	-0.80	-0.01	-	-1.22	-	-	0.03	0.03
AAA	14.39	0.38	0.02	-	-1.22	-	-	0.24	0.24
AA	2.95	0.57	0.02	-	-1.22	-	-	0.05	0.05
A	10.15	-1.38	-0.09	0.12	-0.81	-	0.03	-0.05	-0.02
BAA	36.04	-1.65	-0.59	99.87	-1.22	-1.22	-	-0.15	-0.15
BA	18.08	-2.33	-0.43	0.01	-0.93	-	-0.07	-0.16	-0.22
B	6.28	-9.47	-0.56	-	-1.22	-	-	-0.47	-0.47
CAA	1.54	9.26	0.14	-	-1.22	-	-	0.15	0.15
CA	0.03	2.06	-	-	-1.22	-	-	-	-
C	0.10	0.52	-	-	-1.22	-	-	-	-
NR	8.39	6.66	0.72	-	-1.22	-	-	0.82	0.82

Loomis Sayles

Performance Attribution Analysis

Period Ending: June 30, 2018

Attribution Summary

Returns	
Account Return	-0.79
Benchmark Return	-1.22
Excess Return	0.43
Excess Due To:	
Yield Curve Total	0.08
Parallel Shift	0.26
Nonparallel Shift	-0.18
Sector Allocation	0.62
Security Selection	-0.26
Trading	-
Pricing Differences	-
Compounding	-

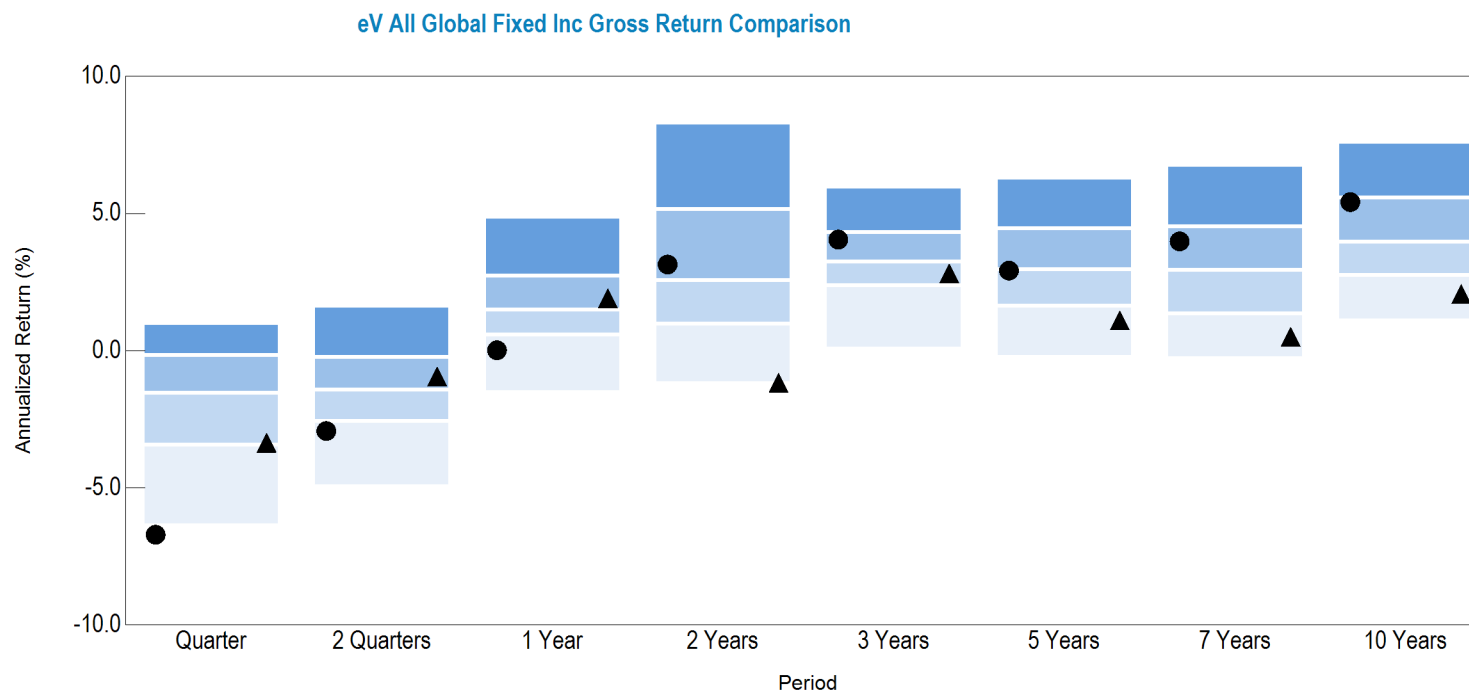
Attribution Details

Name	Acct Avg Duration	Acct Avg Weight	Acct Return	Acct Lcl Return	Acct Rtn Over TSY	Acct Contrib	Bench Avg Duration	Bench Avg Weight	Bench Return	Bench Lcl Return	Bench Rtn Over	Bench Contrib	Yield Curve Total	Parallel Shift	Nonparallel Shift	Sector Allocation	Security Selection	Total Effect
Duration	4.93	100.00	-0.79	-0.04	-0.79	-0.79	7.45	100.00	-1.22	-1.22	-1.22	-1.22	0.08	0.26	-0.18	0.62	-0.26	0.44
Less than 0.5	0.06	8.53	1.12	2.67	1.11	0.19	0.07	0.19	-0.56	-0.56	-0.56	-	0.11	0.14	-0.03	0.01	0.22	0.34
0.5 - 1.0	0.75	3.56	0.83	1.34	0.83	0.03	0.93	0.73	0.76	0.76	0.76	0.01	0.01	0.02	-0.01	0.04	-	0.05
1.0 - 1.5	1.27	6.92	0.17	1.19	0.17	0.01	1.25	3.32	0.66	0.66	0.66	0.02	0.02	0.03	-0.01	0.05	-0.03	0.04
1.5 - 2.0	1.78	4.34	1.72	1.81	1.72	0.07	1.74	4.16	0.53	0.53	0.53	0.02	0.02	0.02	-	-	0.05	0.07
2.0 - 2.5	2.25	5.62	0.29	0.49	0.29	0.01	2.26	4.75	0.48	0.48	0.48	0.02	-0.02	-0.02	-	0.02	-0.02	-0.02
2.5 - 3.0	2.71	5.90	2.06	2.07	2.05	0.12	2.73	4.85	0.25	0.25	0.25	0.01	-0.02	-0.01	-	0.02	0.10	0.11
3.0 - 3.5	3.25	5.43	0.01	0.01	0.01	0.02	3.25	4.60	0.17	0.17	0.17	0.01	-0.02	-0.01	-	0.01	-	-0.01
3.5 - 4.0	3.75	3.87	-2.19	0.13	-2.19	-0.09	3.74	5.11	0.03	0.03	0.03	-	-	-0.01	-	-0.01	-0.09	-0.10
4.0 - 4.5	4.32	4.35	0.20	0.20	0.20	-0.01	4.25	5.95	-0.15	-0.15	-0.15	-0.01	-0.02	-0.02	0.01	-0.01	-0.01	-0.04
4.5 - 5.0	4.76	5.13	0.47	0.94	0.47	0.01	4.74	4.23	-0.44	-0.44	-0.44	-0.02	0.01	0.01	-0.01	0.01	0.05	0.06
5.0 - 5.5	5.24	6.44	-0.72	-0.36	-0.72	-0.05	5.24	3.35	-0.53	-0.53	-0.53	-0.02	-0.01	-	-0.01	0.02	-0.03	-0.01
5.5 - 6.0	5.79	6.72	-0.44	-0.35	-0.44	-0.02	5.78	5.29	-0.55	-0.55	-0.55	-0.02	-	-	-	0.01	0.01	0.02
6.0 - 6.5	6.24	5.39	-2.51	-1.64	-2.51	-0.14	6.22	5.46	-0.82	-0.82	-0.82	-0.05	-	-	-	-	-0.09	-0.09
6.5 - 7.0	6.76	3.59	-1.16	-1.03	-1.16	-0.04	6.75	3.63	-0.94	-0.94	-0.94	-0.04	-	-	-	-	-0.01	-0.01
7.0 - 7.5	7.22	3.57	-2.33	-2.33	-2.33	-0.09	7.25	4.99	-1.04	-1.04	-1.04	-0.05	-	-	-	-	-0.04	-0.04
7.5 - 8.0	7.74	4.86	-1.70	-1.70	-1.70	-0.08	7.76	5.48	-1.09	-1.09	-1.09	-0.06	-	-	-	-	-0.03	-0.03
8.0 - 8.5	7.18	0.63	-6.91	-2.95	-6.90	-0.03	8.17	2.48	-1.64	-1.64	-1.64	-0.04	-	-	-	0.01	-0.02	-0.01
8.5 - 9.0	8.64	0.35	-4.58	-0.74	-4.56	-0.01	8.76	0.82	-2.57	-2.57	-2.57	-0.02	-	-	-	0.01	-	0.01
9.0 - 9.5	9.31	1.25	-9.44	-2.73	-9.43	-0.16	9.23	0.77	-1.25	-1.25	-1.25	-0.01	-	-	-	-	-0.15	-0.14
9.5 - 10.0	9.78	1.49	-6.27	-2.77	-6.27	-0.12	9.75	0.49	-2.85	-2.85	-2.85	-0.02	-	-	-	-0.02	-0.09	-0.10
10.0 - 10.5	10.23	0.84	-10.96	-3.48	-10.96	-0.12	10.27	0.56	-2.73	-2.73	-2.73	-0.01	-0.01	-0.01	-	-0.01	-0.06	-0.09

Loomis Sayles
Performance Attribution Analysis

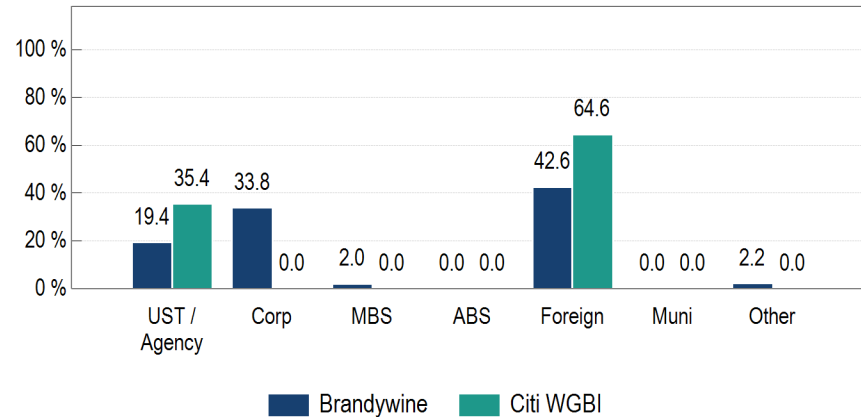
Period Ending: June 30, 2018

Name	Acct Avg Duration	Acct Avg Weight	Acct Return	Acct Lcl Return	Acct Rtn Over TSY	Acct Contrib	Bench Avg Duration	Bench Avg Weight	Bench Return	Bench Lcl Return	Bench Rtn Over	Bench Contrib	Yield Curve Total	Parallel Shift	Nonparallel Shift	Sector Allocation	Security Selection	Total Effect
10.5 - 11.0	10.73	0.64	-4.11	-3.82	-4.11	0.02	10.78	1.24	-2.86	-2.86	-2.85	-0.04	-	-	-	0.01	0.03	0.05
11.0 - 11.5	11.25	0.58	-1.80	-1.80	-1.79	-0.01	11.27	1.92	-3.06	-3.06	-3.06	-0.06	-	0.01	-	0.02	0.01	0.03
11.5 - 12.0	11.79	1.22	-3.69	-3.69	-3.69	-0.06	11.74	2.58	-2.51	-2.51	-2.51	-0.07	-	0.01	-0.01	0.02	-0.03	-0.01
12.0 - 12.5	12.21	1.82	-3.24	-3.24	-3.24	-0.07	12.23	2.24	-2.89	-2.89	-2.88	-0.06	-0.02	-0.02	-	0.02	0.01	0.01
12.5 - 13.0	12.72	0.58	-5.15	-5.15	-5.15	-0.02	12.74	1.90	-3.56	-3.56	-3.56	-0.07	0.01	0.01	-0.01	0.03	-0.01	0.03
13.0 - 13.5	13.22	0.71	-2.51	-2.51	-2.51	-0.02	13.24	1.68	-3.26	-3.26	-3.26	-0.06	0.01	0.01	-0.01	0.01	-	0.02
13.5 - 14.0	13.78	0.54	-8.79	-8.79	-8.79	-0.07	13.76	1.84	-3.04	-3.04	-3.04	-0.06	-	0.01	-0.01	0.03	-0.06	-0.03
14.0 - 14.5	14.24	0.86	-3.22	-3.22	-3.22	-0.05	14.26	2.88	-3.52	-3.52	-3.52	-0.11	-0.01	-	-0.01	0.05	-	0.05
14.5 - 15.0	14.63	1.03	0.10	0.10	0.10	0.01	14.75	3.58	-3.71	-3.71	-3.71	-0.13	-0.01	0.01	-0.02	0.08	0.03	0.10
15.0 - 15.5	12.48	0.25	-4.92	-4.92	-4.91	-0.02	15.25	3.37	-3.32	-3.32	-3.32	-0.13	0.01	0.04	-0.03	0.07	-0.01	0.07
15.5 - 16.0	5.70	0.14	-3.16	-3.16	-3.16	-0.01	15.73	2.74	-3.06	-3.06	-3.06	-0.09	-	0.03	-0.03	0.05	-0.01	0.04
16.0 - 16.5	1.70	0.04	0.82	0.82	0.82	-	16.23	1.38	-3.04	-3.04	-3.04	-0.04	-	0.01	-0.02	0.03	-	0.03
16.5 - 17.0	-	-	-	-	-	-	16.71	0.89	-1.40	-1.40	-1.40	-0.02	-	0.02	-0.02	0.01	-	0.01
17.0 - 17.5	-	-	-	-	-	-	17.22	0.30	-3.30	-3.30	-3.31	-0.01	-	0.01	-0.01	-	-	-
17.5 - 18.0	0.27	-	0.03	0.03	0.02	-	17.73	0.13	-3.02	-3.02	-3.02	-	-	-	-	-	-	-
18.0 - 18.5	-	-	-	-	-	-	15.75	0.04	-3.14	-3.14	-3.13	-	-	-	-	-	-	-
18.5 - 19.0	-	-	-	-	-	-	17.89	0.03	-4.04	-4.04	-4.05	-	-	-	-	-	-	-
19.0 - 19.5	9.13	1.31	-0.07	-0.07	-0.07	-	13.67	0.04	-3.21	-3.21	-3.19	-	-0.01	-0.01	-	-0.03	0.05	0.02
19.5 - 20.0	10.41	1.48	0.59	0.59	0.58	0.02	9.52	0.02	1.64	1.64	1.59	-	0.02	-0.03	0.06	0.06	-0.05	0.03
20.0 - 20.5	-	-	-	-	-	-	3.98	0.01	-1.30	-1.30	-1.29	-	-	-	-	-	-	-
Greater than 25.0	10.82	-	1.70	1.70	1.74	-	-	-	-1.22	-1.22	-1.22	-	-	-	-	-	-	-

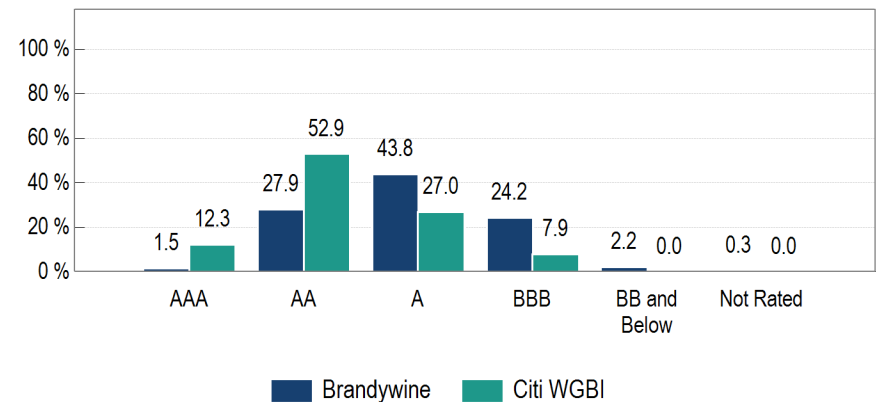


	Return (Rank)							
5th Percentile	0.99	1.63	4.87	8.30	5.97	6.29	6.76	7.59
25th Percentile	-0.14	-0.22	2.74	5.19	4.33	4.47	4.55	5.59
Median	-1.53	-1.41	1.52	2.59	3.27	2.99	2.95	3.98
75th Percentile	-3.40	-2.54	0.59	0.99	2.40	1.65	1.37	2.77
95th Percentile	-6.35	-4.94	-1.50	-1.18	0.08	-0.22	-0.27	1.11
# of Portfolios	465	465	463	457	443	392	313	214
● Brandywine	-6.71 (96)	-2.93 (81)	0.02 (87)	3.14 (44)	4.05 (30)	2.92 (52)	3.98 (34)	5.42 (27)
▲ Citi WGBI	-3.35 (74)	-0.94 (42)	1.90 (40)	-1.16 (95)	2.81 (65)	1.11 (85)	0.51 (90)	2.07 (90)

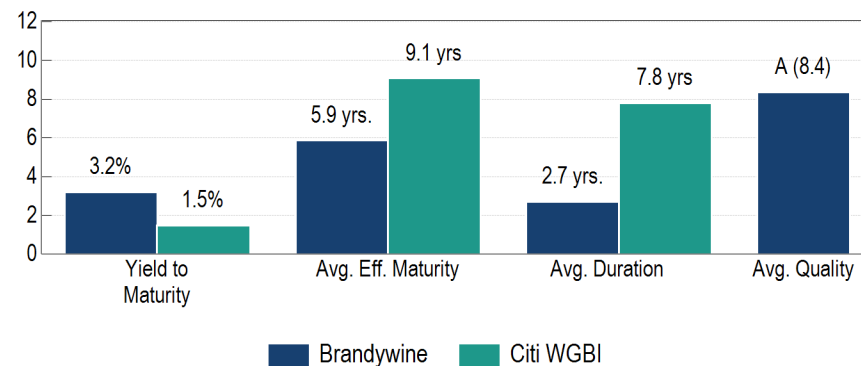
Sectors
Brandywine



Quality Ratings
Brandywine



Characteristics
Brandywine



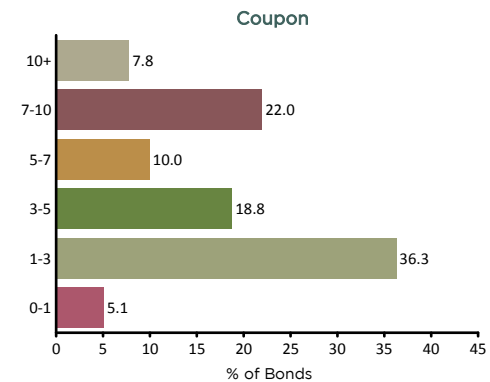
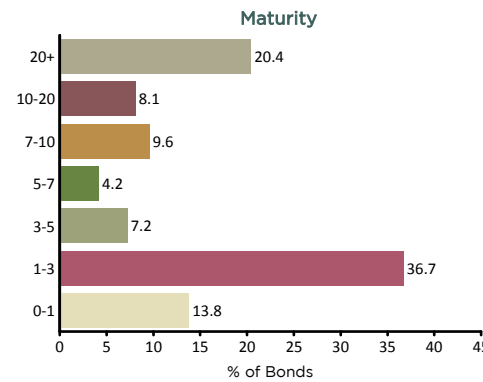
Brandywine

Portfolio Characteristics

Period Ending: June 30, 2018

Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	4.86	1.50
Yield to Worst (%)	4.85	1.50
Modified Duration	3.88	7.83
Effective Duration	3.78	7.95
Average Maturity	8.41	9.13
Average Market Price	99.46	-
Average Coupon (%)	4.64	2.34
Current Yield (%)	4.58	-
# of Issues	124	1,035



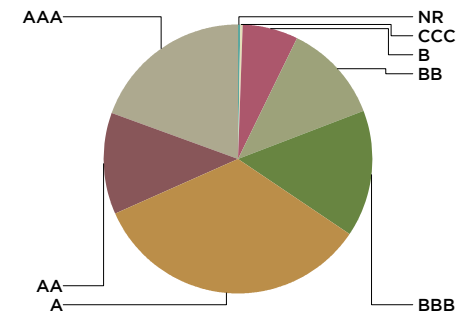
Sector Breakdown

	Market Value (%)	Duration Contribution (in Years)
Government Sovereign	66.85	3.43
Corporate Bond - High Yield	4.49	0.19
Corporate Bond - Investment Grade	21.11	0.14
Mortgage Backed Securities	1.67	0.08
Government Regional Agencies	2.94	0.03
Supranational	0.66	0.01
Bank Loan	0.06	0.00
Cash	3.45	-
Derivatives	(1.24)	-
Total:	100.00	3.88

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	19.4	19.4
AA	12.4	31.8
A	33.8	65.6
BBB	15.3	80.9
BB	12.0	92.8
B	6.7	99.6
CCC	0.3	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.

Brandywine

Country & Currency Allocation

Period Ending: June 30, 2018

Country Allocation	6/30/2018			3/31/2018	
	Portfolio	Index	Active	Portfolio	Change
Japan	-	19.67	(19.67)	-	-
Mexico	12.48	0.65	11.83	11.28	1.20
France	0.07	8.33	(8.26)	0.07	0.01
Italy	-	7.48	(7.48)	0.39	(0.39)
Australia	7.69	1.71	5.98	7.44	0.25
South Africa	5.62	0.47	5.15	6.42	(0.80)
Malaysia	5.19	0.39	4.80	6.66	(1.47)
*Brazil	4.68	-	4.68	5.69	(1.01)
Spain	0.81	4.85	(4.04)	0.83	(0.02)
*Colombia	3.98	-	3.98	2.17	1.81
Poland	4.44	0.51	3.92	5.87	(1.43)
*Egypt	3.67	-	3.67	2.00	1.67
Germany	2.98	5.75	(2.76)	1.61	1.37
*Indonesia	2.60	-	2.60	2.85	(0.24)
Peru	2.07	-	2.07	2.07	-
Belgium	-	2.07	(2.07)	-	-
United States	37.03	35.26	1.77	36.14	0.89
Netherlands	-	1.77	(1.77)	-	-
Canada	0.06	1.64	(1.58)	0.05	-
Austria	-	1.24	(1.24)	-	-
*Turkey	1.14	-	1.14	1.42	(0.28)
Supranational	0.66	-	0.66	0.83	(0.16)
Ireland	-	0.65	(0.65)	-	-
Finland	-	0.52	(0.52)	-	-
Denmark	-	0.49	(0.49)	-	-
Singapore	-	0.31	(0.31)	-	-
United Kingdom	5.94	5.63	0.30	5.86	0.08
*Jamaica	0.13	-	0.13	0.13	-
Other Countries	-	0.60	(0.60)	0.09	(0.09)
Derivative P/L	(1.24)	-	(1.24)	0.15	(1.39)
Total:	100.00	100.00	-	100.00	-

Currency Allocation	6/30/2018			3/31/2018	
	Portfolio	Index	Active	Portfolio	Change
Euro	0.60	32.66	(32.07)	1.31	(0.71)
US Dollar	3.96	35.26	(31.30)	16.21	(12.25)
Japanese Yen	7.26	19.67	(12.42)	12.02	(4.77)
Mexican Peso	12.48	0.65	11.83	11.28	1.20
Swedish Krona	11.95	0.31	11.65	5.81	6.15
Australian Dollar	8.28	1.71	6.57	3.14	5.14
Norwegian Krone	5.80	0.18	5.62	5.62	0.18
Malaysian Ringgit	5.62	0.39	5.23	6.66	(1.03)
British Pound Sterling	10.12	5.63	4.49	9.95	0.17
*Brazilian Real	4.25	-	4.25	5.05	(0.81)
*Colombian Peso	3.98	-	3.98	3.98	0.01
Polish Zloty	4.40	0.51	3.88	4.50	(0.10)
South African Rand	4.30	0.47	3.83	4.00	0.30
Canadian Dollar	5.31	1.64	3.68	-	5.31
*Egyptian Pound	3.67	-	3.67	1.87	1.81
*Indonesian Rupiah	2.60	-	2.60	2.85	(0.24)
*New Turkish Lira	2.53	-	2.53	2.92	(0.39)
Peruvian Nuevo Sol	2.07	-	2.07	2.07	0.01
*Philippine Peso	0.82	-	0.82	0.78	0.04
Danish Krone	-	0.49	(0.49)	-	-
Singapore Dollar	-	0.31	(0.31)	-	-
Swiss Franc	-	0.11	(0.11)	-	-
Total:	100.00	100.00	-	100.00	-

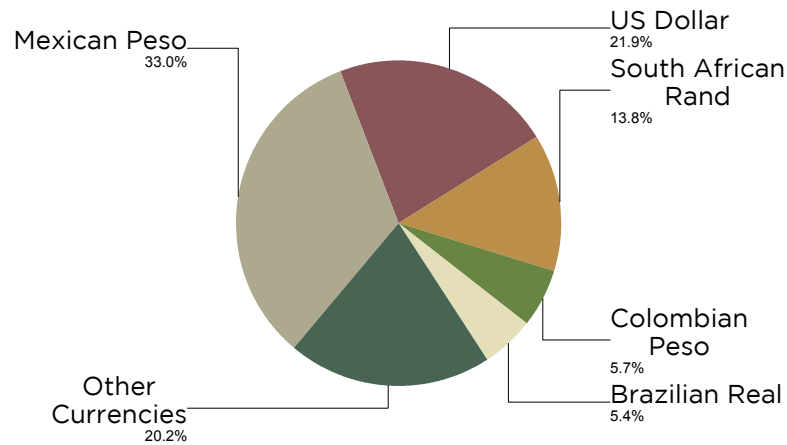
*Emerging Markets are defined as non-WGBI markets with local currency long-term debt rating below A- (or the equivalent) assigned by all NRSROs that provide such a rating. NRSRO means one of the following Nationally Recognized Statistical Rating Organizations: Standard & Poor's Ratings Services, Moody's Investors Service and Fitch, Inc.

Brandywine

Duration Summary

Period Ending: June 30, 2018

Source of Portfolio Duration by Currency Denomination



Duration Contribution by Currency (In Years)

Currency	6/30/2018				3/31/2018	
	0-3	>3-10	>10-20	>20+	Total	Total Change
Mexican Peso	-	-	0.21	1.07	1.28	0.16
US Dollar	0.02	0.18	0.03	0.61	0.85	(0.05)
South African Rand	-	-	-	0.54	0.54	(0.13)
*Colombian Peso	-	0.22	-	-	0.22	0.12
*Brazilian Real	-	0.21	-	-	0.21	(0.07)
Malaysian Ringgit	0.06	0.13	-	-	0.19	(0.06)
Peruvian Nuevo Sol	-	-	0.19	-	0.19	(0.01)
*Indonesian Rupiah	-	-	0.18	-	0.18	(0.03)
Australian Dollar	0.06	-	-	-	0.06	(0.01)
Polish Zloty	0.06	-	-	-	0.06	(0.02)
*New Turkish Lira	-	0.05	-	-	0.05	(0.02)
Euro	-	-	-	0.04	0.04	0.03
*Egyptian Pound	0.01	-	-	-	0.01	0.00
British Pound Sterling	0.00	-	-	-	0.00	(0.01)
Total	0.21	0.80	0.60	2.27	3.88	(0.11)

Duration Contribution by Country vs. FTSE WGBI (USD)

(In Years)

Country	6/30/2018				3/31/2018		Total Change	
	0-3	>3-10	>10-20	>20+	Total	Index	Active	Change
Japan	-	-	-	-	-	2.07	(2.07)	-
United States	0.01	0.15	0.03	0.61	0.81	2.13	(1.33)	(0.03)
Mexico	-	-	0.21	1.07	1.28	0.04	1.25	0.16
United Kingdom	0.00	0.01	-	-	0.01	0.71	(0.70)	(0.01)
France	-	0.00	-	-	0.00	0.68	(0.68)	(0.00)
South Africa	-	-	-	0.54	0.54	0.04	0.50	(0.13)
Italy	-	-	-	-	-	0.50	(0.50)	(0.00)
Germany	0.00	-	-	-	0.00	0.43	(0.43)	0.03
Spain	-	-	-	0.04	0.04	0.36	(0.31)	(0.00)
*Brazil	-	0.23	-	-	0.23	-	0.23	(0.08)
*Colombia	-	0.22	-	-	0.22	-	0.22	0.12
Belgium	-	-	-	-	-	0.19	(0.19)	-
Peru	-	-	0.19	-	0.19	-	0.19	(0.01)
*Indonesia	-	-	0.18	-	0.18	-	0.18	(0.03)
Malaysia	0.06	0.13	-	-	0.19	0.02	0.17	(0.06)
Netherlands	-	-	-	-	-	0.14	(0.14)	-
Austria	-	-	-	-	-	0.11	(0.11)	-
Canada	0.00	-	-	-	0.00	0.11	(0.11)	-
*Turkey	-	0.05	-	-	0.05	-	0.05	(0.02)
Ireland	-	-	-	-	-	0.05	(0.05)	-
Australia	0.06	-	-	-	0.06	0.11	(0.05)	(0.01)
Denmark	-	-	-	-	-	0.04	(0.04)	-
Poland	0.06	-	-	-	0.06	0.02	0.04	(0.02)
Finland	-	-	-	-	-	0.03	(0.03)	-
Singapore	-	-	-	-	-	0.02	(0.02)	-
Sweden	-	-	-	-	-	0.02	(0.02)	-
*Egypt	0.01	-	-	-	0.01	-	0.01	(0.00)
Supranational	0.01	-	-	-	0.01	-	0.01	(0.00)
*Jamaica	0.00	-	-	-	0.00	-	0.00	(0.00)
Other Countries	-	-	-	-	-	0.01	(0.01)	(0.00)
Total	0.21	0.80	0.60	2.27	3.88	7.83	(3.95)	(0.11)

*Emerging Markets are defined as non-WGBI markets with local currency long-term debt rating below A- (or the equivalent) assigned by all NRSROs that provide such a rating. NRSRO means one of the following Nationally Recognized Statistical Rating Organizations: Standard & Poor's Ratings Services, Moody's Investors Service and Fitch, Inc.

Manager Compliance Checklist

Period Ending: June 30, 2018

	I N D E X O U T P E R F O R M A N C E						DATABASE BENCHMARK		MANAGER TO BE PLACED ON WATCH LIST	MANAGER TO BE PLACED ON PROBATION
MANAGER	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)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
BIVIUM (RUSSELL 3000 +1%) ¹	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
BRANDYWINE FIXED INCOME (CITI WGBI)	YES	YES	YES	YES	YES	YES	YES	NO	NO	NO
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
KENNEDY (RUSSELL 2000 VALUE +2.5%)	NO	NO	NO	NO	NO	YES	YES	YES	NO	NO
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
MONDRIAN (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
NEXT CENTURY-SCG (RUSSELL 2000 GROWTH +2.5%)	NO	NO	NO	NO	NO	NO	NO	NO	YES	YES
PZENA (RUSSELL 1000 VALUE +2%)	NO	NO	YES	NO	NO	NO	YES	YES	NO	NO
TCW (RUSSELL 1000 GROWTH +2%) ²	NO	NO	NO	NO	NO	NO	YES	NO	YES	YES
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	NO	NO	NO	NO	NO	YES	NO	NO	YES	YES

1 Prior to 7/1/13, benchmark was linked to Russell 3000 +2%. 2 Prior to 7/1/13, benchmark was linked to Russell 1000 Growth +2.5%.

Policy Index and Benchmark History

Period Ending: March 31, 2018

Total Plan Policy Index	As of:													
	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 UST Bill										1%	1%	1%	1%	2%
BBgBarc Aggregate	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
BBgBarc High Yield	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%					
Bloomberg Commodity	0.75%	0.75%												
Citigroup WGBI ex US	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	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%	6.00%	6%										
Russell 3000	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoFComposite	9.00%													
Thomson Reuters CJA Global All PE	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%												
S&P Global Natural Resources	2.50%	2.50%												
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%

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:**

	6/1/01	1/1/80
BBgBarc Aggregate	75%	100%
BBgBarc High Yield	10%	
Citigroup WGBI ex US	15%	
	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%	
	100.0%	100.0%

Bivium Benchmark	As of:	
	7/1/13	8/1/08
Russell 3000 +1%	100%	
Russell 3000 +2%		100%
	100.0%	100.0%

Pzena Benchmark	As of:	
	2/1/06	
Russell 1000 Value +2%	100%	
	100.0%	

TCW Benchmark	As of:	
	7/1/13	7/1/99
Russell 1000 Growth +2%	100%	
Russell 1000 Growth +2.5%		100%
	100.0%	100.0%

Kennedy Benchmark	As of:	
	10/1/10	
Russell 2000 Value +2.5%	100%	
	100.0%	

Next Century Benchmark	As of:	
	11/1/02	
Russell 2000 Growth +2.5%	100%	
	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: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

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: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

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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September 2018

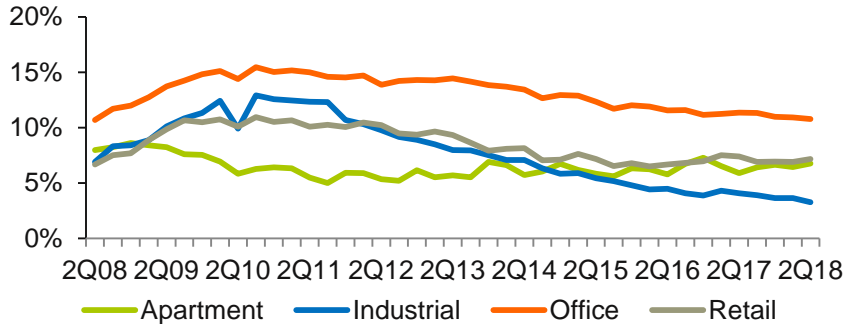
2Q 2018 Real Estate Performance Measurement Report

Callan

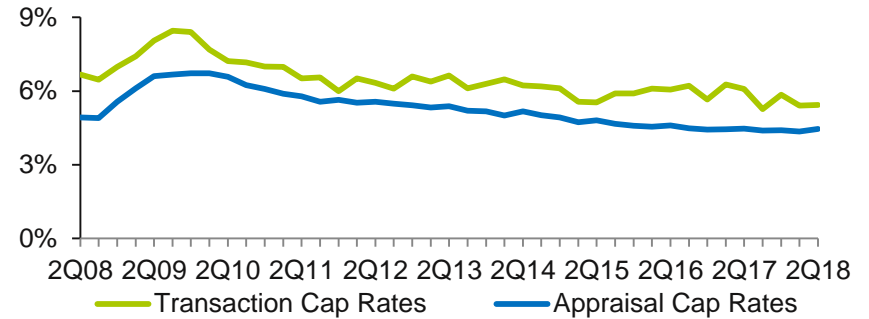
Avery Robinson, CAIA
Senior Vice President

Real Estate Market

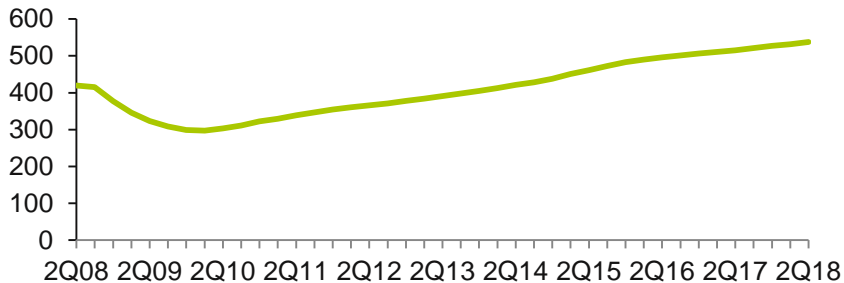
Vacancy by Property Type



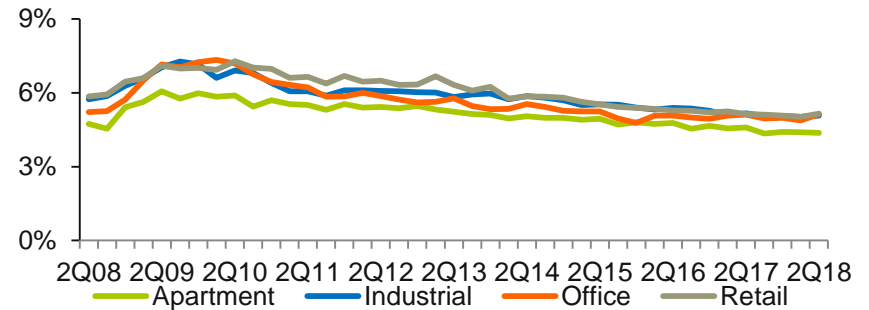
Current Value vs Transaction Cap Rates



Price Index



Current Value Cap Rates by Property Type



- Supply and demand fundamentals are balanced but peaking. Supply is in check and aided by strict commercial real estate lending standards. Demand continues on the back of synchronized domestic growth. Transaction volumes have begun to take a step back in recent quarters from current cycle peak levels but have yet to substantially affect pricing, as property remains expensive.
- The industrial sector is performing the strongest, benefitting as structural shifts in the economy, property markets, and consumer habits continue to dampen demand for traditional retail space. Office is performing as expected late in the cycle and tenant improvements and other capital expenditures are increasingly eroding cash flow. Multifamily remains strong due to positive demographic trends, except for the Class A luxury segment in prime markets such as New York.

Source: NCREIF. Note: Transaction capitalization rate is equal-weighted.

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 June 30, 2018 ("Quarter").

Funding Status as of June 30, 2018

	(\$) Millions	(%)
ACERA Plan Assets	8,103.815	100.00%
Real Estate Target ⁽¹⁾	648.305	8.00%
Plan's Real Estate Market Value	535.066	6.60%
Net Unfunded Commitments ⁽²⁾	37.606	.46%
RE Market Value & Unfunded Commitments	272.672	7.06%
Remaining Allocation	113.239	1.40%

	Target	Funded	Funded & Committed
Core	70.00%	81.35%	76.01%
Value-Added	30.00%	18.65%	23.99%

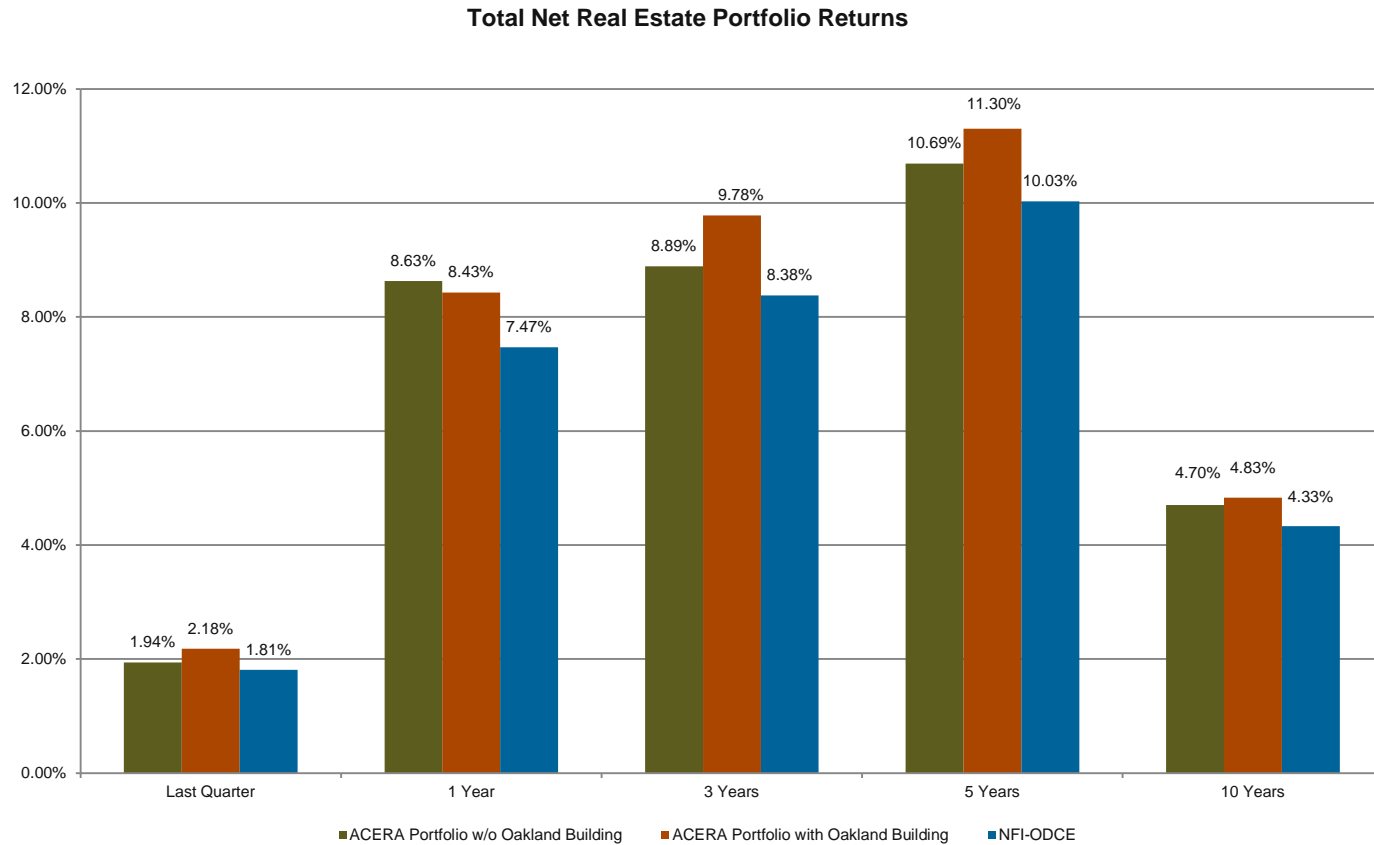
1. The Real Estate Target increase from 6% to 8% was adopted in August 2015.

2. Includes commitments to the Artemis Healthcare Fund and the newly-funded AEW Value VIII.

3. Subsequent to quarter end, in July 2018 the Board adopted the recommendation to invest \$35 million in Angelo Gordon Realty Value Fund X.

Portfolio Net Returns

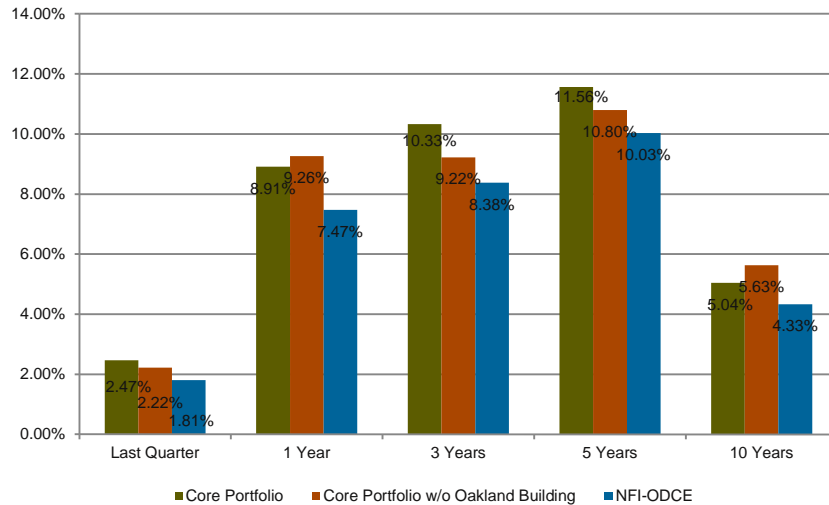
For Period Ended June 30, 2018



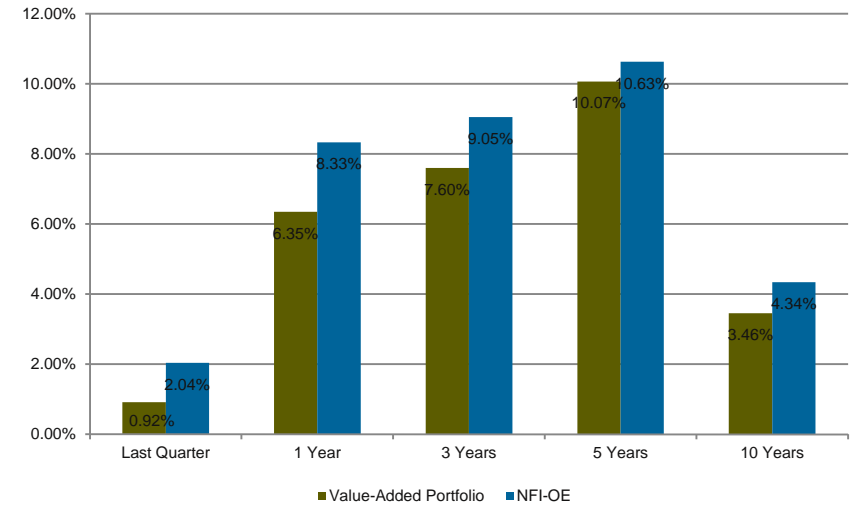
Portfolio Returns by Style

For Period Ended June 30, 2018

Net Core Returns



Net Value-Added Returns



Net Portfolio w/o Oakland Building		Last Quarter	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building		2.22%	9.26%	9.22%	10.80%	5.63%
Value-Added Portfolio		0.92%	6.35%	7.60%	10.07%	3.46%
Total Portfolio w/o Oakland Building		1.94%	8.63%	8.89%	10.69%	4.70%

Net Total Portfolio		Last Quarter	1 Year	3 Years	5 Years	10 Years
Core Portfolio		2.47%	8.91%	10.33%	11.56%	5.04%
Value-Added Portfolio		0.92%	6.35%	7.60%	10.07%	3.46%
Total Portfolio		2.18%	8.43%	9.78%	11.30%	4.83%

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 strong performance this quarter beating the benchmark by 67bps.
- The Lion Industrial Trust once again was the strongest performer.
- The Metlife Core Property Fund was also a strong performer this quarter.

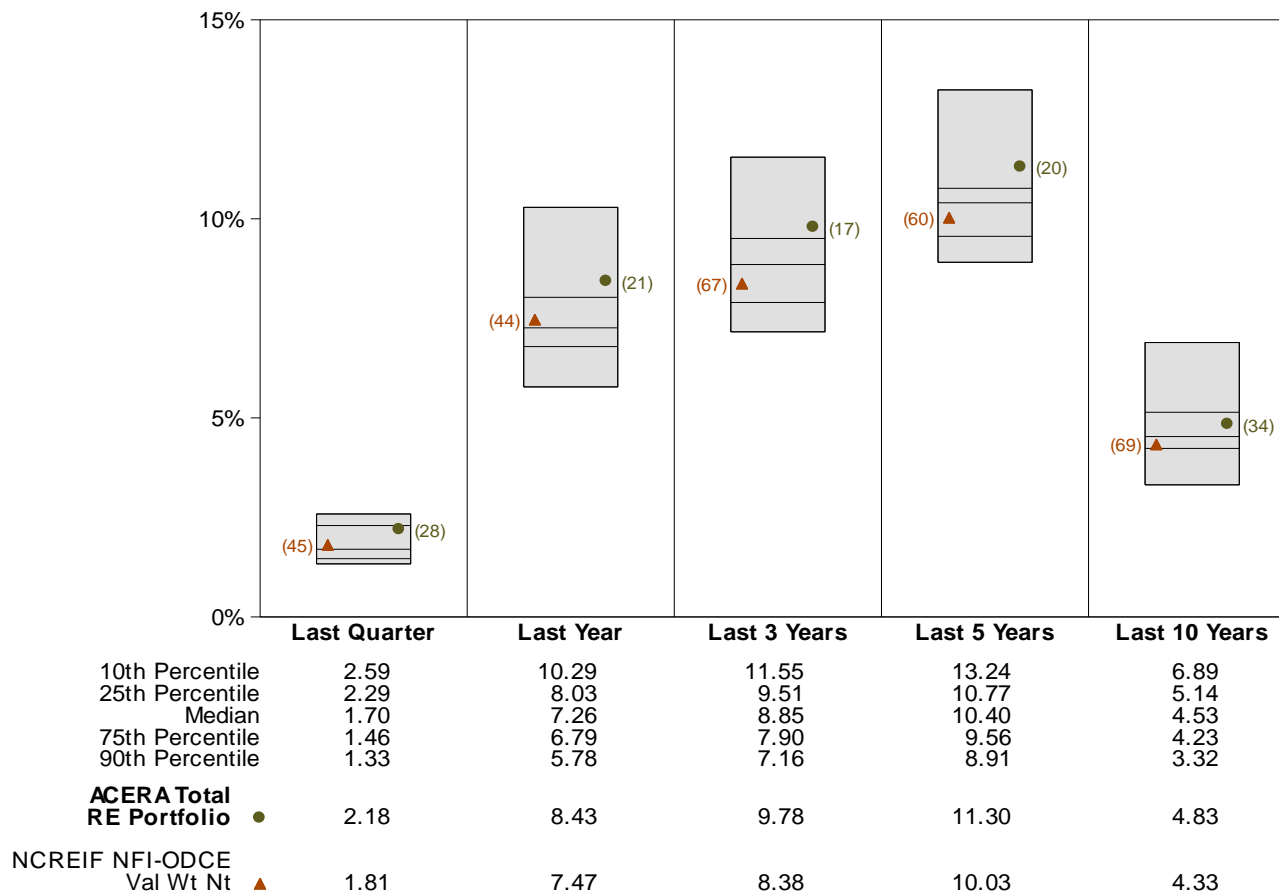
Value-Added Portfolio

- Artemis Health Care Fund I drove performance for the quarter.
- The CIM Commercial Trust Corporation slowed performance for the Value Added Portfolio with a return that was 89bps lower than the benchmark.

Performance vs. Peer Group

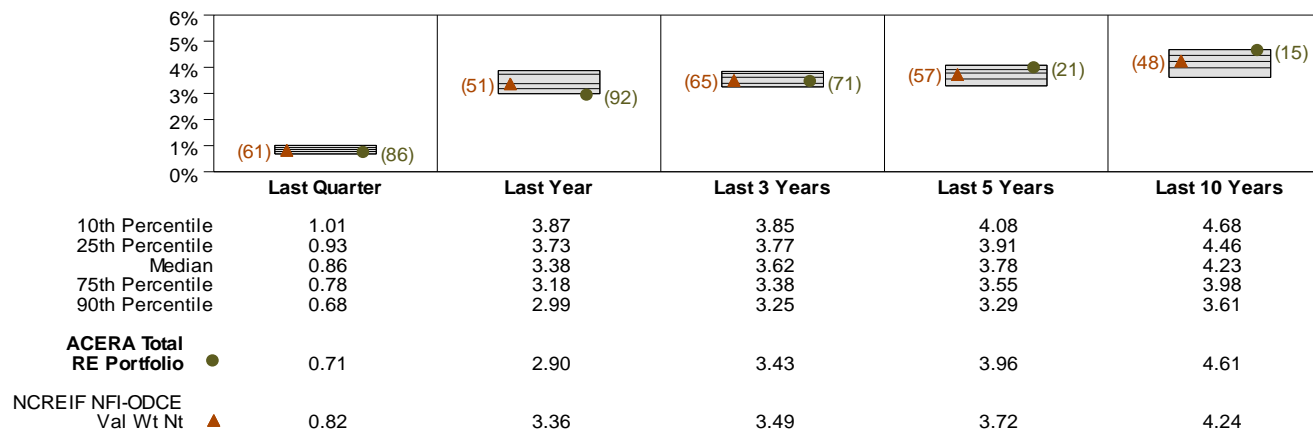
For Period Ended June 30, 2018

Performance vs Callan Open End Core Cmmingled Real Est

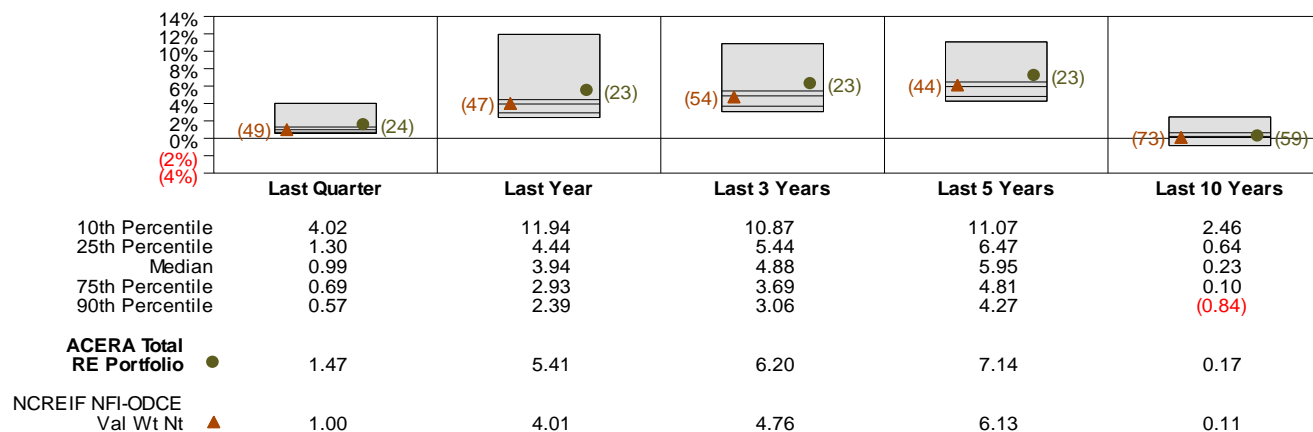


Performance vs. Peer Group

Income Rankings vs Callan OE Core Cmngld RE Periods ended June 30, 2018



Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended June 30, 2018

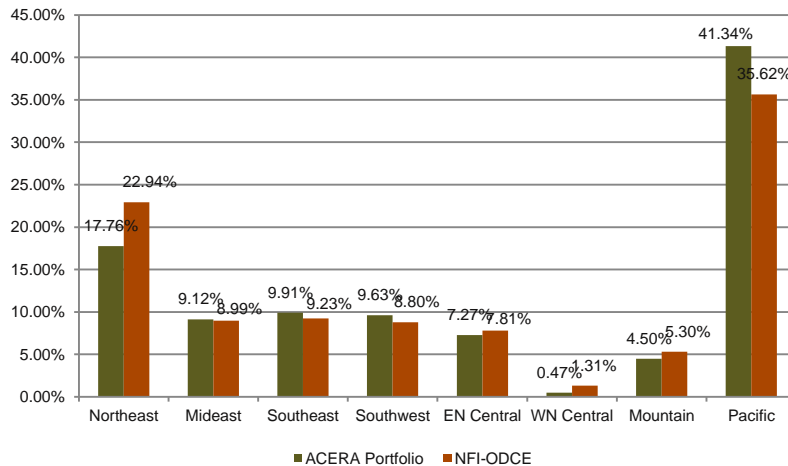


Diversification & Debt

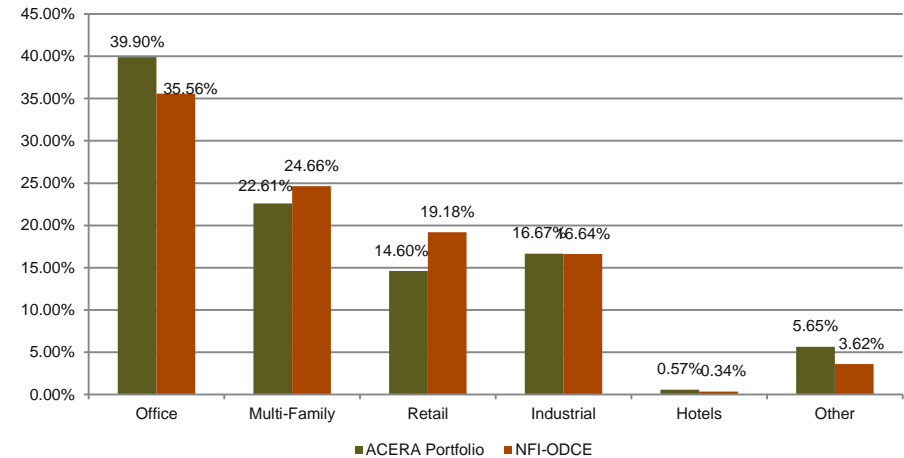
Diversification – Total Portfolio (excluding Oakland Building)

- 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, 2018, the loan-to-value (“LTV”) ratio of the Portfolio was 23.41%.

ACERA Real Estate Portfolio Snapshot – 2Q2018

Total Plan Assets	Allocation		Market Value		Commitments		Remaining Allocation	
8,103,814,920	648,305,194	8.00%	535,065,819	6.60%	38,202,640	0.47%	113,239,375	1.40%

Performance Summary	Quarter (%)		1 Year		3 Years		5 Years		10 Years	
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
ACERA	2.54%	2.18%	9.78%	8.43%	10.91%	9.78%	12.41%	11.30%	5.85%	4.83%
NFI-ODCE	2.05%	1.81%	8.44%	7.47%	9.37%	8.38%	11.04%	10.03%	5.30%	4.33%

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	2001	31,700,000	31,700,000	0	41,045,934	68,535,800	12.81%	11.96%	9.54%	2.18
Core Portfolio	1986	316,700,000	316,700,000	0	116,603,824	435,282,031	81.35%	75.93%		
Value Added Portfolio										
Value Added Portfolio	1988	182,748,645	146,660,530	38,202,640	109,779,135	99,783,788	18.65%	24.07%		
Total Current Portfolio										
ALAMEDA County Employees' Retirement Association	1986	499,448,645	463,360,530	38,202,640	226,382,959	535,065,819	100%	100%		

Quarterly Cash Flow Activity (\$)	Beginning Market Value	Contributions	Net Operating Income	Manager Fees	Appreciation	Distributions	Ending Market Value	LTV
Core Portfolio								
ACERA Oakland Building Portfolio	66,631,929	0	830,474	91,624	1,815,021	650,000	68,535,800	0.00%
Core Portfolio	428,398,832	0	4,805,311	950,033	6,711,756	3,683,835	435,282,031	
Value Added Portfolio								
Value Added Portfolio	94,995,840	5,400,746	815,561	928,239	1,001,262	1,655,140	99,783,788	
Total Current Portfolio	523,394,672	5,400,746	5,620,872	1,878,272	7,713,018	5,338,975	535,065,819	23.41%

1. Capital returned reflects all distributions made to ACERA, including both income and return of/on capital.

ACERA Property Diversification – 2Q2018

Property Type Diversification	Office	Multi-Family	Retail	Industrial	Hotel	Other
Core Portfolio						
ACERA Oakland Building Portfolio	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Core Portfolio	42.42%	17.48%	15.47%	19.65%	0.34%	4.64%
Value Added Portfolio						
Value Added Portfolio	28.86%	45.03%	10.81%	3.63%	1.58%	10.09%
Total Current Portfolio						
ACERA Portfolio w/o Oakland Bldg.	31.07%	25.93%	16.75%	19.12%	0.65%	6.48%
ACERA Portfolio with Oakland Bldg.	39.90%	22.61%	14.60%	16.67%	0.57%	5.65%
ODCE Index	35.56%	24.66%	19.18%	16.64%	0.34%	3.62%

Geographic Diversification	Northeast	Mideast	Southeast	Southwest	EN Central	WN Central	Mountain	Pacific	Other
Core Portfolio									
ACERA Oakland Building Portfolio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Core Portfolio	16.77%	8.42%	9.46%	8.91%	7.68%	0.51%	5.03%	43.22%	0.00%
Value Added Portfolio									
Value Added Portfolio	22.08%	12.15%	11.88%	12.76%	5.51%	0.29%	2.17%	33.16%	0.00%
Total Current Portfolio									
ACERA Portfolio w/o Oakland Bldg.	20.37%	10.46%	11.37%	11.04%	8.34%	0.54%	5.16%	32.72%	0.00%
ACERA Portfolio with Oakland Bldg.	17.76%	9.12%	9.91%	9.63%	7.27%	0.47%	4.50%	41.34%	0.00%
ODCE Index	22.94%	8.99%	9.23%	8.80%	7.81%	1.31%	5.30%	35.62%	0.00%

Detailed Returns

	Quarter			1 Year			3 Year			5 Year			NET IRR	Equity Mult.
	INC	APP	TNET	INC	APP	TNET	INC	APP	TNET	INC	APP	TNET		
Core Portfolio														
Oakland Building Portfolio	1.11%	2.72%	3.83%	3.06%	5.02%	7.04%	3.58%	13.23%	17.17%	5.02%	11.00%	16.47%	9.54%	2.18
Core Portfolio	0.90%	1.57%	2.48%	3.32%	5.45%	8.91%	3.64%	6.52%	10.33%	4.12%	7.22%	11.56%		
Core Portfolio w/o Oakland Building	0.87%	1.36%	2.22%	3.37%	5.74%	9.26%	3.65%	5.43%	9.22%	3.98%	6.62%	10.80%		
NFI-ODCE Value Weight Net	0.82%	1.00%	1.81%	3.36%	4.01%	7.47%	3.49%	4.76%	8.38%	3.72%	6.13%	10.03%		
Value Added Portfolio														
Value Added Portfolio	-0.15%	1.06%	0.92%	1.08%	5.23%	6.35%	2.50%	5.01%	7.60%	3.38%	6.53%	10.07%		
NFI-OE Value Weight Net	0.82%	1.22%	2.04%	3.40%	4.82%	8.33%	3.53%	5.37%	9.05%	3.72%	6.71%	10.63%		
Total Current Portfolio														
	0.65%	1.29%	1.95%	2.88%	5.63%	8.63%	3.41%	5.35%	8.89%	3.84%	6.65%	10.68%		
ACERA Portfolio w/o Oakland Bldg.														
	0.71%	1.47%	2.18%	2.90%	5.41%	8.43%	3.43%	6.20%	9.78%	3.96%	7.14%	11.30%		
ACERA Portfolio with Oakland Bldg.														
NFI-ODCE Value Weight Net	0.82%	1.22%	1.81%	3.36%	4.01%	7.47%	3.49%	4.76%	8.38%	3.72%	6.13%	10.03%		

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.

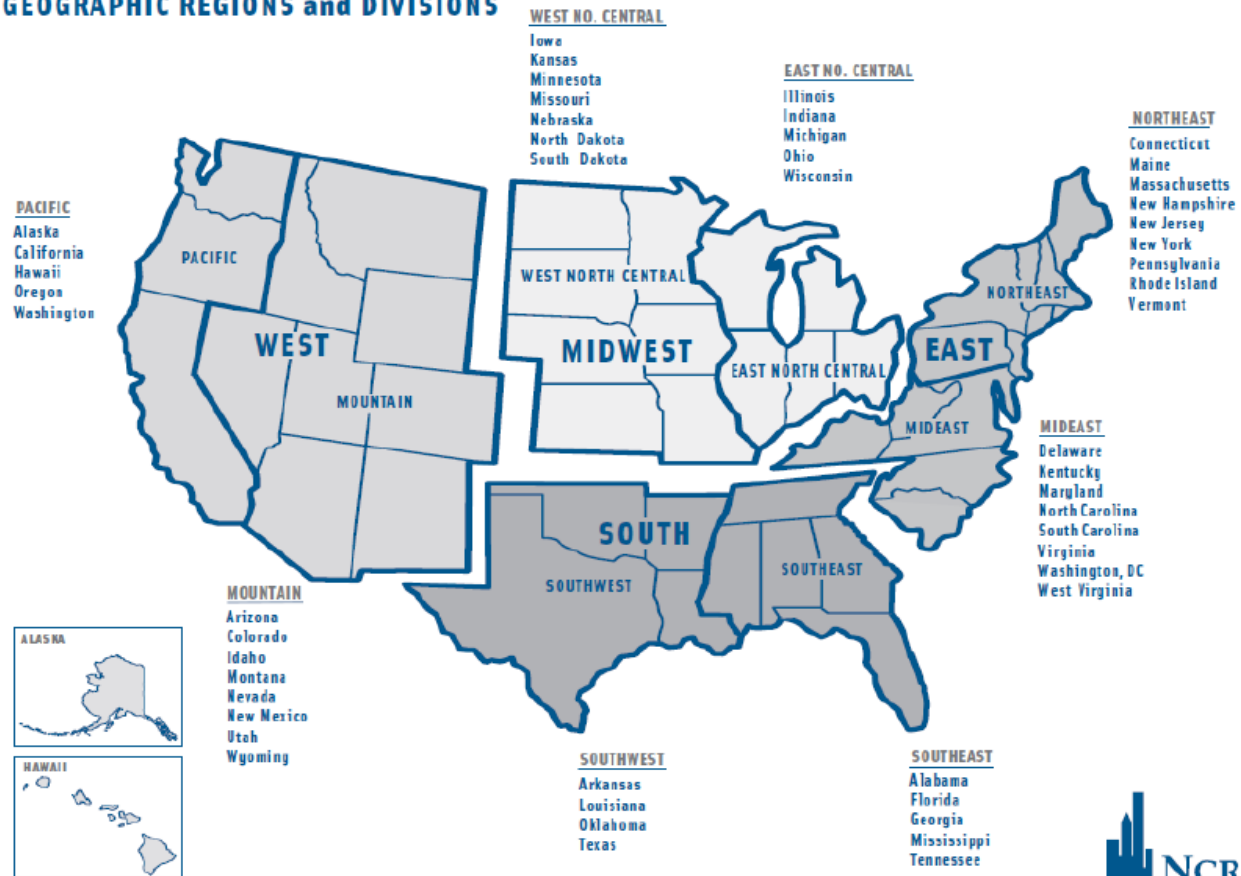
Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

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





Updated Investment Committee Workplan for 2018

September 12, 2018

	Action Items	Information Items
January 10	<ol style="list-style-type: none"> 1. Interview of ACERA's General Investment Consultant Finalists and Possible Motion by the Investment Committee to Recommend one Finalist to the Board 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$44 million Investment in Sycamore Partners III, L.P. as part of ACERA's Private Equity Investment Portfolio – Buyouts 	<ol style="list-style-type: none"> 1. Proposed Investment Committee Workplan for 2018
February 14	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$170 million Investment in the AQR Global Stock Selection (GSS) Institutional Fund L.P. as a part of ACERA's Absolute Return Portfolio – Other Alternatives/Opportunistic 	<ol style="list-style-type: none"> 1. 2018 Capital Market Assumptions 2. Review of Capital Group 3. Review of Mondrian Investment Partners 4. Proposed Investment Committee Workplan 2018
March 14	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt a \$20 million Investment in Clarion LIT as part of ACERA's Real Estate Portfolio – Value Added 2. Discussion of and Possible Motion to Recommend to the Board to Adopt a \$20 million Investment in Heitman Value Partners IV, L.P. as part of ACERA's Real Estate Portfolio – Value Added 3. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$10 million Investments in Khosla Ventures VI, L.P. and Khosla Ventures Seed D, L.P. as part of ACERA's Private Equities Portfolio – Venture Capital 	<ol style="list-style-type: none"> 1. Review of State Street Bank and Trust Company – Custodian Bank 2. Quarterly Performance Review for the Fourth Quarter of 2017 – Equities and Fixed Income 3. Quarterly Performance Review for the Fourth Quarter of 2017 – Real Estate 4. Oral Update on Implementation of New Manager Structure 5. <i>Report of ACERA's Proxy Voting Activities in 2017</i> 6. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the fourth quarter of 2017</i> 7. <i>Quarterly report on ACERA's rebalancing activities for the fourth quarter of 2017</i> 8. <i>Quarterly report on ACERA's securities lending activities for the fourth quarter of 2017</i>



Updated Investment Committee Workplan for 2018

September 12, 2018

Action Items		Information Items
		<i>9. Quarterly report on ACERA's Directed Brokerage (DB) Program for the fourth quarter of 2017</i> <i>10. Quarterly report on Investment Products and Services Introduction (IPSI) for the fourth quarter of 2017</i> <i>11. Updated Investment Committee Workplan 2018</i>
April 11	1. Discussion of and Possible Motion to Recommend to the Board that it make an additional investment of \$178 million in the Lighthouse Strategic Alpha Fund as part of ACERA's Absolute Return Portfolio – Funds of Hedge Funds 2. Discussion of and Possible Motion to Recommend to the Board that it adopt a \$25 million investment in AEW Partners Real Estate Fund VIII as part of ACERA's Real Estate Portfolio - Opportunistic 3. Discussion of and Possible Motion to Recommend to the Board to Approve the Finalists for ACERA's Emerging Markets Manager Search – International Equities	1. Education Session: Environmental, Social and Governance (ESG) – Part 1
May 9		1. Informational presentation related to Investment in the CFM Institutional Systematic Diversified Fund as part of ACERA's Absolute Return Portfolio – Alternative Premia Strategies 2. Report on ACERA's U.S. Small Cap Growth Manager Search – Domestic Equities 3. Update on Transition Management – Domestic Equities



Updated Investment Committee Workplan for 2018

September 12, 2018

Action Items		Information Items
June 13	<ol style="list-style-type: none"> 1. Interview of the Finalists for ACERA's Emerging Markets Manager Search – International Equities – and Possible Motion to Recommend one Finalist to the Board 2. Discussion of and Possible Motion to Recommend that the Board Approve an up to \$34 million Investment in the CapVest Equity Partners IV as part of ACERA's Private Equity Portfolio – Buyout 3. Discussion of and Possible Motion to Recommend that the Board approve an 18-month Extension of the Custody Contract with State Street Bank and Trust Company 	<ol style="list-style-type: none"> 1. Quarterly Performance Review for the First Quarter of 2018 – Equities and Fixed Income 2. Semiannual Performance Review for the Period Ending December 31, 2017 – Private Equities 3. Semiannual Performance Review for the Period Ending December 31, 2017 – Absolute Return 4. Semiannual Performance Review for the Period Ending December 31, 2017 – Real Assets 5. Quarterly Performance Review for the First Quarter of 2018 – Real Estate 6. <i>Quarterly report of ACERA's investment manager, consultant, and custodian fees for the first quarter of 2018</i> 7. <i>Quarterly report on ACERA's rebalancing activities for the first quarter of 2018</i> 8. <i>Quarterly report on ACERA's securities lending activities for the first quarter of 2018</i> 9. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the first quarter of 2018</i> 10. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2018</i> 11. <i>Updated Investment Committee Workplan 2018</i>
July 11	<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. Small Cap Growth Manager Search – Domestic Equities 2. Discussion of and Possible Motion to Recommend to the Board to Approve an Investment in ACERA's Real Estate Portfolio 	<ol style="list-style-type: none"> 1. Discussion of ACERA's International Equities Manager Structure and Emerging Investment Manager Search



Updated Investment Committee Workplan for 2018

September 12, 2018

Action Items		Information Items
August 8	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Approve an up to \$34 million Investment in Audax Private Equity Fund VI as part of ACERA's Private Equity Portfolio – Buyout 2. Discussion of and Possible to Recommend Amending the International Equity Manager Structure and Appointing Bivium to Manage a New Emerging Investment Manager Mandate - International Equity 	<ol style="list-style-type: none"> 1. Discussion of Proposed Revisions to ACERA's General Investment Guidelines, Policies and Procedures
September 12	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Approve an up to \$33 million Investment in ABRY Advanced Securities Fund IV as a part of ACERA's Private Equity Portfolio – Debt-Related/Special Situations 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Amended ACERA General Investment Guidelines, Policies and Procedures 	<ol style="list-style-type: none"> 1. Discussion of Proposed Revisions to ACERA's Real Asset Policy 2. Education Session: Portable Alpha 3. Quarterly Performance Review for the Second Quarter of 2018 – Equities and Fixed Income 4. Quarterly Performance Review for the Second Quarter of 2018 – Real Estate 5. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the second quarter of 2018</i> 6. <i>Quarterly report on ACERA's rebalancing activities for the second quarter of 2018</i> 7. <i>Quarterly report on ACERA's securities lending activities for the second quarter of 2018</i> 8. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the second quarter of 2018</i> 9. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2018</i> 10. <i>Updated Investment Committee Workplan for 2018</i>



Updated Investment Committee Workplan for 2018

September 12, 2018

Action Items		Information Items
October 10	<ol style="list-style-type: none">1. Discussion of and Possible Motion to Recommend to the Board to Approve the Finalists for ACERA's U.S. Small Cap Growth Manager Search – Domestic Equities2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Amended ACERA Real Assets Policy3. Discussion of and Possible Motion to Recommend to the Board to Adopt the 2018 – 2020 Investment Plan for ACERA's Real Assets Class4. Discussion of and Possible Motion to Recommend to the Board to Approve an Investment in ACERA's Real Estate Portfolio – Value Added	
November 7	<ol style="list-style-type: none">1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Amended ACERA Real Estate Investment Guidelines, Policies and Procedures2. Discussion of and Possible Motion to Recommend to the Board to Adopt the 2018 – 2020 Investment Plan for ACERA's Real Estate Asset Class3. Discussion of and Possible Motion to Recommend that the Board Approve an Investment in ACERA's Real Assets Portfolio – Liquid Pool4. Discussion of and Possible Motion to Recommend to the Board to Approve an Investment in ACERA's Real Assets Portfolio – Infrastructure	



Updated Investment Committee Workplan for 2018

September 12, 2018

	Action Items	Information Items
December 12	<ol style="list-style-type: none"> 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 2. Discussion of and Possible Motion to Recommend to the Board to Approve an Investment in ACERA's Real Assets Portfolio – Natural Resources 	<ol style="list-style-type: none"> 1. Quarterly Performance Review for the Third Quarter of 2018 – Equities and Fixed Income 2. Quarterly Performance Review for the Third Quarter of 2018 – Real Estate 3. Semiannual Performance Review for the Period Ending June 30, 2018 – Private Equity 4. Semiannual Performance Review for the Period Ending June 30, 2018 – Absolute Return 5. Semiannual Performance Review for the Period Ending June 30, 2018 – Real Assets 6. CA Gov Code § 7514.7 Information Report 7. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the third quarter of 2018</i> 8. <i>Quarterly report on ACERA's rebalancing activities for the third quarter 2018</i> 9. <i>Quarterly report on ACERA's securities lending activities for the third quarter of 2018</i> 10. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the third quarter of 2018</i> 11. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2018</i> 12. <i>Updated Investment Committee Workplan for 2018</i>

1.



Updated Investment Committee Workplan for 2018

September 12, 2018

Action Items		Information Items
Future Items:	1. Discussion of and Possible Motion to Approve an Investment in ACERA's Private Equities Portfolio – Buyout	1. Education Session: Investment Due Diligence 2. Review of AQR Capital Management 3. Review of Pzena 4. Review of Trust Company of the West 5. Review of Prudential Real Estate Investors 6. Review of UBS Trumbull Property Fund 7. Review of Heitman-Managed Funds 8. Review of AEW Capital Management 9. Review of CIM Group 10. Review of Lion Industrial Trust 11. Review of Franklin Templeton Investments 12. Review of Mondrian Investment Partners 13. Review of Deutsche Asset & Wealth Management 14. Review of JP Morgan SPF


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.



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: September 12, 2018
SUBJECT: Summary of Rebalancing and Cash Activities Completed in 2Q2018

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 June 30, 2018. 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 2Q2018 as all traditionally managed accounts remained within their respective target ranges.
2. Regarding significant cash-flows for 2Q2018, 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 \$52.0 million from the Total Fund to supplement for month-end payroll for the three-months ending June 30, 2018. Staff wired out \$20.0M in April, \$19.0M in May, and \$13M in June to ACERA'S Wells Fargo Bank account. Fiscal Services wired-in \$10.5M from Wells Fargo Bank back to State Street Bank, a/c#H11A.
 - b. **Total Fund Drawdowns¹:** To meet fund operating cash requirements (capital calls, new investment, month-end payroll), Staff withdrew \$205.5M on 5/29/2018 from the ACERA's traditional active equity managers to fund an additional \$178.0M in Lighthouse Alpha Fund. Subsequently, between 6/27-29/2018, Staff withdrew \$206.0M from ACERA's traditional active equity managers to initiate funding of CFM IS-Diversified Fund.
 - c. **Capital Calls and Distributions:** In general, aggregated wire-payments of \$63.0M were made to meet capital calls to ACERA's Private Equity, Absolute Return, Real Assets, and Real Estate funds and pay quarterly management fees. Cash and in-kind distributions and recyclable capital

¹ An interim change to normal drawdown of capital to fund and meet various obligations, Staff, with the concurrences of the Rebalancing Consultant and Verus, withdraws from the most overweight active managed account (vs. index account) in the most overweight of the traditional asset classes. This will continue until all traditional accounts are at or close to target. For example, in the U.S. Equity asset class, the Russell 1000 moves up to 80% from the 70% current allocation.


received from the same investments were \$44.4M. This dollar amount does not include other incidental income².

Reporting of rebalancing activities will continue to be submitted to the Investment Committee on a quarterly basis.

² Securities Lending Income (\$587.3K), Commission Recapture Income (\$18.7K), and Securities Litigation Income (\$36.5K), totaled \$642.7K. Incremental income does not include dividend and interest income from traditional managed accounts, which are reinvested.

**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: September 12, 2018
SUBJECT: Quarterly report on ACERA's Investment Products and Services
Introductions (IPSI) Program

In the second quarter of 2018, Staff received 17 investment products and services inquiries from prospective providers. We met with 7 managers who presented 8 Funds through the IPSI process. 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 second quarter of 2018.

ASSET CLASS	Q1 '18	Q2 '18	Q3 '18	Q4'18	TOTAL
U.S. Equities	0	6	0	0	0
Int'l Equities	0	1	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	1	0	0	0	0
Real Assets	0	1	0	0	0
Other Services	0	0	0	0	0
TOTAL:	1	8	0	0	9

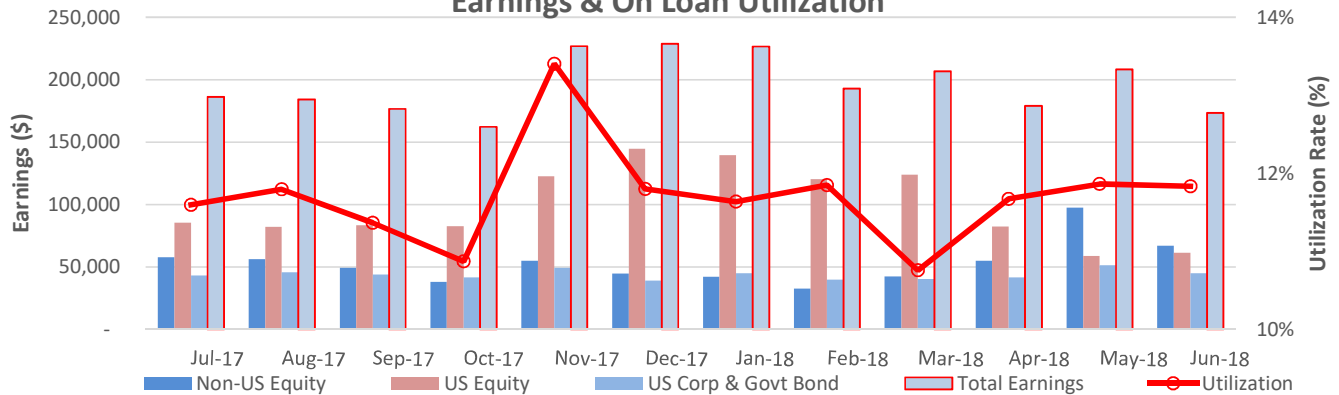
Alameda County Employees' Retirement Association

2nd Quarter 2018 Securities Lending Report

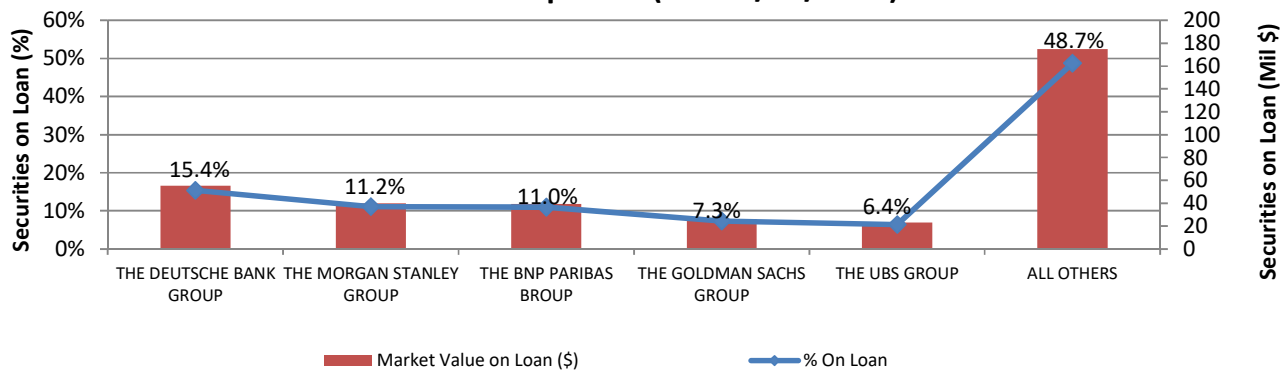
Quarterly Summary

In 2Q2018, ACERA's earnings from Securities Lending activities were \$560,531.46. Non-US Equities generated the highest earnings of \$219,486.89. As of June 30, 2018, the average market value of securities on loan was \$369,111,974.00. Deutsche Bank was the largest borrower of ACERA's securities with 15.4% as of the last day of the quarter.

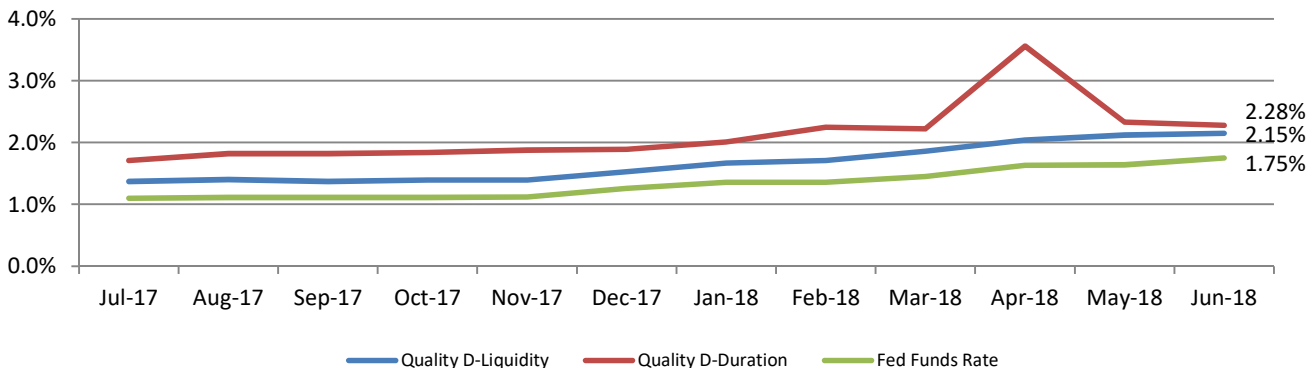
Earnings & On Loan Utilization



Borrower Exposure (as of 6/30/2018)



Average Monthly Collateral Yields vs. Average Fed Funds Rate



Notes:

- 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 6/29/2018, ACERA's combined NAV per unit of the Quality D Liquidity (1.0003) and Quality D Duration Funds (0.9557) was \$1.0001. As of 6/29/2018 Quality D Liquidity had 262,819,550.69 units and Quality D Duration had 1,141,149.37 units.
- Data represents past performance and is not necessarily indicative of future results.
- Data Source: my.statestreet.com and Securities Finance Business Intelligence

Securities Lending Report Provided by Staff

ICM 9/12/2018

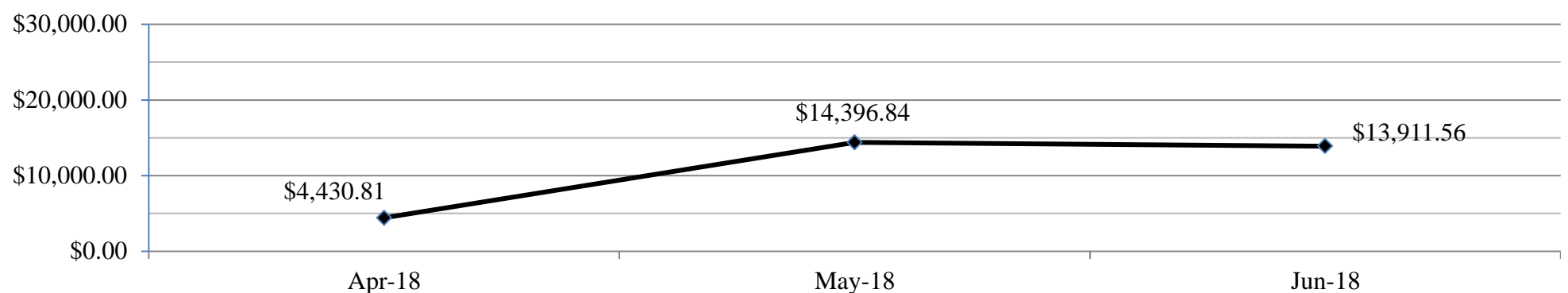


Alameda County Employees' Retirement Association Second Quarter 2018 Directed Brokerage Report

Quarterly Commentary

In 2Q18, the total recaptured dollar amount for ACERA's Directed Brokerage (DB) Program was \$32,739.65. Since inception¹, ACERA has recaptured \$1,999,721.28. For the quarter, Bivium-Alta directed the highest percentage (39.0%) of trading volume and Kennedy generated the largest directed commission dollar amount (\$35,103.07). CAPIS received the majority of ACERA's directed trades (85.3%) among all correspondent brokers within the network. The program continues to operate in compliance with ACERA's DB Policy.

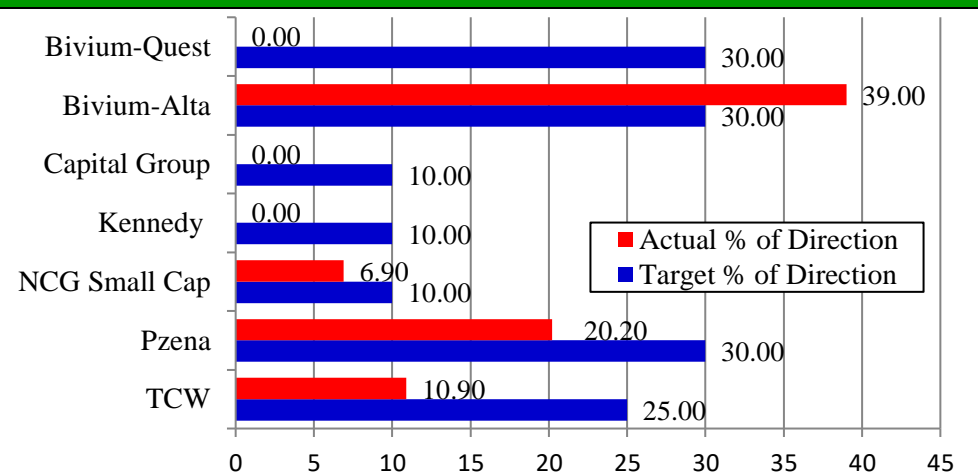
Monthly Recaptured



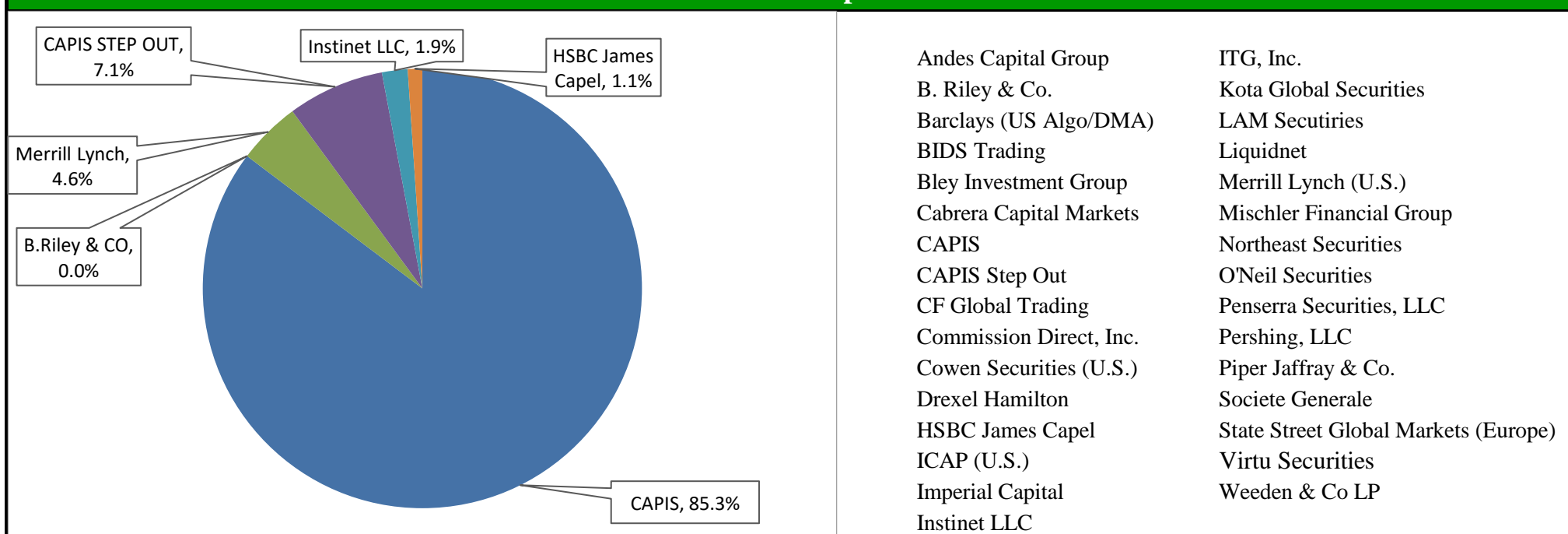
Directed Commission \$²

Manager	2Q18	YTD
Bivium-Alta	60.80	274.60
Capital Group	518.00	5,284.11
Kennedy	35,103.07	47,590.79
NCG Small Cap	3,463.47	4,858.27
Pzena	6,305.93	45,033.28
TCW	3,172.96	5,755.44
Total	\$48,624.23	\$108,796.49

Directed %³



Directed % to Correspondent Brokers⁴



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 Cupps & Vulcan do not participate in Commission Recapture; Mellon 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 (67.05% for 2Q18), 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.



**INVESTMENT MANAGER,
CONSULTANT, AND CUSTODIAN FEES**
For Quarter Ending June 30, 2018

**INVESTMENT NET ASSET VALUE AND INVESTMENT MANAGER FEES
FOR THE QUARTER ENDED JUN 30, 2018**

For the Quarter Ended Jun. 30, 2018	NAV ² (\$) As of 3/31/18	Q1 - Total Fees (\$)	bps of NAV	NAV ² (\$) As of 6/30/18	Q2 - Total Fees (\$)	bps of NAV
Name of Fund						
Domestic Equity¹						
Bivium Capital Partners (HI3A)	79,905,881	131,236	16.42	67,485,186	125,055	18.53
BlackRock Russell 1000 Index Fund (HIC4)*	1,774,920,976	-	N/A	1,824,129,693	45,603	0.25
Kennedy Capital Management (HI3X)	135,861,165	506,813	37.30	124,487,689	271,694	21.82
Mellon Capital Mgmt (HI1J)*	-	33,742	N/A	-	-	N/A
NCG Small Cap (HI2J)	135,233,140	433,794	32.08	121,497,564	305,939	25.18
Pzena (HI2O)	255,502,657	506,655	19.83	217,989,398	279,355	12.82
Trust Company of the West (HI1F)	265,430,392	341,158	12.85	215,194,885	230,241	10.70
Total Domestic Equity	2,646,854,211	1,953,397	7.38	2,570,784,415	1,257,887	4.89
International Equity¹						
AQR Capital Mgmt (HI2Y)	498,904,298	645,031	12.93	425,731,537	616,361	14.48
Capital Group (HI1M) ⁶	1,000,586,870	1,621,431	16.20	860,777,274	1,769,058	20.55
Franklin Templeton (HI4B)	269,917,462	406,183	15.05	214,133,364	388,876	18.16
Mondrian (HI2L) ³	696,303,125	614,797	8.83	649,853,808	614,797	9.46
Total International Equity	2,465,711,755	3,287,442	13.33	2,150,495,983	3,389,092	15.76
Fixed Income¹						
Baird Advisors (HI2G)	663,746,512	133,730	2.01	662,613,858	134,889	2.04
Brandywine Global Investment Mgmt (HI2H)	352,081,970	239,886	6.81	328,219,977	236,169	7.20
Loomis, Sayles & Company (HI1B)	334,073,610	264,746	7.92	331,289,061	266,411	8.04
Total Fixed Income	1,349,902,092	638,362	4.73	1,322,122,896	637,468	4.82
Real Estate^{5, 6}						
Total Real Estate	523,507,193	1,761,289	33.64	535,006,653	1,199,726	22.42
Private Equity^{4, 5, 6}						
Total Private Equity	476,594,593	5,934,701	124.52	469,728,942	5,855,052	124.65
Absolute Return^{5, 6}						
Total Absolute Return	349,640,146	869,460	24.87	612,680,002	943,601	15.40
Real Assets^{4, 5, 6}						
Total Real Assets	307,221,797	939,385	30.58	316,897,095	939,385	29.64
Cash	20,621,782			137,245,441		
TOTAL⁷	8,140,053,569	15,384,036	18.90	8,114,961,428	14,222,212	17.53

Notes:

*Assets were transitioned from Mellon Capital and contributed to the BlackRock Russell 1000 Index Fund on 4/5/18.

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 JUN 30, 2018**

	Q1 - Fees (\$)	Q2 - Fees (\$)
Consultant		
Doug McCalla	11,917	11,917
Callan Associates	56,250	56,250
Verus Advisory, Inc. ¹	165,000	165,000
Institutional Shareholders Services	13,575	13,575
Zeno Consulting Group	11,250	11,250
Sub-total Consultant	257,992	257,992
Custodian		
State Street Bank	136,462	136,462
TOTAL OF CONSULTANT / CUSTODIAN FEES ²	394,454	394,454

Notes:

1. Strategic Investment Solutions merged with Verus effective Jan. 1, 2016
2. Previous quarter's amounts may change as estimates are trued up to actual amounts. Each true up is made using the most recent information.