



Alameda County Employees' Retirement Association
BOARD OF RETIREMENT

INVESTMENT COMMITTEE/BOARD MEETING

THIS MEETING WILL BE CONDUCTED VIA TELECONFERENCE [SEE EXECUTIVE ORDER N-29-20 ATTACHED AT THE END OF THIS AGENDA.]

ACERA MISSION:

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

Wednesday, December 9, 2020
 9:30 a.m.

ZOOM INSTRUCTIONS	COMMITTEE MEMBERS	
<p>The public can view the Teleconference and comment via audio during the meeting. To join this Teleconference, please click on the link below. https://zoom.us/join Meeting ID: 863 7849 7178 Password: 488055 For help joining a Zoom meeting, see: https://support.zoom.us/hc/en-us/articles/201362193</p>	ELIZABETH ROGERS, CHAIR	ELECTED GENERAL
	TARRELL GAMBLE, VICE CHAIR	APPOINTED
	DALE AMARAL	ELECTED SAFETY
	OPHELIA BASGAL	APPOINTED
	KEITH CARSON	APPOINTED
	JAIME GODFREY	APPOINTED
	LIZ KOPPENHAVER	ELECTED RETIRED
	HENRY LEVY	TREASURER
	GEORGE WOOD	ELECTED GENERAL
	NANCY REILLY	ALTERNATE RETIRED¹
	DARRYL L. WALKER	ALTERNATE SAFETY²

The order of agenda items is subject to change without notice. Board and Committee agendas and minutes, and all documents distributed to the Board or a Committee in connection with a public meeting (unless exempt from disclosure), 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, December 9, 2020

Call to Order: 9:30 a.m.

Roll Call:

Public Input (The Chair allows public input on each agenda item at the time the item is discussed)

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

1. Discussion of and Possible Motion to Recommend that the Board Adopt a New Real Assets Structure, Approve Related Amendments to the Real Assets Policy, and Adopt the 2020 – 2026 Real Assets Investment Plan

9:30 – 10:00 Garrett Dinsmore, Verus Advisory Inc.
Clint Kuboyama, ACERA

2. Discussion of an Possible Motion to Recommend to the Board to Adopt the 2021 – 2023 Private Equity Investment Plan

10:00 – 10:30 Faraz Shooshani, Verus Advisory Inc.
John Ta, ACERA

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

1. Semiannual Performance Review for the Period Ending September 30, 2020 – Equities and Fixed Income

Margaret Jadallah, Verus Advisory Inc.
Clint Kuboyama, ACERA
Thomas Taylor, ACERA

2. Semiannual Performance Review for the Period Ending September 30, 2020 – Absolute Return

Margaret Jadallah, Verus Advisory Inc.
Clint Kuboyama, ACERA

3. Semiannual Performance Review for the Period Ending June 30 2020 – Private Equity

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

4. Semiannual Performance Review for the Period Ending June 30, 2020 – Private Credit

Faraz Shooshani, Verus Advisory Inc.
Clint Kuboyama, ACERA

INVESTMENT COMMITTEE/BOARD MEETING

NOTICE and AGENDA, Page 3 of 3 – Wednesday, December 9, 2020

5. Semiannual Performance Review for the Period Ending June 30, 2020 – Real Assets

Garrett Dinsmore, Verus Advisory Inc.
Faraz Shooshani, Verus Advisory Inc.
Clint Kuboyama, ACERA

6. Semiannual Performance Review for the Period Ending September 30, 2020 – Real Estate

Avery Robinson, Callan LLC
Thomas Taylor, ACERA

7. CA Gov. Code § 7514.7 Alternative Investment Vehicles Information Report³

John Ta, ACERA

Adjournment into Closed Session

1. Consider the Purchase or Sale of Particular, Specific Pension Fund Investments (CA Gov. Code § 54956.81) (One Investment)

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

Trustee Remarks

Future Discussion Items

Establishment of Next Meeting Date

January 13, 2021 at 9:30 a.m.

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.

**EXECUTIVE DEPARTMENT
STATE OF CALIFORNIA**

EXECUTIVE ORDER N-29-20

WHEREAS on March 4, 2020, I proclaimed a State of Emergency to exist in California as a result of the threat of COVID-19; and

WHEREAS despite sustained efforts, the virus continues to spread and is impacting nearly all sectors of California; and

WHEREAS the threat of COVID-19 has resulted in serious and ongoing economic harms, in particular to some of the most vulnerable Californians; and

WHEREAS time bound eligibility redeterminations are required for Medi-Cal, CalFresh, CalWORKs, Cash Assistance Program for Immigrants, California Food Assistance Program, and In Home Supportive Services beneficiaries to continue their benefits, in accordance with processes established by the Department of Social Services, the Department of Health Care Services, and the Federal Government; and

WHEREAS social distancing recommendations or Orders as well as a statewide imperative for critical employees to focus on health needs may prevent Medi-Cal, CalFresh, CalWORKs, Cash Assistance Program for Immigrants, California Food Assistance Program, and In Home Supportive Services beneficiaries from obtaining in-person eligibility redeterminations; and

WHEREAS under the provisions of Government Code section 8571, I find that strict compliance with various statutes and regulations specified in this order would prevent, hinder, or delay appropriate actions to prevent and mitigate the effects of the COVID-19 pandemic.

NOW, THEREFORE, I, GAVIN NEWSOM, Governor of the State of California, in accordance with the authority vested in me by the State Constitution and statutes of the State of California, and in particular, Government Code sections 8567 and 8571, do hereby issue the following order to become effective immediately:

IT IS HEREBY ORDERED THAT:

1. As to individuals currently eligible for benefits under Medi-Cal, CalFresh, CalWORKs, the Cash Assistance Program for Immigrants, the California Food Assistance Program, or In Home Supportive Services benefits, and to the extent necessary to allow such individuals to maintain eligibility for such benefits, any state law, including but not limited to California Code of Regulations, Title 22, section 50189(a) and Welfare and Institutions Code sections 18940 and 11265, that would require redetermination of such benefits is suspended for a period of 90 days from the date of this Order. This Order shall be construed to be consistent with applicable federal laws, including but not limited to Code of Federal Regulations, Title 42, section 435.912, subdivision (e), as interpreted by the Centers for Medicare and Medicaid Services (in guidance issued on January 30, 2018) to permit the extension of

otherwise-applicable Medicaid time limits in emergency situations.

2. Through June 17, 2020, any month or partial month in which California Work Opportunity and Responsibility to Kids (CalWORKs) aid or services are received pursuant to Welfare and Institutions Code Section 11200 et seq. shall not be counted for purposes of the 48-month time limit set forth in Welfare and Institutions Code Section 11454. Any waiver of this time limit shall not be applied if it will exceed the federal time limits set forth in Code of Federal Regulations, Title 45, section 264.1.
3. Paragraph 11 of Executive Order N-25-20 (March 12, 2020) is withdrawn and superseded by the following text:

Notwithstanding any other provision of state or local law (including, but not limited to, the Bagley-Keene Act or the Brown Act), and subject to the notice and accessibility requirements set forth below, a local legislative body or state body is authorized to hold public meetings via teleconferencing and to make public meetings accessible telephonically or otherwise electronically to all members of the public seeking to observe and to address the local legislative body or state body. All requirements in both the Bagley-Keene Act and the Brown Act expressly or impliedly requiring the physical presence of members, the clerk or other personnel of the body, or of the public as a condition of participation in or quorum for a public meeting are hereby waived.

In particular, any otherwise-applicable requirements that

- (i) state and local bodies notice each teleconference location from which a member will be participating in a public meeting;
- (ii) each teleconference location be accessible to the public;
- (iii) members of the public may address the body at each teleconference conference location;
- (iv) state and local bodies post agendas at all teleconference locations;
- (v) at least one member of the state body be physically present at the location specified in the notice of the meeting; and
- (vi) during teleconference meetings, a least a quorum of the members of the local body participate from locations within the boundaries of the territory over which the local body exercises jurisdiction

are hereby suspended.

A local legislative body or state body that holds a meeting via teleconferencing and allows members of the public to observe and address the meeting telephonically or otherwise electronically, consistent with the notice and accessibility requirements set forth below, shall have satisfied any requirement that the body allow

members of the public to attend the meeting and offer public comment. Such a body need not make available any physical location from which members of the public may observe the meeting and offer public comment.

Accessibility Requirements: If a local legislative body or state body holds a meeting via teleconferencing and allows members of the public to observe and address the meeting telephonically or otherwise electronically, the body shall also:

- (i) Implement a procedure for receiving and swiftly resolving requests for reasonable modification or accommodation from individuals with disabilities, consistent with the Americans with Disabilities Act and resolving any doubt whatsoever in favor of accessibility; and
- (ii) Advertise that procedure each time notice is given of the means by which members of the public may observe the meeting and offer public comment, pursuant to subparagraph (ii) of the Notice Requirements below.

Notice Requirements: Except to the extent this Order expressly provides otherwise, each local legislative body and state body shall:

- (i) Give advance notice of the time of, and post the agenda for, each public meeting according to the timeframes otherwise prescribed by the Bagley-Keene Act or the Brown Act, and using the means otherwise prescribed by the Bagley-Keene Act or the Brown Act, as applicable; and
- (ii) In each instance in which notice of the time of the meeting is otherwise given or the agenda for the meeting is otherwise posted, also give notice of the means by which members of the public may observe the meeting and offer public comment. As to any instance in which there is a change in such means of public observation and comment, or any instance prior to the issuance of this Order in which the time of the meeting has been noticed or the agenda for the meeting has been posted without also including notice of such means, a body may satisfy this requirement by advertising such means using "the most rapid means of communication available at the time" within the meaning of Government Code, section 54954, subdivision (e); this shall include, but need not be limited to, posting such means on the body's Internet website.

All of the foregoing provisions concerning the conduct of public meetings shall apply only during the period in which state or local public health officials have imposed or recommended social distancing measures.

All state and local bodies are urged to use sound discretion and to make reasonable efforts to adhere as closely as reasonably possible to the provisions of the Bagley-Keene Act and the Brown Act, and other applicable local laws regulating the conduct of public meetings, in order to maximize transparency and provide the public access to their meetings.

IT IS FURTHER ORDERED that as soon as hereafter possible, this Order be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this Order.

This Order is not intended to, and does not, create any rights or benefits, substantive or procedural, enforceable at law or in equity, against the State of California, its agencies, departments, entities, officers, employees, or any other person.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 17th day of March 2020.



GAVIN NEWSOM
Governor of California

ATTEST:

ALEX PADILLA
Secretary of State



TO: Members of the Investment Committee

FROM: Clint Kuboyama, Investment Officer *Clint Kuboyama*

DATE: December 9, 2020

SUBJECT: Discussion of and Possible Motion to Recommend that the Board Adopt a New Real Assets Structure, Approve Related Amendments to the Real Assets Policy, and Adopt the 2020 – 2026 Real Assets Investment Plan

Recommendation:

Adopt a new Real Assets structure, approve the related amendments to the Real Assets Policy, and adopt the 2020 – 2026 Real Assets Investment Plan.

Background/Discussion:

On November 4, 2020, Staff, Verus Advisory Inc. (“Verus”), and the Investment Committee (IC) discussed a recommended change in the Real Assets structure and a proposed Real Assets Investment Plan consistent with the proposed structural change.

The recommended structural change involved shifting the target weightings for the investment sub-classes in the Real Assets Asset Class shown in Table 1 below:

Table 1: Proposed Real Assets Structural Change			
<u>Investment Sub-Class</u>	<u>Current Targets*</u>	<u>Proposed Targets</u>	<u>Difference</u>
Commodities	15%	5%	-10%
Listed Natural Resources	10%	10%	0%
Listed Infrastructure	10%	10%	0%
Private Natural Resources	40%	25%	-15%
Private Infrastructure	25%	50%	25%
*Current Targets included in current Real Assets Policy.			

The primary reason for these recommended changes is that investment opportunities in the private infrastructure market are more attractive on a risk/return basis than the commodities and private natural resources markets, in Staff’s and Verus’ views. (A deeper look at the rationale can be found in Attachment #2 – December 2020 Real Assets Structure and Investment Plan Alameda County Employees’ Retirement Association.)

Staff and Verus are now recommending that the IC adopt the same structural changes first discussed at the November 4, 2020 IC meeting and shown in Table 1 above. As the Real Assets structure is defined within the Real Assets (RA) Policy, Staff and Verus are also recommending that the proposed structural changes are reflected across the RA Policy. Attachment #1 is the current RA Policy redlined to reflect the structural changes shown in Table 1. The related redlined changes to the RA Policy are found on: 1) Page 5, Section VI STRATEGIC ALLOCATIONS TO REAL ASSETS; 2) Page 10, Section X PERFORMANCE EVALUATION CRITERIA; 3) Page 17, Appendix III – Compliance Checklist Template for RA Investment/Commitment; and 4) Page 19, Addendum – Interim Asset Allocation Ranges (Expected 5-8 Years) For Real Assets Portfolio.

Finally, Staff and Verus recommend the adoption of the 2020 – 2026 Real Assets Investment Plan described and exhibited in Attachment #2. It is the same investment plan discussed at the November 4, 2020 IC meeting and is consistent with the proposed changes to the Real Assets structure and the RA Policy.

Attachments:

- #1 Redlined ACERA Real Assets Policy, prepared by Staff
- #2 December 2020 Real Assets Structure and Investment Plan Alameda County Employees' Retirement Association, prepared by Verus

**Alameda County Employees'
Retirement Association**

ACERA

REAL ASSETS POLICY

**Amended: December 17, 2020 ~~May 15,~~
~~2019~~**

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 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.

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

The RA portfolio is principally intended to:

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

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

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. Liquid strategies 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

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

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

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. Privately-placed Energy Funds
9. Privately-placed Mining Funds
10. Privately-placed Infrastructure Funds
11. Farmland, Timber
12. Publicly-traded Energy Master Limited Partnerships (MLP’s)
13. Other Inflation-Hedging Assets

V. STRATEGIC OBJECTIVE OF REAL ASSETS INVESTMENTS

The strategic objective of real assets investments is to generate a positive, domestic inflation-sensitive return in excess of the asset class’s assigned benchmark. 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.

VI. STRATEGIC ALLOCATIONS TO REAL ASSETS

The target allocation to the Real Assets Asset Class is 5.0% of the total Fund. The RA target portfolio will consist of both liquid and illiquid investments with a target allocation between the two pools of investments, at commitment level, as follows:

Permanent RA Portfolio¹	Target Allocations
Liquid Pool (publicly-traded)	3525%
Commodities	15 5%
Natural Resources	10%
Infrastructure	10%
Illiquid Pool (privately-placed)	6575%
Natural Resources	40 25%
Infrastructure	25 50%

The Liquid Pool serves four purposes:

1. Provide a high correlation to inflation
2. Allow ACERA to fund its RA target allocation, providing the Total Fund with RA risk exposures to the private real asset strategies
3. Act as a drawdown vehicle to fund commitments made by ACERA within the illiquid portfolio.
4. Ensure that ACERA has sufficient liquidity either to meet the Total Fund's needs and/or to take advantage of attractive investment opportunities

It is expected that the liquid pool will comprise the majority of the RA portfolio until privately-placed commitments are made and investment dollars are called.

The Illiquid Pool 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

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. 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 positive return that exceeds the RA Policy benchmark. 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

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

within the RA Portfolio to improve its risk/return posture based upon an assessment of the relative attractiveness of all available opportunities.

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 exceed the custom, blended benchmark net of all fees and expenses over a 7-10-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 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 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 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

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. 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;
4. Monitoring the RA Portfolio for performance and compliance with the Policy;
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;
6. Conducting comprehensive annual reviews of ACERA's RA Portfolio and the individual investments in the Portfolio;
7. Reporting to the IC any violations of the Policy with appropriate recommendations;
8. Assisting ACERA's legal department in contract negotiations with the selected Managers;
9. Evaluating RA investment opportunities with Consultant's input on an ongoing basis; and
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, 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
- 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 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 LargeMidCap Commodity and Resources Index	50 35%
S&P Global Infrastructure Index	35 60%
Bloomberg Commodity Index	15 5%

Individual managers will be measured against their respective benchmarks.

Privately-placed and publicly-traded Natural Resources	S&P Global LargeMidCap Commodity and Resources Index
Privately-placed and publicly-traded Infrastructure	S&P Global Infrastructure Index
Privately-placed and publicly-traded Commodities	Bloomberg Commodity Index

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

October 18, 2018

May 15, 2019²

December 17, 2020

²This amendment reflects the updated “Natural Resources” index in the Real Assets Portfolio benchmark composite (see Section X Performance Evaluation Criteria) from the “S&P Global LargeMidCap Natural Resources Index” to the “S&P Global LargeMidCap

Commodity and Resources Index” as reported to the Investment Committee on May 15, 2019.

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 (separately prepared)
Compliance Checklist	Staff
Comprehensive Due Diligence Report (Available to Trustees upon request owing to confidentiality)	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 (%):

Period Ending Dates	YTD	1Year	3Years	5Years	Since Inception
Gross Fund/Account Results					
Net Fund/Account Results					
Benchmark					
Relative Performance: Account – Benchmark					
Gross Fund/Account --- Benchmark					
Net Fund/Account --- Benchmark					

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

<u>RA Policy</u>	<u>Investment Fund</u>	<u>In Compliance</u>
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, 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**

<u>By sub-asset class</u> : among commodities natural resources, infrastructure, and debt-related/special situations.	<i>Specific investment type.</i>	<i>Yes, No, or N/A</i>
<u>By vintage year</u> : 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>
<u>By Investment Fund</u> : <=20% of the target allocation to total RA may be committed to any one illiquid private investment vehicle.	<i>Specific commitments to the Investment Fund.</i>	<i>Yes, No, or N/A</i>
<u>By geography</u> : 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. Investment Allocations

<u>RA Portfolio</u> : range 0-5% of the total Fund. <u>Liquid Pool</u> (publicly-traded): range 20 10% - 100% Commodities: range 100 %- 40 10% Natural Resources: range 5%- 30 35% Infrastructure: 5%- 30 55% <u>Illiquid Pool</u> (privately-placed): range 0- 80 90% Natural Resources: range 0-30% Infrastructure: range 0- 50 60%	<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 YEARSApproved: *DATE***Investment Fund****In compliance**

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

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 Absolute Return investments 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.³

³*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 rapid transition of the Real Assets Portfolio from one that is highly exposed to exchange-traded commodities into an investment fulfillment 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 adopt an interim asset allocation range. This interim asset allocation range temporarily accommodates higher-than-target capital to the Liquid Pool, which can be invested in immediately, and lower-than-target capital to the Illiquid Pool, which takes time to allocate capital to.

The Illiquid Pool (~~65~~75% 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), they 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 allocated to. This over 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, as this process plays out, both the Liquid and Illiquid Pools will increasingly move towards their target asset allocation until finally reaching them in approximately 8 years. This addendum and the below Interim Asset Allocation Ranges demonstrate the wide ranges these sub-asset classes are expected to assume during this process and over the interim period.

RA Asset Sub Class	Interim Asset Allocation Ranges
Liquid Pool (publicly-traded)	20<u>10</u>%-100%
Commodities	100 <u>20</u> %- 20 <u>10</u> %
Natural Resources	5%- 45 <u>35</u> %
Infrastructure	5%- 35 <u>55</u> %
Illiquid Pool (privately-placed)	0%-80<u>90</u>%
Natural Resources	0-50<u>30</u>%
Infrastructure	0-30<u>60</u>%



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DECEMBER 2020

Real Asset Structure and Investment Plan

Alameda County Employees' Retirement Association

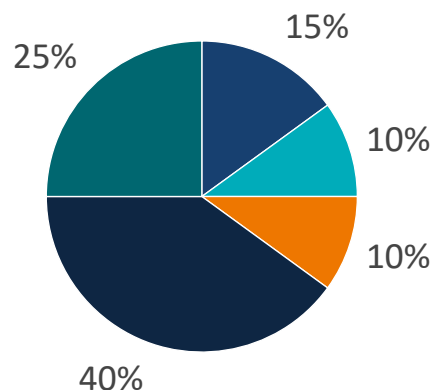
Introduction

- We are recommending an increase in allocation to infrastructure and a reduction to natural resources and commodities.
 - The opportunity set in natural resources has been significantly reduced given the current distressed environment and reduced demand outlook in energy, along with the persistent low returns in timber and farmland.
 - Low global growth since the GFC and the economic challenges caused by the COVID-19 pandemic have contributed to a low inflationary environment and slowing demand for commodities.
 - We expect infrastructure to provide the most compelling investment opportunities within real assets for the foreseeable future.
- We are also recommending a reduction of the liquid portion of the portfolio by 10% with the liquid pool being used to fund private commitments until the targeted mix is achieved.
 - While some liquidity in the portfolio is necessary, the public indices do not provide as much diversification to ACERA's total fund as pure real asset exposure.

Real Asset portfolio design

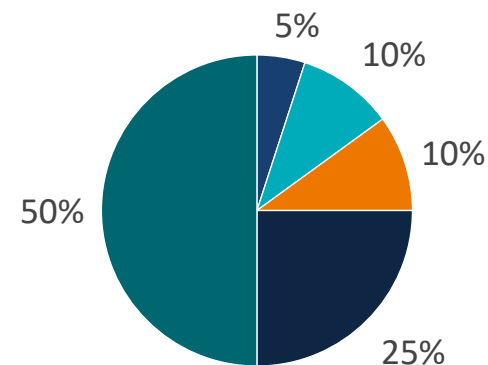
- The proposed changes would make infrastructure the majority allocation within the real asset portfolio at 60% (listed & private).
- The private infrastructure portfolio will be comprised of anchor positions in open-end core funds supplemented by investments in closed-end value add strategies and occasional opportunistic investments when there are attractive market dynamics in a specific sector.
- Private natural resource investments will be made when compelling opportunities arise in sectors such as mining, timberland, and agriculture.
- Listed real assets will be invested in a mix of passive index funds managed by SSGA.

Current Real Assets Target



■ Commodities ■ Listed Natural Resources ■ Listed Infrastructure
■ Private Natural Resources ■ Private Infrastructure

Proposed Real Assets Target

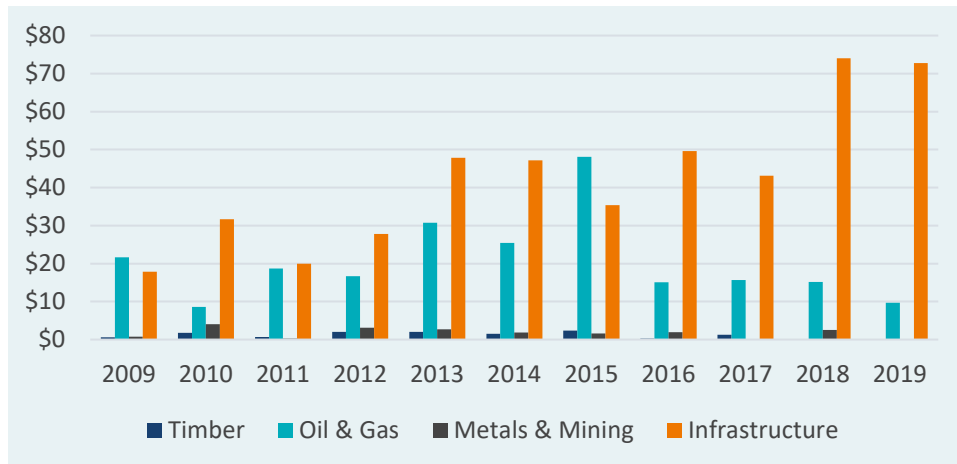


■ Commodities ■ Listed Natural Resources ■ Listed Infrastructure
■ Private Natural Resources ■ Private Infrastructure

Challenges facing natural resources

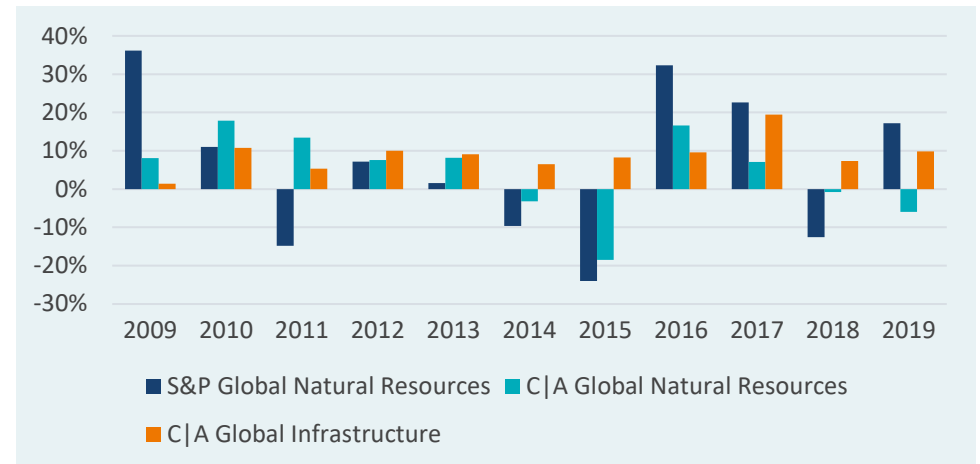
- The low commodity price environment has put downward pressure on historical & expected returns in both public and private markets.
- Oil & gas, which has historically been the largest source of investment opportunities in the space, has been particularly out of favor with limited upside going forward.
- While the market dislocation in energy may provide some attractive buying opportunities, it remains challenging to operate assets profitably at current oil prices and demand and supply outlooks do not suggest an increase in price is likely.

PRIVATE MARKET FUNDRAISING (\$B)



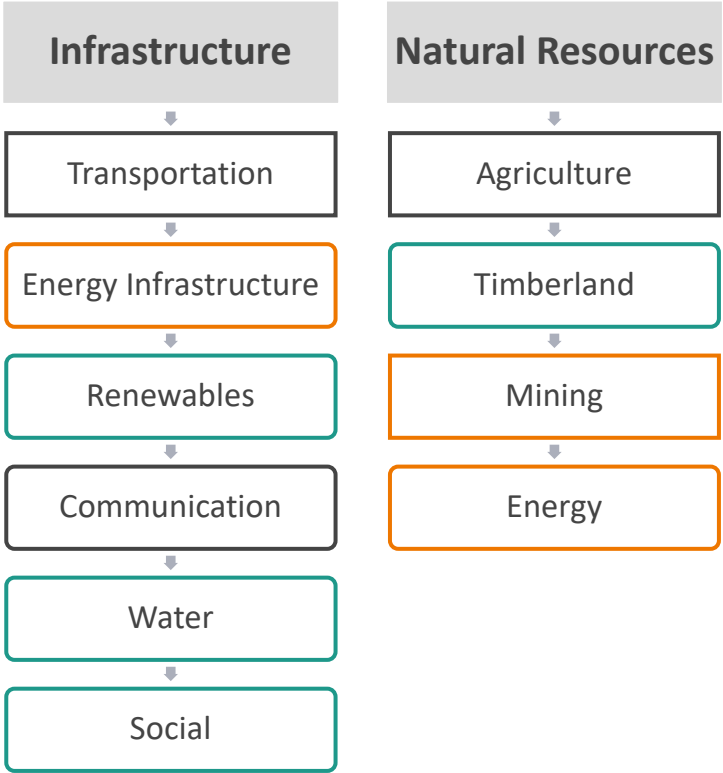
Source: PitchBook

PUBLIC & PRIVATE NATURAL RESOURCES RETURNS






Source: Thomson Reuters C|A, S&P

ESG considerations within real assets



There are opportunities for both positive and negative ESG outcomes within real assets. In general, there are more positive and neutral options within infrastructure, while it can be difficult to avoid ESG issues in natural resources.

-  - Potential ESG concerns
-  - Potential impact opportunity
-  - No concerns or opportunities

Pacing model

RA Category	2020	2021	2022	2023	2024	2025	2026
	Actual Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)
Infrastructure	\$ 70,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000
Natural Resources	\$ -	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000	\$ 40,000,000
Total RA Portfolio	\$ 70,000,000	\$ 80,000,000	\$ 80,000,000	\$ 80,000,000	\$ 80,000,000	\$ 80,000,000	\$ 80,000,000

Listed Infrastructure	\$ 19,512,333	\$ (35,612,962)	\$ (38,217,038)				
Listed Natural Resources	\$ (76,923,251)	\$ (20,774,228)	\$ (22,293,272)				
Commodities	\$ (34,585,367)	\$ (2,967,747)	\$ (3,184,753)				
Total Public	\$ (91,996,286)	\$ (59,354,936)	\$ (63,695,064)				

	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)
Infrastructure	2	1	1	1	1	1	1
Natural Resources	0	1	1	1	1	1	1
Total	2	2	2	2	2	2	2

- This pacing model assumes a 5.0% target allocation to real assets with a private to public ratio of 75:25.
- Deploying ~\$80M/year should result in hitting the target allocation in 5-6 years.

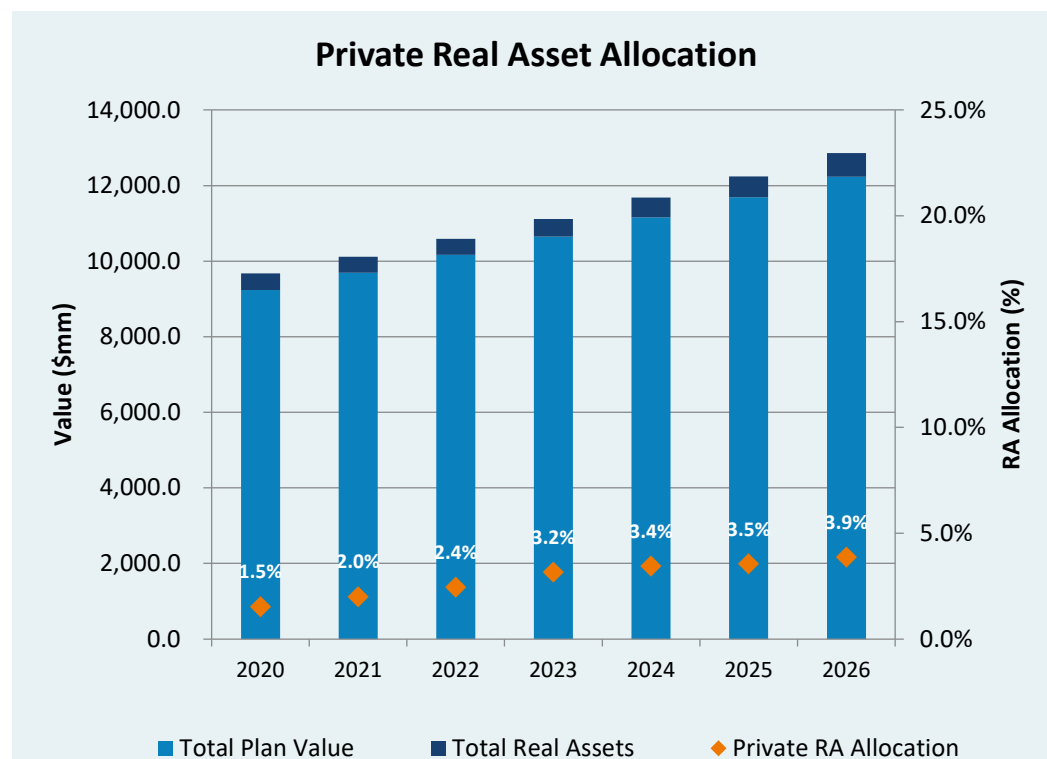
Next steps - timeline

— Phase 1 (1-2 quarters):

- Shift allocation within SSGA Real Asset Liquid Pool to:
 - 60% infrastructure
 - 35% natural resources
 - 5% commodities

— Phase 2 (5+ years)

- 2-3 private funds/year
- Projected to reach target in 2026



Notices & disclosures

Past performance is no guarantee of future results. This report or presentation is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and should not be relied upon by 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. The opinions and information expressed are current as of the date provided or cited only and are subject to change without notice. This information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. This report or presentation cannot be used by the recipient for advertising or sales promotion purposes.

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DECEMBER 2020

Private Equity Investment Plan: 2021-2023

ACERA

Private Equity Investment Plan Overview

— Proposed Updates:

- Plan value: \$8.68 billion (September 30, 2020)
- Long-term investment return assumption: 6.7% per year
- Plan Contributions / Distributions (source: Segal actuarial, December 31, 2017)
- Cash flows and valuations of existing funds

— Achieve target allocation:

- Private Equity: 8% by 2023-2024
- Overweight Buyout (65% vs. 60% neutral target)
- Underweight Debt/Special Situations (16% vs. 20% neutral target) and Venture Capital (18% vs. 20% neutral target; assumes one significant distribution)

Private Equity Investment Plan: 2021-2023

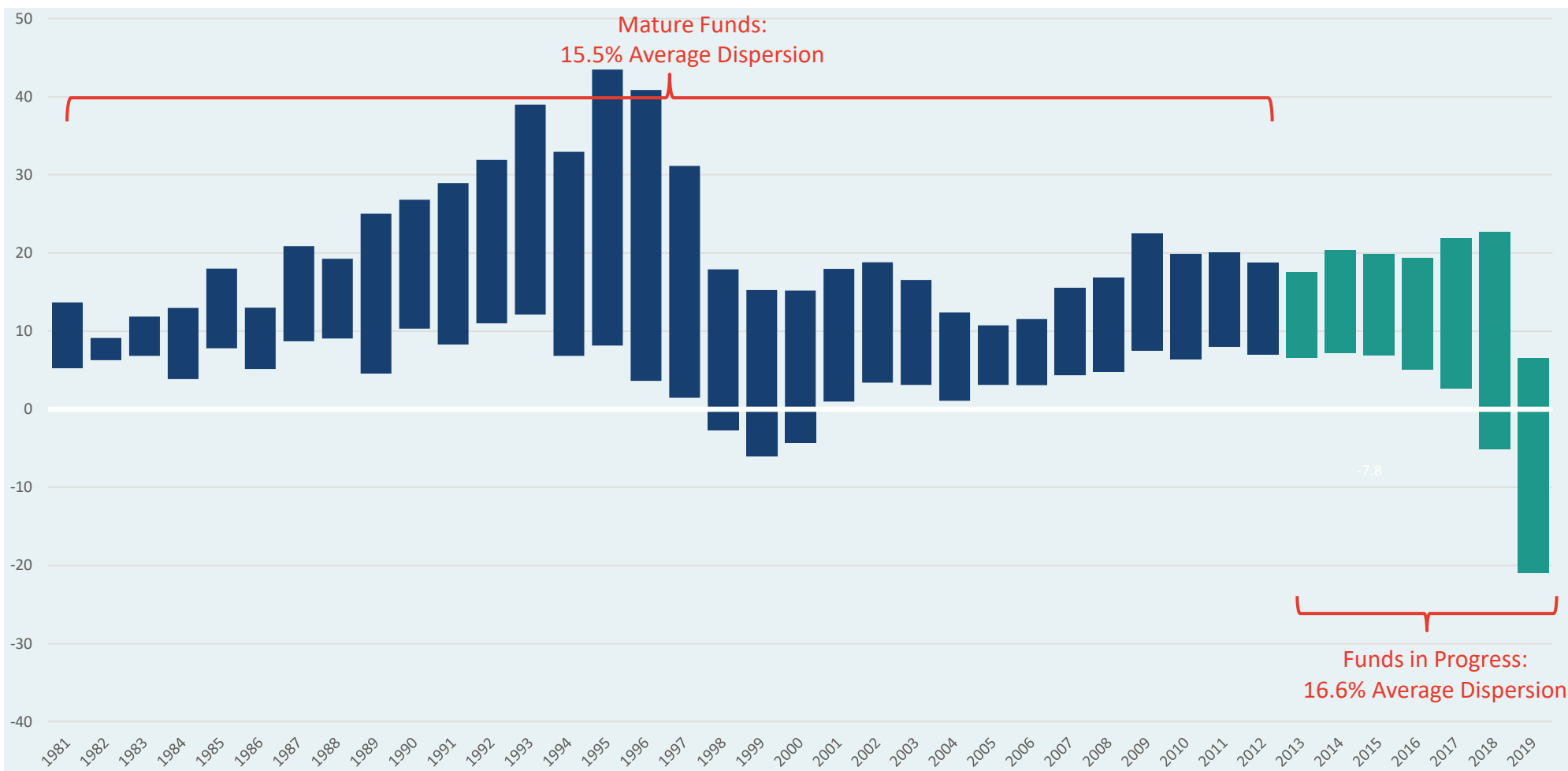
New Commitments Required to Achieve Target Allocations / Diversification*

Buyout:	6-8 new funds	\$225 million
Venture Capital:	5-8 new funds	\$108 million
Debt/Spec. Sits:	3-4 new funds	\$72 million

*All projected commitments (number and size)
subject to bottom-up evaluation of GPs and market opportunities.

Manager selection is critical to results

DISPERSION BETWEEN TOP AND BOTTOM QUARTILE FUND RETURNS



Source: Thomson Reuters C|A U.S. All Private Equity returns, as of 6/30/20

For illustrative purposes only as dispersion of returns varies by sub-asset class. Mature funds defined as those whose 80% or more of total value has been distributed.

Investment Plan – as of September 30, 2020

	2018 Actual	2019 Actual	2020 Actual	2021 Projected	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected	2027 Projected	2028 Projected	2029 Projected	2030 Projected
Annual Commitments (\$M)													
Venture Capital	\$ 10	\$ -	\$ 25	\$ 39	\$ 39	\$ 40	\$ 40	\$ 43	\$ 43	\$ 47	\$ 47	\$ 47	\$ 47
Buyouts	\$ 88	\$ 88	\$ 124	\$ 85	\$ 90	\$ 85	\$ 85	\$ 105	\$ 105	\$ 130	\$ 130	\$ 130	\$ 130
Debt-Related/Special Situations	\$ -	\$ 33	\$ 35	\$ 26	\$ 21	\$ 25	\$ 25	\$ 35	\$ 35	\$ 50	\$ 50	\$ 50	\$ 50
Total Private Equity	\$ 98	\$ 121	\$ 184	\$ 150	\$ 150	\$ 150	\$ 150	\$ 183	\$ 183	\$ 227	\$ 227	\$ 227	\$ 227

Number of Commitments

Venture Capital	2	0	1	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3	2-3
Buyouts	2	4	4	3	2-3	2-3	2-3	3	3	3	3	3	3
Debt-Related/Special Situations	0	1	1	1-2	1	1	1	1-2	1-2	2	2	2	2
Total Private Equity	4	5	6	6-8	5-7	5-7	5-7	6-8	6-8	7-8	7-8	7-8	7-8

Exposures

Private Equity Exposure as a % of Plan (Target 8%; Range 5-10%)	6.8%	7.1%	7.2%	7.3%	7.5%	7.8%	8.1%	8.0%	7.9%	7.9%	8.0%	8.0%	8.0%
VC % of Total Private Equity (Target 20% / Range 0-40%)	32.9%	28.8%	27.5%	24.0%	21.1%	18.6%	18.3%	17.4%	18.1%	20.3%	21.7%	22.6%	22.5%
Buyouts % of Total Private Equity (Target 60% / Range 30-80%)	57.3%	56.1%	53.2%	56.4%	59.8%	63.9%	65.3%	66.8%	66.5%	67.4%	65.0%	63.1%	62.5%
Debt/Special Situations % of Total Private Equity (Target 20% / Range 0-70%)	9.8%	15.1%	19.3%	19.6%	19.1%	17.5%	16.4%	15.7%	15.5%	12.3%	13.3%	14.2%	15.0%



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PERIOD ENDING: SEPTEMBER 30, 2020

Investment Performance Review for

Alameda County Employees' Retirement Association - Public

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PITTSBURGH 412-784-6678

Investment Landscape **TAB I**

Investment Performance Q3
20 Review **TAB II**

Absolute Return Q3 20 **TAB III**

Private Equity & Private
Credit Q2 20 **TAB IV**

Real Assets Q2 2020 **TAB V**

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4TH QUARTER 2020
Investment Landscape

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Annual outlooks

2020 PRIVATE OUTLOOK

In the 2020 Private Equity Outlook, we focus attention on General Partner-led (GP-led) secondary transactions that have evolved and are no longer just associated with general partners trying to dispose of lingering assets that have become hard to sell. The outlook also addresses:

- The significant pull back in private equity in 2020
- Our expectations for a decline in both capital calls and distributions from buyout funds likely leading to negative net cash flows for the coming quarters
- Headwinds for perspective IPO's
- Impacts from Covid-19 on many portfolios
- Our view on how the secondary market is very different than it was during the last economic downturn

Topics of interest

BROADENING DIVERSITY CONSIDERATION

CIO Ian Toner, CFA, and Public Markets Managing Director Marianne Feeley, CFA, outline broader elements of diversity – beyond ownership – that may be used to characterize the demographic qualities of an investment firm. It frames the broader approach to understanding diversity that we are adapting at Verus, which is an integral part of our process of collecting and using information about investment managers.

AEIOU > PPPPP

Manager research and selection have long been described in the language of Ps – people, process, etc. Verus believes the familiar Ps approach, while useful, leaves out important aspects of manager assessment and their products because of its focus on inputs. We outline a vowel-based approach that concentrates research on factors that are more likely to drive investment outcomes.

Webinar replays

BROADENING DIVERSITY CONSIDERATION

AEIOU > PPPPP

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3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP contracted at a -9.0% rate year-over-year in Q2 (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history. **p. 10**
- Europe is experiencing a drastic second wave of COVID-19 which has been sweeping across the continent. The seven-day average daily case growth of the EU and the U.K. combined rose from 4,699 to 48,807 during Q3. **p. 9**
- Election polls and the betting markets are indicating that Joe Biden is leading President Trump materially as we move into the final weeks pre-election. In 2016, the story was largely the same, as Clinton was expected to win up until the day before the election. **p. 18**

PORTFOLIO IMPACTS

- U.S. and emerging markets have recovered most losses year-to-date, while international remain negative. Global equities are now positive for 2020 despite an earnings recession and considerable economic uncertainty. **p. 29**
- U.S. core inflation increased to a more normal level, rising 1.7% year-over-year in August from 1.2% in June. Inflation expectations also normalized. The 10yr U.S. TIPS inflation breakeven rate recovered to 1.6%, from a low of 0.5% on March 19th. The breakeven rate of inflation is now on par with actual year-over-year inflation. **p. 11**

THE INVESTMENT CLIMATE

- The Federal Reserve announced a notable change to its inflation targeting approach, now aiming to achieve “inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%.” This was a reversal from the prior goal of achieving 2% inflation. **p. 22**
- The Federal Reserve maintained an accommodative tone, and most members of the FOMC held their view that short rates are likely to stay near-zero through 2023—eventually moving to 2.50% over the longer-term. **p. 22**
- According to FactSet, S&P 500 Q3 earnings are expected to be down -20.5%. However, earnings in Q2 beat expectations by 12.5% (-31.6% YoY vs. -44.1%). Another large positive surprise in Q3 would be welcome news to investors. **p. 28**

ASSET ALLOCATION ISSUES

- U.S. equities delivered +8.9% over the quarter, reaching a new high in September before giving back some gains. The S&P 500 is up +5.6% year-to-date, despite an earnings recession and considerable economic uncertainty. **p. 30**
- The U.S. dollar fell -3.5% in Q3, continuing a downward trend since a sudden jump in March on safe-haven buying. The dollar has now completely unwound the gains experienced during the market sell-off. **p. 38**

A more neutral risk positioning may be warranted in the current environment

There seems to be a high degree of uncertainty regarding the future market path

What drove the market in Q3?

“Europeans face prospect of 2nd lockdowns as COVID cases surge”

DAILY NEW CONFIRMED CASES IN THE EU27 AND THE U.K. COMBINED

4/30	5/31	6/30	7/31	8/31	9/30
14,261	5,985	4,699	9,127	22,225	48,807

Article Source: CBS News, September 21st, 2020

“Second \$1,200 stimulus checks had bipartisan support. Now they could be a longshot”

U.S. PERSONAL INCOME GROWTH (YEAR-OVER-YEAR)

Mar	Apr	May	Jun	Jul	Aug
1.8%	14.1%	9.3%	7.8%	8.1%	4.7%

Article Source: CNBC, September 9th, 2020

“The US job market is gradually recovering from the pandemic lockdown shock”

U-3 UNEMPLOYMENT RATE

Apr	May	Jun	Jul	Aug	Sep
14.7%	13.3%	11.1%	10.2%	8.4%	7.9%

Article Source: CNN Business, September 3rd, 2020

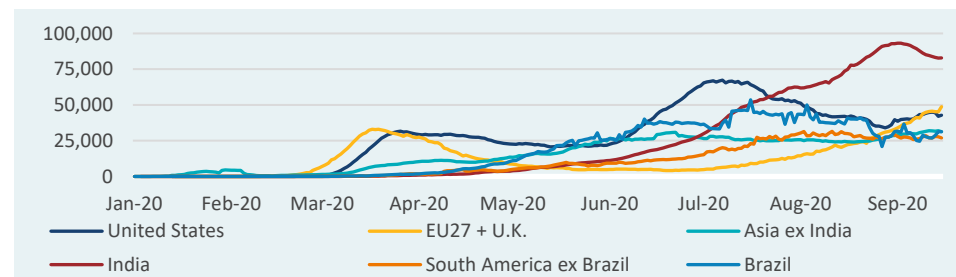
“The market isn’t convinced the Federal Reserve can achieve its inflation objective”

TEN-YEAR BREAK-EVEN INFLATION RATES

4/30	5/31	6/30	7/31	8/31	9/30
1.1%	1.1%	1.3%	1.6%	1.8%	1.6%

Article Source: CNBC, September 17th, 2020

SEVEN-DAY TRAILING AVERAGE DAILY CASE GROWTH BY REGION



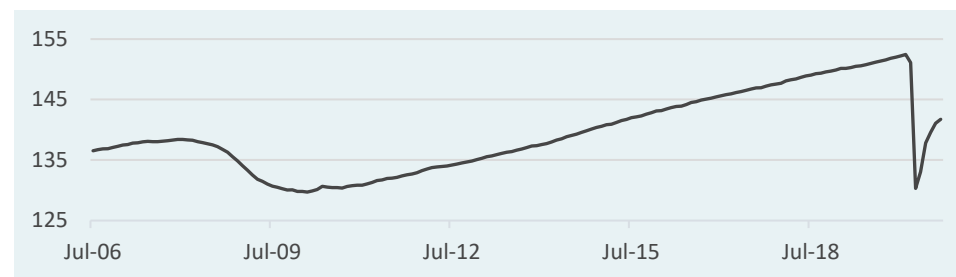
Source: Bloomberg, as of 9/30/20

U.S. PERSONAL INCOME GROWTH (YEAR-OVER-YEAR)



Source: Bureau of Economic Analysis, Bloomberg, as of 8/31/20

NON-FARM EMPLOYEES ON U.S. PAYROLLS (MILLIONS)



Source: Bureau of Labor Statistics, Bloomberg, as of 9/30/20

Economic environment

U.S. economics summary

— Real GDP contracted at a -9.0% rate year-over-year in the second quarter (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history.

— The Atlanta Fed’s forecast for third quarter growth is -10.7% year-over-year (+33.8% quarterly annualized rate). This projection was based on the expectations that consumption rebounds materially, household investment picks up, businesses begin re-stocking shelves that were allowed to run empty, and supporting fiscal policy.

— The U.S. labor market partially recovered from the recent shock. Unemployment fell from 14.7% in April to 7.9% in September. A report released in September indicated 60% of temporary business closures during the pandemic were now permanent.

— Correlation between election results and market performance

has been weak, and the outcome depends greatly on how the data is sliced and the timing of economic events. The S&P 500 has experienced stronger gains with a Democrat in power, though the results are skewed by extreme events such as the Great Depression.

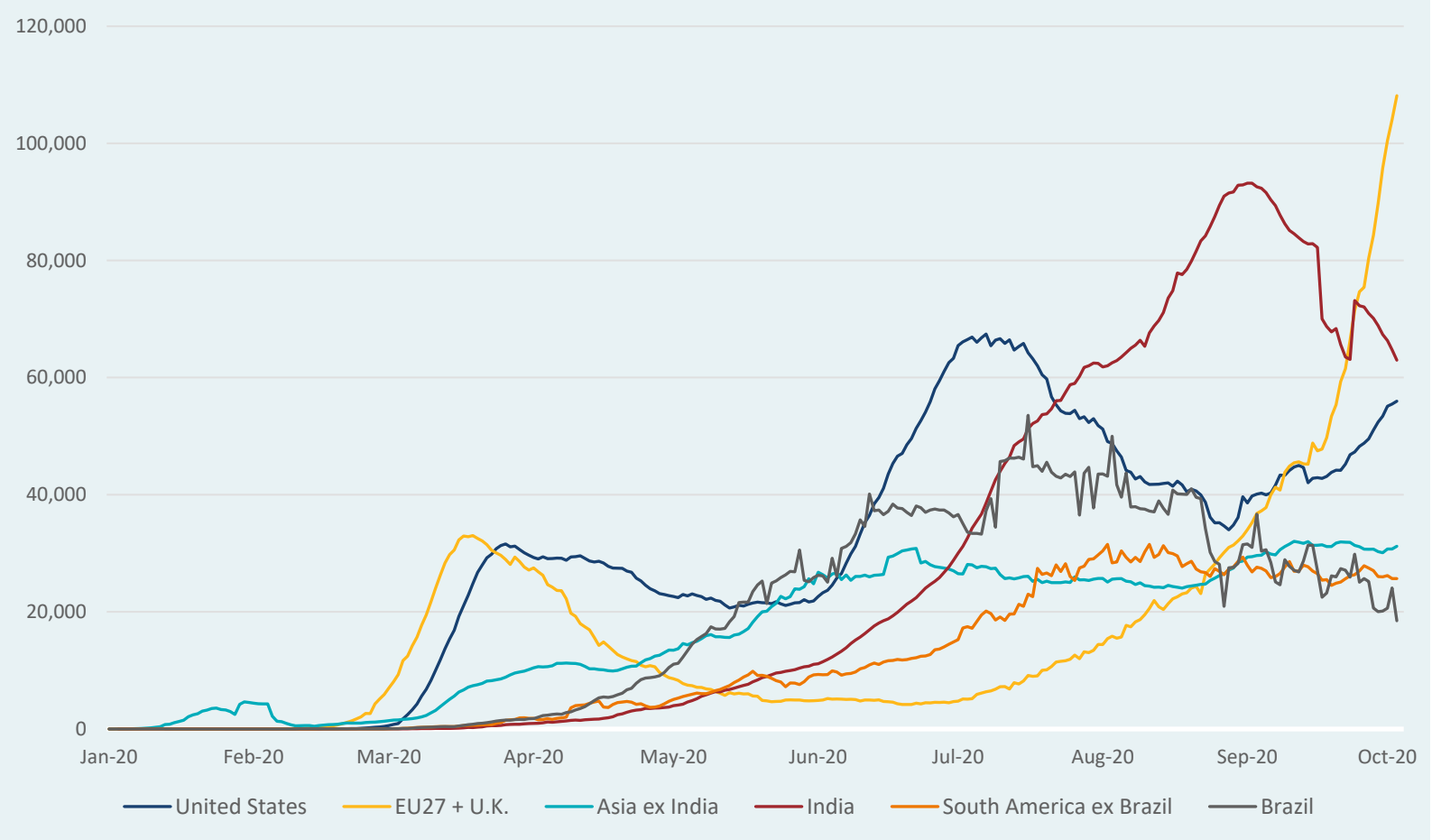
— The NFIB Small Business Optimism Index recovered to 104.0 in Q3, which was in line with pre-pandemic levels. The survey concluded that half of the jobs lost in March and April have been recouped, but that the pace of recovery has slowed.

— The median home price increased 11.1% year-over-year in September, according to Realtor.com. U.S. housing supply has reached record tightness. In August, 3.3 months worth of homes were on the market, which was the lowest inventory ever recorded since the government began tracking this data in 1963.

	Most Recent	12 Months Prior
GDP (YoY)	(9.0%) 6/30/20	2.0% 6/30/19
Inflation (CPI YoY, Core)	1.7% 8/31/20	2.4% 8/31/19
Expected Inflation (5yr-5yr forward)	1.7% 9/30/20	1.7% 9/30/19
Fed Funds Target Range	0% – 0.25% 9/30/20	1.75% – 2.00% 9/30/19
10-Year Rate	0.7% 9/30/20	1.7% 9/30/19
U-3 Unemployment	7.9% 9/30/20	3.5% 9/30/19
U-6 Unemployment	12.8% 9/30/20	6.9% 9/30/19

COVID-19 update

Seven-day trailing daily average case growth by region



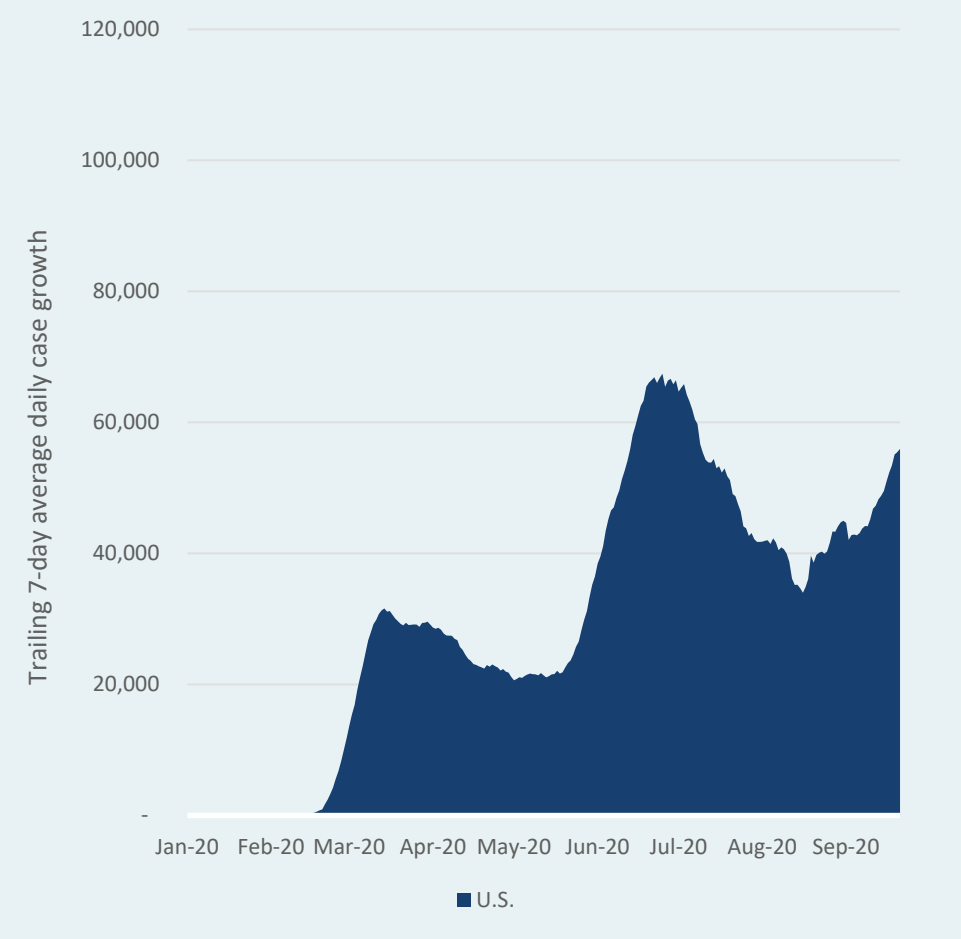
Case growth has increased exponentially across Europe over the past month, resulting in broad reimplementations of economically-restrictive social distancing controls

Deaths have begun to increase on a several-week lag to local case growth, as expected, but remain at lower levels than those seen earlier this year

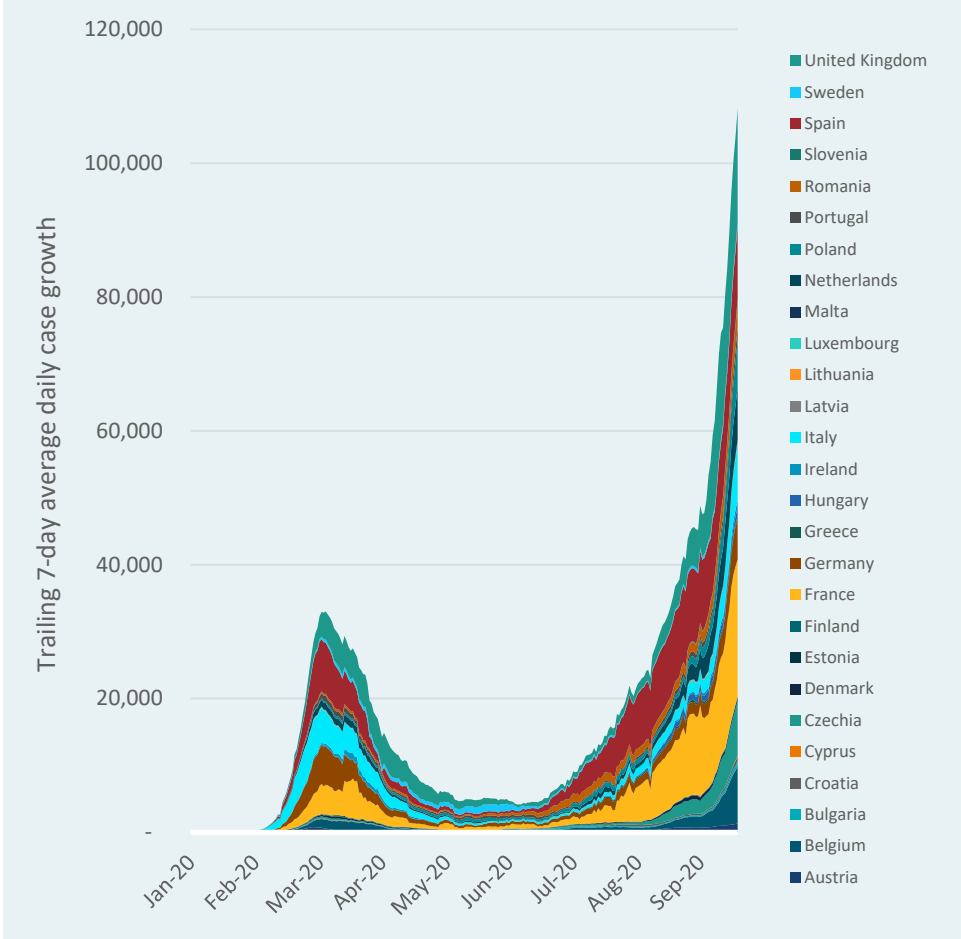
Source: Bloomberg, as of 10/18/20

COVID-19 update

UNITED STATES



EU27 + UNITED KINGDOM



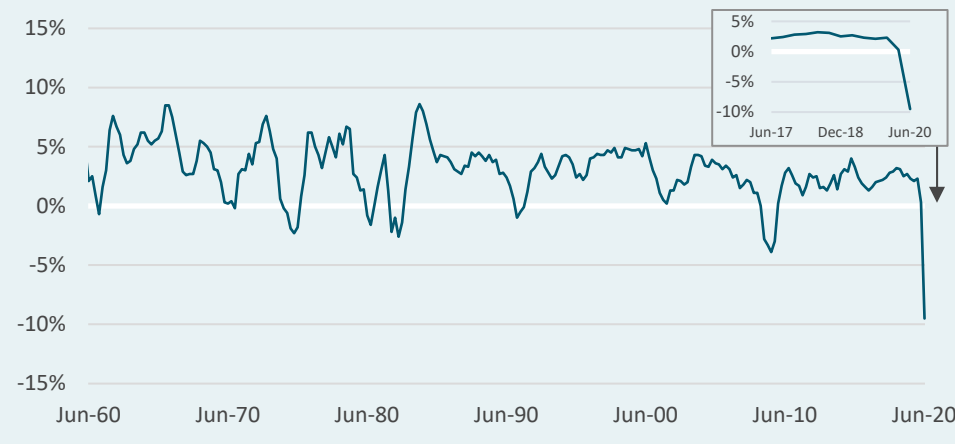
Source: Bloomberg, as of 10/18/20

GDP growth

Real GDP contracted -9.0% year-over-year in Q2 (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history. Personal consumption expenditures shrunk at a quarterly annualized pace of -24%. The decline was driven by a significant pullback in spending on services (-22%) as economic activity remained constrained. U.S. households and businesses exhibited conservatism in the face of an uncertain outlook on both the virus and policy response fronts. Fixed investment slumped -5.3% and private inventories fell -3.5% as companies appeared unwilling to proactively restock their shelves. Trade remained a tailwind to GDP as the value of imported goods declined more than the value of exported goods.

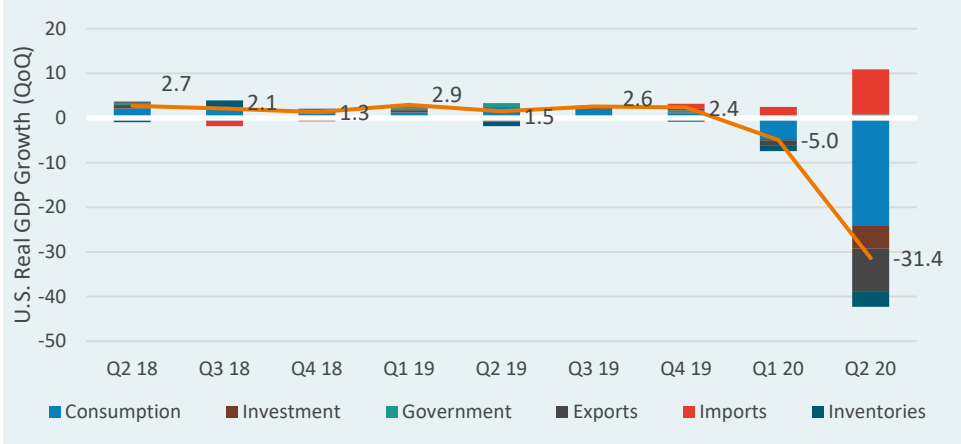
The Atlanta Fed’s forecast for third quarter-growth was +33.8% on a quarter-over-quarter annualized basis (-10.7% year-over-year), as of September 30th. This projection was based on an expectation for consumption to rebound materially, household investment to pick up, businesses to begin re-stocking shelves which were allowed to run empty in the second quarter, and a continuation of supportive fiscal policy. Looking ahead, the strength of the economic recovery will likely remain predicated on the willingness and ability of consumers to spend, the willingness of businesses to supply that demand, and the magnitude of fiscal support.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 6/30/20

U.S. GDP GROWTH ATTRIBUTION



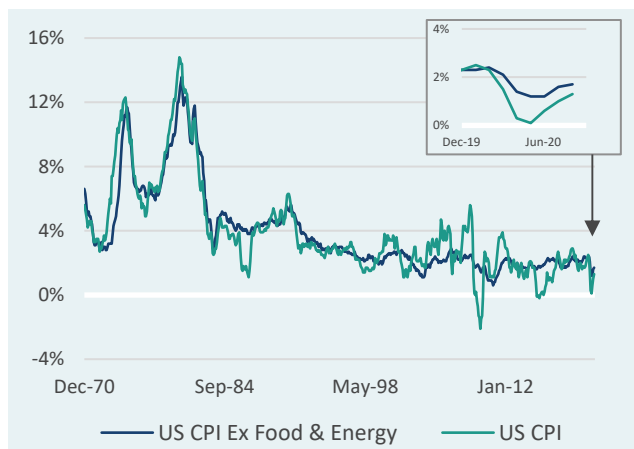
Source: BEA, annualized quarterly rate, as of 6/30/20

Inflation

Growth in headline inflation continued to rebound toward more normal levels in Q3, reaching 1.4% year-over-year in September after bottoming at 0.1% in May. Food items—specifically meats, poultry, fish, eggs, and dairy-related products—continued to drive the recovery in demand for groceries due to COVID-driven restaurant closures. Core inflation, which excludes the more volatile food and energy components, picked up from 1.2% to 1.7% as price increases for used cars and trucks (+10.3%) and medical care services (+4.9%) outweighed a dip in airline fares (-25.0%).

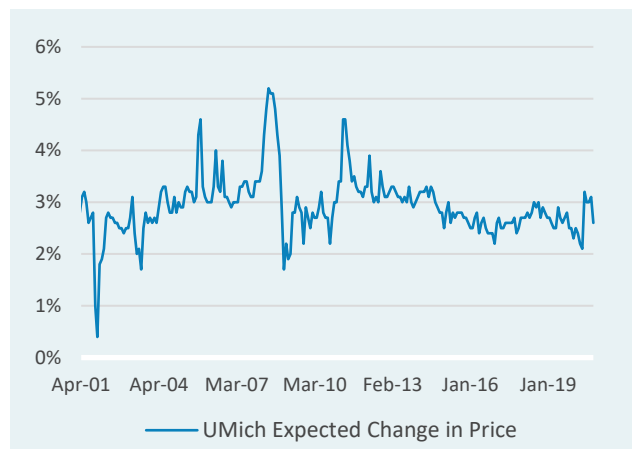
Ten- and 30-year breakeven inflation rates recovered from 1.3% to 1.6% and from 1.6% to 1.8%, respectively, as market participants likely became slightly more bullish on longer-term growth and inflation outlooks. Still, there remains skepticism around the Fed’s ability to sustainably achieve its inflation target average of 2.0%. Year-over-year growth in core PCE inflation recovered to 1.6% in August but remained below the Fed’s target. Officials have stated that in the future they will be less likely to clamp down on rising inflation with restrictive policy and will be more likely to let inflation run above 2.0% for some time.

U.S. CPI (YOY)



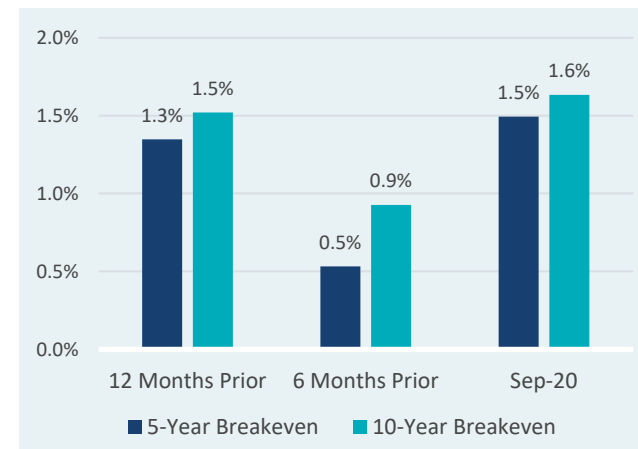
Source: Bloomberg, as of 8/31/20

CONSUMER INFLATION EXPECTATIONS



Source: University of Michigan, as of 9/30/20

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 9/30/20

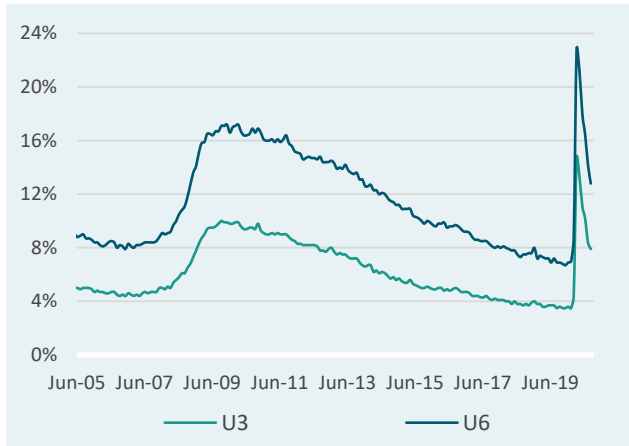
Labor market

The U.S. labor market has partially recovered from the shock sustained in Q1 and Q2. Unemployment fell from 14.7% in April to 7.9% in September. During the economic contraction, the labor participation rate also fell rather dramatically. Most job losses during the pandemic were described by workers as temporary in nature. Most “temporary” job losses have in fact turned out to be temporary, as indicated below. A smaller portion of temporary job losses have unfortunately been reclassified as permanent. We remain watchful regarding how many temporary job losses transition into the “permanent” category in the coming months.

A report released by Yelp in September indicated 60% of businesses that had temporarily closed during the COVID-19 pandemic are now permanently closed. The businesses hit the hardest included: restaurants, bars, retail, fitness, and beauty services. It will be important to monitor whether workers come back to the labor force and once again search for employment as the U.S. economy recovers, or whether these trends result in longer-term unemployment.

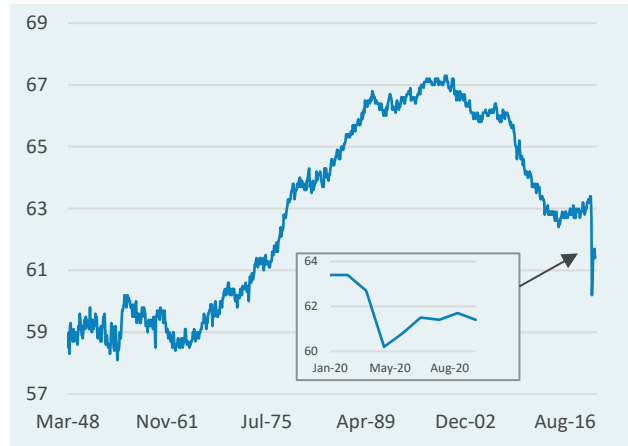
U.S. workers continue to come back to the labor force

U.S. UNEMPLOYMENT



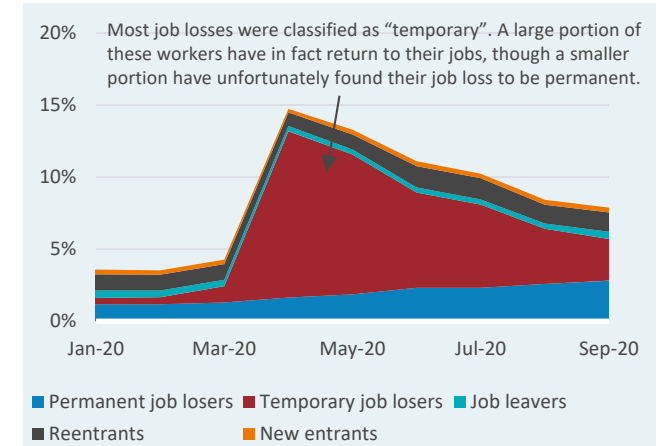
Source: FRED, as of 9/30/20

LABOR PARTICIPATION RATE



Source: FRED, as of 9/30/20

UNEMPLOYMENT DECOMPOSITION BY REASON

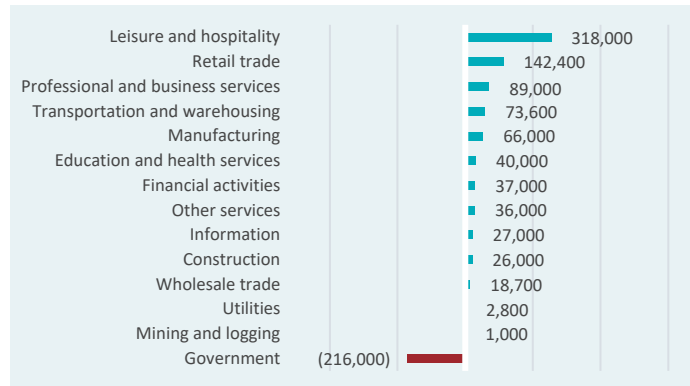


Source: BLS, as of 9/30/20

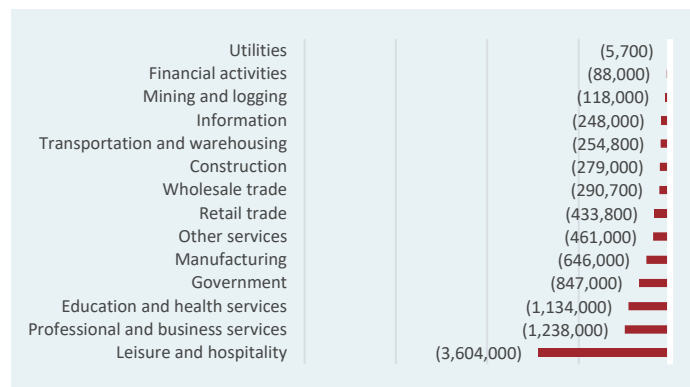
September 2020 jobs report

+661,000 (exp. +859,000) - net revisions to prior two months = +145k

1-MONTH CHANGE



12-MONTH CHANGE



TRAILING % CHANGE



Payrolls continued to recover in the harder-hit services sectors in the third quarter, but payrolls remain well below pre-pandemic levels

All major sectors still have lower payrolls relative to September 2019

Source: BLS, as of 9/30/20

The consumer

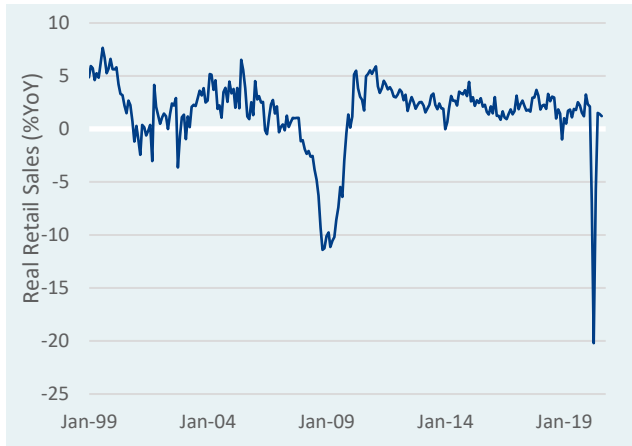
After collapsing -20% year-over-year in April, U.S. real retail sales have now fully recovered and were positive +1.2% in August. Larger purchases, such as automobiles and homes, also slowed considerably earlier in the year but have since rebounded.

The current combination of ultra-low interest rates and vast government fiscal stimulus appears to be supporting many parts of the economy. Despite the inability of households to spend on some traditional discretionary items, other types of purchases have swelled. Recent consumption patterns seem

to indicate that government support is having the intended effect and that the economy is stabilizing.

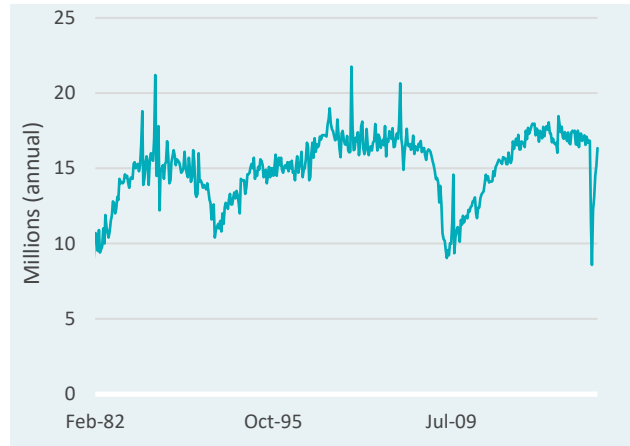
The U.S. personal savings rate fell to 14% in August, largely due to the ending of special unemployment benefits, which expired on July 31st. Broad economic uncertainty typically increases the desire for saving, which is likely the case in today's environment. But perhaps an even greater effect is the overall inability or unwillingness of households to spend on certain items such as vacations and restaurant dining.

REAL RETAIL SALES GROWTH (YOY)



Source: FRED, as of 8/31/20

AUTO SALES



Source: Federal Reserve, as of 9/30/20

PERSONAL SAVINGS RATE



Source: FRED, as of 8/31/20

Sentiment

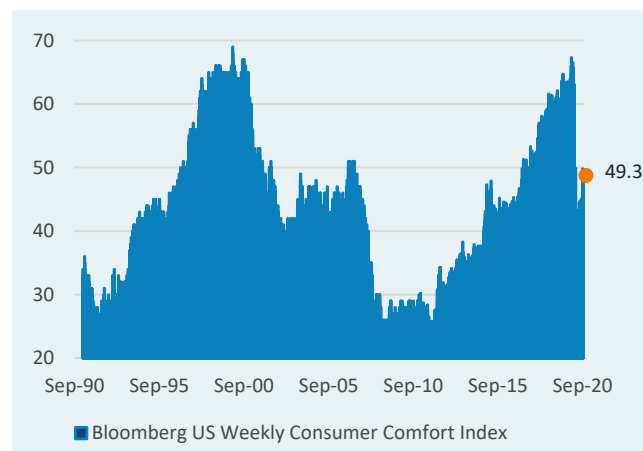
Despite the more optimistic picture painted by a recovery in consumer spending, auto sales, and the housing market, consumer sentiment remains far below the near record-highs of early 2020.

The Bloomberg Consumer Comfort Index attempts to gauge Americans' views on the economy, their personal financial situation, and buying conditions. The index sits at 49.3, compared to a high of 67.3 in January. The University of Michigan Consumer Sentiment Survey attempts to gauge attitudes about the business climate, personal finances, and

spending conditions. The index currently sits at 80.4, down from 101.0 in February.

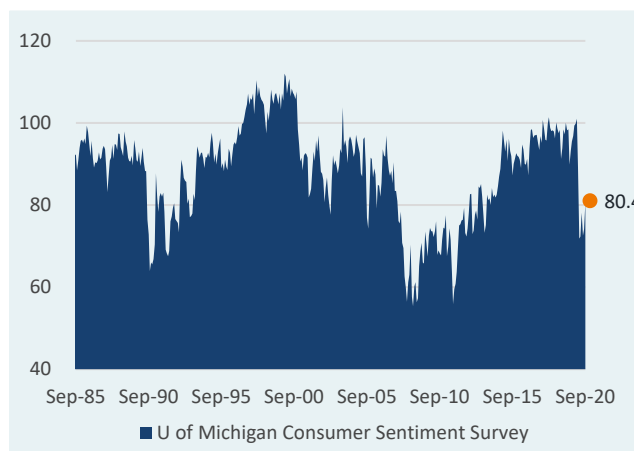
The NFIB Small Business Optimism Index recovered to 104.0 in Q3, which is in line with pre-pandemic levels. The survey concluded that half of the jobs lost in March and April have been recouped, but that the pace of recovery has slowed. Businesses generally expect the economy to continue growing, and hiring plans are now on track with pre-COVID levels.

CONSUMER COMFORT



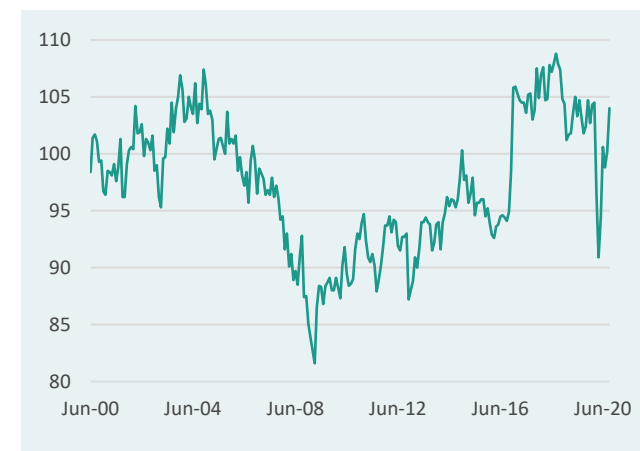
Source: Bloomberg, as of 9/30/20

CONSUMER SENTIMENT



Source: University of Michigan, as of 9/30/20

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 9/30/20

Housing

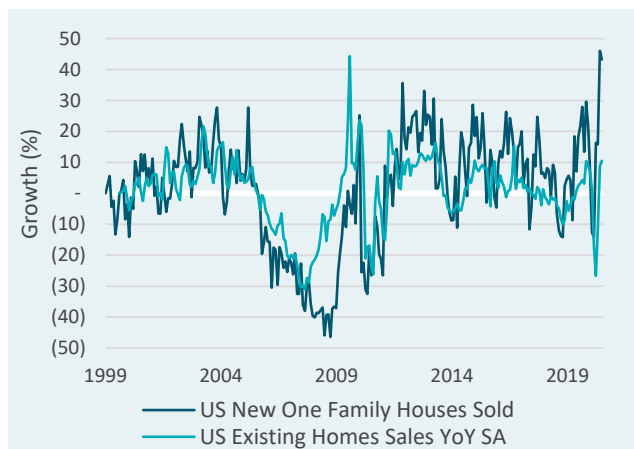
Existing home sales increased intensely over the summer, with existing home purchase activity up 10.5% year-over-year and new home sales higher by a whopping 43.2%. A variety of forces have likely aligned to deliver recent strength, including record-low mortgage interest rates, the desire of many Americans to increase their living space due to the new working-from-home environment, and a record-thin supply of homes on the market.

The portion of U.S. mortgages in the COVID-19 government forbearance program dropped significantly to 5.6% during

the first week of October. This compared to 6.8% the previous week and a high of 8.6% earlier in the year, according to mortgage data firm Black Knight. This positive news eases concerns that the COVID-19 slowdown might lead to another housing crisis.

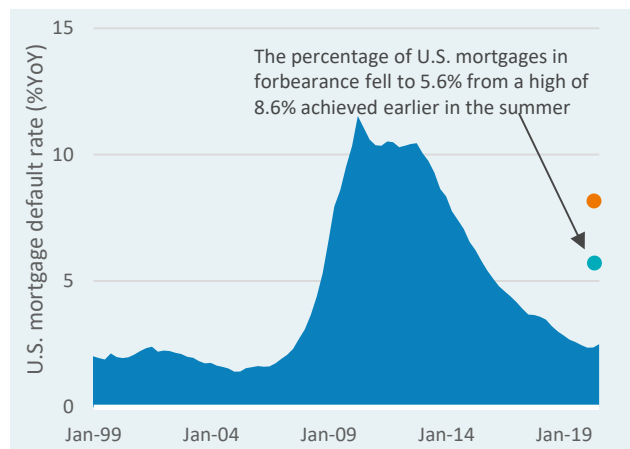
The extremely tight supply of homes has been a major contributor to the recent housing boom. In August, 3.3 months worth of homes were available on the market, which was the lowest inventory level ever recorded since the U.S. government began tracking this data in 1963.

U.S. HOME SALES (YOY)



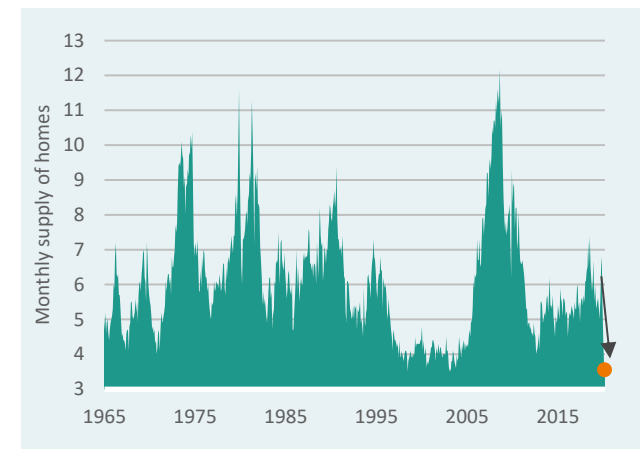
Source: FRED, as of 8/31/20

MORTGAGE DEFAULT RATE (%)



Source: FRED, as of 6/30/20, Black Knight as of 10/9/20

U.S. HOME SUPPLY



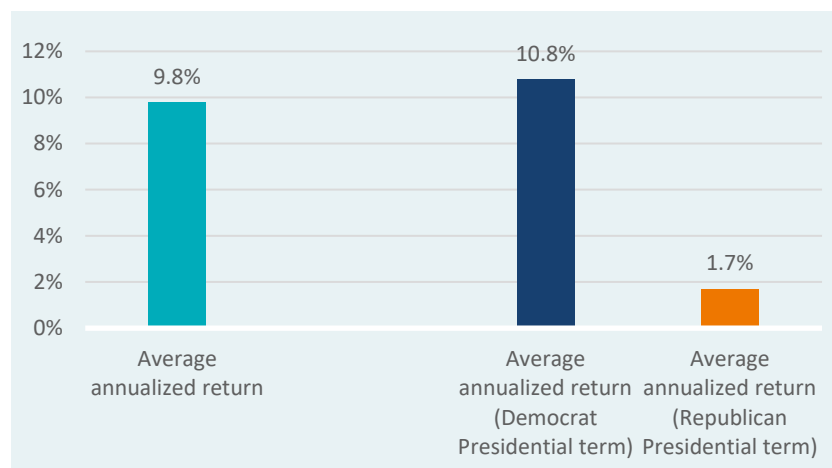
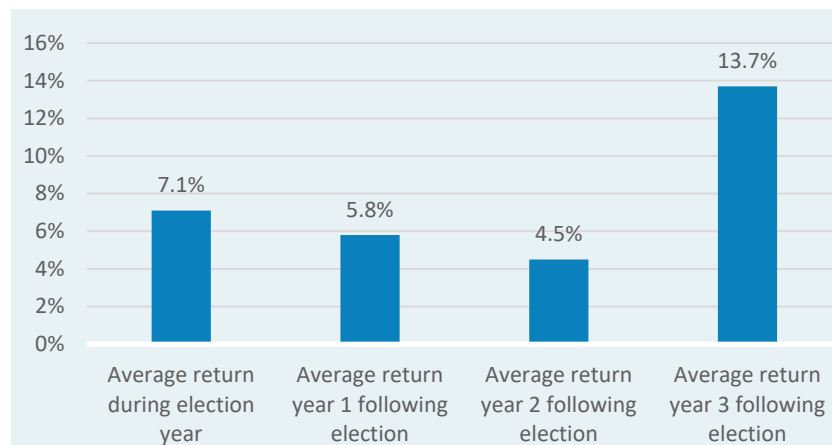
Source: FRED, as of 8/31/20

U.S. presidential election

Correlation between election results and long-term market performance has generally been weak, and the outcome depends greatly on how the data is sliced, as well as the timing of economic and geopolitical events which are often unrelated to elections. The S&P 500 has experienced stronger gains with a Democrat in power, though the results are skewed by extreme events such as the Great Depression (Herbert Hoover saw a -77.1% total return during his presidency, followed by a +205.5% total return in Franklin D. Roosevelt's first term). These events have had a significant impact on the "average" market performance of Democrat and Republican Presidencies.

Markets seem to view a Donald Trump reelection as a positive for markets. But recently investors have also warmed to the idea of a Joe Biden victory, due to expectations for greater fiscal support to the economy which may counteract negative effects of Democratic Party proposals for higher corporate taxes and tax hikes on wealthier households.

PRESIDENTIAL ELECTION & U.S. EQUITY PERFORMANCE (1928 – 2016)



The relationship between election years and market performance has been muddy

Source: Schwab, Bloomberg – S&P 500 Index

Note: Stronger equity performance during one party or the other does not necessarily imply that the party's leadership led to that market performance. The timing of large and significant shocks to the economy such as the Great Depression, natural disasters, and geopolitical turmoil have influenced the performance figures above.

How are we viewing the polling data?

The polls and the betting markets indicate that Biden is leading President Trump materially as we move into the final weeks pre-election. In 2016, the story was largely the same, as Clinton was expected to win up until the day before the election.

“Clinton has 90 percent chance of winning” – Reuters, 11/7/2016

“Election 2016: Hillary Clinton looks poised to lock it up” – Politico, 11/7/2016

“Odds of Clinton win jump on prediction markets” – Financial Times, 11/7/2016

“Polls: Hillary Clinton in position to win the election” – Business Insider, 11/7/2016

Several factors are likely to distort the picture painted by the polling data, including, but not limited to, the following:

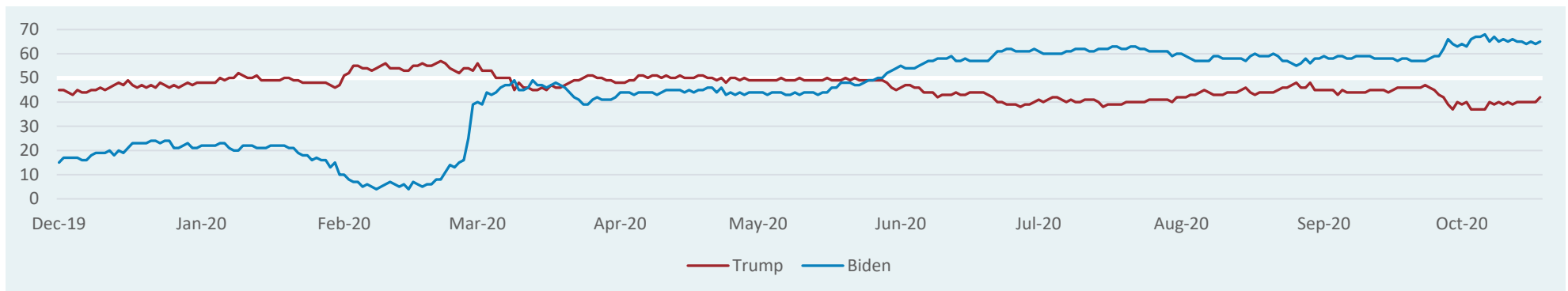
Shy Trump factor: Voters in certain parts of the country may be less willing to express that they would vote for Trump, and this dynamic may be even more prevalent than it was in 2016.

Oversampling: Pollsters do their best to build population samples representative of likely actual voter turnout, but these samples are often flawed. Back in 2016, Democrats were often over-represented in poll samples, which may have incorrectly skewed polling averages in favor of Hillary Clinton. There appears to be some evidence of this effect influencing polling averages this year as well.

Mail-in voting: The increase in reliance on mail-in ballots could delay the distribution of final election results and provide both candidates the opportunity to contest the election results in key swing states.

Late deciding: Voters may break for Trump or Biden in the final few days pre-election, but this is more likely to be a smaller factor than it was in 2016.

PREDICTIT ODDS – WHO WILL WIN THE 2020 U.S. PRESIDENTIAL ELECTION?



Source: PredictIt, as of 10/21/20

International economics summary

- Growth contracted sharply in international developed economies in Q2. Gross domestic product in the Eurozone contracted -14.7% from the prior year, and Japanese GDP sank -9.9% over the same period, despite the deployment of fiscal support to the tune of roughly 40% of Japan's GDP.
- European officials implemented stricter social distancing controls with hopes of stymying the second wave of COVID-19 sweeping across the continent. The seven-day average daily case growth of the EU27 and the United Kingdom combined rose from 4,699 to 48,807 over the third quarter.
- The IMF revised its global growth projections for 2020 and 2021 from -4.9% and 5.4% to -4.4% and 5.2%, respectively. The IMF's model assumes social distancing controls will continue to act as a drag on growth into 2021, and that local transmission of the virus will be falling everywhere by 2023.
- Inflation remained muted globally in the third quarter, supporting arguments that the pandemic's impact has been more disinflationary than inflationary over the short term. The Eurozone's consumer price index ended the quarter -0.3% below its level from September 2019, though most of the deflationary pressures were supplied by an -8.2% decline in energy prices.
- Eurozone retail sales volumes grew 3.7% from the prior year in August (exp. 2.2%), driven by a sharp surge in online purchases and clothing sales. The vigorous rebound in consumer spending has been attributed to pent-up demand and incomes, which have been largely stable due to furlough schemes. Many analysts expect a "normalization" of retail sales in the fourth quarter, under the assumption that current spending levels are unlikely to be sustainable.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(9.0%) 6/30/20	1.3% 8/31/20	7.9% 9/30/20
Eurozone	(14.7%) 6/30/20	(0.3%) 9/30/20	8.1% 8/31/20
Japan	(9.9%) 6/30/20	0.2% 9/30/20	3.0% 8/31/20
BRICS Nations	(3.1%) 6/30/20	3.3% 6/30/20	5.3% 6/30/20
Brazil	(11.4%) 6/30/20	2.4% 8/31/20	13.8% 7/31/20
Russia	(8.0%) 6/30/20	3.3% 9/30/20	6.4% 8/31/20
India	(23.9%) 6/30/20	6.7% 8/31/20	8.5% 12/31/17
China	4.9% 9/30/20	2.4% 8/31/20	3.8% 6/30/20

International economics

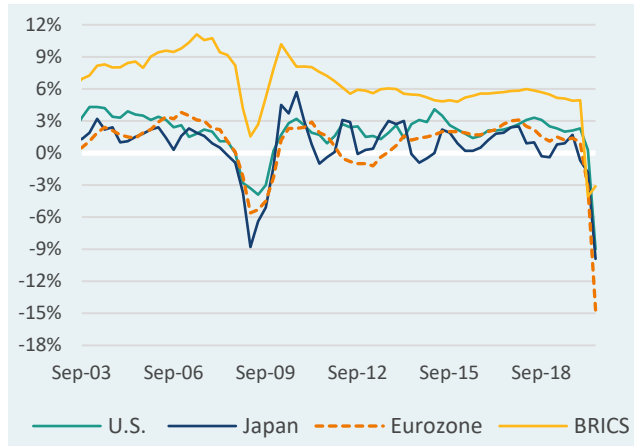
As expected, growth contracted sharply in international developed economies around the world in Q2. Eurozone gross domestic product contracted -14.7% from the prior year, and Japanese growth sank -9.9% over the same period, despite the deployment of fiscal support to the tune of roughly 40% of Japanese GDP.

Growth in most of the emerging markets complex also took a major hit. GDP contracted -11.4% in Brazil, -8.0% in Russia, and -23.9% in India which has been especially hard hit by the coronavirus. China stood out as an exception, and reportedly mustered year-over-year GDP growth of +4.9% in Q3. China's

growth was supported by the People's Bank of China, which cut its 1-year medium-term lending facility rate from 3.15% to 2.95%. Many emerging economies are in a better position to provide monetary stimulus, given higher interest rates.

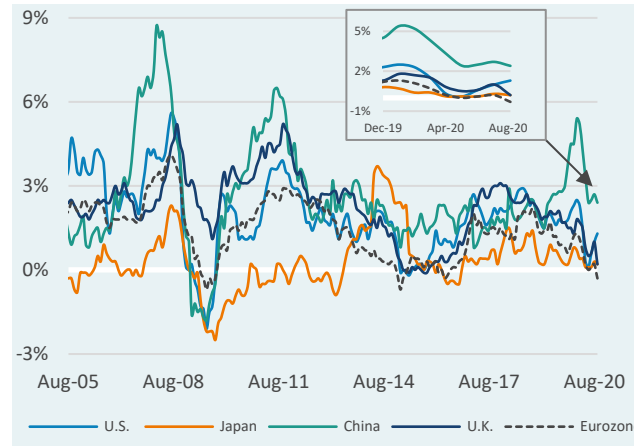
Unemployment in the Eurozone rose from 7.8% to 8.1%, just 0.2% above the quarter-end rate in the United States, as Europe contends with disinflationary pressures. Year-over-year growth of the harmonized consumer price index fell from +0.3% into negative territory at -0.3%. The Union's harmonized measure, however, does not include rents and house prices—a key distinction from the U.S. CPI basket.

REAL GDP GROWTH (YOY)



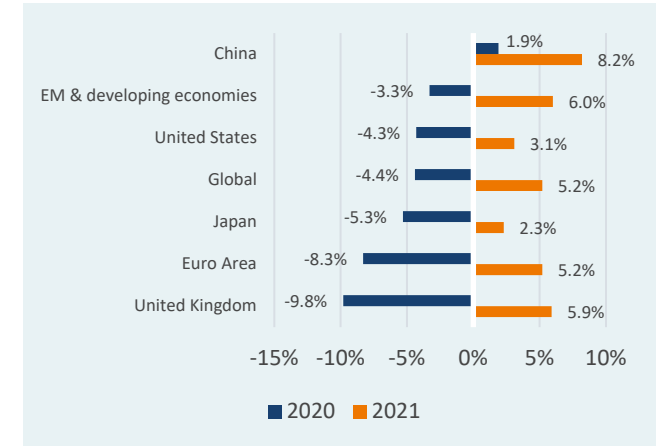
Source: Bloomberg, as of 6/30/20

INFLATION (CPI YOY)



Source: Bloomberg, as of 8/31/20

IMF GLOBAL OUTLOOK GROWTH PROJECTIONS



Source: International Monetary Fund, as of 10/13/20

Fixed income rates & credit

Interest rate environment

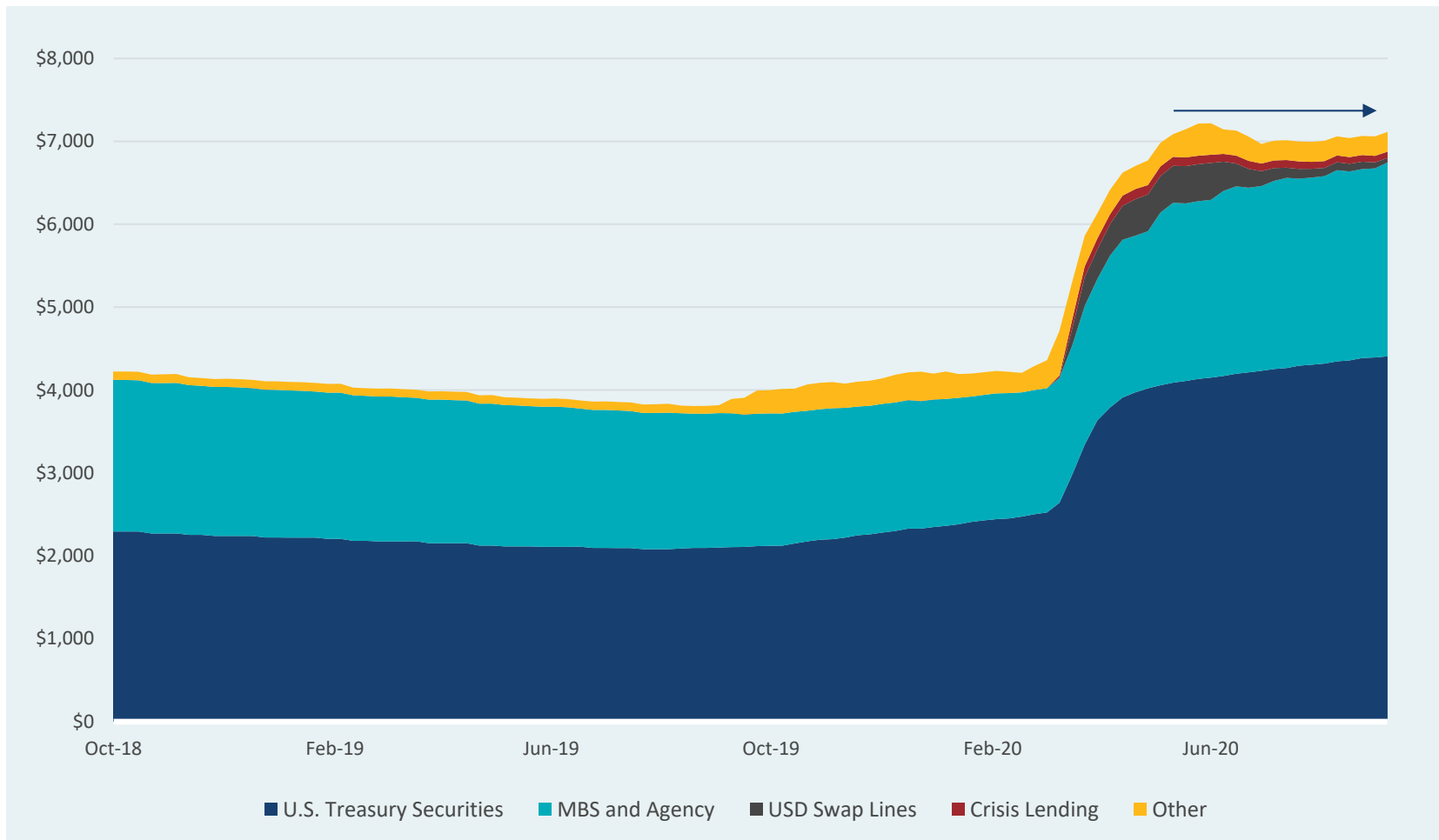
- Global interest rate levels remained extremely depressed relative to long-term averages in Q3, and the 10-year U.S. Treasury yield traded in a relatively narrow range between 0.50%-0.75%.
- The Federal Reserve maintained an accommodative tone, and most members of the Federal Open Market Committee remained of the view that short rates are likely to stay near-zero through 2023, and eventually move toward 2.50% over the longer-term. The Fed repeated that while it has the power to lend, it does not hold the power to spend, and additional fiscal support will likely be required from Congress.
- The U.S. Fed made an adjustment to its policy approach related to its inflation target. Instead of targeting stable prices, defined as 2% annual growth in personal consumption expenditures (PCE), the Fed will now implement an average inflation targeting approach aimed at achieving “inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%.”
- Officials at the Bank of England (BOE) reportedly warmed to the idea of pursuing a negative interest rate policy, and markets are now pricing in negative overnight rates by May 2021. Many analysts have stated that the BOE is likely to remain extremely supportive and may provide additional monetary accommodation in the form of quantitative easing before year-end.
- Investors were paid for betting on longer-term reflation of growth and inflation, likely due to their expectations for further fiscal and monetary accommodation moving forward. Ten-year breakeven inflation rates recovered from 1.3% to 1.6%, and key term spreads indicated a moderate steepening in the U.S. yield curve.

Area	Short Term (3M)	10-Year
United States	0.09%	0.68%
Germany	(0.63%)	(0.52%)
France	(0.64%)	(0.24%)
Spain	(0.54%)	0.25%
Italy	(0.48%)	0.87%
Greece	(0.08%)	1.02%
U.K.	0.01%	0.23%
Japan	(0.15%)	0.01%
Australia	0.12%	0.79%
China	2.29%	3.13%
Brazil	1.93%	7.45%
Russia	4.09%	6.29%

Source: Bloomberg, as of 9/30/20

Monetary stimulus

FED BALANCE SHEET, MILLIONS



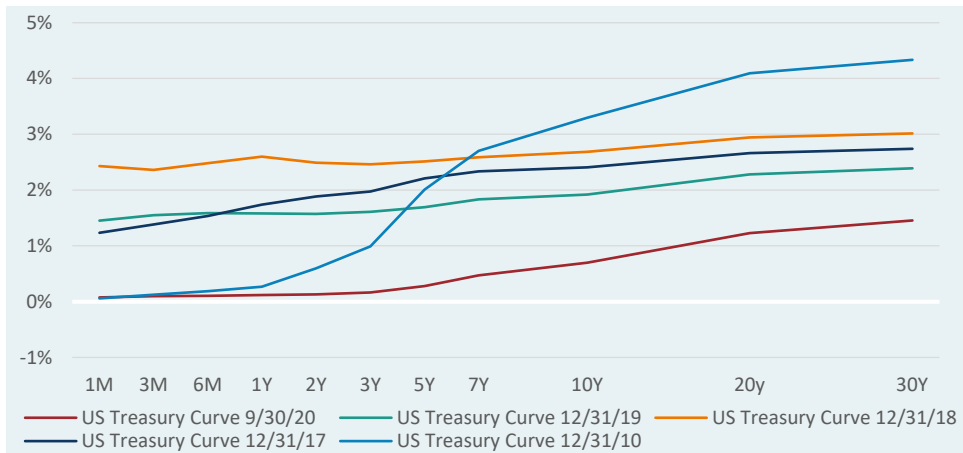
Fed balance sheet levels have remained flat

The Fed provided significant monetary accommodation in Q2. Officials have implied that further stimulus will likely need to come in the form of fiscal support

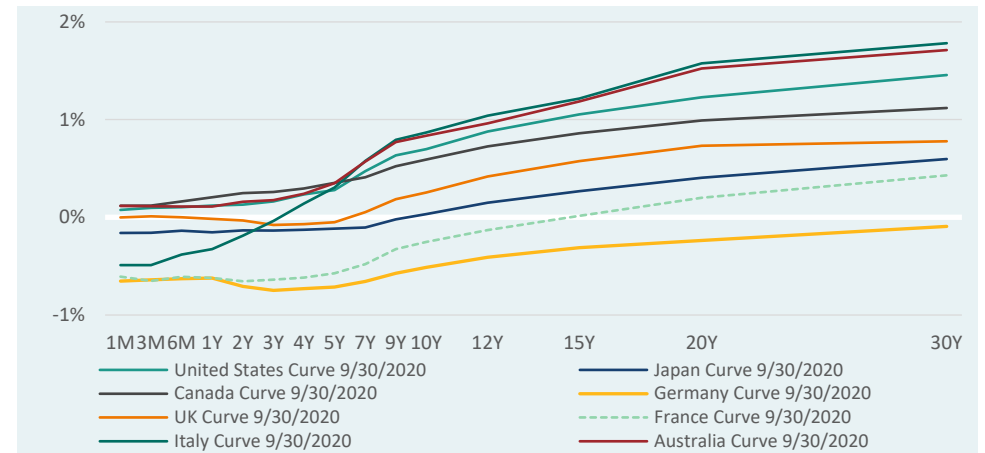
Source: FRED, Bloomberg, as of 9/16/20

Yield environment

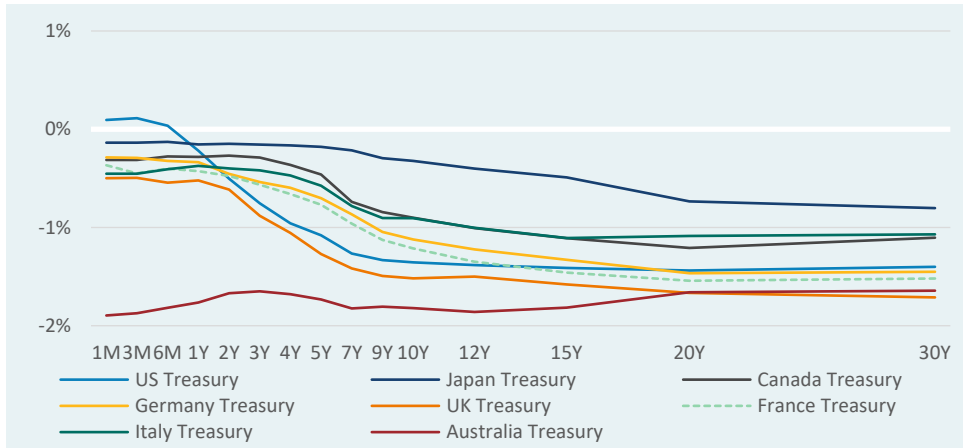
U.S. YIELD CURVE



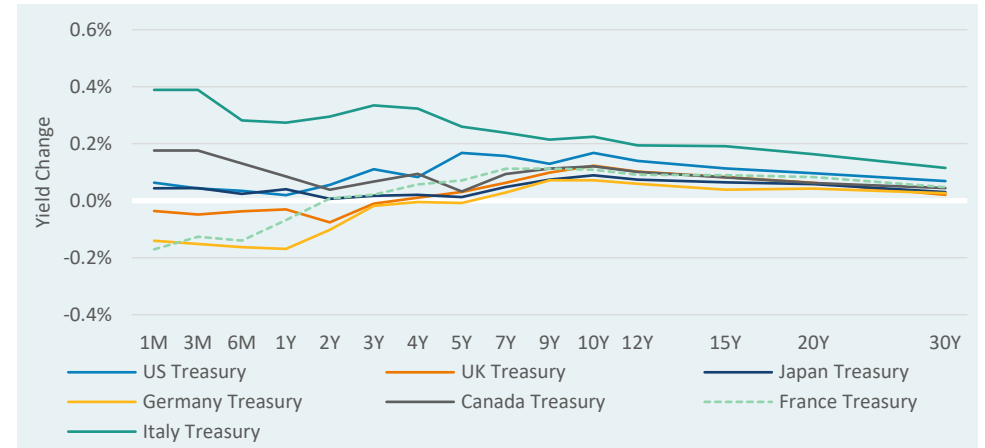
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/20

Credit environment

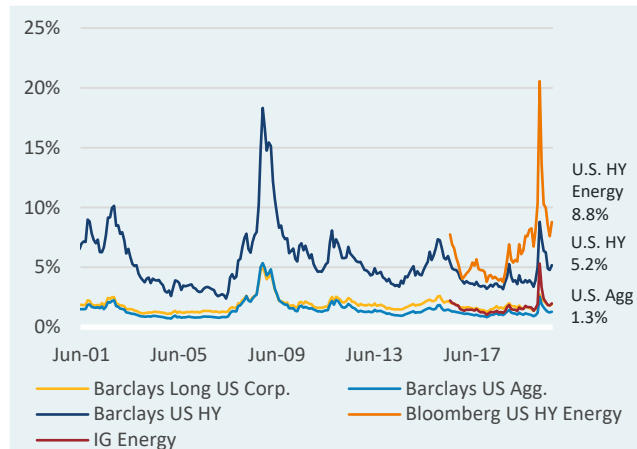
Credit markets performed positively in the third quarter as yields continued to fall from March highs. Buoyed by ongoing support from the Fed as well as increased investor demand for yield, investment grade credit returned 1.5% over the quarter while high yield and leveraged loans returned +4.6% and +4.1%, respectively. Within high yield, lower quality issues outperformed higher quality.

Investment-grade credit has now returned +6.4% year-to-date through September, while high yield performance turned positive at +0.6% and leveraged loans remained negative at -0.8% year-to-date.

Credit spreads fell across the board in Q3 but high yield led the way. Corporate investment grade spreads fell 14 bps through the quarter to 136 bps while high yield spreads fell 109 bps to 517 bps.

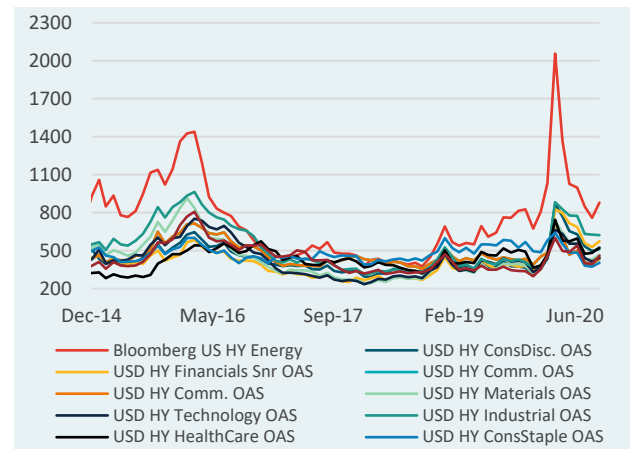
As a result of the post-March recovery, approximately two-thirds of global investment grade debt is now yielding less than 1%, and more debt is currently trading at a negative yield than at above the 2% level. While yields in the U.S. are still modestly higher than pre-pandemic levels, credit markets are priced similarly to how they were in January, despite a very different fundamental picture.

SPREADS



Source: Barclays, Bloomberg, as of 9/30/20

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/20

Market	Credit Spread (OAS)	
	9/30/20	9/30/19
Long U.S. Corp	1.9%	1.7%
U.S. Inv Grade Corp	1.4%	1.2%
U.S. High Yield	5.2%	3.7%
U.S. Bank Loans*	5.3%	4.5%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/20

*Discount margin (4-year life)

Default & issuance

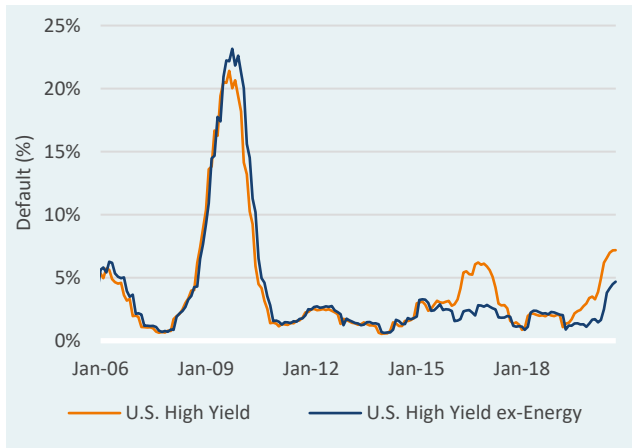
Default activity over the quarter slowed considerably from record numbers in Q2 but remained elevated relative to history. In the third quarter, 26 companies defaulted on \$19.3 billion, bringing the year-to-date default total to \$123.4 billion. This year-to-date figure would rank as the second highest annual default total on record.

The U.S. high yield default rate fell -0.4% in the quarter to 5.8% but remains 3.2% higher than the start of the year. Conversely, the U.S. leveraged loan default rate rose and hit a five-year-high at 4.3%, 2.6% higher year-to-date.

Certain high yield bond issuers took advantage of the low rate environment throughout Q3 and continued to come to market at a record pace. Gross issuance was \$131.9 billion over the quarter, which was second only to \$145.5 billion in Q2, the highest on record. Total gross issuance year-to-date has been \$350.3 billion.

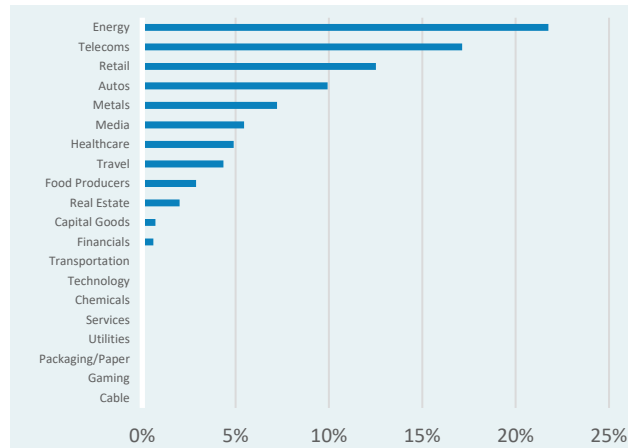
Investment grade issuance fell to nearly half the rate of the second quarter but remains elevated. New investment grade issuance totaled \$371 billion. A year-to-date \$1.54 trillion worth of new investment grade debt was nearly 70% higher than during the same period of 2019.

HY DEFAULT RATE (ROLLING 1-YEAR)



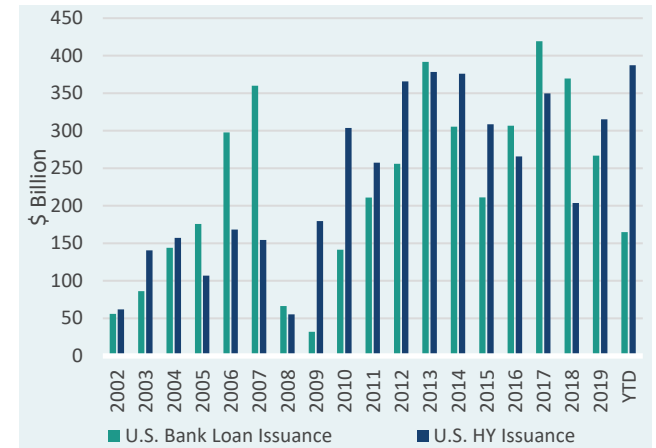
Source: BofA Merrill Lynch, as of 9/30/20

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 9/30/20 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 9/30/20

Equity

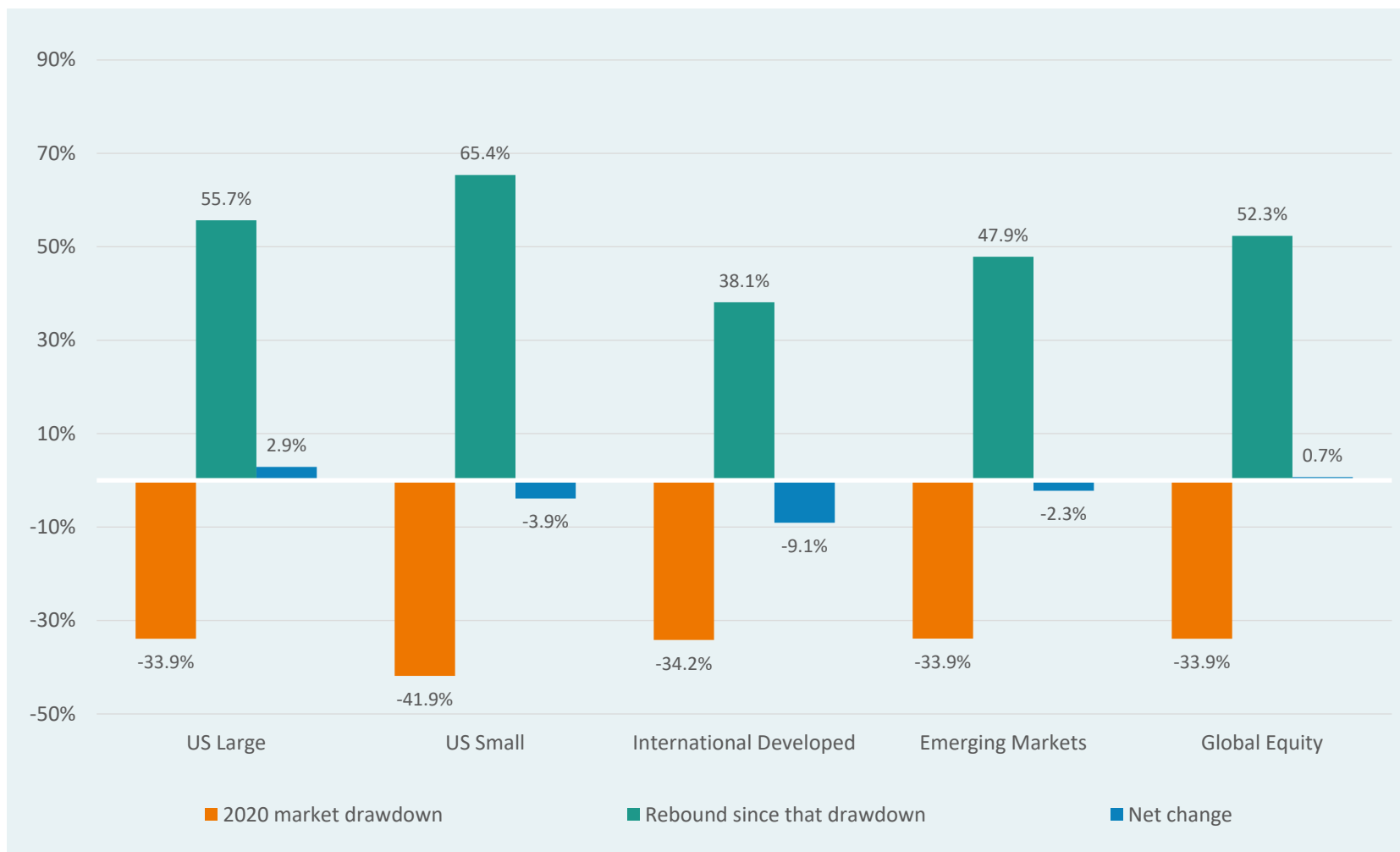
Equity environment

- U.S. equities reached a new high in September before pulling back later in the month. U.S. and emerging markets have recovered most losses year-to-date, while international developed equities remain more negative. Global equities are now positive for 2020 despite an earnings recession and considerable economic uncertainty.
 - Emerging market equities outperformed during the quarter (MSCI Emerging Markets +9.6%) followed by domestic equities (S&P 500 +8.9%) and international developed (MSCI EAFE +4.8%).
 - According to FactSet, S&P 500 Q3 earnings are expected to be down -20.5%. However, earnings in Q2 beat expectations by 12.5% (-31.6% YoY vs. -44.1%). Another large positive surprise in Q3 would be welcome news to investors. The Cboe VIX Index moderated in June
- from heightened levels and remained generally rangebound during the third quarter. The VIX ended the month of September at 26, higher than the long-term average of 19.
- The U.S. dollar fell -3.5% in the third quarter, continuing a downward trend since a sudden jump in March on safe-haven buying. The dollar has now completely unwound the gains experienced during the market sell-off.
 - U.S. growth stocks beat value stocks in the third quarter, continuing an incredible run of market leadership (Russell 1000 Growth +13.2%, Russell 1000 Value +5.6%), while large cap stocks outperformed small cap stocks (Russell 1000 +9.5%, Russell 2000 +4.9%).

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	8.9%		15.1%	
US Small Cap (Russell 2000)	4.9%		0.4%	
US Large Value (Russell 1000 Value)	5.6%		(5.0%)	
US Large Growth (Russell 1000 Growth)	13.2%		37.5%	
International Large (MSCI EAFE)	4.8%	1.3%	0.5%	(3.1%)
Eurozone (Euro Stoxx 50)	3.5%	(0.6%)	(1.7%)	(6.8%)
U.K. (FTSE 100)	0.1%	(4.1%)	(13.9%)	(17.0%)
Japan (NIKKEI 225)	6.8%	4.7%	10.9%	10.2%
Emerging Markets (MSCI Emerging Markets)	9.6%	8.5%	10.5%	12.8%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/20

Equity market peak-to-trough



Equity markets around the world have recovered most of their losses

As of 10/15/20 - "Peak-to-trough" is defined as the total loss from the highest value achieved in 2020 to the lowest value achieved following the COVID-19 market drawdown. "Net change" is the difference between the market price on October 15th and the highest value achieved in 2020. Indexes include: S&P 500, Russell 2000, MSCI EAFE, MSCI Emerging Markets, MSCI ACWI.

Domestic equity

U.S. equities delivered +8.9% in Q3, reaching a new high in September before pulling back later in the month. The S&P 500 is up +5.6% year-to-date, despite an earnings recession and considerable economic uncertainty.

Consumer Discretionary (+15.1%) and Materials (+13.3%) sectors led in Q3, with Energy (-19.7%) delivering further underperformance. Information Technology stocks have shown impressive performance year-to-date (+27.5%) and have captured headlines as some company valuations have

reached lofty levels. Large technology names have seen greater volatility recently, and exhibited a quick pullback during the first week of September. Growth stocks continue to be in vogue in the current low-growth environment.

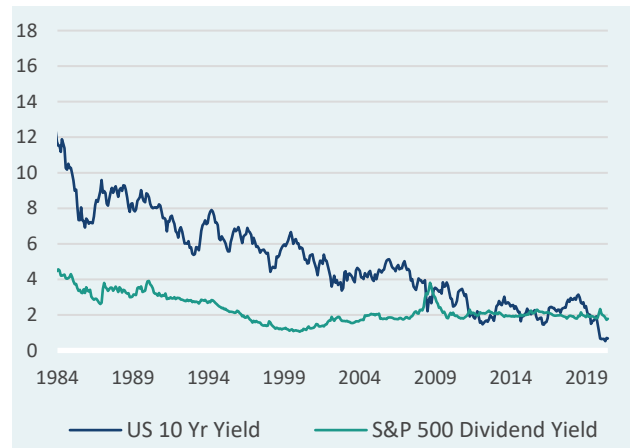
Many investors are justifiably questioning the rationale for such strong risk asset performance, at a time when so much uncertainty exists around public health and the economy, and at a time when some business models may no longer be viable due to COVID-19.

S&P 500



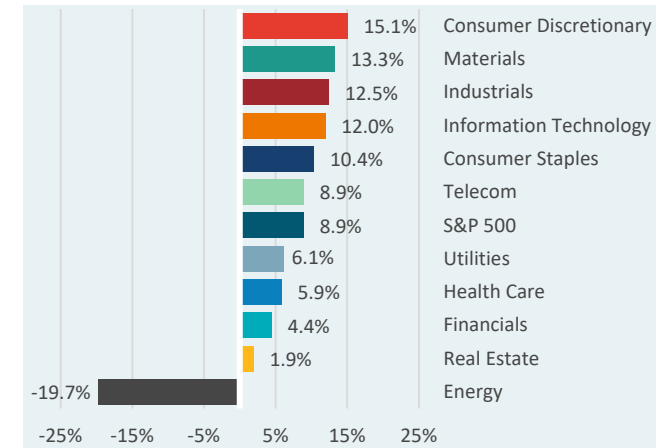
Source: Standard & Poor's, as of 9/30/20

DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 9/30/20

Q3 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 9/30/20

Domestic equity size & style

U.S. growth stocks beat value stocks during Q3, continuing an incredible run of market leadership (Russell 1000 Growth +13.2%, Russell 1000 Value +5.6%), while large cap stocks outperformed small cap stocks (Russell 1000 +9.5%, Russell 2000 +4.9%).

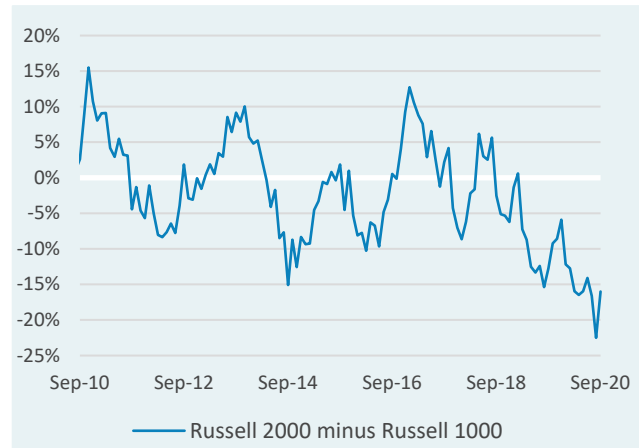
It seems that 2020 has been the perfect storm for value stocks. Commodities sectors were experiencing oversupply leading up to the onset of COVID-19, and the virus greatly accelerated these problems, resulting in a historic crash to prices (the Energy sector contains many value stocks). The Energy sector has delivered -45.2% over the past year. At the same time, the world has been rapidly changing in terms of technological progress, and COVID-19 appears to have accelerated these trends, contributing to extreme

outperformance of the growth-tilted Information Technology sector at +47.2% over the past year.

We recognize that recent value underperformance is anomalous, but we also recognize that much of this price action has been due to global trends that may not necessarily reverse over the short-term. It is very difficult to successfully make short-term bets on style factors, as factors can be incredibly noisy and vulnerable to sector randomness. Value is historically cheap, but a catalyst for a value turnaround is not yet evident. We continue to believe that a buy-and-hold approach to style investing is the best course of action, most of the time, but we are closely watching this space.

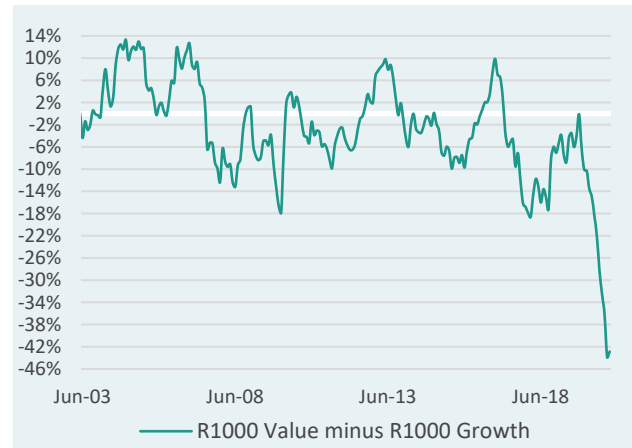
Sector performance has fueled dramatic negative performance of the value premium

SMALL CAP VS LARGE CAP (YOY)



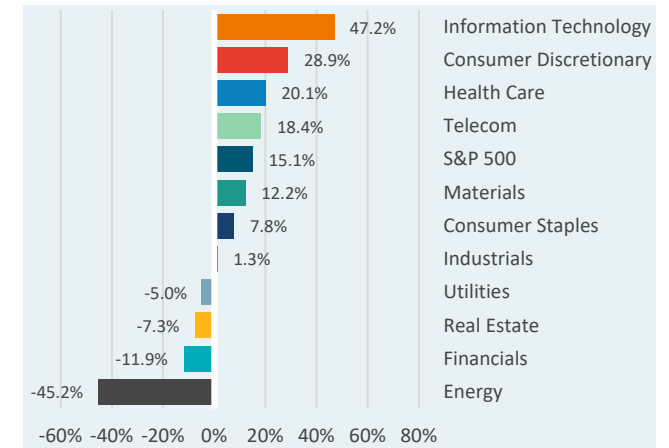
Source: FTSE, as of 9/30/20

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/20

S&P 500 SECTOR PERFORMANCE (1-YEAR)



Source: Standard & Poor's, as of 9/30/20

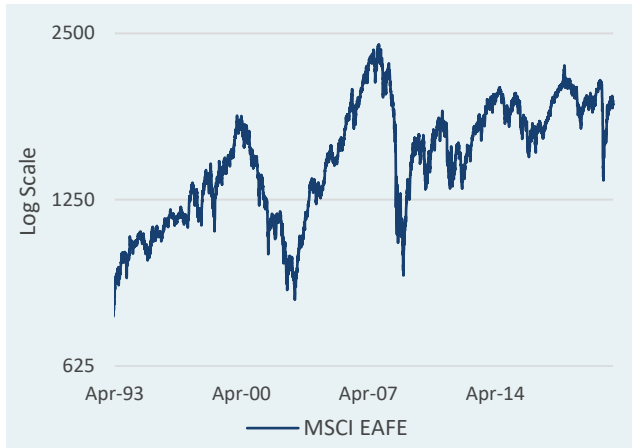
International developed equity

International equities continued to recover through Q3, though the MSCI EAFE Index (+4.8%) materially lagged the MSCI Emerging Markets Index (+9.6%) and the S&P 500 Index (+8.9%). Dollar weakness coinciding with the risk recovery through the summer was a major theme and dampened the underperformance of international developed equities relative to U.S. equities in U.S. dollar terms. The three largest currency exposures embedded in the MSCI EAFE Index—the euro (32%), the yen (26%), and the pound sterling (13%)—appreciated +4.4%, +2.2%, and +4.6% relative to the greenback over the course of the quarter.

In the second quarter, MSCI EAFE Index revenues dropped nearly -20%, and earnings dropped nearly -60%, pushing certain valuation metrics including price/earnings ratios to historic highs. Moving into Q3 earnings season, analysts are anticipating a historic turnaround in corporate profits, which could help bring valuations back to more normal levels.

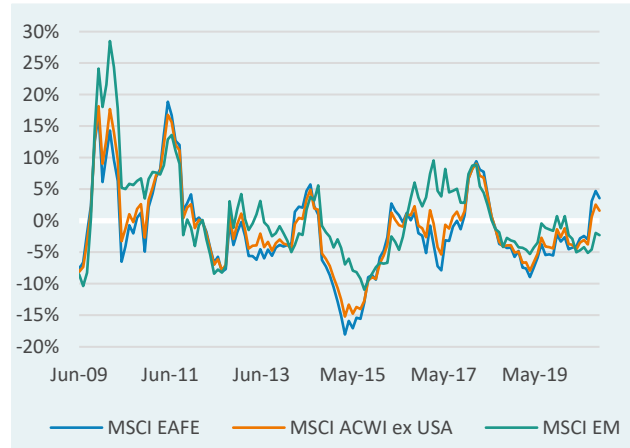
The MSCI EAFE Growth Index returned +8.4% over the third quarter, outpacing the MSCI EAFE Value Index (+1.2%) in U.S. dollar terms, extending its outperformance over the year-to-date to a staggering +23.6%.

INTERNATIONAL DEVELOPED EQUITIES



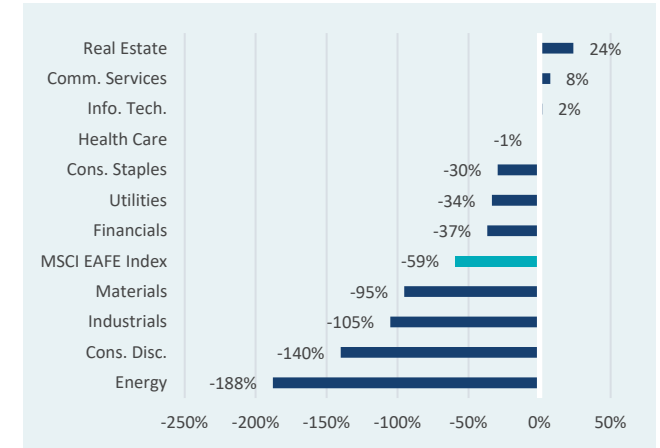
Source: MSCI, as of 9/30/20

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/20

Q2 2020 EARNINGS GROWTH – MSCI EAFE INDEX



Source: MSCI, Bloomberg, as of 9/30/20

Emerging market equity

Emerging market equities (MSCI EM +9.6%) outperformed U.S. (S&P 500 +8.9%) and international developed equities (MSCI EAFE +4.8%) over the quarter. Looking across the emerging market complex, Latin American equities underperformed (MSCI EM Latin American -1.3%) which was a continuation of a longer-term trend. Latin American stocks have drastically underperformed over the previous 10-year period (MSCI EM Latin America -5.7%, MSCI EM +2.5%).

Inflation remained subdued relative to longer-term averages, due in large part to energy prices remaining under pressure. The Emerging Markets Citi Inflation Surprise Index rose from

-28.8 to -6.6 over the quarter, implying that the magnitude of inflation data misses lessened between June and September.

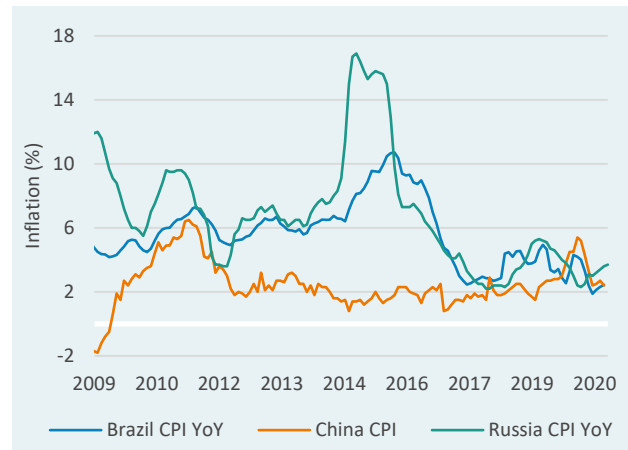
Emerging market currencies broadly appreciated relative to the U.S. dollar, and Asian currencies outperformed. The offshore Chinese renminbi rallied 4.2% versus the greenback to ¥6.78, its strongest level since mid-2019. Part of the rally in the yuan has been attributed to FTSE Russell's recent decision to add Chinese government bonds to its World Government Bond Index. This change would take effect in 2021, and would likely result in increased foreign capital inflows.

EMERGING MARKET EQUITY



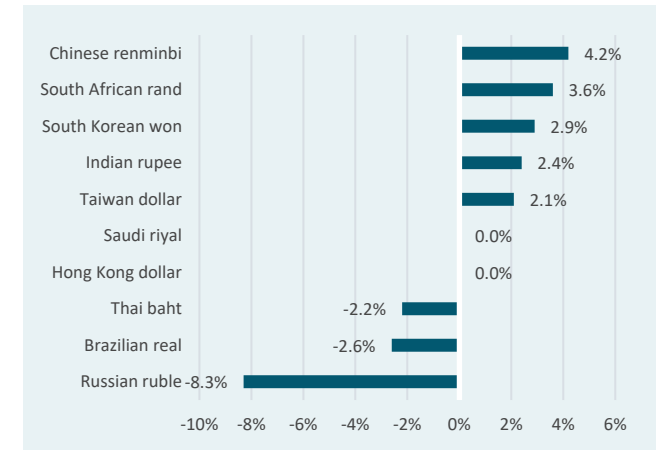
Source: MSCI, as of 9/30/20

INFLATION (YOY)



Source: Bloomberg, as of 9/30/20

Q3 CURRENCY PERFORMANCE – MSCI EM INDEX



Source: Bloomberg, as of 9/30/20

Equity valuations

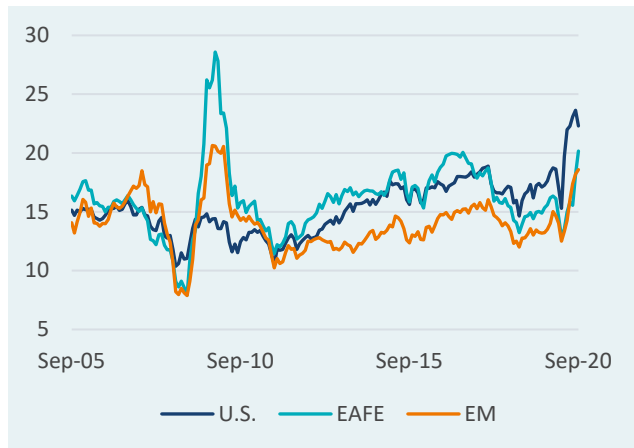
U.S. equity valuation levels moderated in September after continuing to rise through July and August. Prices ended the quarter little changed relative to 12-month earnings forecasts (22.3 Price/Earnings). The moderation of U.S. equity valuations was driven in part by a tech-driven sell-off across U.S. large-caps, and in part by improvement in the earnings growth and outlook.

The blended net profit margin for the S&P 500 Index in Q3, which combines actual reported results and estimated results for companies which have yet to report, is 9.7%. If the

blended net profit margin were to materialize, it would mark the first quarterly improvement in the profitability metric since the second quarter of 2019, and could provide further fundamental backing for current price levels. Analysts are expecting net profit margins to continue to improve. Estimated profit margins for Q4 2020, Q1 2021, and Q2 2021 ended the quarter at 9.8%, 10.4%, and 11.0%, respectively.

Equity dividend yields remain attractive relative to nominal government bond yields, especially in Europe, and could further entice investors to reach for yield through risk assets.

FORWARD P/E RATIOS



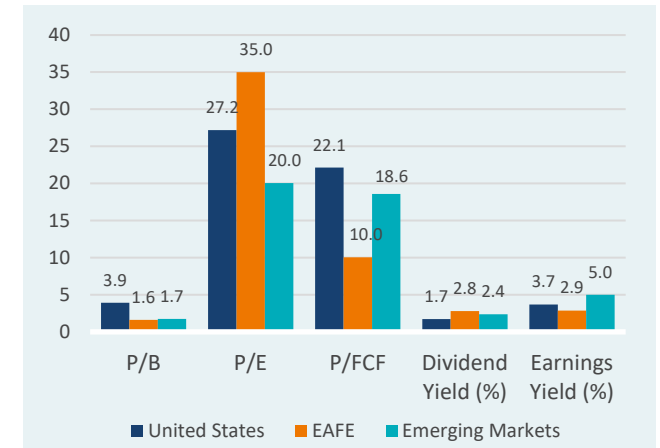
Source: MSCI, 12m forward P/E, as of 9/30/20

S&P 500 NET PROFIT MARGINS



Source: FactSet, as of 9/30/20

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 9/30/20 - trailing P/E

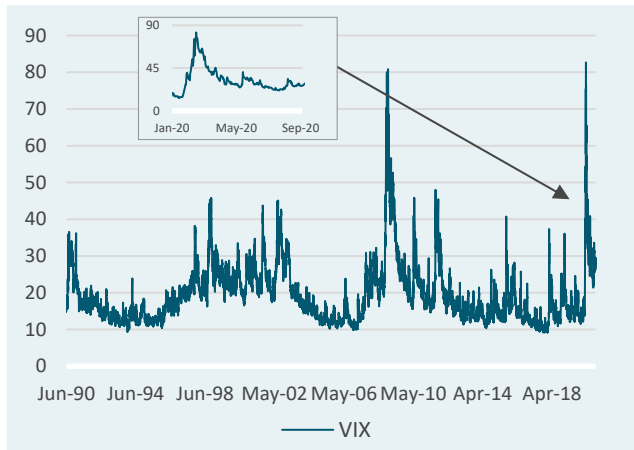
Equity volatility

The Cboe VIX Index moderated in June from heightened levels, and remained generally rangebound during the third quarter. The VIX ended September at 26, but remains elevated relative to the long-term average of 19.

U.S. equities have historically exhibited the lowest risk among developed and emerging markets. In recent years, this relationship has flipped, with U.S. stocks showing higher volatility than developed market stocks, and nearly on par with emerging market equities.

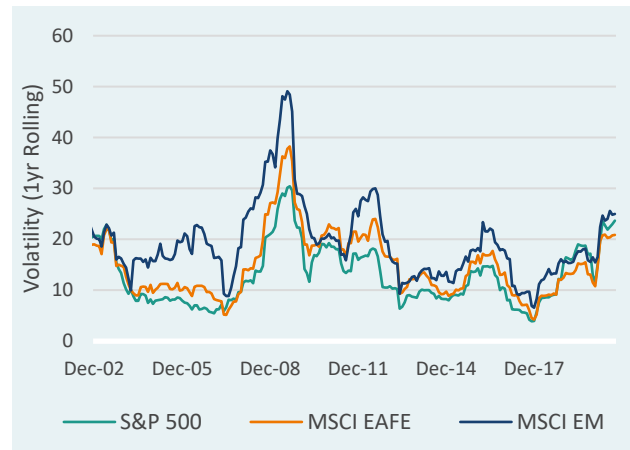
Expectations for short-term equity volatility faded through the summer. The VIX term structure continued to indicate an expectation for heightened volatility around the Presidential election in the beginning of November. Toward the end of the quarter, concerns over the impact of mail-in voting on the timeliness of electoral results reporting led some market participants to position around the prospect of a contested election and its consequences for equity markets. Polling data indicates a widening lead for Biden. The prospect of a “Blue Wave” appears to have emboldened some traders to sell longer-dated VIX futures contracts.

U.S. IMPLIED VOLATILITY (VIX)



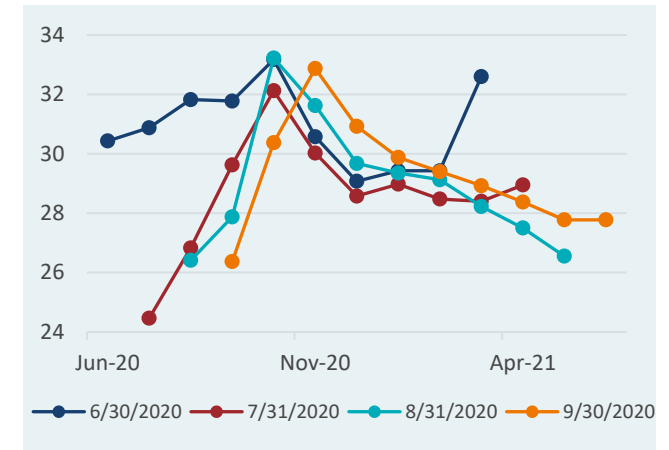
Source: Cboe, as of 9/30/20

REALIZED VOLATILITY



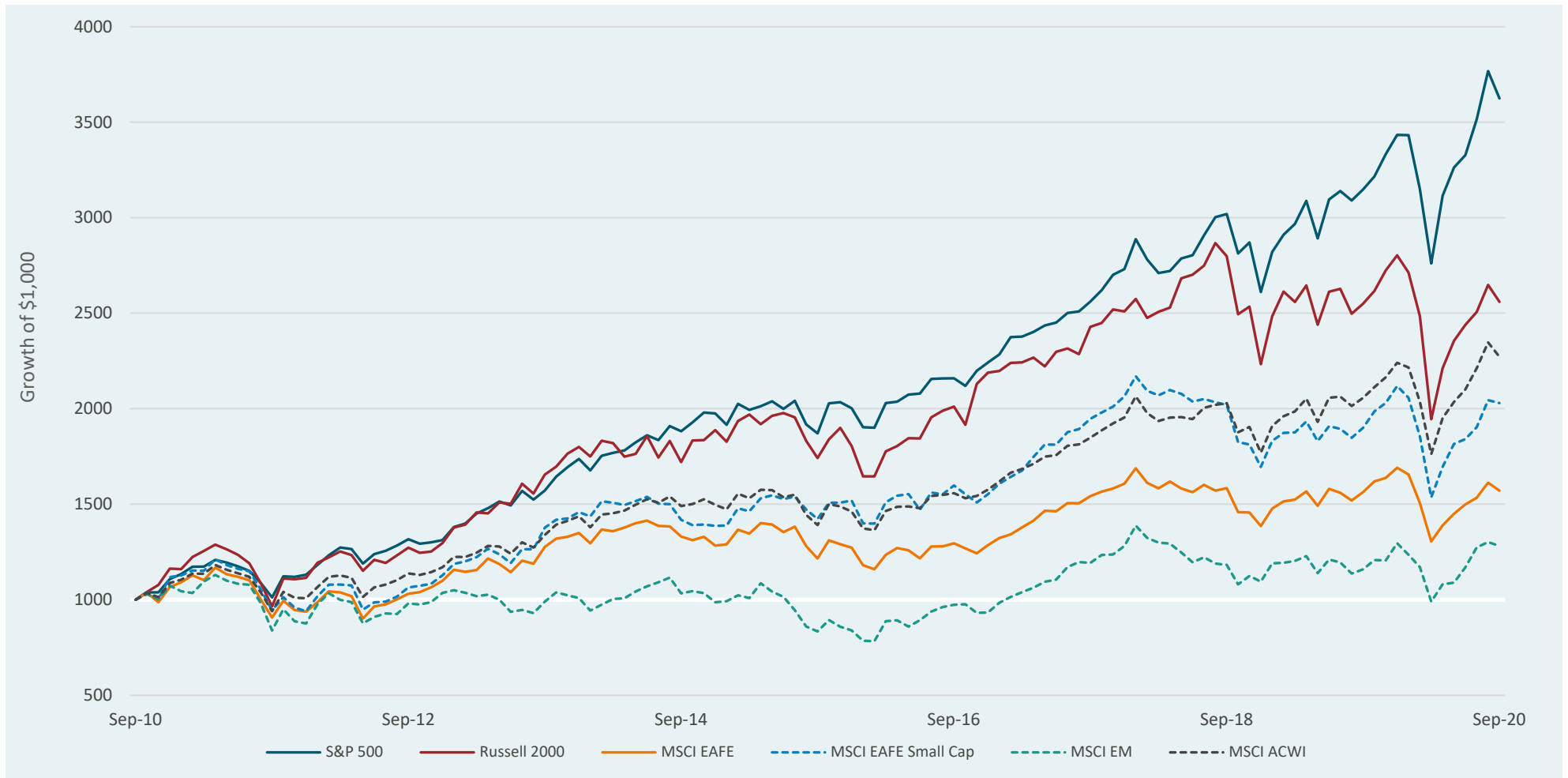
Source: Standard & Poor's, MSCI, as of 9/30/20

HISTORICAL VIX TERM STRUCTURES



Source: Bloomberg, as of 9/30/20

Long-term equity performance



Source: Morningstar, as of 9/30/20

Other assets

Currency

The U.S. dollar fell -3.5% in the third quarter, continuing a downward trend since a sudden jump in March on safe-haven buying. Though the dollar did show some signs of stabilization in September as equities took a step back, the Bloomberg Dollar Spot Index has now completely unwound the gains experienced during the market sell-off.

Interest rate differentials between U.S. Treasury bonds and international developed sovereign bonds have begun to separate once again. U.S. Treasury yields traded in a relatively narrow range while European yields

drifted lower, perhaps as a result of speculation on further quantitative easing from the European Central Bank. A continuation of this trend could be supportive of the dollar bull case, looking ahead.

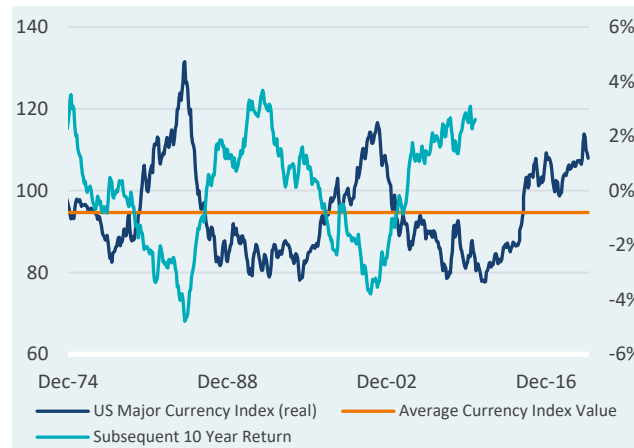
Despite the significant rally of the euro (+4.4%) relative to the greenback in Q3, the common currency remains cheap according to the OECD's purchasing power parity data. At quarter-end, the euro was -20.8% cheap relative to the U.S. dollar, which was significant but still at its least undervalued level since September 2018.

BLOOMBERG DOLLAR SPOT INDEX



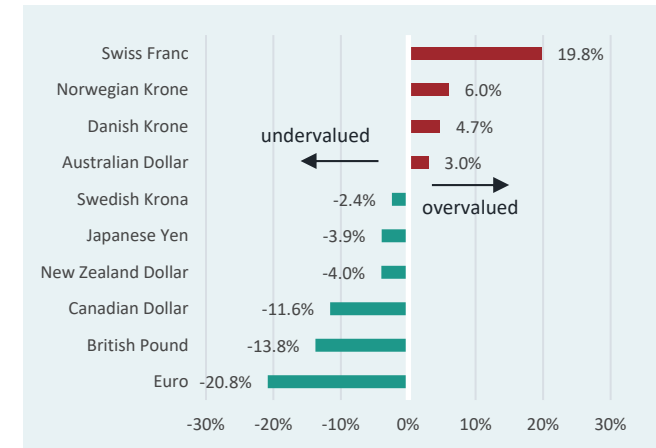
Source: Bloomberg, as of 9/30/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



Source: Federal Reserve, as of 9/30/20

G10 FX VALUATIONS – OECD PPP (VS USD)



Source: OECD, Bloomberg, as of 9/30/20

Equity factors: A closer look

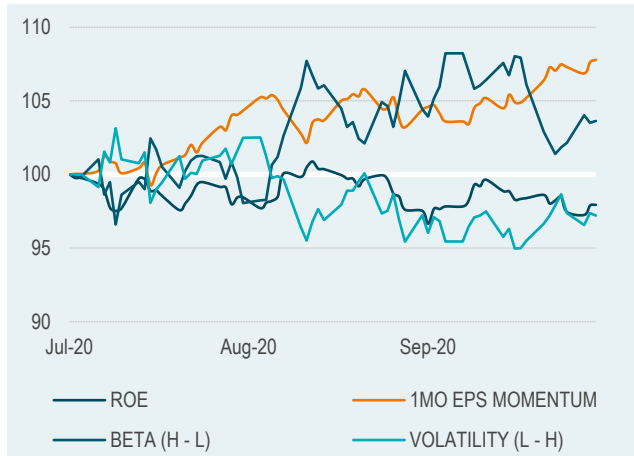
Investors rewarded stocks with improving earnings prospects during the third quarter as one-month earnings momentum (long/short, sector neutral, S&P 500) was the top performing factor for the period. Stocks with higher beta and higher historic volatility also continued to rally during most of the quarter. In contrast, higher quality stocks sold off during the period.

Over the trailing 5-year period, the respective growth, quality and price momentum factors finished with modestly negative results. These factors also showed some recent sensitivity to the dramatic market movements caused by the

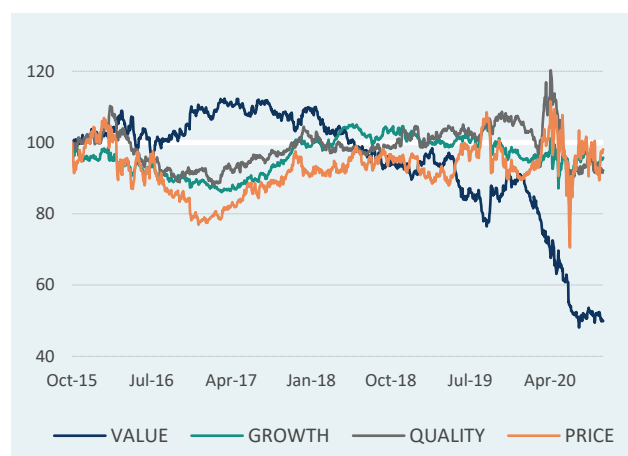
pandemic. In contrast, the value factor remains mired in a long-term drawdown.

The pandemic has caused significant dispersion as investors rushed into stocks perceived to benefit from the crisis. In contrast, the stocks thought to gain most from a potential recovery back to normalcy continue to lag both the beneficiaries and the broad market. The structural risk to the recovery theme is a potential permanent change in behavior as certain activities, such as travel and tourism, remain depressed relative to pre-COVID norms.

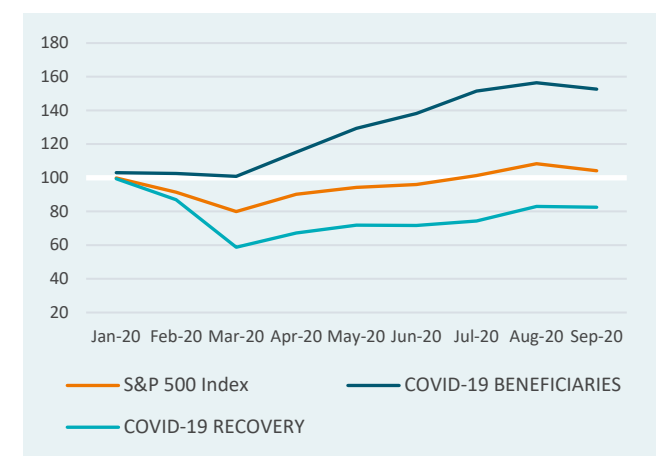
2020 Q3 FACTOR PERFORMANCE



2015Q4 – 2020Q3 FACTOR PERFORMANCE



COVID-19 BASKETS



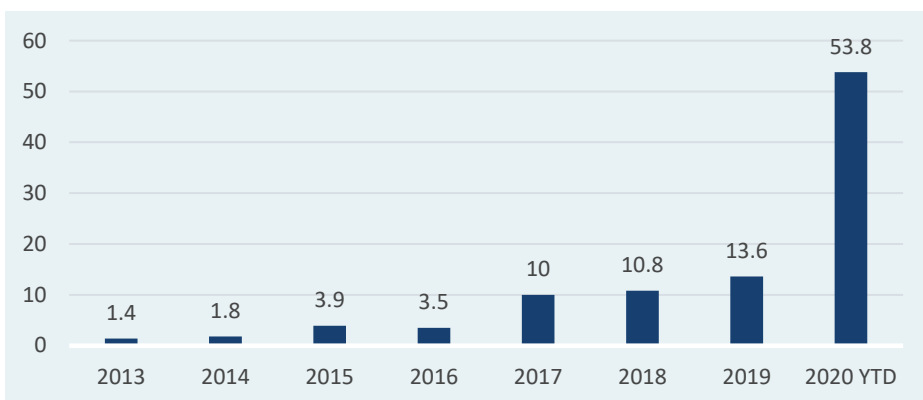
Source: JP Morgan US Equity Strategy

SPACs at a glance

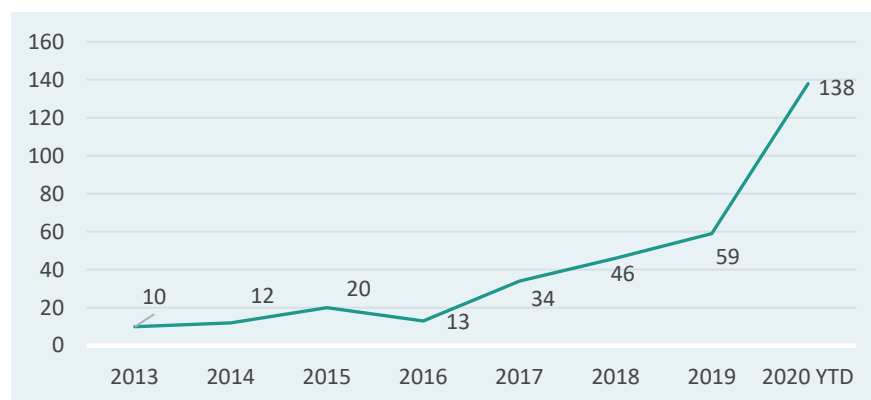
Special Purpose Acquisition Companies, commonly abbreviated as SPACs, have proliferated substantially in 2020, especially in the third quarter. This has been driven by recent market volatility, increasing initial public offering (IPO) risks and inefficiencies, coupled with record retail investor trading volume. The reputation of SPACs is improving as notable investors and operators continue to enter the space.

- A SPAC is a “blank check” shell company formed specifically to acquire a late-stage private company target. From the SPAC sponsor’s point of view, it is analogous to creating a Private Equity fund that renders only one investment, which becomes publicly traded upon the merger process known as “de-SPAC”.
- SPACs allow private companies to undergo public listing quicker, bypassing a traditional IPO process.

TOTAL SPACS CAPITAL RAISED (\$BN)



NUMBER OF SPAC IPOs



Source: SPAC Research, as of 10/9/20

Implications for institutional investors

- SPACs have experienced significant volatility around a historic negative return level.

SPAC RETURNS % POST-MERGER COMPLETION

Sample of SPAC transactions completed since January 2018



- We believe the rise of SPACs will continue to disrupt different asset classes in various ways.
 - In Venture Capital and Leveraged Buyouts, SPAC serves as a new potential exit channel for companies that pre-empts a traditional IPO, generating earlier liquidity for GPs and LPs.
 - SPACs have become a deal source for mutual funds, private markets and hedge fund managers to invest via a PIPE.
 - In SPACs, milestone-based compensation for the management team are more acceptable and normalized as compared to a traditional IPO. This could potentially lead to better alignment of company and GP incentives and interests.

SPACs have yet to be proven as an attractive asset class for prudent investors

We are currently assessing the longer-term impact of SPACs on the private & public markets

Source: Goldman Sachs Global Investment Research, Dealogic, UBS, as of 7/30/20.

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	24.3	20.1	17.3
US Bonds	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	6.8	14.1	13.8
Large Cap Equity	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	6.4	11.4	12.3
Small Cap Growth	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	3.9	9.0	9.9
60/40 Global Portfolio	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	3.6	8.0	9.9
Hedge Funds of Funds	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	2.5	8.0	9.3
Cash	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	0.4	7.7	7.1
Real Estate	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	-0.3	6.1	6.2
Emerging Markets Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	-1.2	5.3	4.6
International Equity	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	-7.1	4.2	3.6
Small Cap Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	-8.7	4.1	2.9
Large Cap Value	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	-11.6	3.1	2.5
Commodities	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	-12.1	1.1	0.6
Small Cap Value	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-21.5	-3.1	-6.0

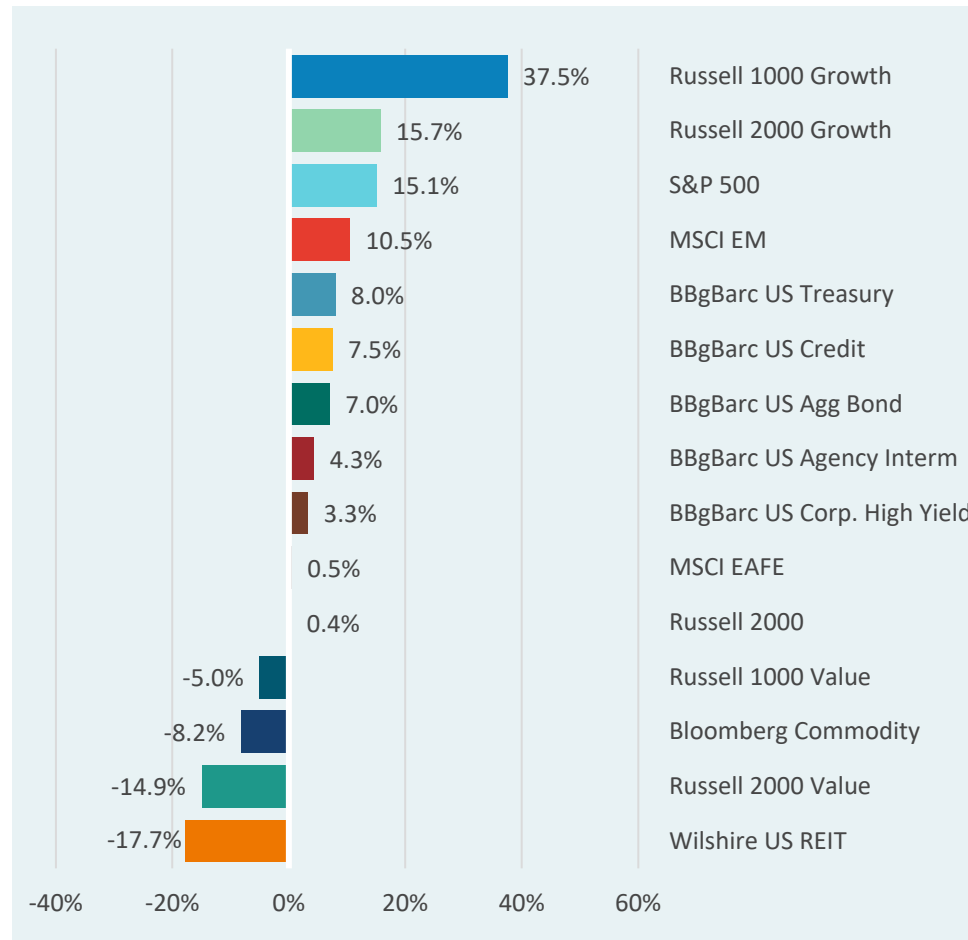
BEST
↑
↓
WORST

- Large Cap Equity
- Small Cap Growth
- Commodities
- Large Cap Value
- International Equity
- Real Estate
- Large Cap Growth
- Emerging Markets Equity
- Hedge Funds of Funds
- 60% MSCI ACWI/40% BBgBarc Global Bond
- US Bonds
- Cash

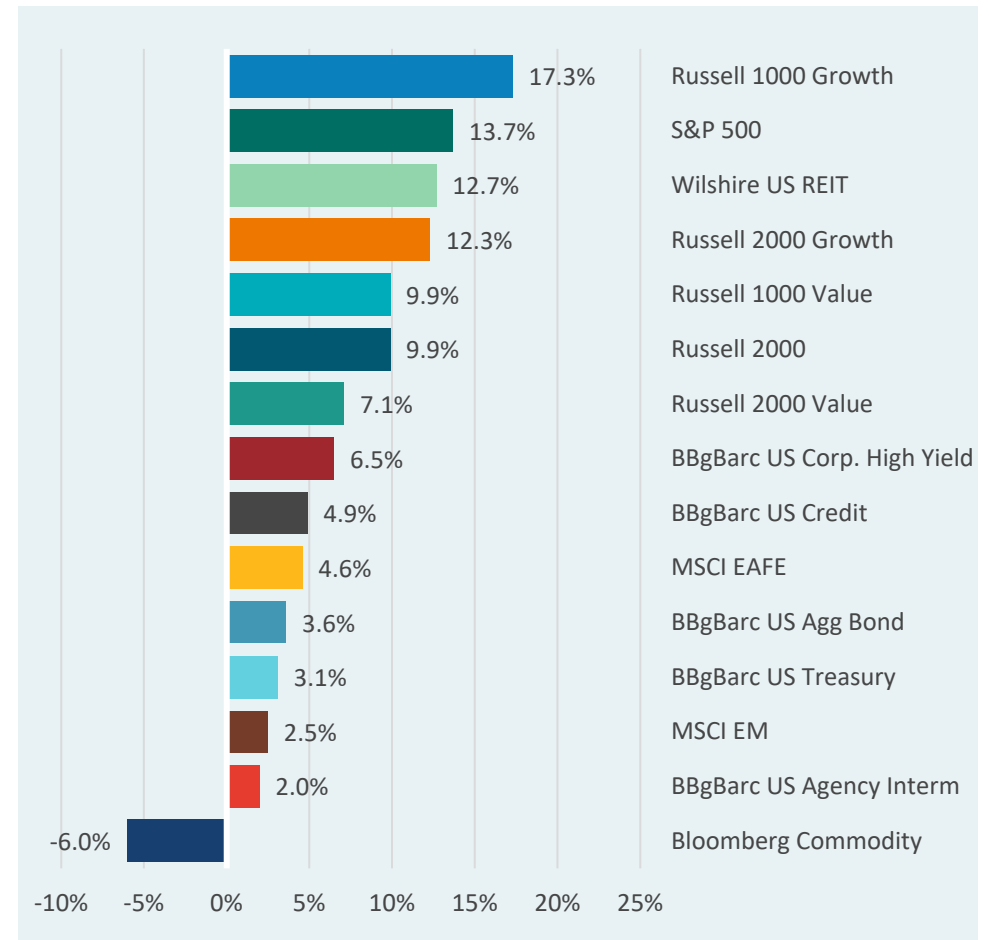
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/20.

Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



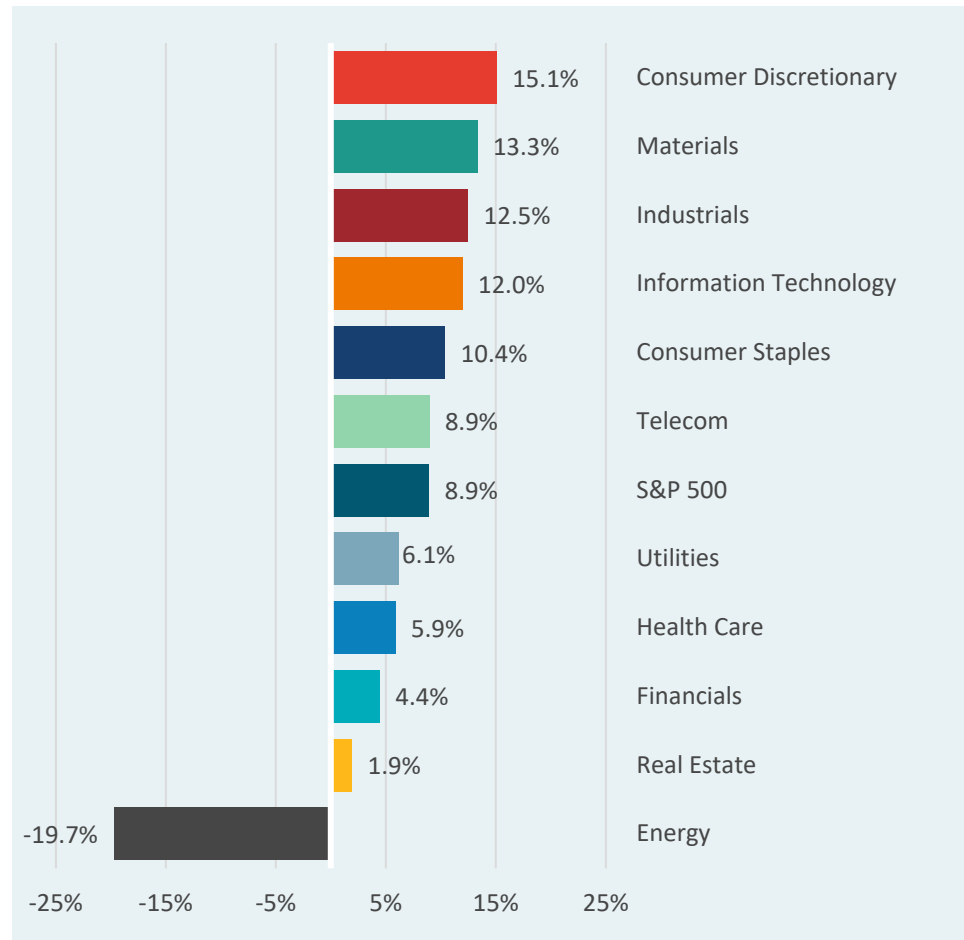
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/20

Source: Morningstar, as of 9/30/20

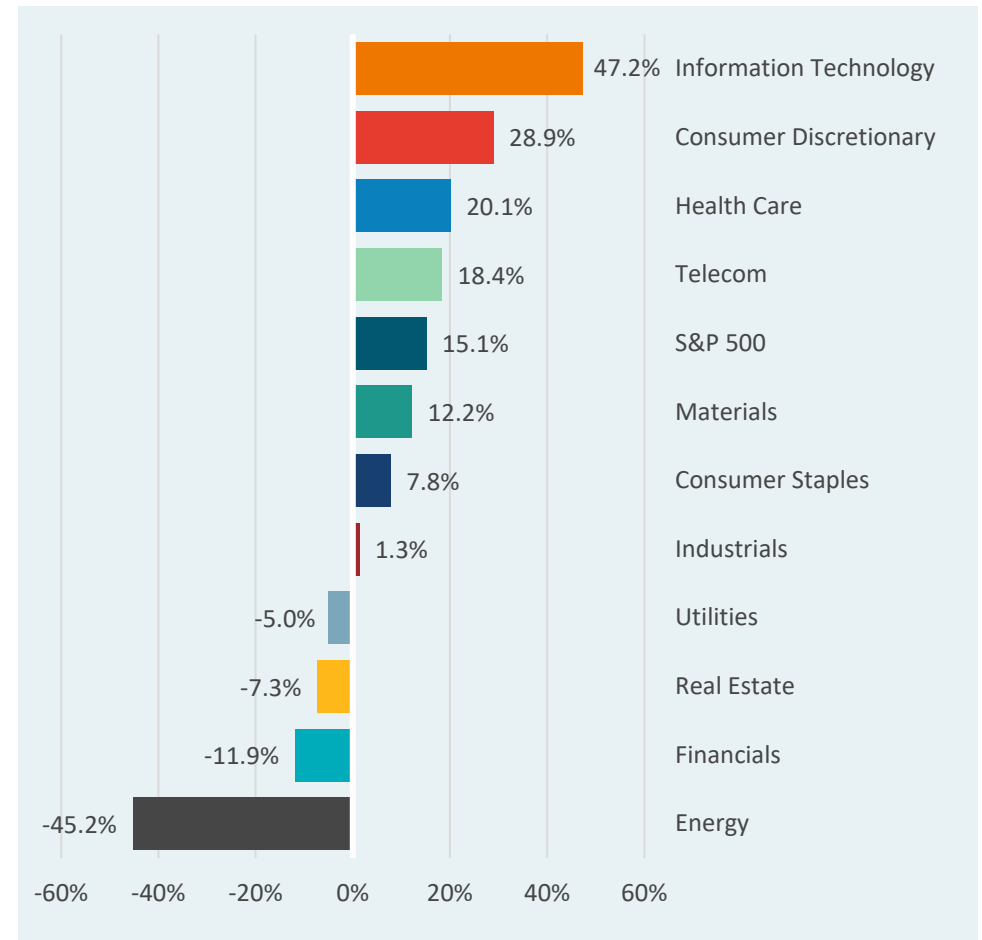
S&P 500 sector returns

Q3 2020



Source: Morningstar, as of 9/30/20

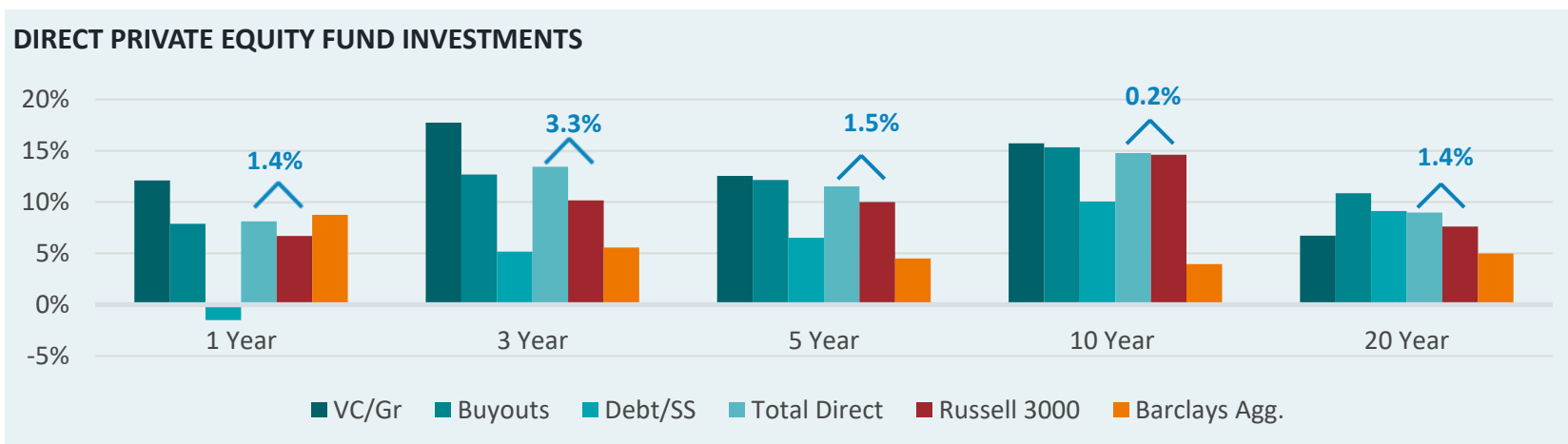
ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/20

Private equity vs. public performance

As of 6/30/2020

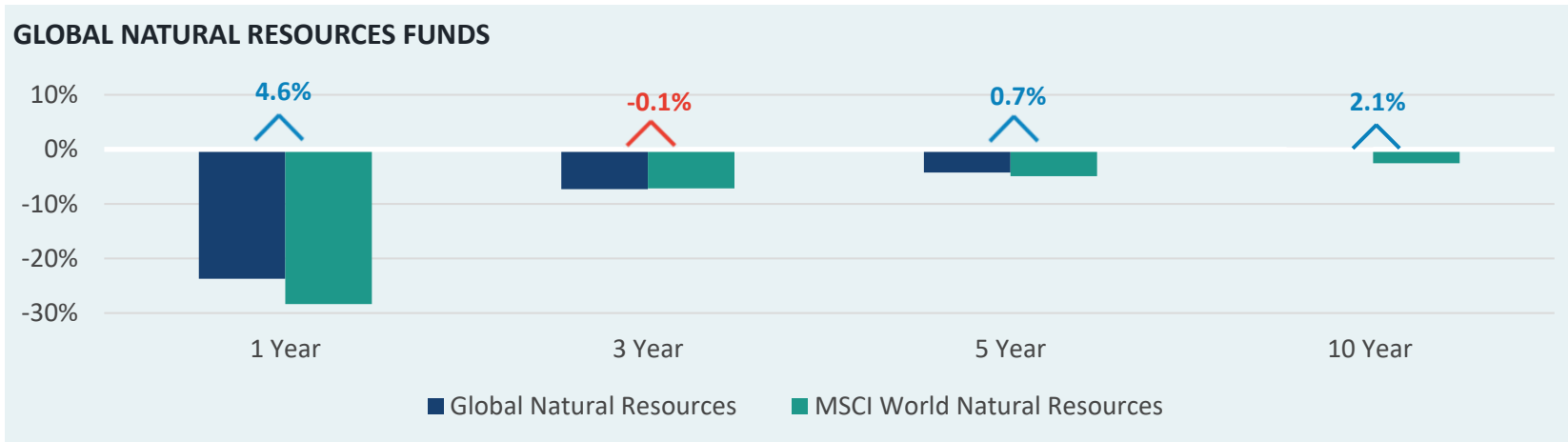


Direct P.E Fund Investments outperformed comparable public equities across all time periods.

Sources: Thomson Reuters Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of June 30, 2020. Public Market Equivalent returns resulted from "Total Direct's" identical cash flows invested into and distributed from respective traditional asset comparable.

Private equity vs. liquid real assets performance

As of 6/30/2020



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods, except on a 3 year basis

Sources: Thomson Reuters C|A PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) universes as of June 30, 2020. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(3.8)	8.9	5.6	15.1	12.3	14.1	13.7
S&P 500 Equal Weighted	(2.5)	6.7	(4.7)	2.5	6.5	10.3	12.0
DJ Industrial Average	(2.2)	8.2	(0.9)	5.7	10.0	14.0	12.7
Russell Top 200	(4.2)	10.2	9.6	20.3	14.3	15.6	14.5
Russell 1000	(3.7)	9.5	6.4	16.0	12.4	14.1	13.8
Russell 2000	(3.3)	4.9	(8.7)	0.4	1.8	8.0	9.9
Russell 3000	(3.6)	9.2	5.4	15.0	11.6	13.7	13.5
Russell Mid Cap	(1.9)	7.5	(2.3)	4.6	7.1	10.1	11.8
Style Index							
Russell 1000 Growth	(4.7)	13.2	24.3	37.5	21.7	20.1	17.3
Russell 1000 Value	(2.5)	5.6	(11.6)	(5.0)	2.6	7.7	9.9
Russell 2000 Growth	(2.1)	7.2	3.9	15.7	8.2	11.4	12.3
Russell 2000 Value	(4.7)	2.6	(21.5)	(14.9)	(5.1)	4.1	7.1

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	(3.2)	8.1	1.4	10.4	7.1	10.3	8.5
MSCI ACWI ex US	(2.5)	6.3	(5.4)	3.0	1.2	6.2	4.0
MSCI EAFE	(2.6)	4.8	(7.1)	0.5	0.6	5.3	4.6
MSCI EM	(1.6)	9.6	(1.2)	10.5	2.4	9.0	2.5
MSCI EAFE Small Cap	(0.7)	10.3	(4.2)	6.8	1.4	7.4	7.3
Style Index							
MSCI EAFE Growth	(0.7)	8.4	4.6	13.4	7.1	9.2	7.0
MSCI EAFE Value	(4.6)	1.2	(18.3)	(11.9)	(5.9)	1.1	2.1
Regional Index							
MSCI UK	(5.0)	(0.2)	(23.4)	(15.8)	(5.6)	(0.4)	2.0
MSCI Japan	1.0	6.9	(0.7)	6.9	3.9	7.5	6.2
MSCI Euro	(3.8)	4.2	(9.1)	(1.9)	(2.1)	4.4	3.5
MSCI EM Asia	(1.1)	11.9	8.0	21.5	5.7	11.3	5.5
MSCI EM Latin American	(5.1)	(1.3)	(36.1)	(29.4)	(11.8)	2.1	(5.7)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(0.4)	3.0	9.2	10.1	5.8	4.6	3.6
BBgBarc US Treasury Bills	0.0	0.0	0.7	1.2	1.7	1.2	0.7
BBgBarc US Agg Bond	(0.1)	0.6	6.8	7.0	5.2	4.2	3.6
Duration							
BBgBarc US Treasury 1-3 Yr	0.0	0.1	3.1	3.6	2.7	1.8	1.3
BBgBarc US Treasury Long	0.4	0.1	21.3	16.3	11.9	8.2	7.2
BBgBarc US Treasury	0.1	0.2	8.9	8.0	5.5	3.7	3.1
Issuer							
BBgBarc US MBS	(0.1)	0.1	3.6	4.4	3.7	3.0	3.0
BBgBarc US Corp. High Yield	(1.0)	4.6	0.6	3.3	4.2	6.8	6.5
BBgBarc US Agency Interm	0.1	0.3	4.0	4.3	3.3	2.4	2.0
BBgBarc US Credit	(0.3)	1.5	6.4	7.5	6.2	5.7	4.9

OTHER

Index							
Bloomberg Commodity	(3.4)	9.1	(12.1)	(8.2)	(4.2)	(3.1)	(6.0)
Wilshire US REIT	(3.4)	1.3	(16.7)	(17.7)	0.4	5.7	12.7
CS Leveraged Loans	0.7	4.1	(0.8)	0.8	3.2	4.6	5.0
Alerian MLP	(13.6)	(16.3)	(48.3)	(50.7)	(21.9)	(12.4)	(4.0)
Regional Index							
JPM EMBI Global Div	(1.9)	2.3	(0.5)	1.3	3.5	6.1	5.4
JPM GBI-EM Global Div	(2.0)	0.6	(6.3)	(1.4)	0.2	4.8	0.5
Hedge Funds							
HFRI Composite	(1.2)	4.1	0.5	4.0	2.7	4.0	3.6
HFRI FOF Composite	(0.4)	4.2	2.5	5.6	2.9	3.1	2.9
Currency (Spot)							
Euro	(1.9)	4.4	4.5	7.6	(0.3)	1.0	(1.5)
Pound	(3.4)	4.6	(2.4)	4.9	(1.2)	(3.1)	(2.0)
Yen	0.5	2.2	3.0	2.4	2.2	2.6	(2.3)

Source: Morningstar, HFR, as of 9/30/20

Definitions

Bloomberg US Weekly Consumer Comfort Index - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.lanqerresearch.com)

University of Michigan Consumer Sentiment Index - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)

NFIB Small Business Outlook - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

NAHB Housing Market Index - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula $(\text{Good-Poor} + 100)/2$ to the present and future sales series and $(\text{High/Very High-Low/Very Low} + 100)/2$ to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2020

Investment Performance Review for

Alameda County Employees' Retirement Association

3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP contracted at a -9.0% rate year-over-year in Q2 (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history.
- Europe is experiencing a drastic second wave of COVID-19 which has been sweeping across the continent. The seven-day average daily case growth of the EU and the U.K. combined rose from 4,699 to 48,807 during Q3.
- Election polls and the betting markets are indicating that Joe Biden is leading President Trump materially as we move into the final weeks pre-election. In 2016, the story was largely the same, as Clinton was expected to win up until the day before the election.

PORTFOLIO IMPACTS

- U.S. and emerging markets have recovered most losses year-to-date, while international remain negative. Global equities are now positive for 2020 despite an earnings recession and considerable economic uncertainty.
- U.S. core inflation increased to a more normal level, rising 1.7% year-over-year in August from 1.2% in June. Inflation expectations also normalized. The 10yr U.S. TIPS inflation breakeven rate recovered to 1.6%, from a low of 0.5% on March 19th. The breakeven rate of inflation is now on par with actual year-over-year inflation.

THE INVESTMENT CLIMATE

- The Federal Reserve announced a notable change to its inflation targeting approach, now aiming to achieve “inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%.” This was a reversal from the prior goal of achieving 2% inflation.
- The Federal Reserve maintained an accommodative tone, and most members of the FOMC held their view that short rates are likely to stay near-zero through 2023—eventually moving to 2.50% over the longer-term.
- According to FactSet, S&P 500 Q3 earnings are expected to be down -20.5%. However, earnings in Q2 beat expectations by 12.5% (-31.6% YoY vs. -44.1%). Another large positive surprise in Q3 would be welcome news to investors.

ASSET ALLOCATION ISSUES

- U.S. equities delivered +8.9% over the quarter, reaching a new high in September before giving back some gains. The S&P 500 is up +5.6% year-to-date, despite an earnings recession and considerable economic uncertainty.
- The U.S. dollar fell -3.5% in Q3, continuing a downward trend since a sudden jump in March on safe-haven buying. The dollar has now completely unwound the gains experienced during the market sell-off.

A more neutral risk positioning may be warranted in the current environment

There seems to be a high degree of uncertainty regarding the future market path

U.S. economics summary

— Real GDP contracted at a -9.0% rate year-over-year in the second quarter (-31.4% quarterly annualized rate)—likely the most sudden economic recession in American history.

— The Atlanta Fed’s forecast for third quarter growth is -10.7% year-over-year (+33.8% quarterly annualized rate). This projection was based on the expectations that consumption rebounds materially, household investment picks up, businesses begin re-stocking shelves that were allowed to run empty, and supporting fiscal policy.

— The U.S. labor market partially recovered from the recent shock. Unemployment fell from 14.7% in April to 7.9% in September. A report released in September indicated 60% of temporary business closures during the pandemic were now permanent.

— Correlation between election results and market performance

has been weak, and the outcome depends greatly on how the data is sliced and the timing of economic events. The S&P 500 has experienced stronger gains with a Democrat in power, though the results are skewed by extreme events such as the Great Depression.

— The NFIB Small Business Optimism Index recovered to 104.0 in Q3, which was in line with pre-pandemic levels. The survey concluded that half of the jobs lost in March and April have been recouped, but that the pace of recovery has slowed.

— The median home price increased 11.1% year-over-year in September, according to Realtor.com. U.S. housing supply has reached record tightness. In August, 3.3 months worth of homes were on the market, which was the lowest inventory ever recorded since the government began tracking this data in 1963.

	Most Recent	12 Months Prior
GDP (YoY)	(9.0%) 6/30/20	2.0% 6/30/19
Inflation (CPI YoY, Core)	1.7% 8/31/20	2.4% 8/31/19
Expected Inflation (5yr-5yr forward)	1.7% 9/30/20	1.7% 9/30/19
Fed Funds Target Range	0% – 0.25% 9/30/20	1.75% – 2.00% 9/30/19
10-Year Rate	0.7% 9/30/20	1.7% 9/30/19
U-3 Unemployment	7.9% 9/30/20	3.5% 9/30/19
U-6 Unemployment	12.8% 9/30/20	6.9% 9/30/19

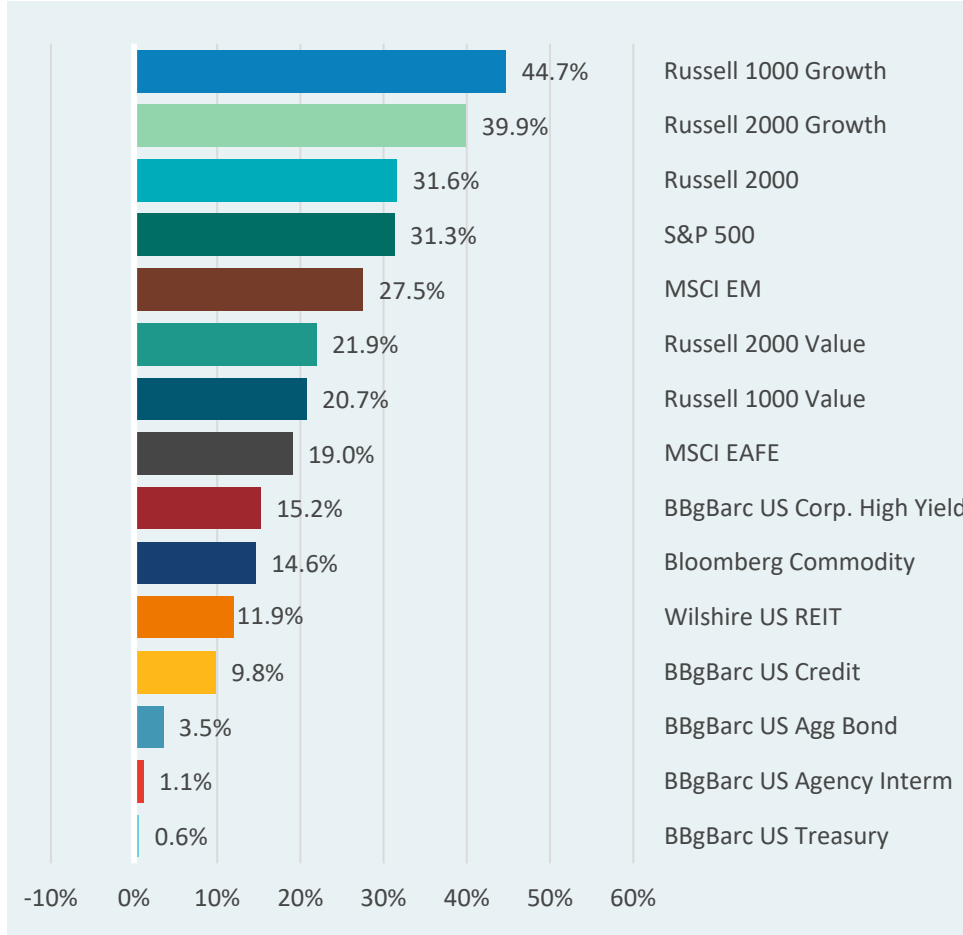
International economics summary

- Growth contracted sharply in international developed economies in Q2. Gross domestic product in the Eurozone contracted -14.7% from the prior year, and Japanese GDP sank -9.9% over the same period, despite the deployment of fiscal support to the tune of roughly 40% of Japan’s GDP.
- European officials implemented stricter social distancing controls with hopes of stymying the second wave of COVID-19 sweeping across the continent. The seven-day average daily case growth of the EU27 and the United Kingdom combined rose from 4,699 to 48,807 over the third quarter.
- The IMF revised its global growth projections for 2020 and 2021 from -4.9% and 5.4% to -4.4% and 5.2%, respectively. The IMF’s model assumes social distancing controls will continue to act as a drag on growth into 2021, and that local transmission of the virus will be falling everywhere by 2023.
- Inflation remained muted globally in the third quarter, supporting arguments that the pandemic’s impact has been more disinflationary than inflationary over the short term. The Eurozone’s consumer price index ended the quarter -0.3% below its level from September 2019, though most of the deflationary pressures were supplied by an -8.2% decline in energy prices.
- Eurozone retail sales volumes grew 3.7% from the prior year in August (exp. 2.2%), driven by a sharp surge in online purchases and clothing sales. The vigorous rebound in consumer spending has been attributed to pent-up demand and incomes, which have been largely stable due to furlough schemes. Many analysts expect a “normalization” of retail sales in the fourth quarter, under the assumption that current spending levels are unlikely to be sustainable.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(9.0%) <i>6/30/20</i>	1.3% <i>8/31/20</i>	7.9% <i>9/30/20</i>
Eurozone	(14.7%) <i>6/30/20</i>	(0.3%) <i>9/30/20</i>	8.1% <i>8/31/20</i>
Japan	(9.9%) <i>6/30/20</i>	0.2% <i>9/30/20</i>	3.0% <i>8/31/20</i>
BRICS Nations	(3.1%) <i>6/30/20</i>	3.3% <i>6/30/20</i>	5.3% <i>6/30/20</i>
Brazil	(11.4%) <i>6/30/20</i>	2.4% <i>8/31/20</i>	13.8% <i>7/31/20</i>
Russia	(8.0%) <i>6/30/20</i>	3.3% <i>9/30/20</i>	6.4% <i>8/31/20</i>
India	(23.9%) <i>6/30/20</i>	6.7% <i>8/31/20</i>	8.5% <i>12/31/17</i>
China	4.9% <i>9/30/20</i>	2.4% <i>8/31/20</i>	3.8% <i>6/30/20</i>

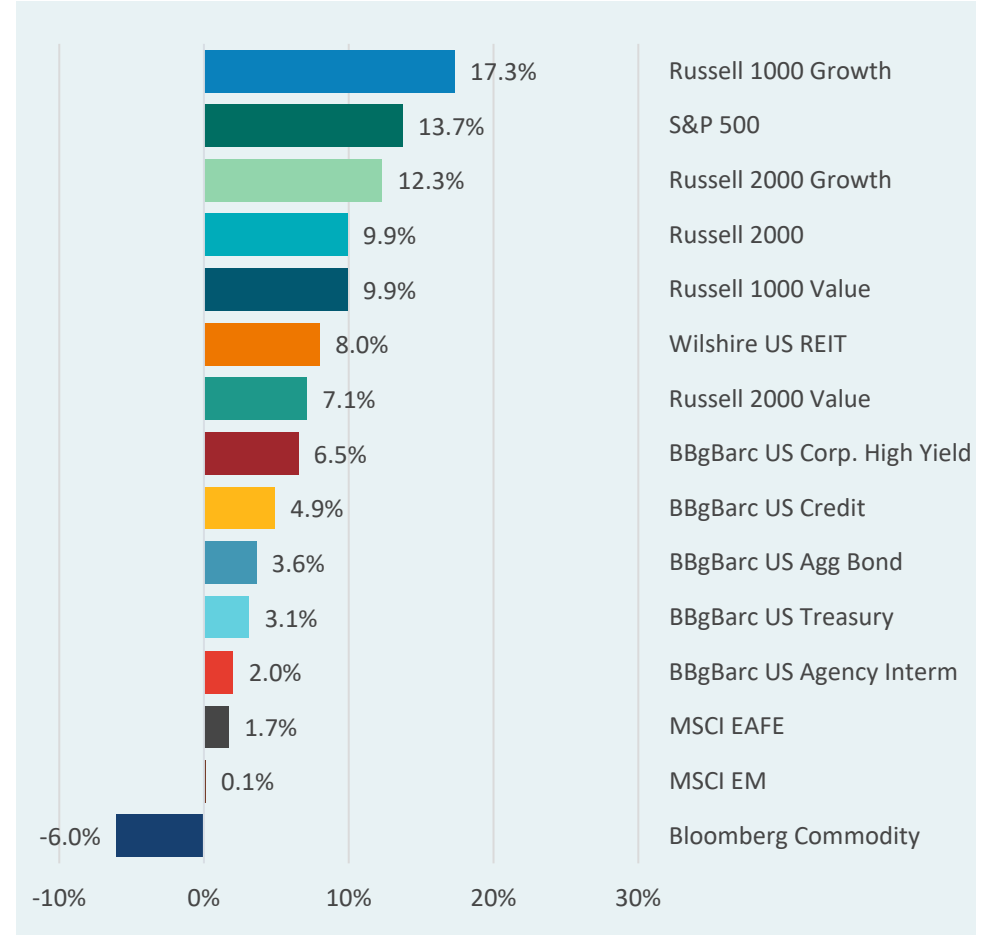
Major asset class returns

SIX MONTHS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/20

TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/20

- The composite fund returned 6.4% for the third quarter of 2020 and ranked in the 4th percentile among public funds greater than \$1 billion (median of 5.0%). The fund beat its policy index return of 6.0% during this time period. Longer term, the five (8.5%), and ten year (8.3%) returns ranked in the 22nd percentile of large public plans respectively.
- Third quarter results were enhanced by the following factors:
 1. Newton gained 21.7% beating the MSCI EM Index which rose 9.7% and ranked in the 1st percentile of its peers. Most of the Fund's outperformance benefited from strong stock selection specifically within consumer discretionary and information technology sectors, but country allocation mainly in China and India also helped relative returns.
 2. Templeton beat the MSCI ACWI ex US Small Cap (13.1% vs 10.6%.) Primary contributors to relative performance were stock selection in industrials, an overweight allocation and stock selection in consumer discretionary, and stock selection in health care. Regionally, stock selection in Europe helped relative performance.
 3. William Blair Small Cap Growth (10.0%) beat the Russell 2000 Growth (7.2%.) Third quarter outperformance was driven by stock selection in the healthcare sector, where some portfolio companies benefited from the demand of Covid-19 testing.
- Third quarter results were hindered by the following factors:
 1. TCW lagged the Russell 1000 (10.3% vs 13.2%.) Sector allocation and security selection in consumer discretionary and real estate weightings hurt relative performance.

Total Fund
 Manager Allocation Analysis (One Quarter)

Period Ending: September 30, 2020

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return ¹	\$700,398,946	-\$75,419,558	\$6,684,962	\$631,664,349
Alta	\$4,213	\$0	\$1,037	\$5,249
Applied Research Investments	\$19,539,901	\$0	\$2,034,532	\$21,574,433
AQR	\$391,970,611	-\$470,647	\$30,769,767	\$422,269,730
Arga Investment Management	\$15,443,486	\$0	\$639,945	\$16,083,431
Baird Advisors	\$614,293,862	\$112,335,296	\$6,610,895	\$733,240,053
Bivium Cash	\$1	\$0	\$0	\$1
BlackRock MSCI World ex-US Index Fd A	\$414,621,299	\$0	\$20,575,254	\$435,196,553
BlackRock Russell 1000 Index Fund	\$1,904,773,094	-\$78,600,000	\$176,866,869	\$2,003,039,963
Brandywine	\$347,171,671	-\$231,538	\$12,585,437	\$359,525,569
Capital Group	\$462,157,600	-\$744,687	\$47,275,202	\$508,688,115
Cash Account	\$62,186,709	\$8,367,221	\$17,886	\$70,571,817
Denali Advisors	\$13,718,958	\$0	\$891,345	\$14,610,303
Dundas Partners	\$18,497,405	\$0	\$1,989,947	\$20,487,352
Global Alpha Capital Management	\$5,753,979	\$0	\$562,825	\$6,316,804
Huber	\$1,765	\$0	\$0	\$1,765
Kennedy	\$95,166,143	-\$177,827	\$3,763,298	\$98,751,614
Loomis Sayles	\$327,603,685	-\$251,289	\$10,036,497	\$337,388,893
Mondrian	\$374,458,267	-\$323,805	\$14,320,693	\$388,455,155
Newton Emerging Mkt	\$247,406,150	\$0	\$53,805,808	\$301,211,958
Next Century-SCG	\$5,440	\$0	\$39	\$5,479
OakBrook	\$696	\$0	\$0	\$696
Private Credit	\$39,054,994	\$7,263,270	\$2,051,166	\$48,369,430
Private Equity	\$564,056,000	\$16,094,398	\$69,333,089	\$649,483,487
Pzena	\$97,754,557	-\$127,018	\$578,381	\$98,205,921
Radin Capital Partners	\$4,900,748	\$0	\$438,192	\$5,338,940
RVX Asset Management	\$3,822,517	\$0	\$347,490	\$4,170,007
Real Assets ¹	\$398,025,937	\$216,358	\$11,014,632	\$409,256,927
Real Estate	\$603,633,633	\$216,820	\$4,282,019	\$608,132,474
Sec. Lending	\$0	-\$135,306	\$135,306	\$0
TCW	\$150,749,338	-\$44,148,891	\$12,903,130	\$119,503,576
Templeton	\$210,206,749	\$0	\$27,926,929	\$238,133,678
Transition Account (Macquarie Capital)	\$278,145	\$0	-\$122,232	\$155,912
William Blair Small Cap Growth	\$120,393,013	-\$217,125	\$12,235,792	\$132,411,680
Total	\$8,208,049,512	-\$56,354,327	\$530,556,132	\$8,682,251,317

¹ Preliminary ending market value

Bivium

Manager Allocation Analysis (One Quarter)

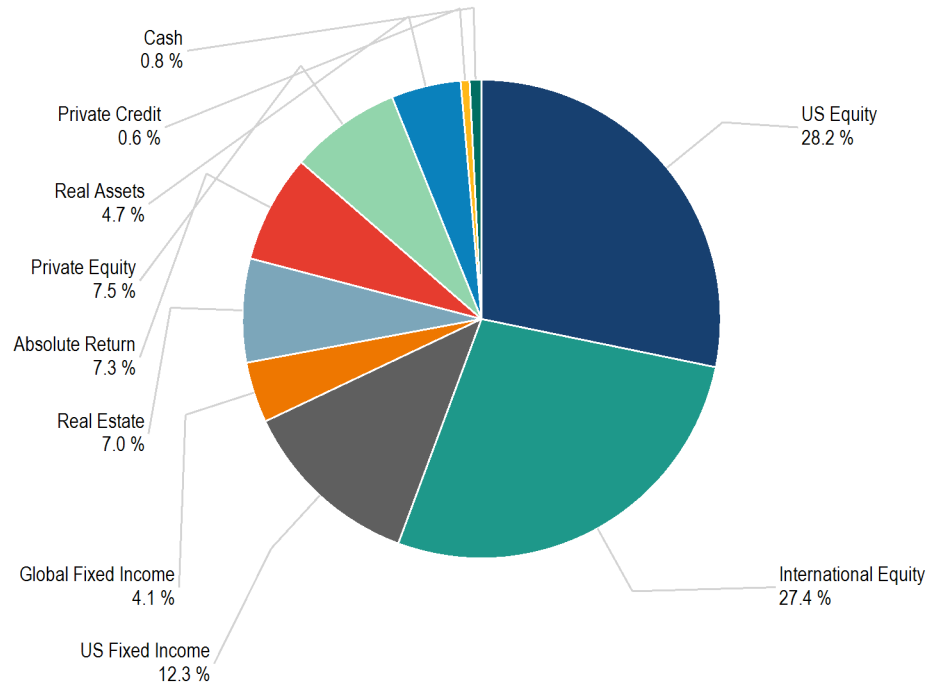
Period Ending: September 30, 2020

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	\$4,213	\$0	\$1,037	\$5,249
Bivium Cash	\$1	\$0	\$0	\$1
Huber	\$1,765	\$0	\$0	\$1,765
OakBrook	\$696	\$0	\$0	\$696
Total	\$6,674	\$0	\$1,037	\$7,711

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Applied Research Investments	\$19,539,901	\$0	\$2,034,532	\$21,574,433
Arga Investment Management	\$15,443,486	\$0	\$639,945	\$16,083,431
Denali Advisors	\$13,718,958	\$0	\$891,345	\$14,610,303
Dundas Partners	\$18,497,405	\$0	\$1,989,947	\$20,487,352
Global Alpha Capital Management	\$5,753,979	\$0	\$562,825	\$6,316,804
Radin Capital Partners	\$4,900,748	\$0	\$438,192	\$5,338,940
RVX Asset Management	\$3,822,517	\$0	\$347,490	\$4,170,007
Total	\$81,676,994	\$0	\$6,904,276	\$88,581,270

Total Fund Asset Allocation Analysis

Period Ending: September 30, 2020



	Actual	Actual
US Equity	\$2,451,925,945	28.2%
International Equity	\$2,382,692,373	27.4%
US Fixed Income	\$1,070,628,946	12.3%
Global Fixed Income	\$359,525,569	4.1%
Real Estate	\$608,132,474	7.0%
Absolute Return	\$631,664,349	7.3%
Private Equity	\$649,483,487	7.5%
Real Assets	\$409,256,927	4.7%
Private Credit	\$48,369,430	0.6%
Cash	\$70,571,817	0.8%
Total	\$8,682,251,317	100.0%

	Actual	Target
US Equity	28.2%	25.0%
International Equity	27.4%	25.0%
US Fixed Income	12.3%	13.0%
Global Fixed Income	4.1%	3.0%
Real Estate	7.0%	8.0%
Absolute Return	7.3%	9.0%
Private Equity	7.5%	8.0%
Real Assets	4.7%	5.0%
Private Credit	0.6%	4.0%
Cash	0.8%	0.0%
Total	100.0%	100.0%

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

Total Fund Performance Summary

Period Ending: September 30, 2020

	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)	6.47	4	18.43	17	6.65	41	6.09	32	8.69	17	7.29	27	8.60	13	9.45	Sep-85
Total Fund (Net)	6.42	4	18.31	18	6.48	43	5.90	38	8.46	22	7.02	32	8.29	22	9.25	
<i>Policy Index 1</i>	5.99	14	17.64	24	6.81	40	5.72	42	8.85	15	7.59	13	8.70	12	9.71	Sep-85
<i>Allocation Index</i>	6.11	9	17.98	23	6.89	39	5.73	41	8.74	17	7.39	23	8.44	17	--	Sep-85
<i>InvMetrics Public DB > \$1B Gross Median</i>	5.04		15.74		6.22		5.45		7.63		6.60		7.49		8.70	Sep-85
US Equity (Gross)	8.95	25	33.67	19	14.10	24	11.86	13	13.50	21	11.69	26	13.52	17	11.67	Sep-85
US Equity (Net)	8.92	27	33.56	20	13.96	25	11.66	17	13.24	29	11.40	37	13.20	30	--	
<i>Russell 3000</i>	9.21	12	33.26	26	15.00	18	11.65	18	13.69	15	12.11	14	13.48	18	--	Sep-85
<i>InvMetrics All DB US Eq Gross Median</i>	8.19		31.64		10.80		9.83		12.44		10.98		12.55		10.84	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	9.48	29	33.38	24	16.06	30	--	--	--	--	--	--	--	--	12.79	Apr-18
BlackRock Russell 1000 Index Fund (Net)	9.47	29	33.37	24	16.04	30	--	--	--	--	--	--	--	--	12.78	
<i>Russell 1000</i>	9.47	29	33.36	24	16.01	30	--	--	--	--	--	--	--	--	12.74	Apr-18
Large Cap Active Equity (Gross)	5.98	--	34.61	--	9.92	--	9.14	--	11.95	--	10.74	--	12.63	--	7.86	Mar-00
Large Cap Active Equity (Net)	5.85	--	34.19	--	9.45	--	8.61	--	11.46	--	10.29	--	12.17	--	7.42	
<i>Russell 1000</i>	9.47	--	33.36	--	16.01	--	12.38	--	14.09	--	12.54	--	13.76	--	6.24	Mar-00
Pzena (Gross)	0.59	99	22.72	46	-18.78	99	-5.73	99	3.77	98	4.26	97	7.32	98	3.48	Jan-06
Pzena (Net)	0.46	99	22.38	48	-19.10	99	-6.22	99	3.27	99	3.78	99	6.82	99	3.04	
<i>Russell 1000 Value</i>	5.59	44	20.68	63	-5.03	66	2.63	65	7.66	61	7.35	64	9.95	66	6.14	Jan-06
TCW (Gross)	10.42	69	44.09	31	40.41	21	23.71	22	19.40	37	16.68	42	17.02	33	8.90	Jun-99
TCW (Net)	10.28	71	43.62	36	39.80	23	23.15	24	18.94	45	16.26	51	16.61	45	--	
<i>Russell 1000 Growth</i>	13.22	22	44.73	29	37.53	30	21.67	39	20.10	28	17.39	29	17.25	27	--	Jun-99

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 91 members with a total market value of \$2.885 Trillion..

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.

1 See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 2020

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Small Cap Equity (Gross)	3.95	--	24.85	--	-11.75	--	1.07	--	6.39	--	5.43	--	9.95	--	12.54	Jul-85
Small Cap Equity (Net)	3.77	--	24.35	--	-12.64	--	0.11	--	5.44	--	4.51	--	9.00	--	--	--
<i>Russell 2000</i>	4.93	--	31.60	--	0.39	--	1.77	--	8.00	--	6.42	--	9.85	--	--	Jul-85
Kennedy (Gross)	3.95	35	24.85	46	-11.75	41	-4.76	64	4.09	60	4.64	39	8.82	44	8.82	Sep-10
Kennedy (Net)	3.77	37	24.35	48	-12.46	46	-5.61	75	3.20	73	3.77	65	7.95	65	7.95	--
<i>Russell 2000 Value</i>	2.56	50	21.94	66	-14.88	63	-5.13	69	4.11	60	3.27	74	7.09	88	7.09	Sep-10
William Blair Small Cap Growth (Gross)	10.16	36	43.28	60	--	--	--	--	--	--	--	--	--	--	14.73	Oct-19
William Blair Small Cap Growth (Net)	9.98	39	42.48	64	--	--	--	--	--	--	--	--	--	--	14.09	--
<i>Russell 2000 Growth</i>	7.16	68	39.93	69	--	--	--	--	--	--	--	--	--	--	12.51	Oct-19
International Equity (Gross)	9.23	14	29.41	31	8.06	34	3.72	24	8.78	19	5.20	21	6.03	23	8.05	Dec-90
International Equity (Net)	9.13	16	29.13	33	7.72	36	3.39	25	8.41	21	4.81	29	5.63	35	--	--
<i>MSCI ACWI ex USA IMI Gross</i> ¹	6.90	62	25.22	72	3.95	64	1.60	49	6.80	47	3.82	58	4.61	72	--	Dec-90
<i>InvMetrics All DB ex-US Eq Gross Median</i>	7.27	--	27.04	--	5.33	--	1.54	--	6.68	--	4.07	--	5.20	--	6.71	Dec-90
Bivium Intl Equity (Gross)	8.45	44	27.06	52	7.32	54	--	--	--	--	--	--	--	--	7.82	Oct-18
Bivium Intl Equity (Net)	8.36	44	26.82	56	6.89	57	--	--	--	--	--	--	--	--	7.49	--
<i>MSCI ACWI ex USA Gross</i>	6.36	71	23.69	70	3.45	69	--	--	--	--	--	--	--	--	5.98	Oct-18
AQR (Gross)	7.85	53	27.27	46	3.69	60	-0.90	88	5.63	79	3.43	77	4.78	80	1.78	Oct-07
AQR (Net)	7.73	54	26.77	50	3.16	62	-1.38	92	5.12	87	2.92	88	4.26	96	1.30	--
<i>MSCI ACWI ex USA Gross</i>	6.36	69	23.69	68	3.45	60	1.65	57	6.74	54	3.66	69	4.48	95	1.30	Oct-07
BlackRock MSCI World ex-US Index Fd A (Gross)	4.96	74	21.27	72	0.52	69	--	--	--	--	--	--	--	--	4.16	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	4.96	74	21.27	72	0.52	69	--	--	--	--	--	--	--	--	4.16	--
<i>MSCI World ex US Gross</i>	5.01	72	21.34	71	0.63	67	--	--	--	--	--	--	--	--	4.28	May-19
Capital Group (Gross)	10.23	58	33.94	38	18.65	53	9.71	54	13.85	18	7.72	56	7.76	56	8.83	Dec-90
Capital Group (Net)	10.07	59	33.52	40	18.24	59	9.42	56	13.55	23	7.41	59	7.41	58	--	--
<i>MSCI ACWI ex USA Gross</i>	6.36	98	23.69	99	3.45	99	1.65	98	6.74	98	3.66	99	4.48	99	--	Dec-90
<i>MSCI ACWI ex USA Growth Gross</i>	10.22	58	31.41	52	17.90	61	7.71	69	10.55	75	6.88	70	6.75	86	--	Dec-90

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 2020

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Mondrian (Gross)	3.82	43	15.61	78	-6.43	66	-2.53	54	3.49	78	2.00	46	3.46	52	5.90	Nov-03
Mondrian (Net)	3.74	43	15.40	79	-6.77	70	-2.92	62	3.09	91	1.62	72	3.10	85	5.58	
MSCI ACWI ex USA Gross	6.36	15	23.69	20	3.45	17	1.65	14	6.74	14	3.66	12	4.48	12	6.44	Nov-03
MSCI ACWI ex USA Value Gross	2.43	91	15.74	77	-10.32	95	-4.51	86	2.75	93	0.30	95	2.08	99	5.20	Nov-03
Newton Emerging Mkt (Gross)	21.75	1	54.65	3	42.84	2	--	--	--	--	--	--	--	--	33.21	May-19
Newton Emerging Mkt (Net)	21.65	1	54.52	3	42.64	2	--	--	--	--	--	--	--	--	33.04	
MSCI Emerging Markets Gross	9.70	51	29.65	60	10.91	46	--	--	--	--	--	--	--	--	9.66	May-19
Templeton (Gross)	13.29	22	40.08	47	6.19	74	1.43	62	6.58	75	4.98	73	--	--	5.76	Apr-11
Templeton (Net)	13.14	25	39.67	49	5.56	75	0.80	63	5.91	82	4.29	77	--	--	5.06	
MSCI ACWI ex US Small Cap Gross	10.61	61	36.03	57	7.36	65	1.32	62	7.20	70	4.87	75	--	--	4.08	Apr-11
MSCI ACWI ex US Small Cap Value GD	7.98	92	27.71	91	-3.69	93	-2.89	87	4.89	84	2.92	84	--	--	2.78	Apr-11
Total Fixed Income (Gross)	2.25	24	10.39	12	9.27	17	5.32	36	5.87	20	5.14	21	5.45	17	7.37	Sep-86
Total Fixed Income (Net)	2.20	26	10.26	12	9.05	17	5.11	42	5.67	23	4.93	23	5.23	20	--	--
Fixed Income Blend ¹	1.76	46	5.45	73	6.45	50	4.91	49	4.43	60	3.77	65	3.59	80	--	Sep-86
InvMetrics All DB Total Fix Inc Gross Median	1.65		7.11		6.40		4.86		4.82		4.13		4.18		6.91	Sep-86
US Fixed Income (Gross)	1.73	33	8.70	19	9.74	19	6.33	22	5.96	21	5.65	19	5.83	17	7.33	Sep-86
US Fixed Income (Net)	1.68	35	8.60	20	9.56	20	6.16	23	5.79	25	5.47	20	5.65	18	--	--
BBgBarc US Aggregate TR	0.62	90	3.53	88	6.98	44	5.24	41	4.18	59	3.97	55	3.63	63	--	Sep-86
InvMetrics All DB US Fix Inc Gross Median	1.34		6.09		6.67		4.96		4.52		4.14		4.11		6.73	Sep-86
Baird Advisors (Gross)	1.07	52	5.84	43	8.46	19	5.99	25	5.20	14	5.10	8	4.98	7	5.40	Oct-01
Baird Advisors (Net)	1.03	55	5.77	44	8.38	23	5.91	31	5.12	18	5.01	9	4.89	9	5.31	
BBgBarc US Aggregate TR	0.62	90	3.53	93	6.98	78	5.24	86	4.18	91	3.97	91	3.63	94	4.52	Oct-01
Loomis Sayles (Gross)	3.06	4	14.50	1	12.33	3	7.03	5	7.42	1	6.70	1	7.37	1	8.42	Dec-00
Loomis Sayles (Net)	2.99	4	14.31	1	11.97	3	6.69	8	7.08	1	6.35	2	7.02	1	8.08	
BBgBarc US Credit BAA TR	2.10	24	13.58	1	6.97	70	6.38	11	6.41	4	5.68	5	5.49	12	6.54	Dec-00

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 2020

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Global Fixed Income (Gross)	3.63	10	15.13	20	7.19	23	2.10	72	5.39	39	3.47	76	4.16	70	7.14	Nov-01
Global Fixed Income (Net)	3.56	24	14.92	21	6.86	27	1.80	78	5.10	59	3.17	77	3.83	82	6.83	
<i>FTSE WGBI TR</i>	2.94	50	5.04	92	6.76	31	4.37	39	3.95	80	2.22	80	1.86	94	4.69	Nov-01
<i>InvMetrics All DB Gbl Fix Inc Gross Median</i>	2.94		11.77		4.73		3.61		5.20		3.95		4.77		5.88	Nov-01
Brandywine (Gross)	3.63	43	15.13	25	7.19	35	2.10	87	5.39	39	3.47	54	4.16	42	7.14	Nov-01
Brandywine (Net)	3.56	45	14.92	27	6.86	39	1.80	90	5.10	44	3.17	60	3.83	49	6.83	
<i>BBgBarc Global Aggregate TR</i>	2.66	69	6.07	85	6.24	45	4.09	56	3.92	78	2.47	76	2.36	82	4.68	Nov-01
<i>FTSE WGBI TR</i>	2.94	62	5.04	91	6.76	40	4.37	48	3.95	77	2.22	79	1.86	89	4.69	Nov-01
Absolute Return (Gross)	1.07	80	2.51	88	-7.48	86	-2.27	83	0.07	78	1.55	73	--	--	1.96	Sep-11
Absolute Return (Net)	1.07	80	2.51	88	-7.48	86	-2.27	83	0.07	78	1.55	73	--	--	1.96	
<i>HFRI Fund of Funds Composite Index</i>	4.26	50	12.44	48	5.72	29	2.88	54	3.09	54	3.06	56	--	--	3.42	Sep-11
<i>InvMetrics All DB Hedge Funds Gross Median</i>	4.18		12.28		2.34		3.14		3.38		3.59		4.24		4.60	Sep-11
Private Equity (Gross)	12.29	--	-2.93	--	1.09	--	10.33	--	10.03	--	13.73	--	12.89	--	3.90	Nov-08
Private Equity (Net)	12.29	--	-2.93	--	1.09	--	10.33	--	10.03	--	13.73	--	12.89	--	3.90	
<i>Thomson Reuters C A Global All PE 1 Qtr Lag</i>	10.62	--	-1.93	--	2.33	--	6.29	--	7.33	--	8.37	--	9.37	--	7.24	Nov-08
Real Assets (Gross)	2.77	--	13.56	--	-8.20	--	-4.53	--	-2.68	--	-6.17	--	--	--	-5.50	Sep-11
Real Assets (Net)	2.71	--	13.49	--	-8.27	--	-4.55	--	-2.69	--	-6.18	--	--	--	-5.51	
<i>Real Asset Blend ¹</i>	2.97	--	19.32	--	-10.54	--	-2.25	--	2.94	--	3.23	--	--	--	3.60	Sep-11
Private Credit (Gross)	4.43	--	15.20	--	--	--	--	--	--	--	--	--	--	--	0.64	Oct-19
Private Credit (Net)	4.43	--	15.20	--	--	--	--	--	--	--	--	--	--	--	0.64	
<i>S&P/LSTA Leveraged Loan Index +175</i>	4.58	--	15.21	--	--	--	--	--	--	--	--	--	--	--	3.14	Oct-19

¹ See Policy Index and Benchmark History.

Total Fund
Performance Summary

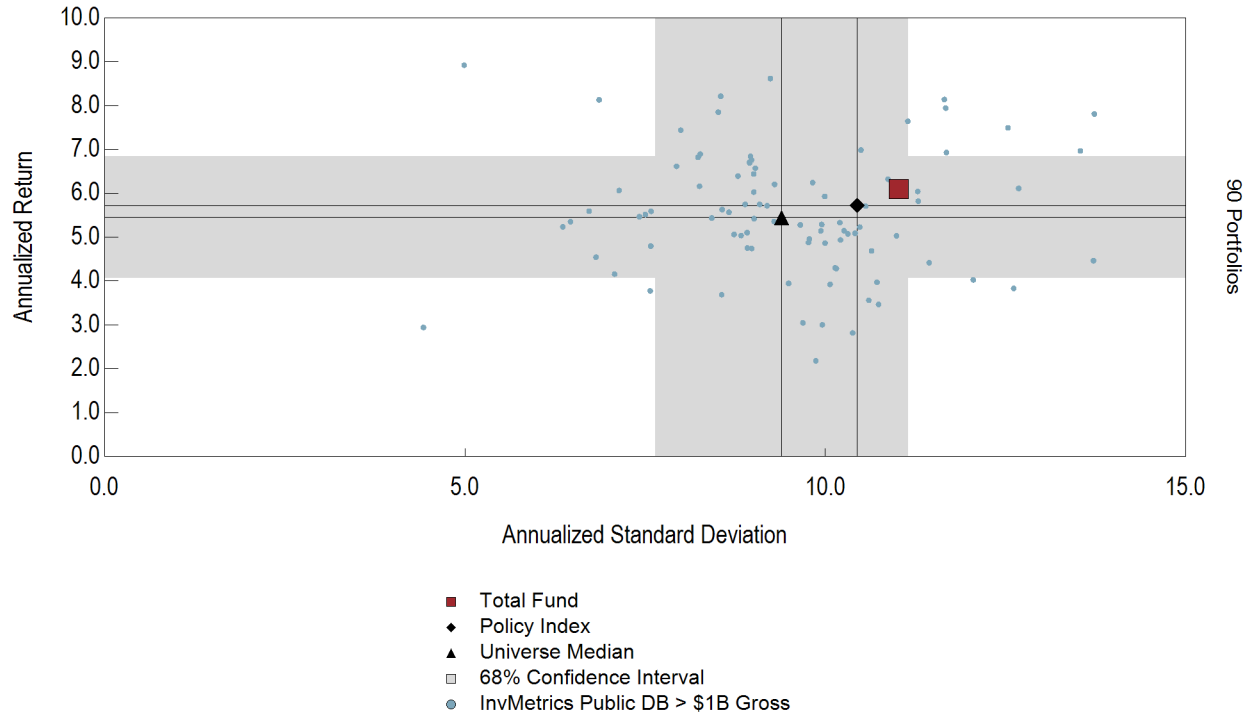
Period Ending: September 30, 2020

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Cash (Gross)	0.04	--	0.16	--	0.90	--	1.38	--	1.10	--	0.80	--	0.59	--	3.08	Sep-85
Cash (Net)	0.04	--	0.16	--	0.90	--	1.38	--	1.10	--	0.80	--	0.59	--	3.08	
91 Day T-Bills	0.02	--	0.05	--	0.82	--	1.58	--	1.13	--	0.82	--	0.59	--	3.18	Sep-85
Real Estate (Gross)	0.71	27	-0.54	43	1.59	38	5.66	30	7.47	21	9.56	19	10.90	21	6.94	Mar-86
Real Estate (Net)	0.71	27	-0.54	43	1.59	38	5.66	30	7.23	27	9.09	30	10.26	40	5.92	
NCREIF-ODCE	0.48	33	-1.08	58	1.39	43	5.18	41	6.64	41	8.60	40	10.27	40	7.10	Mar-86
InvMetrics All DB Real Estate Pub+Priv Gross Median	0.16		-0.84		0.85		4.95		6.40		8.35		9.87		7.32	Mar-86

1 See Policy Index and Benchmark History.

Total Fund
Risk vs. Return (3 Years)

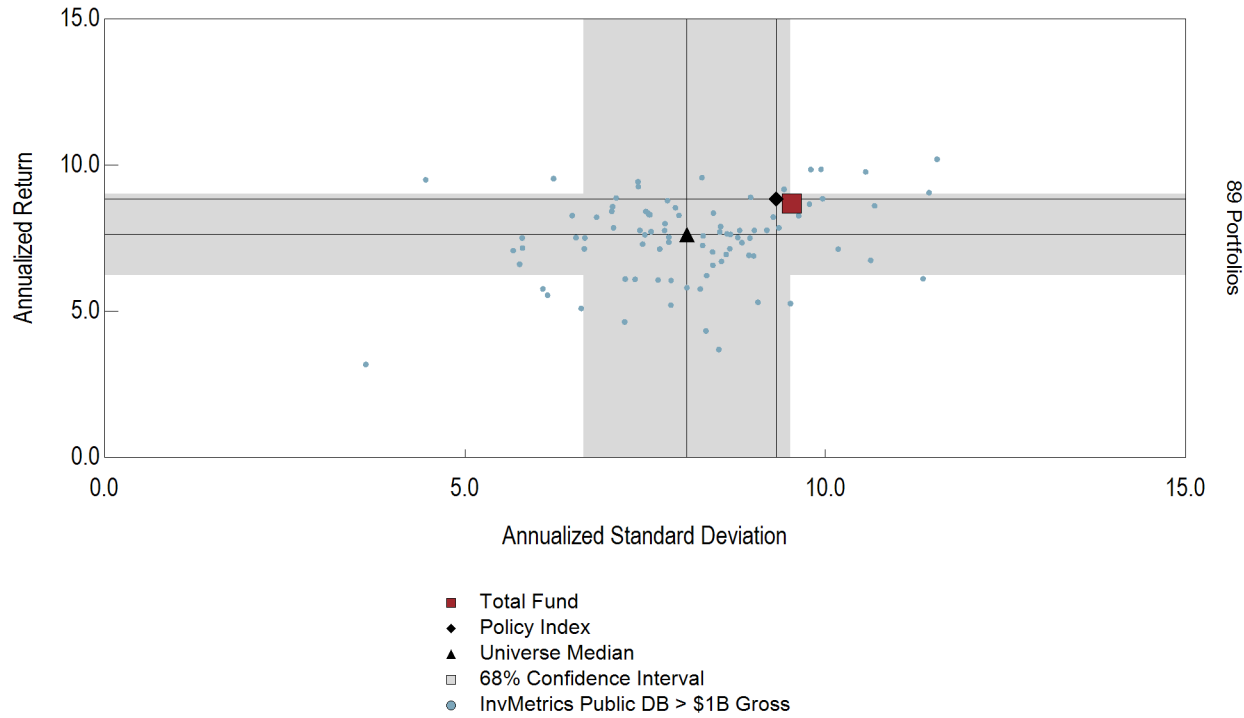
Period Ending: September 30, 2020



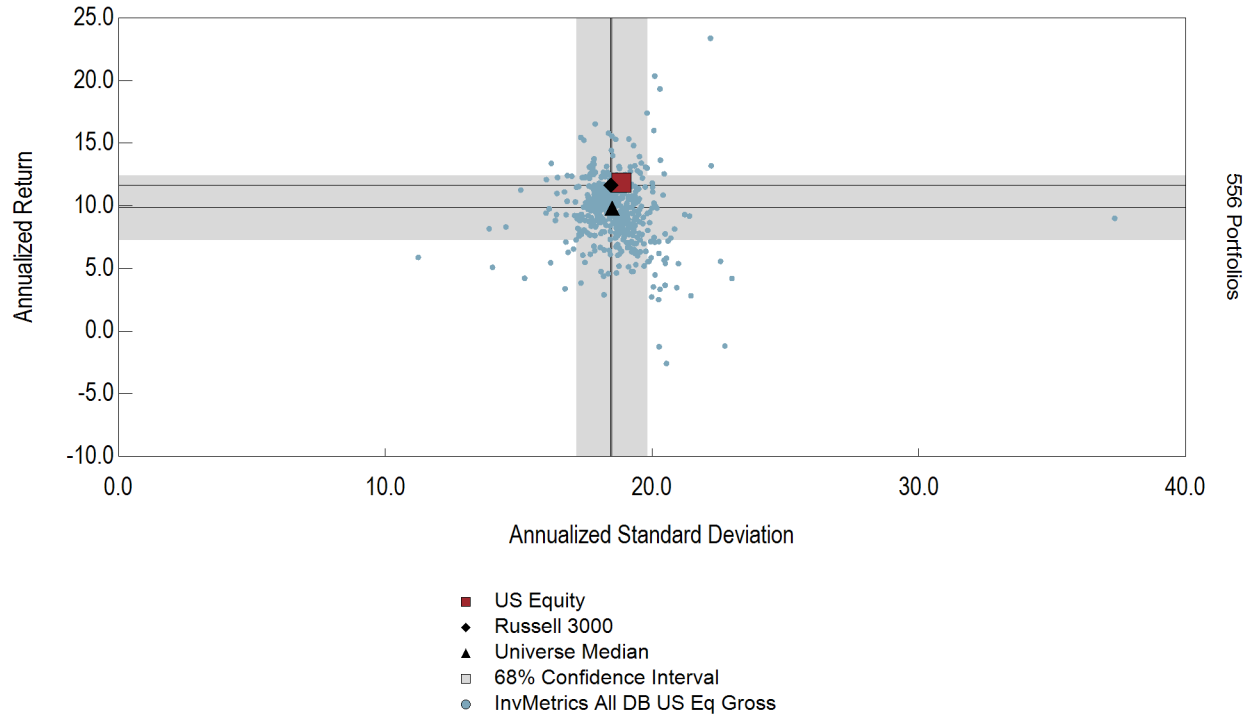
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	6.09%	32	11.02%	85	0.41	51	0.20	30	1.86%	68
Policy Index	5.72%	42	10.45%	74	0.40	55	--	--	0.00%	1
Allocation Index	5.74%	41	10.88%	83	0.38	60	0.02	40	0.67%	4
InvMetrics Public DB > \$1B Gross Median	5.45%	--	9.39%	--	0.42	--	-0.25	--	1.30%	--

Total Fund
Risk vs. Return (5 Years)

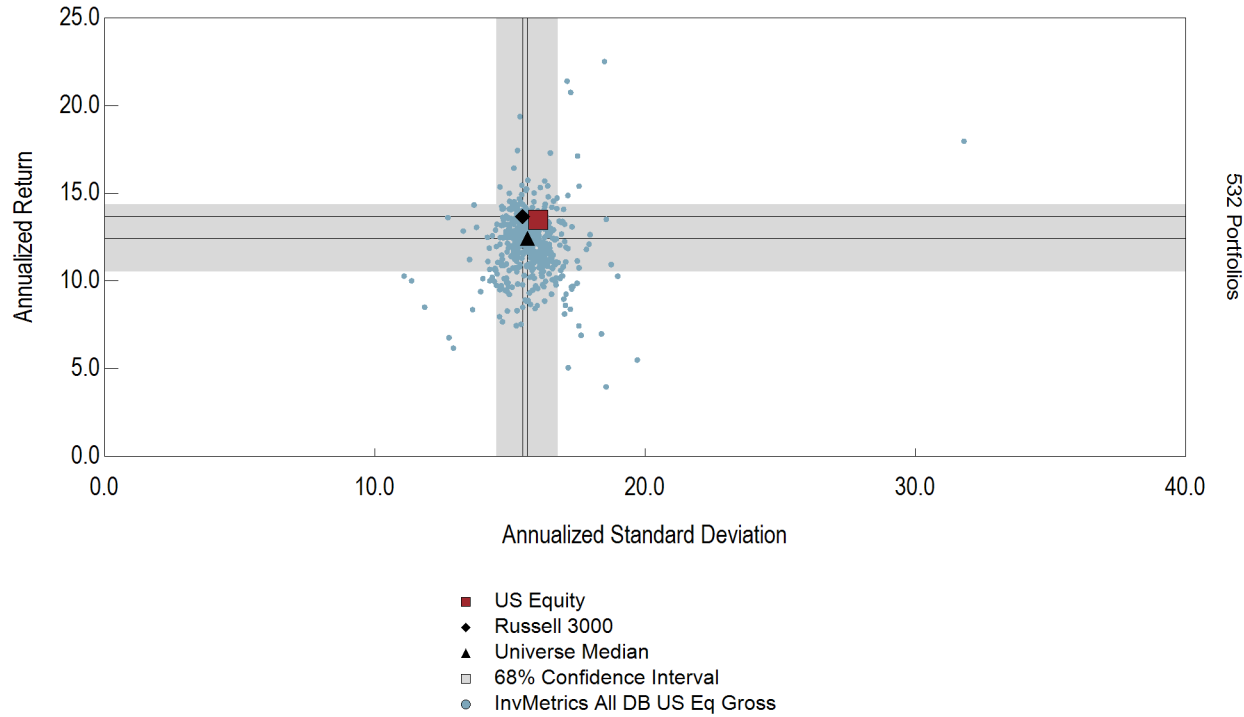
Period Ending: September 30, 2020



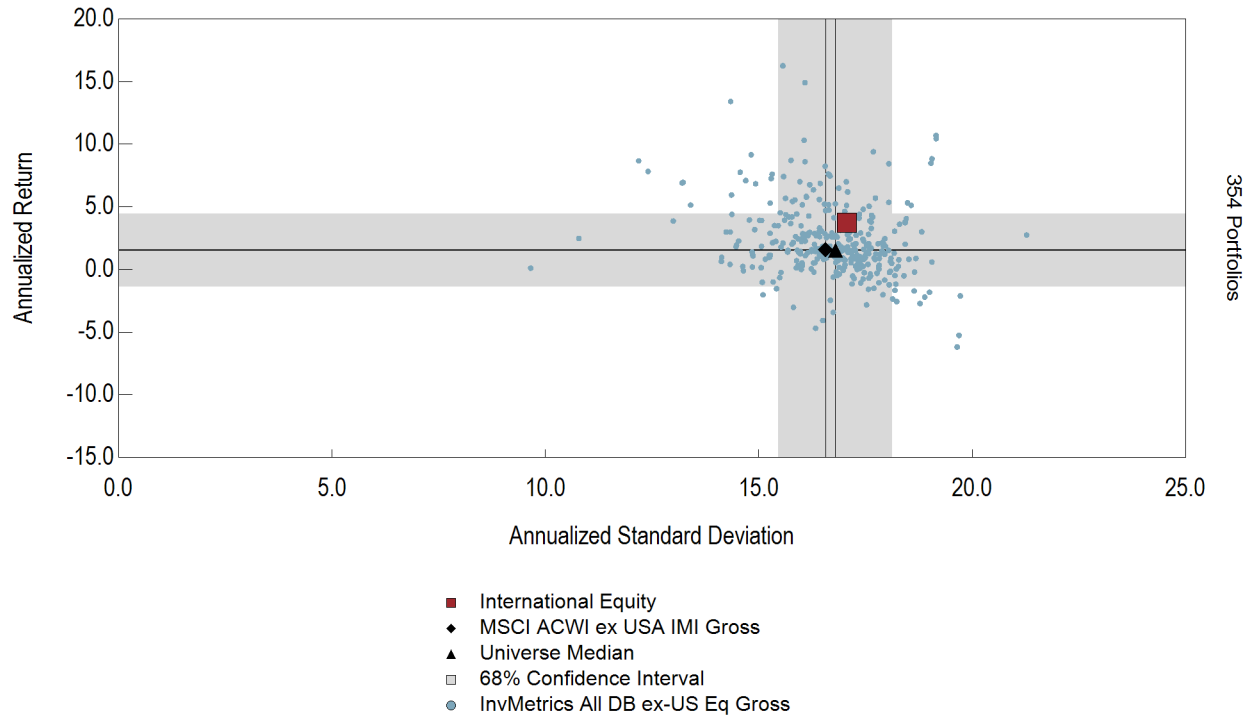
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	8.69%	17	9.53%	87	0.79	46	-0.09	59	1.65%	69
Policy Index	8.85%	15	9.32%	83	0.83	41	--	--	0.00%	1
Allocation Index	8.75%	17	9.57%	87	0.80	45	-0.18	64	0.54%	2
InvMetrics Public DB > \$1B Gross Median	7.63%	--	8.08%	--	0.77	--	0.03	--	1.28%	--



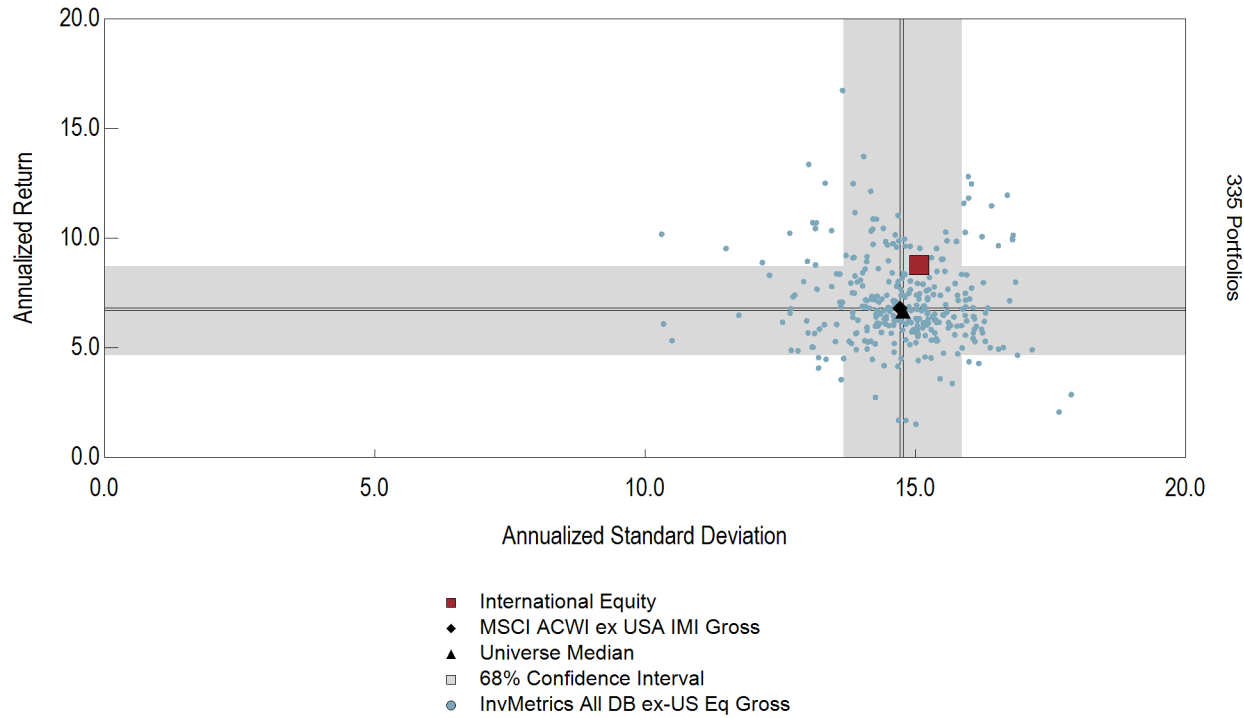
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	11.86%	13	18.86%	67	0.55	20	0.18	21	1.18%	19
Russell 3000	11.65%	18	18.44%	48	0.55	20	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	9.83%	--	18.50%	--	0.45	--	-0.82	--	2.06%	--



	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	13.50%	21	16.04%	71	0.77	32	-0.11	25	1.70%	37
Russell 3000	13.69%	15	15.47%	40	0.81	18	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	12.44%	--	15.65%	--	0.72	--	-0.58	--	2.09%	--



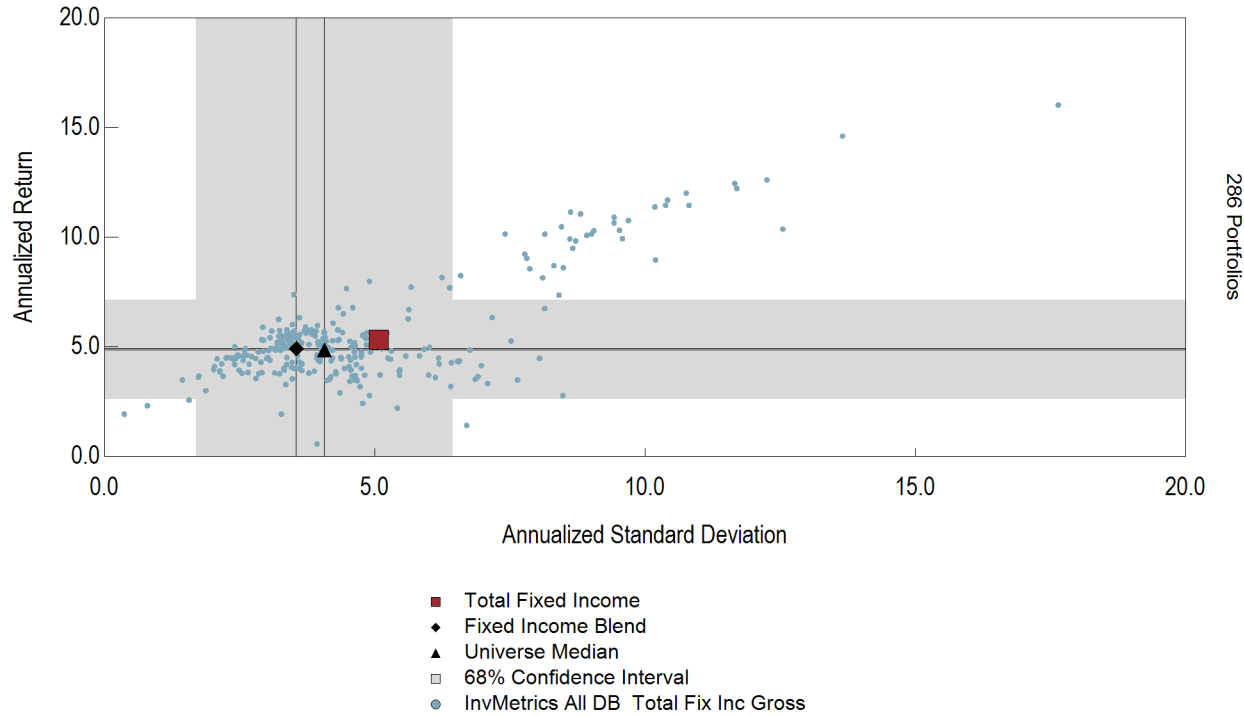
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	3.72%	24	17.07%	61	0.13	23	1.46	9	1.45%	6
MSCI ACWI ex USA IMI Gross	1.60%	49	16.56%	43	0.00	49	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	1.54%	--	16.80%	--	0.00	--	0.15	--	2.97%	--



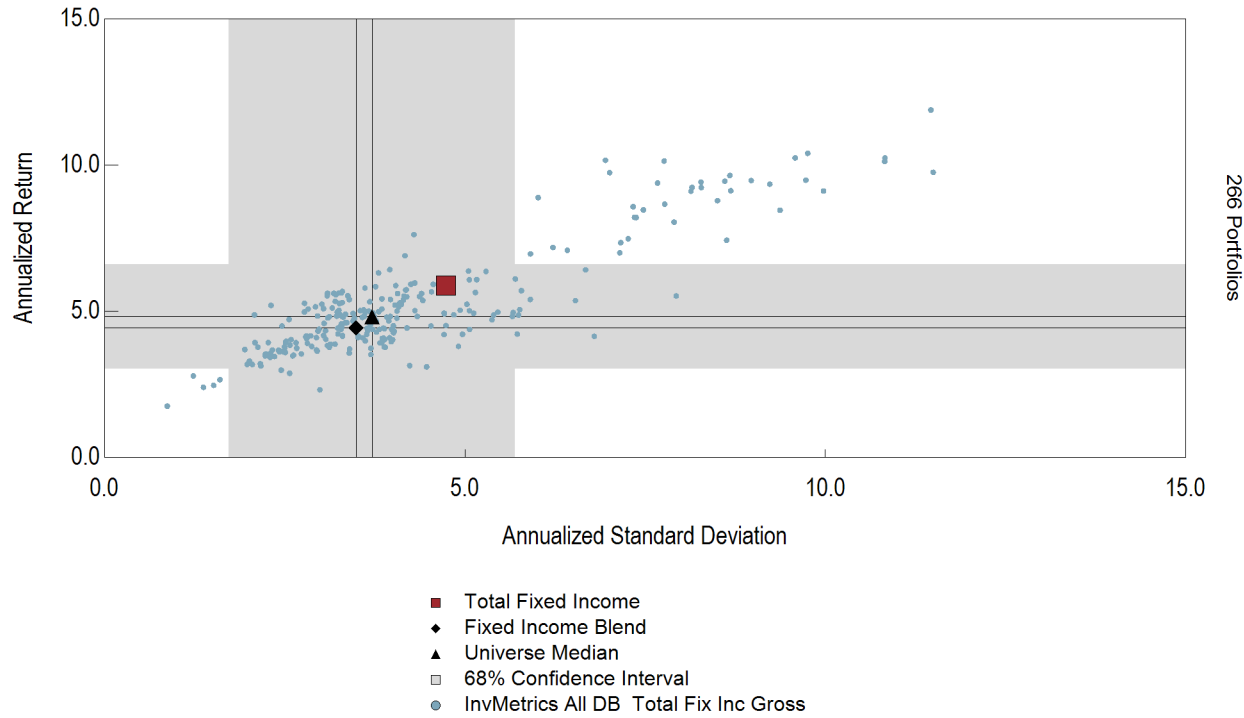
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	8.78%	19	15.07%	63	0.51	21	1.35	5	1.47%	6
MSCI ACWI ex USA IMI Gross	6.80%	47	14.72%	47	0.38	48	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	6.68%	--	14.77%	--	0.38	--	0.18	--	3.05%	--

Total Fixed Income
Risk vs. Return (3 Years)

Period Ending: September 30, 2020



	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	5.32%	36	5.08%	74	0.74	67	0.15	34	2.64%	56
Fixed Income Blend	4.91%	49	3.55%	36	0.94	46	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	4.86%	--	4.07%	--	0.91	--	-0.02	--	2.41%	--



	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	5.87%	20	4.73%	76	1.00	45	0.62	17	2.33%	56
Fixed Income Blend	4.43%	60	3.49%	43	0.94	60	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	4.82%	--	3.71%	--	0.98	--	0.24	--	2.17%	--

Equity environment

- U.S. equities reached a new high in September before pulling back later in the month. U.S. and emerging markets have recovered most losses year-to-date, while international developed equities remain more negative. Global equities are now positive for 2020 despite an earnings recession and considerable economic uncertainty.
 - Emerging market equities outperformed during the quarter (MSCI Emerging Markets +9.6%) followed by domestic equities (S&P 500 +8.9%) and international developed (MSCI EAFE +4.8%).
 - According to FactSet, S&P 500 Q3 earnings are expected to be down -20.5%. However, earnings in Q2 beat expectations by 12.5% (-31.6% YoY vs. -44.1%). Another large positive surprise in Q3 would be welcome news to investors. The Cboe VIX Index moderated in June
- from heightened levels and remained generally rangebound during the third quarter. The VIX ended the month of September at 26, higher than the long-term average of 19.
- The U.S. dollar fell -3.5% in the third quarter, continuing a downward trend since a sudden jump in March on safe-haven buying. The dollar has now completely unwound the gains experienced during the market sell-off.
 - U.S. growth stocks beat value stocks in the third quarter, continuing an incredible run of market leadership (Russell 1000 Growth +13.2%, Russell 1000 Value +5.6%), while large cap stocks outperformed small cap stocks (Russell 1000 +9.5%, Russell 2000 +4.9%).

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	8.9%		15.1%	
US Small Cap (Russell 2000)	4.9%		0.4%	
US Large Value (Russell 1000 Value)	5.6%		(5.0%)	
US Large Growth (Russell 1000 Growth)	13.2%		37.5%	
International Large (MSCI EAFE)	4.8%	1.3%	0.5%	(3.1%)
Eurozone (Euro Stoxx 50)	3.5%	(0.6%)	(1.7%)	(6.8%)
U.K. (FTSE 100)	0.1%	(4.1%)	(13.9%)	(17.0%)
Japan (NIKKEI 225)	6.8%	4.7%	10.9%	10.2%
Emerging Markets (MSCI Emerging Markets)	9.6%	8.5%	10.5%	12.8%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/20

Domestic equity

U.S. equities delivered +8.9% in Q3, reaching a new high in September before pulling back later in the month. The S&P 500 is up +5.6% year-to-date, despite an earnings recession and considerable economic uncertainty.

Consumer Discretionary (+15.1%) and Materials (+13.3%) sectors led in Q3, with Energy (-19.7%) delivering further underperformance. Information Technology stocks have shown impressive performance year-to-date (+27.5%) and have captured headlines as some company valuations have

reached lofty levels. Large technology names have seen greater volatility recently, and exhibited a quick pullback during the first week of September. Growth stocks continue to be in vogue in the current low-growth environment.

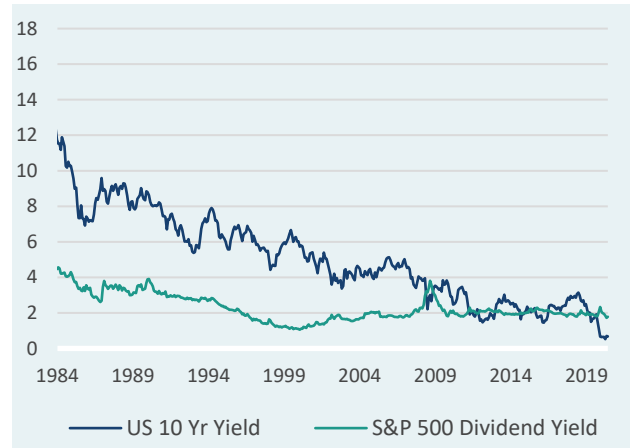
Many investors are justifiably questioning the rationale for such strong risk asset performance, at a time when so much uncertainty exists around public health and the economy, and at a time when some business models may no longer be viable due to COVID-19.

S&P 500



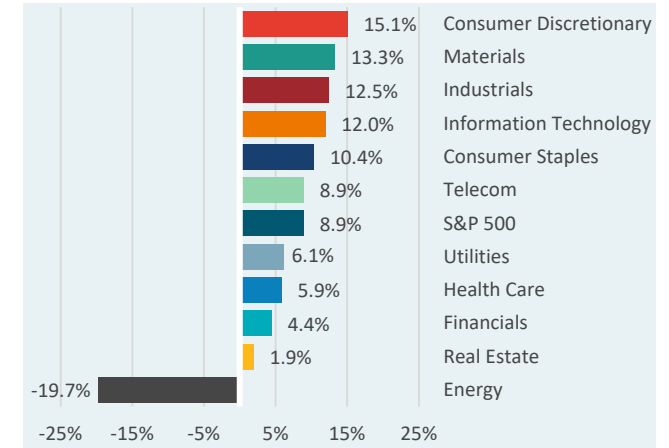
Source: Standard & Poor's, as of 9/30/20

DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 9/30/20

Q3 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 9/30/20

Domestic equity size & style

U.S. growth stocks beat value stocks during Q3, continuing an incredible run of market leadership (Russell 1000 Growth +13.2%, Russell 1000 Value +5.6%), while large cap stocks outperformed small cap stocks (Russell 1000 +9.5%, Russell 2000 +4.9%).

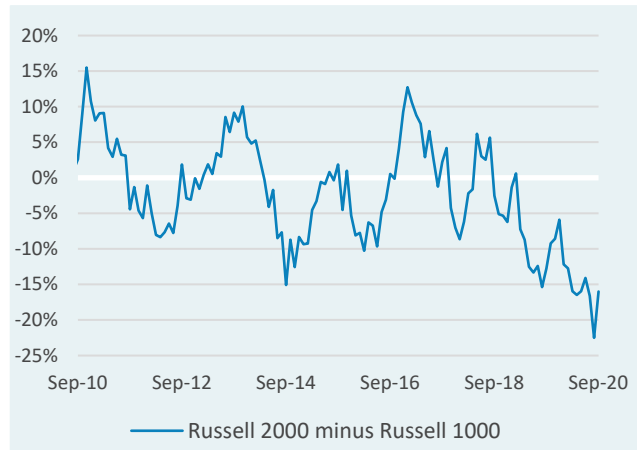
It seems that 2020 has been the perfect storm for value stocks. Commodities sectors were experiencing oversupply leading up to the onset of COVID-19, and the virus greatly accelerated these problems, resulting in a historic crash to prices (the Energy sector contains many value stocks). The Energy sector has delivered -45.2% over the past year. At the same time, the world has been rapidly changing in terms of technological progress, and COVID-19 appears to have accelerated these trends, contributing to extreme

outperformance of the growth-tilted Information Technology sector at +47.2% over the past year.

We recognize that recent value underperformance is anomalous, but we also recognize that much of this price action has been due to global trends that may not necessarily reverse over the short-term. It is very difficult to successfully make short-term bets on style factors, as factors can be incredibly noisy and vulnerable to sector randomness. Value is historically cheap, but a catalyst for a value turnaround is not yet evident. We continue to believe that a buy-and-hold approach to style investing is the best course of action, most of the time, but we are closely watching this space.

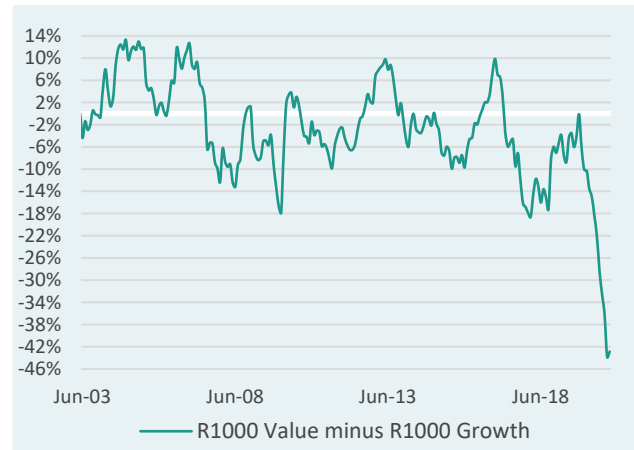
Sector performance has fueled dramatic negative performance of the value premium

SMALL CAP VS LARGE CAP (YOY)



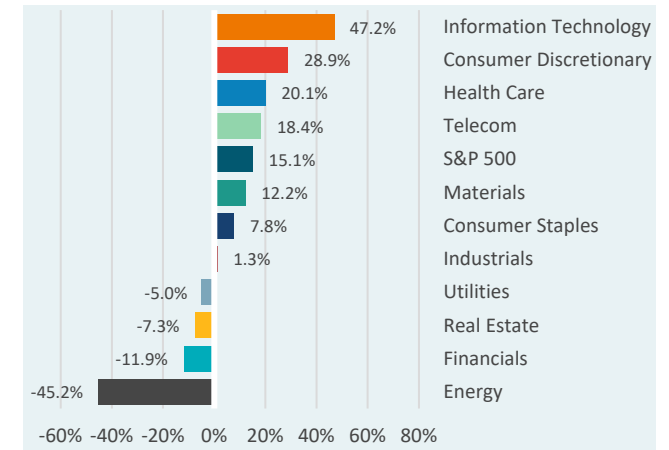
Source: FTSE, as of 9/30/20

VALUE VS GROWTH (YOY)



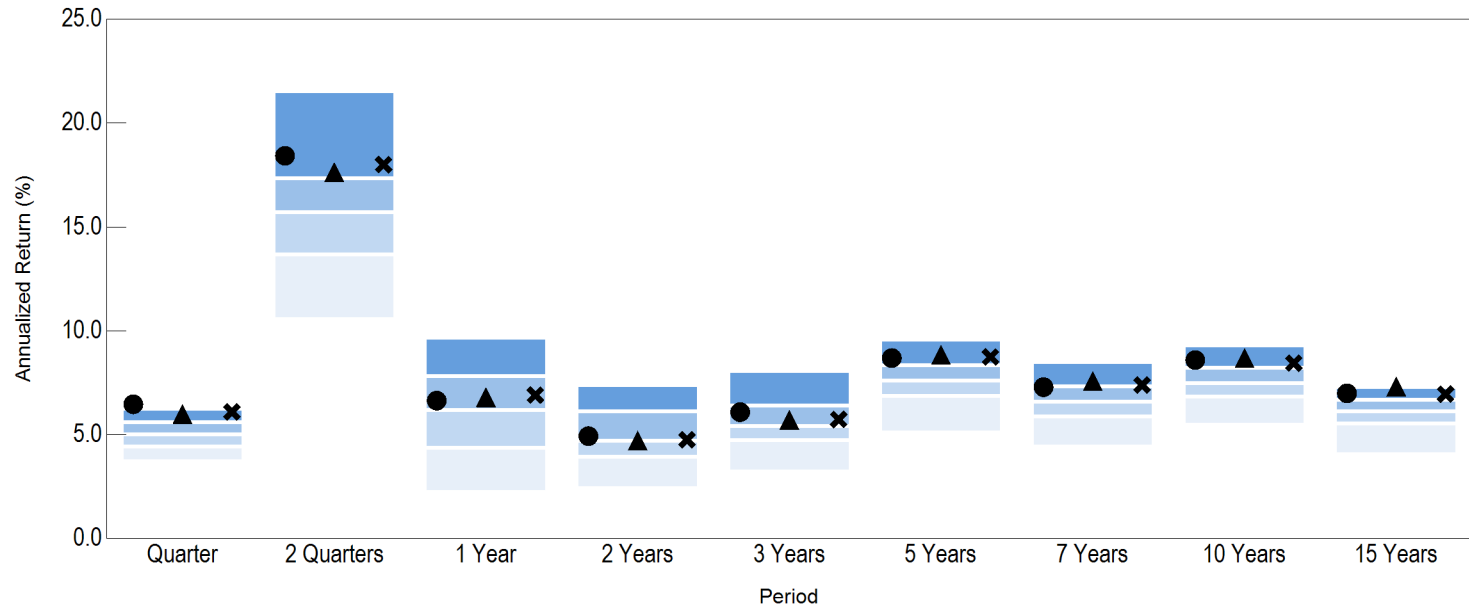
Source: FTSE, as of 9/30/20

S&P 500 SECTOR PERFORMANCE (1-YEAR)



Source: Standard & Poor's, as of 9/30/20

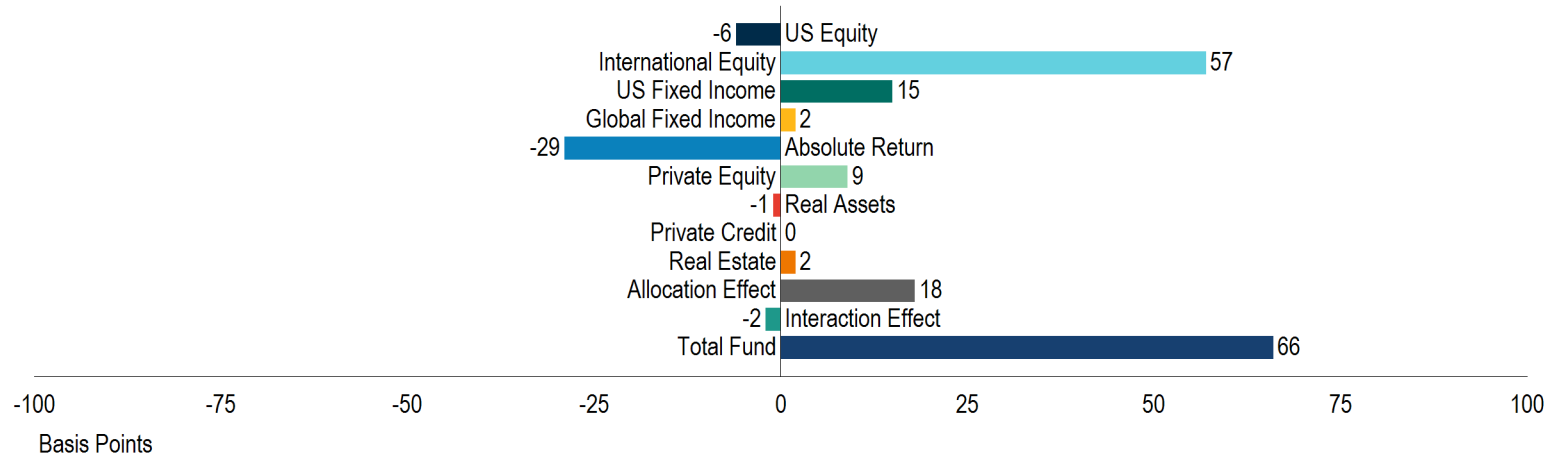
InvMetrics Public DB > \$1B Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years		15 Years	
5th Percentile	6.25	21.51	9.65	7.38	8.05	9.56	8.49	9.30	7.30									
25th Percentile	5.63	17.38	7.84	6.13	6.43	8.36	7.34	8.24	6.70									
Median	5.04	15.74	6.22	4.71	5.45	7.63	6.60	7.49	6.13									
75th Percentile	4.45	13.68	4.40	3.96	4.76	6.89	5.91	6.87	5.55									
95th Percentile	3.73	10.58	2.27	2.46	3.24	5.14	4.45	5.49	4.09									
# of Portfolios	91	91	91	90	90	89	89	85	79									
● Total Fund	6.47 (4)	18.43 (17)	6.65 (41)	4.93 (47)	6.09 (32)	8.69 (17)	7.29 (27)	8.60 (13)	6.99 (12)									
▲ Policy Index	5.99 (14)	17.64 (24)	6.81 (40)	4.72 (50)	5.72 (42)	8.85 (15)	7.59 (13)	8.70 (12)	7.31 (5)									
✕ Allocation Index	6.10 (9)	18.00 (23)	6.91 (39)	4.76 (50)	5.74 (41)	8.75 (17)	7.39 (23)	8.45 (17)	6.96 (12)									

Total Fund
Performance Attribution (One Quarter)

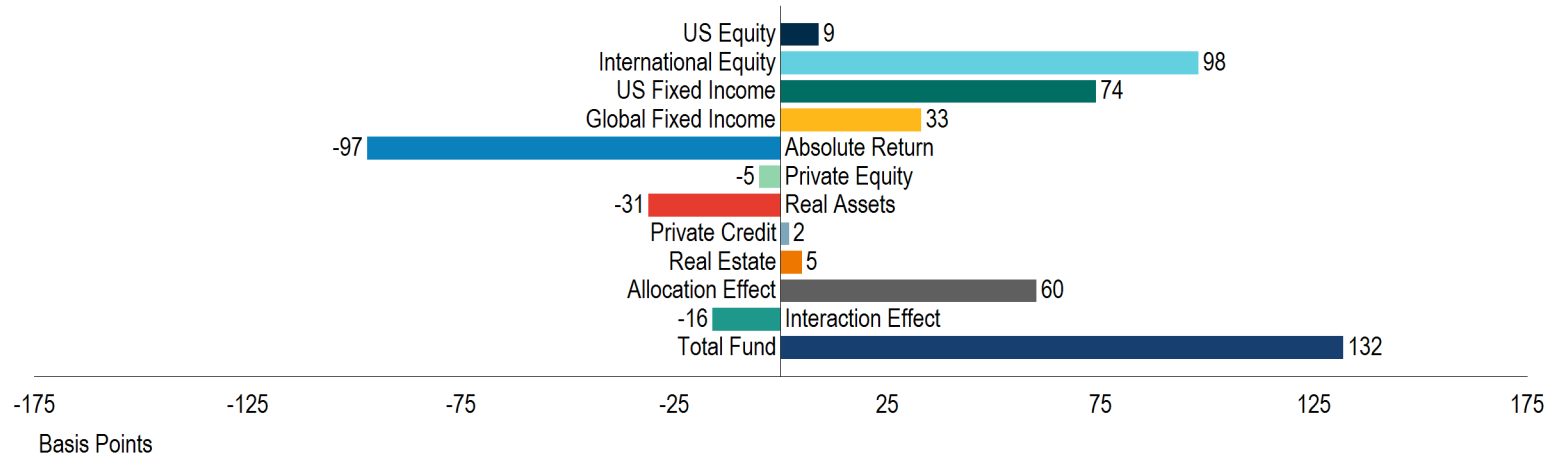
Period Ending: September 30, 2020



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	8.95%	9.21%	-0.26%	-0.06%	0.10%	-0.01%	0.03%
International Equity	9.23%	6.90%	2.32%	0.57%	0.01%	0.05%	0.63%
US Fixed Income	1.73%	0.62%	1.11%	0.15%	0.04%	-0.01%	0.17%
Global Fixed Income	3.63%	2.94%	0.69%	0.02%	-0.04%	0.01%	-0.01%
Absolute Return	1.07%	4.26%	-3.19%	-0.29%	0.01%	0.01%	-0.27%
Private Equity	12.29%	10.62%	1.67%	0.09%	-0.02%	-0.06%	0.01%
Real Assets	2.77%	2.97%	-0.20%	-0.01%	0.01%	0.00%	-0.01%
Private Credit	4.43%	4.58%	-0.15%	0.00%	0.05%	0.00%	0.05%
Real Estate	0.71%	0.48%	0.23%	0.02%	0.04%	0.00%	0.05%
Total	6.54%	5.88%	0.66%	0.49%	0.18%	-0.02%	0.66%

Total Fund
Performance Attribution (6 Months)

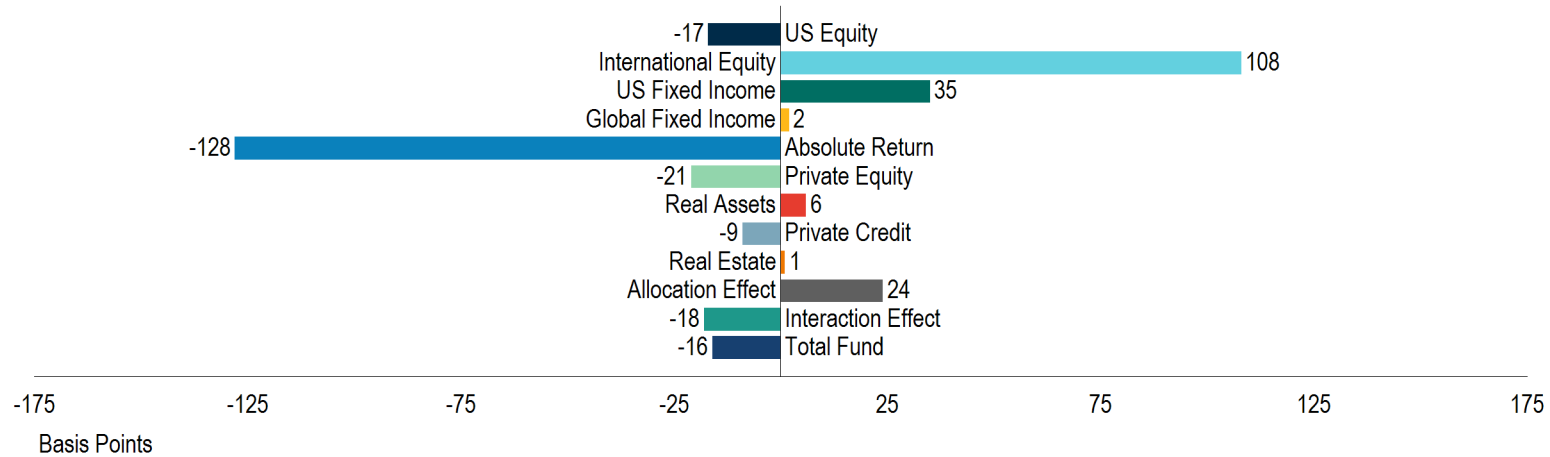
Period Ending: September 30, 2020



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	33.67%	33.26%	0.40%	0.09%	0.39%	0.01%	0.49%
International Equity	29.41%	25.22%	4.19%	0.98%	0.07%	0.06%	1.12%
US Fixed Income	8.70%	3.53%	5.17%	0.74%	0.13%	-0.06%	0.81%
Global Fixed Income	15.13%	5.04%	10.09%	0.33%	-0.17%	0.14%	0.30%
Absolute Return	2.51%	12.44%	-9.93%	-0.97%	-0.01%	0.00%	-0.98%
Private Equity	-2.93%	-1.93%	-1.01%	-0.05%	0.08%	-0.30%	-0.27%
Real Assets	13.56%	19.32%	-5.76%	-0.31%	0.00%	0.01%	-0.30%
Private Credit	15.20%	15.21%	-0.02%	0.02%	0.08%	-0.02%	0.08%
Real Estate	-0.54%	-1.08%	0.54%	0.05%	0.03%	0.00%	0.07%
Total	18.67%	17.35%	1.32%	0.88%	0.60%	-0.16%	1.32%

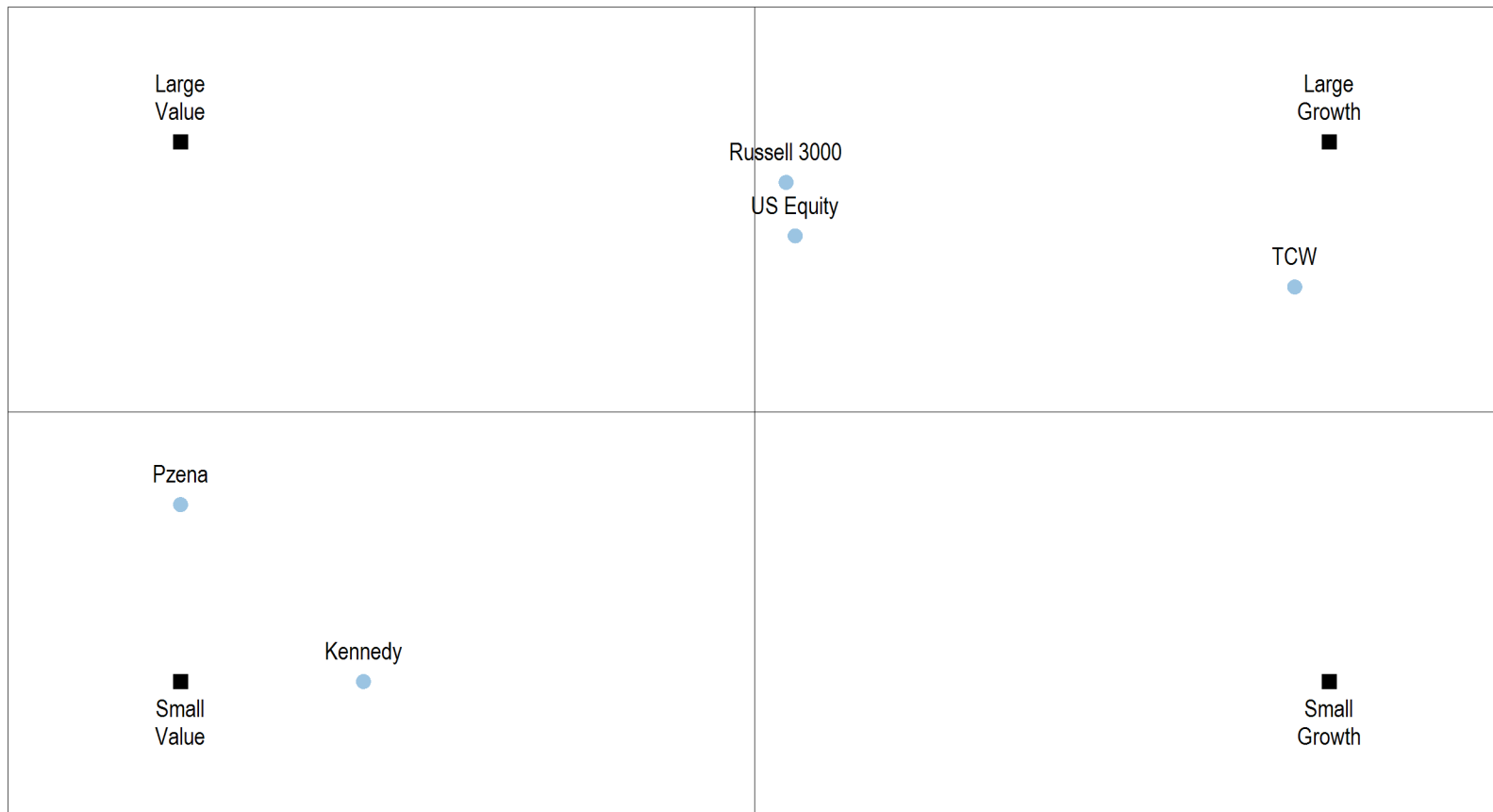
Total Fund
Performance Attribution (One Year)

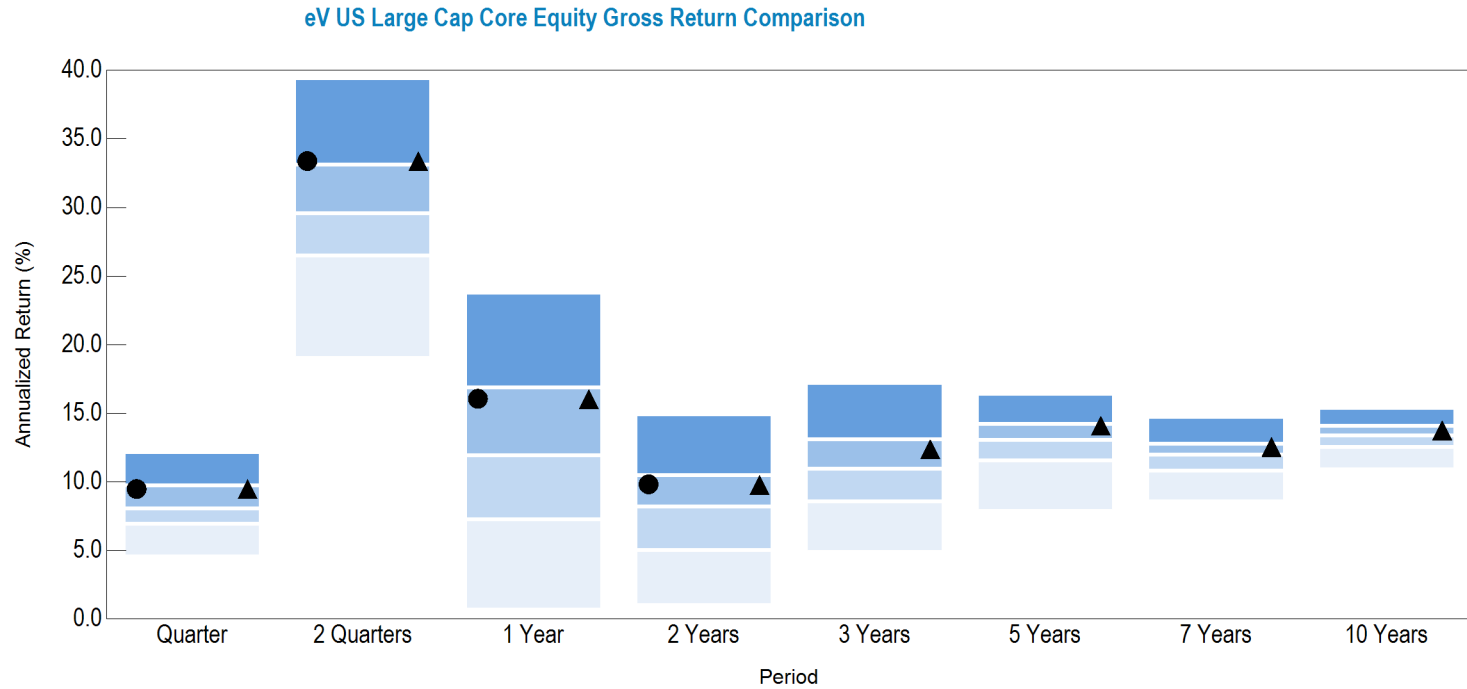
Period Ending: September 30, 2020



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	14.10%	15.00%	-0.90%	-0.17%	0.23%	-0.01%	0.05%
International Equity	8.06%	3.95%	4.11%	1.08%	-0.09%	0.08%	1.07%
US Fixed Income	9.74%	6.98%	2.75%	0.35%	0.07%	-0.06%	0.37%
Global Fixed Income	7.19%	6.76%	0.42%	0.02%	-0.03%	0.02%	0.01%
Absolute Return	-7.48%	5.72%	-13.21%	-1.28%	-0.01%	0.01%	-1.28%
Private Equity	1.09%	2.33%	-1.24%	-0.21%	-0.02%	-0.30%	-0.53%
Real Assets	-8.20%	-10.54%	2.34%	0.06%	0.02%	0.00%	0.08%
Private Credit	0.64%	2.83%	-2.19%	-0.09%	0.15%	0.08%	0.14%
Real Estate	1.59%	1.39%	0.20%	0.01%	-0.08%	0.00%	-0.07%
Total	6.77%	6.93%	-0.16%	-0.22%	0.24%	-0.18%	-0.16%

US Effective Style Map





	Return (Rank)															
5th Percentile	12.13		39.38		23.77		14.89		17.17		16.39		14.72		15.36	
25th Percentile	9.75		33.14		16.90		10.54		13.11		14.25		12.79		14.10	
Median	8.07		29.61		11.95		8.24		10.97		13.07		12.00		13.39	
75th Percentile	6.95		26.53		7.29		5.05		8.61		11.58		10.82		12.57	
95th Percentile	4.60		19.08		0.72		1.03		4.93		7.90		8.59		10.94	
# of Portfolios	327		327		327		322		317		289		274		225	
● BlackRock Russell 1000 Index Fund	9.48	(29)	33.38	(24)	16.06	(30)	9.82	(31)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 1000	9.47	(29)	33.36	(24)	16.01	(30)	9.77	(31)	12.38	(34)	14.09	(29)	12.54	(34)	13.76	(38)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,016	1,015
Weighted Avg. Market Cap. (\$B)	398.7	398.3
Median Market Cap. (\$B)	10.5	10.4
Price To Earnings	24.4	24.4
Price To Book	4.4	4.5
Price To Sales	2.4	2.5
Return on Equity (%)	3.9	3.9
Yield (%)	1.6	1.6

Top Holdings

APPLE INC	6.0%
MICROSOFT CORP	5.0%
AMAZON.COM INC	4.3%
FACEBOOK INC	2.0%
ALPHABET INC	1.4%
ALPHABET INC	1.4%
BERKSHIRE HATHAWAY INC	1.3%
JOHNSON & JOHNSON	1.3%
PROCTER & GAMBLE CO (THE)	1.1%
VISA INC	1.1%

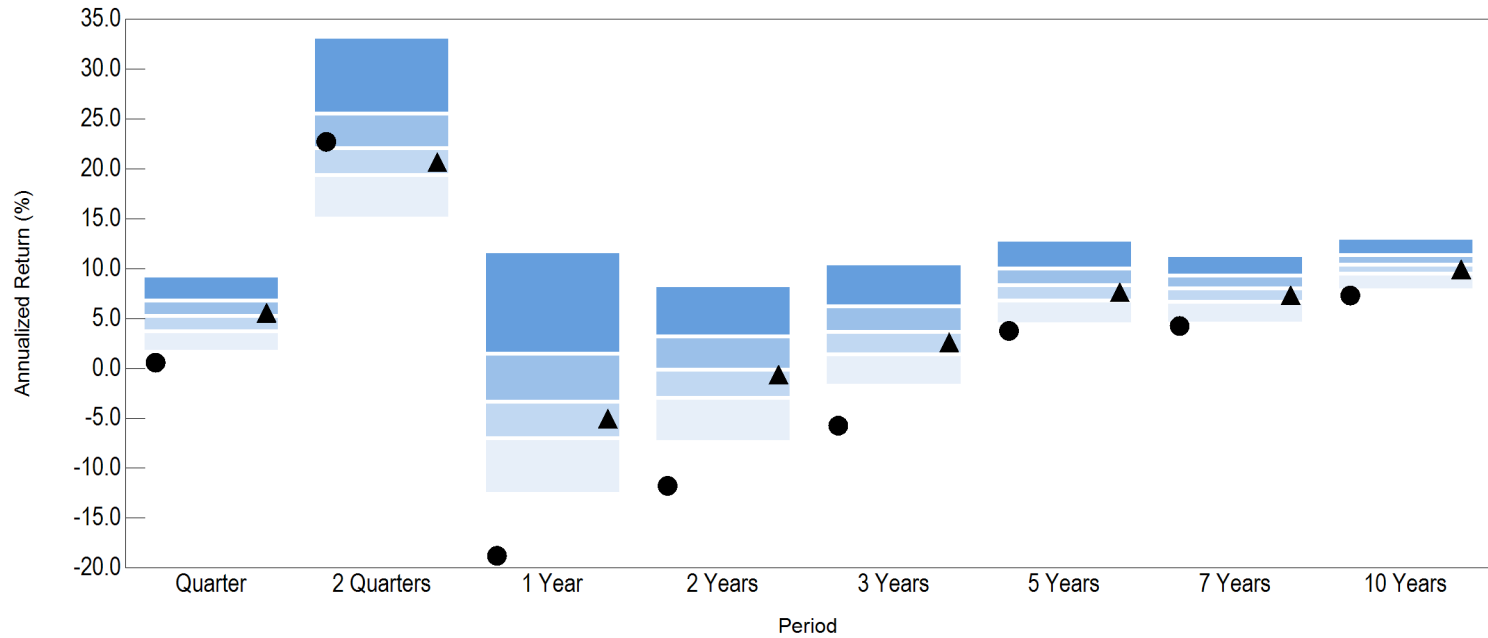
Best Performers

	Return %
IMMUNOMEDICS INC (IMMU)	139.9%
L BRANDS INC (LB)	112.5%
TESLA INC (TSLA)	98.6%
NOVOCURE LTD (NVCR)	87.7%
PINTEREST INC (PINS)	87.2%
LIVONGO HEALTH INC (LVGO)	86.3%
CARVANA CO (CVNA)	85.6%
ZOOM VIDEO COMMUNICATIONS INC (ZM)	85.4%
FEDEX CORP. (FDX)	79.9%
ZILLOW GROUP INC (ZG)	76.7%

Worst Performers

	Return %
OCCIDENTAL PETROLEUM CORP (OXY)	-45.2%
COTY INC (COTY)	-39.6%
BIOMARIN PHARMACEUTICAL INC (BMRN)	-38.3%
REATA PHARMACEUTICALS INC (RETA)	-37.6%
MURPHY OIL CORP (MUR)	-34.8%
AGIOS PHARMACEUTICALS INC (AGIO)	-34.6%
MARATHON OIL CORP (MRO)	-33.2%
KIRBY CORP (KEX)	-32.5%
HOLLYFRONTIER CORP (HFC)	-31.6%
ALTERYX INC (AYX)	-30.9%

eV US Large Cap Value Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	9.28	33.19	11.70	8.30	10.50	12.90	11.37	13.07
25th Percentile	6.84	25.56	1.52	3.25	6.27	10.07	9.36	11.38
Median	5.31	22.10	-3.28	-0.06	3.68	8.36	8.04	10.46
75th Percentile	3.77	19.44	-6.95	-2.91	1.42	6.85	6.70	9.51
95th Percentile	1.71	15.08	-12.51	-7.31	-1.71	4.49	4.54	7.85
# of Portfolios	326	326	326	324	320	309	299	263
● Pzena	0.59 (99)	22.72 (46)	-18.78 (99)	-11.77 (99)	-5.73 (99)	3.77 (98)	4.26 (97)	7.32 (98)
▲ Russell 1000 Value	5.59 (44)	20.68 (63)	-5.03 (66)	-0.62 (55)	2.63 (65)	7.66 (61)	7.35 (64)	9.95 (66)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	39	850
Weighted Avg. Market Cap. (\$B)	38.7	115.4
Median Market Cap. (\$B)	18.7	9.1
Price To Earnings	11.3	18.7
Price To Book	1.9	2.6
Price To Sales	0.5	1.7
Return on Equity (%)	4.7	1.7
Yield (%)	2.4	2.5
Beta	1.4	1.0

Top Holdings

AMERICAN INTERNATIONAL GROUP INC	4.6%
CAPITAL ONE FINANCIAL CORP.	4.6%
FORD MOTOR CO	4.4%
GENERAL ELECTRIC CO	4.4%
CITIGROUP INC	4.0%
DOW INC	3.8%
WELLS FARGO & CO	3.8%
LEAR CORP	3.4%
WABTEC CORP	3.4%
MCKESSON CORP	3.3%

Best Performers

	Return %
GILDAN ACTIVEWEAR INC (GIL)	27.0%
PVH CORP (PVH)	24.1%
COGNIZANT TECHNOLOGY SOLUTIONS CORP (CTSH)	22.6%
DOW INC (DOW)	17.2%
STANLEY BLACK & DECKER INC (SWK)	16.9%
CAPITAL ONE FINANCIAL CORP. (COF)	15.0%
TEXTRON INC (TXT)	9.7%
NEWELL BRANDS & INC (NWL)	9.6%
FORD MOTOR CO (F)	9.5%
AXIS CAPITAL HOLDINGS LTD (AXS)	8.6%

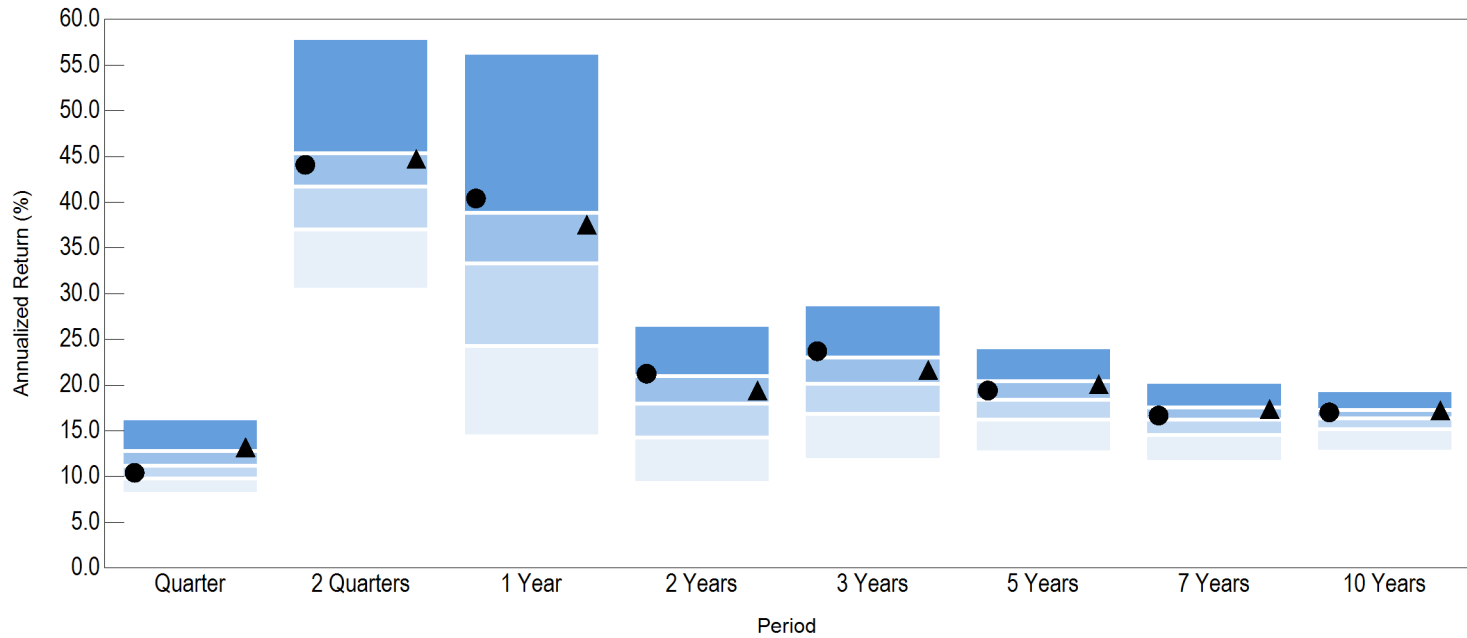
Worst Performers

	Return %
NATIONAL OILWELL VARCO INC (NOV)	-26.0%
ROYAL DUTCH SHELL PLC (RDS.A)	-22.2%
EXXON MOBIL CORP (XOM)	-21.7%
CENOVUS ENERGY INC (CVE)	-16.7%
CITIGROUP INC (C)	-14.8%
BAKER HUGHES A GE CO (BKR)	-12.7%
AMERICAN INTERNATIONAL GROUP INC (AIG)	-10.8%
CARDINAL HEALTH INC (CAH)	-9.1%
GENERAL ELECTRIC CO (GE)	-8.6%
WELLS FARGO & CO (WFC)	-7.8%

Pzena Performance Attribution vs. Russell 1000 Value

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-1.16%	0.21%	-1.64%	0.26%	-15.57%	-19.63%	11.76%	5.28%			
Materials	0.09%	0.24%	-0.08%	-0.07%	17.19%	11.96%	3.29%	4.54%			
Industrials	-1.01%	-1.05%	-0.09%	0.14%	3.01%	11.45%	10.86%	12.50%			
Consumer Discretionary	-0.15%	-0.47%	1.02%	-0.71%	8.72%	15.44%	17.53%	7.02%			
Consumer Staples	-0.29%	--	-0.29%	--	--	9.32%	0.00%	8.07%			
Health Care	-0.98%	-1.79%	-0.16%	0.97%	-5.31%	7.81%	6.30%	13.65%			
Financials	-2.33%	-0.95%	-0.38%	-1.00%	-1.30%	3.76%	38.49%	18.73%			
Information Technology	0.87%	1.07%	0.31%	-0.52%	9.82%	-0.53%	5.36%	10.35%			
Communication Services	-0.31%	-0.93%	-0.24%	0.87%	-1.46%	8.41%	0.68%	9.45%			
Utilities	-0.32%	-0.59%	0.00%	0.27%	-4.75%	5.83%	3.01%	5.60%			
Real Estate	0.19%	--	0.19%	--	--	1.73%	0.00%	4.81%			
Cash	-0.15%	0.00%	-0.15%	0.00%	0.02%	--	2.73%	0.00%			
Portfolio	-5.57%	=	-4.27%	+	-1.52%	+	0.22%	0.13%	5.69%	100.00%	100.00%

eV US Large Cap Growth Equity Gross Return Comparison



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	16.36	57.95	56.31	26.53	28.76	24.13	20.31	19.40
25th Percentile	12.85	45.38	38.87	20.99	23.04	20.44	17.63	17.31
Median	11.21	41.72	33.34	17.99	20.15	18.42	16.27	16.42
75th Percentile	9.82	37.07	24.30	14.32	16.87	16.30	14.60	15.22
95th Percentile	8.15	30.44	14.43	9.36	11.88	12.71	11.67	12.77
# of Portfolios	252	252	252	251	246	231	226	209
● TCW	10.42 (69)	44.09 (31)	40.41 (21)	21.26 (23)	23.71 (22)	19.40 (37)	16.68 (42)	17.02 (33)
▲ Russell 1000 Growth	13.22 (22)	44.73 (29)	37.53 (30)	19.43 (36)	21.67 (39)	20.10 (28)	17.39 (29)	17.25 (27)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	33	447
Weighted Avg. Market Cap. (\$B)	326.2	652.3
Median Market Cap. (\$B)	72.9	13.8
Price To Earnings	47.2	33.4
Price To Book	10.2	9.6
Price To Sales	7.6	4.2
Return on Equity (%)	14.3	6.5
Yield (%)	0.4	0.8
Beta	1.0	1.0

Top Holdings

AMAZON.COM INC	8.0%
ADOBE INC	6.8%
SERVICENOW INC	6.6%
SALESFORCE.COM INC	5.3%
FACEBOOK INC	5.1%
PAYPAL HOLDINGS INC	5.1%
ALPHABET INC	5.0%
VISA INC	4.9%
AMERICAN TOWER CORP	4.6%
NVIDIA CORPORATION	4.5%

Best Performers

	Return %
NVIDIA CORPORATION (NVDA)	42.5%
SALESFORCE.COM INC (CRM)	34.2%
XYLEM INC (XYL)	29.9%
TRADE DESK INC (THE) (TTD)	27.6%
ZOETIS INC (ZTS)	20.8%
SERVICENOW INC (NOW)	19.7%
ALIGN TECHNOLOGY INC (ALGN)	19.3%
COSTCO WHOLESALE CORP (COST)	17.3%
FACEBOOK INC (FB)	15.3%
MASTERCARD INC (MA)	14.5%

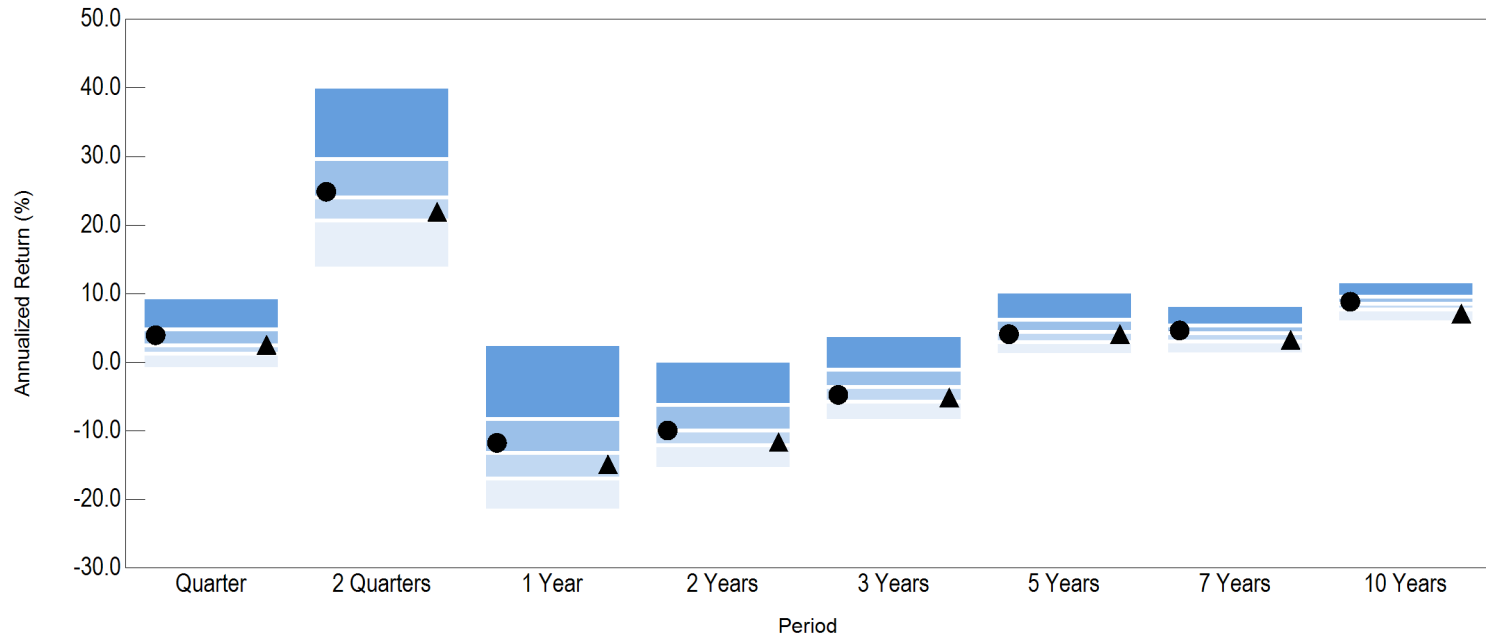
Worst Performers

	Return %
BIOMARIN PHARMACEUTICAL INC (BMRN)	-38.3%
ILLUMINA INC (ILMN)	-16.5%
CHUBB LTD (CB)	-7.7%
AMERICAN TOWER CORP (AMT)	-6.1%
SPLUNK INC (SPLK)	-5.3%
TRANSUNION (TRU)	-3.3%
ASML HOLDING NV (ASML)	0.3%
VISA INC (V)	3.7%
ALPHABET INC (GOOG)	4.0%
IHS MARKIT LTD (INFO)	4.2%

TCW Performance Attribution vs. Russell 1000 Growth

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.01%	--	0.01%	--	--	-4.04%	0.00%	0.08%			
Materials	-0.01%	--	-0.01%	--	--	15.03%	0.00%	0.82%			
Industrials	-0.42%	-0.25%	0.01%	-0.18%	8.06%	13.40%	7.94%	4.63%			
Consumer Discretionary	-1.16%	-1.17%	-0.31%	0.32%	13.08%	20.65%	11.28%	15.47%			
Consumer Staples	0.14%	0.25%	0.03%	-0.13%	17.33%	12.20%	2.25%	4.84%			
Health Care	-0.18%	-0.66%	0.31%	0.18%	1.24%	5.65%	11.01%	15.04%			
Financials	-0.27%	-0.04%	-0.18%	-0.05%	4.32%	6.38%	4.67%	2.10%			
Information Technology	0.54%	0.64%	-0.05%	-0.04%	16.50%	15.05%	40.79%	43.80%			
Communication Services	-0.02%	-0.07%	0.04%	0.01%	9.40%	10.05%	9.84%	11.13%			
Utilities	0.00%	--	0.00%	--	--	-4.75%	0.00%	0.02%			
Real Estate	-0.90%	-0.04%	-0.74%	-0.11%	-0.81%	1.05%	8.17%	2.07%			
Cash	-0.54%	0.00%	-0.54%	0.00%	0.02%	--	4.05%	0.00%			
Portfolio	-2.81%	=	-1.35%	+	-1.44%	+	-0.02%	10.43%	13.24%	100.00%	100.00%

eV US Small Cap Value Equity Gross Return Comparison



Return (Rank)

5th Percentile	9.40	40.15	2.65	0.20	3.92	10.28	8.28	11.80
25th Percentile	4.84	29.71	-8.19	-6.14	-1.08	6.21	5.38	9.58
Median	2.52	24.11	-13.12	-9.86	-3.59	4.47	4.28	8.56
75th Percentile	1.28	20.72	-16.91	-12.09	-5.71	3.01	3.10	7.77
95th Percentile	-0.97	13.67	-21.60	-15.50	-8.47	1.13	1.23	5.90
# of Portfolios	221	221	221	218	214	208	199	186
● Kennedy	3.95 (35)	24.85 (46)	-11.75 (41)	-9.95 (52)	-4.76 (64)	4.09 (60)	4.64 (39)	8.82 (44)
▲ Russell 2000 Value	2.56 (50)	21.94 (66)	-14.88 (63)	-11.63 (71)	-5.13 (69)	4.11 (60)	3.27 (74)	7.09 (88)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	279	1,459
Weighted Avg. Market Cap. (\$B)	2.2	1.9
Median Market Cap. (\$B)	1.3	0.5
Price To Earnings	16.2	13.9
Price To Book	2.1	1.8
Price To Sales	1.0	0.7
Return on Equity (%)	0.5	-0.2
Yield (%)	1.6	2.2
Beta	1.0	1.0

Top Holdings

BMC STOCK HOLDINGS INC	1.1%
CASELLA WASTE SYSTEMS INC	1.0%
RENEWABLE ENERGY GROUP INC	0.9%
SCRIPPS (E.W.) CO (THE)	0.9%
COOPER TIRE & RUBBER CO	0.9%
FIRST INTERSTATE BANCSYSTEM INC	0.8%
REXFORD INDUSTRIAL REALTY INC	0.8%
PENNYMAC FINANCIAL SERVICES INC	0.8%
BLACK HILLS CORP	0.8%
INSTALLED BUILDING PRODUCTS INC	0.8%

Best Performers

	Return %
PACIFIC ETHANOL INC (PEIX)	929.7%
RENEWABLE ENERGY GROUP INC (REGI)	115.6%
YRC WORLDWIDE INC (YRCW)	111.9%
SURGERY PARTNERS INC (SGRY)	89.3%
SITIME CORP (SITM)	77.2%
BMC STOCK HOLDINGS INC (BMCH)	70.4%
ASPEN AEROGELS INC (ASPN)	66.4%
VIRTUSA CORP (VRTU)	51.4%
LITHIA MOTORS INC. (LAD)	50.8%
ARCH COAL INC (ARCH)	49.5%

Worst Performers

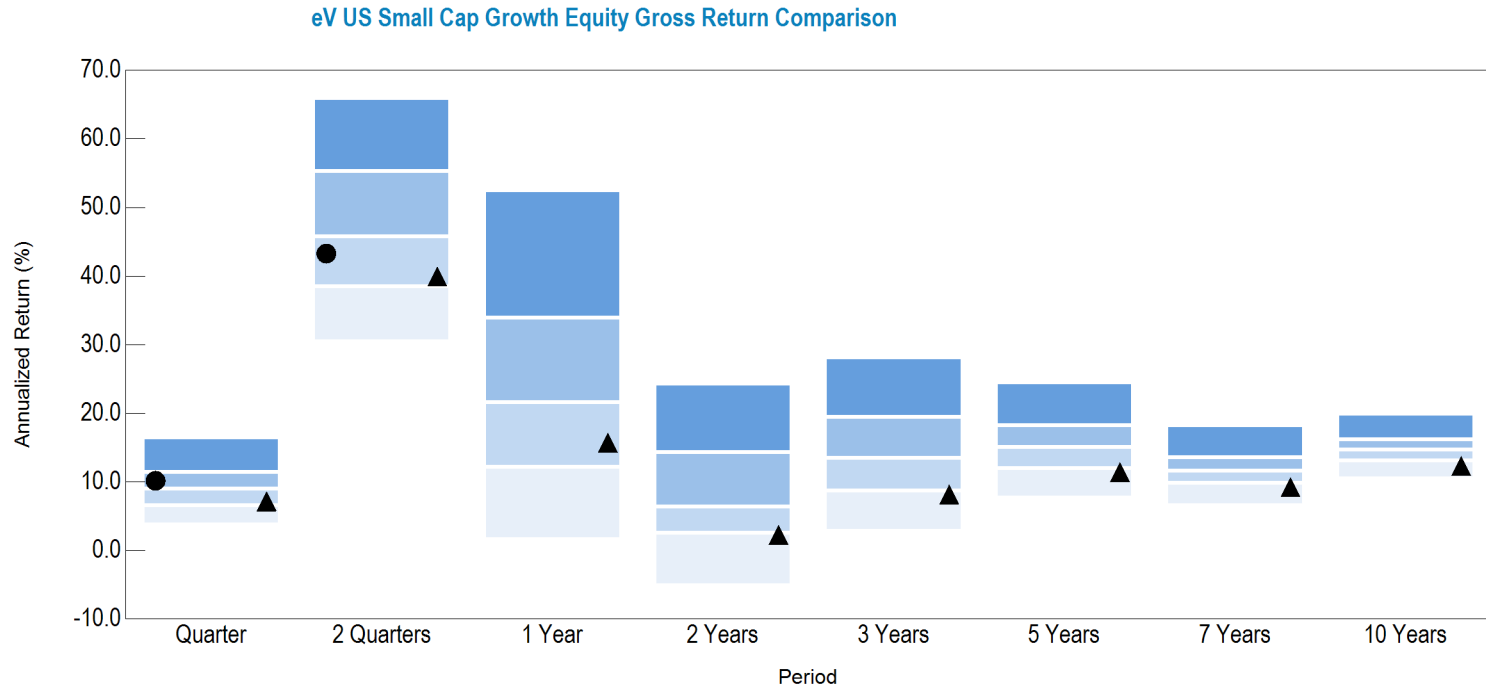
	Return %
RECRO PHARMA INC (REPH)	-53.8%
PBF ENERGY INC (PBF)	-44.4%
APREA THERAPEUTICS INC (APRE)	-38.0%
REATA PHARMACEUTICALS INC (RETA)	-37.6%
PIXELWORKS INC (PXLW)	-36.5%
DELEK US HOLDINGS INC (DK)	-34.8%
KIRBY CORP (KEX)	-32.5%
NEOPHOTONICS CORP (NPTN)	-31.4%
SCHOLASTIC CORP (SCHL)	-29.4%
AEHR TEST SYSTEMS (AEHR)	-28.9%

Kennedy Performance Attribution vs. Russell 2000 Value

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.86%	1.05%	0.20%	-0.39%	13.51%	-9.91%	2.79%	4.46%			
Materials	-0.12%	-0.10%	-0.02%	0.01%	4.49%	6.45%	4.98%	5.52%			
Industrials	0.60%	0.55%	0.03%	0.02%	10.48%	7.08%	16.77%	16.12%			
Consumer Discretionary	-0.45%	-0.36%	-0.11%	0.02%	17.20%	20.48%	10.39%	11.01%			
Consumer Staples	-0.01%	-0.01%	0.00%	0.00%	6.98%	7.12%	3.53%	3.54%			
Health Care	-0.34%	-0.34%	-0.05%	0.05%	2.45%	7.81%	5.33%	6.27%			
Financials	0.30%	-0.10%	0.38%	0.02%	-4.30%	-3.96%	22.89%	28.88%			
Information Technology	0.21%	0.17%	-0.16%	0.20%	2.83%	0.11%	13.49%	6.21%			
Communication Services	0.19%	0.26%	0.04%	-0.11%	9.63%	-1.19%	1.41%	2.44%			
Utilities	0.06%	0.06%	0.00%	0.00%	-4.79%	-5.89%	4.99%	5.01%			
Real Estate	0.63%	0.64%	0.04%	-0.05%	3.49%	-2.63%	9.69%	10.52%			
Cash	-0.09%	0.00%	-0.09%	0.00%	0.02%	--	3.74%	0.00%			
Portfolio	1.84%	=	1.82%	+	0.26%	+	-0.24%	4.15%	2.31%	100.00%	100.00%

Small Cap Growth Equity
Peer Universe Comparison

Period Ending: September 30, 2020



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	16.45		65.92		52.48		24.28		28.08		24.50		18.26		19.86	
25th Percentile	11.50		55.37		33.96		14.35		19.52		18.27		13.62		16.30	
Median	9.09		45.80		21.68		6.44		13.56		15.15		11.68		14.75	
75th Percentile	6.61		38.55		12.20		2.63		8.83		12.03		9.88		13.15	
95th Percentile	3.86		30.54		1.67		-5.05		2.89		7.73		6.62		10.54	
# of Portfolios	156		156		156		156		155		149		140		136	
● William Blair Small Cap Growth	10.16	(36)	43.28	(60)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 2000 Growth	7.16	(68)	39.93	(69)	15.71	(67)	2.26	(77)	8.18	(79)	11.42	(79)	9.22	(83)	12.34	(89)

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	3,716	1,099
Weighted Avg. Market Cap. (\$B)	218.7	3.0
Median Market Cap. (\$B)	9.1	0.9
Price To Earnings	21.9	25.9
Price To Book	3.6	4.7
Price To Sales	1.6	2.2
Return on Equity (%)	6.6	-1.6
Yield (%)	1.8	0.5

Top Holdings

BWX TECHNOLOGIES INC	2.2%
BOOT BARN HOLDINGS INC	2.0%
QUINSTREET INC	1.9%
ENCOMPASS HEALTH CORP	1.8%
NATIONAL VISION HOLDINGS INC	1.8%
CASELLA WASTE SYSTEMS INC	1.8%
DARLING INGREDIENTS INC	1.7%
IRHYTHM TECHNOLOGIES INC	1.7%
AARONS HOLDINGS COMPANY INC	1.7%
FIRSTSERVICE CORP	1.6%

Best Performers

	Return %
IRHYTHM TECHNOLOGIES INC (IRTC)	105.5%
SITIME CORP (SITM)	77.2%
SOLAREGE TECHNOLOGIES INC (SEDG)	71.7%
OPEN LENDING CORP (LPRO)	68.9%
TWIST BIOSCIENCE CORP (TWST)	67.7%
QUINSTREET INC (QNST)	51.4%
LITHIA MOTORS INC. (LAD)	50.8%
DARLING INGREDIENTS INC (DAR)	46.3%
RITCHIE BROS AUCTIONEERS INC (RBA)	45.6%
HORIZON THERAPEUTICS PUBLIC LTD CO (HZNP)	39.8%

Worst Performers

	Return %
TABULA RASA HEALTHCARE INC (TRHC)	-25.5%
ROGERS CORP. (ROG)	-21.3%
AERIE PHARMACEUTICALS INC (AERI)	-20.3%
BLUE BIRD CORP (BLBD)	-18.9%
PERSPECTA INC (PRSP)	-16.0%
ALBANY INTERNATIONAL CORP. (AIN)	-15.4%
FIRSTCASH INC (FCFS)	-14.8%
LIGAND PHARMACEUTICALS INC (LGND)	-14.8%
ALARM.COM HOLDINGS INC (ALRM)	-14.8%
HEALTH EQUITY INC (HQY)	-12.4%

William Blair Small Cap Growth Performance Attribution vs. Russell 2000 Growth

	Attribution Effects				Returns		Sector Weights				
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.12%	0.00%	-0.15%	0.02%	-3.84%	-6.09%	1.28%	0.17%			
Materials	0.12%	0.32%	0.01%	-0.20%	18.13%	6.58%	0.99%	2.68%			
Industrials	-2.36%	-1.85%	0.66%	-1.17%	0.94%	15.15%	21.29%	13.05%			
Consumer Discretionary	0.12%	0.52%	-0.28%	-0.12%	21.20%	17.12%	9.88%	12.70%			
Consumer Staples	0.51%	0.60%	-0.01%	-0.08%	28.62%	9.79%	2.79%	3.19%			
Health Care	3.02%	3.56%	0.19%	-0.74%	14.81%	4.45%	27.27%	34.37%			
Financials	0.10%	0.10%	-0.02%	0.02%	7.25%	4.84%	5.08%	4.28%			
Information Technology	1.04%	1.02%	-0.10%	0.12%	7.77%	2.95%	23.68%	21.18%			
Communication Services	0.93%	1.39%	0.09%	-0.56%	51.43%	-1.34%	1.59%	2.64%			
Utilities	0.22%	--	0.22%	--	--	-4.36%	0.00%	1.88%			
Real Estate	0.45%	0.51%	0.00%	-0.06%	19.91%	6.70%	3.37%	3.85%			
Cash	-0.20%	0.00%	-0.20%	0.00%	0.02%	--	2.80%	0.00%			
Portfolio	3.82%	=	6.17%	+	0.41%	+	-2.76%	10.96%	7.13%	100.00%	100.00%

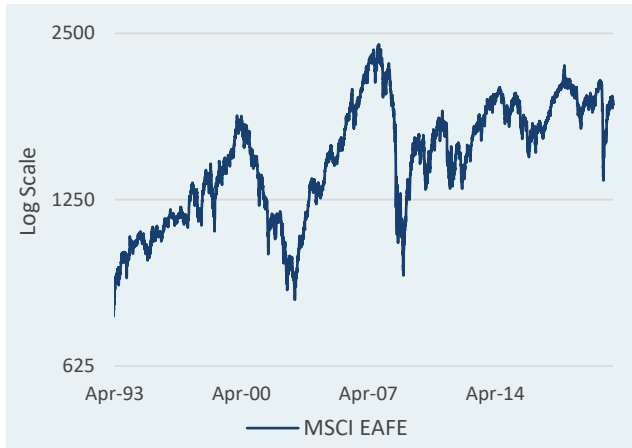
International developed equity

International equities continued to recover through Q3, though the MSCI EAFE Index (+4.8%) materially lagged the MSCI Emerging Markets Index (+9.6%) and the S&P 500 Index (+8.9%). Dollar weakness coinciding with the risk recovery through the summer was a major theme and dampened the underperformance of international developed equities relative to U.S. equities in U.S. dollar terms. The three largest currency exposures embedded in the MSCI EAFE Index—the euro (32%), the yen (26%), and the pound sterling (13%)—appreciated +4.4%, +2.2%, and +4.6% relative to the greenback over the course of the quarter.

In the second quarter, MSCI EAFE Index revenues dropped nearly -20%, and earnings dropped nearly -60%, pushing certain valuation metrics including price/earnings ratios to historic highs. Moving into Q3 earnings season, analysts are anticipating a historic turnaround in corporate profits, which could help bring valuations back to more normal levels.

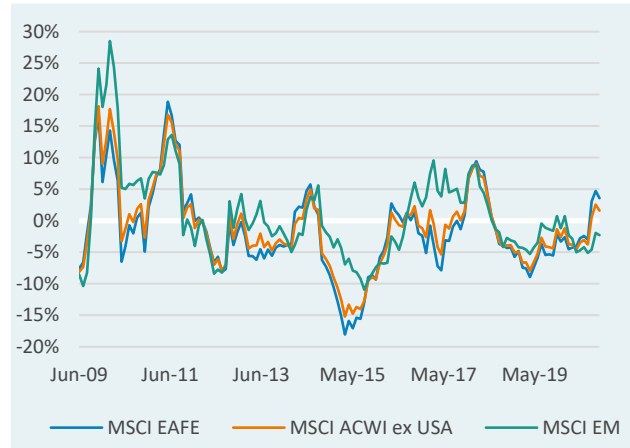
The MSCI EAFE Growth Index returned +8.4% over the third quarter, outpacing the MSCI EAFE Value Index (+1.2%) in U.S. dollar terms, extending its outperformance over the year-to-date to a staggering +23.6%.

INTERNATIONAL DEVELOPED EQUITIES



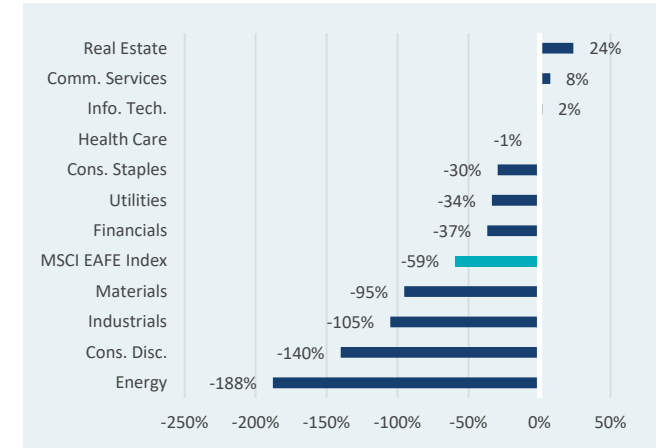
Source: MSCI, as of 9/30/20

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/20

Q2 2020 EARNINGS GROWTH – MSCI EAFE INDEX



Source: MSCI, Bloomberg, as of 9/30/20

Emerging market equity

Emerging market equities (MSCI EM +9.6%) outperformed U.S. (S&P 500 +8.9%) and international developed equities (MSCI EAFE +4.8%) over the quarter. Looking across the emerging market complex, Latin American equities underperformed (MSCI EM Latin American -1.3%) which was a continuation of a longer-term trend. Latin American stocks have drastically underperformed over the previous 10-year period (MSCI EM Latin America -5.7%, MSCI EM +2.5%).

Inflation remained subdued relative to longer-term averages, due in large part to energy prices remaining under pressure. The Emerging Markets Citi Inflation Surprise Index rose from

-28.8 to -6.6 over the quarter, implying that the magnitude of inflation data misses lessened between June and September.

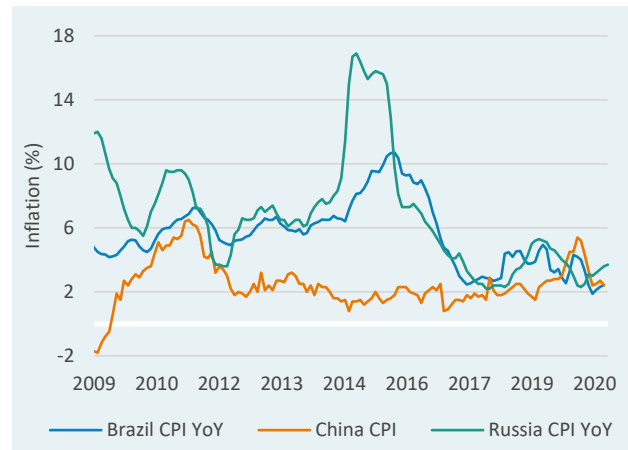
Emerging market currencies broadly appreciated relative to the U.S. dollar, and Asian currencies outperformed. The offshore Chinese renminbi rallied 4.2% versus the greenback to ¥6.78, its strongest level since mid-2019. Part of the rally in the yuan has been attributed to FTSE Russell's recent decision to add Chinese government bonds to its World Government Bond Index. This change would take effect in 2021, and would likely result in increased foreign capital inflows.

EMERGING MARKET EQUITY



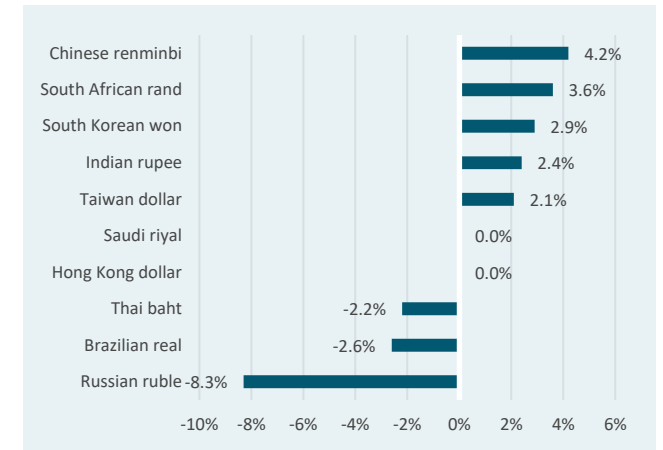
Source: MSCI, as of 9/30/20

INFLATION (YOY)



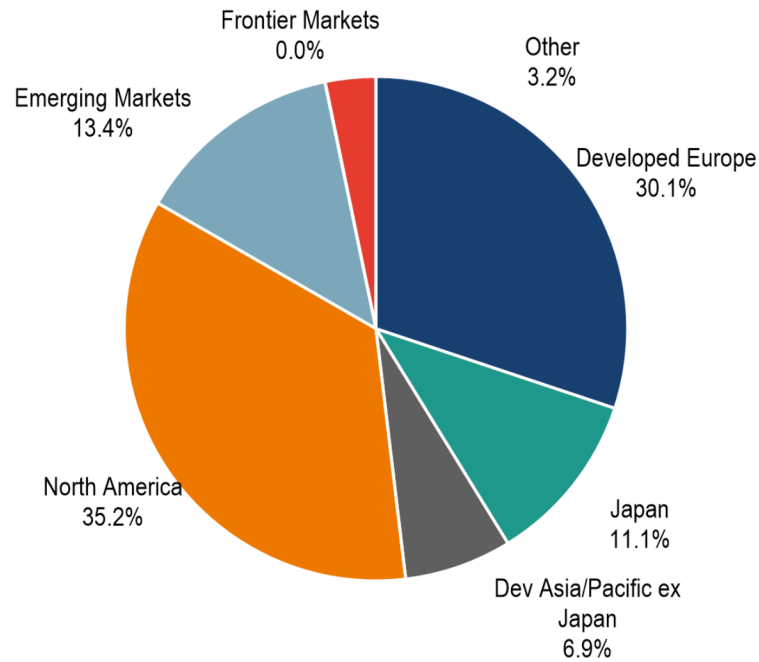
Source: Bloomberg, as of 9/30/20

Q3 CURRENCY PERFORMANCE – MSCI EM INDEX

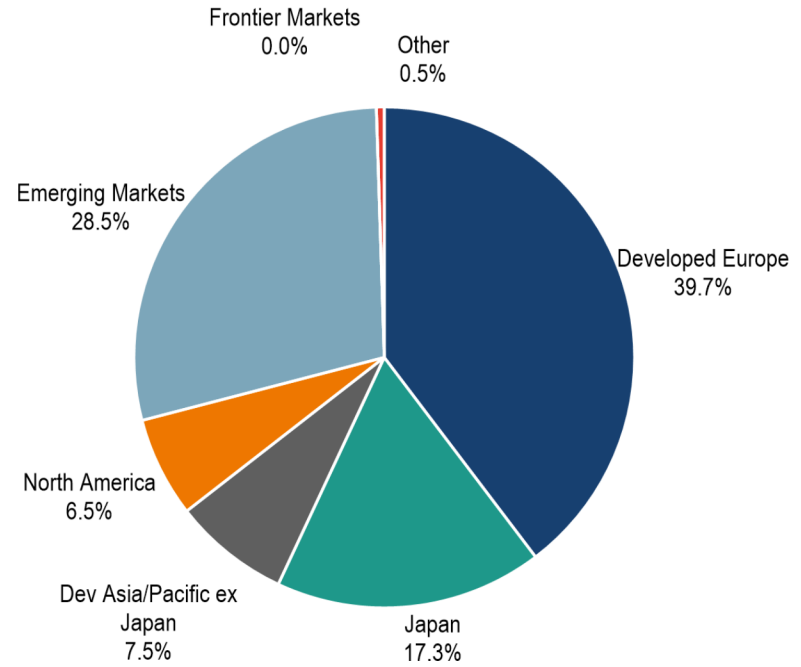


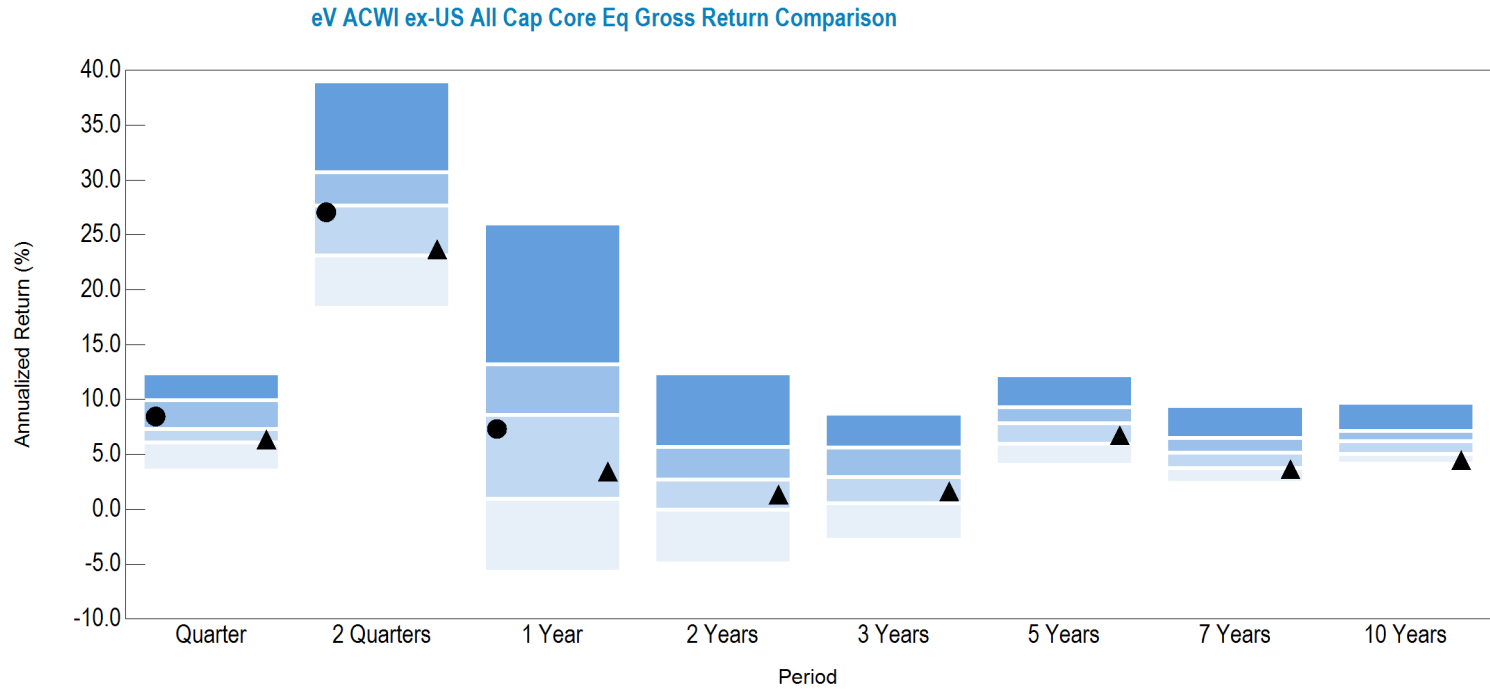
Source: Bloomberg, as of 9/30/20

International Equity



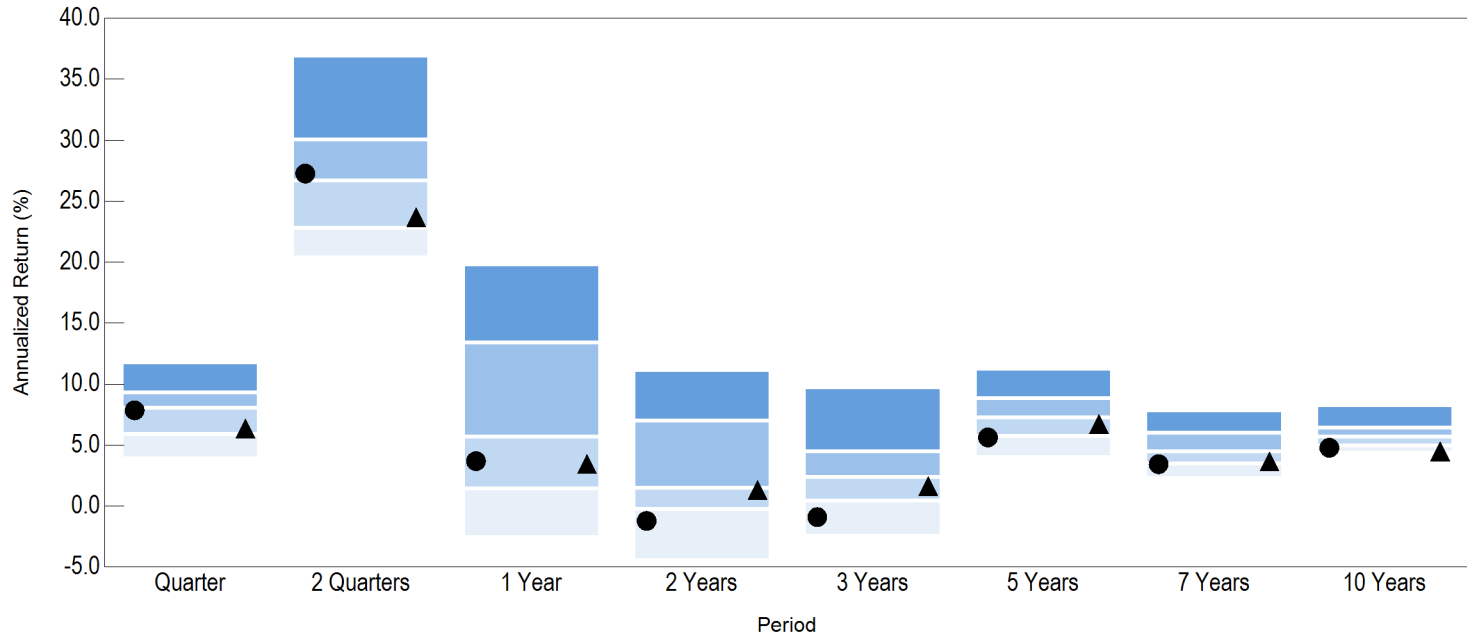
MSCI ACWI ex US IMI





	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	12.36	38.97	26.02	12.38	8.68	12.19	9.37	9.70								
25th Percentile	9.98	30.76	13.25	5.73	5.65	9.35	6.55	7.16								
Median	7.35	27.68	8.63	2.76	2.97	7.88	5.18	6.24								
75th Percentile	6.11	23.18	1.01	0.01	0.56	6.02	3.78	5.08								
95th Percentile	3.56	18.40	-5.67	-4.91	-2.75	4.10	2.46	4.22								
# of Portfolios	51	51	51	50	49	45	43	33								
● Bivium Intl Equity	8.45	(44)	27.06	(52)	7.32	(54)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	6.36	(71)	23.69	(70)	3.45	(69)	1.34	(63)	1.64	(63)	6.74	(64)	3.66	(79)	4.48	(86)

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



	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
Return (Rank)								
5th Percentile	11.76	36.93	19.78	11.16	9.73	11.25	7.80	8.23
25th Percentile	9.32	30.08	13.46	7.04	4.52	8.88	6.02	6.46
Median	8.08	26.75	5.75	1.54	2.43	7.29	4.52	5.75
75th Percentile	5.92	22.83	1.47	-0.18	0.49	5.77	3.52	5.01
95th Percentile	3.93	20.43	-2.51	-4.43	-2.44	4.06	2.31	4.42
# of Portfolios	61	61	61	60	60	56	48	39
● AQR	7.85 (53)	27.27 (46)	3.69 (60)	-1.22 (84)	-0.90 (88)	5.63 (79)	3.43 (77)	4.78 (80)
▲ MSCI ACWI ex USA Gross	6.36 (69)	23.69 (68)	3.45 (60)	1.34 (51)	1.64 (57)	6.74 (54)	3.66 (69)	4.48 (95)

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	1,771	6,427
Weighted Avg. Market Cap. (\$B)	62.7	84.8
Median Market Cap. (\$B)	10.6	1.7
Price To Earnings	19.2	16.6
Price To Book	2.9	2.8
Price To Sales	1.2	1.1
Return on Equity (%)	9.6	9.8
Yield (%)	2.2	2.6
Beta	1.0	1.0

Top Holdings

ROCHE HOLDING AG	2.9%
NOVARTIS AG	2.0%
NINTENDO CO LTD	1.7%
ASML HOLDING NV	1.7%
BAYER	1.5%
NOVO NORDISK 'B'	1.4%
FRESENIUS MEDICAL CARE AG & CO KGAA	1.4%
KONINKLIJKE AHOLD DELHAIZE NV	1.4%
AVIVA PLC	1.3%
NESTLE SA, CHAM UND VEVEY	1.3%

Best Performers

	Return %
INVESTMENTS AB KINNEVIK	54.5%
RITCHIE BROS AUCTIONEERS INC (RBA.)	46.4%
SHIMAMURA CORP	45.0%
PACIFIC CENTURY PREMIUM DEVELOPMENTS LTD	43.0%
NTT DOCOMO INC	40.5%
KINGFISHER PLC	40.3%
KION GROUP GMBH	39.4%
NELES OYJ	38.5%
GVC HOLDINGS PLC	37.4%
AFTERPAY LTD	36.2%

Worst Performers

	Return %
WIRECARD AG	-85.9%
IMPERIAL OIL LTD (IMO.)	-24.7%
REPSOL SA	-23.3%
BP PLC	-22.4%
ORIGIN ENERGY LTD	-22.1%
ROYAL DUTCH SHELL PLC	-21.0%
TAYLOR WIMPEY PLC	-20.6%
TOSHIBA CORP	-20.2%
SOCIETE GENERALE GROUP	-20.2%
BANCO BILBAO VIZCAYA ARGENTARIA SA (BBVA)	-19.2%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.04%	-0.41%	0.24%	0.20%	-14.32%	-7.48%	3.55%	4.81%			
Materials	0.45%	0.04%	0.18%	0.22%	12.20%	10.94%	11.46%	7.58%			
Industrials	-0.01%	-0.16%	0.15%	0.01%	8.20%	9.83%	14.70%	11.38%			
Consumer Discretionary	-0.77%	-0.53%	-0.49%	0.25%	14.01%	16.42%	8.25%	12.54%			
Consumer Staples	0.08%	0.16%	0.08%	-0.16%	6.17%	4.59%	6.51%	9.92%			
Health Care	-0.29%	-0.15%	-0.29%	0.15%	1.66%	2.84%	17.82%	10.64%			
Financials	0.64%	0.43%	0.36%	-0.15%	3.22%	-0.10%	11.68%	18.17%			
Information Technology	-0.59%	-0.75%	0.19%	-0.03%	7.18%	13.41%	13.95%	10.98%			
Communication Services	0.24%	0.31%	0.07%	-0.14%	8.33%	3.37%	4.13%	7.53%			
Utilities	0.11%	0.07%	0.00%	0.03%	5.08%	1.89%	3.41%	3.51%			
Real Estate	-0.06%	-0.04%	-0.03%	0.00%	0.08%	1.50%	3.46%	2.76%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	0.01%	-0.01%	0.00%	0.01%	5.56%	6.23%	1.08%	0.18%			
Portfolio	-0.15%	=	-1.01%	+	0.46%	+	0.41%	6.10%	6.24%	100.00%	100.00%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

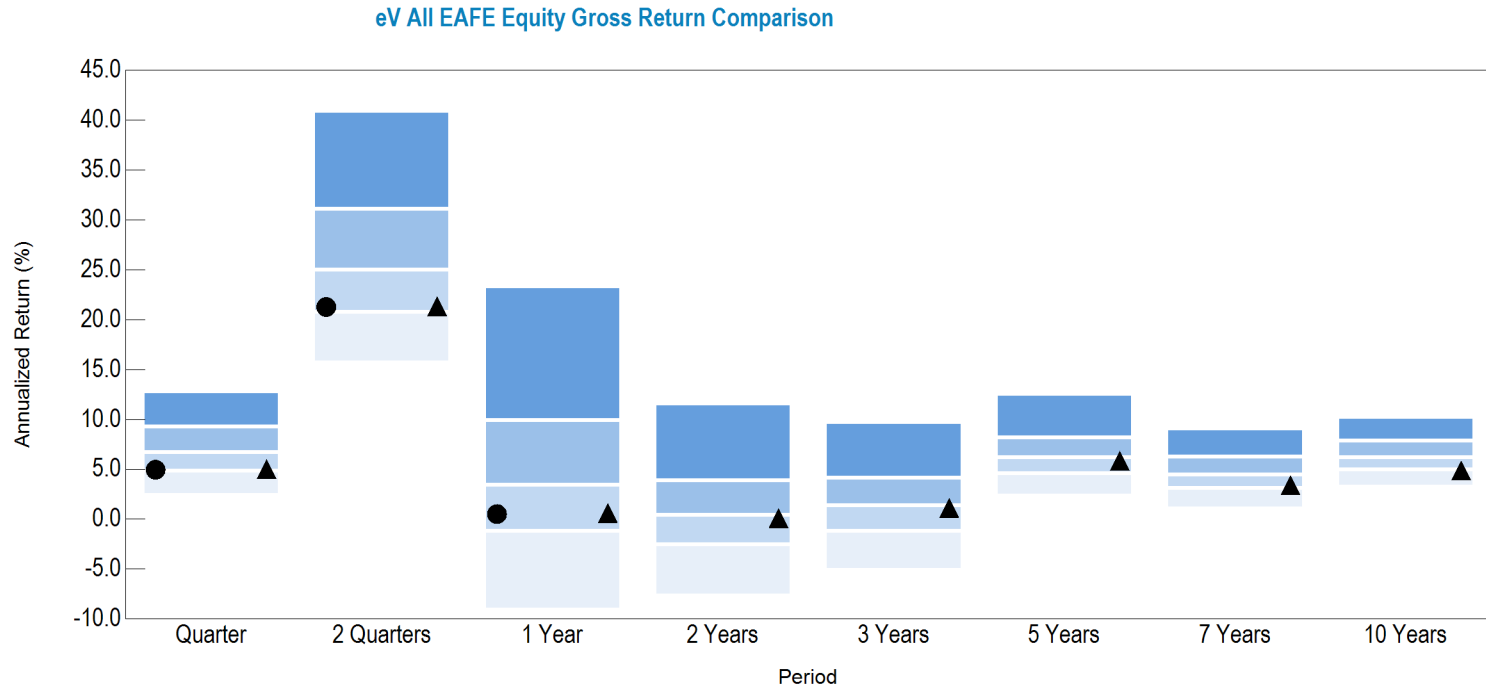
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-4.78%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Belgium	3.42%	0.40%	1.26%	0.62%	0.02%	-0.05%	0.03%	0.02%	0.02%
Czech Republic*	--	-4.84%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Denmark	17.20%	15.42%	2.23%	1.56%	0.03%	0.05%	0.04%	0.01%	0.12%
Finland	3.38%	12.45%	1.29%	0.67%	-0.06%	0.03%	0.02%	-0.05%	-0.06%
France	3.76%	2.82%	8.36%	7.25%	0.07%	-0.06%	0.05%	0.01%	0.07%
Germany	10.69%	10.68%	4.90%	3.61%	-0.01%	0.03%	0.07%	0.00%	0.09%
Greece*	--	3.43%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-9.08%	0.00%	0.07%	--	0.01%	0.00%	--	0.01%
Ireland	--	12.40%	0.00%	0.38%	--	-0.02%	-0.01%	--	-0.03%
Italy	-1.18%	1.51%	1.88%	1.52%	-0.04%	-0.02%	0.01%	-0.01%	-0.06%
Netherlands	3.18%	5.90%	4.47%	2.88%	-0.08%	-0.03%	0.07%	-0.04%	-0.09%
Norway	--	8.42%	0.00%	0.35%	--	0.00%	-0.01%	--	-0.02%
Poland*	--	-0.86%	0.00%	0.21%	--	0.01%	0.00%	--	0.01%
Portugal	--	-2.24%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Russia*	--	-4.98%	0.00%	0.93%	--	0.01%	0.07%	--	0.08%
Spain	0.35%	-3.88%	2.71%	1.61%	0.07%	-0.13%	0.05%	0.04%	0.03%
Sweden	18.02%	14.28%	3.21%	2.04%	0.07%	0.07%	0.05%	0.04%	0.24%
Switzerland	6.05%	5.21%	9.60%	6.87%	0.06%	-0.05%	0.09%	0.02%	0.12%
United Kingdom	3.40%	-0.40%	10.49%	9.39%	0.34%	-0.09%	0.06%	0.04%	0.35%

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects	
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect		
AsiaPacific										
Australia	7.58%	2.53%	5.08%	4.49%	0.22%	-0.03%	0.03%	0.03%	0.25%	
China*	--	12.36%	0.00%	11.99%	--	-0.97%	-0.06%	--	-1.03%	
Hong Kong	-5.20%	1.55%	3.75%	2.24%	-0.15%	-0.03%	0.00%	-0.10%	-0.29%	
India*	--	15.19%	0.00%	2.36%	--	-0.20%	-0.07%	--	-0.27%	
Indonesia*	--	-5.65%	0.00%	0.43%	--	0.03%	0.01%	--	0.04%	
Japan	6.05%	7.04%	20.53%	16.92%	-0.16%	0.04%	0.08%	-0.04%	-0.08%	
Korea*	--	13.22%	0.00%	3.42%	--	-0.21%	-0.11%	--	-0.32%	
Malaysia*	--	3.96%	0.00%	0.52%	--	0.02%	-0.02%	--	0.00%	
New Zealand	--	-0.87%	0.00%	0.22%	--	0.02%	-0.01%	--	0.01%	
Pakistan*	--	12.55%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%	
Philippines*	--	-2.71%	0.00%	0.25%	--	0.02%	-0.01%	--	0.02%	
Singapore	8.53%	-1.06%	1.00%	0.74%	0.07%	-0.02%	0.01%	0.02%	0.08%	
Taiwan*	--	16.73%	0.00%	3.62%	--	-0.40%	-0.07%	--	-0.47%	
Thailand*	--	-13.80%	0.00%	0.67%	--	0.10%	0.01%	--	0.12%	
Americas										
Argentina*	--	6.67%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%	
Brazil*	--	-2.86%	0.00%	1.52%	--	0.06%	0.04%	--	0.10%	
Canada	7.61%	6.51%	8.35%	6.67%	0.09%	0.01%	0.02%	0.02%	0.14%	
Chile*	--	-3.97%	0.00%	0.17%	--	0.02%	-0.01%	--	0.01%	
Colombia*	--	-1.00%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%	
Mexico*	--	4.45%	0.00%	0.51%	--	0.02%	-0.02%	--	0.00%	
Peru*	--	3.54%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%	

AQR Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.60%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	-2.00%	0.00%	0.42%	--	0.03%	0.00%	--	0.02%
Qatar*	--	7.45%	0.00%	0.24%	--	-0.01%	0.00%	--	-0.01%
Saudi Arabia*	--	9.47%	0.00%	0.78%	--	-0.04%	0.00%	--	-0.04%
South Africa*	--	3.41%	0.00%	1.08%	--	0.05%	-0.04%	--	0.00%
Turkey*	--	-15.76%	0.00%	0.13%	--	0.01%	0.01%	--	0.03%
United Arab Emirates*	--	6.34%	0.00%	0.15%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	7.61%	4.55%	8.35%	9.03%	0.23%	0.00%	0.03%	-0.02%	0.25%
Europe	5.86%	4.16%	50.41%	40.25%	0.53%	-0.34%	0.58%	0.13%	0.90%
Asia/Pacific	5.00%	8.62%	30.36%	47.86%	-1.93%	-0.53%	-0.20%	0.71%	-1.96%
Other	--	3.90%	0.00%	2.85%	--	0.03%	-0.03%	--	0.00%
Cash	0.02%	--	10.88%	0.00%	0.00%	-0.40%	0.00%	0.00%	-0.40%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	5.11%	6.32%	100.00%	100.00%	-1.17%	-1.24%	0.37%	0.82%	-1.21%
Totals									
Developed	5.73%	4.93%	89.12%	70.66%	0.53%	-0.38%	0.65%	0.14%	0.94%
Emerging*	--	9.67%	0.00%	29.34%	--	-1.47%	-0.28%	--	-1.74%
Cash	0.02%	--	10.88%	0.00%	0.00%	-0.40%	0.00%	0.00%	-0.40%



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	12.81		40.92		23.31		11.57		9.72		12.56		9.07		10.26	
25th Percentile	9.35		31.18		9.97		3.97		4.20		8.25		6.34		7.92	
Median	6.74		25.04		3.51		0.47		1.44		6.29		4.50		6.28	
75th Percentile	4.91		20.81		-1.11		-2.49		-1.12		4.64		3.19		5.02	
95th Percentile	2.49		15.77		-9.04		-7.62		-5.04		2.40		1.15		3.33	
# of Portfolios	401		401		401		391		379		344		303		258	
● BlackRock MSCI World ex-US Index Fd A	4.96	(74)	21.27	(72)	0.52	(69)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI World ex US Gross	5.01	(72)	21.34	(71)	0.63	(67)	0.12	(53)	1.14	(53)	5.86	(56)	3.41	(70)	4.88	(79)

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	989	988
Weighted Avg. Market Cap. (\$B)	63.1	63.0
Median Market Cap. (\$B)	10.2	10.2
Price To Earnings	19.3	19.0
Price To Book	2.8	2.8
Price To Sales	1.2	1.1
Return on Equity (%)	10.3	10.6
Yield (%)	2.5	2.8

Top Holdings

NESTLE SA, CHAM UND VEVEY	2.3%
ROCHE HOLDING AG	1.5%
NOVARTIS AG	1.2%
SAP SE	1.1%
ASML HOLDING NV	1.1%
ASTRAZENECA PLC	1.0%
TOYOTA MOTOR CORP	0.9%
LVMH MOET HENNESSY LOUIS VUITTON SE	0.9%
AIA GROUP LTD	0.8%
NOVO NORDISK 'B'	0.8%

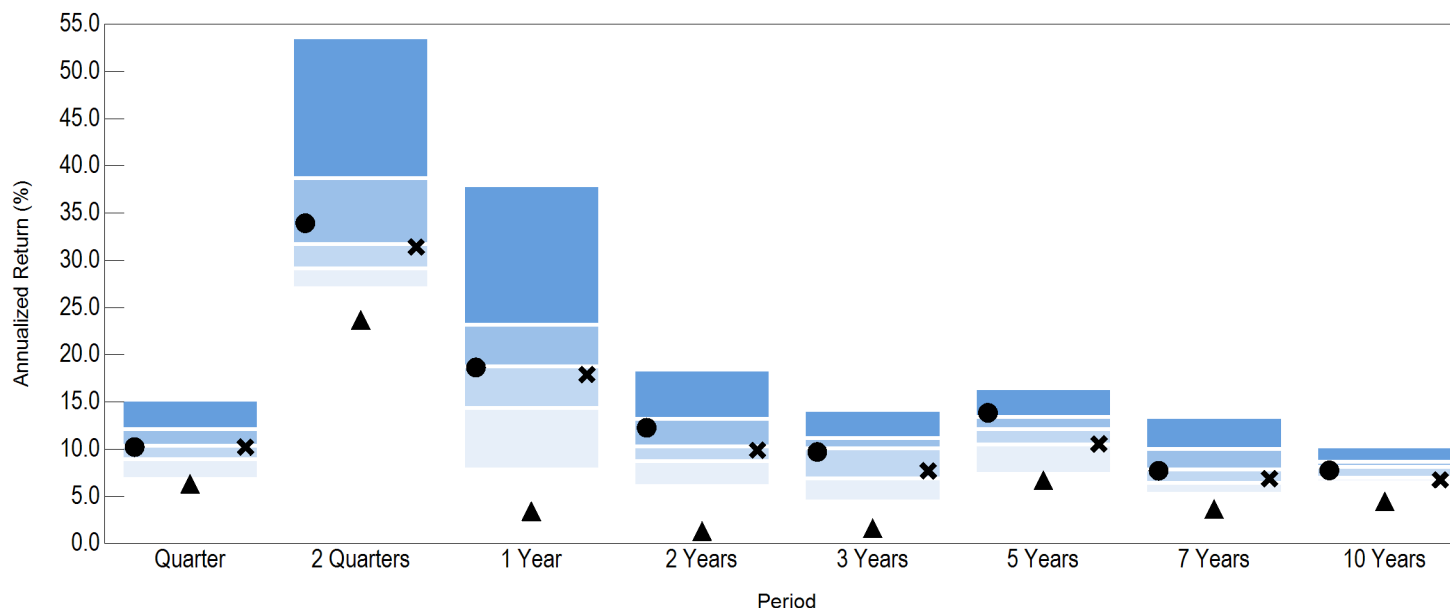
Best Performers

	Return %
ADEVINTA ASA	70.6%
SCHIBSTED ASA	69.7%
VESTAS WIND SYSTEMS A/S	59.4%
SG HOLDINGS CO LTD	59.2%
SUEZ SA	58.0%
INVESTMENTS AB KINNEVIK	54.5%
SIEMENS GAMESA RENEWABLE ENERGY SA	53.1%
BEIGENE LTD (BGNE)	52.0%
MERCARI INC	48.9%
RITCHIE BROS AUCTIONEERS INC (RBA.)	46.4%

Worst Performers

	Return %
ROLLS ROYCE HOLDINGS PLC	-52.4%
UNIBAIL-RODAMCO-WESTFIELD SE	-34.5%
CASINO GUICHARD PERRACHON	-34.2%
TELEFONICA SA	-27.8%
GALAPAGOS (B:GLPG)	-27.8%
TEVA PHARMACEUTICAL INDUSTRIES LTD (TEVA)	-26.9%
SUNCOR ENERGY INC. (SU.)	-26.7%
KLEPIERRE	-24.8%
IMPERIAL OIL LTD (IMO.)	-24.7%
REPSOL SA	-23.3%

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



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	15.25	53.59	37.90	18.38	14.16	16.41	13.40	10.26
25th Percentile	12.18	38.72	23.18	13.22	11.21	13.47	10.06	8.73
Median	10.42	31.75	18.83	10.35	10.11	12.17	7.91	8.18
75th Percentile	8.98	29.18	14.39	8.76	6.92	10.53	6.47	7.00
95th Percentile	6.86	27.06	7.88	6.14	4.51	7.44	5.29	6.54
# of Portfolios	36	36	36	36	35	33	28	18
● Capital Group	10.23 (58)	33.94 (38)	18.65 (53)	12.27 (35)	9.71 (54)	13.85 (18)	7.72 (56)	7.76 (56)
▲ MSCI ACWI ex USA Gross	6.36 (98)	23.69 (99)	3.45 (99)	1.34 (99)	1.64 (98)	6.74 (98)	3.66 (99)	4.48 (99)
✕ MSCI ACWI ex USA Growth Gross	10.22 (58)	31.41 (52)	17.90 (61)	9.89 (60)	7.71 (69)	10.55 (75)	6.88 (70)	6.75 (86)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	201	2,375
Weighted Avg. Market Cap. (\$B)	71.0	97.2
Median Market Cap. (\$B)	25.9	7.4
Price To Earnings	25.2	16.5
Price To Book	4.0	2.9
Price To Sales	2.4	1.1
Return on Equity (%)	9.5	10.4
Yield (%)	1.7	2.6
Beta	1.0	1.0

Top Holdings

OCADO GROUP PLC	4.7%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	2.6%
BEIGENE LTD	2.3%
ASML HOLDING NV	2.3%
AIA GROUP LTD	2.2%
YANDEX NV	2.2%
ASTRAZENECA PLC	1.9%
PING AN INSURANCE GROUP	1.9%
KEYENCE CORP	1.9%
LONGFOR GROUP HOLDINGS LTD	1.8%

Best Performers

	Return %
ADEVINTA ASA	70.6%
BEIGENE LTD (BGNE)	52.0%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD (TSM)	43.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	41.4%
OCADO GROUP PLC	41.3%
NIDEC CORP	39.7%
NET ONE SYSTEMS CO LTD	36.6%
RELIANCE INDUSTRIES LTD (RLNIY)	34.7%
LIGHTSPEED POS INC (LSPD.)	34.3%
DSV PANALPINA A/S	33.9%

Worst Performers

	Return %
CAPITA PLC	-27.6%
ROYAL DUTCH SHELL PLC	-21.1%
BANCO BILBAO VIZCAYA ARGENTARIA SA (BBVA)	-19.2%
CK ASSET HOLDINGS	-17.6%
VODAFONE GROUP PLC	-16.8%
CHINA OVERSEAS LAND & INVESTMENT LTD	-15.4%
SHIONOGI & CO LTD	-14.0%
LOJAS AMERICANAS SA	-14.0%
PETROLEO BRASILEIRO S.A.- PETROBRAS (PBR)	-13.1%
TRAINLINE PLC	-12.7%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.26%	-0.12%	0.36%	0.02%	-10.53%	-7.49%	2.09%	4.94%			
Materials	-0.39%	-0.09%	-0.21%	-0.10%	8.97%	11.04%	3.28%	7.73%			
Industrials	-0.32%	-0.21%	-0.08%	-0.03%	8.14%	9.84%	8.77%	11.52%			
Consumer Discretionary	0.59%	-0.11%	0.45%	0.26%	16.81%	16.51%	16.53%	12.28%			
Consumer Staples	-0.14%	-0.24%	0.06%	0.03%	2.97%	4.59%	7.58%	10.12%			
Health Care	1.17%	1.06%	-0.04%	0.14%	13.47%	3.21%	11.42%	10.37%			
Financials	0.98%	1.18%	0.11%	-0.31%	5.76%	0.11%	16.06%	18.01%			
Information Technology	0.17%	-0.20%	0.29%	0.08%	11.82%	13.41%	15.50%	11.16%			
Communication Services	0.76%	0.95%	0.04%	-0.22%	15.95%	3.39%	6.04%	7.77%			
Utilities	0.09%	0.04%	-0.06%	0.11%	4.27%	1.94%	4.81%	3.51%			
Real Estate	0.31%	0.24%	-0.10%	0.16%	8.83%	1.26%	4.84%	2.60%			
Cash	-0.11%	0.00%	-0.11%	0.00%	0.02%	--	3.09%	0.00%			
Portfolio	3.36%	=	2.50%	+	0.72%	+	0.14%	9.68%	6.32%	100.00%	100.00%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-4.78%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Belgium	11.04%	0.40%	1.14%	0.62%	0.06%	-0.04%	0.03%	0.05%	0.10%
Czech Republic*	--	-4.84%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Denmark	8.71%	15.42%	4.81%	1.56%	-0.10%	0.22%	0.15%	-0.21%	0.06%
Finland	--	12.45%	0.00%	0.67%	--	-0.03%	-0.03%	--	-0.06%
France	6.89%	2.82%	10.53%	7.25%	0.28%	-0.17%	0.16%	0.13%	0.40%
Germany	1.39%	10.68%	5.04%	3.61%	-0.33%	0.04%	0.06%	-0.13%	-0.37%
Greece*	--	3.43%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-9.08%	0.00%	0.07%	--	0.01%	0.00%	--	0.01%
Ireland	19.77%	12.40%	0.44%	0.38%	0.03%	0.00%	0.00%	0.00%	0.04%
Italy	2.84%	1.51%	3.02%	1.52%	0.02%	-0.10%	0.06%	0.02%	0.01%
Netherlands	-1.01%	5.90%	3.89%	2.88%	-0.20%	-0.02%	0.04%	-0.07%	-0.25%
Norway	28.52%	8.42%	0.96%	0.35%	0.07%	0.01%	0.03%	0.12%	0.22%
Poland*	--	-0.86%	0.00%	0.21%	--	0.01%	0.00%	--	0.01%
Portugal	--	-2.24%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Russia*	1.82%	-4.98%	1.13%	0.93%	-0.01%	0.00%	0.07%	0.00%	0.06%
Spain	5.22%	-3.88%	2.06%	1.61%	0.14%	-0.05%	0.03%	0.04%	0.15%
Sweden	7.83%	14.28%	2.51%	2.04%	-0.13%	0.03%	0.01%	-0.03%	-0.11%
Switzerland	10.53%	5.21%	3.54%	6.87%	0.35%	0.06%	-0.10%	-0.17%	0.14%
United Kingdom	14.40%	-0.40%	13.46%	9.39%	1.34%	-0.34%	0.24%	0.58%	1.82%

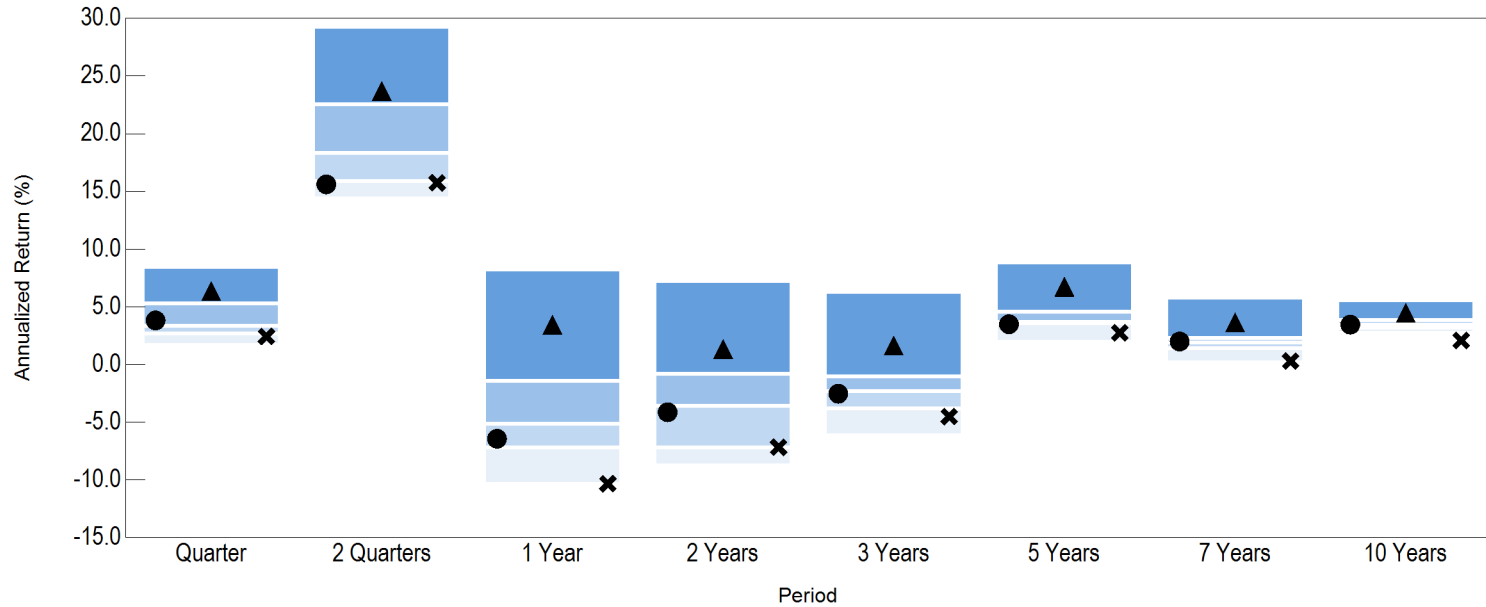
Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	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	--	2.53%	0.00%	4.49%	--	0.22%	-0.17%	--	0.05%
China*	8.79%	12.36%	4.39%	11.99%	-0.39%	-0.62%	-0.05%	0.25%	-0.81%
Hong Kong	5.90%	1.55%	9.91%	2.24%	0.09%	-0.17%	0.03%	0.31%	0.26%
India*	7.77%	15.19%	1.70%	2.36%	-0.10%	-0.06%	-0.07%	0.03%	-0.20%
Indonesia*	-4.04%	-5.65%	1.15%	0.43%	0.01%	-0.05%	-0.02%	0.01%	-0.05%
Japan	11.82%	7.04%	11.90%	16.92%	0.79%	-0.05%	-0.10%	-0.23%	0.40%
Korea*	15.75%	13.22%	0.64%	3.42%	0.08%	-0.17%	-0.09%	-0.07%	-0.25%
Malaysia*	--	3.96%	0.00%	0.52%	--	0.02%	-0.02%	--	0.00%
New Zealand	8.73%	-0.87%	0.12%	0.22%	0.02%	0.01%	0.00%	-0.01%	0.02%
Pakistan*	--	12.55%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-2.71%	0.00%	0.25%	--	0.02%	-0.01%	--	0.02%
Singapore	-3.88%	-1.06%	0.14%	0.74%	-0.01%	0.04%	-0.02%	0.00%	0.02%
Taiwan*	37.30%	16.73%	3.24%	3.62%	0.76%	-0.04%	-0.02%	-0.08%	0.62%
Thailand*	-2.24%	-13.80%	0.11%	0.67%	0.08%	0.09%	0.01%	-0.07%	0.11%
Americas									
Argentina*	--	6.67%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Brazil*	-5.40%	-2.86%	3.51%	1.52%	-0.06%	-0.08%	0.01%	-0.08%	-0.22%
Canada	6.67%	6.51%	1.00%	6.67%	0.01%	-0.03%	-0.12%	-0.01%	-0.16%
Chile*	--	-3.97%	0.00%	0.17%	--	0.02%	-0.01%	--	0.01%
Colombia*	--	-1.00%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Mexico*	2.01%	4.45%	0.57%	0.51%	0.01%	0.00%	-0.02%	0.00%	-0.01%
Peru*	-7.24%	3.54%	0.36%	0.07%	-0.01%	0.00%	0.00%	-0.03%	-0.04%
United States	32.40%	9.51%	4.73%	0.00%	0.00%	0.27%	0.00%	1.08%	1.36%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.60%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	-2.00%	0.00%	0.42%	--	0.03%	0.00%	--	0.02%
Qatar*	--	7.45%	0.00%	0.24%	--	-0.01%	0.00%	--	-0.01%
Saudi Arabia*	--	9.47%	0.00%	0.78%	--	-0.04%	0.00%	--	-0.04%
South Africa*	13.88%	3.41%	0.89%	1.08%	0.11%	0.01%	0.00%	-0.02%	0.09%
Turkey*	--	-15.76%	0.00%	0.13%	--	0.01%	0.01%	--	0.03%
United Arab Emirates*	--	6.34%	0.00%	0.15%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	13.72%	4.55%	10.17%	9.03%	0.97%	-0.01%	-0.14%	0.12%	0.94%
Europe	8.34%	4.16%	52.54%	40.25%	1.49%	-0.41%	0.72%	0.45%	2.25%
Asia/Pacific	11.34%	8.62%	33.30%	47.86%	1.68%	-0.44%	-0.54%	-0.51%	0.19%
Other	13.88%	3.90%	0.89%	2.85%	0.19%	0.02%	0.01%	-0.13%	0.08%
Cash	0.02%	--	3.11%	0.00%	0.00%	-0.12%	0.00%	0.00%	-0.12%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	9.68%	6.32%	100.00%	100.00%	4.33%	-0.96%	0.05%	-0.07%	3.36%
Totals									
Developed	10.05%	4.93%	79.20%	70.66%	3.62%	-0.18%	0.27%	0.44%	4.16%
Emerging*	9.72%	9.67%	17.69%	29.34%	0.20%	-0.58%	-0.22%	-0.08%	-0.68%
Cash	0.02%	--	3.11%	0.00%	0.00%	-0.12%	0.00%	0.00%	-0.12%

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



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	8.45	29.25	8.19	7.19	6.27	8.84	5.77	5.56
25th Percentile	5.33	22.57	-1.36	-0.77	-1.01	4.60	2.32	3.91
Median	3.38	18.39	-5.08	-3.52	-2.29	3.74	1.96	3.48
75th Percentile	2.69	15.93	-7.13	-7.13	-3.79	3.60	1.42	3.20
95th Percentile	1.74	14.45	-10.33	-8.72	-6.11	2.01	0.24	2.77
# of Portfolios	21	21	21	21	21	21	17	14
● Mondrian	3.82 (43)	15.61 (78)	-6.43 (66)	-4.13 (54)	-2.53 (54)	3.49 (78)	2.00 (46)	3.46 (52)
▲ MSCI ACWI ex USA Gross	6.36 (15)	23.69 (20)	3.45 (17)	1.34 (14)	1.64 (14)	6.74 (14)	3.66 (12)	4.48 (12)
✕ MSCI ACWI ex USA Value Gross	2.43 (91)	15.74 (77)	-10.32 (95)	-7.17 (76)	-4.51 (86)	2.75 (93)	0.30 (95)	2.08 (99)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	60	2,375
Weighted Avg. Market Cap. (\$B)	42.2	97.2
Median Market Cap. (\$B)	25.4	7.4
Price To Earnings	16.6	16.5
Price To Book	1.7	2.9
Price To Sales	0.7	1.1
Return on Equity (%)	4.5	10.4
Yield (%)	4.0	2.6
Beta	1.0	1.0

Top Holdings

CONTINENTAL	3.8%
COMPAGNIE DE SAINT GOBAIN SA	3.8%
SANOFI	3.6%
KYOCERA CORP	3.4%
FUJIFILM HOLDINGS CORP	3.3%
SCOTTISH AND SOUTHERN ENERGY PLC	3.2%
TELIA COMPANY AB	3.2%
ABB LTD	3.2%
KINGFISHER PLC	3.1%
ALLIANZ	3.1%

Best Performers

	Return %
G4S PLC	83.6%
KINGFISHER PLC	40.3%
TOYOTA INDUSTRIES CORP	20.1%
COMPAGNIE DE SAINT GOBAIN SA	17.2%
FUJITSU LTD	16.9%
FUJIFILM HOLDINGS CORP	16.0%
ABB LTD	13.5%
BMW PREF. (D:BMW3)	12.8%
SEKISUI CHEMICAL CO LTD	12.6%
SONY CORP	11.5%

Worst Performers

	Return %
BANCO SANTANDER SA	-23.2%
BP PLC	-22.4%
ROYAL DUTCH SHELL PLC	-21.1%
SOCIETE GENERALE GROUP	-20.2%
ROYAL DUTCH SHELL PLC	-18.9%
ISS A/S	-16.5%
ENI SPA	-16.4%
LLOYDS BANKING GROUP PLC	-11.7%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	-10.7%
SINGAPORE TELECOMMUNICATIONS LTD	-10.4%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-1.30%	-0.77%	-0.34%	-0.20%	-19.97%	-7.48%	7.67%	4.81%			
Materials	-0.53%	-0.60%	-0.23%	0.31%	4.50%	10.94%	2.53%	7.58%			
Industrials	-0.49%	-0.54%	0.16%	-0.11%	4.85%	9.83%	15.99%	11.38%			
Consumer Discretionary	-0.48%	-0.52%	-0.05%	0.08%	12.51%	16.42%	12.17%	12.54%			
Consumer Staples	-0.45%	-0.71%	0.10%	0.15%	-2.24%	4.59%	6.11%	9.92%			
Health Care	-0.83%	-0.55%	-0.22%	-0.07%	-1.97%	2.84%	16.11%	10.64%			
Financials	-1.02%	-1.74%	0.25%	0.46%	-8.43%	-0.10%	13.66%	18.17%			
Information Technology	-0.40%	-0.11%	-0.21%	-0.09%	11.95%	13.41%	7.94%	10.98%			
Communication Services	-0.31%	-0.36%	-0.04%	0.09%	0.27%	3.37%	9.81%	7.53%			
Utilities	-0.17%	-0.08%	-0.22%	0.13%	1.03%	1.89%	7.20%	3.51%			
Real Estate	0.05%	0.03%	0.07%	-0.05%	2.92%	1.50%	0.80%	2.76%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	0.00%	--	0.00%	--	--	6.23%	0.00%	0.18%			
Portfolio	-5.94%	=	-5.94%	+	-0.71%	+	0.70%	0.30%	6.24%	100.00%	100.00%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

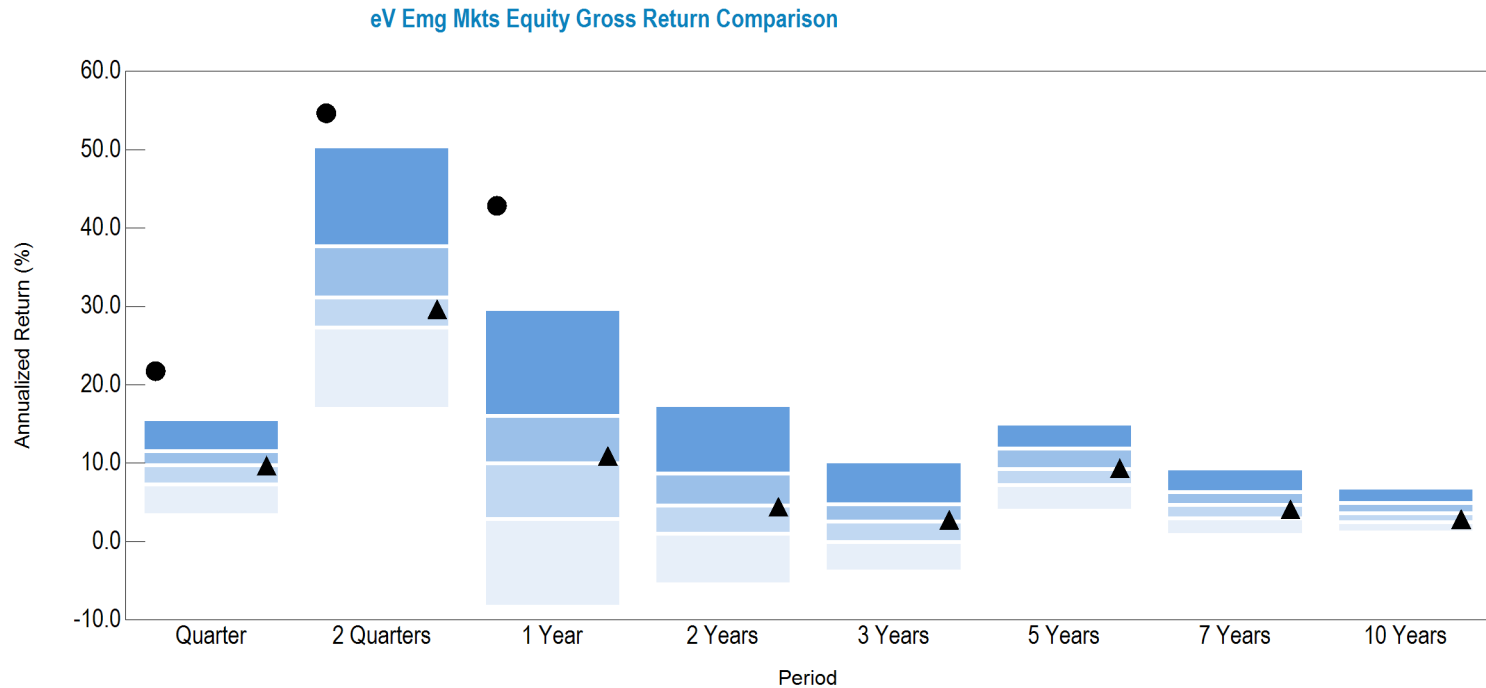
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-4.78%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Belgium	--	0.40%	0.00%	0.62%	--	0.05%	-0.03%	--	0.02%
Czech Republic*	--	-4.84%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Denmark	-16.49%	15.42%	1.53%	1.56%	-0.48%	0.00%	-0.02%	0.01%	-0.49%
Finland	--	12.45%	0.00%	0.67%	--	-0.03%	-0.03%	--	-0.06%
France	3.93%	2.82%	9.28%	7.25%	0.08%	-0.11%	0.09%	0.02%	0.08%
Germany	2.81%	10.68%	4.41%	3.61%	-0.29%	0.02%	0.03%	-0.06%	-0.29%
Greece*	--	3.43%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-9.08%	0.00%	0.07%	--	0.01%	0.00%	--	0.01%
Ireland	--	12.40%	0.00%	0.38%	--	-0.02%	-0.01%	--	-0.03%
Italy	-4.51%	1.51%	5.38%	1.52%	-0.09%	-0.25%	0.15%	-0.22%	-0.41%
Netherlands	-11.53%	5.90%	3.15%	2.88%	-0.49%	-0.01%	0.00%	-0.05%	-0.54%
Norway	--	8.42%	0.00%	0.35%	--	0.00%	-0.01%	--	-0.02%
Poland*	--	-0.86%	0.00%	0.21%	--	0.01%	0.00%	--	0.01%
Portugal	--	-2.24%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Russia*	--	-4.98%	0.00%	0.93%	--	0.01%	0.07%	--	0.08%
Spain	-22.26%	-3.88%	2.37%	1.61%	-0.28%	-0.09%	0.01%	-0.13%	-0.49%
Sweden	9.95%	14.28%	3.08%	2.04%	-0.08%	0.07%	0.04%	-0.04%	-0.02%
Switzerland	5.89%	5.21%	6.74%	6.87%	0.05%	0.00%	0.00%	0.00%	0.04%
United Kingdom	-1.09%	-0.40%	21.42%	9.39%	-0.06%	-1.01%	0.50%	-0.08%	-0.64%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	1.27%	2.53%	1.13%	4.49%	-0.05%	0.17%	-0.13%	0.04%	0.03%
China*	--	12.36%	0.00%	11.99%	--	-0.97%	-0.06%	--	-1.03%
Hong Kong	-5.26%	1.55%	3.19%	2.24%	-0.15%	-0.02%	0.00%	-0.06%	-0.24%
India*	--	15.19%	0.00%	2.36%	--	-0.20%	-0.07%	--	-0.27%
Indonesia*	--	-5.65%	0.00%	0.43%	--	0.03%	0.01%	--	0.04%
Japan	4.01%	7.04%	30.87%	16.92%	-0.50%	0.14%	0.30%	-0.41%	-0.47%
Korea*	--	13.22%	0.00%	3.42%	--	-0.21%	-0.11%	--	-0.32%
Malaysia*	--	3.96%	0.00%	0.52%	--	0.02%	-0.02%	--	0.00%
New Zealand	--	-0.87%	0.00%	0.22%	--	0.02%	-0.01%	--	0.01%
Pakistan*	--	12.55%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-2.71%	0.00%	0.25%	--	0.02%	-0.01%	--	0.02%
Singapore	-4.23%	-1.06%	5.26%	0.74%	-0.02%	-0.31%	0.07%	-0.13%	-0.38%
Taiwan*	--	16.73%	0.00%	3.62%	--	-0.40%	-0.07%	--	-0.47%
Thailand*	--	-13.80%	0.00%	0.67%	--	0.10%	0.01%	--	0.12%
Americas									
Argentina*	--	6.67%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Brazil*	--	-2.86%	0.00%	1.52%	--	0.06%	0.04%	--	0.10%
Canada	2.92%	6.51%	0.79%	6.67%	-0.23%	-0.03%	-0.13%	0.21%	-0.19%
Chile*	--	-3.97%	0.00%	0.17%	--	0.02%	-0.01%	--	0.01%
Colombia*	--	-1.00%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Mexico*	--	4.45%	0.00%	0.51%	--	0.02%	-0.02%	--	0.00%
Peru*	--	3.54%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.60%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	-2.00%	0.00%	0.42%	--	0.03%	0.00%	--	0.02%
Qatar*	--	7.45%	0.00%	0.24%	--	-0.01%	0.00%	--	-0.01%
Saudi Arabia*	--	9.47%	0.00%	0.78%	--	-0.04%	0.00%	--	-0.04%
South Africa*	--	3.41%	0.00%	1.08%	--	0.05%	-0.04%	--	0.00%
Turkey*	--	-15.76%	0.00%	0.13%	--	0.01%	0.01%	--	0.03%
United Arab Emirates*	--	6.34%	0.00%	0.15%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	2.92%	4.55%	0.79%	9.03%	-0.20%	0.06%	-0.12%	0.18%	-0.08%
Europe	-0.74%	4.16%	57.37%	40.25%	-2.06%	-0.58%	0.77%	-0.88%	-2.74%
Asia/Pacific	2.13%	8.62%	40.44%	47.86%	-3.19%	-0.22%	-0.07%	0.49%	-2.99%
Other	--	3.90%	0.00%	2.85%	--	0.03%	-0.03%	--	0.00%
Cash	0.02%	--	1.40%	0.00%	0.00%	-0.05%	0.00%	0.00%	-0.05%
Total	0.46%	6.32%	100.00%	100.00%	-5.45%	-0.77%	0.55%	-0.20%	-5.86%
Totals									
Developed	0.46%	4.93%	98.60%	70.66%	-3.09%	-0.58%	0.83%	-1.22%	-4.07%
Emerging*	--	9.67%	0.00%	29.34%	--	-1.47%	-0.28%	--	-1.74%
Cash	0.02%	--	1.40%	0.00%	0.00%	-0.05%	0.00%	0.00%	-0.05%



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	15.61		50.35		29.63		17.38		10.20		15.05		9.27		6.83	
25th Percentile	11.58		37.76		16.09		8.72		4.79		11.89		6.37		4.99	
Median	9.79		31.21		10.02		4.67		2.64		9.27		4.74		3.67	
75th Percentile	7.33		27.36		2.95		1.03		0.00		7.28		3.00		2.55	
95th Percentile	3.42		16.97		-8.26		-5.38		-3.74		4.01		0.90		1.19	
# of Portfolios	391		391		391		377		356		322		277		172	
● Newton Emerging Mkt	21.75	(1)	54.65	(3)	42.84	(2)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets Gross	9.70	(51)	29.65	(60)	10.91	(46)	4.45	(51)	2.79	(48)	9.37	(49)	4.12	(60)	2.87	(71)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	46	1,387
Weighted Avg. Market Cap. (\$B)	125.5	178.5
Median Market Cap. (\$B)	10.4	5.6
Price To Earnings	24.3	12.6
Price To Book	4.7	3.1
Price To Sales	4.1	1.2
Return on Equity (%)	7.7	9.7
Yield (%)	0.6	2.3

Top Holdings

ALIBABA GROUP HOLDING LTD	6.2%
SAMSUNG SDI CO LTD	5.9%
LONGI GREEN ENERGY TECHNOLOGY CO LTD	5.9%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.6%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	5.3%
NEW ORIENTAL EDUCATION & TECHNOLOGY GROUP INC	5.0%
AIA GROUP LTD	4.3%
HOUSING DEVELOPMENT FINANCE CORP LTD	4.0%
INFO EDGE (INDIA) LTD	3.5%
ILJIN MATERIALS CO LTD	3.1%

Best Performers

	Return %
G4S PLC	83.6%
KINGFISHER PLC	40.3%
TOYOTA INDUSTRIES CORP	20.1%
COMPAGNIE DE SAINT GOBAIN SA	17.2%
FUJITSU LTD	16.9%
FUJIFILM HOLDINGS CORP	16.0%
ABB LTD	13.5%
BMW PREF. (D:BMW3)	12.8%
SEKISUI CHEMICAL CO LTD	12.6%
SONY CORP	11.5%

Worst Performers

	Return %
BANCO SANTANDER SA	-23.2%
BP PLC	-22.4%
ROYAL DUTCH SHELL PLC	-21.1%
SOCIETE GENERALE GROUP	-20.2%
ROYAL DUTCH SHELL PLC	-18.9%
ISS A/S	-16.5%
ENI SPA	-16.4%
LLOYDS BANKING GROUP PLC	-11.7%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	-10.7%
SINGAPORE TELECOMMUNICATIONS LTD	-10.4%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.54%	--	0.46%	--	--	-0.25%	0.00%	5.95%			
Materials	0.91%	0.86%	-0.01%	0.06%	25.28%	11.90%	6.34%	6.84%			
Industrials	0.22%	0.34%	0.25%	-0.37%	7.01%	2.05%	1.89%	4.68%			
Consumer Discretionary	1.86%	-0.92%	3.31%	-0.53%	22.63%	27.00%	37.73%	17.34%			
Consumer Staples	0.27%	0.18%	0.23%	-0.14%	9.05%	4.32%	3.16%	6.34%			
Health Care	0.64%	2.43%	0.30%	-2.09%	63.74%	2.26%	0.68%	4.20%			
Financials	1.15%	0.66%	0.72%	-0.23%	4.05%	-0.10%	11.67%	19.22%			
Information Technology	3.50%	1.45%	1.03%	1.03%	29.69%	20.76%	26.09%	16.85%			
Communication Services	2.16%	2.24%	0.07%	-0.15%	19.13%	2.55%	12.45%	13.35%			
Utilities	0.30%	--	0.32%	--	--	-4.11%	0.00%	2.27%			
Real Estate	0.24%	--	0.25%	--	--	0.11%	0.00%	2.55%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	0.00%	--	0.00%	--	--	9.71%	0.00%	0.40%			
Portfolio	11.79%	=	7.23%	+	6.92%	+	-2.37%	21.53%	9.74%	100.00%	100.00%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets 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									
Czech Republic*	--	-4.84%	0.00%	0.11%	--	0.02%	0.00%	--	0.01%
Germany	12.55%	6.21%	2.62%	0.00%	0.00%	-0.17%	0.12%	0.15%	0.10%
Greece*	--	3.43%	0.00%	0.14%	--	0.01%	-0.01%	--	0.01%
Hungary*	--	-9.08%	0.00%	0.23%	--	0.04%	0.00%	--	0.04%
Netherlands	-0.38%	5.90%	5.28%	0.00%	0.00%	-0.38%	0.22%	-0.32%	-0.48%
Poland*	--	-0.86%	0.00%	0.72%	--	0.09%	-0.02%	--	0.07%
Russia*	--	-4.98%	0.00%	3.17%	--	0.20%	0.24%	--	0.43%

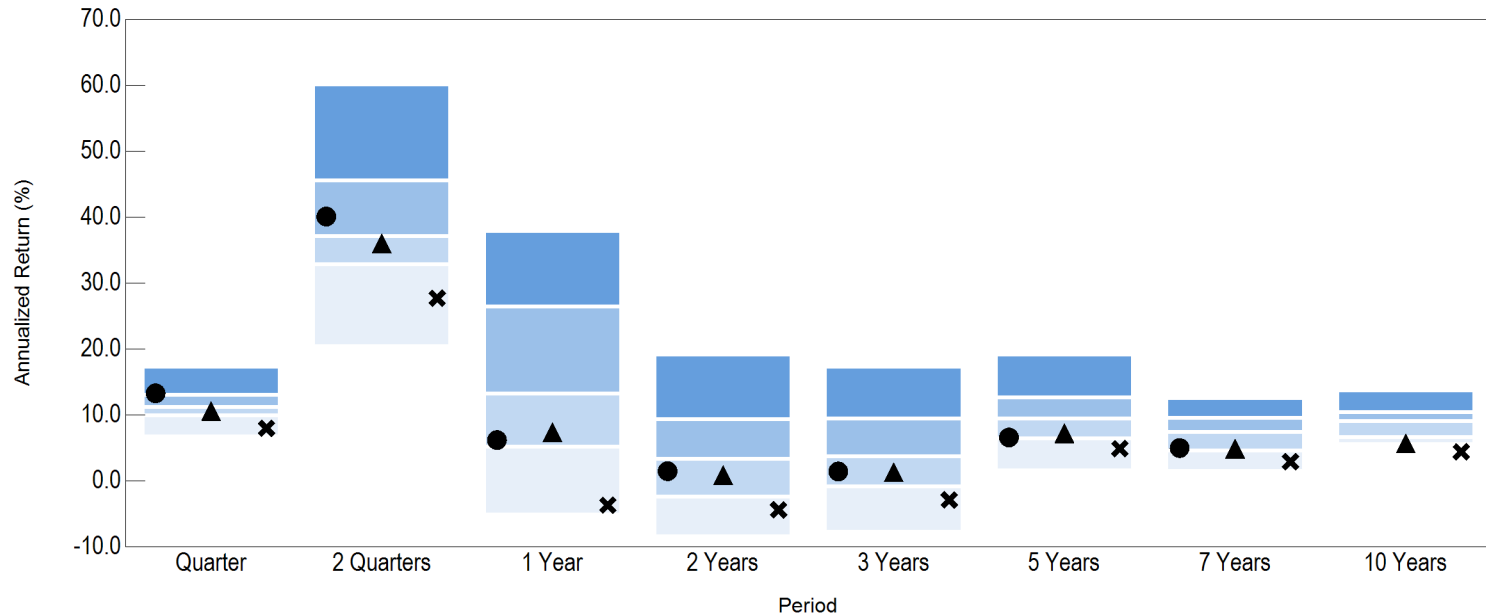
Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	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	17.99%	2.53%	1.37%	0.00%	0.00%	-0.14%	0.06%	0.20%	0.13%
China*	34.49%	12.36%	19.36%	40.88%	8.75%	-0.67%	0.03%	-4.60%	3.51%
Hong Kong	15.68%	1.56%	15.48%	0.00%	0.00%	-1.11%	0.00%	2.19%	1.07%
India*	23.36%	15.19%	18.62%	8.05%	0.64%	0.36%	0.36%	0.84%	2.20%
Indonesia*	23.52%	-5.65%	0.78%	1.47%	0.44%	0.08%	0.01%	-0.21%	0.33%
Korea*	10.80%	13.22%	11.61%	11.66%	-0.27%	0.00%	-0.01%	0.00%	-0.28%
Malaysia*	--	3.96%	0.00%	1.77%	--	0.14%	-0.06%	--	0.08%
Pakistan*	--	12.55%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-2.71%	0.00%	0.84%	--	0.12%	-0.02%	--	0.10%
Taiwan*	34.79%	16.73%	6.03%	12.33%	2.19%	-0.38%	-0.10%	-1.12%	0.58%
Thailand*	-19.32%	-13.80%	0.50%	2.27%	-0.13%	0.37%	0.04%	0.10%	0.37%
Americas									
Argentina*	--	6.67%	0.00%	0.13%	--	0.00%	0.00%	--	0.00%
Brazil*	--	-2.86%	0.00%	5.16%	--	0.47%	0.13%	--	0.60%
Chile*	24.36%	-3.97%	0.78%	0.59%	0.19%	-0.03%	-0.02%	0.06%	0.20%
Colombia*	--	-1.00%	0.00%	0.19%	--	0.01%	0.01%	--	0.02%
Mexico*	--	4.45%	0.00%	1.74%	--	0.15%	-0.08%	--	0.07%
Peru*	--	3.54%	0.00%	0.25%	--	0.01%	0.00%	--	0.01%
United States	23.23%	9.51%	13.87%	0.00%	0.00%	0.11%	0.00%	1.90%	2.01%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.60%	0.00%	0.12%	--	0.01%	0.00%	--	0.00%
Qatar*	--	7.45%	0.00%	0.83%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	9.47%	0.00%	2.67%	--	-0.02%	0.00%	--	-0.02%
South Africa*	10.24%	3.41%	3.71%	3.69%	0.24%	0.00%	0.01%	0.00%	0.25%
Turkey*	--	-15.76%	0.00%	0.46%	--	0.06%	0.05%	--	0.11%
United Arab Emirates*	--	6.34%	0.00%	0.53%	--	0.01%	0.00%	--	0.01%
Totals									
Americas	23.29%	-0.97%	14.65%	8.05%	1.92%	-0.62%	0.03%	1.58%	2.91%
Europe	3.90%	-4.24%	7.90%	4.36%	-0.04%	-0.29%	0.55%	-0.03%	0.18%
Asia/Pacific	23.24%	12.02%	73.74%	79.29%	8.48%	-0.11%	0.32%	-0.59%	8.09%
Other	10.24%	4.92%	3.71%	8.29%	0.19%	0.23%	0.06%	-0.11%	0.37%
Total	21.24%	9.67%	100.00%	100.00%	10.55%	-0.78%	0.95%	0.84%	11.57%
Totals									
Developed	16.07%	--	38.62%	0.00%	0.00%	0.00%	0.40%	2.43%	2.83%
Emerging*	24.49%	9.67%	61.38%	100.00%	13.34%	0.00%	0.55%	-5.15%	8.73%

eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Return (Rank)															
5th Percentile	17.28	60.08	37.91	19.11	17.32	19.09	12.49	13.65								
25th Percentile	13.11	45.60	26.51	9.40	9.54	12.76	9.66	10.51								
Median	11.31	37.17	13.32	3.38	3.74	9.48	7.50	9.16								
75th Percentile	10.00	32.87	5.29	-2.34	-0.73	6.55	4.70	6.74								
95th Percentile	6.84	20.47	-5.09	-8.34	-7.63	1.62	1.57	5.64								
# of Portfolios	55	55	55	52	50	44	32	22								
● Templeton	13.29	(22)	40.08	(47)	6.19	(74)	1.48	(60)	1.43	(62)	6.58	(75)	4.98	(73)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	10.61	(61)	36.03	(57)	7.36	(65)	0.87	(62)	1.32	(62)	7.20	(70)	4.87	(75)	5.70	(95)
✘ MSCI ACWI ex US Small Cap Value GD	7.98	(92)	27.71	(91)	-3.69	(93)	-4.40	(82)	-2.89	(87)	4.89	(84)	2.92	(84)	4.40	(99)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	107	4,052
Weighted Avg. Market Cap. (\$B)	2.9	2.4
Median Market Cap. (\$B)	1.5	0.9
Price To Earnings	15.6	16.9
Price To Book	2.4	2.4
Price To Sales	1.0	0.9
Return on Equity (%)	11.7	8.0
Yield (%)	2.1	2.3
Beta	1.0	1.0

Top Holdings

THULE GROUP AB	2.1%
TECHTRONIC INDUSTRIES CO LTD	2.1%
HUHTAMAKI OY	2.0%
FUJI OIL HOLDINGS INC	2.0%
INTERPUMP GROUP SPA, SANT'ILARIO (RE)	2.0%
BUCHER INDUSTRIES AG, NIEDERWENINGEN	1.9%
TSUMURA & CO	1.9%
SIEGFRIED HOLDING AG, ZOFINGEN	1.8%
LOGITECH INTERNATIONAL SA, APPLES	1.8%
DOMETIC GROUP AB	1.7%

Best Performers

	Return %
SIEGFRIED HOLDING AG, ZOFINGEN	52.4%
SHANGHAI HAOHAI BIOLOGICAL TECHNOLOGY CO LTD	46.9%
SOLUTIONS 30 SE	46.6%
LIVENT CORP (LTHM)	45.6%
NICHIHA CORP	41.6%
TECAN GROUP AG, MAENNEDORF	41.2%
RATIONAL AG, LANDSBERG AM LECH	40.1%
CANADA GOOSE HOLDINGS INC (GOOS.)	38.5%
DOMETIC GROUP AB	38.3%
NISSEI ASB MACHINE CO LTD	37.2%

Worst Performers

	Return %
PT XL AXIATA TBK	-28.8%
GREGGS PLC	-24.2%
KINPOLIS GROUP (B:KIN)	-21.5%
M DIAS BRANCO INDUSTRIA ON (BR:MDB)	-18.0%
HOLLYSYS AUTOMATION TECHNOLOGIES LTD (HOLI)	-16.9%
BARCO NV, KORTRIJK	-16.7%
VALUE PARTNERS GROUP LTD	-16.3%
LANDIS & GYR AG	-15.0%
ZUR ROSE GROUP AG	-12.1%
QUANG VIET ENTERPRISE CO LTD	-11.6%

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

	Total Effects	Attribution Effects				Returns		Sector Weights					
		Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark				
Energy	0.19%	0.25%	0.12%	-0.04%	-0.15%	11.98%	0.79%	0.87%	2.22%				
Materials	0.30%	0.77%	-0.05%	-0.10%	-0.32%	19.13%	11.40%	6.05%	10.43%				
Industrials	2.02%	1.53%	-0.01%	0.17%	0.33%	18.43%	10.37%	23.62%	19.38%				
Consumer Discretionary	1.63%	0.43%	0.39%	0.34%	0.47%	17.03%	13.44%	24.52%	11.78%				
Consumer Staples	0.10%	0.14%	-0.07%	-0.04%	0.07%	9.02%	8.18%	9.77%	6.48%				
Health Care	0.63%	1.11%	-0.12%	-0.05%	-0.31%	29.39%	15.91%	6.15%	8.49%				
Financials	0.03%	0.08%	-0.01%	-0.04%	0.00%	5.69%	5.33%	10.31%	10.16%				
Information Technology	-1.04%	-0.94%	0.02%	-0.04%	-0.08%	3.95%	12.17%	13.27%	12.21%				
Communication Services	-0.67%	-0.67%	-0.11%	-0.10%	0.22%	0.71%	18.49%	2.90%	4.28%				
Utilities	0.03%	--	0.12%	-0.08%	--	--	6.55%	0.00%	3.43%				
Real Estate	0.27%	2.34%	0.37%	-0.29%	-2.14%	27.70%	6.77%	0.93%	11.15%				
Cash	0.00%	--	--	--	--	--	--	0.00%	0.00%				
Unclassified	0.04%	0.00%	0.04%	0.00%	0.00%	10.02%	--	1.61%	0.00%				
Portfolio	3.55%	=	5.04%	+	0.70%	+	-0.27%	+	-1.92%	14.03%	10.48%	100.00%	100.00%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	3.17%	0.00%	0.58%	--	0.05%	-0.02%	--	0.03%
Belgium	-17.93%	10.67%	2.08%	1.44%	-0.40%	-0.01%	0.00%	-0.17%	-0.57%
Czech Republic*	--	18.16%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Denmark	31.80%	15.44%	0.68%	1.25%	0.20%	-0.02%	-0.02%	-0.09%	0.06%
Finland	22.55%	22.15%	2.66%	1.04%	0.01%	0.16%	0.06%	0.02%	0.25%
France	31.79%	8.70%	2.58%	2.13%	0.47%	-0.02%	0.05%	0.10%	0.60%
Germany	22.61%	9.14%	5.91%	2.44%	0.31%	-0.10%	0.19%	0.44%	0.85%
Greece*	-2.18%	2.98%	0.47%	0.26%	-0.01%	-0.02%	0.01%	-0.01%	-0.03%
Hungary*	--	-3.68%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Ireland	--	-2.73%	0.00%	0.28%	--	0.04%	-0.01%	--	0.03%
Italy	12.55%	9.42%	4.53%	2.26%	0.07%	-0.06%	0.11%	0.07%	0.19%
Netherlands	14.03%	11.18%	5.61%	1.63%	0.04%	-0.04%	0.19%	0.11%	0.31%
Norway	--	13.13%	0.00%	1.56%	--	-0.03%	-0.05%	--	-0.09%
Poland*	--	2.63%	0.00%	0.30%	--	0.02%	-0.01%	--	0.01%
Portugal	--	-4.77%	0.00%	0.20%	--	0.03%	-0.01%	--	0.02%
Russia*	--	1.53%	0.00%	0.21%	--	0.00%	0.01%	--	0.01%
Spain	-4.87%	4.97%	0.89%	1.43%	-0.13%	0.04%	-0.03%	0.05%	-0.07%
Sweden	27.54%	23.22%	5.35%	4.95%	0.21%	0.04%	0.03%	0.02%	0.29%
Switzerland	21.38%	11.98%	6.84%	3.98%	0.40%	0.03%	0.05%	0.29%	0.77%
United Kingdom	0.62%	6.28%	4.35%	12.18%	-0.66%	0.45%	-0.36%	0.42%	-0.15%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	--	9.96%	0.00%	6.15%	--	0.10%	-0.25%	--	-0.15%
China*	46.91%	11.21%	0.51%	2.20%	0.79%	-0.06%	0.00%	-0.60%	0.12%
Hong Kong	15.11%	9.29%	6.60%	1.65%	0.10%	0.09%	0.00%	0.29%	0.47%
India*	--	22.19%	0.00%	2.53%	--	-0.29%	-0.08%	--	-0.37%
Indonesia*	-28.80%	-4.61%	1.00%	0.41%	-0.10%	-0.06%	-0.01%	-0.15%	-0.31%
Japan	16.12%	9.79%	25.75%	23.03%	1.43%	0.00%	0.10%	0.17%	1.69%
Korea*	8.02%	24.10%	1.44%	3.79%	-0.59%	-0.30%	-0.09%	0.37%	-0.62%
Malaysia*	--	22.52%	0.00%	0.74%	--	-0.08%	-0.03%	--	-0.11%
New Zealand	--	13.48%	0.00%	0.70%	--	-0.02%	-0.02%	--	-0.04%
Pakistan*	--	17.00%	0.00%	0.12%	--	-0.01%	0.00%	--	-0.01%
Philippines*	--	-0.81%	0.00%	0.18%	--	0.02%	0.00%	--	0.02%
Singapore	--	6.31%	0.00%	1.43%	--	0.05%	-0.03%	--	0.02%
Taiwan*	3.72%	6.79%	9.46%	5.37%	-0.16%	-0.10%	0.07%	-0.12%	-0.32%
Thailand*	--	-2.99%	0.00%	0.81%	--	0.07%	0.02%	--	0.09%
Americas									
Argentina*	--	-13.99%	0.00%	0.18%	--	0.04%	0.00%	--	0.04%
Brazil*	1.80%	1.32%	3.66%	1.64%	0.01%	-0.07%	-0.05%	0.01%	-0.11%
Canada	16.94%	8.84%	5.04%	6.70%	0.53%	0.02%	-0.03%	-0.13%	0.39%
Chile*	--	-2.99%	0.00%	0.20%	--	0.03%	-0.01%	--	0.02%
Colombia*	--	19.59%	0.00%	0.06%	--	-0.01%	0.00%	--	-0.01%
Mexico*	--	8.26%	0.00%	0.47%	--	0.02%	-0.02%	--	0.00%
United States	14.75%	9.51%	4.60%	0.00%	0.00%	0.09%	0.00%	0.24%	0.33%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	3.33%	0.00%	0.09%	--	0.01%	0.00%	--	0.00%
Israel	--	9.67%	0.00%	1.40%	--	-0.02%	-0.01%	--	-0.03%
Qatar*	--	21.29%	0.00%	0.23%	--	-0.03%	0.00%	--	-0.03%
Saudi Arabia*	--	24.54%	0.00%	0.58%	--	-0.10%	0.00%	--	-0.10%
South Africa*	--	5.37%	0.00%	0.74%	--	0.05%	-0.03%	--	0.02%
Turkey*	--	-11.68%	0.00%	0.30%	--	0.02%	0.03%	--	0.06%
United Arab Emirates*	--	4.15%	0.00%	0.13%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	12.02%	6.84%	13.30%	9.26%	0.60%	-0.09%	-0.11%	0.26%	0.66%
Europe	16.37%	10.67%	41.94%	38.17%	2.15%	-0.04%	0.19%	0.21%	2.51%
Asia/Pacific	12.44%	11.06%	44.76%	49.12%	0.93%	-0.05%	-0.33%	-0.08%	0.46%
Other	--	9.79%	0.00%	3.46%	--	-0.07%	-0.01%	--	-0.08%
Total	14.03%	10.48%	100.00%	100.00%	3.68%	-0.25%	-0.27%	0.39%	3.55%
Totals									
Developed	16.24%	10.18%	83.46%	78.42%	4.98%	-0.04%	-0.07%	0.32%	5.19%
Emerging*	2.87%	11.55%	16.54%	21.58%	-1.71%	-0.13%	-0.20%	0.40%	-1.64%

Interest rate environment

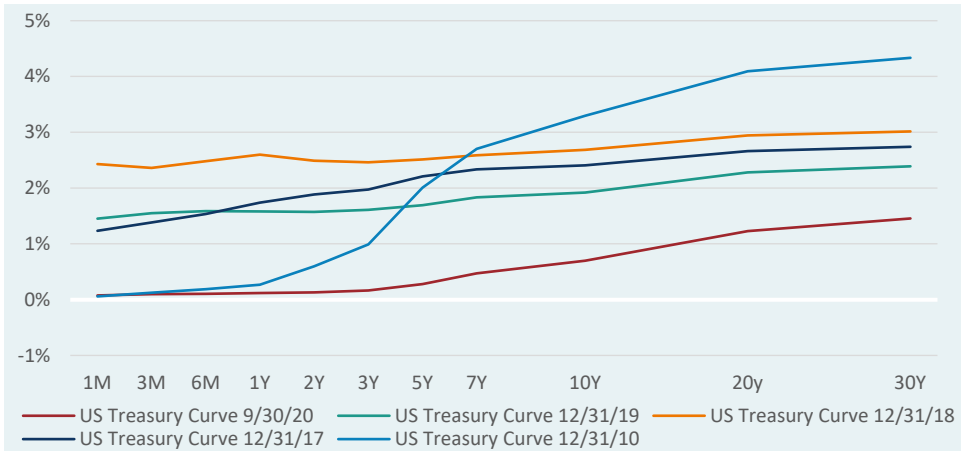
- Global interest rate levels remained extremely depressed relative to long-term averages in Q3, and the 10-year U.S. Treasury yield traded in a relatively narrow range between 0.50%-0.75%.
 - achieving “inflation moderately above 2% for some time so that inflation averages 2% over time and longer-term inflation expectations remain well anchored at 2%.”
- The Federal Reserve maintained an accommodative tone, and most members of the Federal Open Market Committee remained of the view that short rates are likely to stay near-zero through 2023, and eventually move toward 2.50% over the longer-term. The Fed repeated that while it has the power to lend, it does not hold the power to spend, and additional fiscal support will likely be required from Congress.
- Officials at the Bank of England (BOE) reportedly warmed to the idea of pursuing a negative interest rate policy, and markets are now pricing in negative overnight rates by May 2021. Many analysts have stated that the BOE is likely to remain extremely supportive and may provide additional monetary accommodation in the form of quantitative easing before year-end.
- Investors were paid for betting on longer-term reflation of growth and inflation, likely due to their expectations for further fiscal and monetary accommodation moving forward. Ten-year breakeven inflation rates recovered from 1.3% to 1.6%, and key term spreads indicated a moderate steepening in the U.S. yield curve.
- The U.S. Fed made an adjustment to its policy approach related to its inflation target. Instead of targeting stable prices, defined as 2% annual growth in personal consumption expenditures (PCE), the Fed will now implement an average inflation targeting approach aimed at

Area	Short Term (3M)	10-Year
United States	0.09%	0.68%
Germany	(0.63%)	(0.52%)
France	(0.64%)	(0.24%)
Spain	(0.54%)	0.25%
Italy	(0.48%)	0.87%
Greece	(0.08%)	1.02%
U.K.	0.01%	0.23%
Japan	(0.15%)	0.01%
Australia	0.12%	0.79%
China	2.29%	3.13%
Brazil	1.93%	7.45%
Russia	4.09%	6.29%

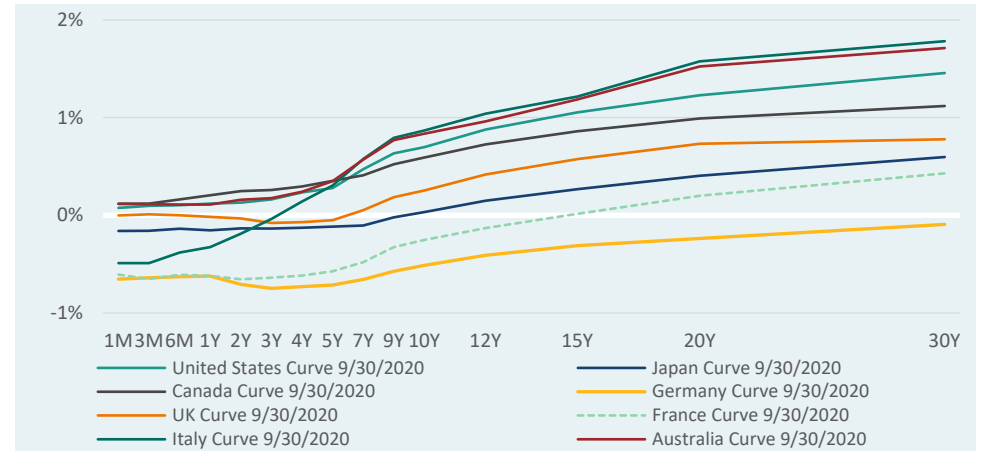
Source: Bloomberg, as of 9/30/20

Yield environment

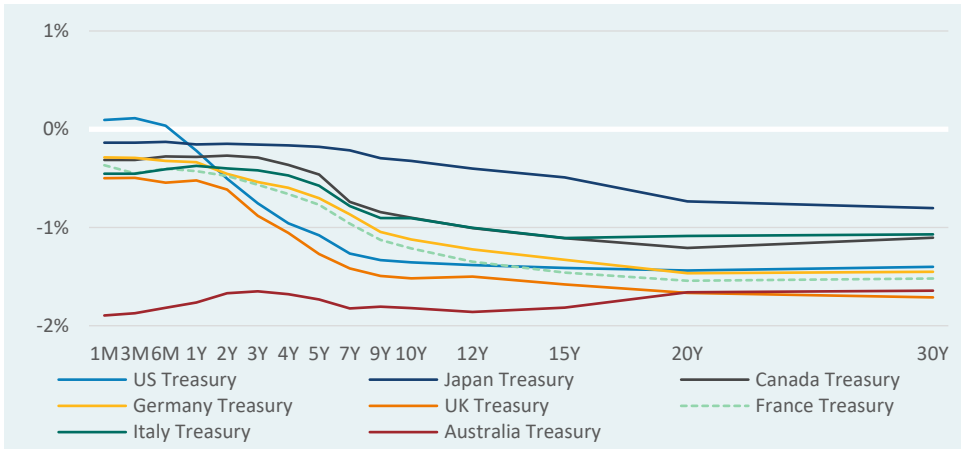
U.S. YIELD CURVE



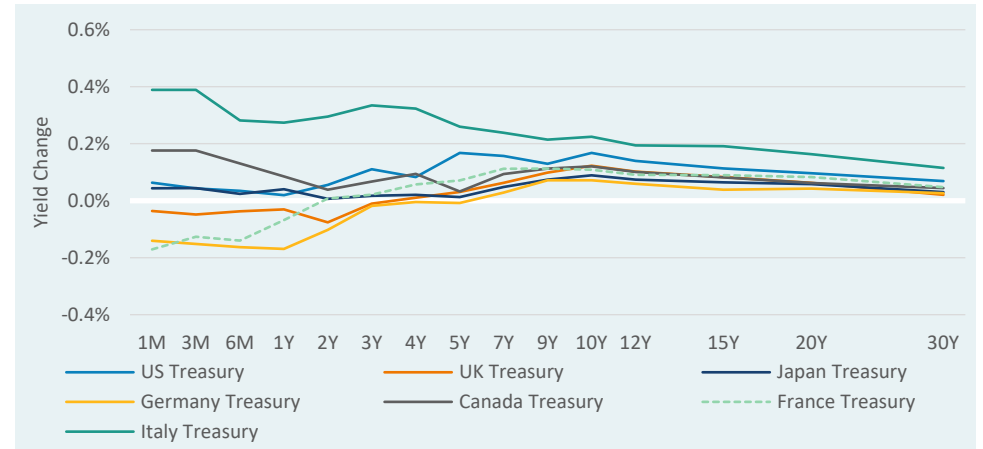
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/20

Currency

The U.S. dollar fell -3.5% in the third quarter, continuing a downward trend since a sudden jump in March on safe-haven buying. Though the dollar did show some signs of stabilization in September as equities took a step back, the Bloomberg Dollar Spot Index has now completely unwound the gains experienced during the market sell-off.

Interest rate differentials between U.S. Treasury bonds and international developed sovereign bonds have begun to separate once again. U.S. Treasury yields traded in a relatively narrow range while European yields

drifted lower, perhaps as a result of speculation on further quantitative easing from the European Central Bank. A continuation of this trend could be supportive of the dollar bull case, looking ahead.

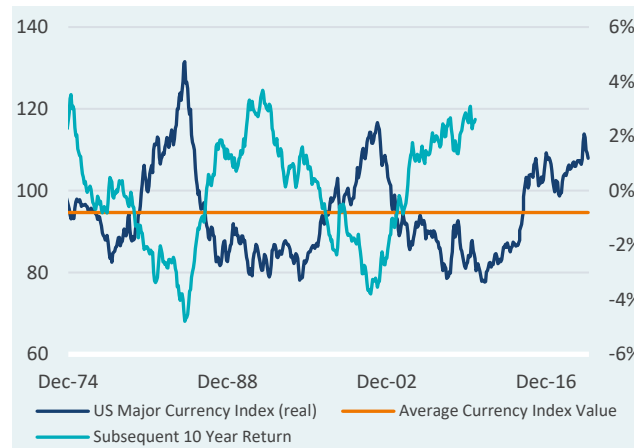
Despite the significant rally of the euro (+4.4%) relative to the greenback in Q3, the common currency remains cheap according to the OECD's purchasing power parity data. At quarter-end, the euro was -20.8% cheap relative to the U.S. dollar, which was significant but still at its least undervalued level since September 2018.

BLOOMBERG DOLLAR SPOT INDEX



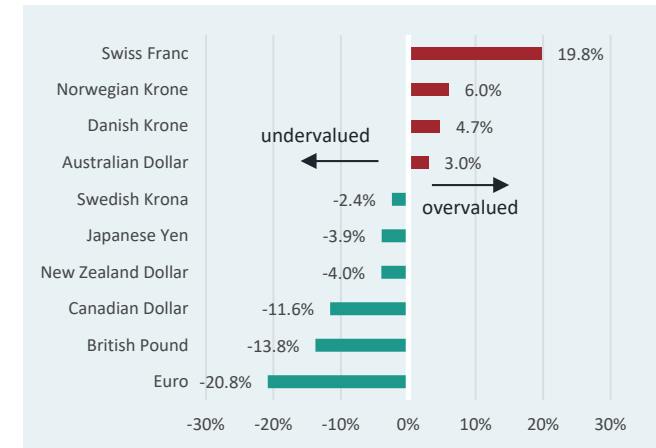
Source: Bloomberg, as of 9/30/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



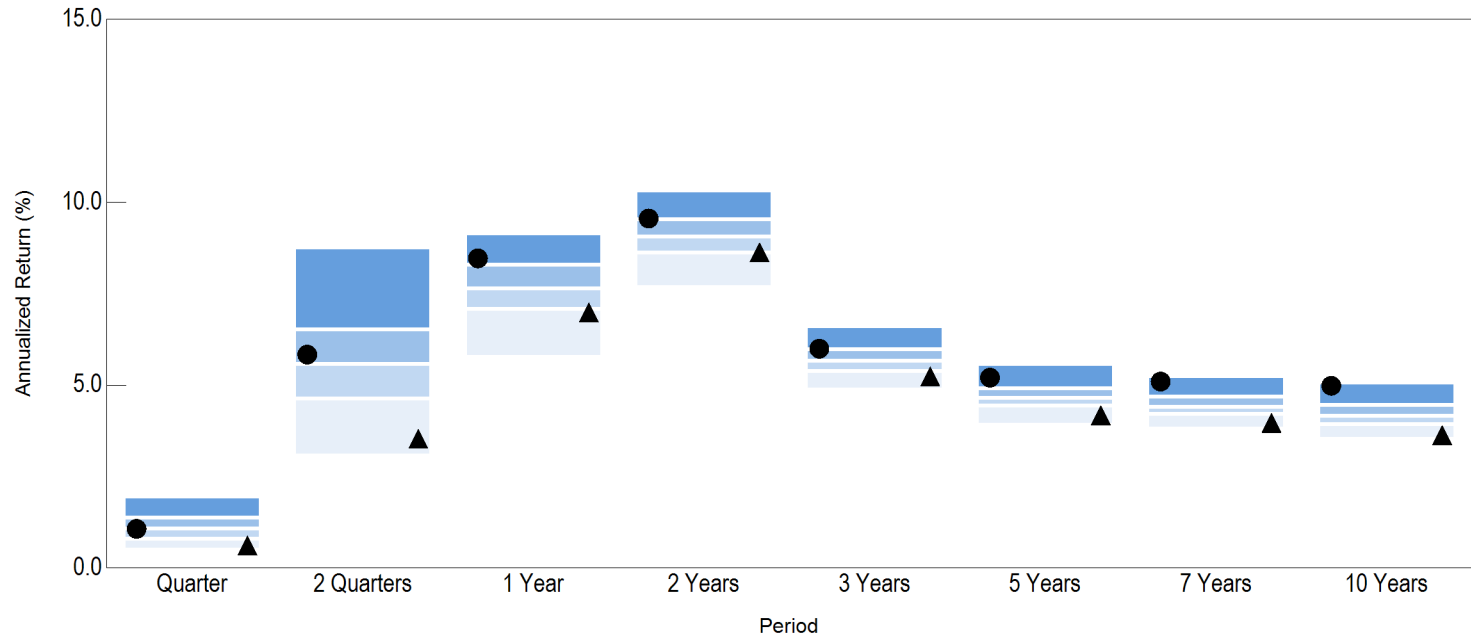
Source: Federal Reserve, as of 9/30/20

G10 FX VALUATIONS – OECD PPP (VS USD)



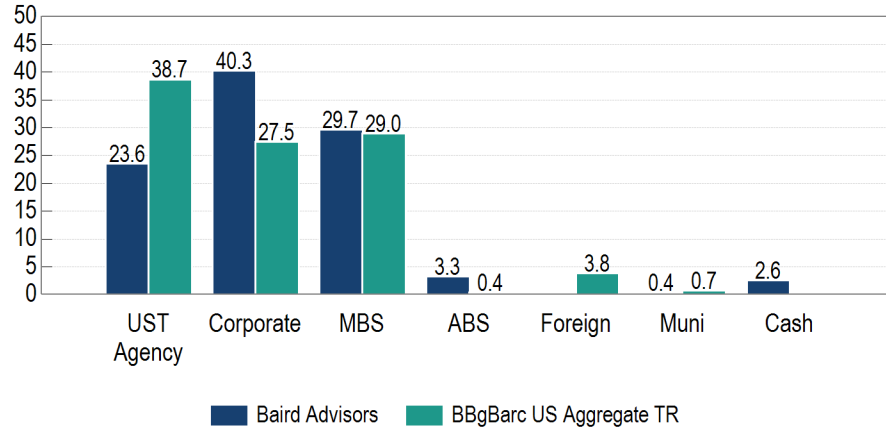
Source: OECD, Bloomberg, as of 9/30/20

eV US Core Fixed Inc Gross Return Comparison

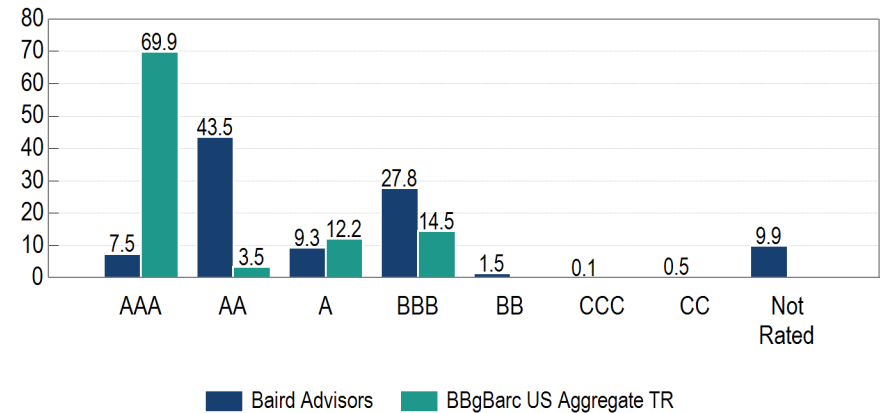


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.94	8.75	9.14	10.31	6.60	5.58	5.24	5.07
25th Percentile	1.38	6.53	8.30	9.54	5.98	4.92	4.69	4.46
Median	1.10	5.59	7.65	9.08	5.67	4.66	4.41	4.17
75th Percentile	0.81	4.65	7.09	8.64	5.40	4.45	4.22	3.94
95th Percentile	0.51	3.09	5.77	7.68	4.89	3.93	3.82	3.53
# of Portfolios	223	223	223	221	220	216	213	207
● Baird Advisors	1.07 (52)	5.84 (43)	8.46 (19)	9.55 (24)	5.99 (25)	5.20 (14)	5.10 (8)	4.98 (7)
▲ BBgBarc US Aggregate TR	0.62 (90)	3.53 (93)	6.98 (78)	8.63 (77)	5.24 (86)	4.18 (91)	3.97 (91)	3.63 (94)

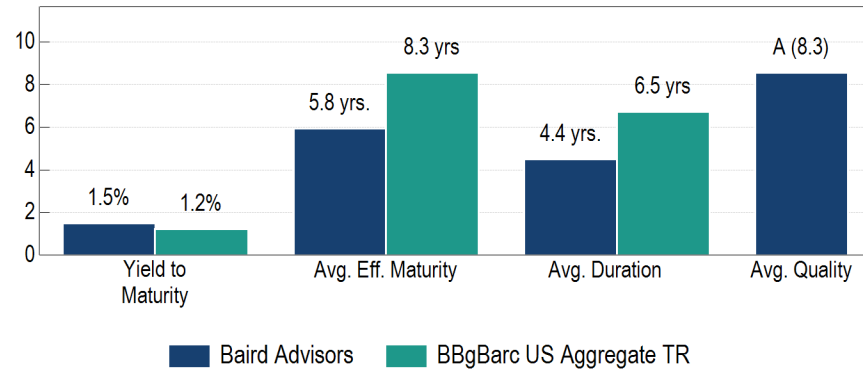
US Sector Allocation
Baird Advisors



Credit Quality Allocation
Baird Advisors



Characteristics
Baird Advisors

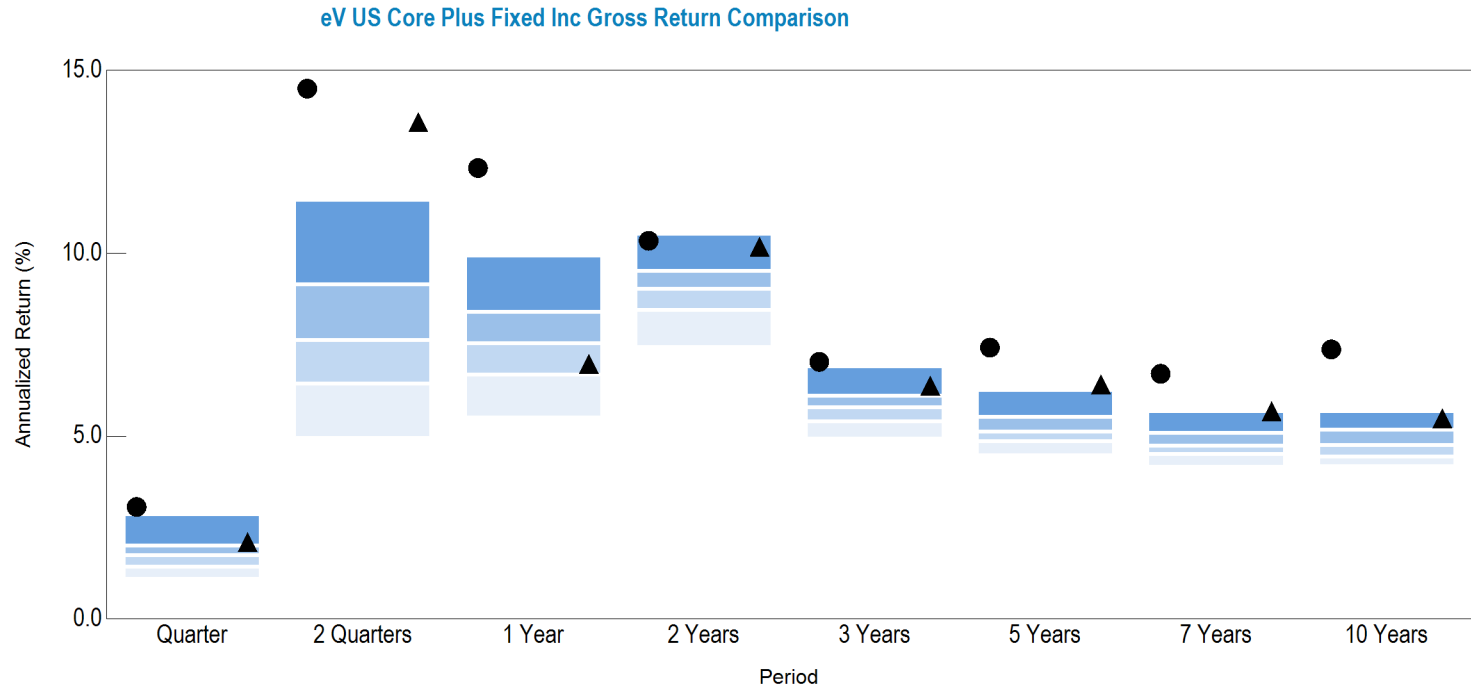


PERFORMANCE BY QUALITY

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Cash & Equiv	1	19,064	2.6	0.03	0.00
Govt & Agency	113	343,890	46.9	0.30	0.12
AAA	26	60,126	8.2	1.30	0.11
AA	7	4,399	0.6	-0.70	0.00
A	37	90,922	12.4	1.70	0.21
BAA	82	195,042	26.6	1.90	0.51
Below BAA	16	19,797	2.7	4.80	0.13
Other	0	-	0.0	0.00	0.00
Total Account	282	\$733,240	100.0	1.06	1.06

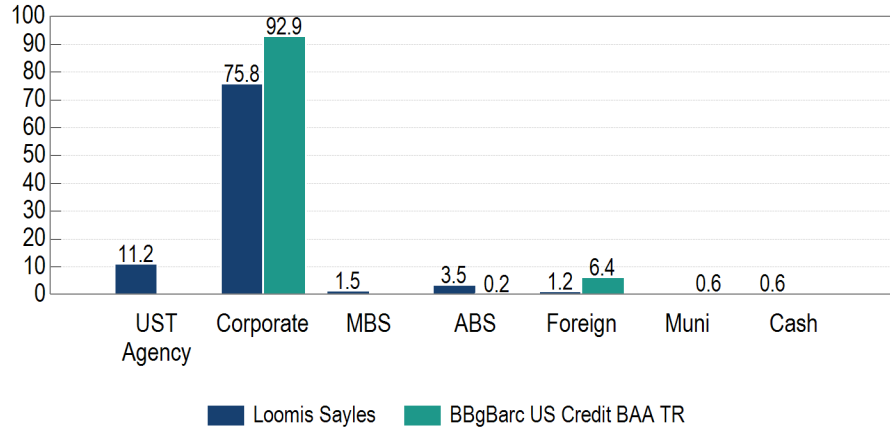
PERFORMANCE BY DURATION

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Under 1 Year	30	60,126	8.2	0.30	0.02
1 - 3 Years	86	197,241	26.9	0.61	0.16
3 - 6 Years	103	252,235	34.4	1.21	0.42
Over 6 Years	63	223,638	30.5	1.51	0.46
Total Account	282	\$733,240	100.0	1.06	1.06

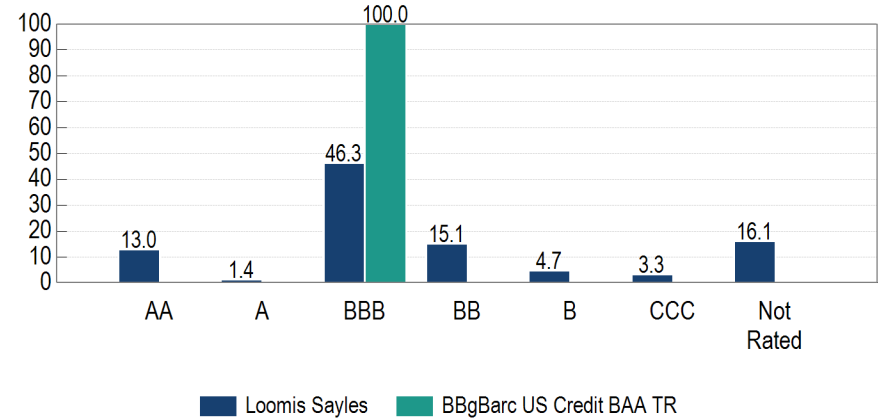


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.85	11.45	9.94	10.52	6.90	6.25	5.68	5.68
25th Percentile	2.02	9.16	8.40	9.52	6.11	5.53	5.09	5.19
Median	1.76	7.63	7.55	9.03	5.80	5.13	4.75	4.76
75th Percentile	1.44	6.44	6.68	8.46	5.41	4.87	4.53	4.45
95th Percentile	1.10	4.96	5.52	7.44	4.95	4.49	4.18	4.19
# of Portfolios	119	119	119	116	114	109	104	100
● Loomis Sayles	3.06 (4)	14.50 (1)	12.33 (3)	10.34 (6)	7.03 (5)	7.42 (1)	6.70 (1)	7.37 (1)
▲ BBgBarc US Credit BAA TR	2.10 (24)	13.58 (1)	6.97 (70)	10.18 (9)	6.38 (11)	6.41 (4)	5.68 (5)	5.49 (12)

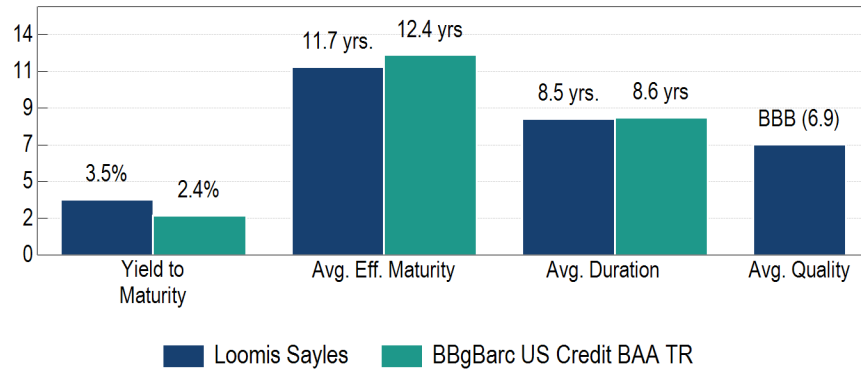
US Sector Allocation
Loomis Sayles



Credit Quality Allocation
Loomis Sayles



Characteristics
Loomis Sayles



Summary

Account Return	3.02
Benchmark Return	2.10
Excess Return	0.92
Sector Allocation	0.15
Security Selection	0.75
Trading	0.03
Pricing Differences	-0.01
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	3.00	2.09	3.00	2.09	0.15	0.75	0.90	0.90
CASH	3.71	0.00	0.41	2.09	0.00	0.00	0.00	-0.01	-0.01	-0.01
AAA	12.67	0.00	-0.08	2.09	0.06	0.00	0.00	-0.24	-0.24	-0.24
AA	0.65	0.00	2.22	2.09	0.01	0.00	0.00	0.01	0.01	0.01
A	4.61	0.01	2.55	1.24	0.11	0.00	0.11	-0.05	0.03	0.03
BAA	45.95	99.95	3.22	2.09	1.57	2.09	0.00	0.52	0.52	0.52
BA	18.50	0.00	5.15	2.09	0.93	0.00	0.00	0.56	0.56	0.56
B	5.28	0.00	4.00	2.09	0.22	0.00	0.00	0.10	0.10	0.10
CAA	3.42	0.00	4.21	2.09	0.14	0.00	0.00	0.08	0.08	0.08
CA	0.13	0.00	-13.35	2.09	0.02	0.00	0.00	0.01	0.01	0.01
C	0.14	0.00	14.13	2.09	0.02	0.00	0.00	0.02	0.02	0.02
NR	3.90	0.01	-2.19	2.18	-0.08	0.00	0.03	-0.20	-0.17	-0.17

Summary

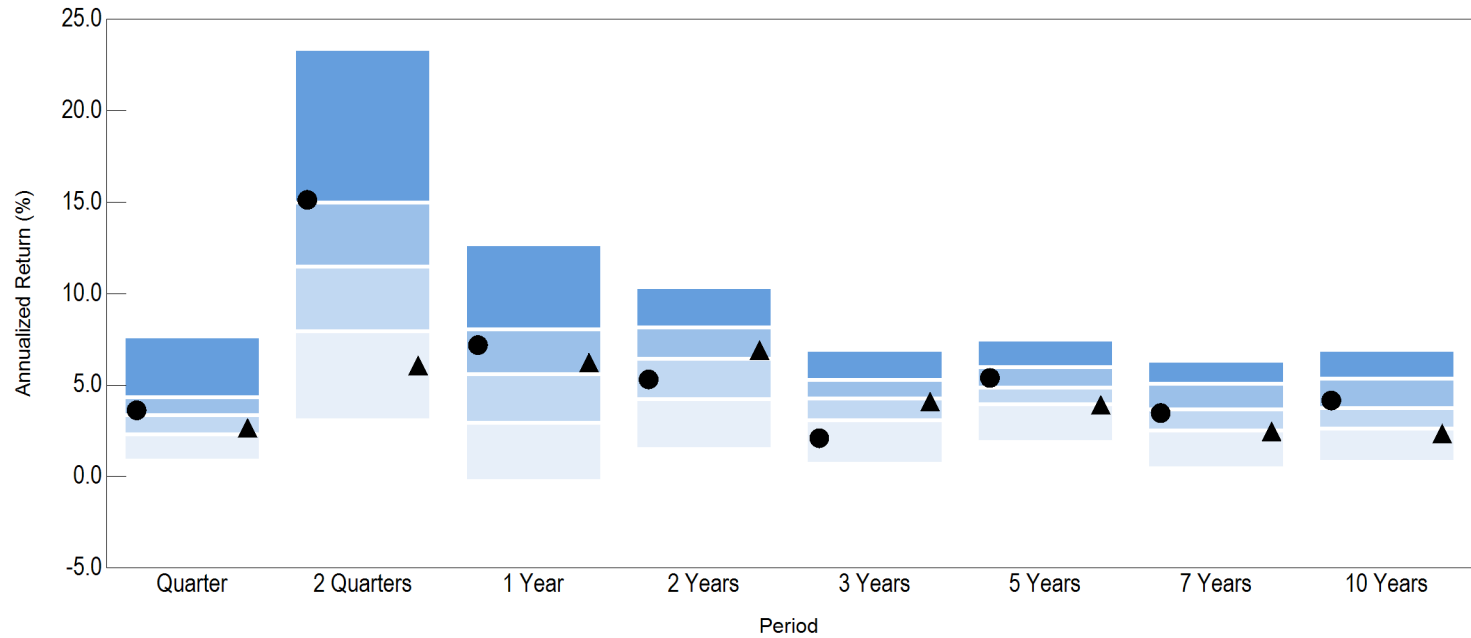
Account Return	3.02
Benchmark Return	2.10
Excess Return	0.92
Sector Allocation	0.19
Security Selection	0.71
Trading	0.03
Pricing Differences	-0.01
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	3.00	2.09	3.00	2.09	0.19	0.71	0.90	0.90
Less than 0.5	6.11	0.21	0.35	0.78	0.08	0.00	-0.02	0.03	0.01	0.01
0.5 - 1.0	1.35	0.70	2.22	0.74	0.03	0.01	0.00	0.02	0.02	0.02
1.0 - 1.5	1.35	2.77	2.49	0.74	0.02	0.02	0.02	0.01	0.04	0.04
1.5 - 2.0	4.37	3.26	1.06	0.84	0.04	0.03	0.01	0.01	0.02	0.02
2.0 - 2.5	3.61	4.02	5.58	1.08	0.20	0.04	0.01	0.16	0.16	0.16
2.5 - 3.0	4.22	4.06	1.27	1.37	0.03	0.06	0.03	-0.02	0.00	0.00
3.0 - 3.5	8.70	3.91	3.68	1.62	0.32	0.06	-0.03	0.18	0.15	0.15
3.5 - 4.0	4.23	4.04	3.96	1.96	0.17	0.07	-0.01	0.09	0.08	0.08
4.0 - 4.5	5.35	6.41	3.68	1.81	0.20	0.12	0.00	0.10	0.11	0.11
4.5 - 5.0	3.64	4.45	2.52	1.92	0.09	0.08	-0.01	0.02	0.02	0.02
5.0 - 5.5	4.28	3.44	4.46	1.95	0.19	0.06	0.00	0.11	0.11	0.11
5.5 - 6.0	3.97	4.28	4.20	2.24	0.17	0.10	-0.01	0.08	0.07	0.07
6.0 - 6.5	5.87	4.35	4.16	2.18	0.24	0.09	0.01	0.12	0.13	0.13
6.5 - 7.0	2.32	3.98	3.75	2.42	0.07	0.10	0.00	0.03	0.03	0.03
7.0 - 7.5	3.98	3.40	4.88	2.53	0.23	0.09	0.00	0.11	0.11	0.11
7.5 - 8.0	4.65	4.05	3.48	2.60	0.12	0.09	0.01	0.03	0.04	0.04
8.0 - 8.5	3.46	4.15	4.17	2.70	0.16	0.12	-0.01	0.05	0.04	0.04
8.5 - 9.0	1.51	1.70	1.68	2.28	0.03	0.04	0.00	-0.02	-0.02	-0.02
9.0 - 9.5	1.18	1.10	5.91	2.88	0.11	0.03	0.00	0.07	0.07	0.07
9.5 - 10.0	0.64	0.55	8.02	3.27	0.05	0.02	0.00	0.03	0.04	0.04

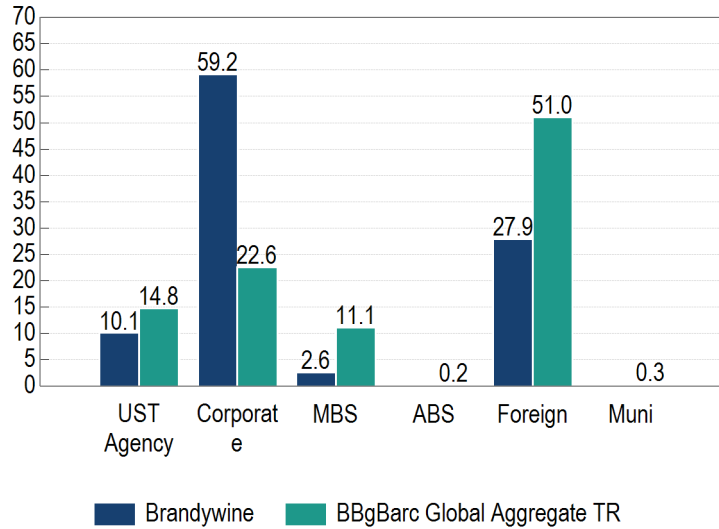
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
10.0 - 10.5	0.20	0.96	5.72	3.71	0.02	0.03	-0.01	0.01	0.00	0.00
10.5 - 11.0	0.61	1.23	3.28	3.10	0.02	0.03	0.00	0.00	0.00	0.00
11.0 - 11.5	0.55	2.03	6.89	2.87	0.01	0.05	-0.02	0.02	0.00	0.00
11.5 - 12.0	1.67	1.78	2.34	2.02	0.06	0.05	0.01	-0.01	0.00	0.00
12.0 - 12.5	0.14	1.38	5.58	2.67	0.02	0.04	0.00	0.00	0.00	0.00
12.5 - 13.0	0.74	1.57	2.90	2.69	0.02	0.06	-0.01	0.00	-0.01	-0.01
13.0 - 13.5	1.21	1.21	4.61	3.57	0.05	0.03	0.00	0.02	0.02	0.02
13.5 - 14.0	0.30	1.26	5.29	1.95	0.01	0.03	0.00	0.01	0.01	0.01
14.0 - 14.5	0.80	1.53	6.96	2.49	0.03	0.04	0.00	0.01	0.01	0.01
14.5 - 15.0	0.70	2.15	3.48	3.37	0.02	0.06	-0.01	0.00	-0.01	-0.01
15.0 - 15.5	1.32	2.67	0.19	2.27	0.00	0.05	0.00	-0.01	-0.01	-0.01
15.5 - 16.0	1.50	2.82	0.96	1.98	0.04	0.07	0.00	-0.01	-0.01	-0.01
16.0 - 16.5	1.29	2.59	2.37	2.49	0.05	0.04	0.02	0.00	0.02	0.02
16.5 - 17.0	1.50	3.01	1.21	1.87	0.00	0.05	0.00	-0.01	-0.01	-0.01
17.0 - 17.5	0.43	1.93	4.93	2.92	0.05	0.05	0.00	0.02	0.02	0.02
17.5 - 18.0	0.42	2.15	5.80	2.64	0.03	0.05	0.00	0.00	0.00	0.00
18.0 - 18.5	0.42	1.27	-1.20	1.92	0.02	0.04	-0.01	0.00	-0.01	-0.01
18.5 - 19.0	0.58	1.04	-0.06	2.00	-0.04	0.03	-0.02	-0.02	-0.04	-0.04
19.0 - 19.5	0.22	0.69	6.13	0.95	-0.03	0.01	0.02	-0.05	-0.03	-0.03
19.5 - 20.0	0.17	0.76	0.39	2.12	0.01	0.01	0.00	0.02	0.02	0.02
20.0 - 20.5	0.01	0.41	-1.65	4.00	0.00	0.03	-0.01	0.00	-0.02	-0.02
20.5 - 21.0	0.01	0.11	-1.85	3.59	0.00	0.00	0.00	0.00	0.00	0.00
21.0 - 21.5	0.12	0.07	-6.52	1.28	-0.03	0.00	-0.01	0.00	-0.01	-0.01
21.5 - 22.0	1.69	0.10	-2.49	-1.68	0.06	-0.01	0.04	-0.08	-0.03	-0.03
22.0 - 22.5	0.12	0.09	7.06	1.70	0.05	0.00	0.02	0.01	0.03	0.03
22.5 - 23.0	2.92	0.08	-0.38	6.14	0.00	0.01	0.12	-0.20	-0.08	-0.08
23.0 - 23.5	0.00	0.03	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00
23.5 - 24.0	5.46	0.03	-0.50	3.40	-0.02	0.00	0.08	-0.23	-0.14	-0.14
24.5 - 25.0	0.00	0.02	0.00	-1.28	0.00	0.00	0.00	0.00	0.00	0.00
Greater than 25.0	0.00	0.02	-1.11	3.69	0.00	0.00	0.00	0.00	0.00	0.00
24.0 - 24.5	0.00	0.03	0.00	-1.81	0.00	0.00	0.00	0.00	0.00	0.00

eV All Global Fixed Inc Gross Return Comparison

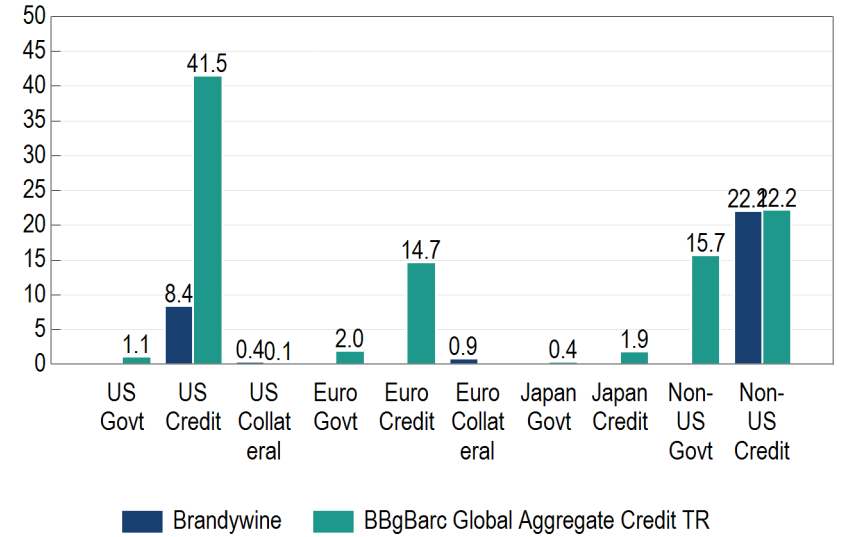


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	7.66	23.38	12.68	10.33	6.90	7.46	6.33	6.91
25th Percentile	4.37	15.01	8.06	8.16	5.30	6.01	5.08	5.36
Median	3.38	11.49	5.61	6.47	4.29	4.87	3.69	3.77
75th Percentile	2.32	7.95	2.97	4.24	3.10	3.98	2.52	2.63
95th Percentile	0.91	3.10	-0.22	1.54	0.72	1.92	0.48	0.83
# of Portfolios	504	504	504	490	470	437	377	275
● Brandywine	3.63 (43)	15.13 (25)	7.19 (35)	5.31 (63)	2.10 (87)	5.39 (39)	3.47 (54)	4.16 (42)
▲ BBgBarc Global Aggregate TR	2.66 (69)	6.07 (85)	6.24 (45)	6.91 (45)	4.09 (56)	3.92 (78)	2.47 (76)	2.36 (82)

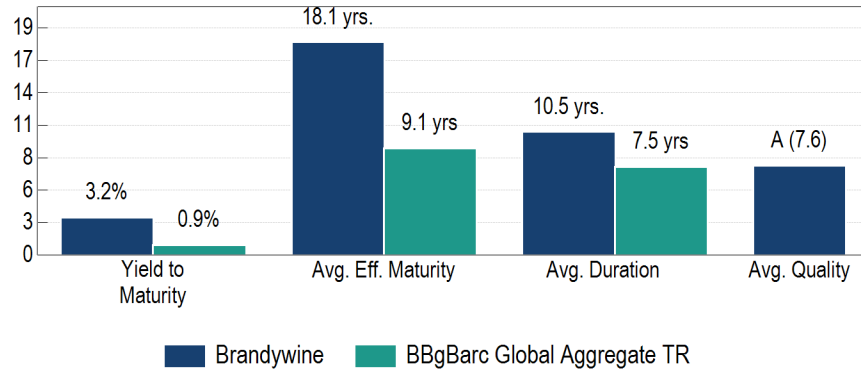
US Sector Allocation



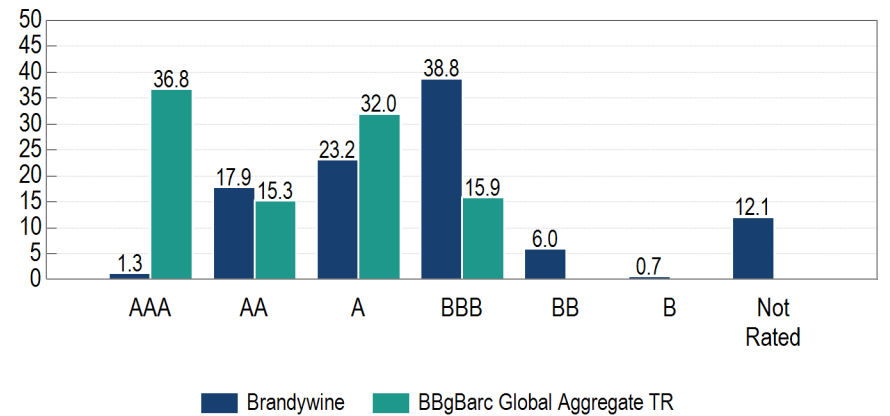
Global Sector Allocation



Characteristics
Brandywine

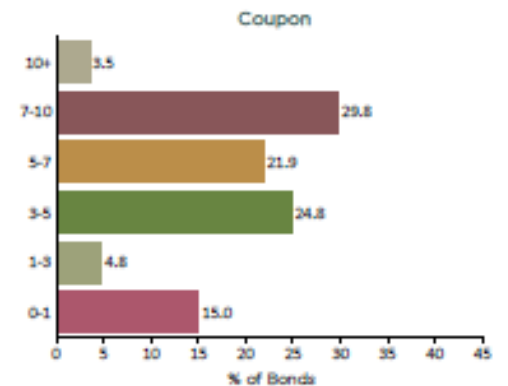
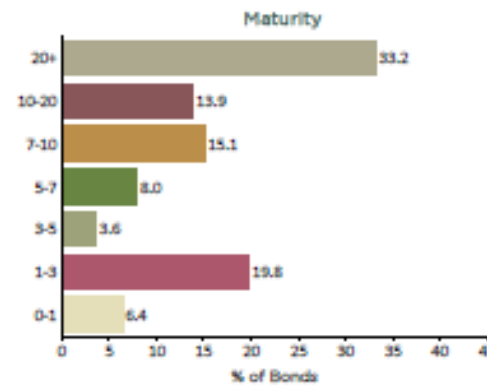


Credit Quality Allocation
Brandywine



Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	3.91	0.26
Yield to Worst (%)	3.90	0.26
Modified Duration	6.38	8.81
Effective Duration	6.29	8.97
Average Maturity	14.28	9.53
Average Market Price	106.77	-
Average Coupon (%)	3.12	1.96
Current Yield (%)	4.53	-
# of Issues	234	1,064



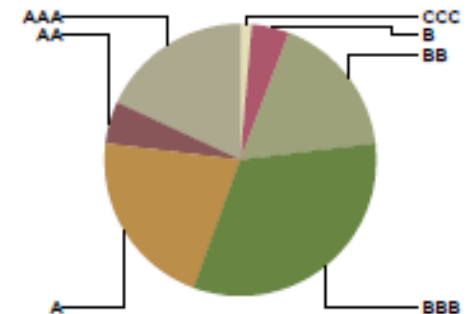
Sector Breakdown

	Market Value (%)	Duration Contribution (in Years)
Corporate Bond - Investment Grade	30.33	3.55
Government Sovereign	43.48	2.59
Corporate Bond - High Yield	11.72	0.62
Government Owned - No Guarantee	4.67	0.49
Mortgage Backed Securities	1.61	0.05
Government Regional Agencies	2.44	0.02
Cash	3.85	-
Derivatives	(0.31)	(0.93)
Total:	100.00	6.38

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	18.1	18.1
AA	5.0	23.2
A	21.3	44.5
BBB	32.4	76.9
BB	17.3	94.1
B	4.4	98.5
CCC	1.5	100.0

Average Quality: BBB+



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.

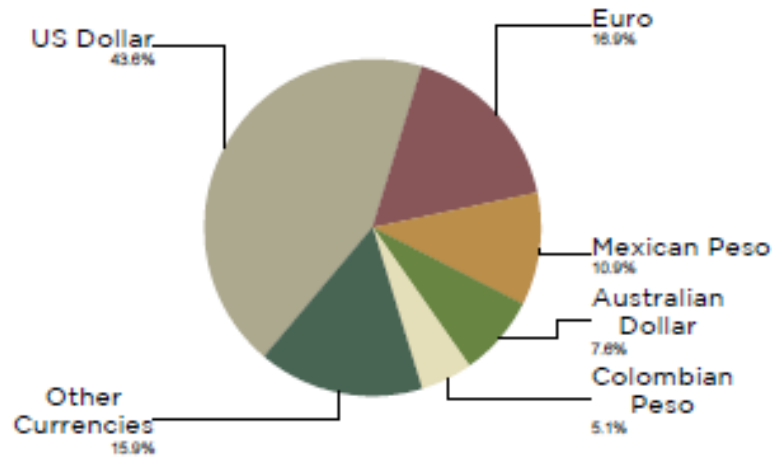
Brandywine
Country & Currency Allocation

Period Ending: September 30, 2020

Country Allocation	9/30/2020			6/30/2020		Currency Allocation	9/30/2020			6/30/2020	
	Portfolio	Index	Active	Portfolio	Change		Portfolio	Index	Active	Portfolio	Change
*Mexico	11.41	0.62	10.80	12.04	(0.62)	Euro	0.75	33.77	(33.02)	10.81	(10.06)
France	0.68	8.71	(8.03)	0.68	-	US Dollar	22.17	36.53	(14.37)	29.35	(7.18)
United States	43.28	36.53	6.75	41.73	1.56	*Mexican Peso	12.77	0.62	12.16	11.63	1.15
United Kingdom	0.11	5.36	(5.25)	0.22	(0.10)	British Pound Sterling	14.55	5.36	9.20	5.41	9.15
*Brazil	5.24	-	5.24	4.82	0.42	Japanese Yen	12.02	17.50	(5.48)	-	12.02
*Colombia	4.75	-	4.75	4.56	0.19	*Chilean Peso	5.17	-	5.17	3.45	1.72
Spain	0.53	5.00	(4.47)	2.57	(2.04)	South Korean Won	5.00	-	5.00	4.97	0.02
Australia	6.45	2.15	4.30	4.69	1.76	*Hungarian Forint	4.08	-	4.08	3.88	0.20
Canada	5.67	1.54	4.13	3.58	2.09	*Malaysian Ringgit	4.17	0.41	3.76	4.18	(0.01)
*Russian Federation	3.90	-	3.90	4.43	(0.52)	*Brazilian Real	3.45	-	3.45	2.72	0.73
*Indonesia	3.55	-	3.55	4.15	(0.60)	*Czech Koruna	3.18	-	3.18	3.87	(0.69)
*Malaysia	3.82	0.41	3.42	3.83	(0.01)	*Indonesian Rupiah	2.70	-	2.70	2.90	(0.20)
*South Africa	3.30	-	3.30	3.34	(0.04)	*Russian Ruble	2.66	-	2.66	2.62	0.04
*Peru	2.04	-	2.04	2.28	(0.24)	*South African Rand	2.45	-	2.45	2.78	(0.33)
*Hungary	0.93	-	0.93	-	0.93	*Polish Zloty	2.62	0.53	2.09	5.90	(3.29)
*Egypt	0.71	-	0.71	0.72	(0.01)	Australian Dollar	0.19	2.15	(1.96)	0.25	(0.06)
*China	0.58	-	0.58	0.24	0.33	*Peruvian Nuevo Sol	1.61	-	1.61	1.72	(0.12)
Belgium	1.53	2.06	(0.53)	1.46	0.07	Canadian Dollar	-	1.54	(1.54)	-	-
*Zambia	0.35	-	0.35	0.36	(0.01)	*Colombian Peso	0.49	-	0.49	1.76	(1.27)
*Chile	0.26	-	0.26	1.07	(0.81)	Danish Krone	-	0.46	(0.46)	-	-
*Ukraine	0.10	-	0.10	-	0.10	Singapore Dollar	-	0.38	(0.38)	-	-
*Vietnam	0.09	-	0.09	0.09	-	Israeli Shekel	-	0.34	(0.34)	-	-
Luxembourg	0.07	-	0.07	0.06	0.01	Swedish Krona	-	0.26	(0.26)	-	-
*Poland	0.46	0.53	(0.07)	0.47	(0.01)	Norwegian Krone	-	0.17	(0.17)	-	-
*Panama	0.06	-	0.06	-	0.06	*New Turkish Lira	-	-	-	0.91	(0.91)
*Uruguay	0.05	-	0.05	0.12	(0.07)	New Zealand Dollar	-	-	-	0.90	(0.90)
*Ecuador	0.04	-	0.04	-	0.04						
Israel	0.34	0.34	-	0.34	-						
Other Countries	-	36.77	(36.77)	1.24	(1.24)						
Derivative P/L	(0.31)	-	(0.31)	0.93	(1.24)						
Total:	100.00	100.00	-	100.00	-	Total:	100.00	100.00	-	100.00	-

*Emerging Markets are defined as any country and currency included in the JP Morgan Government Bond Index-Emerging Market or the JP Morgan Emerging Market Bond Index Global Indices.

Source of Portfolio Duration by Currency Denomination



Modified Duration Contribution by Currency (In Years)

Currency	9/30/2020				6/30/2020	
	0-3	>3-10	>10-20	>20+	Total	Total Change
US Dollar	0.03	0.39	(1.58)	3.94	2.78	(2.03)
Euro	-	1.05	-	0.03	1.08	(0.50)
*Mexican Peso	-	0.08	0.31	0.30	0.69	(0.07)
Australian Dollar	0.05	-	-	0.43	0.48	0.42
*Colombian Peso	-	-	0.32	-	0.32	0.12
*Russian Ruble	-	0.23	-	-	0.23	(0.04)
*Indonesian Rupiah	-	0.22	-	-	0.22	(0.04)
*South African Rand	-	0.18	-	0.01	0.18	(0.00)
*Peruvian Nuevo Sol	-	0.01	0.14	-	0.15	(0.01)
*Brazilian Real	0.01	0.07	-	-	0.08	(0.01)
*Hungarian Forint	-	0.07	-	-	0.07	0.07
*Malaysian Ringgit	0.01	0.06	-	-	0.07	(0.01)
*Polish Zloty	0.00	-	-	-	0.00	(0.00)
*Chilean Peso	-	-	-	-	-	(0.01)
*New Turkish Lira	-	-	-	-	-	(0.02)
Total	0.11	2.37	(0.80)	4.70	6.38	(2.14)

Modified Duration Contribution by Country vs. FTSE WGBI (USD)

(In Years)

Country	9/30/2020				6/30/2020			
	0-3	>3-10	>10-20	>20+	Total	Index	Active	Total Change
*Mexico	0.00	0.09	0.31	0.63	1.04	0.03	1.01	(0.10)
United States	0.01	0.26	(1.66)	3.01	1.62	2.57	(0.95)	(2.06)
United Kingdom	-	0.00	-	-	0.00	0.76	(0.76)	(0.00)
France	-	0.00	-	0.12	0.12	0.80	(0.68)	(0.00)
Italy	-	1.05	-	-	1.05	0.38	0.47	0.02
Spain	-	-	-	0.03	0.03	0.42	(0.39)	(0.52)
*Colombia	0.00	0.03	0.32	-	0.36	-	0.36	0.13
Australia	0.05	-	-	0.43	0.48	0.16	0.33	0.42
*Brazil	0.02	0.11	0.02	0.16	0.30	-	0.30	0.04
*Russian Federation	-	0.23	-	-	0.23	-	0.23	(0.04)
*Indonesia	-	0.22	-	-	0.22	-	0.22	(0.04)
*South Africa	-	0.18	-	0.02	0.20	-	0.20	(0.01)
*Peru	-	0.02	0.17	-	0.18	-	0.18	(0.02)
Canada	0.00	0.00	-	-	0.01	0.12	(0.11)	0.00
*Hungary	-	0.07	-	-	0.07	-	0.07	0.07
Belgium	-	-	-	0.27	0.27	0.22	0.05	0.01
*Malaysia	0.01	0.06	-	-	0.07	0.03	0.05	(0.01)
*Chile	0.00	-	-	0.03	0.04	-	0.04	(0.04)
*Egypt	0.00	0.01	0.02	-	0.03	-	0.03	(0.00)
*Poland	0.00	-	-	-	0.00	0.02	(0.02)	(0.00)
Israel	0.00	0.01	-	-	0.01	0.02	(0.01)	(0.00)
*Zambia	0.00	0.01	-	-	0.01	-	0.01	0.00
*Ukraine	-	-	0.01	-	0.01	-	0.01	0.01
*China	0.01	-	-	-	0.01	-	0.01	0.01
*Panama	-	0.00	-	-	0.00	-	0.00	0.00
Luxembourg	-	0.00	-	-	0.00	-	0.00	0.00
*Vietnam	-	0.00	-	-	0.00	-	0.00	(0.00)
*Ecuador	-	0.00	-	-	0.00	-	0.00	0.00
*Uruguay	-	0.00	-	-	0.00	-	0.00	(0.00)
Other Countries	-	-	-	-	-	3.08	(3.08)	(0.02)
Total	0.11	2.37	(0.80)	4.70	6.38	8.81	(2.43)	(2.14)

*Emerging Markets are defined as any country and currency included in the JP Morgan Government Bond Index-Emerging Market or the JP Morgan Emerging Market Bond Index Global Indices.

Policy Index and Benchmark History

Period Ending: September 30, 2020

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

ACERA

US Equity Benchmark

As of:

	1/1/92	1/1/80
Russell 3000	100%	0%
S&P 500	0%	100%
	100.0%	100.0%

International Equity Benchmark

As of:

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

Fixed Income Benchmark

As of:

	6/1/19	6/1/01	1/1/80
BBgBarc Aggregate	71.25%	75%	100%
BBgBarc High Yield	10.00%	10%	
FTSE WGBI	18.75%	15%	
	100.0%	100.0%	100.0%

Real Estate Benchmark

As of:

	1/1/80
NCREIF ODCE	100%
	100.0%

Real Assets Benchmark

As of:

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

Glossary

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

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

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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The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

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Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.



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PERIOD ENDING: SEPTEMBER 30, 2020

Absolute Return Performance Report

Alameda County Employees' Retirement Association

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Hedge Fund Environment **PAGE 3**

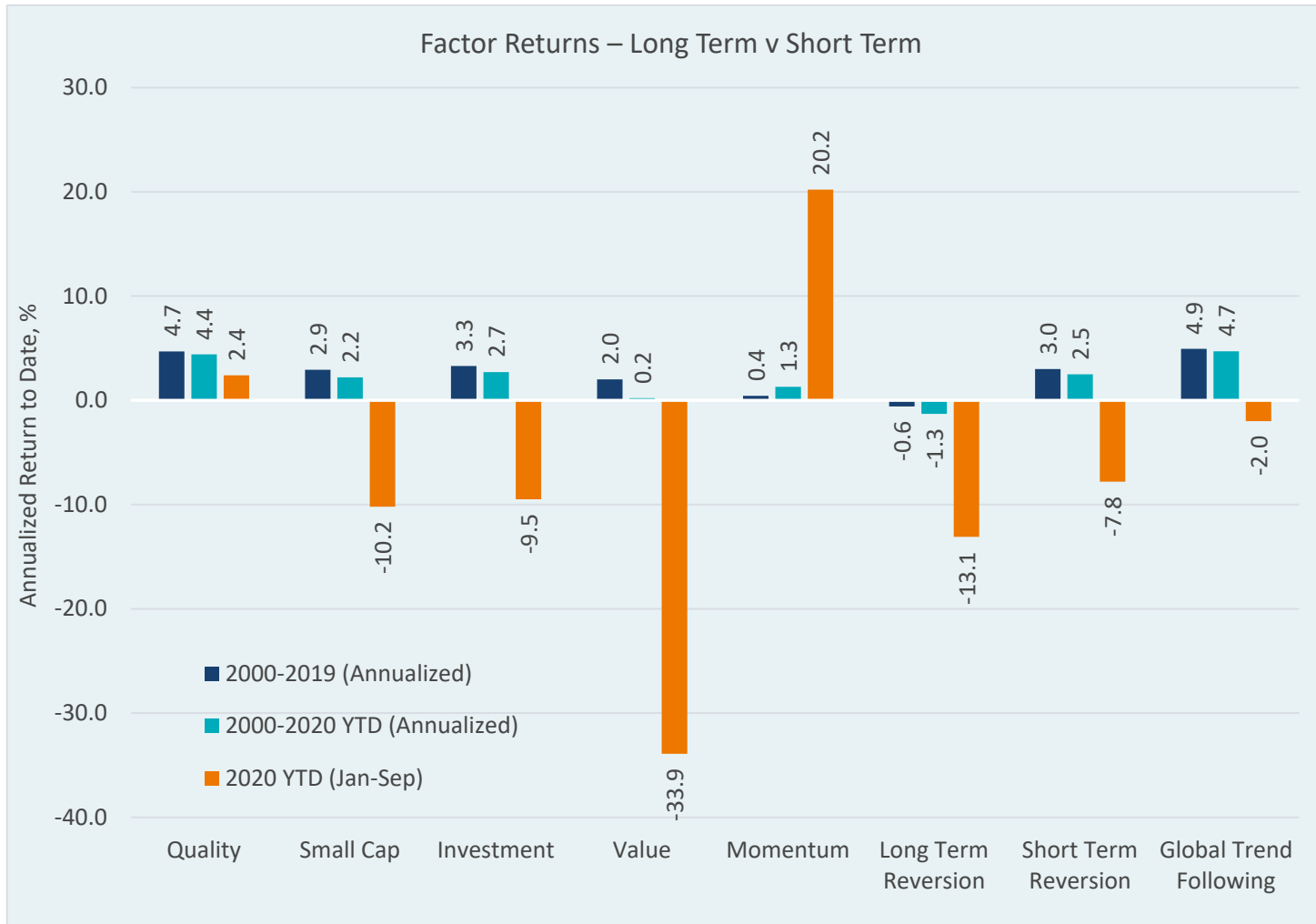
ACERA Performance **PAGE 9**

Appendix **PAGE 14**

***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™.*

Hedge Fund Environment

Despite recent experience, factors additive over the long term



Fama French 5-Factor model factors are mostly positive over last 20 years, as has been global trend following, a key component of most alt beta strategies

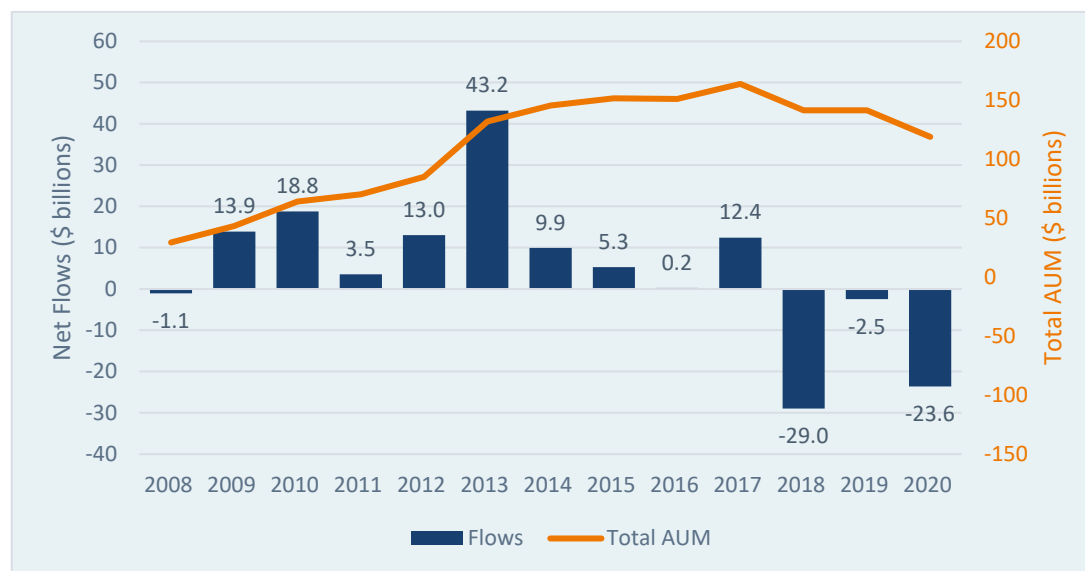
Factor detail: Quality = Fama French Robust Minus Weak, Small Cap = FF Small Minus Big, Investment = FF Conservative Minus Aggressive, Value = FF High Minus Low, Momentum = FF-Carrhart Momentum, LT Reversion = FF Long Term Reversal, ST Reversion = FF Short Term Reversal, Global Trend Following = SocGen Trend Index (representing momentum in equity + non equity assets)

Alt premia performance and liquid alt flows

Alt Beta Strategy	Index	YTD as of 10/31/20	1-year	3-year	5-year	10-year	Annualized Std. Dev.	Sharpe Ratio	Inception Date
Alt Risk Premia - Equity	HFR Bank Systematic Risk Premia Equity Index	-32.8%	-32.6%	-18.5%	-10.0%	-2.1%	17.5%	-0.19	May-07
Alt Risk Premia - Rates	HFR Bank Systematic Risk Premia Rates Index	5.2%	2.1%	-1.7%	-2.1%	3.9%	11.4%	0.78	Mar-08
Alt Risk Premia - Multi Asset	HFR Bank Systematic Risk Premia Multi-Asset Index	-16.7%	-15.1%	1.0%	4.9%	8.5%	27.4%	0.22	Jun-07

Source: HFR

Statistics are calculated from inception date to 10/31/20



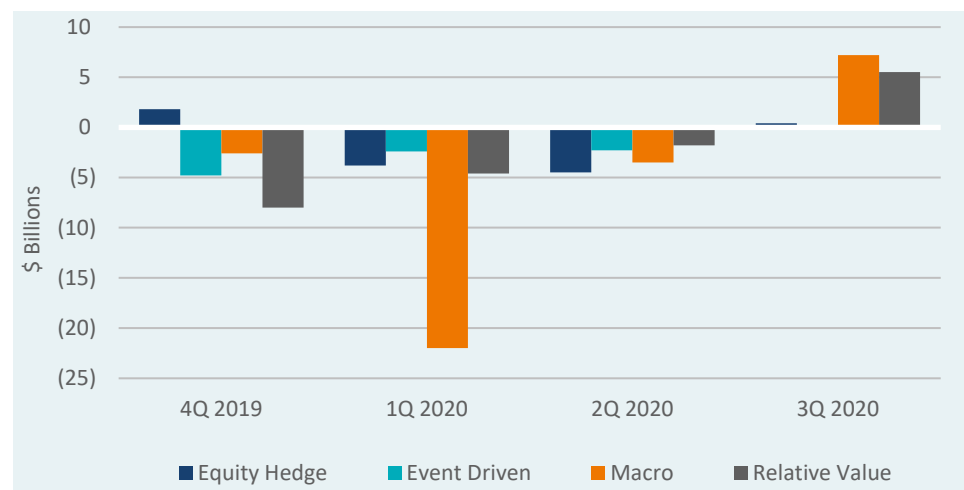
Source: Morningstar, all US Open-end (ex-FOF) Alternative Funds. 2020 data is through 10/31/20

Hedge fund trends & flows

Hedge funds see inflows for first time in nearly 3 years

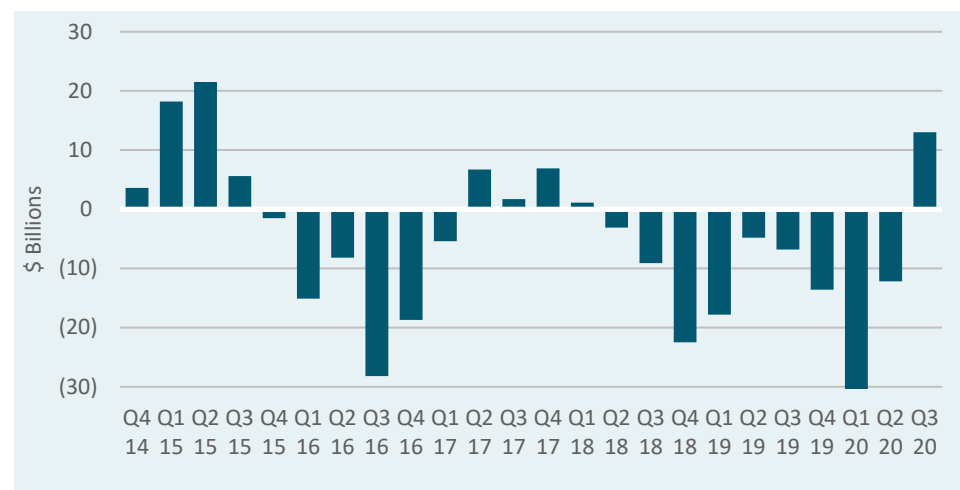
- Investors allocated an estimated net \$12 billion into hedge funds in the third quarter of 2020, the first quarterly inflows since the first quarter of 2018. Inflows were led by Macro and Relative Value strategies which together received an estimated \$13 billion in net inflows.
- Outflows were limited to Event Driven strategies, but amounts were small relative to the industry size.
- The quarterly net inflows for the industry were the largest since second quarter of 2015.
- Within Macro, net inflows were split between quantitative/CTA funds and currency focused funds. The quantitative/CTA funds are still recovering from their significant outflows in the first quarter.
- The most significant net inflows were into Relative Value Credit: Multi Strategy firms, which saw an estimated net \$14.3 billion inflow.

NET FLOWS TO HFR SUB-STRATEGIES, LAST 4 QUARTERS



Source: HFR

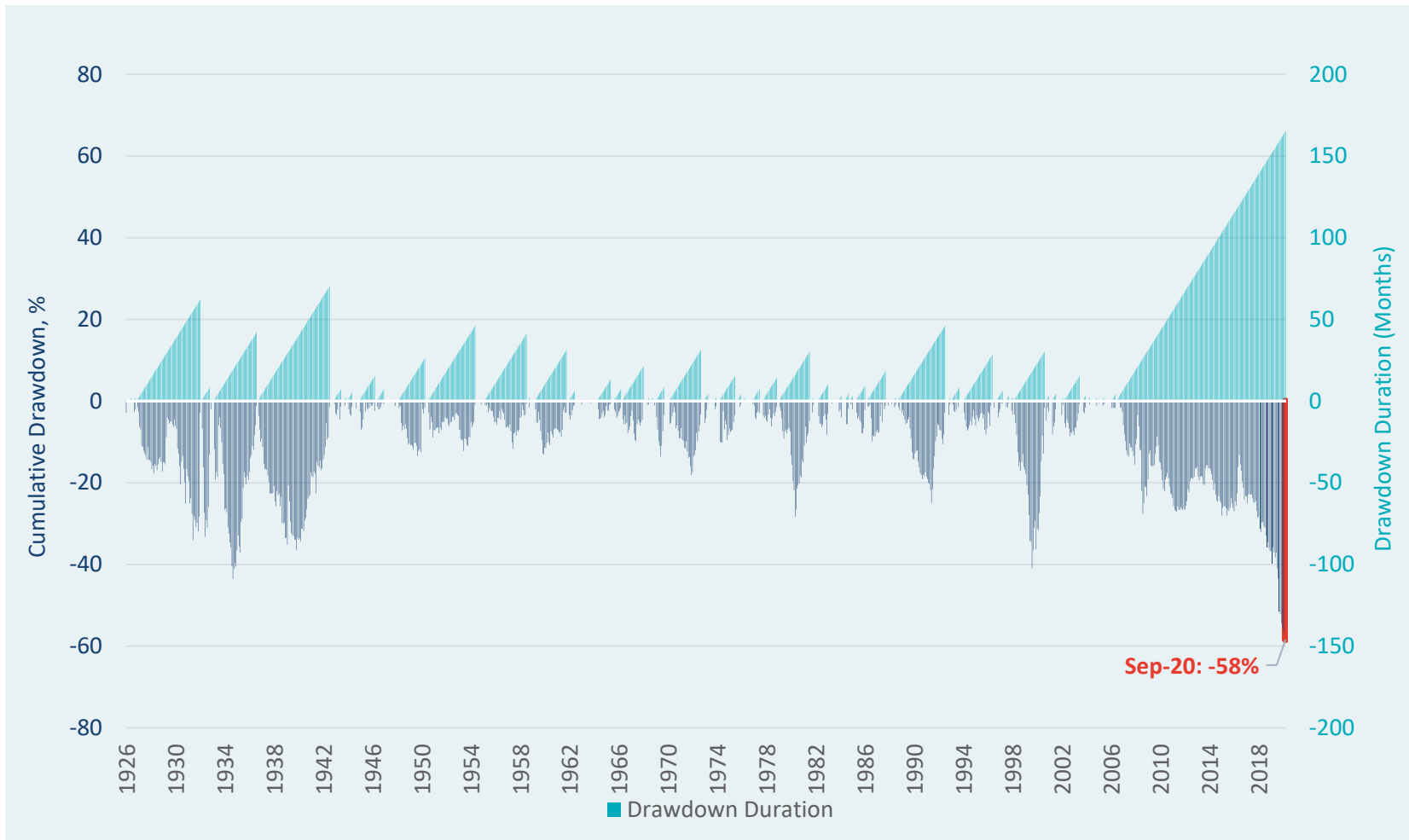
QUARTERLY NET FLOWS TO HEDGE FUNDS



Source: HFR

Long-term perspective on value

HISTORICAL DRAWDOWNS FOR FAMA-FRENCH HML FACTOR 1926 – APRIL 2020



The Fama-French Value factor has declined well beyond its historical max loss.

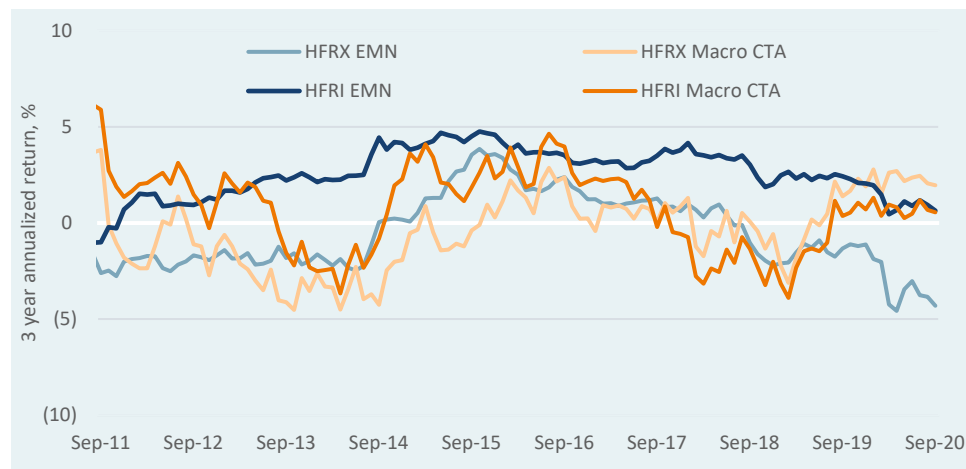
Its -34% return in 2020 through September would be its worst return in a calendar year period ever, just ahead of 1932 and 1934.

Source: MPI

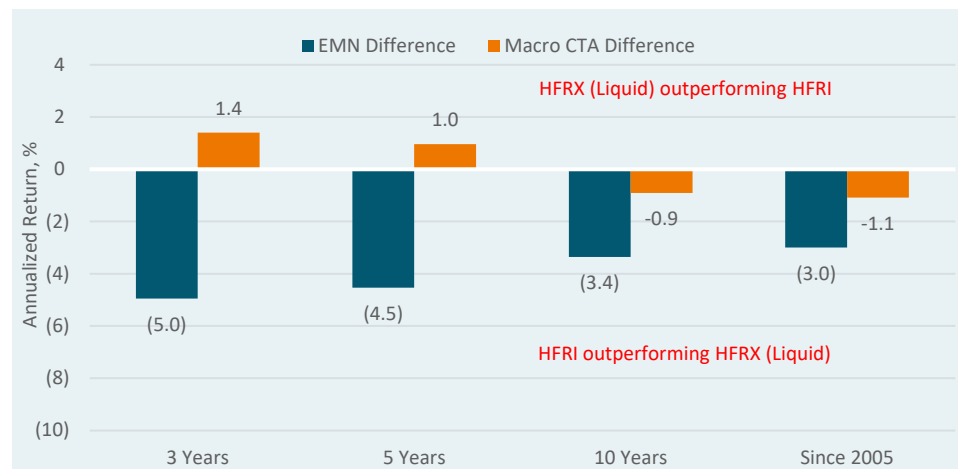
Liquid alts – macro vs equity mkt neutral

- Liquid equity market neutral hedge funds (proxied by HFRX Equity Market Neutral) have consistently underperformed their less liquid/true hedge fund peers (proxied by the HFRI equivalent). This is consistent with the extreme struggles alt risk premia managers are having within their equity market neutral books.
- Looking at the same comparison of liquid (HFRX) to less liquid (HFRI) for the CTA/Systematic Macro strategies shows a different story: liquid alternatives have been much more competitive with their illiquid hedge fund peers over time and have even outperformed over the last 3 and 5 years. This is also consistent with the alt premia portfolios – macro strategies have performed well, but not enough to balance out EMN losses.
- Several alt premia managers have recently launched “macro-only” alt premia funds. The data below supports this initiative to some extent, but suspect some recency bias at play as well.

3 YR ROLLING RETURNS, SEP-08 TO SEP-20



RETURNS TO DATE, AS OF SEP-20



ACERA Performance

Allocations

Target

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

Current (as of 9/30/2020)

Sub-categories	Current Allocations	Min./Max. Ranges
AR Portfolio	8.1%	5% to 10.5%
▪ <i>Alternative Premia Strategies</i>	2.3%	2% to 6%
▪ <i>Fund of Funds</i>	3.8%	2% to 6%
▪ <i>Other Alternatives/Oppportunistic</i>	1.9%	0% to 4.5%

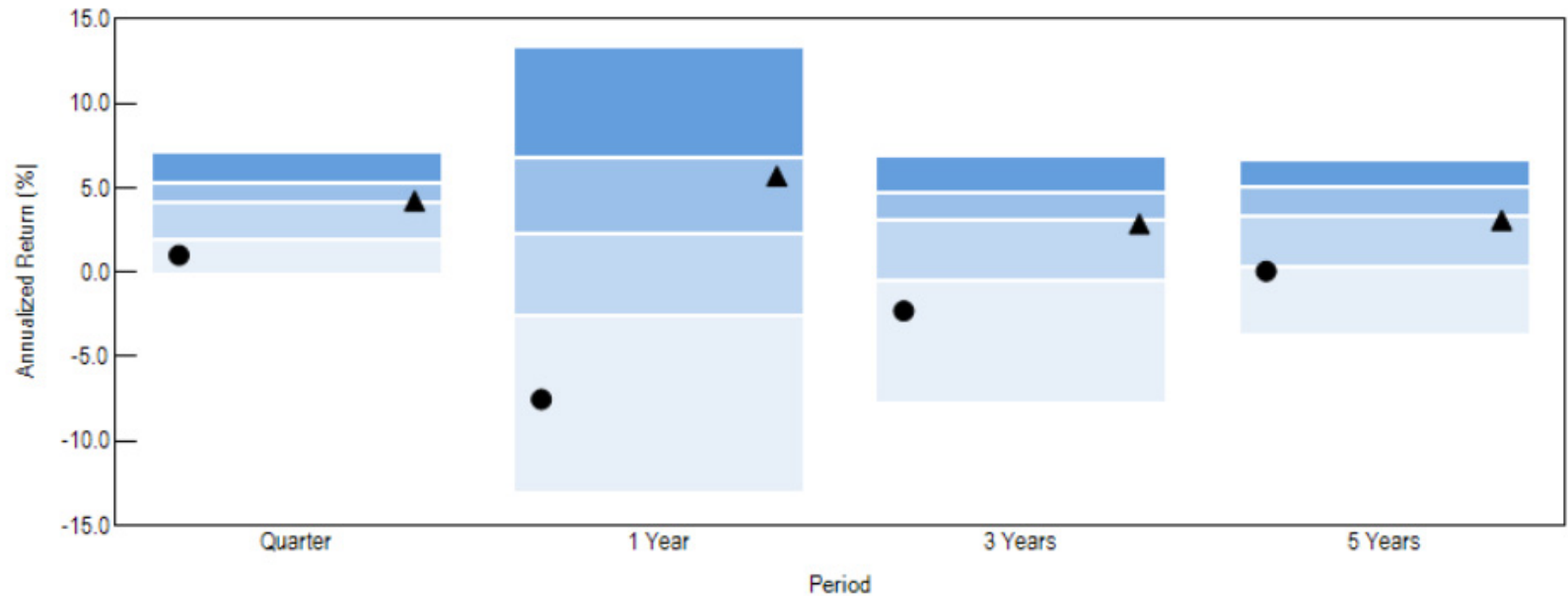
Performance Summary

	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Ending September 30, 2020					Inception (%)	Inception Date
										2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)		
Absolute Return*	631,664,349	100.0	1.1	-7.3	-7.3	-7.5	-2.3	0.1	--	1.8	-2.2	3.3	5.4	0.7	2.0	Sep-11
<i>HFRI Fund of Funds Composite Index</i>			4.3	2.6	2.6	5.7	2.9	3.1	2.9	8.4	-4.0	7.8	0.5	-0.3	3.4	Sep-11

Relative Performance

InvMetrics All DB Hedge Funds Gross Return Comparison

Ending September 30, 2020



Return (Rank)

	Quarter	1 Year	3 Years	5 Years
5th Percentile	7.1	13.3	6.9	6.7
25th Percentile	5.3	6.8	4.8	5.1
Median	4.2	2.3	3.1	3.4
75th Percentile	2.0	-2.6	-0.5	0.3
95th Percentile	-0.1	-13.0	-7.7	-3.6
# of Portfolios	193	192	180	169
● Absolute Return	1.0 (80)	-7.5 (86)	-2.3 (83)	0.1 (79)
▲ HFRI Fund of Funds Composite Index	4.2 (50)	5.7 (30)	2.9 (54)	3.1 (54)

Portfolio Statistics* (as of 9/30/2020)

	Benchmark HFRI FoF Composite	Absolute Return Portfolio	MSCI ACWI
Max Drawdown	-9.0	-10.6	-21.2
Sharpe Ratio	0.51	0.23	0.69
Beta	0.30	0.11	1.00
Correlation to MSCI ACWI	0.86	0.35	1.00
Annualized StDev	4.7	4.1	13.8

*Since inception of AR Portfolio (9/2011)

Portfolio performance and risk targets are:

AR portfolio returns to exceed benchmark

Correlation to global equities less than or equal to 0.5

Appendix

Glossary

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

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

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

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

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

Glossary

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

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



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PERIOD ENDING JUNE 30, 2020

Private Equity Review

Alameda County Employees' Retirement Association

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— PE Portfolio Diversification by Vintage Year			

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DEBT RELATED

- **HY issuance was down and leveraged loan issuance was up.** In the first half of 2020, US high yield issuance was down 2.1% at \$128 billion¹ compared to 1H 2019. Leverage loan issuance volume reached \$385 billion in the first half of 2020, up 22% from the same time last year.
- **Spreads loosen across the board.** US HY Credit Index loosened by 228 bps or 54.2%² in 1H 2020 versus the same period last year. BB and B index loosened by 162 bps and 168 bps, a 55.9%² and 34.4%² increases versus the same period last year. In the meantime, CCC index increased by 46.2%² in the first half of 2020 from 2019 same period.
- **Decline in LBO debt, with interest coverage up significantly.** US total leverage (Debt / EBITDA) for 1H 2020 at 5.1x³ down 14.2% from the same time last year. Interest coverage (EBITDA / Cash Interest) of first half of 2020 was 3.6x³, up 55.7% from same time 2019 as underwriting new deals focused on risk reduction.

GLOBAL

- **PE dry powder continued to surge globally.** For the first half of 2020, global total PE dry powder was at \$1.74 trillion⁴, up 16.4% from same time last year. US total PE was up by 21.9% to \$964.5 billion⁴; Europe total PE increased by 12.3% to \$335.2 billion⁴; Asia total PE was up by 8.3% to \$387.7 billion⁴; and the rest of world total PE was up by 11.1% to \$55.0 billion⁴.
- **Investment activity was down.** During the first of 2020, global PE firms invested in \$299.3 billion⁶ worth of deals, down 19.0% from the same time prior year and closed on 9,923 transactions⁶, down 19.1% from same time in 2019.

US BUYOUTS

- **Dry powder increased.** For the first half of 2020, US buyout dry powder was \$505.1 billion⁴, up by 15.5% from the same time in 2019.
- **Fundraising activity was down significantly.** In 1H 2020, US firms across all buyout strategies raised \$65.6 billion⁵, down by 49.8% from same time prior year. Average fund size decreased 25.1%, from \$1.72 billion in 1H 2019 to \$1.29 billion in 1H 2020.
- **Investment activity was down.** During 1H 2020, US buyout firms invested in \$77.4 billion⁶ worth of deals, down 41.1% from the same time last year and closed on 1,210 transactions⁶, down 23.6% versus the same time in 2019.

- **LBO price multiples were down.** As of June 30, 2020, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 10.6x⁷, a 4.7% decrease from the second quarter-end of 2019.
- **Exit activity slowed down.** During 1H 2020, US buyout firms exited 358 companies¹², representing \$74.6 billion¹² in total transaction value. This represented a 30.4% decrease in the number of exits and a 45.0% decrease in total transaction value compared to the same time last year.

US VENTURE CAPITAL

- **Dry powder increased.** In the first six months of 2020, US VC dry powder was at \$150.3 billion⁴, up 27.2% from 1H 2019.
- **Fundraising activity slowed down, but average fund size increased.** US VC firms raised \$44.4 billion⁵ during the first half of 2020, a 77.6% increase from the same period last year. 193 funds⁵ closed in 1H 2020, a 20.6% decrease from the same period last year. The average US VC fund size increased to \$230.1 million⁵ by 123.6% versus the same period last year.
- **Investment activity was down, but average check size was up.** US VC firms deployed \$72.7 billion⁶ in capital in 1H 2020, a 9.8% increase from 1H 2019 as deal activity skewed from early to late stage. The number of rounds closed at 2,646⁶, a 21.1% decrease from the same time last year. The average investment per deal increased to \$27.5 million⁶, a 39.2% increase from prior year.
- **All stages valuations were up.** Compared to December 31, 2019, the average pre-money valuations increased for both early VC and late VC stages in 1H 2020: up 2.0% at \$30.0 million⁸ for early stage VC, and 36.4% at \$120 million⁸ for late stage VC.
- **Exit activity decreased with larger transactions.** US VC firms exited 344 companies⁶ in the first half of 2020, down by 4.4% from last year. This represented \$49.8 billion⁶ in transaction value, up by 5.7% from the same period last year. Largest sectors exited were Technology Services and Health Technology.

EX US

- **Ex US dry powder grew but less than dry powder in the US.** PE dry powder outside the US grew to \$777.8 billion⁴ for 1H 2020, a 10.2% increase versus last year. However, dry powder outside the US was still 19.4% less than dry powder in the US (\$964.5 billion⁴).
 - **Europe buyout and VC dry powders were up.** For 1H 2020, Europe buyout dry power was \$227.8 billion⁴, up by 11.9% from last year. Same time, VC dry powder in Europe grew to \$34.2 billion⁴, a 11.0% increase from prior year.
 - **In Asia, dry powder of both buyout and VC kept increasing, but growth equity decreased.** In the first half of 2020, Asia buyout dry power was \$99.7 billion⁴, up by 16.1% from same time last year. VC dry powder in Asia increased to \$124.1 billion⁴, up by 19.9% from 1H 2019. Growth equity dry powder decreased to \$141.3 billion⁴, down by 5.4% from 2019.

- **Fundraising outside of US was down except Europe.** In 1H 2020, ex-US fundraising was down 8.9% to \$108.2 billion⁵ compared to same time prior year. The decrease was led by Asian funds which raised \$35.3 billion⁵, down 36.9% from same time last year. Fundraising in the rest of the world decreased by 18.5%, from 8.1 billion⁵ in 1H 2019 to \$6.6 billion⁵ in the same time 2020. However, fundraising was up in Europe, up by 21.0% from \$54.8 billion in the first half of 2018 to \$66.3 billion⁵ in 1H 2020.
- **Investments activity was down, but with larger deals in Asia.** Both Europe buyout and Asia venture capital firms decreased the number of deals and aggregate deal volume in the first 6 months in 2020. But Asia buyout and venture capital firms decreased the number of deals but increased aggregate deal volume in 1H 2020.
 - **Both Europe buyout and VC activities decreased.** In the first half in 2020, Europe buyout firms transacted on \$43.4 billion⁶ in aggregate value, down by 25.0% from 1H 2019. VC investment activity was down from \$19.3 billion in 1H 2019 to \$17.3 billion⁶ in 1H 2020, an increase of 10.4%.
 - **Asia buyout and VC activities were down, but average deal size was up slightly.** During 1H 2020, Asia buyout firms closed on \$30.8 billion⁶ in aggregate value, up by 4.2% from the same time of last year's \$29.5 billion⁶. VC investment activity was up from \$40.6 billion during 1H 2020 to \$40.9 billion⁶, an increase of 0.9%.
- **Both US and Europe purchase price multiples decreased.** As of June 30, 2020, US median purchase price multiples (Enterprise Value / EBITDA) was 10.6x¹, a 4.7% decrease from the same time last year. In the meantime. Europe median purchase price multiples dropped 15.3% from to 8.0x¹ from the same time last year.
- **Leverage multiples in Europe moved down.** European LBO leverage multiples (Debt / EBITDA) have averaged 5.8x¹⁰ during 1H 2020, an increase of 3.9% from the same time last year and an 5.0% decrease from the peak (6.1x¹¹) in 2007. European LBO Loan volume at \$26.9 billion¹¹ is down 4.4% versus 1H 2019, a decrease of 75.0% versus the peak of \$107.3 billion¹¹ in the first half of 2007.
- **Exit activity weaker in Europe, but stronger in Asia.** During 1H 2020, Europe PE firms aggregate exit value amounted to \$32.3 billion⁶, a 41.5% decrease from the same time last year, while Asia PE firms' exits were up 48.6% from to \$101.8⁶ billion in the same time.

Outlook

- **PE allocations likely to remain stable.** A recent survey of institutional investors conducted on June 30, 2020¹² indicated that 41% intend to increase their allocation for private equity compared to 40% during the same period last year; 49% intend to maintain their allocation for private equity compared to 47% during the same period last year; 11% intend to commit less capital to private equity compared to 13% during the same period last year.
- **Institutional investors most interested in investing in North America and like small- to mid-market buyouts.** Based on the survey conducted on June 30, 2020¹², institutional investors view North America as the most attractive location to invest in the current economic climate with 80% choosing it as their preferred developed market investment destination. This compares favorably versus Western Europe (49%) and Asia (11%). China (42%) and India (38%) are the top two desired countries in the emerging markets for investors. In the same survey, 53% of institutional investors also cited the venture capital strategy as presenting the best opportunities in the current financial climate. Small to mid-market buyout strategy was mentioned next with 83% of institutional investors believing it presented the best opportunities.

Notes

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

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
ACERA Plan Assets - Total				\$8,208,050		
Private Equity:	8.0%	0-13%	7.7%	\$633,209	\$549,219	\$1,182,428
Buyouts	60.0%	30-80%	51.2%	\$324,168	\$351,240	\$675,408
Venture Capital	20.0%	0-40%	30.2%	\$191,295	\$40,398	\$231,693
Debt-Related/Special Situations	20.0%	0-70%	18.6%	\$117,746	\$157,581	\$275,327

Portfolio Summary

- As of June 30, 2020, the Private Equity portfolio had a total market value of \$633.2M, with \$324.2M in Buyouts, \$191.3M in Venture Capital, and \$117.7M in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed \$918.3M towards its Private Equity commitments, with \$469.0M to Buyouts, \$168.1M to Venture Capital, and \$281.2M in Debt-Related / Special Situations. Unfunded commitments total \$549.2M.

Portfolio Activity

- In the first half of 2020, ACERA committed \$35.0M to AG CSF1A (Annex) Dislocation Fund, L.P. and \$35.0M to Vista Foundation Fund IV, L.P.

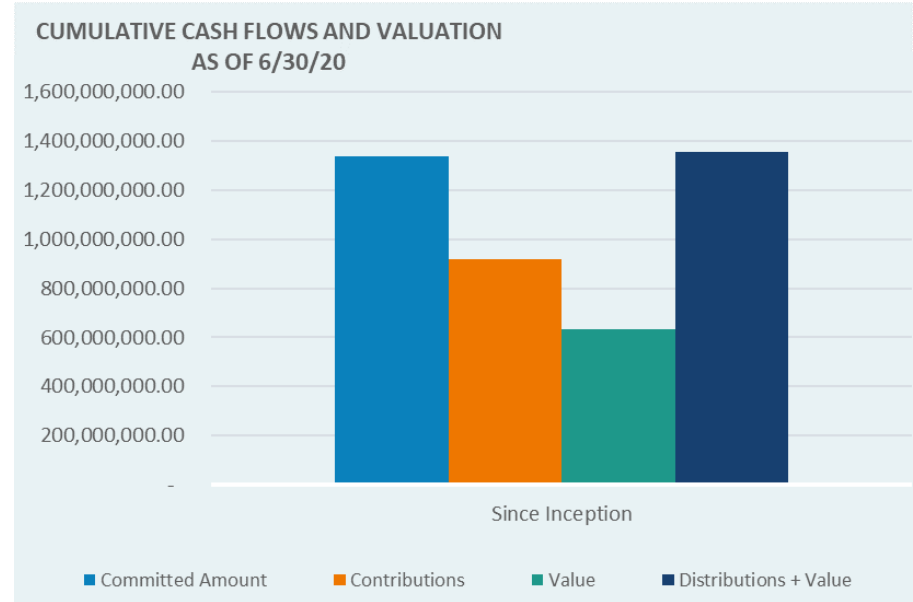
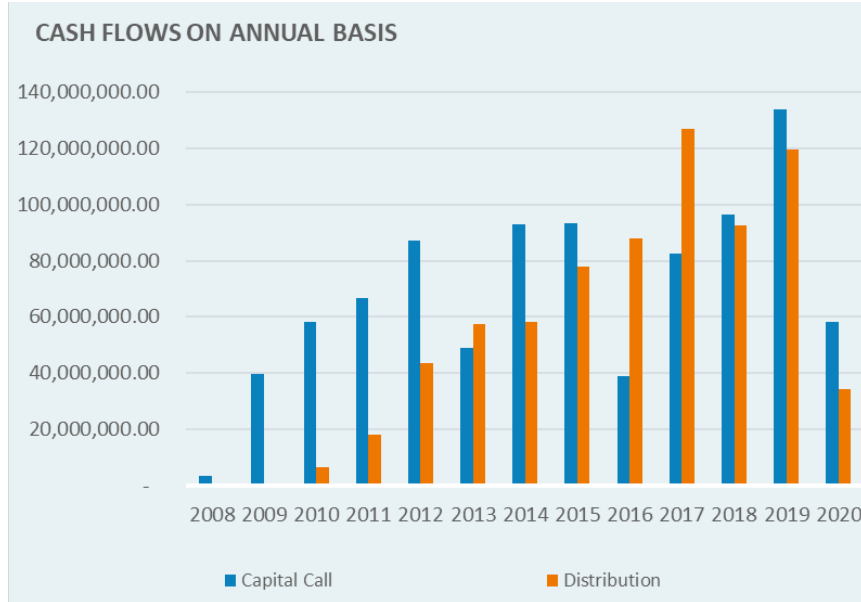
Private Equity Portfolio Performance

Period Ending: June 30, 2020

Performance

- Current Private Equity portfolio is valued at \$633.2M. Capital calls continued to outpace distributions by a ratio of 2.23:1.0 in 1H'20 as commitments have increased over the last several years in order to meet higher allocation target to Private Equity. Portfolio investments have a capital-weighted average life of 4.7 years.
- Since inception (2008):
 - The portfolio has produced +13.65% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 12.58% by 107 basis points. Portfolio returns rank above Median on net IRR, Total Value Multiple (TVPI), and Distribution Multiple (DPI).
 - Relative to same Vintage global benchmark peers, Buyout ranks above Median on net IRR, TVPI, and DPI; Venture Capital ranks above Top-Quartile on TVPI and DPI and slightly below Top-Quartile on IRR; and Debt Related/ Special Situations ranks slightly below Median on IRR and TVPI and above Median on DPI.
- Together with \$723.1M in realized distributions (0.79x cost), Private Equity's Total Value at \$1,356.3M is approximately \$438.0M above \$918.3M cost (1.48x cost), net of fees. Return drivers include:

- Venture Capital up \$199.8M/+118.8% versus cost (Third Rock Venture II & III, General Catalyst VI, Great Hill IV, Khosla Ventures III, IV & Seed B, and NEA 13 and 14, leading), with 105.0% of called capital realized and distributed. Since inception, this portfolio produced 20.25% net IRR versus its peer global benchmark of 16.89% pooled IRR.
 - Buyout up \$191.5M/+40.8% versus cost (Great Hill V and VI, Sycamore Partners I, Warburg XI, and Peakrock Capital Fund II leading) with 71.7% of called capital realized and distributed. Since inception, the Buyout portfolio produced 12.42% net IRR versus its peer global benchmark of 13.90% pooled IRR.
 - Debt-Related / Special Situations was up \$46.8M/+16.6% versus cost (Centerbridge Special Credit Partners, ABRY Advanced Securities II and Senior Equity IV, and OHA Strategic Credit IB leading), with 74.8% of called capital realized and distributed. Since inception, this portfolio produced 7.91% net IRR versus its peer global benchmark of 9.45% pooled IRR.
- Within Private Equity, the current allocation of invested capital is 51.2% to Buyouts, 30.2% to Venture Capital and 18.6% to Debt / Special Situations. Of \$723.1M in cash distributions, 46.5% were from Buyouts, 29.1% from Debt-Related/Special Situations, and 24.4% from Venture Capital.



Private Equity – Portfolio Performance vs. Pooled Benchmark IRR

Period Ending: June 30, 2020

	1-Year	3-Year	5-Year	10-Year	Since Inception ²
Buyout	1.33%	7.74%	8.16%	12.64%	12.42%
<i>Thomson Reuters C/A Global Buyout Benchmark¹</i>	6.71%	12.94%	14.21%	14.86%	13.90%
Venture Capital	12.54%	20.80%	14.59%	20.55%	20.25%
<i>Thomson Reuters C/A Global Venture Capital & Growth Equity Benchmark¹</i>	14.86%	18.68%	14.93%	17.35%	16.89%
Debt-Related / Special Situation	-18.57%	-8.42%	-0.76%	7.05%	7.91%
<i>Thomson Reuters C/A Global Mezzanine & Distressed Benchmark¹</i>	-1.76%	4.40%	6.25%	8.64%	9.45%
Total Private Equity	1.47%	9.80%	9.34%	13.67%	13.65%
<i>Thomson Reuters C/A Global All Private Equity Benchmark¹</i>	5.28%	11.63%	11.49%	13.02%	12.58%

Identical cash flows from the portfolio inception through 6/30/2020 invested in the Russell 3000 Total Return index would yield a 12.96% (Long Nickels). The Private Equity Portfolio outperformed the Russell 3000 by 0.69%. Public Market Equivalent analysis provided by Solovis.

¹ Benchmarks: Thomson Reuters C/A as of 6/30/20, vintage 2008 through present.

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

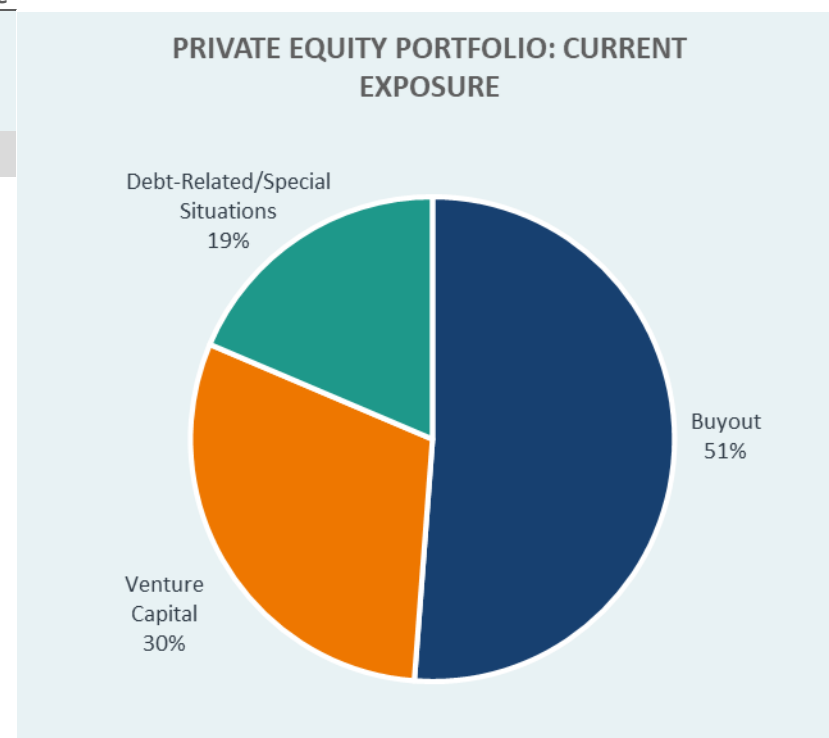
Strategy

Portfolio Diversification

Period Ending: June 30, 2020

Investment Type	Commitment	Current Exposure	Current Exposure as % of Private Equity
Buyout	774,006,508	324,168,060	51.2%
Venture Capital	208,100,000	191,294,872	30.2%
Debt-Related/Special Situations	388,997,675	117,746,157	18.6%
Total Private Equity	1,371,104,183	633,209,089	100.0%

Investment Type	Target Range	Current Exposure as		
		Target Exposure	% of Target	Difference
Buyout	4%-8%	5.4%	4.4%	-1.0%
Venture Capital	0%-3%	1.8%	2.5%	0.7%
Debt-Related/Special Situations	1%-3%	1.8%	1.6%	-0.2%
Total Private Equity	0%-13%	9.0%	8.5%	-0.5%

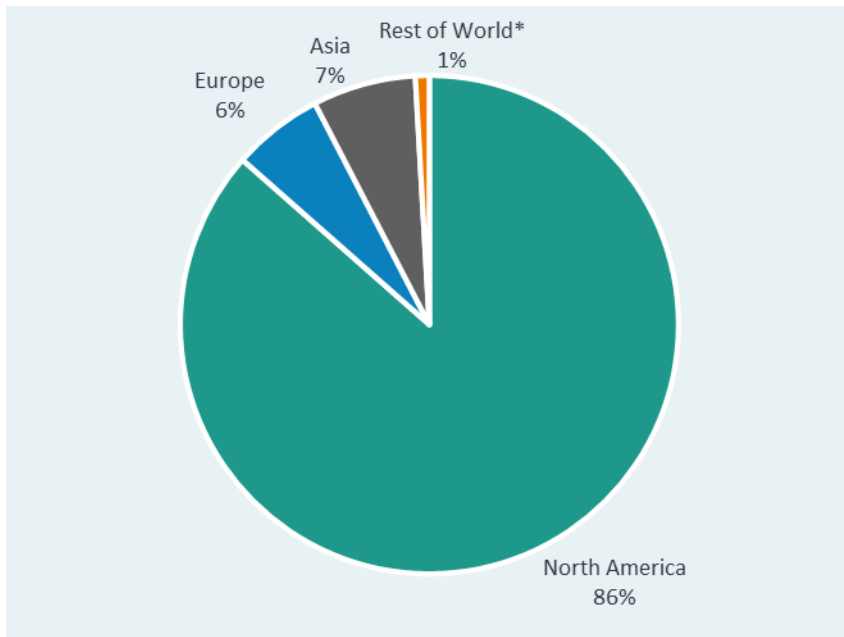


Geography

Private Equity Portfolio Diversification

Period Ending: June 30, 2020

Geography	Current Exposure
North America	514,975,190
Europe	34,986,515
Asia	39,827,249
Rest of World*	5,417,252
Total Private Equity	595,206,206



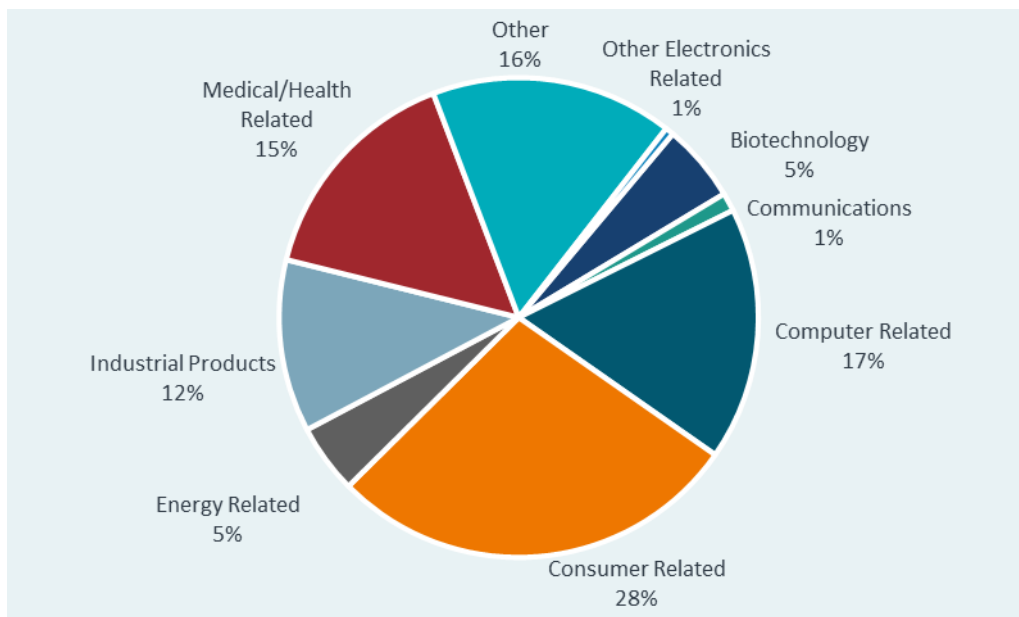
Based on the value of private equity portfolio companies as of June 30, 2020, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

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

Industry Private Equity Portfolio Diversification

Period Ending: June 30, 2020

Industry	Current Exposure
Biotechnology	31,389,852
Communications	7,394,463
Computer Related	101,650,310
Consumer Related	165,938,539
Energy Related	27,772,298
Industrial Products	69,212,269
Medical/Health Related	91,164,453
Other	97,372,892
Other Electronics Related	3,311,130
Total Private Equity	595,206,206

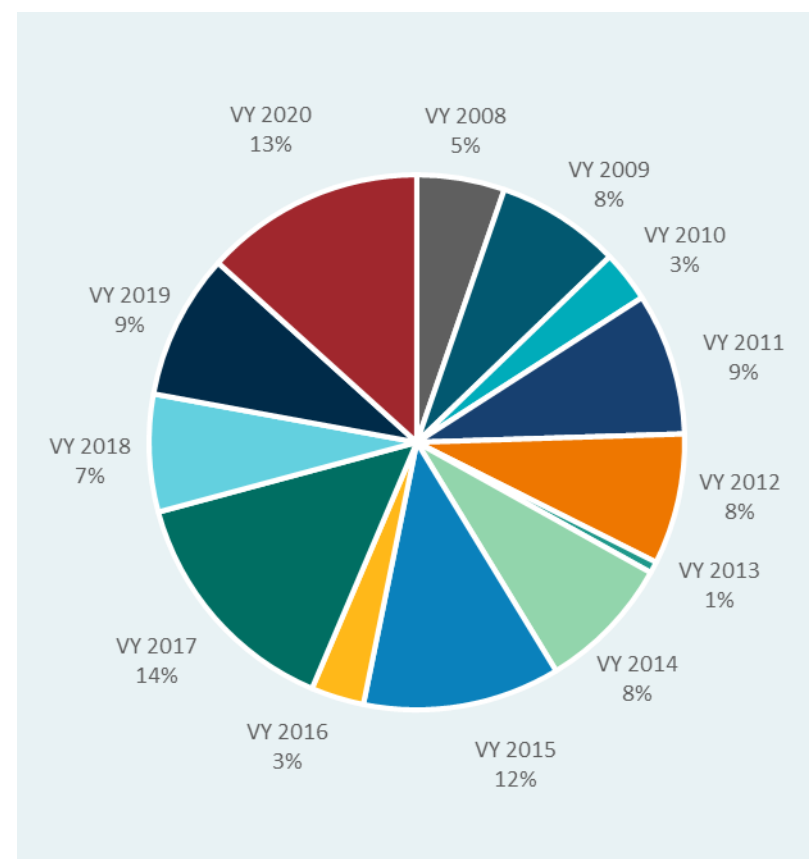


Based on the value of private equity portfolio companies as of June 30, 2020, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

Vintage Year
Private Equity Portfolio Diversification

Period Ending: June 30, 2020

Vintage Year	Commitment as of 6/30/20	% of Portfolio Commitment	Reported Value as of 6/30/20
2008	72,370,855	5.3%	7,008,526
2009	103,500,000	7.5%	28,623,644
2010	42,500,000	3.1%	5,640,952
2011	117,500,000	8.6%	51,731,726
2012	108,500,000	7.9%	100,716,401
2013	10,000,000	0.7%	15,805,656
2014	112,080,000	8.2%	91,538,124
2015	163,250,000	11.9%	126,404,001
2016	43,250,000	3.2%	23,077,301
2017	197,251,820	14.4%	117,862,887
2018	98,000,000	7.1%	12,881,079
2019	121,000,000	8.8%	31,999,450
2020	181,901,508	13.3%	19,919,343
Total Private Equity	1,371,104,183	100%	633,209,089



- **As of June 30, 2020, the Private Equity Portfolio's market value at 7.7% is below its target allocation of 8.0%, but within its target range. In the second half of 2019, ACERA reduced the allocation to Private Equity from 9.0% to 8.0%.**

Appendix

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
ACERA Plan Assets - Total				\$8,208,050		
Private Credit:	4.0%	3-5%	0.5%	\$39,055	\$40,000	\$79,055

Portfolio Summary

- As of June 30, 2020, the Private Credit portfolio had a total market value of \$39.1M. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Credit in Q1 2019, ACERA has contributed \$41.1M towards its Private Credit commitments. Unfunded commitments total \$40.0M.

Portfolio Activity

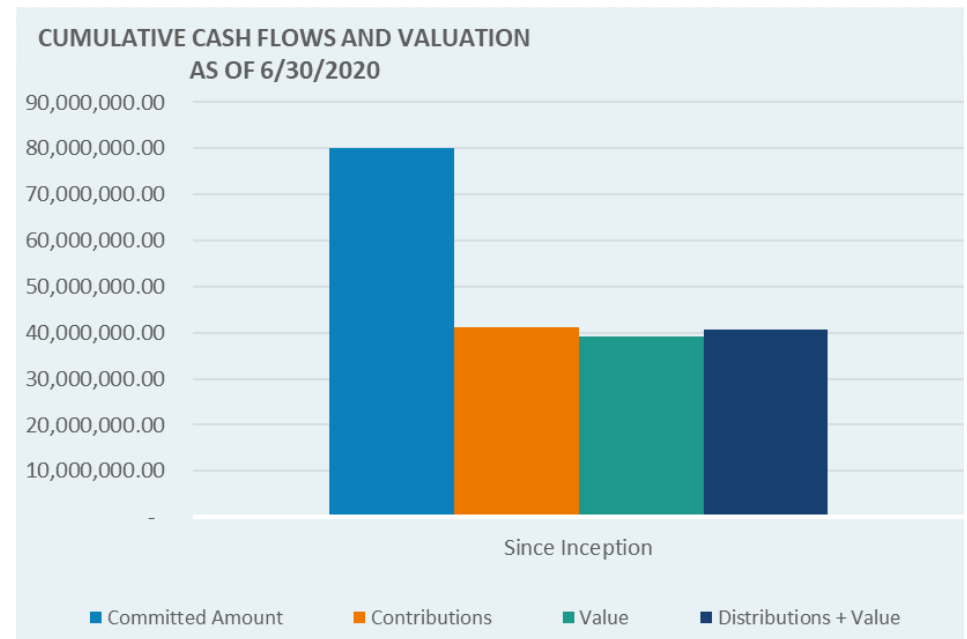
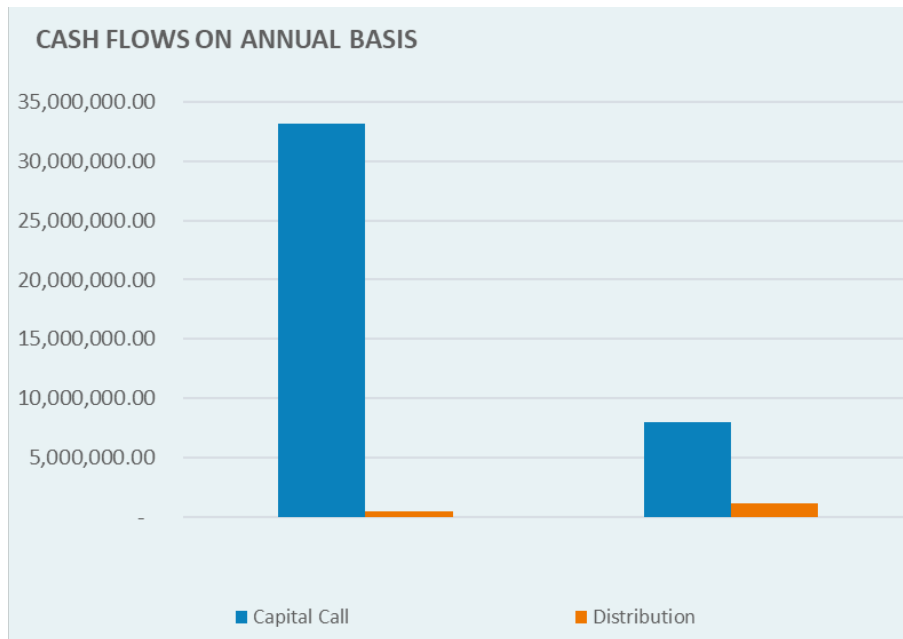
- Most recently ACERA made two new commitments to Private Credit in the second half of 2020: \$75.0M to Blackrock Direct Lending Fund IX, L.P. and \$75.0M to HPS Specialty Loan Fund V, L.P.

Private Credit Portfolio Performance

Period Ending: June 30, 2020

Performance

- The Private Credit’s performance, as measured by net IRR, is -2.03%, 115 bps above the same cash flow invested in the S&P LSTA U.S. Leveraged Loan 100 Index of -3.18%. With a capital-weighted average life of investments at 0.6 years, portfolio IRR is not meaningful.
- The portfolio is currently valued at \$39.1M. Together with \$1.6M in realized distributions (0.04x cost), Private Credit’s Total Value at \$40.6M is approximately \$500.0 thousand below \$41.1M cost (0.99x cost), net of fees.
- Capital calls dominated the portfolio’s cash-flow activity as new investments are made to reach the target exposure.





**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2020

Real Assets Review

Alameda County Employees' Retirement Association

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Real Asset Outlook

Outlook summary

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Private Real Estate	Negative impacts from the economic slowdown caused by Covid-19 will likely take several quarters to play out in the appraisal process for existing assets. Transaction activity has come to a halt, making pricing comparisons difficult. Retail/hotel/resort/casinos will likely feel the greatest impact. Income declines are more likely than prior downturns.	<ul style="list-style-type: none"> — The duration of the economic slowdown will impact the degree of negative real estate performance. Core real estate returns tend to have high correlation to overall GDP growth. — A sharp rise in interest rates could lead to increased cap rates, hurting values. 	Our outlook remains neutral; however we are taking a barbell approach. The lag effect of the appraisals process will create a period of several quarters where valuations are not reflective of perceived value. Redemption requests are typically met with gates or redemption restrictions. We recommend rebalancing redemptions in core real estate where possible and deploying capital in non-core strategies with fresh capital.	Neutral
REITs	REITs responded sharply downward in March when the severity of coronavirus forecasts filtered in. REITs were down almost 40% YTD at their nadir with some sectors such as hotels and casinos down over 70%. A sharp recovery occurred, but not all the way back. Through mid April REITs were down ~25%, but well off their lows.	<ul style="list-style-type: none"> — REITs have higher leverage than core real estate and have higher exposures to non-core sectors such as hotels, self-storage, for rent residential and senior/student housing. — Rising interest rates can have a negative effect on REITs and all yield-sensitive assets over short periods. — REITs are sensitive to economic decline and general equity market volatility. 	We remain neutral on REITs. Although the recent decline in performance has increased discounts to NAV, the underlying NAVs have not yet adjusted. REITs can provide liquid exposure to real estate with the following caveats: high sensitivity to equity market volatility over shorter holding periods, higher leverage and higher exposures to non-core sectors such as hotels, self-storage, for-rent residential, etc.	Neutral
Commodities	Commodities futures have had lackluster performance over the last decade. An upward sloping futures curve for most of the last decade has created a headwind for the asset class. In 1Q, an oversupply of energy, coronavirus demand destruction, and declining inflation concerns has exacerbated performance issues.	<ul style="list-style-type: none"> — Oversupply issues, especially across the energy complex could have a lasting impact. — Depending on the depth of the recession, demand for energy and industrial metals could be reduced for an extended period. — Inflationary pressures remaining low would continue to be a headwind. 	Commodities will likely face both supply and demand issues over the intermediate timeframe. Contango remains steep across the complexes and lower rates will keep collateral returns low. Inflation driven by excess demand is unlikely in the intermediate horizon and any inflation led by excess monetary supply is unlikely to have a direct benefit to commodities.	Negative

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
TIPS	Declining nominal interest rates have led to positive total returns, however declining inflation has caused TIPS to underperform nominal bonds. Breakeven rates, while volatile, are down across the board.	<ul style="list-style-type: none"> Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS. Continued low rates create a high cost of carry. 	Low current yields and modest inflation expectations have led to other real assets offering higher total return potential than TIPS.	Negative
Infrastructure	Infrastructure assets have not been spared during the broad market sell-off in 2020. Coming into the year, we were especially bearish on transportation infrastructure assets (airports, toll roads, ports, etc.) due to valuations and significant GDP risk. We anticipate that Covid-19-related impacts on travel will generate more interesting deals for client capital. Power and energy-related infrastructure has also been hit hard by the economic fallout though we are cautious about taking significant commodity-price risk. Finally, the telecom/data space remains an attractive segment for infrastructure capital and we anticipate putting more money to work in this area going forward.	<ul style="list-style-type: none"> Regulatory changes are creating investment challenges in parts of Europe as low interest rates are putting downward pressure on the allowed returns by investors. We are cautious on utilities where returns are set by governmental bodies. Transportation assets are particularly vulnerable in the current environment. We may see interesting opportunities emerge from over-levered infrastructure funds, but we'd be a patient buyer. 	The asset class offers a compelling return profile that aligns well with long duration pools of capital. We favor private infrastructure funds that have capabilities to improve operations and manage complex deal structures..	Positive
Oil & Gas	The oil & gas industry entered 2020 on shaky legs following several years of weak commodity prices. The dual impact of Covid-related demand destruction and the disintegration of OPEC+ supply controls sent oil markets into a tailspin. For independent drillers, current prices are far too low for them to operate profitably. We expect a large number of bankruptcies across the energy industry vertical and a challenging time ahead raising capital once prices stabilize.	<ul style="list-style-type: none"> Slowing demand for oil, mostly driven by slowing economic growth, is a key concern for the industry. Longer-term, oil demand is expected to decline as non-carbon sources of power outcompete hydrocarbons. Access to capital within oil & gas presents a challenge for an industry that requires large capital expenditures to grow. Geopolitics and the tension between OPEC and non-OPEC producers presents an additional risk for investors. 	We had been cautious about energy going into 2020 but industry fundamentals deteriorated far more than we would have predicted. There is too much uncertainty around oil/gas demand, access to capital, and geopolitics for us to gain comfort. We recognize that someone will likely make money from the devastation occurring in upstream energy, but we aren't willing to place bets just yet.	Negative

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Renewables	Operating renewable energy assets remain expensive with yields in the mid-single digits. New development projects will slow down in 2020 but will likely see a rebound shortly after as solar and wind farms are now the cheapest form of new build electricity generation for over two-thirds of the global population, and countries shift their energy sources to meet pledges to become carbon neutral.	<ul style="list-style-type: none"> As corporations shore up capital to preserve liquidity, capital expenditure dedicated to developing and purchasing renewable energy assets may shrink. There is also a potential for government subsidies and tax incentives to be reduced as governments are forced to dedicate resources to the current crisis as opposed to the long-term impact of climate change. 	While we believe the development of solar and wind farms is an attractive investment, it is difficult to find scalable opportunities that warrant deploying capital into a dedicated renewable energy fund. Infrastructure funds with a track record of successful development projects within broader portfolios are the most effective way to gain exposure to the sector.	Neutral
Mining	The mining industry has not suffered quite like the oil & gas market, but it has been a weak sector for several years. Unlike oil, we see growing demand for industrial metals like copper, nickel, zinc and steel inputs as electrification takes market share from carbon-based power generation.	<ul style="list-style-type: none"> Global GDP growth and the economy in China are the two biggest risks in the sector. China represents a disproportionately large buyer of industrial metals, so its economy and industrial output have a large impact on metal prices. 	Longer-term, we believe the demand outlook looks favorable for several industrial metals. There will be near-term headwinds from Covid-19 but as the global economy recovers, we expect a tightening of supply/demand for mining commodities.	Positive
Midstream Energy / MLPs	Coming into 2020, midstream companies were trading at levels that indicated the market was skeptical about company cashflows and future earnings. Falling oil prices from the impact of Covid-19 and news that OPEC & Russia would no longer cooperate to balance the supply side of the market compounded negative sentiment. With so much uncertainty now present in the energy market, we would avoid companies exposed directly or indirectly to oil price movement.	<ul style="list-style-type: none"> Falling oil/gas prices could curtail drilling programs and reduce production volumes which would hurt MLP cash flows. Regulatory risk is low for most of the midstream space though there are pockets of risk in states like Colorado and New York where regulations could greatly impact drillers and pipeline owners. 	We have shifted our outlook to negative for midstream energy given the challenges that emerged in 2020. Though prices for listed midstream stocks have plummeted, we are seeing a wave of distribution cuts that will reset the sectors income yield and depending on the duration of the oil price downturn, could see a spike in bankruptcies.	Negative

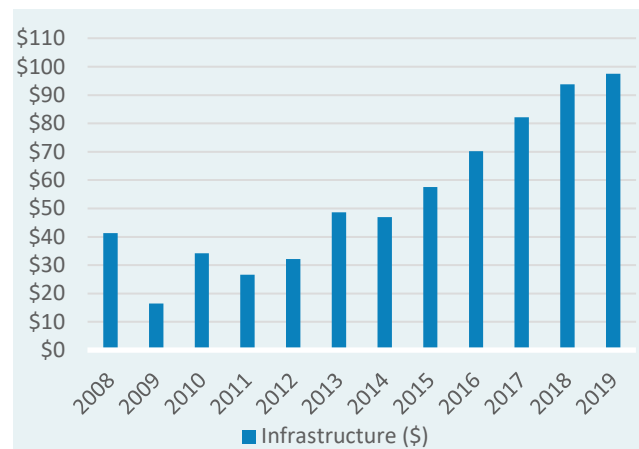
Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Timberland	Timber markets in North America continue to face challenges from excess inventory, low interest rates and unfavorable transaction market. Stumpage and lumber prices are facing near-term headwinds from Covid-19 as home building softens exports to Asia have stalled. Our outlook on timber has been negative for several years due to the headwinds the asset class has faced. Despite broadly negative sentiment towards the timber industry, we struggle to make a case for returns to reach higher than mid-single digits.	<ul style="list-style-type: none"> — Coming off trade war headwinds, the timber market hit another bump when Covid-19 stalled exports to Asia and home building activity declined. An already oversupplied timber market will take time to work through excess inventory. — Timber markets outside the U.S. face varying degrees of currency and political risk which in many cases has resulted in disappointing returns for investors. With few exceptions, returns do not justify the additional risk. 	For most investors, high single-digit expected returns for timberland in the U.S. is too low for the illiquidity and risk assumed within the asset class. Fundraising has been slow for several years which has resulted in a slow transaction market and less competition but finding attractive deals remains elusive.	Negative
Agriculture	Farmland prices in the Midwest leveled off after 2014 but remain too expensive for the income and return potential. We are interested in opportunities where we can control more of the value-chain associated with food production.	<ul style="list-style-type: none"> — Similar to timber markets, we have concerns around valuations and the risk/return proposition for farmland investments. — The income potential within farmland is more attractive than timber and the global growth in food is a more compelling macro trend than pulp and paper but we remain bearish on the sector, in general. 	Currently we find the asset class to be broadly expensive. Selectively looking at agriculture business investments where crop and land are a component of a broader value-add investment strategy.	Negative

Infrastructure

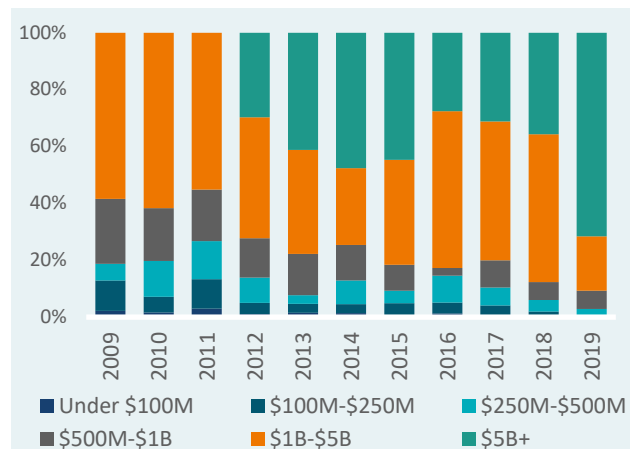
- Fundraising within Infrastructure reached a record high of \$98 billion in 2019, according to Preqin. In addition, large infrastructure funds are capturing a greater share of the overall market, with around 70% of the capital raised in 2019 committed to infrastructure funds that were targeting at least \$5B in assets.
- In 2019, we saw a surge in deal activity for telecom and energy (ex. renewables). We've been bullish on the telecom theme given the tailwinds around data usage growth globally. Social distancing measures have heightened our collective use of data as we learn to work remotely and conduct meetings via videoconferencing. The growth in energy transactions, led by several midstream take-privates, has likely not worked quite as well. The collapse in oil prices has devastated oil/gas producers which will flow through to the pipeline owners as volumes fall from production declines.

FUNDRAISING IN INFRASTRUCTURE



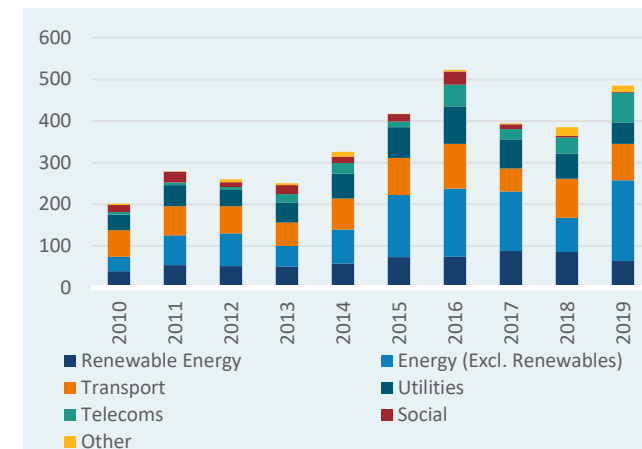
Source: Preqin

INFRASTRUCTURE FUNDRAISING BY FUND SIZE



Source: Pitchbook

INFRASTRUCTURE DEALS BY SECTOR

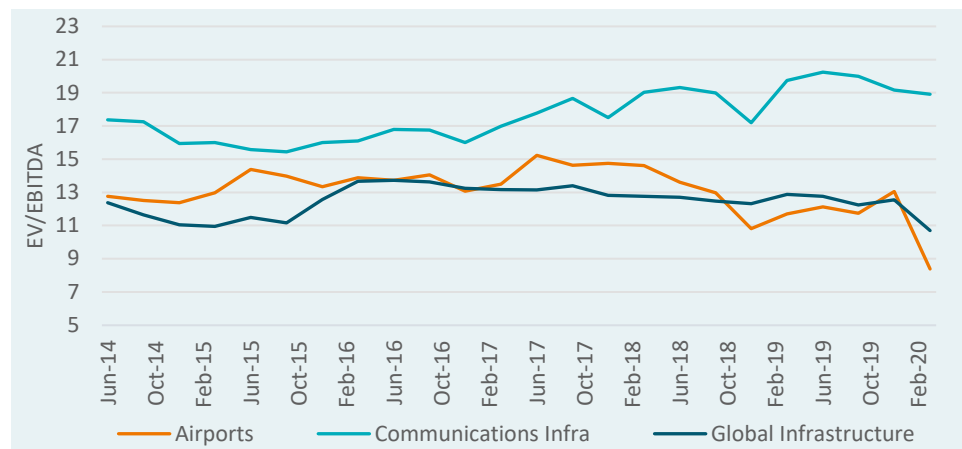


Source: Preqin

Infrastructure (cont.)

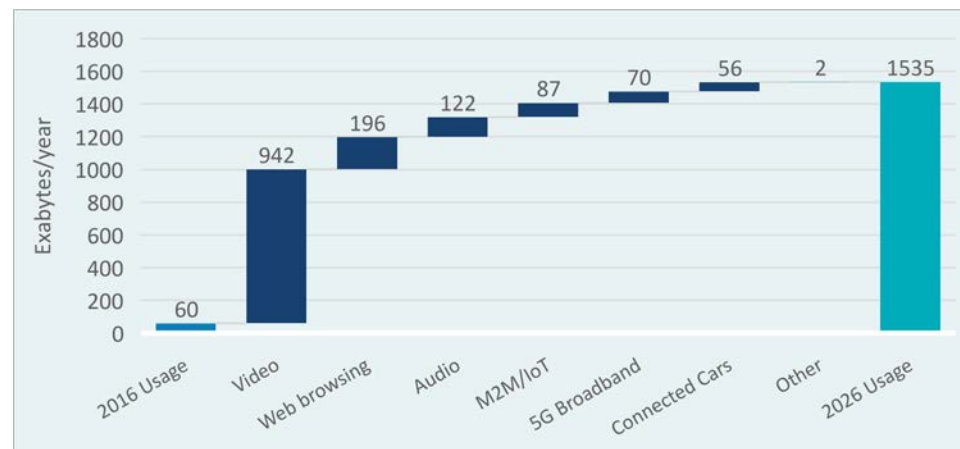
- Transportation infrastructure (i.e. ports, toll roads, airports) is experiencing a material decline in revenue due to travel restrictions and slowing global trade. Airport passenger traffic fell as much as 50-90% during March as the full impact of social distancing orders took effect. Cargo volumes were down 30% at the Port of Los Angeles, the largest port in the U.S. In contrast, communications infrastructure has either seen little-to-no impact or has benefited from a surge in data usage. Verizon reported traffic across its networks increased 20% from pre-coronavirus levels as video streaming, gaming and web traffic surged.
- Valuations within sectors most impacted by Covid-19 fell sharply during the first quarter, reflecting the near-term business impact and higher risk premiums. Listed airports, for example, fell from an average EV/EBITDA multiple of 13.0x to 8.0x in March 2020. Having been bearish on the transportation sector for a couple years, the disruption to infrastructure assets could present an interesting entry point for new capital.
- Communication infrastructure trades at a considerable premium, 19.0x vs. 10.5x for infrastructure broadly, which is a reflection of the stability of their earnings and future growth potential. The macro tailwinds within mobile data usage and video streaming are compelling, though valuations, at least within public markets, appear to be pricing in much of the future growth opportunity.

INFRASTRUCTURE VALUATIONS – EV/EBITDA



Source: Bloomberg; Dow Jones Brookfield Infrastructure; S&P Global Infrastructure

GROWTH IN GLOBAL MOBILE DATA TRAFFIC (EXABYTES PER YEAR)

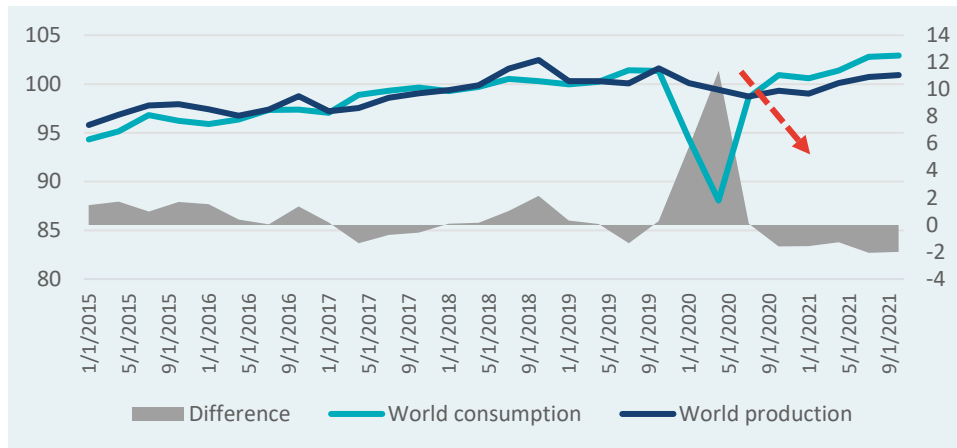


Source: Altman Vilandrie 2018

Energy – Oil/Gas

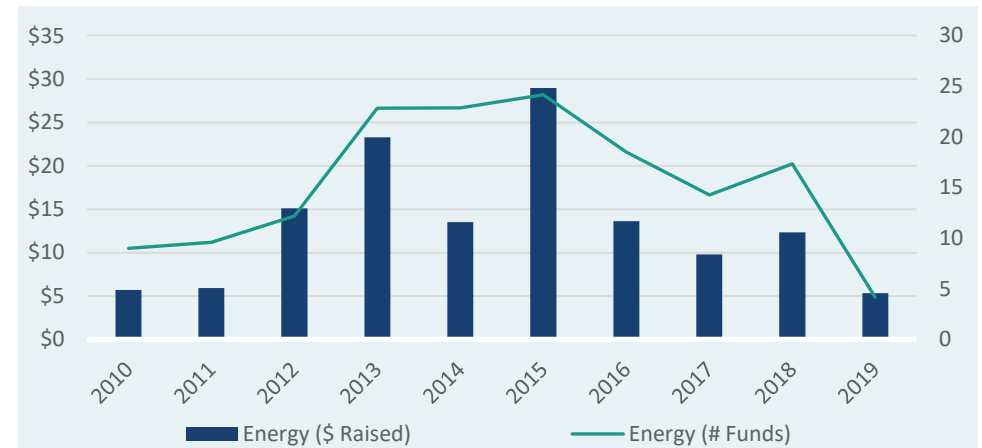
- The oil/gas industry would seem to be cursed as weather, geopolitics, human pandemics and investor antipathy have collectively hit the sector when it was already severely wounded. News of a breakdown in the alliance between OPEC and Russia on supply management will likely result in another round of bankruptcies and capital destruction for North American Oil & Gas companies. Forecasts for oil demand are still being adjusted downward but are projected to decline 5-10% in 2020. An already oversupplied market will take time to recover from the steep decline in demand but for U.S. drillers, time is in short supply.
- We do not see private capital stepping in to provide much needed debt and equity infusions as they did in 2015/'16. Fundraising, both in equity and credit strategies, to support the energy industry has been anemic. Absent a sharp recovery in oil prices over the next 6 months, we believe a substantial wave of restructurings will occur and U.S. shale production will fall sharply as small and financially weak operators are taken out of the market.
- For now, we would recommend investors avoid putting new capital into the sector. We are more comfortable potentially missing out on a market bottom than risking additional capital that in our view is likely to become impaired.

WORLD CONSUMPTION/PRODUCTION OF LIQUID FUELS PER DAY



Source: EIA

FUNDRAISING IN OIL/GAS

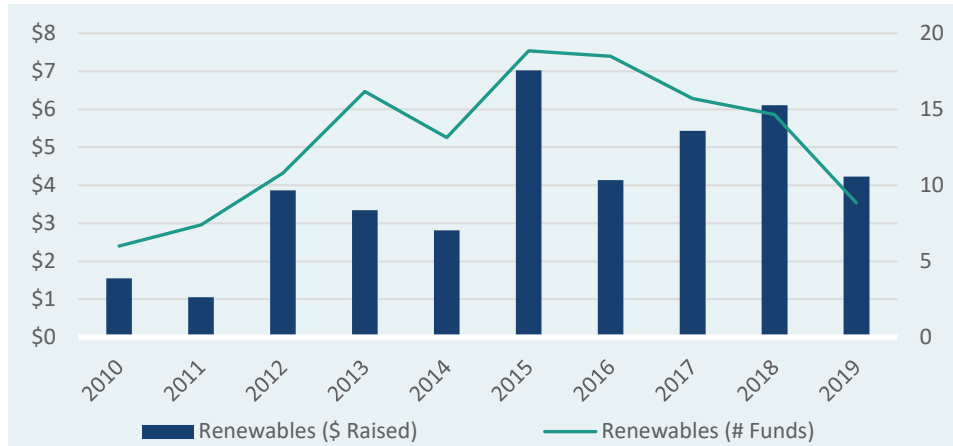


Source: Preqin

Energy – Renewables

- Dedicated renewable energy fundraising moderated in 2019 to just over \$4 billion. However, this figure does not include energy funds that invest in both conventional energy sources along with renewable sources, or infrastructure funds that target renewable energy investments as a portion of their strategy. Taken as a whole, investment in the sector has been on a consistent upward trend, with only more room to grow as countries and corporations aim to become carbon neutral. According to Bloomberg¹, over \$10 trillion of investment in new renewable energy generation assets is needed by 2050 in order to meet demand.
- The sector has held up strongly through the Covid-19 crisis due to stable demand for electricity and the relative ease of operations for solar and wind farms. New development projects will likely slow in the short term as financing dries up and permitting processes come to a halt, but existing assets will be largely unaffected.
- Despite a strong outlook for demand, there are challenges to deploying capital in the space. Investments in operating assets are not compelling as returns remain in the mid-single digits, and it is difficult to find scalable development opportunities. We currently believe the best way to gain exposure is through broader infrastructure funds that include investments in the sector as a component of a diversified portfolio.

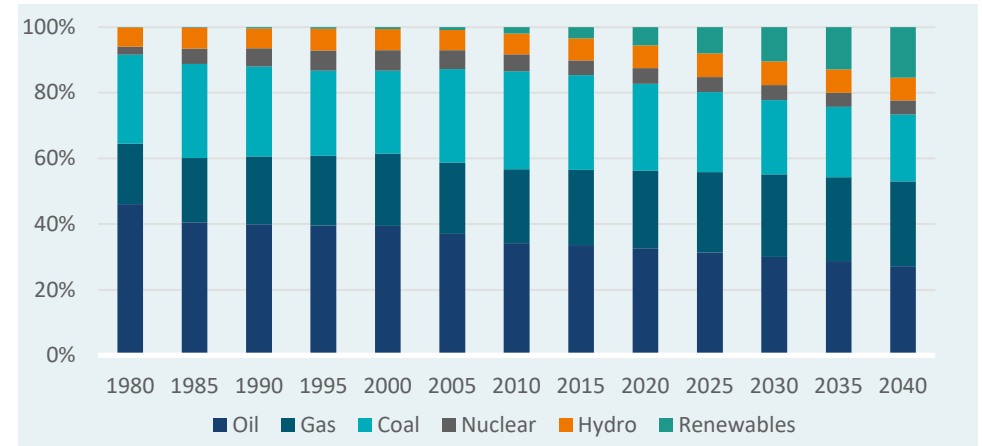
FUNDRAISING IN RENEWABLES



Source: Preqin

1. Bloomberg New Energy Finance, New Energy Outlook 2019.

GLOBAL ENERGY SOURCES

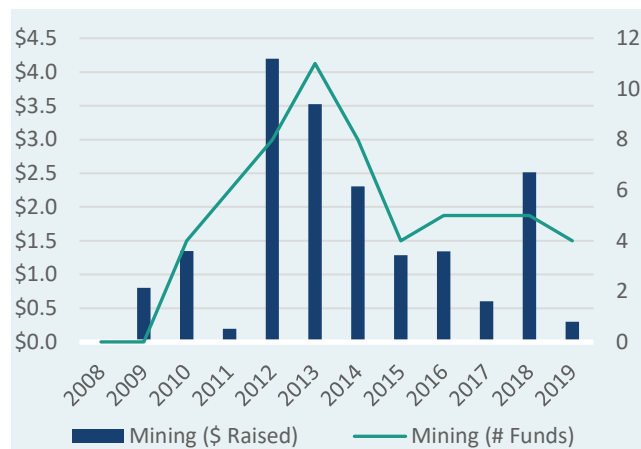


Source: BP

Metals and mining

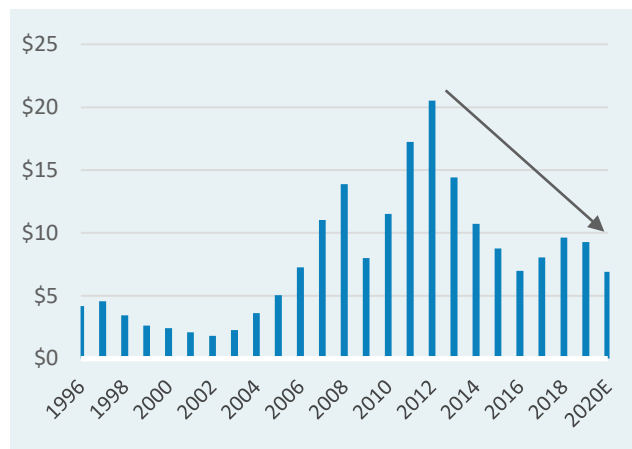
- Fundraising in the private equity mining segment has been lumpy and quite modest since the GFC. 2019 saw a significant decrease after a notable uptick in fundraising in 2018. The landscape for fundraising in mining will be one to watch as more institutions implement strong ESG programs that will undoubtedly impact mining GPs. We could see a scenario where fundraising improves if investors see the benefit of funding the extraction of materials that contribute to our shift away from fossil fuels.
- After a modest recovery from a cyclical low in 2016, mining exploration budgets are expected to decrease by 29% in 2020 due to limited access to financing and lockdown measures in place in many countries mining companies operate. Despite short term challenges, macro trends of increasing demand for industrial metals remain in place. Our overall outlook within mining is positive with a notable challenge in finding enough investment opportunities that meet our underwriting criteria.
- On the investment side, we have participated in the mining sector by backing teams with expertise in financing mining projects which delivers a high income return with some upside associated with a structured equity security. We are more bullish on base/industrial metals which longer-term will benefit from a shift away from fossil fuels. We are less bullish on bulk and energy-related commodities.

FUNDRAISING IN MINING



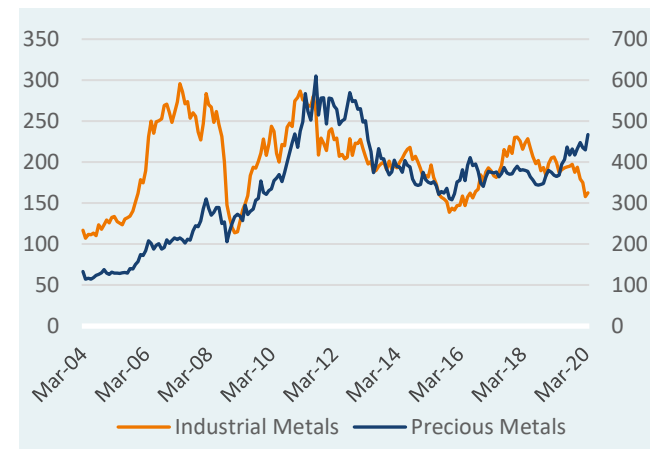
Source: Preqin

CAPITAL EXPENDITURE IN MINING (\$B)



Source: S&P Global Market Intelligence

METAL PRICES

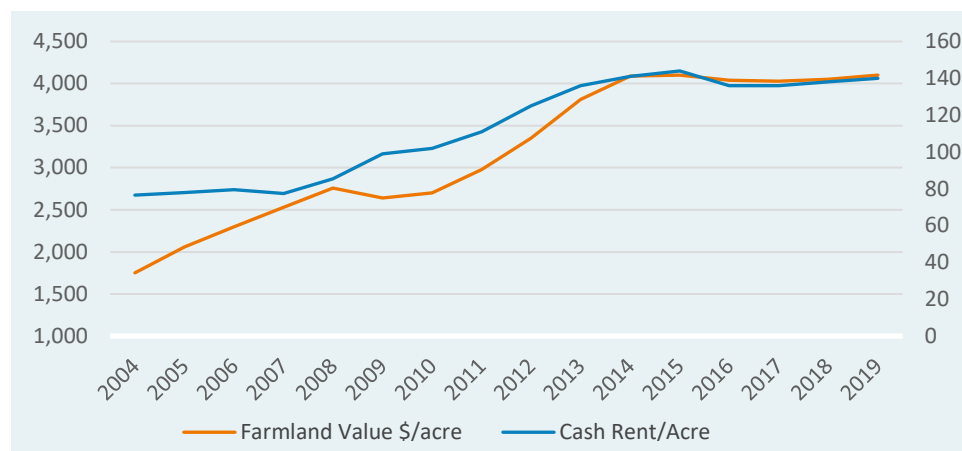


Source: Bloomberg

Agriculture

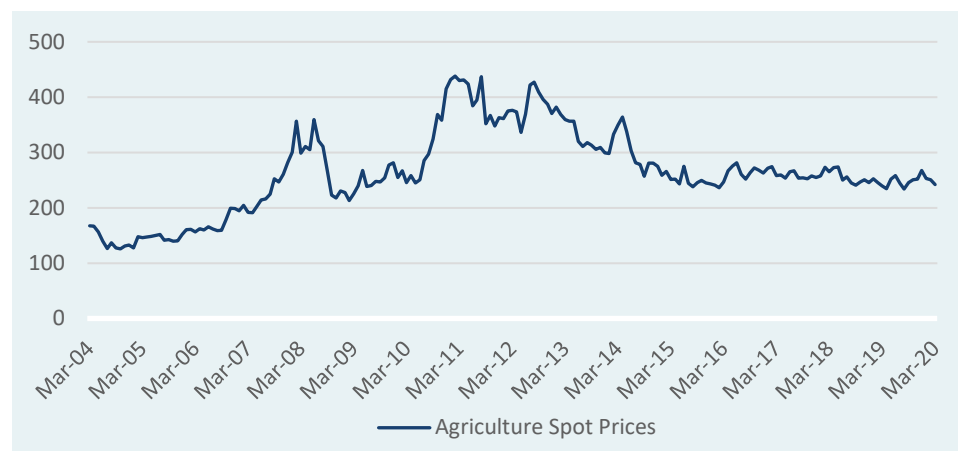
- Farmland values nationally have remained largely flat since 2014, despite a challenging commodity price environment over the last 5 years. That has put pressure on investment returns as income yields have been flat-to-down and capital appreciation has not materialized. For new investors, the investment return potential looks disappointing as rental yields remain stubbornly low (3-4% on average) and land values appear expensive.
- In the row crop segment, rental yields hover around 3% which is insufficient in our opinion for most institutional investors. Permanent crops offer the potential of higher income yields but also carry greater risk and operational expertise. There are additional ways to add value through crop selection, improving crop yields and selling land for higher-and-better-use cases. In addition, managers can control a greater share of the food production value-chain which carries higher returns but also higher operational risk.
- We tend to favor agriculture strategies that both own land for crop production and control the operating verticals that bring food to the consumer. Strategies that can capture more value through processing, storage and marketing, offer the potential of higher returns.

U.S. NATIONAL FARMLAND VALUES VS CASH RENTS



Source: USDA

BLOOMBERG AGRICULTURE PRICES

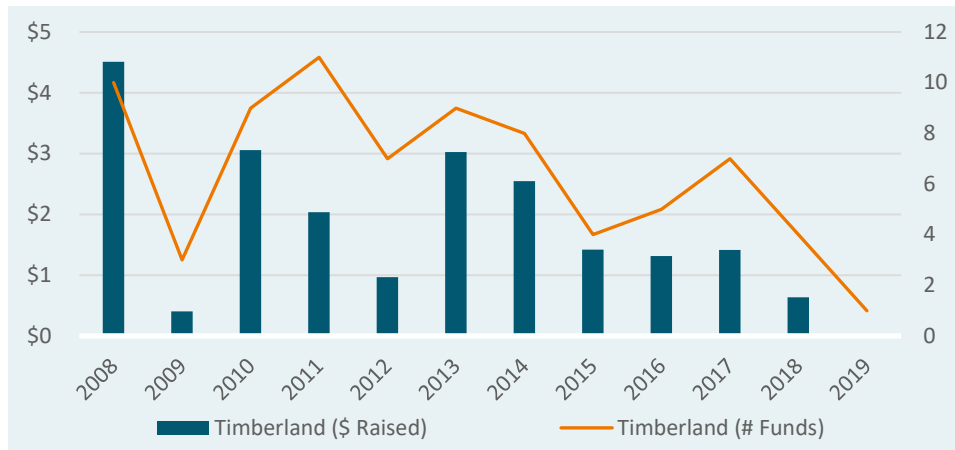


Source: Bloomberg, as of 3/31/20

Timberland

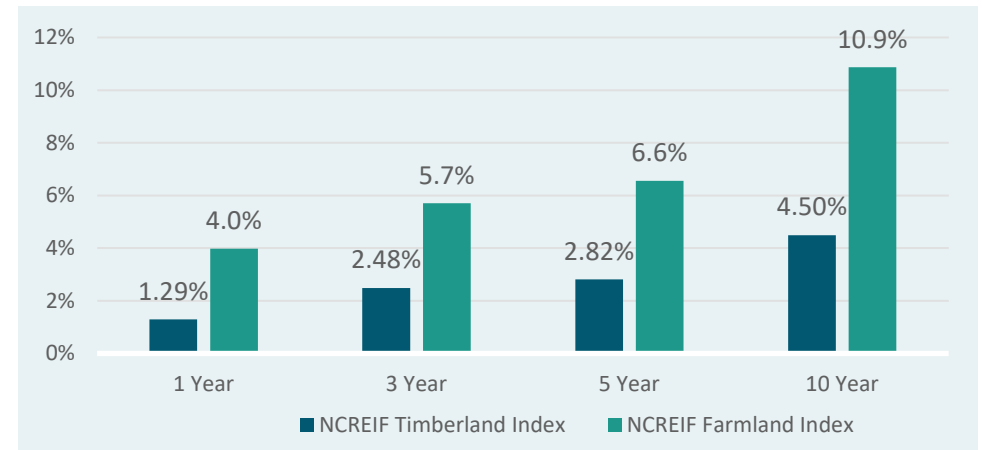
- Fundraising has continued to be a challenge within the timber industry with Preqin having 1 timber fund raised in 2019. Despite a lack of capital being raised by TIMOs, the investment opportunity within timber has not materially improved.
- One other effect of the fundraising trend in timberland is the cluster of “zombie” funds raised in the pre-GFC period that are finding liquidity a challenge. The mismatch in buyers and sellers in other markets could present a buying opportunity but a reluctance on the part of selling timber managers to realize a loss has kept prices elevated and thus expected returns low.
- The past 10 years have been lackluster for timber investors, achieving a trailing average return of 4.5%, according to the NCREIF Timberland Index. Many TIMO funds have fared worse than the index due to leverage and/or less favorable geographic exposures within their portfolio. The 10-year returns prior to the GFC were more than double the returns experienced after, so investors may ask, which returns we are likely to see in the decade ahead. We believe the asset class was undergoing a unique shift in the 90s and early 2000s that drove high double-digit returns that aren’t repeatable in today’s market.

FUNDRAISING IN TIMBERLAND



Source: Pitchbook/Preqin

TIMBERLAND TRAILING PERFORMANCE

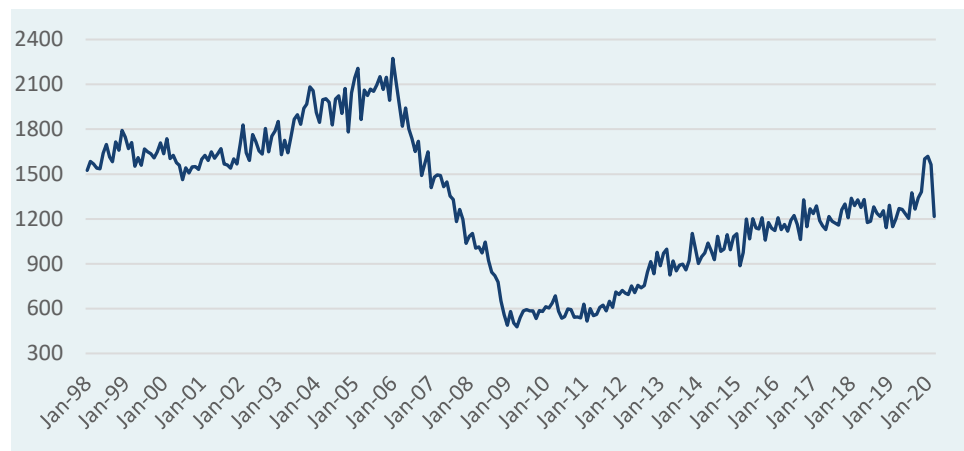


Source: NCREIF (as of 3/31/20)

Timberland (continued)

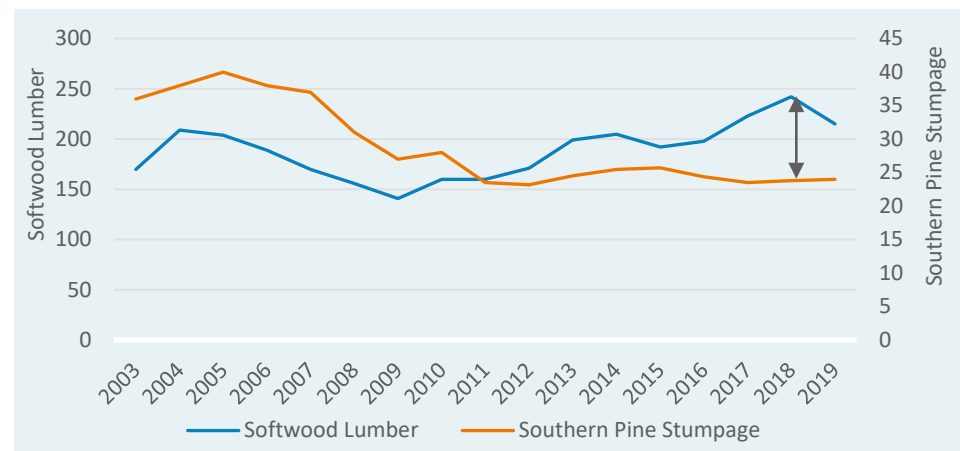
- Housing starts have experienced a slow rebound since the GFC as millennials delayed buying and urban living trends reduced demand for single family homes. There was a surge in housing starts in 2019 but the impact of Covid-19 caused a sharp reversal in the first quarter of 2020.
- As the chart on the bottom right indicates, one of the challenges that timber investors have faced is that the price they received for their trees (southern pine stumpage) began to decline during the GFC and largely never recovered. With housing construction turning around in 2015/16, lumber prices began to respond but the prices that timberland owners received did not. Two critical issues have kept stumpage prices depressed, excess supply of trees in the region and a lack of mill density that has created bottle necks in lumber production.
- The impact of Covid-19 is likely to be a short-term headwind for lumber prices and the timber industry as a whole. That said, given the lack of highly leveraged players in the timber market, we don't expect a stressed buying opportunity to emerge.

U.S. HOUSING STARTS



Source: St. Louis Fed, as of 3/1/20

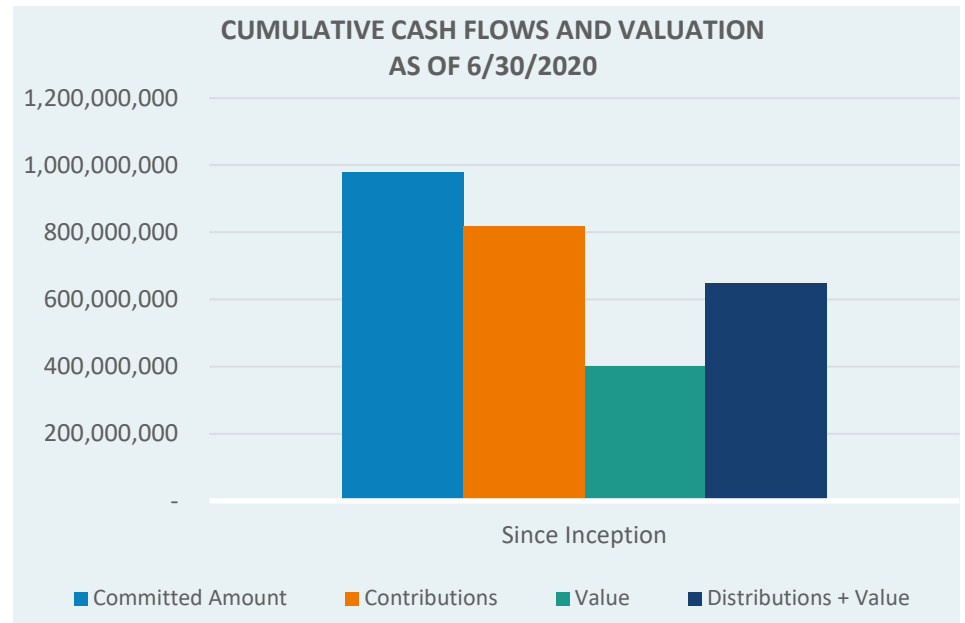
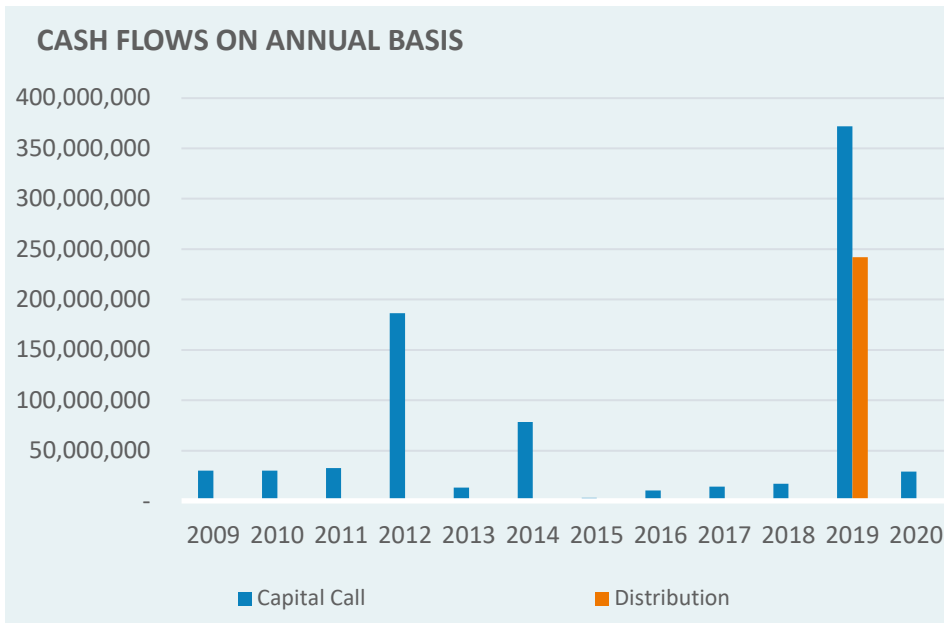
SOUTHERN PINE STUMPAGE VS SOFTWOOD LUMBER PRICES



Real Asset Performance

Performance

— ACERA’s Real Asset Pool has produced a -6.45% IRR since inception. The portfolios poor performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and from earlier investments in energy (Sheridan). More recent investments in CIM Infrastructure II, EQT Infrastructure IV, and ISQ Global Infrastructure II have emerged from their j-curve but are still too early in their fund life to gauge performance.



Real Assets Performance vs. Pooled Benchmark IRR

Period Ending: June 30, 2020

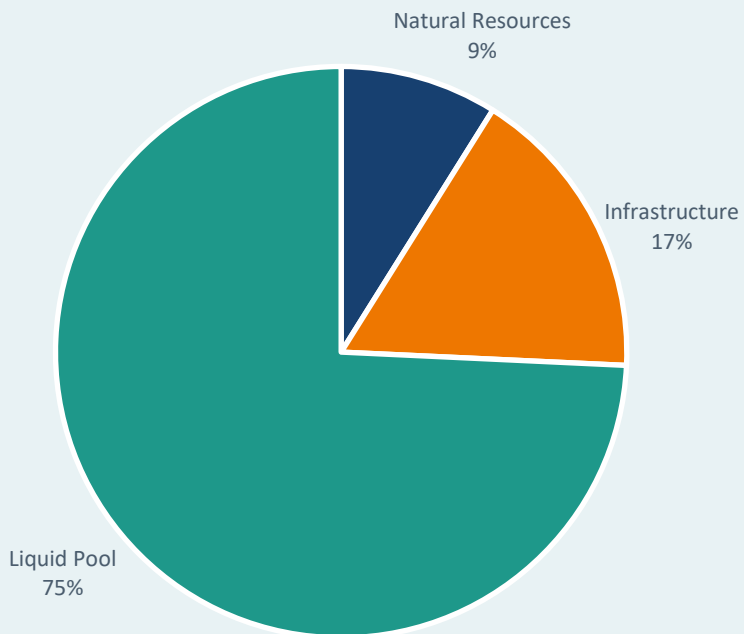
	1-Year	3-Year	5-Year	10-Year	Since Inception
Natural Resources Funds	-15.50%	-18.81%	-14.00%		-15.45%
<i>S&P Global Natural Resources Index¹</i>	-27.67%	-9.94%	-7.25%	-5.71%	-5.71%
Infrastructure Funds	12.09%	9.24%			8.43%
<i>S&P Global Infrastructure Index¹</i>	-35.34%	-19.74%	-17.43%	-17.43%	-17.43%
Liquid Pool Funds	-13.56%	-5.75%	-5.72%	-6.57%	-6.36%
<i>Bloomberg Commodity Index¹</i>	-0.83%	-0.32%	-3.98%	-5.95%	-5.78%
Total Real Assets	-11.38%	-5.97%	-5.55%	-6.63%	-6.45%
<i>Blended Real Assets Benchmark²</i>	-15.80%	-1.05%	0.48%	2.46%	3.52%

¹ Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 12/31/2019. Analysis provided by Solovis.

² Blended Real Assets Benchmark calculated on a time-weighted return basis

Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Natural Resources	104,000,000	34,844,398	8.7%
Infrastructure	185,000,000	65,821,956	16.5%
Liquid Pool	689,235,893	298,930,111	74.8%
Total Portfolio	978,235,893	399,596,465	100.0%

REAL ASSETS PORTFOLIO: CURRENT EXPOSURE

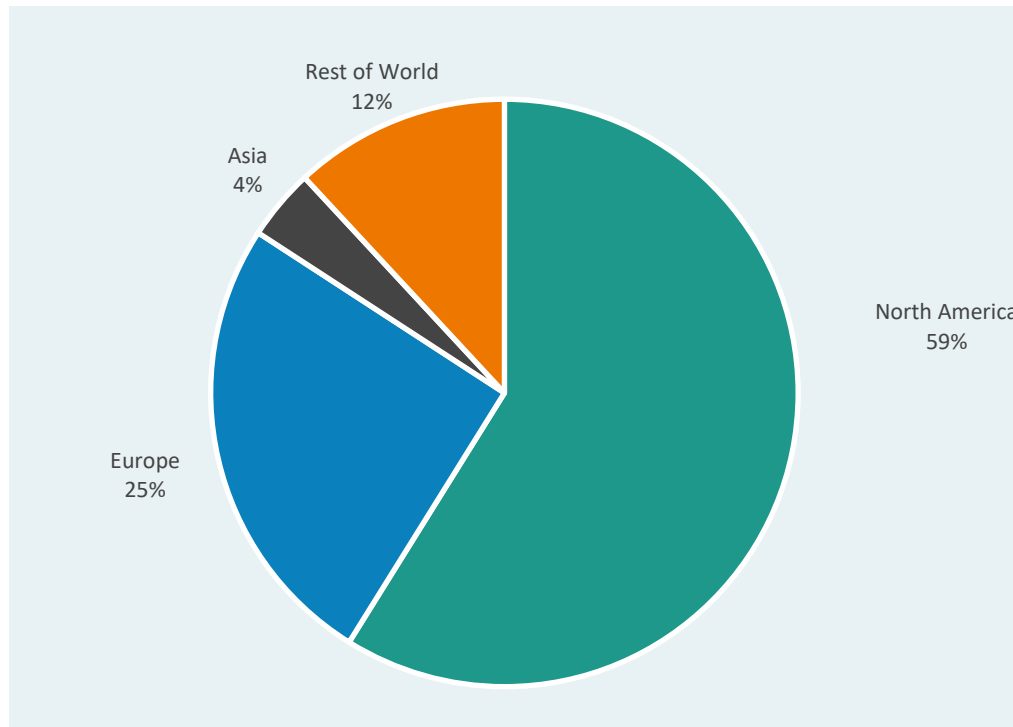


Geography Portfolio Diversification

Period Ending: June 30, 2020

Geography	Reported Fair Value
North America	59,261,132
Europe	25,479,527
Asia	3,942,135
Rest of World	11,983,560
Total Portfolio*	100,666,354

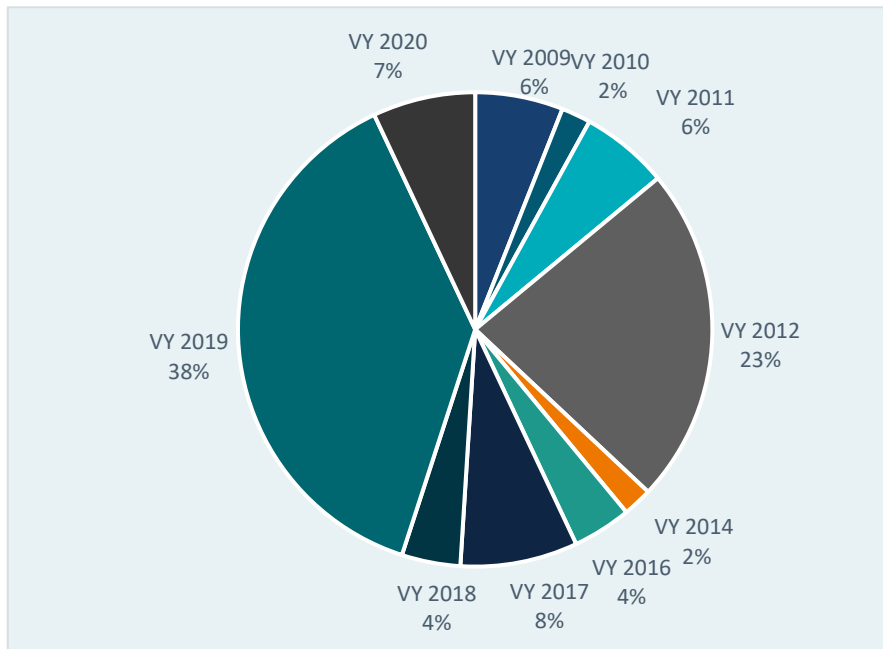
* Excludes Liquid assets.



Vintage Year Portfolio Diversification

Period Ending: June 30, 2020

Vintage Year	Commitment as of 6/30/20	% of Portfolio Commitment	Reported Value as of 6/30/20
2009	62,900,000	6.4%	0
2010	24,000,000	2.5%	0
2011	60,800,000	6.2%	0
2012	223,979,858	22.9%	0
2014	15,000,000	1.5%	8,487,610
2016	35,000,000	3.6%	14,953,252
2017	75,000,000	7.7%	40,966,835
2018	40,000,000	4.1%	24,275,097
2019	371,556,035	38.0%	310,913,671
2020	70,000,000	7.2%	0
Total Portfolio	978,235,893	100%	399,596,465



- ACERA committed \$40 million to Brookfield Super-Core Infrastructure Partners and \$30 million to EQT Infrastructure V, a re-up with an existing GP relationship for ACERA within the infrastructure portfolio.
- Several GPs within ACERA's portfolio are coming back to market in 2021 so we will be revisiting those opportunities for potential re-ups. We are also working on a sustainable real asset strategy that could be an interesting investment opportunity with the additional benefit of being ESG-friendly.
- As mentioned previously, we plan to increase the allocation to infrastructure investments at the expense of natural resource strategies as we move away from investments in the oil & gas industry.



December 2020

**Semi-Annual Real Estate
Performance Measurement Report**

Callan

PUBLIC VERSION

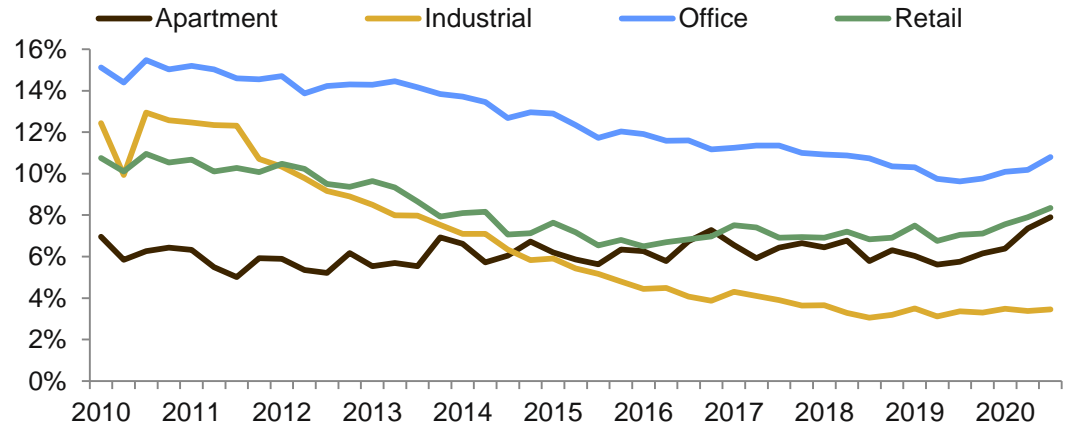
Avery Robinson, CAIA
Senior Vice President

U.S. Private Real Estate Market Trends

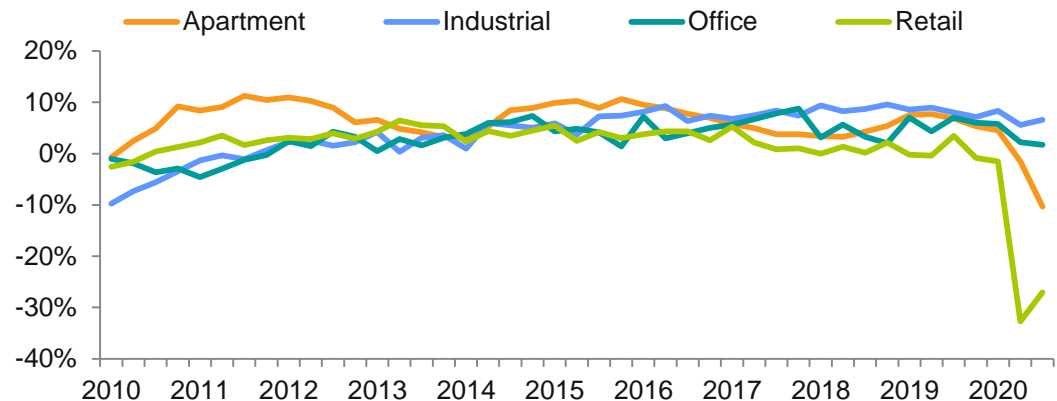
● U.S. real estate fundamentals

- Vacancy rates for all property types are increasing or likely to increase.
- Net operating income has declined as retail continues to suffer.
- 3Q rent collections show relatively stable income throughout the quarter in the Industrial, Apartment, and Office sectors. The Retail sector remains challenged, with regional malls impacted most heavily.
- Class A/B urban apartment rent collections have been relatively strong although occupancy has been declining
- Supply was in check before the pandemic.
- Construction is limited to completion of existing projects but has been hampered by shelter in place and construction material shortages.
- New construction is expected to be slowed significantly future quarters - except for pre-leased properties.

Vacancy by Property Type



Rolling 4-Quarter NOI Growth by Property Type



● Source: NCREIF

Alameda County Employees' Retirement Association Performance Measurement Report Summary

Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") Quarter ending September 30, 2020 ("Quarter").

Funding Status as of September 30, 2020

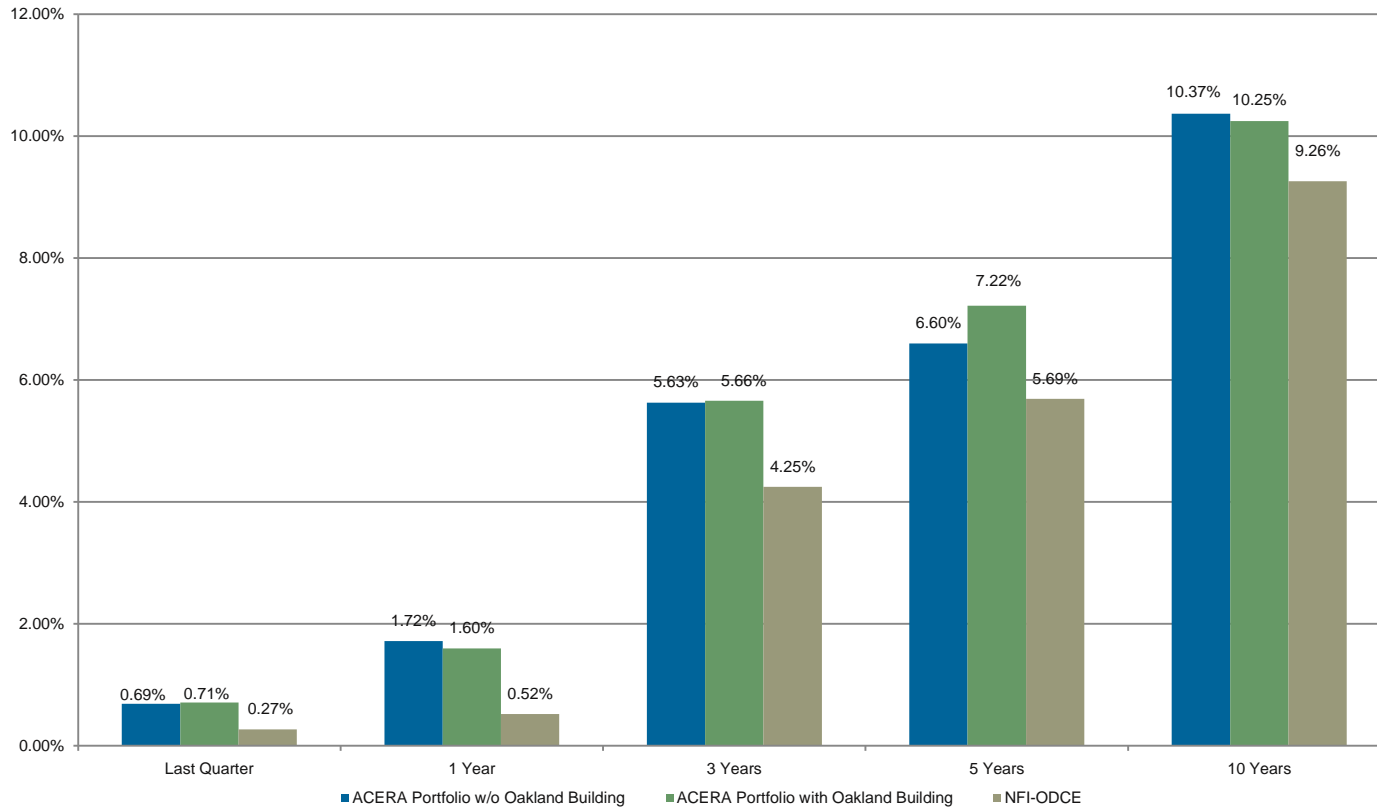
	(\$) Millions	(%)
ACERA Plan Assets	8,682.251	100.00%
Real Estate Target ⁽¹⁾	694.580	8.00%
Plan's Real Estate Market Value	608.132	7.00%
Net Unfunded Commitments	72.921	0.84%
RE Market Value & Unfunded Commitments	681.053	7.84%
Remaining Allocation	86.447	1.00%

	Target	Funded	Funded & Committed
Core	70.00%	70.93%	61.48%
Non-Core	30.00%	29.07%	38.52%

Portfolio Net Returns

For Period Ended September 30, 2020

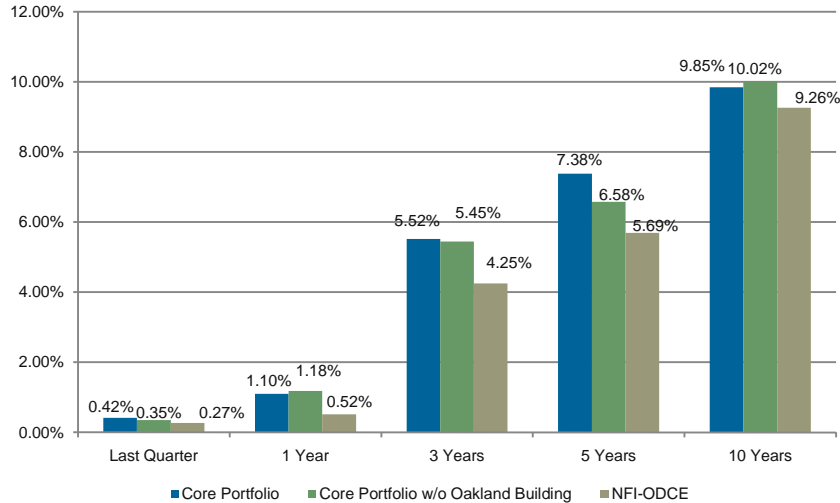
Total Net Real Estate Portfolio Returns



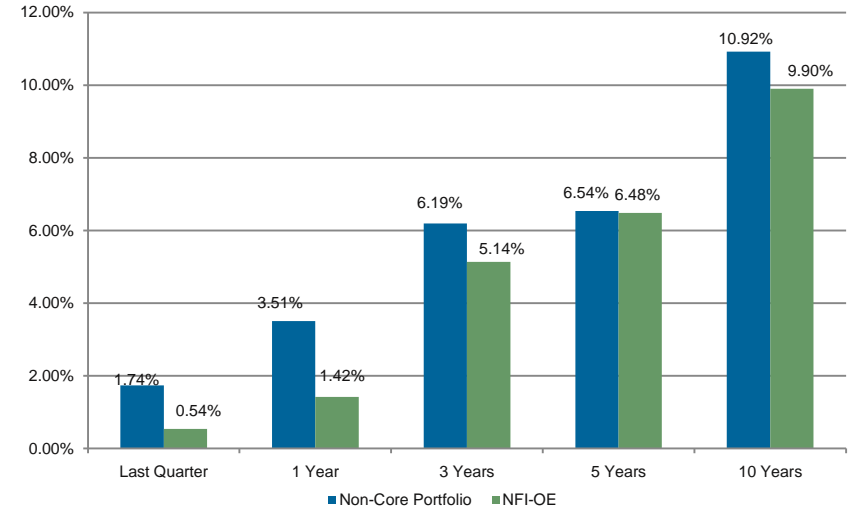
Portfolio Returns by Style

For Period Ended September 30, 2020

Net Core Returns



Net Non-Core Returns



Net Portfolio w/o Oakland Building	Last Quarter	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	0.35%	1.18%	5.45%	6.58%	10.02%
Non-Core Portfolio	1.74%	3.51%	6.19%	6.54%	10.92%
Total Portfolio w/o Oakland Building	0.69%	1.72%	5.63%	6.60%	10.37%

Net Total Portfolio	Last Quarter	1 Year	3 Years	5 Years	10 Years
Core Portfolio	0.42%	1.10%	5.52%	7.38%	9.85%
Non-Core Portfolio	1.74%	3.51%	6.19%	6.54%	10.92%
Total Portfolio	0.71%	1.60%	5.66%	7.22%	10.25%

Performance Drivers and Detractors by Style

Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio outperformed the NFI-ODCE Value Weight Index (Net) by 8 bps for the quarter ending 9/30/2020. The core portfolio has outperformed the benchmark over the last year, last 3 years, last 5 years, and last 10 years.
- The Lion Industrial Trust was once again the strongest performer.
- Jamestown Premier Property Fund and the UBS Trumbull Property Fund were the largest detractors from performance over the last quarter.

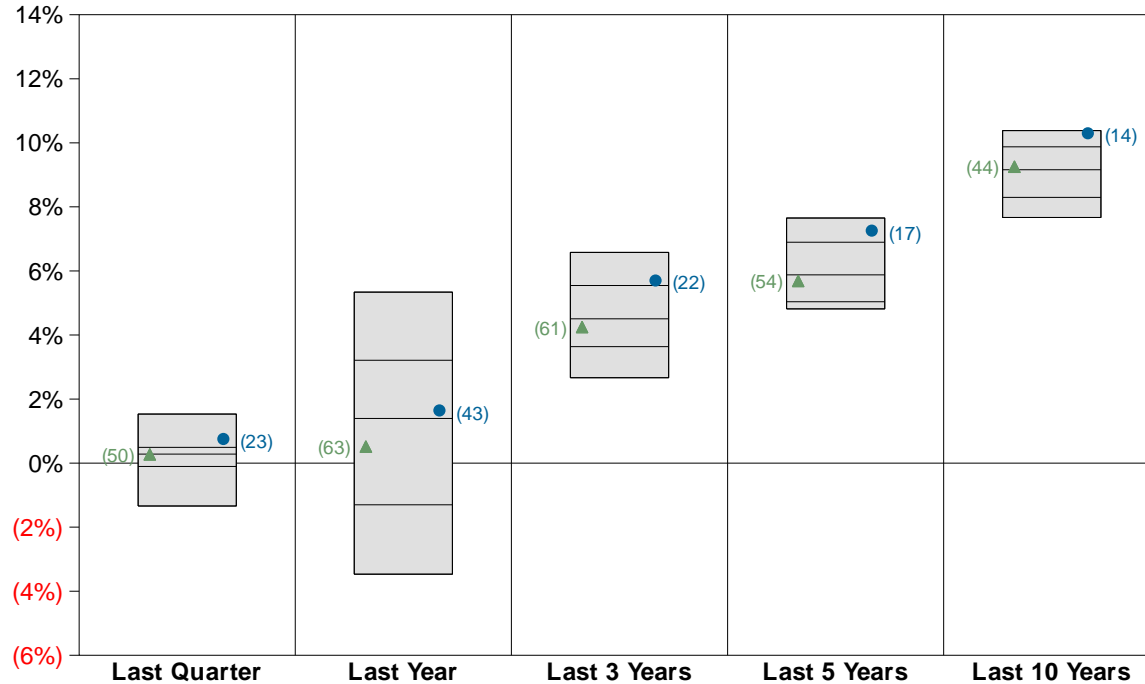
Non-Core Portfolio

- The Non-Core Portfolio outperformed the NFI-OE Value Weight Index (Net) by 120 bps for the period.
- CIM VI Urban REIT and Artemis Income and Growth were the weakest performers over the period.
- Angelo Gordon and PRISA III were the primary drivers of performance.

Performance vs. Peer Group

For Period Ended September 30, 2020

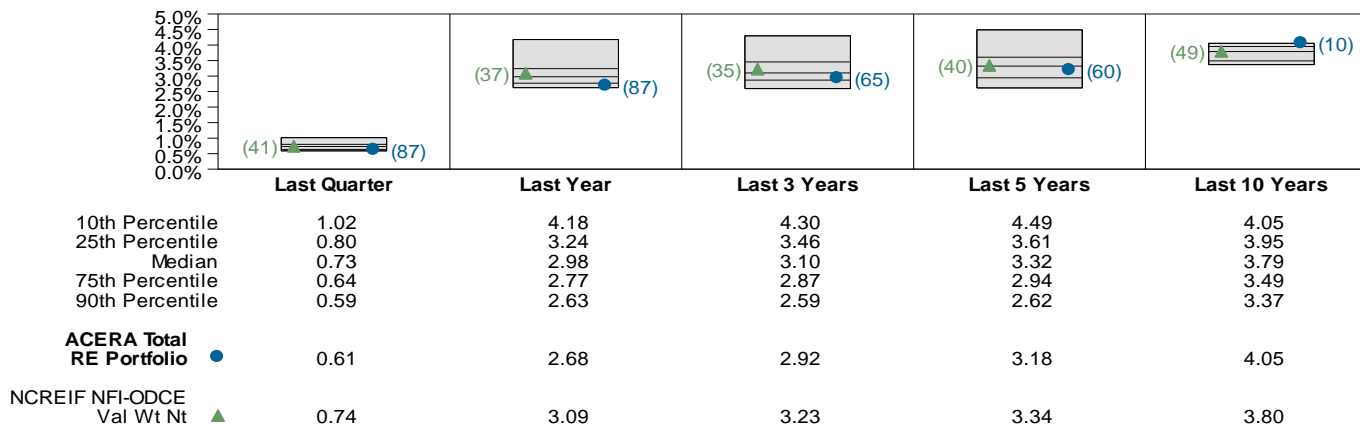
Performance vs Callan Open End Core Cmmingled Real Est



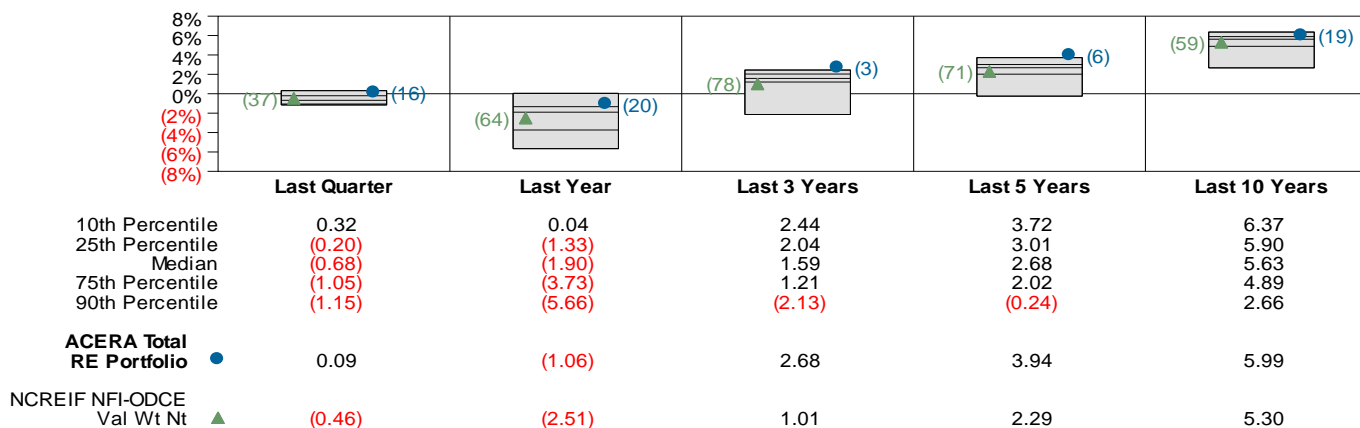
	Last Quarter	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.53	5.34	6.58	7.65	10.38
25th Percentile	0.49	3.21	5.54	6.90	9.87
Median	0.28	1.40	4.51	5.88	9.16
75th Percentile	(0.10)	(1.30)	3.64	5.04	8.30
90th Percentile	(1.34)	(3.47)	2.67	4.82	7.67
ACERA Total RE Portfolio ●	0.71	1.60	5.66	7.22	10.25
NCREIF NFI-ODCE Val Wt Nt ▲	0.27	0.52	4.25	5.69	9.26

Performance vs. Peer Group

Income Rankings vs Callan OE Core Cmngld RE Periods ended September 30, 2020



Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended September 30, 2020

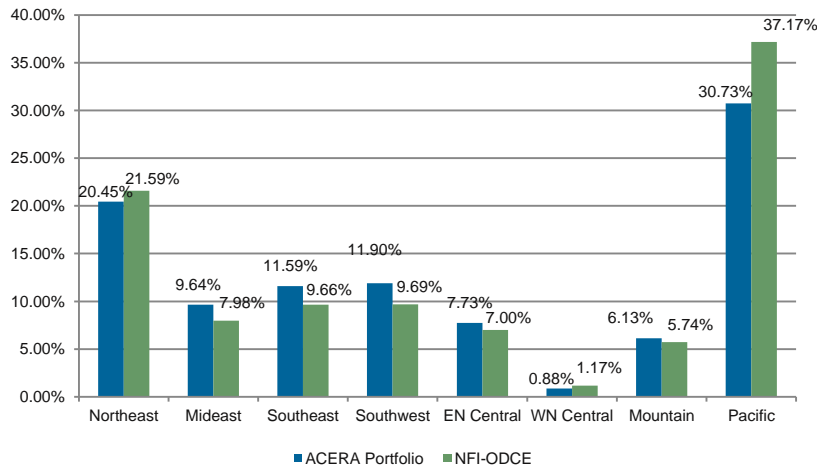


Diversification & Debt

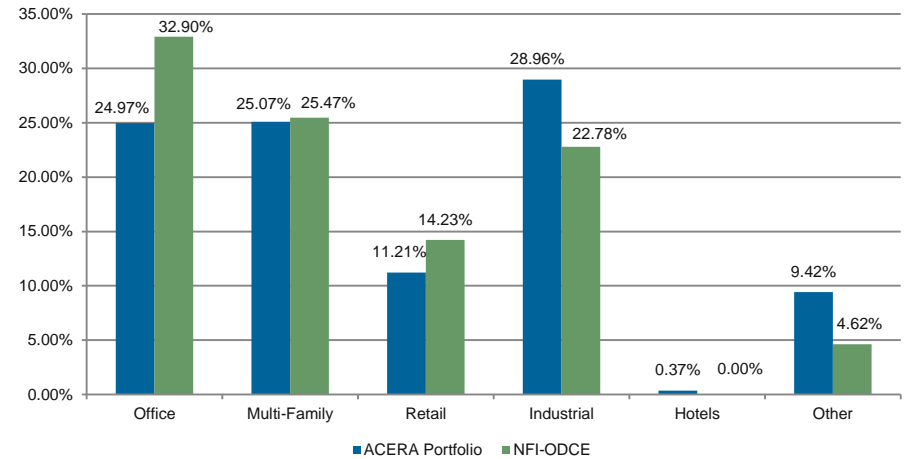
Diversification – Total Portfolio (excluding Oakland Building)

- 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 September 30, 2020, the loan-to-value (“LTV”) ratio of the Portfolio was 29.11%.

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.

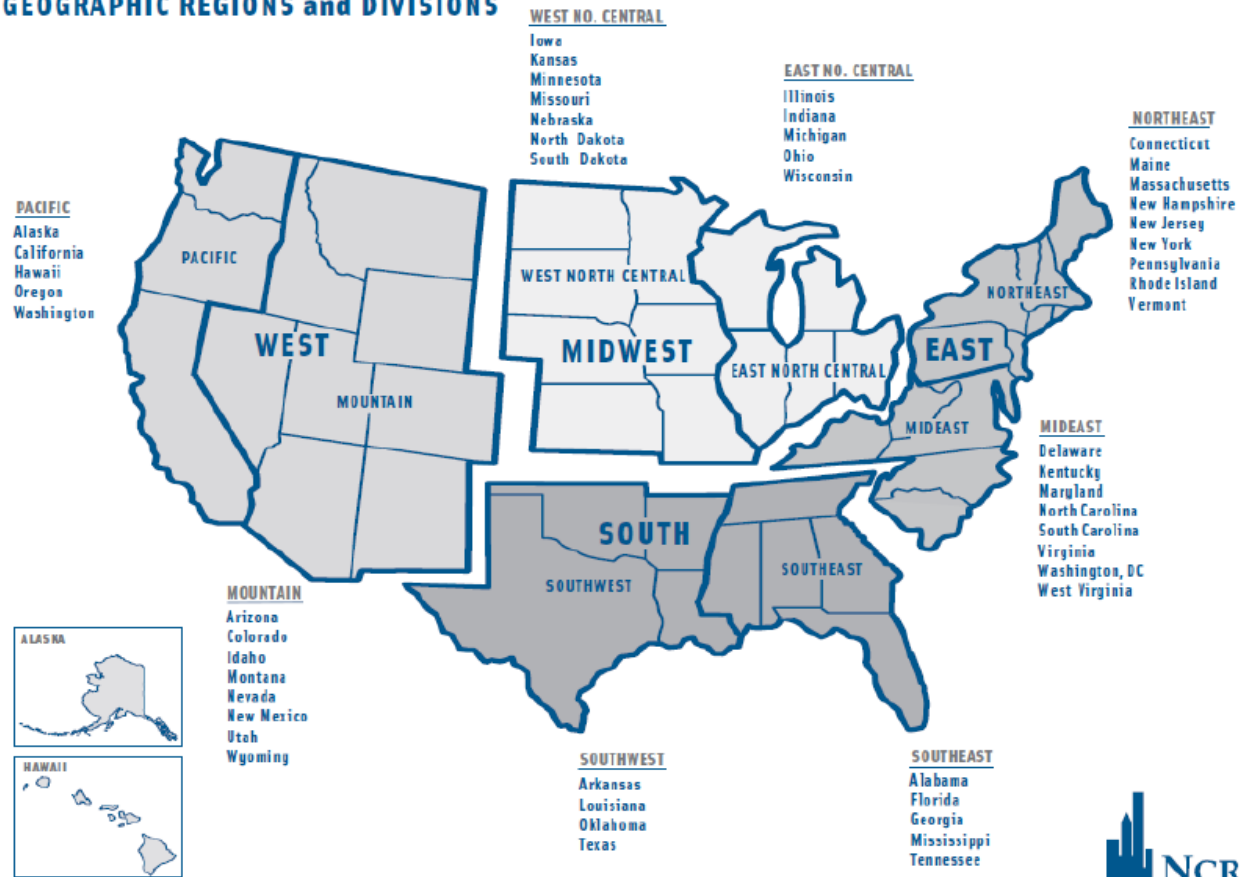
Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

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



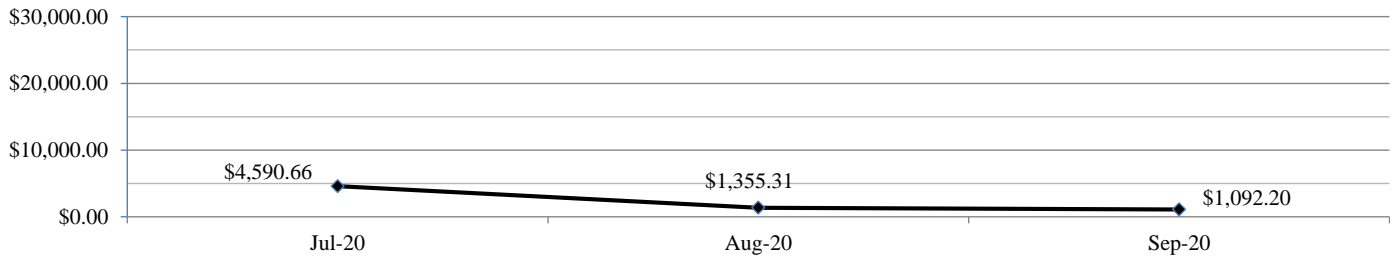


Alameda County Employees' Retirement Association Third Quarter 2020 Directed Brokerage Report

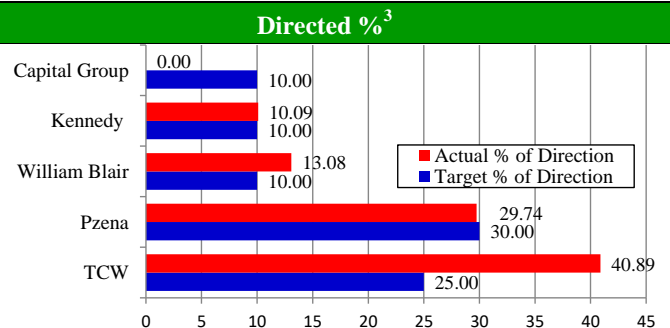
Quarterly Commentary

In 3Q20, the total recaptured dollar amount for ACERA's Directed Brokerage (DB) Program was \$7,038.17. Since inception¹, ACERA has recaptured \$2,075,549.75. For the quarter, TCW directed the highest percentage (40.89%) of trading volume and Kennedy generated the largest recaptured directed commission dollar amount (\$4,148.63). CAPIS received 70.5% of ACERA's directed trades among the network of correspondent brokers. The program continues to operate in compliance with ACERA's DB Policy.

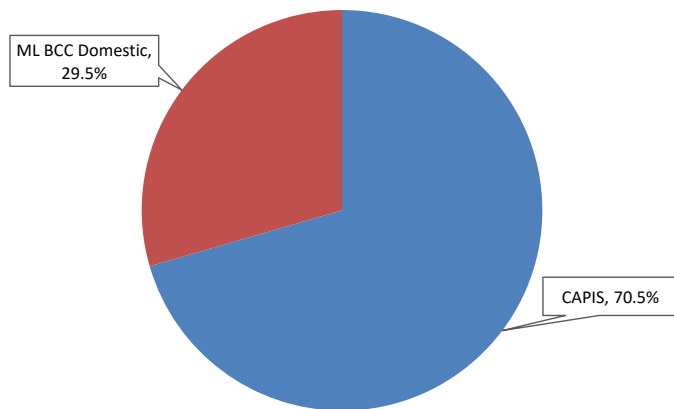
Monthly Recaptured



Directed Commission \$ ²			Directed % ³	
Manager	3Q2020	YTD		
Capital Group	0.00	0.00	Capital Group	0.00
Kennedy	4,148.63	17,078.86	Kennedy	10.09
William Blair	2,660.16	4,393.08	William Blair	13.08
Pzena	1,765.73	14,511.81	Pzena	29.74
TCW	3,588.28	4,136.96	TCW	40.89
Total	\$12,162.80	\$40,120.71		



Directed % to Correspondent Brokers⁴



- | | |
|---|---|
| <ul style="list-style-type: none"> Andes Capital Group B. Riley & Co. Barclays (US Algo/DMA) BIDS Trading Bley Investment Group Cabrera Capital Markets CAPIS CAPIS Step Out CF Global Trading Commission Direct, Inc. Cowen Securities (U.S.) Drexel Hamilton HSBC James Capel ICAP (U.S.) Imperial Capital Instinet LLC | <ul style="list-style-type: none"> ITG, Inc. Kota Global Securities LAM Securities Liquidnet Merrill Lynch (U.S.) Mischler Financial Group Northeast Securities O'Neil Securities Penserra Securities, LLC Pershing, LLC Piper Jaffray & Co. Societe Generale State Street Global Markets (Europe) Virtu Securities Weeden & Co LP |
|---|---|

Brokers are selected at the discretion of the Investment Managers, pursuant to Best Execution and ACERA's DB Policy.

1. ACERA's DB Program began in September 2006. AQR Int'l, Mondrian, Bivium do not participate in Commission Recapture; Blackrock, Newton, and Templeton are not SMA.
 2. Data provided by CAPIS. Directed Commission \$ - Dollar amount of commissions from directed trades - this amount is split among ACERA (57.87% for 3Q2020), 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 September 30, 2020

**INVESTMENT NET ASSET VALUE AND INVESTMENT MANAGER FEES
FOR THE QUARTER ENDED SEPT 30, 2020**

For the Quarter Ended Sept 30, 2020	NAV ² (\$) As of 3/31/20	Q1 - Total Fees (\$)	bps of NAV	NAV ² (\$) As of 6/30/20	Q2 - Total Fees (\$)	bps of NAV	NAV ² (\$) As of 9/30/20	Q3 - Total Fees (\$)	bps of NAV
Name of Fund									
Domestic Equity¹									
BlackRock R1000 Index Fund	1,563,402,891	39,321	0.25	1,904,773,094	40,642	0.21	2,003,039,962	44,168	0.22
Kennedy Capital	79,413,186	216,284	27.24	95,166,143	177,827	18.69	98,751,614	199,848	20.24
Pzena	80,249,376	153,347	19.11	97,754,557	127,018	12.99	98,205,921	138,878	14.14
Trust Co. of the West	115,760,060	143,698	12.41	150,749,338	148,891	9.88	119,503,576	142,422	11.92
William Blair Small Cap Growth	92,931,190	228,731	24.61	120,393,013	217,125	18.03	129,685,001	256,200	19.76
Total Domestic Equity	1,931,756,703	781,381	4.04	2,368,836,145	711,503	3.00	2,449,186,073	781,517	3.19
International Equity¹									
AQR International Equity	333,110,143	512,297	15.38	391,970,611	470,647	12.01	423,110,916	536,592	12.68
BlackRock MSCI World ex-US	358,855,540	25,581	0.71	414,621,299	24,846	0.60	435,196,553	27,411	0.63
Bivium International Equity	69,722,702	171,614	24.61	81,676,994	155,493	19.04	88,581,271	179,386	20.25
Capital Group	380,976,080	779,730	20.47	462,157,600	744,687	16.11	508,688,115	883,460	17.37
Franklin Templeton Inv.	169,997,461	341,607	20.09	210,206,749	309,827	14.74	238,133,678	356,312	14.96
Mondrian	336,615,852	373,477	11.10	374,458,267	323,805	8.65	388,455,155	355,372	9.15
Newton Emerging Market Equity Fund	194,773,677	121,734	6.25	247,406,150	246,387	9.96	301,211,958	376,542	12.50
Total International Equity	1,844,051,455	2,326,040	12.61	2,182,497,670	2,275,691	10.43	2,383,377,647	2,715,075	11.39
Fixed Income¹									
Baird Advisors	586,769,834	136,245	2.32	614,293,862	127,320	2.07	733,240,053	142,114	1.94
Loomis Sayles	295,145,772	288,449	9.77	327,603,685	251,289	7.67	337,388,893	271,694	8.05
Brandywine Global FI	312,857,319	236,487	7.56	347,171,671	231,538	6.67	360,136,390	253,594	7.04
Total Fixed Income	1,194,772,925	661,180	5.53	1,289,069,218	610,147	4.73	1,430,765,336	667,402	4.66
Real Estate^{5,6}									
Total Real Estate	607,428,802	1,323,482	21.79	603,633,632	1,413,109	23.41	607,279,603	1,980,991	32.62
Private Equity^{4,5,6}									
Total Private Equity	547,909,221	(2,738,439)	(49.98)	637,808,250	8,702,983	136.45	710,815,606	13,796,626	194.10
Absolute Return^{5,6}									
Total Absolute Return	686,222,746	3,568,300	52.00	700,398,945	2,075,123	29.63	633,950,612	2,104,494	33.20
Real Assets^{4,5,6}									
Total Real Assets	351,023,108	1,336,887	38.09	399,596,465	680,075	17.02	416,583,649	1,678,389	40.29
Private Credit^{4,5,6}									
Total Private Credit	36,070,411	127,333	35.30	39,054,994	139,067	35.61	48,369,430	252,000	52.10
Cash	130,547,692			62,186,709			65,710,315		
TOTAL⁷	7,329,783,063	7,386,164	10.08	8,283,082,028	16,607,698	20.05	8,746,038,272	23,976,493	27.41

Notes:

- Domestic, International Equity, and Fixed Income managers' fees are based on staff validated manager invoices.
- NAVs may use estimates at the time of this report's production.
- Some accounts contain submanaged funds; the fees shown include all assets in the account.
- Sometimes fees may be estimates. According to the Limited Partnership Agreements, management fees are based on committed amounts and/or assets under management.
- Detailed records regarding these investments of public pension funds are exempt from disclosure under California Government Code Section 6254.26
- Fees may include management, incentive fees, and expenses as applicable. Incentive fees may include unrealized (hypothetical) fees which can fluctuate from quarter to quarter based on changes in valuations.
- Previous quarter's amounts may change as estimates are tried up to actual amounts. Each true up is made using the most recent information.

**CONSULTANT/CUSTODIAN FEES
FOR THE QUARTER ENDED SEPT 30, 2020**

	Q1 - Fees (\$)	Q2 - Fees (\$)	Q3 - Fees (\$)
Consultant			
Doug McCalla	12,367	12,367	12,367
Callan Associates	56,250	56,250	56,250
Verus Advisory, Inc.	171,250	171,250	171,250
Institutional Shareholders Services	13,575	13,575	13,575
Zeno Consulting Group	11,250	11,250	11,250
Sub-total Consultant	264,692	264,692	264,692
Custodian			
State Street Bank	137,596	137,596	137,596
TOTAL OF CONSULTANT / CUSTODIAN FEES ¹	402,288	402,288	402,288

Notes:

1. Previous quarter's amounts may change as estimates are true up to actual amounts. Each true up is made using the most recent information.



ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

475 14th Street, Suite 1000, Oakland, CA 94612 800/838-1932 510/628-3000 fax: 510/268-9574 www.acera.org

TO: Members of the Investment Committee
FROM: Agnes Ducanes – Administrative Specialist II *Aducanes*
DATE: December 9, 2020
SUBJECT: Quarterly report on ACERA's Investment Products and Services
 Introductions (IPSI) Program

In the third quarter of 2020, Staff received 31 investment products and services inquiries from prospective providers. We met with 4 managers who presented through the IPSI process. Since we had staff turnovers, the IPSI meetings has been scheduled according to staff's availabilities.

The purpose of IPSI is to provide prospective vendors an opportunity to gain a better understanding of ACERA's investment objectives and for Staff to learn about the vendors' investment products/services through face-to-face meetings, teleconferences, or video conferences. Staff has designated the morning of the third Wednesday of every month as ACERA's IPSI day. Each introductory session is approximately 45 minutes.

Below please find a chart depicting the types of IPSI sessions that were held in the third quarter of 2020.

ASSET CLASS	Q1 '20	Q2 '20	Q3 '20	Q4'20	TOTAL
U.S. Equities	1	0	0	0	1
Int'l Equities	0	0	0	0	0
Fixed Income	0	0	0	0	0
Real Estate	1	1	0	0	2
Private Equities	0	0	0	1	1
Absolute Return	1	1	2	2	6
Real Assets	1	0	1	0	2
Private Credit	2	1	1	0	4
Other Services	0	0	0	0	0
TOTAL:	6	3	4	3	16



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 *-Thomas Taylor*

DATE: December 9, 2020

SUBJECT: Summary of Rebalancing and Cash Activities Completed in 3Q2020

Recommendation:

Not Applicable – This is an information item.

Background/Discussion:

1. Action was required to rebalance the Total Fund in the quarter ending September 30, 2020. 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 two rebalancing signals received during 3Q2020: TCW traded above its upper target-range for 5-business days, and the Baird Advisor account was below its minimum target-range for 5-business days. In July 2020, ACERA withdrew \$44.0 million from TCW, \$68.6 million from Blackrock Russell 1000 index fund, and funded \$112.6 million to fixed income account managed by Baird Advisor. Given the uncertainty of the economic times and ACERA's inferred possibility to cover employer payroll contributions timely, Staff has maintained a higher than normal balance in HI1A¹.
2. Regarding significant cash-flows for 3Q2020, Staff implemented the following changes to make the supplemental timely 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 \$53.5 million from the Total Fund to supplement for month-end payroll for the three-months ending September 30, 2020. Staff wired out \$18.05M in July, \$18.0M in August, and \$19.0M in September to ACERA'S Wells Fargo Bank account. Fiscal Services wired-in \$0.547M from Wells Fargo Bank back to State Street Bank (#HI1A) at the end of July and \$1.0M at the end of September for a total of \$1.547M. The reason for noting the incoming wires is because not all employer contributions were received before the month-end and administrative payroll are paid in that particular month.
 - b. Capital Calls, Distributions, and Other Cash Flows: In general, wire-payments of \$52.238 M in aggregate were made to meet capital calls for ACERA's privately placed investments. ACERA received cash and in-kind distributions from ACERA's investments totaled \$99.08M. This dollar amount does not include other incidental income².
3. Reporting of rebalancing activities will continue to be submitted to the Investment Committee on a quarterly basis.

¹ As of 9/30/2020, HI1A was \$63.1M. The normal balance in HI1A is approximately \$10M.

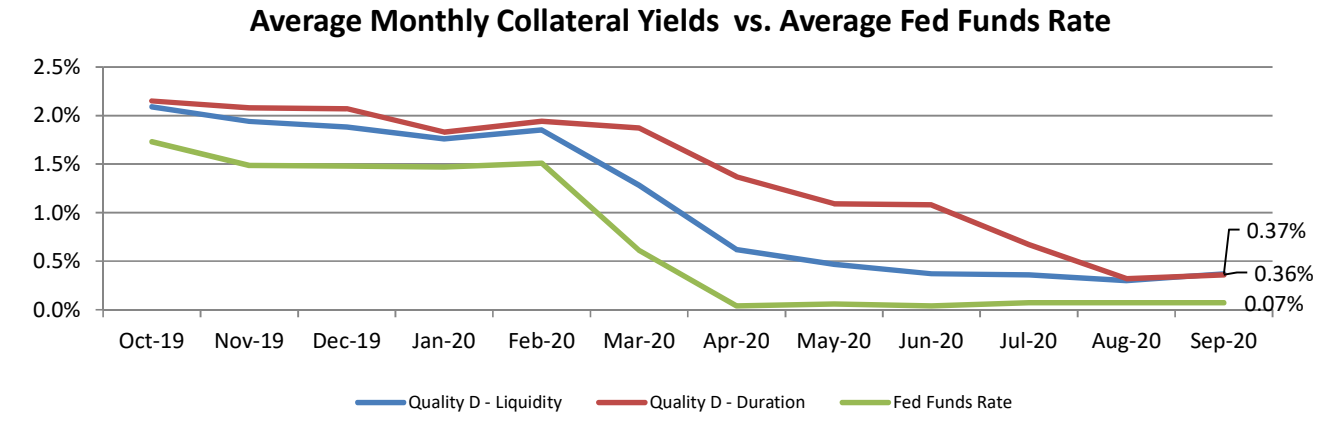
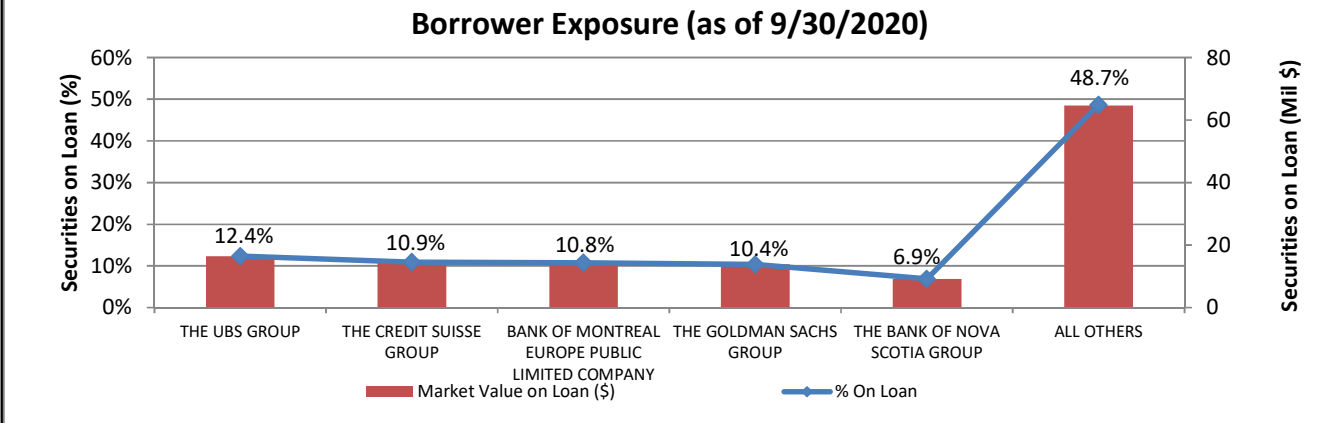
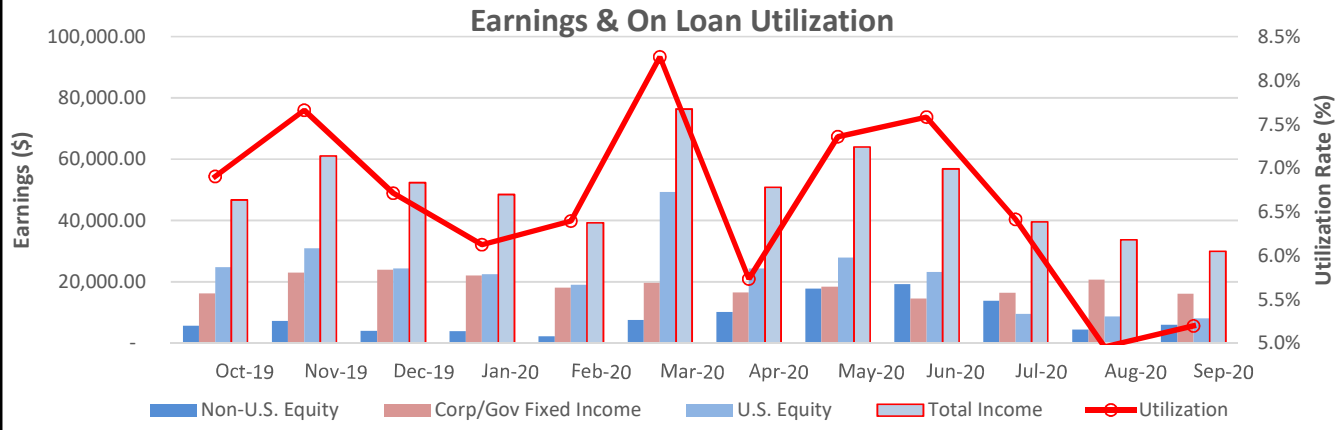
² Securities Litigation Income (\$0.00), Securities Lending Income (\$141.8K), and Commission Recapture Income (\$6.39K) totaled \$148.26K. Incremental income does not include dividend and interest income from traditional managed accounts, which is reinvested by the managers.

Alameda County Employees' Retirement Association

3rd Quarter 2020 Securities Lending Report

Quarterly Summary

In 3Q2020, ACERA's earnings from Securities Lending activities were \$120,056.86. U.S. Equities generated the highest earnings of \$53,097.73. As of September 30, 2020, the average market value of securities on loan was \$131,295,485.00. UBS GROUP was the largest borrower of ACERA's securities with 12.4% as of the last day of the quarter.



Notes:

- (1) Quality D Liquidity and Quality D Duration Funds are managed by an affiliate of State Street Bank (SSB); these funds are common pools in which many securities lending clients of SSB invest their cash collateral generated from their security lending activities. ACERA invests the cash collateral received from its security lending activities into Quality D Liquidity and Quality D Duration Funds. As of 9/30/2020, ACERA's combined NAV per unit of the Quality D Liquidity (1.0001) and Quality D Duration Funds (93.37) was \$0.9995. As of 9/30/2020, Quality D Liquidity had 105,763,937.57 units and Quality D Duration had 877,025.98 units.
- (2) Data represents past performance and is not necessarily indicative of future results.
- (3) Data Source: my.statestreet.com and Securities Finance Business Intelligence

Securities Lending Report Provided by Staff

ICM 12/9/2020



Investment Committee Workplan for 2020

December 9, 2020

Action Items

Information Items

Date	Action Items	Information Items
January 8	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend that the Board Authorize Staff to Negotiate an Extension of the Custody Contract with State Street Bank and Trust Company 2. Discussion of and Possible Motion to Recommend to the Board to approve short list of candidates for ACERA’s Large Cap Value Manager Search 	<ol style="list-style-type: none"> 1. Education Session: Cash Overlay 2. Proposed Investment Committee Workplan for 2020
February 13 (schedule change due to 2 nd Wednesday falls on Lincoln Day – County Holiday)	<ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt ACERA’s ESG Belief Statement 	<ol style="list-style-type: none"> 1. Review of 2020 Capital Market Assumptions 2. Investment Committee Workplan 2020
March 18 (ICM Cancelled)		
April 8 (ICM Cancelled)		
May 20 (ICM Cancelled)		

Notes:

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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.



Investment Committee Workplan for 2020

December 9, 2020

Action Items

Information Items

Action Items	Information Items
<p>June 10</p> <ol style="list-style-type: none"> Interview of the Finalists for ACERA’s U.S. Large Cap Value Manager Search and Possible Motion by the Investment Committee to Recommend one Finalist to the Board 	<ol style="list-style-type: none"> Verus firm update - Introduction of Stuart Odell, Managing Director / Senior Consultant Semiannual Performance Review for the Period Ending March 31, 2020 – Equities and Fixed Income Semiannual Performance Review for the Period Ending December 31, 2019 – Private Equities Semiannual Performance Review for the Period Ending March 31, 2020 – Absolute Return Semiannual Performance Review for the Period Ending December 31, 2019– Private Credit Semiannual Performance Review for the Period Ending December 31, 2019 – Real Assets Semiannual Performance Review for the Period Ending March 31, 2020 – Real Estate <i>Quarterly report of ACERA’s investment manager, consultant, and custodian fees for the first quarter of 2020</i> <i>Quarterly report on ACERA’s rebalancing activities for the first quarter of 2020</i> <i>Quarterly report on ACERA’s securities lending activities for the first quarter of 2020</i> <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the first quarter of 2020</i> <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2020</i> <i>Updated Investment Committee Workplan 2020</i>

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Investment Committee Workplan for 2020

December 9, 2020

Action Items	Information Items
<p>July 8</p> <ol style="list-style-type: none"> Discussion of and Possible Motion to Recommend to the Board to Adopt a \$40 million Investment in Brookfield Super-Core Infrastructure Partners, as part of ACERA’s Real Assets Portfolio – Infrastructure <p>Adjournment into Closed Session</p> <p>Consider the Purchase or Sale of Particular, Specific Pension Fund Investment (CA Gov. Code § 54956.81)</p>	<ol style="list-style-type: none"> Semiannual Performance Review for the Period Ending as of December 31, 2019 – Real Assets Review of Cash Overlay and Rebalancing
<p>August 12</p>	<ol style="list-style-type: none"> Review of AQR International Equities Traditional Manager – (Non U.S. Equity – Quantitative) Education Session: Risk Management and Reporting Semiannual Performance Review for the Period Ending March 31, 2020 – Real Estate Review of Real Estate Fund JP Morgan SPF – Real Estate Review of Real Estate Fund UBS Trumbull – Real Estate
<p>September 9</p> <ol style="list-style-type: none"> Discussion and Possible Motion to Recommend to the Board to Adopt an up to \$35 million Investment in CD&R Fund as part of ACERA’s Private Equity Portfolio – Buyouts Discussion and Possible Motion to Recommend to the Board to Adopt an up to \$75 Investment in Blackrock Direct Lending Fund IX as part of ACERA’s Private Credit Portfolio 	<ol style="list-style-type: none"> Review and Discussion of ACERA’s International Equity Manager Structure <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the second quarter of 2020</i> <i>Quarterly report on ACERA’s rebalancing activities for the second quarter of 2020</i> <i>Quarterly report on ACERA’s securities lending activities for the second quarter of 2020</i>

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Investment Committee Workplan for 2020

December 9, 2020

Action Items

Information Items

	Action Items	Information Items
		5. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the second quarter of 2020</i> 6. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2020</i> 7. <i>Updated Investment Committee Workplan for 2020</i>
October 14	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$40 million Investment in EQT Infrastructure Fund V as part of ACERA's Real Asset Portfolio - Infrastructure 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$75 million Investment in HPS Specialty Loan Fund V as part of ACERA's Private Credit Portfolio 3. Discussion and Possible Motion to Recommend to the Board to Adopt a new manager structure for the International Equity Asset Class	1. Report by UBS and Baltimore Marriott Labor Dispute
November 4 (meeting moved to first Wednesday due to SACRS Conference)	1. Discussion of and Possible Motion to Recommend that the Board Adopt an up to \$75 million Investment in HPS Specialty Loan Fund V as part of ACERA's Private Credit Portfolio	1. Discussion of an up to \$10 million Investment in Canvas Ventures 3 as part of ACERA's Private Equity Portfolio – Venture Capital 2. Review of Real Assets Structure and Investment Plan 3. Real Estate Market Update
December 9	1. Discussion of and Possible Motion to Recommend that the Board Adopt a New Real Assets Structure, Approve Related Amendments to the Real Assets Policy, and Adopt the 2020 – 2026 Real Assets Investment Plan	1. Semiannual Performance Review for the Period Ending September 30, 2020 – Equities and Fixed Income

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Investment Committee Workplan for 2020

December 9, 2020

Action Items

Information Items

	<p>2. Discussion of an Possible Motion to Recommend to the Board to Adopt the 2021 – 2023 Private Equity Investment Plan</p>	<p>2. Semiannual Performance Review for the Period Ending June 30, 2020 – Private Equity</p> <p>3. Semiannual Performance Review for the Period Ending September 30, 2020 – Absolute Return</p> <p>4. Semiannual Performance Review for the Period Ending June 30, 2020 – Private Credit</p> <p>5. Semiannual Performance Review for the Period Ending June 30, 2020 – Real Assets</p> <p>6. Semiannual Performance Review for the Period Ending September 30, 2020 – Real Estate</p> <p>7. CA Gov. Code § 7514.7 Information Report</p> <p>8. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the third quarter of 2020</i></p> <p>9. <i>Quarterly report on ACERA’s rebalancing activities for the third quarter 2020</i></p> <p>10. <i>Quarterly report on ACERA’s securities lending activities for the third quarter of 2020</i></p> <p>11. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the third quarter of 2020</i></p> <p>12. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2020</i></p> <p>13. <i>Updated Investment Committee Workplan 2020</i></p>
	<p>Adjournment into Closed Session</p> <p>Consider the Purchase or Sale of Particular, Specific Pension Fund Investments (CA Gov. Code § 54956.81) (One Investment)</p>	

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