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, June 9, 2021
9:30 a.m.

ZOOM INSTRUCTIONS	COMMITTEE MEMBERS	
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 **Webinar ID: 838 4907 0813** **Passcode: 130339** For help joining a Zoom meeting, see: https://support.zoom.us/hc/en-us/articles/201362193	**GEORGE WOOD, CHAIR**	**ELECTED GENERAL**
	JAIME GODFREY, VICE-CHAIR	**APPOINTED**
	DALE AMARAL	**ELECTED SAFETY**
	OPHELIA BASGAL	**APPOINTED**
	KEITH CARSON	**APPOINTED**
	TARRELL GAMBLE	**APPOINTED**
	LIZ KOPPENHAVER	**ELECTED RETIRED**
	HENRY LEVY	**TREASURER**
	DARRYL L.WALKER	**ELECTED GENERAL[1]**
	NANCY REILLY	**ALTERNATE RETIRED[2]**
	VACANT	**ALTERNATE SAFETY**

[1]Trustee Walker is filling the vacancy created by Trustee Rogers' retirement. See Gov't Code §§ 31524, 31520.1(b)

[2] 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).

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.

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

The order of agendized 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.

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 and Possible Motion to Recommend that the Board Adopt an up to $40 million Investment in Starwood Distressed Opportunity Fund XII as part of ACERA's Real Estate Portfolio – Opportunistic,[3] Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations

   9:30 – 10:15
   Mark Deason, Starwood Capital Group Global II, L.P.
   Khalif Edwards, Starwood Capital Group Global II, L.P.
   Andrea Pierce, Starwood Capital Group Global II, L.P.
   Avery Robinson, Callan LLC
   Thomas Taylor, ACERA
   Betty Tse, ACERA

2. Discussion and Possible Motion to Recommend that the Board Approve Changes to ACERA's Portfolio Asset Allocation

   10:15 – 11:00
   Joe Abdou, Verus Advisory Inc.
   Marc Gesell, Verus Advisory Inc.
   Margaret Jadallah, Verus Advisory Inc.
   Betty Tse, ACERA

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

1. Semiannual Performance Review for the Period Ending March 31, 2021 – Real Estate

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

2. Semiannual Performance Review for the Period Ending March 31, 2021 – Equities and Fixed Income

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

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

3. Semiannual Performance Review for the Period Ending March 31, 2021 – Absolute Return

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

4. Semiannual Performance Review for the Period Ending December 31, 2020 – Private Equity

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

5. Semiannual Performance Review for the Period Ending December 31, 2020 – Private Credit

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

6. Semiannual Performance Review for the Period Ending December 31, 2020 – Real Assets

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

Trustee Remarks

Future Discussion Items

Establishment of Next Meeting Date
July 14, 2021 at 9:30 a.m.

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 an 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

ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION
475 14th Street, Suite 1000, Oakland, CA 94612 800/838-1932 510/628-3000 Fax: 510/268-9574 www.acera.org

TO: Members of the Investment Committee

FROM: Betty Tse – Chief Investment Officer Betty Tse

DATE: June 9, 2021

SUBJECT: Discussion and Possible Motion to Recommend that the Board Approve Changes to ACERA's Portfolio Asset Allocation

Recommendation:

Approve the "More Privates" Mix in the Asset Allocation Review.

Background and Discussion:

In May 2019, ACERA adopted alternative #2 in our last Asset-Liability Review with the primary long-term objective of Sustainability of the Plan – ranked as one of the top two objectives from our Long Term Enterprise Risk Tolerance (ERT) Survey conducted in the same year. Since then, the ACERA Total Fund has experienced strong performance (18.7% in 2019 and 12.5% in 2020), ushering ACERA past the exciting Total Fund milestone of $10B in early April 2021. The Total Fund has benefited from the overall Capital Market's ascent in the named period with very low inflation. However, our asset allocation review process is forecasting increasing inflation in the intermediate and longer term. As currently allocated, higher inflation and other market factors, are expected to lower our return from the previously forecasted 6.7% to 5.5%. By comparison, the "More Privates" Mix Asset Allocation is forecasted to yield 5.8% over the next 10 years.

In keeping with the same objective of preserving Sustainability of the Plan while acknowledging that the Total Fund will be experiencing a rather low return environment in the next 10 years, Staff believes that taking on more risk or being more risk efficient to generate slightly higher return (from 5.5 to 5.8%) for the Total Fund would be an appropriate approach. Also, the "More Private" Mix will help us to meet the other top long-term objective of Preventing Deterioration of the Funded Status of the Plan which we have improved slightly upon our last review of the asset allocation in 2019. (Funding status of the Plan has improved from about 76% then to the current 77.6%).

Staff is recommending the "More Privates" Mix primarily based on our desire to steer the Total Fund to reach the top two objectives per our Long Term ERT Survey result, while potentially generating higher return. We understand that the Committee's decision making process is contingent on your preference for the risk/return balance, especially in light of the rather small percentage difference in the projected returns.

Staff also considers that a second alternative Allocation, the "ACERA Revised" Mix is a suitable option in terms of a modest increase of the 10 year projected return from 5.5. to 5.6%, while meeting multiple Long Term ERT Survey objectives including one the top two objectives, namely, the Sustainability of the Plan.

Conclusion:

Staff believes that the "More Privates" Mix is an appropriate mix in helping us to achieve our top two Long-Term ERT objectives while allowing us to potentially enhance our 10 year projected returns in a more meaningful way.

Attachment #1: Asset Allocation Review prepared by Verus

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

JUNE 2021

Asset Allocation Review

ACERA

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Verus

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
LOS ANGELES 310-297-1777
SAN FRANCISCO 415-362-3484
PITTSBURGH 412-784-6678

Overview

Introduction

— As fiduciaries we need to periodically review the asset allocation relative to the market environment and the enterprise objectives.

- 2020 was an unprecedented year with a constantly evolving market environment driven by the global pandemic and its ramifications.

— The goal of this presentation is to review the current asset allocation targets relative to potential alternatives while considering:

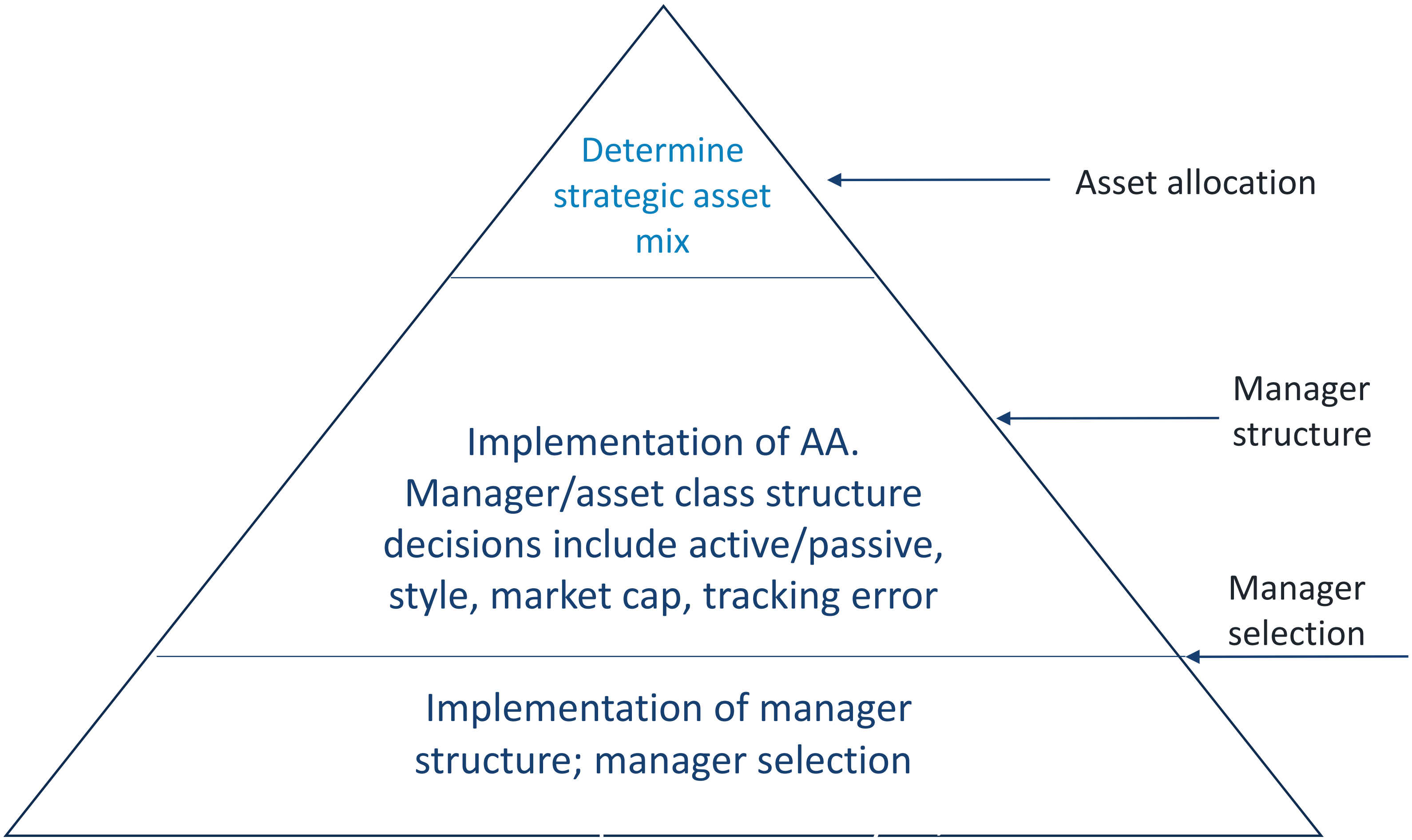
- Risk tolerance/liquidity
- The market environment

— This review considers modest changes to existing asset classes in the ACERA portfolio.

- Asset allocation of current policy reflects target asset allocation adopted during ACERA's 2019 asset-liability study.
- The turbulence of 2020 has resulted in a meaningful reduction in 10-year expected returns compared to last year.

Many plans are reviewing their asset allocation since updated expected returns deviate from actuarial assumed rates.

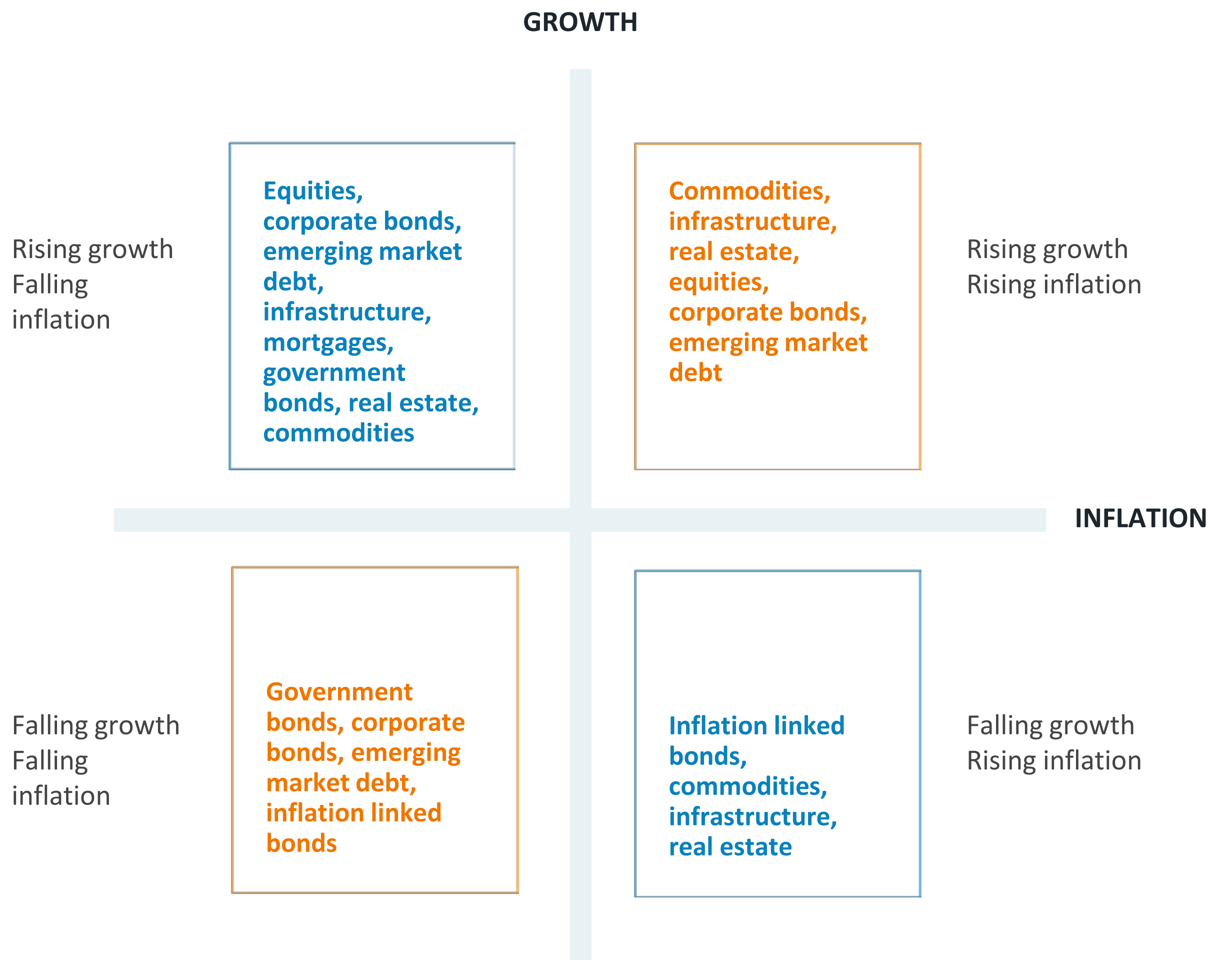
Asset allocation analysis



Asset allocation is the biggest determinant of portfolio risk and return. Asset allocation analysis assumes only market beta (no alpha or manager skill).

Identifying economic drivers of return

- For each asset class, investors can usually identify the economic environments which are likely to lead to strong, or poor, performance.
- Based on these relationships, investors can work to understand how their overall portfolio is likely to perform if faced with different economic environments.
- Investors may choose to adjust asset allocation so that their portfolio is not overly exposed to one type of future environment.
- Verus recommends diversified portfolios that are designed to weather all economic environments.



The roles of asset classes

- Why do we invest in various asset classes?
- What is it we practically expect them to contribute to the portfolio over time?
- What will determine whether or not they serve the desired role?

	RETURN ROLES				DIVERSIFICATION & VOLATILITY ROLES			HOW MACRO OUTLOOK/GDP AFFECTS ROLE	
	Benefit from GDP Growth	Earn Risk Premium	Produce Stable Income	Hedge Against Inflation	Low Absolute Volatility	Low Corr. To Other Assets	Reduce Portfolio Volatility	Elements of Return for Asset Class	Sensitivity of Role to GDP
Public Equities	High	Med-High	Low	Medium	None	Low	Low	PEs, Dividends, Earnings Growth	High
Private Equities	High	High	None	None	Low	Medium	Medium	PEs (exits), Financing, Opportunity Set	Med-High
Fixed (Treasury)	None	None	High	Low	High	Medium	High	Direct Link to Yields	Medium
Fixed (Credit)	Medium	Low	High	Low	Med-High	Medium	Med-High	Direct Link to Yields, Credit Spreads	Med-High
Hedge Funds (Intended role)	None	Low	None	None	High	High	High	Pes, Credit Spreads, Fat Tails	Medium
Real Estate	Med-High	Medium	Med-High	High	Medium	Med-High	Medium	Unemployment, Vacancies, Cap Rates	High

MAGNITUDE				
High	Med-High	Medium	Low	None

Investors are typically looking for a combination of return enhancement and lower correlation.

Complexity is not an advantage unless there are clear reasons why you're taking on additional risks and costs.

Methodology

CORE INPUTS

— We use a fundamental building block approach based on several inputs, including historical data and academic research to create asset class return forecasts.
— For most asset classes, we use the long-term historical volatility after adjusting for autocorrelation.
— Correlations between asset classes are calculated based on the last 10 years. For illiquid assets, such as private equity and private real estate, we use BarraOne correlation estimates.

Asset	Return Methodology	Volatility Methodology*
Inflation	25% weight to the University of Michigan Survey 5-10 year ahead inflation expectation and the Survey of Professional Forecasters (Fed Survey), and the remaining 50% to the market's expectation for inflation as observed through the 10-year TIPS breakeven rate	-
Cash	75% * current federal funds rate + 25% * U.S. 10-year Treasury yield	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Bank loan forecast + 1.75% private credit premium**	Long-term volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 4%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

**Long-term historical volatility data is adjusted for autocorrelation (see Appendix)*

***The private credit premium is generated by illiquidity, issuer size, and lack of credit rating*

10-year return & risk assumptions

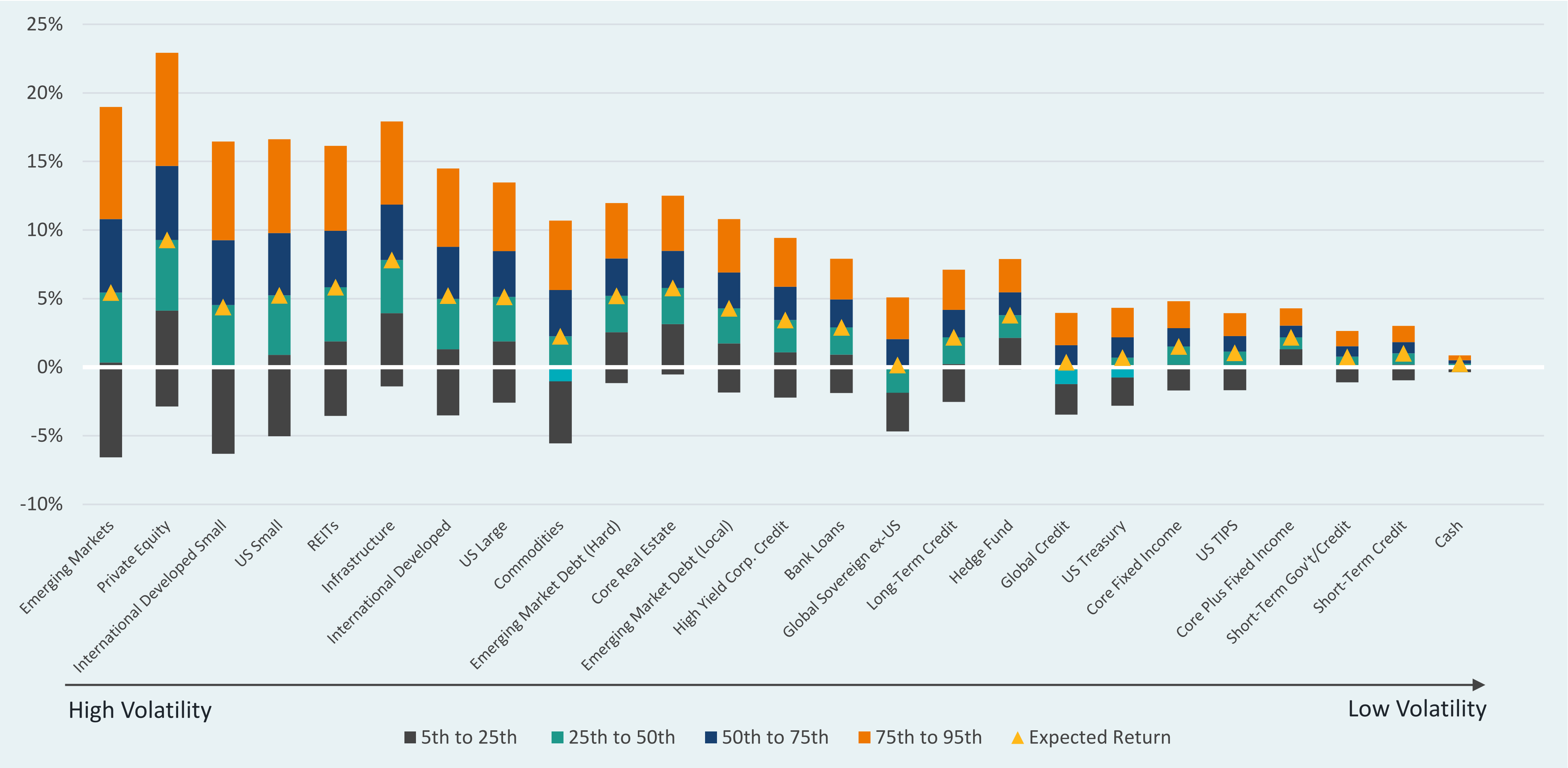
Asset Class	Index Proxy	Ten Year Return Forecast Geometric	Ten Year Return Forecast Arithmetic	Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
Equities								
U.S. Large	S&P 500	5.1%	6.3%	15.7%	0.31	0.38	0.99	0.99
U.S. Small	Russell 2000	5.2%	7.3%	21.4%	0.23	0.33	0.51	0.58
International Developed	MSCI EAFE	5.2%	6.7%	17.9%	0.28	0.36	0.27	0.34
International Small	MSCI EAFE Small Cap	4.4%	6.7%	22.4%	0.19	0.29	0.43	0.49
Emerging Markets	MSCI EM	5.4%	8.3%	25.5%	0.20	0.32	0.11	0.19
Global Equity	MSCI ACWI	5.2%	6.6%	17.3%	0.29	0.37	0.58	0.62
Private Equity*	Cambridge Private Equity	9.3%	12.1%	28.1%	0.35	0.46	-	-
Fixed Income								
Cash	30 Day T-Bills	0.2%	0.2%	1.2%	-	-	-	-
U.S. TIPS	BBgBarc U.S. TIPS 5-10	1.1%	1.2%	5.3%	0.15	0.18	0.66	0.67
U.S. Treasury	BBgBarc Treasury 7-10 Year	0.7%	0.9%	6.7%	0.07	0.10	0.67	0.68
Global Sovereign ex U.S.	BBgBarc Global Treasury ex U.S.	0.2%	0.6%	9.6%	-0.01	0.04	0.09	0.12
Global Aggregate	BBgBarc Global Aggregate	1.1%	1.3%	6.1%	0.14	0.17	0.38	0.39
Core Fixed Income	BBgBarc U.S. Aggregate Bond	1.5%	1.6%	4.0%	0.31	0.36	1.02	1.01
Core Plus Fixed Income	BBgBarc U.S. Universal	2.2%	2.3%	4.0%	0.49	0.50	1.13	1.12
Short-Term Gov't/Credit	BBgBarc U.S. Gov't/Credit 1-3 Year	0.7%	0.8%	3.6%	0.14	0.16	1.23	1.22
Short-Term Credit	BBgBarc Credit 1-3 Year	1.0%	1.1%	3.6%	0.21	0.23	1.23	1.22
Long-Term Credit	BBgBarc Long U.S. Corporate	2.2%	2.6%	9.3%	0.21	0.25	0.76	0.77
High Yield Corp. Credit	BBgBarc U.S. Corporate High Yield	3.4%	4.0%	11.3%	0.28	0.34	0.82	0.83
Bank Loans	S&P/LSTA Leveraged Loan	2.9%	3.2%	9.5%	0.28	0.32	0.66	0.67
Global Credit	BBgBarc Global Credit	0.3%	0.6%	7.4%	0.01	0.05	0.63	0.64
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.2%	6.0%	12.7%	0.39	0.45	0.60	0.63
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	4.3%	5.0%	12.2%	0.33	0.39	-0.01	0.05
Private Credit	Bank Loans + 175bps	4.6%	5.2%	11.2%	0.39	0.45	-	-
Other								
Commodities	Bloomberg Commodity	2.2%	3.4%	15.9%	0.13	0.20	-0.47	-0.41
Hedge Funds*	HFRI Fund Weighted Composite	3.8%	4.1%	7.8%	0.46	0.49	0.47	0.49
Real Estate Debt	BBgBarc CMBS IG	2.2%	2.5%	7.5%	0.26	0.30	1.18	1.17
Core Real Estate	NCREIF Property	5.8%	6.5%	12.6%	0.44	0.50	2.06	1.99
Value-Add Real Estate	NCREIF Property + 200bps	7.8%	9.1%	17.1%	0.44	0.52	-	-
Opportunistic Real Estate	NCREIF Property + 400bps	9.8%	11.8%	21.6%	0.44	0.54	-	-
REITs	Wilshire REIT	5.8%	7.5%	19.3%	0.29	0.38	0.46	0.52
Global Infrastructure	S&P Global Infrastructure	7.8%	9.4%	18.8%	0.40	0.49	0.28	0.35
Risk Parity	Risk Parity	5.2%	5.9%	10.0%	0.50	0.56	-	-
Currency Beta	MSCI Currency Factor Index	1.2%	1.3%	3.5%	0.28	0.30	0.15	0.16
Inflation		2.0%	-	-	-	-	-	-

Investors wishing to produce expected geometric return forecasts for their portfolios should use the arithmetic return forecasts provided here as inputs into that calculation, rather than the single-asset-class geometric return forecasts. This is the industry standard approach, but requires a complex explanation only a heavy quant could love, so we have chosen not to provide further details in this document – we will happily provide those details to any readers of this who are interested.

**Return expectations differ depending on method of implementation*

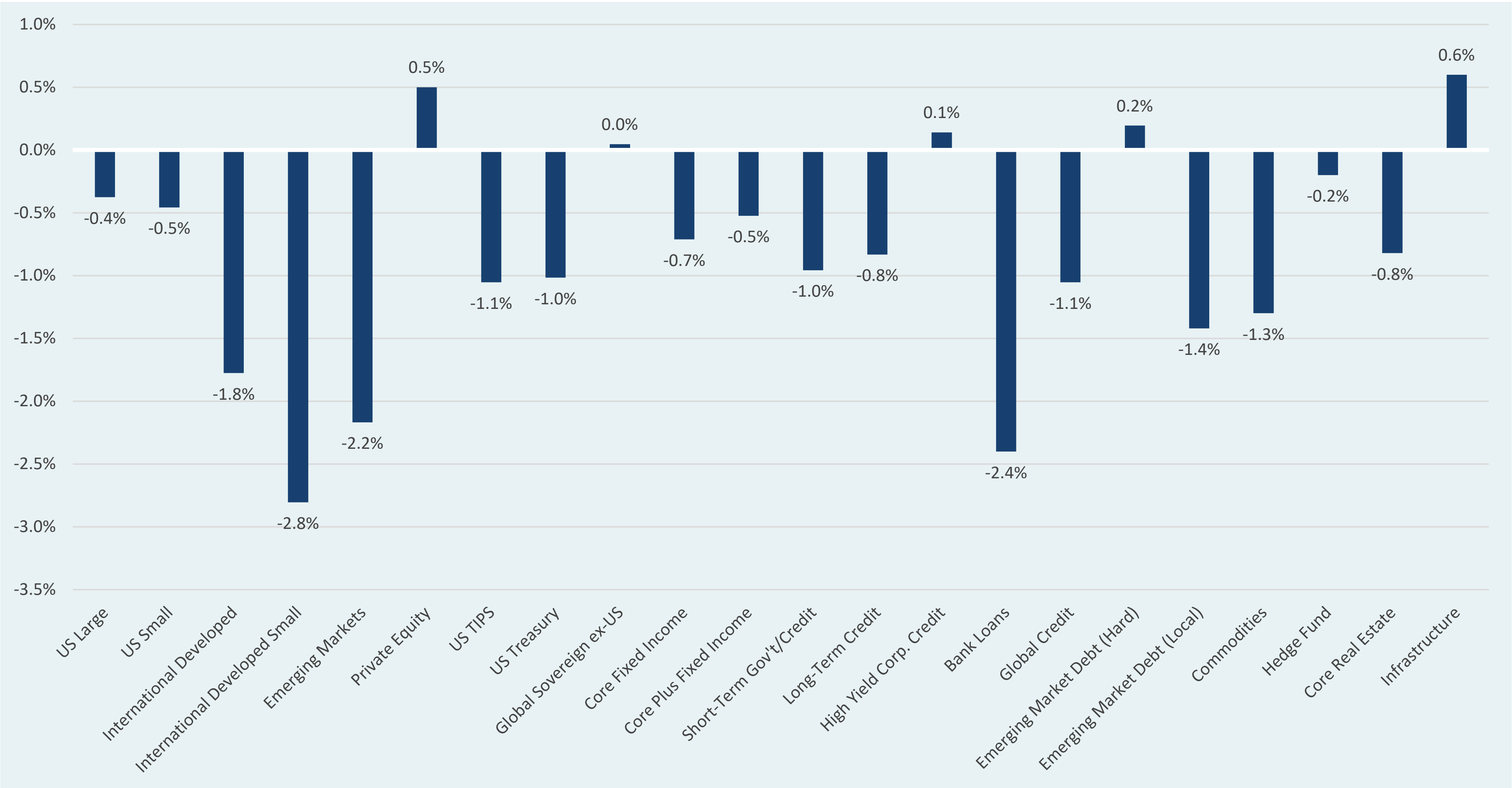
Range of likely 10-year outcomes

10-YEAR RETURN 90% CONFIDENCE INTERVAL



Source: Verus, MPI

2021 vs. 2020 return forecasts



Note: year-over-year change of the select group of asset classes above is based on the 2020 CMA methodology

Which overall risks should an investor accept?

Accept greater volatility

Be truly different from peers

Add portfolio leverage, which can change risk profile

Maintain same risk, but with weaker expected return

Take on illiquidity risk, which may lead to forced selling in stressed markets

Tilt into assets with higher expected return, but forecasts may be wrong

Make portfolio "bets" which might fail to pay off

Rely on active managers who may fail to produce alpha

Over-diversify which might reduce return

Source: Bridgewater, Verus

Market environment

— Stocks broadly are relatively expensive, bolstered by high valuations

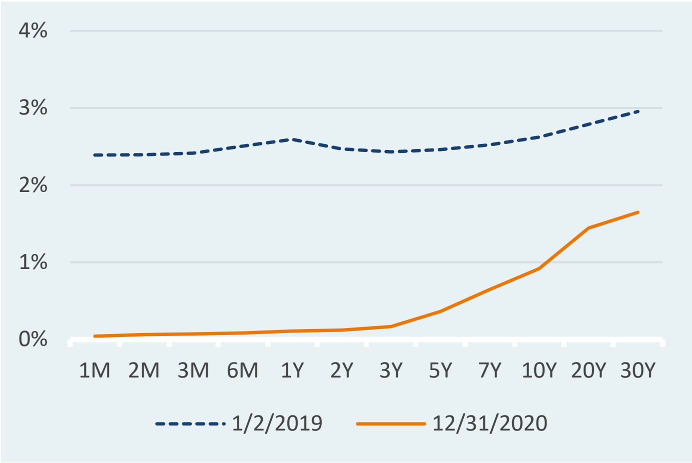
— Interest rates are low but with potential for longer term reflation trade

— Credit spreads are relatively tight

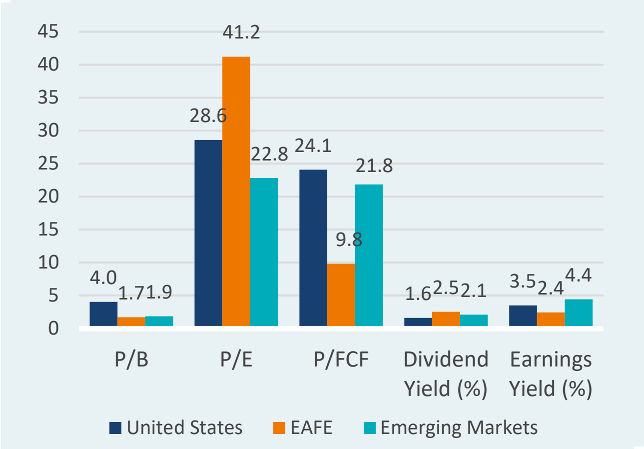
— Fiscal stimulus likely under new administration

— Assumption of full reopening of the global economy after COVID vaccinations are widely distributed

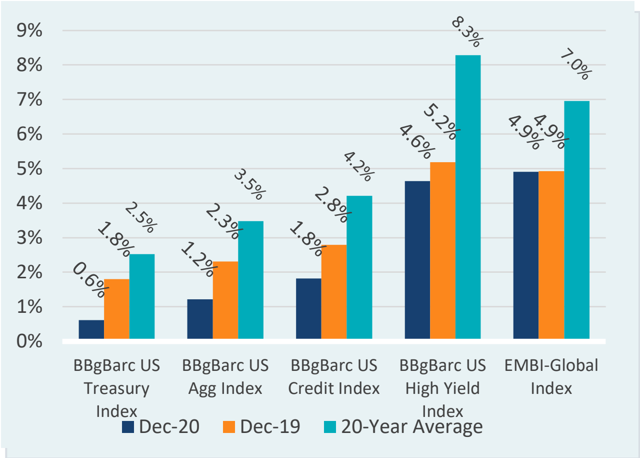
YIELD CURVE PRE- AND POST-COVID



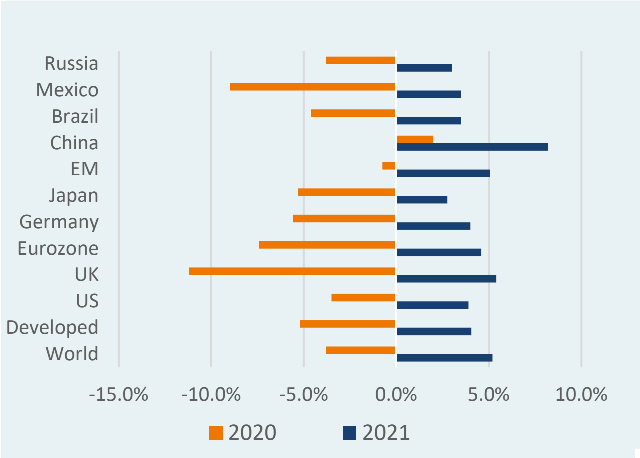
MSCI STOCK VALUATIONS(3-MONTH AVG)



NOMINAL YIELDS

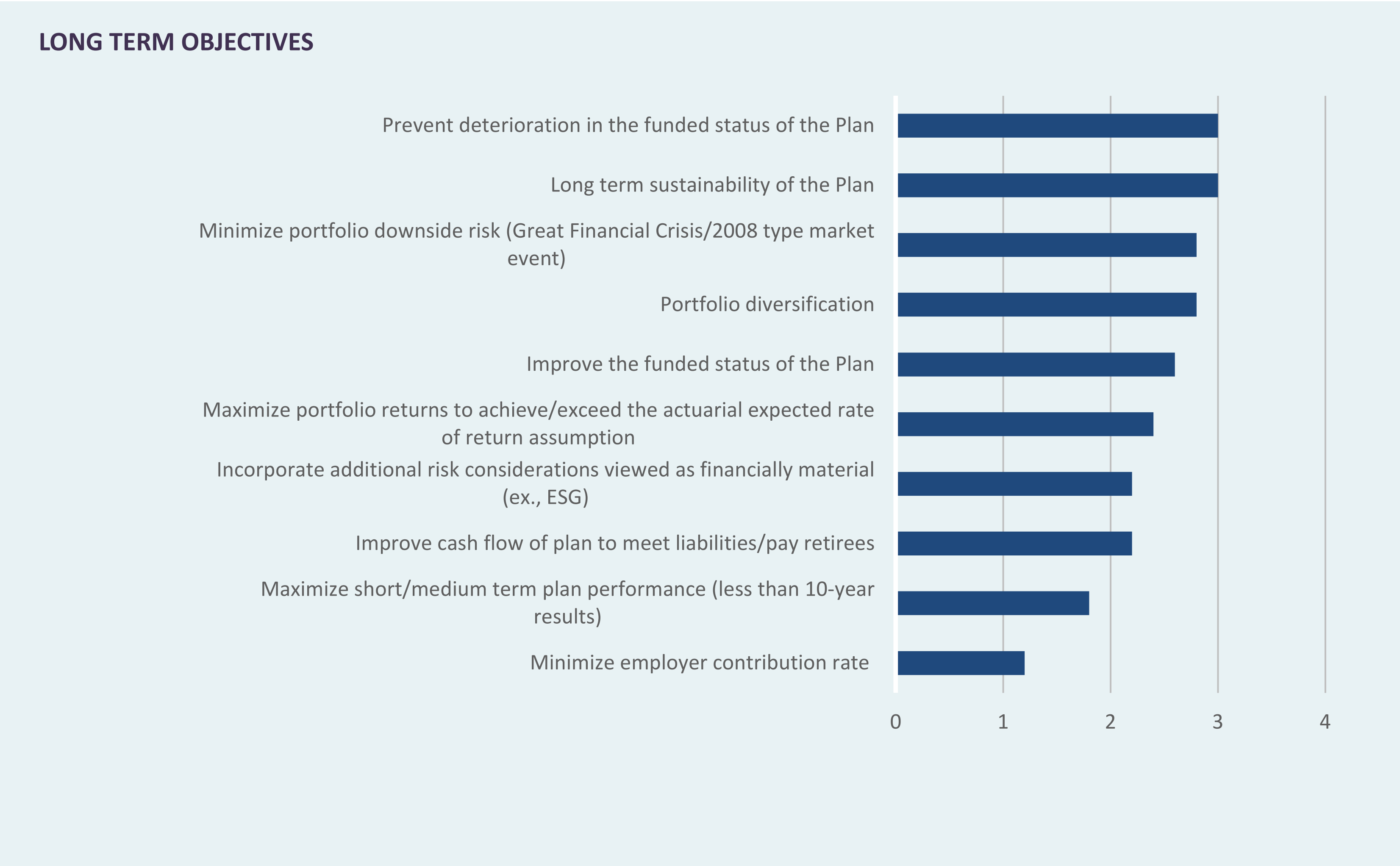


GDP GROWTH EXPECTATIONS (%)



Data as of 12/31/20

Long-term objectives – ERT results



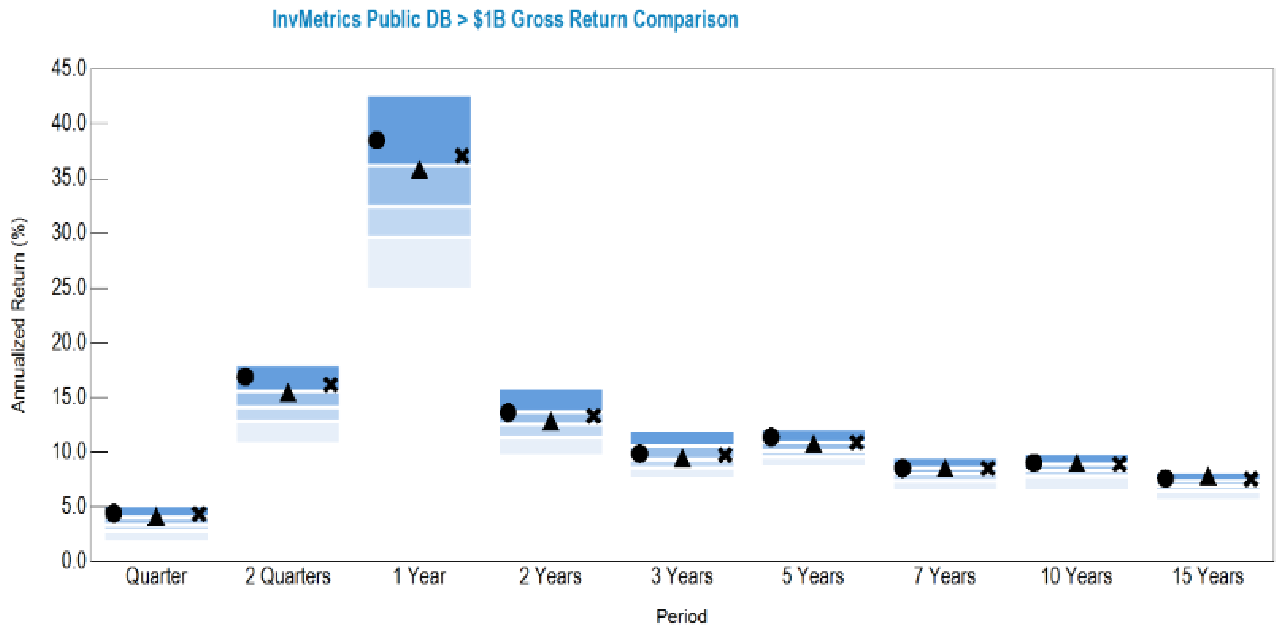
Enterprise Risk Tolerance survey results from 2019 asset-liability study

Assesses the Trustees' ability, willingness and comfort in taking different types of risks to achieve the objectives of ACERA

Objectives can be at odds with one another at times

ACERA's Portfolio

Historical performance



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years		15 Years	
5th Percentile	5.07		18.01		42.64		15.84		11.93		12.10		9.57		9.89		8.20	
25th Percentile	4.08		15.53		36.18		13.71		10.56		10.93		8.54		8.93		7.40	
Median	3.43		14.11		32.47		12.54		9.33		10.17		8.00		8.37		6.97	
75th Percentile	2.86		12.83		29.65		11.41		8.56		9.57		7.42		7.79		6.46	
95th Percentile	1.80		10.82		24.88		9.68		7.59		8.68		6.52		6.48		5.60	
# of Portfolios	96		96		96		96		96		96		95		91		84	
● Total Fund	4.41	(15)	16.90	(13)	38.50	(18)	13.62	(28)	9.87	(38)	11.39	(13)	8.53	(27)	9.03	(17)	7.60	(16)
▲ Policy Index	4.19	(21)	15.47	(26)	35.88	(28)	12.82	(45)	9.50	(47)	10.82	(33)	8.58	(23)	9.05	(16)	7.86	(10)
✕ Allocation Index	4.36	(16)	16.16	(18)	37.07	(23)	13.30	(36)	9.73	(42)	10.88	(29)	8.52	(28)	8.90	(27)	7.53	(19)

ACERA's returns have exceeded the actuarial assumed rate by a large margin in recent years.

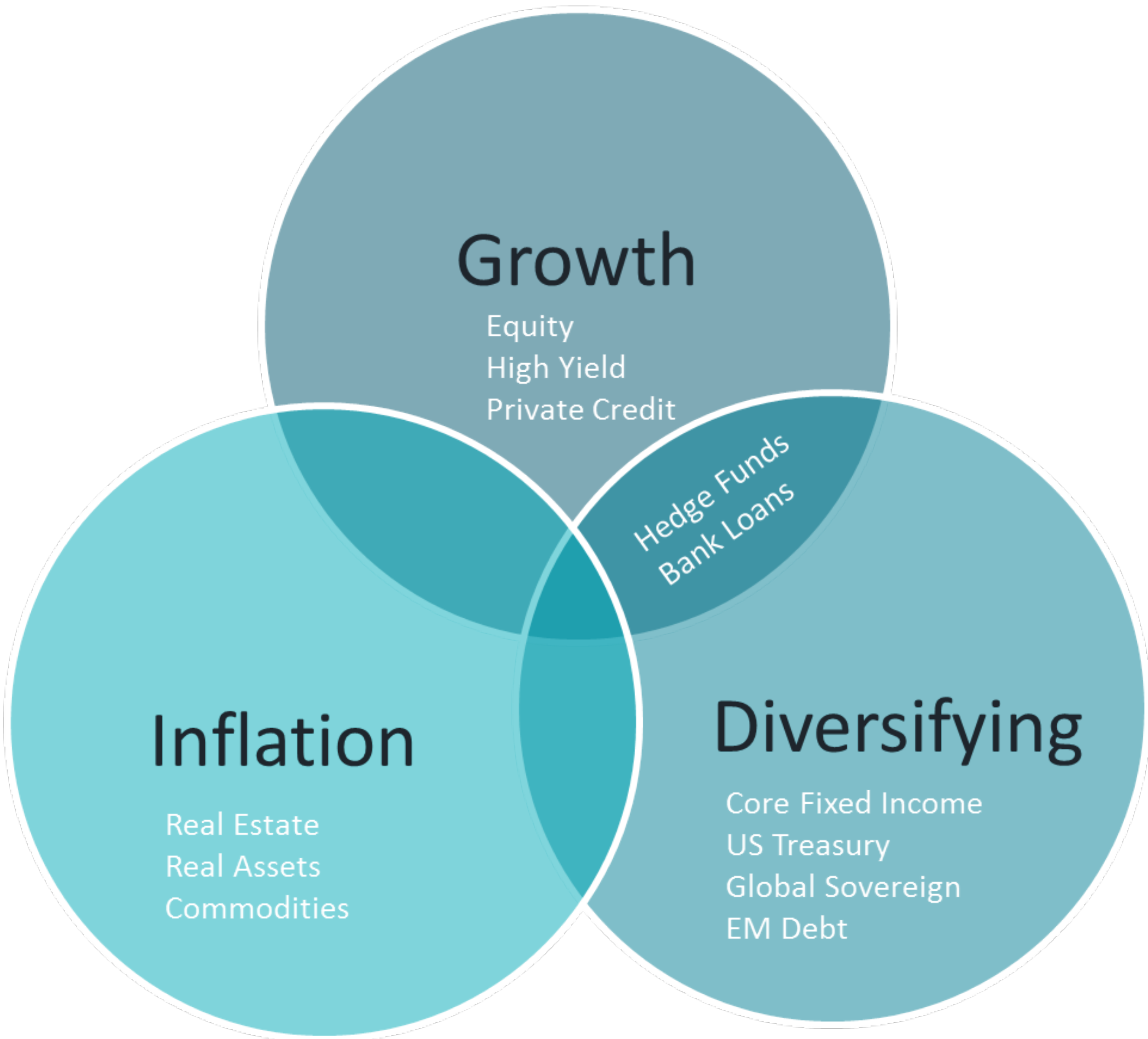
Over the past 30 years, a 60/40 US portfolio returned 8.9% and a 60/40 global portfolio returned 6.9%.

High equity valuations and lower bond yields reduce future expected returns.

Historical performance by asset class

	6 Mo(%)	Index(%)	1 Yr(%)	Index(%)	3 Yrs(%)	Index(%)	5 Yrs(%)	Index(%)	10 Yrs(%)	Index(%)
Total Fund	16.8	15.5	38.2	35.9	9.7	9.5	11.2	10.8	8.7	9.1
US Equity	22.8	22.0	64.0	62.5	16.6	17.1	17.3	16.6	13.4	13.8
Large Cap Active	18.1	20.4	58.5	60.6	12.0	17.3	14.7	16.7	12.3	14.0
Small Cap Equity	48.1	48.1	98.6	94.9	17.7	14.8	18.7	16.4	11.9	11.7
International Equity	21.8	21.8	57.3	52.6	8.6	7.0	11.7	10.4	6.7	5.6
Total Fixed Income	1.2	-1.6	11.6	3.8	5.3	4.3	5.1	3.5	5.1	3.4
US Fixed Income	-0.8	-2.7	7.7	0.7	6.0	4.7	5.2	3.1	5.3	3.4
Global Fixed	7.1	-3.1	23.1	1.8	3.0	2.1	4.8	2.1	4.5	1.7
Absolute Return	11.3	10.1	14.3	23.8	0.4	5.4	2.8	5.6	--	3.4
Private Equity	30.4	27.7	26.6	25.2	17.7	12.8	16.3	12.9	15.1	10.4
Real Assets	20.7	24.8	37.7	49.6	0.1	5.3	1.6	6.7	--	--
Private Credit	4.8	6.6	20.7	22.8	--	5.9	--	7.1	--	6.1
Real Estate	4.0	3.4	3.5	2.3	5.5	4.9	6.6	6.2	9.8	9.7
Cash	0.2	0.0	0.3	0.1	1.3	1.4	1.1	1.1	0.6	0.6

Functional labels



Asset allocation

- ACERA "Current Target" Mix – Approved strategic asset allocation as of 6/1/19
  - Public equity lowered by 4% from prior asset-liability study
  - Addition of Private Credit +4%
- "ACERA Revised" Mix – Incorporates feedback and modest suggested changes by ACERA
  - Private Real Assets -1%; Real Estate +2%
  - Absolute Return -2%; Global Fixed Income +1%
  - US Fixed -2%; Private Credit +2%
  - EM Equity increased (from 20% to 30% of Intl Equity)
- "More Equities" Mix – Moderately increases public equities with the aim of increasing portfolio expected returns
  - Public Equity +4%
  - Fixed Income -3%
  - Absolute Return -1%
- "More Privates" Mix – Moderately increases private investments with the aim of increasing portfolio expected returns
  - Private Equity +3%; Public Equity -2%
  - Diversifying -3%
  - Inflation Hedge +2%: Real Estate +1%; Private Real Assets +1%

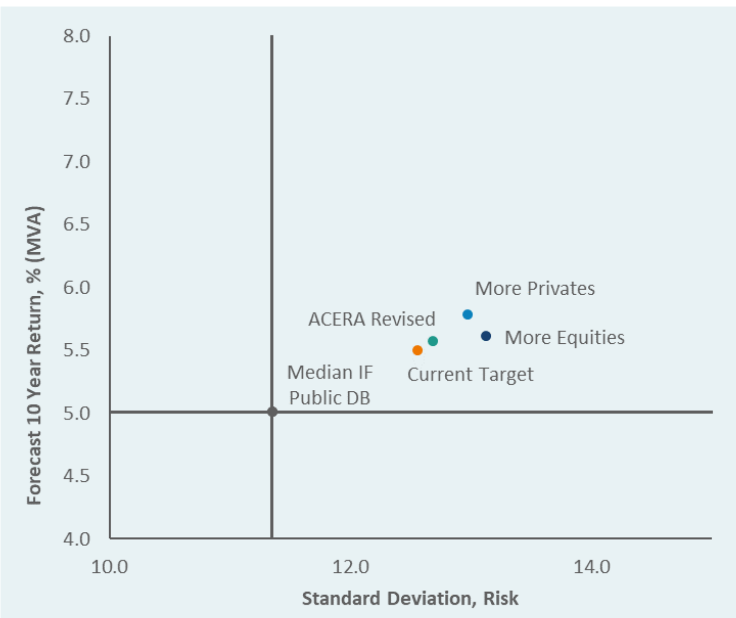
Asset allocation

	Current Target	ACERA Revised	More Equities	More Privates	Median IF Public DB	CMA's (10 Yr) Return (g)	Standard Deviation	Sharpe Ratio (a)
Total Domestic Equity	***25***	***25***	***27***	***24***	***27***	*5.2*	*16.1*	*0.38*
International Developed	17.0	14.9	18.4	16.3	17.2	*5.2*	*17.9*	*0.36*
International Developed Small	3.0	2.6	3.2	2.9		*4.4*	*22.4*	*0.29*
Emerging Markets	5.0	7.5	5.4	4.8	5.2	*5.4*	*25.5*	*0.32*
Total Int'l Equity	***25***	***25***	***27***	***24***	***22***			
Total Equity	***50***	***50***	***54***	***48***	***50***			
Private Equity	8.0	8.0	8.0	11.0	7.0	*9.3*	*28.1*	*0.46*
Private Credit	4.0	6.0	4.0	4.0		*4.6*	*11.2*	*0.45*
Total Growth	***62***	***64***	***66***	***63***	***57***			
Core Fixed Income	11.4	9.6	9.6	10.5	18.2	*1.5*	*4.0*	*0.36*
High Yield Corp. Credit	1.6	1.4	1.4	1.5		*3.4*	*11.3*	*0.34*
Total US Fixed	***13***	***11***	***11***	***12***	***18***			
Global Sovereign	3.0	4.0	2.0	2.0	3.8	*0.5*	*7.3*	*0.07*
Emerging Market Debt					3.8	*5.2*	*12.7*	*0.45*
Total Global Fixed	***3***	***4***	***2***	***2***	***8***			
Absolute Return	9.0	7.0	8.0	8.0	5.4	*3.8*	*7.8*	*0.49*
Total Diversifying	***25***	***22***	***21***	***22***	***31***			
Core Real Estate	5.6	7.0	5.6	6.3	9.1	*5.8*	*12.6*	*0.50*
Value Add Real Estate	1.6	2.0	1.6	1.8		*7.8*	*17.1*	*0.52*
Opportunistic Real Estate	0.8	1.0	0.8	0.9		*9.8*	*21.6*	*0.54*
Total Real Estate	***8***	***10***	***8***	***9***	***9***			
Private Real Assets	5.0	4.0	5.0	6.0		*7.8*	*18.8*	*0.49*
Commodities					3.2	*2.2*	*15.9*	*0.20*
Total Real Assets	***5***	***4***	***5***	***6***	***3***			
Total Infl Hedge	***13***	***14***	***13***	***15***	***12***			
Cash						*0.2*	*1.2*	*-*
Total Allocation	**100**	**100**	**100**	**100**	**100**			

	Current Target	ACERA Revised	More Equities	More Privates	Median IF Public DB
Mean Variance Analysis					
Forecast 10 Year Return	***5.5***	***5.6***	***5.6***	***5.8***	***5.0***
Standard Deviation	12.6	12.7	13.1	13.0	11.4
1st percentile ret. 1 year	*-19.8*	*-20.0*	*-20.7*	*-20.2*	*-18.2*
Sharpe Ratio	0.47	0.47	0.46	0.48	0.46
Probability 1 year return > 7%	45.2	45.5	45.8	46.3	43.0
Probability 10 year return > 7%	35.2	36.1	36.9	38.3	29.0
Verus Scenario Analysis					
10 Year Return Forecast					
Stagflation	2.3	2.2	2.3	2.3	2.9
Weak	-0.7	-0.8	-0.9	-0.9	-0.3
Feb 2021	***5.6***	***5.7***	***5.7***	***5.9***	***5.2***
Strong	12.7	13.0	13.2	13.5	11.6
Shock (1 year)	*-30.0*	*-29.7*	*-31.6*	*-31.5*	*-25.1*

Expected 10-year forecasts

- "ACERA Revised" expected to provide 10 bps more return with same risk-efficiency (Sharpe Ratio)
- "More Equities" expected to provide 10 bps more return with slightly less risk-efficiency
- "More Privates" expected to provide 30 bps more return with slightly better risk-efficiency



	Current Target	ACERA Revised	More Equities	More Privates	Median IF Public DB
Mean Variance Analysis					
Forecast 10 Year Return	***5.5***	***5.6***	***5.6***	***5.8***	***5.0***
Standard Deviation	12.6	12.7	13.1	13.0	11.4
1st percentile ret. 1 year	*-19.8*	*-20.0*	*-20.7*	*-20.2*	*-18.2*
Sharpe Ratio	0.47	0.47	0.46	0.48	0.46
Probability 1 year return > 7%	45.2	45.5	45.8	46.3	43.0
Probability 10 year return > 7%	35.2	36.1	36.9	38.3	29.0
Verus Scenario Analysis					
10 Year Return Forecast					
Stagflation	2.3	2.2	2.3	2.3	2.9
Weak	-0.7	-0.8	-0.9	-0.9	-0.3
Feb 2021	***5.6***	***5.7***	***5.7***	***5.9***	***5.2***
Strong	12.7	13.0	13.2	13.5	11.6
Shock (1 year)	*-30.0*	*-29.7*	*-31.6*	*-31.5*	*-25.1*

Risk Decomposition

- "ACERA Revised" provides slightly more hedging of Barra inflation risk factor and less exposure to equity risk factor than does current target

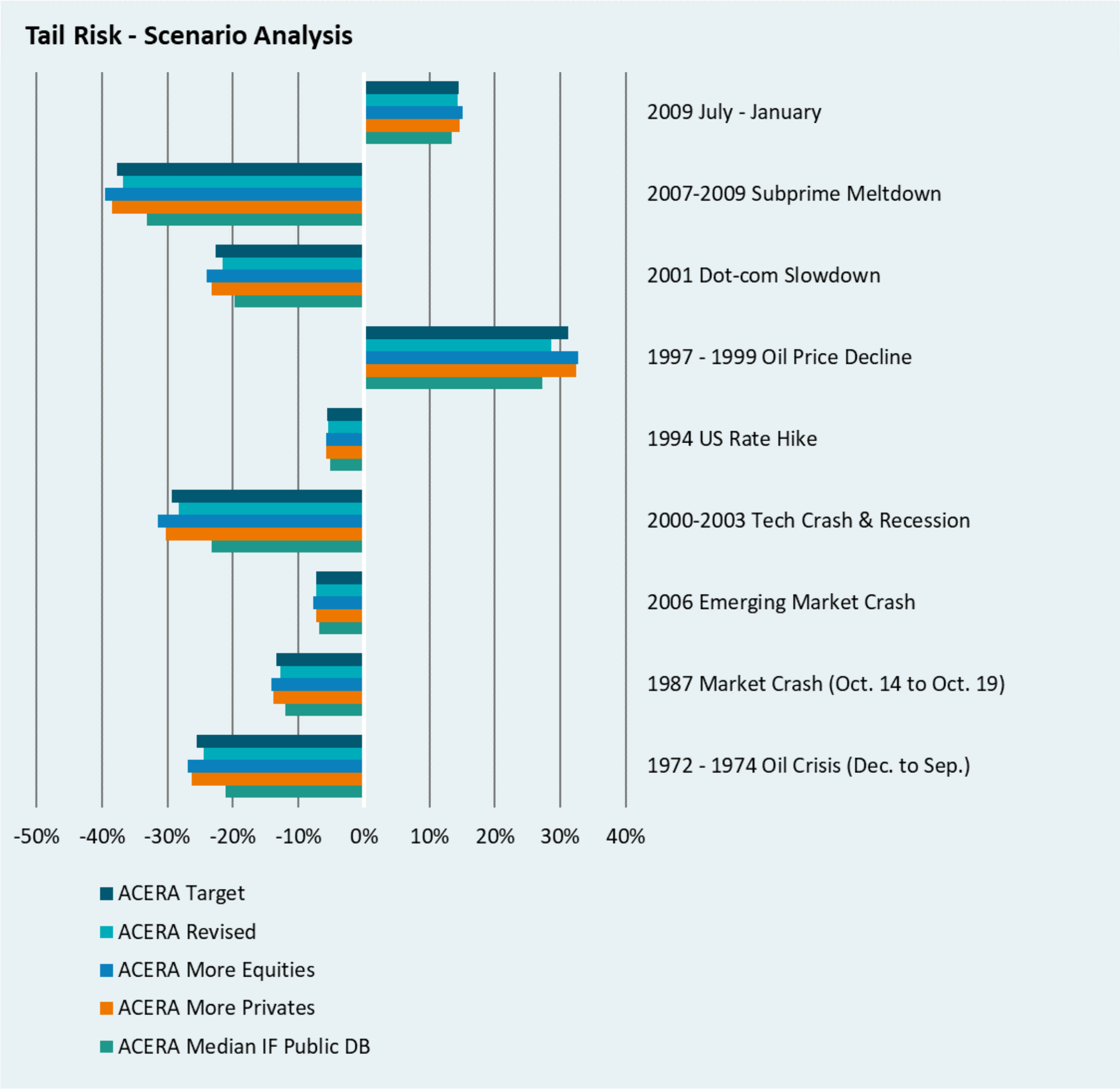
RISK BY FACTOR (%)

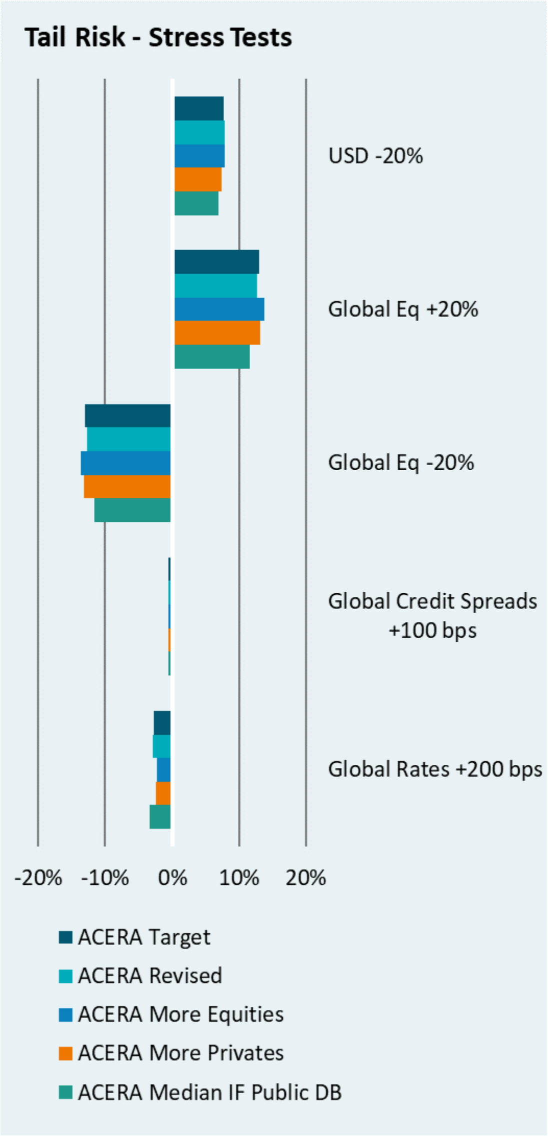
	Current Target	ACERA Revised	More Equities	More Privates	Median IF Public DB
Other	0.0	0.0	0.0	0.0	0.0
Currency	0.5%	0.5%	0.5%	0.5%	0.5%
Inflation	1.0%	1.3%	1.0%	1.2%	1.5%
Equity	13.0%	12.6%	13.7%	13.5%	11.2%
Credit	1.0%	1.1%	0.9%	1.0%	1.0%
Rates	-0.2%	-0.2%	-0.2%	-0.2%	-0.3%

RISK FACTOR CONTRIBUTION

	Current Target	ACERA Revised	More Equities	More Privates	Median IF Public DB
Other	1.0%	1.0%	0.9%	1.3%	0.7%
Currency	3.3%	3.5%	3.3%	3.0%	3.6%
Inflation	6.7%	8.5%	6.4%	7.2%	11.0%
Equity	84.0%	81.0%	84.8%	83.6%	79.6%
Credit	6.4%	7.3%	5.7%	6.1%	6.9%
Rates	-1.3%	-1.3%	-1.1%	-1.2%	-2.0%

Scenario Analysis





ACERA Liquidity Coverage Ratio (LCR)

Liquidity Available	Liquid Financial Assets	$	9,176,263,284.43
	Distributions from Illiquids	$	872,993,894.00
	Employer + Employee Contributions	$	2,296,554,990.00
	Investment Income		482,585,827.15
Liquidity Needs	Benefit Payments	$	3,259,088,106.00
	Capital Calls	$	732,119,750.00
	Plan Expenses	$	89,521,771.80
	UAAL Amortization	-	
LCR			**3.1**

LCR = 3.1

3.1x coverage in liquidity available relative to your spending needs over the next 5 years

DRAWDOWN SCENARIO AND CHANGE IN FUTURE RETURN

Drawdown Scenario (Immediate)	Assumed Return (Subsequent 5-years)					
3.14	2.50%	3.50%	4.50%	5.50%	6.50%	7.50%
-50%	1.59	1.63	1.68	1.73	1.79	1.84
-40%	1.77	1.84	1.90	1.97	2.05	2.14
-30%	1.99	2.07	2.16	2.26	2.37	2.49
-20%	2.24	2.35	2.47	2.55	2.63	2.71
-10%	2.51	2.59	2.67	2.76	2.85	2.94
0%	2.69	2.78	2.87	2.97	3.07	3.17

Contribution Sensitivity Analysis

Contribution Reduction	3.14
0%	3.14
10%	3.09
20%	3.03
30%	2.97
40%	2.92
50%	2.86
60%	2.81

Illiquid Asset Sensitivity Analysis

Illiquid Asset Allocation Increase	3.14
0%	3.14
2%	3.08
4%	3.01
6%	2.94
8%	2.88
10%	2.81
12%	2.74

The Liquidity Coverage Ratio (LCR) seeks to quantify the amount of liquid assets available to cover anticipated cash spending needs of ACERA using its policy allocation. Any number over 1 indicates ample liquidity.

ACERA Increasing PE LCR

Liquidity Available	Liquid Financial Assets	$	8,765,385,823.93
	Distributions from Illiquids	$	927,081,000.00
	Employer + Employee Contributions	$	2,296,554,990.00
	Investment Income		482,585,827.15
Liquidity Needs	Benefit Payments	$	3,259,088,106.00
	Capital Calls	$	1,006,253,000.00
	Plan Expenses	$	89,521,771.80
	UAAL Amortization	-	
LCR			**2.9**

LCR = 2.9

2.9x coverage in liquidity available relative to your spending needs over the next 5 years

DRAWDOWN SCENARIO AND CHANGE IN FUTURE RETURN

Drawdown Scenario (Immediate)	Assumed Return (Subsequent 5-years)					
2.86	2.50%	3.50%	4.50%	5.50%	6.50%	7.50%
-50%	1.49	1.53	1.57	1.62	1.67	1.72
-40%	1.66	1.71	1.77	1.83	1.90	1.97
-30%	1.84	1.92	1.99	2.08	2.18	2.28
-20%	2.06	2.16	2.26	2.33	2.41	2.48
-10%	2.30	2.37	2.44	2.52	2.60	2.68
0%	2.46	2.54	2.62	2.70	2.79	2.89

Contribution Sensitivity Analysis

Contribution Reduction	2.86
0%	2.86
10%	2.81
20%	2.76
30%	2.71
40%	2.65
50%	2.60
60%	2.55

Illiquid Asset Sensitivity Analysis

Illiquid Asset Allocation Increase	2.86
0%	2.86
2%	2.80
4%	2.74
6%	2.68
8%	2.61
10%	2.55
12%	2.49

Conclusions

- Plan sponsors are expected to have difficulty meeting actuarial returns in the current low expected return environment without taking on additional risk.
  - There are some key differences between investment and actuarial assumptions (shorter vs longer time periods, inflation differences) which must be considered in decision-making.
- Forecasting expected returns uses a precise methodology to estimate what is unknowable.
  - Standard deviation around a mean estimate
  - Changing market conditions impacting building block inputs for CMAs
  - The exclusion of alpha (AA only considers market beta)
- Objectives and risks must be discussed and prioritized to determine the right asset allocation decision for the ACERA portfolio.
  - Key plan objectives can be in conflict, and market risks are fluid and subject to change.
- It is important to revisit (and/or reaffirm) the Plan's asset allocation when market conditions change meaningfully and impact capital market assumptions and expected returns.

Comparison of mixes relative to ERT objectives

	Objective Rank
— Current	
• Minimize downside risk	• 3
• Improved diversification	• 4
— ACERA Revised	
• Long term sustainability of plan	• 2
• Minimize downside risk	• 3
• Improved diversification	• 4
— More Equities	
• Long term sustainability of plan	• 2
— More Privates	
• Long term sustainability of plan	• 2
• Prevent deterioration of funded status	• 1
• Maximize return/meet or exceed actuarial return	• 6

Recommendation

— Current Target may be appropriate to maintain depending on Trustees' time horizon for decision-making and objective/risk prioritization (>10 yrs; downside risk sensitivity).

— More equities reduces risk efficiency, and Verus believes that this asset mix should not be implemented.

— Updated asset allocation analysis points to a modest increase in risk efficiency with the ACERA Revised and More Privates mixes.

- More Privates increases expected return and supports several ERT objectives.
- ACERA Revised keeps similar risk profile as Current and supports several ERT objectives.

Appendix

Correlation assumptions

	Cash	US Large	US Small	Intl Large	Intl Small	EM	Global Equity	PE	US TIPS	US Treasury	Global Sovereign ex-US	US Core	Core Plus	Short-Term Gov't/Credit	Short-Term Credit	Long-Term Credit	US HY	Bank Loans	Global Credit	EMD USD	EMD Local	Commodities	Hedge Funds	Real Estate	REITs	Infrastructure	Risk Parity	Currency Beta
Cash	1.0																											
US Large	-0.2	1.0																										
US Small	-0.2	0.9	1.0																									
Intl Large	-0.1	0.9	0.8	1.0																								
Intl Small	-0.2	0.9	0.8	1.0	1.0																							
EM	-0.1	0.7	0.7	0.8	0.8	1.0																						
Global Equity	-0.2	1.0	0.9	1.0	0.9	0.9	1.0																					
PE	-0.2	0.6	0.6	0.6	0.6	0.5	0.7	1.0																				
US TIPS	0.0	0.1	0.1	0.2	0.2	0.3	0.2	0.1	1.0																			
US Treasury	0.2	-0.4	-0.5	-0.4	-0.4	-0.3	-0.4	-0.2	0.7	1.0																		
Global Sovereign ex-US	0.1	0.2	0.1	0.3	0.3	0.5	0.3	0.0	0.6	0.3	1.0																	
US Core	0.1	-0.1	-0.2	-0.1	-0.1	0.1	-0.1	0.0	0.8	0.9	0.5	1.0																
Core Plus	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.0	0.8	0.7	0.6	0.9	1.0															
Short-Term Gov't/Credit	0.4	-0.1	-0.2	0.0	-0.1	0.1	0.0	-0.2	0.6	0.7	0.5	0.8	0.8	1.0														
Short-Term Credit	0.0	0.4	0.4	0.4	0.4	0.5	0.4	0.0	0.5	0.2	0.5	0.5	0.8	0.7	1.0													
Long-Term Credit	0.0	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.7	0.5	0.5	0.8	0.9	0.5	0.6	1.0												
US HY	-0.2	0.8	0.7	0.8	0.8	0.8	0.8	0.5	0.4	-0.2	0.4	0.2	0.4	0.1	0.7	0.5	1.0											
Bank Loans	-0.3	0.7	0.7	0.6	0.7	0.6	0.7	0.4	0.2	-0.3	0.2	0.0	0.2	0.0	0.6	0.4	0.9	1.0										
Global Credit	-0.1	0.6	0.5	0.7	0.7	0.7	0.7	0.4	0.6	0.1	0.7	0.5	0.6	0.4	0.8	0.7	0.8	0.6	1.0									
EMD USD	-0.2	0.5	0.5	0.6	0.6	0.7	0.6	0.4	0.6	0.1	0.5	0.5	0.6	0.3	0.7	0.6	0.8	0.7	0.9	1.0								
EMD Local	0.0	0.5	0.4	0.7	0.7	0.8	0.7	0.4	0.4	0.0	0.6	0.3	0.4	0.3	0.5	0.4	0.7	0.5	0.8	0.8	1.0							
Commodities	-0.1	0.5	0.5	0.6	0.6	0.6	0.6	0.3	0.2	-0.3	0.4	-0.1	0.0	0.0	0.3	0.1	0.6	0.5	0.5	0.5	0.6	1.0						
Hedge Funds	-0.2	0.8	0.8	0.8	0.9	0.7	0.9	0.6	0.2	-0.4	0.2	0.0	0.2	0.0	0.5	0.3	0.8	0.8	0.7	0.6	0.5	0.5	1.0					
Real Estate	-0.1	0.5	0.5	0.4	0.5	0.4	0.5	0.4	0.1	-0.1	0.1	0.0	-0.1	0.0	0.1	0.0	0.3	0.3	0.4	0.3	0.3	0.3	0.4	1.0				
REITs	-0.2	0.6	0.6	0.6	0.6	0.5	0.6	0.5	0.4	0.1	0.3	0.4	0.4	0.2	0.5	0.5	0.6	0.6	0.7	0.6	0.5	0.4	0.5	0.8	1.0			
Infrastructure	-0.2	0.8	0.7	0.8	0.8	0.7	0.8	0.7	0.4	-0.2	0.5	0.2	0.4	0.2	0.6	0.5	0.8	0.7	0.8	0.8	0.7	0.5	0.7	0.3	0.7	1.0		
Risk Parity	-0.1	0.6	0.6	0.7	0.6	0.6	0.7	0.3	0.4	0.0	0.4	0.2	0.5	0.3	0.6	0.5	0.8	0.6	0.7	0.7	0.6	0.6	0.7	0.0	0.5	0.7	1.0	
Currency Beta	0.0	0.2	0.2	0.1	0.1	0.1	0.2	0.0	0.0	-0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.2	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	1.0

Note: Correlation assumptions are based on the last ten years. Private Equity and Real Estate correlations are especially difficult to model – we have therefore used BarraOne correlation data to strengthen these correlation estimates.

Relevant forecast changes

— Fixed income return expectations fell markedly across most asset classes as bond yields headed towards zero. Equity return expectations also fell due to a corporate earnings recession and quick recovery in prices, both of which pushed valuations significantly higher. Most of our fixed income forecasts are 0.5-1.5% lower, while our equity forecasts are 0.4-2.8% lower.

— Inflation expectations were mixed during the year. The U.S. TIPS breakeven inflation rate increased from 1.5% to 1.7%, and household inflation expectations (University of Michigan) rose from 2.4% to 2.7%. However, the Survey of Professional Forecasters moved in the opposite direction, indicating a decrease from 2.20% to 2.04%. Overall, our inflation forecast increased very slightly from 1.9% to 2.0%. Inflation is an important component of the performance of asset classes such as equities, real estate, and commodities. It is important to note that inflation expectations affect *nominal* returns, rather than *real* returns.

— Credit spreads spiked in March and April as the spread of COVID-19 contributed to extreme market volatility. Although spreads later moved back towards normal levels, they remain elevated and supportive of long-term return expectations. Core fixed income spreads increased from 62 bps to 90 bps, and high yield spreads rose from 396 bps to 551 bps.

— The yield curve fell as the Federal Reserve brought interest rates down to zero. The short end of the curve felt most of this move, though the longer end of the curve was also considerably impacted. As indicated by the Federal Reserve, interest rates will likely be kept at 0% for the foreseeable future. The three-month U.S. dollar LIBOR reference rate fell from 2.09% to 0.23%.

— Emerging market hard and local currency debt forecasts were mixed. Hard currency-denominated debt spreads to U.S. Treasury yields jumped from 351 bps to 471 bps, although the broader 1% fall in interest rates brought expectations down commensurately, leading to little overall change. The yield of local-denominated debt fell from 6.0% to 4.6% alongside the broader fixed income market.

All data cited above is as of 9/30/20

Inflation

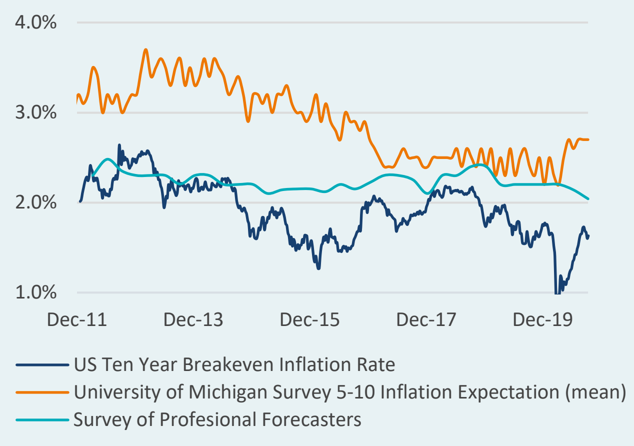
We use a weighted average of market expectations (50%), consumer expectations (25%), and professional forecasts (25%) to create a 10-year inflation forecast. The market's expectations for 10-year inflation can be inferred by taking the difference between the U.S. 10-year Treasury yield and the 10-year Treasury Inflation-Protected (TIPS) yield (referred to as the breakeven inflation rate).

Inflation fell suddenly in the first half of 2020 as COVID-19 led to a global economic slowdown. In the third quarter inflation increased to a normal level as the broader economic recovered. Investors generally expect the low inflation environment to continue well into the future.

Consumer inflation expectations decoupled from investor inflation expectations during the year. While investors are pricing lower-for-longer inflation, American households are expecting 2.7% long-term inflation—the highest forecast since 2016. Inflation expectations from the Survey of Professional Forecasters fell from 2.20% to 2.04% over the year.

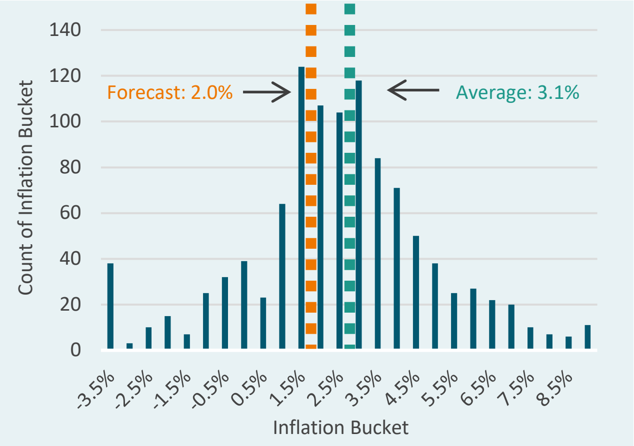
Our inflation forecast increased very slightly from 1.9% to 2.0%.

INFLATION EXPECTATIONS



Source: U. of Michigan, Philly Fed, as of 9/30/20

U.S. 10-YR ROLLING AVERAGE INFLATION SINCE 1923



Source: Bloomberg, as of 9/30/20

FORECAST

	10-Year Forecast
University of Michigan Survey *(25% weight)*	+2.7%
Survey of Professional Forecasters *(25% weight)*	+2.0%
US 10-Year TIPS Breakeven Rate *(50% weight)*	+1.6%
Inflation Forecast	2.0%

Source: Verus, as of 9/30/20

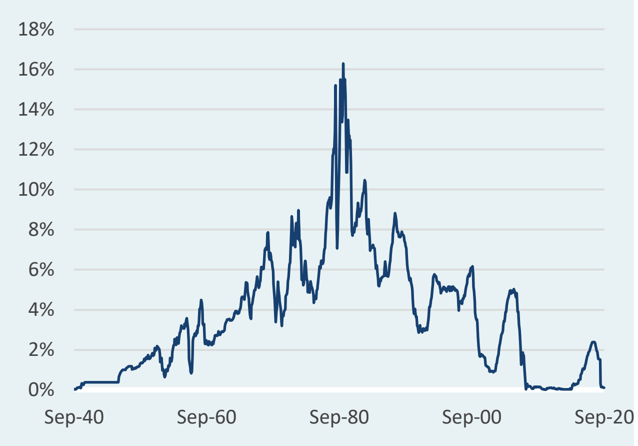
Cash

The U.S. Treasury yield curve collapsed to nearly zero in the first half of 2020, but the curve retained steepness similar to that experienced in recent years. Unprecedented monetary policy and central bank involvement in the markets has led bond yields towards zero, or negative, in most developed countries. As indicated by the Federal Reserve, interest rates will likely be kept at 0% for the foreseeable future. This brings the real cash rate deeply negative.

The return of cash seems to have decoupled from the rate of inflation in the current environment, as zero or negative interest rates have become the new normal. We believe that the current federal funds rate, as well as the steepness of the U.S. Treasury yield curve, may provide guidance regarding the future longer-term cash return. We place a 75% forecasting weight on the current federal funds rate and a 25% weight to the 10-year U.S. Treasury.

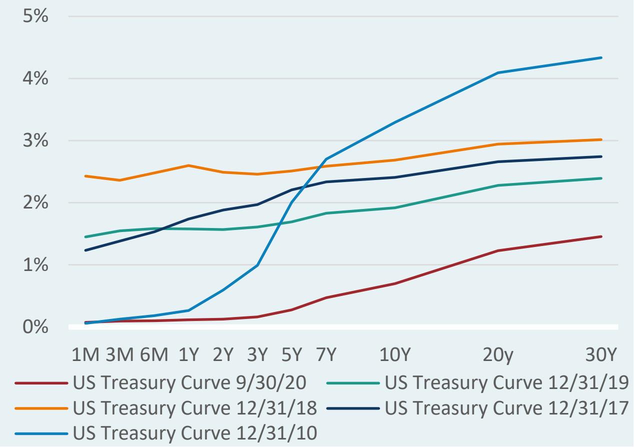
Applying these relationships result in a 10-year cash forecast of 0.2%.

CASH YIELD (3-MONTH T-BILL)



Source: FRED, as of 9/30/20

U.S. TREASURY YIELD CURVE



Source: Bloomberg, as of 9/30/20

FORECAST

	10-Year Forecast
Cash	+0.2%
Inflation Forecast	-2.0%
Real Return	-1.8%

Source: Verus, as of 9/30/20

Rates

We forecast the return from rates based upon the current 10-year Treasury yield, with all cash flows reinvested at the current yield. The 10-year yield fell from 1.7% to 0.7% through September.

U.S. Treasury yields remain high relative to other developed nations, specifically Japan and Germany, though less so since U.S. rates collapsed during the COVID-19 pandemic. Investors generally believe U.S. yields will stay lower-for-longer, though the Federal Reserve has expressed no interest in bringing rates into negative territory, which may limit significant downward movement from this point. The U.S. yield curve remains surprisingly flat.

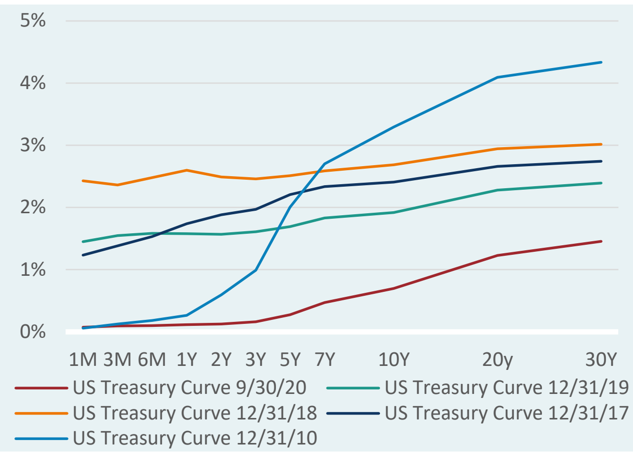
Developed world central banks have began to recognize the limitations of monetary policy in spurring economic growth, and many have commented on the need for greater fiscal policy support. It appears that interest rates in many countries have hit or are close to hitting a natural floor.

Our expectations are for a 0.7% return over the next ten years, in line with the current U.S. 10-year Treasury yield.

U.S. 10-YR TREASURY YIELD

Source: Bloomberg, as of 9/30/20

U.S. TREASURY YIELD CURVE



Source: Bloomberg, as of 9/30/20

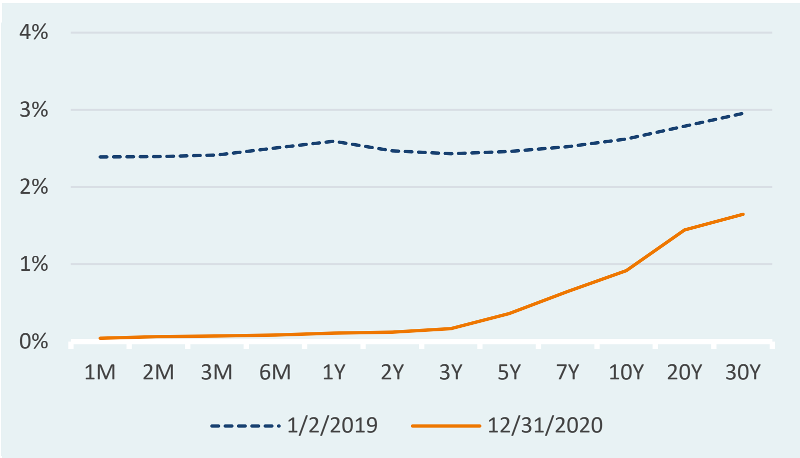
FORECAST

	10-Year Forecast
U.S. 10-Year Treasury	+0.7%
Inflation Forecast	-2.0%
Real Return	-1.3%

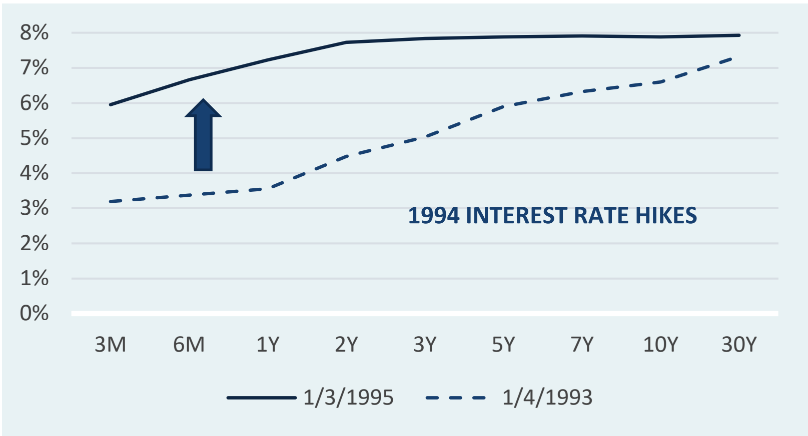
Source: Verus, as of 9/30/20

Interest rates

JANUARY 2019 TO DECEMBER 2020

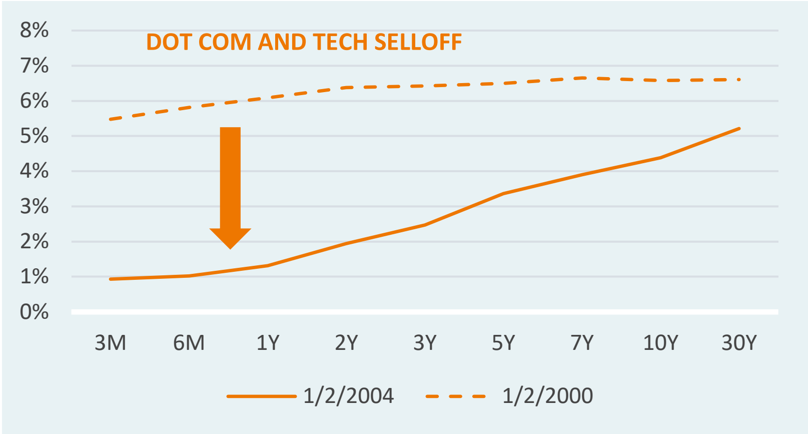


JANUARY 1993 TO JANUARY 1995



JANUARY 2007 – JANUARY 2009

JANUARY 2000 TO JANUARY 2004



The anchor or ballast potential of fixed income has decreased due to low rates.

Source: FRED

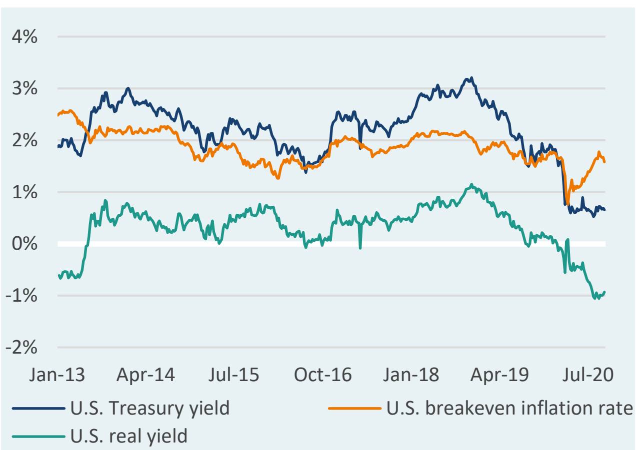
Real rates

TIPS provide high sensitivity to duration (interest rate risk) over short periods and track inflation (CPI) fairly well over longer periods. Changing inflation expectations, demand for inflation protection, and rate movements contribute to the price volatility of TIPS. Currently, future inflation is expected to be mild, there is low demand for inflation protection, and interest rates arguably cannot move much lower.

The U.S. 10-year real yield fell into deeply negative territory in 2020, along with falling interest rates. While inflation expectations bounced back in Q3 to prior levels, interest rates have stayed depressed. The breakeven inflation rate bottomed at 0.5% in March, but recovered to 1.64% in the third quarter.

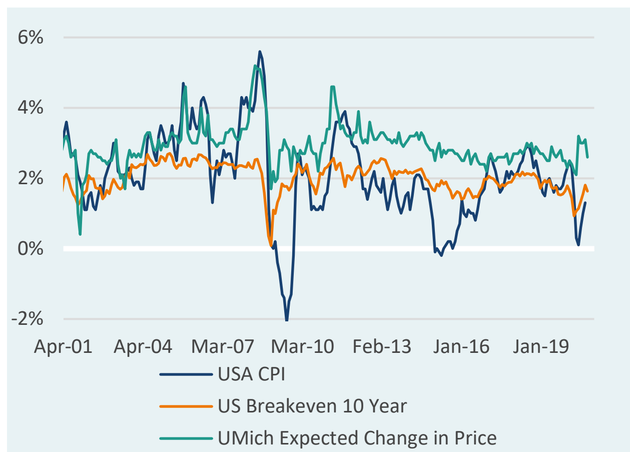
To arrive at a nominal 10-year forecast, we add the current real TIPS yield to our 10-year inflation forecast. Our real rates forecast fell into deeply negative territory from 0.14% to -0.95% as nominal interest rate collapsed and inflation expectations are relatively unchanged from one year prior.

NOMINAL YIELD VS. REAL



Source: Bloomberg, as of 9/30/20

INFLATION EXPECTATIONS



Source: Bloomberg, as of 9/30/20

FORECAST

	10-Year Forecast
U.S. 10-Year TIPS Real Yield	-0.95%
Inflation Forecast	+2.00%
Nominal Return	1.05%

Source: Verus, as of 9/30/20

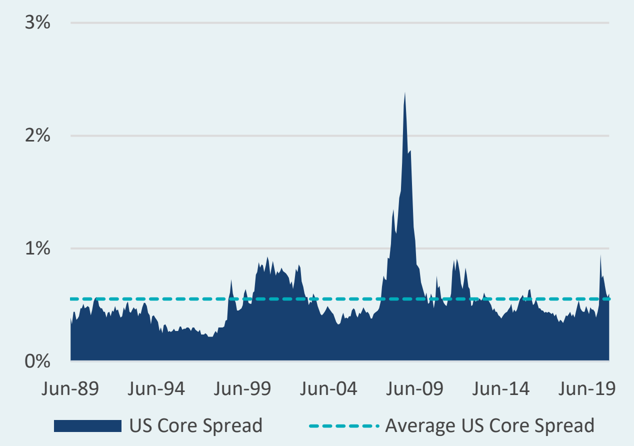
Core fixed

Credit fixed income return is composed of a bond term premium (duration) and credit spread. The bond term premium is represented by the 10-year U.S. Treasury yield.

We use default rates and credit spreads for each respective fixed income category to provide our 10-year return forecast. Our default rate assumption is derived from a variety of sources, including historical data and academic research. The effective default that is subtracted from the return forecast is based on our assumed default and recovery rates.

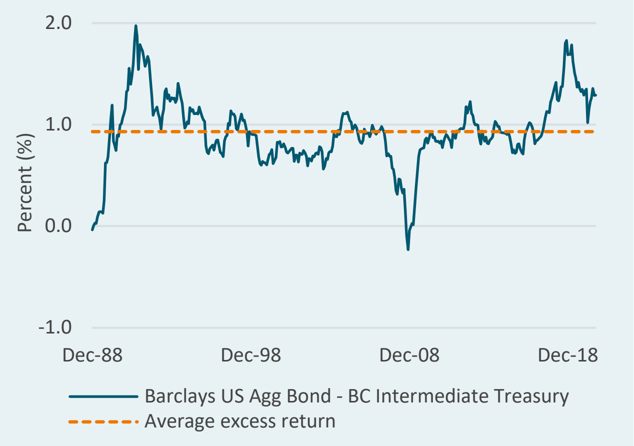
Core fixed income spreads increased from 62 bps to 90 bps over the year, but remain below the 30-year average of 1.25%. Although higher credit spreads have bolstered core fixed income expectations slightly, materially lower interest rates had a greater impact, bringing our forecast from 2.2% to 1.5%.

U.S. CORE CREDIT SPREAD



Source: Barclays, as of 9/30/20

ROLLING EXCESS RETURN (10-YR)



Source: Barclays, as of 9/30/20

FORECAST

	10-Year Forecast
Barclays U.S. Option-Adjusted Spread	+0.9%
Effective Default	-0.1%
U.S. 10-Year Treasury	+0.7%
Nominal Return	1.5%
Inflation Forecast	-2.0%
Real Return	-0.5%

Source: Verus, as of 9/30/20

Credit summary

	Core	Long-Term Credit	Global Credit	High Yield*	Bank Loans*	EM Debt (USD)	EM Debt (Local)	Private Credit	Real Estate Debt
Index	BBgBarc U.S. Aggregate	BBgBarc Long U.S. Corporate	BBgBarc Global Credit	BBgBarc U.S. High Yield	S&P LSTA	JPM EMBI	JPM GBI-EM	S&P LTSA + 1.75%	BBgBarc CMBS IG
Method	OAS + U.S. 10-Year	OAS + U.S. 10-Year	OAS + Global 10-Year Treasuries	OAS + U.S. 10-Year	LIBOR + Spread	OAS + U.S. 10-Year	Current Yield	Bank Loans+ 1.75% private premium	LIBOR + Spread
Spread to	Intermediate U.S. Treasury	Long-Term U.S. Treasury	Global Long-Term Treasuries	Intermediate U.S. Treasury	LIBOR	Intermediate U.S. Treasury	-	-	LIBOR
Default Assumption	-0.5%	-4.5%	-3.0%	-	-	-0.5%	-0.5%	-	-3.7%
Recovery Assumption	80%	95%	40%	-	-	60%	40%	-	47%
Spread	0.9%	1.7%	1.7%	5.5%	5.3%	4.7%	-	-	4.0%
Yield	-	-	-	-	-	-	4.6%	-	-
Risk Free Yield	0.7%	0.7%	0.4%	0.7%	0.2%	0.7%	-	-	0.2%
Effective Default	-0.1%	-0.2%	-1.8%	-2.8%	-2.6%	-0.2%	-0.3%	-	-2.0%
Nominal Return	1.5%	2.2%	0.3%	3.4%	2.9%	5.2%	4.3%	4.6%	2.2%
Inflation Forecast	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Real Return	-0.5%	0.2%	-1.6%	1.4%	0.9%	3.2%	2.3%	2.6%	0.2%

**We assume half of the spread of higher risk credit will be lost to defaults, as this has roughly been the case throughout history.*

Source: Verus

Equities

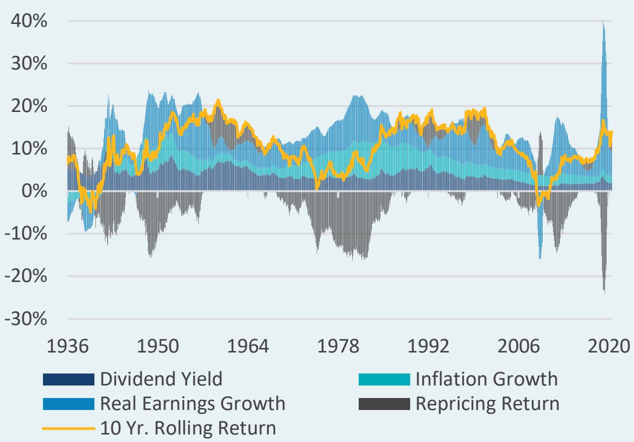
Investment returns in the equity space can be broken down into earnings growth, dividend yield, inflation, and repricing. Over the very long-term, repricing represents a small portion of return to equity investors, but over shorter time frames, the impacts on return can vary considerably.

If investors are willing to pay more for earnings, it could signal that investors are more confident in positive earnings growth going forward, while the opposite is true if investors pay less for earnings. It is somewhat surprising that investor confidence varies so much given that the long-term earnings growth is relatively stable.

Investor confidence in earnings growth can be measured using both the Shiller P/E ratio and the trailing 12-month P/E ratio. We take an average of these two valuations metrics when determining our repricing assumption. In short, if the P/E ratio is too high (low) relative to history, we expect future returns to be lower (higher) than the long-term average. Implicit in this analysis is the assumption that P/E's will exhibit mild mean reversion over 10 years.

We make a conservative repricing estimate given how widely repricing can vary over time. We then skew the repricing adjustment because the percentage change in index price is larger with each incremental rise in valuations when P/E's are low, compared to when they are high.

TRAILING 10-YR S&P 500 RETURN COMPOSITION



Source: Shiller, Standard & Poor's, as of 6/30/20

U.S. LARGE SHILLER P/E

Source: Shiller, S&P 500, as of 9/30/20

P/E REPRICING ASSUMPTION

Average P/E Percentile Bucket	Lower P/E	Upper P/E	Repricing Assumption
Lower 10%	-	10	2.00%
10% - 20%	10	13	1.50%
20% - 30%	13	15	0.75%
30% - 45%	15	18	0.50%
45% - 55%	18	19	0.0%
55% - 70%	19	21	-0.25%
70% - 80%	21	22	-0.50%
80% - 90%	22	24	-0.75%
Top 10%	24	-	-1.00%

Source: Verus

Equity summary

	U.S. Large	U.S. Small	EAFE	EAFE Small	EM
Index	S&P 500	Russell 2000	MSCI EAFE Large	MSCI EAFE Small	MSCI EM
Method	Building Block Approach: current dividend yield + historical average real earnings growth + inflation on earnings + repricing				
Current Shiller P/E Ratio	30.8	43.1	17.0	-	11.2
Regular P/E Ratio	26.0	13,764**	34.6	28.6	20.1
2020 Shiller P/E Change	+6.2%	-4.4%	-2.9%	-	+6.7%
2020 Regular P/E Change	+33.3%	+33,571%	+207.1%	+53%	+51.1%
Current Shiller P/E Percentile Rank	86%	91%	32%	-	34%
Current Regular P/E Percentile Rank	94%	100%	97%	63%*	93%
Average of P/E Methods' Percentile Rank	90%	95%	64%	63%*	63%
2020 YTD Return	5.6%	-8.7%	-7.1%	-4.2%	-1.2%
Shiller PE History	1982	1988	1982	Not Enough History	2005
Long-Term Average Shiller P/E	23.1	31.4	22.4	-	14.8
Current Dividend Yield	1.8%	1.3%	2.8%	2.3%	2.3%
Long-Term Average Real Earnings Growth	2.4%	2.9%	1.8%	1.6%	1.4%
Inflation on Earnings	2.0%	2.0%	0.8%	0.8%	2.0%
Repricing Effect (Estimate)	-1.0%	-1.0%	-0.3%	-0.3%	-0.3%
Nominal Return	5.1%	5.2%	5.2%	4.4%	5.4%
Inflation Forecast	2.0%	2.0%	0.8%	0.8%	2.0%
Real Return	3.1%	3.2%	4.4%	3.6%	3.4%

Data as of 9/30/20

**Average trailing P/E from previous 12 months is used*

***Earnings have fallen to nearly zero, which is the cause of this extremely high figure (the denominator of the Price/Earnings equation is nearly zero)*

NOTE: For all equities, we exclude data prior to 1972, which allows for a more appropriate comparison between data sets

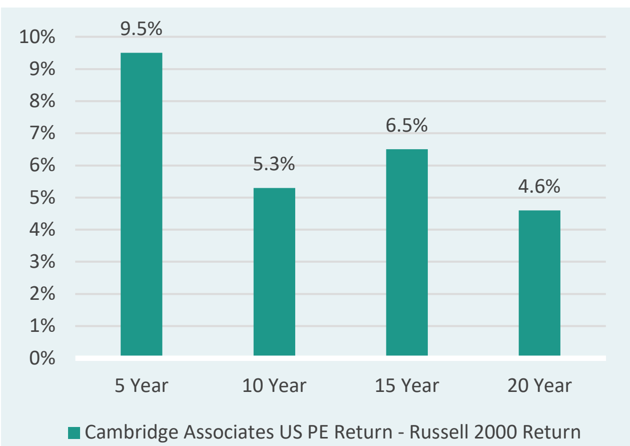
Private equity

Private equity and public equity returns have been correlated historically because the underlying economic forces driving these asset class returns are quite similar. The return relationship between the two can vary in the short-term, but over the long-term investors have received a premium, driven by leverage, concentrated factor exposure (smaller and undervalued companies), skill, and possibly illiquidity.

Historically, the beta of private equity relative to public equities has been high. We use a beta assumption of 1.85 to U.S. large cap equities in our capital market forecast.

Private equity performance typically differs based on the implementation approach. We provide a 10-year forecast for the entire private equity universe of 9.3%. Direct private equity programs have historically outperformed the broader universe by approximately 1.0%, and we forecast direct private equity accordingly with a forecast of 10.3%. Private equity fund-of-fund (FoF) programs have historically lagged the universe by 1.0%, and we forecast private equity fund-of-funds at 8.3% to reflect this drag.

PRIVATE EQUITY EXCESS RETURN (PE – U.S. SMALL CAP EQUITY)



Source: Cambridge, Russell, as of 3/31/20

PRIVATE EQUITY IMPLEMENTATION FORECASTS

	10-Year Forecast
Private Equity Universe Forecast	9.3%
Private Equity FoF Forecast	8.3%
Private Equity Direct Forecast	10.3%

Source: Verus, as of 9/30/20

PRIVATE EQUITY UNIVERSE FORECAST

	10-Year Forecast
U.S. Large Cap Forecast	+5.1%
1.85 Beta Multiplier	+4.2%
Nominal Return	9.3%
Inflation Forecast	-2.0%
Real Return	7.3%

Source: Verus, as of 9/30/20

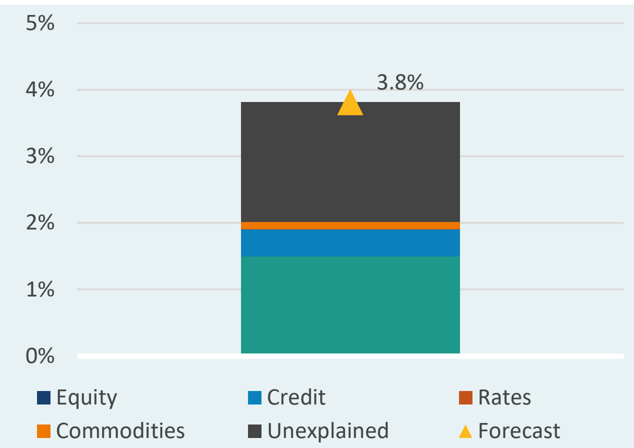
Hedge funds

Hedge fund performance variation through time can be partly explained by public market betas (ex: equity, rates, credit, etc.) and partly explained by non-public sources of return (ex: alternative betas, skill, luck). Certain hedge funds can be mostly explained by public market betas, while others are driven mostly by non-public sources of return. We do not believe hedge funds should be thought of as an asset class, and in most cases we recommend benchmarking and modeling individual hedge funds in line with the underlying asset class exposure set (equity hedge funds modeled as equity exposure, fixed income hedge funds modeled as fixed income exposure, etc.) Our forecast for "hedge funds" that we show here can be thought of as a forecast of the broad universe of hedge funds.

To forecast hedge fund returns, we identified the portion of historical hedge fund performance that can be attributed to public market betas, and the portion of hedge fund returns that cannot be attributed to public market beta. This means our forecast has two components: the public market return (explained return) and the non-public market return (unexplained return).

To forecast the public market beta portion of hedge funds, we take the historical sensitivity of hedge funds to equity, rates, credit, and commodities and pair these with our current 10-year public market forecasts for each asset class. To forecast the non-public market return portion of hedge funds (unexplained return) we simply assume the historical performance contribution of these sources will continue.

HEDGE FUND FORECAST



Source: Verus, as of 9/30/20

HEDGE FUND PUBLIC MARKET SOURCES OF RETURN (EXPLAINED RETURN)
Equity
Rates
Credit
Commodities

HEDGE FUND NON-PUBLIC SOURCES OF RETURN (UNEXPLAINED RETURN)
Alternative betas
Skill
Luck

Source: Verus

FORECAST

	10-Year Forecast
Public Market % of Return	+2.0%
Non-Public Market % of Return	+1.8%
Nominal Return	+3.8%
Inflation Forecast	-2.0%
Real Return	+1.8%

Source: Verus, as of 9/30/20

Private core real estate/REITS

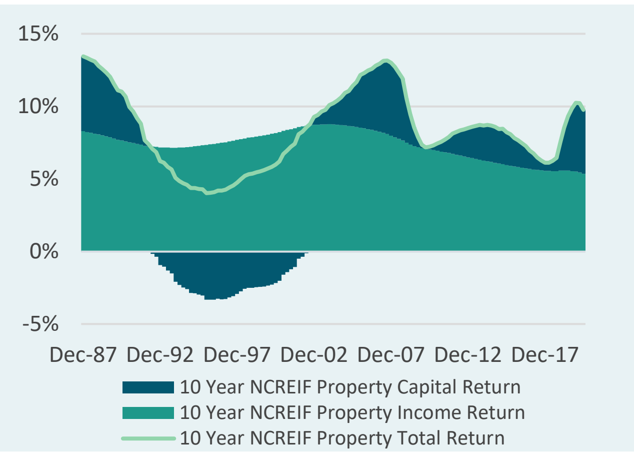
Performance of the NCREIF property index can be decomposed into an income return (cap rate) and capital return. The return coming from income has historically been more stable than the return derived from capital changes.

The cap rate is the ratio of earnings less expenses to price and does not include extraordinary expenses. A more accurate measure of the yield investors receive should include non-recurring capital expenditures; we assume a 2.0% capex expenditure. We also assume income growth will roughly equal the rate of broad economic growth, and we use GDP forecasts as an estimate for future income growth.

Private real estate and REITs have provided very similar returns over the long-term. Investors should be careful when comparing risk-adjusted returns of publicly traded assets to returns of appraisal priced assets, due to data problems and smoothing effects. While private real estate appears to be less volatile than REITs, the true risks to investors are likely very similar.

We assume the effects of leverage and liquidity offset each other. Therefore, our return forecast is the same for private real estate and REITs.

TRAILING 10-YR NCREIF RETURN COMPOSITION



Source: NCREIF, as of 6/30/20

PRIVATE REAL ESTATE

	Private Real Estate 10-Year Forecast
Current Cap Rate	+4.1%
Real Income Growth	+1.7%
Capex Assumption	-2.0%
Inflation	+2.0%
Nominal Return	5.8%
Inflation Forecast	-2.0%
Real Return	3.8%

Source: Verus, as of 9/30/20

REITS

	10-Year Forecast
Nominal Return Forecast	5.8%
Inflation Forecast	-2.0%
Real Return	3.8%

Source: Verus, as of 9/30/20

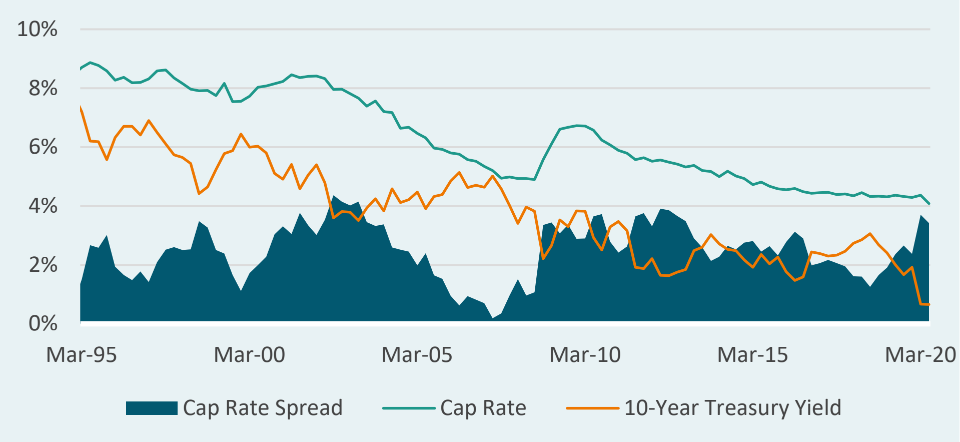
Value-add & opportunistic real estate

Value-add real estate includes properties which are in need of renovation, repositioning, and/or lease-up. Properties may also be classified as value-add due to their lower quality and/or location. Opportunistic real estate can also include development and distressed or very complex transactions. Greater amounts of leverage are usually employed within these strategies. Leverage increases beta (risk) by expanding the purchasing power of property managers via a greater debt load, which magnifies gains or losses. Increased debt also results in greater interest rate sensitivity. An increase/decrease in interest rates may result in a write-up/write-down of fixed rate debt, since debt holdings are typically marked-to-market.

Performance of value-add real estate is composed of the underlying private real estate market returns, plus a premium for additional associated risk, which is modeled here as 200 bps above our core real estate return forecast. Performance of opportunistic real estate strategies rests further out on the risk spectrum, and is modeled as 400 bps above the core real estate return forecast.

Additional expected returns above core real estate are justified by the higher inherent risk of properties which need improvement (operational or physical), price discounts built into properties located in non-core markets, illiquidity, and the ability of real estate managers to potentially source attractive deals in this less-than-efficient marketplace.

CAP RATE SPREADS



Source: NCREIF, Bloomberg, as of 6/30/20

FORECAST

	Value-Add 10-Year Forecast	Opportunistic 10-Year Forecast
Premium above core	+2.0%	+4.0%
Current Cap Rate	+4.1%	+4.1%
Real Income Growth	+1.7%	+1.7%
Capex Assumption	-2.0%	-2.0%
Inflation	+2.0%	+2.0%
Nominal Return	7.8%	9.8%
Inflation Forecast	-2.0%	-2.0%
Real Return	5.8%	7.8%

Source: Verus, as of 9/30/20

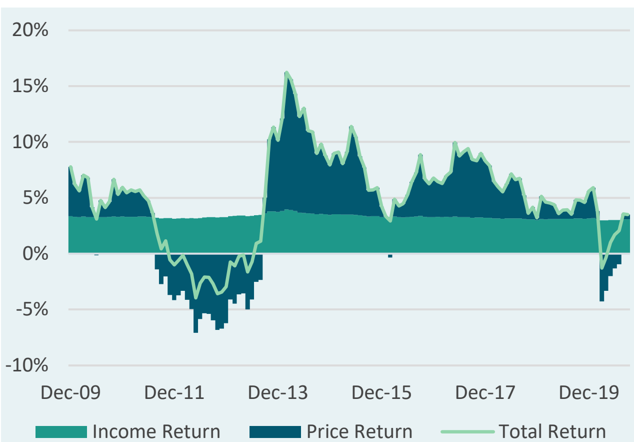
Infrastructure

Infrastructure includes a variety of investment types across a subset of industries. There is not one definition for what can be included within infrastructure. The asset class has grown dramatically during the last decade as investors sought assets that might provide more attractive yield relative to fixed income along with the potential for inflation protection.

Similar to real estate investment, income plays a significant role in the returns which investors receive. Income yields are currently lower than average due to higher prices and competition in the space, which might reasonably be expected to translate into lower expected future returns.

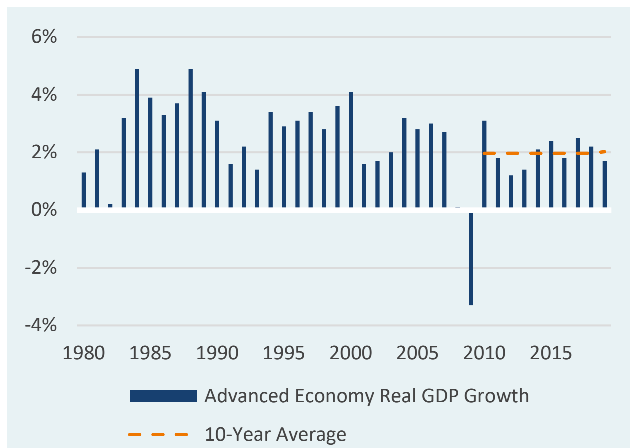
Due to the discount rate effect, infrastructure asset valuations would generally be negatively affected by material increases in interest rates. Because leverage is used in this space, higher interest rates would also impact investors in the form of higher borrowing costs.

5-YR ROLLING RETURN COMPOSITION



Source: S&P Global Infrastructure Index, as of 9/30/20

ADVANCED ECONOMY REAL GDP GROWTH



Source: IMF, as of 9/30/20

FORECAST

	10-Year Forecast
Inflation	1.7%
Yield	4.1%
Income Growth	2.0%
Nominal Return	7.8%
Global Inflation Forecast	-1.7%
Real Return	6.2%

Source: Verus, as of 9/30/20

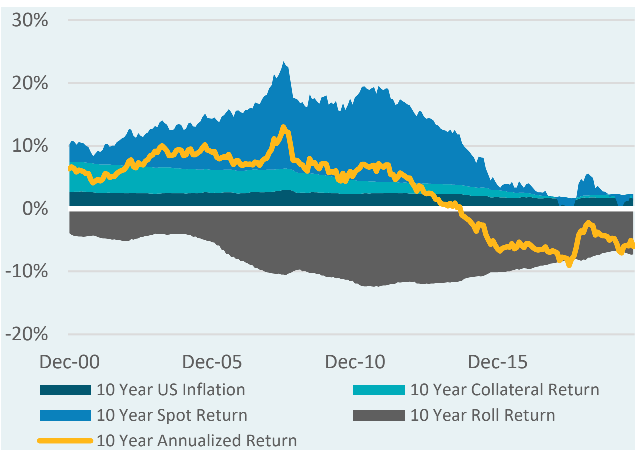
Commodities

Commodity returns can be decomposed into three sources: collateral return (cash), spot changes (inflation), and roll yield.

Roll return is generated by either backwardation or contango present in futures markets. Backwardation occurs when the futures price is below the spot price, which results in positive yield. Contango occurs when the futures price is above the spot price, and this results in a loss to commodity investors. Historically, futures markets have fluctuated between backwardation and contango but with a net-zero effect over the very long-term (since 1877). Therefore, roll return is assumed to be zero in our forecast. Over the most recent 10-year period, roll return has been negative, though this is likely the result of multiple commodity crises and a difficult market environment.

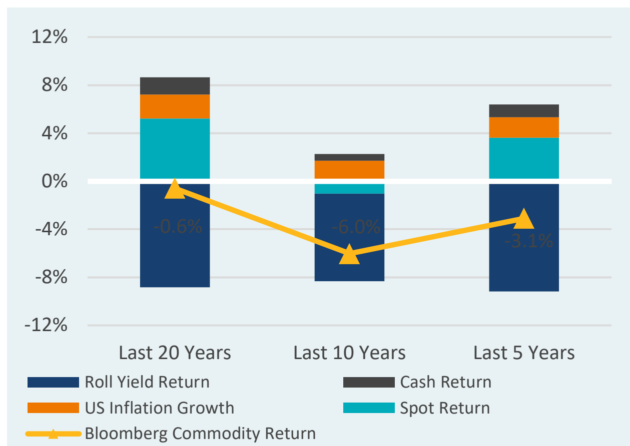
Our 10-year commodity forecast combines collateral (cash) return with spot return (inflation) to arrive at the nominal return, and subtracts out inflation to arrive at the real return.

TRAILING 10YR BLOOMBERG COMMODITY RETURN COMPOSITION (%)



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

BLOOMBERG COMMODITY RETURN COMPOSITION (%)



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

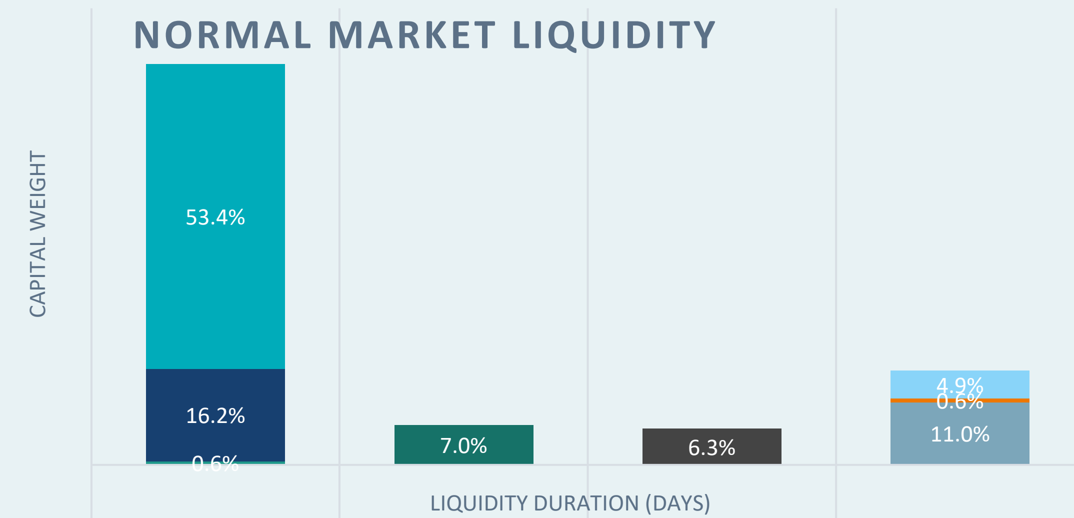
FORECAST

	10-Year Forecast
Collateral Return (Cash)	+0.2%
Roll Return	+0.0%
Spot Return (Inflation)	+2.0%
Nominal Return	2.2%
Inflation Forecast	-2.0%
Real Return	0.2%

Source: Verus, as of 9/30/20

Liquidity analysis – more privates

NORMAL MARKET LIQUIDITY



	1-7	8-30	31-90	180+
Real Assets				4.9%
Equities	53.4%			
Fixed Income	16.2%			
Private Credit				0.6%
Real Estate			6.3%	
Cash	0.6%			
Private Equity				11.0%
Absolute Return		7.0%		
Total (%)	69.9%	7.0%	6.3%	16.5%
Total ($)	$7,113,315,090	$675,620,158	$608,058,142	$1,592,533,229

70% of ACERA' portfolio can be converted to cash within 1-7 days in a normal market environment

Around 16.5% of ACERA' assets would be considered mostly or completely illiquid

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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June 2021

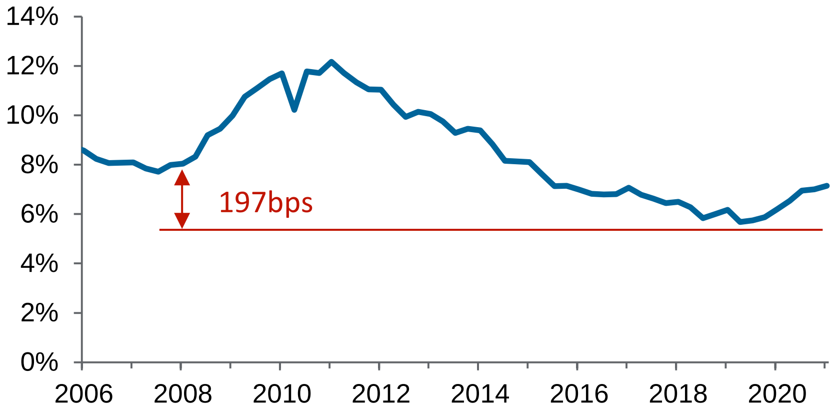
Semiannual Ending March 31, 2021
Real Estate
Performance Measurement Report

Callan

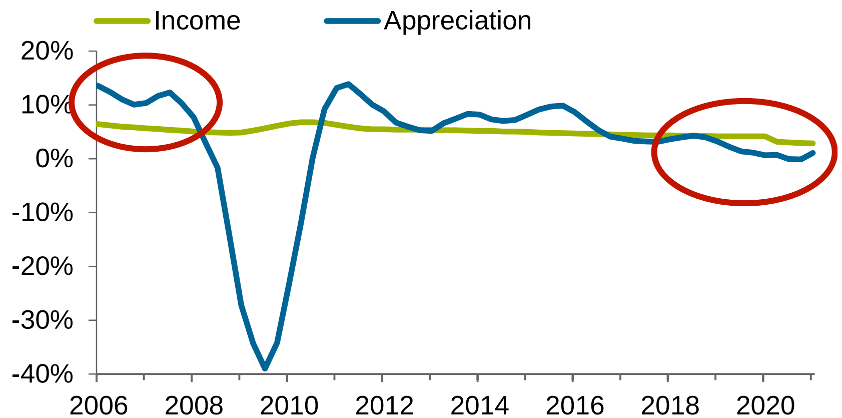
Avery Robinson, CAIA
Senior Vice President

U.S. Private Real Estate Market Trends

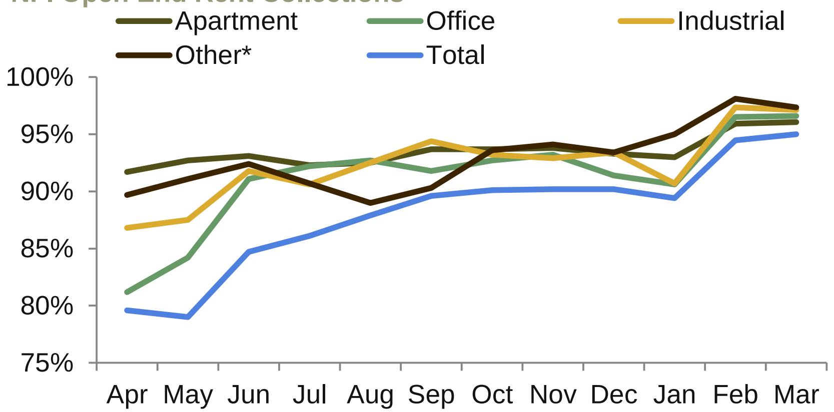
NCREIF Vacancy



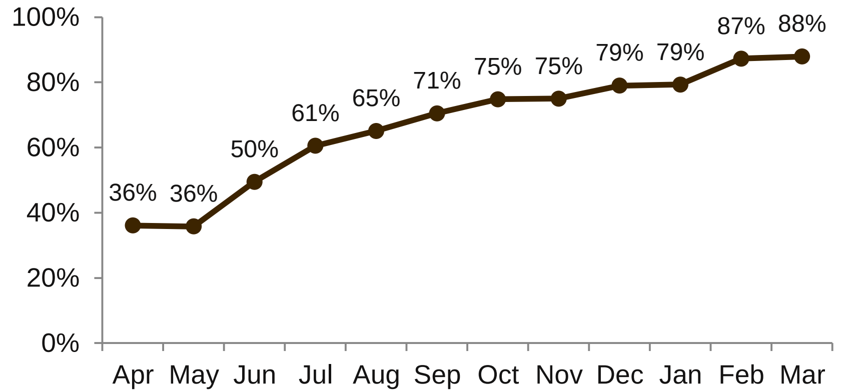
ODCE Returns



NFI Open End Rent Collections



Retail

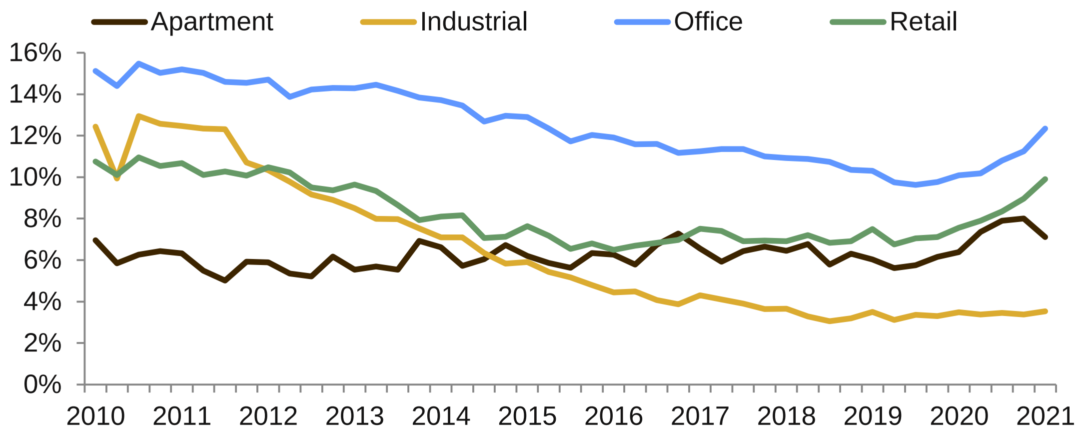


- Source: NCREIF, JPMAM, Moody's Analytics
- *Other refers to specialty property types e.g. medical office, life sciences, self-storage, student housing etc.

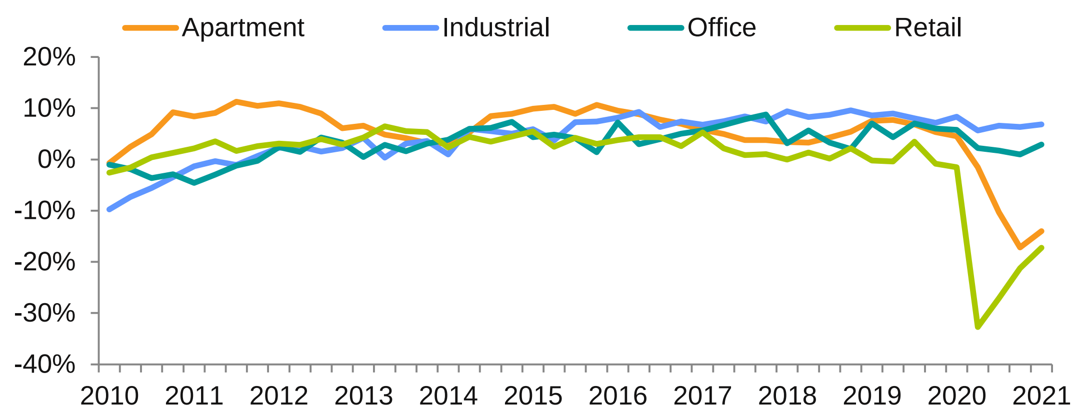
U.S. Private Real Estate Market Trends

- U.S. real estate fundamentals
  - *Vacancy rates for all property types are or will be impacted.*
  - *Net operating income has declined as retail continues to suffer.*
  - *1Q21 rent collections showed 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 apartments were relatively strong, followed by Industrial and Office.*
  - *Supply was in check before the pandemic.*
  - *New construction of preleased industrial and multifamily is occurring.*

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 March 31, 2021.

Funding Status as of March 31, 2021

	($) Millions	(%)
ACERA Plan Assets	10,050.174	100.00%
Real Estate Target[(1)]	804.014	8.00%
Plan's Real Estate Market Value	628.099	6.25%
Net Unfunded Commitments	104.014	1.03%
RE Market Value & Unfunded Commitments	732.113	7.28%
Remaining Allocation	175.914	1.75%

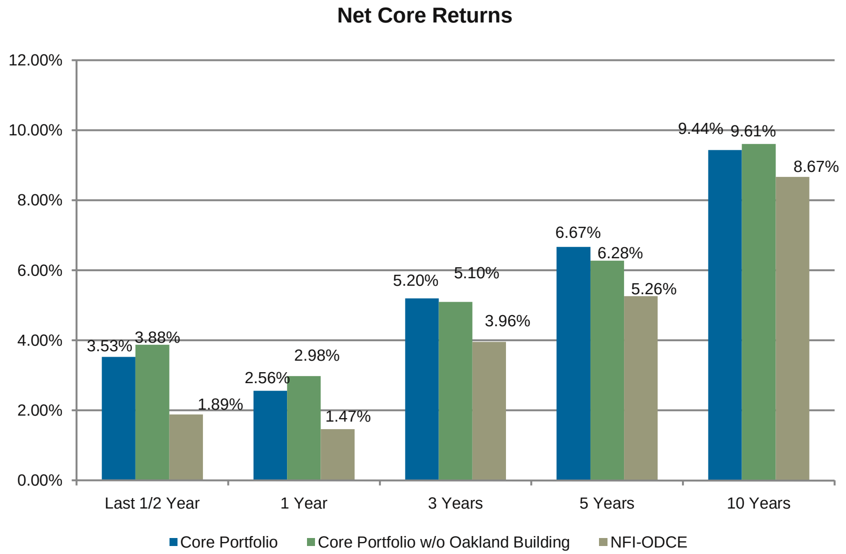
	Target	Funded	Funded & Committed
Core	70.00%	77.18%	66.21%
Non-Core	30.00%	22.82%	33.79%

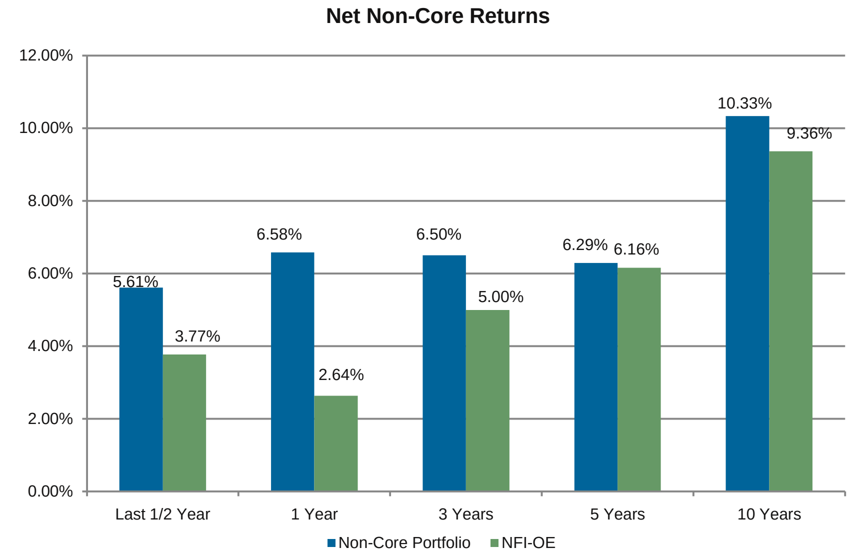
Portfolio Net Returns

For Period Ended March 31, 2021

Portfolio Returns by Style

For Period Ended March 31, 2021





Net Portfolio w/o Oakland Building	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	3.88%	2.98%	5.10%	6.28%	9.61%
Non-Core Portfolio	5.61%	6.58%	6.50%	6.29%	10.33%
Total Portfolio w/o Oakland Building	**4.32%**	**3.87%**	**5.44%**	**6.31%**	**9.87%**

Net Total Portfolio	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio	3.53%	2.56%	5.20%	6.67%	9.44%
Non-Core Portfolio	5.61%	6.58%	6.50%	6.29%	10.33%
Total Portfolio	**3.99%**	**3.43%**	**5.48%**	**6.61%**	**9.78%**

Performance Drivers and Detractors by Style

Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio outperformed the NFI-ODCE Value Weight Index (Net) by 88 bps for the last six months ending 03/31/2021. 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 the strongest performer over the period.
- Jamestown Premier Property Fund was the largest detractor from performance over the period.

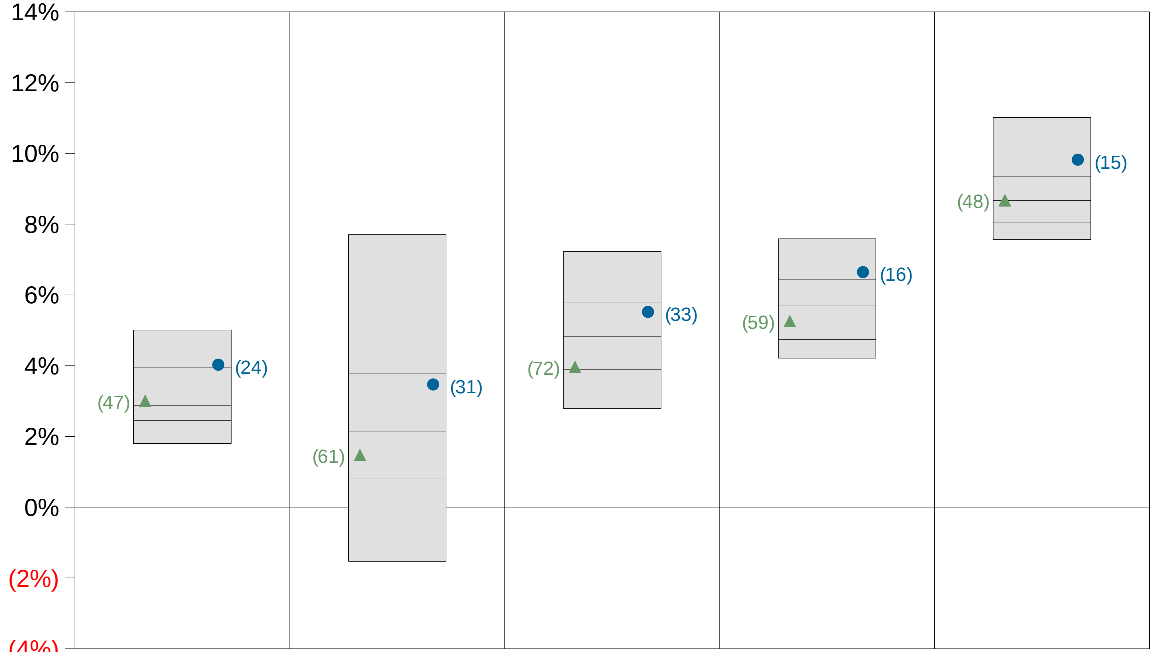
Non-Core Portfolio

- The Non-Core Portfolio outperformed the NFI-OE Value Weight Index (Net) by 184 bps for the period.
- CIM VI Urban REIT was the worst performer over the period.
- Heitman Value Partners IV and Angelo Gordon X were the primary drivers of performance.

Performance vs. Peer Group

For Period Ended March 31, 2021

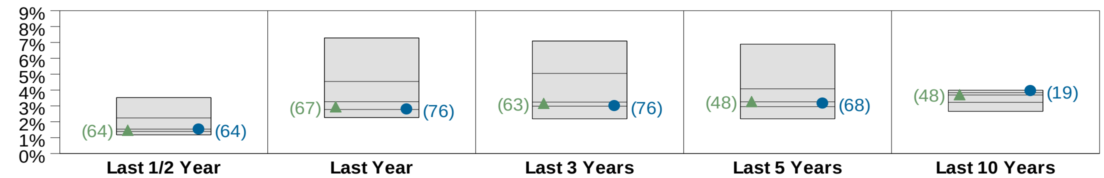
Performance vs Callan Open End Core Cmmingled Real Est



	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	5.01	7.70	7.23	7.58	11.01
25th Percentile	3.94	3.77	5.80	6.44	9.34
Median	2.88	2.15	4.82	5.69	8.67
75th Percentile	2.45	0.82	3.88	4.74	8.06
90th Percentile	1.80	(1.53)	2.79	4.21	7.56
ACERA Total RE Portfolio ●	3.99	3.43	5.48	6.61	9.78
NCREIF NFI-ODCE Val Wt Nt ▲	3.00	1.47	3.96	5.26	8.67

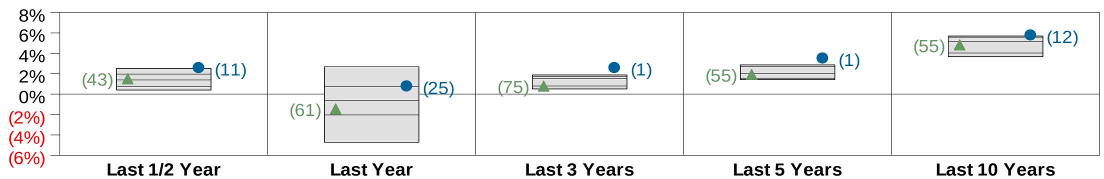
Performance vs. Peer Group

Income Rankings vs Callan OE Core Cmngld RE
Periods ended March 31, 2021



	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	3.52	7.29	7.09	6.89	4.00
25th Percentile	2.24	4.54	5.05	4.08	3.84
Median	1.54	3.27	3.24	3.26	3.69
75th Percentile	1.39	2.77	2.98	2.95	3.23
90th Percentile	1.18	2.26	2.19	2.19	2.66
ACERA Total RE Portfolio ●	1.48	2.73	2.95	3.11	3.90
NCREIF NFI-ODCE Val Wt Nt ▲	1.47	2.95	3.16	3.28	3.71

Appreciation Rankings vs Callan OE Core Cmngld RE
Periods ended March 31, 2021

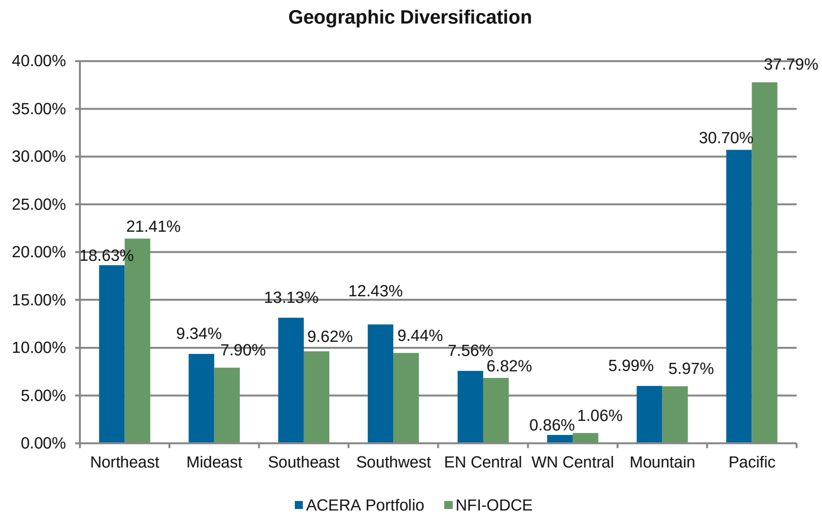


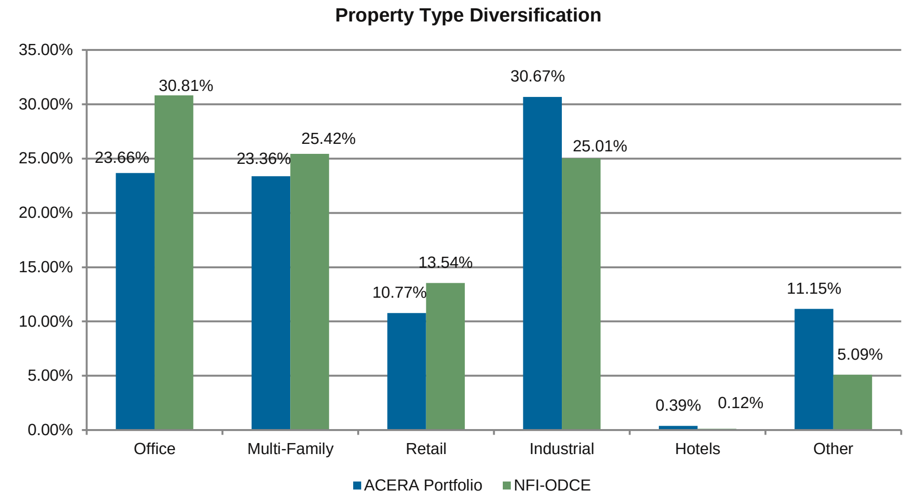
	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.53	2.68	1.88	2.86	5.70
25th Percentile	1.96	0.74	1.73	2.70	5.59
Median	1.39	(0.62)	1.53	2.02	5.16
75th Percentile	0.72	(2.04)	0.79	1.51	4.02
90th Percentile	0.40	(4.72)	0.50	1.43	3.68
ACERA Total RE Portfolio ●	2.50	0.68	2.48	3.42	5.69
NCREIF NFI-ODCE Val Wt Nt ▲	1.52	(1.45)	0.80	1.94	4.83

Diversification & Debt

Diversification – Total Portfolio (excluding Oakland Building)

– The ACERA Portfolio is well diversified by both property type and region.





Debt Compliance

– The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of March 31, 2021, the loan-to-value (“LTV”) ratio of the Portfolio was 28.93%.

Definitions

Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. Cap rate = Net operating income / 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.

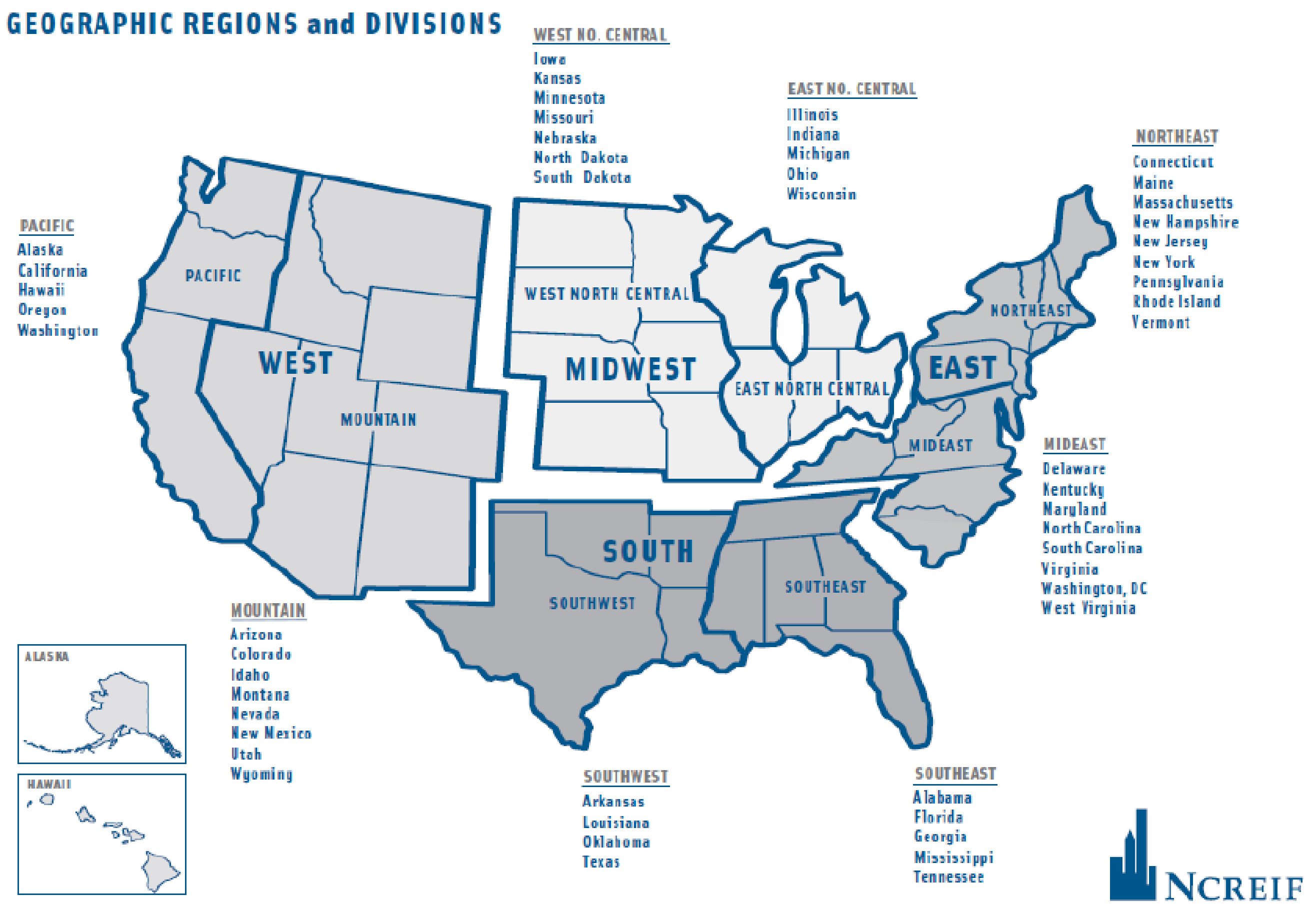
Withdrawals: Cash returned from the investment, representing returns of capital or net sales proceeds.

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



PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: MARCH 31, 2021

Investment Performance Review for

Alameda County Employees' Retirement Association - Public

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Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

2ND QUARTER 2021

Investment Landscape

Recent Verus research

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Topics of interest

IS THERE ALPHA AVAILABLE FROM EMERGING & DIVERSE MANAGERS?

While discussion on the alpha-generating ability of emerging and diverse managers has been part of institutional conversation for decades, the use of emerging and diverse managers has become a mainstay of industry conferences and in many Board meetings more recently. This paper explores the alpha-generating ability of emerging and diverse firms across asset classes and structures.

LEVERAGE IN PORTFOLIOS

Our latest Topics of Interest paper hopes to shed light on one segment of today's investment challenge, the benefits and risks associated with using leverage. This paper finds that for investors with sufficient capital to leverage market opportunities and allocate to a wide range of asset classes, and with an appropriate Enterprise Risk Tolerance to accept the range of outcomes involved, modest leverage may be responsibly employed to provide greater diversification of risk while maintaining a similar return target.

HOW TO MAKE MANAGER DECISIONS

Manager research decisions are made harder if you use the wrong tools and approaches. In this new paper, we outline the reasons why many investors may be finding these decisions harder than they need to and discuss a different way of thinking that may make the task of manager assessment clearer and more effective.

DEVELOPING AN END-GAME STRATEGY FOR CORPORATE PENSIONS

As a plan sponsor's de-risking strategy ultimately bears fruit and the plan approaches full funding, a new phase of the pension management lifecycle brings with it new challenges. Navigating the later stages of the asset-liability journey requires that plan sponsors establish a clear and well-defined view of the end-state. Doing so requires careful consideration of costs (some knowable, some not), risks, and less tangible company-specific considerations. Once this end-state is defined, investment and contribution strategy can be cohesively aligned to maximize the probability of success. With greater flexibility, the probability of a successful outcome increases.

Annual research

ACTIVE MANAGEMENT ENVIRONMENT

We are pleased to release the Verus 2021 Active Management Environment. The past year has been one of extreme volatility and divergence in many respects, creating interesting opportunities for active managers to show differentiated performance and deliver alpha to clients. We hope the insights from this research will allow for a deeper understanding of active manager behavior and inform selection in the future.

IMPLICATIONS OF RISK TOLERANCE ON ESTABLISHING AN EFFECTIVE INVESTMENT STRATEGY FOR PUBLIC PENSION PLANS

The future health of public pension plans is dependent on many factors and faces many risks, including low prospective returns, unfavorable plan demographics, and stressed plan sponsor financial conditions. This paper will explore these risks and provide a framework for discussion and evaluation designed to ensure a plan's investment program is appropriately aligned with its risk tolerance.

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PITTSBURGH 412.784.6678
LOS ANGELES 310.297.1777
SAN FRANCISCO 415.362.3484

1st quarter summary

THE ECONOMIC CLIMATE

— Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued at a brisk pace. ***p. 11***

— The speed of vaccinations in the U.S. has exceeded expectations, reaching more than 3 million doses per day during the first week of April. Approximately 23% of the country have been fully vaccinated, and 37% have received a first dose. ***p. 7***

— The Europe Union has been slower to roll out vaccinations, suggesting member countries may be grappling with the virus for longer periods of time. ***p. 19***

PORTFOLIO IMPACTS

— We believe the U.S. economy is playing catch-up to the markets in the current environment. While it seems increasingly likely that the economy will rapidly come back to life over the next year, this optimism may already be baked into equity prices. ***p. 29***

— U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation will continue to see a temporary rise in the coming months due to the lower prices of Q2 2020, since inflation is a year-over-year measure. ***p. 13***

THE INVESTMENT CLIMATE

— President Biden announced his $2 trillion Infrastructure Plan. In its initial form, the plan did not have bipartisan support, reportedly due to the lower proportion of the plan that related to traditional infrastructure spending, the size of the plan, and the proposed methods to fund it. Negotiations will commence in late-April, though it remains possible that the bill is modified in order to pass it via the "reconciliation" process, to avoid the need for Republican support. ***p. 11***

— According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020. ***p. 28***

ASSET ALLOCATION ISSUES

— U.S. equities were a top performer in Q1, returning +6.2%. International equities returned +3.5% (MSCI EAFE Index) and emerging markets returned +2.3% (MSCI Emerging Markets Index), on an unhedged currency basis. ***p. 28***

— Size and value factors both delivered strong relative performance. U.S. value stocks beat growth stocks (Russell 1000 Value +11.3%, Russell 1000 Growth +0.9%), as growth stocks entered a correction in February. Small capitalization stocks continued their rally (Russell 2000 +12.7%, Russell 1000 +5.9%). ***p. 31***

Prospects for a strong economic rebound are compelling, though this good news may already be reflected in asset prices

We believe a neutral risk stance is warranted in the current environment

What drove the market in Q1?

"Biden signs $1.9 trillion Covid relief bill, clearing way for stimulus checks, vaccine aid"

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

Sep	Oct	Nov	Dec	Jan	Feb
6.0%	5.0%	3.2%	3.7%	13.1%	4.3%

Article Source: CNBC, as of March 11th, 2021

"U.S. vaccination campaign gains steam as White House speeds shipments"

AVERAGE DAILY VACCINE DOSE ADMINISTRATIONS (TRAILING SEVEN DAYS)

1/15	1/31	2/14	2/28	3/15	3/31
843,447	1,348,021	1,681,951	1,735,053	2,427,429	2,828,491

Article Source: Reuters, March 31st, 2021

"Bond Traders Gird for More Pain After Biggest Loss Since 1980"

BLOOMBERG BARCLAYS US LONG TREASURY INDEX TOTAL RETURN

Oct	Nov	Dec	Jan	Feb	Mar
-3.01%	+1.20%	-1.18%	-3.61%	-5.57%	-4.99%

Article Source: Bloomberg, March 31st, 2021

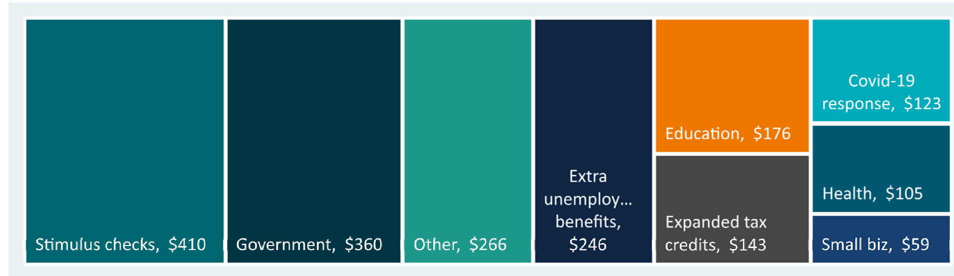
"OECD More Than Doubles US Economic Growth Forecast"

U.S. 2021 GDP GROWTH FORECAST (BLOOMBERG MEDIAN ESTIMATE)

Oct	Nov	Dec	Jan	Feb	Mar
3.8%	3.8%	3.9%	4.1%	4.9%	5.7%

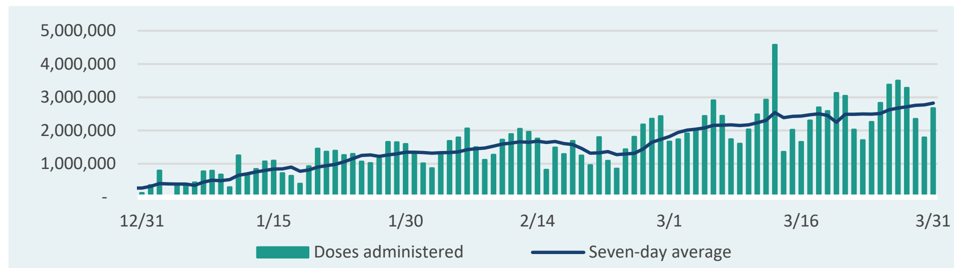
Article Source: Chief Investment Officer, March 17th, 2021

AMERICAN RESCUE PLAN ACT ALLOCATIONS



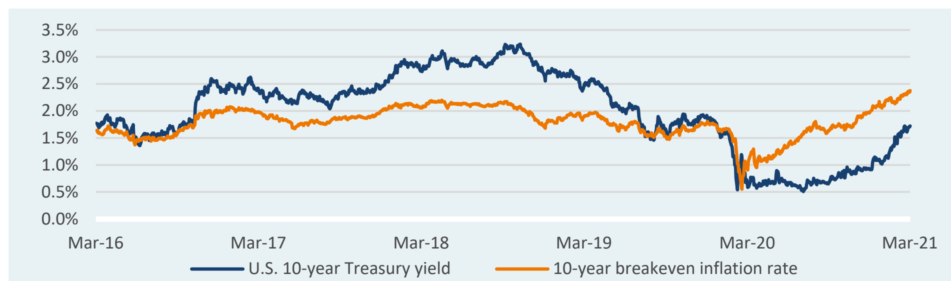
Source: Wall Street Journal, as of 3/11/21

U.S. COVID-19 VACCINATION CAMPAIGN



Source: Bloomberg, as of 3/31/21

INTEREST RATES AND INFLATION EXPECTATIONS



Source: Bloomberg, as of 3/31/21

Economic environment

U.S. economics summary

— Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued. The Atlanta Fed's GDPNow forecast for 2021 Q1 growth was 6.0% on a quarter-over-quarter annualized basis as of April 9th, suggesting an even more robust pace than the prior quarter.

— The speed of vaccinations in the U.S. has exceeded expectations, reaching 3 million doses per day. Approximately 23% of the country have been fully vaccinated, and 37% have received a first dose.

— President Biden announced his $2 trillion Infrastructure Plan. In its initial form, the bill would spend $400b on expanded care for the elderly and disabled, spend $500b on electric vehicle subsidies and incentives, and spend $100B on national high-speed broadband internet access, with a smaller portion of the spending going towards traditional infrastructure such as power grid, railway, and public transit.

— U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation will continue to see a temporary rise in the coming months due to the lower prices of Q2 2020, since inflation is a year-over-year measure.

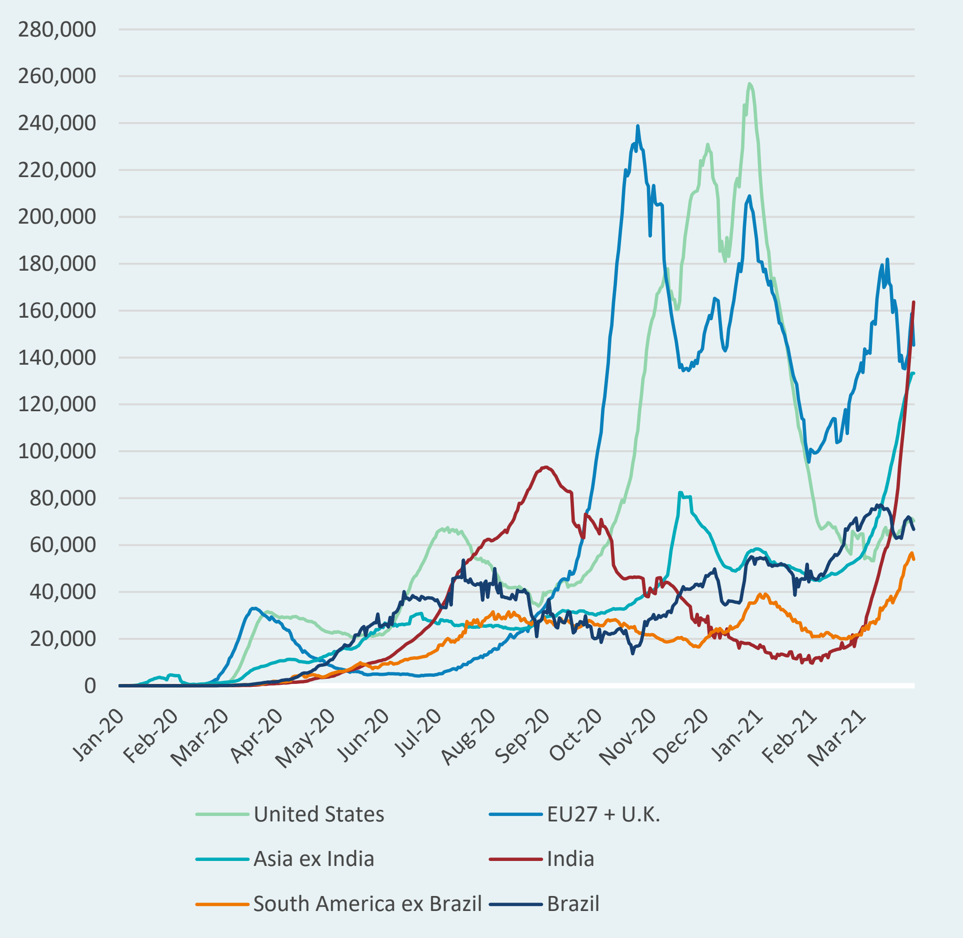
— While the U.S. unemployment rate continues to improve, falling from 6.7% to 6.0% during the quarter, the overall labor participation rate has stagnated. A disconnect seems to exist between the strong economy and weaker labor market.

— Consumer sentiment improved during Q1, along with the economic recovery. Sentiment is now at an average level relative to history.

	Most Recent	**12 Months Prior**
GDP *(YoY)*	(2.4%) *12/31/20*	2.3% *12/31/19*
Inflation *(CPI YoY, Core)*	1.6% *3/31/21*	2.1% *3/31/20*
Expected Inflation *(5yr-5yr forward)*	2.20% *3/31/21*	1.25% *3/31/20*
Fed Funds Target Range	0% – 0.25% *3/31/21*	0% – 0.25% *3/31/20*
10-Year Rate	1.74% *3/31/21*	0.67% *3/31/20*
U-3 Unemployment	6.0% *3/31/21*	4.4% *3/31/20*
U-6 Unemployment	10.7% *3/31/21*	8.8% *3/31/20*

COVID-19 case growth

SEVEN-DAY AVERAGE DAILY CASE GROWTH

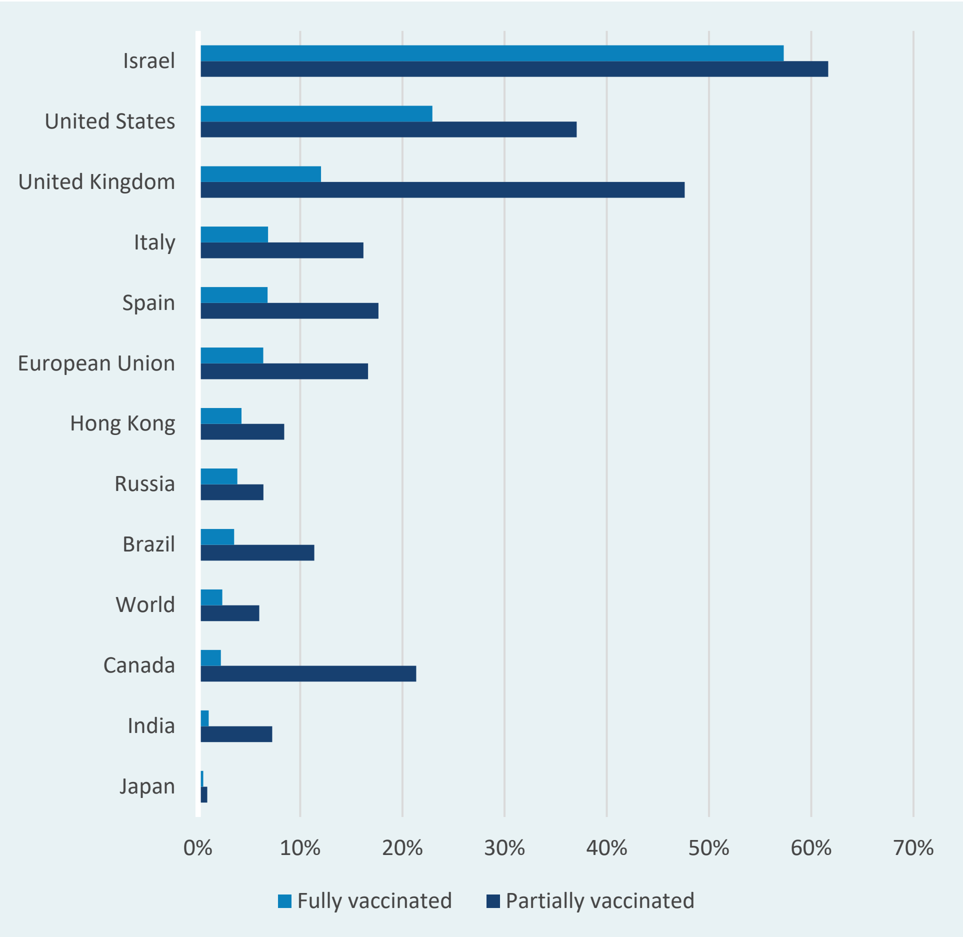


SEVEN-DAY AVERAGE DAILY CASE GROWTH – PER 100,000 RESIDENTS

Source: Bloomberg, as of 4/15/21

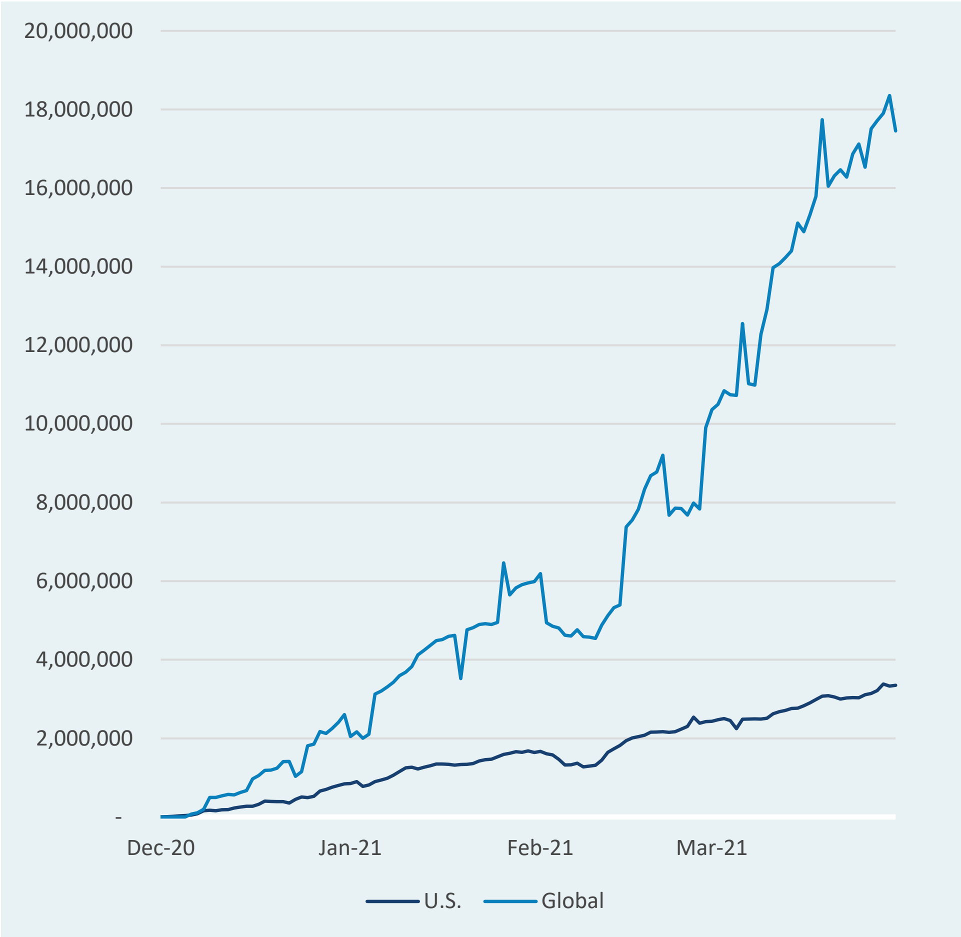
Global vaccination campaign

PERCENTAGE OF PEOPLE WHO ARE…



Source: Our World in Data, as of 4/14/21, or most recent release.

DAILY VACCINE DOSE ADMINISTRATIONS (7-DAY TRAILING AVERAGE)



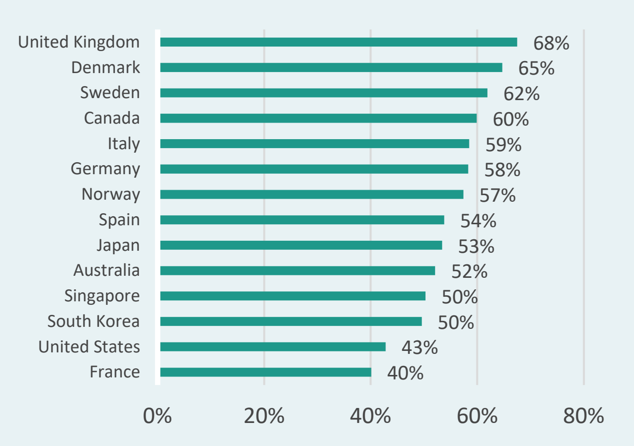
Source: Bloomberg, as of 4/15/21

Vaccine hesitancy

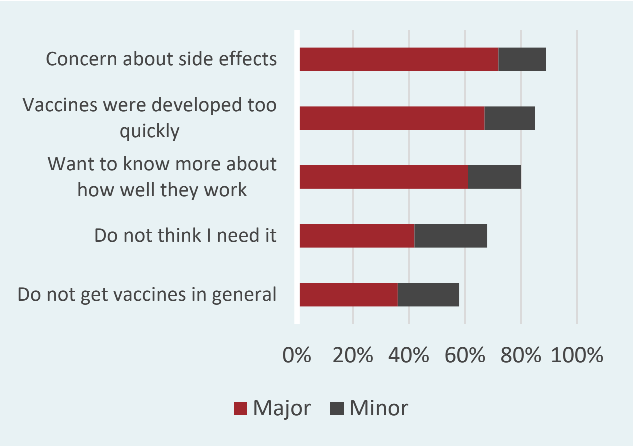
Toward quarter-end, concerns over the development of blood clots in a very small percentage of recipients of the AstraZeneca/Oxford and Johnson & Johnson vaccines led policymakers in many countries to suspend administrations pending further investigation.

Though today these side effects appear quite rare, these developments will likely result in further delays in the push toward herd immunity over the short-term. If suspensions are lifted in the intermediate term, the vaccines in question are likely to face public relations issues which could further hamper vaccination efforts. This dynamic is currently playing out in Europe with regard to the AstraZeneca vaccine—most of the Western part of the continent is taking a more cautious approach, while the Eastern segment has largely dismissed any clot-related concerns. Over the longer term, we believe that expanded vaccine production capacity, sufficiently diversified vaccine portfolios, and the coming online of new vaccines will reduce significantly the risk that idiosyncratic vaccine concerns create problems for the global vaccination campaign.

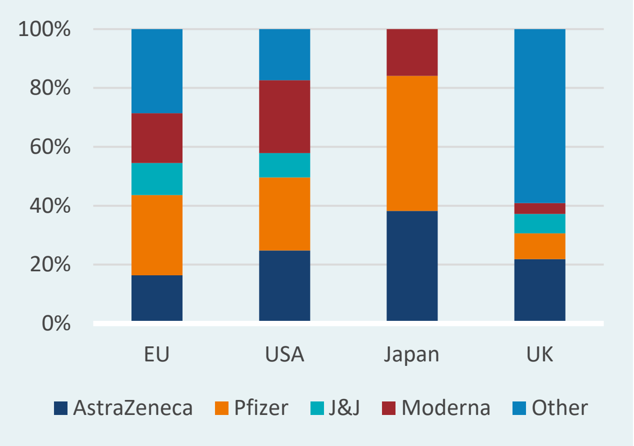
VACCINE WILLINGNESS



AMONG U.S. ADULTS ELECTING NOT TO BE VACCINATED, THE PERCENTAGE WHO SAY EACH OF THE FOLLOWING IS A MAJOR/MINOR REASON



VACCINE PORTFOLIO COMPOSITION ESTIMATE



Source: Our World in Data, Pew Research, Duke Global Health Innovation Centre, as of 3/31/21, or most recent release. The bars in the "Vaccine Willingness" chart indicate the percentage of people who agree with the following statement: "If a COVID-19 vaccine were made available to me this week, I would definitely get it."

GDP growth

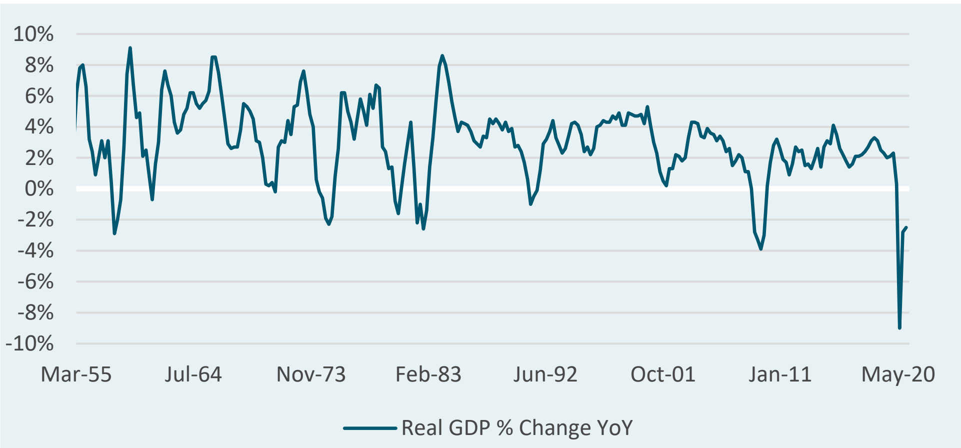
Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued. The Atlanta Fed's GDPNow forecast for 2021 Q1 growth was 6.0% on a quarter-over-quarter annualized basis as of April 9th, suggesting an even quicker pace than the prior quarter.

President Biden announced his $2 trillion Infrastructure Plan. In its initial form, the bill would spend $400b on care for the elderly and disabled, $500b on electric vehicle subsidies and incentives, and $100b on national high-speed broadband internet access, with a smaller portion of spending going towards traditional infrastructure such as power grid, railway, and transit.

The plan as originally proposed did not have bipartisan support, reportedly due to the lower proportion of the plan dedicated to traditional infrastructure spending, its size, and its funding methods. Negotiations will commence in late-April, though it remains possible that the bill is modified in order to pass it via the "reconciliation" process, to avoid the need for Republican support.

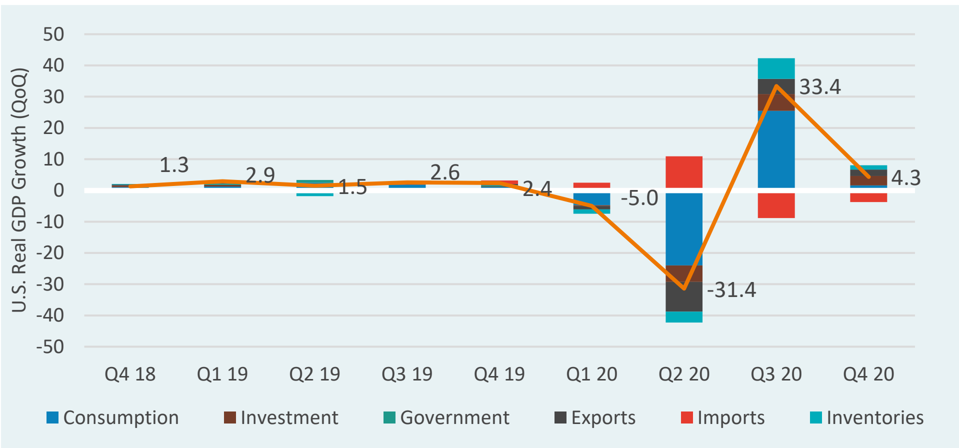
Large government stimulus programs are typically implemented during earlier stages of a recession, with the intent to fill a gap in demand and offset initial weakness. The current stimulus plans are very large and are being implemented at a time when the economy is well on the way to recovery. This creates risks of economic overheating, excesses, and inflation.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 12/31/20

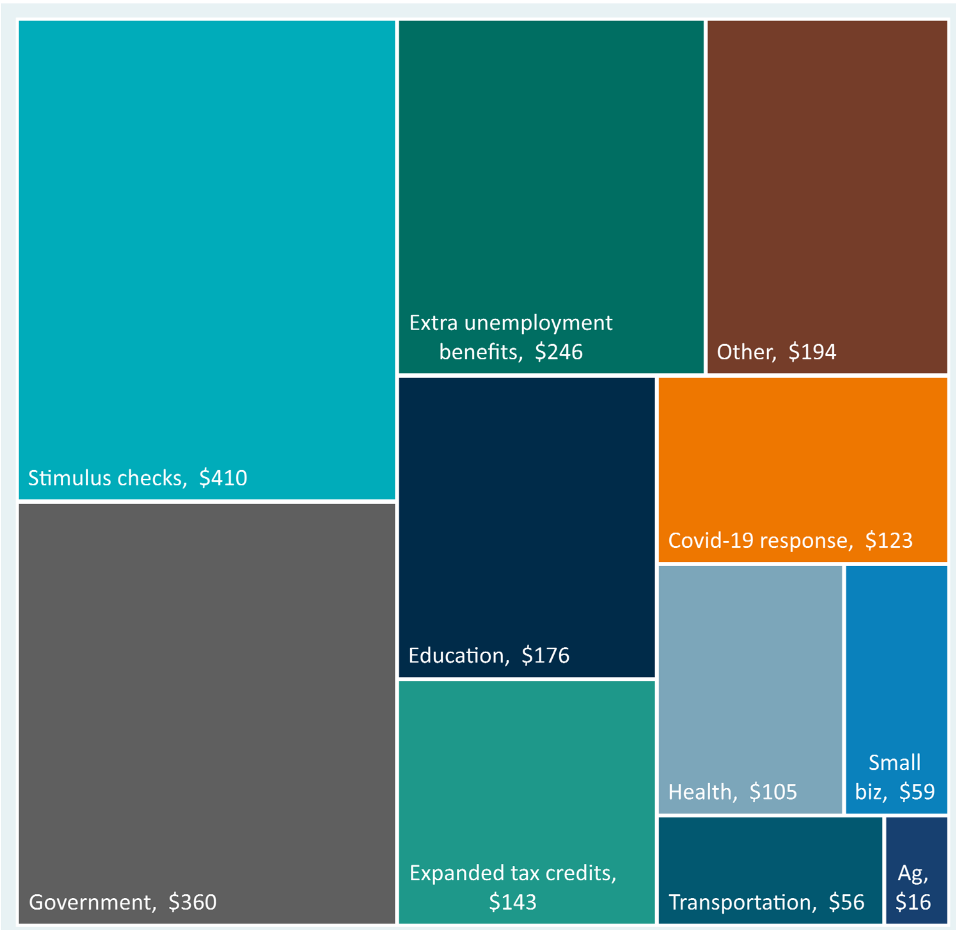
U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 12/31/20

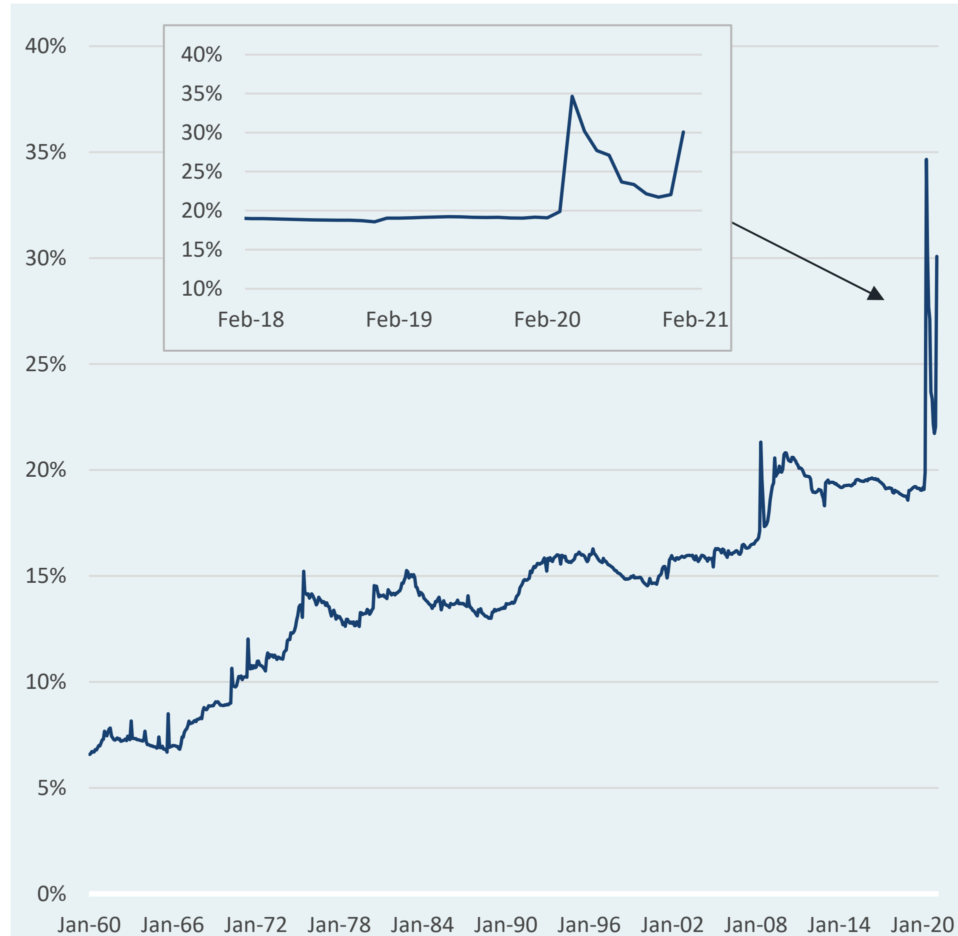
American Rescue Plan Act of 2021

STIMULUS BILL ALLOCATIONS (BILLIONS)



Source: Wall Street Journal, as of 3/13/21

GOVT. TRANSFER PAYMENTS AS A % OF DISPOSABLE PERSONAL INCOME



Source: BEA, as of 2/28/21

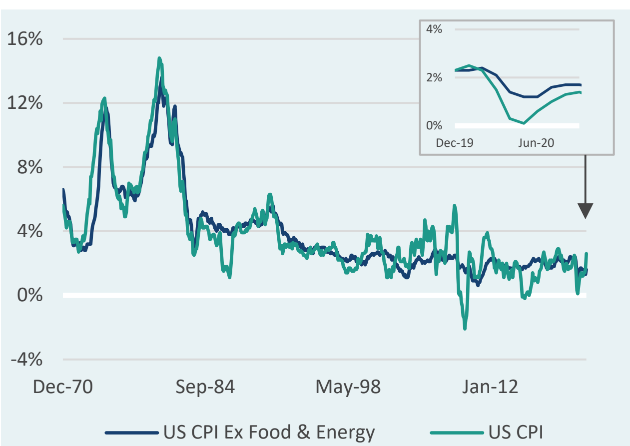
Inflation

U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation may jump temporarily in the coming months due to the lower prices of spring 2020, which will flow through to inflation, since inflation is a year-over-year measure.

The 10-year TIPS breakeven inflation rate continued higher during the quarter to nearly 2.4% from 2.0%. Most inflation indicators have risen, though we believe that government purchases of TIPS may be artificially pushing up the breakeven rate.

Investor fears persist around potential inflation. Following the response of central banks to the Global Financial Crisis, and very little inflationary effects resulting from that monetary experiment, it is reasonable to have doubts around whether ultra low interest rates and easy money are highly inflationary. Some have argued that most money “printed” after 2008-2009 ended up on bank balance sheets, rather than in the real economy, which resulted in muted inflationary effects. In the current environment, much easy money is arriving in the form of checks delivered straight to households. This new form of stimulus, along with broader government spending, may suggest possible rising inflation, though we believe the probability of this remains low.

U.S. CPI (YOY)

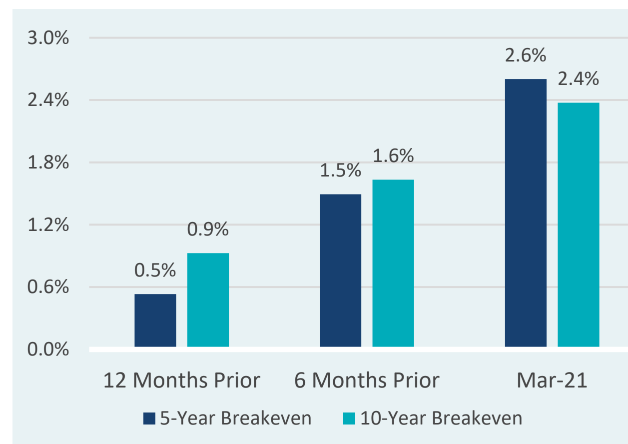


Source: Bloomberg, as of 3/31/21

Market Inflation Expectations

Source: FRED, as of 3/31/21

Breakeven Inflation Rates



Source: Bloomberg, as of 3/31/21

Labor market

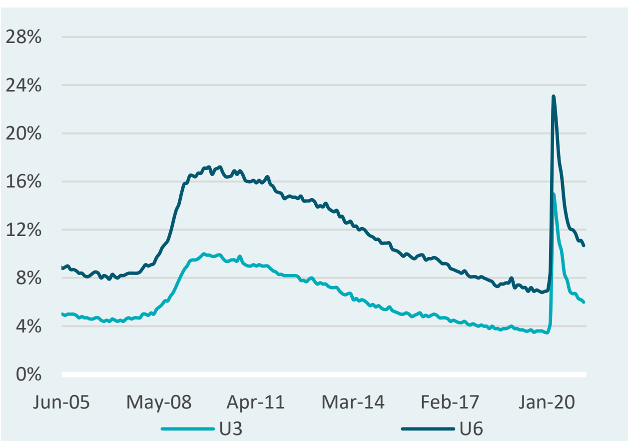
Unemployment fell from 6.7% in December to 6.0% in March. However, the overall labor force participation rate paints a less optimistic picture. At 61.5% participation in March, this metric has not budged since June of 2020.

The U.S. labor force showed a strong rebound during the fall of 2020, but more recently appears to have stalled. Approximately 2% of the total U.S. workforce remains out of a job and is not seeking work, relative to pre-COVID levels. This effect is illustrated in the labor participation rate, which is a broad measure of employment—defined as the percentage of the country's population that is currently employed, among all eligible workers. The participation rate fell from 63.3% immediately before the pandemic, to 60.2% in April, then back to 61.7% in August. The labor market remains weak despite an impressive economic comeback.

The most recent NFIB Small Business Optimism report explained "Main Street is doing better as state and local restrictions are eased, but finding qualified labor is a critical issue for small businesses nationwide… Small business owners are competing with the pandemic and increased unemployment benefits that are keeping some workers out of the labor force."

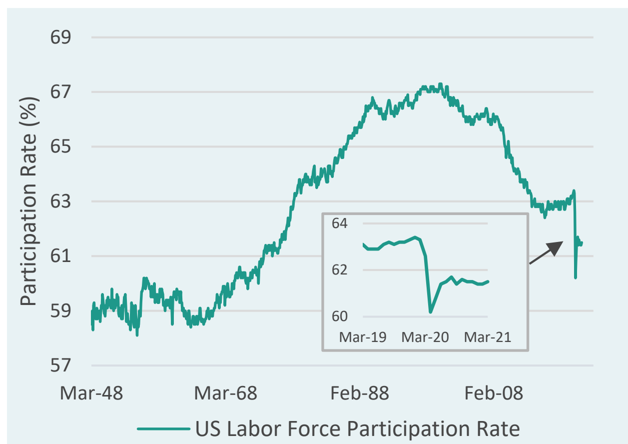
A large portion of the U.S. labor force remains neither employed nor seeking work

U.S. UNEMPLOYMENT



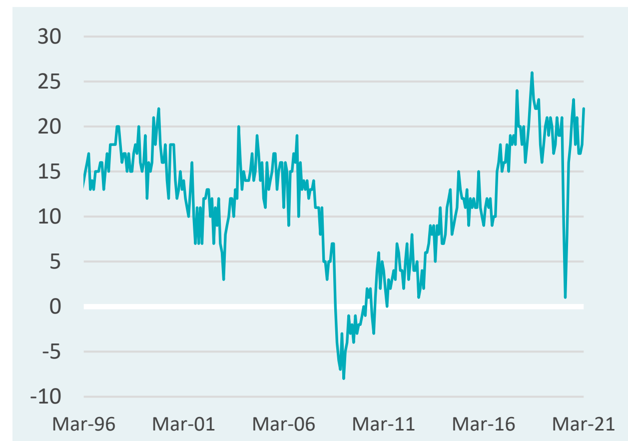
Source: FRED, as of 3/31/21

LABOR PARTICIPATION RATE



Source: FRED, as of 3/31/21

NFIB SMALL BUSINESS HIRING PLANS INDEX



Source: NFIB, as of 3/31/21

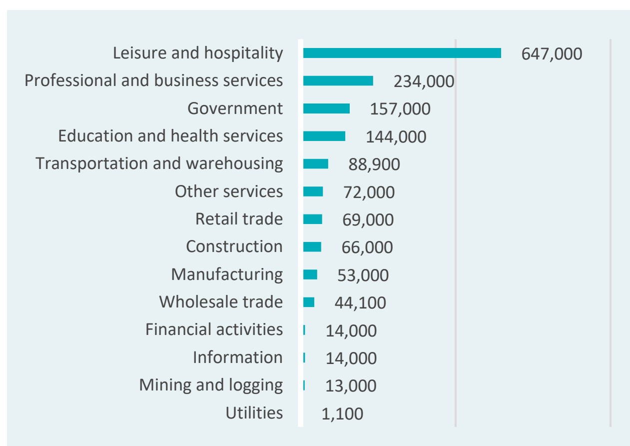
Employment conditions

Hiring activity picked up considerably in the first quarter of 2021, supported by strong progress on the vaccination campaign and the concurrent relaxation of social distancing controls. While the broad unemployment rate dipped from 6.7% to 6.0%, that number probably overstates the magnitude of the labor market recovery thus far. Labor force participation dropped from 63.4% in January of 2020 to 60.2% in April, and as of the end of the first quarter, that number had recovered to just 61.5%. As a result, while unemployment has improved, there remain roughly nine million U.S. citizens who have yet to regain employment.

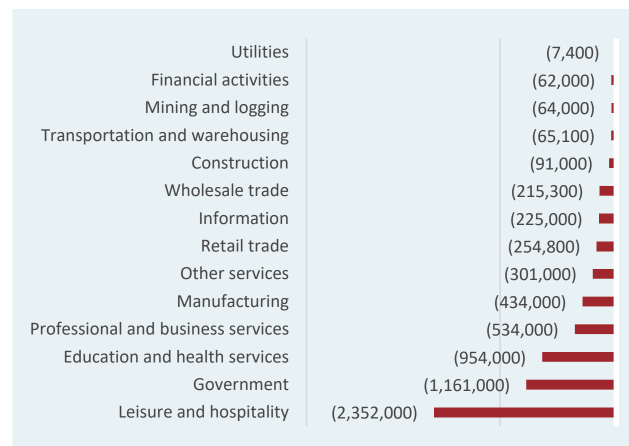
The primary concern of the Federal Reserve remains limiting the potential scarring of the labor market as a result of the shutdowns over the last year, and the Fed's accommodation, paired with continued progress on the vaccination campaign should lay the foundation for a continued recovery in the labor market over the next several quarters. There remains much wood to chop.

NON-FARM PAYROLLS – ONE-MONTH CHANGE

NON-FARM PAYROLLS – THREE-MONTH CHANGE



NON-FARM PAYROLLS – ONE-YEAR CHANGE



Source: BLS, as of 3/31/21

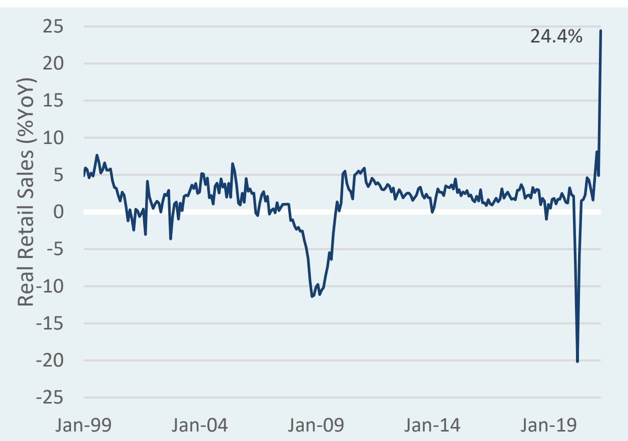
The consumer

U.S. retail sales rocketed higher in the first quarter, accelerating to a 9.8% month-over-month pace in March (this rate was an astounding 24.4% on a year-over-year basis, though this metric is more difficult to interpret since it calculates growth from a starting point of March 2020—the depths of the recession). As expected, vast government stimulus is translating to red hot consumer spending.

According to anonymized cellular phone data collected by Google for COVID-19 public health research, Americans began returning to their daily routines through late spring and summer, as activity began moving back towards normalcy. Then, as COVID-19 cases began to surge, many types of activities dipped once again. It now appears that activity such as retail, recreation, and grocery shopping are moving back to normal levels. At the same time, public transit usage and travel to workplaces remains depressed.

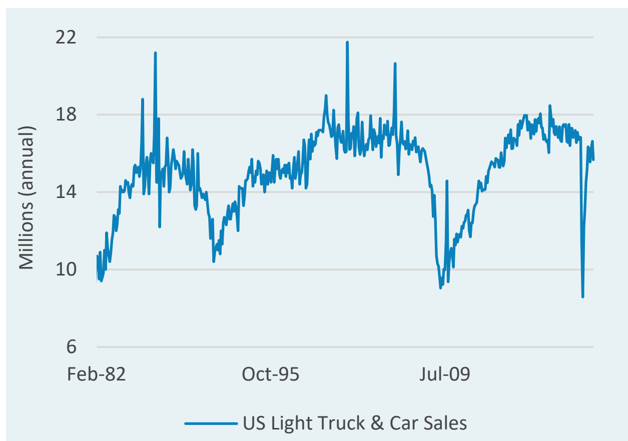
In last quarter's landscape we discussed concerns around the difficulty in determining what portion of the economic bounceback may have been due to unprecedented government stimulus, rather than a "natural" recovery of jobs and the financial health of Americans. We remain cautious, as certain aspects of the economy remain very weak, such as the labor market trends outlined earlier in this document.

REAL RETAIL SALES GROWTH (YOY)



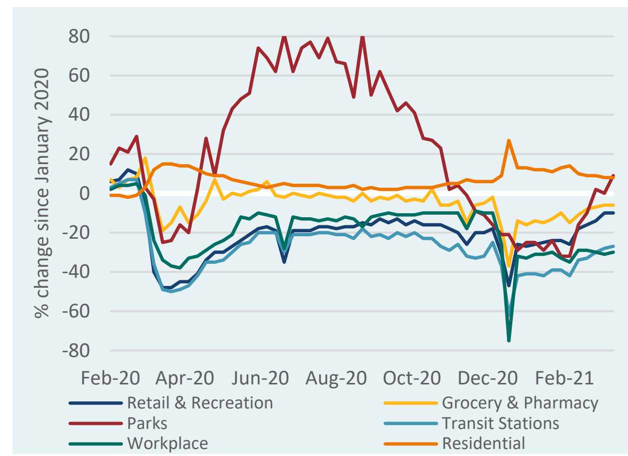
Source: FRED, as of 3/31/21

AUTO SALES



Source: Federal Reserve, as of 2/28/21

GOOGLE U.S. ACTIVITY TRACKER



Source: Google anonymized U.S. citizen mobility, as of 3/31/21

Sentiment

Consumer sentiment has seen only mild improvement, despite the stronger-than-expected pace of economic recovery.

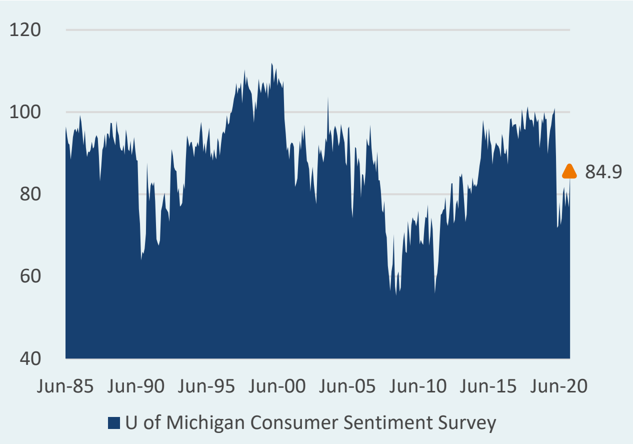
The Bloomberg Consumer Comfort Index attempts to gauge Americans' views on the economy, their personal financial situation, and buying conditions. The index rose from 44.6 to 50.0 during the quarter. The University of Michigan Consumer Sentiment Survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. The index jumped from 80.7 to 84.9 in Q1, directionally in line with the continued economic recovery.

The NFIB Small Business Optimism Index returned to an average reading in Q4 and remains materially weaker than pre-pandemic levels. Participants in the survey expressed uncertainty around business conditions, and extreme difficulties in finding qualified workers due to attractive unemployment benefits. A surprising 42% of small business owners reported job openings that could not be filled, which was a record-high figure.

CONSUMER COMFORT

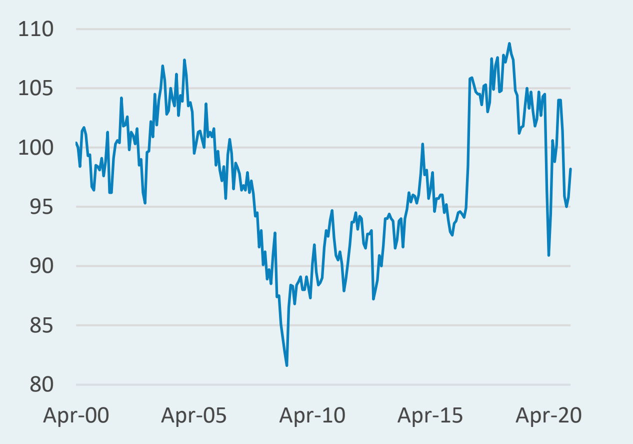
Source: Bloomberg, Langer, as of 3/28/21

CONSUMER SENTIMENT



Source: University of Michigan, as of 3/31/21

SMALL BUSINESS OPTIMISM



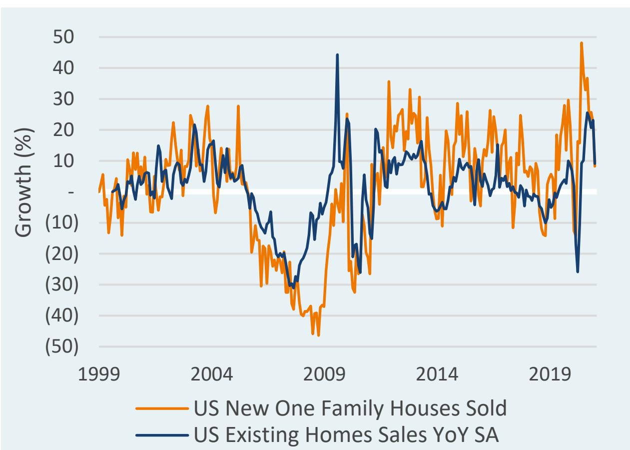
Source: NFIB, as of 3/31/21

Housing

Sales of existing homes continued at a near-record pace through fall of 2020 and the beginning of 2021, before decelerating to 9.1% year-over-year in February. Sales of new homes followed a similar directional trend, though new homes have shown an even stronger growth rate consistently over the past decade. The impressive number of sales were achieved despite there being an extremely slim inventory of homes available on the market.

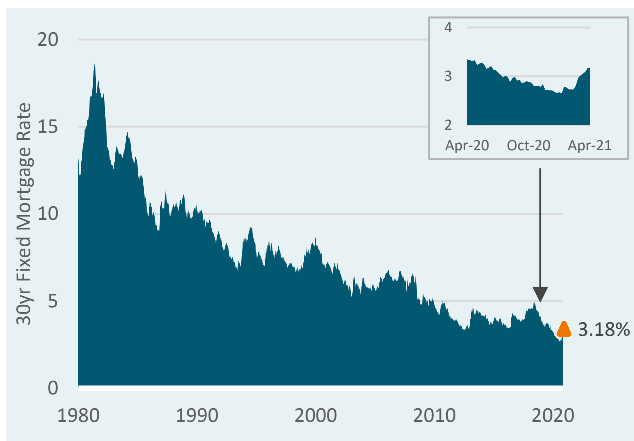
It has been surprising to witness a housing boom coincide with a sharp and deep global recession, although the dynamics that led to this environment are fairly simple to understand with hindsight. Record-low interest rates, record-low inventory of homes, and a desire of Americans for more space during the work-from-home environment, have lifted the cost of homes significantly. Some of these influences appear to be easing. Rising interest rates since the beginning of the year have contributed to higher mortgage rates, as the 30-year fixed average mortgage rate has risen from 2.65% to 3.18%. And the nationwide inventory of homes has improved to 4.8 months worth of supply. A further easing of conditions may help to cool down an extremely hot market.

U.S. HOME SALES (YOY)



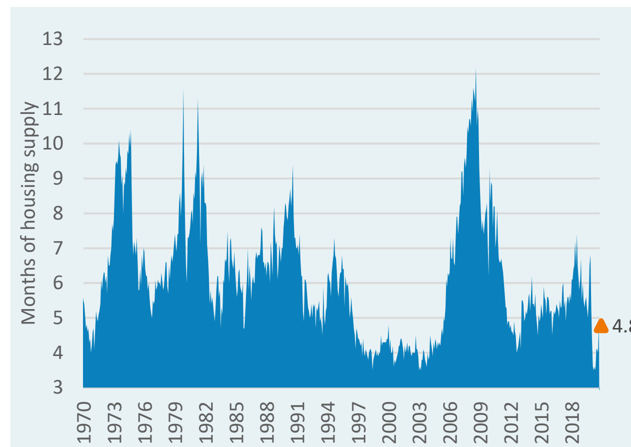
Source: FRED, as of 2/28/21

30-YEAR FIXED MORTGAGE RATE (AVERAGE)



Source: FRED, as of 3/31/21

HOUSING INVENTORY



Source: FRED, as of 2/28/21

International economics summary

— Economic growth continued to recover during the fourth quarter, though was still negative on a year-over-year basis in many countries. Growth expectations have risen as successful vaccine rollouts suggest that the world may get back to normal more quickly than originally assumed.

— Europe may unfortunately be excluded from this optimism, as a renewed wave of COVID-19 has once again led to lockdowns and restrictions. The Europe Union has been slower to rollout vaccinations, suggesting member countries may be grappling with the virus for longer periods of time.

— Unemployment was stable in the Eurozone and Japan, and fell modestly in the United States. As we described in prior quarters, governments have taken very different approaches to supporting workers, which makes labor market comparisons difficult.

— Despite heightened discussions about inflation risk, inflation remains muted and stable around the world, though the rebound in energy prices from record-low levels last year is having a lifting impact. This influence, driven by base effects, will most likely persist for the next few months.

— The gap between the manufacturing and services sectors of the economy narrowed toward the end of the quarter, as the beaten-down services sector showed signs of life across Europe. Extended periods of service sector activity expansion will likely depend on manageable levels of case growth and relaxed social distancing controls.

— Vaccine campaigns across mainland Europe as well as Japan have materially lagged those of the U.S. and the U.K., and the indefinite suspension of the AstraZeneca vaccine in many countries is likely to widen the gap in the short-term.

Area	**GDP (Real, YoY)**	**Inflation (CPI, YoY)**	**Unemployment**
United States	(2.4%) *12/31/20*	2.6% *3/31/21*	6.0% *3/31/21*
Eurozone	(4.9%) *12/31/20*	1.3% *3/31/21*	8.3% *2/28/21*
Japan	(1.4%) *12/31/20*	(0.2%) *3/31/21*	2.8% *2/28/21*
BRICS Nations	1.6% *12/31/20*	1.4% *3/31/21*	5.7% *12/31/20*
Brazil	(4.1%) *12/31/20*	6.1% *3/31/21*	14.2% *1/31/21*
Russia	(3.0%) *12/31/20*	5.8% *3/31/21*	5.4% *3/31/21*
India	0.4% *12/31/20*	5.5% *3/31/21*	6.5% *3/31/21*
China	18.3% *3/31/21*	0.4% *3/31/21*	4.2% *12/31/20*

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy

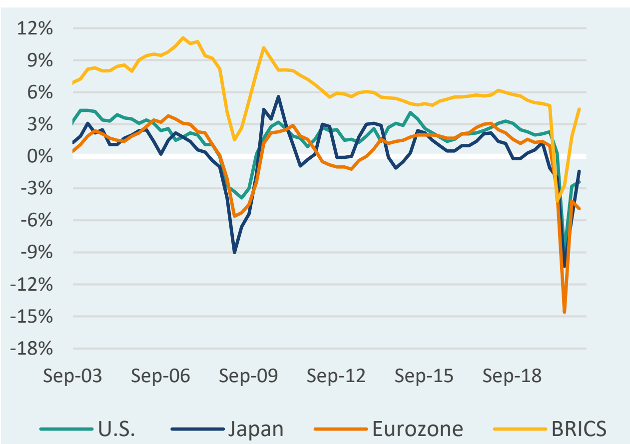
International economics

Economic growth continued to recover during the fourth quarter, though still negative on a year-over-year basis in many countries. Growth expectations have risen as successful vaccine rollouts suggest that the world may move back to normal more quickly than originally expected, although the speed of vaccine distribution has differed wildly. As of quarter-end, the U.S. and United Kingdom lead in vaccine rollouts, while the European Union and Japan lag behind. Europe is seeing a renewed wave of COVID-19, which has once again led to lockdowns and restrictions.

Despite heightened discussions about inflation risk, inflation around the world remains muted and stable, though the rebound in energy prices from record-low levels last year is having a lifting impact. This influence, driven by base effects, will most likely persist for the next few months.

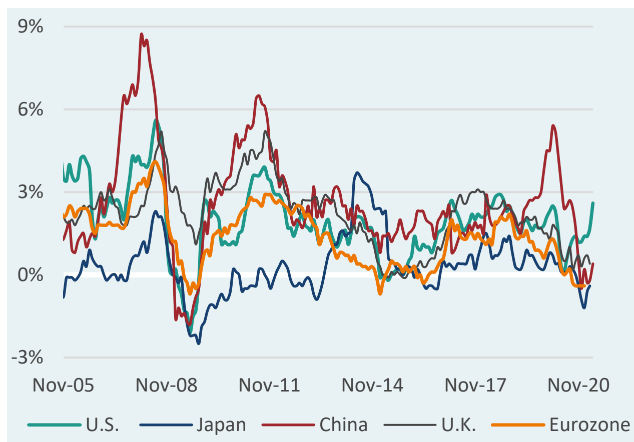
Unemployment was stable in the Eurozone and Japan, and fell modestly in the United States. As we have described in prior quarters, governments have taken very different approaches to supporting workers, which has made global labor market comparisons difficult.

REAL GDP GROWTH (YOY)



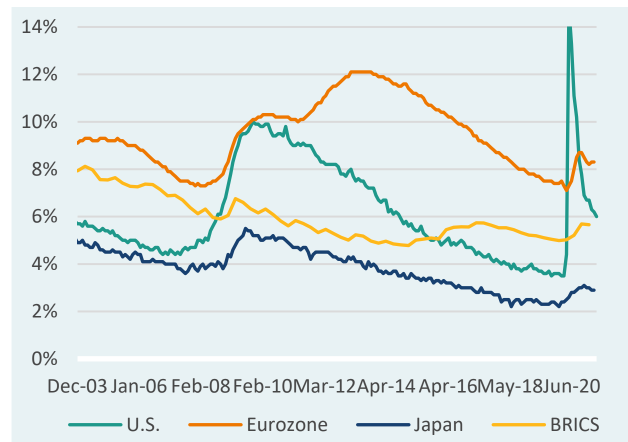
Source: Bloomberg, as of 12/31/20

INFLATION (CPI YOY)



Source: Bloomberg, as of 3/31/21 – or most recent release

UNEMPLOYMENT



Source: Bloomberg, as of 3/31/21 – or most recent release

Fixed income rates & credit

Interest rate environment

— Ten-year U.S. Treasury yields moved sharply higher, rising from 0.91% to 1.74%. Higher interest rates and tighter financial conditions create concerns for currently above-average risk asset prices, and for the economic recovery more broadly.

— Bond yields around the world rose in tandem with the United States, though the yield of shorter-dated bonds and cash remained anchored near zero. Rising bond yields at longer tenors and relatively steady movement in short tenor yields resulted in yield curve steepening in many countries.

— The spike in global interest rates tested the standing policies at a number of major central banks. The Reserve Bank of Australia was forced to step in to defend its 3-year bond yield target, the Bank of Japan widened the target band for its 10-year bond yield, and the ECB tweaked its asset purchase program to allow for more flexible purchases.

— The Federal Reserve maintained an accommodative tone and signaled it will continue to provide support until substantial progress has been made in the labor market and the pandemic is clearly in the rear-view mirror. On balance, the Fed remains of the view that any pickup in inflation over the next few months is likely to be transitory.

— Breakeven inflation rates surged as reflation bets continued to mount. The five-year breakeven inflation rate closed the quarter at 2.6%, its highest level since 2008.

— Credit spreads compressed to near decade-tights as demand for higher-yielding bonds remained high, and concerns over a wave of pandemic-driven defaults abated.

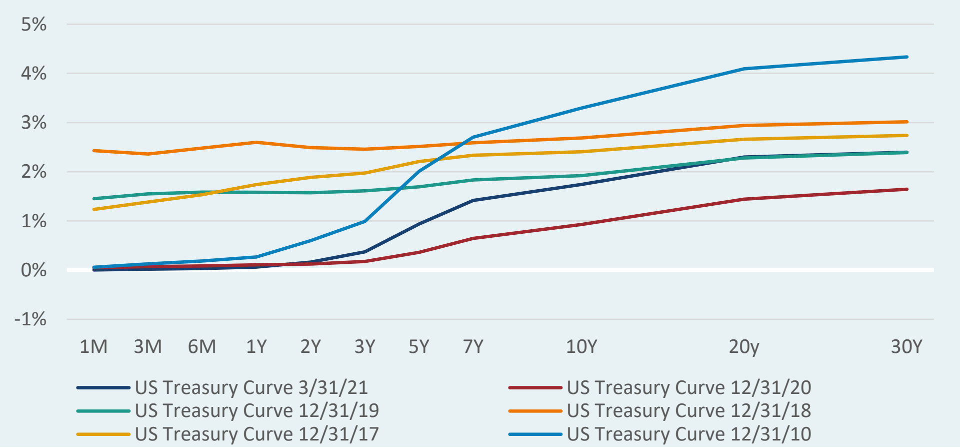
— Long-duration Treasuries posted their worst quarter since Q1 of 1980. The Bloomberg Barclays U.S. Long Treasury Index delivered a total return of -13.5%.

Area	Short Term (3M)	10-Year
United States	0.02%	1.74%
Germany	(0.67%)	(0.29%)
France	(0.62%)	(0.05%)
Spain	(0.56%)	0.34%
Italy	(0.54%)	0.67%
Greece	(0.24%)	0.86%
U.K.	(0.01%)	0.85%
Japan	(0.11%)	0.09%
Australia	0.00%	1.79%
China	2.28%	3.19%
Brazil	3.32%	9.28%
Russia	4.70%	7.00%

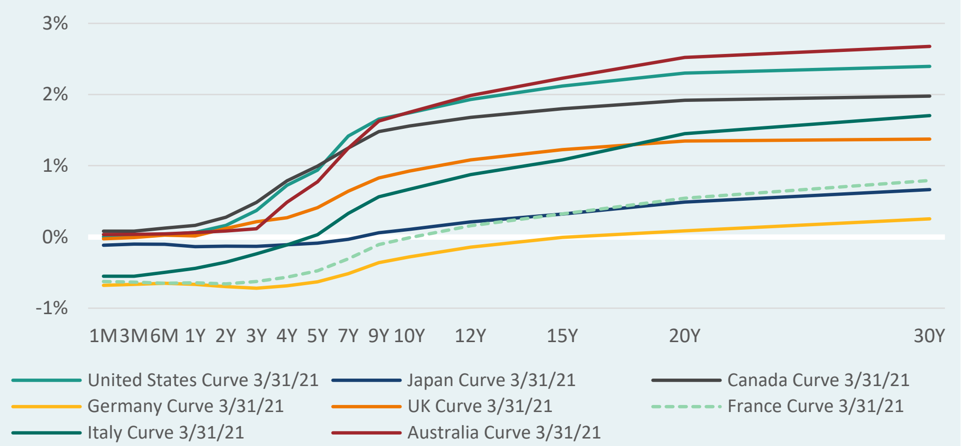
Source: Bloomberg, as of 3/31/21

Yield environment

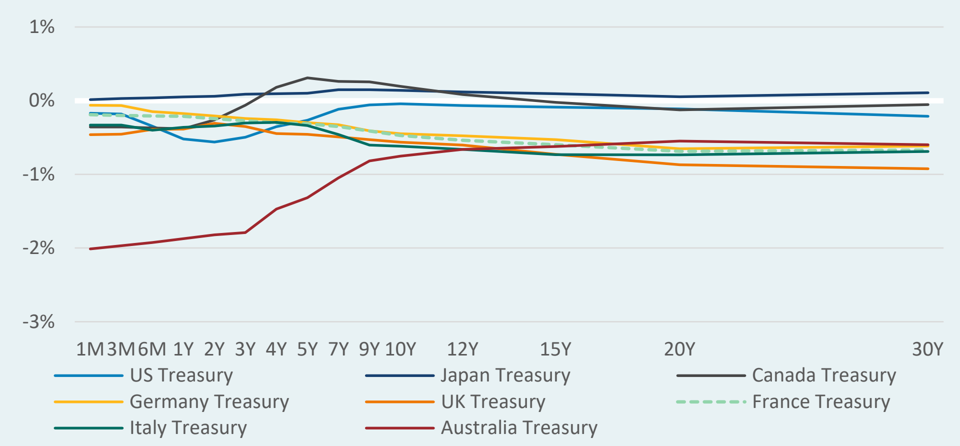
U.S. YIELD CURVE



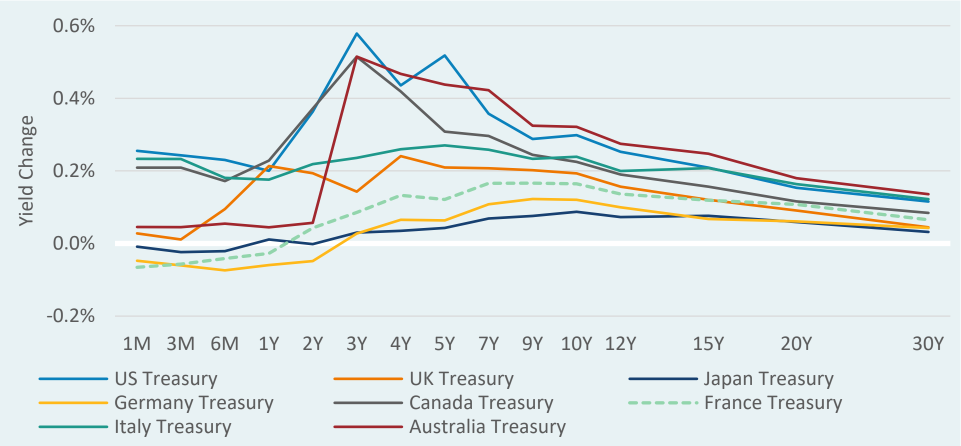
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/21

Yield increases have tested central banks

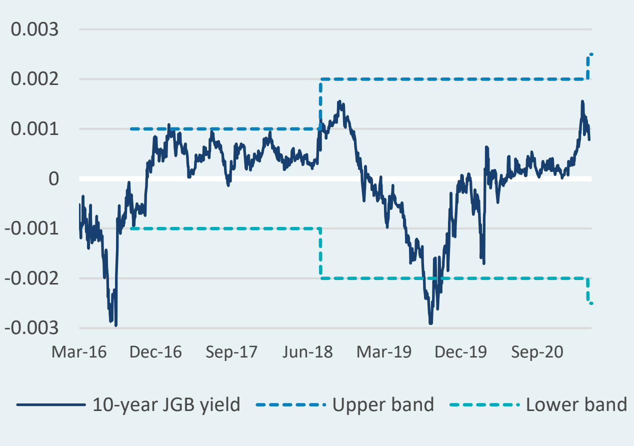
Bank of Japan: Clarified that 10-year yields can move within 25 basis points of the 0.00% target; tweaked guidance around buying ¥6 trillion in equity ETFs to make its purchases more "flexible and nimble".

Reserve Bank of Australia: Purchased A$7 billion of bonds in a matter of days, A$5 billion more than the scheduled amount, in order to defend its 0.10% target for its three-year bond yield.

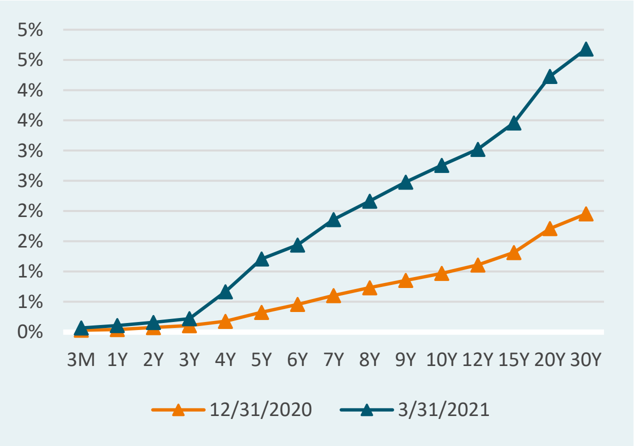
European Central Bank: Elected not to expand the size of its Pandemic Emergency Purchase Programme (PEPP), but elected to frontload bond purchases to increase short-term accommodation.

Federal Reserve: Fed officials have largely avoided comment and have been sticking to the script that financial conditions remain loose, and that higher long rates are indicative of an improving economic outlook. As a result, some have surmised that the ambiguity around the Fed's reaction function may result in elevated levels of bond market volatility in the near-term.

BANK OF JAPAN 10-YEAR YIELD TARGET BAND



AUD AUSTRALIAN YIELD CURVE



VALUE OF GLOBAL NEGATIVE YIELDING DEBT

Source: Bloomberg, as of 3/31/21

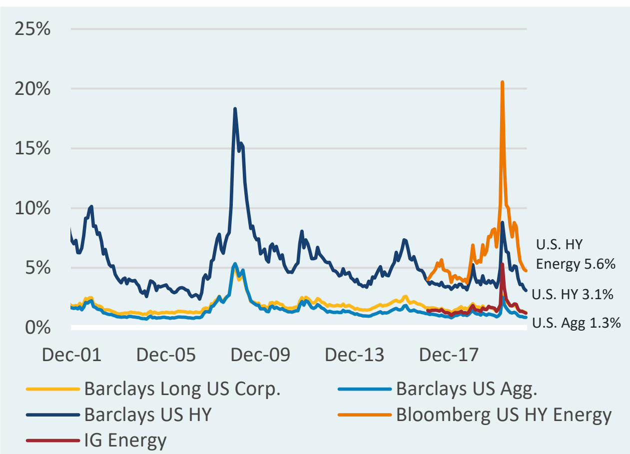
Credit environment

During the first quarter, credit market performance largely reflected the movements of the US Treasury curve, which steepened significantly as 10-year yields rose 82 basis points while 2-year yields remained anchored near zero. Investment grade credit, with an effective duration of 8.5, returned -4.65% over the quarter while high yield, with an effective duration of 3.9, return +0.85%. Bank Loans outperformed, returning +2.0% over the quarter.

Credit spreads continued to tighten during the quarter, as the vaccine rollout, which accelerated faster than expected, led to higher growth expectations for 2021. High yield spreads tightened 51 basis points, to 308 basis points, while investment grade tightened a more modest 6 basis points to end the quarter at 90 basis points.

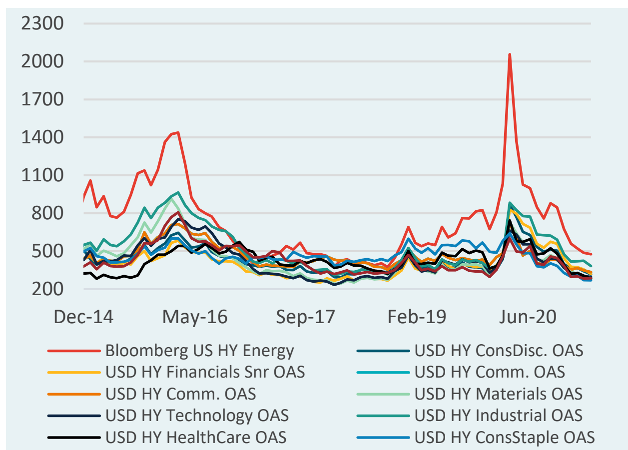
Spreads in higher quality investment grade assets have continued to compress over the past year. Notably, the BBB/A spread is now at an all-time low of 40 basis points, down from a high of 163 basis points experienced in Q1 2020. Similarly, the BB/BBB spread is now 155 basis points, down from recent high of 512 basis points established in March of 2020 and below the ten-year average of 215 basis points.

SPREADS



Source: Barclays, Bloomberg, as of 3/31/21

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 3/31/21

	Credit Spread (OAS)	
Market	**3/31/21**	**3/31/20**
Long U.S. Corp	1.3%	2.8%
U.S. Inv Grade Corp	0.9%	2.7%
U.S. High Yield	3.1%	8.8%
U.S. Bank Loans*	4.3%	8.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 3/31/21
**Discount margin (4-year life)*

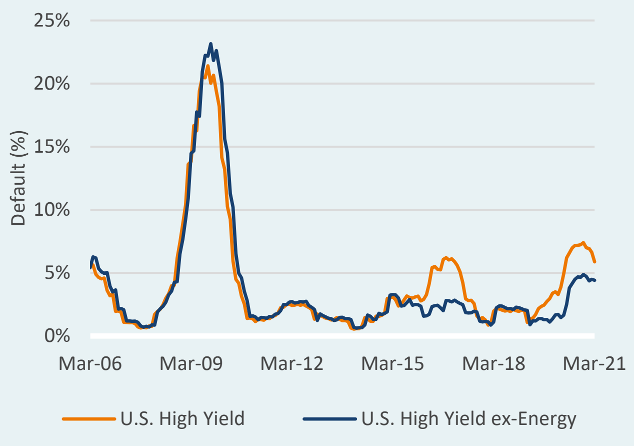
Default & issuance

Default activity was modest over the quarter, with 5 companies totaling $3.2 billion defaulting on bonds and loans. The par-weighted U.S. high yield default rate retreated 139 basis points from recent highs to end the quarter at 5.4%. Similarly, the loan par-weighted default rate ended the quarter at an eleven-month low of 3.3%, down 61 basis points year-to-date.

Given the market perception of upside rate risk throughout the remainder of 2021, high yield bond issuers continued to come to market at a blistering pace. Gross issuance for the quarter set a new quarterly record of $158.6 billion, outpacing the previous record set in Q2 2020 of $145.5 billion. Quarterly issuance remains significantly elevated relative to the ten-year average of $79.9 billion. Notably, $44.8 billion was issued to take-out leverage loans in Q1, which was roughly 60% of the previous annual record of $78.5 billion set in 2012. $154.6 billion in leverage loans were issued during the quarter, an amount eclipsing the previous record of $139.5 in Q1 2017.

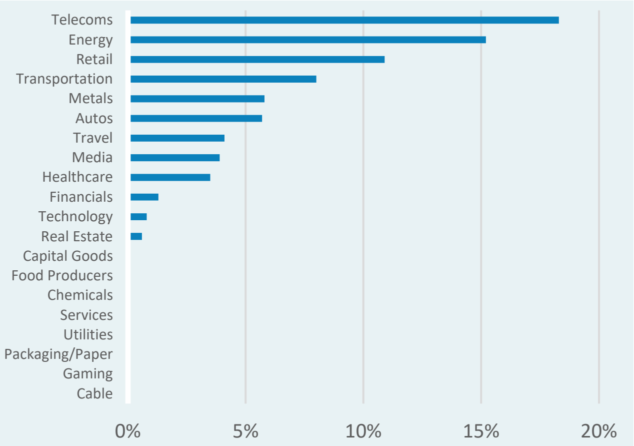
Investment grade issuance for the quarter totaled $423 billion, which remains elevated from the 4-year average first quarter issuance of $375, but lower than $480 billion issued in Q1 2020 when supply surged due to COVID funding.

HY DEFAULT RATE (ROLLING 1-YEAR)



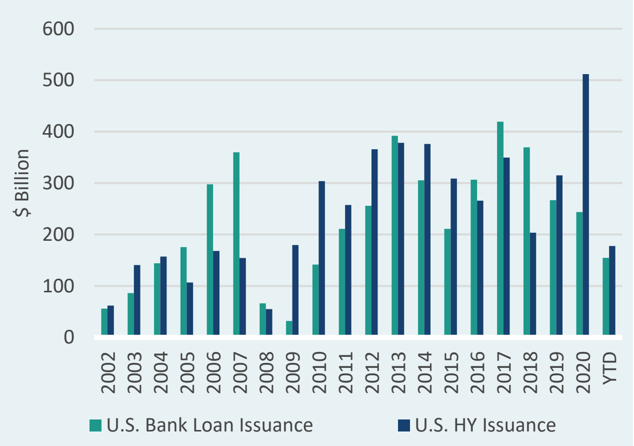
Source: BofA Merrill Lynch, as of 3/31/21

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



Source: BofA Merrill Lynch, as of 3/31/21 – par weighted

U.S. ISSUANCE ($ BILLIONS)



Source: BofA Merrill Lynch, as of 3/31/21

Equity

Equity environment

— U.S. equities were a top performer in Q1, delivering +6.2%. International equities delivered +3.5% (MSCI EAFE Index) and emerging markets delivered +2.3% (MSCI Emerging Markets Index), on an unhedged currency basis. Trailing one-year returns hit extremely high levels, reflecting low base effects (markets bottomed out during March of 2020), and a recovery from those depressed levels year-over-year.

— We believe the U.S. economy is playing catch-up to the markets in the current environment. While it seems increasingly likely that the economy will rapidly recover over the next year, this optimism may already be baked into equity prices. It is reasonable to be enthusiastic about U.S. economic prospects while also being cautions about lofty equity valuations.

— According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

— The Cboe VIX Index has slowly been falling back towards the longer-term average of 19. The index fluctuated in the low 20s during Q1, falling below 19 briefly in late March.

— The U.S. dollar stabilized in the first quarter, paring some of the losses accrued in the final three quarters of last year. Rising relative yields helped the dollar to appreciate materially relative to the euro, yen, and a broad basket of emerging market currencies.

— A rotation towards value stocks persisted during the quarter, as beaten-down sectors delivered outsized performance. Energy, financials, industrials, and materials were the strongest performers.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	6.2%		56.4%	
US Small Cap (Russell 2000)	12.7%		94.8%	
US Large Value (Russell 1000 Value)	11.3%		56.1%	
US Large Growth (Russell 1000 Growth)	0.9%		62.7%	
International Large (MSCI EAFE)	3.5%	7.6%	44.6%	37.7%
Eurozone (Euro Stoxx 50)	6.3%	10.6%	53.7%	45.3%
U.K. (FTSE 100)	5.9%	5.0%	35.6%	22.5%
Japan (NIKKEI 225)	(0.2%)	7.0%	52.6%	57.4%
Emerging Markets (MSCI Emerging Markets)	2.3%	3.7%	58.4%	52.2%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/21

Domestic equity

U.S. equities moved higher in Q1, returning +6.2%. According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

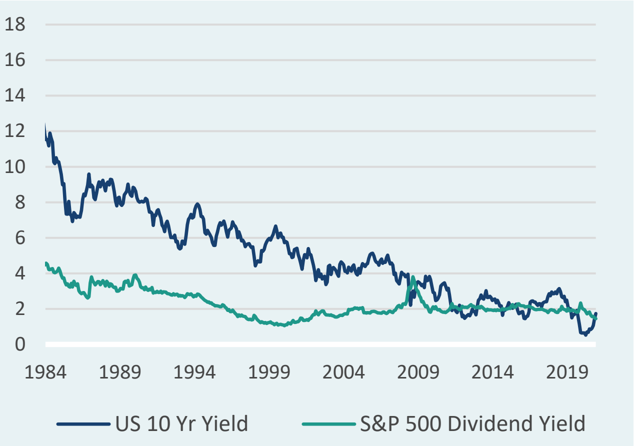
Equities continued upward and valuations have followed. The U.S. market has been a top performer but has also remained one of the most expensive markets. On the other hand, successful COVID-19 vaccinate rollouts, rosy earnings expectations, and the potential for an impressive economic reopening may be supportive of high prices. This reopening appears to be fueling a rotation towards traditional cyclical sectors, such as energy, financials, and industrials.

As markets move higher, it appears to us that the economy may be playing catch-up to the markets. While it seems increasingly likely that the economy will rapidly recover during the next year, this optimism may already be reflected in equity prices. In other words, it is reasonable to be enthusiastic about U.S. economic prospects while also being cautions about higher equity valuations.

S&P 500 INDEX

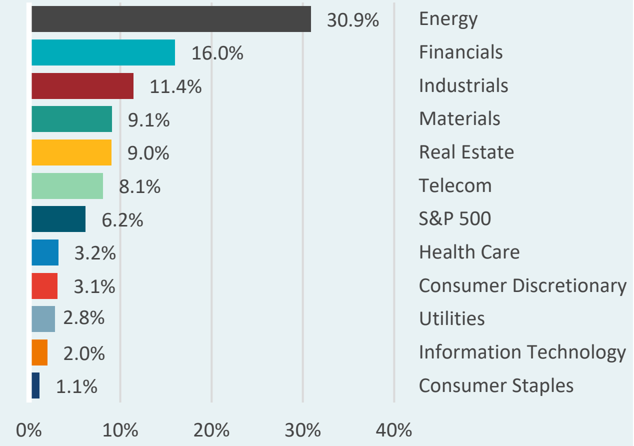
Source: Standard & Poor's, as of 3/31/21

DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 3/31/21

Q1 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 3/31/21

Retail market speculation

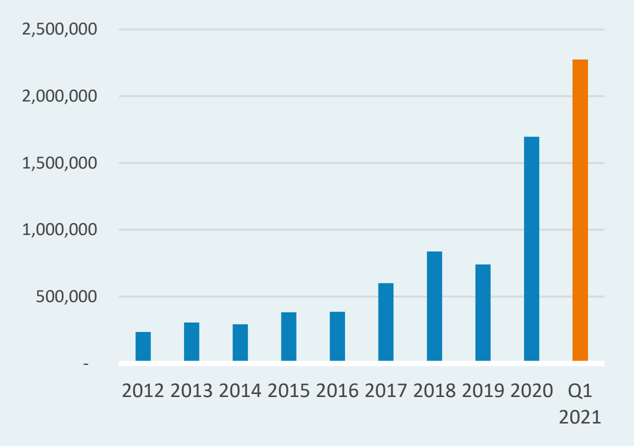
In recent years, trading has become free on certain platforms, making day trading a more attractive proposition. Retail's portion of total market trading has increased from 10% in 2010 to 23% in 2020, according to Bloomberg Intelligence.

Some trading platforms have attracted users by designing the trading process to be entertaining, similar to a video game. Discussion sites such as Reddit have also become popular places to talk about trades in a social setting.

Lockdowns due to COVID-19 have prevented many Americans from pursuing their usual hobbies, leading to boredom. Stock trading may have become an entertaining outlet for otherwise non-traders. And government stimulus checks may have provided idle cash to fuel this new hobby.

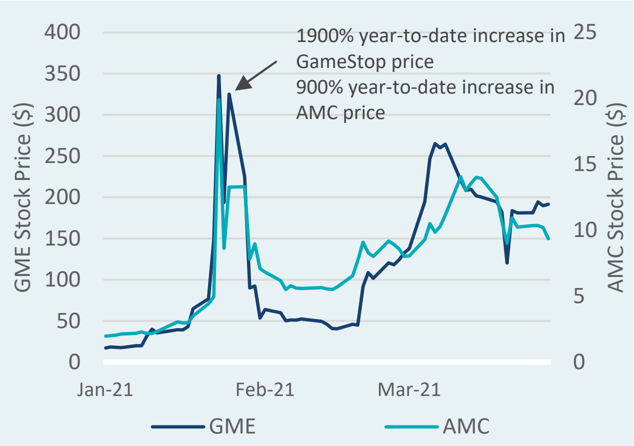
This environment appears to have contributed to intense speculation in stocks such as GME and AMC. In these instances, retail traders aimed to force a "short squeeze" on these heavily-shorted stocks.

SCHWAB - ORGANIC CHANGE IN ACTIVE BROKERAGE ACCOUNTS*



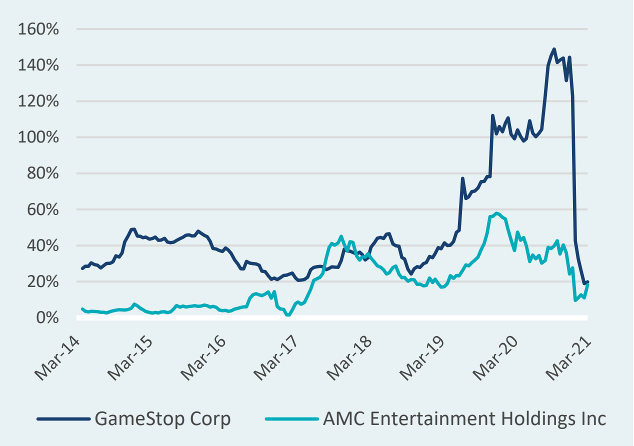
Source: Bloomberg, as of 4/15/21.

GAMESTOP & AMC THEATERS STOCK PRICES



Source: Bloomberg, as of 3/31/21

SHORT INTEREST AS A PERCENTAGE OF FLOAT



Source: Bloomberg, as of 3/31/21

**Excludes 15.6 million brokerage accounts which Schwab added in 2020 as a result of its acquisition of TD Ameritrade and its acquisition of the assets of USAA's Investment Management Company.*

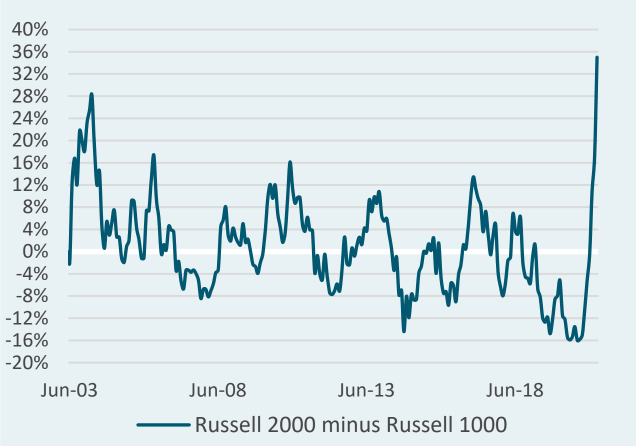
Domestic equity size & style

Factor performance surged during the quarter, as small capitalization and value stocks delivered strong relative returns. U.S. value stocks beat growth stocks by a wide margin (Russell 1000 Value +11.3%, Russell 1000 Growth +0.9%), as growth entered a correction in February and value marched higher. Small cap stocks continued their surprisingly strong rally, outperforming growth (Russell 2000 +12.7%, Russell 1000 +5.9%).

A rotation towards value occurred as beaten-down sectors such as energy, financials, and materials delivered outsized performance—sectors which tend to possess a heavier concentration of value stocks. Companies which benefited from the pandemic due to a shift in household habits may see a further reversal of that windfall as households begin to go back to normal life. Additionally, value stocks typically exhibit strength during economic recoveries. These dynamics of growth and value may suggest further value factor strength, though factor trends are noisy and extremely difficult to predict.

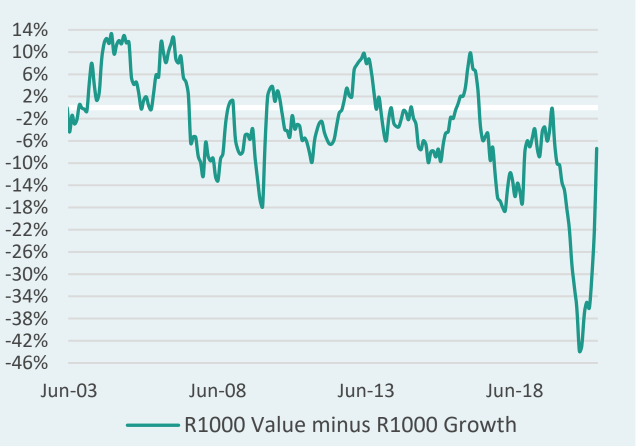
Small cap and value stocks delivered strong relative performance during Q1

SMALL CAP VS LARGE CAP (YOY)



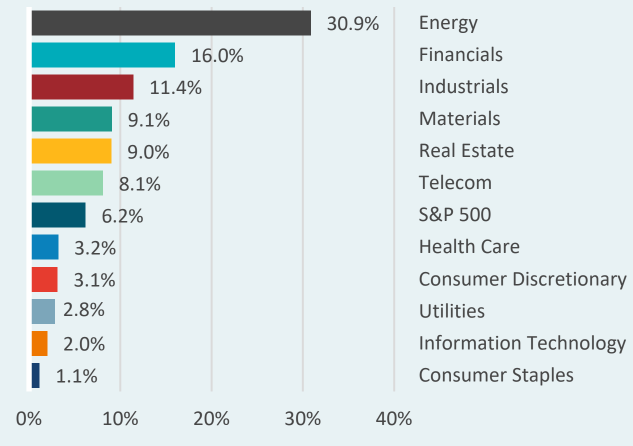
Source: FTSE, as of 3/31/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 3/31/21

Q1 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 3/31/21

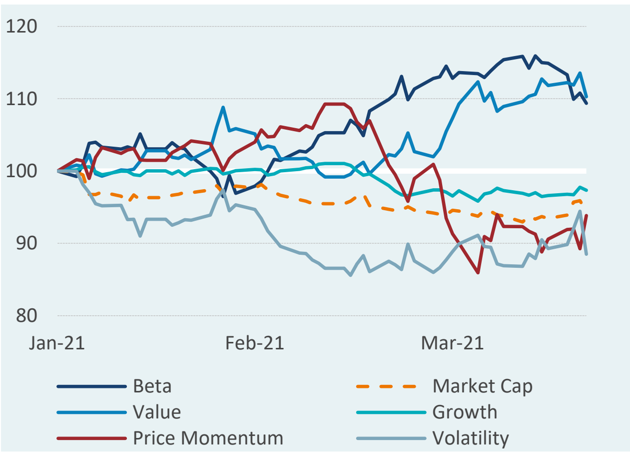
Factor portfolios in 2021

Factor performance trends that started with positive COVID vaccine news in late 2020 continued into 2021 Q1. Investors kept favoring the value factor; they also bought stocks with higher betas and higher volatility (long/short, sector neutral, S&P 500 Index quintiles). This was a significant change from pre-vaccine pandemic behavior when investors had bid up the low volatility, growth, and price momentum factors.

From a longer-term perspective, the latest rotation did not come close to reversing the trend of positive results accruing to the momentum and low volatility factors.

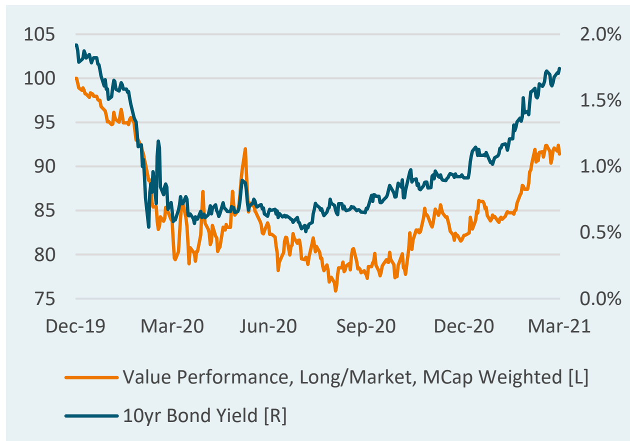
Value stocks, which were largely beaten down during the pandemic, remain an ongoing beneficiary of the economic recovery rooted in both positive medical news and ongoing government stimulus programs. Higher interest rates and a steepening yield curve, which are related to the recovery trade, also help certain cheap financial stocks. In contrast, certain growth stocks are hurt by higher rates as future profits are further discounted. The recent market activity is reflected within the momentum factor itself as investors sold growth and low volatility stocks to keep buying stocks with higher exposure to value and other factors.

Q1 2021 PERFORMANCE



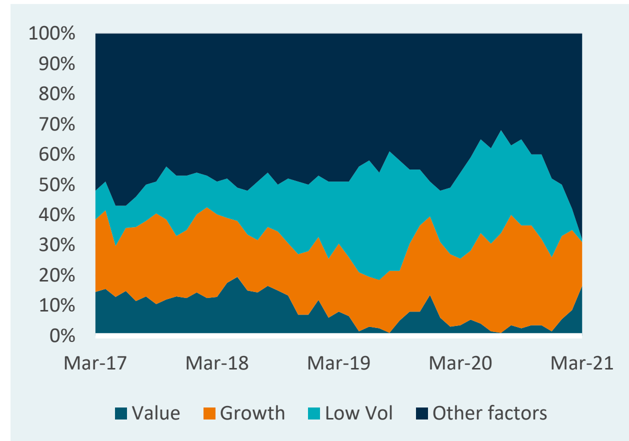
Source: J.P. Morgan, as of 3/27/21

VALUE PERFORMANCE AND RATE MOVEMENT



Source: J.P. Morgan, as of 3/31/21

J.P. MORGAN MOMENTUM BUCKET: LONG-SIDE FACTOR EXPOSURES (S&P 500 INDEX UNIVERSE)



Source: J.P. Morgan, as of 3/31/21

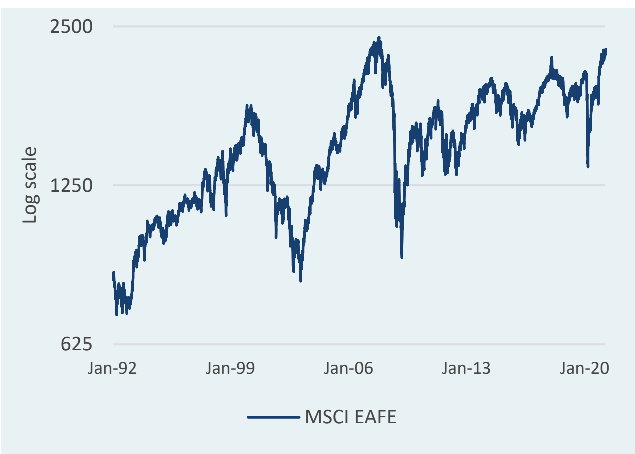
International developed equity

International equities delivered +3.5% (MSCI EAFE Index) during the first quarter on an unhedged currency basis. International developed underperformed the S&P 500 Index (+6.2%) while outperforming the MSCI Emerging Markets Index (+2.3%). The trend towards U.S. dollar weakness has boosted the performance of unhedged international equities, adding +6.8% over the past year, though this trend may have begun to reverse in the first quarter.

International developed equity weakness may be partly attributed to snags in the European COVID-19 vaccination campaign, which has materially lagged the rest of the world. However, European equities (+4.1%) managed to outperform Japanese equities (+1.6%) in U.S. dollar terms, primarily due to currency movements, as the yen (-6.7%) depreciated more sharply relative to the U.S. dollar than the euro (-4.0%) or swiss franc (-6.2%).

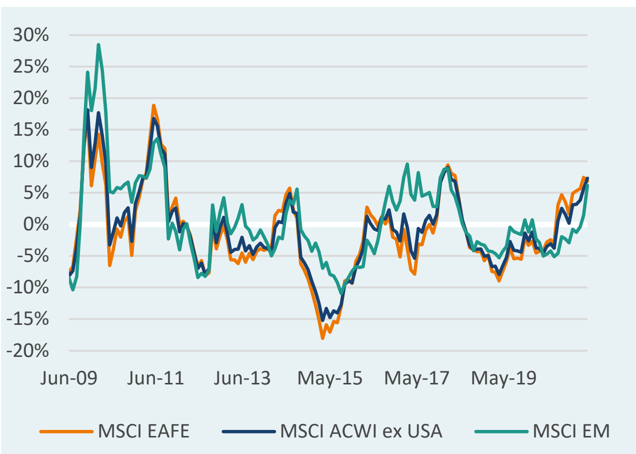
Bets against the Japanese yen rose to multi-year highs amid a backdrop of increasing relative interest rates available in the U.S., and a wave of risk-on sentiment pouring cold water on the appeal of traditional safe-haven assets.

INTERNATIONAL DEVELOPED EQUITIES



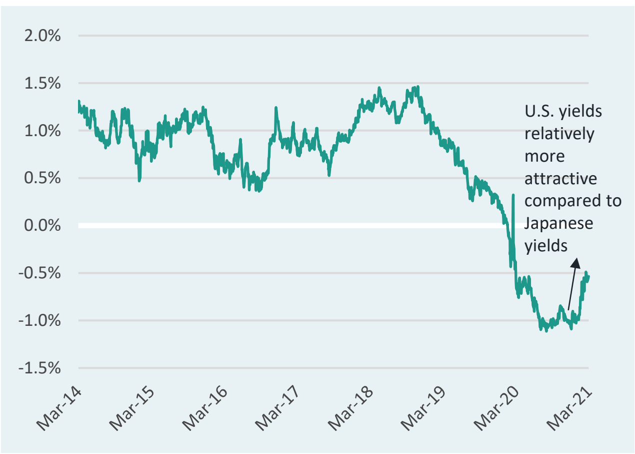
Source: MSCI, as of 3/31/21

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/21

10-YEAR REAL YIELD SPREAD (US MINUS JAPAN)



Source: Bloomberg, as of 3/31/21

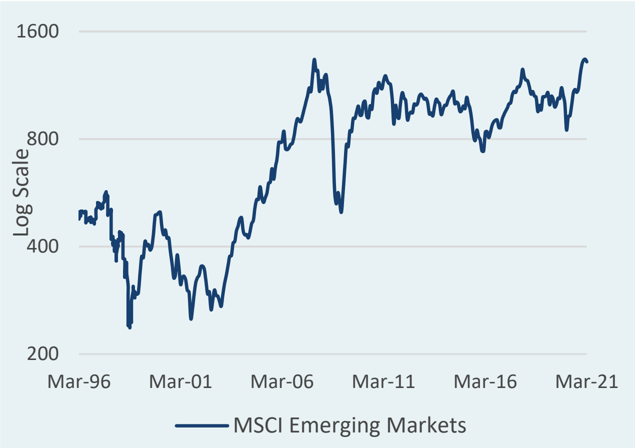
Emerging market equity

Emerging market equities (MSCI EM +2.3%) underperformed U.S. (S&P 500 +6.2%) and international developed equities (MSCI EAFE +3.5%) during the quarter. Latin American equities pulled back from strong performance in Q4, underperforming the broader index (MSCI Latin America -5.3%).

Chinese mainland equities, which account for roughly 36% of the MSCI EM Index, slumped -0.4%, dampening overall index returns. Many analysts attributed the relative weakness in China to tightening liquidity conditions, as the People's Bank of China shifted focus away from promoting economic recovery and toward clamping down on real estate speculation and leverage broadly, in the interest of preventing the buildup of financial excesses.

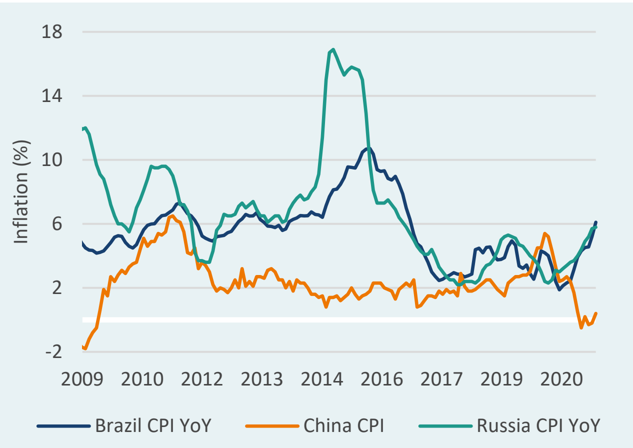
Central banks from Turkey to Russia to Brazil delivered surprise rate hikes in part to respond to a resurgence in inflation, which weighed on markets. Idiosyncratic political developments further pressured returns in Turkey (-20.4%) and Brazil (-10.0%), while Russian equities held up better (+2.4%) despite a weaker ruble (-2.1%).

EMERGING MARKET EQUITY



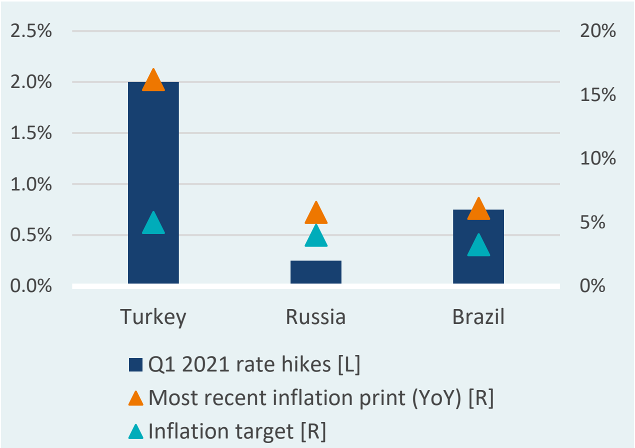
Source: MSCI, as of 3/31/21

INFLATION (YOY)



Source: Bloomberg, as of 3/31/21 or most recent data

SURPRISE CENTRAL BANK RATE HIKES



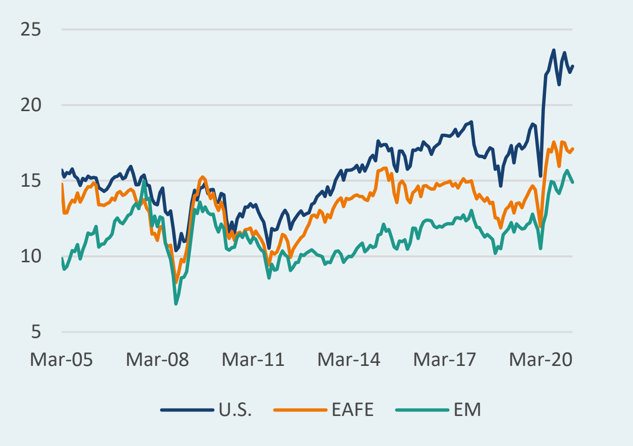
Source: Bloomberg, as of 3/31/21

Equity valuations

Valuations remain at very high levels relative to history. However, prices may be somewhat justified, considering the historically low (though slightly higher over the quarter) level of interest rates, and the fact that earnings are expected to rebound sharply later this year. Additionally, some have projected that aggressive cost-cutting measures and pandemic-driven innovation could result in higher operating leverage within U.S. companies, which would allow them to generate more earnings per dollar of revenue than before the pandemic began, and perhaps more earnings overall if revenues were to return to near pre-pandemic levels.

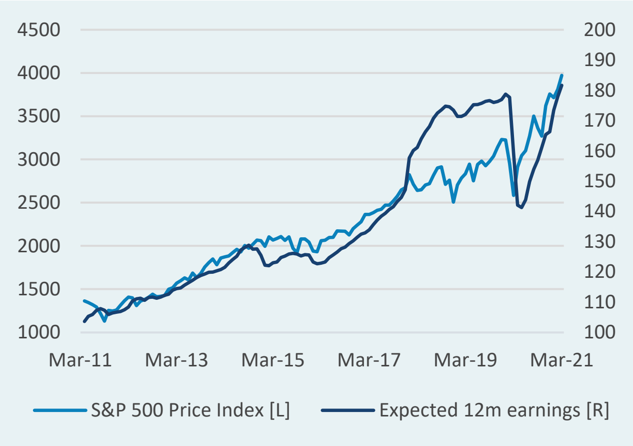
Equity prices proved quite resilient to the significant increase in global interest rates, leaving investors pondering the level at which rising interest rates would materially impact the present value of equities. While this is difficult to gauge, the answer is likely dependent on the sector and duration characteristics of the various global equity benchmarks. Additionally, central bank accommodation remains a crucial support for equity prices. Looking ahead, if central bankers were to adopt a more hawkish tone as the developed world approaches herd immunity, valuations may be challenged.

FORWARD P/E RATIOS



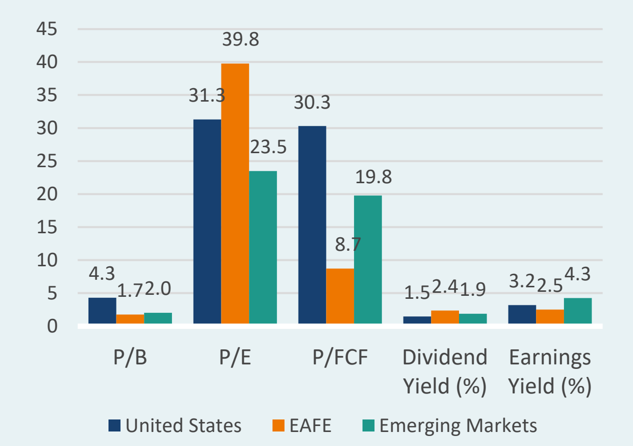
Source: MSCI, 12m forward P/E, as of 3/31/21

S&P 500 PRICE & EARNINGS EXPECTATIONS



Source: Bloomberg, as of 3/31/21

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 3/31/21 - trailing P/E

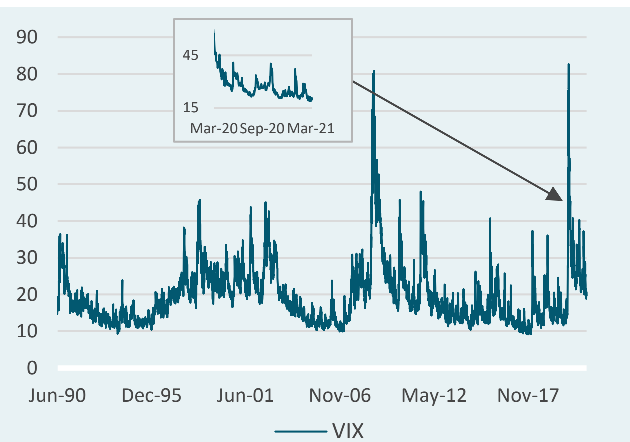
Equity volatility

The Cboe VIX Index has slowly been falling back towards the longer-term average of 19. The index fluctuated in the low 20s during Q1, falling below 19 briefly in late March.

One-year trailing realized volatility began to fade alongside implied volatility in the first quarter of the year, as the tumultuous markets of Q1 2020 fell out of the lookback period. Central bank accommodation has translated to easy global financial conditions, though policy normalization and liquidity tightening in China has likely contributed to recent weakness in Chinese equity markets.

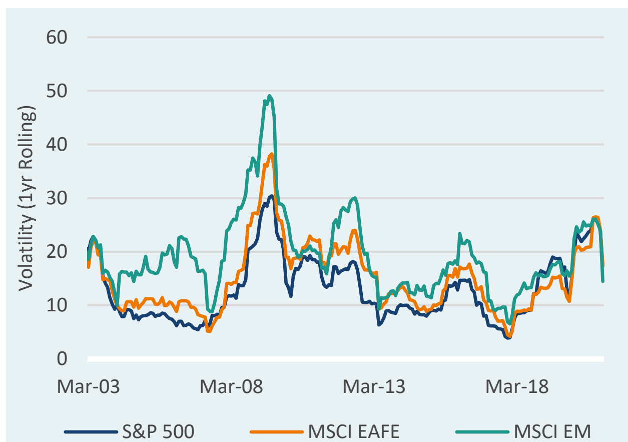
Since seeing recoveries during Q3 and Q4 of last year, respectively, U.S. and international equities have headed higher with relatively low volatility. Idiosyncratic political developments across the emerging markets universe, surprise central bank rate hikes, and the high concentration of tech in Asian EM countries in a period of rising rates, all contributed to a more volatile quarter for the emerging markets complex.

U.S. IMPLIED VOLATILITY (VIX)



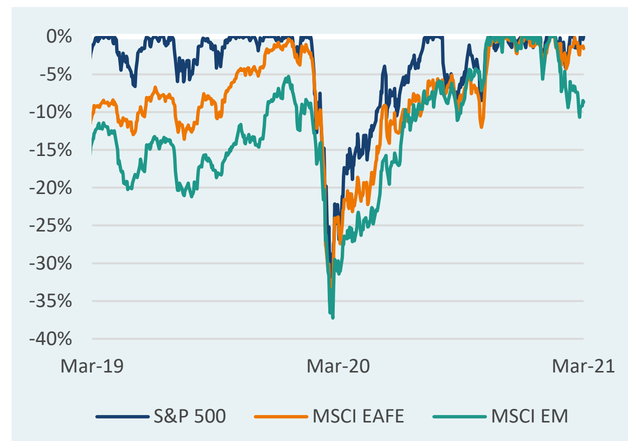
Source: Cboe, as of 3/31/21

REALIZED VOLATILITY



Source: Standard & Poor's, MSCI, as of 3/31/21

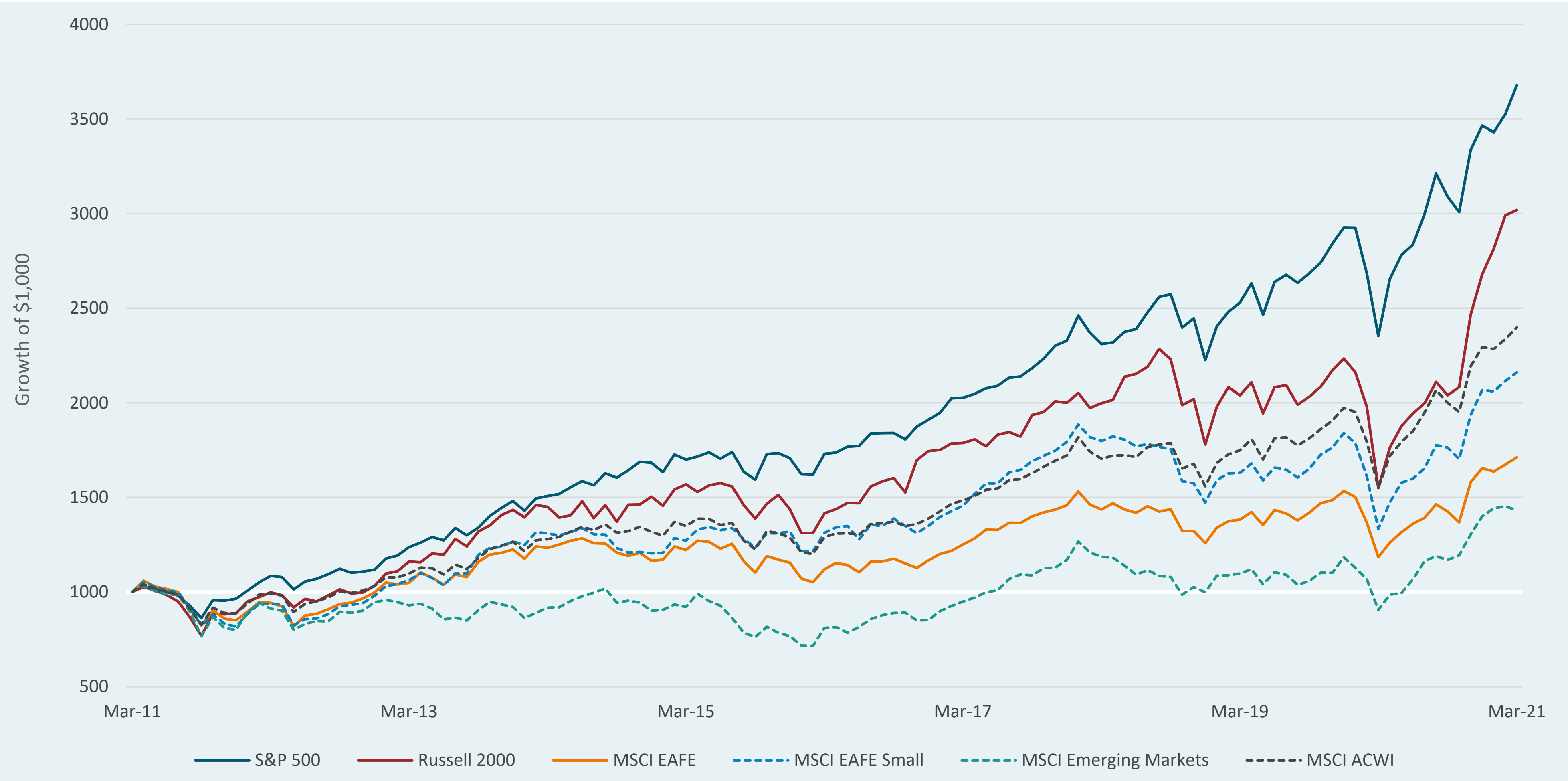
MAX DRAWDOWNS FROM PRIOR PEAKS



Source: Standard & Poor's, MSCI, Bloomberg, as of 3/31/21

Verus

Long-term equity performance



Source: Morningstar, as of 3/31/21

Other assets

Currency

U.S. dollar weakness had prevailed for most of 2020, but turned around in the first quarter of 2021. The Bloomberg Dollar Spot Index increased 2.8% over the quarter, after slipping -5.4% in 2020. Strength in the dollar was attributed to rising relative yields in the U.S., the relatively effective vaccination campaign, and speculation that a series of fiscal support packages might fuel supernormal growth over the next few years.

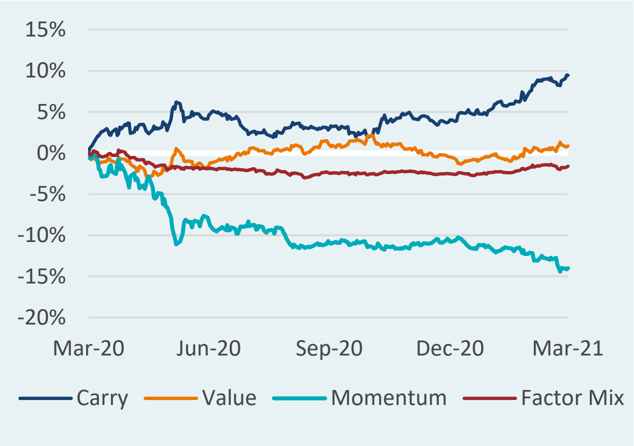
Currency beta returns, or the returns of a long-short portfolio of G10 currencies constructed by investing in three equally-weighted factors (carry, value, momentum), remained negative over the trailing year. Rotations back into the U.S. dollar and out of the euro and yen supported performance for the carry factor while detracting from the performance of the currency momentum factor.

International developed currencies fared poorly, pressured by risk-on sentiment, a lackluster European vaccination effort, and concerns expressed by the European Central Bank about rising global interest rates. The embedded currency portfolio of the MSCI EAFE Index returned -4.1%, as the yen (-6.7%) and euro (-4.0%) weakened relative to the U.S. dollar. Emerging market currencies (-3.1%) softened, driven by declines in the Brazilian real (-7.8%) and Turkish lira (-9.9%).

BLOOMBERG DOLLAR SPOT INDEX

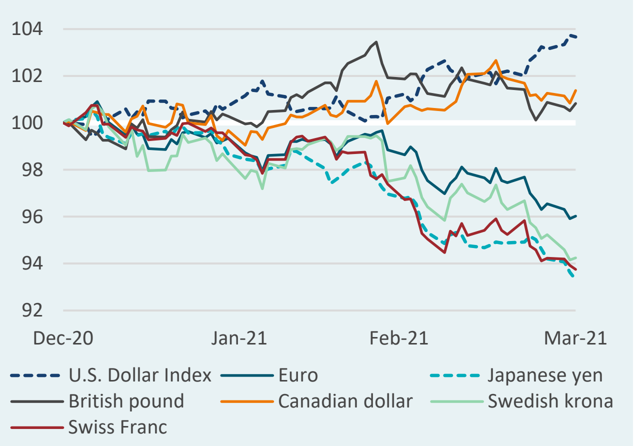
Source: Bloomberg, as of 3/31/21

CURRENCY BETA (ONE-YEAR RETURNS)



Source: MSCI, Bloomberg, as of 3/31/21

U.S. DOLLAR INDEX CONSTITUENTS



Source: Bloomberg, as of 3/31/21

Appendix

Periodic table of returns

BEST

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	YTD	5-Year	10-Year
Small Cap Value	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	38.5	21.2	21.0	16.6
Small Cap Equity	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	34.6	12.7	18.6	14.0
Large Cap Value	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	21.0	11.3	16.7	13.0
Commodities	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	20.0	6.9	16.4	11.7
Large Cap Equity	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	18.3	5.9	13.6	11.0
Small Cap Growth	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	14.0	4.9	12.1	10.1
International Equity	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	10.3	3.5	11.7	8.6
Emerging Markets Equity	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	7.8	2.3	9.2	6.6
Hedge Funds of Funds	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	7.5	2.0	8.8	5.5
60/40 Global Portfolio	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	4.6	1.0	5.6	3.7
Large Cap Growth	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	2.8	0.9	5.4	3.4
Cash	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	0.5	0.0	3.1	3.4
Real Estate	-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	0.5	0.0	2.3	0.6
US Bonds	-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	-3.1	-3.4	1.1	-6.3

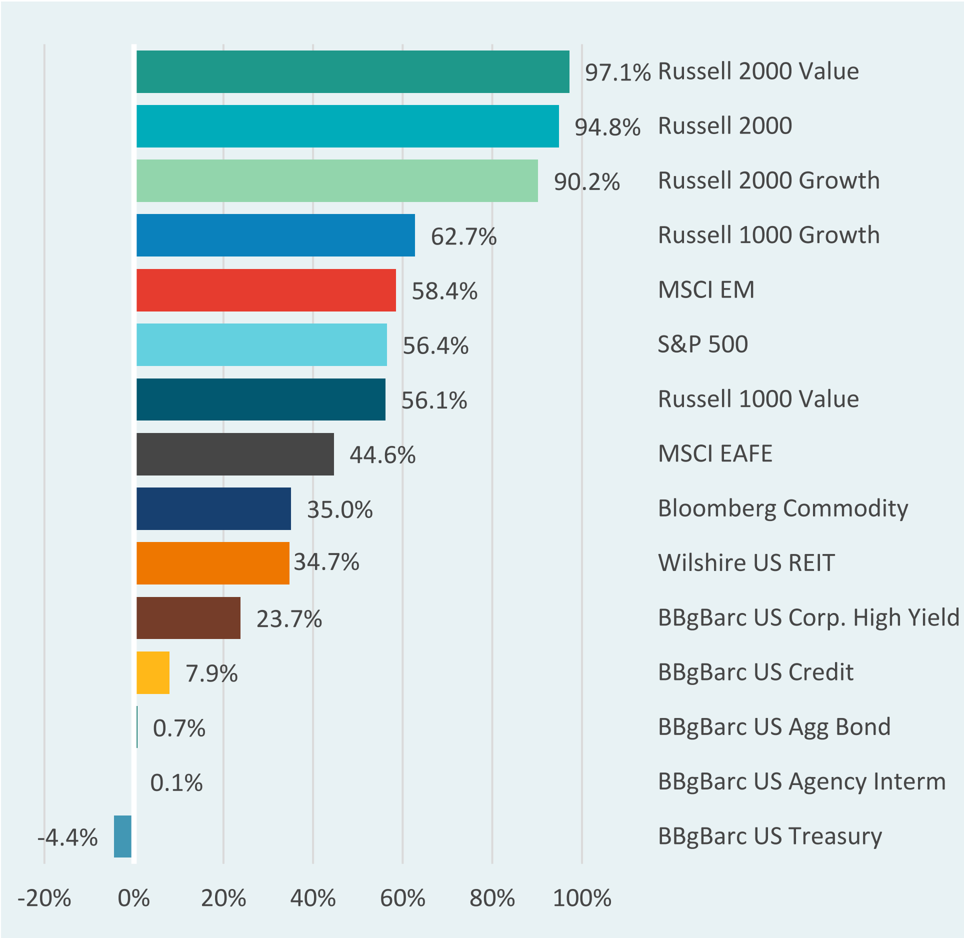
WORST

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

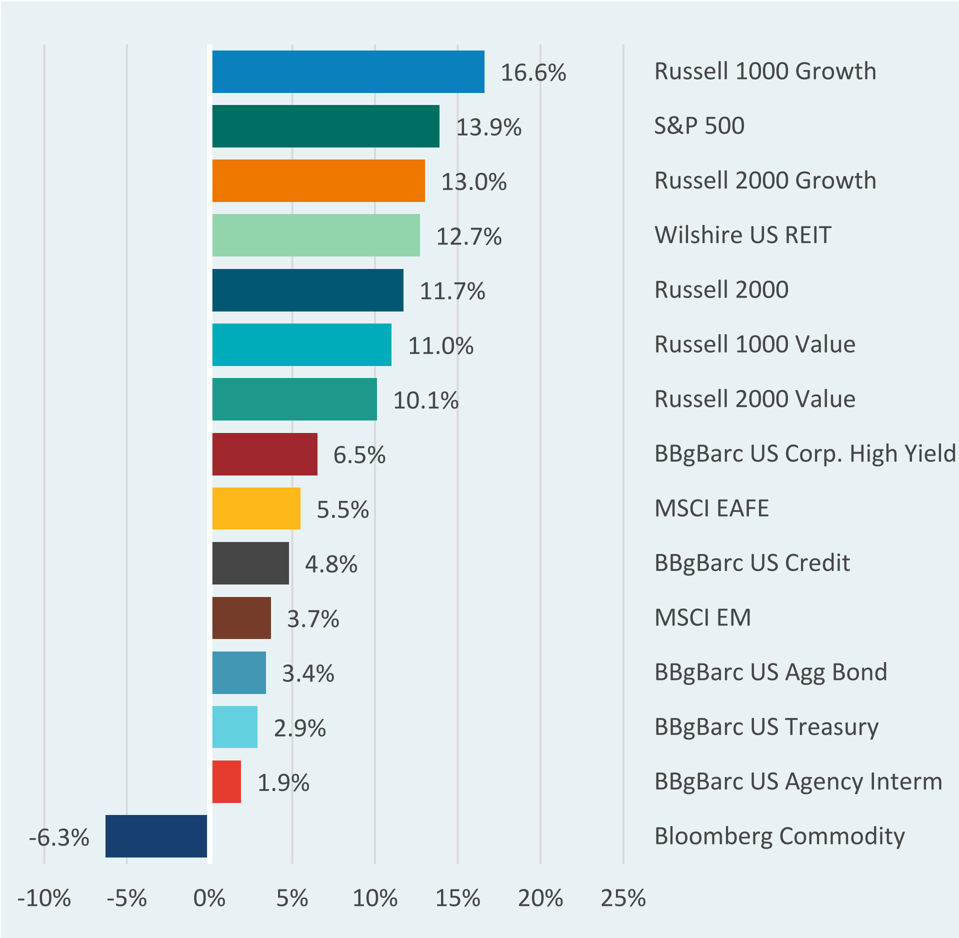
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 12/31/20.

Major asset class returns

ONE YEAR ENDING MARCH



TEN YEARS ENDING MARCH



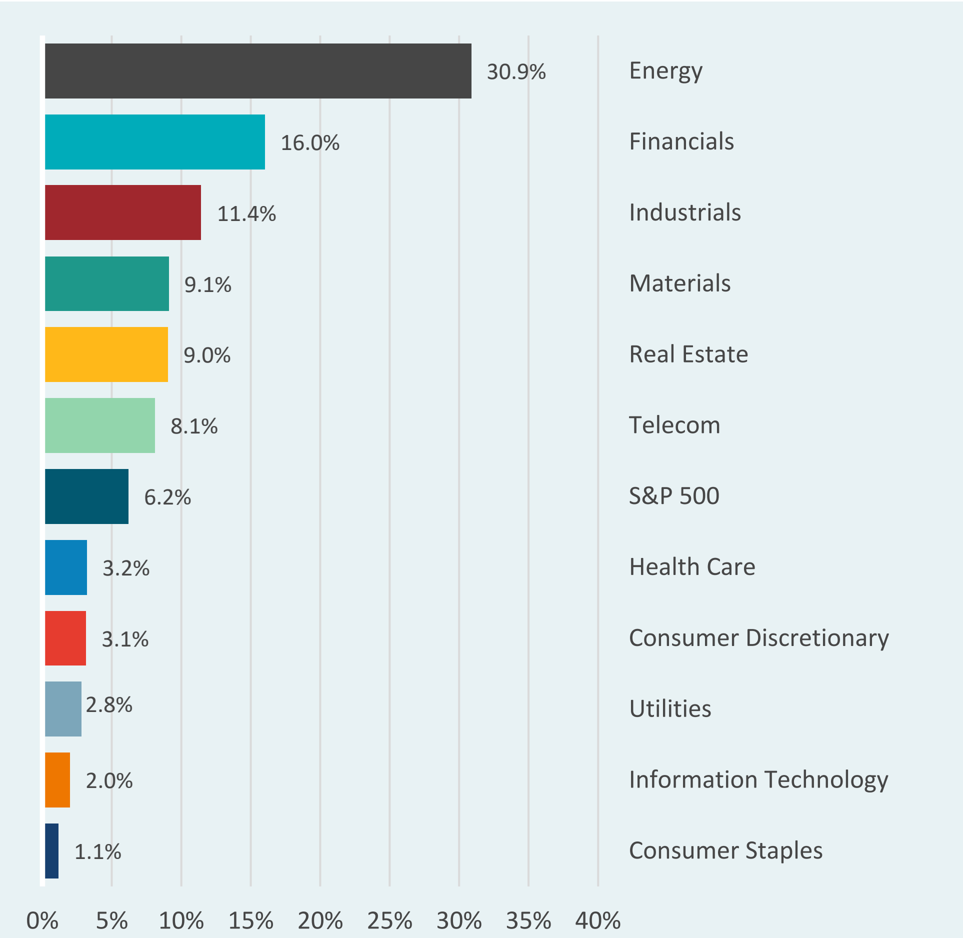
Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 3/31/21

Source: Morningstar, as of 3/31/21

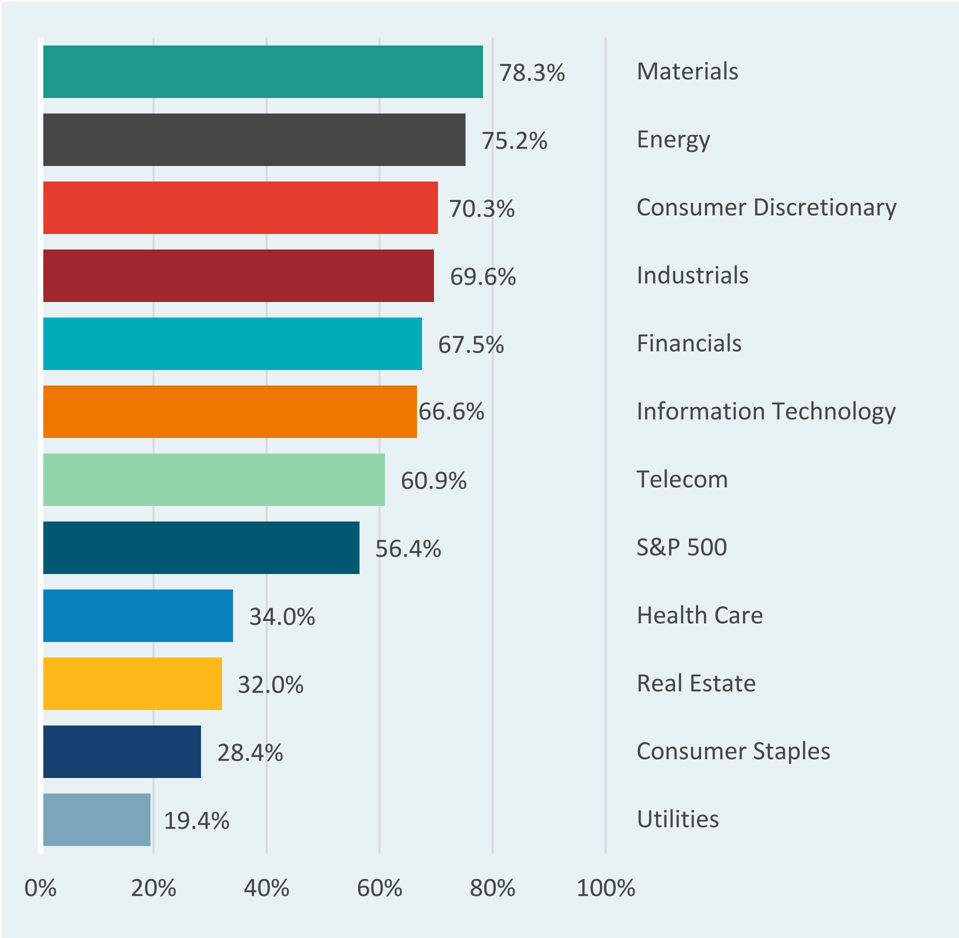
S&P 500 sector returns

Q1 2021



Source: Morningstar, as of 3/31/21

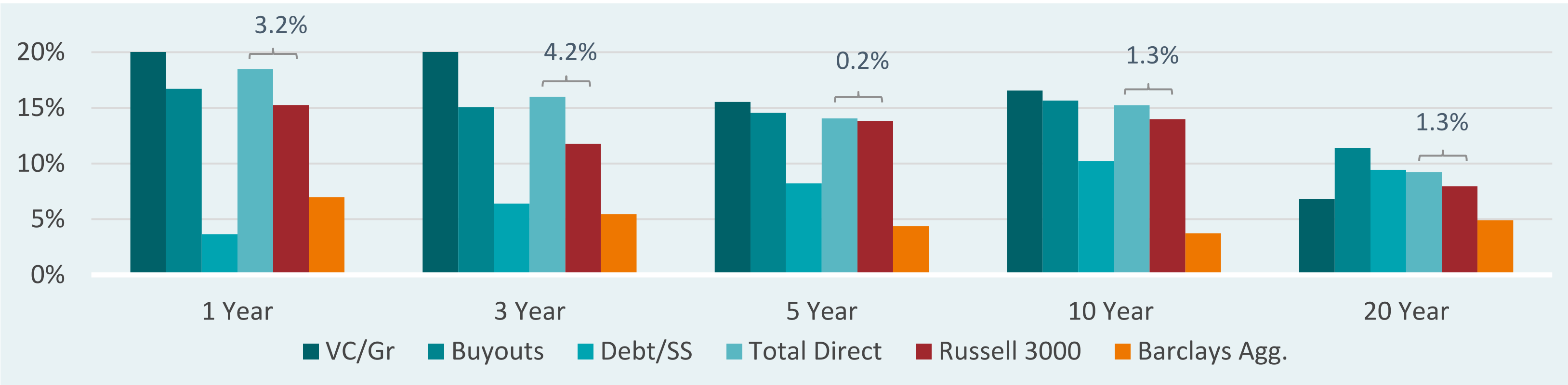
ONE YEAR ENDING MARCH



Source: Morningstar, as of 3/31/21

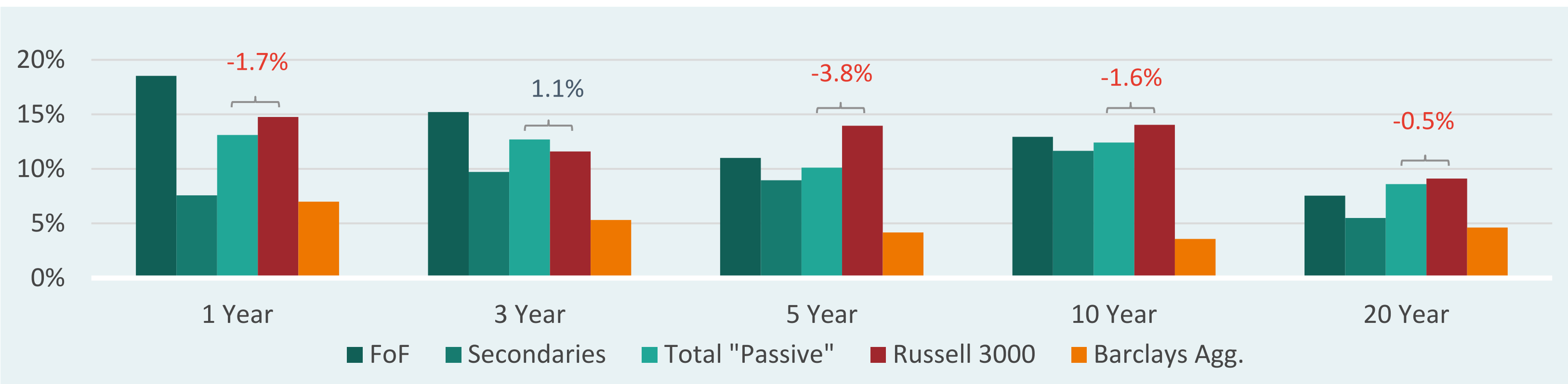
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



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

"PASSIVE" STRATEGIES

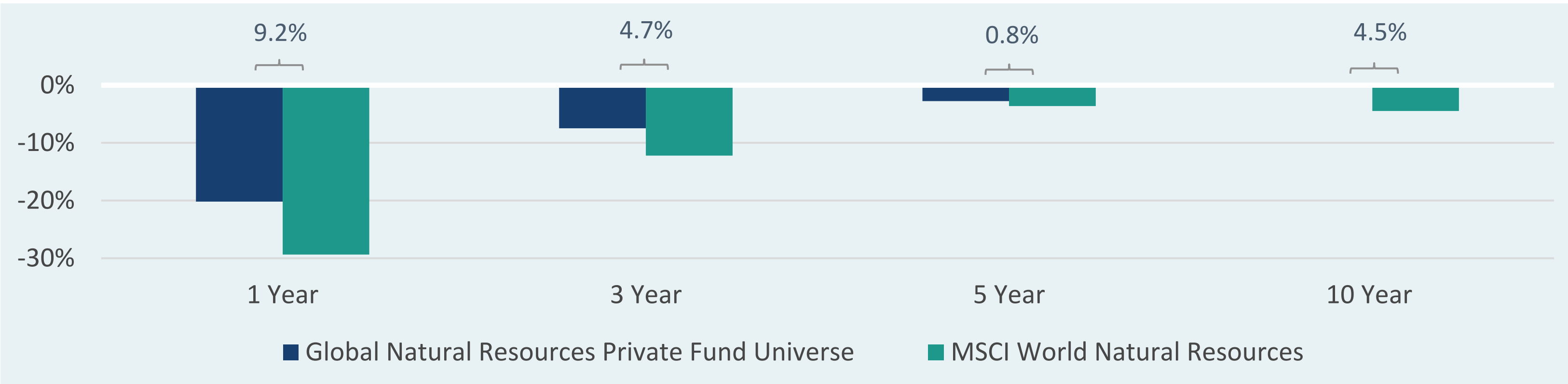


"Passive" strategies underperformed comparable public equities across all time periods, aside from the 3-year basis.

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

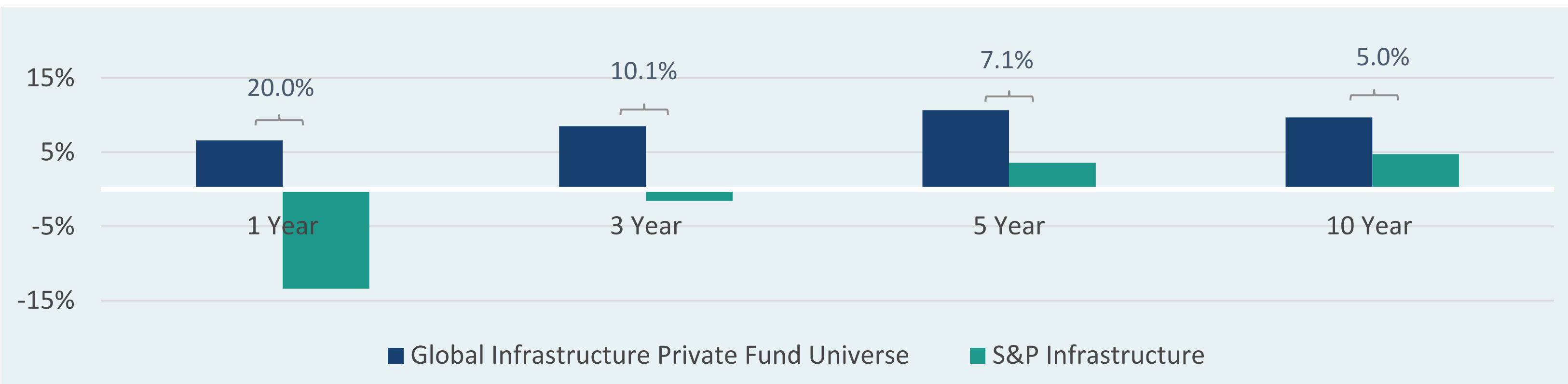
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds outperformed the MSCI World Natural Resources benchmark across all time periods.

GLOBAL INFRASTRUCTURE FUNDS

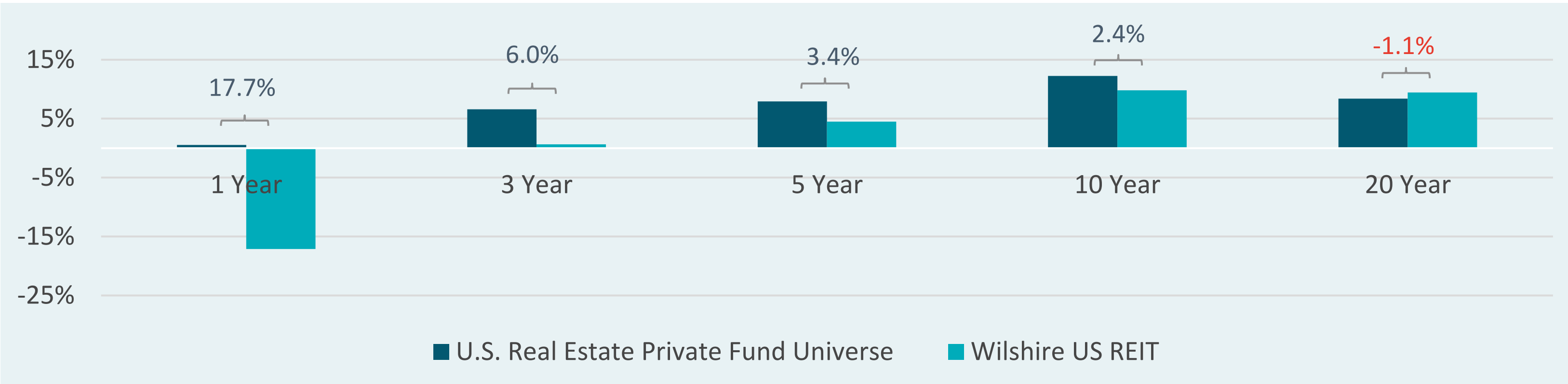


Infra. funds outperformed the S&P Infra. across all periods.

Sources: Refinitiv C|A PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of September 30, 2020. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

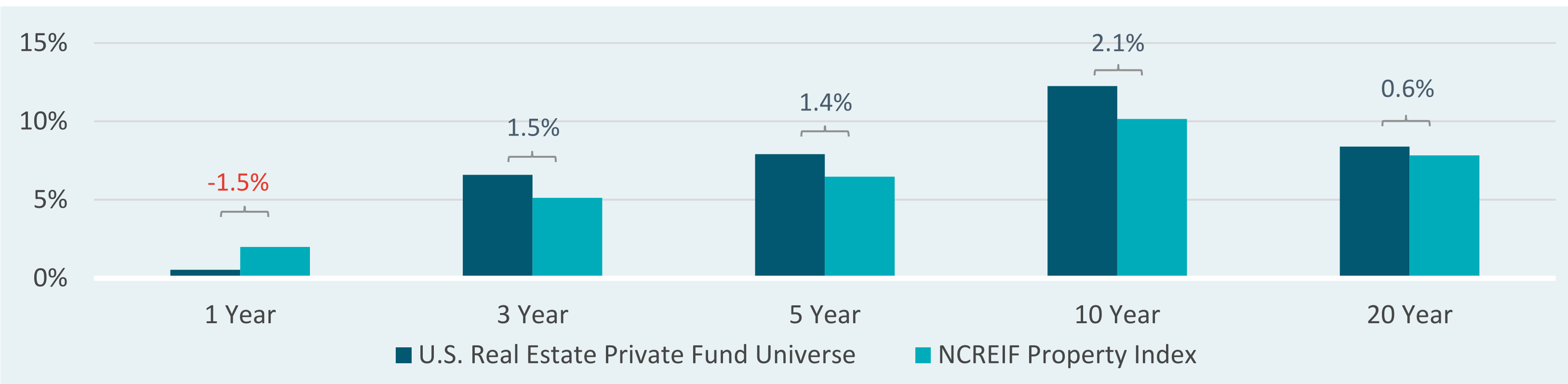
Private vs. liquid and core real estate performance

U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. Private R.E. funds outperformed the Wilshire U.S. REIT Index across all time periods, aside on a 20-year basis.

U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods, aside on a 1-year basis.

Sources: Refinitiv C|A PME: Global and U.S. Real Estate universes as of September 30, 2020. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	4.4	6.2	6.2	56.4	16.8	16.3	13.9
S&P 500 Equal Weighted	6.0	11.5	11.5	71.6	14.9	14.7	13.1
DJ Industrial Average	6.8	8.3	8.3	53.8	13.6	16.0	13.1
Russell Top 200	4.2	5.1	5.1	56.3	18.3	17.4	14.6
Russell 1000	3.8	5.9	5.9	60.6	17.3	16.7	14.0
Russell 2000	1.0	12.7	12.7	94.8	14.8	16.4	11.7
Russell 3000	3.6	6.3	6.3	62.5	17.1	16.6	13.8
Russell Mid Cap	2.7	8.1	8.1	73.6	14.7	14.7	12.5
Style Index							
Russell 1000 Growth	1.7	0.9	0.9	62.7	22.8	21.0	16.6
Russell 1000 Value	5.9	11.3	11.3	56.1	11.0	11.7	11.0
Russell 2000 Growth	(3.1)	4.9	4.9	90.2	17.2	18.6	13.0
Russell 2000 Value	5.2	21.2	21.2	97.1	11.6	13.6	10.1

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	2.7	4.6	4.6	54.6	12.1	13.2	9.1
MSCI ACWI ex US	1.3	3.5	3.5	49.4	6.5	9.8	4.9
MSCI EAFE	2.3	3.5	3.5	44.6	6.0	8.8	5.5
MSCI EM	(1.5)	2.3	2.3	58.4	6.5	12.1	3.7
MSCI EAFE Small Cap	2.2	4.5	4.5	62.0	6.3	10.5	8.0
Style Index							
MSCI EAFE Growth	1.2	(0.6)	(0.6)	42.6	9.8	10.8	7.2
MSCI EAFE Value	3.4	7.4	7.4	45.7	1.8	6.6	3.7
Regional Index							
MSCI UK	2.8	6.2	6.2	33.5	0.9	4.3	3.3
MSCI Japan	1.1	1.6	1.6	39.7	6.3	10.5	7.2
MSCI Europe	3.1	4.1	4.1	44.9	5.6	8.2	5.1
MSCI EM Asia	(3.0)	2.2	2.2	60.1	9.5	14.5	6.6
MSCI EM Latin American	4.6	(5.3)	(5.3)	50.1	(6.1)	4.0	(4.1)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(0.2)	(1.5)	(1.5)	7.5	5.7	3.9	3.4
BBgBarc US Treasury Bills	0.0	0.0	0.0	0.1	1.5	1.2	0.7
BBgBarc US Agg Bond	(1.2)	(3.4)	(3.4)	0.7	4.7	3.1	3.4
BBgBarc US Universal	(1.2)	(3.1)	(3.1)	3.0	4.9	3.6	3.8
Duration							
BBgBarc US Treasury 1-3 Yr	(0.0)	(0.1)	(0.1)	0.3	2.8	1.7	1.3
BBgBarc US Treasury Long	(5.0)	(13.5)	(13.5)	(15.8)	5.9	3.1	6.3
BBgBarc US Treasury	(1.5)	(4.3)	(4.3)	(4.4)	4.1	2.2	2.9
Issuer							
BBgBarc US MBS	(0.5)	(1.1)	(1.1)	(0.1)	3.7	2.4	2.8
BBgBarc US Corp. High Yield	0.1	0.9	0.9	23.7	6.8	8.1	6.5
BBgBarc US Agency Interm	(0.4)	(1.0)	(1.0)	0.1	3.2	2.0	1.9
BBgBarc US Credit	(1.6)	(4.5)	(4.5)	7.9	5.9	4.7	4.8

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(2.1)	6.9	6.9	35.0	(0.2)	2.3	(6.3)
Wilshire US REIT	4.8	8.8	8.8	34.7	9.0	5.7	12.7
CS Leveraged Loans	0.1	2.0	2.0	20.8	4.1	4.6	5.0
Alerian MLP	6.9	22.0	22.0	99.1	(4.0)	(2.1)	(0.7)
Regional Index							
JPM EMBI Global Div	(1.0)	(4.5)	(4.5)	16.0	4.0	5.1	5.6
JPM GBI-EM Global Div	(3.1)	(6.7)	(6.7)	13.0	(0.8)	3.1	0.5
Hedge Funds							
HFRI Composite	1.0	6.1	6.1	34.0	7.7	7.5	4.6
HFRI FOF Composite	0.4	2.0	2.0	23.9	5.4	5.6	3.4
Currency (Spot)							
Euro	(3.2)	(3.9)	(3.9)	7.1	(1.5)	0.6	(1.9)
Pound Sterling	(1.3)	0.9	0.9	11.3	(0.6)	(0.8)	(1.5)
Yen	(3.6)	(6.6)	(6.6)	(2.3)	(1.3)	0.3	(2.8)

Source: Morningstar, HFRI, as of 3/31/21

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.langerresearch.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 induces 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 "(Good-Poor + 100)/2" to the present and future sales series and "(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.*

Notices & disclosures

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: MARCH 31, 2021

Investment Performance Review for

Alameda County Employees’ Retirement Association

1st quarter summary

THE ECONOMIC CLIMATE

— Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued at a brisk pace.

— The speed of vaccinations in the U.S. has exceeded expectations, reaching more than 3 million doses per day during the first week of April. Approximately 23% of the country have been fully vaccinated, and 37% have received a first dose.

— The Europe Union has been slower to roll out vaccinations, suggesting member countries may be grappling with the virus for longer periods of time.

PORTFOLIO IMPACTS

— We believe the U.S. economy is playing catch-up to the markets in the current environment. While it seems increasingly likely that the economy will rapidly come back to life over the next year, this optimism may already be baked into equity prices.

— U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation will continue to see a temporary rise in the coming months due to the lower prices of Q2 2020, since inflation is a year-over-year measure.

THE INVESTMENT CLIMATE

— President Biden announced his $2 trillion Infrastructure Plan. In its initial form, the plan did not have bipartisan support, reportedly due to the lower proportion of the plan that related to traditional infrastructure spending, the size of the plan, and the proposed methods to fund it. Negotiations will commence in late-April, though it remains possible that the bill is modified in order to pass it via the “reconciliation” process, to avoid the need for Republican support.

— According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

ASSET ALLOCATION ISSUES

— U.S. equities were a top performer in Q1, returning +6.2%. International equities returned +3.5% (MSCI EAFE Index) and emerging markets returned +2.3% (MSCI Emerging Markets Index), on an unhedged currency basis.

— Size and value factors both delivered strong relative performance. U.S. value stocks beat growth stocks (Russell 1000 Value +11.3%, Russell 1000 Growth +0.9%), as growth stocks entered a correction in February. Small capitalization stocks continued their rally (Russell 2000 +12.7%, Russell 1000 +5.9%).

Prospects for a strong economic rebound are compelling, though this good news may already be reflected in asset prices

We believe a neutral risk stance is warranted in the current environment

U.S. economics summary

— Real GDP grew at a -2.4% rate year-over-year in the fourth quarter (+4.3% quarterly annualized rate) as the U.S. economic recovery continued. The Atlanta Fed's GDPNow forecast for 2021 Q1 growth was 6.0% on a quarter-over-quarter annualized basis as of April 9th, suggesting an even more robust pace than the prior quarter.

— The speed of vaccinations in the U.S. has exceeded expectations, reaching 3 million doses per day. Approximately 23% of the country have been fully vaccinated, and 37% have received a first dose.

— President Biden announced his $2 trillion Infrastructure Plan. In its initial form, the bill would spend $400b on expanded care for the elderly and disabled, spend $500b on electric vehicle subsidies and incentives, and spend $100B on national high-speed broadband internet access, with a smaller portion of the spending going towards traditional infrastructure such as power grid, railway, and public transit.

— U.S. core inflation remained low and stable, at 1.6% year-over-year in March. A jump in gasoline prices, along with base effects from the 2020 recession, pushed up headline inflation to 2.6%. It appears likely that inflation will continue to see a temporary rise in the coming months due to the lower prices of Q2 2020, since inflation is a year-over-year measure.

— While the U.S. unemployment rate continues to improve, falling from 6.7% to 6.0% during the quarter, the overall labor participation rate has stagnated. A disconnect seems to exist between the strong economy and weaker labor market.

— Consumer sentiment improved during Q1, along with the economic recovery. Sentiment is now at an average level relative to history.

	Most Recent	**12 Months Prior**
GDP *(YoY)*	(2.4%) *12/31/20*	2.3% *12/31/19*
Inflation *(CPI YoY, Core)*	1.6% *3/31/21*	2.1% *3/31/20*
Expected Inflation *(5yr-5yr forward)*	2.20% *3/31/21*	1.25% *3/31/20*
Fed Funds Target Range	0% – 0.25% *3/31/21*	0% – 0.25% *3/31/20*
10-Year Rate	1.74% *3/31/21*	0.67% *3/31/20*
U-3 Unemployment	6.0% *3/31/21*	4.4% *3/31/20*
U-6 Unemployment	10.7% *3/31/21*	8.8% *3/31/20*

International economics summary

— Economic growth continued to recover during the fourth quarter, though was still negative on a year-over-year basis in many countries. Growth expectations have risen as successful vaccine rollouts suggest that the world may get back to normal more quickly than originally assumed.

— Europe may unfortunately be excluded from this optimism, as a renewed wave of COVID-19 has once again led to lockdowns and restrictions. The Europe Union has been slower to rollout vaccinations, suggesting member countries may be grappling with the virus for longer periods of time.

— Unemployment was stable in the Eurozone and Japan, and fell modestly in the United States. As we described in prior quarters, governments have taken very different approaches to supporting workers, which makes labor market comparisons difficult.

— Despite heightened discussions about inflation risk, inflation remains muted and stable around the world, though the rebound in energy prices from record-low levels last year is having a lifting impact. This influence, driven by base effects, will most likely persist for the next few months.

— The gap between the manufacturing and services sectors of the economy narrowed toward the end of the quarter, as the beaten-down services sector showed signs of life across Europe. Extended periods of service sector activity expansion will likely depend on manageable levels of case growth and relaxed social distancing controls.

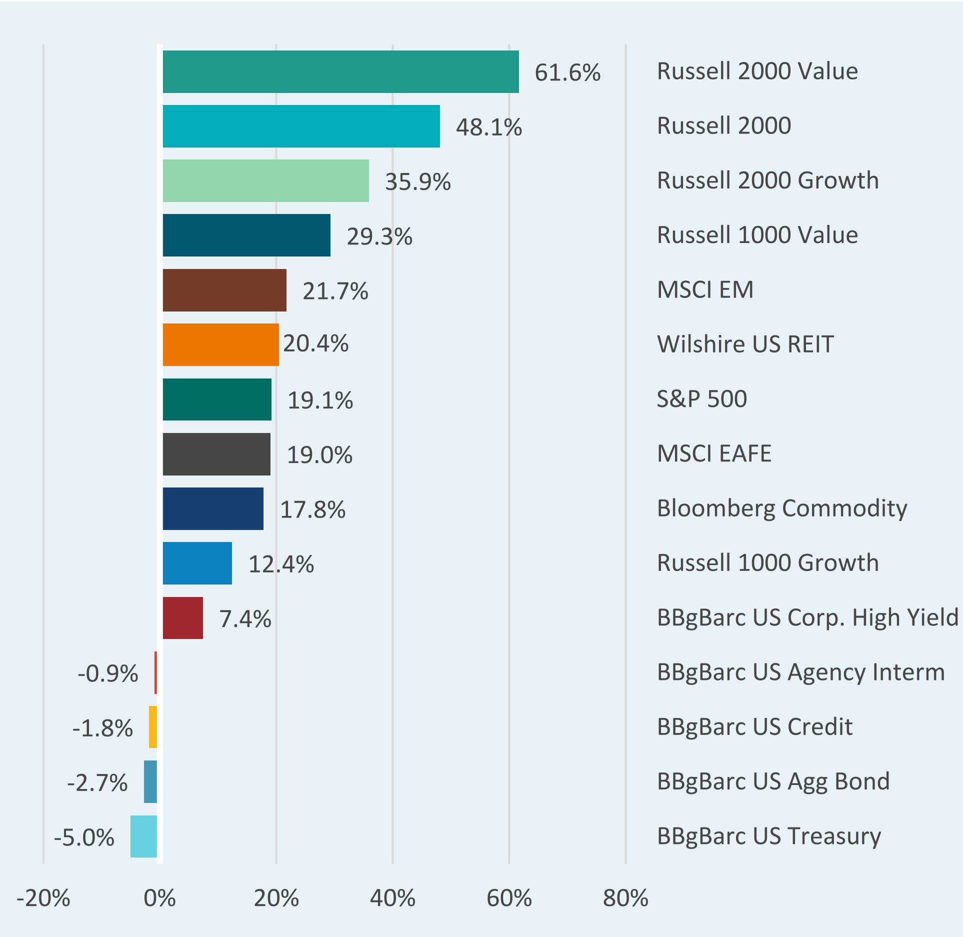
— Vaccine campaigns across mainland Europe as well as Japan have materially lagged those of the U.S. and the U.K., and the indefinite suspension of the AstraZeneca vaccine in many countries is likely to widen the gap in the short-term.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(2.4%) *12/31/20*	2.6% *3/31/21*	6.0% *3/31/21*
Eurozone	(4.9%) *12/31/20*	1.3% *3/31/21*	8.3% *2/28/21*
Japan	(1.4%) *12/31/20*	(0.2%) *3/31/21*	2.8% *2/28/21*
BRICS Nations	1.6% *12/31/20*	1.4% *3/31/21*	5.7% *12/31/20*
Brazil	(4.1%) *12/31/20*	6.1% *3/31/21*	14.2% *1/31/21*
Russia	(3.0%) *12/31/20*	5.8% *3/31/21*	5.4% *3/31/21*
India	0.4% *12/31/20*	5.5% *3/31/21*	6.5% *3/31/21*
China	18.3% *3/31/21*	0.4% *3/31/21*	4.2% *12/31/20*

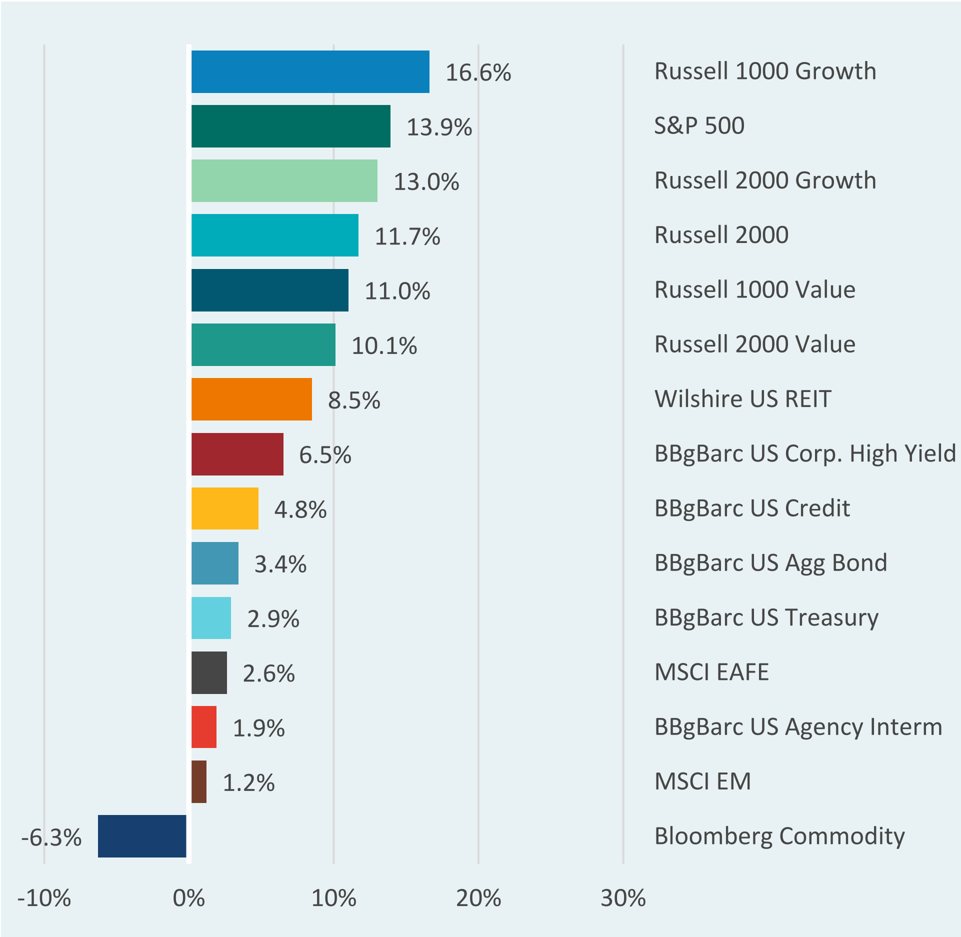
NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy

Major asset class returns

SIX MONTHS ENDING MARCH



TEN YEARS ENDING MARCH



Source: Bloomberg, as of 3/31/21

Source: Morningstar, as of 3/31/21

— The composite fund returned 4.4% for the first quarter of 2021 and ranked in the 16th percentile among public funds greater than $1 billion (median of 3.4%). The fund beat its policy index return of 4.2% during this time period. Longer term, the five (11.2%), and ten year (8.8%) returns ranked in the 15th and 36th percentile of large public plans respectively.

— First quarter results were enhanced by the following factors:

1. William Blair Small Cap Growth beat the Russell 2000 Growth (7.8% vs 4.9%). Strong stock selection in the health care sector drove relative performance.

2. Loomis lost – 2.2% beating the Bloomberg Barclays US Credit BAA (-4.3%.) Loomis was positioned with slightly less duration than the benchmark in Q1. This helped the strategy as long-term rates rose during the quarter.

— First quarter results were hindered by the following factors:

1. Capital Group trailed the MSCI ACWI ex US gaining 2% versus 3.6% for the index. While underperforming the core benchmark the strategy outperformed the MSCI ACWI ex US Growth which was flat for the quarter. Having a growth tilt, while beneficial in 2020, hurt in Q1 2021 with the comeback of value.

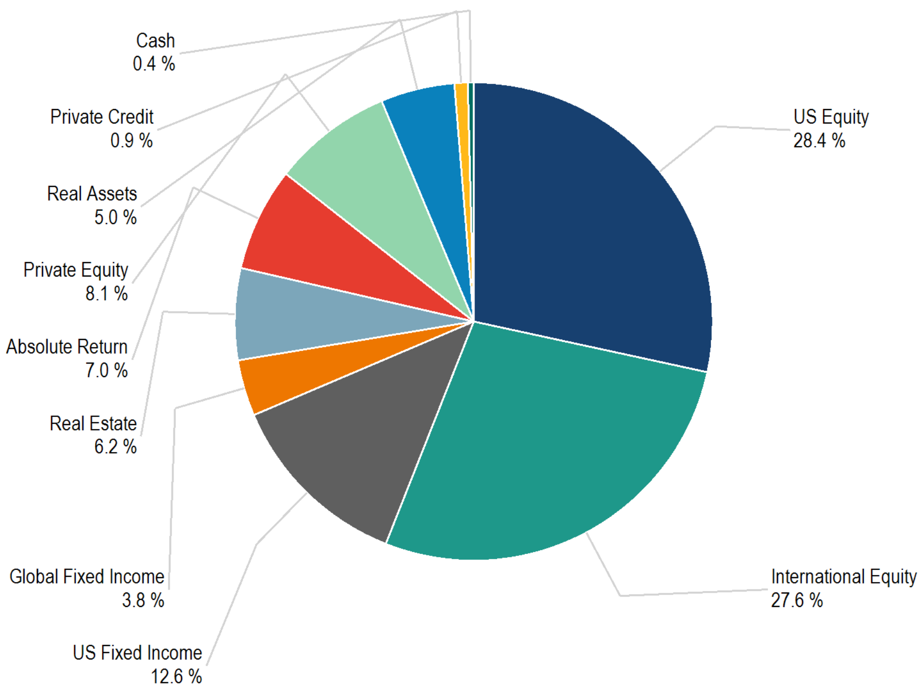
2. Newton lost -0.47% trailing the 2.3% return for the MSCI EM. The shift to value over the quarter, hurt the returns of some of the strategies portfolio companies. Specifically, EV supply chain and solar companies hurt relative performance in Q1

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return[1]	$676,776,371	-$2,342,934	$27,119,450	$701,552,887
Alta	$5,249	$0	$0	$5,249
Applied Research Investments	$27,852,621	-$820,000	-$745,040	$26,287,581
AQR	$6,009,177	-$4,211,216	-$145,236	$1,652,725
Arga Investment Management	$27,278,268	-$820,000	$3,176,412	$29,634,680
Aristotle	$136,877,998	-$94,278	$13,946,638	$150,730,357
Baird Advisors	$741,163,039	$142,200,000	-$28,394,809	$854,968,230
Bivium Cash	$0	$0	$0	$0
BlackRock MSCI World ex-US Index Fd A	$687,181,334	-$18,566,735	$28,371,694	$696,986,292
BlackRock Russell 1000 Index Fund	$2,144,843,522	-$20,000,000	$126,986,562	$2,251,830,085
Brandywine	$400,857,610	-$262,059	-$15,459,010	$385,136,541
Capital Group	$695,621,553	-$30,691,998	$14,814,965	$679,744,520
Cash Account	$61,656,850	-$25,442,744	$61,904	$36,276,009
Denali Advisors	$27,045,083	-$820,000	$2,466,910	$28,691,993
Dundas Partners	$27,744,210	-$820,000	-$50,990	$26,873,220
Global Alpha Capital Management	$10,303,432	$0	$574,379	$10,877,812
Huber	$1,651	$0	$0	$1,651
Kennedy	$129,466,612	-$225,899	$26,266,228	$155,506,940
Loomis Sayles	$422,796,783	-$289,895	-$9,212,078	$413,294,810
Mondrian	$693,998,669	-$26,044,511	$44,230,342	$712,184,500
Newton Emerging Mkt	$292,153,237	-$36,350,000	$2,200,712	$258,003,949
Next Century-SCG	$44,717	-$44,720	$433	$431
OakBrook	$146	-$146	$0	$0
Private Credit[1]	$59,247,492	$29,650,399	$1,800,065	$90,697,956
Private Equity	$718,825,860	-$29,820,528	$127,357,653	$816,362,985
Pzena	$57,437	-$40,084	-$2,025	$15,328
Radin Capital Partners	$10,892,671	-$250,000	$1,072,526	$11,715,197
RVX Asset Management	$6,996,344	$0	$388,437	$7,384,781
Real Assets[1]	$480,788,044	-$3,819,807	$21,758,749	$499,898,178
Real Estate	$610,503,035	$3,899,554	$13,697,273	$628,099,862
Sec. Lending	$0	-$826,604	$826,604	$0
TCW	$129,834,071	-$140,105	$671,366	$130,365,332
Templeton	$274,426,388	-$6,760,000	$15,176,895	$282,843,282
Transition Account	$141,402	-$39,641	-$1,632	$100,128
Willliam Blair Small Cap Growth	$172,296,544	-$22,546,091	$13,871,501	$163,621,954
Total	**$9,673,687,417**	**-$56,340,044**	**$432,826,877**	**$10,051,345,442**

1 Preliminary ending market value

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	$5,249	$0	$0	$5,249
Bivium Cash	$0	$0	$0	$0
Huber	$1,651	$0	$0	$1,651
OakBrook	$146	-$146	$0	$0
Total	**$7,046**	**-$146**	**$0**	**$6,900**

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Applied Research Investments	$27,852,621	-$820,000	-$745,040	$26,287,581
Arga Investment Management	$27,278,268	-$820,000	$3,176,412	$29,634,680
Denali Advisors	$27,045,083	-$820,000	$2,466,910	$28,691,993
Dundas Partners	$27,744,210	-$820,000	-$50,990	$26,873,220
Global Alpha Capital Management	$10,303,432	$0	$574,379	$10,877,812
Radin Capital Partners	$10,892,671	-$250,000	$1,072,526	$11,715,197
RVX Asset Management	$6,996,344	$0	$388,437	$7,384,781
Total	**$138,112,629**	**-$3,530,000**	**$6,882,634**	**$141,465,263**



	Actual	Actual
US Equity	$2,852,077,326	28.4%
International Equity	$2,772,980,659	27.6%
US Fixed Income	$1,268,263,040	12.6%
Global Fixed Income	$385,136,541	3.8%
Real Estate	$628,099,862	6.2%
Absolute Return	$701,552,886	7.0%
Private Equity	$816,362,985	8.1%
Real Assets	$499,898,178	5.0%
Private Credit	$90,697,956	0.9%
Cash	$36,276,009	0.4%
Total	**$10,051,345,442**	**100.0%**

	Actual	Target
US Equity	28.4%	25.0%
International Equity	27.6%	25.0%
US Fixed Income	12.6%	13.0%
Global Fixed Income	3.8%	3.0%
Real Estate	6.2%	8.0%
Absolute Return	7.0%	9.0%
Private Equity	8.1%	8.0%
Real Assets	5.0%	5.0%
Private Credit	0.9%	4.0%
Cash	0.4%	0.0%
Total	**100.0%**	**100.0%**

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

Total Fund
Performance Summary

Period Ending: March 31, 2021

	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)	**4.42**	**14**	**16.92**	**13**	**38.51**	**18**	**9.87**	**38**	**11.40**	**13**	**8.53**	**27**	**9.04**	**17**	**9.79**	**Sep-85**
Total Fund (Net)	**4.38**	**16**	**16.82**	**14**	**38.26**	**19**	**9.68**	**42**	**11.16**	**15**	**8.27**	**39**	**8.75**	**36**	**9.60**	
Policy Index[1]	*4.19*	*21*	*15.47*	*26*	*35.88*	*28*	*9.50*	*47*	*10.82*	*33*	*8.58*	*23*	*9.05*	*16*	*10.01*	*Sep-85*
Allocation Index	*4.36*	*16*	*16.16*	*18*	*37.07*	*23*	*9.73*	*42*	*10.88*	*29*	*8.52*	*28*	*8.90*	*27*	*--*	*Sep-85*
InvMetrics Public DB > $1B Gross Median	*3.43*		*14.11*		*32.47*		*9.33*		*10.17*		*8.00*		*8.37*		*8.89*	*Sep-85*
US Equity (Gross)	**6.71**	**67**	**22.87**	**71**	**64.23**	**47**	**16.81**	**34**	**17.54**	**12**	**13.26**	**32**	**13.74**	**25**	**12.15**	**Sep-85**
US Equity (Net)	**6.67**	**68**	**22.79**	**72**	**64.00**	**49**	**16.63**	**40**	**17.28**	**16**	**12.98**	**46**	**13.43**	**43**	**--**	
Russell 3000	*6.35*	*81*	*21.96*	*83*	*62.53*	*65*	*17.12*	*25*	*16.64*	*37*	*13.44*	*22*	*13.79*	*23*	*--*	*Sep-85*
InvMetrics All DB US Eq Gross Median	*7.38*		*24.19*		*63.84*		*16.23*		*16.24*		*12.88*		*13.26*		*11.30*	*Sep-85*
BlackRock Russell 1000 Index Fund (Gross)	5.93	60	20.43	40	60.64	29	--	--	--	--	--	--	--	--	17.76	Apr-18
BlackRock Russell 1000 Index Fund (Net)	5.93	60	20.43	40	60.62	29	--	--	--	--	--	--	--	--	17.75	
Russell 1000	*5.91*	*61*	*20.41*	*40*	*60.59*	*30*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*17.71*	*Apr-18*
Large Cap Active Equity (Gross)	**5.48**	**--**	**18.36**	**--**	**59.32**	**--**	**12.53**	**--**	**15.19**	**--**	**11.73**	**--**	**12.76**	**--**	**8.53**	**Mar-00**
Large Cap Active Equity (Net)	**5.39**	**--**	**18.13**	**--**	**58.52**	**--**	**11.97**	**--**	**14.68**	**--**	**11.27**	**--**	**12.30**	**--**	**8.09**	
Russell 1000	*5.91*	*--*	*20.41*	*--*	*60.59*	*--*	*17.31*	*--*	*16.66*	*--*	*13.64*	*--*	*13.97*	*--*	*7.03*	*Mar-00*
Aristotle (Gross)	10.19	65	--	--	--	--	--	--	--	--	--	--	--	--	27.68	Oct-20
Aristotle (Net)	10.12	65	--	--	--	--	--	--	--	--	--	--	--	--	27.60	
Russell 1000 Value	*11.25*	*53*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*31.06*	*Oct-20*
TCW (Gross)	0.52	77	9.33	91	57.53	67	23.39	31	21.27	40	16.82	46	16.15	45	9.13	Jun-99
TCW (Net)	0.41	80	9.09	91	56.67	70	22.81	36	20.76	46	16.39	56	15.74	56	--	
Russell 1000 Growth	*0.94*	*70*	*12.44*	*65*	*62.74*	*40*	*22.80*	*36*	*21.05*	*43*	*17.50*	*34*	*16.63*	*32*	*--*	*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 96 members with a total market value of $1,164.9 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.
** Funded October 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)	**13.72**	**--**	**48.56**	**--**	**100.22**	**--**	**18.67**	**--**	**19.71**	**--**	**12.48**	**--**	**12.79**	**--**	**14.10**	**Jul-85**
Small Cap Equity (Net)	**13.43**	**--**	**48.07**	**--**	**98.60**	**--**	**17.66**	**--**	**18.67**	**--**	**11.54**	**--**	**11.85**	**--**	**--**	
Russell 2000	*12.70*	--	*48.05*	--	*94.85*	--	*14.76*	--	*16.35*	--	*11.05*	--	*11.68*	--	--	*Jul-85*
Kennedy (Gross)	20.30	43	57.97	42	97.24	43	10.52	63	13.42	46	9.51	47	11.09	50	13.21	Sep-10
Kennedy (Net)	20.11	45	57.47	43	95.82	45	9.56	75	12.43	66	8.61	70	10.18	78	12.31	
Russell 2000 Value	*21.17*	*33*	*61.59*	*30*	*97.05*	*43*	*11.57*	*46*	*13.56*	*45*	*8.93*	*63*	*10.06*	*81*	*11.74*	*Sep-10*
William Blair Small Cap Growth (Gross)	8.15	33	40.72	24	101.62	40	--	--	--	--	--	--	--	--	40.23	Oct-19
William Blair Small Cap Growth (Net)	7.78	36	40.24	27	99.82	42	--	--	--	--	--	--	--	--	39.35	
Russell 2000 Growth	*4.88*	*55*	*35.92*	*42*	*90.20*	*62*	--	--	--	--	--	--	--	--	*34.97*	*Oct-19*
International Equity (Gross)	**3.99**	**32**	**21.98**	**43**	**57.84**	**30**	**8.94**	**22**	**12.09**	**22**	**7.24**	**25**	**7.10**	**25**	**8.63**	**Dec-90**
International Equity (Net)	**3.90**	**38**	**21.78**	**47**	**57.25**	**35**	**8.58**	**24**	**11.70**	**26**	**6.85**	**33**	**6.70**	**34**	**--**	
MSCI ACWI ex USA IMI Gross [1]	*3.87*	*40*	*21.83*	*47*	*52.55*	*69*	*7.01*	*52*	*10.35*	*53*	*5.93*	*59*	*5.59*	*73*	--	*Dec-90*
InvMetrics All DB ex-US Eq Gross Median	*3.61*		*21.51*		*55.38*		*7.12*		*10.44*		*6.19*		*6.22*		*7.27*	*Dec-90*
Bivium Intl Equity (Gross)	5.12	41	24.16	40	57.75	49	--	--	--	--	--	--	--	--	16.09	Oct-18
Bivium Intl Equity (Net)	4.82	44	23.44	44	55.91	56	--	--	--	--	--	--	--	--	14.76	
MSCI ACWI ex USA Gross	*3.60*	*61*	*21.29*	*60*	*50.03*	*87*	--	--	--	--	--	--	--	--	*13.42*	*Oct-18*
BlackRock MSCI World ex-US Index Fd A (Gross)	4.19	50	20.84	48	46.54	68	--	--	--	--	--	--	--	--	14.21	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	4.19	50	20.84	48	46.54	68	--	--	--	--	--	--	--	--	14.21	
MSCI World ex US Gross	*4.17*	*50*	*20.74*	*49*	*46.51*	*69*	--	--	--	--	--	--	--	--	*14.26*	*May-19*
Capital Group (Gross)	1.99	39	17.48	34	57.36	38	13.26	31	16.06	24	9.48	60	8.36	62	9.26	Dec-90
Capital Group (Net)	1.93	39	17.42	35	56.78	40	12.95	39	15.77	27	9.18	70	8.03	69	--	
MSCI ACWI ex USA Gross	*3.60*	*8*	*21.29*	*6*	*50.03*	*73*	*7.02*	*99*	*10.28*	*94*	*5.75*	*99*	*5.41*	*99*	--	*Dec-90*
MSCI ACWI ex USA Growth Gross	*0.00*	*74*	*13.96*	*66*	*49.76*	*74*	*10.70*	*83*	*12.42*	*85*	*8.13*	*82*	*7.06*	*99*	--	*Dec-90*

1 See Policy Index and Benchmark History.

	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)	6.52	72	27.19	67	47.04	78	4.65	61	7.63	72	4.28	55	5.17	58	7.20	Nov-03
Mondrian (Net)	6.42	73	26.89	68	46.43	80	4.21	69	7.19	83	3.87	83	4.80	84	6.87	
MSCI ACWI ex USA Gross	*3.60*	*99*	*21.29*	*96*	*50.03*	*61*	*7.02*	*16*	*10.28*	*25*	*5.75*	*7*	*5.41*	*10*	*7.44*	*Nov-03*
MSCI ACWI ex USA Value Gross	*7.20*	*64*	*29.18*	*43*	*49.52*	*65*	*3.02*	*90*	*7.89*	*66*	*3.20*	*89*	*3.62*	*99*	*6.61*	*Nov-03*
Newton Emerging Mkt (Gross)	-0.31	93	26.71	36	95.95	3	--	--	--	--	--	--	--	--	40.17	May-19
Newton Emerging Mkt (Net)	-0.47	94	26.37	38	95.26	3	--	--	--	--	--	--	--	--	39.83	
MSCI Emerging Markets Gross	*2.34*	*69*	*22.58*	*68*	*58.92*	*72*	--	--	--	--	--	--	--	--	*19.49*	*May-19*
Templeton (Gross)	5.62	43	20.97	56	69.45	50	5.50	71	10.16	80	6.95	74	--	--	7.51	Apr-11
Templeton (Net)	5.47	44	20.63	56	68.48	58	4.84	77	9.44	87	6.26	82	--	--	6.80	
MSCI ACWI ex US Small Cap Gross	*5.61*	*43*	*25.29*	*36*	*70.42*	*43*	*7.02*	*55*	*10.82*	*67*	*7.07*	*73*	--	--	*6.26*	*Apr-11*
MSCI ACWI ex US Small Cap Value GD	*7.76*	*32*	*30.64*	*11*	*66.83*	*62*	*4.63*	*77*	*9.48*	*87*	*5.63*	*85*	--	--	*5.45*	*Apr-11*
Total Fixed Income (Gross)	**-3.17**	**76**	**1.27**	**28**	**11.79**	**16**	**5.54**	**28**	**5.35**	**23**	**4.71**	**20**	**5.35**	**17**	**7.30**	**Sep-86**
Total Fixed Income (Net)	**-3.21**	**76**	**1.19**	**29**	**11.58**	**17**	**5.34**	**36**	**5.14**	**28**	**4.51**	**22**	**5.14**	**19**	**--**	
Fixed Income Blend [1]	*-3.53*	*84*	*-1.59*	*74*	*3.77*	*69*	*4.34*	*74*	*3.46*	*78*	*3.21*	*79*	*3.43*	*83*	--	*Sep-86*
InvMetrics All DB Total Fix Inc Gross Median	*-2.13*		*-0.15*		*6.67*		*4.97*		*4.40*		*3.77*		*4.14*		*6.72*	*Sep-86*
US Fixed Income (Gross)	**-2.94**	**66**	**-0.73**	**44**	**7.91**	**26**	**6.19**	**22**	**5.34**	**24**	**4.91**	**22**	**5.48**	**20**	**7.19**	**Sep-86**
US Fixed Income (Net)	**-2.96**	**67**	**-0.78**	**45**	**7.75**	**28**	**6.03**	**26**	**5.17**	**28**	**4.74**	**27**	**5.31**	**22**	**--**	
BBgBarc US Aggregate TR	*-3.37*	*74*	*-2.73*	*79*	*0.71*	*86*	*4.65*	*75*	*3.10*	*82*	*3.31*	*75*	*3.44*	*80*	--	*Sep-86*
InvMetrics All DB US Fix Inc Gross Median	*-2.24*		*-1.12*		*4.52*		*5.22*		*4.24*		*3.95*		*4.35*		*6.58*	*Sep-86*
Baird Advisors (Gross)	-3.29	61	-2.23	57	3.48	47	5.48	28	4.16	17	4.34	9	4.71	7	5.13	Oct-01
Baird Advisors (Net)	-3.29	61	-2.25	57	3.40	48	5.40	35	4.08	23	4.26	11	4.62	11	5.04	
BBgBarc US Aggregate TR	*-3.37*	*66*	*-2.73*	*79*	*0.71*	*91*	*4.65*	*90*	*3.10*	*91*	*3.31*	*92*	*3.44*	*93*	*4.25*	*Oct-01*
Loomis Sayles (Gross)	-2.18	23	2.46	6	17.31	2	7.69	3	7.68	1	6.04	1	6.91	1	8.34	Dec-00
Loomis Sayles (Net)	-2.25	24	2.32	7	16.96	2	7.36	4	7.33	1	5.71	2	6.57	1	7.99	
BBgBarc US Credit BAA TR	*-4.32*	*98*	*-0.46*	*42*	*13.06*	*6*	*6.55*	*10*	*5.63*	*10*	*4.87*	*9*	*5.47*	*5*	*6.35*	*Dec-00*

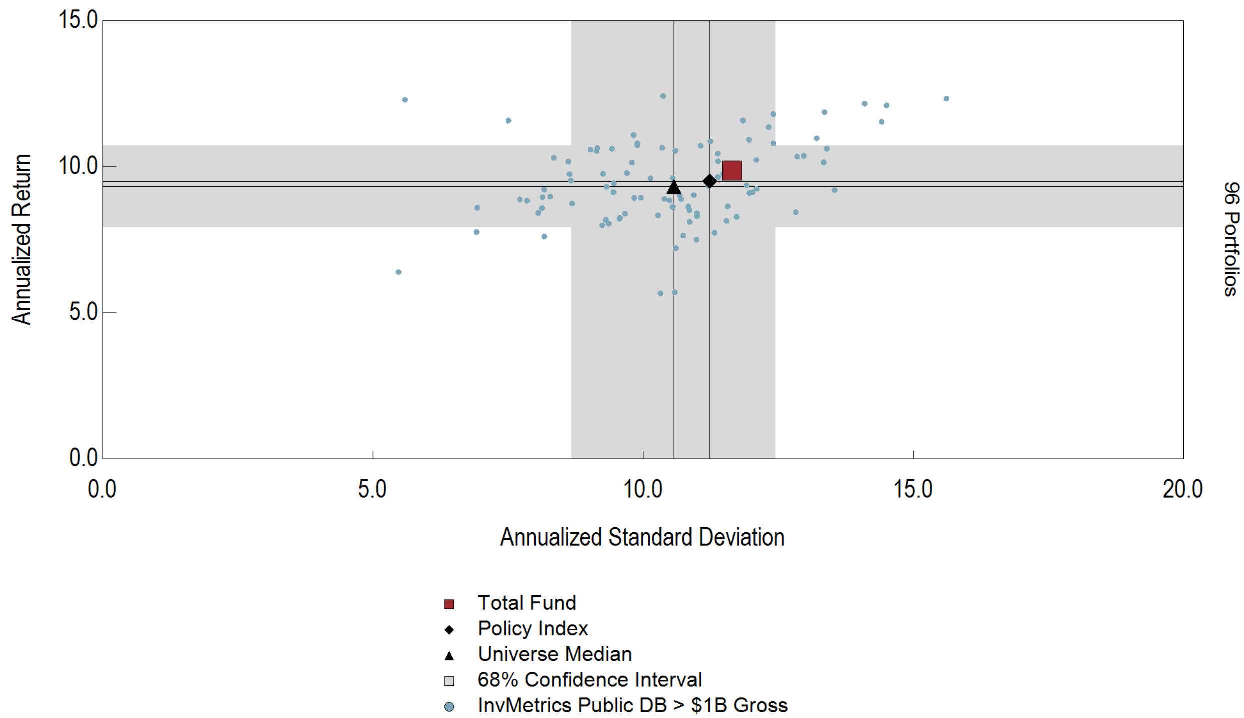
1 See Policy Index and Benchmark History.

	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)	**-3.86**	**61**	**7.27**	**8**	**23.49**	**4**	**3.33**	**67**	**5.10**	**43**	**3.93**	**43**	**4.81**	**64**	**7.34**	**Nov-01**
Global Fixed Income (Net)	**-3.92**	**65**	**7.12**	**8**	**23.10**	**6**	**3.04**	**73**	**4.79**	**67**	**3.64**	**66**	**4.48**	**70**	**7.03**	
FTSE WGBI TR	*-5.68*	*75*	*-3.07*	*88*	*1.82*	*92*	*2.09*	*81*	*2.15*	*97*	*1.54*	*82*	*1.66*	*99*	*4.39*	*Nov-01*
InvMetrics All DB Glbl Fix Inc Gross Median	*-2.27*		*3.02*		*17.34*		*4.22*		*4.92*		*3.83*		*5.17*		*6.37*	*Nov-01*
Brandywine (Gross)	-3.86	72	7.27	16	23.49	18	3.33	71	5.10	43	3.93	45	4.81	31	7.34	Nov-01
Brandywine (Net)	-3.92	73	7.12	16	23.10	20	3.04	77	4.79	48	3.64	48	4.48	36	7.03	
BBgBarc Global Aggregate TR	*-4.46*	*81*	*-1.32*	*86*	*4.67*	*87*	*2.80*	*81*	*2.66*	*85*	*2.00*	*81*	*2.23*	*82*	*4.48*	*Nov-01*
FTSE WGBI TR	*-5.68*	*92*	*-3.07*	*96*	*1.82*	*95*	*2.09*	*89*	*2.15*	*93*	*1.54*	*87*	*1.66*	*91*	*4.39*	*Nov-01*
Absolute Return (Gross)	**4.01**	**39**	**11.33**	**51**	**14.28**	**83**	**0.44**	**87**	**2.79**	**82**	**2.45**	**77**	**--**	**--**	**3.03**	**Sep-11**
Absolute Return (Net)	**4.01**	**39**	**11.33**	**51**	**14.28**	**83**	**0.44**	**87**	**2.79**	**82**	**2.45**	**77**	**--**	**--**	**3.03**	
HFRI Fund of Funds Composite Index	*1.87*	*65*	*10.13*	*57*	*23.83*	*58*	*5.43*	*59*	*5.61*	*60*	*3.87*	*60*	*--*	*--*	*4.29*	*Sep-11*
InvMetrics All DB Hedge Funds Gross Median	*3.01*		*11.37*		*25.37*		*6.23*		*6.44*		*4.49*		*4.79*		*5.61*	*Sep-11*
Private Equity (Gross)	**17.72**	**--**	**30.44**	**--**	**26.62**	**--**	**17.66**	**--**	**16.26**	**--**	**16.41**	**--**	**15.14**	**--**	**6.00**	**Nov-08**
Private Equity (Net)	**17.72**	**--**	**30.44**	**--**	**26.62**	**--**	**17.66**	**--**	**16.26**	**--**	**16.41**	**--**	**15.14**	**--**	**6.00**	
Thomson Reuters C|A Global All PE 1 Qtr Lag	*18.20*	*--*	*27.67*	*--*	*25.21*	*--*	*12.81*	*--*	*12.94*	*--*	*10.38*	*--*	*10.40*	*--*	*9.07*	*Nov-08*
Real Assets (Gross)	**4.80**	**--**	**21.06**	**--**	**38.26**	**--**	**0.24**	**--**	**1.71**	**--**	**-3.57**	**--**	**--**	**--**	**-3.24**	**Sep-11**
Real Assets (Net)	**4.77**	**--**	**20.96**	**--**	**38.06**	**--**	**0.18**	**--**	**1.68**	**--**	**-3.59**	**--**	**--**	**--**	**-3.25**	
Real Asset Blend[1]	*6.41*	*--*	*24.76*	*--*	*49.61*	*--*	*5.27*	*--*	*6.73*	*--*	*5.98*	*--*	*--*	*--*	*5.68*	*Sep-11*
Private Credit (Gross)	**2.11**	**--**	**4.76**	**--**	**20.68**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**3.80**	**Oct-19**
Private Credit (Net)	**2.11**	**--**	**4.76**	**--**	**20.68**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**3.80**	
S&P/LSTA Leveraged Loan Index +1.75%	*2.22*	*--*	*6.57*	*--*	*22.79*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*--*	*6.91*	*Oct-19*

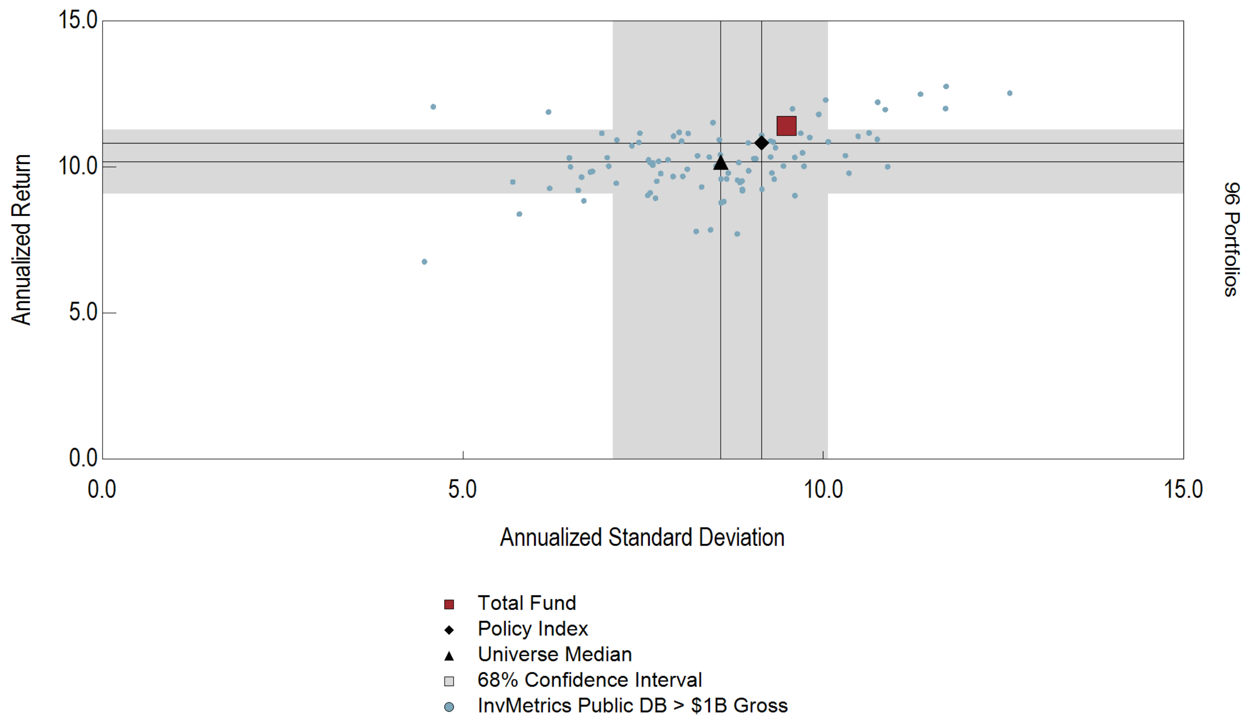
1 See Policy Index and Benchmark History.

	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)	**0.14**	**--**	**0.17**	**--**	**0.32**	**--**	**1.27**	**--**	**1.12**	**--**	**0.82**	**--**	**0.60**	**--**	**3.05**	**Sep-85**
Cash (Net)	**0.14**	**--**	**0.17**	**--**	**0.32**	**--**	**1.27**	**--**	**1.12**	**--**	**0.82**	**--**	**0.60**	**--**	**3.05**	
91 Day T-Bills	*0.01*	--	*0.03*	--	*0.09*	--	*1.36*	--	*1.12*	--	*0.82*	--	*0.59*	--	*3.14*	*Sep-85*
Real Estate (Gross)	**2.24**	**44**	**4.02**	**45**	**3.46**	**39**	**5.48**	**45**	**6.75**	**35**	**9.00**	**26**	**10.37**	**22**	**6.96**	**Mar-86**
Real Estate (Net)	**2.24**	**44**	**4.02**	**45**	**3.46**	**39**	**5.48**	**45**	**6.61**	**40**	**8.60**	**34**	**9.79**	**39**	**5.95**	
NCREIF-ODCE	*2.09*	*53*	*3.42*	*60*	*2.30*	*62*	*4.88*	*60*	*6.20*	*54*	*8.25*	*45*	*9.67*	*43*	*7.10*	*Mar-86*
InvMetrics All DB Real Estate Pub+Priv Gross Median	*2.11*		*3.80*		*2.63*		*5.30*		*6.27*		*8.15*		*9.44*		*7.37*	*Mar-86*

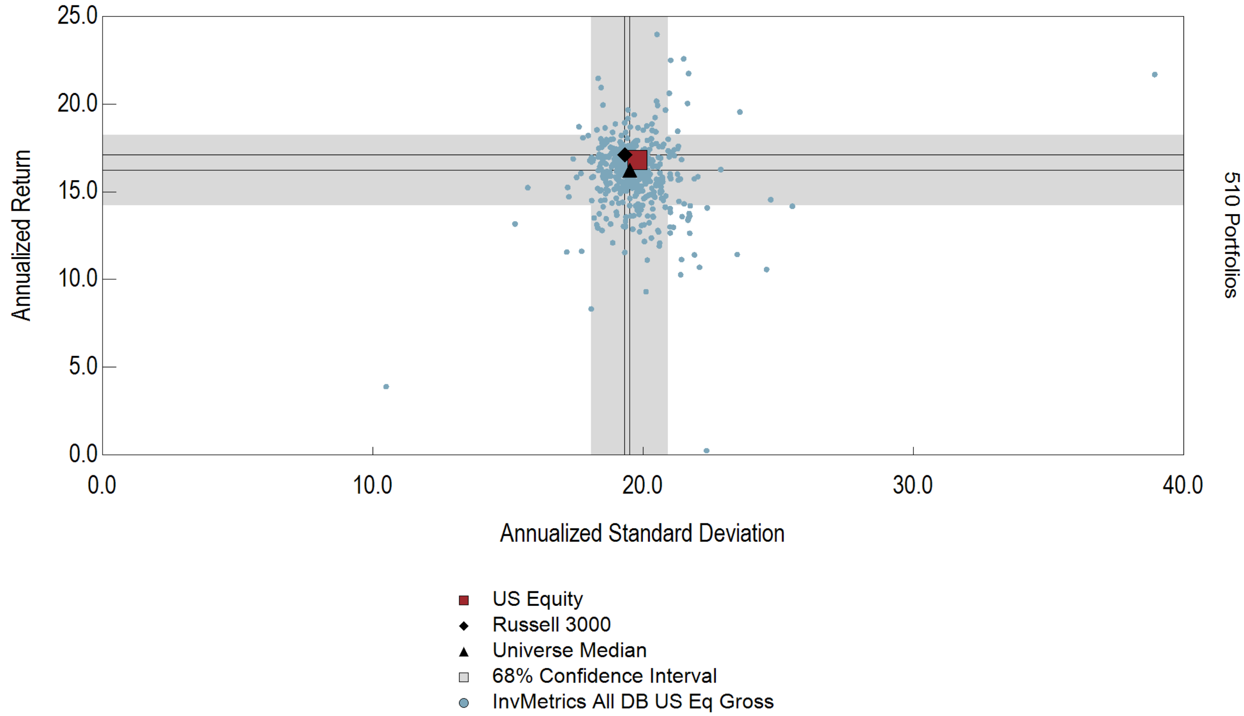
1 See Policy Index and Benchmark History.



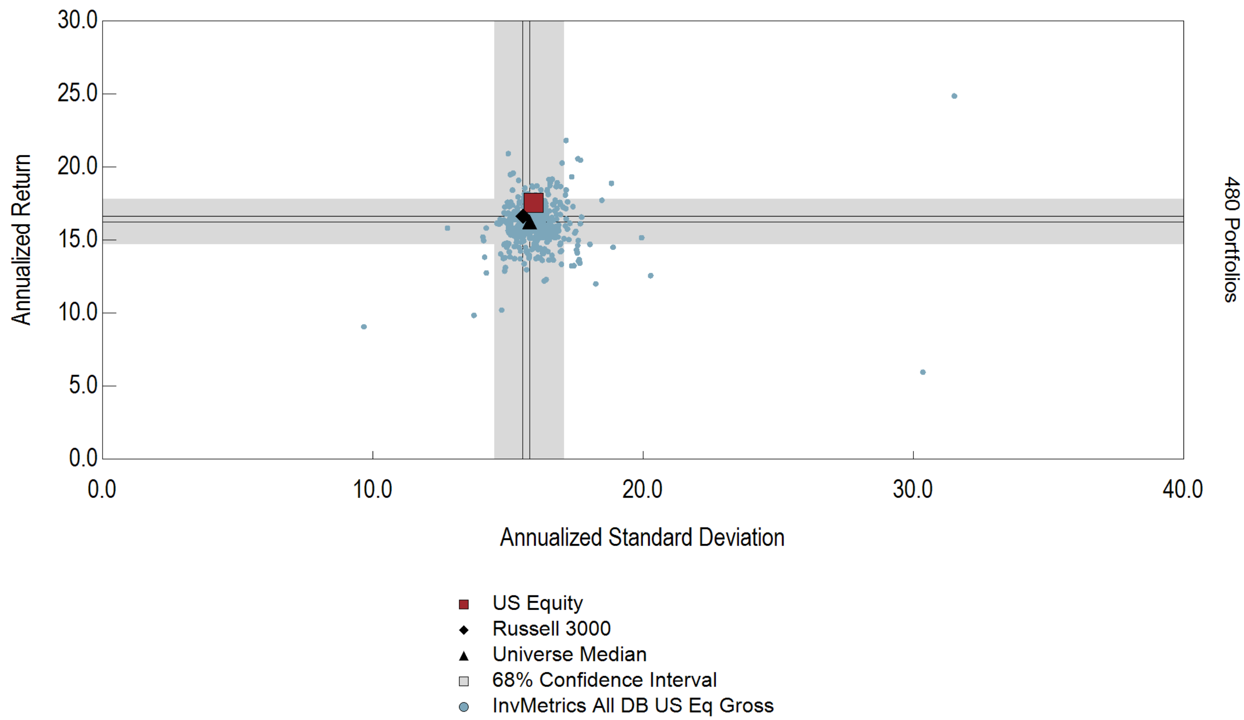
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	9.87%	38	11.65%	77	0.73	56	0.17	36	2.19%	65
Policy Index	9.50%	47	11.23%	66	0.73	61	--	--	0.00%	1
Allocation Index	9.73%	42	11.69%	77	0.72	66	0.36	29	0.62%	3
InvMetrics Public DB > $1B Gross Median	9.33%	--	10.57%	--	0.76	--	-0.04	--	1.66%	--



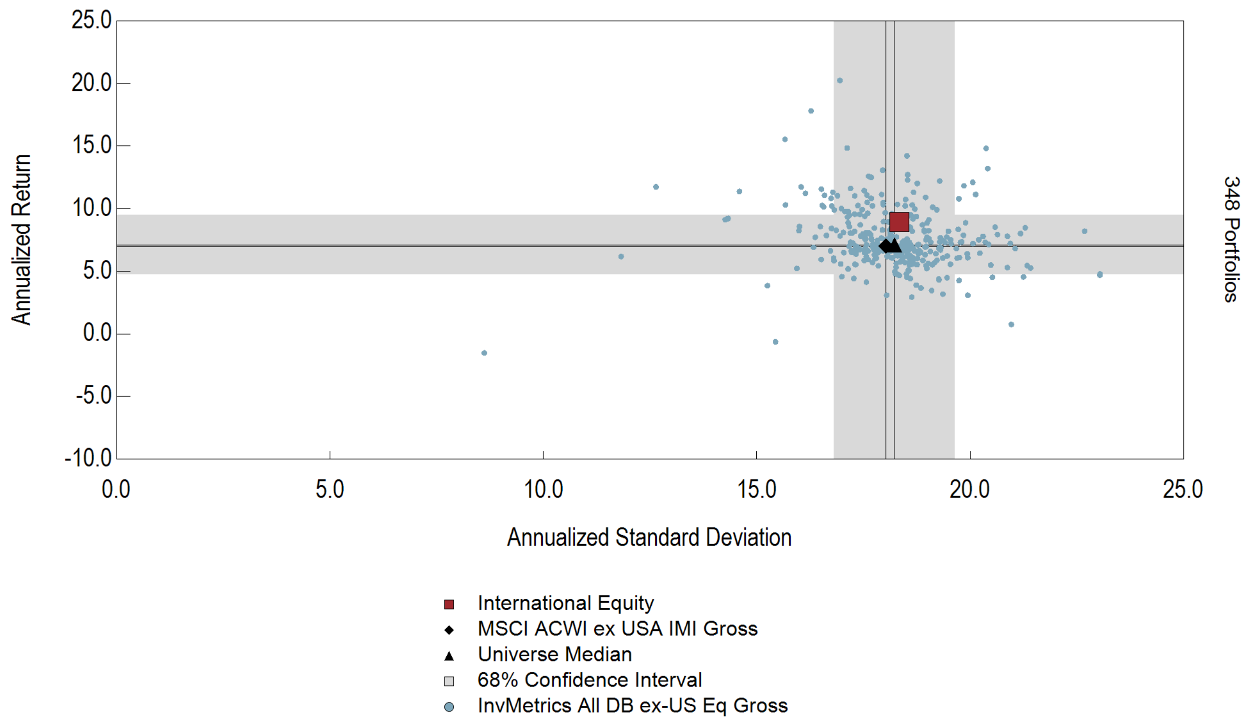
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	11.40%	13	9.49%	78	1.08	46	0.32	42	1.84%	65
Policy Index	10.82%	33	9.14%	68	1.06	49	--	--	0.00%	1
Allocation Index	10.88%	29	9.53%	78	1.02	57	0.12	54	0.57%	1
InvMetrics Public DB > $1B Gross Median	10.17%	--	8.58%	--	1.05	--	0.15	--	1.52%	--



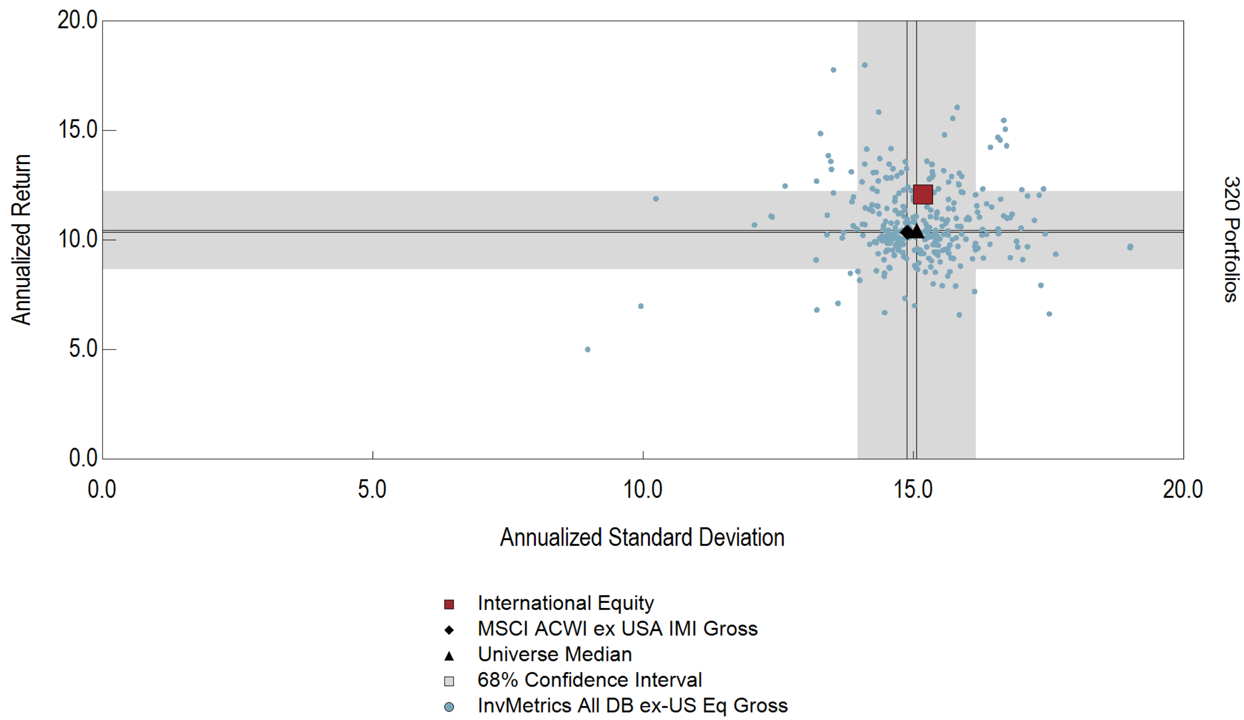
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	16.81%	34	19.80%	64	0.78	43	-0.31	48	0.99%	13
Russell 3000	17.12%	25	19.33%	42	0.82	27	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	16.23%	--	19.51%	--	0.77	--	-0.37	--	2.28%	--



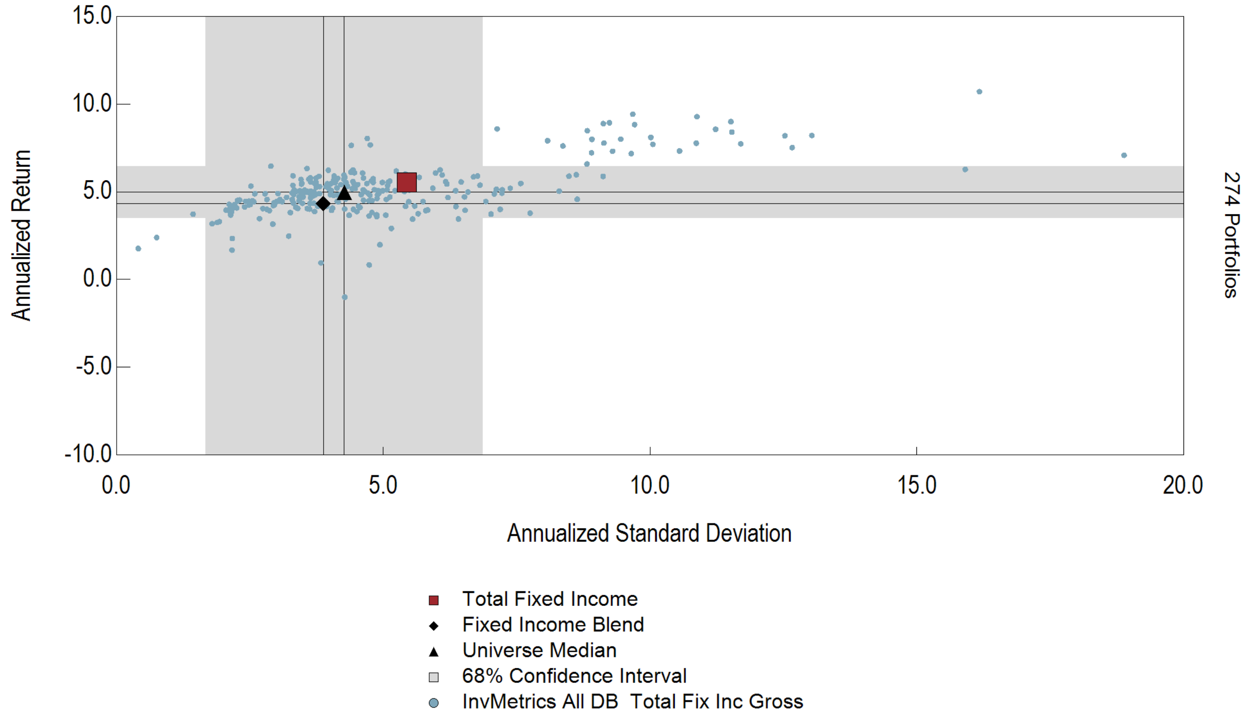
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	17.54%	12	15.96%	58	1.03	16	0.68	7	1.34%	22
Russell 3000	16.64%	37	15.56%	35	1.00	31	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	16.24%	--	15.80%	--	0.96	--	-0.21	--	2.15%	--



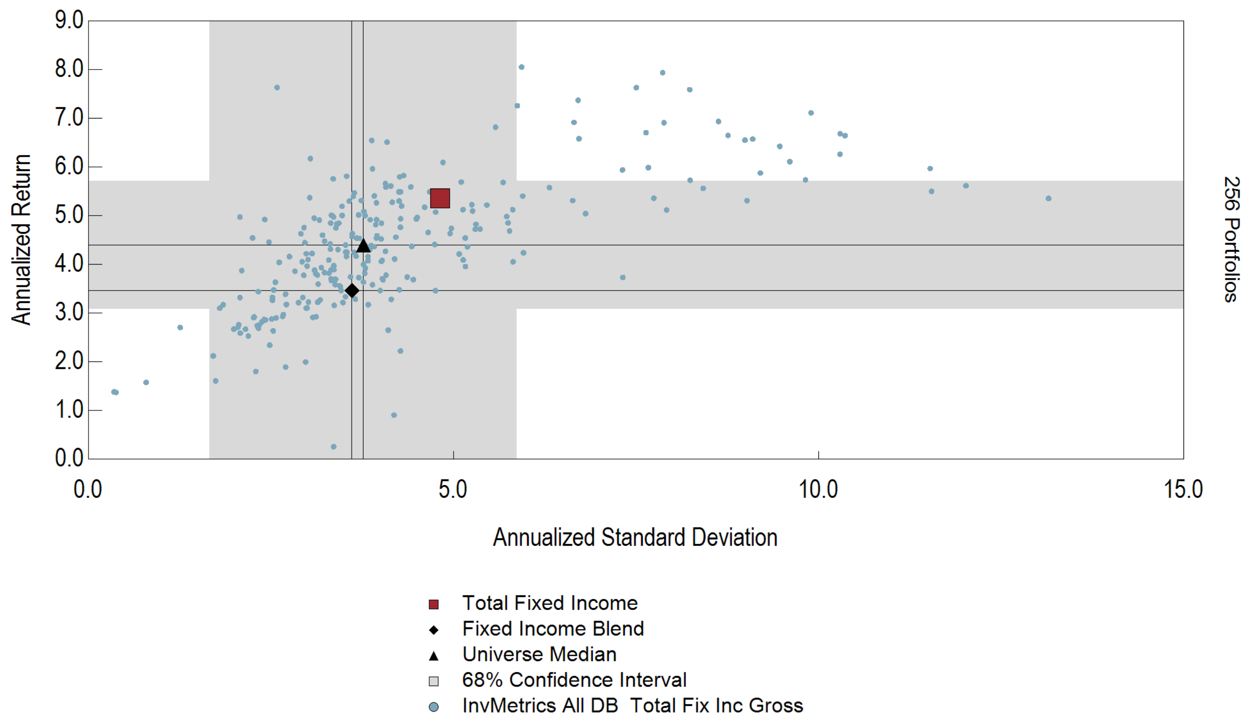
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	8.94%	22	18.34%	54	0.41	24	1.35	5	1.43%	7
MSCI ACWI ex USA IMI Gross	7.01%	52	18.02%	44	0.31	50	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	7.12%	--	18.22%	--	0.31	--	0.15	--	3.21%	--



	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	12.09%	22	15.18%	53	0.72	24	1.22	3	1.42%	7
MSCI ACWI ex USA IMI Gross	10.35%	53	14.89%	44	0.62	50	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	10.44%	--	15.06%	--	0.62	--	0.21	--	3.04%	--



	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	5.54%	28	5.44%	75	0.77	60	0.44	23	2.74%	53
Fixed Income Blend	4.34%	74	3.87%	39	0.77	60	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	4.97%	--	4.27%	--	0.84	--	0.16	--	2.59%	--



	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	5.35%	23	4.81%	76	0.88	37	0.83	14	2.28%	52
Fixed Income Blend	3.46%	78	3.61%	46	0.65	77	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	4.40%	--	3.77%	--	0.79	--	0.44	--	2.22%	--

Equity environment

— U.S. equities were a top performer in Q1, delivering +6.2%. International equities delivered +3.5% (MSCI EAFE Index) and emerging markets delivered +2.3% (MSCI Emerging Markets Index), on an unhedged currency basis. Trailing one-year returns hit extremely high levels, reflecting low base effects (markets bottomed out during March of 2020), and a recovery from those depressed levels year-over-year.

— We believe the U.S. economy is playing catch-up to the markets in the current environment. While it seems increasingly likely that the economy will rapidly recover over the next year, this optimism may already be baked into equity prices. It is reasonable to be enthusiastic about U.S. economic prospects while also being cautions about lofty equity valuations.

— According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

— The Cboe VIX Index has slowly been falling back towards the longer-term average of 19. The index fluctuated in the low 20s during Q1, falling below 19 briefly in late March.

— The U.S. dollar stabilized in the first quarter, paring some of the losses accrued in the final three quarters of last year. Rising relative yields helped the dollar to appreciate materially relative to the euro, yen, and a broad basket of emerging market currencies.

— A rotation towards value stocks persisted during the quarter, as beaten-down sectors delivered outsized performance. Energy, financials, industrials, and materials were the strongest performers.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	6.2%		56.4%	
US Small Cap (Russell 2000)	12.7%		94.8%	
US Large Value (Russell 1000 Value)	11.3%		56.1%	
US Large Growth (Russell 1000 Growth)	0.9%		62.7%	
International Large (MSCI EAFE)	3.5%	7.6%	44.6%	37.7%
Eurozone (Euro Stoxx 50)	6.3%	10.6%	53.7%	45.3%
U.K. (FTSE 100)	5.9%	5.0%	35.6%	22.5%
Japan (NIKKEI 225)	(0.2%)	7.0%	52.6%	57.4%
Emerging Markets (MSCI Emerging Markets)	2.3%	3.7%	58.4%	52.2%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 3/31/21

Domestic equity

U.S. equities moved higher in Q1, returning +6.2%. According to FactSet, S&P 500 earnings expectations for 2021 improved by 5.0% during the quarter. Analysts are now forecasting 25.4% earnings growth for 2021—an incredible recovery from the -11.2% earnings drop expected of 2020.

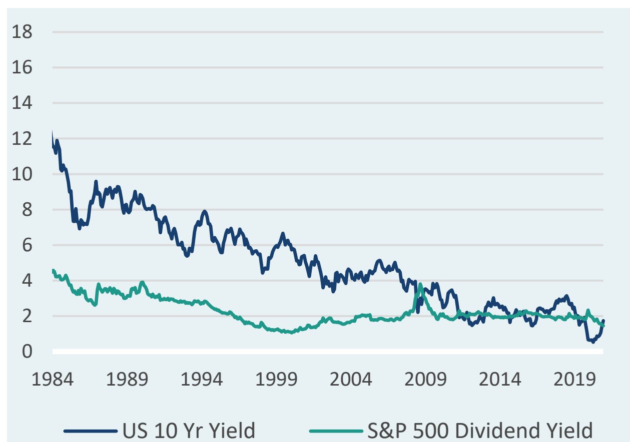
Equities continued upward and valuations have followed. The U.S. market has been a top performer but has also remained one of the most expensive markets. On the other hand, successful COVID-19 vaccinate rollouts, rosy earnings expectations, and the potential for an impressive economic reopening may be supportive of high prices. This reopening appears to be fueling a rotation towards traditional cyclical sectors, such as energy, financials, and industrials.

As markets move higher, it appears to us that the economy may be playing catch-up to the markets. While it seems increasingly likely that the economy will rapidly recover during the next year, this optimism may already be reflected in equity prices. In other words, it is reasonable to be enthusiastic about U.S. economic prospects while also being cautions about higher equity valuations.

S&P 500 INDEX

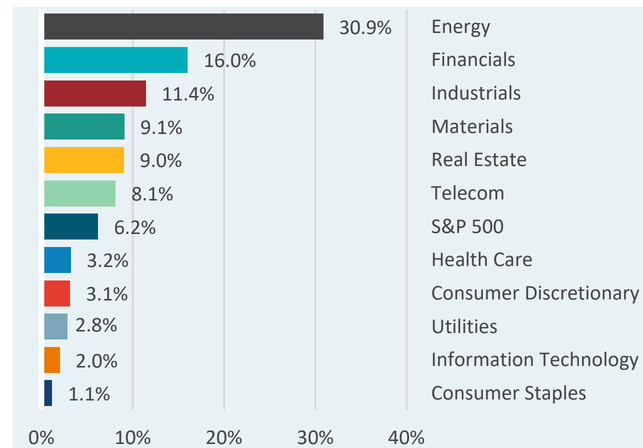
Source: Standard & Poor's, as of 3/31/21

DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 3/31/21

Q1 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 3/31/21

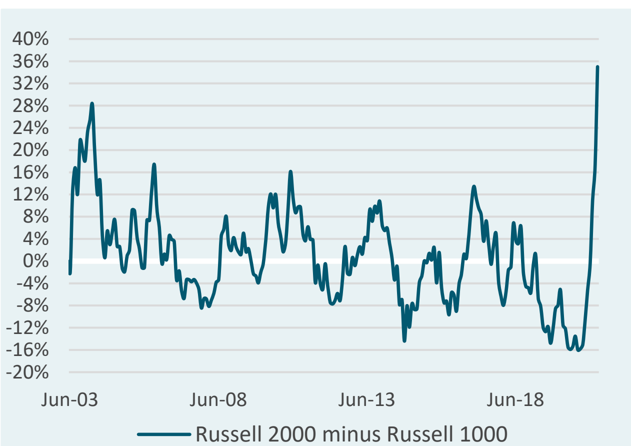
Domestic equity size & style

Factor performance surged during the quarter, as small capitalization and value stocks delivered strong relative returns. U.S. value stocks beat growth stocks by a wide margin (Russell 1000 Value +11.3%, Russell 1000 Growth +0.9%), as growth entered a correction in February and value marched higher. Small cap stocks continued their surprisingly strong rally, outperforming growth (Russell 2000 +12.7%, Russell 1000 +5.9%).

A rotation towards value occurred as beaten-down sectors such as energy, financials, and materials delivered outsized performance—sectors which tend to possess a heavier concentration of value stocks. Companies which benefited from the pandemic due to a shift in household habits may see a further reversal of that windfall as households begin to go back to normal life. Additionally, value stocks typically exhibit strength during economic recoveries. These dynamics of growth and value may suggest further value factor strength, though factor trends are noisy and extremely difficult to predict.

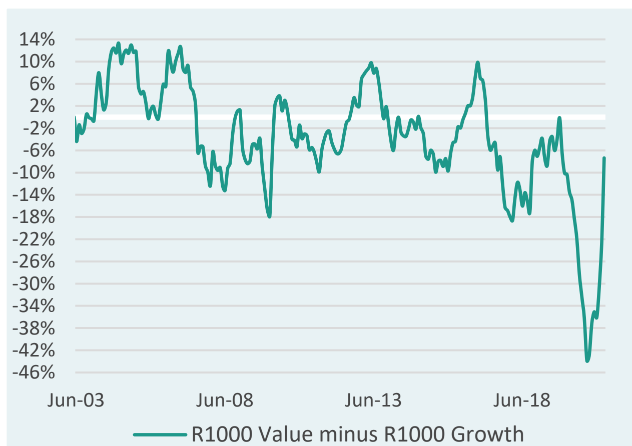
Small cap and value stocks delivered strong relative performance during Q1

SMALL CAP VS LARGE CAP (YOY)



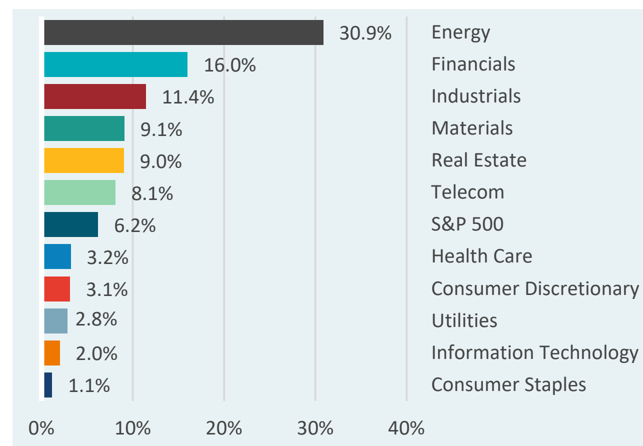
Source: FTSE, as of 3/31/21

VALUE VS GROWTH (YOY)

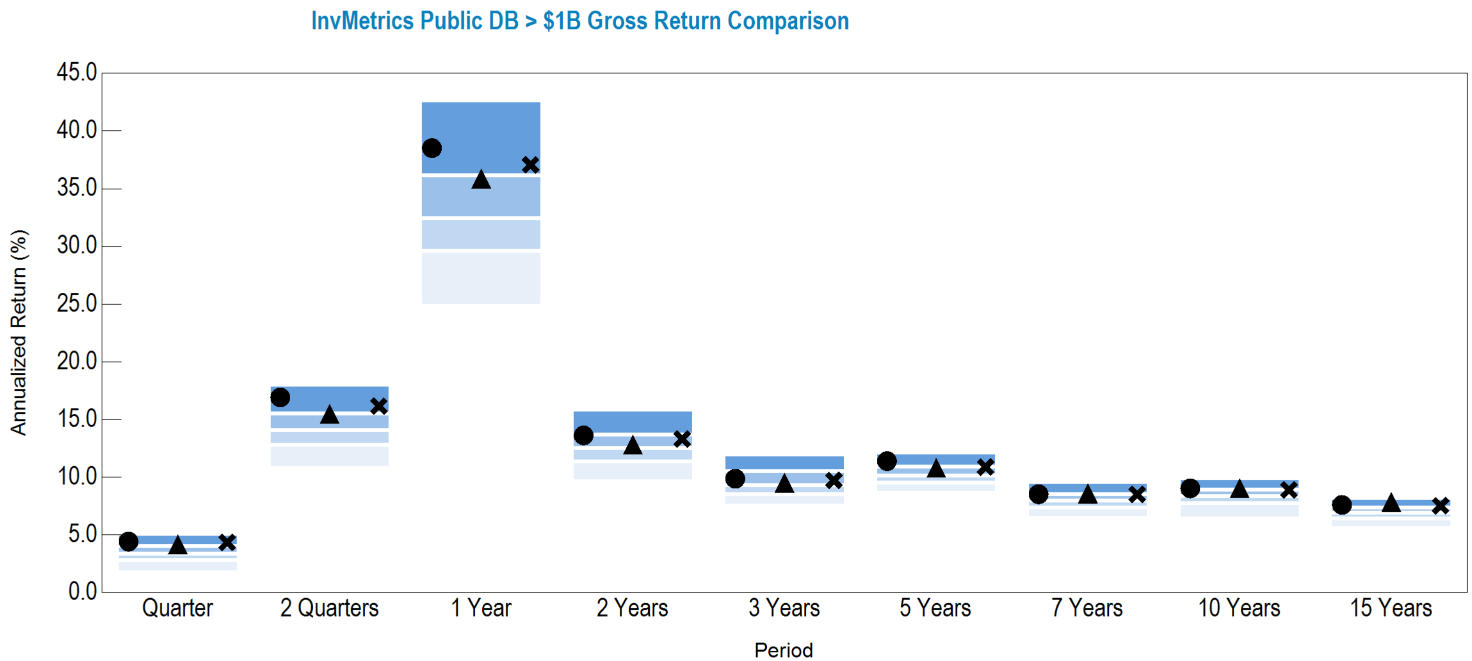


Source: FTSE, as of 3/31/21

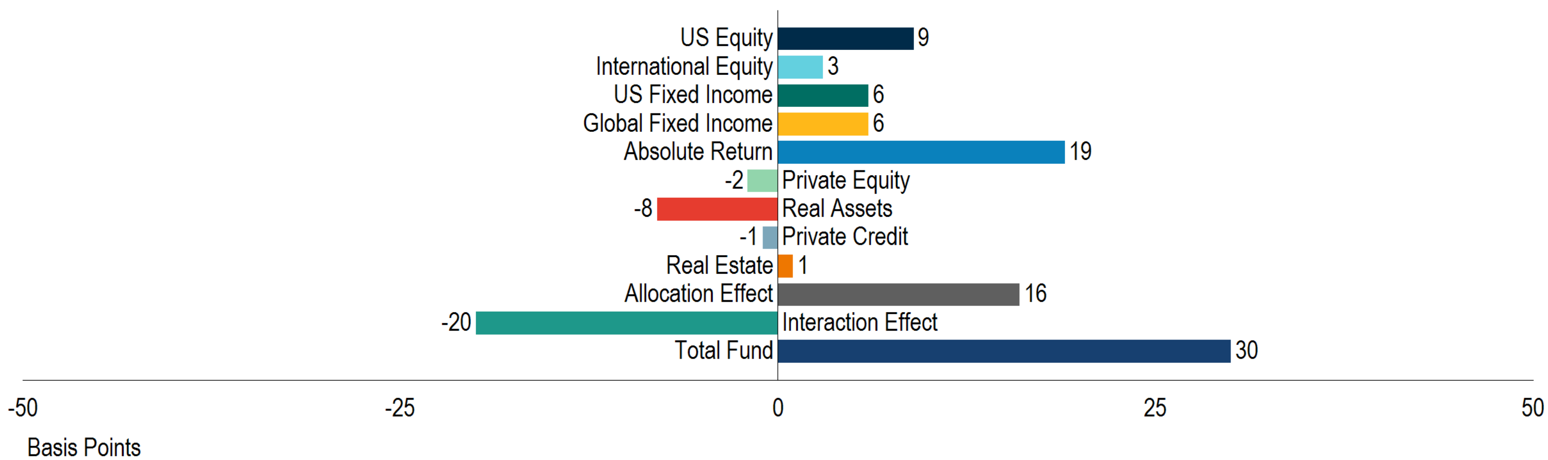
Q1 SECTOR PERFORMANCE



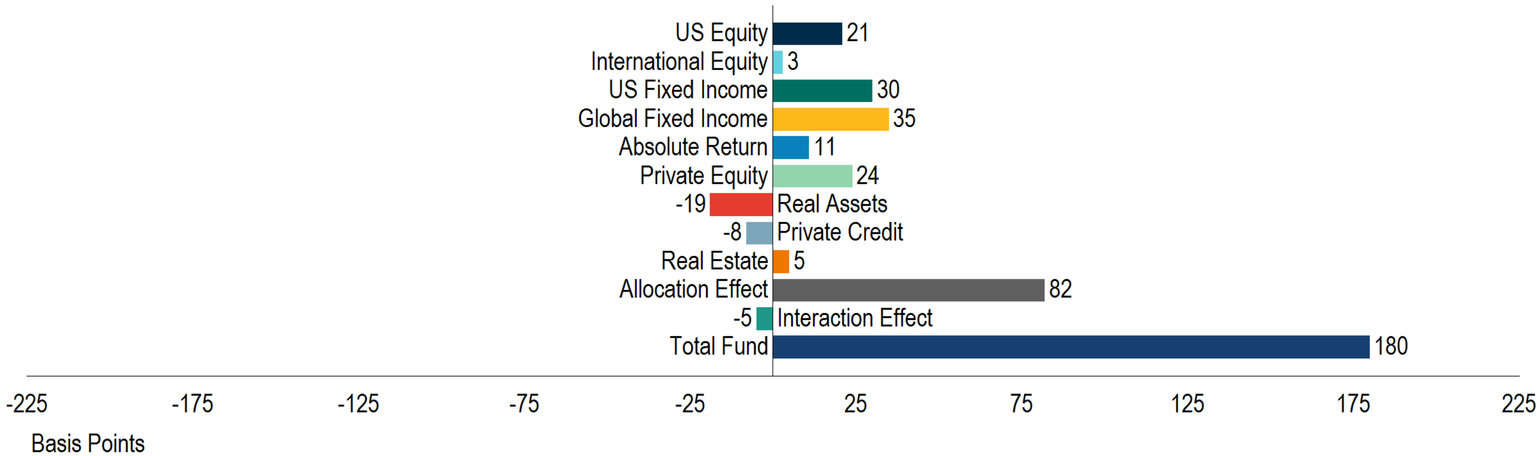
Source: Standard & Poor's, as of 3/31/21



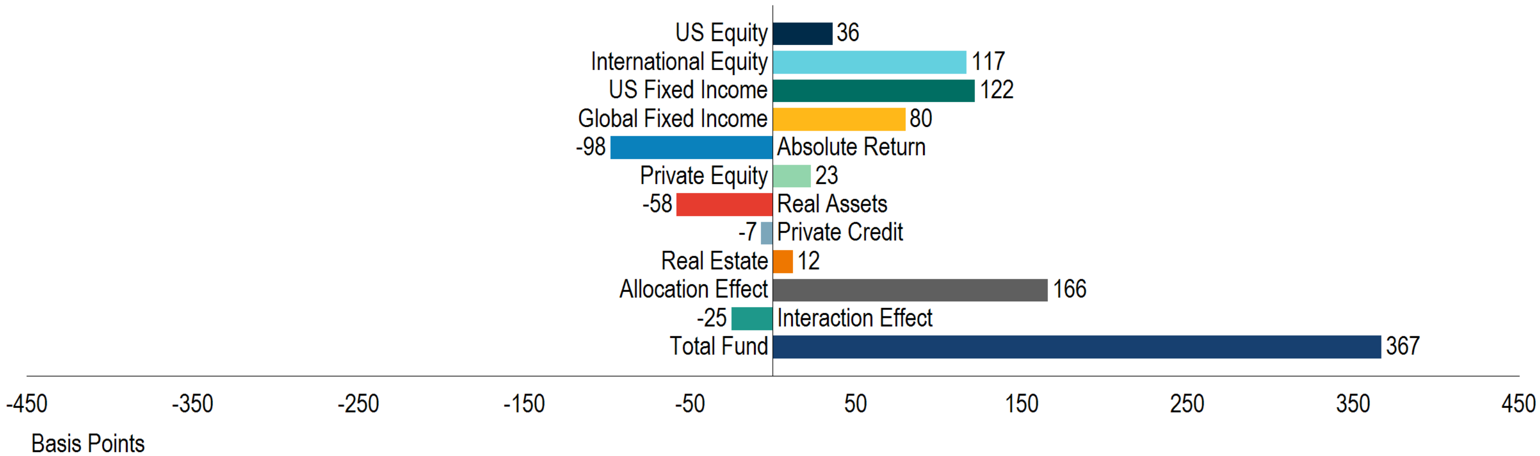
	Return (Rank)																	
5th Percentile	5.07		18.01		42.64		15.84		11.93		12.10		9.57		9.89		8.20	
25th Percentile	4.08		15.53		36.18		13.71		10.56		10.93		8.54		8.93		7.40	
Median	3.43		14.11		32.47		12.54		9.33		10.17		8.00		8.37		6.97	
75th Percentile	2.86		12.83		29.65		11.41		8.56		9.57		7.42		7.79		6.46	
95th Percentile	1.80		10.82		24.88		9.68		7.59		8.68		6.52		6.48		5.60	
# of Portfolios	96		96		96		96		96		96		95		91		84	
● Total Fund	4.42	(14)	16.92	(13)	38.51	(18)	13.63	(28)	9.87	(38)	11.40	(13)	8.53	(27)	9.04	(17)	7.60	(16)
▲ Policy Index	4.19	(21)	15.47	(26)	35.88	(28)	12.82	(45)	9.50	(47)	10.82	(33)	8.58	(23)	9.05	(16)	7.86	(10)
✕ Allocation Index	4.36	(16)	16.16	(18)	37.07	(23)	13.30	(36)	9.73	(42)	10.88	(29)	8.52	(28)	8.90	(27)	7.53	(19)



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	6.71%	6.35%	0.37%	0.09%	0.06%	0.01%	0.16%
International Equity	3.99%	3.87%	0.11%	0.03%	0.00%	0.01%	0.04%
US Fixed Income	-2.94%	-3.37%	0.43%	0.06%	0.00%	0.00%	0.06%
Global Fixed Income	-3.86%	-5.68%	1.82%	0.06%	-0.10%	0.02%	-0.03%
Absolute Return	4.01%	1.87%	2.15%	0.19%	0.04%	-0.04%	0.19%
Private Equity	17.72%	18.20%	-0.48%	-0.02%	0.08%	-0.20%	-0.14%
Real Assets	4.80%	6.41%	-1.61%	-0.08%	0.00%	0.00%	-0.08%
Private Credit	2.11%	2.22%	-0.11%	-0.01%	0.06%	0.01%	0.06%
Real Estate	2.24%	2.09%	0.15%	0.01%	0.04%	0.00%	0.05%
Total	**4.44%**	**4.14%**	**0.30%**	**0.34%**	**0.16%**	**-0.20%**	**0.30%**

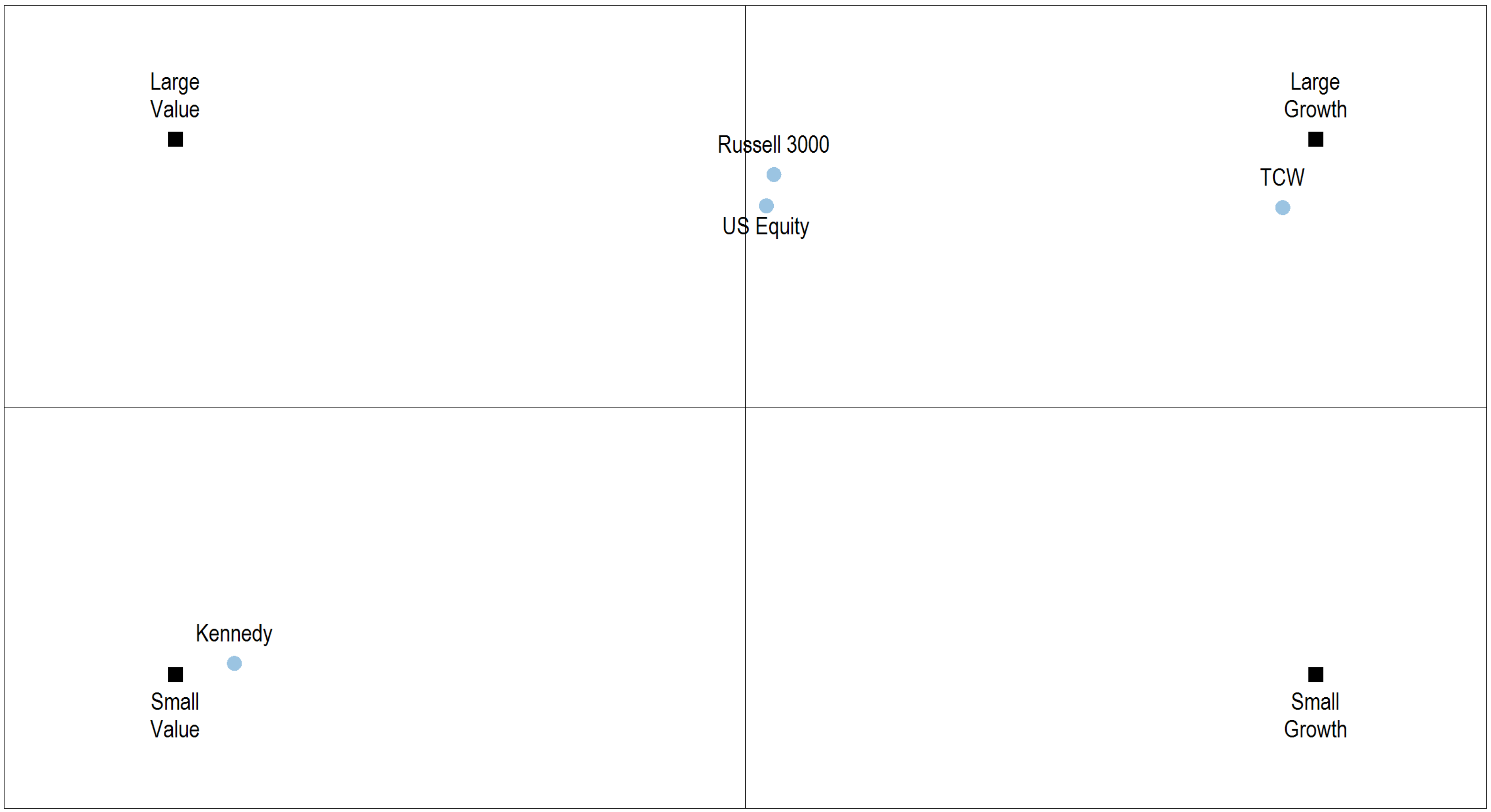


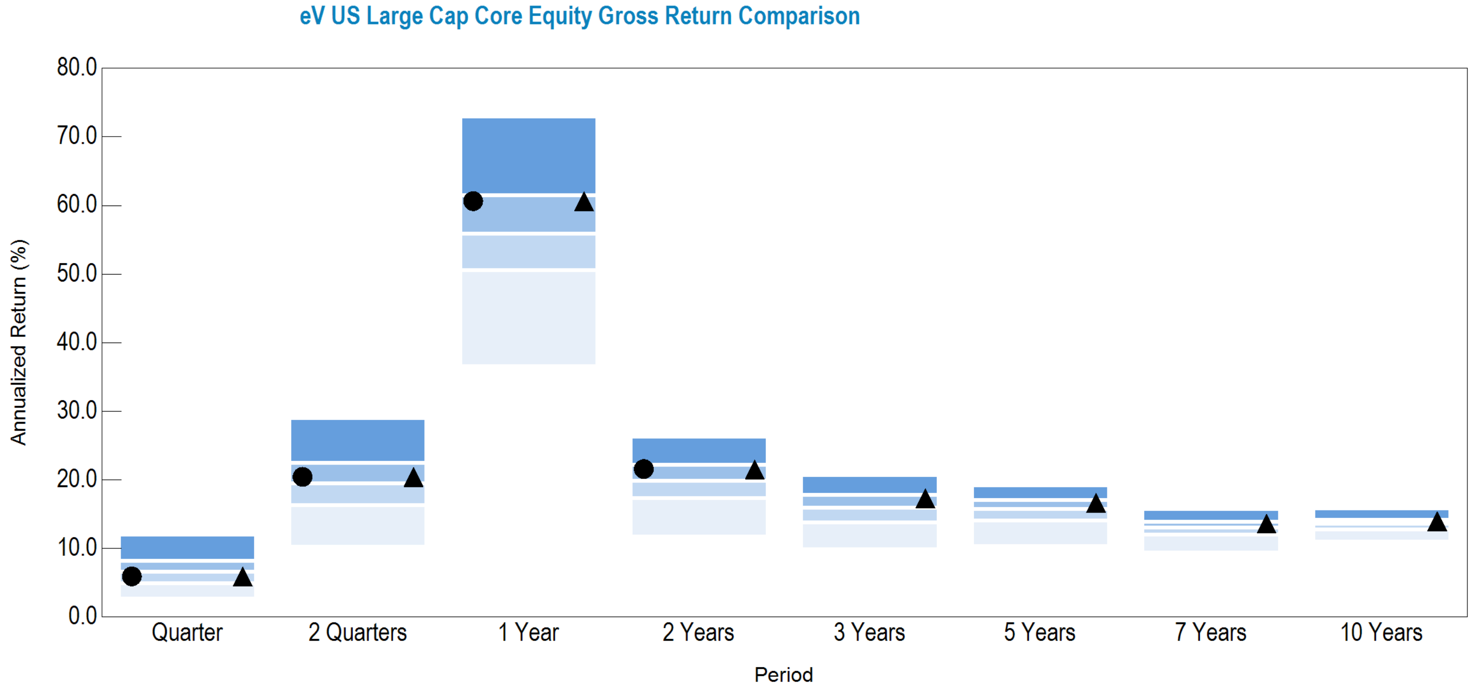
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	22.87%	21.96%	0.91%	0.21%	0.20%	0.02%	0.44%
International Equity	21.98%	21.83%	0.15%	0.03%	0.18%	0.01%	0.21%
US Fixed Income	-0.73%	-2.73%	2.00%	0.30%	0.09%	-0.01%	0.38%
Global Fixed Income	7.27%	-3.07%	10.33%	0.35%	-0.22%	0.14%	0.27%
Absolute Return	11.33%	10.13%	1.20%	0.11%	0.09%	-0.03%	0.17%
Private Equity	30.44%	27.67%	2.77%	0.24%	0.03%	-0.25%	0.03%
Real Assets	21.06%	24.76%	-3.70%	-0.19%	-0.02%	0.01%	-0.20%
Private Credit	4.76%	6.57%	-1.81%	-0.08%	0.31%	0.07%	0.30%
Real Estate	4.02%	3.42%	0.61%	0.05%	0.15%	-0.01%	0.20%
Total	**17.05%**	**15.25%**	**1.80%**	**1.03%**	**0.82%**	**-0.05%**	**1.80%**



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	64.23%	62.53%	1.70%	0.36%	0.69%	0.04%	1.09%
International Equity	57.84%	52.55%	5.29%	1.17%	0.30%	0.09%	1.55%
US Fixed Income	7.91%	0.71%	7.20%	1.22%	0.26%	-0.09%	1.39%
Global Fixed Income	23.49%	1.82%	21.67%	0.80%	-0.45%	0.32%	0.66%
Absolute Return	14.28%	23.83%	-9.55%	-0.98%	0.10%	-0.04%	-0.92%
Private Equity	26.62%	25.21%	1.40%	0.23%	0.13%	-0.65%	-0.28%
Real Assets	38.26%	49.61%	-11.35%	-0.58%	-0.03%	0.02%	-0.59%
Private Credit	20.68%	22.79%	-2.10%	-0.07%	0.46%	0.06%	0.45%
Real Estate	3.46%	2.30%	1.16%	0.12%	0.21%	-0.01%	0.32%
Total	**38.96%**	**35.29%**	**3.67%**	**2.26%**	**1.66%**	**-0.25%**	**3.67%**

US Effective Style Map





	Return (Rank)															
5th Percentile	11.94		28.97		72.96		26.24		20.67		19.15		15.73		15.78	
25th Percentile	8.27		22.49		61.52		22.22		17.86		17.11		13.97		14.26	
Median	6.62		19.51		55.96		19.87		15.97		15.80		13.10		13.66	
75th Percentile	4.98		16.38		50.66		17.40		13.82		14.16		12.06		12.80	
95th Percentile	2.74		10.29		36.57		11.79		9.96		10.41		9.44		11.07	
# of Portfolios	321		321		321		314		309		285		267		227	
● BlackRock Russell 1000 Index Fund	5.93	(60)	20.43	(40)	60.64	(29)	21.57	(31)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 1000	5.91	(61)	20.41	(40)	60.59	(30)	21.53	(32)	17.31	(31)	16.66	(33)	13.64	(32)	13.97	(34)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,000	1,012
Weighted Avg. Market Cap. ($B)	414.9	414.5
Median Market Cap. ($B)	14.3	14.4
Price To Earnings	29.9	29.9
Price To Book	4.5	4.5
Price To Sales	3.2	3.2
Return on Equity (%)	19.8	19.9
Yield (%)	1.4	1.4

Top Holdings

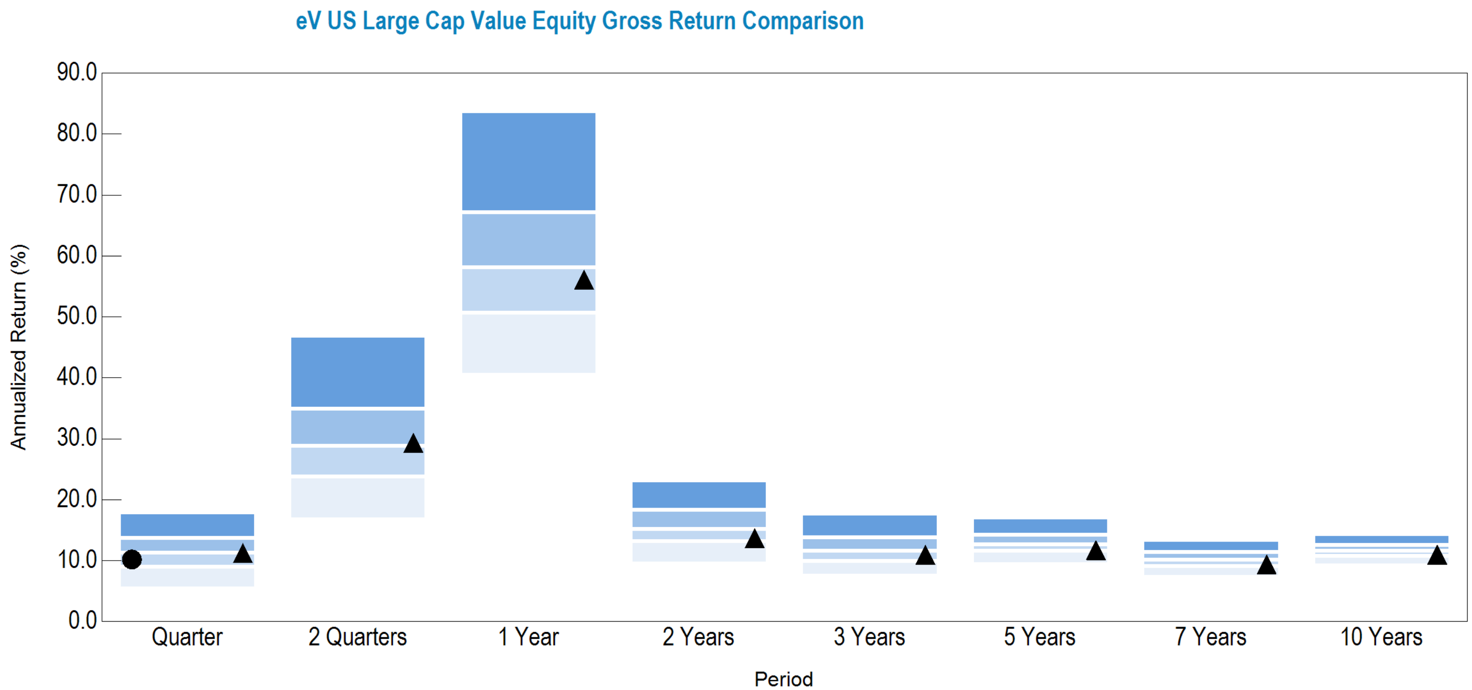
APPLE INC	5.2%
MICROSOFT CORP	4.7%
AMAZON.COM INC	3.5%
FACEBOOK INC	1.9%
ALPHABET INC	1.7%
ALPHABET INC	1.6%
TESLA INC	1.4%
BERKSHIRE HATHAWAY INC	1.3%
JPMORGAN CHASE & CO	1.2%
JOHNSON & JOHNSON	1.2%

Best Performers

	Return %
TRIPADVISOR INC (TRIP)	86.9%
WILLIAMS-SONOMA INC. (WSM)	76.7%
TERADATA CORP (TDC)	71.5%
COHERENT INC (COHR)	68.6%
SIGNATURE BANK (SBNY)	67.7%
L BRANDS INC (LB)	66.3%
MARATHON OIL CORP (MRO)	60.6%
CIMAREX ENERGY CO. (XEC)	59.0%
CONTINENTAL RESOURCES INC (CLR)	58.7%
WESTERN ALLIANCE BANCORPORATION (WAL)	58.0%

Worst Performers

	Return %
SAREPTA THERAPEUTICS INC (SRPT)	-56.3%
ACADIA PHARMACEUTICALS INC (ACAD)	-51.7%
UNITY SOFTWARE INC (U)	-34.6%
ADAPTIVE BIOTECHNOLOGIES CORP (ADPT)	-31.9%
ALTERYX INC (AYX)	-31.9%
IOVANCE BIOTHERAPEUTICS INC (IOVA)	-31.8%
AMERICAN WELL CORP (AMWL)	-31.4%
ARRAY TECHNOLOGIES INC (ARRY)	-30.9%
BLUEBIRD BIO INC (BLUE)	-30.3%
JFROG LTD (FROG)	-29.4%



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	17.84		46.86		83.69		23.17		17.70		17.03		13.35		14.29	
25th Percentile	13.79		34.96		67.23		18.41		13.87		14.33		11.44		12.59	
Median	11.38		28.94		58.16		15.28		11.70		12.75		10.23		11.67	
75th Percentile	9.08		23.86		50.78		13.28		9.97		11.66		9.16		10.83	
95th Percentile	5.53		16.85		40.58		9.63		7.62		9.44		7.38		9.31	
# of Portfolios	327		327		326		324		320		305		289		260	
● **Aristotle**	10.19	(65)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ **Russell 1000 Value**	11.25	(53)	29.34	(49)	56.09	(57)	13.70	(71)	10.96	(60)	11.74	(73)	9.40	(70)	10.99	(70)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	44	849
Weighted Avg. Market Cap. ($B)	156.6	146.6
Median Market Cap. ($B)	42.4	13.0
Price To Earnings	27.0	24.1
Price To Book	3.3	2.7
Price To Sales	2.9	2.3
Return on Equity (%)	15.7	10.8
Yield (%)	1.5	2.0

Top Holdings

MICROSOFT CORP	3.8%
DANAHER CORP	3.7%
ADOBE INC	3.7%
SONY GROUP CORPORATION	3.6%
ANSYS INC	3.4%
LENNAR CORP	3.2%
MICROCHIP TECHNOLOGY INC	3.1%
CORTEVA INC	3.0%
CAPITAL ONE FINANCIAL CORP.	3.0%
PARKER-HANNIFIN CORP	3.0%

Best Performers

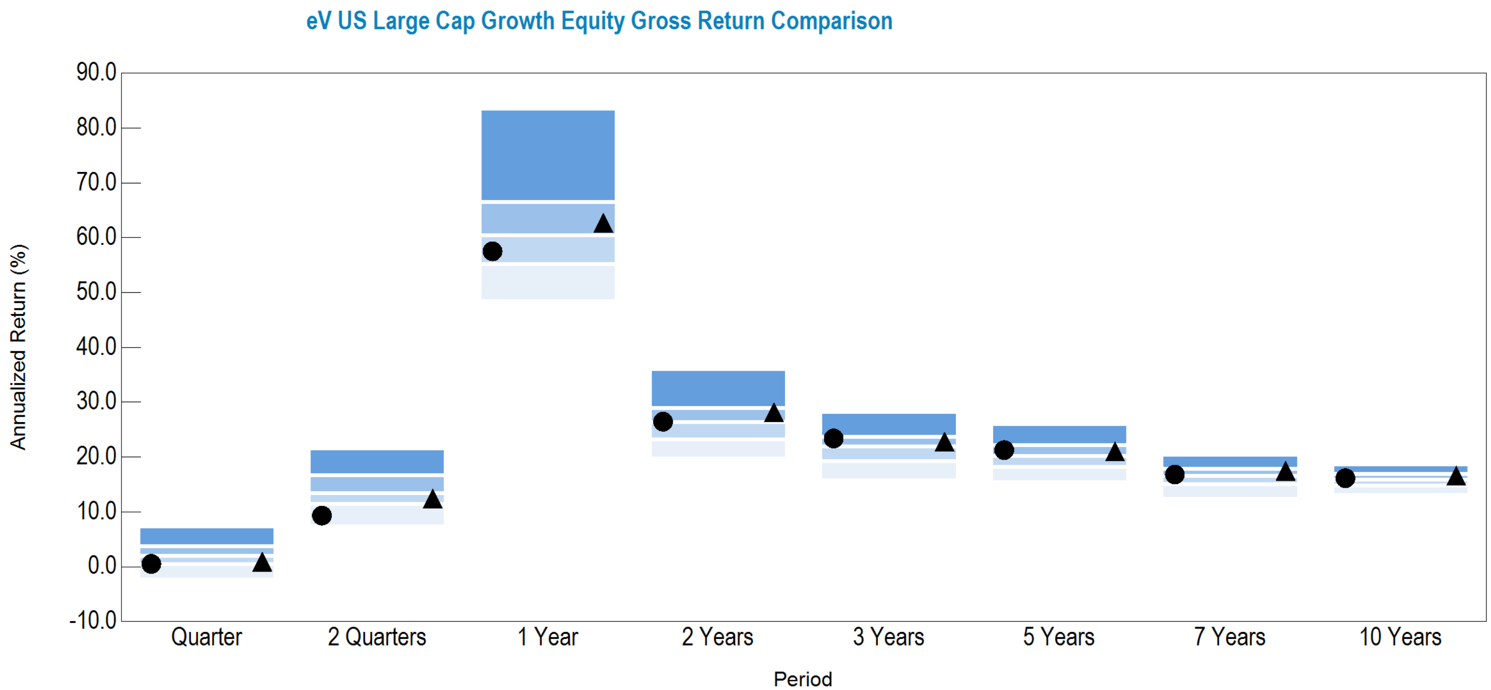
	Return %
EAST WEST BANCORP INC (EWBC)	46.3%
PIONEER NATURAL RESOURCES CO (PXD)	39.9%
WALGREENS BOOTS ALLIANCE INC (WBA)	39.0%
OSHKOSH CORP (OSK)	38.3%
LENNAR CORP (LEN)	33.2%
CAPITAL ONE FINANCIAL CORP. (COF)	29.1%
JOHNSON CONTROLS INTERNATIONAL PLC (JCI)	28.7%
CULLEN/FROST BANKERS INC (CFR)	25.5%
GENERAL DYNAMICS CORP (GD)	22.9%
MITSUBISHI UFJ FINANCIAL GROUP (MUFG)	21.4%

Worst Performers

	Return %
QUALCOMM INC. (QCOM)	-12.5%
ANSYS INC (ANSS)	-6.7%
NOVARTIS AG (NVS)	-6.0%
ADOBE INC (ADBE)	-4.9%
ELANCO ANIMAL HEALTH INC (ELAN)	-4.0%
COCA-COLA CO (THE) (KO)	-3.1%
PROCTER & GAMBLE CO (THE) (PG)	-2.1%
SUN COMMUNITIES INC. (SUI)	-0.7%
EQUITY LIFESTYLE PROPERTIES INC (ELS)	1.0%
MEDTRONIC PLC (MDT)	1.3%

Aristotle Performance Attribution vs. Russell 1000 Value

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.26%		-0.41%	0.16%	-0.01%	20.78%	30.76%	4.61%	3.94%
Materials	0.20%		0.15%	-0.01%	0.06%	13.64%	10.71%	7.00%	4.81%
Industrials	0.27%		0.39%	-0.06%	-0.06%	16.77%	13.72%	12.06%	13.52%
Consumer Discretionary	0.09%		0.08%	0.00%	0.00%	16.01%	14.88%	7.19%	7.57%
Consumer Staples	0.33%		0.32%	0.02%	-0.01%	7.32%	3.07%	7.27%	7.62%
Health Care	-0.32%		-0.39%	0.05%	0.01%	1.39%	4.19%	13.34%	13.51%
Financials	0.48%		0.71%	-0.12%	-0.11%	21.30%	17.52%	17.90%	19.70%
Information Technology	-2.45%		-1.21%	0.00%	-1.24%	-0.66%	11.12%	20.46%	9.72%
Communication Services	0.73%		2.29%	0.33%	-1.89%	17.51%	6.11%	2.21%	9.68%
Utilities	0.48%		--	0.48%	--	--	2.87%	0.00%	5.51%
Real Estate	-0.08%		-0.23%	0.04%	0.12%	3.95%	9.09%	2.24%	4.42%
Cash	-0.33%		0.00%	-0.33%	0.00%	0.01%	--	3.60%	0.00%
Unclassified	-0.09%		0.00%	-0.09%	0.00%	6.36%	--	2.11%	0.00%
Portfolio	**-0.95%**	**=**	**1.71%**	**+ 0.47%**	**+ -3.13%**	**10.23%**	**11.18%**	**100.00%**	**100.00%**



	Return (Rank)															
5th Percentile	7.26		21.55		83.53		35.99		28.23		25.98		20.42		18.59	
25th Percentile	3.77		16.76		66.54		28.99		23.76		22.30		17.90		17.01	
Median	2.08		13.52		60.55		26.38		21.98		20.22		16.63		15.96	
75th Percentile	0.57		11.46		55.31		23.32		19.30		18.31		15.10		14.89	
95th Percentile	-2.24		7.46		48.45		19.83		15.84		15.42		12.44		13.14	
# of Portfolios	259		259		259		256		254		234		226		210	
● **TCW**	0.52	(77)	9.33	(91)	57.53	(67)	26.46	(50)	23.39	(31)	21.27	(40)	16.82	(46)	16.15	(45)
▲ **Russell 1000 Growth**	0.94	(70)	12.44	(65)	62.74	(40)	28.15	(34)	22.80	(36)	21.05	(43)	17.50	(34)	16.63	(32)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	33	453
Weighted Avg. Market Cap. ($B)	361.8	689.0
Median Market Cap. ($B)	98.1	17.3
Price To Earnings	51.9	38.3
Price To Book	10.3	11.5
Price To Sales	8.5	5.5
Return on Equity (%)	40.0	36.9
Yield (%)	0.4	0.8
Beta	1.0	1.0

Top Holdings

AMAZON.COM INC	7.1%
ALPHABET INC	6.3%
SERVICENOW INC	6.0%
ADOBE INC	6.0%
PAYPAL HOLDINGS INC	5.6%
FACEBOOK INC	5.1%
VISA INC	4.6%
AMERICAN TOWER CORP	4.1%
NVIDIA CORPORATION	4.0%
SALESFORCE.COM INC	4.0%

Best Performers

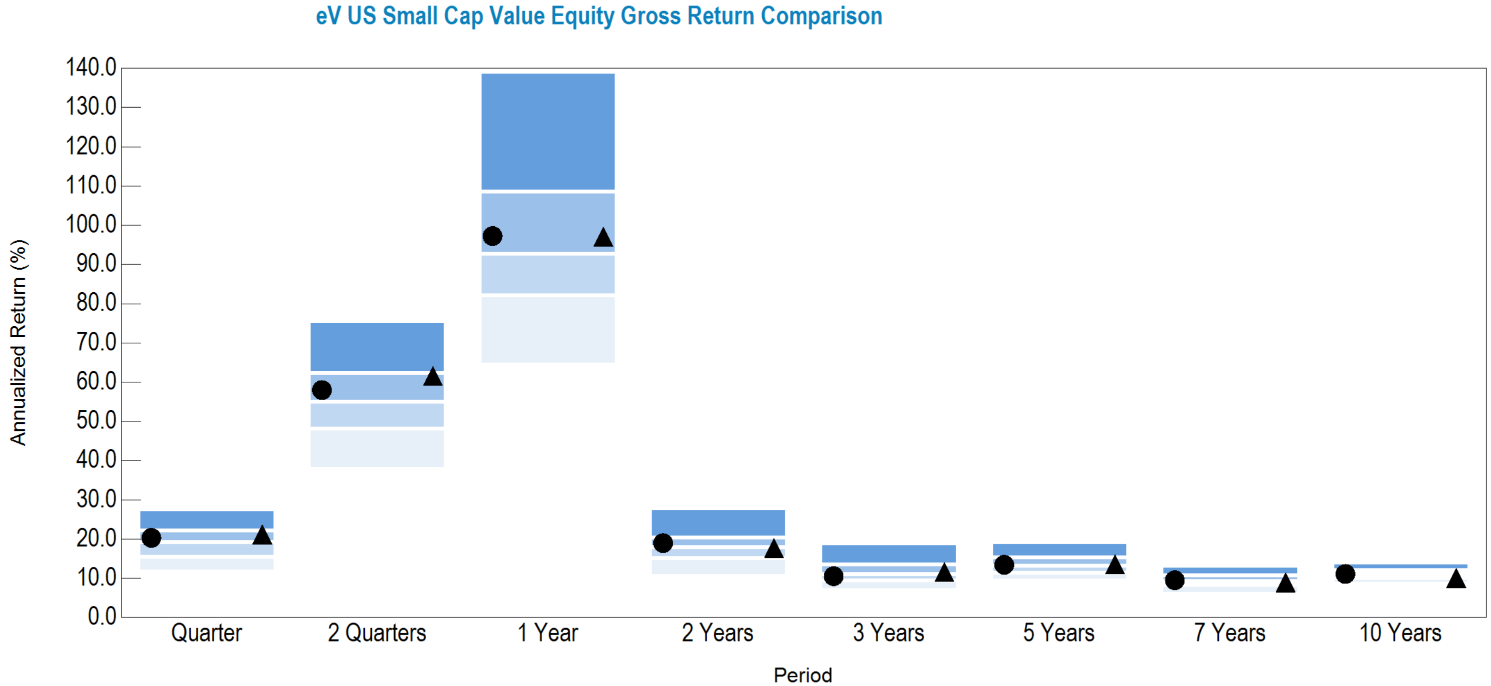
	Return %
ASML HOLDING NV (ASML)	26.6%
SCHWAB (CHARLES) CORP (SCHW)	23.3%
ALPHABET INC (GOOG)	18.1%
HOME DEPOT INC. (THE) (HD)	15.6%
IHS MARKIT LTD (INFO)	8.0%
FACEBOOK INC (FB)	7.8%
IQVIA HOLDINGS INC (IQV)	7.8%
ULTA BEAUTY INC (ULTA)	7.7%
S&P GLOBAL INC (SPGI)	7.6%
BOSTON SCIENTIFIC CORP (BSX)	7.5%

Worst Performers

	Return %
SPLUNK INC (SPLK)	-20.3%
TRADE DESK INC (THE) (TTD)	-18.6%
SNOWFLAKE INC (SNOW)	-18.5%
BIOMARIN PHARMACEUTICAL INC (BMRN)	-13.9%
TRANSUNION (TRU)	-9.2%
SERVICENOW INC (NOW)	-9.1%
COSTCO WHOLESALE CORP (COST)	-6.3%
AMAZON.COM INC (AMZN)	-5.0%
ADOBE INC (ADBE)	-4.9%
SALESFORCE.COM INC (CRM)	-4.8%

TCW Performance Attribution vs. Russell 1000 Growth

	Attribution Effects						Returns		Sector Weights	
	Total Effects		Selection Effect		Allocation Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.01%		--		-0.01%		--	--	19.56%	0.00%	0.08%
Materials	0.00%		--		0.00%		--	--	0.88%	0.00%	0.81%
Industrials	-0.12%		-0.10%		0.06%		-0.08%	1.22%	3.63%	8.21%	4.53%
Consumer Discretionary	0.29%		0.29%		0.10%		-0.09%	0.80%	-0.94%	11.13%	16.70%
Consumer Staples	-0.10%		-0.24%		0.02%		0.12%	-6.27%	-0.70%	2.33%	4.53%
Health Care	-0.07%		-0.06%		-0.03%		0.02%	0.69%	1.34%	11.40%	13.56%
Financials	0.46%		0.22%		0.04%		0.20%	15.35%	2.68%	3.41%	1.88%
Information Technology	-1.30%		-1.39%		0.04%		0.06%	-3.81%	-0.73%	43.36%	45.15%
Communication Services	0.35%		0.30%		0.04%		0.01%	11.15%	8.45%	10.06%	11.14%
Utilities	0.00%		--		0.00%		--	--	1.27%	0.00%	0.02%
Real Estate	-0.02%		-0.07%		0.26%		-0.21%	2.18%	6.99%	6.29%	1.61%
Cash	0.00%		0.00%		0.00%		0.00%	0.01%	--	3.81%	0.00%
Portfolio	**-0.52%**	**=**	**-1.06%**	**+**	**0.52%**	**+**	**0.02%**	**0.43%**	**0.96%**	**100.00%**	**100.00%**



	Return (Rank)															
5th Percentile	27.50		75.46		139.10		27.84		18.90		19.12		13.04		13.99	
25th Percentile	22.31		62.41		108.65		20.43		13.65		15.34		10.83		12.19	
Median	19.34		55.02		92.87		18.06		11.19		13.21		9.38		11.08	
75th Percentile	15.60		48.27		82.29		15.32		9.55		11.48		8.38		10.25	
95th Percentile	11.81		37.91		64.65		10.73		7.09		9.50		6.17		8.73	
# of Portfolios	215		215		214		212		206		201		191		177	
● Kennedy	20.30	(43)	57.97	(42)	97.24	(43)	18.95	(40)	10.52	(63)	13.42	(46)	9.51	(47)	11.09	(50)
▲ Russell 2000 Value	21.17	(33)	61.59	(30)	97.05	(43)	17.74	(56)	11.57	(46)	13.56	(45)	8.93	(63)	10.06	(81)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	272	1,474
Weighted Avg. Market Cap. ($B)	3.1	3.2
Median Market Cap. ($B)	1.9	0.9
Price To Earnings	21.5	19.3
Price To Book	2.1	2.0
Price To Sales	1.4	1.3
Return on Equity (%)	-0.2	-6.0
Yield (%)	1.2	1.5
Beta	1.0	1.0

Top Holdings

CLEVELAND-CLIFFS INC	1.0%
CADENCE BANCORPORATION	1.0%
BUILDERS FIRSTSOURCE INC	0.9%
AMERIS BANCORP	0.9%
INTERNATIONAL BANCSHARES CORP	0.9%
PDC ENERGY INC	0.9%
BANCORP INC (THE)	0.9%
THE SHYFT GROUP INC	0.8%
PACWEST BANCORP	0.8%
TRONOX HOLDINGS PLC	0.8%

Best Performers

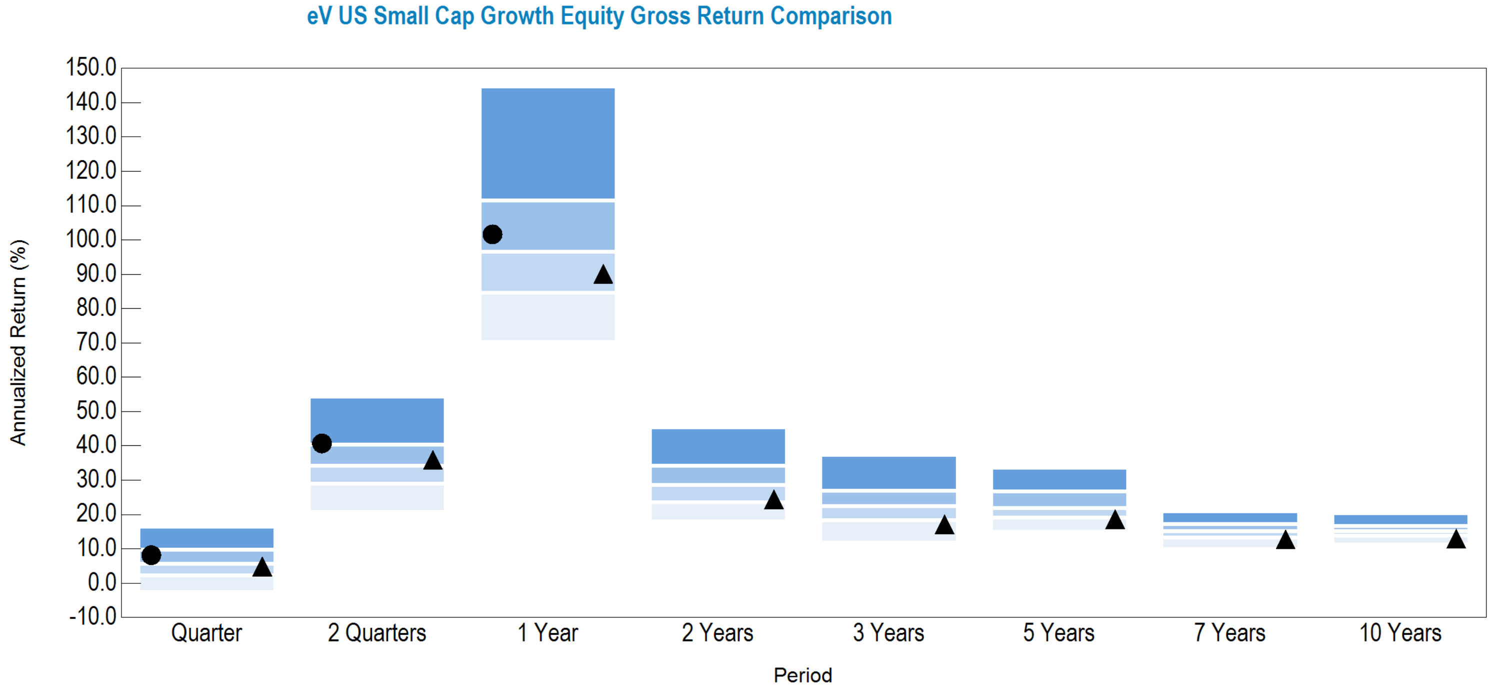
	Return %
CALLON PETROLEUM CO/DE (CPE)	192.9%
BABCOCK & WILCOX ENTERPRISES INC (BW)	169.8%
DESIGNER BRANDS INC (DBI)	127.5%
FARMER BROTHERS CO (FARM)	123.6%
VERITIV CORP (VRTV)	104.6%
PBF ENERGY INC (PBF)	99.3%
YELLOW CORP (YELL)	98.4%
ROCKY BRANDS INC (RCKY)	93.2%
SIENTRA INC (SIEN)	87.4%
HIMAX TECHNOLOGIES INC (HIMX)	84.7%

Worst Performers

	Return %
FREQUENCY THERAPEUTICS INC (FREQ)	-73.1%
CONCERT PHARMACEUTICALS INC (CNCE)	-60.5%
ASPEN GROUP INC (ASPU)	-46.1%
BLUEBIRD BIO INC (BLUE)	-30.3%
QUIDEL CORP (QDEL)	-28.8%
LENDINGTREE INC (TREE)	-22.2%
CYBERARK SOFTWARE LTD (CYBR)	-20.0%
MERCURY SYSTEMS INC (MRCY)	-19.8%
REATA PHARMACEUTICALS INC (RETA)	-19.3%
CONSTELLATION PHARMACEUTICALS INC (CNST)	-18.8%

Kennedy Performance Attribution vs. Russell 2000 Value

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.45%		-0.13%	-0.37%	0.05%	38.92%	41.95%	2.42%	4.24%
Materials	0.00%		-0.01%	0.01%	0.00%	23.34%	23.56%	6.44%	6.00%
Industrials	0.00%		0.03%	-0.02%	0.00%	19.60%	19.46%	18.13%	16.87%
Consumer Discretionary	-1.27%		-1.21%	-0.16%	0.10%	26.74%	36.26%	11.69%	12.75%
Consumer Staples	-0.18%		-0.19%	0.00%	0.01%	13.34%	18.72%	3.45%	3.60%
Health Care	-0.36%		-0.59%	0.08%	0.15%	7.16%	16.36%	4.74%	6.37%
Financials	1.05%		1.18%	0.02%	-0.16%	24.90%	20.65%	24.15%	27.81%
Information Technology	0.52%		0.51%	-0.37%	0.38%	21.65%	13.81%	11.36%	6.46%
Communication Services	0.17%		0.24%	0.01%	-0.08%	30.13%	20.32%	1.66%	2.45%
Utilities	0.10%		0.05%	0.06%	0.00%	6.73%	5.71%	4.00%	4.40%
Real Estate	-0.41%		-0.35%	-0.04%	-0.02%	8.43%	12.34%	9.46%	9.05%
Cash	-0.53%		0.00%	-0.53%	0.00%	0.01%	--	2.49%	0.00%
Portfolio	**-1.35%**	**=**	**-0.49%**	**+ -1.30%**	**+ 0.44%**	**19.97%**	**21.32%**	**100.00%**	**100.00%**



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
	Return (Rank)															
5th Percentile	16.36		54.36		144.63		45.36		37.23		33.51		20.78		20.25	
25th Percentile	9.92		40.38		111.56		34.37		26.93		26.86		17.29		16.76	
Median	5.67		34.37		96.63		28.77		22.58		22.07		15.32		15.19	
75th Percentile	2.33		29.05		84.67		23.69		18.52		19.15		13.32		13.94	
95th Percentile	-2.49		20.77		70.32		18.15		11.81		15.12		10.01		11.41	
# of Portfolios	157		157		157		155		155		149		141		135	
● **Willliam Blair Small Cap Growth**	8.15	(33)	40.72	(24)	101.62	(40)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ **Russell 2000 Growth**	4.88	(55)	35.92	(42)	90.20	(62)	24.44	(69)	17.16	(84)	18.61	(78)	12.77	(82)	13.02	(86)

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	2,648	1,114
Weighted Avg. Market Cap. ($B)	248.5	4.2
Median Market Cap. ($B)	10.8	1.2
Price To Earnings	27.8	33.5
Price To Book	3.6	5.3
Price To Sales	2.3	3.1
Return on Equity (%)	13.3	-8.2
Yield (%)	1.5	0.4

Top Holdings

BRINK'S CO (THE)	2.4%
DUCOMMUN INC	2.3%
BWX TECHNOLOGIES INC	2.2%
GRID DYNAMICS HOLDINGS INC	1.9%
BOOT BARN HOLDINGS INC	1.7%
CASELLA WASTE SYSTEMS INC	1.7%
GRAND CANYON EDUCATION INC	1.7%
BROOKS AUTOMATION INC	1.6%
CAMECO CORP	1.6%
MONTROSE ENVIRONMENTAL GROUP INC	1.6%

Best Performers

	Return %
VERICEL CORP (VCEL)	79.9%
GENMARK DIAGNOSTICS INC (GNMK)	63.7%
MONTROSE ENVIRONMENTAL GROUP INC (MEG)	62.1%
DINE BRANDS GLOBAL INC (DIN)	55.2%
PENUMBRA INC (PEN)	54.6%
LIGAND PHARMACEUTICALS INC (LGND)	53.3%
SKYLINE CHAMPION CORP (SKY)	46.3%
REVOLVE GROUP INC (RVLV)	44.1%
BOOT BARN HOLDINGS INC (BOOT)	43.7%
HOME BANCSHARES INC (HOMB)	39.7%

Worst Performers

	Return %
AMICUS THERAPEUTICS INC (FOLD)	-57.2%
VERTEX INC (VERX)	-36.9%
LIVERAMP HOLDINGS INC (RAMP)	-29.1%
RUSH STREET INTERACTIVE INC	-24.5%
MERCURY SYSTEMS INC (MRCY)	-19.8%
PROG HOLDINGS INC (PRG)	-19.6%
CERTARA INC (CERT)	-19.0%
PDF SOLUTIONS INC (PDFS)	-17.7%
ALARM.COM HOLDINGS INC (ALRM)	-16.5%
PROS HOLDINGS INC (PRO)	-16.3%

Willliam 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	0.21%		-0.02%	0.37%	-0.14%	23.96%	40.17%	1.28%	0.16%
Materials	-0.06%		0.07%	-0.10%	-0.04%	15.05%	13.40%	1.25%	2.45%
Industrials	-0.25%		-0.41%	0.43%	-0.27%	7.29%	11.44%	20.32%	13.82%
Consumer Discretionary	0.30%		1.15%	-0.53%	-0.31%	27.22%	18.43%	8.97%	13.32%
Consumer Staples	0.10%		0.31%	-0.06%	-0.15%	22.63%	11.93%	2.43%	2.94%
Health Care	3.28%		3.52%	0.69%	-0.94%	7.83%	-1.97%	25.87%	34.39%
Financials	0.32%		0.30%	-0.10%	0.13%	10.25%	2.76%	6.59%	4.11%
Information Technology	-0.70%		-0.58%	-0.06%	-0.05%	0.08%	2.71%	23.51%	21.38%
Communication Services	-0.08%		-0.14%	0.01%	0.04%	-5.32%	2.27%	1.76%	2.29%
Utilities	0.10%		--	0.10%	--	--	-0.61%	0.00%	1.59%
Real Estate	0.11%		0.18%	0.01%	-0.09%	9.30%	4.67%	1.83%	3.55%
Cash	-0.18%		0.00%	-0.18%	0.00%	0.01%	--	2.54%	0.00%
Unclassified	-0.05%		0.00%	-0.05%	0.00%	3.26%	--	3.66%	0.00%
Portfolio	**3.10%**	**=**	**4.38%**	**+ 0.53%**	**+ -1.81%**	**8.08%**	**4.99%**	**100.00%**	**100.00%**

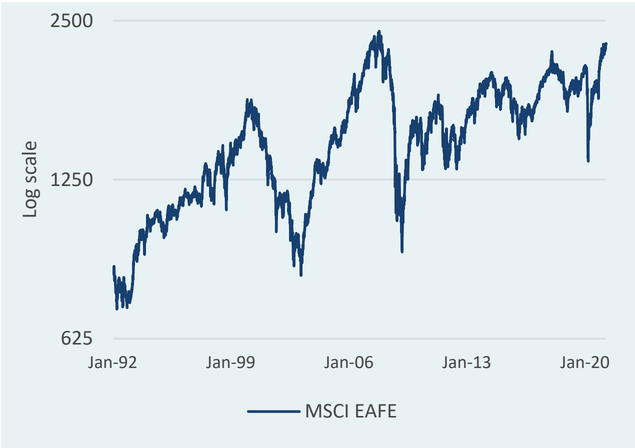
International developed equity

International equities delivered +3.5% (MSCI EAFE Index) during the first quarter on an unhedged currency basis. International developed underperformed the S&P 500 Index (+6.2%) while outperforming the MSCI Emerging Markets Index (+2.3%). The trend towards U.S. dollar weakness has boosted the performance of unhedged international equities, adding +6.8% over the past year, though this trend may have begun to reverse in the first quarter.

International developed equity weakness may be partly attributed to snags in the European COVID-19 vaccination campaign, which has materially lagged the rest of the world. However, European equities (+4.1%) managed to outperform Japanese equities (+1.6%) in U.S. dollar terms, primarily due to currency movements, as the yen (-6.7%) depreciated more sharply relative to the U.S. dollar than the euro (-4.0%) or swiss franc (-6.2%).

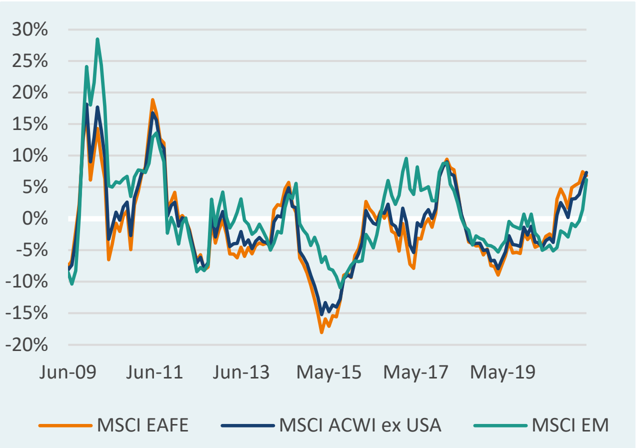
Bets against the Japanese yen rose to multi-year highs amid a backdrop of increasing relative interest rates available in the U.S., and a wave of risk-on sentiment pouring cold water on the appeal of traditional safe-haven assets.

INTERNATIONAL DEVELOPED EQUITIES



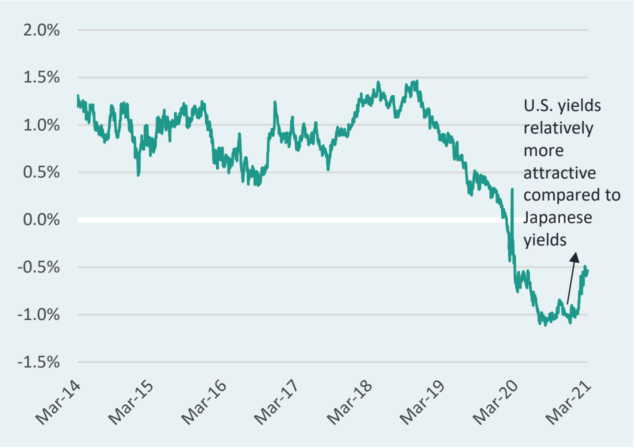
Source: MSCI, as of 3/31/21

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 3/31/21

10-YEAR REAL YIELD SPREAD (US MINUS JAPAN)



Source: Bloomberg, as of 3/31/21

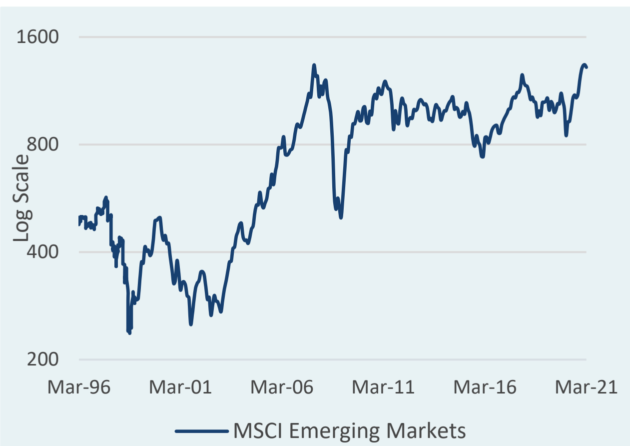
Emerging market equity

Emerging market equities (MSCI EM +2.3%) underperformed U.S. (S&P 500 +6.2%) and international developed equities (MSCI EAFE +3.5%) during the quarter. Latin American equities pulled back from strong performance in Q4, underperforming the broader index (MSCI Latin America -5.3%).

Chinese mainland equities, which account for roughly 36% of the MSCI EM Index, slumped -0.4%, dampening overall index returns. Many analysts attributed the relative weakness in China to tightening liquidity conditions, as the People's Bank of China shifted focus away from promoting economic recovery and toward clamping down on real estate speculation and leverage broadly, in the interest of preventing the buildup of financial excesses.

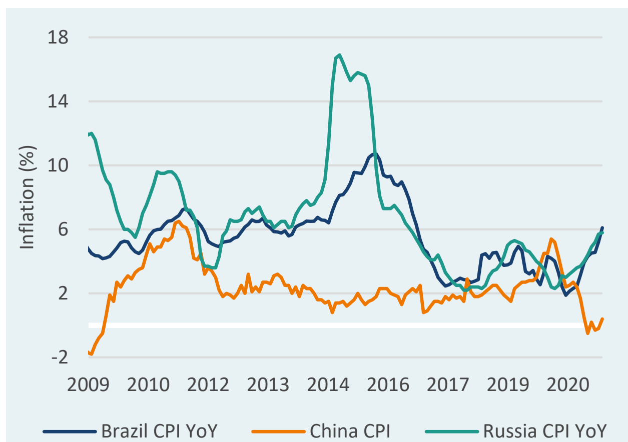
Central banks from Turkey to Russia to Brazil delivered surprise rate hikes in part to respond to a resurgence in inflation, which weighed on markets. Idiosyncratic political developments further pressured returns in Turkey (-20.4%) and Brazil (-10.0%), while Russian equities held up better (+2.4%) despite a weaker ruble (-2.1%).

EMERGING MARKET EQUITY



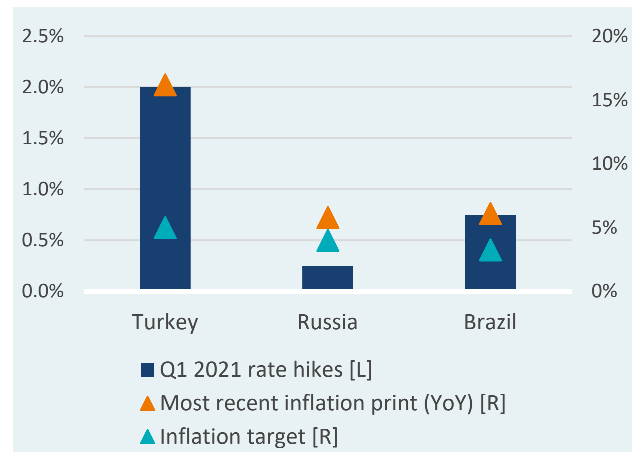
Source: MSCI, as of 3/31/21

INFLATION (YOY)

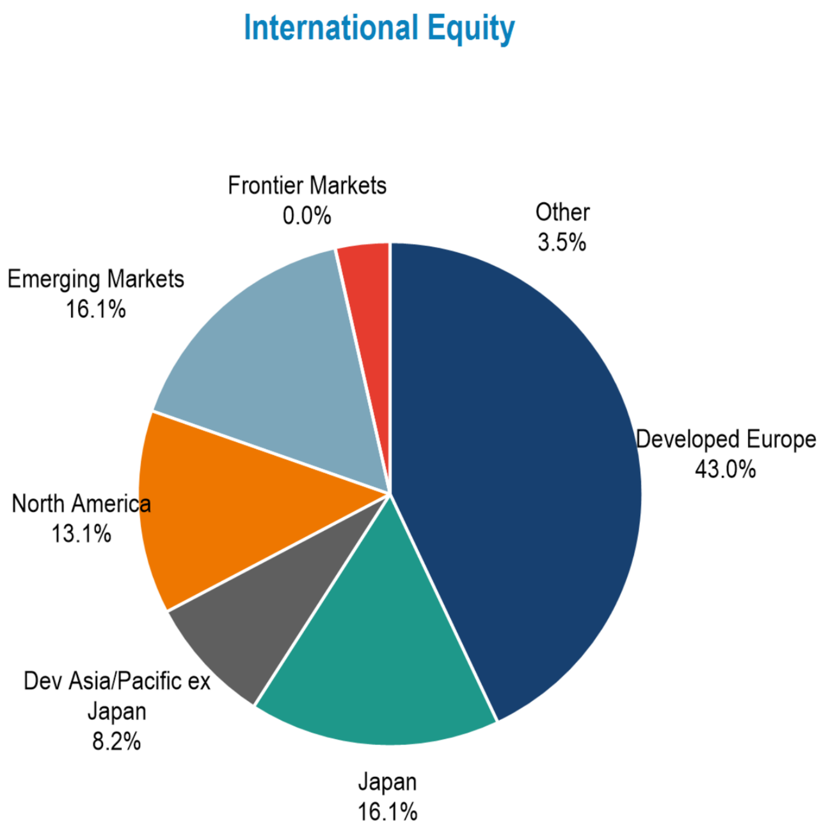


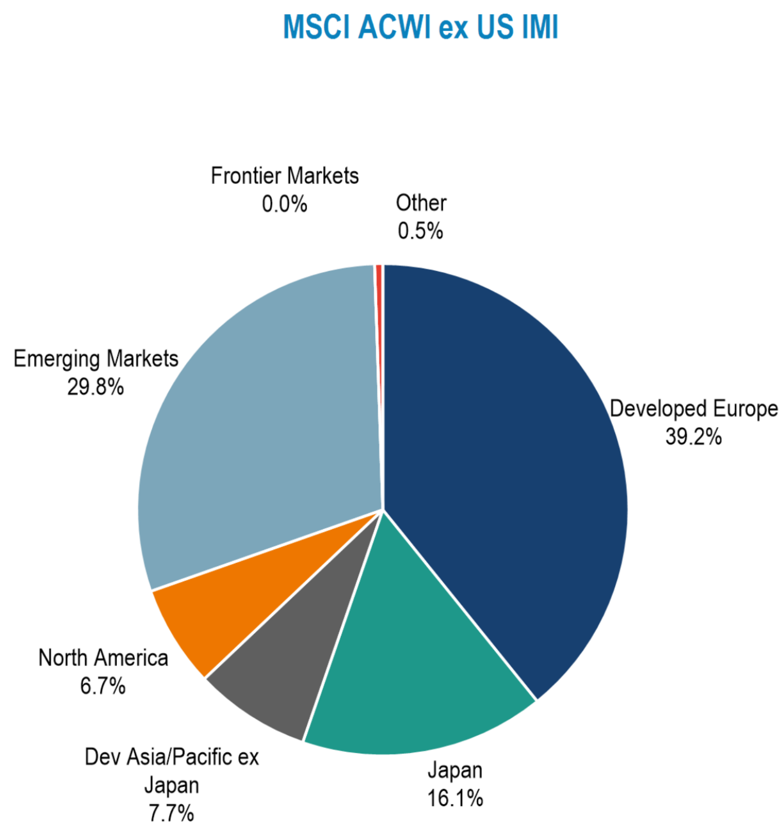
Source: Bloomberg, as of 3/31/21 or most recent data

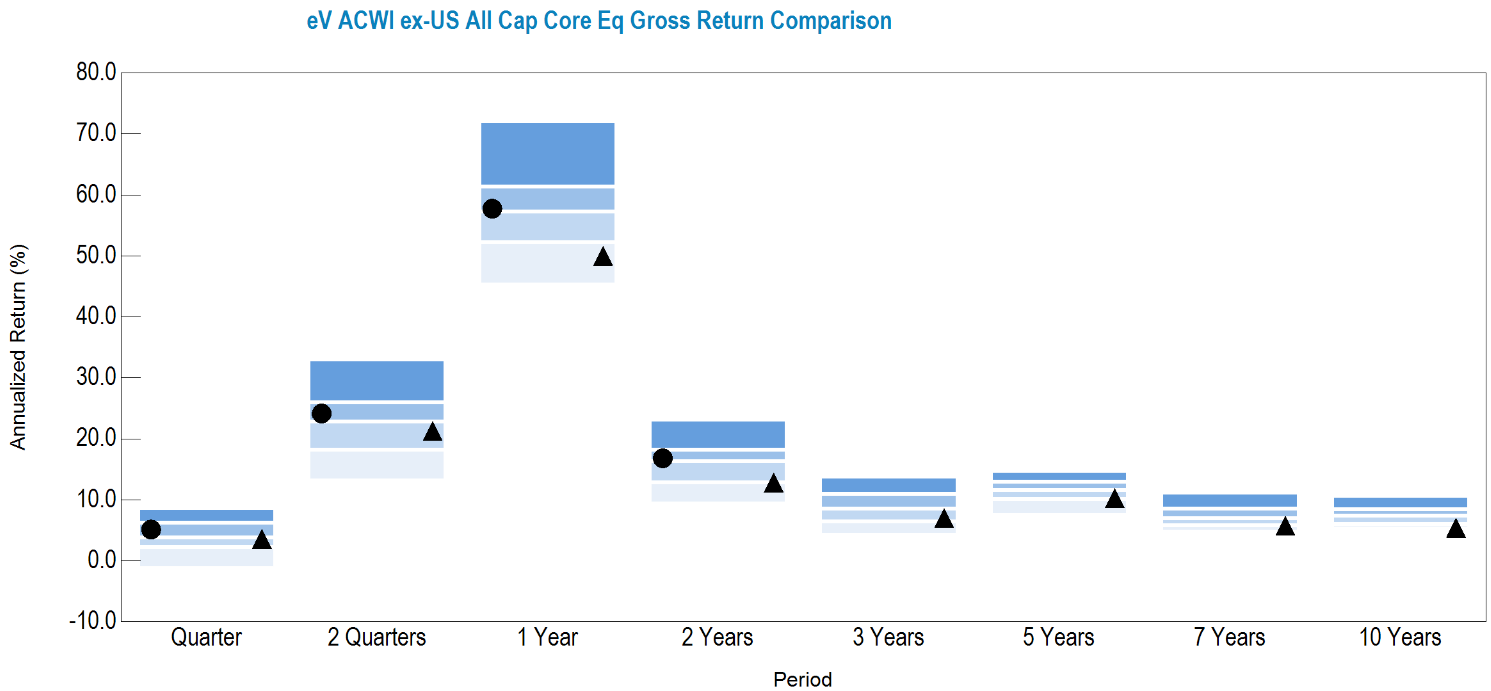
SURPRISE CENTRAL BANK RATE HIKES



Source: Bloomberg, as of 3/31/21


International Equity
Frontier Markets
0.0%
Other
3.5%
Emerging Markets
16.1%
Developed Europe
43.0%
North America
13.1%
Dev Asia/Pacific ex Japan
8.2%
Japan
16.1%


MSCI ACWI ex US IMI
Frontier Markets
0.0%
Other
0.5%
Emerging Markets
29.8%
Developed Europe
39.2%
North America
6.7%
Dev Asia/Pacific ex Japan
7.7%
Japan
16.1%



	Return (Rank)															
5th Percentile	8.57		32.94		72.04		23.13		13.79		14.75		11.17		10.58	
25th Percentile	6.31		26.10		61.49		18.33		11.02		13.05		8.59		8.47	
Median	3.94		22.92		57.31		16.40		8.57		11.63		7.06		7.51	
75th Percentile	2.29		18.28		52.27		12.96		6.54		10.24		5.92		6.11	
95th Percentile	-1.10		13.27		45.33		9.42		4.28		7.52		4.87		5.34	
# of Portfolios	54		54		54		53		52		50		46		35	
● Bivium Intl Equity	5.12	(41)	24.16	(40)	57.75	(49)	16.81	(46)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	3.60	(61)	21.29	(60)	50.03	(87)	12.83	(78)	7.02	(71)	10.28	(75)	5.75	(79)	5.41	(94)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	333	2,345
Weighted Avg. Market Cap. ($B)	70.6	102.8
Median Market Cap. ($B)	13.2	9.7
Price To Earnings	24.5	21.6
Price To Book	3.0	2.7
Price To Sales	1.4	1.5
Return on Equity (%)	9.7	10.4
Yield (%)	1.5	2.3

Top Holdings

ISHARES CORE MSCI EMERGING MARKETS ETF	6.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.9%
ASML HOLDING NV	1.5%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.4%
AIRBUS SE	1.3%
POSCO	1.2%
DIAGEO PLC	1.1%
SAMSUNG ELECTRONICS CO LTD	1.1%
L'OREAL S.A., PARIS	1.0%
H D F C BANK LTD	0.9%

Best Performers

	Return %
ALCHIP TECHNOLOGIES INC	42.9%
NATIXIS	40.4%
NORSK HYDRO ASA	37.9%
CHINA LESSO GROUP HOLDINGS LTD	37.3%
KERRY LOGISTICS NETWORK LTD	36.7%
GOODBABY INTERNATIONAL HOLDINGS LTD	35.8%
JARDINE STRATEGIC HOLDINGS LTD (BERMUDAS)	32.7%
JGC HOLDINGS CORP	32.4%
ARC RESOURCES LTD (ARX.)	31.3%
KOSMOS ENERGY LTD (KOS)	30.6%

Worst Performers

	Return %
BIOGAIA AB	-28.1%
M3 INC	-27.4%
STONECO LTD (STNE)	-27.0%
YDUQS PARTICIPACOES SA	-25.5%
WESTGOLD RESOURCES LTD	-25.5%
NEW ORIENTAL EDUCATION & TECHNOLOGY GROUP INC (EDU)	-24.7%
PINDUODUO (PDD)	-24.6%
PETROLEO BRASILEIRO S.A.- PETROBRAS (PBR)	-24.5%
GUANGZHOU AUTOMOBILE GROUP CO LTD	-24.5%
DIASORIN SPA	-22.8%

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects						Returns		Sector Weights	
	Total Effects		Selection Effect		Allocation Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.07%		0.34%		-0.12%		-0.15%	19.58%	9.87%	2.10%	4.31%
Materials	0.32%		0.41%		0.00%		-0.09%	9.40%	5.36%	8.77%	8.09%
Industrials	0.45%		0.36%		0.11%		-0.02%	8.13%	5.14%	14.14%	11.55%
Consumer Discretionary	0.21%		-0.01%		0.03%		0.18%	2.43%	2.07%	8.20%	13.81%
Consumer Staples	-0.11%		-0.08%		-0.03%		0.00%	-2.94%	-2.28%	9.23%	8.93%
Health Care	-0.51%		-0.23%		-0.14%		-0.14%	-6.25%	-3.62%	11.28%	9.57%
Financials	-0.23%		-0.23%		-0.17%		0.17%	7.37%	8.58%	13.32%	18.10%
Information Technology	-0.02%		-0.19%		0.03%		0.13%	3.33%	3.45%	14.33%	12.71%
Communication Services	0.55%		0.80%		0.04%		-0.29%	18.75%	5.35%	3.97%	6.99%
Utilities	0.18%		0.18%		0.08%		-0.09%	1.51%	-1.23%	1.50%	3.34%
Real Estate	0.07%		0.08%		0.00%		0.00%	6.55%	3.72%	2.29%	2.60%
Cash	-0.17%		0.00%		-0.17%		0.00%	0.01%	--	2.56%	0.00%
Unclassified	-0.09%		0.00%		0.00%		-0.10%	5.78%	--	8.30%	0.00%
Portfolio	**0.71%**	**=**	**1.44%**	**+**	**-0.33%**	**+**	**-0.40%**	**4.32%**	**3.62%**	**100.00%**	**100.00%**

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

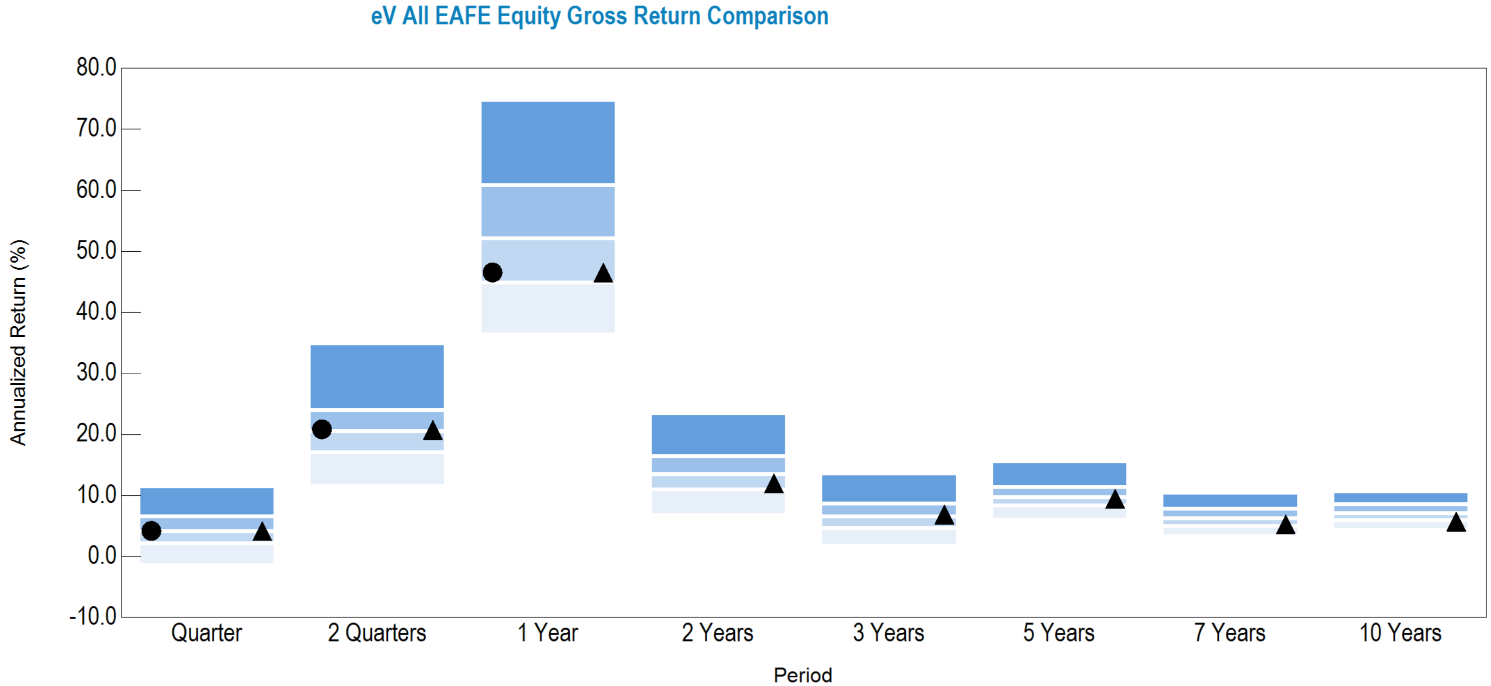
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	12.10%	9.16%	0.71%	0.11%	0.00%	0.04%	-0.03%	0.02%	0.04%
Belgium	-6.19%	-2.61%	0.53%	0.62%	-0.02%	0.00%	0.00%	0.00%	-0.01%
Czech Republic*	--	5.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Denmark	5.51%	-2.88%	2.86%	1.58%	0.14%	-0.07%	-0.06%	0.11%	0.12%
Finland	0.86%	-0.94%	0.50%	0.66%	0.01%	0.01%	0.01%	0.00%	0.02%
France	3.51%	4.43%	11.64%	6.89%	-0.07%	0.10%	-0.19%	-0.05%	-0.21%
Germany	-6.35%	4.03%	2.62%	5.87%	-0.62%	-0.05%	0.14%	0.35%	-0.19%
Greece*	--	1.39%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Hungary*	--	0.37%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Ireland	9.85%	5.39%	2.20%	0.44%	0.00%	0.06%	0.02%	0.00%	0.08%
Italy	0.70%	4.95%	1.65%	1.41%	-0.06%	0.01%	-0.01%	-0.01%	-0.07%
Luxembourg	21.65%	3.62%	0.38%	0.00%	0.00%	0.00%	-0.02%	0.07%	0.06%
Netherlands	10.91%	10.99%	3.94%	2.42%	-0.01%	0.14%	-0.07%	0.00%	0.06%
Norway	-2.68%	11.44%	1.05%	0.37%	-0.05%	0.03%	0.00%	-0.10%	-0.12%
Poland*	-14.87%	-7.21%	0.98%	0.21%	-0.02%	-0.07%	-0.04%	-0.06%	-0.18%
Portugal	--	-4.38%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Russia*	28.28%	6.23%	0.45%	0.82%	0.16%	-0.01%	0.02%	-0.07%	0.10%
Spain	1.56%	0.88%	1.70%	1.53%	0.01%	0.00%	-0.01%	0.00%	0.00%
Sweden	8.41%	11.42%	1.28%	2.10%	-0.07%	-0.10%	0.06%	0.03%	-0.08%
Switzerland	-2.89%	-1.67%	6.99%	6.06%	-0.10%	-0.02%	-0.03%	-0.02%	-0.16%
United Kingdom	7.33%	6.14%	9.12%	8.82%	0.12%	0.00%	-0.01%	0.00%	0.11%

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-4.36%	3.43%	2.38%	4.43%	-0.35%	0.04%	0.03%	0.16%	-0.12%
China*	-1.76%	0.24%	4.81%	12.16%	-0.26%	0.46%	0.02%	0.16%	0.38%
Hong Kong	12.74%	7.26%	2.76%	2.04%	0.11%	0.01%	0.00%	0.04%	0.16%
India*	5.47%	5.18%	1.02%	2.89%	0.00%	0.02%	0.01%	0.00%	0.03%
Indonesia*	0.91%	-8.28%	0.57%	0.42%	0.04%	-0.02%	-0.01%	0.01%	0.03%
Japan	2.48%	1.57%	13.68%	15.90%	0.16%	-0.05%	0.15%	-0.02%	0.24%
Korea*	8.26%	1.61%	3.58%	4.21%	0.15%	0.01%	0.14%	-0.02%	0.27%
Malaysia*	--	-5.75%	0.00%	0.47%	--	0.05%	0.01%	--	0.06%
New Zealand	-4.98%	-10.48%	1.03%	0.19%	0.01%	-0.12%	-0.02%	0.05%	-0.09%
Pakistan*	--	0.58%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	-0.91%	-10.45%	0.14%	0.23%	0.02%	0.01%	0.00%	-0.01%	0.03%
Singapore	13.04%	8.75%	1.38%	0.66%	0.03%	0.03%	-0.01%	0.03%	0.07%
Taiwan*	11.53%	11.07%	2.64%	3.99%	-0.04%	-0.08%	0.06%	0.01%	-0.05%
Thailand*	0.92%	4.57%	0.09%	0.57%	-0.03%	-0.01%	0.02%	0.03%	0.01%
Americas									
Argentina*	--	-5.96%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Brazil*	-18.94%	-9.71%	0.26%	1.60%	-0.21%	0.11%	0.12%	0.18%	0.19%
Canada	8.84%	9.82%	6.48%	6.33%	-0.06%	0.00%	0.00%	0.00%	-0.06%
Chile*	--	19.60%	0.00%	0.16%	--	-0.02%	0.00%	--	-0.02%
Colombia*	--	-17.25%	0.00%	0.06%	--	0.01%	0.00%	--	0.01%
Mexico*	-1.47%	4.05%	0.21%	0.54%	-0.03%	0.00%	0.01%	0.02%	0.00%
Peru*	--	-10.58%	0.00%	0.08%	--	0.01%	0.00%	--	0.01%
United States	4.31%	5.37%	7.00%	0.00%	0.00%	-0.09%	0.00%	-0.07%	-0.17%

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.83%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	17.71%	0.19%	0.39%	0.38%	0.08%	0.00%	-0.01%	0.00%	0.07%
Kuwait*	--	6.82%	0.00%	0.15%	--	0.00%	0.00%	--	0.00%
Qatar*	--	3.44%	0.00%	0.22%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	19.01%	0.00%	0.76%	--	-0.09%	0.00%	--	-0.09%
South Africa*	-4.36%	12.07%	0.21%	1.05%	-0.18%	-0.05%	0.01%	0.14%	-0.08%
Turkey*	--	-19.91%	0.00%	0.12%	--	0.02%	0.01%	--	0.03%
United Arab Emirates*	-9.09%	15.56%	0.12%	0.16%	-0.04%	0.00%	0.00%	0.01%	-0.03%
Totals									
Americas	5.89%	5.67%	13.95%	8.80%	-0.09%	-0.02%	0.13%	-0.05%	-0.02%
Europe	3.61%	4.02%	48.60%	40.16%	-0.26%	0.07%	-0.19%	-0.05%	-0.42%
Asia/Pacific	3.79%	2.53%	34.07%	48.16%	0.70%	0.13%	0.39%	-0.20%	1.02%
Other	6.80%	10.15%	0.72%	2.87%	-0.05%	-0.09%	0.01%	0.04%	-0.10%
Cash	0.01%	--	2.65%	0.00%	0.00%	-0.18%	0.00%	0.00%	-0.18%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	**3.92%**	**3.62%**	**100.00%**	**100.00%**	**0.31%**	**-0.08%**	**0.35%**	**-0.27%**	**0.30%**
Totals									
Developed	4.17%	4.04%	82.26%	68.93%	-0.29%	0.14%	-0.04%	-0.06%	-0.24%
Emerging*	3.22%	2.69%	15.08%	31.07%	-0.10%	0.38%	0.39%	0.05%	0.72%
Cash	0.01%	--	2.65%	0.00%	0.00%	-0.18%	0.00%	0.00%	-0.18%



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	11.48		34.87		74.73		23.44		13.55		15.55		10.37		10.66	
25th Percentile	6.59		24.05		60.87		16.52		8.71		11.47		7.90		8.63	
Median	4.16		20.57		52.15		13.53		6.66		9.73		6.32		7.12	
75th Percentile	2.18		17.08		45.00		11.00		4.79		8.45		5.09		6.02	
95th Percentile	-1.35		11.54		36.49		6.79		1.84		6.05		3.36		4.38	
# of Portfolios	391		391		391		378		372		340		294		248	
● BlackRock MSCI World ex-US Index Fd A	4.19	(50)	20.84	(48)	46.54	(68)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI World ex US Gross	4.17	(50)	20.74	(49)	46.51	(69)	11.97	(61)	6.88	(46)	9.48	(56)	5.28	(70)	5.73	(84)

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	969	964
Weighted Avg. Market Cap. ($B)	70.9	71.2
Median Market Cap. ($B)	12.7	12.9
Price To Earnings	23.0	22.8
Price To Book	2.6	2.5
Price To Sales	1.5	1.4
Return on Equity (%)	9.9	9.8
Yield (%)	2.2	2.4

Top Holdings

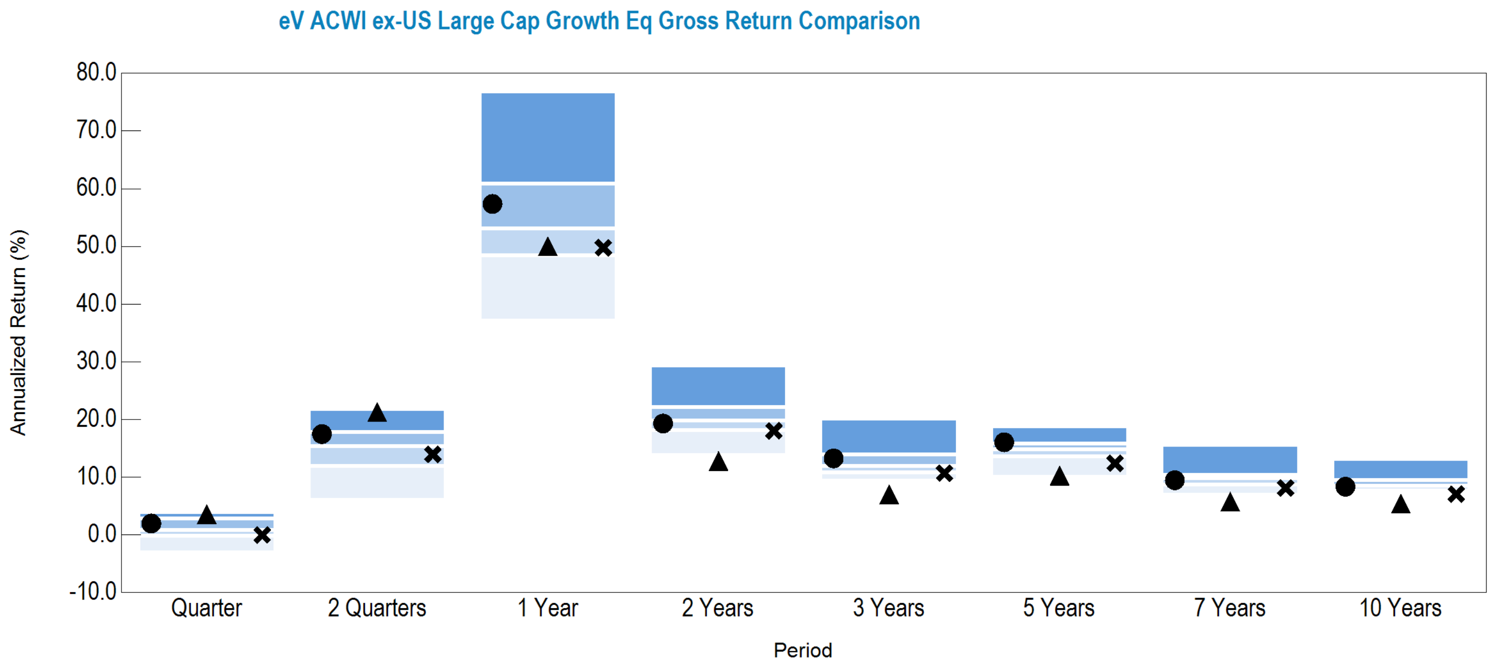
NESTLE SA, CHAM UND VEVEY	1.7%
ASML HOLDING NV	1.4%
ROCHE HOLDING AG	1.2%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.0%
NOVARTIS AG	1.0%
TOYOTA MOTOR CORP	0.9%
AIA GROUP LTD	0.8%
UNILEVER PLC	0.8%
SOFTBANK GROUP CORP	0.7%
SONY GROUP CORPORATION	0.7%

Best Performers

	Return %
RICOH CO LTD	55.9%
INTER PIPELINE LTD (IPL.)	54.5%
BAUSCH HEALTH COS INC (BHC.)	52.9%
NIPPON YUSEN KK	50.8%
VOLKSWAGEN AG	50.2%
SHAW COMMUNICATIONS INC. (SJR.B)	50.1%
EVOLUTION AB (PUBL)	45.1%
NATIXIS	40.4%
TENARIS SA, LUXEMBOURG	39.2%
NORSK HYDRO ASA	37.9%

Worst Performers

	Return %
NIPPON PAINT HOLDINGS CO LTD	-34.3%
A2 MILK (Z:ATMZ)	-30.6%
CIMIC GROUP (A:CIMX)	-28.8%
SSR MINING INC (SSRM.)	-28.5%
MERIDIAN ENERGY LTD	-28.3%
M3 INC	-27.4%
NESTE OYJ	-25.9%
NORTHERN STAR (A:NSTX)	-25.6%
ORACLE CORP JAPAN	-25.1%
ASAHI INTECC KK	-24.4%



	Return (Rank)															
5th Percentile	3.93		21.81		76.79		29.31		20.13		18.73		15.62		13.12	
25th Percentile	2.91		17.92		60.95		22.25		13.97		15.92		10.42		9.58	
Median	0.90		15.43		53.13		19.90		11.98		14.91		9.92		8.60	
75th Percentile	-0.13		12.07		48.56		18.26		10.90		13.66		8.83		7.74	
95th Percentile	-2.95		6.16		37.25		13.93		9.46		10.15		6.98		7.51	
# of Portfolios	37		37		37		35		35		32		26		17	
● Capital Group	1.99	(39)	17.48	(34)	57.36	(38)	19.31	(62)	13.26	(31)	16.06	(24)	9.48	(60)	8.36	(62)
▲ MSCI ACWI ex USA Gross	3.60	(8)	21.29	(6)	50.03	(73)	12.83	(97)	7.02	(99)	10.28	(94)	5.75	(99)	5.41	(99)
✕ MSCI ACWI ex USA Growth Gross	0.00	(74)	13.96	(66)	49.76	(74)	18.05	(77)	10.70	(83)	12.42	(85)	8.13	(82)	7.06	(99)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	210	2,345
Weighted Avg. Market Cap. ($B)	95.2	102.8
Median Market Cap. ($B)	33.0	9.7
Price To Earnings	29.9	21.6
Price To Book	4.0	2.7
Price To Sales	3.0	1.5
Return on Equity (%)	9.2	10.4
Yield (%)	1.5	2.3
Beta	1.0	1.0

Top Holdings

ASML HOLDING NV	3.1%
EVOLUTION AB (PUBL)	2.8%
OCADO GROUP PLC	2.8%
AIA GROUP LTD	2.6%
BEIGENE LTD	2.5%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	2.0%
YANDEX NV	1.9%
PING AN INSURANCE GROUP	1.9%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.8%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.7%

Best Performers

	Return %
TCS GROUP HOLDING PLC	77.0%
TCS GROUP HOLDING PLC	76.4%
COUNTRY GARDEN SERVICES HOLDINGS COMPANY LIMITED	49.8%
TFI INTERNATIONAL INC (TFII.)	46.1%
MERIDA INDUSTRY (TW:MER)	45.8%
EVOLUTION AB (PUBL)	45.1%
ZOOPLUS AG	37.6%
BEIGENE LTD (BGNE)	34.7%
ROSNEFT OIL COMPANY	34.1%
ING GROEP NV	32.8%

Worst Performers

	Return %
CD PROJECT RED (PO:CDR)	-34.4%
SURYA CITRA MEDIA (ID:SCM)	-29.0%
ONECONNECT FINANCIAL TECHNOLOGY CO LTD (OCFT)	-25.0%
SHANGHAI INTERNATIONAL AIRPORT CO LTD	-23.8%
LONDON STOCK EXCHANGE GROUP PLC	-22.3%
GALAPAGOS (B:GLPG)	-21.2%
UBI SOFT ENTERTAINMENT SA	-21.0%
LOJAS AMERICANAS SA	-20.8%
DYE DURHAM LTD COMMON (DND.)	-20.4%
TEAMVIEWER AG	-20.3%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects						Returns		Sector Weights	
	Total Effects		Selection Effect		Allocation Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.10%		-0.02%		-0.13%		0.05%	9.05%	9.81%	1.50%	4.32%
Materials	0.01%		0.03%		-0.05%		0.03%	4.22%	5.34%	4.13%	8.07%
Industrials	-0.13%		-0.25%		-0.07%		0.19%	3.32%	5.14%	9.13%	11.58%
Consumer Discretionary	0.69%		0.63%		-0.05%		0.11%	7.01%	2.08%	17.30%	13.69%
Consumer Staples	0.38%		0.10%		0.20%		0.07%	-1.04%	-2.33%	5.56%	8.94%
Health Care	0.44%		0.37%		-0.06%		0.13%	1.48%	-3.61%	10.58%	9.60%
Financials	-1.10%		-1.39%		-0.09%		0.38%	1.89%	8.51%	16.02%	18.11%
Information Technology	-0.57%		-0.19%		0.01%		-0.39%	1.59%	3.55%	19.08%	12.74%
Communication Services	-0.50%		-0.77%		-0.03%		0.30%	-4.46%	5.56%	5.23%	7.01%
Utilities	-0.23%		-0.02%		-0.10%		-0.11%	-2.76%	-1.22%	5.24%	3.34%
Real Estate	0.24%		0.13%		0.00%		0.11%	11.18%	3.72%	3.60%	2.60%
Cash	-0.15%		0.00%		-0.15%		0.00%	0.01%	--	2.31%	0.00%
Unclassified	-0.06%		0.00%		-0.04%		-0.02%	-12.51%	--	0.32%	0.00%
Portfolio	**-1.10%**	**=**	**-1.38%**	**+**	**-0.56%**	**+**	**0.83%**	**2.52%**	**3.62%**	**100.00%**	**100.00%**

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

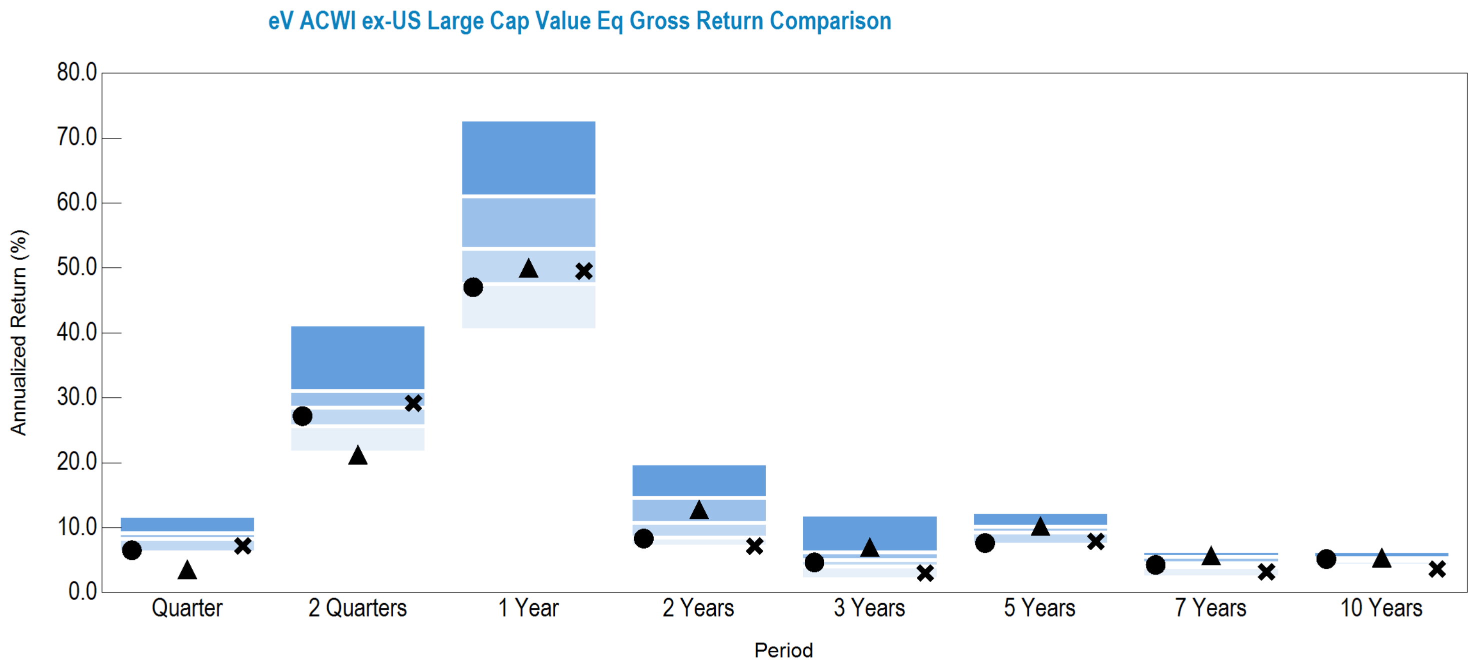
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	11.26%	9.16%	0.17%	0.11%	0.00%	0.00%	0.00%	0.00%	0.01%
Belgium	-5.58%	-2.61%	1.28%	0.62%	-0.02%	-0.04%	-0.03%	-0.02%	-0.10%
Czech Republic*	--	5.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Denmark	-5.67%	-2.88%	4.90%	1.58%	-0.05%	-0.18%	-0.10%	-0.11%	-0.45%
Finland	--	-0.94%	0.00%	0.66%	--	0.02%	0.03%	--	0.05%
France	-1.07%	4.43%	7.71%	6.89%	-0.40%	0.02%	-0.02%	-0.05%	-0.44%
Germany	-7.48%	4.03%	4.13%	5.87%	-0.69%	-0.03%	0.08%	0.21%	-0.43%
Greece*	--	1.39%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Hungary*	--	0.37%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Ireland	4.48%	5.39%	0.56%	0.44%	-0.02%	0.00%	0.01%	0.00%	-0.01%
Italy	0.47%	4.95%	2.80%	1.41%	-0.07%	0.04%	-0.06%	-0.06%	-0.15%
Luxembourg	7.15%	3.62%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Netherlands	7.48%	10.99%	9.40%	2.42%	-0.11%	0.62%	-0.22%	-0.32%	-0.03%
Norway	2.49%	11.44%	0.58%	0.37%	-0.03%	0.01%	0.00%	-0.02%	-0.04%
Poland*	-34.44%	-7.21%	0.18%	0.21%	-0.06%	0.00%	0.00%	0.01%	-0.04%
Portugal	8.73%	-4.38%	0.24%	0.11%	0.01%	-0.01%	-0.01%	0.02%	0.02%
Russia*	10.35%	6.23%	1.12%	0.82%	0.02%	0.00%	0.02%	0.01%	0.04%
Spain	-4.05%	0.88%	1.72%	1.53%	-0.08%	0.00%	0.00%	-0.01%	-0.10%
Sweden	40.97%	11.42%	2.48%	2.10%	0.66%	0.04%	-0.07%	0.12%	0.75%
Switzerland	3.26%	-1.67%	3.30%	6.06%	0.32%	0.05%	0.17%	-0.14%	0.39%
United Kingdom	-2.90%	6.14%	9.60%	8.82%	-0.79%	-0.01%	0.00%	-0.07%	-0.87%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-9.88%	3.43%	0.29%	4.43%	-0.65%	0.08%	0.06%	0.61%	0.10%
China*	12.49%	0.24%	9.25%	12.16%	1.49%	0.18%	0.01%	-0.36%	1.32%
Hong Kong	5.66%	7.26%	6.18%	2.04%	-0.03%	0.04%	-0.01%	-0.07%	-0.07%
India*	6.22%	5.18%	3.20%	2.89%	0.02%	0.00%	0.01%	0.00%	0.03%
Indonesia*	-4.45%	-8.28%	1.07%	0.42%	0.02%	-0.07%	-0.03%	0.03%	-0.06%
Japan	-3.56%	1.57%	12.42%	15.90%	-0.87%	-0.08%	0.30%	0.19%	-0.46%
Korea*	-3.62%	1.61%	1.10%	4.21%	-0.23%	0.04%	0.12%	0.17%	0.10%
Malaysia*	--	-5.75%	0.00%	0.47%	--	0.05%	0.01%	--	0.06%
New Zealand	-5.21%	-10.48%	0.17%	0.19%	0.01%	0.00%	0.00%	0.00%	0.01%
Pakistan*	--	0.58%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-10.45%	0.00%	0.23%	--	0.04%	0.00%	--	0.04%
Singapore	12.99%	8.75%	0.18%	0.66%	0.03%	-0.02%	0.01%	-0.02%	0.00%
Taiwan*	13.62%	11.07%	4.79%	3.99%	0.07%	0.05%	0.02%	0.01%	0.16%
Thailand*	1.08%	4.57%	0.38%	0.57%	-0.02%	0.00%	0.01%	0.01%	-0.01%
Americas									
Argentina*	-12.12%	-5.96%	1.62%	0.04%	0.00%	-0.20%	0.00%	-0.10%	-0.30%
Brazil*	-0.47%	-9.71%	3.30%	1.60%	0.08%	-0.14%	0.00%	0.09%	0.03%
Canada	2.21%	9.82%	1.17%	6.33%	-0.48%	-0.09%	-0.07%	0.39%	-0.25%
Chile*	--	19.60%	0.00%	0.16%	--	-0.02%	0.00%	--	-0.02%
Colombia*	--	-17.25%	0.00%	0.06%	--	0.01%	0.00%	--	0.01%
Mexico*	-14.85%	4.05%	0.09%	0.54%	-0.11%	0.00%	0.01%	0.09%	-0.01%
Peru*	--	-10.58%	0.00%	0.08%	--	0.01%	0.00%	--	0.01%
United States	-16.55%	5.37%	0.96%	0.00%	0.00%	-0.01%	-0.03%	-0.19%	-0.22%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.83%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	0.19%	0.00%	0.38%	--	0.02%	0.01%	--	0.02%
Kuwait*	--	6.82%	0.00%	0.15%	--	0.00%	0.00%	--	0.00%
Qatar*	--	3.44%	0.00%	0.22%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	19.01%	0.00%	0.76%	--	-0.09%	0.00%	--	-0.09%
South Africa*	-3.22%	12.07%	0.99%	1.05%	-0.16%	0.00%	0.00%	0.01%	-0.15%
Turkey*	--	-19.91%	0.00%	0.12%	--	0.02%	0.01%	--	0.03%
United Arab Emirates*	--	15.56%	0.00%	0.16%	--	-0.01%	0.00%	--	-0.01%
Totals									
Americas	-5.01%	5.67%	7.14%	8.80%	-0.83%	0.01%	-0.08%	0.16%	-0.75%
Europe	1.79%	4.02%	50.48%	40.16%	-1.03%	0.09%	-0.19%	-0.26%	-1.40%
Asia/Pacific	4.66%	2.53%	39.03%	48.16%	0.76%	0.08%	0.51%	-0.14%	1.21%
Other	-3.22%	10.15%	0.99%	2.87%	-0.39%	-0.08%	0.02%	0.26%	-0.20%
Cash	0.01%	--	2.36%	0.00%	0.00%	-0.16%	0.00%	0.00%	-0.16%
Total	**2.34%**	**3.62%**	**100.00%**	**100.00%**	**-1.49%**	**-0.06%**	**0.26%**	**0.00%**	**-1.28%**
Totals									
Developed	0.87%	4.04%	70.56%	68.93%	-2.29%	0.02%	0.05%	-0.05%	-2.28%
Emerging*	6.36%	2.69%	27.08%	31.07%	0.98%	0.09%	0.20%	-0.13%	1.15%
Cash	0.01%	--	2.36%	0.00%	0.00%	-0.16%	0.00%	0.00%	-0.16%



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	11.77		41.29		72.83		19.89		11.97		12.37		6.33		6.31	
25th Percentile	9.19		31.06		61.13		14.68		6.27		10.19		5.57		5.32	
Median	8.30		28.53		52.96		10.84		5.07		9.31		4.62		5.23	
75th Percentile	6.27		25.72		47.53		8.55		4.06		7.48		3.99		4.98	
95th Percentile	5.62		21.59		40.44		7.11		2.06		6.94		2.37		4.15	
# of Portfolios	19		19		19		19		19		19		17		12	
● Mondrian	6.52	(72)	27.19	(67)	47.04	(78)	8.33	(81)	4.65	(61)	7.63	(72)	4.28	(55)	5.17	(58)
▲ MSCI ACWI ex USA Gross	3.60	(99)	21.29	(96)	50.03	(61)	12.83	(36)	7.02	(16)	10.28	(25)	5.75	(7)	5.41	(10)
✕ MSCI ACWI ex USA Value Gross	7.20	(64)	29.18	(43)	49.52	(65)	7.17	(95)	3.02	(90)	7.89	(66)	3.20	(89)	3.62	(99)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	62	2,345
Weighted Avg. Market Cap. ($B)	48.7	102.8
Median Market Cap. ($B)	30.6	9.7
Price To Earnings	17.7	21.6
Price To Book	1.6	2.7
Price To Sales	0.9	1.5
Return on Equity (%)	0.9	10.4
Yield (%)	2.9	2.3
Beta	1.1	1.0

Top Holdings

CK HUTCHISON HOLDINGS LTD	3.8%
COMPAGNIE DE SAINT GOBAIN SA	3.5%
UNITED OVERSEAS BANK LTD	3.3%
HONDA MOTOR CO LTD	3.2%
SCOTTISH AND SOUTHERN ENERGY PLC	3.2%
LLOYDS BANKING GROUP PLC	3.2%
ALLIANZ	3.1%
SANOFI	3.1%
BANCO SANTANDER SA	3.1%
TAKEDA PHARMACEUTICAL CO LTD	3.1%

Best Performers

	Return %
COMPAGNIE DE SAINT GOBAIN SA	28.8%
SOCIETE GENERALE GROUP	25.8%
JARDINE MATHESON HOLDINGS LTD	19.0%
KINGFISHER PLC	18.8%
BP PLC	18.3%
ENI SPA	17.8%
LLOYDS BANKING GROUP PLC	17.8%
WPP PLC	16.1%
TRAVIS PERKINS PLC	15.5%
CK HUTCHISON HOLDINGS LTD	14.2%

Worst Performers

	Return %
NOVARTIS AG	-5.9%
TOKIO MARINE HOLDINGS INC	-5.7%
KONINKLIJKE AHOLD DELHAIZE NV	-1.4%
GLAXOSMITHKLINE PLC	-1.4%
OTSUKA HOLDINGS CO LTD	-1.0%
SCOTTISH AND SOUTHERN ENERGY PLC	-0.6%
TESCO PLC	-0.4%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	0.5%
ESSITY AKTIEBOLAG	0.7%
FUJITSU LTD	0.8%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects				Returns		Sector Weights	
	Total Effects	Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.43%	0.18%	0.16%	0.09%	14.10%	9.87%	7.58%	4.31%
Materials	0.16%	0.41%	-0.06%	-0.19%	8.46%	5.36%	3.04%	8.09%
Industrials	1.43%	0.97%	0.14%	0.32%	14.55%	5.14%	16.50%	11.55%
Consumer Discretionary	1.06%	1.50%	0.02%	-0.46%	9.91%	2.07%	13.05%	13.81%
Consumer Staples	0.75%	0.67%	0.16%	-0.08%	4.57%	-2.28%	4.64%	8.93%
Health Care	-0.09%	0.35%	-0.33%	-0.11%	-0.74%	-3.62%	14.13%	9.57%
Financials	0.28%	0.66%	-0.17%	-0.21%	10.95%	8.58%	14.73%	18.10%
Information Technology	0.48%	1.06%	0.00%	-0.59%	7.37%	3.45%	8.06%	12.71%
Communication Services	0.18%	0.24%	0.04%	-0.11%	7.70%	5.35%	8.62%	6.99%
Utilities	-0.12%	0.09%	-0.26%	0.05%	1.87%	-1.23%	8.45%	3.34%
Real Estate	0.12%	0.08%	0.00%	0.03%	10.09%	3.72%	1.20%	2.60%
Cash	0.00%	--	--	--	--	--	0.00%	0.00%
Portfolio	**4.61% =**	**6.21% +**	**-0.33% +**	**-1.27%**	**8.23%**	**3.62%**	**100.00%**	**100.00%**

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

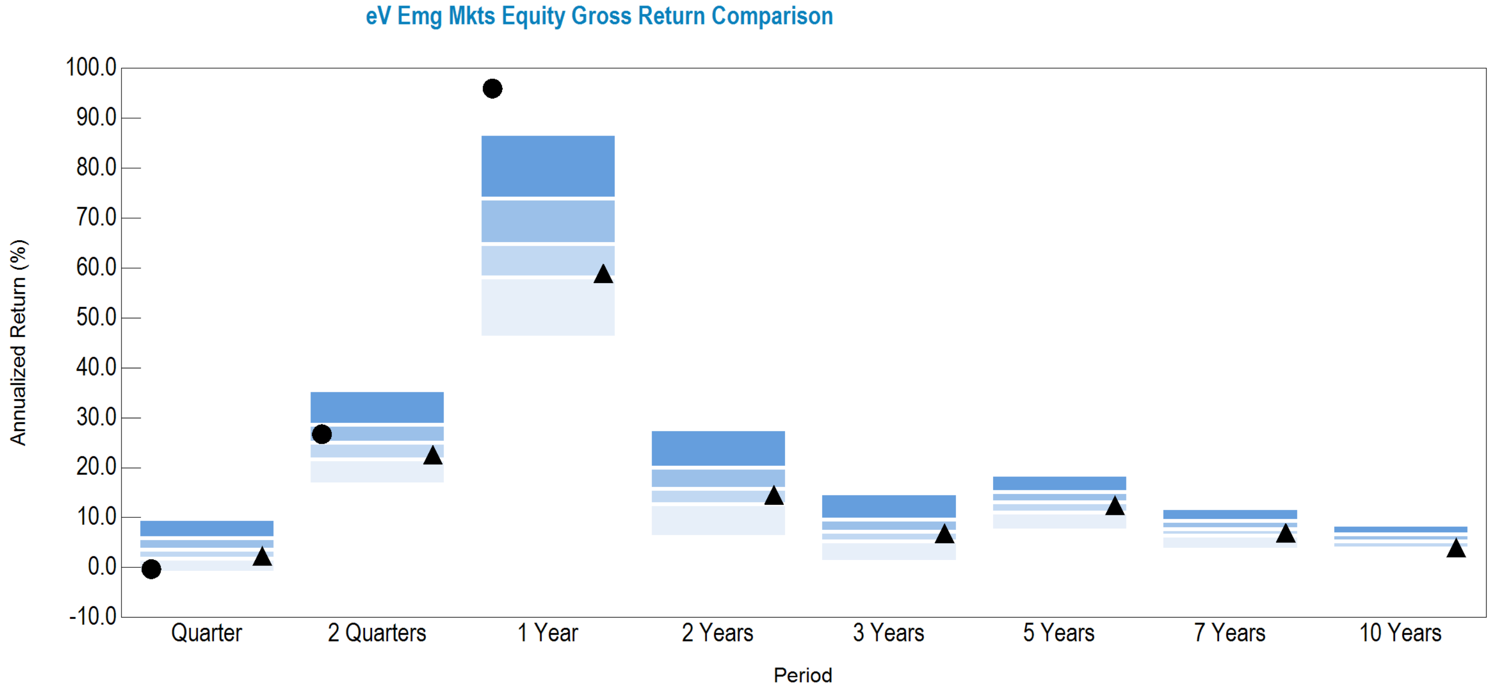
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	9.16%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Belgium	--	-2.61%	0.00%	0.62%	--	0.03%	0.02%	--	0.06%
Czech Republic*	--	5.46%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Denmark	7.72%	-2.88%	1.41%	1.58%	0.17%	0.01%	0.00%	-0.02%	0.17%
Finland	--	-0.94%	0.00%	0.66%	--	0.02%	0.03%	--	0.05%
France	16.92%	4.43%	8.63%	6.89%	0.90%	0.04%	-0.12%	0.23%	1.04%
Germany	8.46%	4.03%	3.07%	5.87%	0.28%	-0.04%	0.10%	-0.14%	0.21%
Greece*	--	1.39%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Hungary*	--	0.37%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Ireland	--	5.39%	0.00%	0.44%	--	-0.01%	0.02%	--	0.01%
Italy	7.57%	4.95%	5.06%	1.41%	0.04%	0.10%	-0.17%	0.10%	0.07%
Netherlands	9.05%	10.99%	1.67%	2.42%	-0.05%	-0.07%	0.03%	0.01%	-0.06%
Norway	--	11.44%	0.00%	0.37%	--	-0.02%	0.00%	--	-0.02%
Poland*	--	-7.21%	0.00%	0.21%	--	0.02%	0.01%	--	0.03%
Portugal	--	-4.38%	0.00%	0.11%	--	0.01%	0.00%	--	0.01%
Russia*	--	6.23%	0.00%	0.82%	--	-0.01%	0.02%	--	0.00%
Spain	9.34%	0.88%	5.00%	1.53%	0.14%	-0.05%	-0.17%	0.31%	0.22%
Sweden	4.89%	11.42%	2.65%	2.10%	-0.15%	0.06%	-0.03%	-0.04%	-0.15%
Switzerland	2.74%	-1.67%	6.22%	6.06%	0.28%	0.00%	-0.03%	0.01%	0.26%
United Kingdom	8.94%	6.14%	23.44%	8.82%	0.24%	-0.22%	0.14%	0.41%	0.58%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	11.25%	3.43%	1.05%	4.43%	0.35%	0.06%	0.05%	-0.27%	0.19%
China*	--	0.24%	0.00%	12.16%	--	0.76%	0.03%	--	0.78%
Hong Kong	14.19%	7.26%	3.79%	2.04%	0.14%	0.02%	-0.01%	0.12%	0.27%
India*	--	5.18%	0.00%	2.89%	--	0.04%	0.01%	--	0.04%
Indonesia*	--	-8.28%	0.00%	0.42%	--	0.05%	0.02%	--	0.06%
Japan	4.96%	1.57%	32.28%	15.90%	0.58%	0.36%	-1.27%	0.60%	0.26%
Korea*	--	1.61%	0.00%	4.21%	--	0.06%	0.15%	--	0.21%
Malaysia*	--	-5.75%	0.00%	0.47%	--	0.05%	0.01%	--	0.06%
New Zealand	--	-10.48%	0.00%	0.19%	--	0.03%	0.01%	--	0.03%
Pakistan*	--	0.58%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-10.45%	0.00%	0.23%	--	0.04%	0.00%	--	0.04%
Singapore	10.17%	8.75%	4.27%	0.66%	0.01%	0.14%	-0.07%	0.05%	0.14%
Taiwan*	--	11.07%	0.00%	3.99%	--	-0.24%	0.06%	--	-0.18%
Thailand*	--	4.57%	0.00%	0.57%	--	-0.01%	0.02%	--	0.01%
Americas									
Argentina*	--	-5.96%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Brazil*	--	-9.71%	0.00%	1.60%	--	0.13%	0.13%	--	0.26%
Canada	10.09%	9.82%	1.21%	6.33%	0.02%	-0.09%	-0.07%	-0.01%	-0.16%
Chile*	--	19.60%	0.00%	0.16%	--	-0.02%	0.00%	--	-0.02%
Colombia*	--	-17.25%	0.00%	0.06%	--	0.01%	0.00%	--	0.01%
Mexico*	--	4.05%	0.00%	0.54%	--	0.00%	0.02%	--	0.01%
Peru*	--	-10.58%	0.00%	0.08%	--	0.01%	0.00%	--	0.01%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.83%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
Israel	--	0.19%	0.00%	0.38%	--	0.02%	0.01%	--	0.02%
Kuwait*	--	6.82%	0.00%	0.15%	--	0.00%	0.00%	--	0.00%
Qatar*	--	3.44%	0.00%	0.22%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	19.01%	0.00%	0.76%	--	-0.09%	0.00%	--	-0.09%
South Africa*	--	12.07%	0.00%	1.05%	--	-0.07%	0.01%	--	-0.06%
Turkey*	--	-19.91%	0.00%	0.12%	--	0.02%	0.01%	--	0.03%
United Arab Emirates*	--	15.56%	0.00%	0.16%	--	-0.01%	0.00%	--	-0.01%
Totals									
Americas	10.09%	5.67%	1.21%	8.80%	0.21%	0.02%	0.08%	-0.18%	0.13%
Europe	9.14%	4.02%	57.15%	40.16%	1.72%	0.15%	-0.11%	0.73%	2.48%
Asia/Pacific	6.50%	2.53%	41.40%	48.16%	3.32%	0.06%	-0.99%	-0.47%	1.93%
Other	--	10.15%	0.00%	2.87%	--	-0.13%	0.03%	--	-0.10%
Cash	0.01%	--	0.24%	0.00%	0.00%	-0.02%	0.00%	0.00%	-0.02%
Total	**8.04%**	**3.62%**	**100.00%**	**100.00%**	**5.24%**	**0.09%**	**-1.00%**	**0.08%**	**4.42%**
Totals									
Developed	8.06%	4.04%	99.76%	68.93%	3.02%	0.33%	-1.51%	1.35%	3.20%
Emerging*	--	2.69%	0.00%	31.07%	--	0.73%	0.50%	--	1.24%
Cash	0.01%	--	0.24%	0.00%	0.00%	-0.02%	0.00%	0.00%	-0.02%



	Return (Rank)															
5th Percentile	9.71		35.46		86.85		27.63		14.85		18.48		11.82		8.46	
25th Percentile	5.95		28.71		74.01		20.13		9.68		15.17		9.47		6.69	
Median	3.60		25.07		64.83		15.87		7.28		13.12		7.74		5.26	
75th Percentile	1.89		21.76		58.22		12.71		5.33		11.14		6.45		3.93	
95th Percentile	-1.00		16.67		46.11		6.17		1.20		7.45		3.63		3.13	
# of Portfolios	382		382		382		369		352		318		269		191	
● Newton Emerging Mkt	-0.31	(93)	26.71	(36)	95.95	(3)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets Gross	2.34	(69)	22.58	(68)	58.92	(72)	14.60	(62)	6.87	(55)	12.48	(59)	6.97	(64)	4.02	(75)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	50	1,381
Weighted Avg. Market Cap. ($B)	139.9	176.6
Median Market Cap. ($B)	14.1	7.1
Price To Earnings	37.4	19.2
Price To Book	5.2	3.0
Price To Sales	3.4	1.6
Return on Equity (%)	16.2	12.0
Yield (%)	0.6	2.0

Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.7%
ALIBABA GROUP HOLDING LTD	5.0%
SAMSUNG SDI CO LTD	4.7%
AIA GROUP LTD	4.3%
HOUSING DEVELOPMENT FINANCE CORP LTD	4.3%
NEW ORIENTAL EDUCATION & TECHNOLOGY GROUP INC	3.9%
PROSUS ORD	3.6%
TENCENT HOLDINGS LTD	3.5%
INFO EDGE (INDIA) LTD	3.4%
ILJIN MATERIALS CO LTD	3.4%

Best Performers

	Return %
COMPAGNIE DE SAINT GOBAIN SA	28.8%
SOCIETE GENERALE GROUP	25.8%
JARDINE MATHESON HOLDINGS LTD	19.0%
KINGFISHER PLC	18.8%
BP PLC	18.3%
ENI SPA	17.8%
LLOYDS BANKING GROUP PLC	17.8%
WPP PLC	16.1%
TRAVIS PERKINS PLC	15.5%
CK HUTCHISON HOLDINGS LTD	14.2%

Worst Performers

	Return %
NOVARTIS AG	-5.9%
TOKIO MARINE HOLDINGS INC	-5.7%
KONINKLIJKE AHOLD DELHAIZE NV	-1.4%
GLAXOSMITHKLINE PLC	-1.4%
OTSUKA HOLDINGS CO LTD	-1.0%
SCOTTISH AND SOUTHERN ENERGY PLC	-0.6%
TESCO PLC	-0.4%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	0.5%
ESSITY AKTIEBOLAG	0.7%
FUJITSU LTD	0.8%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.06%		--	-0.05%	--	--	3.12%	0.00%	5.05%
Materials	-1.34%		-1.26%	0.22%	-0.30%	-4.93%	9.79%	10.09%	7.50%
Industrials	0.16%		0.34%	0.01%	-0.20%	12.13%	1.89%	0.67%	4.24%
Consumer Discretionary	-1.57%		-0.52%	-0.72%	-0.33%	-5.68%	-3.06%	29.25%	18.40%
Consumer Staples	0.16%		-0.21%	0.15%	0.22%	-5.33%	-1.75%	1.99%	5.81%
Health Care	0.47%		1.11%	0.32%	-0.96%	20.08%	-4.37%	0.38%	4.76%
Financials	-0.75%		-1.28%	-0.03%	0.56%	-2.19%	3.45%	13.96%	18.08%
Information Technology	-1.03%		-0.82%	0.22%	-0.43%	1.20%	4.93%	29.06%	20.62%
Communication Services	-0.52%		-0.59%	0.05%	0.02%	2.49%	6.83%	12.95%	11.44%
Utilities	0.05%		--	0.01%	--	--	1.86%	0.00%	2.03%
Real Estate	-0.04%		--	-0.06%	--	--	6.35%	0.00%	2.07%
Cash	0.00%		--	--	--	--	--	0.00%	0.00%
Unclassified	0.19%		0.00%	0.19%	0.00%	15.90%	--	1.65%	0.00%
Portfolio	**-4.17%**	**=**	**-3.22%**	**+ 0.30%**	**+ -1.24%**	**-1.48%**	**2.69%**	**100.00%**	**100.00%**

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

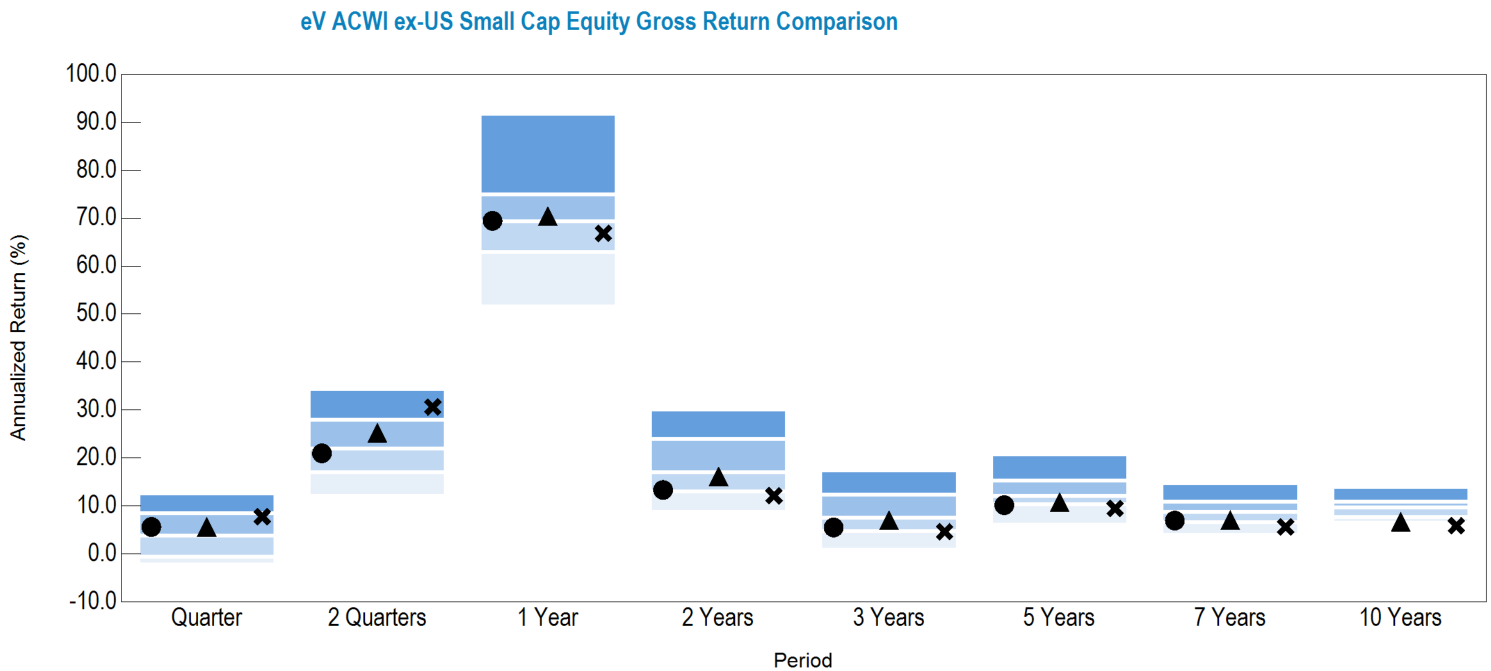
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Czech Republic*	--	5.46%	0.00%	0.10%	--	0.00%	0.00%	--	0.00%
Greece*	--	1.39%	0.00%	0.11%	--	0.00%	0.00%	--	0.00%
Hungary*	--	0.37%	0.00%	0.21%	--	0.00%	0.01%	--	0.01%
Luxembourg	-4.60%	2.69%	2.59%	0.00%	0.00%	0.00%	0.00%	-0.23%	-0.23%
Netherlands	10.41%	11.19%	4.12%	0.00%	0.00%	0.47%	-0.19%	-0.03%	0.25%
Poland*	--	-7.21%	0.00%	0.68%	--	0.04%	0.04%	--	0.08%
Russia*	12.13%	6.23%	0.67%	2.64%	0.10%	-0.08%	0.05%	-0.08%	0.00%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	8.03%	3.43%	2.15%	0.00%	0.00%	0.01%	-0.03%	0.10%	0.08%
China*	-6.17%	0.24%	35.17%	39.13%	-2.53%	0.15%	0.02%	0.26%	-2.09%
Hong Kong	-1.01%	7.26%	4.46%	0.00%	0.00%	0.14%	-0.01%	-0.37%	-0.24%
India*	-3.51%	5.18%	23.12%	9.31%	-0.81%	0.15%	-0.02%	-1.20%	-1.89%
Indonesia*	-17.87%	-8.28%	1.21%	1.35%	-0.13%	0.01%	0.01%	0.01%	-0.10%
Korea*	9.56%	1.61%	8.68%	13.55%	1.12%	-0.05%	0.15%	-0.40%	0.82%
Malaysia*	--	-5.75%	0.00%	1.52%	--	0.11%	0.04%	--	0.15%
Pakistan*	--	0.58%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-10.45%	0.00%	0.74%	--	0.10%	0.01%	--	0.11%
Taiwan*	9.32%	11.07%	6.05%	12.84%	-0.23%	-0.57%	0.11%	0.12%	-0.56%
Thailand*	--	4.57%	0.00%	1.83%	--	-0.08%	0.08%	--	0.00%
Americas									
Argentina*	-12.12%	-5.96%	2.02%	0.12%	-0.01%	-0.20%	0.00%	-0.12%	-0.32%
Brazil*	-28.60%	-9.71%	0.40%	5.14%	-1.38%	0.29%	0.41%	1.27%	0.59%
Chile*	8.11%	19.60%	1.37%	0.51%	-0.07%	0.15%	0.01%	-0.11%	-0.03%
Colombia*	--	-17.25%	0.00%	0.20%	--	0.03%	0.01%	--	0.04%
Mexico*	--	4.05%	0.00%	1.74%	--	-0.04%	0.05%	--	0.00%
Peru*	--	-10.58%	0.00%	0.25%	--	0.04%	0.00%	--	0.04%
United States	3.38%	5.37%	6.22%	0.00%	0.00%	0.07%	0.00%	-0.12%	-0.06%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.83%	0.00%	0.08%	--	0.01%	0.00%	--	0.01%
Kuwait*	--	6.82%	0.00%	0.49%	--	-0.01%	0.00%	--	-0.01%
Qatar*	--	3.44%	0.00%	0.70%	--	0.01%	0.00%	--	0.01%
Saudi Arabia*	--	19.01%	0.00%	2.46%	--	-0.36%	0.00%	--	-0.36%
South Africa*	-8.98%	12.07%	1.76%	3.37%	-0.72%	-0.14%	0.02%	0.34%	-0.50%
Turkey*	--	-19.91%	0.00%	0.38%	--	0.06%	0.03%	--	0.09%
United Arab Emirates*	--	15.56%	0.00%	0.53%	--	-0.06%	0.00%	--	-0.06%
Totals									
Americas	-0.36%	-4.98%	10.02%	7.95%	-0.11%	-0.07%	0.48%	-0.03%	0.27%
Europe	5.31%	3.30%	7.38%	3.74%	0.07%	0.07%	-0.09%	0.06%	0.11%
Asia/Pacific	-2.07%	2.52%	80.84%	80.29%	-4.05%	0.00%	0.35%	-0.03%	-3.72%
Other	-8.98%	11.69%	1.76%	8.02%	-1.66%	-0.51%	0.05%	1.29%	-0.83%
Total	**-1.48%**	**2.69%**	**100.00%**	**100.00%**	**-5.75%**	**-0.51%**	**0.79%**	**1.30%**	**-4.17%**
Totals									
Developed	3.31%	--	19.53%	0.00%	0.00%	0.00%	-0.24%	0.04%	-0.20%
Emerging*	-2.64%	2.69%	80.47%	100.00%	-6.22%	0.00%	1.03%	1.21%	-3.97%



	Return (Rank)															
5th Percentile	12.50		34.29		91.66		30.02		17.33		20.71		14.69		13.83	
25th Percentile	8.58		28.00		75.07		24.06		12.37		15.42		10.97		10.91	
Median	3.85		22.06		69.38		17.06		7.64		12.14		8.83		9.77	
75th Percentile	-0.46		17.16		63.01		13.14		4.86		10.38		6.65		7.77	
95th Percentile	-2.05		12.19		51.63		8.84		0.90		6.21		3.97		6.60	
# of Portfolios	56		56		56		54		51		47		37		23	
● Templeton	5.62	(43)	20.97	(56)	69.45	(50)	13.33	(74)	5.50	(71)	10.16	(80)	6.95	(74)	--	(--)
▲ MSCI ACWI ex US Small Cap Gross	5.61	(43)	25.29	(36)	70.42	(43)	16.15	(64)	7.02	(55)	10.82	(67)	7.07	(73)	6.71	(94)
✕ MSCI ACWI ex US Small Cap Value GD	7.76	(32)	30.64	(11)	66.83	(62)	12.13	(87)	4.63	(77)	9.48	(87)	5.63	(85)	5.88	(99)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	109	4,205
Weighted Avg. Market Cap. ($B)	3.0	2.9
Median Market Cap. ($B)	1.7	1.1
Price To Earnings	19.9	19.8
Price To Book	2.5	2.4
Price To Sales	1.4	1.1
Return on Equity (%)	9.3	6.5
Yield (%)	1.9	1.9
Beta	1.0	1.0

Top Holdings

BUCHER INDUSTRIES AG, NIEDERWENINGEN	2.0%
INTERPUMP GROUP SPA, SANT'ILARIO (RE)	2.0%
SIEGFRIED HOLDING AG, ZOFINGEN	1.9%
MERIDA INDUSTRY	1.9%
TSUMURA & CO	1.9%
TECHNOGYM SPA	1.8%
THULE GROUP AB	1.7%
DOMETIC GROUP AB	1.7%
MEITEC CORP	1.6%
HUHTAMAKI OY	1.6%

Best Performers

	Return %
ACCELL GROUP (H:ACCE)	46.1%
MERIDA INDUSTRY (TW:MER)	45.8%
SHIMA SEIKI MNFG. (J:SHMA)	37.6%
GOODBABY INTERNATIONAL HOLDINGS LTD	35.8%
CANADA GOOSE HOLDINGS INC (GOOS.)	32.1%
QOL HOLDINGS CO LTD	30.2%
VALUE PARTNERS GROUP LTD	28.7%
PRIMAX ELECTRONICS LTD	28.6%
GREGGS PLC	26.5%
FLOW TRADERS NV	26.4%

Worst Performers

	Return %
PT XL AXIATA TBK	-26.8%
KOBAYASHI PHARMACEUTICAL CO LTD	-23.6%
ALPARGATAS SA	-19.4%
M DIAS BRANCO INDUSTRIA ON (BR:MDB)	-17.2%
ASICS CORP	-16.8%
NISSEI ASB MACHINE CO LTD	-16.7%
RATIONAL AG, LANDSBERG AM LECH	-16.5%
GREATVIEW ASEPTIC PACKAGING CO LTD	-14.8%
HOLLYSYS AUTOMATION TECHNOLOGIES LTD (HOLI)	-14.8%
COATS GROUP PLC	-14.7%

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

	Attribution Effects									Returns		Sector Weights	
	Total Effects		Selection Effect		Allocation Effect		Currency Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.05%		0.16%		-0.05%		0.05%		-0.11%	20.35%	10.07%	0.69%	2.24%
Materials	-0.36%		-0.68%		0.00%		0.04%		0.29%	-1.91%	5.89%	6.31%	10.95%
Industrials	-0.78%		-0.30%		0.09%		-0.52%		-0.05%	4.37%	7.49%	23.88%	20.57%
Consumer Discretionary	0.50%		0.23%		0.46%		-0.42%		0.22%	11.02%	9.20%	23.95%	12.20%
Consumer Staples	-0.42%		-0.07%		-0.04%		-0.28%		-0.04%	0.63%	3.65%	8.78%	5.66%
Health Care	0.79%		0.99%		0.11%		-0.11%		-0.21%	8.47%	-1.73%	6.13%	7.73%
Financials	0.21%		0.05%		0.01%		0.14%		0.00%	12.21%	10.25%	10.38%	10.24%
Information Technology	0.13%		0.01%		-0.01%		0.13%		0.00%	5.19%	3.91%	12.77%	12.12%
Communication Services	-0.17%		-0.33%		0.04%		0.00%		0.13%	-7.19%	2.82%	2.59%	4.18%
Utilities	0.25%		--		0.16%		0.10%		--	--	1.47%	0.00%	3.51%
Real Estate	0.82%		0.65%		0.48%		0.30%		-0.62%	2.70%	0.67%	0.51%	10.59%
Cash	-0.35%		0.00%		-0.35%		0.00%		0.00%	0.01%	--	4.00%	0.00%
Portfolio	**0.66%**	**=**	**0.71%**	**+**	**0.91%**	**+**	**-0.57%**	**+**	**-0.38%**	**6.03%**	**5.37%**	**100.00%**	**100.00%**

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

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	10.27%	0.00%	0.64%	--	-0.04%	0.03%	--	-0.01%
Belgium	6.66%	1.48%	2.48%	1.07%	0.06%	-0.04%	-0.07%	0.08%	0.03%
Czech Republic*	--	1.29%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Denmark	-7.65%	2.58%	0.68%	1.17%	-0.12%	0.01%	0.02%	0.05%	-0.04%
Finland	-5.44%	6.09%	2.87%	1.19%	-0.14%	0.03%	-0.06%	-0.20%	-0.37%
France	14.31%	2.95%	2.72%	2.27%	0.27%	-0.01%	-0.03%	0.05%	0.28%
Germany	-9.86%	2.20%	3.47%	3.61%	-0.45%	0.00%	0.02%	0.02%	-0.41%
Greece*	5.54%	4.40%	0.57%	0.32%	0.00%	0.00%	-0.01%	0.00%	0.00%
Hungary*	--	-1.29%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Ireland	--	15.25%	0.00%	0.35%	--	-0.04%	0.02%	--	-0.02%
Italy	2.43%	9.04%	5.40%	1.96%	-0.14%	0.17%	-0.14%	-0.24%	-0.34%
Luxembourg	0.56%	5.37%	1.47%	0.00%	0.00%	0.00%	-0.06%	-0.06%	-0.12%
Netherlands	19.61%	16.92%	5.05%	1.89%	0.06%	0.40%	-0.17%	0.10%	0.40%
Norway	24.55%	7.04%	0.51%	1.62%	0.28%	0.02%	0.00%	-0.19%	0.11%
Poland*	--	0.57%	0.00%	0.29%	--	0.01%	0.02%	--	0.02%
Portugal	--	3.30%	0.00%	0.16%	--	0.00%	0.01%	--	0.01%
Russia*	--	5.54%	0.00%	0.20%	--	0.00%	0.00%	--	0.01%
Spain	-2.45%	7.83%	0.94%	1.44%	-0.15%	-0.02%	0.03%	0.05%	-0.09%
Sweden	9.96%	0.40%	6.11%	5.37%	0.55%	-0.02%	-0.08%	0.08%	0.52%
Switzerland	9.83%	1.79%	6.78%	3.74%	0.25%	-0.01%	-0.12%	0.21%	0.34%
United Kingdom	7.50%	6.98%	7.18%	12.48%	0.19%	0.14%	-0.12%	-0.08%	0.13%

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

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	--	1.26%	0.00%	6.35%	--	0.38%	0.09%	--	0.47%
China*	1.21%	11.49%	4.09%	2.30%	-0.24%	0.05%	0.00%	-0.18%	-0.37%
Hong Kong	18.45%	19.94%	4.14%	1.32%	-0.02%	0.33%	-0.01%	-0.04%	0.26%
India*	--	15.90%	0.00%	3.63%	--	-0.27%	0.01%	--	-0.26%
Indonesia*	-26.78%	-5.14%	0.80%	0.48%	-0.11%	-0.03%	-0.01%	-0.07%	-0.22%
Japan	0.41%	3.36%	23.22%	20.40%	-0.65%	0.06%	-0.16%	-0.09%	-0.84%
Korea*	18.20%	2.32%	1.56%	4.35%	0.72%	0.07%	0.09%	-0.46%	0.43%
Malaysia*	--	2.31%	0.00%	0.77%	--	0.03%	0.02%	--	0.05%
New Zealand	--	-5.25%	0.00%	0.75%	--	0.08%	0.02%	--	0.10%
Pakistan*	--	6.98%	0.00%	0.11%	--	0.01%	-0.01%	--	0.00%
Philippines*	--	-5.95%	0.00%	0.20%	--	0.03%	0.00%	--	0.03%
Singapore	--	4.42%	0.00%	1.27%	--	0.03%	0.02%	--	0.05%
Taiwan*	22.94%	9.94%	8.02%	4.89%	0.64%	0.09%	-0.06%	0.41%	1.08%
Thailand*	--	14.69%	0.00%	0.81%	--	-0.09%	0.04%	--	-0.05%
Americas									
Argentina*	--	-1.79%	0.00%	0.14%	--	0.01%	0.00%	--	0.01%
Brazil*	-16.67%	-7.60%	2.50%	1.55%	-0.15%	-0.08%	-0.06%	-0.09%	-0.38%
Canada	13.92%	9.08%	4.72%	6.25%	0.30%	0.02%	-0.02%	-0.07%	0.22%
Chile*	--	9.09%	0.00%	0.22%	--	0.00%	0.00%	--	0.00%
Colombia*	--	-16.41%	0.00%	0.07%	--	0.01%	0.00%	--	0.02%
Mexico*	--	-0.39%	0.00%	0.46%	--	0.03%	0.01%	--	0.04%
Peru*	--	-7.57%	0.00%	0.03%	--	0.00%	0.00%	--	0.00%
United States	-8.07%	5.37%	0.65%	0.00%	0.00%	-0.02%	0.00%	-0.09%	-0.11%

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

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.34%	0.00%	0.07%	--	0.01%	0.00%	--	0.01%
Israel	--	3.69%	0.00%	1.61%	--	0.03%	0.05%	--	0.08%
Kuwait*	--	7.60%	0.00%	0.17%	--	0.00%	0.00%	--	0.00%
Qatar*	--	7.47%	0.00%	0.20%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	9.82%	0.00%	0.55%	--	-0.01%	0.00%	--	-0.01%
South Africa*	--	15.11%	0.00%	0.76%	--	-0.06%	0.01%	--	-0.05%
Turkey*	--	-4.86%	0.00%	0.36%	--	0.01%	0.04%	--	0.05%
United Arab Emirates*	--	1.94%	0.00%	0.13%	--	0.01%	0.00%	--	0.01%
Totals									
Americas	2.39%	5.17%	7.87%	8.72%	-0.17%	0.02%	-0.06%	0.02%	-0.19%
Europe	6.67%	5.27%	46.22%	39.79%	1.02%	-0.03%	-0.73%	0.16%	0.43%
Asia/Pacific	6.74%	5.42%	41.83%	47.64%	0.85%	-0.05%	0.05%	-0.10%	0.74%
Other	--	6.22%	0.00%	3.85%	--	0.00%	0.10%	--	0.09%
Cash	0.01%	--	4.07%	0.00%	0.00%	-0.35%	0.00%	0.00%	-0.35%
Total	**6.09%**	**5.37%**	**100.00%**	**100.00%**	**1.69%**	**-0.41%**	**-0.64%**	**0.08%**	**0.72%**
Totals									
Developed	5.76%	4.87%	78.39%	76.91%	1.36%	0.00%	-0.74%	0.03%	0.64%
Emerging*	8.97%	7.04%	17.54%	23.09%	0.49%	-0.04%	0.10%	-0.12%	0.43%
Cash	0.01%	--	4.07%	0.00%	0.00%	-0.35%	0.00%	0.00%	-0.35%

Interest rate environment

— Ten-year U.S. Treasury yields moved sharply higher, rising from 0.91% to 1.74%. Higher interest rates and tighter financial conditions create concerns for currently above-average risk asset prices, and for the economic recovery more broadly.

— Bond yields around the world rose in tandem with the United States, though the yield of shorter-dated bonds and cash remained anchored near zero. Rising bond yields at longer tenors and relatively steady movement in short tenor yields resulted in yield curve steepening in many countries.

— The spike in global interest rates tested the standing policies at a number of major central banks. The Reserve Bank of Australia was forced to step in to defend its 3-year bond yield target, the Bank of Japan widened the target band for its 10-year bond yield, and the ECB tweaked its asset purchase program to allow for more flexible purchases.

— The Federal Reserve maintained an accommodative tone and signaled it will continue to provide support until substantial progress has been made in the labor market and the pandemic is clearly in the rear-view mirror. On balance, the Fed remains of the view that any pickup in inflation over the next few months is likely to be transitory.

— Breakeven inflation rates surged as reflation bets continued to mount. The five-year breakeven inflation rate closed the quarter at 2.6%, its highest level since 2008.

— Credit spreads compressed to near decade-tights as demand for higher-yielding bonds remained high, and concerns over a wave of pandemic-driven defaults abated.

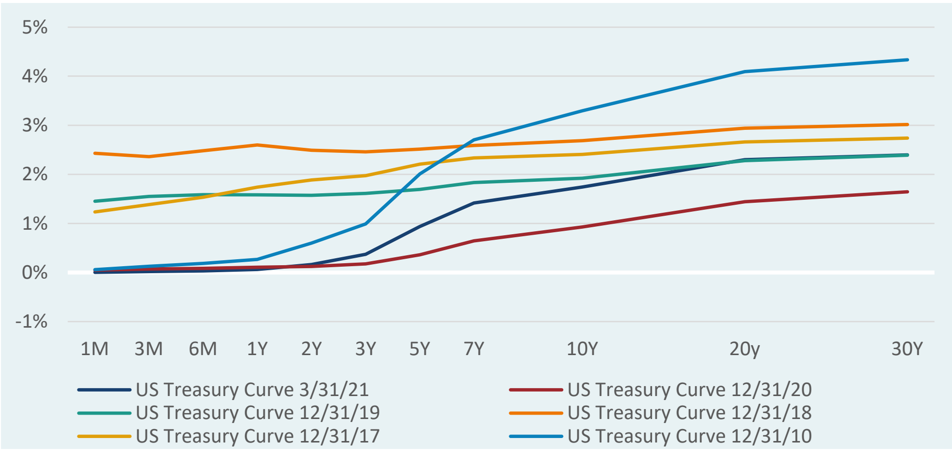
— Long-duration Treasuries posted their worst quarter since Q1 of 1980. The Bloomberg Barclays U.S. Long Treasury Index delivered a total return of -13.5%.

Area	Short Term (3M)	10-Year
United States	0.02%	1.74%
Germany	(0.67%)	(0.29%)
France	(0.62%)	(0.05%)
Spain	(0.56%)	0.34%
Italy	(0.54%)	0.67%
Greece	(0.24%)	0.86%
U.K.	(0.01%)	0.85%
Japan	(0.11%)	0.09%
Australia	0.00%	1.79%
China	2.28%	3.19%
Brazil	3.32%	9.28%
Russia	4.70%	7.00%

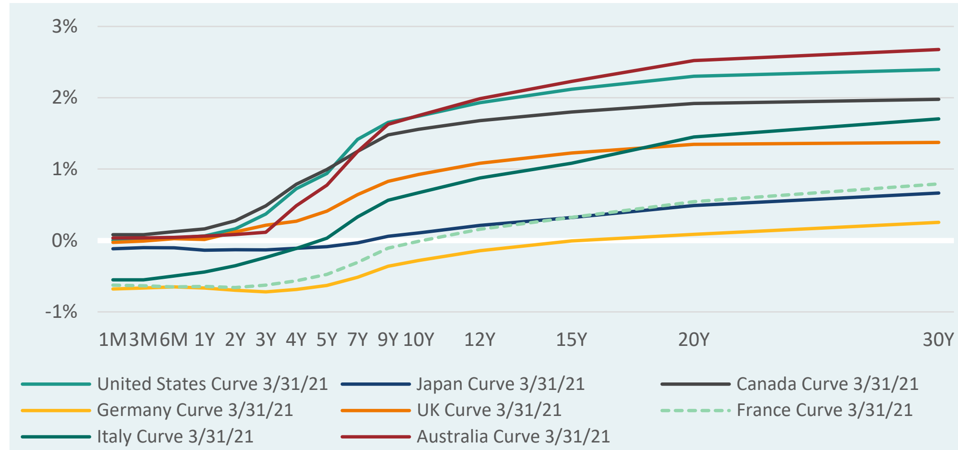
Source: Bloomberg, as of 3/31/21

Yield environment

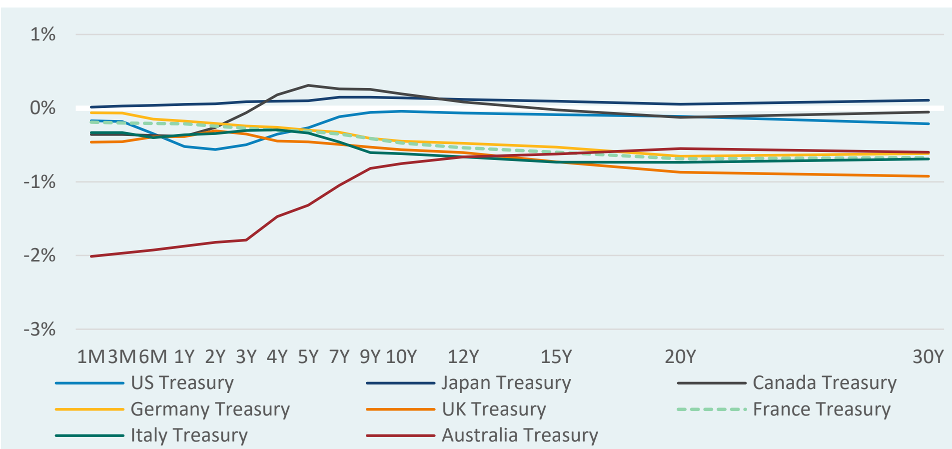
U.S. YIELD CURVE



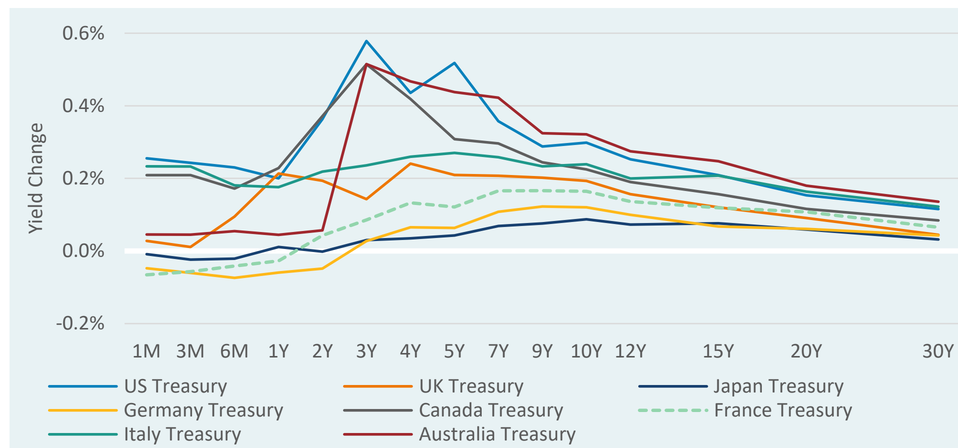
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 3/31/21

Currency

U.S. dollar weakness had prevailed for most of 2020, but turned around in the first quarter of 2021. The Bloomberg Dollar Spot Index increased 2.8% over the quarter, after slipping -5.4% in 2020. Strength in the dollar was attributed to rising relative yields in the U.S., the relatively effective vaccination campaign, and speculation that a series of fiscal support packages might fuel supernormal growth over the next few years.

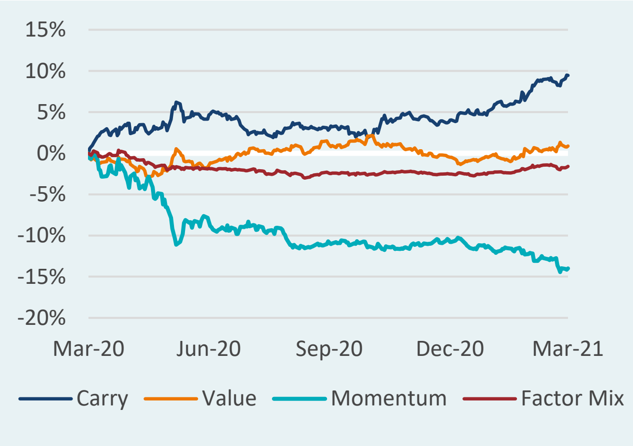
Currency beta returns, or the returns of a long-short portfolio of G10 currencies constructed by investing in three equally-weighted factors (carry, value, momentum), remained negative over the trailing year. Rotations back into the U.S. dollar and out of the euro and yen supported performance for the carry factor while detracting from the performance of the currency momentum factor.

International developed currencies fared poorly, pressured by risk-on sentiment, a lackluster European vaccination effort, and concerns expressed by the European Central Bank about rising global interest rates. The embedded currency portfolio of the MSCI EAFE Index returned -4.1%, as the yen (-6.7%) and euro (-4.0%) weakened relative to the U.S. dollar. Emerging market currencies (-3.1%) softened, driven by declines in the Brazilian real (-7.8%) and Turkish lira (-9.9%).

BLOOMBERG DOLLAR SPOT INDEX

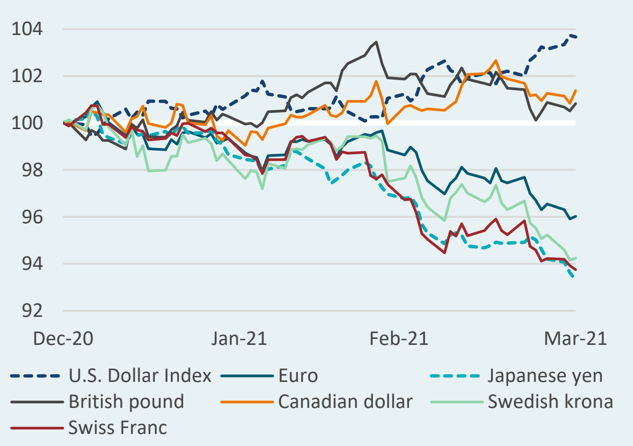
Source: Bloomberg, as of 3/31/21

CURRENCY BETA (ONE-YEAR RETURNS)

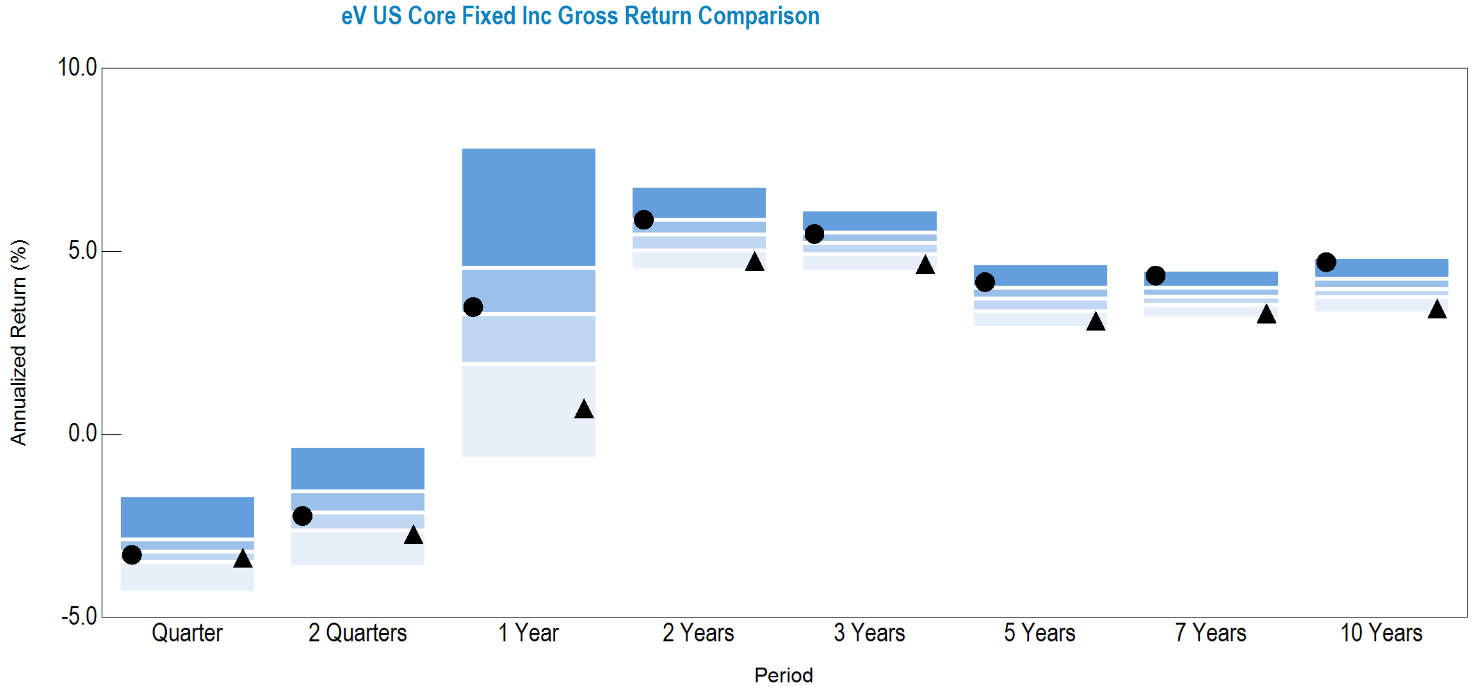


Source: MSCI, Bloomberg, as of 3/31/21

U.S. DOLLAR INDEX CONSTITUENTS

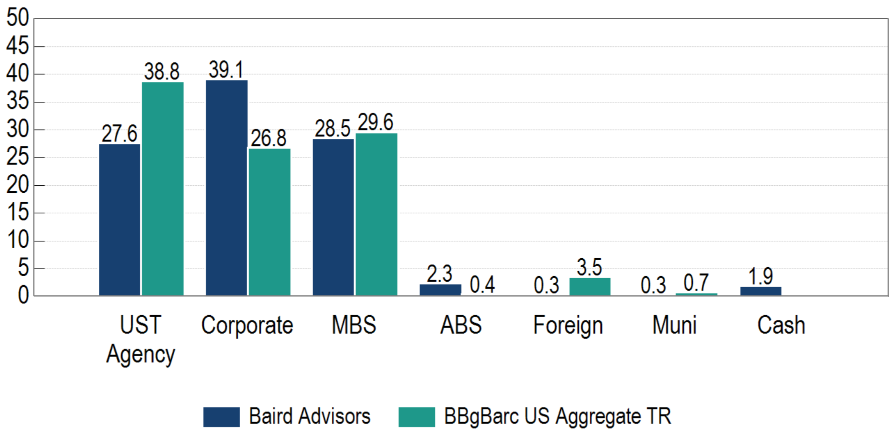


Source: Bloomberg, as of 3/31/21

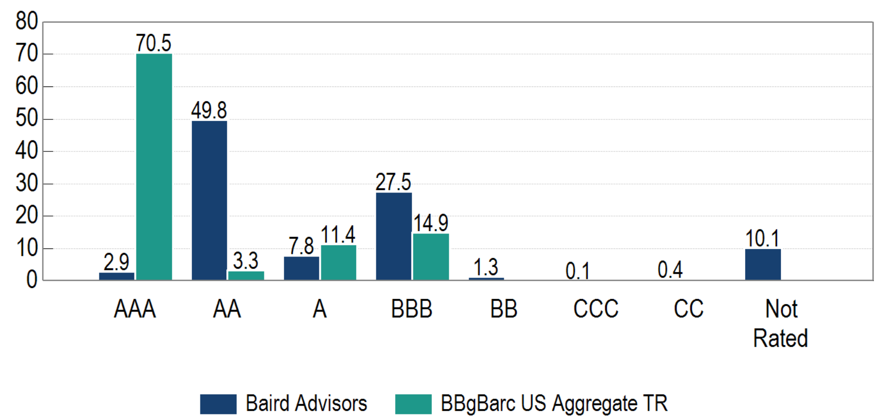


	Return (Rank)															
5th Percentile	-1.67		-0.33		7.86		6.79		6.13		4.67		4.49		4.84	
25th Percentile	-2.86		-1.55		4.57		5.88		5.52		4.02		4.01		4.26	
Median	-3.19		-2.12		3.30		5.48		5.24		3.72		3.77		3.98	
75th Percentile	-3.48		-2.62		1.93		5.03		4.93		3.38		3.55		3.76	
95th Percentile	-4.31		-3.61		-0.65		4.50		4.46		2.92		3.17		3.33	
# of Portfolios	217		217		217		215		213		210		206		200	
● Baird Advisors	-3.29	(61)	-2.23	(57)	3.48	(47)	5.86	(26)	5.48	(28)	4.16	(17)	4.34	(9)	4.71	(7)
▲ BBgBarc US Aggregate TR	-3.37	(66)	-2.73	(79)	0.71	(91)	4.74	(88)	4.65	(90)	3.10	(91)	3.31	(92)	3.44	(93)

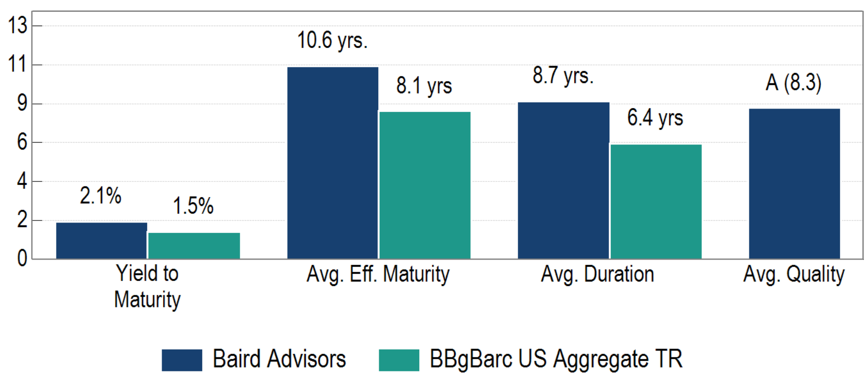
US Sector Allocation
Baird Advisors



Credit Quality Allocation
Baird Advisors



Characteristics
Baird Advisors

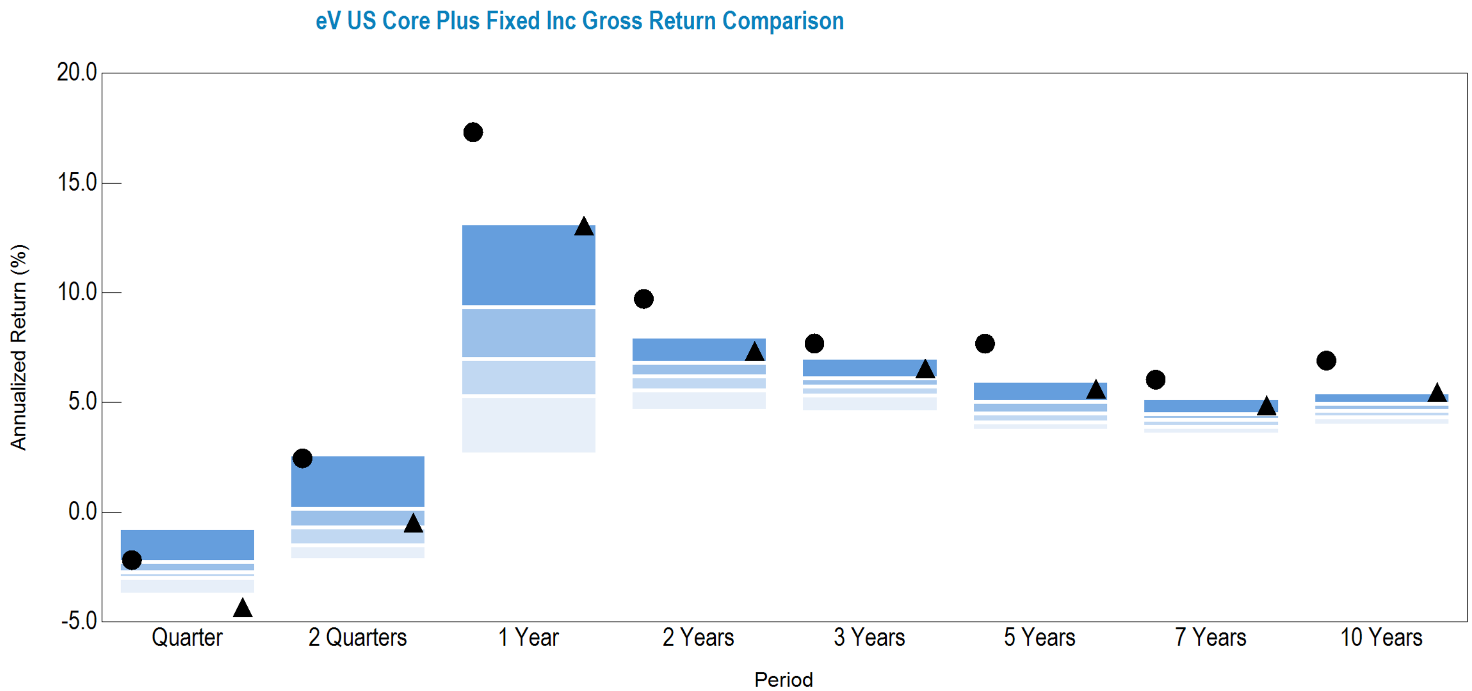


PERFORMANCE BY QUALITY

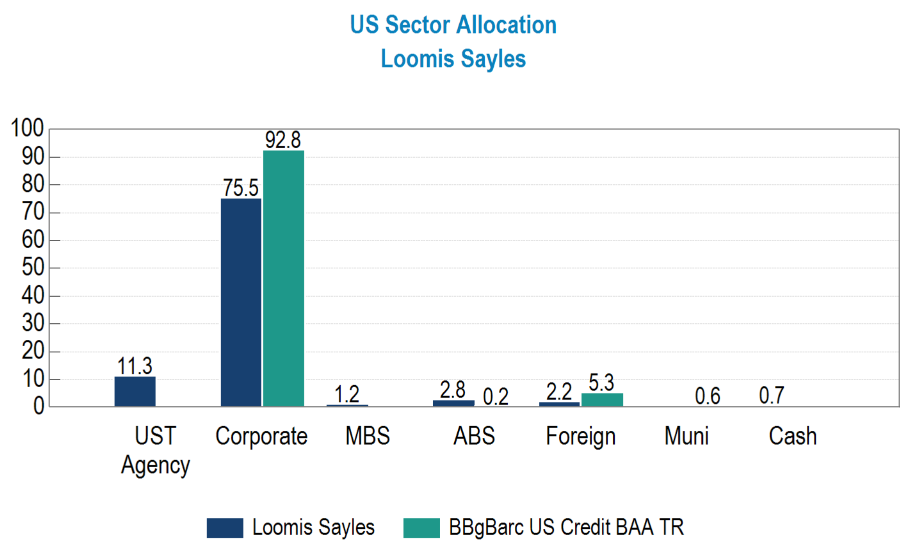
	NUMBER OF ISSUES	FINAL MARKET VALUE ($000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Cash & Equiv	1	16,243	1.9	0.02	0.00
Govt & Agency	127	426,595	49.9	-3.72	-1.86
AAA	28	65,827	7.7	-3.40	-0.26
AA	7	4,275	0.5	-7.99	-0.04
A	38	93,184	10.9	-3.15	-0.34
BAA	98	229,968	26.9	-3.01	-0.81
Below BAA	15	18,808	2.2	1.45	0.03
Other	0	-	0.0	0.00	0.00
Total Account	**314**	**$854,900**	**100.0**	**-3.28**	**-3.28**

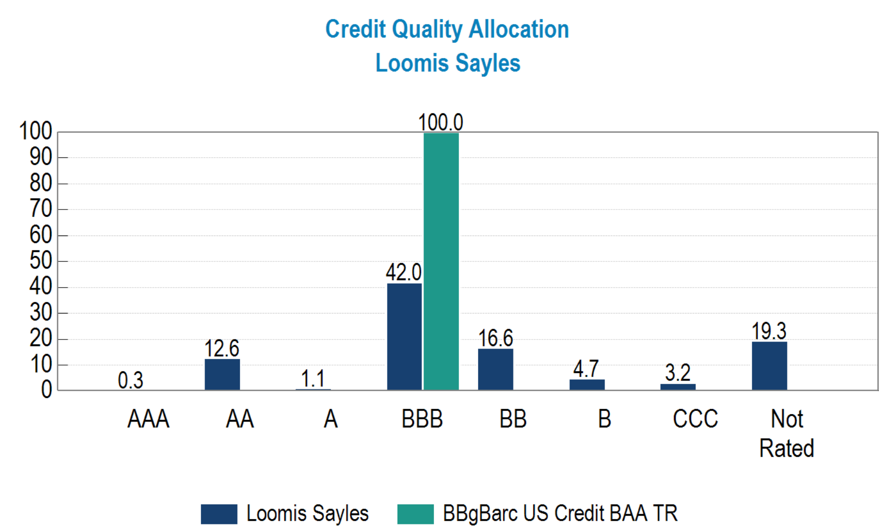
PERFORMANCE BY DURATION

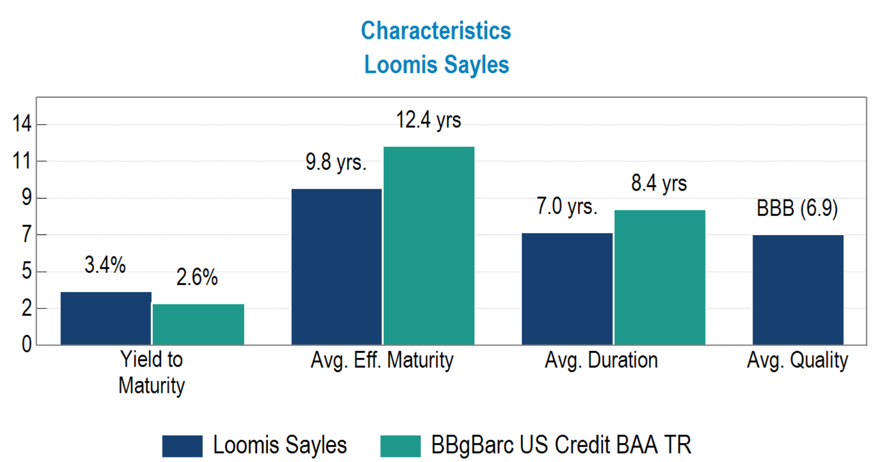
	NUMBER OF ISSUES	FINAL MARKET VALUE ($000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Under 1 Year	20	39,325	4.6	-0.01	0.00
1 - 3 Years	85	230,823	27.0	-0.05	-0.01
3 - 6 Years	124	265,874	31.1	-1.06	-0.33
Over 6 Years	85	318,878	37.3	-7.87	-2.94
Total Account	**314**	**$854,900**	**100.0**	**-3.28**	**-3.28**



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-0.73		2.62		13.17		7.98		7.04		5.97		5.19		5.45	
25th Percentile	-2.26		0.18		9.35		6.83		6.13		5.04		4.50		4.97	
Median	-2.71		-0.68		7.00		6.20		5.73		4.52		4.21		4.62	
75th Percentile	-2.98		-1.48		5.31		5.58		5.34		4.12		3.91		4.34	
95th Percentile	-3.73		-2.15		2.66		4.64		4.57		3.73		3.55		3.95	
# of Portfolios	126		126		126		124		120		117		110		104	
● Loomis Sayles	-2.18	(23)	2.46	(6)	17.31	(2)	9.72	(2)	7.69	(3)	7.68	(1)	6.04	(1)	6.91	(1)
▲ BBgBarc US Credit BAA TR	-4.32	(98)	-0.46	(42)	13.06	(6)	7.34	(14)	6.55	(10)	5.63	(10)	4.87	(9)	5.47	(5)


US Sector Allocation
Loomis Sayles
100
90
80
70
60
50
40
30
20
10
0
11.3
75.5
92.8
1.2
2.8
0.2
2.2
5.3
0.6
0.7
UST Agency
Corporate
MBS
ABS
Foreign
Muni
Cash
Loomis Sayles
BBgBarc US Credit BAA TR


Credit Quality Allocation
Loomis Sayles
100
90
80
70
60
50
40
30
20
10
0
0.3
12.6
1.1
42.0
100.0
16.6
4.7
3.2
19.3
AAA
AA
A
BBB
BB
B
CCC
Not Rated
Loomis Sayles
BBgBarc US Credit BAA TR


Characteristics
Loomis Sayles
14
11
9
7
5
2
0
3.4%
2.6%
9.8 yrs.
12.4 yrs
7.0 yrs.
8.4 yrs
BBB (6.9)
Yield to Maturity
Avg. Eff. Maturity
Avg. Duration
Avg. Quality
Loomis Sayles
BBgBarc US Credit BAA TR

Summary

Account Return	-2.12
Benchmark Return	-4.31
Excess Return	2.20
Sector Allocation	0.00
Security Selection	2.26
Trading	-0.06
Pricing Differences	0.00
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	-2.06	-4.32	-2.06	-4.32	0.00	2.26	2.26	2.26
CASH	3.57	0.00	0.11	-4.32	0.00	0.00	0.00	0.19	0.19	0.19
AAA	10.97	0.00	-2.67	-4.32	-0.34	0.00	0.00	0.08	0.08	0.08
AA	0.93	0.00	-0.86	-4.32	-0.01	0.00	0.00	0.04	0.04	0.04
A	5.65	0.00	-2.86	-4.32	-0.18	0.00	0.00	0.10	0.10	0.10
BAA	43.62	100.00	-3.70	-4.32	-1.64	-4.32	0.00	0.27	0.27	0.27
BA	19.73	0.00	-0.72	-4.32	-0.15	0.00	0.00	0.70	0.70	0.70
B	5.08	0.00	1.38	-4.32	0.06	0.00	0.00	0.28	0.28	0.28
CAA	4.44	0.00	0.65	-4.32	0.02	0.00	0.00	0.21	0.21	0.21
CA	0.07	0.00	36.12	-4.32	0.04	0.00	0.00	0.04	0.04	0.04
C	0.13	0.00	16.09	-4.32	0.02	0.00	0.00	0.02	0.02	0.02
NR	5.80	0.00	2.14	-4.32	0.10	0.00	0.00	0.32	0.32	0.32

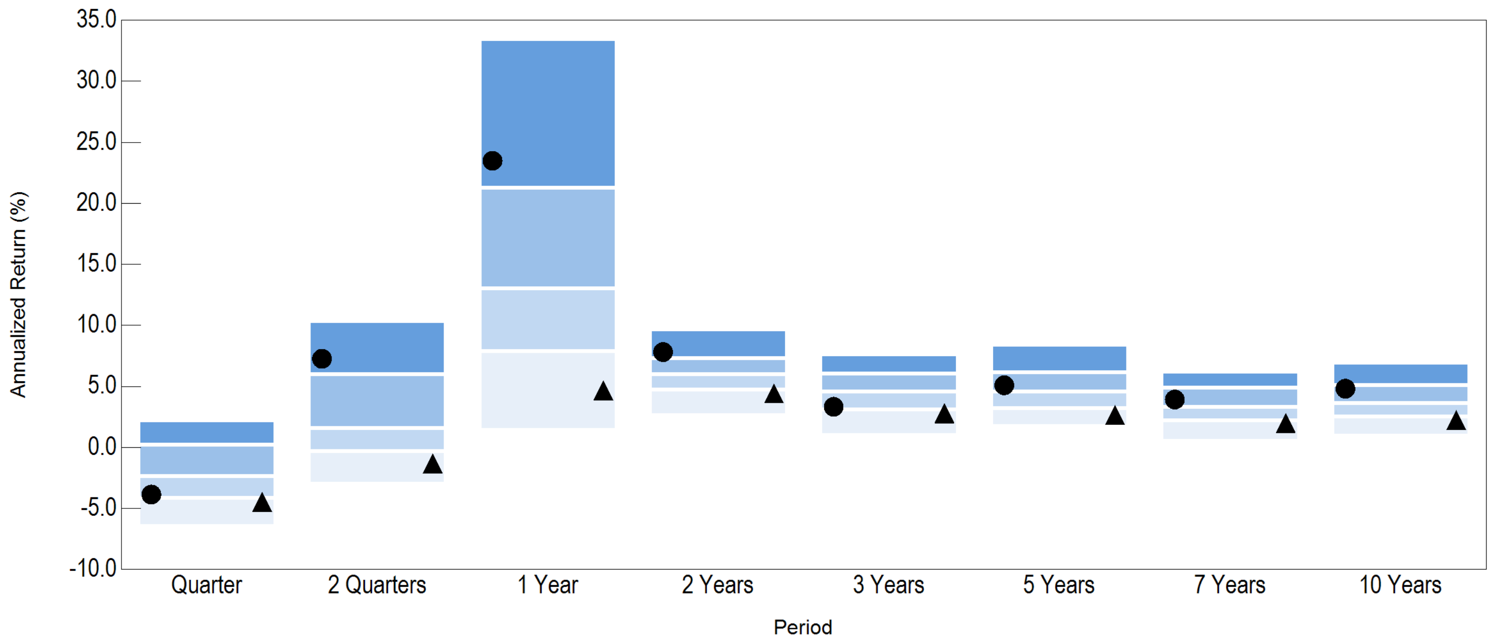
Summary

Account Return	-2.12
Benchmark Return	-4.31
Excess Return	2.20
Sector Allocation	1.22
Security Selection	1.04
Trading	-0.06
Pricing Differences	0.00
Compounding	0.00

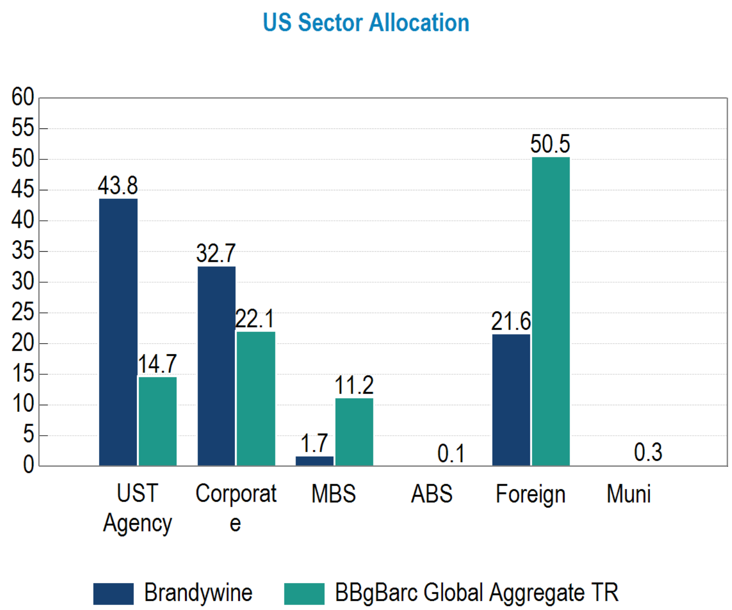
Details

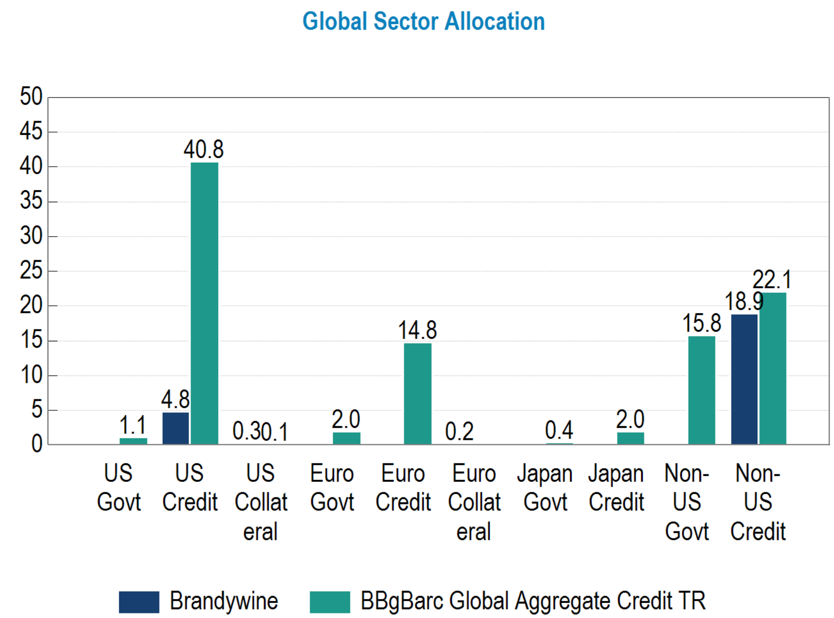
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	-2.06	-4.32	-2.06	-4.32	1.22	1.04	2.26	2.26
Less than 0.5	8.04	0.16	2.99	1.18	0.24	0.00	0.44	0.14	0.58	0.58
0.5 - 1.0	1.10	0.99	1.31	0.24	0.00	0.00	0.01	0.00	0.01	0.01
1.0 - 1.5	4.60	2.99	1.74	0.12	0.06	0.00	0.09	0.05	0.14	0.14
1.5 - 2.0	8.95	3.36	1.46	0.08	0.12	0.00	0.18	0.11	0.29	0.29
2.0 - 2.5	2.95	3.97	1.51	-0.01	0.06	0.00	-0.04	0.05	0.01	0.01
2.5 - 3.0	7.85	3.88	0.13	-0.08	0.02	0.00	0.18	0.03	0.20	0.20
3.0 - 3.5	4.51	3.45	0.77	-0.34	0.06	-0.01	0.05	0.06	0.11	0.11
3.5 - 4.0	5.71	6.26	-0.81	-1.20	-0.06	-0.08	-0.03	0.01	-0.02	-0.02
4.0 - 4.5	3.33	4.76	-0.75	-1.81	-0.03	-0.09	-0.04	0.04	0.00	0.00
4.5 - 5.0	3.41	3.88	-0.78	-2.19	-0.03	-0.08	-0.01	0.05	0.03	0.03
5.0 - 5.5	4.44	4.19	-1.12	-2.27	-0.04	-0.09	0.02	0.05	0.07	0.07
5.5 - 6.0	4.34	3.37	-0.43	-2.68	-0.04	-0.09	0.01	0.10	0.11	0.11
6.0 - 6.5	4.09	4.52	-2.39	-3.19	-0.08	-0.15	-0.01	0.03	0.02	0.02
6.5 - 7.0	2.30	3.81	-3.95	-3.86	-0.10	-0.15	-0.01	0.00	-0.01	-0.01
7.0 - 7.5	4.81	3.00	-3.98	-3.67	-0.18	-0.11	0.01	-0.02	-0.01	-0.01
7.5 - 8.0	5.20	4.73	-3.98	-4.79	-0.21	-0.23	-0.01	0.04	0.03	0.03
8.0 - 8.5	3.32	3.04	-5.08	-5.19	-0.18	-0.16	0.00	0.00	0.00	0.00
8.5 - 9.0	2.54	2.39	-4.26	-5.87	-0.12	-0.14	0.00	0.04	0.03	0.03
9.0 - 9.5	-0.60	0.99	1.52	-6.53	0.07	-0.07	0.05	0.04	0.09	0.09
9.5 - 10.0	0.54	0.80	1.53	-5.45	0.00	-0.04	0.00	0.02	0.02	0.02

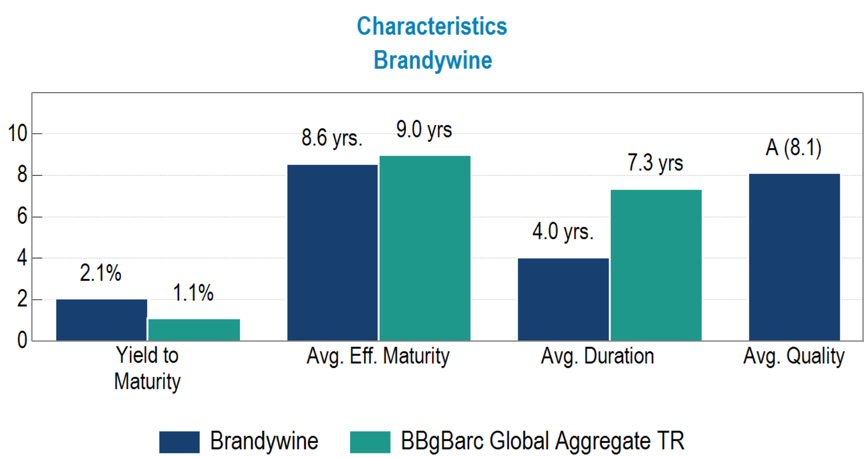
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
10.0 - 10.5	0.55	1.13	-3.54	-4.84	-0.02	-0.06	0.01	0.01	0.01	0.01
10.5 - 11.0	0.22	1.58	-5.12	-5.45	-0.02	-0.09	0.02	0.00	0.01	0.01
11.0 - 11.5	0.29	2.22	-2.01	-4.79	0.00	-0.11	0.01	0.01	0.02	0.02
11.5 - 12.0	0.41	1.32	0.80	-4.90	0.00	-0.06	0.01	0.02	0.03	0.03
12.0 - 12.5	0.10	1.53	-7.16	-5.47	-0.01	-0.09	0.02	0.00	0.01	0.01
12.5 - 13.0	0.62	1.20	-7.02	-5.35	-0.05	-0.07	0.00	-0.01	-0.01	-0.01
13.0 - 13.5	1.11	0.96	-5.03	-5.92	-0.05	-0.05	0.00	0.01	0.01	0.01
13.5 - 14.0	0.56	1.41	-5.86	-6.53	-0.04	-0.10	0.02	-0.01	0.01	0.01
14.0 - 14.5	0.71	1.91	-4.95	-6.89	-0.04	-0.13	0.03	0.01	0.03	0.03
14.5 - 15.0	0.90	2.49	-3.38	-7.20	-0.05	-0.19	0.06	0.01	0.06	0.06
15.0 - 15.5	1.55	2.92	-6.17	-7.64	-0.12	-0.23	0.04	0.02	0.06	0.06
15.5 - 16.0	1.89	2.90	-6.19	-7.92	-0.13	-0.25	0.03	0.04	0.07	0.07
16.0 - 16.5	1.29	2.89	-4.28	-8.85	-0.03	-0.23	0.07	0.06	0.13	0.13
16.5 - 17.0	0.56	2.19	-7.30	-9.46	-0.04	-0.23	0.09	0.02	0.11	0.11
17.0 - 17.5	0.48	2.12	-7.12	-9.90	-0.03	-0.22	0.10	0.02	0.12	0.12
17.5 - 18.0	0.54	1.36	-10.30	-10.49	-0.07	-0.14	0.05	-0.01	0.04	0.04
18.0 - 18.5	0.76	1.14	-9.17	-10.17	-0.11	-0.14	0.02	0.01	0.02	0.02
18.5 - 19.0	0.99	1.13	-3.53	-9.29	0.00	-0.11	0.04	0.06	0.10	0.10
19.0 - 19.5	1.40	1.03	-9.30	-9.67	-0.13	-0.10	-0.03	0.01	-0.02	-0.02
19.5 - 20.0	0.43	0.63	-2.27	-8.88	-0.03	-0.05	0.01	0.01	0.02	0.02
20.0 - 20.5	0.39	0.46	-9.20	-11.24	-0.05	-0.06	0.01	0.00	0.01	0.01
20.5 - 21.0	0.29	0.24	-10.73	-13.52	-0.06	-0.03	-0.01	-0.01	-0.02	-0.02
21.0 - 21.5	0.38	0.18	-8.69	-10.57	-0.06	-0.03	-0.01	-0.02	-0.03	-0.03
21.5 - 22.0	0.08	0.14	-9.22	-14.64	-0.03	-0.03	0.01	-0.01	0.00	0.00
22.0 - 22.5	0.13	0.11	-4.62	-10.36	-0.01	-0.01	0.00	-0.01	-0.01	-0.01
22.5 - 23.0	0.48	0.07	-9.31	-13.93	-0.12	-0.01	-0.06	-0.03	-0.09	-0.09
23.0 - 23.5	0.19	0.06	-1.96	-14.92	-0.05	-0.01	-0.03	0.01	-0.02	-0.02
23.5 - 24.0	0.00	0.05	0.00	-14.57	0.00	-0.01	0.01	0.00	0.01	0.01
24.0 - 24.5	1.21	0.04	-7.16	-9.05	-0.23	0.00	-0.15	-0.04	-0.18	-0.18
Greater than 25.0	0.00	0.03	0.01	-12.75	0.00	0.00	0.00	0.00	0.00	0.00
24.5 - 25.0	0.05	0.02	-0.31	-2.91	-0.01	0.00	0.00	-0.01	0.00	0.00

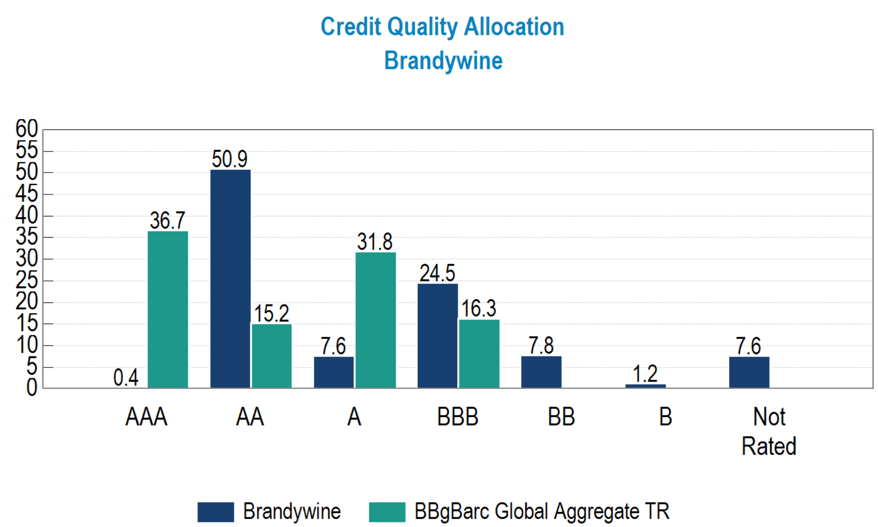


Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.18		10.34		33.42		9.64		7.63		8.37		6.17		6.95	
25th Percentile	0.28		6.01		21.30		7.36		6.09		6.19		4.95		5.15	
Median	-2.31		1.63		13.06		6.04		4.59		4.60		3.36		3.66	
75th Percentile	-4.12		-0.25		7.90		4.77		3.14		3.27		2.24		2.55	
95th Percentile	-6.39		-2.93		1.45		2.67		1.03		1.75		0.59		0.99	
# of Portfolios	507		507		507		499		484		446		395		293	
● **Brandywine**	-3.86	(72)	7.27	(16)	23.49	(18)	7.81	(18)	3.33	(71)	5.10	(43)	3.93	(45)	4.81	(31)
▲ **BBgBarc Global Aggregate TR**	-4.46	(81)	-1.32	(86)	4.67	(87)	4.43	(80)	2.80	(81)	2.66	(85)	2.00	(81)	2.23	(82)


US Sector Allocation
60
55
50
45
40
35
30
25
20
15
10
5
0
43.8
14.7
32.7
22.1
1.7
11.2
0.1
21.6
50.5
0.3
UST Agency
Corporate
MBS
ABS
Foreign
Muni
Brandywine
BBgBarc Global Aggregate TR

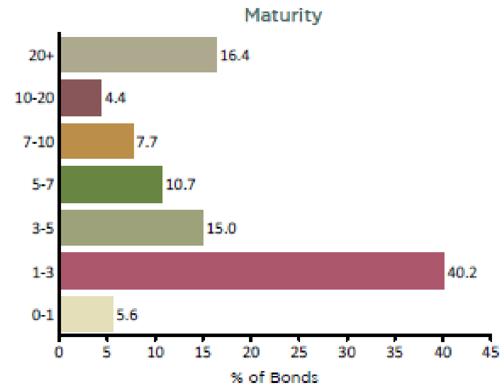

Global Sector Allocation
50
45
40
35
30
25
20
15
10
5
0
1.1
4.8
40.8
0.3
0.1
2.0
14.8
0.2
0.4
2.0
15.8
18.9
22.1
US Govt
US Credit
US Collateral
Euro Govt
Euro Credit
Euro Collateral
Japan Govt
Japan Credit
Non-US Govt
Non-US Credit
Brandywine
BBgBarc Global Aggregate Credit TR

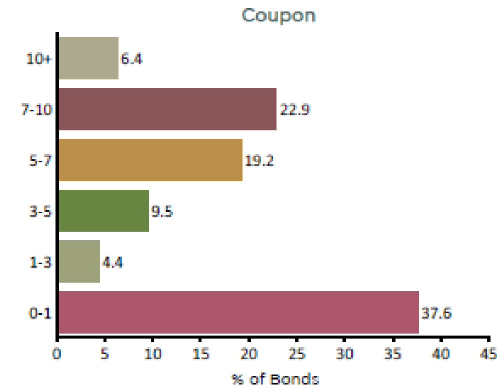

Characteristics
Brandywine
10
8
6
4
2
0
2.1%
1.1%
8.6 yrs.
9.0 yrs
4.0 yrs.
7.3 yrs
A (8.1)
Yield to Maturity
Avg. Eff. Maturity
Avg. Duration
Avg. Quality
Brandywine
BBgBarc Global Aggregate TR


Credit Quality Allocation
Brandywine
60
55
50
45
40
35
30
25
20
15
10
5
0
0.4
36.7
50.9
15.2
7.6
31.8
24.5
16.3
7.8
1.2
7.6
AAA
AA
A
BBB
BB
B
Not Rated
Brandywine
BBgBarc Global Aggregate TR

Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	3.35	0.55
Yield to Worst (%)	3.30	0.55
Modified Duration	2.61	8.55
Effective Duration	2.48	8.72
Average Maturity	7.99	9.67
Average Market Price	102.35	-
Average Coupon (%)	4.09	1.80
Current Yield (%)	3.75	-
# of Issues	187	1,083





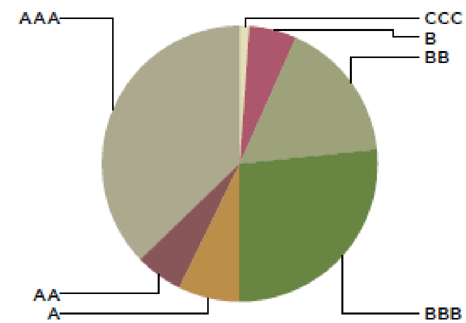
Sector Breakdown

	Market Value (%)	Duration Contribution (In Years)
Government Sovereign	59.55	1.60
Corporate Bond - Investment Grade	15.40	1.05
Corporate Bond - High Yield	11.36	0.64
Government Owned - No Guarantee	3.90	0.43
Supranational	1.61	0.07
Mortgage Backed Securities	1.14	0.03
Government Regional Agencies	2.36	0.00
Cash	5.09	-
Derivatives	(0.40)	(1.21)
Total:	**100.00**	**2.61**

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	37.1	37.1
AA	5.7	42.8
A	7.2	50.0
BBB	26.7	76.7
BB	16.6	93.2
B	5.7	98.9
CCC	1.1	100.0

Average Quality: A



PRIMARY BENCHMARK is FTSE WGBI (USD)

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

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

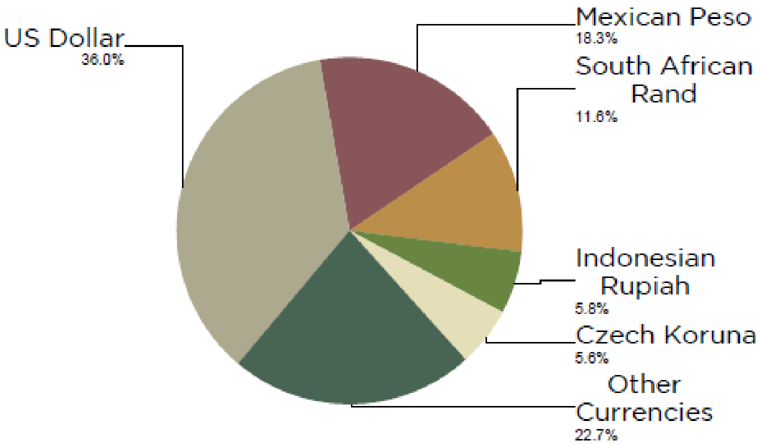
Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.

Country Allocation	3/31/2021 Portfolio	3/31/2021 Index	3/31/2021 Active	12/31/2020 Portfolio	12/31/2020 Change
United States	50.62	36.94	13.68	44.60	6.02
*Mexico	9.27	0.67	8.60	12.34	(3.07)
France	0.59	8.78	(8.19)	0.64	(0.05)
United Kingdom	0.11	5.39	(5.28)	0.11	-
Spain	0.14	5.00	(4.86)	0.14	-
*South Africa	4.71	-	4.71	3.45	1.25
*Colombia	4.37	-	4.37	4.65	(0.28)
Canada	5.43	1.66	3.76	5.18	0.25
*Russian Federation	3.61	-	3.61	3.67	(0.06)
*Indonesia	3.44	-	3.44	3.64	(0.20)
*Brazil	2.69	-	2.69	5.32	(2.63)
Australia	4.48	1.82	2.66	6.10	(1.63)
*Egypt	2.09	-	2.09	1.65	0.44
Supranational	1.61	-	1.61	-	1.61
*Czech Republic	1.58	-	1.58	-	1.58
*Peru	1.36	-	1.36	1.54	(0.18)
*Malaysia	1.72	0.39	1.33	1.90	(0.18)
*China	0.39	-	0.39	0.43	(0.03)
*Poland	0.22	0.55	(0.32)	0.23	-
*Zambia	0.32	-	0.32	0.31	0.01
*Chile	0.23	-	0.23	0.06	0.16
*Turkey	0.21	-	0.21	0.30	(0.10)
*Uruguay	0.19	-	0.19	0.05	0.14
Israel	0.55	0.38	0.18	0.32	0.23
Bahamas	0.11	-	0.11	-	0.11
*Saudi Arabia	0.11	-	0.11	0.57	(0.46)
*Ukraine	0.10	-	0.10	0.11	(0.01)
Luxembourg	0.07	-	0.07	0.07	-
Other Countries	0.09	38.43	(38.33)	0.97	(0.87)
Derivative P/L	(0.40)	-	(0.40)	1.66	(2.06)
Total:	100.00	100.00	-	100.00	-

Currency Allocation	3/31/2021 Portfolio	3/31/2021 Index	3/31/2021 Active	12/31/2020 Portfolio	12/31/2020 Change
Euro	4.98	34.07	(29.08)	0.63	4.36
US Dollar	16.46	36.94	(20.48)	16.23	0.23
Japanese Yen	4.28	16.86	(12.58)	-	4.28
*Chilean Peso	10.94	-	10.94	5.03	5.91
*Mexican Peso	10.01	0.67	9.35	13.10	(3.09)
South Korean Won	5.80	-	5.80	4.80	1.00
*Polish Zloty	6.19	0.55	5.65	2.90	3.29
Canadian Dollar	5.90	1.66	4.24	2.97	2.93
*Russian Ruble	4.05	-	4.05	5.29	(1.24)
*Brazilian Real	3.48	-	3.48	3.90	(0.42)
*Czech Koruna	3.48	-	3.48	3.07	0.41
*Hungarian Forint	3.39	-	3.39	3.83	(0.44)
*Indonesian Rupiah	3.30	-	3.30	3.74	(0.44)
*Malaysian Ringgit	3.54	0.39	3.14	3.70	(0.16)
Norwegian Krone	3.19	0.21	2.98	3.06	0.14
*Egyptian Pound	1.84	-	1.84	0.97	0.87
*Indian Rupee	1.61	-	1.61	3.77	(2.16)
Australian Dollar	0.25	1.82	(1.56)	3.00	(2.75)
*South African Rand	0.75	-	0.75	2.52	(1.77)
*Colombian Peso	0.58	-	0.58	1.97	(1.39)
*Peruvian Nuevo Sol	0.49	-	0.49	1.41	(0.92)
Danish Krone	-	0.42	(0.42)	-	-
Israeli Shekel	-	0.38	(0.38)	-	-
Singapore Dollar	-	0.36	(0.36)	-	-
Swedish Krona	-	0.30	(0.30)	-	-
British Pound Sterling	5.48	5.39	0.09	14.12	(8.64)
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	3/31/2021 0-3	>3-10	>10-20	>20+	Total	12/31/2020 Total Change
US Dollar	0.06	0.39	(1.11)	1.59	0.94	(0.73)
*Mexican Peso	-	0.13	0.14	0.21	0.48	(0.26)
*South African Rand	-	0.18	-	0.13	0.30	0.10
*Indonesian Rupiah	-	0.15	-	-	0.15	(0.07)
*Czech Koruna	-	0.15	-	-	0.15	0.15
*Russian Ruble	-	0.14	-	-	0.14	(0.07)
*Peruvian Nuevo Sol	-	-	0.11	-	0.11	(0.02)
*Colombian Peso	-	0.10	-	-	0.10	(0.23)
*Indian Rupee	-	0.07	-	-	0.07	0.07
*Malaysian Ringgit	0.01	0.04	-	-	0.05	(0.01)
*Brazilian Real	-	0.03	-	-	0.03	(0.07)
Australian Dollar	0.03	-	-	-	0.03	(0.40)
*Chilean Peso	0.03	-	-	-	0.03	0.03
*Egyptian Pound	0.01	-	-	-	0.01	0.00
Euro	-	0.00	-	0.01	0.01	(0.00)
Canadian Dollar	-	0.00	-	-	0.00	0.00
Other Currencies	0.00	-	-	-	0.00	(0.00)
Total	0.14	1.39	(0.86)	1.93	2.61	(1.52)

Modified Duration Contribution by Country

vs. FTSE WGBI (USD)

(In Years)

Country	3/31/2021 0-3	>3-10	>10-20	>20+	Total	Index	Active	12/31/2020 Total Change
United States	0.05	0.25	(1.12)	1.07	0.25	2.43	(2.18)	(0.41)
*Mexico	-	0.15	0.14	0.51	0.79	0.03	0.76	(0.40)
United Kingdom	-	0.00	-	-	0.00	0.71	(0.71)	(0.00)
France	-	0.00	-	0.10	0.10	0.80	(0.70)	(0.01)
Spain	-	-	-	0.01	0.01	0.42	(0.41)	(0.00)
*South Africa	-	0.18	-	0.13	0.30	-	0.30	0.10
*Brazil	0.00	0.06	-	0.11	0.17	-	0.17	(0.14)
*Indonesia	-	0.15	-	-	0.15	-	0.15	(0.07)
*Czech Republic	-	0.15	-	-	0.15	-	0.15	0.15
*Russian Federation	-	0.14	-	-	0.14	-	0.14	(0.07)
*Colombia	0.00	0.13	-	-	0.13	-	0.13	(0.23)
*Peru	-	0.01	0.11	-	0.12	-	0.12	(0.02)
Canada	0.00	0.01	-	-	0.01	0.11	(0.11)	0.00
Australia	0.03	-	-	-	0.03	0.13	(0.10)	(0.40)
Supranational	-	0.07	-	-	0.07	-	0.07	0.07
*Chile	0.03	0.01	-	-	0.04	-	0.04	0.04
*Malaysia	0.01	0.04	-	-	0.05	0.03	0.02	(0.01)
*Saudi Arabia	-	-	-	0.02	0.02	-	0.02	(0.08)
*Egypt	0.01	0.01	-	-	0.02	-	0.02	(0.02)
*Ukraine	-	-	0.01	-	0.01	-	0.01	(0.00)
*Zambia	0.00	0.01	-	-	0.01	-	0.01	0.00
*China	0.01	-	-	-	0.01	-	0.01	0.01
*Turkey	0.00	0.00	-	-	0.01	-	0.01	(0.02)
Israel	0.00	0.02	-	-	0.02	0.03	0.00	0.01
*Panama	-	0.00	-	-	0.00	-	0.00	(0.00)
*Uruguay	-	0.00	-	-	0.00	-	0.00	0.00
Luxembourg	-	0.00	-	-	0.00	-	0.00	0.00
Bahamas	0.00	-	-	-	0.00	-	0.00	0.00
*Ecuador	-	0.00	-	-	0.00	-	0.00	(0.00)
Other Countries	0.00	-	-	-	0.00	3.86	(3.86)	(0.07)
Total	0.14	1.39	(0.86)	1.93	2.61	8.55	(5.95)	(1.59)

*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.

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 C|A 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 Large Mid Commodity & Resource	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 Large Mid Commodity & Resource	50%	
	100.00%	100.0%

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: MARCH 31, 2021

Absolute Return Performance Report

Alameda County Employees’ Retirement Association

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Hedge Fund Environment

Hedge fund trends & flows

Hedge funds see third consecutive quarter of inflows

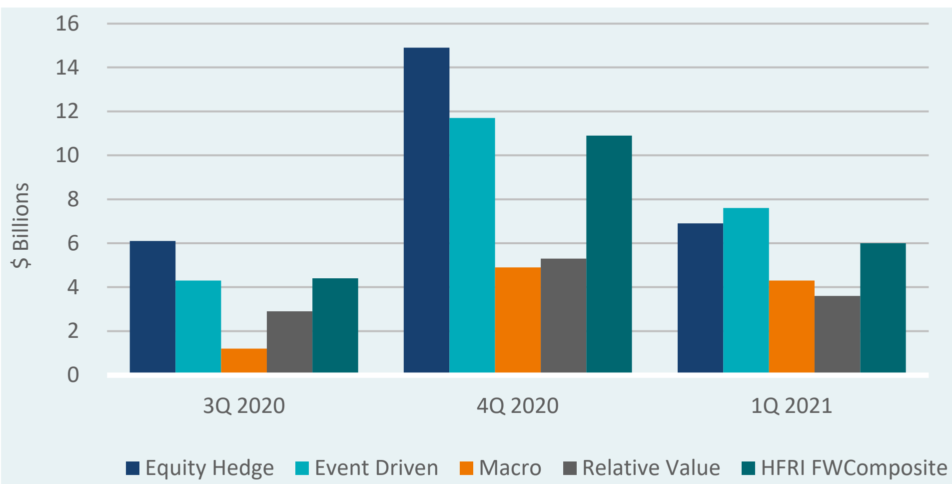
— Performance for Q1 (+6.0% for HFRI Composite) was the strongest first quarter return of any year since 2000.

— Investors allocated an estimated net $6.1 billion into hedge funds in the first quarter of 2021, the third consecutive quarterly inflow and bringing net inflows since 3Q 2020 to $22.1 billion. Inflows were led by Relative Value fixed income strategies which received an estimated $5.6 billion in new flows during the quarter.

— After strong performance in Q1, Event Driven strategies now account for more than $1 trillion of the $3.8 trillion hedge fund industry, with Equity Hedge strategies slightly ahead ($1.2 trillion). Event Driven Special Situations strategies were the best performing sub-strategy during Q1, gaining +10.0%.

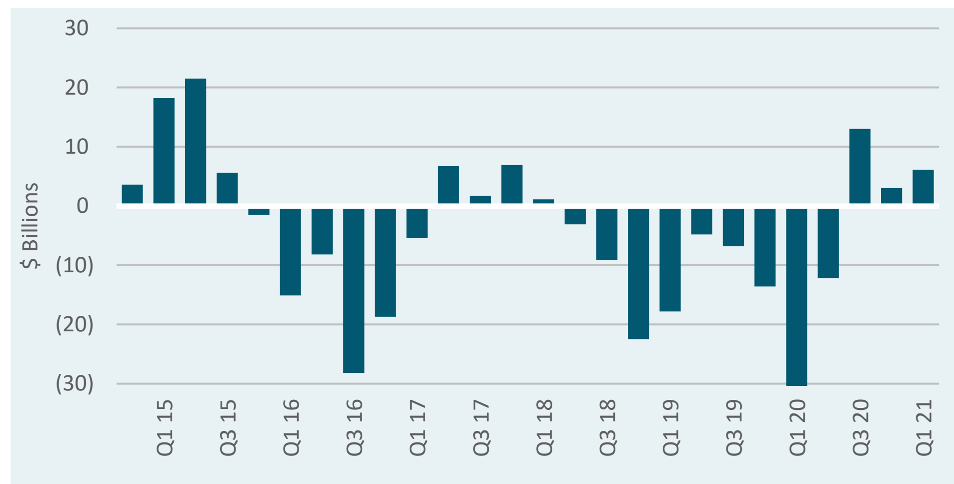
— Relative Value Multi-Strategy firms continue to dominate investor inflows with $4.3 billion coming in Q1 on top of strong Q4 2020 inflows.

HFRI STRATEGY RETURNS, LAST 3 QUARTERS



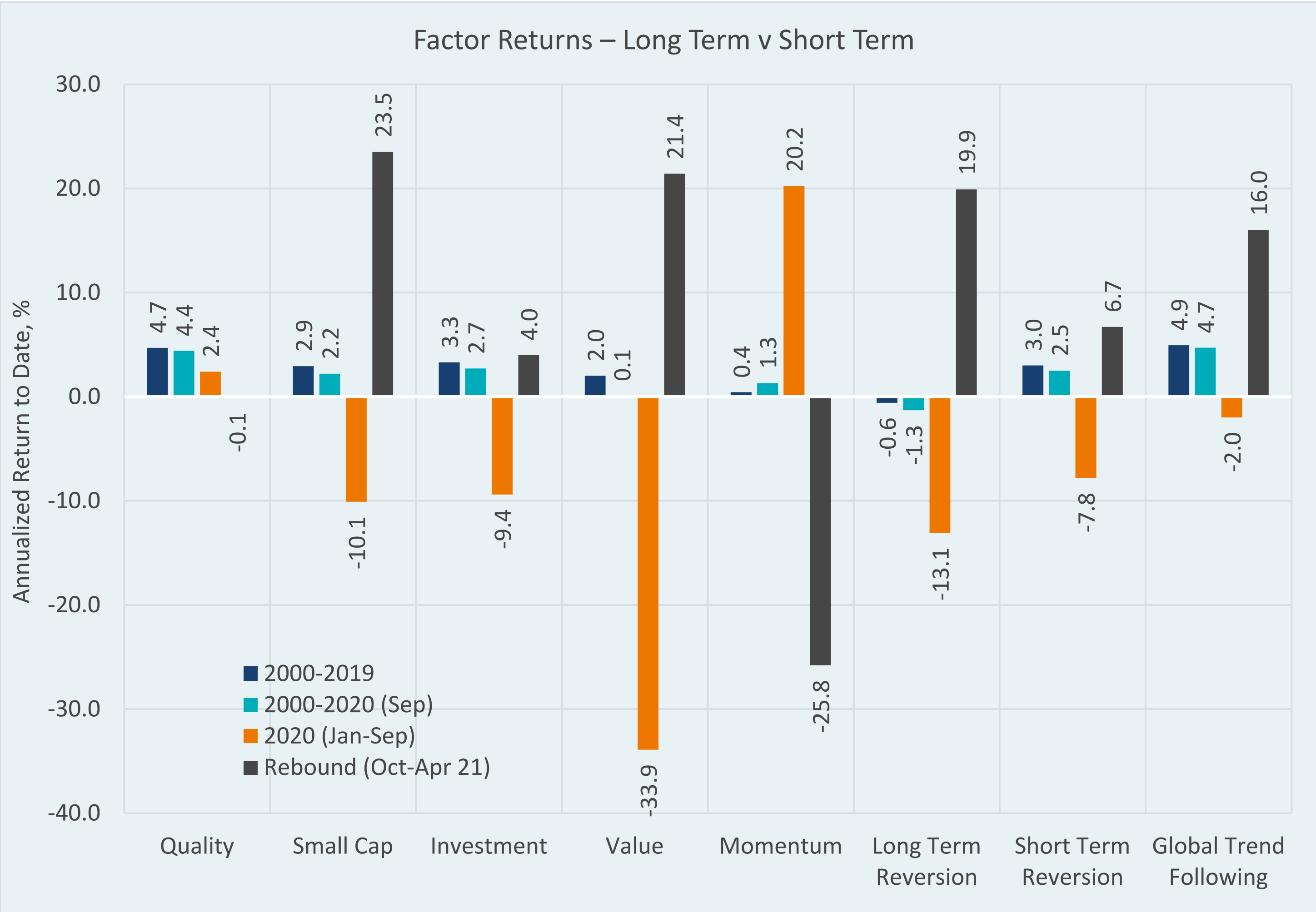
Source: HFR

QUARTERLY NET FLOWS TO HEDGE FUNDS



Source: HFR

Factors additive over the long term but diminished by short term returns



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.

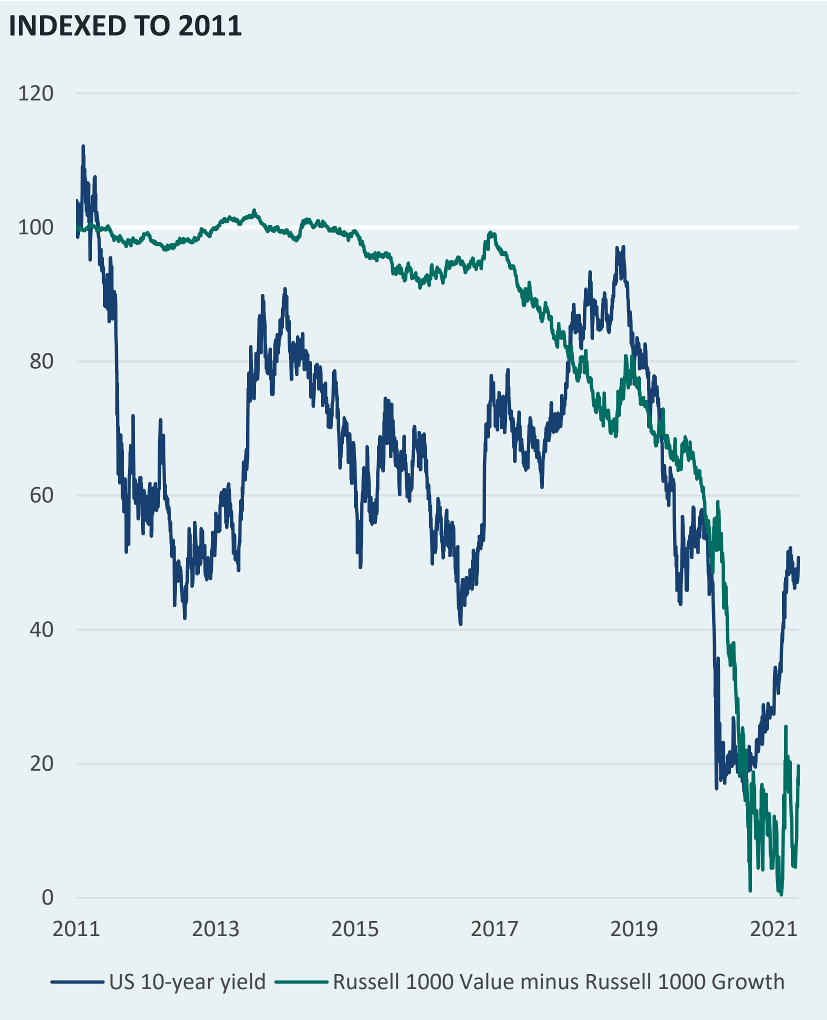
2020 saw major drawdowns in several factors – including Value – with only minor gains elsewhere to offset those losses.

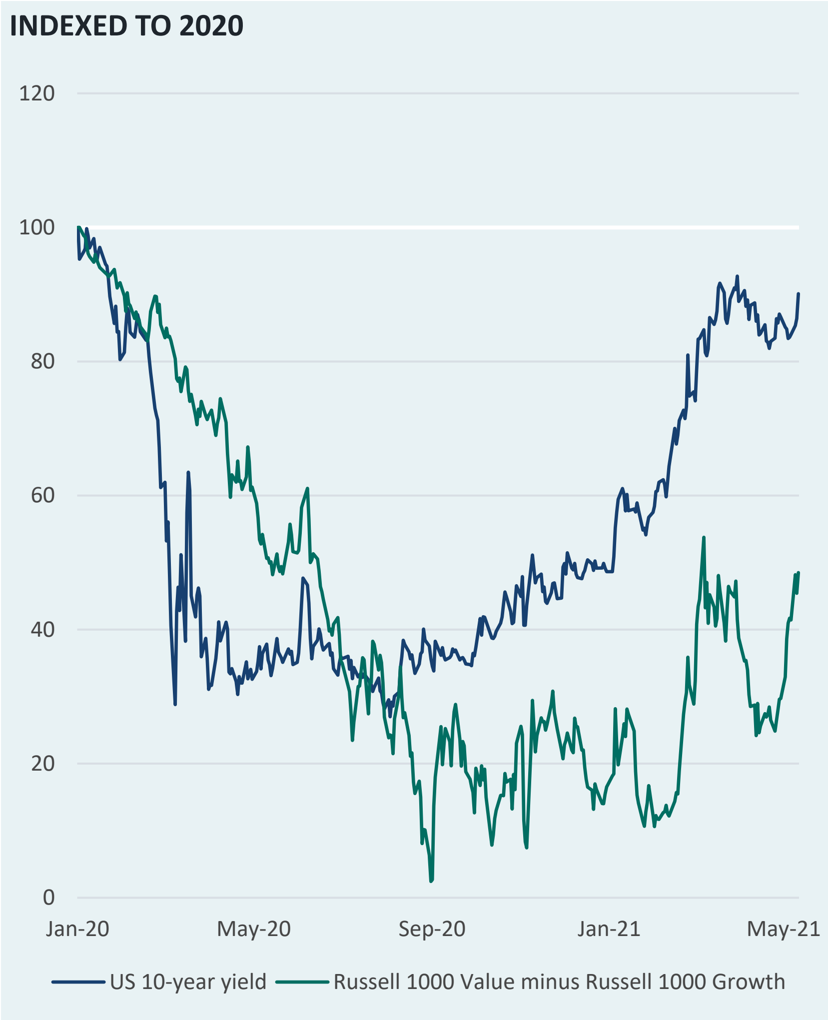
Factor returns have shifted tremendously since October 2020. Notably, Value and Trend following have seen significant reversals.

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)

Treasury yields and value

UST YIELDS AND EXCESS CUMULATIVE RETURNS FROM LARGE CAP VALUE, INDEXED TO 100

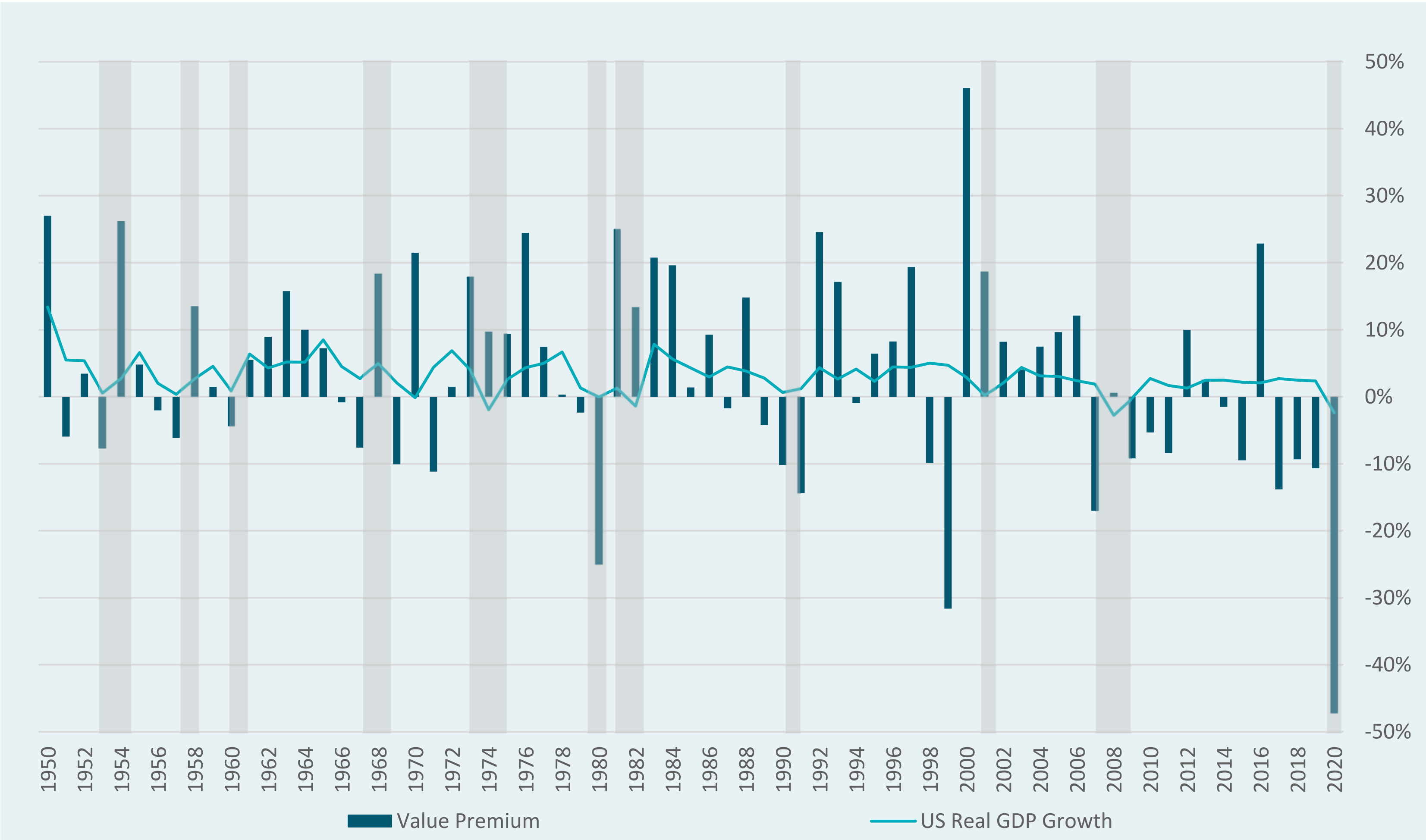




The recent period of value outperformance corresponds with rising rates

Source: Bloomberg. Excess returns defined by Russell 1000 Value cumulative total return subtracted by Russell 1000 Growth cumulative total return

Value & the economic cycle

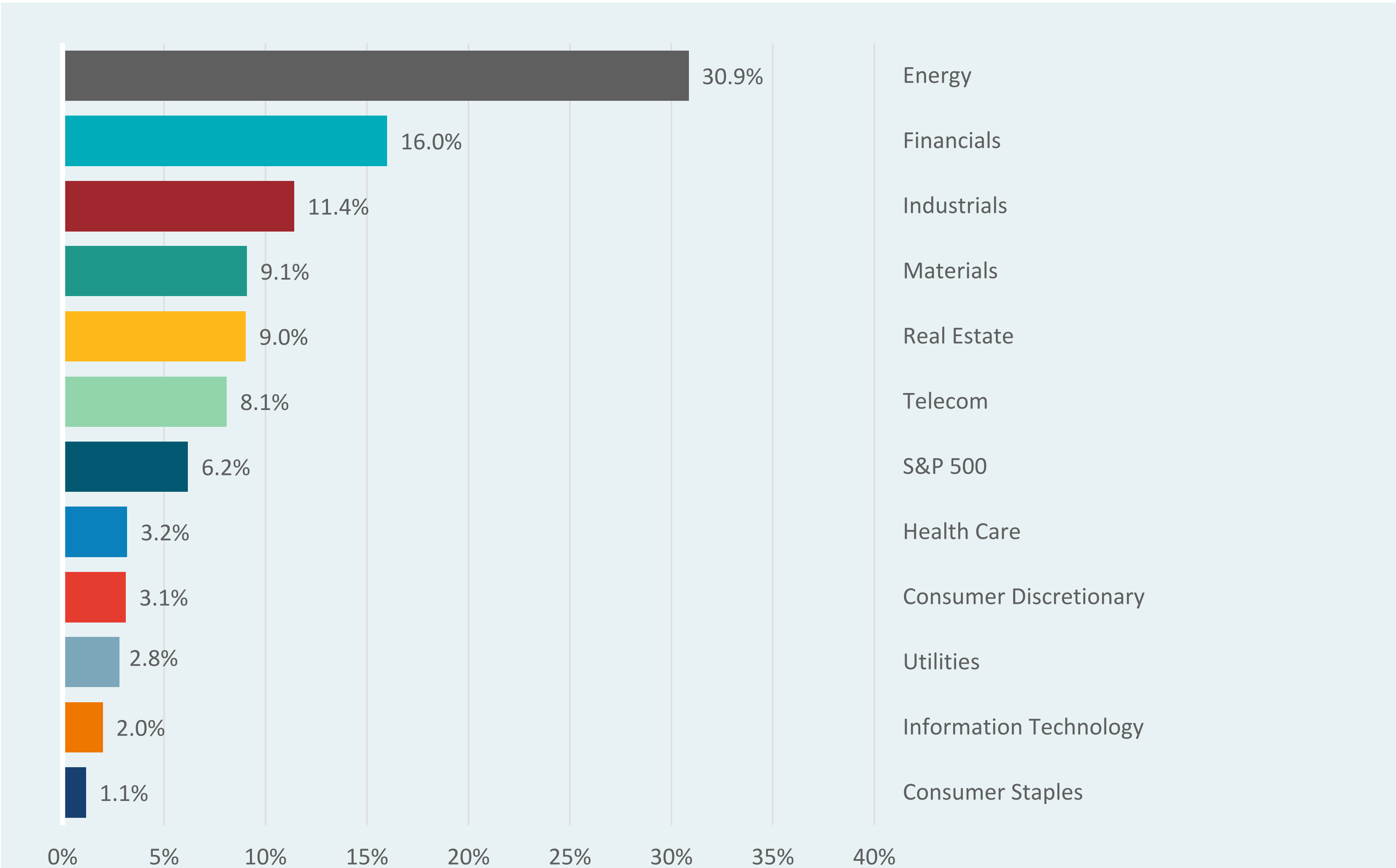


Value often outperforms during economic recession & during the early stages of recovery

Though this relationship has only held some of the time

Source: Kenneth French Data Library, Standard & Poor's – value defined using book-to-market value (the classic Fama & French definition). For more information regarding the classic value premium definition see Fama and French, 1993, "Common Risk Factors in the Returns on Stocks and Bonds," Journal of Financial Economics

Value is exposed to sector swings (Q1 2021)



Source: Bloomberg, as of 3/31/21

ACERA Performance

Allocations

Target

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

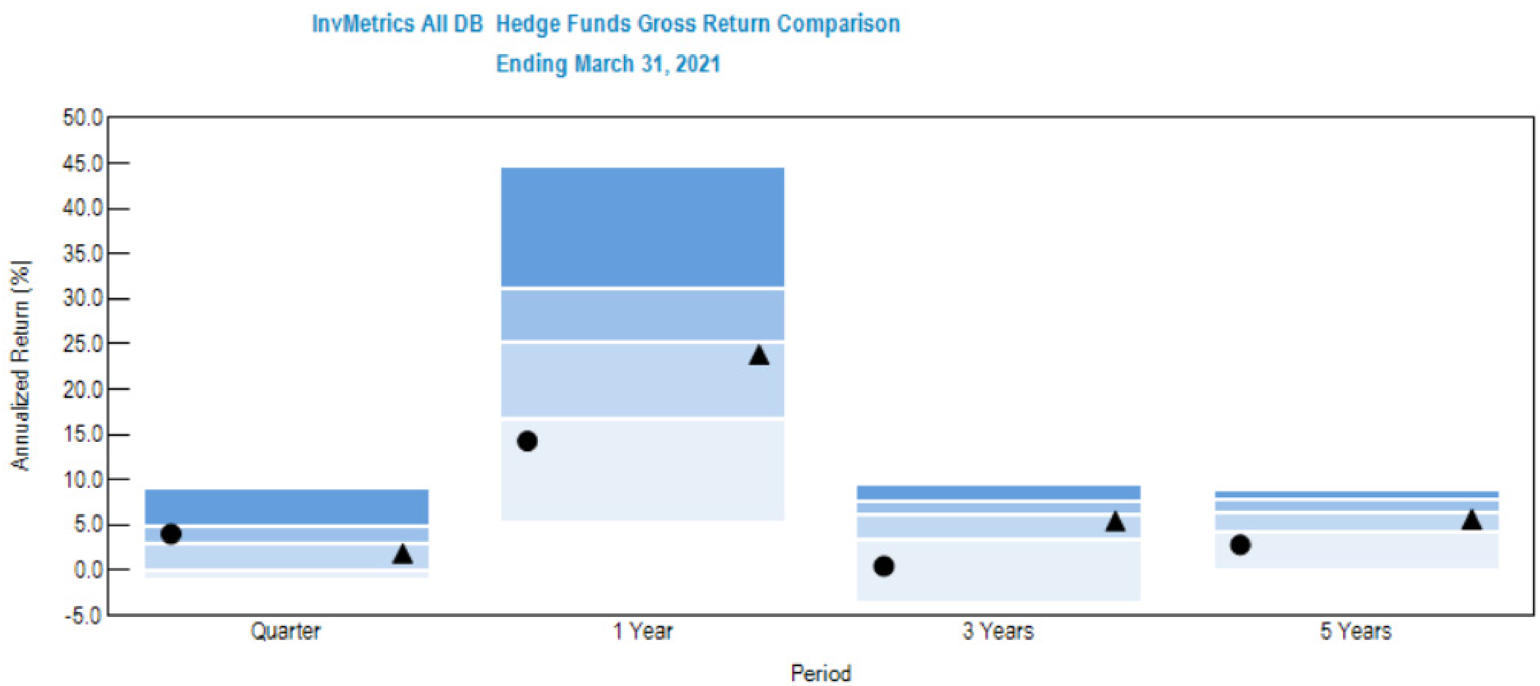
Current (as of 3/31/2021)

Sub-categories	Current Allocations	Min./Max. Ranges
AR Portfolio	**7.0%**	**5% to 10.5%**
▪ *Alternative Premia Strategies*	*1.9%*	*2% to 6%*
▪ *Fund of Funds*	*3.5%*	*2% to 6%*
▪ *Other Alternatives/Opportunistic*	*1.5%*	*0% to 4.5%*

Performance Summary

	Market Value ($)	% of Portfolio	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	Inception (%)	Inception Date
										Ending March 31, 2021						
Absolute Return	701,552,886	100.0	4.0	4.0	4.0	14.3	0.4	2.8	--	-0.6	1.8	-2.2	3.3	5.4	3.0	Sep-11

Relative Performance



	Return (Rank)							
5th Percentile	9.0		44.6		9.5		8.7	
25th Percentile	5.0		31.3		7.7		7.8	
Median	3.0		25.4		6.2		6.4	
75th Percentile	0.0		16.8		3.4		4.2	
95th Percentile	-1.0		5.3		-3.5		0.0	
# of Portfolios	181		180		173		162	
● Absolute Return	4.0	(39)	14.3	(83)	0.4	(87)	2.8	(82)
▲ HFRI Fund of Funds Composite Index	1.9	(65)	23.8	(58)	5.4	(59)	5.6	(60)

Portfolio Statistics* (as of 3/31/2021)

	Benchmark HFRI FoF Composite	Absolute Return Portfolio	MSCI ACWI
Max Drawdown	-9.0	-10.5	-21.3
Sharpe Ratio	0.66	0.46	0.78
Beta	0.30	0.12	1.00
Correlation to MSCI ACWI	0.85	0.37	1.00
Annualized StDev	5.0	4.4	14.0

*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.

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING DECEMBER 31, 2020*

Private Equity Review

Alameda County Employees' Retirement Association

**Pages 7-9 and 14 as of September 30, 2020, the latest date benchmark data available on publication date of this report.*

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SEATTLE 206-622-3700
LOS ANGELES 310-297-1777
SAN FRANCISCO 415-362-3484
PITTSBURGH 412-784-6678

Market Commentary

DEBT RELATED

- **HY issuance was up and leveraged loan issuance was down.** In 2020, US high yield issuance was up 54.2% at a record high of $411.6 billion compared to 2019[1]. Leverage loan issuance volume was $711 billion in 2020, down 12.0% from the same time last year[1].
- **HY Credit Index and BB index spreads loosened, while CCC index spreads tightened.** US HY Credit Index and BB index spreads loosened by 20 bps and 43 bps in 2020 (+5.4% and +16.4 from 2019, respectively)[2]. At the same time, CCC index tightened by 198 bps (-14.5% versus 2019 levels)[2]. B spreads remained flat, tightening by 1bp [2].
- **With decline in LBO debt issuance, interest coverage increased significantly in US.** Total leverage averaged 5.7x (Debt / EBITDA) in 2020 for US new issue loans, down 3.0% from 2019[3]. Interest coverage averaged 3.5x (EBITDA / Cash Interest), up 27.8% from 2019[3]. In Europe with 2020 LBO Loan volume at $43.8 billion down 17.5% from 2019 and down 68.2% from $137.7 billion peak in 2007[11], leverage multiples nudged up 4.5% to 5.9x in 2020[10], still below 6.1x peak in 2007[11].

GLOBAL

- **Investment activity was down, average deal size was up.** During 2020, global PE firms invested in $810.1 billion worth of deals, up 6.3% from the same time prior year and closed on 24,482 transactions, down 5.1% from same time in 2019[6].
- **PE dry powder continued to surge globally.** In 2020, global total PE dry powder was at $1.75 trillion, up 10.6% from 2019[4]. US total PE was up by 12.5% to $970.7 billion; Europe total PE increased by 6.6% to $329.5 billion; Asia total PE was up by 7.8% to $363.1 billion; and the rest of world total PE was up by 3.6% to $57.6 billion[4]. By sub-asset, VC dry powder grew most in the US (26.5%), Europe (23.0%), and Asia (17.8%)[4].

US BUYOUTS

- **Dry powder increased.** In 2020, US buyout dry powder was $525.3 billion, up by 8.2% from the same time in 2019[4].
- **Fundraising activity was down significantly.** In 2020, US firms across all buyout strategies raised $172.0 billion, down by 39.5% from same time prior year[5]. Average fund size decreased 30.3%, from $1.79 billion in 2019 to $1.25 billion in 2020[5].
- **Investment activity was up, average deal size was down.** During 2020, US buyout firms invested in $241.1 billion worth of deals (-4.7% from 2019) into 3,244 deals (+2.9%)[6].

Market Commentary

— **LBO price multiples were up.** As of December 31, 2020, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 11.4x , a 2.2% increase from end of 2019[7].

— **Exit activity increased, but with smaller transactions.** During 2020, US buyout firms exited 3,244 companies, representing $241.1 billion in total transaction value[12]. This represented a 2.9% increase in the number of exits and a 4.7% decrease in total transaction value compared to the same time last year[12].

US VENTURE CAPITAL

— **Dry powder increased.** In 2020, US VC dry powder was at $153.6 billion, up 26.5% from 2019[4].

— **Fundraising activity slowed down, but average fund size increased.** US VC firms raised $77.3 billion during 2020, a 45.3% increase from the same period last year[5]. 459 funds closed in 2020, a 13.1% decrease from the same period last year[5]. The average US VC fund size increased to $168.4million by 67.1% versus the same period last year[5].

— **Investment activity was down, average deal size was up.** US VC firms deployed $181.8 billion in capital in 2020, a 28.8% increase from 2019 as deal activity skewed from early to late stage[6]. The number of rounds closed at 6,384, a 10.2% decrease from the same time last year[6]. The average investment per deal increased to $35.7 million, a 43.4% increase from prior year[6].

— **Seed stage valuation was down, but Early and Late VC valuations increased.** Compared to December 31, 2020, the average pre-money valuations decreased for Seed-stage VC in 2020, down 16.7% at from $6.0 million to $5.0 million[8]. The average pre-money valuations increased for both early VC and late VC stages in 2020: up 7.1% at $30.0 million for Early-stage VC, and 18.3% at $76.9 million for Late-stage[8]. Over the past 3 years, the average pre-money valuations of Seed-, Early- and Late-stage investments were up 16.7%, 66.7%, and 61.8%, respectively[9].

— **Exit activity increased significantly with larger transactions.** US VC firms exited 998 companies in 2020, up by 47.9% from last year and 47.6% from three years ago[6]. This represented the record high $241.0 billion in transaction value, up by 201.3% from the same period last year and 366.1% from three years ago[6]. Largest sectors exited were Technology Services and Health Technology.

Market Commentary

EX US

— **Dry powder grew ex-US, but absolute level still less than in the US.** PE dry powder outside the US grew to $776.9 billion for 2020, an 8.4% increase versus last year[4]. However, dry powder outside the US was still 20% less than dry powder in the US ($970.7 billion)[4].

- **Europe VC and buyout dry powders both up.** VC at $37.5 billion and buyout at $218.6 billion were up 23.0% and 8.2% from 2019, respectively[4].
- **In Asia, VC dry powder increase paralleled US and Europe. Growth equity dry powder decreased as buyout saw increase.** VC dry powder at $124.0 billion was up 17.8% from 2019[4]. Growth equity declined to $116.2 billion (-4.8% from 2019), but with larger funds raised targeting control deals, buyout dry powder increased to $99.7 billion (+16.7%)[4]. In aggregate, growth equity and buyout dry powder was $215.9 billion, up 4.2% from 2019[4].

— **Ex-US fundraising down, driven by a significant drop in Asia.** In 2020, ex-US fundraising dropped 12.9% from 2019 to $274.3 billion[5]. The decrease was caused by Asian funds which raised $95.5 billion, down 44.7%[5]. Fundraising in Europe and ROW increased by 24.4% and 34.7% from 2019 to $155.5 billion and $23.3 billion, respectively[5].

— **Capital deployment increased in all but European buyouts.**

- **In both Europe and Asia, VCs invested more capital into fewer deals.** Investment activity declined by 3.6% and 7.1% in Europe and Asia from 2019[6]. But capital deployed increased by 11.9% to $46.2 billion and by 26.5% to $119.8 billion, respectively, in Europe and Asia[6].
- **Buyout deal activity and capital deployment declined in Europe, but rose in Asia.** In Europe, buyout firms transacted invested $115.5 billion in aggregate value (-14.6% from 2019) in 2,038 deals (-3.1%)[6]. Asia buyout firms invested $75.8 billion in aggregate value (+18.1%) in 494 deals (+6.5%)[6].

— **Europe purchase price multiples dropped.** As of December 31, 2020, Europe median purchase price multiples dropped 7.6% from 8.7x to 8.1x EBITDA from the same time last year[1].

— **Similar to US, exit activity strengthened in Asia and Europe. Exits were smaller in Asia, but larger in Europe.** Europe PE aggregate exit value amounted to $184.8 billion, a 31.5% increase from 2019, while Asia PE exit value declined by 6.5% to $105.1 billion[6].

Market Commentary

Outlook

— **PE allocations likely to continue rising steadily.** A recent survey of institutional investors conducted in December 2020 indicated that 39% intend to increase their allocation for private equity compared to 45% during the same period last year; 38% intend to maintain their allocation for private equity compared to 36% during the same period last year; 2% intend to commit less capital to private equity compared to 2% during the same period last year[12].

— **Institutional investors most interested in investing in North America and like small- to mid-market buyouts.** Based on the survey conducted in December 2020 , institutional investors view North America as the most attractive location to invest in the current economic climate with 91% choosing it as their preferred developed market investment destination, followed by Western Europe (82%) and Asia (68%) [12]. China (58%) and India (27%) are the top two desired countries in the emerging markets for investors[12]. In the same survey, North American respondents were heavily focused on U.S. Middle Market (78%), U.S. Growth Capital Funds (59%), and Small Market Buyouts (56%) with European Middle Market Buyouts (44%) just slightly behind[12].

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. *Probitas Partners 2021 Institutional Investors Private Equity Survey*

	Policy Target	Policy Range	Market Value %	Market Value $(000)	Unfunded Commitment $(000)	Market Value + Unfunded $(000)
ACERA Plan Assets - Total				**$8,685,488**		
Private Equity:	**8.0%**	**0-13%**	**8.4%**	**$728,849**	**$481,030**	**$1,209,879**
Buyouts	60.0%	30-80%	51.6%	$376,180	$323,404	$699,584
Venture Capital	20.0%	0-40%	30.6%	$223,099	$37,957	$261,056
Debt-Related/Special Situations	20.0%	0-70%	17.8%	$129,570	$119,669	$249,239

Portfolio Summary

— As of September 30, 2020, the Private Equity portfolio had a total market value of $728.8M, with $376.2M in Buyouts, $223.1M in Venture Capital, and $129.6M in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding unfunded commitments.

— Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed $953.8M towards its Private Equity commitments, with $495.3M to Buyouts, $170.5M to Venture Capital, and $287.9M in Debt-Related / Special Situations. Unfunded commitments total $481.0.0M

— The portfolio exposure at 8.4% is above the 8.0% policy target but within its 0-13% target range. Compared to December 31, 2019, portfolio exposure is up 0.5%, driven by Venture Capital's strong performance relative to Public Markets. Buyout remains under its policy target, Venture capital above its target and Debt-Related / Special Situations below its policy target but all within policy ranges.

Portfolio Activity

— In the fourth quarter of 2020, ACERA committed $35.0M to CD&R XI, L.P. and $20M to Canvas Ventures III, L.P.

Performance

— Current Private Equity portfolio is valued at $728.8M. Capital calls continued to outpace distributions by a ratio of 2.061:1.0 in 3Q'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.

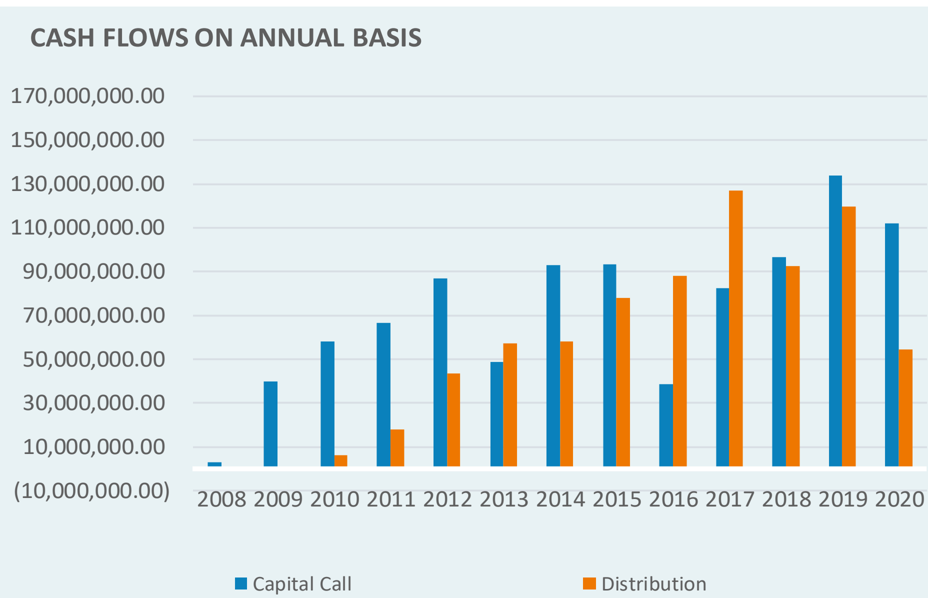
— Since inception (2008):

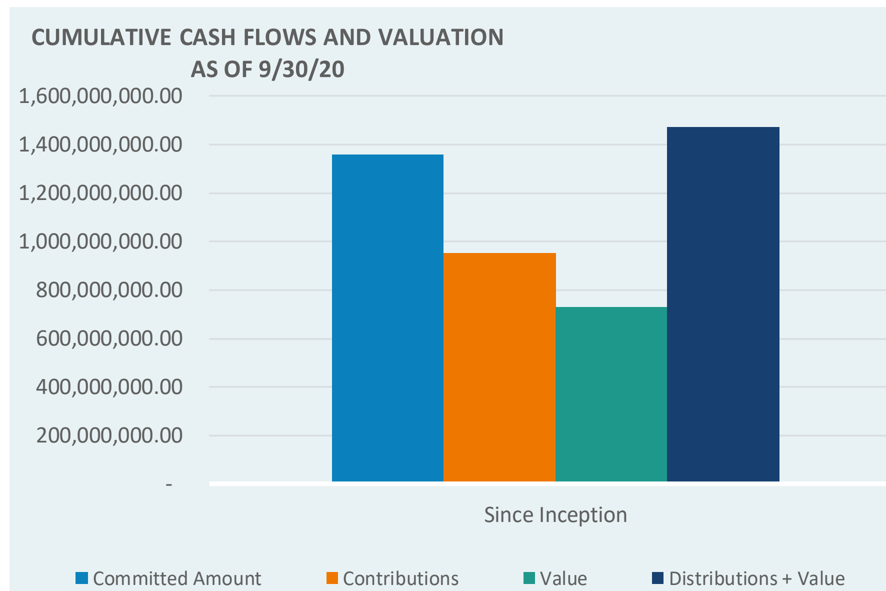
- The portfolio has produced +14.66% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 13.38% by 128 basis points. Portfolio returns rank above Median on net IRR, Total Value Multiple (TVPI), and Distribution Multiple (DPI).
- Relative to same Vintage global benchmark peers, Buyout ranks above Median on 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 above Median on DPI and slightly below Median on IRR and TVPI.

— Together with $743.1M in realized distributions (0.78x cost), Private Equity's Total Value at $1,471.9M is approximately $518.1M above $953.8M cost (1.54x cost), net of fees. Return drivers include:

- Venture Capital up $233.9M/+137.2% versus cost (Third Rock Venture II & III, General Catalyst VI, Great Hill IV, Khosla Ventures IV & Seed B, and NEA 13 and 14 leading), with 106.4% of called capital realized and distributed. Since inception, this portfolio produced 21.4% net IRR versus its peer global benchmark of 18.05% pooled IRR.
- Buyout up $230.7M/+46.6% versus cost (Great Hill V and VI, Sycamore Partners I, Warburg XI, Insight II and Peak Rock Capital Fund II leading) with 70.6% of called capital realized and distributed. Since inception, the Buyout portfolio produced 13.58% net IRR versus its peer global benchmark of 14.83% pooled IRR.
- Debt-Related / Special Situations was up $53.5M/+18.6% versus cost (Centerbridge Special Credit Partners, ABRY Advanced Securities II and Senior Equity IV, and Partners Group 2008 leading), with 73.6% of called capital realized and distributed. Since inception, this portfolio produced 8.36% net IRR versus its peer global benchmark of 9.03% pooled IRR.

— Within Private Equity, the current allocation of invested capital is 51.6% to Buyouts, 30.6% to Venture Capital and 17.8% to Debt / Special Situations. Of $743.1M in cash distributions, 47.1% were from Buyouts, 28.5% from Debt-Related/Special Situations, and 24.4% from Venture Capital.





Private Equity – Portfolio Performance vs. Pooled Benchmark IRR

Period Ending: September 30, 2020

	1-Year	3-Year	5-Year	10-Year	Since Inception[2]
Buyout	**11.62%**	**11.72%**	**10.66%**	**13.95%**	**13.58%**
Thomson Reuters C/A Global Buyout Benchmark[1]	*16.52%*	*15.01%*	*16.55%*	*15.68%*	*14.83%*
Venture Capital	**37.96%**	**22.52%**	**18.21%**	**21.53%**	**21.42%**
Thomson Reuters C/A Global Venture Capital & Growth Equity Benchmark[1]	*27.80%*	*21.52%*	*17.40%*	*18.54%*	*18.05%*
Debt-Related / Special Situation	**-9.76%**	**-5.67%**	**1.80%**	**6.95%**	**8.36%**
Thomson Reuters C/A Global All Debt Benchmark[1]	*3.87%*	*5.55%*	*7.63%*	*8.63%*	***9.63%***
Total Private Equity	**14.93%**	**12.79%**	**12.20%**	**14.60%**	**14.66%**
Thomson Reuters C/A Global All Private Equity Benchmark[1]	***14.76%***	***13.54%***	***13.60%***	***13.69%***	***13.38%***

Identical cash flows from the portfolio inception through 9/30/2020 invested in the Russell 3000 Total Return index would yield a 13.61% (Long Nickels). The Private Equity Portfolio outperformed the Russell 3000 by 1.05%. Public Market Equivalent analysis provided by Solovis.

1 *Benchmarks: Thomson Reuters C/A as of 9/30/20, vintage 2008 through present.*

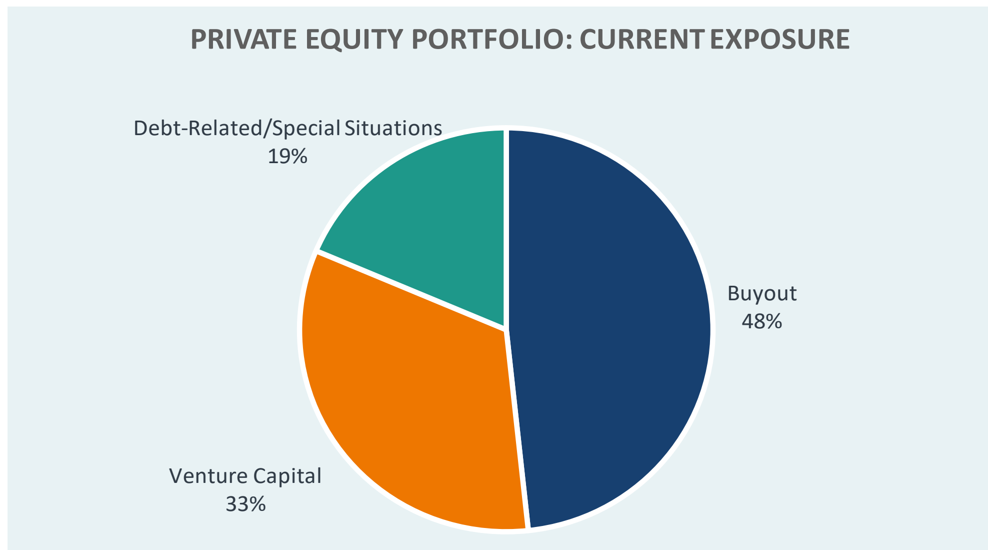
2 *ACERA's inception date of November 21, 2008 vs. Thomson Reuters C/A's inception date of January 1, 2008.*

Portfolio Diversification

Period Ending: December 31, 2020

Investment Type	Commitment	Current Exposure	Current Exposure as % of Private Equity
Buyout	806,806,404	408,692,265	48.3%
Venture Capital	218,100,000	279,913,704	33.1%
Debt-Related/Special Situations	325,247,675	157,222,435	18.6%
Total Private Equity	**1,350,154,079**	**845,828,404**	**100.0%**

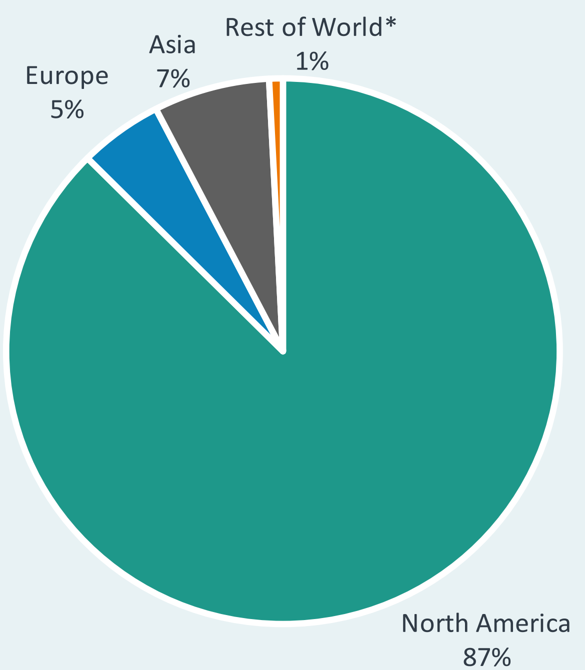
Investment Type	Target Range	Target Exposure	Current Exposure as % of Target	Difference
Buyout	4%-8%	4.8%	4.2%	-0.6%
Venture Capital	0%-3%	1.6%	2.8%	1.2%
Debt-Related/Special Situations	1%-3%	1.6%	1.7%	0.1%
Total Private Equity	**0%-13%**	**8.0%**	**8.7%**	**0.7%**



Private Equity Portfolio Diversification

Period Ending: December 31, 2020

Geography	Current Exposure
North America	740,901,368
Europe	41,452,636
Asia	57,164,294
Rest of World*	6,359,293
Total Private Equity	**845,828,404**



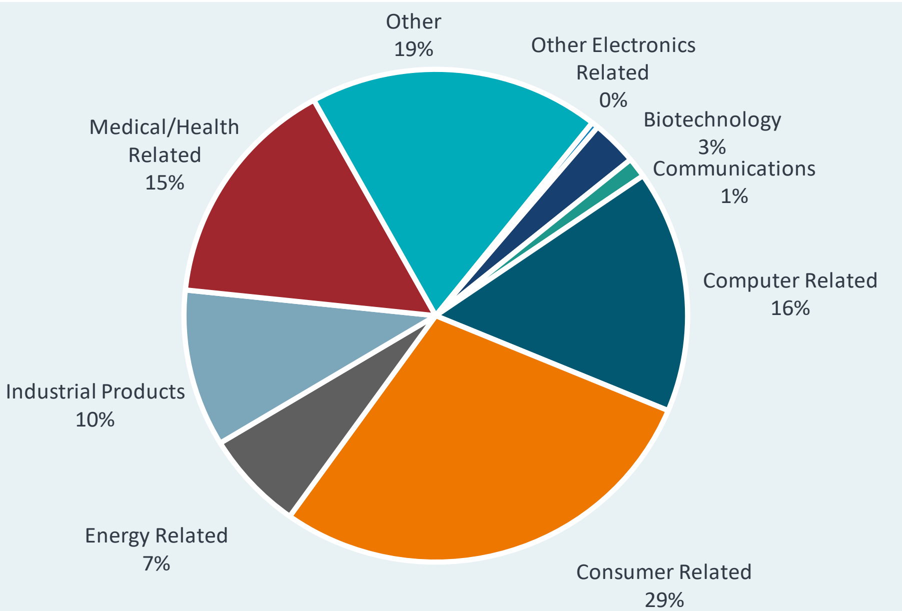
Based on the value of private equity portfolio companies as of December 31, 2020, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

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

Private Equity Portfolio Diversification

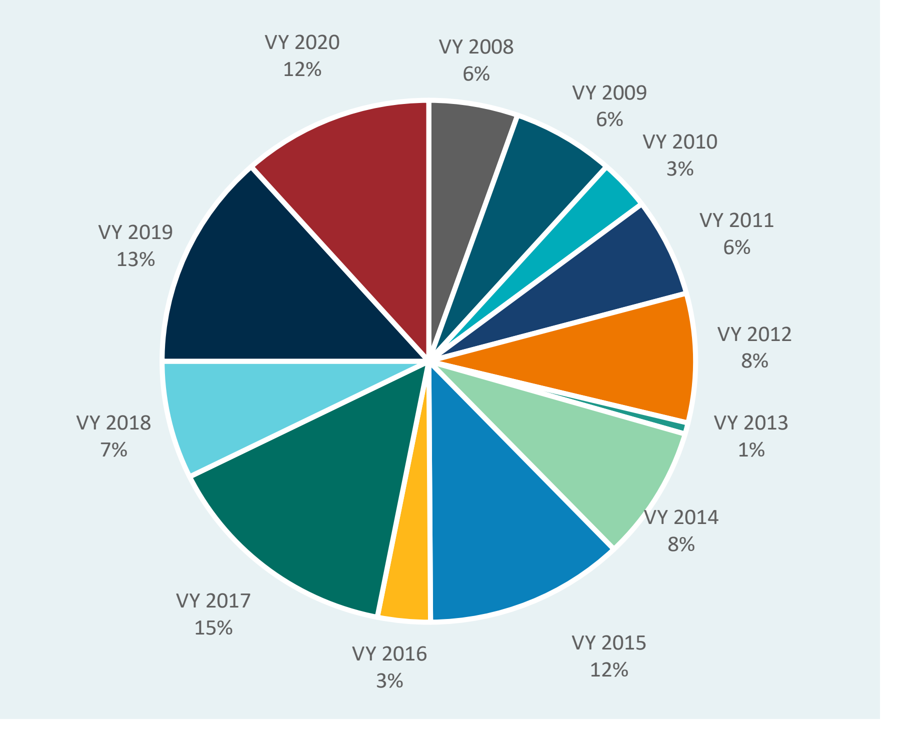
Period Ending: December 31, 2020

Industry	Current Exposure
Biotechnology	25,051,639
Communications	11,081,618
Computer Related	134,595,639
Consumer Related	241,521,549
Energy Related	54,977,951
Industrial Products	87,297,337
Medical/Health Related	129,325,710
Other	158,396,608
Other Electronics Related	3,660,636
Total Private Equity	**845,828,404**



Based on the value of private equity portfolio companies as of December 31, 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	Commitment as of 12/31/20	% of Portfolio Commitment	Reported Value as of 12/31/20
2008	72,370,855	5.4%	8,909,011
2009	83,500,000	6.2%	49,324,382
2010	42,500,000	3.1%	3,762,517
2011	82,500,000	6.1%	70,031,731
2012	108,500,000	8.0%	124,578,091
2013	10,000,000	0.7%	20,300,627
2014	112,080,000	8.3%	93,336,010
2015	163,250,000	12.1%	155,189,129
2016	43,250,000	3.2%	27,167,303
2017	197,251,820	14.6%	170,518,731
2018	98,000,000	7.3%	30,352,794
2019	181,000,000	13.4%	62,814,030
2020	155,951,404	11.6%	29,544,047
Total Private Equity	**1,350,154,079**	**100%**	**845,828,404**



— As of September 30, 2020, the Private Equity Portfolio's market value at 8.4% is above 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				$9,673,687		
Private Credit:	4.0%	3-5%	0.6%	$57,124	$172,623	$229,747

Portfolio Summary

— As of December 31, 2020, the Private Credit portfolio had a total market value of $57.1M. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.

— Since ACERA's initial allocation to Private Credit in Q1 2019, the Plan has contributed $58.5M towards its Private Credit commitments. Unfunded commitments total $172.6M.

— The portfolio exposure at 0.6% is below the policy target of 4.0% and falls short of the policy range of 3-5%. ACERA continues to make new commitments to the allocation to reach its policy target.

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.

Performance

— The Private Credit's performance, as measured by net IRR, is 3.29%, 227 bps below the same cash flow invested in the S&P LSTA U.S. Leveraged Loan 100 Index of 5.56%. With a capital-weighted average life of investments at 0.7 years, portfolio IRR is not meaningful.

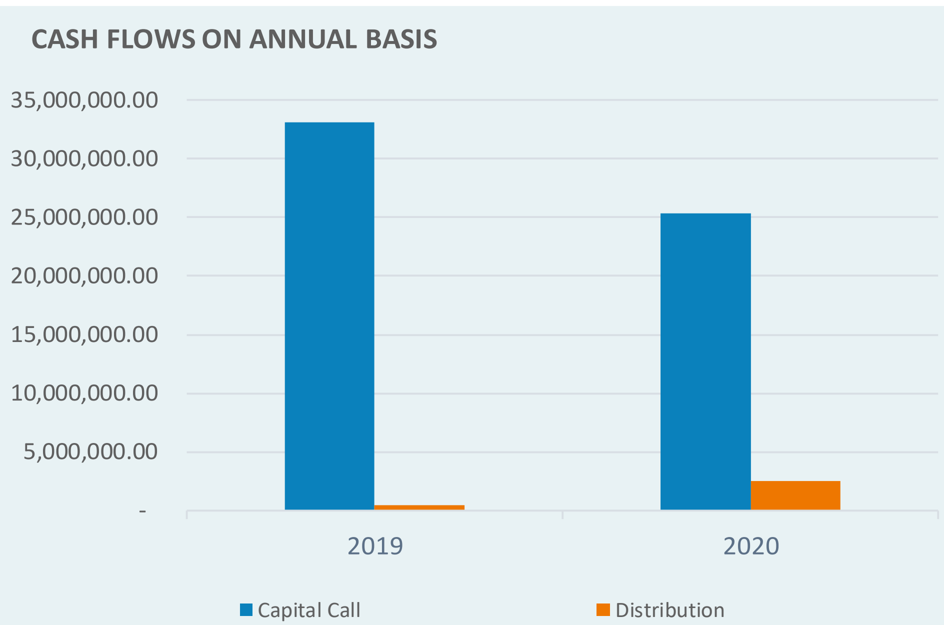
— The portfolio is currently valued at $57.1M. Together with $2.9M in realized distributions (0.05x cost), Private Credit's Total Value at $60.1M is approximately $1.6M above $58.5M cost (1.03x cost), net of fees.

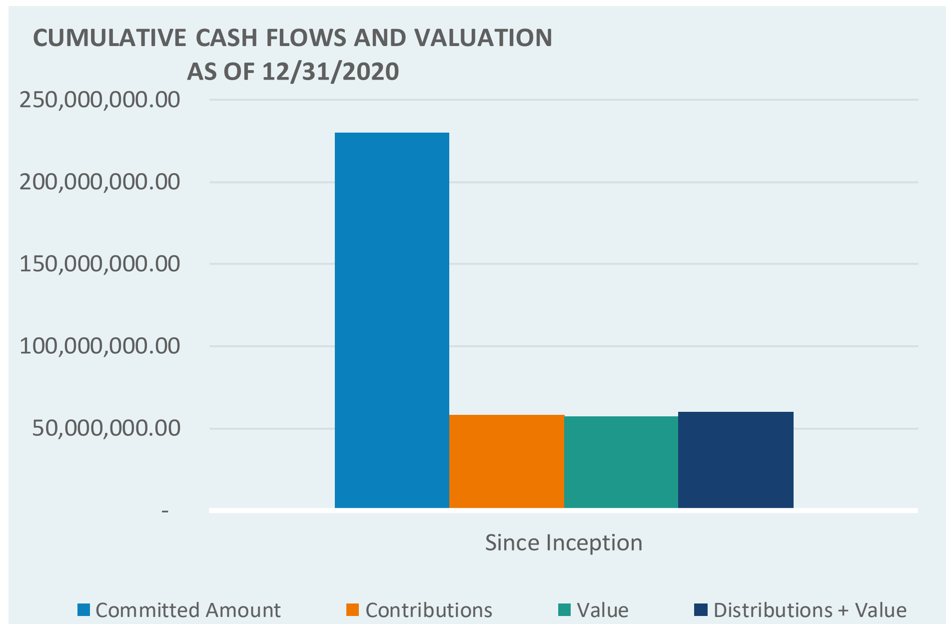
— Capital calls continued to dominate the portfolio's cash-flow activity as new investments are made to reach the target exposure.

— The Portfolio has three commitments to date:

- Owl Rock First Lien, LP $80.0M
- HPS Specialty Loan Fund V, LP $75.0M
- Owl Rock Direct Lending Fund IX, LP $75.0M

— As of year, end Owl Rock First Lien is the only fund to call capital.





Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: DECEMBER 31, 2020

Real Assets Review

Alameda County Employees’ Retirement Association

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Real Asset Outlook

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Private Real Estate	Transaction volumes are picking up after a slow 2020, which should help price discovery in some sectors. Private market valuations have been slower to adjust than the public markets. Rent collections are back to normal levels for all but retail and hospitality however uncertainty remains on the demand side as the recovery progresses. It will likely take several years to fully understand the impact that work from home will have on office demand.	— Core real estate returns tend to have high correlation to overall GDP growth. Any hiccup to the recovery or reversal in vaccination progress will have an impact. — A sharp rise in interest rates could create upward pressure on cap rates, hurting asset values. — Increasing e-commerce adoption rates may continue to impact retail.	Our outlook remains neutral; however, we continue to take a barbell approach. A lagging appraisal process may impact office/retail values, giving us concern over existing traditional core assets. We recommend leaning away from traditional core and diversifying into alternative property types such as self storage, senior/student housing, medical office, life science as well as dedicated industrial. We also continue to recommend deploying fresh capital in non-core closed end funds with value added or opportunistic strategies.	**Neutral**
REITs	REITs experienced high volatility in 2020, declining almost 40% by April and recovering to down only 10% for the year, yet still underperforming broad equities. Sector dispersion was incredibly high as Covid-19 shutdowns negatively impacted some sectors (retail/office/hospitality), while others benefited (industrial/data centers).	— REITs have higher leverage than core real estate and have higher exposures to non-core sectors such as hotels, self-storage, for-rent residential homes 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.	Although performance diverged in 2020 as REITs experienced more pain than private real estate, current premiums to NAV remain high and relatively unattractive. 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. Active management is preferred.	**Neutral**
Commodities	Commodities futures have had lackluster performance over the last decade. An upward sloping futures curve has been a headwind for the asset class, and, with the exception of oil futures, this condition remains for most commodities today. The current economic recovery and re-opening is creating higher forecasted demand from energy and industrial metals which has led to a strong recent recovery in performance.	— Oversupply issues across energy, metals and agriculture have driven much of the negative performance, that condition could remain. — Energy prices remaining at sustainable levels is largely dependent upon a continuation of OPEC led production restraint. — Any reversal in the economic recovery or vaccination roll-out will impact demand for energy and industrial metals.	Futures based commodities strategies continue to face structural headwinds with steep contango and low collateral rates. A strong economic recovery could be bullish for spot prices, however. Futures based commodities potentially offer insurance against an unexpected spike in inflation, although that can be an expensive policy as we've seen over the past decade.	**Neutral**

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
TIPS	Declining nominal interest rates have led to positive total returns and recent increases in inflation expectations have caused TIPs to outperform nominal bonds. Breakeven rates have risen sharply during the recovery, although it may be technically driven through government purchases.	— Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS. — Continued low rates creates a high cost of carry.	Low absolute current yields and moderate inflation expectations has led to low total return expectations for TIPS, especially relative to other real asset investment opportunities. If inflation continues higher, TIPS could provide protection to portfolios.	**Neutral**
Core Infrastructure	Performance within infrastructure was mixed for 2020 as several sectors faced Covid-related challenges, while some industries in communication and logistics thrived. With the global economy is set for a recovery, we expect lower risk infrastructure assets will continue to deliver modest high single digit returns. The asset class could see some tailwinds as investors search for income above that available in fixed income. In addition, inflation concerns from some investors may lead to additional capital entering the space.	— We remain cautious on public-private (PPP) infrastructure assets, especially in the U.S and Europe. Assets with high regulatory oversight have had a mixed history of success and the recent political environment has seen an uptick in hostility to private ownership of public goods. — Strong fundraising trends in infrastructure has, in part, kept valuations elevated despite the asset classes challenges. For open-end infrastructure funds with mature portfolios, we would pay particular attention to valuations and embedded risks from exposure to energy and transportation assets.	The asset class offers a compelling return profile that aligns well with long duration pools of capital. We favor private infrastructure funds that have in-house capability to improve operations and manage complex deal structures.	**Neutral**
Value-add Infrastructure	Similar to core infrastructure, exposure to certain transportation assets and midstream energy likely presented performance challenges in 2020 for infrastructure investors. In addition, the markets desire for high growth assets led to underperformance within traditionally low growth industries like infrastructure. While we would not call infrastructure cheap, on a relative basis, the segment appears attractive.	— Regulatory risk, falling power prices, demand for green energy and Covid-19 are just a sample of the challenges that infrastructure has faced in the past year. Opportunities are also created from those challenges, and we believe with the right manager, value-add infrastructure will be best positioned to take advantage of any disruptions in the industry.	The asset class offers a compelling return profile that aligns well with long duration pools of capital. Value-add infrastructure comes with higher operational/execution risk than Core so investors should expect a broader range of outcomes and greater emphasis on manager selection.	**Positive**

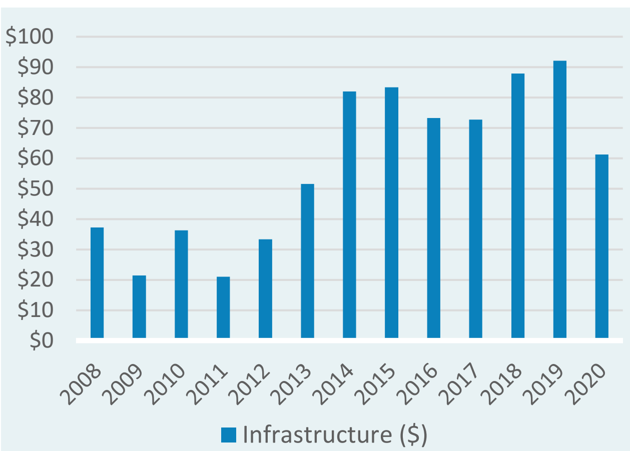
Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Energy Transition	New development projects of renewable assets will continue to accelerate as solar and wind farms are now the cheapest form of new build electricity generation for over two-thirds of the global population. However, there is continued downward pressure on the cost of capital in the sector to mid-single digits. Outside of traditional solar & wind, there are potentially higher returning opportunities for newer technologies such as battery storage.	— Several approaches to a carbon-neutral energy system such as green hydrogen and carbon capture technology are nascent and not yet economically viable. Investments in this space will take venture-like risk and rely on significant cost reductions as well as favorable policy regimes to be successful.	While the opportunity to achieve an attractive return in solar & wind has passed, we do think there will be potentially attractive opportunities in sectors that still require innovation. However, it is difficult to find areas where investors will be appropriately compensated for risk given the amount of capital in the space.	**Neutral**
Oil & Gas	The oil & gas industry enters 2021 with hopes for an improved market environment 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 last year. Higher commodity prices have begun to breathe some life into publicly-listed upstream companies and likely some areas of the capital markets will return to provide funding for independent drillers. Our belief is that the private markets that funded a lot of the growth in energy production will continue to shrink as institutions shift capital towards cleaner forms of energy.	— The industry could see a rebound in 2021 if prices stabilize around $65-70/bbl, or higher. Public equity and debt markets could re-open for oil/gas producers as investors look for higher potential returns. We expect fundraising within private markets will remain challenging for carbon-heavy industries. — Longer-term, oil demand is expected to decline as non-carbon sources of power outcompete hydrocarbons. — Geopolitics and the tension between OPEC and non-OPEC producers presents an additional risk for investors.	Higher commodity prices have improved the outlook for the energy industry and if prices hold at current levels, or move higher, the sector could rebound sharply. That said, there is still too much uncertainty around oil/gas demand, access to capital, and geopolitics for us to gain comfort in the long-term outlook for the oil/gas industry. As long-term investors, we recommend avoiding the upstream energy market but recognize that performance in the short-term could be exceptional.	**Negative**
Midstream Energy / MLPs	As in prior years, the MLP/midstream market appears cheap both historically and relative to other areas of the market with a yield above 8.0%. An uptick in drilling rig count and an improving outlook for the broader economy provide some tailwinds for the sector. On the flipside, the Biden administration will likely usher in greater regulatory risk and perhaps hasten the move away from carbon-based forms of energy. We wouldn't be surprised to see midstream energy perform quite well in 2021 but we remain cautious on the long-term outlook for the industry.	— Expectations have improved for the midstream industry and a strong rally in the beaten down sector is highly probable if oil prices stabilize at or above current levels. But the experience of the last several years has taught investors how quickly the tide can shift and how unpredictable those shifts can be. — Regulatory risk has gone up considerably in the U.S. with the Biden administration and both houses in Democratic hands.	We retained a negative outlook for midstream energy, despite the positive tailwinds that higher oil prices and economic growth could bring to this sector in the near-term. Longer-term, we think the unknown risks remain too high for our comfort.	**Negative**

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
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.	— 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. However, there are a host of idiosyncratic risks in funding mining operations outside of the macro-economic environment. We will look for skilled GPs with a track record of successfully managing these risks while generating attractive returns.	**Positive**
Timberland	Timber markets in North America continue to face challenges from excess inventory, low interest rates and unfavorable transaction market. Homebuilding has surged back to life after the initial decline due to the Covid lockdown. Despite the rise in homebuilding and appreciation in lumber prices, stumpage prices for southern pine remained flat. 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.	— Coming off trade war headwinds, the timber market hit another bump when Covid-19 stalled exports to Asia and home building activity declined. Exports resumed in the Pacific Northwest and prices have recovered for Douglas Fir. Southern pine stumpage, on the other hand, saw little appreciation. — 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 nationally leveled off after 2014 but remain too expensive for the income and return potential. Rental income yield for permanent crop farmland hovers around 3.5% which after fees/expenses leaves little income return for investors. We are interested in opportunities where we can control more of the value-chain associated with food production.	— Similar to timber markets, we have concerns around valuations and the risk/return proposition for farmland investments. — The income potential within farmland is slightly 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. We are selectively looking at agriculture business investments where crop and land are a component of a broader value-add investment strategy.	**Negative**

Private infrastructure

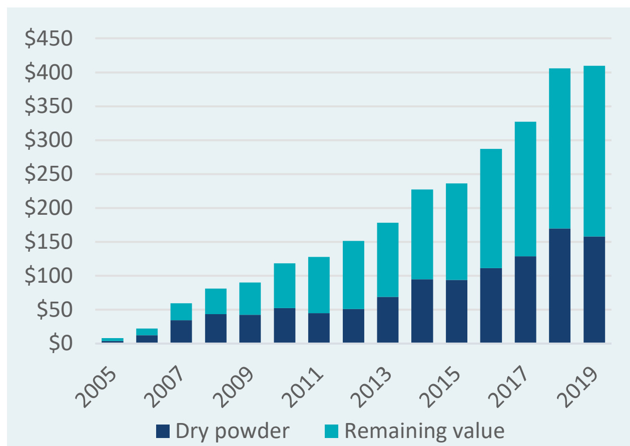
- Fundraising within Infrastructure declined in 2020 though most of that was due to challenges with fundraising across all asset classes during a lockdown. With the oil/gas sector out of favor with institutional investors, infrastructure has been a recipient for some of the commitments which used to go into natural resources. One effect of that shift has been a surge in “energy transition” funds from many of the large upstream energy managers as they try and pivot towards clean energy. It’s still too early to say how successful that pivot will be, but competition should creep up for renewable energy production and storage assets.
- With deal activity slowing during the pandemic, dry powder ticked up during the year though we expect a robust transaction market in 2021.
- As institutions look for asset classes that can deliver returns above their target rates, private infrastructure should be a consideration for many investors. Historical returns range from 8-12% (net) on average, with income of 4-6% for core infrastructure funds.

FUNDRAISING IN INFRASTRUCTURE ($B)



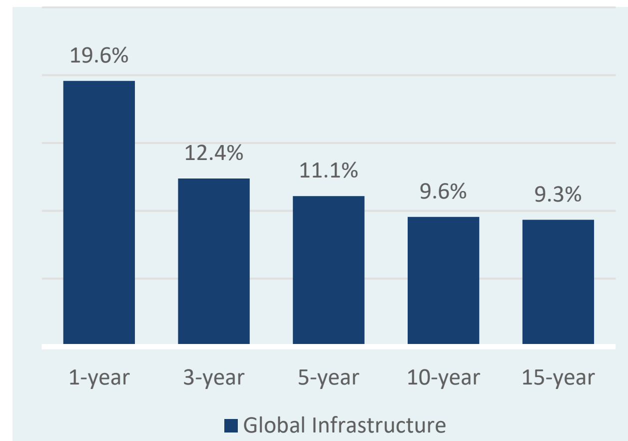
Source: Preqin/Pitchbook

INFRASTRUCTURE DRY POWDER ($B)



Source: Pitchbook

INFRASTRUCTURE PERFORMANCE (NET)



Source: Pitchbook, weighted horizon IRRs as of 12/31/19

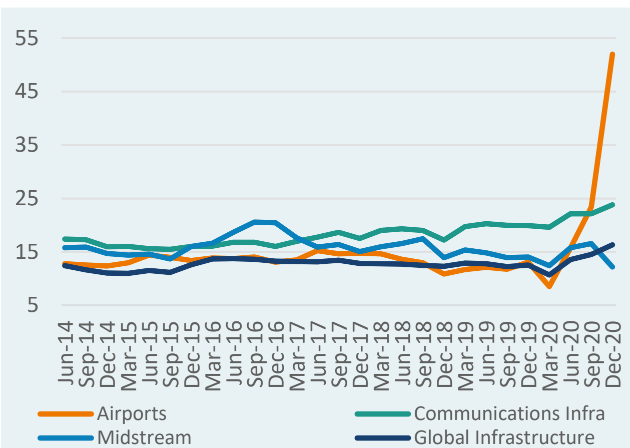
Private infrastructure (cont.)

— One of the industries hardest hit by the pandemic has been transportation infrastructure. Airport passenger traffic fell as much 90% during March/April as the full impact of social distancing orders took effect, and was off 50-60% in 2020, relative to the prior year. With traffic volumes declining in such a short period, revenue and earnings took a major hit causing what appears to be a spike in valuations. In contrast, communications infrastructure has largely been a beneficiary as data usage surged. Despite the challenges within segments of the transportation market, we find better opportunities elsewhere in the infrastructure market.

— Communication infrastructure trades at a considerable premium, 23x vs. 16x for infrastructure broadly, which reflects 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. Transactions in private markets for digital infrastructure are growing rapidly as more capital is raised to take advantage of the buildout in data storage and transmission. There are still attractive opportunities globally for digital infrastructure, but returns are coming down and finding managers that can identify underserved markets and successfully develop infrastructure will be an area of focus for our team.

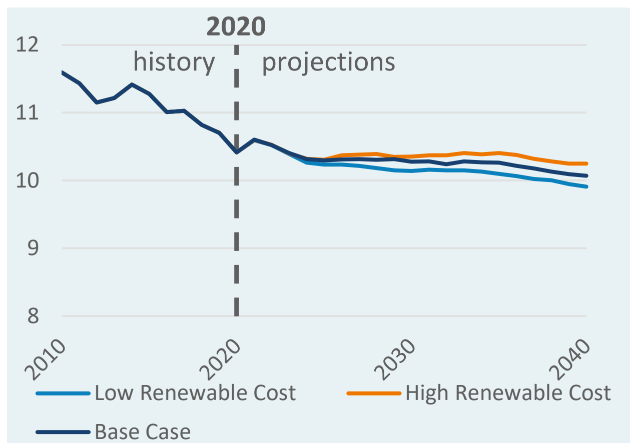
— One challenging area for investors has been power production assets in the U.S. as electricity prices have been marching down for several years. The growth in low-cost renewables and stagnant/declining demand for power has hurt investment returns in both thermal and renewable power. This is a challenge for base load power assets and isn't likely to reverse as more renewables hit the grid. An area that we are seeing opportunities is within battery storage and independent power systems for commercial & industrial customers.

INFRASTRUCTURE VALUATIONS – EV/EBITDA



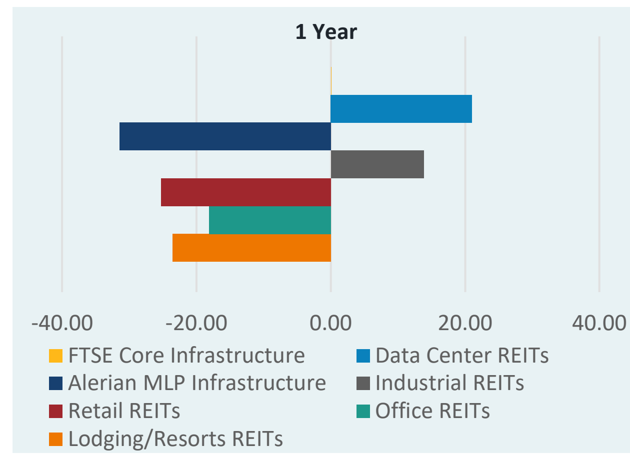
Source: Bloomberg; Dow Jones Brookfield; S&P Indices

U.S. AVERAGE ELECTRICITY PRICES (CENTS PER KILOWATT HOUR)



Source: EIA

LISTED INFRASTRUCTURE PERFORMANCE

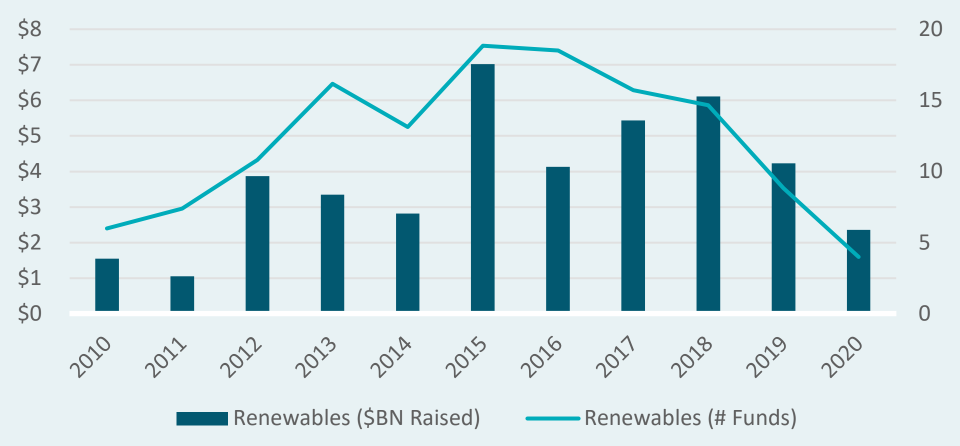


Source: eVestment; FTSE NAREIT; Alerian

Infrastructure – Energy transition

- Fundraising in dedicated renewables moderated in 2020 to $2.4 billion. However, this universe is not easily defined and excludes funds that invest in renewables or related energy transition assets 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 renewables have become the cheapest form of electricity generation in most geographies and costs continue to decline. According to Bloomberg[1], over $15 trillion of investment in new renewable energy generation and battery storage assets is needed by 2050 in order to meet demand purely from economic considerations, excluding any effects of policy changes to meet emission goals.
- Despite a strong outlook for demand, there are challenges to deploying capital in the space. Returns for owning operating wind and solar assets have compressed to the mid-single digits, and the additional returns for taking development risk are only marginal due to the level of competition and the relatively straight forward operational requirements.
- We recommend investors gain exposure to this space through GPs that can invest opportunistically in projects across the energy transition, as opposed to a dedicated solar & wind development mandate.

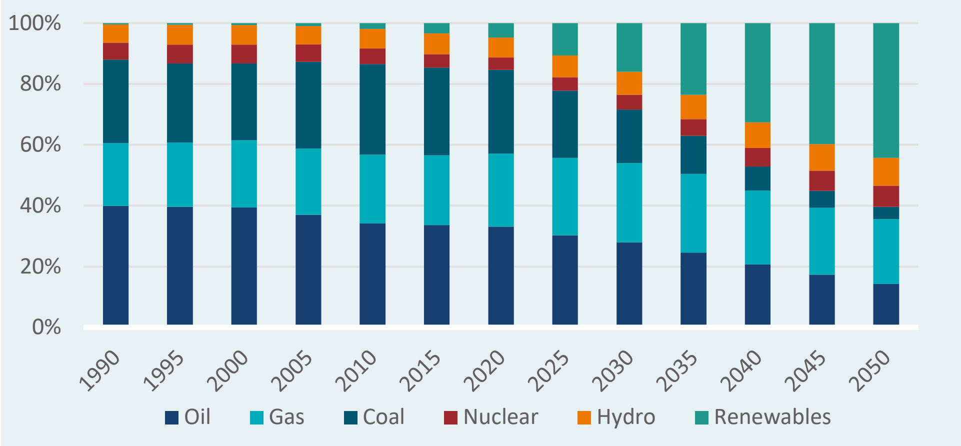
FUNDRAISING IN ENERGY TRANSITION ($B)



Source: Pitchbook

[1] Bloomberg New Energy Finance, New Energy Outlook 2020.

GLOBAL ENERGY SOURCES



Source: BP

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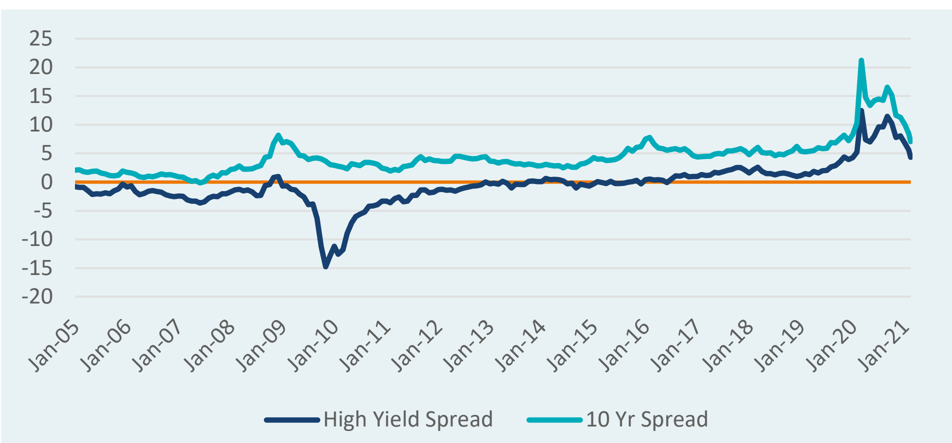
Midstream energy/MLPs

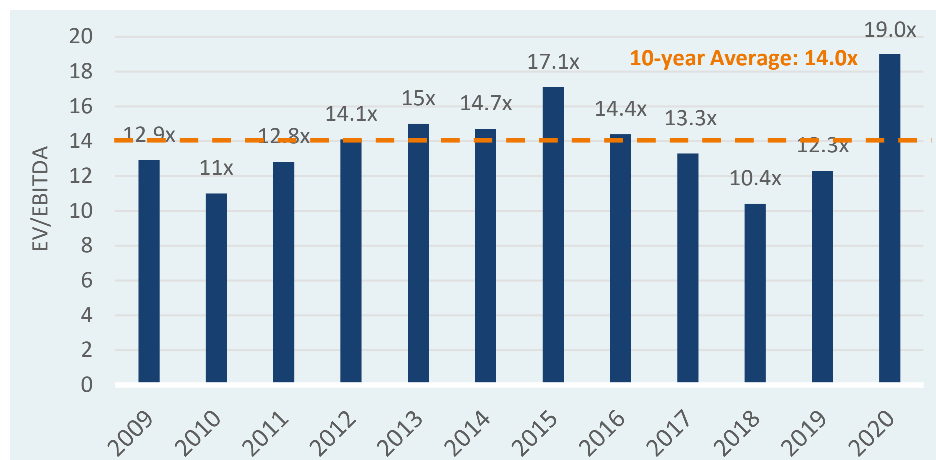
- Midstream energy stocks were down around 30% in 2020. Energy stocks, both upstream and midstream, were down over 50% in the first quarter of 2020 and unlike the broader equity market, failed to recoup those early losses by year-end.
- Yields for listed midstream companies continue to trade at a premium relative to high yield bonds and government bonds but as we cautioned last year that spread comes with an enormous amount of volatility and uncertainty. While higher oil and gas prices have improved the outlook for the upstream and midstream sectors, we remain concerned about the long-term viability of the industry. Like most investors, we've been humbled by the unpredictable nature of the global oil/gas industry. Having informed views on geopolitics, government regulations and social attitudes towards fossil fuels all have an impact on the industry and we do not claim to have special insight into those areas. So, while we recognize that higher commodity prices is a positive development, we think the risks are too great for a tactical investment opportunity in midstream energy.
- Midstream companies on average are trading around 19.0x EV/EBITDA (vs. 13-14.0x long-term average) which would seem to indicate that they are overvalued but much like airports, this is really a function of the denominator deteriorating rapidly in 2020 as earnings took a hit in the oil market sell-off. If you were to normalize earnings, we would expect a discount to historical values but as we've indicated above, cheapness is not enough for us to recommend an allocation.

MLP SPREADS VS HIGH YIELD & TREASURIES



Source: Bloomberg

MIDSTREAM VALUATIONS (EV/EBITDA)

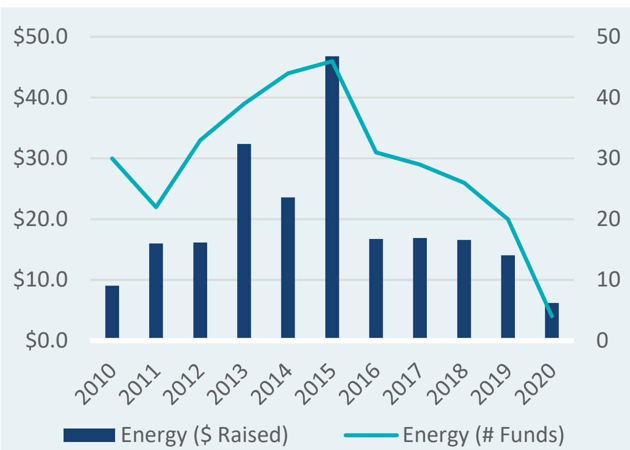


Source: Bloomberg; Alerian MLP Index

Energy – Oil/gas

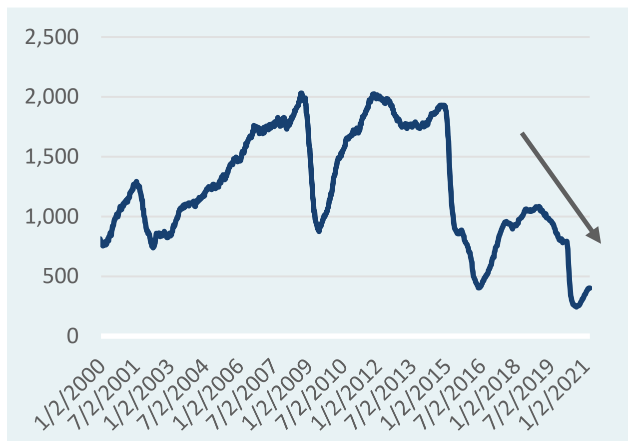
- According to Pitchbook, fundraising within Oil/Gas private equity has collapsed and that mirrors our own experience within the asset class. Historical performance has been poor, more institutions are adopting standards in ESG, and the long-term outlook for the industry appears unfavorable. We do not see this trend reversing in any meaningful way and it would appear the private energy managers agree as they seek to pivot their business towards energy transition funds.
- Historically, oil/gas production levels in the U.S. followed drilling rig activity. If you look at the weekly drilling rig chart below, you would assume that production fell-off starting around 2016. That is not the case. Production has grown each year, hitting a peak in 2019 at around 12 million barrels/day. 2020 production levels declined by around 1 million barrels, but the U.S. is still producing oil at record levels. Without delving into the cause of that divergence, it has frustrated any recovery in oil prices. At some point, if the industry doesn't reinvest in drilling activity, production will fall further but capital spending discipline has not been a strength of the industry.
- For now, we would recommend investors avoid putting new capital into the sector. We recognize that if commodity prices continue to move north of $65/bbl that energy stocks could be in for a strong recovery, but the long-term trends are not in the sectors favor as renewable energy continues to take market share.

FUNDRAISING IN OIL/GAS



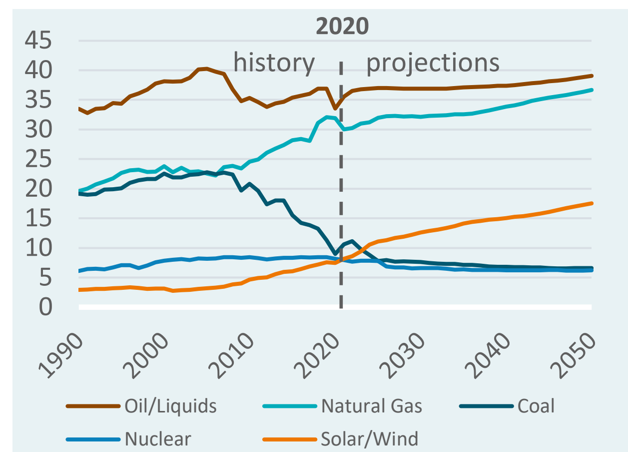
Source: Pitchbook

US WEEKLY DRILLING RIG COUNT



Source: Baker Hughes

ENERGY CONSUMPTION BY FUEL (QUADRILLION BTU)



Source: EIA

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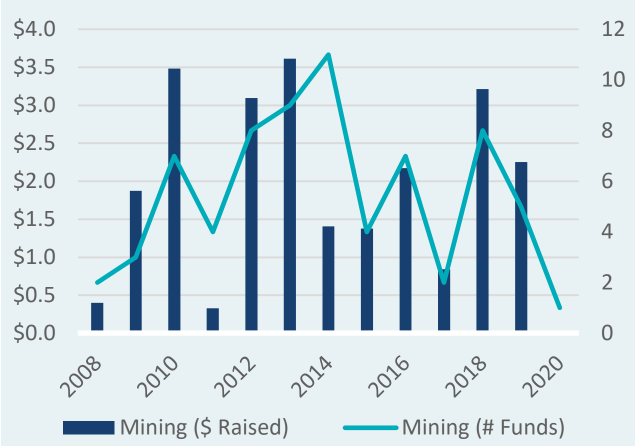
Metals and mining

— Fundraising in the private equity mining segment has been lumpy and quite modest since the GFC, with virtually no private capital raised in the space in 2020. ESG issues in the sector have been a barrier for LPs, but it is possible for fundraising to improve if investors see the benefit of funding the extraction of materials that contribute to our shift away from fossil fuels, such as copper and lithium.

— After a modest recovery from a cyclical low in 2016, mining exploration budgets decreased by 11% in 2020 due to an initial demand shock for industrial metals and lockdown measures put in place in many countries mining companies operate. However, the surge in metal prices that followed along with the persistent low investment over the last several years leading to under-supply is expected to drive an increase in budgets for 2021. Our overall outlook within mining is positive with a notable challenge in finding enough investment opportunities that meet our underwriting criteria.

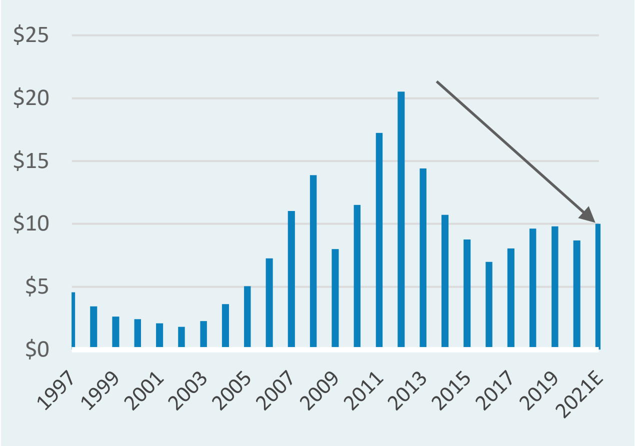
— On the investment side, we have participated in the mining sector by backing teams with expertise in financing mining projects which delivers a high income return with some upside associated with a structured equity security. We are more bullish on base/industrial metals which longer-term will benefit from a shift away from fossil fuels. We are less bullish on bulk and energy-related commodities.

FUNDRAISING IN MINING ($B)



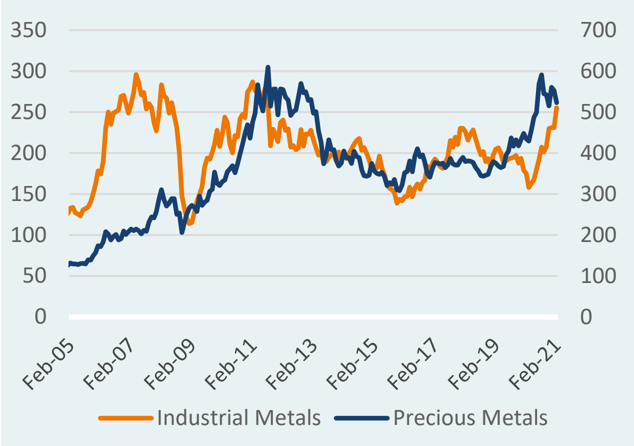
Source: Pitchbook

CAPITAL EXPENDITURE IN MINING ($B)



Source: S&P Global Market Intelligence

METAL PRICES



Source: Bloomberg, as of 2/26/2021

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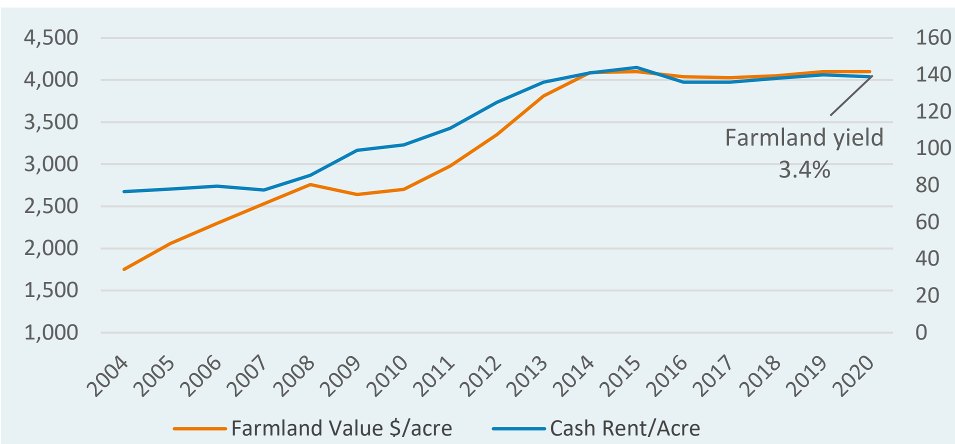
Agriculture

— 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.

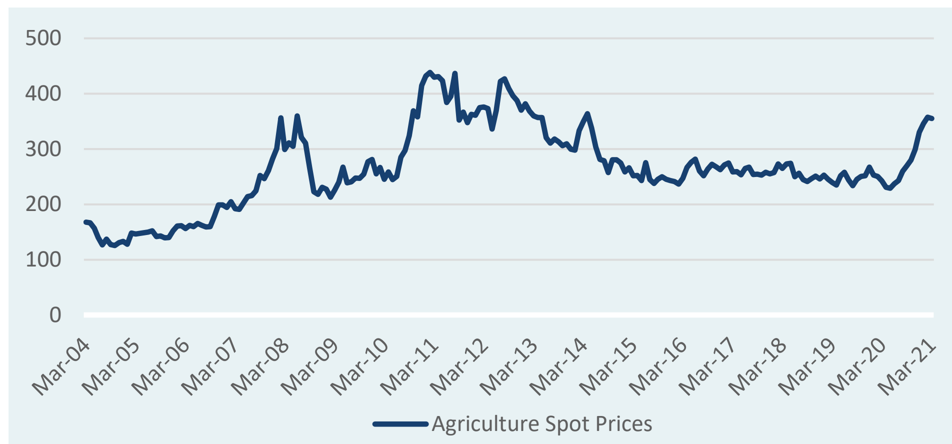
— We tend to favor agriculture strategies that both own land for crop production and control the operating verticals that bring food to the consumer. Strategies that can capture more value through processing, storage and marketing, offer the potential of higher returns.

U.S. NATIONAL FARMLAND VALUES VS CASH RENTS



Source: USDA

BLOOMBERG AGRICULTURE PRICES



Source: Bloomberg, as of 3/31/20

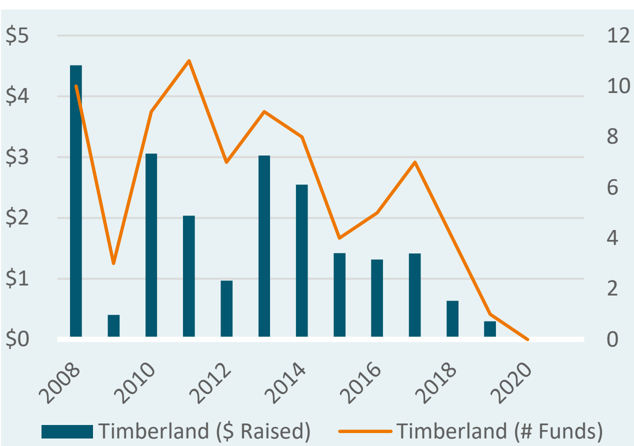
Timberland

— Fundraising has continued to be a challenge within the timber industry. According to Pitchbook, one timber fund was raised in 2019 and there were no reported funds raised in 2020 (Note: this data does not include any separate accounts that may have been raised). Despite a lack of capital being raised by TIMOs, the investment opportunity within timber has not materially improved.

— 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. Much like the broader capital markets, housing starts recovered quickly and have surpassed the highs reached pre-Covid.

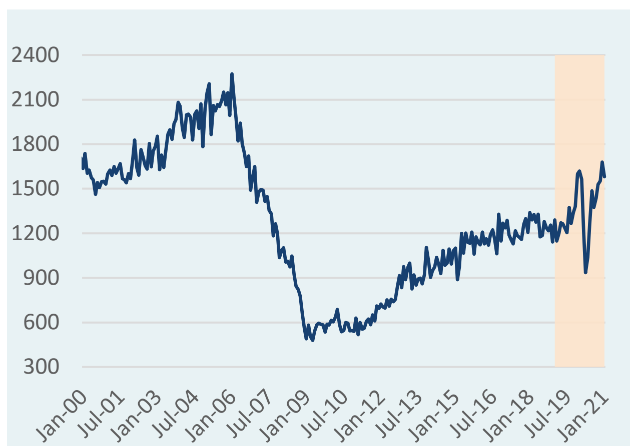
— As the chart on the bottom right indicates, one of the challenges that timber investors have faced is that the price they received for their trees (southern pine stumpage) began to decline during the GFC and largely never recovered. With housing construction turning around in 2015/16, lumber prices 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.

FUNDRAISING IN TIMBERLAND



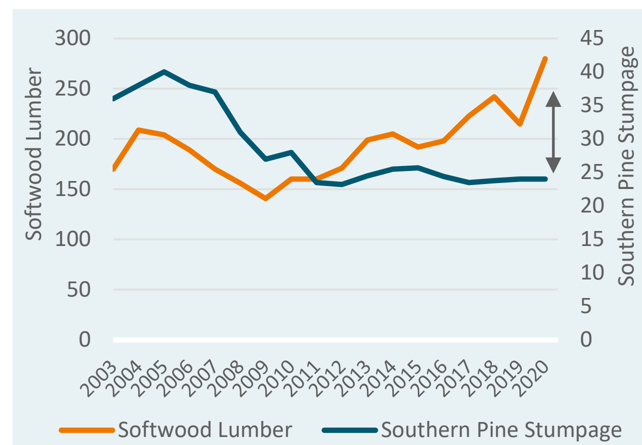
Source: Preqin/Pitchbook

US HOUSING STARTS



Source: St. Louis Fed

SOUTHERN PINE STUMPAGE VS SOFTWOOD LUMBER PRICES



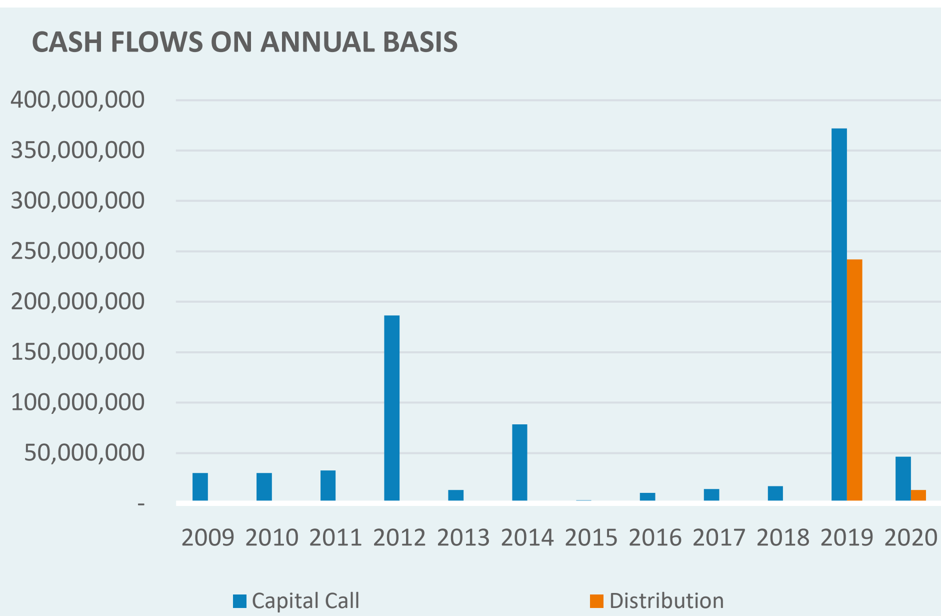
Source: St. Louis Fed

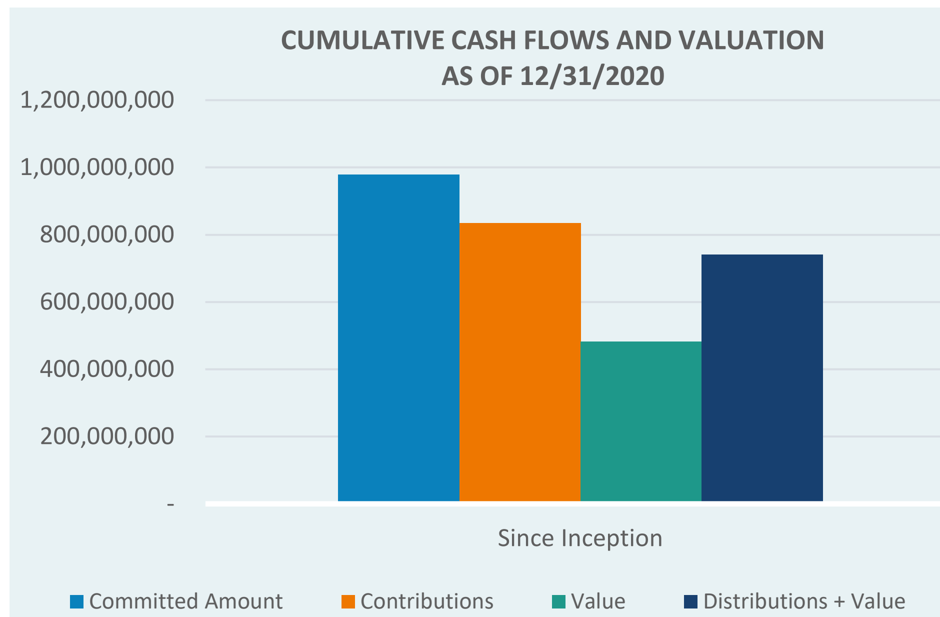
Verus

Real Asset Performance

Performance

— ACERA's Real Asset Pool has produced a -2.91% 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). That said, the portfolio is beginning to see the success of more recent fund investments with Quantum now posting positive performance, several of the infrastructure investments have matured and are delivering double digit returns since inception, and the liquid pool has also performed well in 2021.



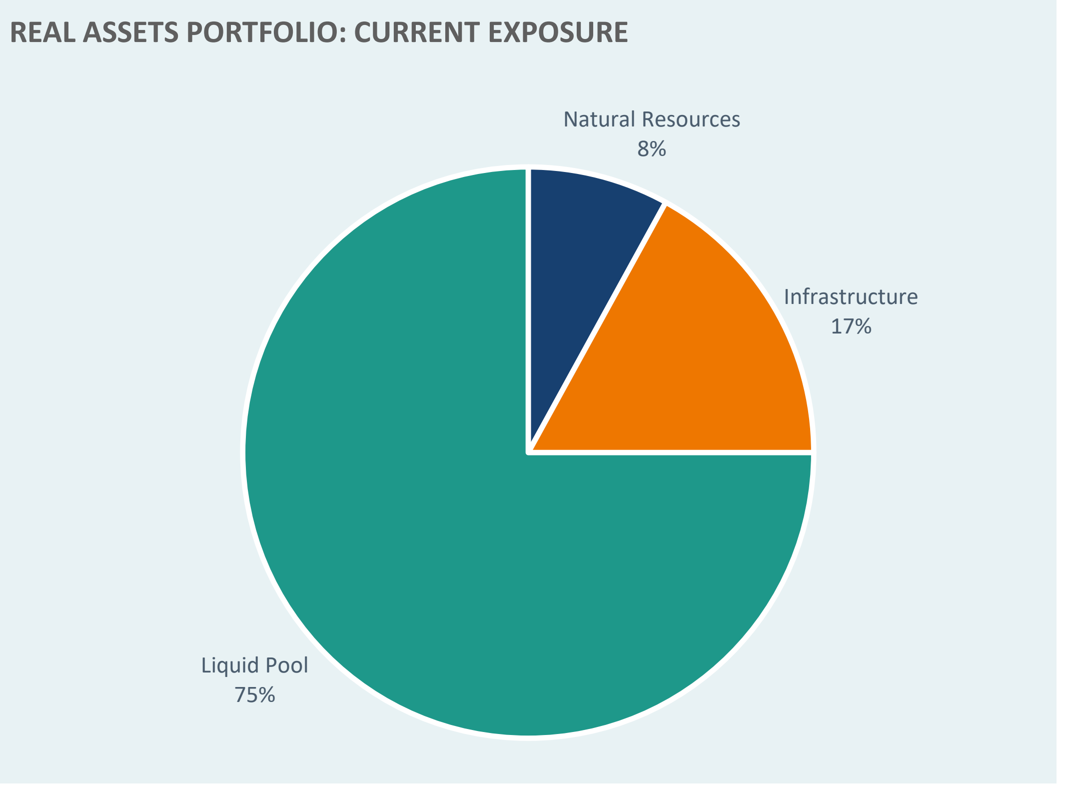


	1-Year	3-Year	5-Year	10-Year	Since Inception
Natural Resources Funds	**6.21%**	**-7.39%**	**-2.30%**	**-8.99%**	**-9.03%**
S&P Global Natural Resources Index[1]	*-1.27%*	*0.48%*	*5.47%*	*1.93%*	*1.93%*
Infrastructure Funds	**15.67%**	**14.76%**			**12.53%**
S&P Global Infrastructure Index[1]	*-15.62%*	*-5.51%*	*-4.01%*	*-4.01%*	*-4.01%*
Liquid Pool Funds	**-0.43%**	**-0.37%**	**1.73%**	**-3.88%**	**-3.13%**
Bloomberg Commodity Index[1]	*0.00%*	*-2.23%*	*0.83%*	*-5.98%*	*-5.34%*
Total Real Assets	**2.21%**	**0.25%**	**2.21%**	**-3.57%**	**-2.91%**
Blended Real Assets Benchmark[2]	*-1.29%*	*1.90%*	*5.73%*	*5.35%*	*5.12%*

[1] *Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 12/31/2020. Analysis provided by Solovis.*

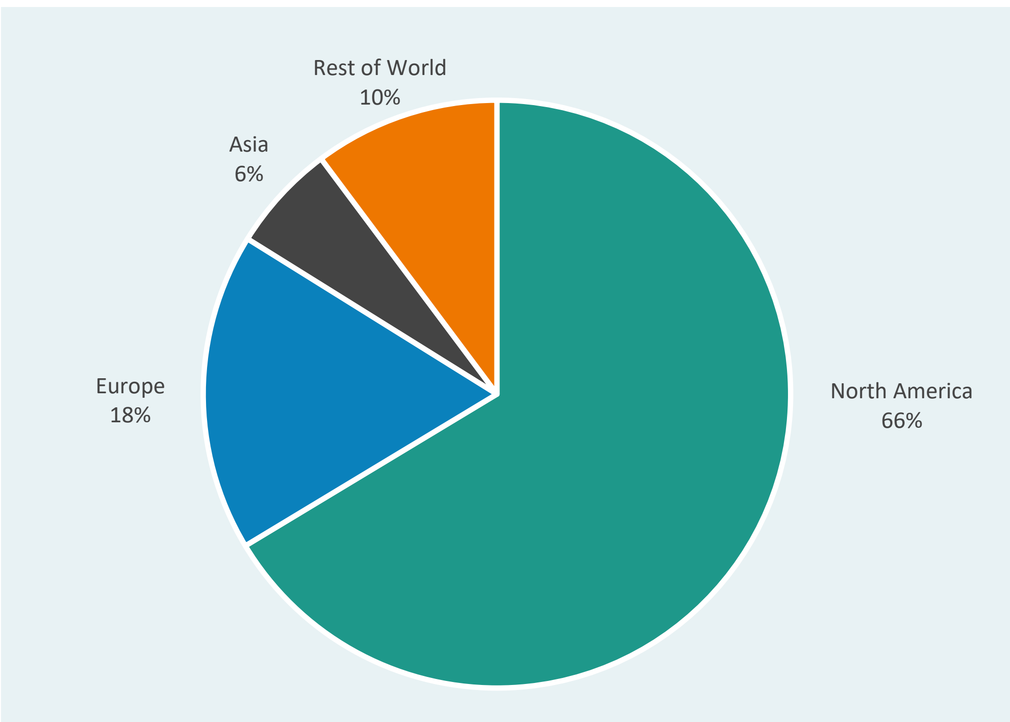
[2] *Blendeed Real Assets Benchmark calculated on a time-weighted return basis*

Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Natural Resources	104,000,000	40,592,307	8.4%
Infrastructure	185,000,000	79,934,323	16.6%
Liquid Pool	689,235,893	360,931,073	75.0%
Total Portfolio	**978,235,893**	**481,457,703**	**100.0%**



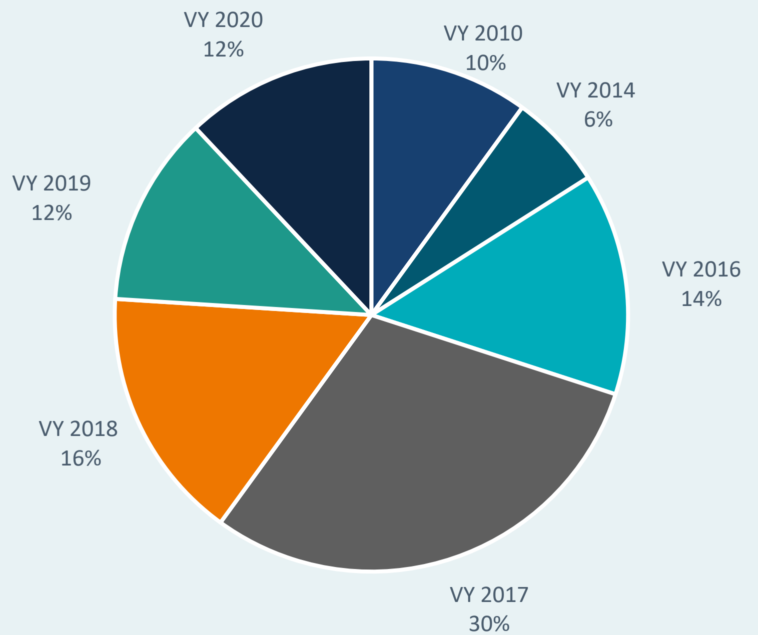
Geography	Reported Fair Value
North America	79,990,866
Europe	21,082,542
Asia	7,138,319
Rest of World	12,314,903
Total Portfolio*	**120,526,630**

* *Excludes Liquid assets.*



Vintage Year	Commitment as of 12/31/20	% of Portfolio Commitment	Reported Value as of 12/31/20
2010	24,000,000	9.6%	0
2014	15,000,000	6.0%	6,792,639
2016	35,000,000	14.1%	24,479,505
2017	75,000,000	30.1%	54,205,759
2018	40,000,000	16.1%	25,857,701
2019	30,000,000	12.0%	9,191,026
2020	30,000,000	12.0%	0
Total Portfolio	**249,000,000**	**100%**	**120,526,630**

* *Excludes open-end vehicles and liquid assets.*



— ACERA committed $25 million to Vision Ridge Sustainable Asset Fund III within the infrastructure portfolio at the March Investment Committee Meeting.

— Several GPs that we have invested with previously are coming back to market in 2021 so we will be revisiting those opportunities for potential re-ups.

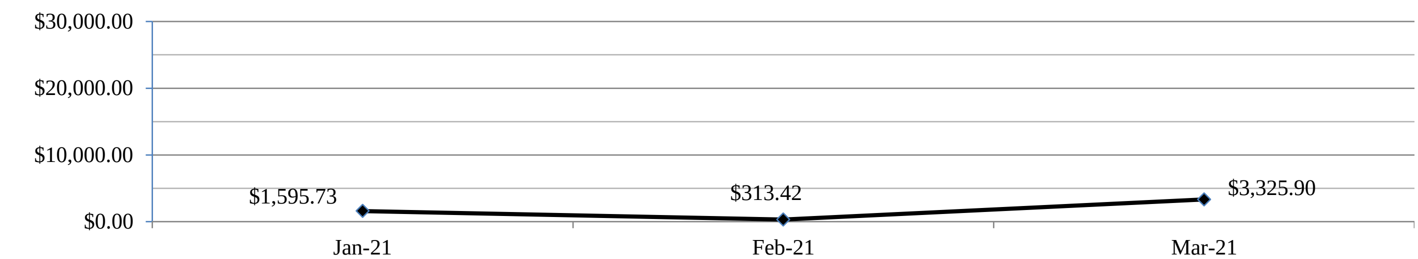
— As mentioned previously, we plan to increase the allocation to infrastructure investments at the expense of natural resource strategies as we move away from investments in the oil & gas industry.

Alameda County Employees' Retirement Association
First Quarter 2021 Directed Brokerage Report

Quarterly Commentary

In 1Q21, the total recaptured dollar amount for ACERA's Directed Brokerage (DB) Program was $5,235.05. Since inception[1], ACERA has recaptured $2,084,991.03. For the quarter, Kennedy directed the highest percentage (27.45%) of trading volume and Kennedy also generated the largest recaptured directed commission dollar amount ($8,595.17). CAPIS received 99.9% of ACERA's directed trades among the network of correspondent brokers. The program continues to operate in compliance with ACERA's DB Policy.

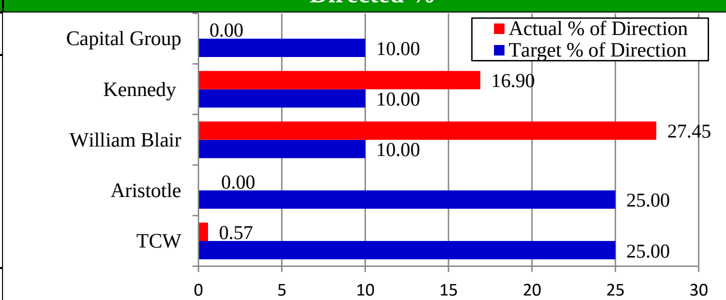
Monthly Recaptured



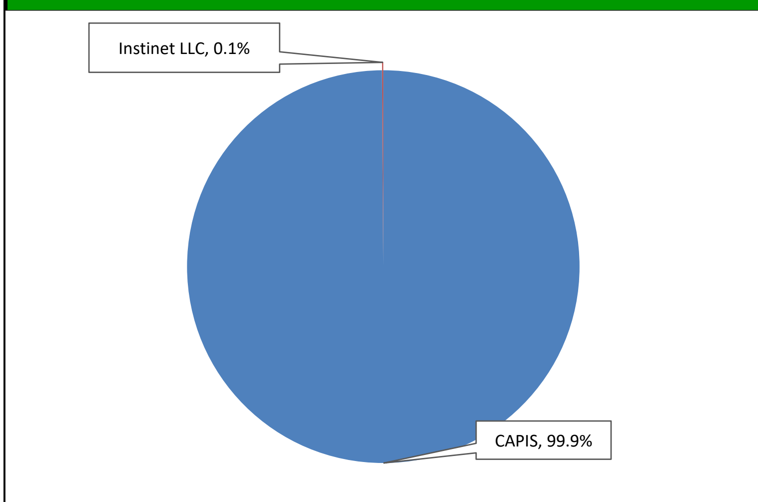
Directed Commission $[2]

Manager	1Q2021	YTD
Capital Group	0.00	0.00
Kennedy	8,595.17	8,595.17
William Blair	4,243.82	4,243.82
Aristotle Capital	0.00	0.00
TCW	12.64	12.64
Total	**$12,851.63**	**$12,851.63**

Directed %[3]



Directed % to Correspondent Brokers[4]



Andes Capital Group
B. Riley & Co.
Barclays (US Algo/DMA)
BIDS Trading
Bley Investment Group
Cabrera Capital Markets
CAPIS
CAPIS Step Out
CF Global Trading
Commission Direct, Inc.
Cowen Securities (U.S.)
Drexel Hamilton
HSBC James Capel
ICAP (U.S.)
Imperial Capital
Instinet LLC
ITG, Inc.
Kota Global Securities
LAM Securities
Liquidnet
Merrill Lynch (U.S.)
Mischler Financial Group
Northeast Securities
O'Neil Securities
Penserra Securities, LLC
Pershing, LLC
Piper Jaffray & Co.
Societe Generale
State Street Global Markets (Europe)
Virtu Securities
Weeden & Co LP

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

1. ACERA's DB Program began in September 2006. Mondrian, Bivium do not participate in Commission Recapture; Blackrock, Newton, and Templeton are cominingled accounts and do not particiapate.
2. Data provided by CAPIS. Directed Commission $ - Dollar amount of commissions from directed trades - this amount is split among ACERA (40.73% for 1Q2021), 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 25% for TCW).
4. Data provided by CAPIS.

Report prepared by Investment Staff

ICM 6/9/2021

INVESTMENT MANAGER, CONSULTANT, AND CUSTODIAN FEES

For Quarter Ending March 31, 2021

INVESTMENT NET ASSET VALUE AND INVESTMENT MANAGER FEES
FOR THE QUARTER ENDED MAR 31, 2021

For the Quarter Ended Mar 31, 2021 Name of Fund	NAV[2] ($) As of 3/31/21	Q1 - Total Fees ($)	bps of NAV
Domestic Equity [1]			
Aristotle Capital	150,730,357	136,658	9.07
BlackRock R1000 Index Fund	2,251,830,085	46,533	0.21
Kennedy Capital	155,506,940	278,600	17.92
Trust Co. of the West	130,365,332	141,509	10.85
William Blair Small Cap Growth	163,621,954	310,642	18.99
Total Domestic Equity	2,852,054,668	913,943	3.20
International Equity [1]			
BlackRock MSCI World ex-US	696,986,292	41,872	0.60
Bivium International Equity	141,465,263	271,534	19.19
Capital Group	679,744,520	1,184,087	17.42
Franklin Templeton Inv.	282,843,282	409,560	14.48
Mondrian	712,184,500	595,149	8.36
Newton Emerging Market Equity Fund	258,003,949	331,592	12.85
Total International Equity	2,771,227,806	2,833,795	10.23
Fixed Income [1]			
Baird Advisors	854,968,230	154,416	1.81
Loomis Sayles	413,294,810	326,107	7.89
Brandywine Global FI	385,136,541	267,114	6.94
Total Fixed Income	1,653,399,581	747,637	4.52
Real Estate [5, 6]			
Total Real Estate	628,099,861	1,645,485	26.20
Private Equity [4, 5, 6]			
Total Private Equity	900,303,750	3,102,791	34.46
Absolute Return [5,6]			
Total Absolute Return	702,108,937	1,509,456	21.50
Real Assets [4, 5, 6]			
Total Real Assets	500,855,995	715,355	14.28
Private Credit [4,5,6]			
Total Private Credit	91,839,895	433,988	47.25
Cash	36,276,009		
TOTAL [7]	**10,136,166,502**	**11,902,450**	**11.74**

Notes:

1. Domestic, International Equity, and Fixed Income managers' fees are based on staff validated manager invoices.
2. NAVs may use estimates at the time of this report's production.
3. Some accounts contain submanaged funds; the fees shown include all assets in the account.
4. Sometimes fees may be estimates. According to the Limited Partnership Agreements, management fees are based on committed amounts and/or assets under management.
5. Detailed records regarding these investments of public pension funds are exempt from disclosure under California Government Code Section 6254.26
6. As of 1Q 2021, the management fee totals no longer includes estimates for other expenses and carried interest allocations. This additional information will be reported in the annual 7514.7 Alternative Investment Vehicles Information Report presented each December.
7. Previous quarter's amounts may change as estimates are trued up to actual amounts. Each true up is made using the most recent information.

CONSULTANT/CUSTODIAN FEES
FOR THE QUARTER ENDED MAR 31, 2021

	Q1 - Fees ($)
Consultant	
Doug McCalla	12,367
Callan Associates	56,250
Verus Advisory, Inc.	178,750
Institutional Shareholders Services	13,575
Zeno Consulting Group	11,250
Sub-total Consultant	272,192
Custodian	
State Street Bank	142,930
TOTAL OF CONSULTANT / CUSTODIAN FEES [1]	**415,122**

Notes:

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

ACERA

ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

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

TO: Members of the Investment Committee

FROM: Agnes Ducanes – Administrative Specialist II

DATE: June 9, 2021

SUBJECT: Quarterly report on ACERA's Investment Products and Services Introductions (IPSI) Program

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In the first quarter of 2021, Staff received 17 investment products and services inquiries from prospective providers. We met with 7 managers who presented through the IPSI process.

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

Below please find a chart depicting the types of IPSI sessions that were held in the first quarter of 2021.

ASSET CLASS	Q1 '21	Q2 '21	Q3 '21	Q4'21	TOTAL
U.S. Equities	0	0	0	0	0
Int'l Equities	0	0	0	0	0
Fixed Income	0	0	0	0	0
Real Estate	0	0	0	0	0
Private Equities	0	0	0	0	0
Absolute Return	0	0	0	0	0
Real Assets	2	0	0	0	2
Private Credit	5	0	0	0	5
Other Services	0	0	0	0	0
TOTAL:	7	0	0	0	7

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: June 9, 2021

SUBJECT: Summary of Rebalancing and Cash Activities Completed in 1Q2021

Recommendation:

Not Applicable – This is an information item.

Background/Discussion:

1. Action was required to rebalance the Total Fund for the quarter ending March 31, 2021. 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 was a rebalancing signal in late January 2021. The account managed by Baird Advisor was underweight and below its lower target range. Following established procedures and input from ACERA's Rebalancing Consultant, Staff withdrew $142.2 million from the most overweight managers in International Equity and U.S. Equity asset classes[1] to fund the Baird account.

2. Regarding significant cash-flows for 1Q2021, Staff implemented the following changes to manage excess cash, make the supplemental month-end retiree benefits and administrative payroll, and to meet the capital calls and provide operating funds:

   a. **Month-end payroll[2]:** Staff withdrew a net $51.3 million from the Total Fund to supplement for month-end payroll for the three-months ending March 31, 2021. Staff wired out $19.5M in January, $18.5M in February, and $17.0M in March to ACERA'S Wells Fargo Bank account. Fiscal Services wired-in or added back in $2.0M and $1.7M from Wells Fargo Bank back to State Street Bank (#HI1A) in January and February, respectively. The reason for noting the incoming wires is not all employer contributions are received before the month-end and administrative payroll is made for that month.

   b. **Capital Calls, Distributions, and Other:** In general, wire-payments of $67.1M in aggregate were made to meet capital calls for ACERA's privately placed investments.

[1] Bivium $3,530,000; BlackRock MSCI World ex-U.S., $18,600,000; Capital Group, $29,600,000; Franklin Templeton, $6,760,000; Mondrian, $25,360,000; Newton, $36,350,000; William Blair, $22,000,000

[2] To meet capital calls, new investments, and month-end payroll, Staff supplemented HI1A cash balances by withdrawing $20.0K February 16, 2021 from the ACERA's Blackrock Russell 1000 Index in accordance with the most overweight asset class according to policy and procedures.

ACERA received cash and in-kind distributions from ACERA's investments totaled $47.0M. This dollar amount does not include other incidental income[1].

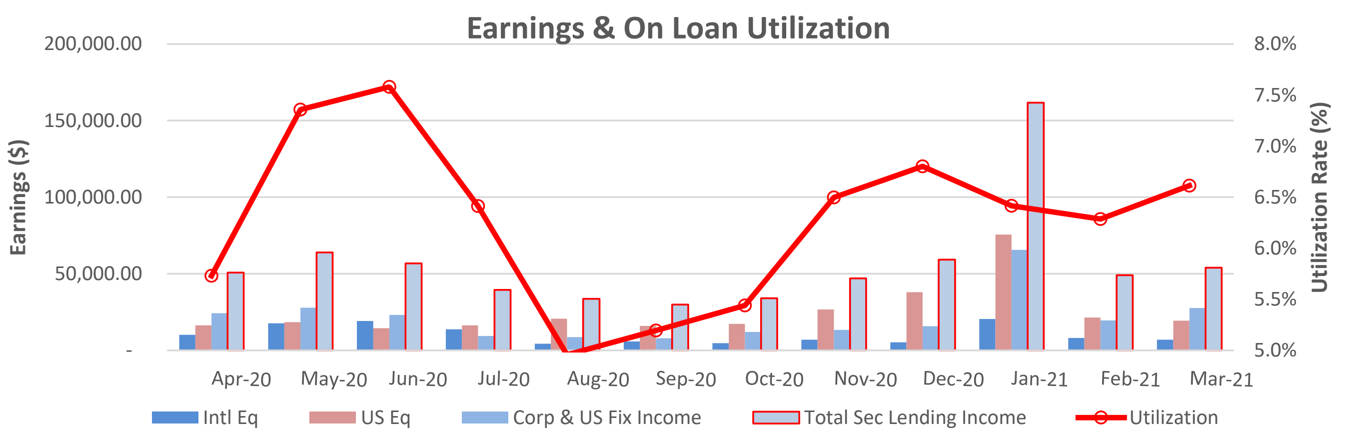
Reporting of rebalancing activities will continue to be submitted to the Investment Committee on a quarterly basis.

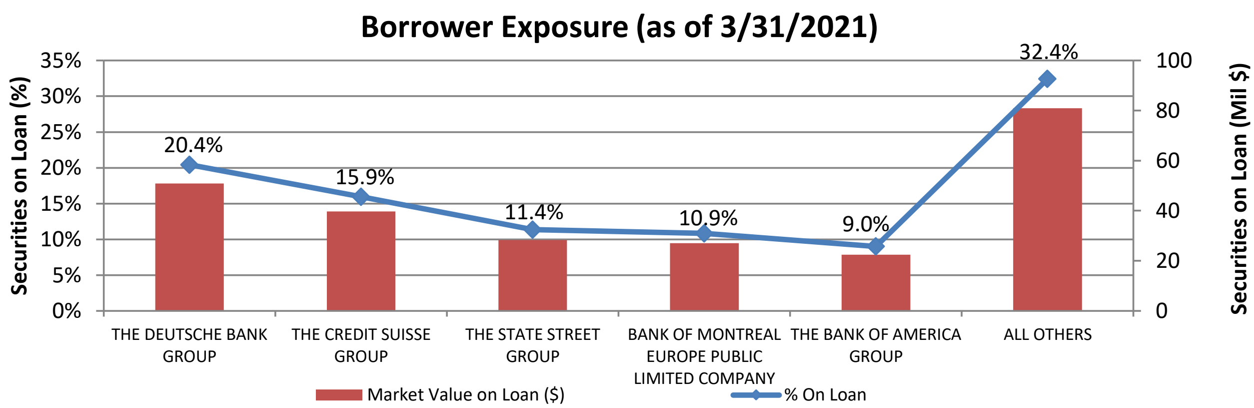
[1] Securities Lending Income ($166.9k), Securities Litigation Income ($710.0k), and Commission Recapture Income ($3.8k) totaled $880.8k. Incremental income does not include dividend and interest income from traditional managed accounts, which are reinvested back into each account.

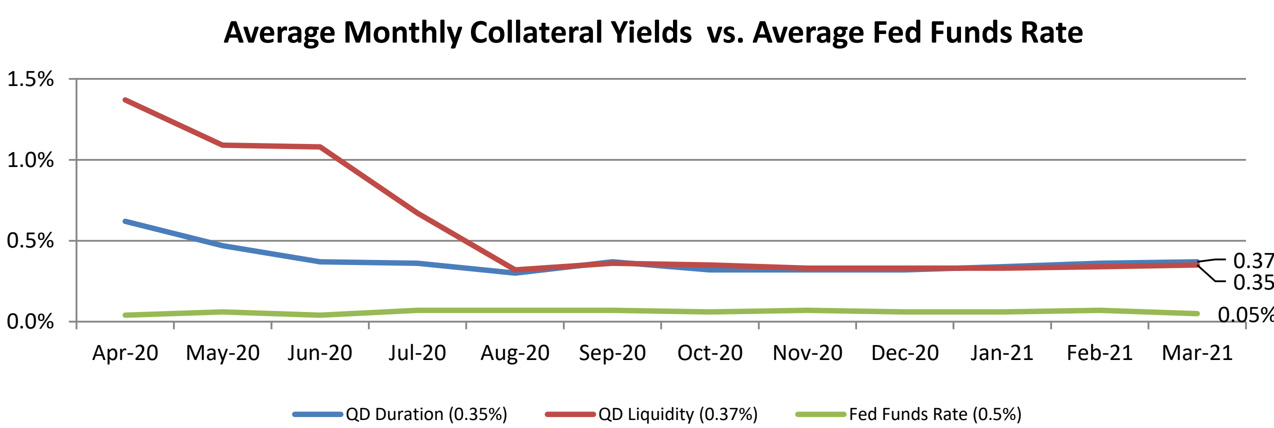
Alameda County Employees' Retirement Association
1st Quarter 2021 Securities Lending Report

Quarterly Summary

In 1Q2021, ACERA's earnings from Securities Lending activities were $264,669.32. U.S. Equities generated the highest earnings of $116,457.32. For the quarter ending March 31, 2021, the average value of securities out on loan was $184,481,418.00. The average lendable amount for the same period was $2.86 billion. Deutsche Bank was the largest borrower of ACERA's securities with 20.4% or $50.9 million.







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 3/31/2021, ACERA's combined NAV per unit of the Quality D Liquidity (1.00) and Quality D Duration Funds (98.2) was $0.9999.

As of 3/31/2021, Quality D Liquidity had 114,598,686.57 units and Quality D Duration had 832,456.48 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 6/9/2020

Investment Committee Workplan for 2021

June 9, 2021

	Action Items	Information Items
January 8	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to $35 million Investment in Peak Rock Fund III as part of ACERA's Private Equity Portfolio – Buyout 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to $25 million Investment in Artemis Real Estate Partners Healthcare Fund II as part of ACERA's Real Estate Portfolio – Value-Added Adjournment into Closed Session Consider the Purchase or Sale of Particular, Specific Pension Fund Investments (CA Gov. Code § 54956.81) (One Investment)	1. CA Gov. Code § 7514.7 Alternative Investment Vehicle Information Report 2. Proposed Investment Committee Work Plan for 2021
February 10	1. Discussion of and Possible Motion to Recommend that the Board Adopt the 2021 – 2022 Investment Plan for ACERA's Real Estate Asset Class	1. Investment Committee Work Plan 2021
March 10	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to $30 million Investment in Genstar Capital Partners Fund X as part of ACERA's Private Equity Portfolio – Buyout, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to $27 million Investment in Strategic Value	*1. Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the fourth quarter of 2020* *2. Quarterly report on ACERA's rebalancing activities for the fourth quarter 2020* *3. Quarterly report on ACERA's securities lending activities for the fourth quarter of 2020*

Notes:

1. This workplan is subject to change without prior notice. Periodic rearrangements of agenda items will be made to the workplan to provide a reasonable length of time for each meeting.
2. Meeting date is assumed to be the second Wednesday of each month.
3. Educational sessions may be added to the Agenda from time-to-time e.g., Portable Alpha, Market and Currency Overlay, Equity Overlay, and Emerging Managers in Private Equity investments. Recommendations and reports on ACERA's Real Estate, Private Equity, Absolute Return, and Real Assets investments will be added to the Agenda from time-to-time.

Investment Committee Workplan for 2021

June 9, 2021

	Action Items	Information Items
	Special Situations Fund V as part of ACERA's Private Equity Portfolio – Debt Related/Special Situations, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations 3. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to $25 million Investment in Vision Ridge Partners Sustainable Asset Fund III as part of ACERA's Real Assets Portfolio – Infrastructure, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations 4. Discussion and Possible Motion to Recommend that the Board Adopt the Proposed Environmental, Social and Governance (ESG) Investment Policy	*4. Quarterly report on ACERA's Directed Brokerage (DB) Program for the fourth quarter of 2020* *5. Quarterly report on Investment Products and Services Introductions (IPSI) for the fourth quarter of 2020* *6. Investment Committee Work Plan 2021*
April 14	1. Discussion of and Possible Motion to that the Board Approve Certain Changes to the Absolute Return Asset Class Structure 2. Discussion and Possible Motion to Recommend that the Board Hire an Overlay Services Provider, Pending Completion of Legal and Operational Due Diligence and Successful Contract Negotiations	
May 5 (meeting moved to third Wednesday due to SACRS Conference)	1. Discussion and Possible Motion to Recommend that the Board Adopt an up to $40 million Investment in CBRE Strategic Partners U.S. Value 9 as part of ACERA's Real Estate Portfolio – Value Added, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations 2. Discussion and Possible Motion to Recommend that the Board Adopt an up to $27 million Investment in ABRY Senior Equity VI, L.P. as part of ACERA's Private Equity Portfolio – Debt Related/Special Situations, Pending Completion of Legal and	

Notes:

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Investment Committee Workplan for 2021

June 9, 2021

	Action Items	**Information Items**
	Investment Due Diligence and Successful Contract Negotiations	
June 9	1. Discussion and Possible Motion to Recommend that the Board Adopt an up to $50 million Investment in Starwood Distressed Opportunity Fund XII as part of ACERA's Real Estate Portfolio – Opportunistic, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations 2. Discussion and Possible Motion to Recommend that the Board Approve Changes to ACERA's Portfolio Asset Allocation	1. Semiannual Performance Review for the Period Ending March 31, 2021 – Real Estate 2. Semiannual Performance Review for the Period Ending March 31, 2021 – Equities and Fixed Income 3. Semiannual Performance Review for the Period Ending March 31, 2021 – Absolute Return 4. Semiannual Performance Review for the Period Ending September 30, 2020 – Private Equity 5. Semiannual Performance Review for the Period Ending December 31, 2020 – Private Credit 6. Semiannual Performance Review for the Period Ending December 31, 2020 – Real Assets *7. Quarterly report of ACERA's investment manager, consultant, and custodian fees for the first quarter of 2021* *8. Quarterly report on ACERA's rebalancing activities for the first quarter of 2021* *9. Quarterly report on ACERA's securities lending activities for the first quarter of 2021* *10. Quarterly report on ACERA's Directed Brokerage (DB) Program for the first quarter of 2021* *11. Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2021* *12. Updated Investment Committee Work Plan 2021*

Notes:

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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 2021

June 9, 2021

	Action Items	Information Items
July 14	1. Discussion and Possible Motion to Approve Updated Investment Policy Statement(s) (Placeholder)	1. Report on the proposed timeline, search criteria, and evaluation matrix for ACERA's Absolute Return Manager Search 2. Review of Newton Emerging Markets Equity Manager (Placeholder)
August 11	1. Discussion and Possible Motion to Recommend to the Board to Adopt the proposed timeline, search criteria, and evaluation matrix for ACERA's Absolute Return Manager Search 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Equities Portfolio (Placeholder) 3. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Credit Portfolio (Placeholder)	1. Proxy Voting Education and Description of ACERA's Proxy Voting Policy and Results (Placeholder)
September 8	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Estate Portfolio (Placeholder)	*1. Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the second quarter of 2021* *2. Quarterly report on ACERA's rebalancing activities for the second quarter of 2021* *3. Quarterly report on ACERA's securities lending activities for the second quarter of 2021* *4. Quarterly report on ACERA's Directed Brokerage (DB) Program for the second quarter of 2021* *5. Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2021*

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 2021

June 9, 2021

	Action Items	Information Items
		6. *Updated Investment Committee Work Plan for 2021*
October 13	1. Discussion and Possible Motion to Recommend to the Board to Approve the Finalists for ACERA's Absolute Return Manager Search 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Assets Portfolio (Placeholder)	1. Review of ESG Reporting and Monitoring on ACERA Portfolio (Placeholder)
November 3 (meeting moved to first Wednesday due to SACRS Conference)	1. Interview of the Finalists for ACERA's Absolute Return Manager Search and Possible Motion by the Investment Committee to Recommend Finalist (s) to the Board	
December 8	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Private Equities Portfolio (Placeholder)	1. Semiannual Performance Review for the Period Ending September 30, 2021 – Equities and Fixed Income 2. Semiannual Performance Review for the Period Ending June 30, 2021 – Private Equity 3. Semiannual Performance Review for the Period Ending September 30, 2021 – Absolute Return 4. Semiannual Performance Review for the Period Ending June 30, 2021 – Private Credit 5. Semiannual Performance Review for the Period Ending June 30, 2021 – Real Assets

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Investment Committee Workplan for 2021

June 9, 2021

Action Items		Information Items
		6. Semiannual Performance Review for the Period Ending September 30, 2021 – Real Estate 7. CA Gov. Code § 7514.7 Information Report *8. Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the third quarter of 2021* *9. Quarterly report on ACERA's rebalancing activities for the third quarter 2021* *10. Quarterly report on ACERA's securities lending activities for the third quarter of 2021* *11. Quarterly report on ACERA's Directed Brokerage (DB) Program for the third quarter of 2021* *12. Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2021* *13. Updated Investment Committee Work Plan 2021*

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