



**Alameda County Employees' Retirement Association
BOARD OF RETIREMENT**

INVESTMENT COMMITTEE/BOARD MEETING

**THIS MEETING WILL BE CONDUCTED VIA TELECONFERENCE
SEE GOV'T CODE § 54953(e).**

ACERA MISSION:

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

**Wednesday, February 9, 2022
9:30 a.m.**

ZOOM INSTRUCTIONS	COMMITTEE MEMBERS	
<p>The public can view the Teleconference and comment via audio during the meeting. To join this Teleconference, please click on the link below. https://zoom.us/join Webinar ID: 879 6337 8479 Passcode: 699406 1 (669) 900-6833 US For help joining a Zoom meeting, see: https://support.zoom.us/hc/en-us/articles/201362193</p>	TARRELL GAMBLE	APPOINTED
	CHAIR	
	GEORGE WOOD	ELECTED GENERAL
	VICE CHAIR	
	DALE AMARAL	ELECTED SAFETY
	OPHELIA BASGAL	APPOINTED
	KEITH CARSON	APPOINTED
JAIME GODFREY	APPOINTED	
LIZ KOPPENHAVER	ELECTED RETIRED	
HENRY LEVY	TREASURER	
KELLIE SIMON	ELECTED GENERAL	
NANCY REILLY	ALTERNATE RETIRED¹	
DARRYL WALKER	ALTERNATE SAFETY²	

¹ The 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 Safety Member and an Elected General member, are absent.

² The Alternate Safety Member votes in the absence of the Elected Safety, either of the two Elected General Members, or both the Retired and Alternate Retired members.

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 agenda items is subject to change without notice. Board and Committee agendas and minutes, and all documents distributed to the Board or a Committee in connection with a public meeting (unless exempt from disclosure), are available online at www.acera.org.

INVESTMENT COMMITTEE/BOARD MEETING

NOTICE and AGENDA, Page 2 of 2 – February 9, 2022

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

There are no action items.

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

1. 2022 Capital Market Assumption

Margaret Jadallah, Verus Advisory Inc.
Eileen Neill, Verus Advisory Inc.
Betty Tse, ACERA

2. Semiannual Performance Review for the Period Ending September 30, 2021 – Equities and Fixed Income

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

3. Semiannual Performance Review for the Period Ending September 30, 2021 – Absolute Return

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

4. Semiannual Performance Review for the Period Ending June 30, 2021 – Private Equity

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

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5. Semiannual Performance Review for the Period Ending June 30, 2021 – Private Credit

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

6. Semiannual Performance Review for the Period Ending June 30, 2021 – Real Assets

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

7. Semiannual Performance Review for the Period Ending September 30, 2021 – Real Estate

Avery Robinson, Callan LLC
Thomas Taylor, ACERA

8. Investment Committee Meeting Workplan 2022

Agnes Ducanes, ACERA
Betty Tse, ACERA

Trustee Remarks

Future Discussion Items

Establishment of Next Meeting Date

March 9, 2022 at 9:30 a.m.



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

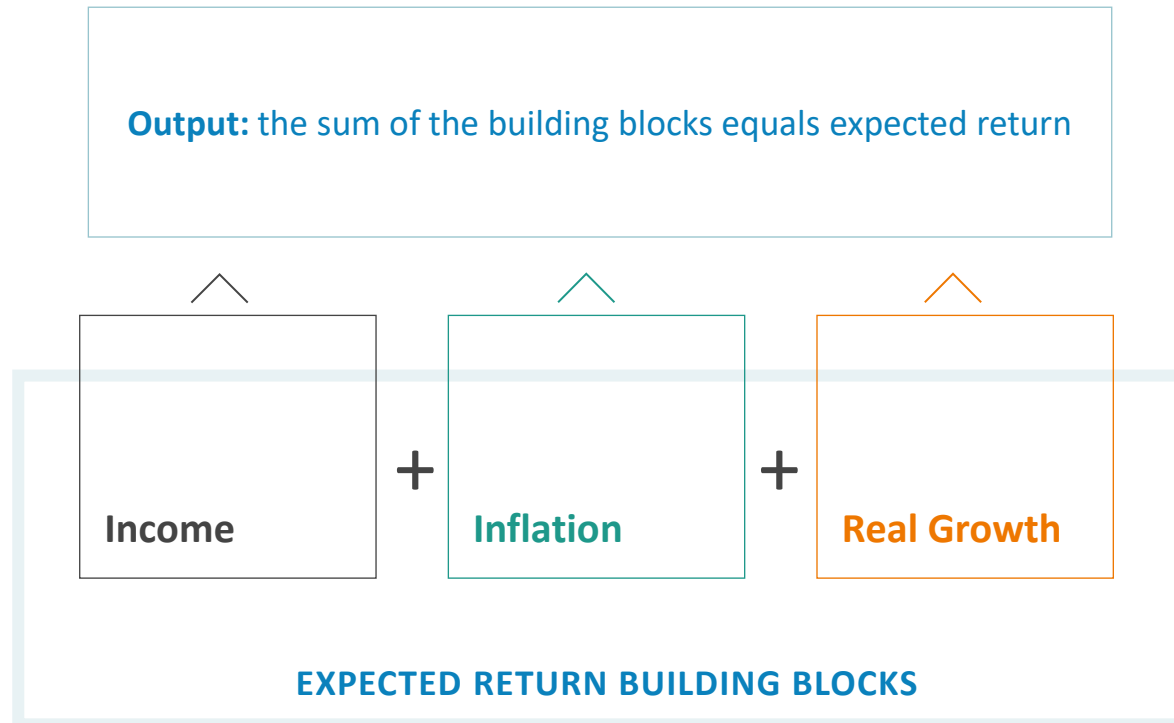


FEBRUARY 2022

2022 Capital Market Assumptions Review

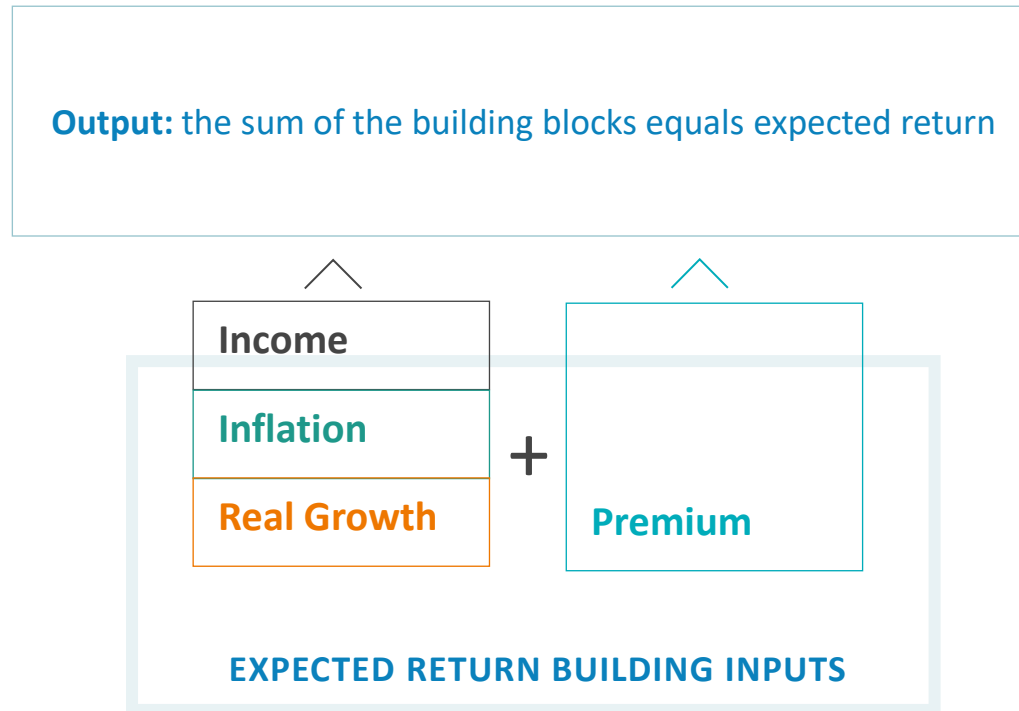
Alameda County Employees Retirement Association

Building block methodology



For illustrative purposes only

Build-up/spread



Alternative asset classes will in some cases use the build-up + spread methodology

For illustrative purposes only

Expected return methodology

BUILDING BLOCK METHODOLOGY

Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change
Domestic Fixed Income	Nominal bonds: current yield; Real bonds: real yield + inflation forecast
International Fixed Income	Current yield
Absolute Return	Return coming from traditional betas + 15-year historical idiosyncratic return
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)
Core Real Estate	Cap rate + real income growth – capex + inflation forecast
Cash	Real yield estimate + inflation forecast

BUILD-UP/SPREAD METHODOLOGY

Private Equity	U.S. large cap domestic equity forecast * 1.85 beta adjustment
Private Credit	Bank loan forecast + 1.75% private credit premium

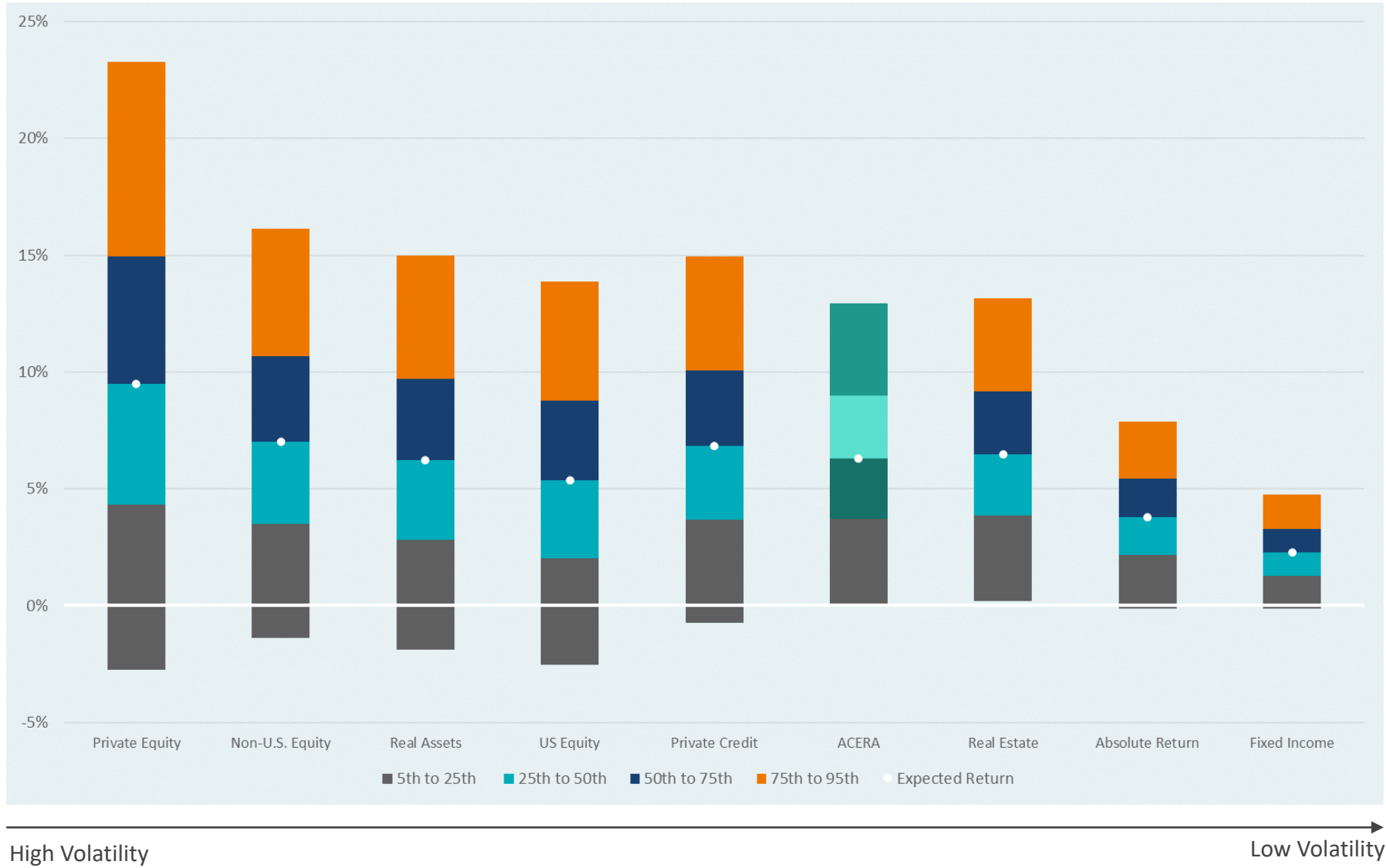
10-year expected return & risk assumptions

Asset Class	Index Proxy	Target Weight	Return Forecast	Standard Deviation Forecast
Equities				
US Equity	Custom*	24.0%	5.4%	16.0%
Non-U.S. Equities	Custom*	24.0%	7.0%	17.1%
Private Equity	Cambridge US Private Equity	11.0%	10.5%	26.0%
Fixed Income				
Fixed Income	Custom*	14.0%	2.3%	4.7%
Private Credit	S&P LSTA Leveraged Loan Index	4.0%	6.8%	14.6%
Other				
Real Estate	NCREIF Property	9.0%	6.5%	12.5%
Absolute Return	HFRI Fund of Funds Composite	8.0%	2.8%	7.7%
Real Assets	Custom*	6.0%	6.2%	16.5%
Inflation			2.5%	-
Total Portfolio	Custom*		6.3%	12.5%

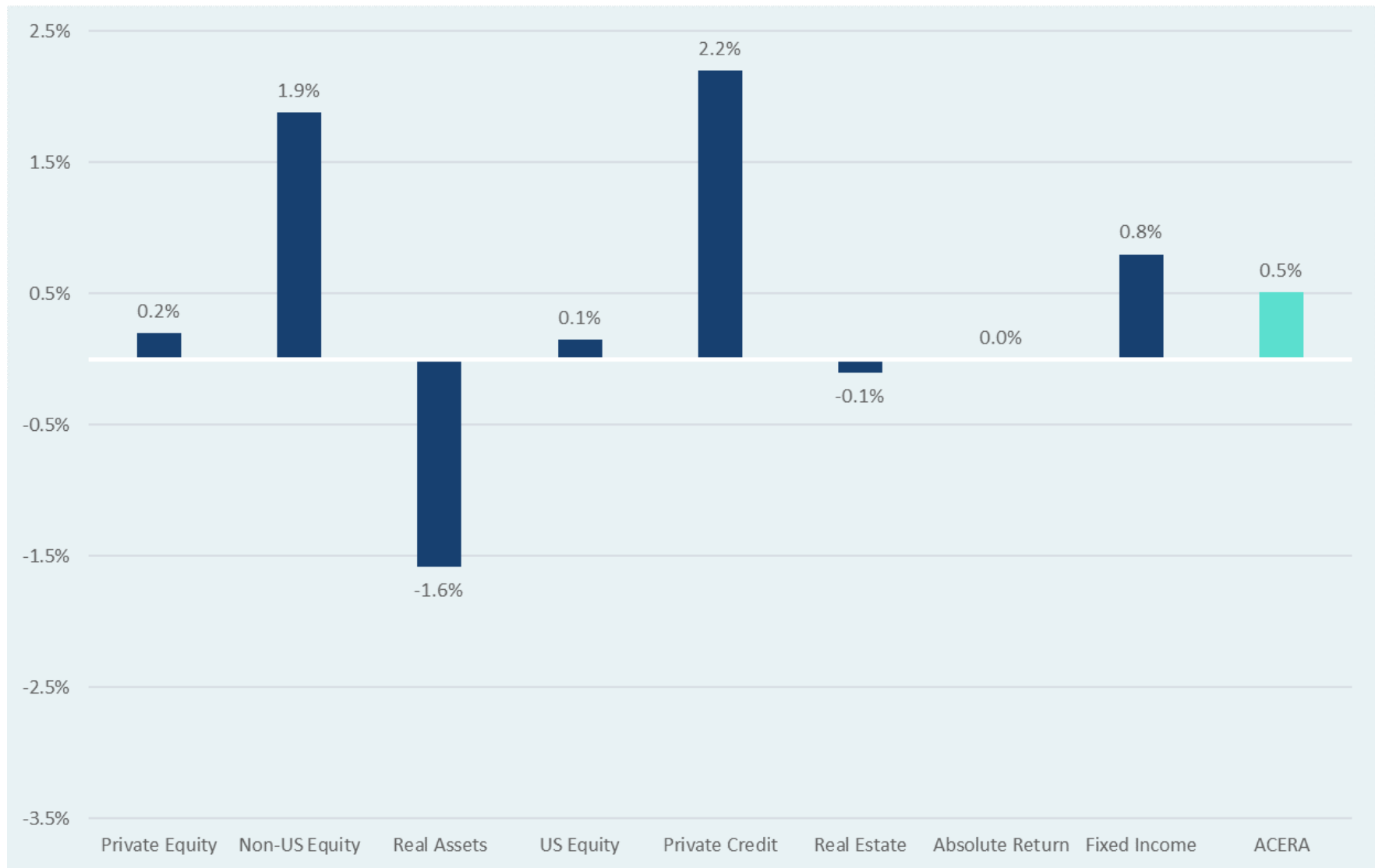
* Approved asset allocation policy June 2021. For further detail on index construction, please see appendix, slide 29.

Range of likely 10-year outcomes

10-YEAR RETURN 90% CONFIDENCE INTERVAL



2022 vs. 2021 return forecast



Source: Verus, as of 9/30/21

Relevant capital market assumption changes

- Return expectations of higher quality fixed income increased, as bond yields recovered from pandemic lows
 - Long end of yield curve increased as 10-year U.S. Treasury yield climbed from 0.68% to 1.49%.
 - Short end of curve remained anchored at zero, though as economy has improved, market has priced in Fed interest rate hikes beginning March 2022.
 - However, riskier fixed income forecasts were generally lower due to historically tight credit spreads.
- Equity return expectations increased modestly as valuations fell and inflation moved higher
- Inflation expectations increased materially throughout 2021. Overall, inflation forecast increased from 2.0% to 2.5%.
 - Inflation is important component of asset classes performance as inflation expectations affect *nominal* returns, rather than *real* returns
- For Private Credit, 2022 CMAs have been updated to instead assume more diversified basket of Private Credit exposures that more effectively captures diverse exposures within this universe
 - Verus 2021 CMAs had assumed exposure to only unlevered Direct Lending

Summary

- Setting ACERA's asset allocation policy is most important fiduciary decision ACERA Board makes; thus, annual review is warranted
 - asset allocation policy drives 90+% of total fund return and risk experience
 - best practice for public funds is annual asset allocation policy review to understand how capital market assumption changes may affect total fund expected return and risk in between asset allocation and asset/liability studies
- Changes in Verus' capital market assumptions from 2021 to 2022 produce an updated long-term policy expected return of 6.3% versus 5.8%, which is 50 basis points higher
 - Principally, increased assumptions driven by higher actual and expected yields
 - Expected risk assumptions tend to be fairly static; there is no meaningful change in expected total fund risk from 2021
- Given the changes to ACERA asset allocation policy adopted by Board in 2021, no additional revisions to this policy are warranted at this time
 - ACERA investment policy articulates asset allocation policy will be revisited every 3 years to determine whether changes are warranted given trends in capital markets

Appendix

Inflation

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).

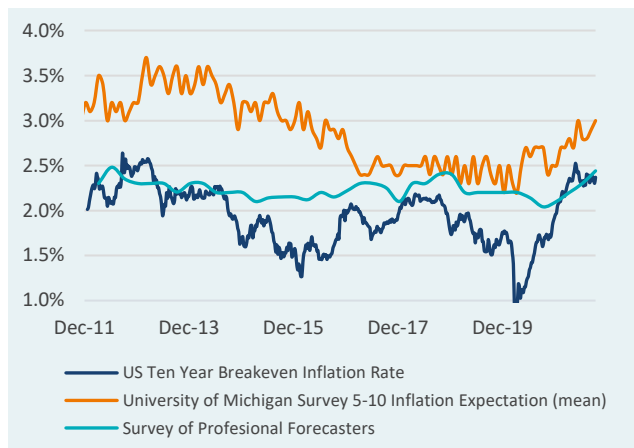
Inflation at the beginning of the year remained depressed from 2020 economic downturn, but then spiked in the second quarter due to a combination of year-over-year base effects, a recovery in energy, and pandemic-related supply/demand imbalances. Inflation is now a nationwide

concern, and debates abound regarding how “transitory” it might be.

Consumer inflation expectations further separated from investor inflation expectations during the year, as consumer expectations tend to more closely track the current rate of inflation. While investors are pricing lower-for-longer inflation, American households are expecting 3.0% long-term inflation—the highest forecast since 2016. Inflation expectations from the Survey of Professional Forecasters rose from 2.0% to 2.4% during the year.

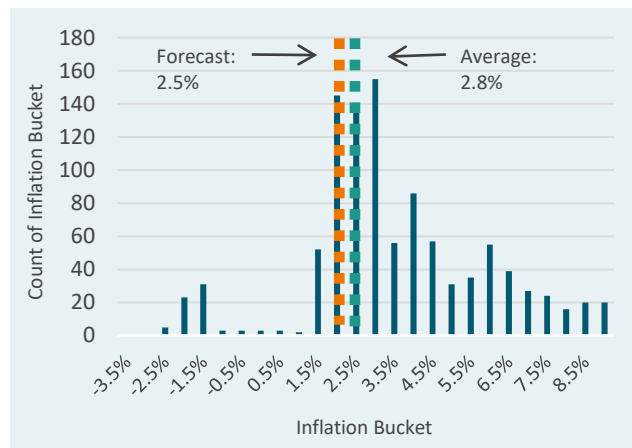
Our inflation forecast increased from 2.0% to 2.5%.

INFLATION EXPECTATIONS



Source: U. of Michigan, Philly Fed, as of 9/30/21

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



Source: Bloomberg, as of 9/30/21

FORECAST

	10-Year Forecast
University of Michigan Survey (25% weight)	+3.0%
Survey of Professional Forecasters (25% weight)	+2.4%
US 10-Year TIPS Breakeven Rate (50% weight)	+2.4%
Inflation Forecast	2.5%

Source: Verus, as of 9/30/21

Fixed income

Cash

The U.S. Treasury yield recovered from its collapse to nearly zero in 2020, though the curve steepness is mild, historically speaking. The Federal Funds Rate range remains at 0-0.25%, and no interest rate hikes are priced in until at least 2022.

The yield of cash seems to have decoupled from the rate of inflation in many developed markets, as near-zero interest rates and relatively high inflation result in deeply negative interest rates on an inflation-adjusted basis. 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.

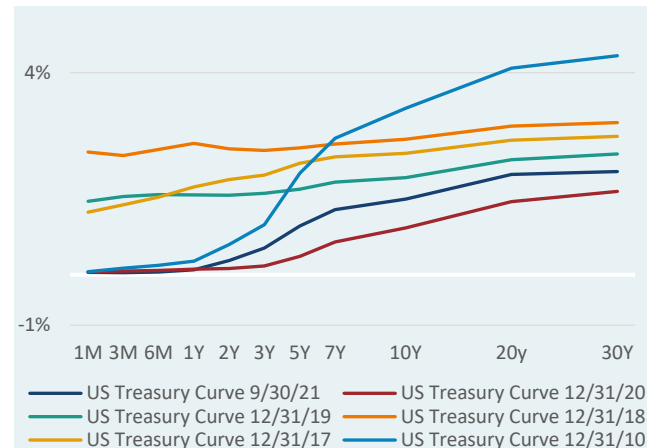
Applying these relationships result in a 10-year cash forecast of 0.4%.

CASH YIELD (3-MONTH T-BILL)



Source: FRED, as of 9/30/21

U.S. TREASURY YIELD CURVE



Source: Bloomberg, as of 9/30/21

FORECAST

	10-Year Forecast
Cash	+0.4%
Inflation Forecast	-2.5%
Real Return	-2.1%

Source: Verus, as of 9/30/21

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 rose from 0.7% to 1.5% through September.

U.S. Treasury yields remain high relative to other developed nations, which will likely limit increases in domestic interest rates, as higher rates would attract foreign capital inflows and push rates downward. Investors generally believe U.S. yields will stay lower-for-longer. The U.S. yield curve has steepened as the long end of the curve has risen, but remains relatively flat by historical standards.

Developed world central banks are moving away from extremely loose policies that were enacted to fight the pandemic-induced recession. Higher inflation is also a new risk that creates unique challenges for policymakers who must decide how to balance the need for economic recovery with the risks of rising inflation.

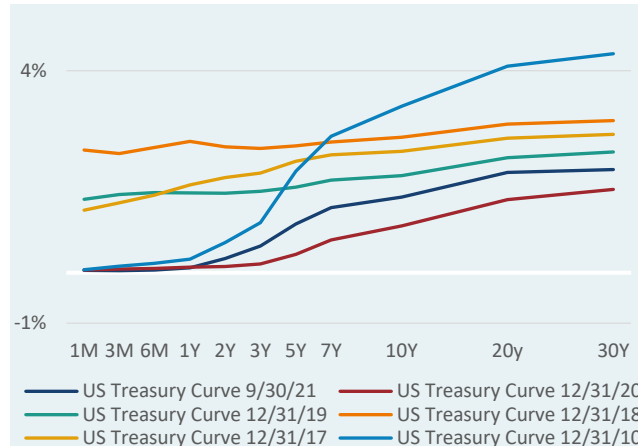
Our expectations are for a 1.5% return over the next ten years, in line with the current U.S. 10-year Treasury yield.

U.S. 10-YR TREASURY YIELD



Source: Bloomberg, as of 9/30/21

U.S. TREASURY YIELD CURVE



Source: Bloomberg, as of 9/30/21

FORECAST

	10-Year Forecast
U.S. 10-Year Treasury	+1.5%
Inflation Forecast	-2.5%
Real Return	-1.1%

Source: Verus, as of 9/30/21

Real rates

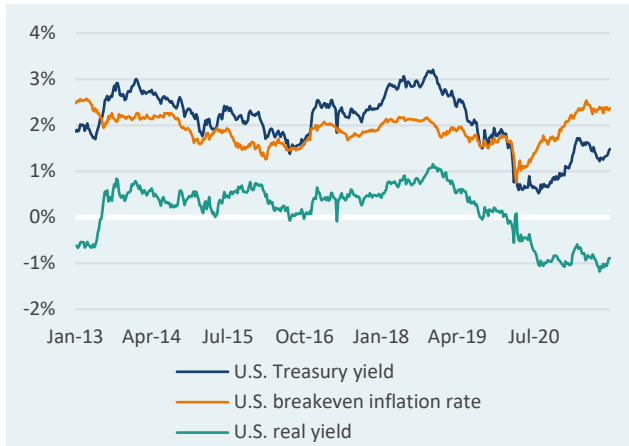
TIPS provide high sensitivity to duration (interest rate risk) over short periods and track inflation (CPI) fairly well over longer periods. Changing inflation expectations, demand for inflation protection, and rate movements contribute to the price movement of TIPS. Currently, investors appear to expect higher inflation to be temporary, but also expect that inflation will be higher in the next decade than the most recent decade.

The long end of the yield curve increased as the 10-year U.S. Treasury climbed from 0.69% to 1.49%. While inflation has risen substantially,

inflation expectations have been more subdued. The breakeven inflation rate increased from 1.63% to 2.38%.

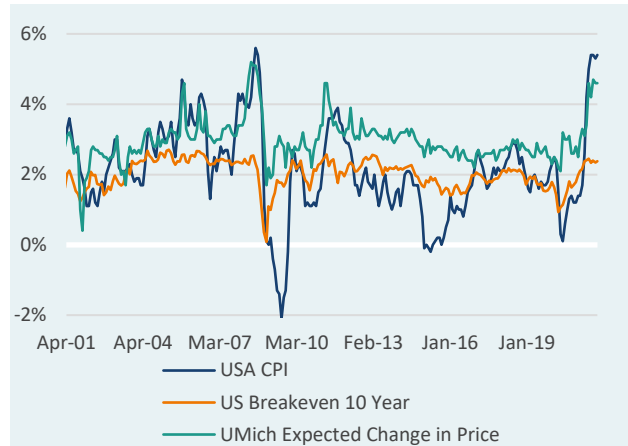
To arrive at a nominal 10-year forecast, we add the current real TIPS yield to our 10-year inflation forecast. Our real rates forecast remains in negative territory as both Treasury yields and priced inflation has risen.

NOMINAL YIELD VS. REAL



Source: Bloomberg, as of 9/30/21

INFLATION EXPECTATIONS



Source: Bloomberg, as of 9/30/21

FORECAST

	10-Year Forecast
U.S. 10-Year TIPS Real Yield	-0.9%
Inflation Forecast	+2.5%
Nominal Return	1.7%

Source: Verus, as of 9/30/21

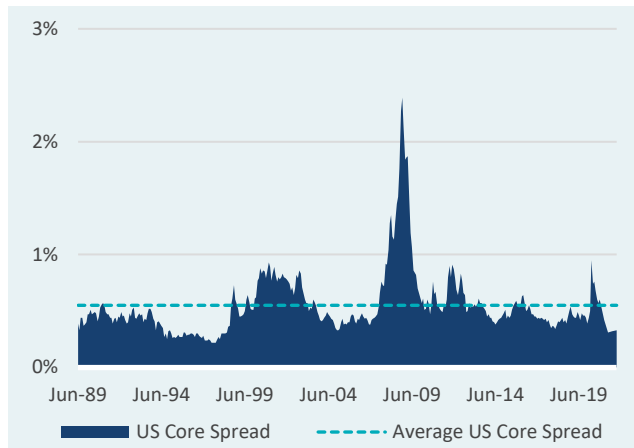
Core fixed

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.

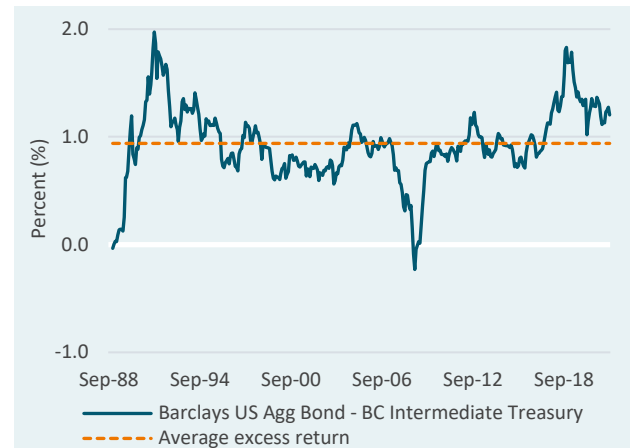
Core fixed income spreads fell from 90 bps to 81 bps over the year and remain below the 30-year average of 1.25%. Higher interest rates bolstered our core fixed income expectations, while slightly tighter credit spreads had an opposing effect. Our forecast increased from 1.5% to 2.2% during the year.

U.S. CORE CREDIT SPREAD



Source: Bloomberg, as of 9/30/21

ROLLING EXCESS RETURN (10-YR)



Source: Bloomberg, as of 9/30/21

FORECAST

	10-Year Forecast
Bloomberg U.S. Option-Adjusted Spread	+0.8%
Effective Default	-0.1%
U.S. 10-Year Treasury	+1.5%
Nominal Return	2.2%
Inflation Forecast	-2.5%
Real Return	-0.4%

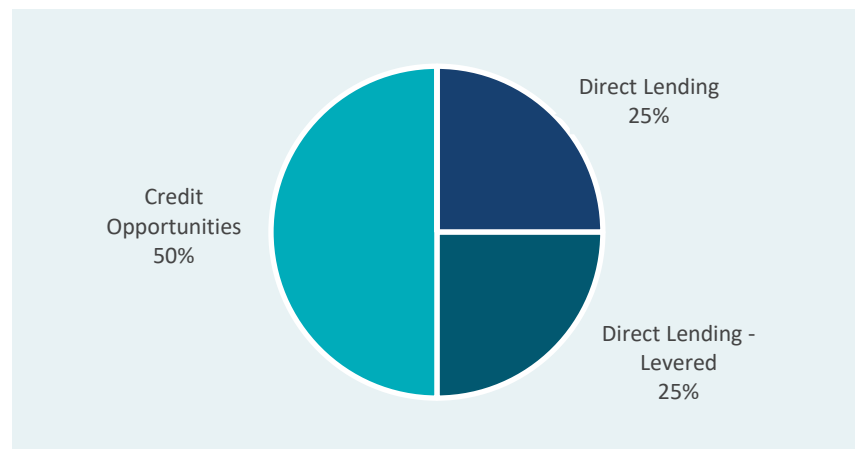
Source: Verus, as of 9/30/21

Private credit

The spectrum of private credit is broad and the types of investments in this asset class can differ considerably in terms of return expectations and risks involved. To reflect the disparate characteristics of this asset class, our private credit forecast assumes a diversified portfolio comprised of 25% direct lending, 25% direct lending with fund-level leverage, and 50% credit opportunities strategies. Our resulting private credit forecast is a result of our combined expectations for each of these exposure types.

We follow a building block approach to build return expectations.

PRIVATE CREDIT WEIGHTS



Source: Verus

Direct lending expected return is a product of interest rates (LIBOR with a 0.5% rate floor), a floating rate credit spread above LIBOR, plus original issuance discounts, minus management fees and carried interest. Direct lending with fund-level leverage includes these same building blocks but is adjusted for the added spread from leverage and the costs of that leverage. The expected return of credit opportunities strategies is a result of interest rates (U.S. Treasury yield), credit spread, original issuance discounts, minus management fees and carried interest, with an adjustment for added spread from leverage and the costs of that leverage. Further details of this methodology is provided on the next page.

FORECAST

	10-Year Forecast
Credit Opportunities (50% weight)	7.0%
Direct Lending – Unlevered (25% weight)	5.0%
Direct Lending – Levered (25% weight)	8.0%
Private Credit Weighted Return Forecast	6.8%
Inflation Forecast	-2.5%
Real Return	4.3%

Source: Verus, as of 9/30/21 – assuming universe weights as indicated by left-hand chart
Please reach out to your Verus consultant for Private Credit universe forecast methodology

Private credit

Below we illustrate the specific building blocks of our private credit forecasts. The build up method is used to calculate a gross investment level return, which is adjusted to account for fund level leverage, management fees, and carried interest.

	Direct Lending –Unlevered	Direct Lending – Levered		Credit Opportunities*		Junior Capital / Mezzanine	Distressed	
Interest Rate Floor	0.5%	0.5%	Base Interest Rate	0.7% - 1.2%	Fixed rate coupon	8.5%	Return expectations for distressed have been developed on a range bound basis given the diversity of strategies included in the asset class:	
Spread	5.5%	5.5%	Spread	4.5% - 9.0%	Paid-in-kind coupon	3.5%		
Original Issuance Discount	2.0%	2.0%	Original Issuance Discount	1.5%	Annualized equity upside	1.5%		
<i>Gross return</i>	<i>6.7%</i>	<i>6.7%</i>	<i>Gross return</i>	<i>5.7% - 10.7%</i>	<i>Gross return</i>	<i>13.5%</i>	Distressed strategies are highly opportunistic by nature and returns are primarily, if not entirely, driven by capital appreciation limiting the ability to use a build up method.	
Leverage Cost	NA	2.3%	Leverage Cost	2.34%	Leverage Cost	NA		
Leverage Level	0.0x	1.0x	Leverage Level	0.3x – 0.5x	Leverage Level	0.0x	Distressed strategies typically target 10%+ net returns, but market conditions often weigh heavily into the overall performance.	
<i>Levered gross return</i>	<i>6.7%</i>	<i>11.0%</i>	<i>Levered gross return</i>	<i>7.4% - 13.2%</i>	<i>Levered gross return</i>	<i>13.5%</i>		
Effective Management Fees	1.0%	1.8%	Effective Management Fees	1.5% - 2.0%	Effective Management Fees	1.5%	Periods of market volatility, dislocation, and economic downturns generally provide a more attractive investment environment for distressed strategies where outperformance may be expected.	
Carried Interest	0.7%	1.2%	Carried Interest	0.9% - 2.3%	Carried Interest	3.2%		
							Historically, median fund level net returns have ranged between 9-10% although top to bottom quartile dispersion is has been wide historically.	
Total Net Return	5.0%	8.0%	Total Net Return	7.0%	Total Net Return	8.8%	Total Net Return	9.0%

*Return expectations for credit opportunities have been developed on a range-bound basis given the diversity of strategies included in the asset class. Values represent the mid-point estimate of those ranges. For Credit Opportunities, our return assumption is the midpoint of the total net return range of 5.0% - 9.0%.

Source: Verus

Credit summary

	Core	Long-Term Credit	Global Credit*	High Yield*	Bank Loans*	EM Debt (USD)	EM Debt (Local)	Private Credit	Real Estate Debt
Index	Bloomberg U.S. Aggregate	Bloomberg Long U.S. Corporate	Bloomberg Global Credit	Bloomberg U.S. High Yield	S&P LSTA	JPM EMBI	JPM GBI-EM	N/A	Bloomberg 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	Build up method using Direct Lending (unlevered), Direct Lending (levered), Opportunistic Credit**	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%	-	-	-	-0.5%	-0.5%	-	-3.7%
Recovery Assumption	80%	95%	-	-	-	60%	40%	-	47%
Spread	0.8%	1.1%	0.8%	3.2%	4.3%	3.9%	-	-	4.0%
Yield	-	-	-	-	-	-	4.5%	-	-
Risk Free Yield	1.5%	1.5%	1.2%	1.5%	0.1%	1.5%	-	-	0.1%
Effective Default	-0.1%	-0.2%	-0.4%	-1.6%	-2.1%	-0.2%	-0.3%	-	-2.0%
Nominal Return	2.2%	2.4%	1.5%	3.1%	2.3%	5.2%	4.2%	6.8%	2.1%
Inflation Forecast	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Real Return	-0.4%	-0.2%	-1.0%	-0.6%	-0.3%	2.7%	1.7%	4.3%	-0.4%

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

**We assume 25% Direct Lending (Unlevered), 25% Direct Lending (Levered), 50% Credit Opportunities – please refer to the previous page for more information.

Source: Verus

Equities

Equities

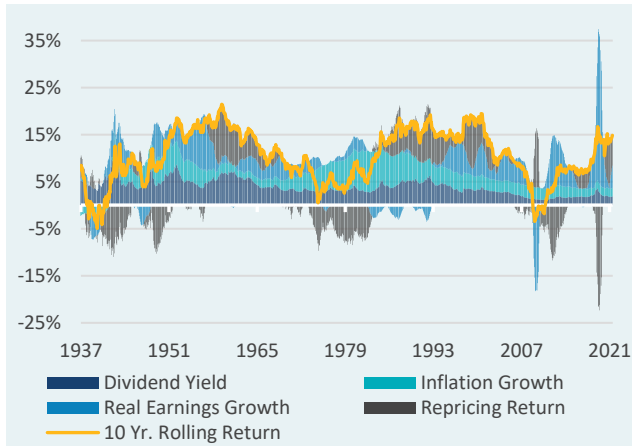
Investment returns in the equity space can be broken down into earnings growth, dividend yield, inflation, and repricing. Over the very long-term, repricing represents a small portion of return to equity investors, but over shorter time frames, the impacts on return can vary considerably.

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 6/30/21

U.S. LARGE SHILLER P/E



Source: Shiller, S&P 500, as of 9/30/21

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

Global equity

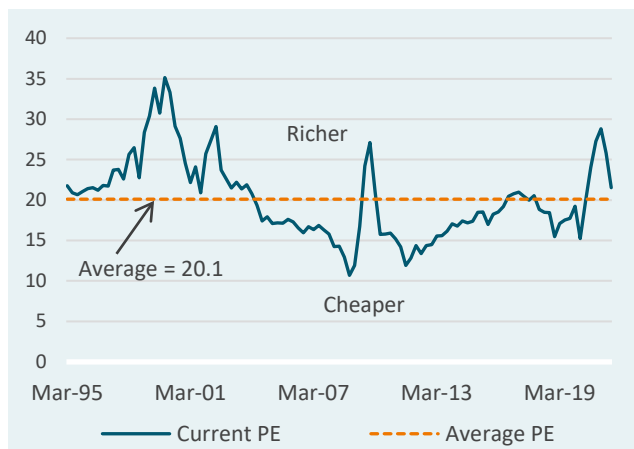
Global Equity is a combination of U.S. large, international developed, and emerging market equities. We can therefore combine our existing return forecasts for each of these asset classes to arrive at our global equity return forecast.

We use the MSCI ACWI Index as our benchmark for global equity and apply the country weights of this index to determine the weightings for our global equity return calculation. As with other equity asset classes, we use the historical standard deviation of the benchmark (MSCI ACWI Index) for our volatility forecast.

The valuation of global equities are driven by the richness/cheapness of the underlying markets, as indicated by the current price-to-earnings ratio.

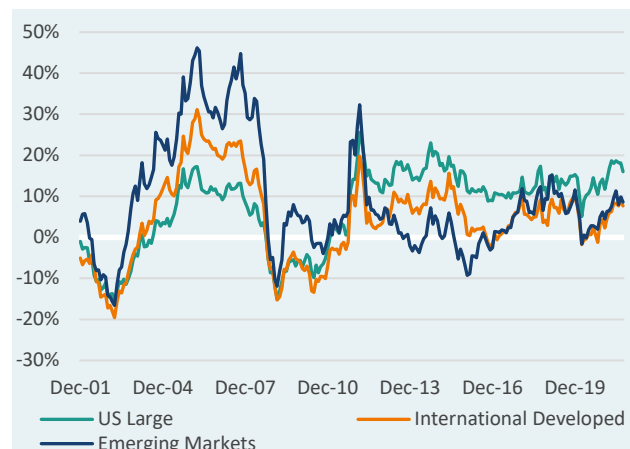
Our return building blocks produce a local return forecast for international equities. For investors who wish to incorporate market implied currency movements into the return forecast, please see the adjustments and explanation in the Appendix.

GLOBAL EQUITY P/E RATIO HISTORY



Source: MSCI, as of 9/30/21

MARKET PERFORMANCE (3-YR ROLLING)



Source: MSCI, Standard & Poor's, as of 9/30/21

FORECAST

Market	Weight	CMA return
U.S. Large	58%	5.3%
Developed Large	31%	6.1%
Emerging Markets	11%	6.1%
Global Equity Forecast		5.7%

Source: Verus, weights rescaled to equal 100%, as of 9/30/21

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	38.3	63.6	21.3	-	12.7
Regular P/E Ratio	25.1	181.5**	19.0	51.6	15.3
2021 Shiller P/E Change	+24.4%	+47.6%	+25.3%	-	+13.4%
2021 Regular P/E Change	-3.5%	-98.7%	-45.1%	+80.4%	-23.9%
Current Shiller P/E Percentile Rank	95%	98%	45%	-	49%
Current Regular P/E Percentile Rank	90%	99%	54%	55%*	61%
Average of P/E Methods' Percentile Rank	93%	99%	50%	55%*	55%
2021 YTD Return	15.9%	12.4%	8.3%	10.0%	-1.2%
Shiller PE History	1982	1988	1982	Not Enough History	2005
Long-Term Average Shiller P/E	23.4	32.4	22.4	-	14.7
Current Dividend Yield	1.4%	1.3%	3.0%	2.3%	2.8%
Long-Term Average Real Earnings Growth	2.4%	2.5%	1.6%	1.2%	0.8%
Inflation on Earnings	2.5%	2.5%	1.5%	1.5%	2.5%
Repricing Effect (Estimate)	-1.0%	-1.0%	0.0%	-0.3%	0.0%
Nominal Return	5.3%	5.3%	6.1%	4.7%	6.1%
Inflation Forecast	2.5%	2.5%	2.5%	2.5%	2.5%
Real Return	2.8%	2.8%	3.6%	2.2%	3.6%

Data as of 9/30/21

*Average trailing P/E from previous 12 months (25% weight) and current P/E (75% weight) are blended into one P/E metric, which is then percentile ranked relative to long-term history. This is done to reduce reliance on a single price multiple, as insufficient data history is available to calculate Shiller P/E for this asset class.

**Earnings fell to nearly zero during 2020, which is the cause of this very high figure

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

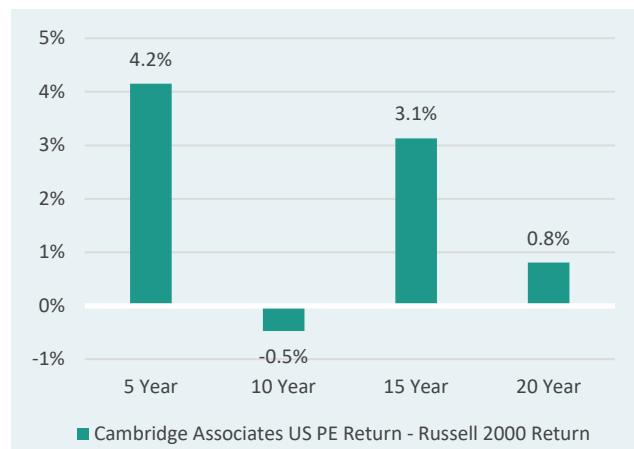
Private equity

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 9.5%. 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 10.5%. Private equity fund-of-fund (FoF) programs have historically lagged the universe by 1.0%, and we forecast private equity fund-of-funds at 8.5% to reflect this drag.

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



Source: Cambridge, Russell, as of 3/31/21

PRIVATE EQUITY IMPLEMENTATION FORECASTS

	10-Year Forecast
Private Equity Universe Forecast	9.5%
Private Equity FoF Forecast	8.5%
Private Equity Direct Forecast	10.5%

Source: Verus, as of 9/30/21

PRIVATE EQUITY UNIVERSE FORECAST

	10-Year Forecast
U.S. Large Cap Forecast	+5.3%
1.85 Beta Multiplier	+4.2%
Nominal Return	9.5%
Inflation Forecast	-2.5%
Real Return	7.0%

Source: Verus, as of 9/30/21

Real assets / alternatives

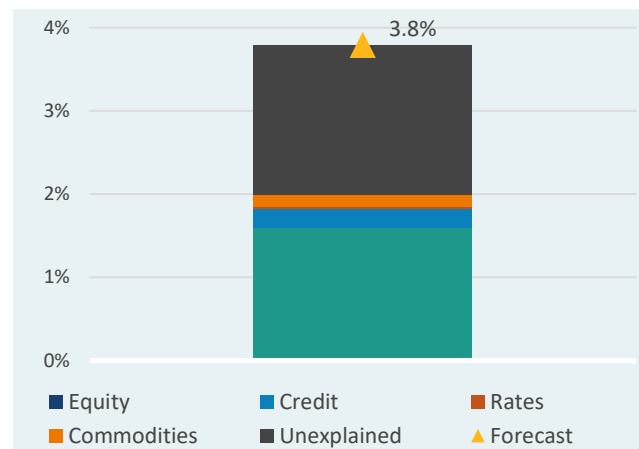
Hedge funds

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 9/30/21

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	-2.5%
Real Return	1.3%

Source: Verus, as of 9/30/21

Private core real estate/REITS

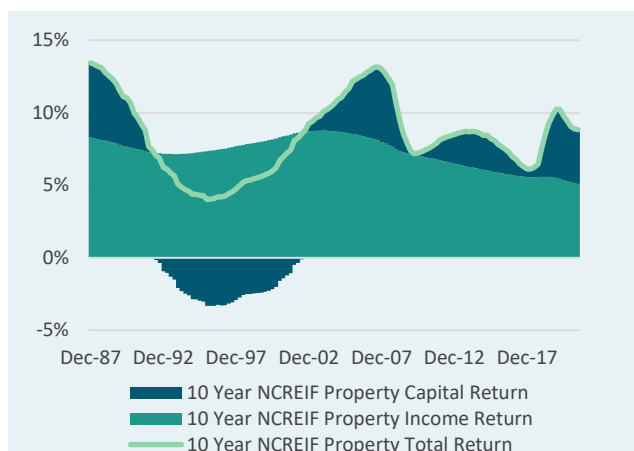
Performance of the NCREIF property index can be decomposed into an income return (cap rate) and capital return. The return coming from income has historically been more stable than the return derived from capital changes.

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 6/30/21

PRIVATE REAL ESTATE

	Private Real Estate 10-Year Forecast
Current Cap Rate	+4.1%
Real Income Growth	+1.9%
Capex Assumption	-2.0%
Inflation	+2.5%
Nominal Return	6.5%
Inflation Forecast	-2.5%
Real Return	+4.0%

Source: Verus, as of 9/30/21

REITS

	10-Year Forecast
Nominal Return Forecast	6.5%
Inflation Forecast	-2.5%
Real Return	4.0%

Source: Verus, as of 9/30/21

Infrastructure

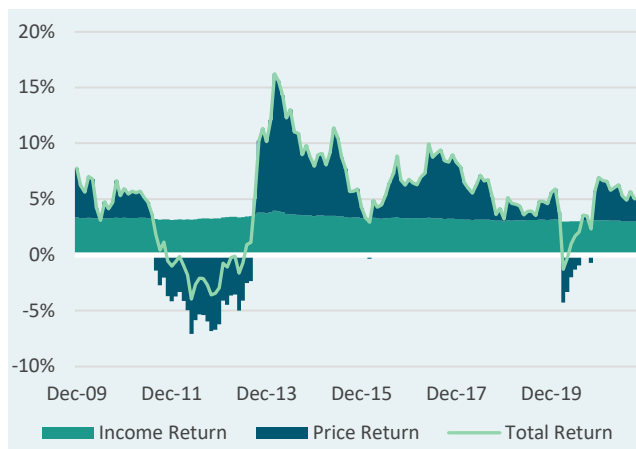
Infrastructure includes a variety of investment types across a subset of industries. There is not one definition for what can be included within infrastructure. The asset class has grown dramatically during the last decade as investors sought assets that might provide more attractive yield relative to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

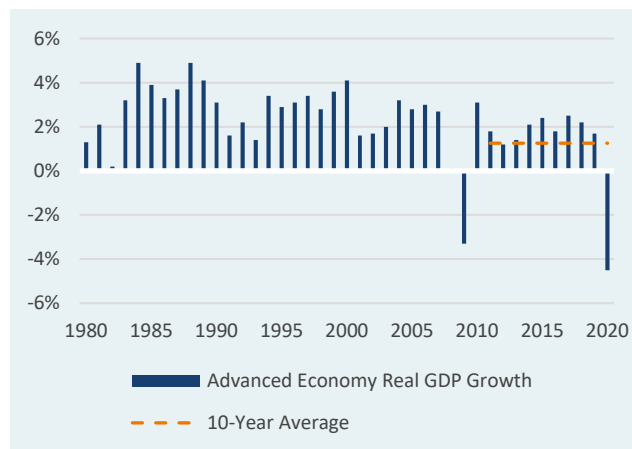
Due to the discount rate effect, infrastructure asset valuations would generally be negatively affected by material increases in interest rates. Because leverage is used in this space, higher interest rates would also impact investors in the form of higher borrowing costs.

5-YR ROLLING RETURN COMPOSITION



Source: S&P Global Infrastructure Index, as of 9/30/21

ADVANCED ECONOMY REAL GDP GROWTH



Source: IMF, as of 9/30/21

FORECAST

	10-Year Forecast
Global Inflation	+2.2%
Yield	+3.1%
Income Growth	+1.3%
Nominal Return	6.6%
U.S. Inflation Forecast	-2.5%
Real Return	4.0%

Source: Verus, as of 9/30/21

Commodities

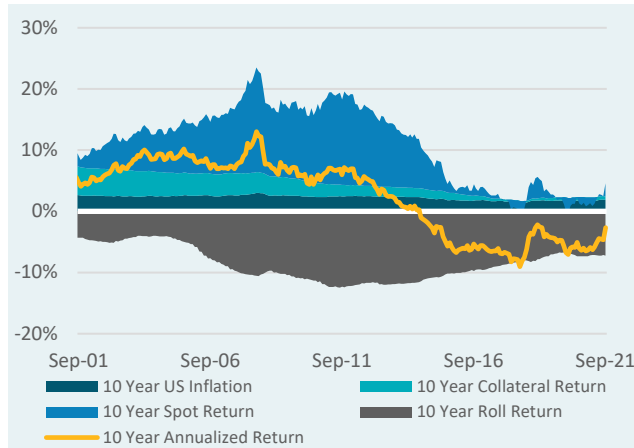
Commodity returns can be decomposed into three sources: collateral return (cash), spot changes (inflation), and roll yield.

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.

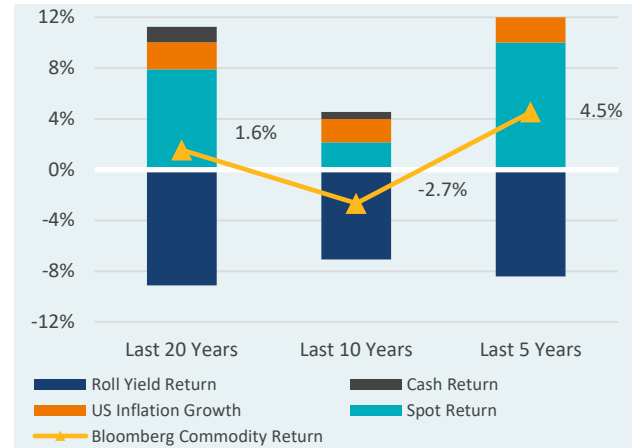
Our 10-year commodity forecast combines collateral (cash) return with spot return (inflation) to arrive at the nominal return, and subtracts out inflation to arrive at the real return.

TRAILING 10YR BLOOMBERG COMMODITY RETURN COMPOSITION (%)



Source: MPI, Bloomberg, as of 9/30/21

BLOOMBERG COMMODITY RETURN COMPOSITION (%)



Source: MPI, Bloomberg, as of 9/30/21

FORECAST

	10-Year Forecast
Collateral Return (Cash)	+0.4%
Roll Return	+0.0%
Spot Return (Inflation)	+2.5%
Nominal Return	3.0%
Inflation Forecast	-2.5%
Real Return	0.4%

Source: Verus, as of 9/30/21

ACERA Custom Index Construction

Asset Class	Weighting	Sub-weighting	Index
US Equity	24.0%	90.0%	S&P 500
		10.0%	Russell 2000
Non-US Equity	24.0%	67.5%	MSCI EAFE (represents DME component of ACWI)
		22.5%	MSCI Emerging Markets (represents EME component of ACWI)
		10.0%	MSCI EAFE Small Cap
Private Equity	11.0%		Cambridge US Private Equity
Fixed Income	14.0%	75.0%	Bloomberg US Agg
		15.0%	Bloomberg Global Sovereign ex-US
		10.0%	Bloomberg US High Yield
Private Credit	4.0%		S&P LSTA Leveraged Loan Index
Real Estate	9.0%		NCREIF Property
Absolute Return	8.0%		HFRI Fund of Funds Composite
Real Assets	6.0%	85.0%	S&P Global Infrastructure
		15.0%	Bloomberg Commodity

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	Levered gross return (LIBOR + spread + original issuance discounts) – management fees – carried interest	Estimated 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 + 3%	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)

Full suite of Verus 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)	
		Geometric	Arithmetic						
Equities									
U.S. Large	S&P 500	5.3%	6.4%	15.7%	0.31	0.39	1.21	1.19	
U.S. Small	Russell 2000	5.3%	7.4%	21.6%	0.23	0.32	0.77	0.81	
International Developed	MSCI EAFE	6.1%	7.6%	17.9%	0.32	0.40	0.52	0.57	
International Small	MSCI EAFE Small Cap	4.7%	6.9%	22.2%	0.19	0.29	0.66	0.71	
Emerging Markets	MSCI EM	6.1%	8.9%	25.3%	0.23	0.34	0.32	0.40	
Global Equity	MSCI ACWI	5.7%	7.1%	17.3%	0.31	0.39	0.84	0.86	
Private Equity	Cambridge U.S. Private Equity	9.5%	12.4%	26.0%	0.35	0.46	-	-	
Private Equity (Direct)	Cambridge U.S. Private Equity	10.5%	13.4%	26.0%	0.39	0.50	-	-	
Private Equity (Fund of Funds)	Cambridge U.S. Private Equity	8.5%	11.4%	26.0%	0.31	0.42	-	-	
Fixed Income									
Cash	30 Day T-Bills	0.4%	0.4%	1.2%	-	-	-	-	
U.S. TIPS	Bloomberg U.S. TIPS 5-10	1.7%	1.8%	5.3%	0.25	0.27	0.59	0.60	
U.S. Treasury	Bloomberg Treasury 7-10 Year	1.5%	1.7%	6.8%	0.16	0.20	0.43	0.45	
Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	0.5%	1.0%	9.5%	0.01	0.06	-0.01	0.02	
Global Aggregate	Bloomberg Global Aggregate	1.4%	1.6%	6.1%	0.16	0.20	0.28	0.30	
Core Fixed Income	Bloomberg U.S. Aggregate Bond	2.2%	2.3%	4.1%	0.44	0.46	0.80	0.80	
Core Plus Fixed Income	Bloomberg U.S. Universal	2.4%	2.5%	4.0%	0.50	0.51	0.82	0.83	
Short-Term Gov't/Credit	Bloomberg U.S. Gov't/Credit 1-3 Year	1.5%	1.6%	3.6%	0.31	0.33	1.07	1.06	
Short-Term Credit	Bloomberg Credit 1-3 Year	1.6%	1.7%	3.6%	0.34	0.35	1.25	1.24	
Long-Term Credit	Bloomberg Long U.S. Corporate	2.4%	2.8%	9.4%	0.21	0.26	0.67	0.70	
High Yield Corp. Credit	Bloomberg U.S. Corporate High Yield	3.1%	3.7%	11.2%	0.24	0.30	1.01	1.00	
Bank Loans	S&P/LSTA Leveraged Loan Index	2.3%	2.7%	9.3%	0.20	0.25	0.82	0.83	
Global Credit	Bloomberg Global Credit	1.5%	1.8%	7.3%	0.15	0.19	0.67	0.68	
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.2%	5.9%	12.6%	0.38	0.44	0.66	0.68	
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	4.2%	4.9%	12.2%	0.31	0.37	0.04	0.09	
Private Credit	S&P LSTA Leveraged Loan Index	6.8%	7.8%	14.6%	0.44	0.51	-	-	
Private Credit (Direct Lending - Unlevered)	S&P LSTA Leveraged Loan Index	5.0%	5.5%	10.5%	0.44	0.49	-	-	
Private Credit (Direct Lending - Levered)	S&P LSTA Leveraged Loan Index	8.0%	9.4%	17.4%	0.44	0.51	-	-	
Private Credit (Credit Opportunities)	S&P LSTA Leveraged Loan Index	7.0%	8.0%	15.0%	0.44	0.51	-	-	
Private Credit (Junior Capital / Mezzanine)	S&P LSTA Leveraged Loan Index	8.8%	10.4%	19.0%	0.44	0.53	-	-	
Private Credit (Distressed)	S&P LSTA Leveraged Loan Index	9.0%	12.6%	29.1%	0.30	0.42	-	-	

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.

Full suite of Verus 10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		Standard Deviation Forecast	Sharpe Ratio Forecast (g)	Sharpe Ratio Forecast (a)	10-Year Historical Sharpe Ratio (g)	10-Year Historical Sharpe Ratio (a)
		Geometric	Arithmetic					
Other								
Commodities	Bloomberg Commodity	3.0%	4.2%	15.9%	0.16	0.24	-0.25	-0.18
Hedge Funds	HFRI Fund Weighted Composite	3.8%	4.1%	7.7%	0.44	0.48	0.88	0.49
Hedge Funds (Fund of Funds)	HFRI Fund of Funds Composite	2.8%	3.1%	7.7%	0.31	0.35	-	-
Hedge Funds (Equity Style)	Custom HFRI Benchmark Mix*	4.5%	5.6%	15.0%	0.27	0.34	-	-
Hedge Funds (Credit Style)	Custom HFRI Benchmark Mix*	3.6%	4.1%	10.1%	0.32	0.37	-	-
Hedge Funds (Asymmetric Style)	Custom HFRI Benchmark Mix*	2.3%	2.4%	4.9%	0.39	0.41	-	-
Real Estate Debt	Bloomberg CMBS IG	2.1%	2.4%	7.4%	0.23	0.27	1.12	1.11
Core Real Estate	NCREIF Property	6.5%	7.2%	12.5%	0.49	0.54	2.08	2.02
Value-Add Real Estate	NCREIF Property + 200bps	8.5%	9.8%	16.7%	0.49	0.56	-	-
Opportunistic Real Estate	NCREIF Property + 300bps	9.5%	11.1%	18.7%	0.49	0.57	-	-
REITs	Wilshire REIT	6.5%	8.2%	19.3%	0.32	0.40	0.67	0.72
Global Infrastructure	S&P Global Infrastructure	6.6%	8.0%	17.6%	0.35	0.43	0.45	0.51
Risk Parity	S&P Risk Parity 10% Vol Index	5.4%	5.9%	10.0%	0.50	0.55	-	-
Currency Beta	MSCI Currency Factor Index	0.8%	0.9%	3.4%	0.12	0.13	0.24	0.25
Inflation		2.5%	-	-	-	-	-	-

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.

*To represent hedge fund styles, we use a combination of HFRI benchmarks: Equity Style = 33% HFRI Fundamental Growth, 33% HFRI Fundamental Value, 33% HFRI Activist. Credit Style = 20% HFRI Distressed/Restructuring, 20% HFRI Credit Arbitrage, 20% HFRI Fixed Income-Corporate, 20% HFRI Fixed Income-Convertible Arbitrage, 20% HFRI Fixed Income-Asset Backed. Asymmetric Style = 50% HFRI Relative Value, 50% HFRI Macro

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	-0.2	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	0.7	0.6	0.6	0.6	0.6	0.7	1.0																						
US TIPS	0.0	0.2	0.1	0.2	0.2	0.3	0.2	0.2	1.0																					
US Treasury	0.2	-0.3	-0.4	-0.3	-0.3	-0.2	-0.3	-0.2	0.7	1.0																				
Global Sovereign ex-US	0.1	0.2	0.1	0.3	0.4	0.5	0.3	0.1	0.6	0.4	1.0																			
US Core	0.2	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	0.8	0.9	0.6	1.0																		
Core Plus	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.8	0.8	0.6	1.0	1.0																	
Short-Term Gov't/Credit	0.4	-0.1	-0.1	0.0	0.0	0.1	0.0	-0.1	0.6	0.7	0.5	0.8	0.7	1.0																
Short-Term Credit	0.0	0.4	0.4	0.4	0.4	0.5	0.4	0.0	0.6	0.3	0.5	0.6	0.7	0.6	1.0															
Long-Term Credit	0.0	0.3	0.2	0.3	0.3	0.4	0.3	0.1	0.7	0.6	0.5	0.8	0.9	0.5	0.7	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	0.5	0.1	0.7	0.6	1.0													
Bank Loans	-0.3	0.6	0.7	0.6	0.7	0.6	0.7	0.3	0.3	-0.3	0.2	0.1	0.3	0.0	0.6	0.4	0.9	1.0												
Global Credit	-0.1	0.6	0.5	0.7	0.7	0.8	0.7	0.3	0.6	0.2	0.7	0.5	0.7	0.4	0.8	0.8	0.8	0.6	1.0											
EMD USD	-0.2	0.6	0.5	0.7	0.7	0.7	0.7	0.4	0.6	0.1	0.6	0.5	0.7	0.3	0.7	0.7	0.8	0.7	0.9	1.0										
EMD Local	0.0	0.6	0.5	0.7	0.7	0.8	0.7	0.4	0.4	0.0	0.7	0.3	0.5	0.3	0.6	0.5	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	0.3	-0.1	0.1	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	0.8	0.7	0.8	0.6	0.2	-0.3	0.2	0.0	0.2	0.0	0.5	0.4	0.8	0.7	0.6	0.6	0.5	0.5	1.0							
Real Estate	-0.2	0.6	0.6	0.5	0.5	0.5	0.6	0.4	0.2	-0.1	0.2	0.1	0.1	-0.1	0.1	0.2	0.4	0.3	0.3	0.4	0.4	0.3	0.5	1.0						
REITs	-0.2	0.7	0.6	0.6	0.6	0.5	0.7	0.5	0.5	0.1	0.3	0.4	0.5	0.2	0.5	0.5	0.7	0.5	0.6	0.6	0.5	0.3	0.5	0.7	1.0					
Infrastructure	-0.2	0.8	0.7	0.8	0.8	0.7	0.8	0.7	0.4	-0.1	0.5	0.3	0.4	0.2	0.6	0.5	0.8	0.7	0.8	0.8	0.8	0.5	0.7	0.3	0.7	1.0				
Risk Parity	-0.1	0.7	0.6	0.7	0.7	0.7	0.8	0.4	0.5	0.0	0.4	0.3	0.5	0.3	0.7	0.5	0.8	0.7	0.7	0.8	0.7	0.7	0.7	0.4	0.6	0.8	1.0			
Currency Beta	0.0	0.2	0.2	0.1	0.1	0.1	0.2	0.2	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	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.

Autocorrelation adjustment

- We adjust all volatility forecasts that use the long-term historical volatility for autocorrelation.
- Autocorrelation occurs when the future returns of a time series are described (positively correlated) by past returns.
- Time series with positive autocorrelation exhibit artificially low volatility, while time series with negative autocorrelation exhibit artificially high volatility.
- Many asset classes that we tested showed positive autocorrelation, meaning the volatility forecasts that we use in the forecasting process are too low for those asset classes.
- The result of this process was that several asset classes have higher volatility forecasts than if we had made no adjustment for autocorrelation.

Autocorrelation has been shown to be statistically significant across many asset classes, which implies an adjustment is appropriate

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PERIOD ENDING: SEPTEMBER 30, 2021

Investment Performance Review for

Alameda County Employees' Retirement Association - Public

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Private Equity & Private Credit Q2 21 TAB IV

Real Assets Q2 21 TAB V

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



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4TH QUARTER 2021
Investment Landscape

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Topics of interest

THINKING ABOUT INFLATION IN RISK TERMS

Inflation has been subdued in the United States for the last three decades. In this piece, we analyze historic inflationary environments to understand the protection offered by different types of assets. Using a variety of risk tools, we consider the impact inflation has on an investor's overall portfolio and their obligations. No single asset class can reliably protect against inflationary environments but through constructing diversified portfolios and understanding risk exposures, we believe an investor can best position themselves for an uncertain future.

THINKING DIFFERENTLY

Today's market environment appears to be an exceedingly challenging one to navigate, and investors are grappling with the question of how best to structure portfolios that not only meet their return targets but provide impactful diversification and risk management. In this Topic of Interest paper, we will assess a wide variety of less-conventional investment strategies in both mature and nascent marketplaces, and which may only appeal to a specific set of investors.

ESTABLISHMENT OF RISK MITIGATION BUCKETS

An evolving market environment has arguably diminished the role of traditional fixed income as a diversifier in portfolios and led to a higher opportunity cost of holding bonds due to lower yields. This may suggest improved relative attractiveness of other equity risk mitigation approaches. In this research piece we discuss other approaches to risk mitigation and outline their merits, while tying these ideas to the Functionally-Focused Portfolios (FFP) approach to portfolio construction.

Annual research

2021 PRIVATE EQUITY OUTLOOK

In the Verus 2021 Private Equity Outlook, we focus attention on investor appetite for ESG and the growing response from private equity. The outlook also addresses the resilience of private equity in the face of COVID; SPACs rise as a streamlined path to the public markets, however not without risk; Private credit markets continue to gain investor interest; Buyout purchase multiples expand as public market valuations continue to climb; and Venture capital valuations soar alongside increased economic confidence

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3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 12.2% rate year-over-year in Q2 (+6.7% quarterly annualized rate) as the U.S. fully recovered from the pandemic-induced recession of 2020. **p. 10**
- In the U.S. labor market, unemployment has fallen as many workers who desired jobs have been successful in gaining employment. The overall U.S. labor participation rate has not improved, as millions of workers remain neither employed nor seeking employment. **p. 15**
- Consumer sentiment deteriorated during the third quarter, on reports of pessimism around the COVID Delta variant, higher inflation, and unfavorable economic prospects. Small business optimism also fell, as businesses face difficulty in hiring and are concerned about tax increases and more burdensome government regulations. **p. 17**

PORTFOLIO IMPACTS

- Credit markets traded in a relatively tight range throughout the quarter, delivering mild returns. Bank loans outperformed in Q3, returning 1.1% and outpacing high yield bonds (0.9%) and corporate investment grade (0.0%). **p. 24**
- U.S. core CPI, which excludes food & energy prices, rose 4.0% YoY in September. U.S. headline inflation came in at 5.4%. Price changes moderated during Q3, relative to the larger price moves that occurred in March through June. **p. 12**

THE INVESTMENT CLIMATE

- The Biden Administration's \$3.5 trillion social spending package remains in the negotiation stage among Democrats, as the size of the package, the contents, and national concerns over inflation have given some members of the party reason to pause. The package is reportedly being scaled back, which creates the risk of rejection from progressives within the party who are pushing for more spending. **p. 10**
- It seems that investors have put the 2020 pandemic-induced recession and its associated risks behind them. However, it is not clear that market risks have completely subsided, as the Delta-variant continues to spread, high inflation could indeed persist, and most governments are set to pull back generous stimulus programs. **p. 34**

ASSET ALLOCATION ISSUES

- Equity markets took a breather in Q3. U.S. equities delivered 0.6%, while international equities experienced slight losses of -0.4% and emerging market equities saw a larger selloff of -8.1%, on an unhedged currency basis. **p. 27**
- Factor performance was negative during the quarter, as large capitalization stocks outperformed small cap by a wide margin (Russell 1000 +0.2%, Russell 2000 -4.4%) and growth stocks beat value (Russell 1000 Growth +1.2%, Russell 1000 Value -0.8%). **p. 30**

The economic recovery may be slowing, though the environment remains positive for risk assets

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

What drove the market in Q3?

“Covid cases are rising again in all 50 states across U.S. as delta variant tightens its grip”

DELTA VARIANT SHARE OF COVID CASE GROWTH IN THE UNITED STATES

Apr	May	Jun	Jul	Aug	Sep
0.6%	3.1%	31.9%	96.0%	97.9%	99.9%

Article Source: CNBC, as of July 23rd, 2021

“The World Economy’s Supply Chain Problem Keeps Getting Worse”

SHIPS AT ANCHOR OUTSIDE THE PORT OF LOS ANGELES (MONTHLY AVERAGE)

Apr	May	Jun	Jul	Aug	Sep
11	10	7	12	22	27

Article Source: Bloomberg, August 25th, 2021

“Beijing’s Crackdown Ruins July for Investors Everywhere”

NASDAQ GOLDEN DRAGON CHINA INDEX TOTAL RETURN

Apr	May	Jun	Jul	Aug	Sep
-0.1%	-5.6%	+1.8%	-22.0%	-1.6%	-9.8%

Article Source: Bloomberg, July 27th, 2021

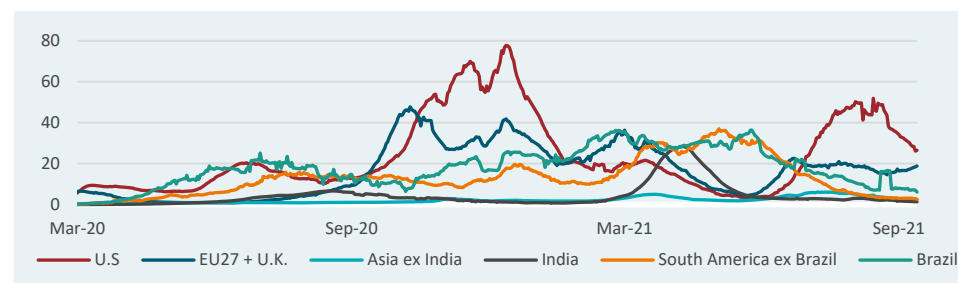
“Commodities surge again; spot price index hits decade high”

BLOOMBERG COMMODITY SPOT INDEX

Apr	May	Jun	Jul	Aug	Sep
464.0	476.9	480.2	487.4	486.3	510.3

Article Source: BNN Bloomberg, September 13th, 2021

AVERAGE DAILY CASE GROWTH PER 100,000 (TRAILING TWO WEEKS)



Source: Bloomberg, as of 9/30/21

SUPPLIER DELIVERY INDICES



Source: Institute for Supply Management, as of 9/30/21

NASDAQ GOLDEN DRAGON CHINA INDEX



Source: NASDAQ, Bloomberg, as of 9/30/21

Economic environment

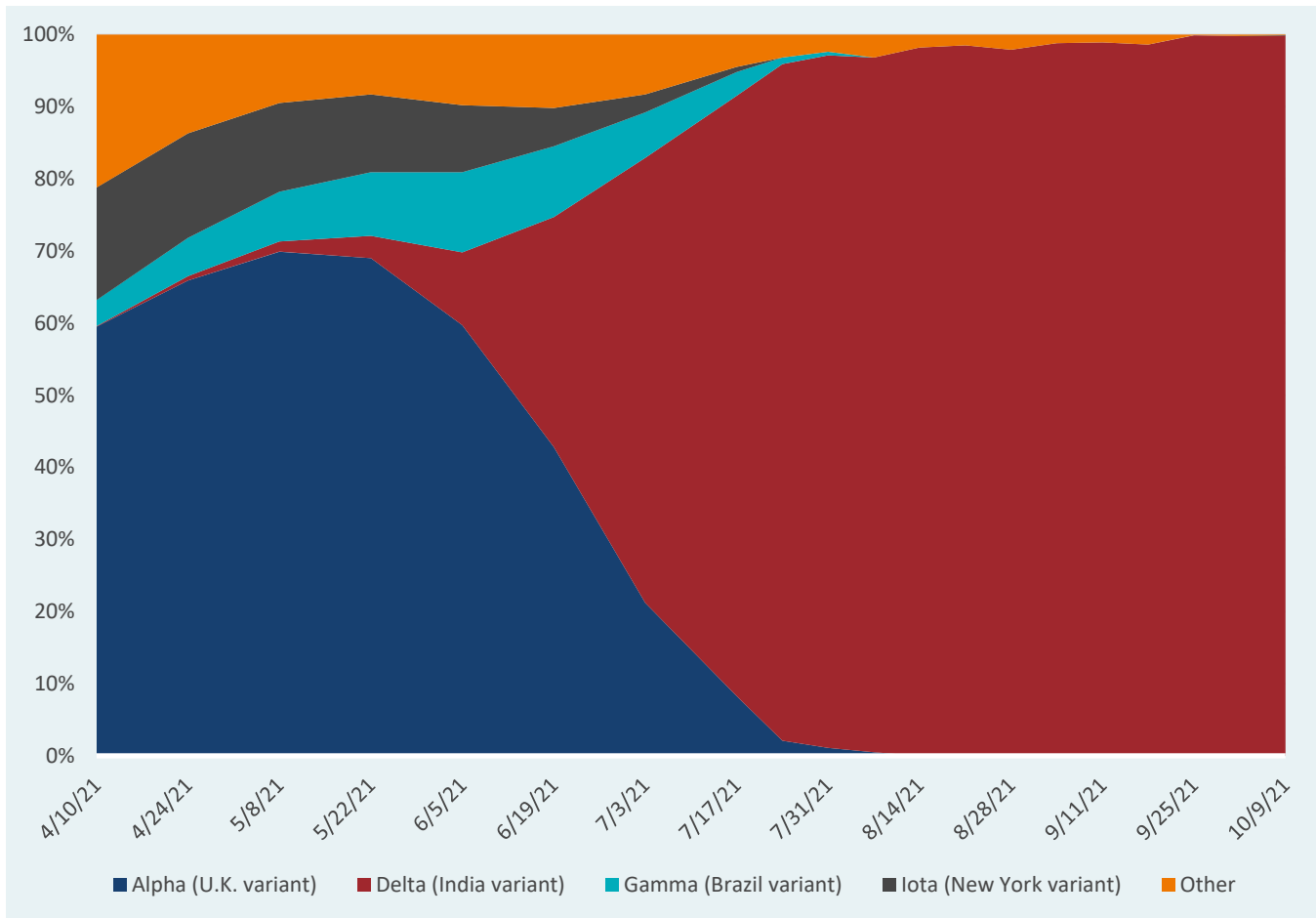
U.S. economics summary

- Real GDP grew at a 12.2% rate year-over-year in Q2 (+6.7% quarterly annualized rate) as the U.S. fully recovered from the pandemic-induced recession of 2020. However, it appears that recent strong economic activity may be slowing down.
- U.S. core CPI, which excludes food & energy prices, rose 4.0% YoY in September. U.S. headline inflation came in at 5.4%. Price changes moderated during Q3, relative to the larger price moves that occurred in March through June, but remain elevated.
- Unemployment fell from 5.9% to 4.8% during the quarter, while the laborforce participation was unmoved at 61.6%. The unemployment rate has fallen as many workers who desired jobs have been successful in gaining employment, but the overall U.S. laborforce participation rate has not improved
- The Biden Administration’s \$3.5 trillion social spending package remains in the negotiation stage among Democrats, as the size of the package, the contents, and national concerns over inflation have given some members of the party reason to pause. The package is reportedly being scaled back, which creates the risk of rejection from progressives within the party who are pushing for more spending.
- U.S. home prices have rocketed higher, up 19.7% over the past year, according to the S&P/Case-Shiller U.S. National Home Price Index.
- Consumer sentiment was mixed over the quarter. The University of Michigan reported that the Delta variant and persistent inflation, as well as unfavorable prospects for the national economy, are weighing on sentiment. High prices of homes, vehicles, and durables are a concern.

	Most Recent	12 Months Prior
GDP (YoY)	12.2% <i>6/30/21</i>	(9.1%) <i>6/30/20</i>
Inflation (CPI YoY, Core)	4.0% <i>9/30/21</i>	1.7% <i>9/30/20</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>9/30/21</i>	1.7% <i>9/30/20</i>
Fed Funds Target Range	0% – 0.25% <i>9/30/21</i>	0% – 0.25% <i>9/30/20</i>
10-Year Rate	1.49% <i>9/30/21</i>	0.68% <i>9/30/20</i>
U-3 Unemployment	4.8% <i>9/30/21</i>	7.8% <i>9/30/20</i>
U-6 Unemployment	8.5% <i>9/30/21</i>	12.8% <i>9/30/20</i>

Delta-plus variant?

SHARE OF NEW COVID-19 CASES ATTRIBUTED TO EACH MAJOR VARIANT



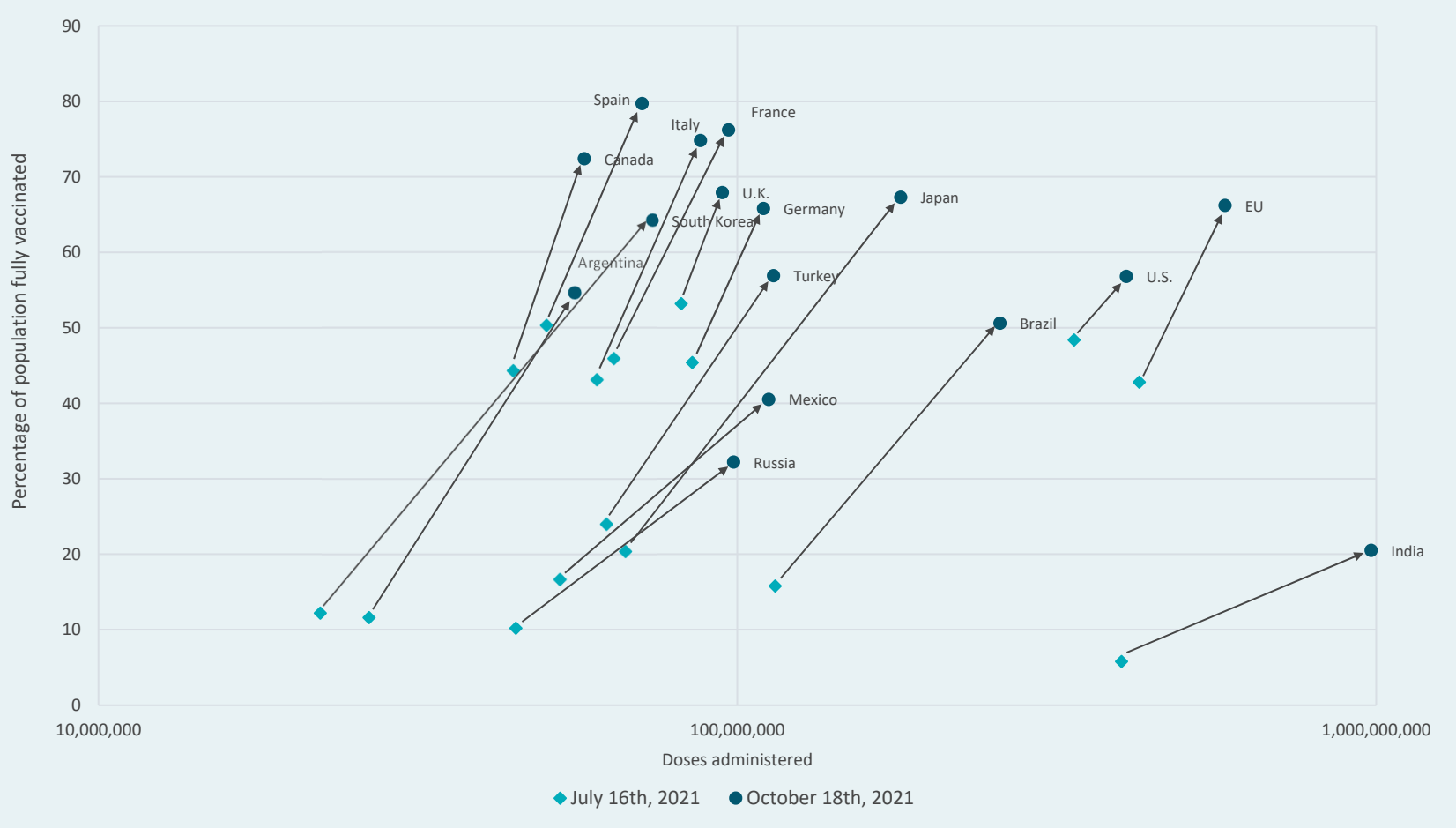
The delta variant of COVID-19 which surged through India in the second quarter took hold in the U.S., and by the end of the quarter, accounted for almost all new cases

Most recently, FDA Commissioner Scott Gottlieb called for “urgent research” into whether a new strain – known as delta plus – could be more transmissible or have partial immune evasion

Source: Bloomberg, BBC, U.K. government, as of 10/9/21

Global vaccination campaign

DOSES ADMINISTERED RELATIVE TO PERCENTAGE OF POPULATION FULLY VACCINATED



Over the last quarter, vaccination rates have improved considerably in Asia, Europe, and to a lesser extent, the emerging markets

Source: Bloomberg, as of 10/18/21

GDP growth

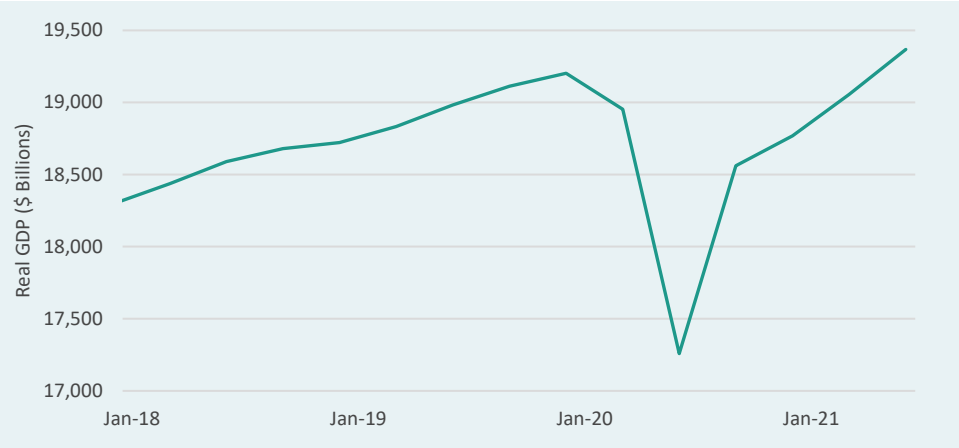
Real GDP grew at a 12.2% rate year-over-year in Q2 (+6.7% quarterly annualized rate) as the U.S. fully recovered from the pandemic-induced recession of 2020. However, it appears that recent strong economic activity may be slowing down. The Atlanta Fed GDPNow estimate, as of October 15th, suggests that GDP growth will slow to 1.2% in the fourth quarter (seasonally-adjusted quarterly annualized rate).

In contrast to the wild swings of 2020, quarterly GDP growth has steadied. Consumption has contributed to the lion's share of GDP, while supply chain issues have detracted from growth as some businesses have been unable to purchase inventory.

The Biden Administration's \$3.5 trillion social spending package remains in the negotiation stage among Democrats, as the size of the package, the contents, and national concerns over inflation have given some members of the party reason to pause. The package is reportedly being scaled back, which creates the risk of rejection from progressives within the party who are pushing for more spending. House Speaker Nancy Pelosi reportedly expressed the party's intent to include each of the original social programs (expanded government healthcare, child tax credit, tuition-free community college, etc.) but to scale back the planned length of guaranteed funding in order to reduce overall costs.

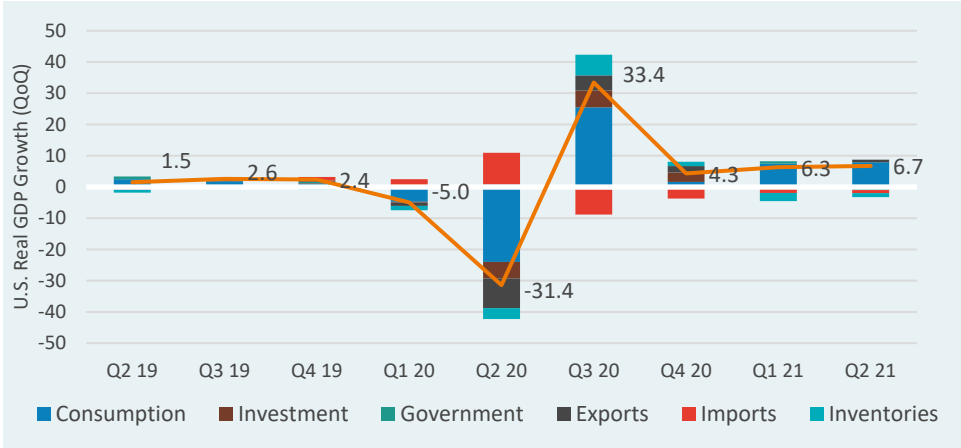
During Q2 2021 the U.S. economy fully recovered from the COVID-19 recession

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 6/30/21

U.S. REAL GDP COMPONENTS (QOQ)



Source: FRED, as of 6/30/21

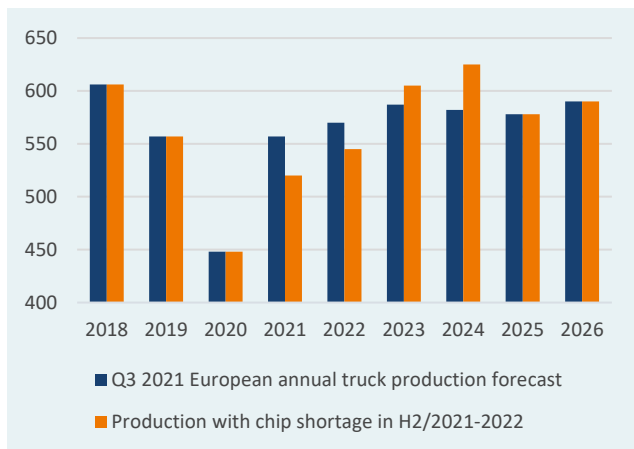
Supply chain disruptions

Throughout the course of the pandemic, idiosyncratic supply chain snags have caused largely temporary price distortions affecting all sorts of markets, from labor, to lumber, to meat-packing and semiconductors, and many others. In some cases, these distortions have had a large impact on overall inflation levels. For example, limited semiconductor chip supplies led major suppliers to ration chips for higher-margin tech clients at the expense of lower-margin automaker clients. This prioritization resulted in a lower level of new vehicle production, and a massive surge in prices for used cars.

In September, key ports in Southern California hit several new cargo ship backlog records, forcing these ships to remain at anchor outside the ports

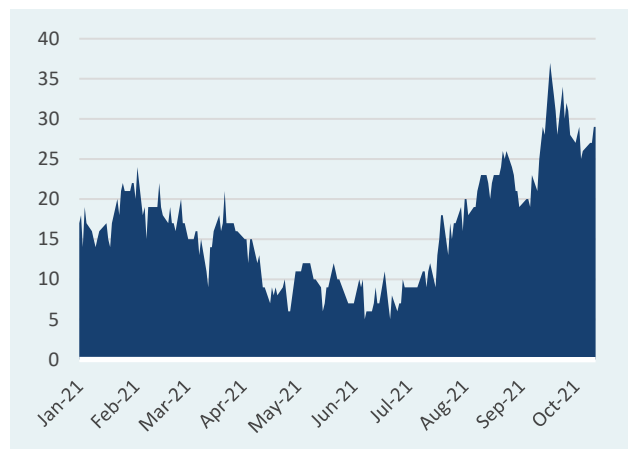
for several weeks in some cases. Part of the problem has been the massive size of these ships, which require many workers to unload, a lot of trucks to ship their cargo, and many warehouses to store that cargo. If there are not enough truckers to move the new cargo coming in, or there is not enough warehouse capacity to offload new cargo, new ships have longer unload times and the problem compounds. It is important to remember that global supply chains are very complex, and issues in certain segments tend to cascade through the others. According to the NFIB's Small Business Optimism Survey, only 10% of small business owners have been insulated from the impacts of these disruptions. We will be watching corporate guidance to gauge the impact of these disruptions on profit margins.

IMPACT OF SEMICONDUCTOR SHORTAGE ON EUROPEAN TRUCK PRODUCTION (THOUSANDS)



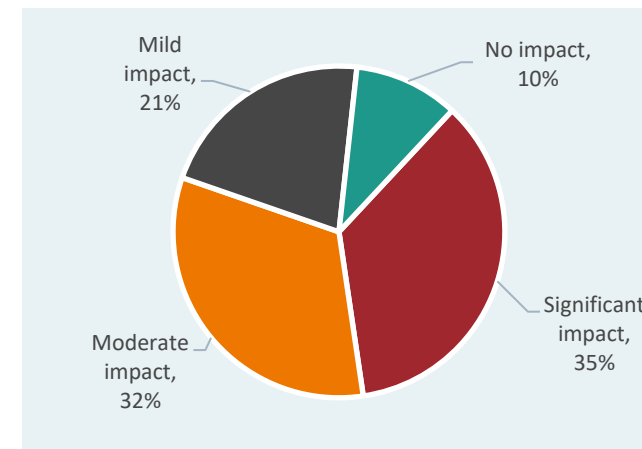
Source: IHS Markit, as of 9/28/21

VESSELS AT ANCHOR – PORT OF LOS ANGELES



Source: The Port of Los Angeles, as of 10/15/21

MAGNITUDE OF THE IMPACT OF SUPPLY CHAIN DISRUPTIONS ON SMALL BUSINESSES IN THE US



Source: NFIB, as of 9/30/21

Inflation

U.S. core CPI, which excludes food & energy prices, rose 4.0% YoY in September. U.S. headline inflation came in at 5.4%. Price changes moderated somewhat during Q3, relative to the larger price moves that occurred from March through June.

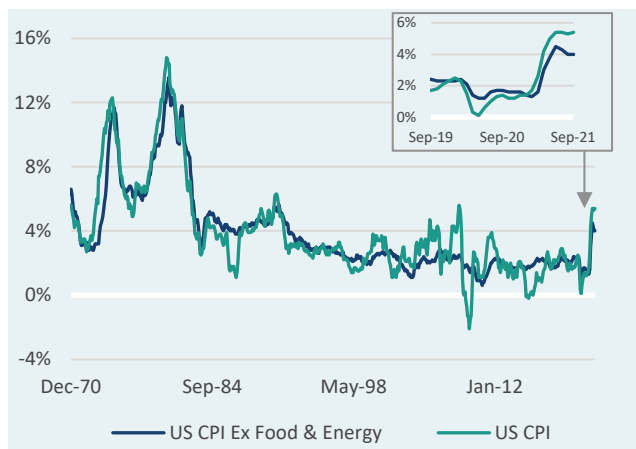
Energy and used automobile prices have had outsized impacts on inflation over the past year, increasing 24.8% and 24.4%, respectively. These two components have driven most of the rise in inflation experienced since 2019. If energy and used auto prices moderate, this will push inflation back down towards “normal” level, all else equal. However, continued supply chain issues appear to be contributing to a material rise in certain goods prices such as food, up +0.9% in September. Rent prices

(+0.5% over the month) are also a concern as costs begin to catch up with real estate values. As food comprises 13.9% of the overall inflation basket, and shelter comprises 32.6%, price moves across these categories could impact the direction of future inflation.

While we retain our long-term view that inflation is likely to return to lower levels, as most of the recent increases can be attributed to base effects or short-term one-time issues, the significant disruptions in the global supply chain are clearly an important component of the developing story. If this disruption continues there will likely be ongoing effects on the economy as a whole, and on inflation outcomes. We continue to research this issue and it’s likely effects.

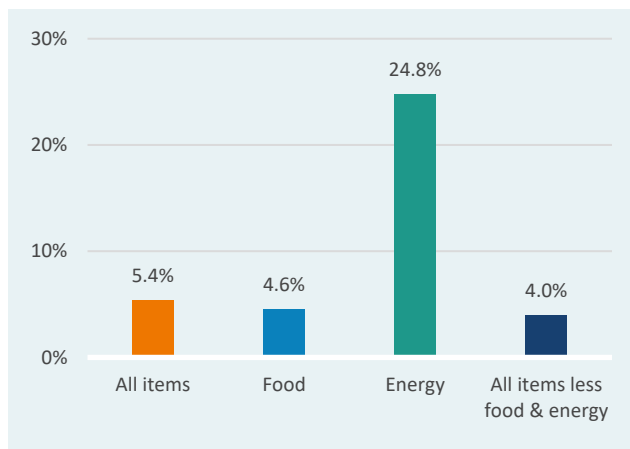
Recent moves suggest a moderation of prices, though we are watching closely for potential structural inflation

U.S. CPI (YOY)



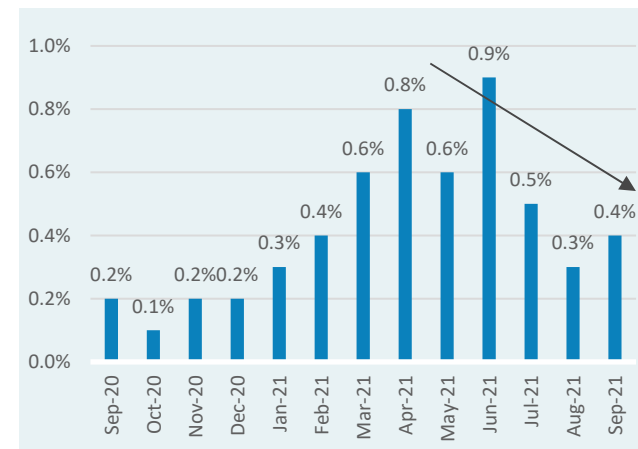
Source: BLS, as of 9/30/21

U.S. CPI (YOY)



Source: BLS, as of 9/30/21

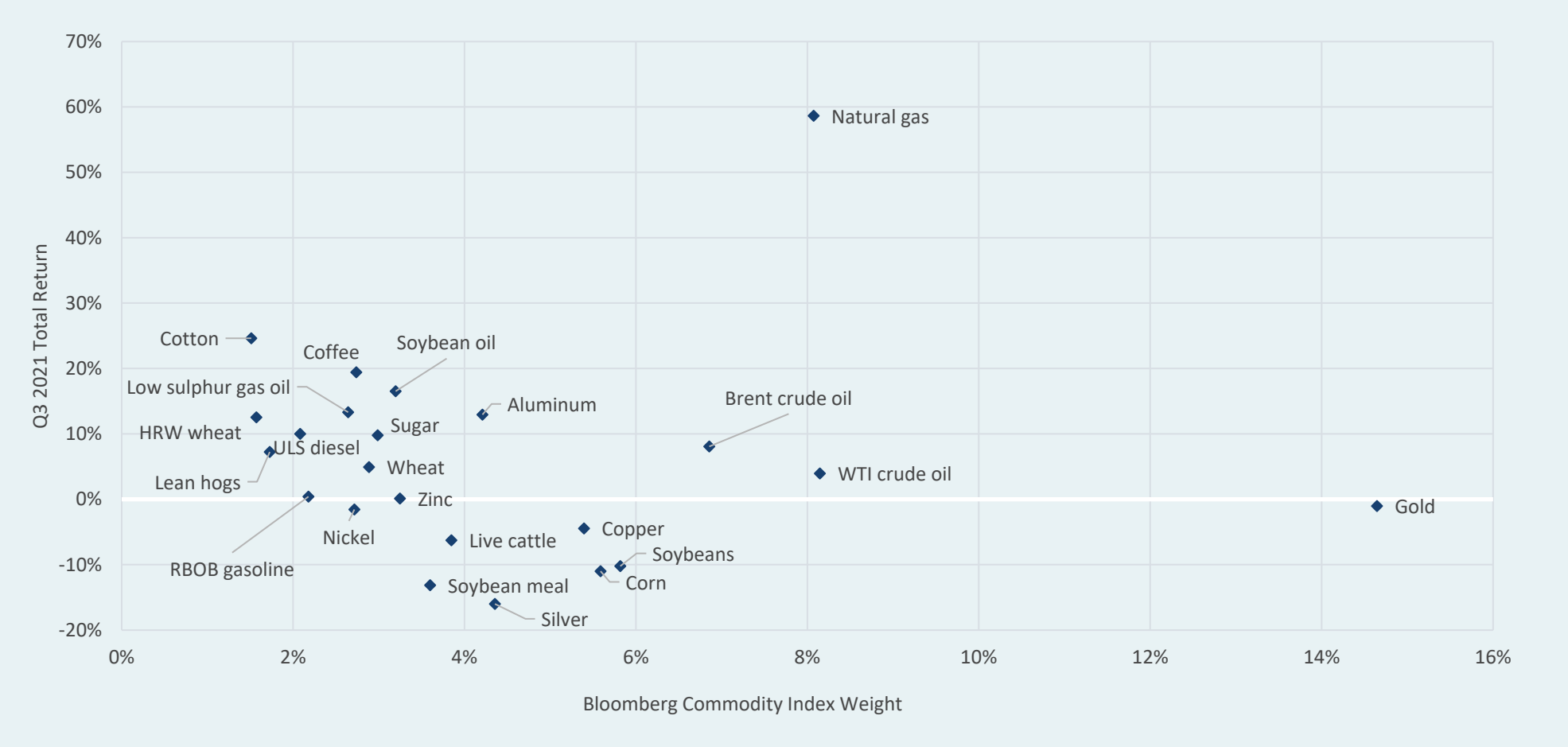
MONTHLY PRICE MOVEMENT



Source: BLS, as of 9/30/21

Commodity surge

BLOOMBERG COMMODITY INDEX – Q3 2021 RETURNS BY INDEX WEIGHT



Source: Bloomberg, as of 9/30/21

Labor market

U.S. unemployment fell from 5.9% to 4.8% during the quarter, while the labor participation rate was unmoved at 61.6%.

Two major themes can be observed in the U.S. labor market: 1) the unemployment rate has fallen as many workers who desired jobs have been successful in gaining employment, but 2) the overall U.S. laborforce participation rate has not improved, as millions of workers remain out of the laborforce and are not seeking employment. We continue to believe that the second effect has been fueled by approximately two million abnormally early retirements since 2020, which implies that the available U.S. workforce is now permanently smaller. As

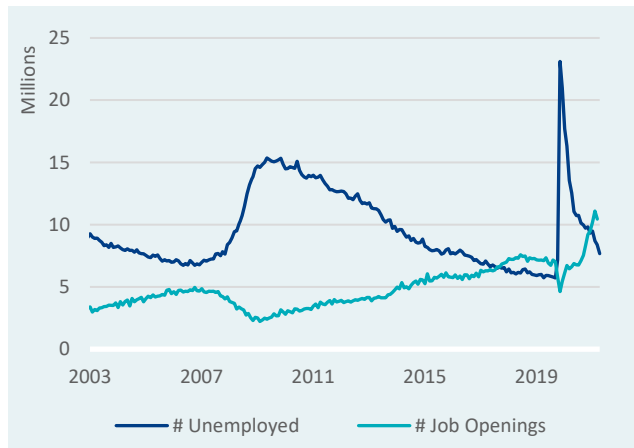
demonstrated below and on the next slide, the proportion of retired Americans per age group has increased markedly since 2019. It is difficult to know the main drivers behind the trend towards early retirement, but greater wealth (strong returns from markets and real estate), the need to take care of family, and an unwillingness to return to full-time work after extended periods of time off, may all be playing a part.

The number of U.S. job openings has far surpassed the supply of workers. As of August, 10.4 million job openings were posted across the country, while only 8.3 million Americans were seeking employment.

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

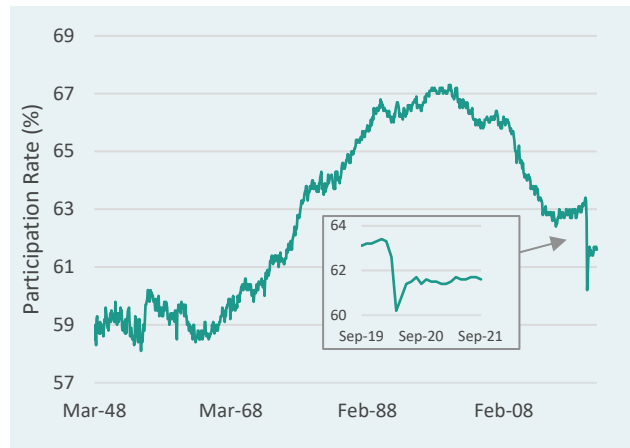
Much of this loss appears to be due to early retirements

UNEMPLOYMENT VS. JOB OPENINGS



Source: FRED, as of 9/30/21

LABOR PARTICIPATION RATE



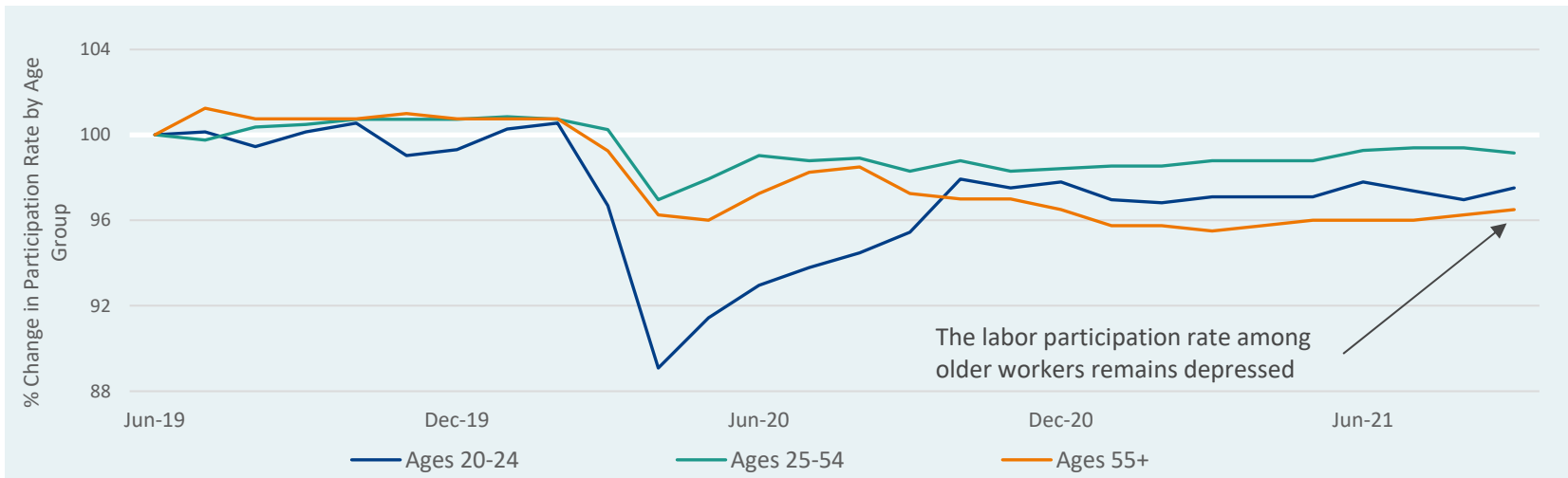
Source: FRED, as of 9/30/21

% OF AMERICANS RETIRED

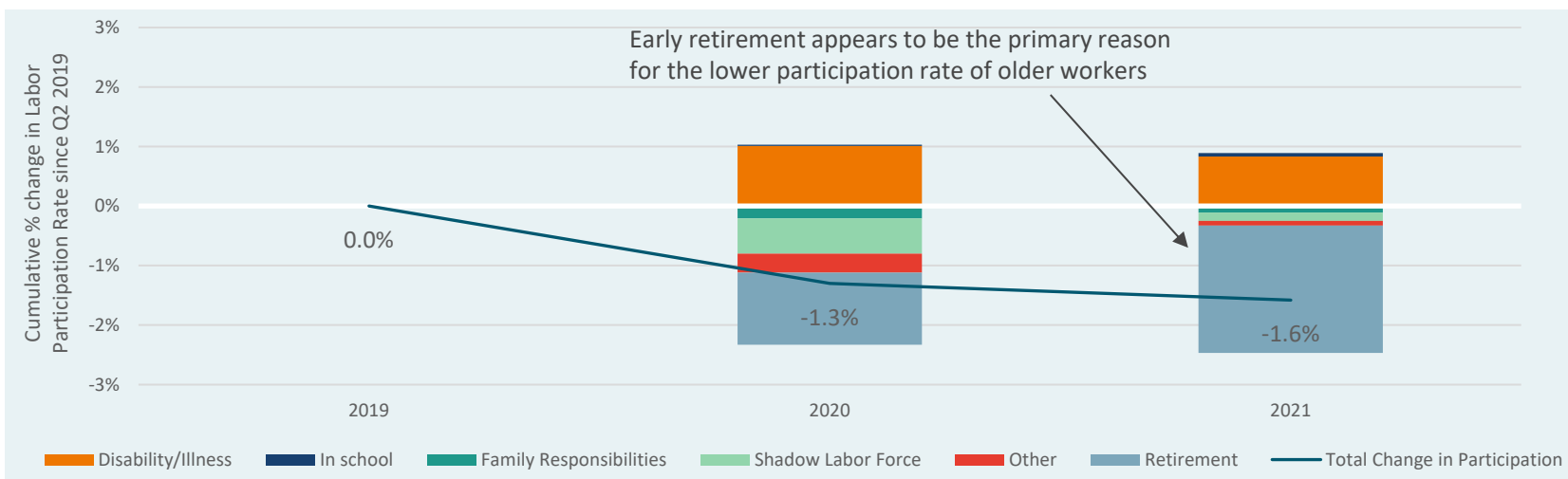
Age cohort	Women		Men	
	2019	2021	2019	2021
55+	52%	54%	44%	45%
55-59	11%	11%	7%	7%
60-64	28%	29%	21%	21%
65-69	59%	62%	52%	53%
70-74	78%	80%	71%	73%
75+	87%	88%	83%	85%

Source: St. Louis Federal Reserve

Labor participation rate



The U.S. labor participation rate remains considerably depressed, due to millions of workers being out of work *and also not seeking work*



Economic data suggests that this effect may be largely due to millions of unusually early retirements since 2019

Source: Federal Reserve Bank of St. Louis, Verus, as of Q2 2021

The consumer

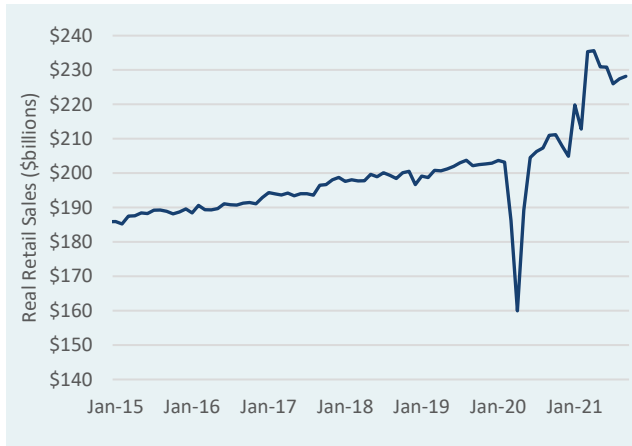
U.S. retail sales remain strong but have now slowed for two consecutive quarters, lower by -1.1% in Q3. The *reopening* spending surge appears to be slowing down, as retail sales, auto sales, and home sales have all declined in recent months. Fears around the COVID-19 Delta variant are also likely weighing on consumer spending activity. We examine quarterly rate of change here, because year-over-year rate of change (the traditional measure) is skewed due to the events of 2020.

Retail sales were expected to fall in September, but exceeded those expectations despite global supply chain issues and the rolling off of some enhanced government benefits. U.S. auto sales continued to fall sharply,

likely fueled by the dual effects of low supply and also the fact that many potential buyers, flush with stimulus cash, had already made a recent purchase.

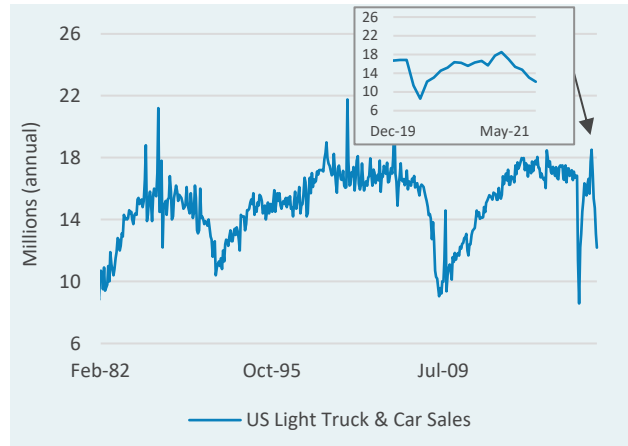
According to anonymized cellular phone data collected by Google for COVID-19 public health research, most economic activity seems to be back to normal for the most part. Public transportation and workplace travel remains the exception, though a recent uptick in workplace mobility might imply that some businesses are bringing staff back to the office.

REAL RETAIL SALES



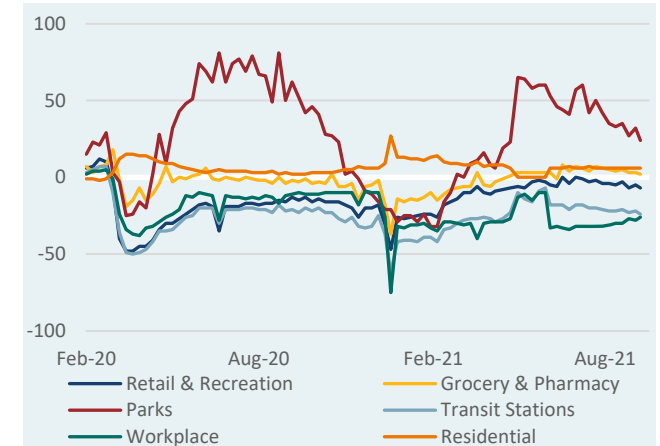
Source: FRED, as of 9/30/21

AUTO SALES



Source: Federal Reserve, as of 9/30/21

GOOGLE U.S. ACTIVITY TRACKER



Source: Google anonymized U.S. citizen mobility, as of 9/30/21

Sentiment

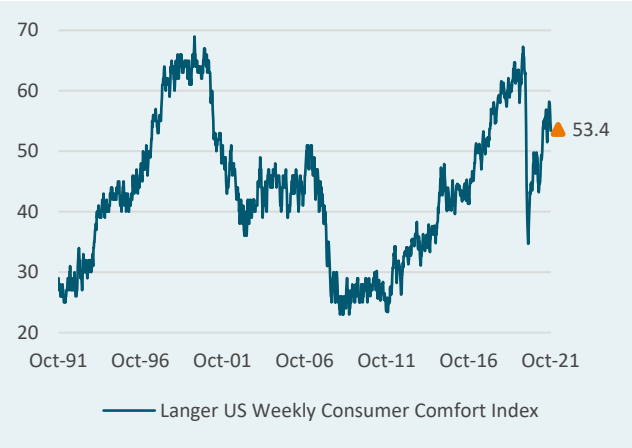
Consumer sentiment deteriorated during the third quarter, on reports of pessimism around COVID-19, inflation, and the economy. Small business optimism also fell as businesses face difficulty in hiring and are concerned about tax increases and more burdensome government regulations.

The University of Michigan Consumer Sentiment Survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. The survey reading fell from 85.5 to 72.8 on reports that the Delta variant and persistent inflation, as well as unfavorable prospects for the national economy, are weighing on sentiment. High prices of homes, vehicles, and durables are a concern, and only 18% of households anticipate that wage gains will be greater than inflation. The

Bloomberg Consumer Comfort Index attempts to gauge Americans' views on the economy, their personal financial situation, and buying conditions. The index fell from 55.1 to 53.4.

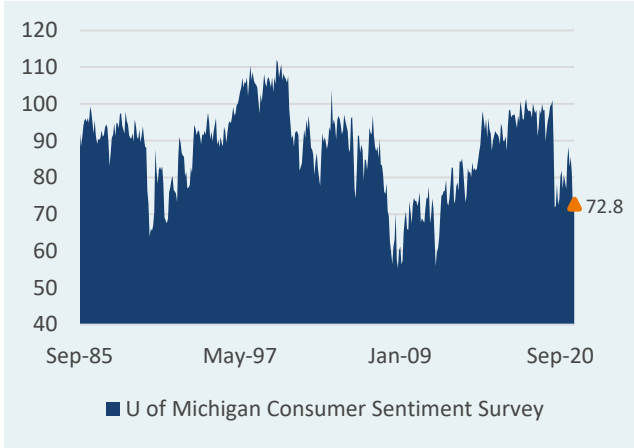
The NFIB Small Business Optimism index fell from 102.5 to 99.1 during the quarter. As reported, "Small business owners are doing their best to meet the needs of customers, but are unable to hire workers or receive the needed supplies and inventories," said NFIB Chief Economist Bill Dunkelberg. "The outlook for economic policy is not encouraging to owners, as lawmakers shift to talks about tax increases and additional regulations."

CONSUMER COMFORT



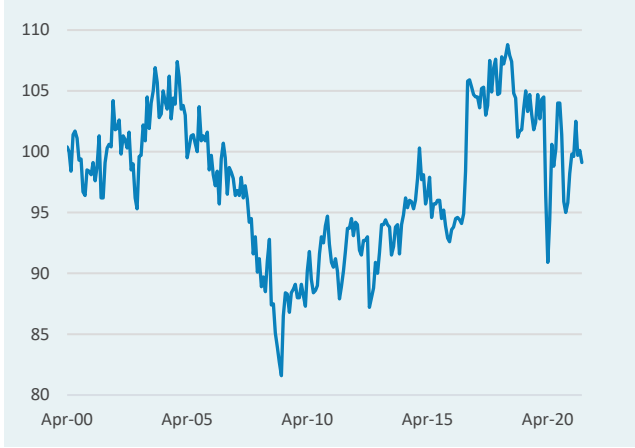
Source: Bloomberg, as of 9/30/21

CONSUMER SENTIMENT



Source: University of Michigan, as of 9/30/21

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 9/30/21

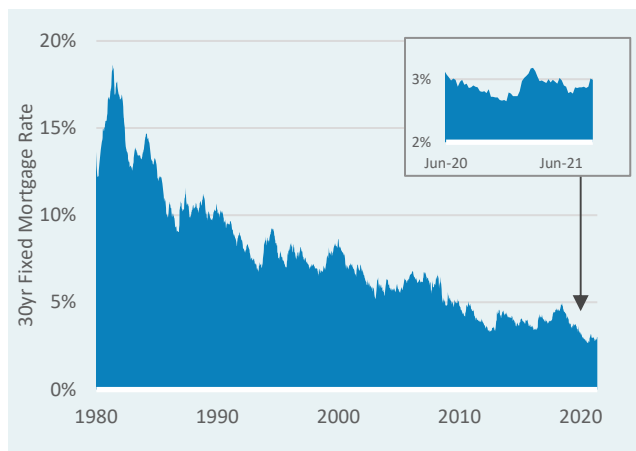
Housing

U.S. home prices have rocketed higher, up 19.7% over the past year, according to the S&P/Case-Shiller U.S. National Home Price Index. This surprising boom appears to have been the product of a perfect storm for home demand, impacted by ultra-low interest rates, Americans' need for more space in the work-from-home environment, and likely pent-up demand from younger families who have been slower to purchase homes than past generations.

Mortgage interest rates have remained steady at around 3.0%, as attractive borrowing conditions support potential buyers who face elevated home prices.

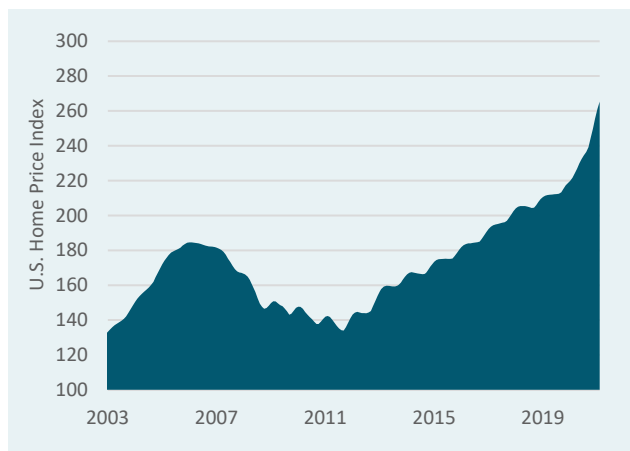
The cost of renting has seen a considerable rise throughout the pandemic, with rents up 9.2% year-over-year in September, according to Zillow. The rise in rent prices has differed quite a bit across the country, and it may be reasonable to assume that states with more outgoing net migration (ex: New York, California) may be experiencing less upward rent pressure than states with more incoming net migration (ex: Arizona, Florida), as demonstrated by recent rental price trends. Dramatic increases in rent prices, without a commensurate improvement in wages, creates obvious issues for many Americans.

30YR FIXED MORTGAGE RATE (AVERAGE)



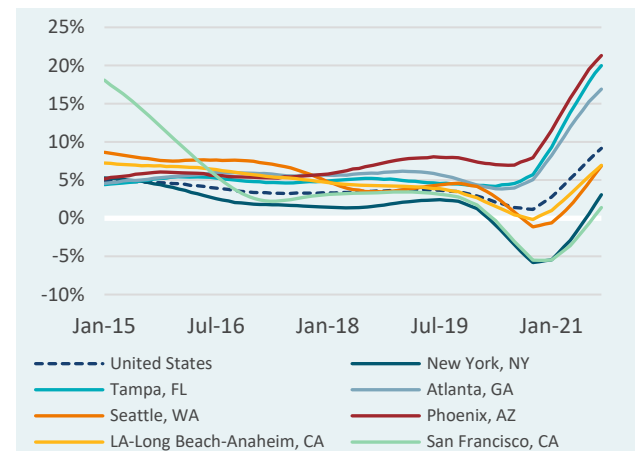
Source: U.S. Census Bureau, as of 9/30/21

U.S. HOME PRICES



Source: S&P/Case-Shiller U.S. National Home Price Index, as of 7/31/21

ZILLOW OBSERVED RENT INDEXES – ZORI* (YOY)



*Measures changes in asking rents across 100 markets over time.

Source: Zillow ZORI, as of 9/30/21

International economics summary

- The emergence of the delta variant of COVID-19 in Europe and the United States over the summer led to the reimplementing of social distancing controls and a subsequent moderation of economic activity in the services sector.
- European and Japanese vaccination rates improved vastly over the quarter, which helped to contain the spread of COVID-19.
- Inflation surprised to the upside around the globe, but particularly in the Eurozone, which has spurred some tough conversations amongst central bank policymakers.
- Global consumer confidence has trended lower over most of the last two quarters on concerns over labor market prospects, as well as the impact of rising prices on purchasing power stability.
- Natural gas prices surged more

than 60% in Q3, primarily as a result of low supply levels and substitution effects due to price surges in other energy sources including coal. On a more thematic basis, Europe's clean energy initiatives also played a role, as renewable sources are not yet equipped to replace carbon-based power supplies, and adequate investment in nuclear plants has not been made. We are keeping a watchful eye on the potential impact of energy prices on inflation.

- Many factories in China were forced to shut down late in the quarter as a result of surging coal and electricity prices. Those shutdowns, alongside weaker than expected investment activity, tighter financing conditions, and stricter social distancing controls, all contributed to a larger-than-expected moderation in Chinese GDP growth, which fell to 4.9% year-over-year in Q3.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	12.2% 6/30/21	5.4% 9/30/21	4.8% 9/30/21
Eurozone	14.3% 6/30/21	3.4% 9/30/21	7.5% 8/31/21
Japan	7.6% 6/30/21	0.3% 9/30/21	2.8% 8/31/21
BRICS Nations	10.1% 6/30/21	2.4% 9/30/21	5.3% 6/30/21
Brazil	12.4% 6/30/21	10.3% 9/30/21	13.7% 7/31/21
Russia	10.5% 6/30/21	7.4% 9/30/21	4.4% 8/31/21
India	20.1% 6/30/21	5.3% 8/31/21	6.9% 9/30/21
China	4.9% 9/30/21	0.7% 9/30/21	5.1% 8/31/21

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

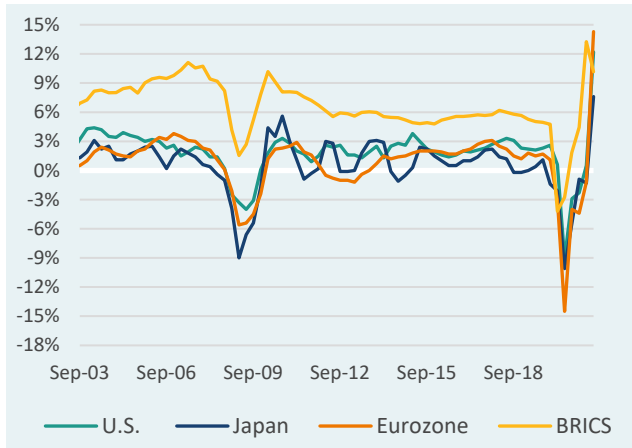
International economics

The IMF expects the global economy will grow by 5.9% in 2021, and 4.9% in 2022. More recently, concerns over the impact of supply chain disruptions have crimped near-term growth expectations for advanced economies, but the expectation remains that those economies will regain their pre-pandemic trend path in 2022 and exceed it by 0.9% by 2024. However, sizable disparities in vaccine access and policy support have resulted in a larger expected setback to living standard improvements in the developing world, where growth is expected to remain 5.5% beneath the pre-pandemic trend by 2024.

Inflation remained high in most global economies, and the United States has seen one of the largest increases among other major developed economies. Inflation trends and the reaction of central banks to these trends will have important implications for markets.

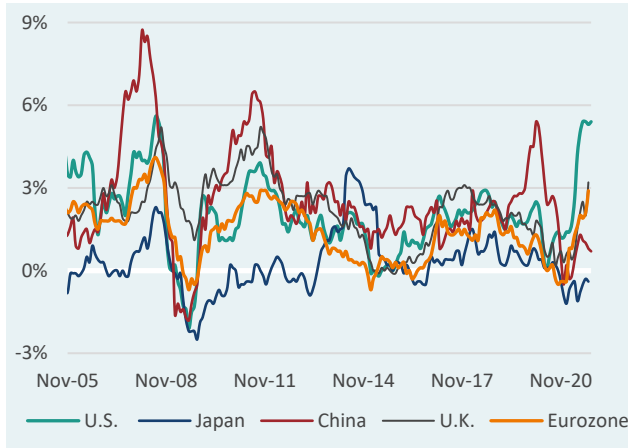
Unemployment around the world has improved as economies recover, government restrictions are loosened, and life moves back towards normalcy.

REAL GDP GROWTH (YOY)



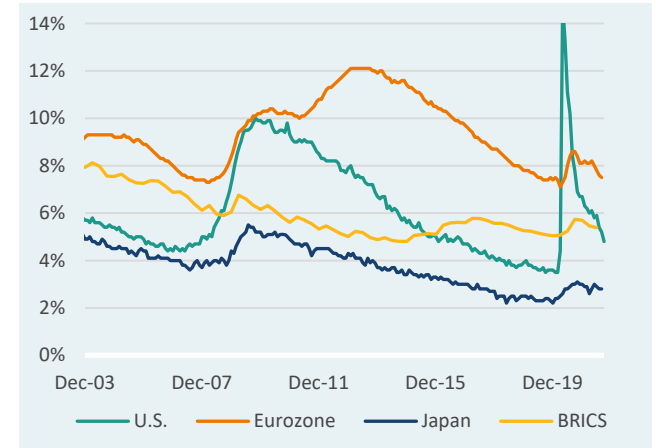
Source: Bloomberg, as of 6/30/21

INFLATION (CPI YOY)



Source: Bloomberg, as of 9/30/21 – or most recent release

UNEMPLOYMENT



Source: Bloomberg, as of 9/30/21 – or most recent release

Fixed income rates & credit

Fixed income environment

— The 10-year U.S. Treasury yield increased slightly during the quarter, from 1.45% to 1.52%. Longer-term Treasury bond yields drifted lower in July and August before picking up considerably in September, as speculation mounted that the Federal Reserve would begin tapering the current asset purchase program (\$80 billion in monthly Treasury purchases and \$40 billion in monthly agency mortgage-backed-securities) in November or December of this year.

— Credit spreads traded in a relatively tight range during the quarter and remained at a very low level relative to the historical average. Historically low credit default rates have supported tight spread levels. Above-average credit quality has also been supportive, specifically in the high-yield universe. Although credit spreads are tight, spreads arguably remain healthy relative to current bond default levels.

— Reports that Evergrande, one of the

largest property developers in China, was on track to miss debt service payments led to a sell-off in Chinese high-yield debt as investors braced for potential contagion. Dollar-denominated high-yield Chinese bonds in aggregate fell by around 20% in value.

— Realized and expected inflation metrics reached high levels relative to history, sparking a number of different policy responses from central bankers. The base case at the Fed and at the ECB remains that inflation will be transitory, and that rates can remain at current levels at least until late next year. In contrast, officials at the Bank of England are now expected to begin hiking rates in November, and many central banks in the emerging markets have already begun tightening policy.

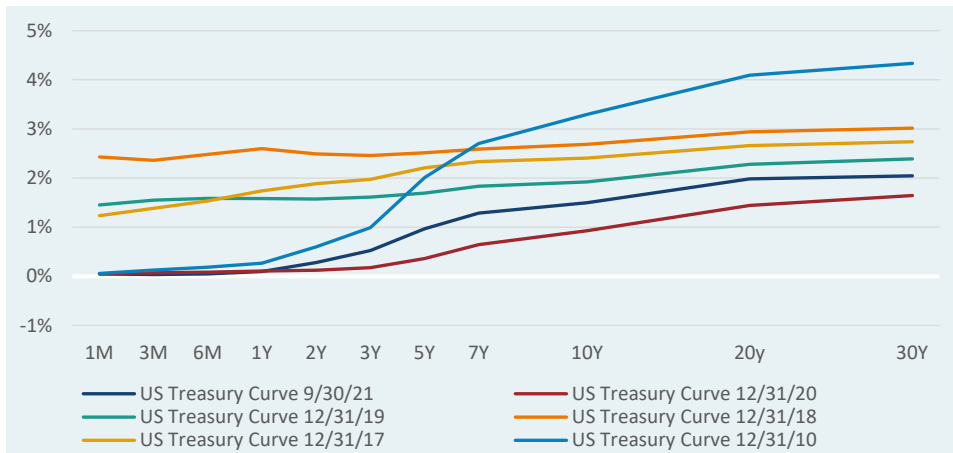
— The four-year discount margin, our preferred spread metric for bank loans, compressed slightly over the quarter from 4.32% to 4.28%.

	QTD Total Return	1 Year Total Return
Core Fixed Income (BBgBarc U.S. Aggregate)	0.1%	(0.9%)
Core Plus Fixed Income (BBgBarc U.S. Universal)	0.1%	0.2%
U.S. Treasuries (BBgBarc U.S. Treasury)	0.1%	(3.3%)
U.S. High Yield (BBgBarc U.S. Corporate HY)	0.9%	11.3%
Bank Loans (S&P/LSTA Leveraged Loan)	1.1%	8.4%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(3.1%)	2.6%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(0.7%)	4.4%
Mortgage-Backed Securities (BBgBarc MBS)	0.1%	(0.4%)

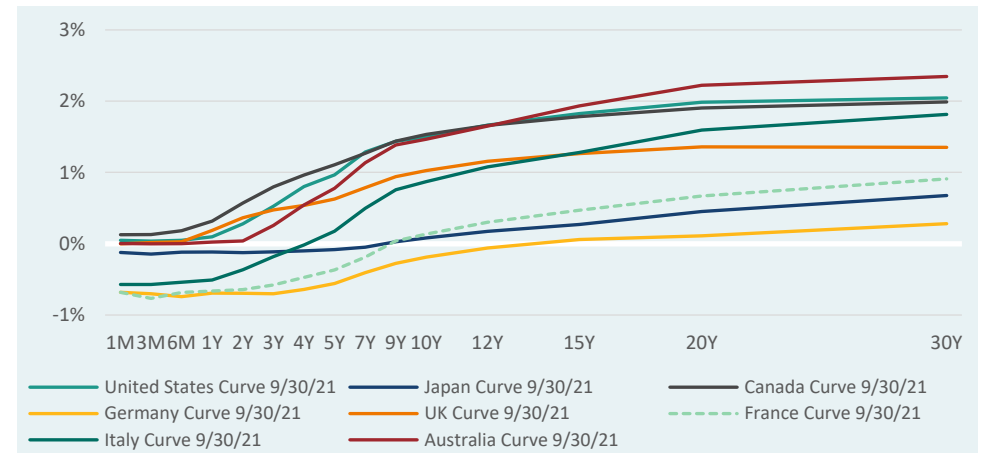
Source: Bloomberg, as of 9/30/21

Yield environment

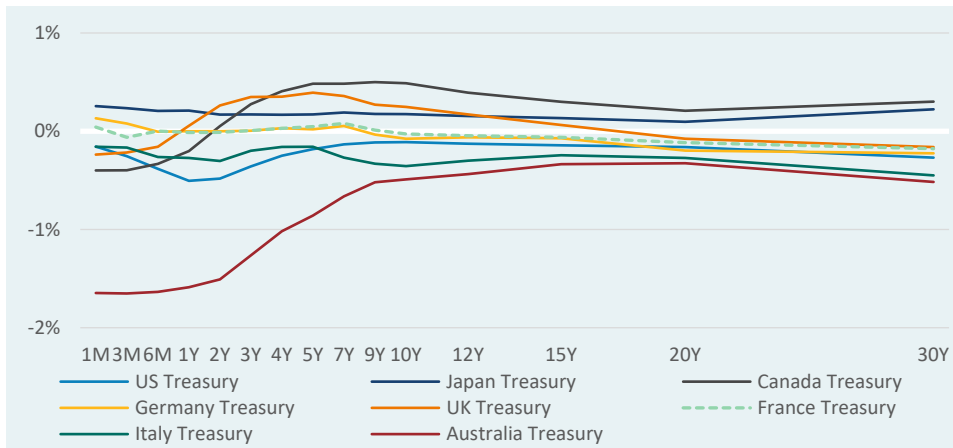
U.S. YIELD CURVE



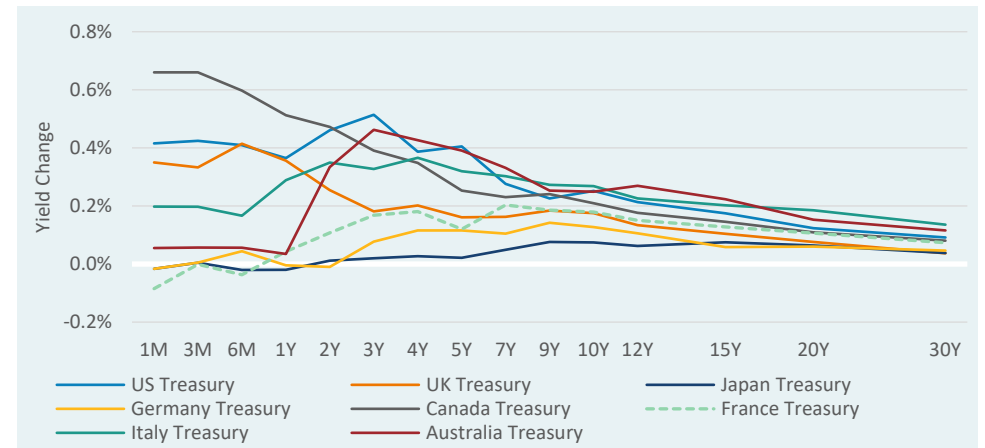
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/21

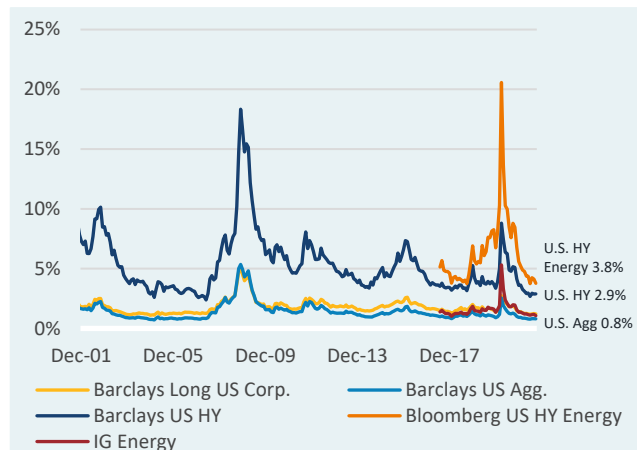
Credit environment

Credit markets traded in a relatively tight range throughout the quarter, delivering mild returns. Bank loans outperformed, returning 1.1% and outpacing high yield bonds (0.9%) and corporate investment grade (0.0%). Credit spreads widened as strong demand did not fully offset lingering concerns around inflation, persistent supply chain delays, default the by Chinese property developer Evergrande, and risk of a government shutdown. High yield spreads widened 21 basis points to 289 basis points while investment grade spreads widened 4 basis points to end the quarter at 84 basis points.

Demand for high quality credit has been strong this year with an estimated \$80 billion flowing into corporate investment grade funds. At the same

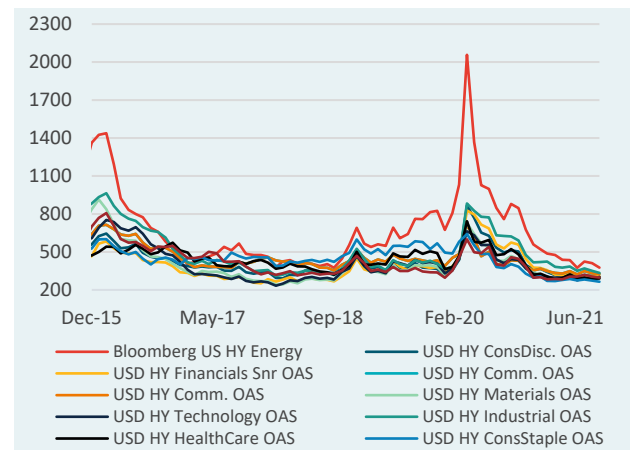
time, the sector has seen improvement in credit fundamentals as businesses repay some of last year's precautionary borrowing, reducing total debt levels. Strong demand and declining leverage, in conjunction with a potentially higher rate environment, are all supportive factors for credit (for example: global investors have stepped in to buy high yield bonds as rates rise, despite tight credit spreads, because the U.S. is a higher interest rate market). Investment grade spreads have only been this tight roughly 5% of the time since 2000. Tight valuations, which product low spread carry and longer relative duration, likely present challenges to credit performance going forward.

SPREADS



Source: Barclays, Bloomberg, as of 9/30/21

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/21

Market	Credit Spread (OAS)	
	9/30/21	9/30/20
Long U.S. Corp	1.2%	1.9%
U.S. Inv Grade Corp	0.8%	1.4%
U.S. High Yield	2.9%	5.2%
U.S. Bank Loans*	4.3%	5.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/21

*Discount margin (4-year life)

Default & issuance

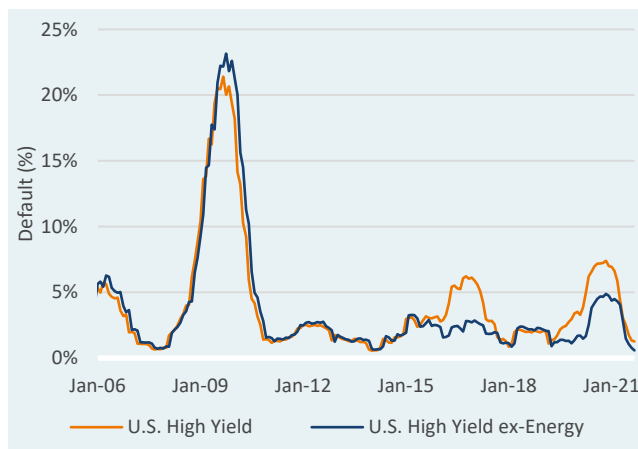
Default activity continued at a moderate pace in the third quarter with three defaults totaling \$1.3 billion across high yield bonds and bank loans. Over the first three quarters of the year, a total of nine companies defaulted on \$6.1 billion. As default activity continues to be light, the par-weighted U.S. high yield default rate declined in half to end the quarter at 1.3% year-over-year. Similarly, the loan par-weighted default rate ended the quarter at 0.9%, falling 3.4% year-to-date.

High yield bond issuance remains strong with Q3 gross issuance of \$129.4 billion, bringing the year-to date total to \$469.8 billion. Leveraged loan issuance continued at a historic pace with \$133.7 billion of new loan issued over the quarter. The \$418.3 billion of loans issued year-to-date has already

surpassed all previous *annual periods* with the exception of 2017 (\$419.2 billion).

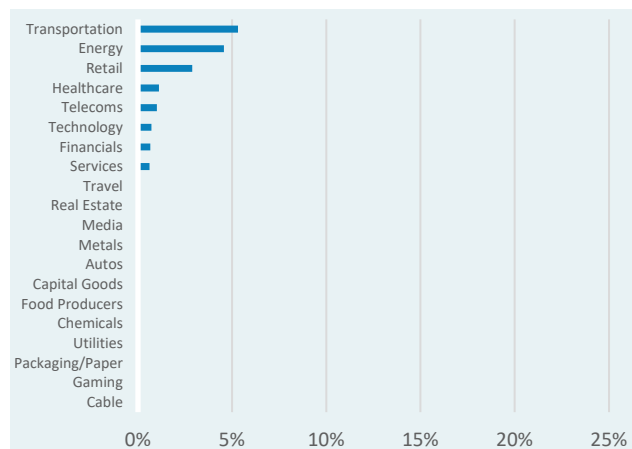
Investment grade issuance for the quarter totaled \$321 billion, below first (\$423 billion) and second quarter (\$350 billion) issuance but in-line with the 4-year average of \$323 billion. Of note, year-to-date Financial sector issuance has seen an uptick, accounting for 42% of issuance versus its four-year average share of roughly one-third of total investment grade issuance.

HY DEFAULT RATE (ROLLING 1-YEAR)



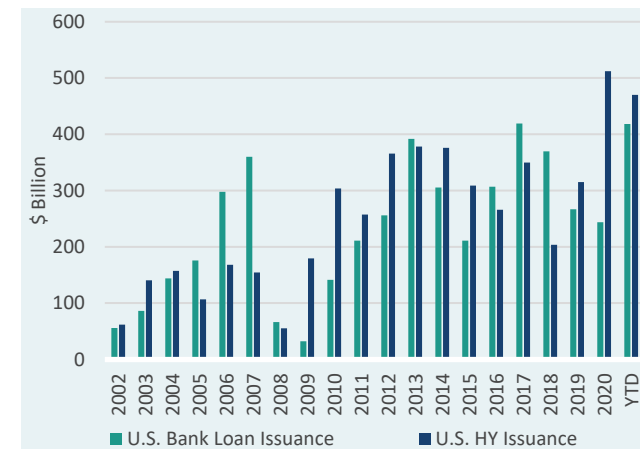
Source: BofA Merrill Lynch, as of 9/30/21

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



Source: BofA Merrill Lynch, as of 9/30/21 – par weighted

U.S. ISSUANCE (\$ BILLIONS)



Source: BofA Merrill Lynch, as of 9/30/21

Equity

Equity environment

- Equity markets took a pause in Q3, a notable change from the seemingly non-stop rally year-to-date. U.S. equities delivered 0.6%, while international equities experienced slight losses of -0.4% and emerging market equities saw a larger selloff of -8.1%, on an unhedged currency basis.
- Size and value factor performance was negative during the quarter, as large capitalization stocks outperformed small capitalization stocks by a wide margin (Russell 1000 +0.2%, Russell 2000 -4.4%) and growth stocks beat value (Russell 1000 Growth +1.2%, Russell 1000 Value -0.8%).
- As we observed last quarter, it does seem that investors have put the 2020 pandemic-induced recession and its associated risks behind them. However, it is not clear that market risks have completely subsided, as the Delta-variant continues to spread, high

inflation could indeed persist, and most governments are set to pull back generous stimulus programs.

- The U.S. is facing acute supply chain issues, and 71% of S&P 500 companies reported negative impacts to their business during quarterly earnings calls, as reported by FactSet.
- Weakness in Chinese equities (MSCI China -18.2%) was the major driver of emerging market equity underperformance, as a wave of new regulations were implemented by the Communist Party of China which cascaded across a number of sectors including Technology, Property Management, and Financials.
- Within MSCI's long-short U.S. factor portfolios, momentum (+1.3%) led the way while volatility (-1.7%) posted a negative total return.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	0.6%		30.0%	
US Small Cap (Russell 2000)	(4.4%)		47.7%	
US Large Value (Russell 1000 Value)	(0.8%)		35.0%	
US Large Growth (Russell 1000 Growth)	1.2%		27.3%	
International Large (MSCI EAFE)	(0.4%)	1.5%	25.7%	28.2%
Eurozone (Euro Stoxx 50)	(2.4%)	0.1%	27.6%	30.6%
U.K. (FTSE 100)	(0.5%)	2.0%	30.7%	26.1%
Japan (NIKKEI 225)	2.5%	2.9%	21.9%	29.3%
Emerging Markets (MSCI Emerging Markets)	(8.1%)	(6.9%)	18.2%	15.9%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/21

Domestic equity

U.S. equities performed relatively well in Q2, delivering a slightly positive return of 0.6% (S&P 500). The index is expected to report Q3 earnings growth of 27.6% year-over-year, as indicated by FactSet. The U.S. is facing acute supply chain issues, and 71% of S&P 500 companies reported negative impacts to their business during quarterly earnings calls.

Mildly higher interest rates during the quarter likely supported Financials (+2.7%) while acting as a headwind to growth-oriented sectors such as Information Technology (+1.3%).

Performance over the near-term may be constrained by a degree of economic slowdown induced by the COVID-19 Delta variant, as well as moderating earnings growth expectations, although the analyst consensus price target for the S&P 500 over the next year is 5051, as of October 6th.

Recent price increases have raised questions around the defensibility of net profit margins, which are expected to moderate in Q3 but remain elevated well above recent averages. Some investors have begun to discuss positioning within sectors that have exhibited more pricing power.

S&P 500 INDEX



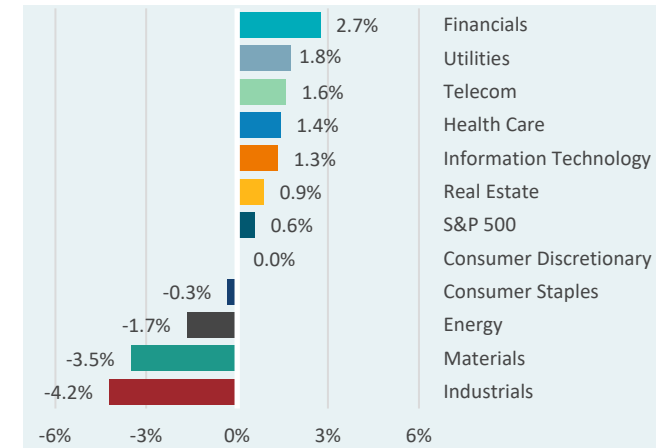
Source: Standard & Poor's, as of 9/30/21

S&P 500 NET PROFIT MARGINS



Source: FactSet, as of 10/18/21

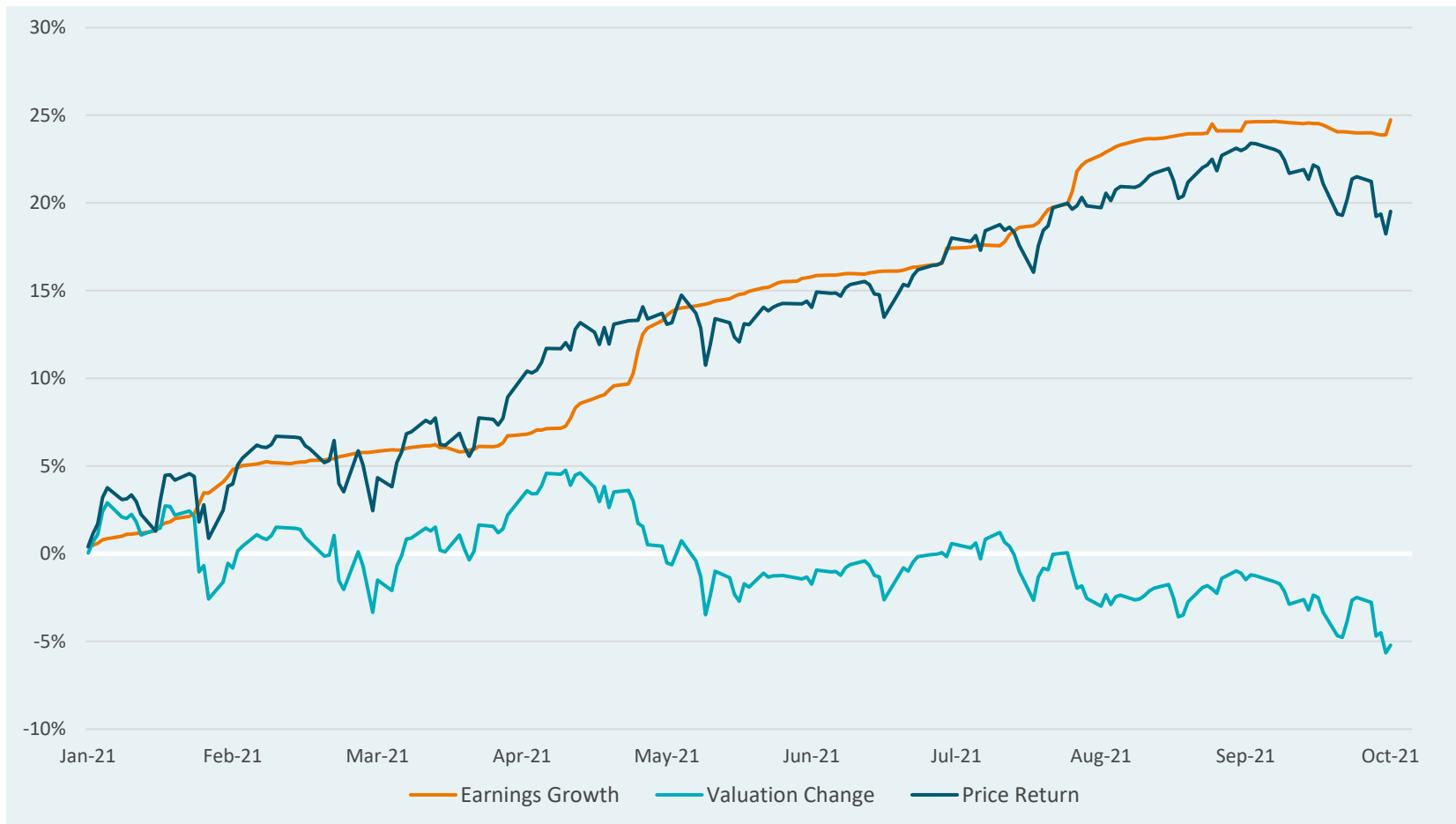
Q3 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 9/30/21

U.S. equity *Price/Earnings*

A very expensive “P” but record-growth of “E”



Corporate earnings growth has been the main driver of U.S. equity returns in 2021

Strong earnings growth expectations have led to slightly cheaper equities, as demonstrated by the *P/E multiple*

Source: Standard & Poor's, Bloomberg, Factset - Forward P/E, as of 9/30/21

Domestic equity size & style

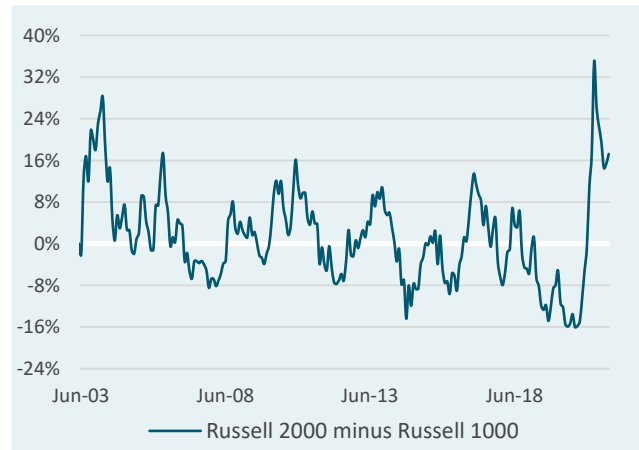
Large capitalization stocks outperformed small cap during the quarter by a wide margin (Russell 1000 +0.2%, Russell 2000 -4.4%) and growth stocks beat value (Russell 1000 Growth +1.2%, Russell 1000 Value -0.8%).

Following the notable turnaround in value stock performance during Q1, growth stocks took the lead in Q2, dampening excitement for a value comeback. Growth further outperformed in Q3. As we expressed earlier in the year, style performance is often impacted heavily by sector

randomness, which suggests that investors should be cautious in assuming that performance is *signal* rather than *noise*. Value stocks continue to be cheap relative to growth stocks, historically speaking. However, there does not appear to be a clear catalyst on the horizon that would imply a value timing opportunity. Factor performance tends to be noisy and difficult to predict, which suggests that style investing should in most cases involve a longer-term focus.

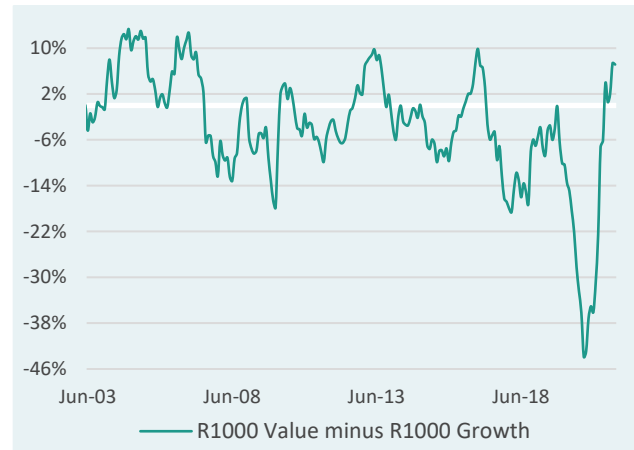
Large cap and growth stocks outperformed during Q3

SMALL CAP VS LARGE CAP (YOY)



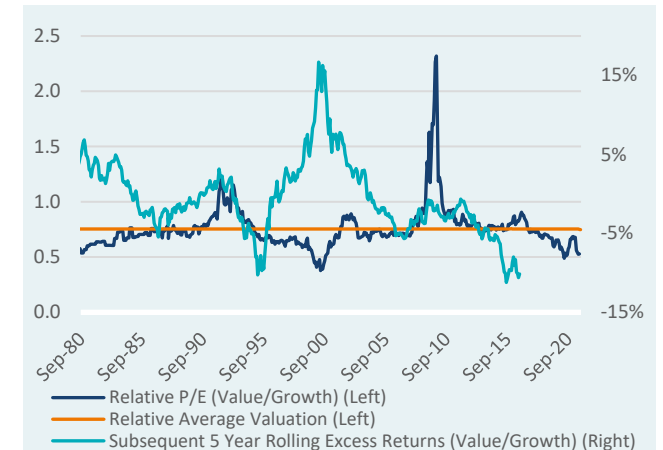
Source: FTSE, as of 9/30/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/21

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 9/30/21

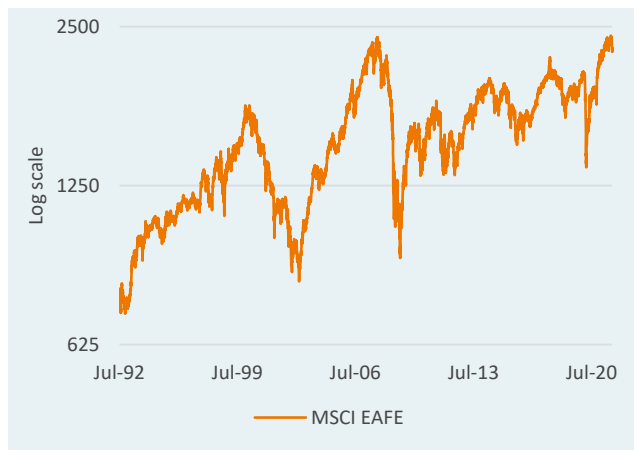
International developed equity

International equities experienced slight losses of -0.4% (MSCI EAFE Index) during the quarter on an unhedged currency basis, lagging U.S. equities but outperforming emerging markets. Currency movement during the quarter resulted in a loss of -1.9% relative to those investors with a currency hedging program.

Japanese equities (MSCI Japan +4.6%) rallied on strong earnings, and on the news that Prime Minister Suga's successor, Fumio Kishida, would be less likely to pursue tax hikes on investment income. Japan's vaccination rate also improved considerably, and ended the quarter in line with major European countries, laying the groundwork for a broader reopening of the economy.

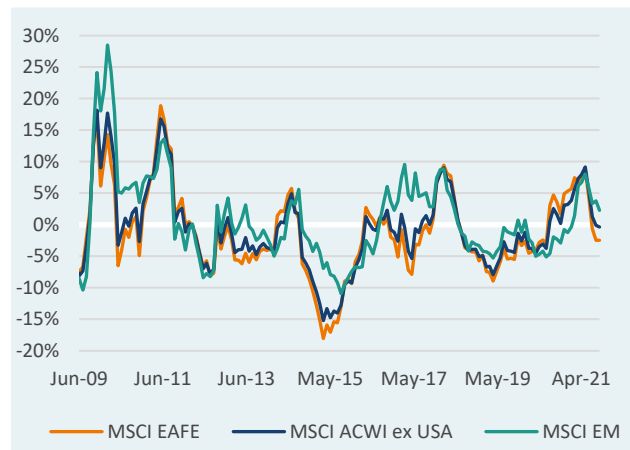
The strong performance of Japanese equities helped to offset for international developed equity investors the negative returns delivered by European equities (MSCI Europe -1.6%), which faced headwinds from a significant weakening in the pound sterling (-2.4%) and euro (-2.3%) relative to the U.S. dollar. According to futures market positioning data from the CFTC, more people are betting that the euro will depreciate in value than those betting that it will appreciate in value, for the first time since March 2020.

INTERNATIONAL DEVELOPED EQUITIES



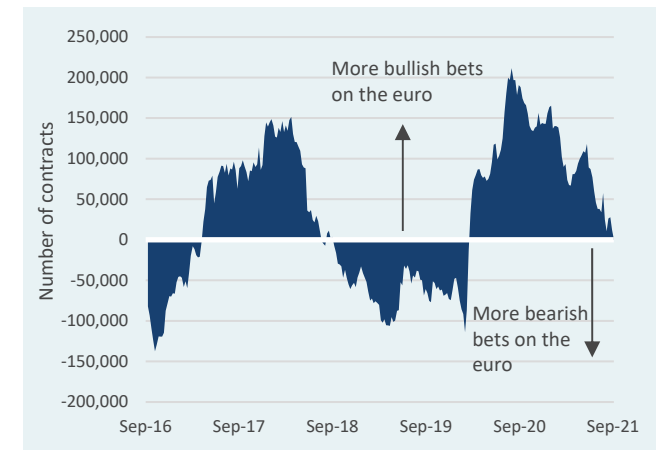
Source: MSCI, as of 9/30/21

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/21

EURO NET FUTURES POSITIONING



Source: CFTC, non-commercial positioning, as of 9/28/21

Emerging market equity

Emerging market equities saw large losses (MSCI EM -8.1%) on an unhedged currency basis, underperforming other markets during the third quarter. China has dragged down emerging markets performance considerably, producing losses of -18.2% in Q3 relative to ex-China emerging market performance of -2.0%, and producing losses of -7.2% over the past year relative to ex-China emerging market performance of 36.9% (MSCI China vs. MSCI Emerging Markets ex-China). China comprises 34% of the MSCI Emerging Markets Index.

Latin American emerging markets have taken the lead over Asian emerging markets over the past year, a notable change from strong Asian

leadership in recent years (MSCI EM Latin America +27.3%, MSCI EM Asia +13.9%)

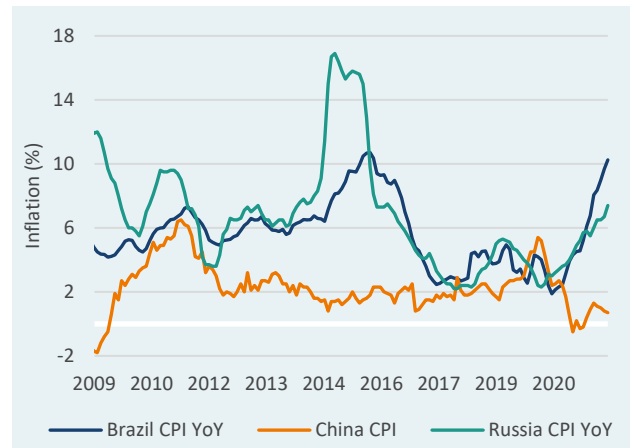
Inflation in Brazil has risen to 10.3%, and in Russia to 7.4%, which has generated responses from central banks. Brazil has hiked their central bank rate from 2.00% to 6.25% to battle rising prices, while Russia has hiked its rate from 4.25% to 6.75% year-to-date. While inflation rate in the U.S. is one of the highest in the developed world, emerging markets are also facing tough decisions regarding the balance between economic recovery and the risks of uncomfortably high inflation.

EMERGING MARKET EQUITY



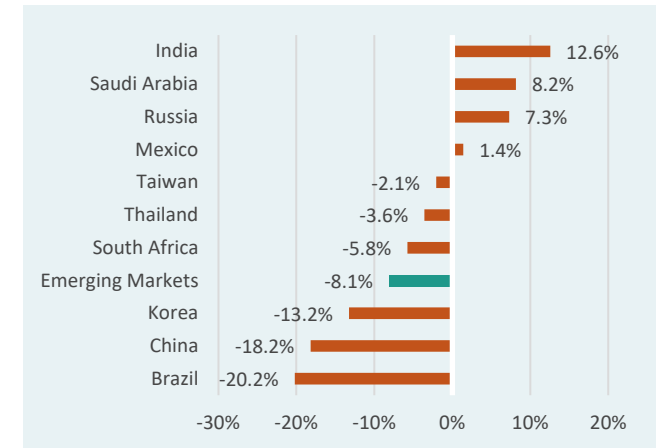
Source: MSCI, as of 9/30/21

INFLATION (YOY)



Source: Bloomberg, as of 9/30/21 or most recent data

Q3 PERFORMANCE – TOP 10 EM CONSTITUENTS



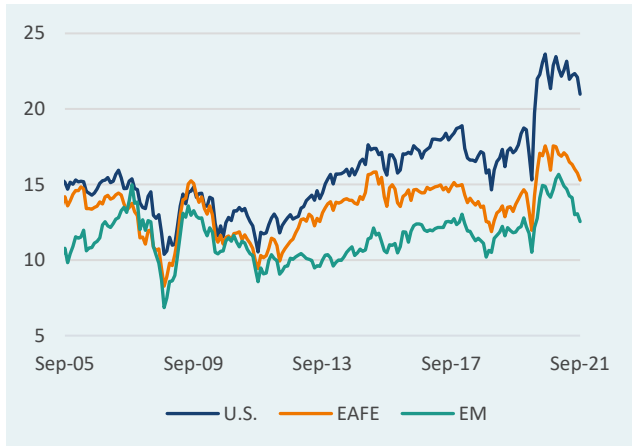
Source: Bloomberg, MSCI, as of 9/30/21, performance in USD terms

Equity valuations

Forward price/earnings equity multiples have been falling around the world, as earnings expectations rise faster than equity prices, though valuations remain very high. U.S. stock valuations are, and have been, incredibly elevated. A larger share of technology stocks in U.S. indices partly explains these historically high prices, as technology stocks tend to demand a higher P/E than most other industry sectors. Investors appear to agree that high prices of domestic stocks will likely translate to below-average future performance over the long-term, as reflected in industry capital market assumptions.

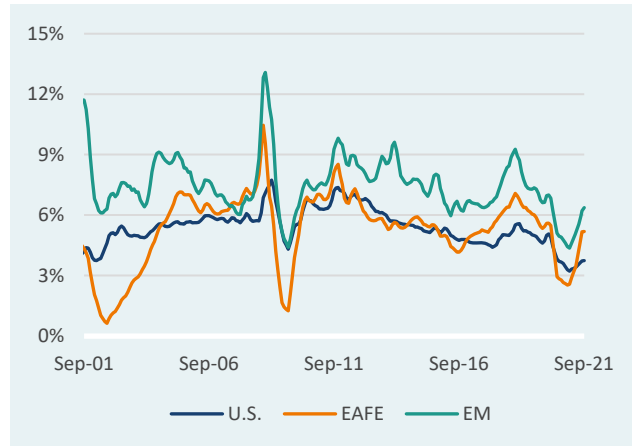
Global equity earnings yields improved considerably, as trailing 12-month earnings have rebounded from low levels. Price growth has moderated in the U.S. and has moved into negative territory across international developed and emerging market equities. The question moving ahead will be whether valuations (which remain rich) are sustainable absent further above-average earnings growth. Rising prices of major input costs, including labor and energy, have dampened the outlook for margins, which may lead companies to raise prices where possible. This pricing power varies by sector and by region.

FORWARD P/E RATIOS



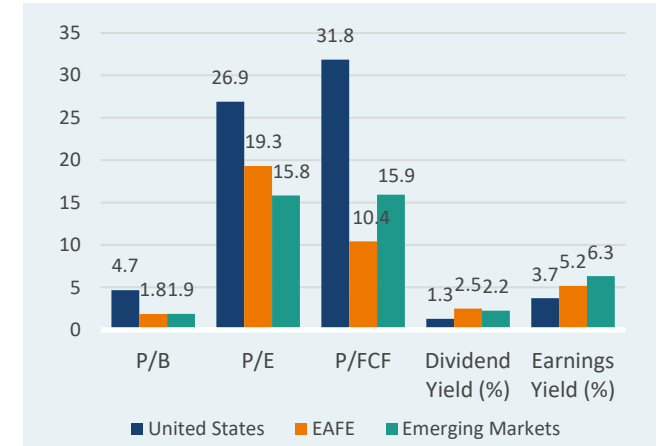
Source: MSCI, 12m forward P/E, as of 9/30/21

CURRENT EARNINGS YIELD (3-MONTH AVERAGE)



Source: Bloomberg, MSCI, as of 9/30/21

VALUATION METRICS (3-MONTH AVERAGE)



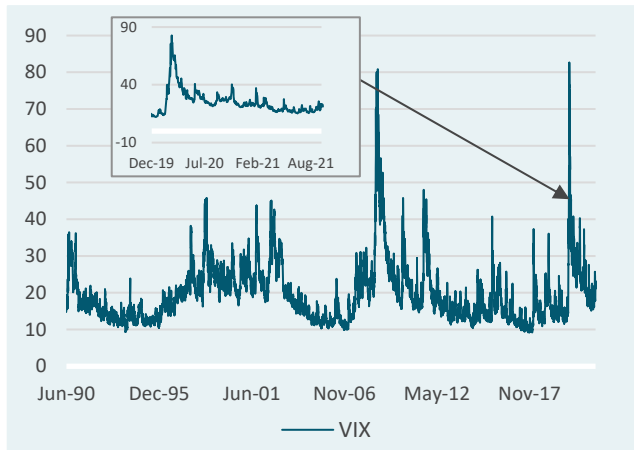
Source: Bloomberg, MSCI as of 9/30/21 - trailing P/E

Equity volatility

The Cboe VIX Index remained below the longer-term average of 19 through July and August, then increased throughout September, ending the quarter at an elevated 23.1. This compares to only 13.9% realized volatility over the past year. As is typical, international developed equity realized volatility has been slightly greater than that of the U.S. market. The realized volatility of emerging market equities, on the other hand, has been on par with the U.S. for a few years—a rare occurrence, historically speaking.

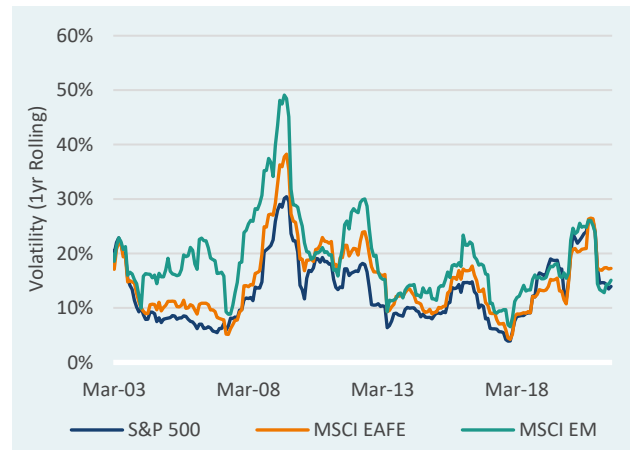
As we observed last quarter, it does seem that investors have put the 2020 pandemic-induced recession and its associated risks behind them. However, it is not clear that market risks have completely subsided, as the Delta-variant continues to spread, high inflation could indeed persist, and most governments are set to pull back generous stimulus programs. While U.S. equities have marched higher with very few road bumps over the year-to-date, the S&P 500 Index closed the quarter 5.1% below its previous record high level, snapping a streak of 231 consecutive trading days where it had not fallen more than 5% beneath the record high.

U.S. IMPLIED VOLATILITY (VIX)



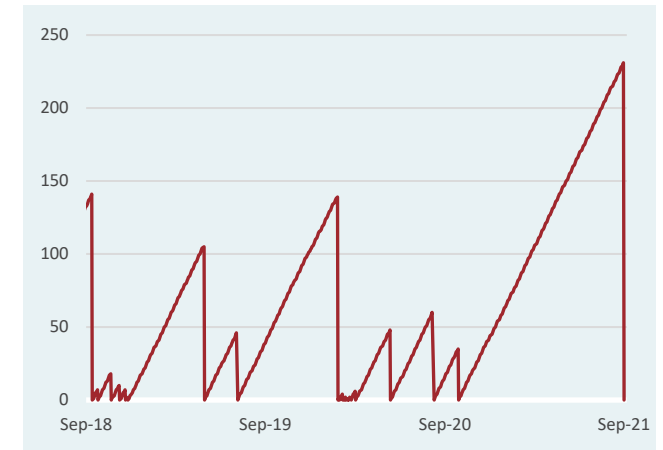
Source: Cboe, as of 9/30/21

REALIZED VOLATILITY



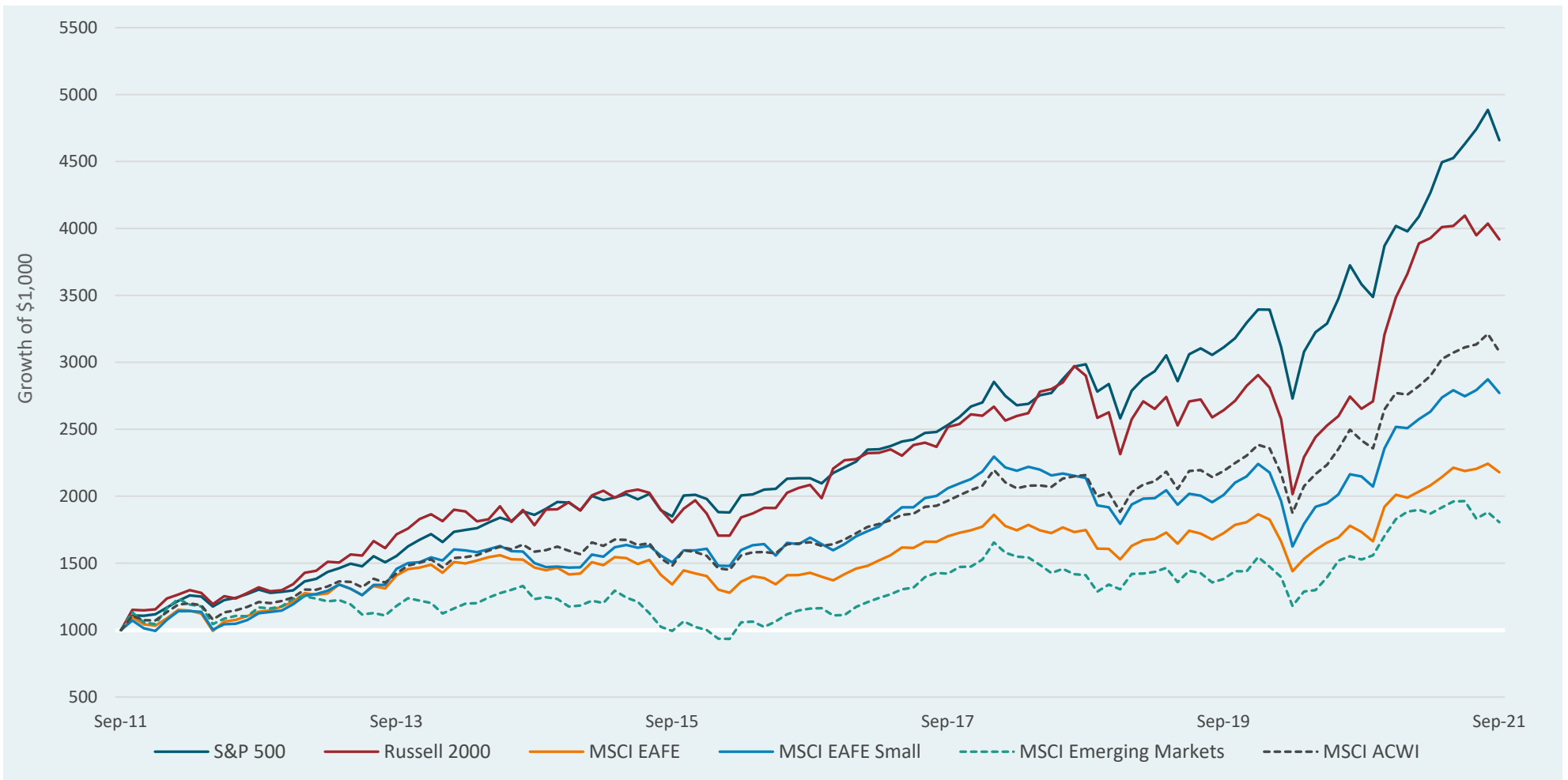
Source: Standard & Poor's, MSCI, as of 9/30/21

DAYS SINCE LAST 5% DRAWDOWN – S&P 500



Source: Standard & Poor's, Verus, as of 9/30/21

Long-term equity performance



Source: Morningstar, as of 9/30/21

Other assets

Currency

The U.S. dollar appreciated 2% during the quarter, continuing its modest rise year-to-date. This move coincided with a slight increase in U.S. Treasury yields and European government bond yields, resulting in little change to interest rate differentials.

U.S. dollar sentiment reached its most optimistic level since late 2019, while sentiment surrounding the euro and pound turned from optimistic to pessimistic. Differences in monetary policy from country-to-country appear to be driving this shift in sentiment. While the U.S. Federal Reserve is expected to begin tapering asset purchases by year-end, the ECB is planning on simply shifting the complexion of its asset purchase program, and the

BOE is planning on adjusting short-term interest rates higher while retaining the majority of its asset purchase program which targets longer-duration bonds.

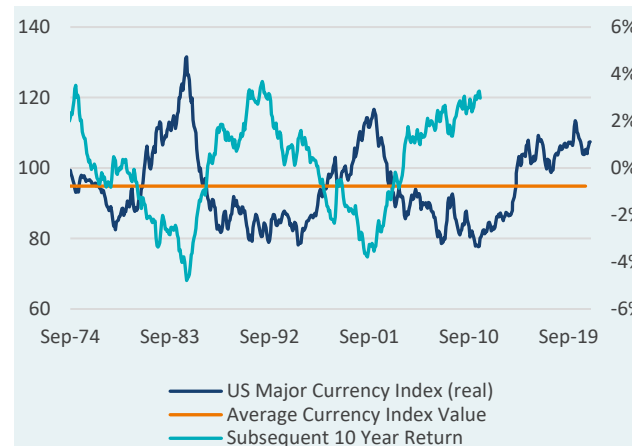
The MSCI Currency Factor Mix Index, Verus' preferred currency beta benchmark, outperformed the currency portfolio of the MSCI ACWI ex-US Index over the twelve months ending September 30th, while exhibiting 1.1% less volatility.

BLOOMBERG DOLLAR SPOT INDEX



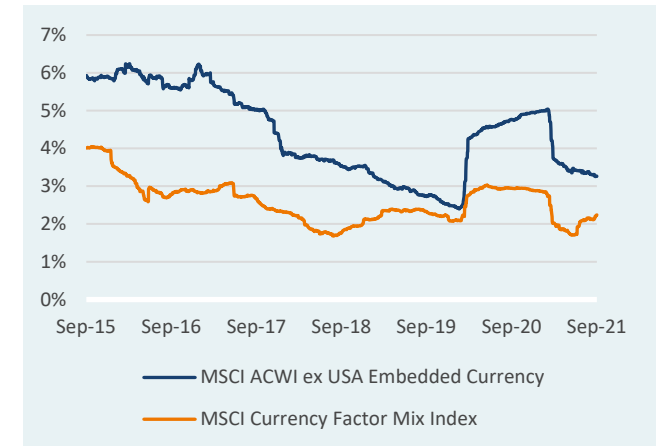
Source: Bloomberg, as of 9/30/21

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 9/30/21

TRAILING ONE-YEAR ANNUALIZED VOLATILITY



Source: Bloomberg, MSCI, as of 9/30/21

Appendix

Periodic table of returns

	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
Commodities	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	29.1	22.8	19.7
Small Cap Value	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	22.9	17.1	16.8
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	16.1	15.3	15.7
Large Cap Equity	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	15.2	13.5	14.6
Large Cap Growth	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	14.3	11.0	13.5
Small Cap Equity	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	12.4	10.9	13.2
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	8.3	9.2	8.8
Hedge Funds of Funds	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	6.4	8.9	8.1
Real Estate	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	5.4	8.8	8.0
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	5.0	6.1	6.1
Small 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	2.8	5.9	4.5
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	4.5	3.0
Emerging Markets Equity	-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	-1.2	2.9	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	-1.6	1.1	-2.7

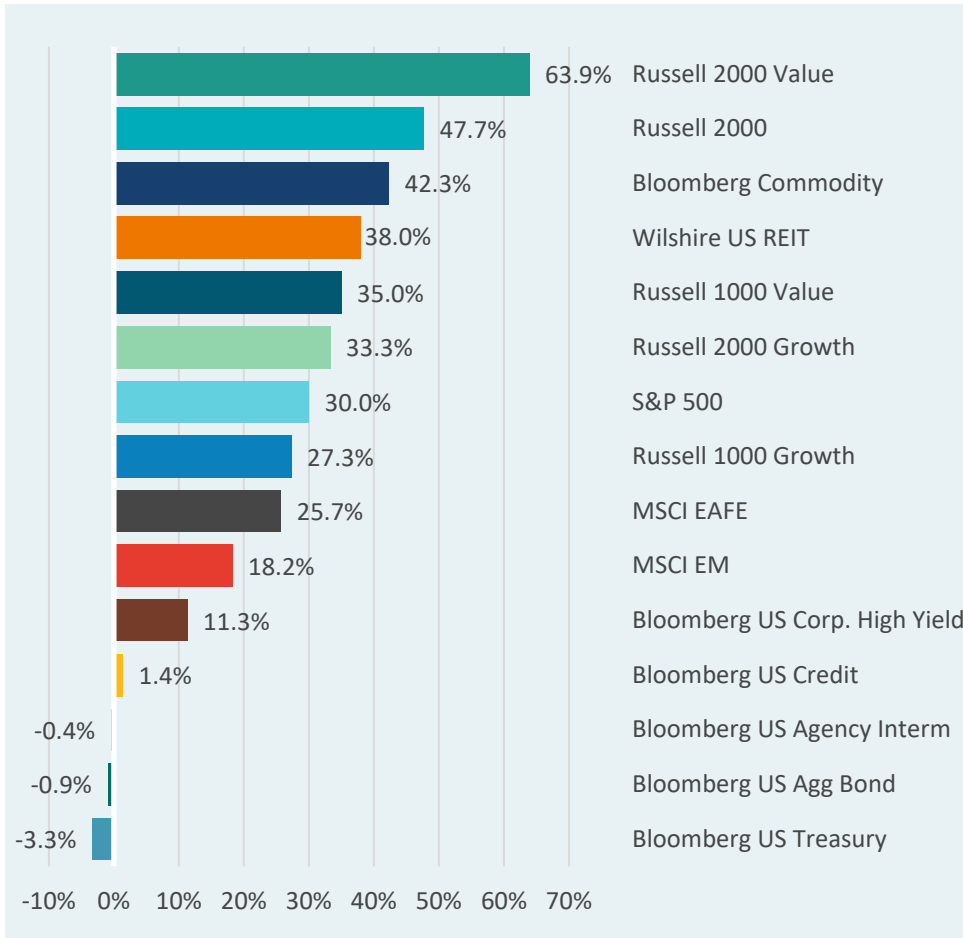
BEST
↑
↓
WORST

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

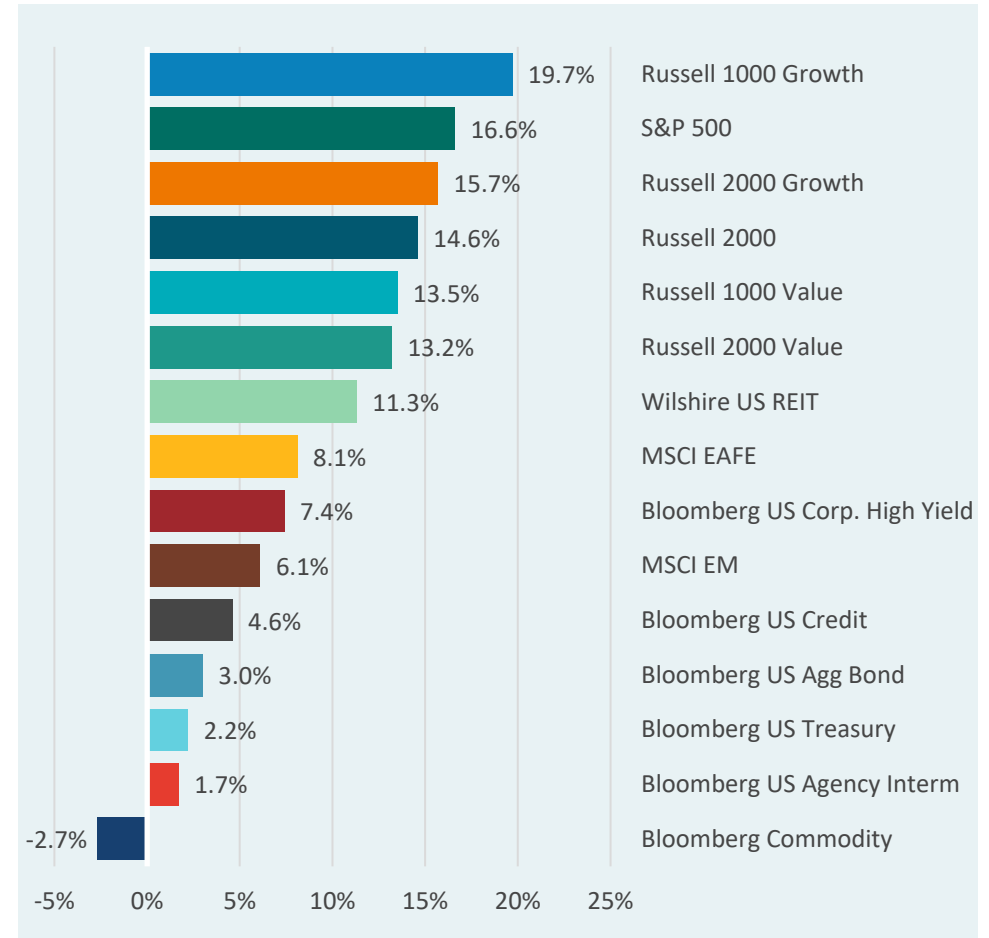
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 6/30/21.

Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



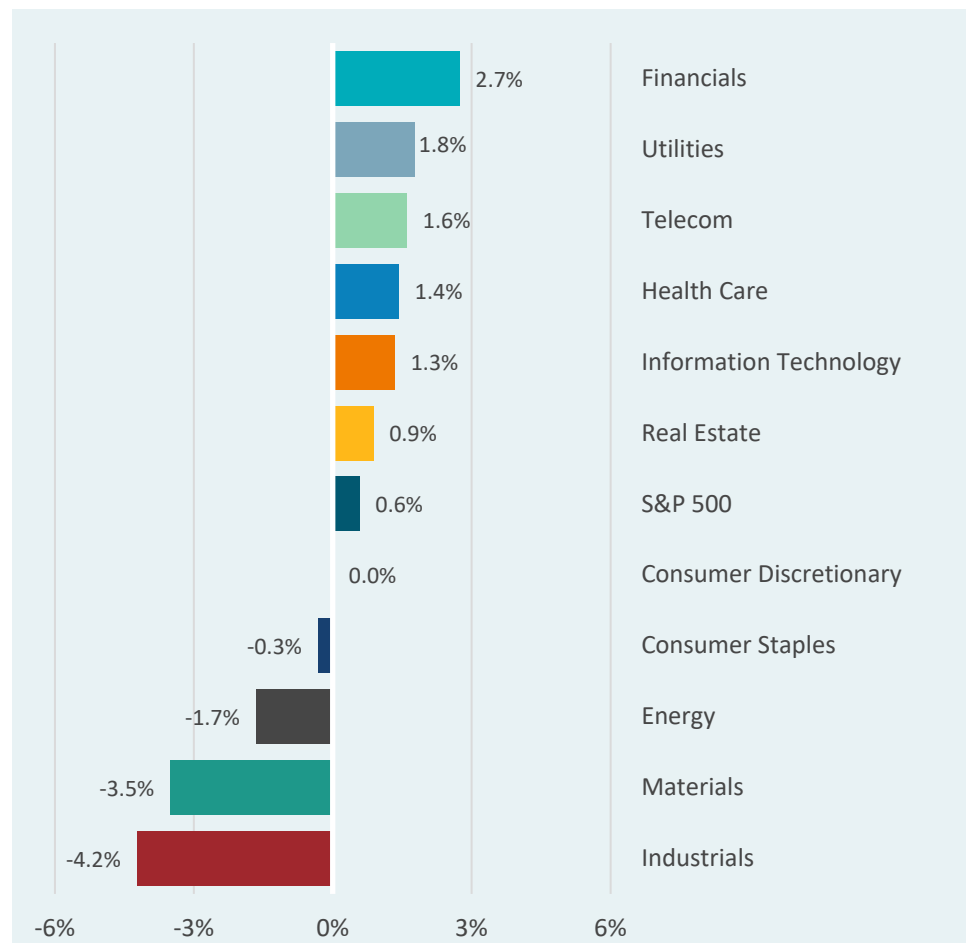
*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/21

Source: Morningstar, as of 9/30/21

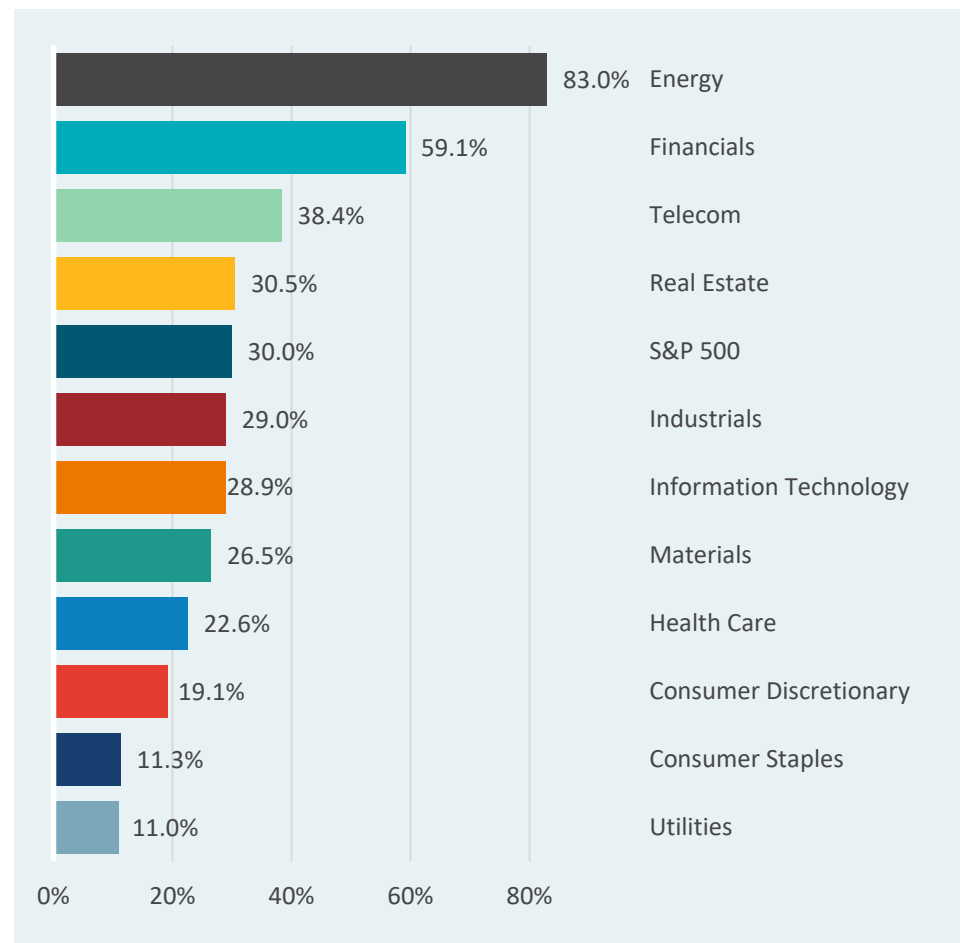
S&P 500 sector returns

Q3 2021



Source: Morningstar, as of 9/30/21

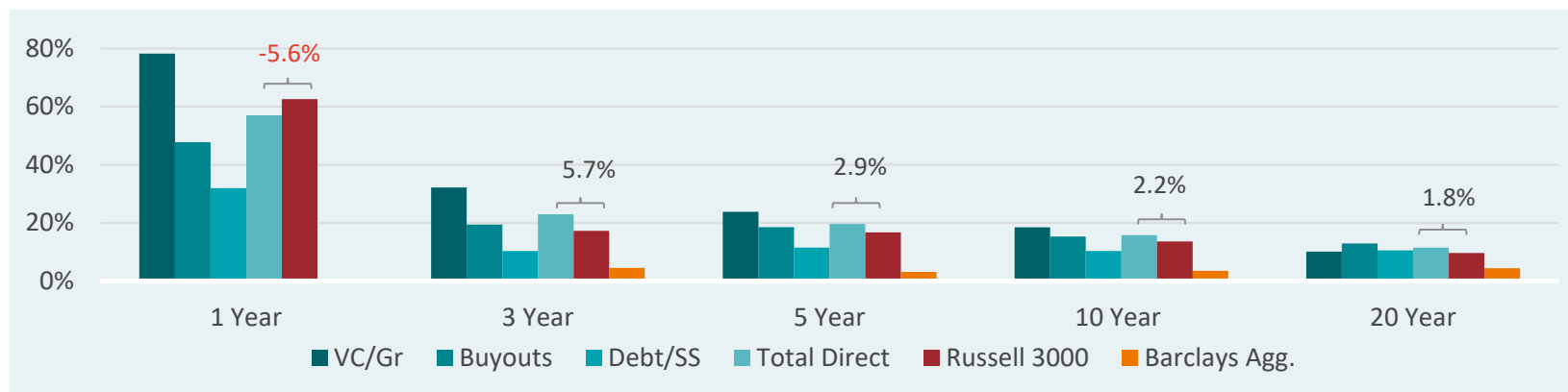
ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/21

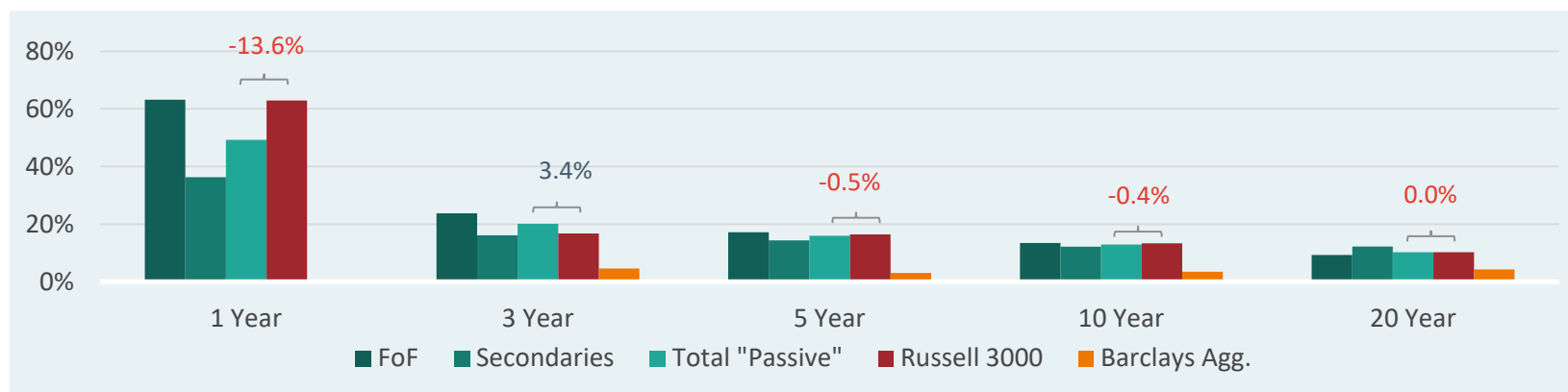
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods, aside from the 1-year basis.

"PASSIVE" STRATEGIES

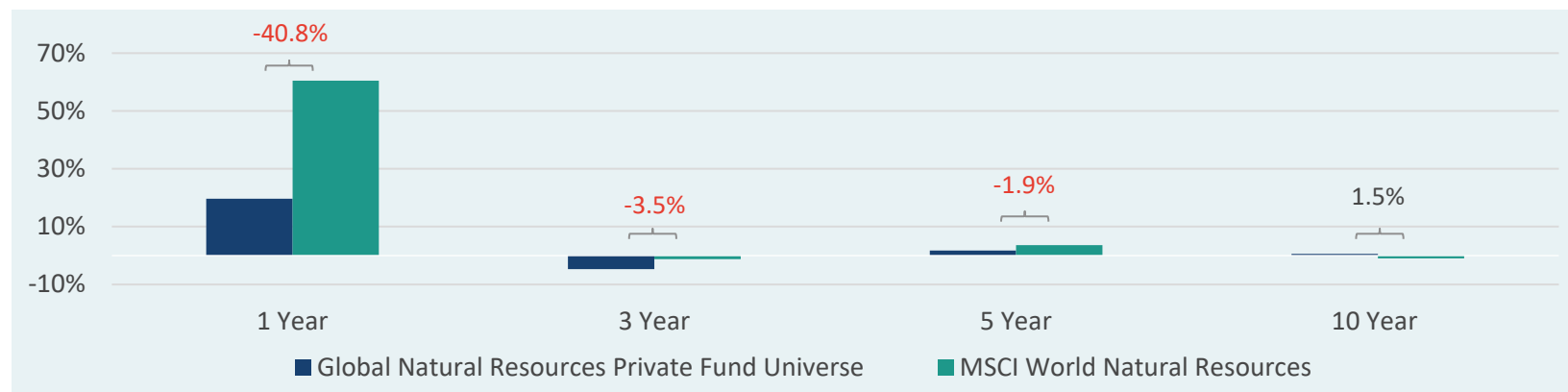


"Passive" strategies underperformed comparable public equities across all time periods, aside from the 3-year basis.

Sources: Refinitiv Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of March 31, 2021. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

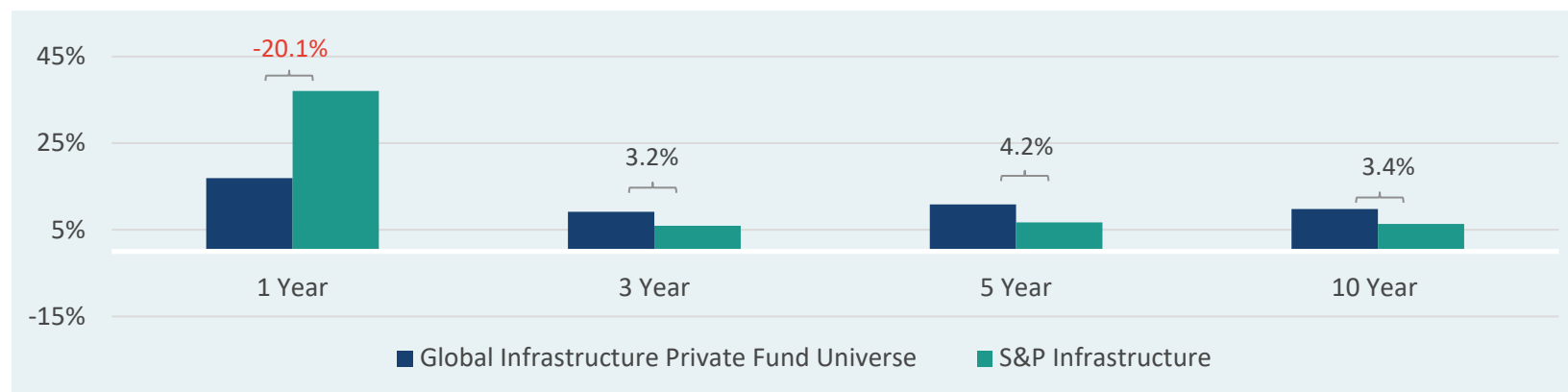
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds has lagged against the MSCI World Natural Resources benchmark across all time periods, aside from the 10-year.

GLOBAL INFRASTRUCTURE FUNDS

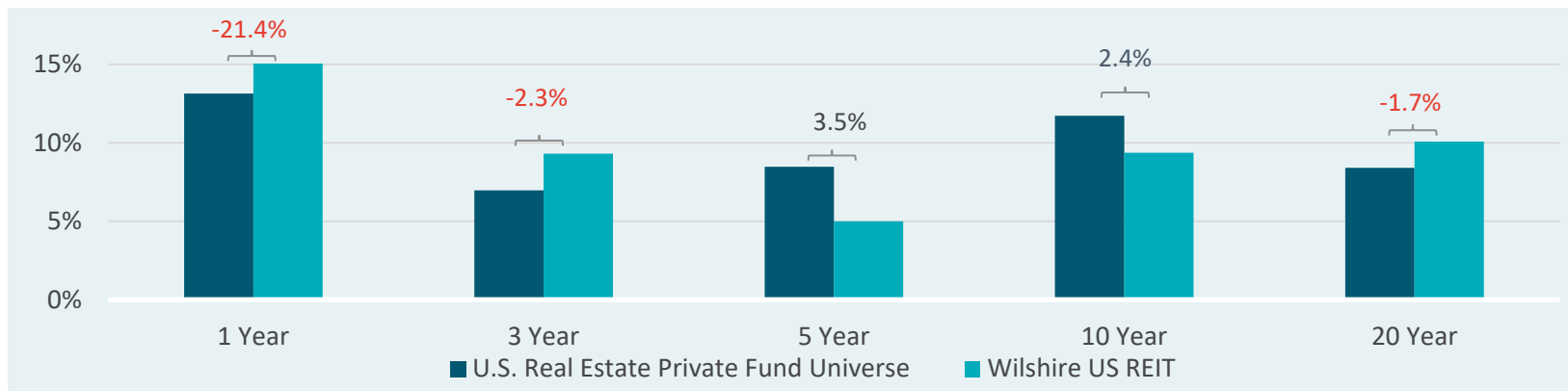


Infra. funds outperformed the S&P Infra. across all periods, aside from the 1-year.

Sources: Refinitiv CJA 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 March 31, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

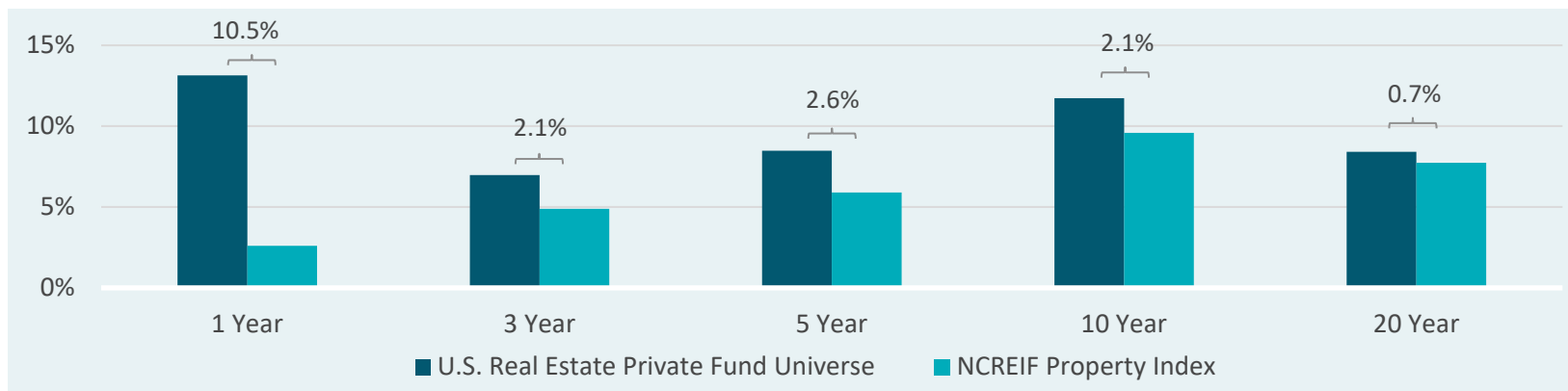
Private vs. liquid and core real estate performance

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



U.S. Private R.E. funds lagged against the Wilshire U.S. REIT Index across all time periods, aside on the 5 and 10 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.

Sources: Refinitiv CJA PME: Global and U.S. Real Estate universes as of March 31, 2021. 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	(4.7)	0.6	15.9	30.0	16.0	16.9	16.6
S&P 500 Equal Weighted	(3.8)	(0.2)	18.9	40.9	14.3	14.6	16.0
DJ Industrial Average	(4.2)	(1.5)	12.1	24.2	11.0	15.7	14.7
Russell Top 200	(4.8)	0.6	15.2	28.6	17.3	18.2	17.2
Russell 1000	(4.6)	0.2	15.2	31.0	16.4	17.1	16.8
Russell 2000	(2.9)	(4.4)	12.4	47.7	10.5	13.5	14.6
Russell 3000	(4.5)	(0.1)	15.0	31.9	16.0	16.9	16.6
Russell Mid Cap	(4.1)	(0.9)	15.2	38.1	14.2	14.4	15.5
Style Index							
Russell 1000 Growth	(5.6)	1.2	14.3	27.3	22.0	22.8	19.7
Russell 1000 Value	(3.5)	(0.8)	16.1	35.0	10.1	10.9	13.5
Russell 2000 Growth	(3.8)	(5.7)	2.8	33.3	11.7	15.3	15.7
Russell 2000 Value	(2.0)	(3.0)	22.9	63.9	8.6	11.0	13.2

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	(4.1)	(1.1)	11.1	27.4	12.6	13.2	11.9
MSCI ACWI ex US	(3.2)	(3.0)	5.9	23.9	8.0	8.9	7.5
MSCI EAFE	(2.9)	(0.4)	8.3	25.7	7.6	8.8	8.1
MSCI EM	(4.0)	(8.1)	(1.2)	18.2	8.6	9.2	6.1
MSCI EAFE Small Cap	(3.6)	0.9	10.0	29.0	9.0	10.4	10.7
Style Index							
MSCI EAFE Growth	(3.9)	0.1	6.9	20.9	11.9	11.4	10.1
MSCI EAFE Value	(1.8)	(1.0)	9.6	30.7	3.0	6.0	6.0
Regional Index							
MSCI UK	(2.0)	(0.3)	12.2	31.2	2.4	4.8	5.4
MSCI Japan	2.8	4.6	5.9	22.1	7.5	9.4	8.4
MSCI Euro	(5.0)	(2.0)	10.5	29.5	7.9	9.3	8.3
MSCI EM Asia	(4.1)	(9.6)	(4.1)	13.9	10.0	10.7	8.5
MSCI EM Latin American	(10.3)	(13.3)	(5.6)	27.3	(1.4)	1.8	(1.1)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(0.7)	1.8	3.5	5.2	7.4	4.3	3.1
Bloomberg US Treasury Bills	0.0	0.0	0.0	0.1	1.2	1.2	0.7
Bloomberg US Agg Bond	(0.9)	0.1	(1.6)	(0.9)	5.4	2.9	3.0
Bloomberg US Universal	(0.9)	0.1	(1.1)	0.2	5.6	3.3	3.5
Duration							
Bloomberg US Treasury 1-3 Yr	(0.1)	0.1	(0.0)	0.0	2.7	1.6	1.2
Bloomberg US Treasury Long	(2.9)	0.5	(7.5)	(10.3)	9.2	3.3	4.4
Bloomberg US Treasury	(1.1)	0.1	(2.5)	(3.3)	4.9	2.2	2.2
Issuer							
Bloomberg US MBS	(0.4)	0.1	(0.7)	(0.4)	3.9	2.2	2.4
Bloomberg US Corp. High Yield	(0.0)	0.9	4.5	11.3	6.9	6.5	7.4
Bloomberg US Agency Interm	(0.4)	0.1	(0.5)	(0.4)	3.2	1.9	1.7
Bloomberg US Credit	(1.1)	(0.0)	(1.3)	1.4	7.1	4.4	4.6

OTHER

Index							
Bloomberg Commodity	5.0	6.6	29.1	42.3	6.9	4.5	(2.7)
Wilshire US REIT	(5.1)	1.6	24.8	38.0	10.4	7.0	11.3
CS Leveraged Loans	0.5	0.9	4.0	8.5	4.1	4.7	5.0
Alerian MLP	3.0	(5.7)	39.4	84.6	(5.2)	(3.5)	1.2
Regional Index							
JPM EMBI Global Div	(2.1)	(0.7)	(1.4)	4.4	5.7	3.9	5.8
JPM GBI-EM Global Div	(3.4)	(3.1)	(6.4)	2.6	3.7	2.1	1.1
Hedge Funds							
HFRI Composite	0.1	(0.0)	10.1	22.1	8.5	7.3	5.9
HFRI FOF Composite	0.8	1.4	6.4	15.0	6.7	5.9	4.5
Currency (Spot)							
Euro	(1.8)	(2.3)	(5.3)	(1.2)	(0.1)	0.6	(1.5)
Pound Sterling	(2.0)	(2.4)	(1.4)	4.3	1.1	0.7	(1.4)
Yen	(1.5)	(0.5)	(7.5)	(5.4)	0.6	(1.9)	(3.6)

Source: Morningstar, HFRI, as of 9/30/21

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.lanqerresearch.com)

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

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

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

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2021

Investment Performance Review for

Alameda County Employees' Retirement Association

3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 12.2% rate year-over-year in Q2 (+6.7% quarterly annualized rate) as the U.S. fully recovered from the pandemic-induced recession of 2020.
- In the U.S. labor market, unemployment has fallen as many workers who desired jobs have been successful in gaining employment. The overall U.S. labor participation rate has not improved, as millions of workers remain neither employed nor seeking employment.
- Consumer sentiment deteriorated during the third quarter, on reports of pessimism around the COVID Delta variant, higher inflation, and unfavorable economic prospects. Small business optimism also fell, as businesses face difficulty in hiring and are concerned about tax increases and more burdensome government regulations.

PORTFOLIO IMPACTS

- Credit markets traded in a relatively tight range throughout the quarter, delivering mild returns. Bank loans outperformed in Q3, returning 1.1% and outpacing high yield bonds (0.9%) and corporate investment grade (0.0%).
- U.S. core CPI, which excludes food & energy prices, rose 4.0% YoY in September. U.S. headline inflation came in at 5.4%. Price changes moderated during Q3, relative to the larger price moves that occurred in March through June.

THE INVESTMENT CLIMATE

- The Biden Administration's \$3.5 trillion social spending package remains in the negotiation stage among Democrats, as the size of the package, the contents, and national concerns over inflation have given some members of the party reason to pause. The package is reportedly being scaled back, which creates the risk of rejection from progressives within the party who are pushing for more spending.
- It seems that investors have put the 2020 pandemic-induced recession and its associated risks behind them. However, it is not clear that market risks have completely subsided, as the Delta-variant continues to spread, high inflation could indeed persist, and most governments are set to pull back generous stimulus programs.

ASSET ALLOCATION ISSUES

- Equity markets took a breather in Q3. U.S. equities delivered 0.6%, while international equities experienced slight losses of -0.4% and emerging market equities saw a larger selloff of -8.1%, on an unhedged currency basis.
- Factor performance was negative during the quarter, as large capitalization stocks outperformed small cap by a wide margin (Russell 1000 +0.2%, Russell 2000 -4.4%) and growth stocks beat value (Russell 1000 Growth +1.2%, Russell 1000 Value -0.8%).

The economic recovery may be slowing, though the environment remains positive for risk assets

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

U.S. economics summary

- Real GDP grew at a 12.2% rate year-over-year in Q2 (+6.7% quarterly annualized rate) as the U.S. fully recovered from the pandemic-induced recession of 2020. However, it appears that recent strong economic activity may be slowing down.
- U.S. core CPI, which excludes food & energy prices, rose 4.0% YoY in September. U.S. headline inflation came in at 5.4%. Price changes moderated during Q3, relative to the larger price moves that occurred in March through June, but remain elevated.
- Unemployment fell from 5.9% to 4.8% during the quarter, while the laborforce participation was unmoved at 61.6%. The unemployment rate has fallen as many workers who desired jobs have been successful in gaining employment, but the overall U.S. laborforce participation rate has not improved
- The Biden Administration’s \$3.5 trillion social spending package remains in the negotiation stage among Democrats, as the size of the package, the contents, and national concerns over inflation have given some members of the party reason to pause. The package is reportedly being scaled back, which creates the risk of rejection from progressives within the party who are pushing for more spending.
- U.S. home prices have rocketed higher, up 19.7% over the past year, according to the S&P/Case-Shiller U.S. National Home Price Index.
- Consumer sentiment was mixed over the quarter. The University of Michigan reported that the Delta variant and persistent inflation, as well as unfavorable prospects for the national economy, are weighing on sentiment. High prices of homes, vehicles, and durables are a concern.

	Most Recent	12 Months Prior
GDP (YoY)	12.2% <i>6/30/21</i>	(9.1%) <i>6/30/20</i>
Inflation (CPI YoY, Core)	4.0% <i>9/30/21</i>	1.7% <i>9/30/20</i>
Expected Inflation (5yr-5yr forward)	2.2% <i>9/30/21</i>	1.7% <i>9/30/20</i>
Fed Funds Target Range	0% – 0.25% <i>9/30/21</i>	0% – 0.25% <i>9/30/20</i>
10-Year Rate	1.49% <i>9/30/21</i>	0.68% <i>9/30/20</i>
U-3 Unemployment	4.8% <i>9/30/21</i>	7.8% <i>9/30/20</i>
U-6 Unemployment	8.5% <i>9/30/21</i>	12.8% <i>9/30/20</i>

International economics summary

- The emergence of the delta variant of COVID-19 in Europe and the United States over the summer led to the reimplementing of social distancing controls and a subsequent moderation of economic activity in the services sector.
- European and Japanese vaccination rates improved vastly over the quarter, which helped to contain the spread of COVID-19.
- Inflation surprised to the upside around the globe, but particularly in the Eurozone, which has spurred some tough conversations amongst central bank policymakers.
- Global consumer confidence has trended lower over most of the last two quarters on concerns over labor market prospects, as well as the impact of rising prices on purchasing power stability.
- Natural gas prices surged more

than 60% in Q3, primarily as a result of low supply levels and substitution effects due to price surges in other energy sources including coal. On a more thematic basis, Europe’s clean energy initiatives also played a role, as renewable sources are not yet equipped to replace carbon-based power supplies, and adequate investment in nuclear plants has not been made. We are keeping a watchful eye on the potential impact of energy prices on inflation.

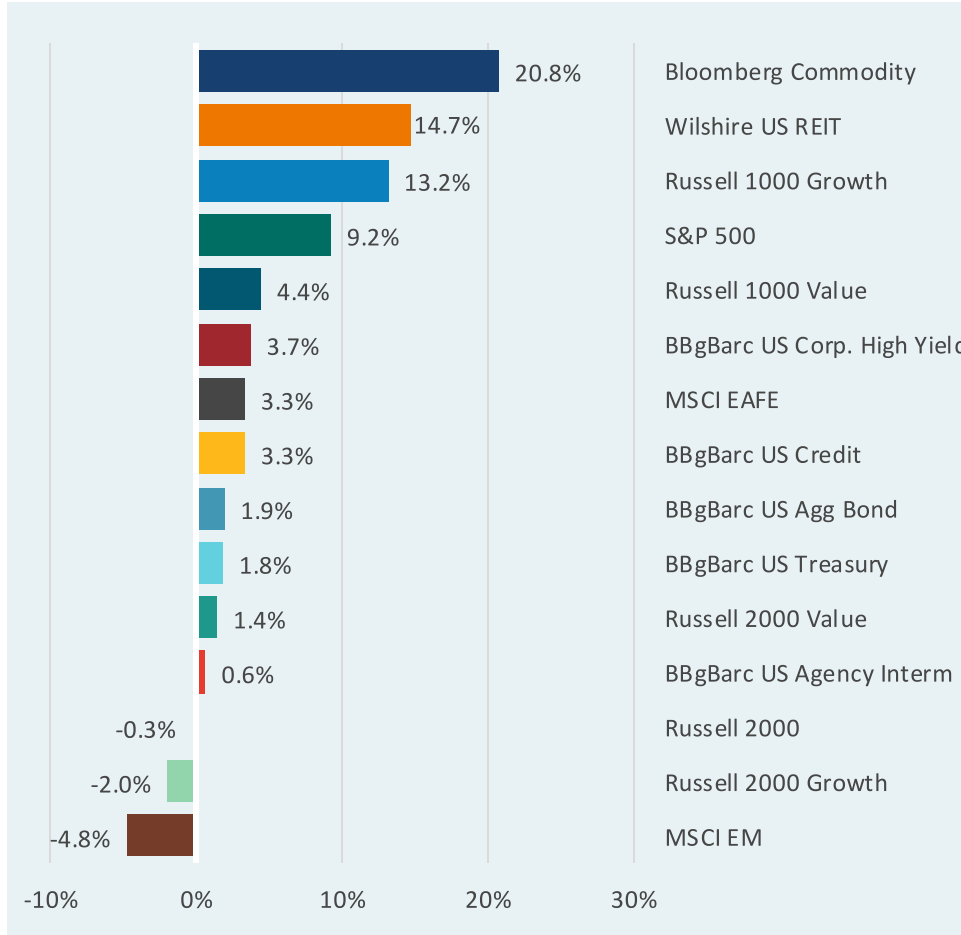
- Many factories in China were forced to shut down late in the quarter as a result of surging coal and electricity prices. Those shutdowns, alongside weaker than expected investment activity, tighter financing conditions, and stricter social distancing controls, all contributed to a larger-than expected moderation in Chinese GDP growth, which fell to 4.9% year-over-year in Q3.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	12.2% 6/30/21	5.4% 9/30/21	4.8% 9/30/21
Eurozone	14.3% 6/30/21	3.4% 9/30/21	7.5% 8/31/21
Japan	7.6% 6/30/21	0.3% 9/30/21	2.8% 8/31/21
BRICS Nations	10.1% 6/30/21	2.4% 9/30/21	5.3% 6/30/21
Brazil	12.4% 6/30/21	10.3% 9/30/21	13.7% 7/31/21
Russia	10.5% 6/30/21	7.4% 9/30/21	4.4% 8/31/21
India	20.1% 6/30/21	5.3% 8/31/21	6.9% 9/30/21
China	4.9% 9/30/21	0.7% 9/30/21	5.1% 8/31/21

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

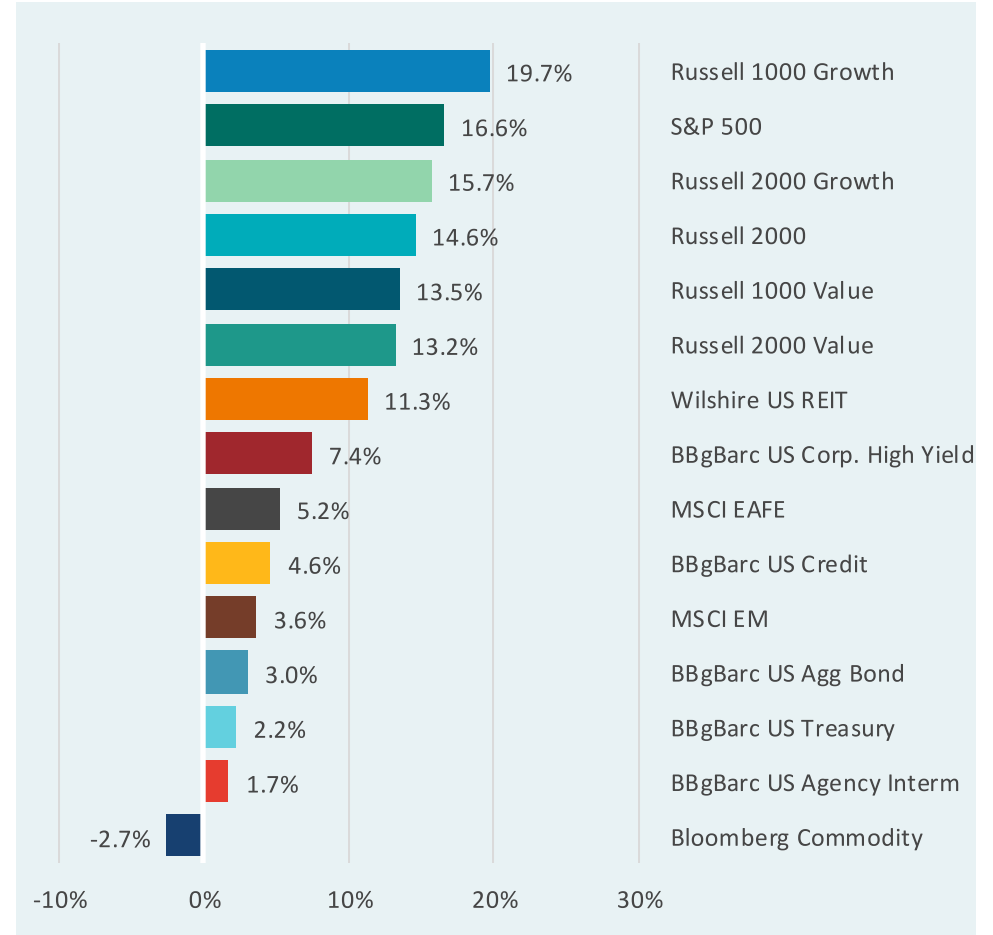
Major asset class returns

SIX MONTHS ENDING SEPTEMBER



Source: Bloomberg, as of 9/30/21

TEN YEARS ENDING SEPTEMBER



Source: Bloomberg, as of 9/30/21

- The composite fund returned 0.8% for the third quarter of 2021 and ranked in the 38th percentile among public funds greater than \$1 billion (median of 0.4%). The fund matched its policy index return of 0.8% during this time period. Longer term, the five (11.4%), and ten-year (10.7%) returns ranked in the 20th and 25th percentile of large public plans respectively.
- Third quarter results were enhanced by the following factors:
 1. William Blair Small Cap Growth beat the Russell 2000 Growth (0.3% vs -5.7%). Third quarter relative performance was a result of strong stock selection in several sectors, but most notably within information technology.
 2. Kennedy lost -1.1% beating the Russell 2000 Value which returned -3.0%. The strategy outperformed due to stock selection within the financials, communication services, and industrial sectors.
 3. Newton lost 2% beating the MSCI Emerging Market Index (-8.0%). Increasing regulatory intervention within China affected a number of holdings in the strategy, but this was outweighed by superior stock selection in India.
- Third quarter results were hindered by the following factors:
 1. Templeton trailed the MSCI ACWI ex US Small Cap -2.2% versus 0.1% for the index. Stock selection in IT hurt relative returns this quarter due to raw materials shortages and shipping congestion.

Total Fund
 Manager Allocation Analysis (One Quarter)

Period Ending: September 30, 2021

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return ¹	\$733,939,675	-\$1,605,917	\$12,578,873	\$744,912,630
Alta	\$5,249	\$0	\$0	\$5,249
Applied Research Investments	\$28,405,052	\$0	-\$550,374	\$27,854,678
AQR	\$1,603,051	-\$4	-\$30,082	\$1,572,965
Arga Investment Management	\$30,762,466	\$0	-\$877,418	\$29,885,048
Aristotle	\$160,122,732	-\$305,242	-\$197,397	\$159,620,093
Baird Advisors	\$872,487,802	\$479,842,728	\$2,021,873	\$1,354,352,403
Bivium Cash	\$0	\$0	\$0	\$0
BlackRock MSCI World ex-US Index Fd A	\$737,297,934	\$38,000,000	-\$4,573,841	\$770,724,093
BlackRock Russell 1000 Index Fund	\$2,409,566,427	\$35,000,000	\$6,910,945	\$2,451,477,372
Brandywine	\$394,409,463	-\$165,270,193	-\$9,028,516	\$220,110,754
Capital Group	\$726,094,505	\$49,733,177	-\$18,630,344	\$757,197,337
Cash Account	\$837,761,043	-\$753,895,353	-\$8,174	\$83,857,516
Denali Advisors	\$29,884,570	\$0	-\$1,086,214	\$28,798,357
Dundas Partners	\$29,814,822	\$2,000,000	\$254,991	\$32,069,813
Global Alpha Capital Management	\$11,811,477	\$0	\$54,698	\$11,866,175
Huber	\$1,651	\$0	\$0	\$1,651
Kennedy	\$163,736,003	-\$5,323,529	-\$1,493,807	\$156,918,667
Loomis Sayles	\$425,029,011	\$10,668,965	\$1,064,117	\$436,762,093
Mondrian	\$744,613,507	\$26,363,063	-\$28,318,365	\$742,658,205
Newton Emerging Mkt	\$266,275,485	\$50,000,000	-\$5,507,670	\$310,767,815
Next Century-SCG	\$0	\$259	\$0	\$259
Overlay	\$0	\$10,000,000	-\$2,005,321	\$7,994,679
Private Credit	\$123,326,560	\$18,725,449	\$3,449,630	\$145,501,638
Private Equity	\$895,422,433	-\$27,992,722	\$89,973,825	\$957,403,536
Pzena	\$21,933	-\$7,023	\$0	\$14,911
Radin Capital Partners	\$12,500,104	\$0	-\$1,075,439	\$11,424,665
Redwood	\$0	\$7,747,033	-\$461,171	\$7,285,862
RVX Asset Management	\$7,720,230	\$252,967	-\$1,435,048	\$6,538,149
Real Assets	\$531,447,957	\$166,924,619	\$7,170,007	\$705,542,582
Real Estate	\$658,532,300	-\$6,802,060	\$44,921,079	\$696,651,317
Sec. Lending	\$0	-\$284,711	\$284,711	\$0
TCW	\$151,211,171	\$8,347,859	\$2,954,832	\$162,513,862
Templeton	\$302,213,800	\$15,000,000	-\$6,531,217	\$310,682,583
Transition Account	\$100,462	\$0	-\$68,447	\$32,015
William Blair Small Cap Growth	\$171,569,253	-\$15,322,748	\$870,733	\$157,117,239
Total	\$11,457,688,127	-\$58,203,385	\$90,631,468	\$11,490,116,211

¹ Preliminary ending market value

Bivium

Manager Allocation Analysis (One Quarter)

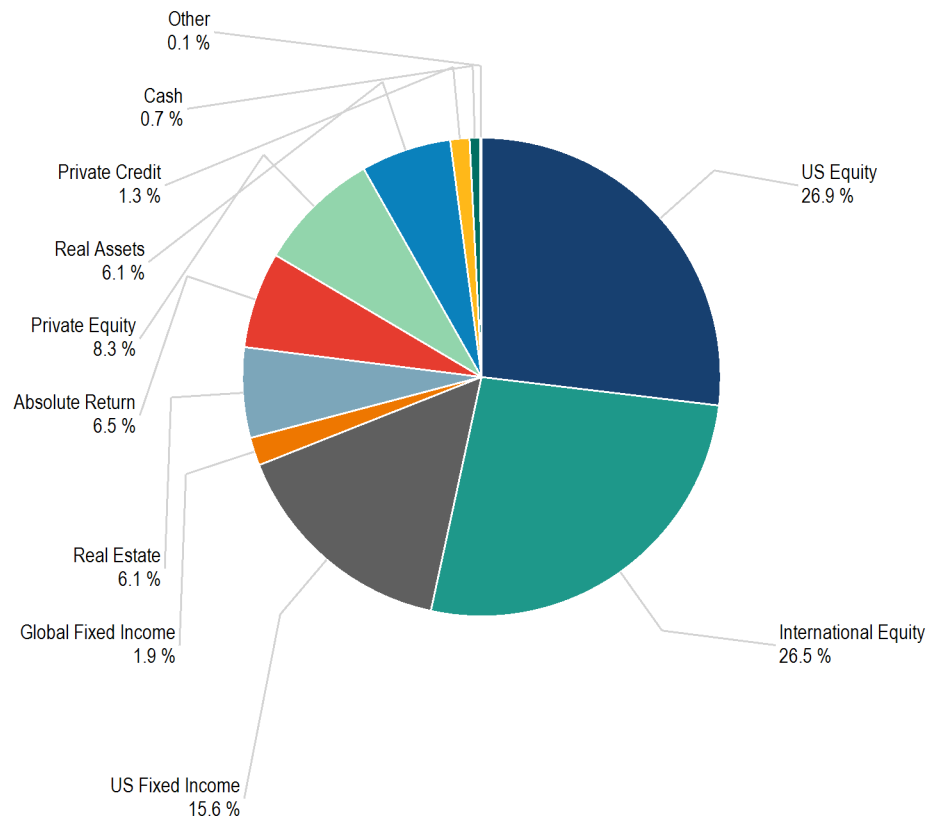
Period Ending: September 30, 2021

	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
Total	\$6,900	\$0	\$0	\$6,900

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Applied Research Investments	\$28,405,052	\$0	-\$550,374	\$27,854,678
Arga Investment Management	\$30,762,466	\$0	-\$877,418	\$29,885,048
Denali Advisors	\$29,884,570	\$0	-\$1,086,214	\$28,798,357
Dundas Partners	\$29,814,822	\$2,000,000	\$254,991	\$32,069,813
Global Alpha Capital Management	\$11,811,477	\$0	\$54,698	\$11,866,175
Radin Capital Partners	\$12,500,104	\$0	-\$1,075,439	\$11,424,665
Redwood	\$0	\$7,747,033	-\$461,171	\$7,285,862
RVX Asset Management	\$7,720,230	\$252,967	-\$1,435,048	\$6,538,149
Total	\$150,898,722	\$10,000,000	-\$5,175,975	\$155,722,747

Total Fund Asset Allocation Analysis

Period Ending: September 30, 2021



	Actual	Actual
US Equity	\$3,087,669,302	26.9%
International Equity	\$3,049,357,759	26.5%
US Fixed Income	\$1,791,114,496	15.6%
Global Fixed Income	\$220,110,754	1.9%
Real Estate	\$696,651,317	6.1%
Absolute Return	\$744,912,630	6.5%
Private Equity	\$957,403,536	8.3%
Real Assets	\$705,542,582	6.1%
Private Credit	\$145,501,638	1.3%
Cash	\$83,857,516	0.7%
Other	\$7,994,679	0.1%
Total	\$11,490,116,211	100.0%

	Actual	Target
US Equity	26.9%	25.0%
International Equity	26.5%	25.0%
US Fixed Income	15.6%	13.0%
Global Fixed Income	1.9%	3.0%
Real Estate	6.1%	8.0%
Absolute Return	6.5%	9.0%
Private Equity	8.3%	8.0%
Real Assets	6.1%	5.0%
Private Credit	1.3%	4.0%
Cash	0.7%	0.0%
Other	0.1%	0.0%
Total	100.0%	100.0%

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

Total Fund Performance Summary

Period Ending: September 30, 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)	0.81	38	7.13	32	25.29	18	11.34	29	11.57	16	9.41	19	11.03	16	9.86	Sep-85
Total Fund (Net)	0.77	38	7.05	33	25.11	19	11.16	32	11.36	20	9.16	34	10.74	25	9.67	
<i>Policy Index 1</i>	0.83	37	5.87	49	21.90	50	10.21	59	10.67	41	8.98	38	10.84	20	10.03	Sep-85
<i>Allocation Index</i>	0.46	45	5.74	54	22.45	44	10.38	53	10.73	40	8.93	39	10.67	27	--	Sep-85
<i>InvMetrics Public DB > \$1B Gross Median</i>	0.39		5.86		21.90		10.63		10.38		8.73		10.09		8.93	Sep-85
US Equity (Gross)	0.24	22	8.65	11	33.50	49	16.10	15	17.59	11	14.27	14	16.75	18	12.23	Sep-85
US Equity (Net)	0.20	24	8.58	13	33.33	53	15.95	24	17.37	13	14.01	23	16.45	31	--	
<i>Russell 3000</i>	-0.10	52	8.13	28	31.87	79	16.00	21	16.85	29	13.93	27	16.60	24	11.75	Sep-85
<i>InvMetrics All DB US Eq Gross Median</i>	-0.10		7.55		33.44		15.00		16.17		13.38		16.06		11.36	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	0.22	52	8.77	44	30.99	41	16.47	32	--	--	--	--	--	--	17.84	Apr-18
BlackRock Russell 1000 Index Fund (Net)	0.21	53	8.76	44	30.98	41	16.46	33	--	--	--	--	--	--	17.83	
<i>Russell 1000</i>	0.21	53	8.76	44	30.96	41	16.43	33	17.11	34	14.09	33	16.76	34	17.79	Apr-18
Large Cap Active Equity (Gross)	0.86	--	11.81	--	32.35	--	13.36	--	15.92	--	12.95	--	15.68	--	8.89	Mar-00
Large Cap Active Equity (Net)	0.72	--	11.56	--	31.78	--	12.82	--	15.41	--	12.47	--	15.20	--	8.44	
<i>Russell 1000</i>	0.21	--	8.76	--	30.96	--	16.43	--	17.11	--	14.09	--	16.76	--	7.28	Mar-00
Aristotle (Gross)	-0.13	38	6.18	30	--	--	--	--	--	--	--	--	--	--	35.57	Oct-20
Aristotle (Net)	-0.31	43	5.90	36	--	--	--	--	--	--	--	--	--	--	35.12	
<i>Russell 1000 Value</i>	-0.78	61	4.39	64	35.01	54	10.07	65	10.94	77	9.32	74	13.51	70	36.81	Oct-20
TCW (Gross)	1.86	15	18.26	2	29.29	30	23.88	19	23.86	24	19.09	22	19.14	49	9.74	Jun-99
TCW (Net)	1.77	18	18.04	2	28.77	33	23.32	23	23.35	27	18.64	31	18.71	59	--	
<i>Russell 1000 Growth</i>	1.16	37	13.23	28	27.32	50	22.00	39	22.84	36	18.51	35	19.68	36	7.73	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 85 members with a total market value of \$1,149.5 Trillion.
 Effective 1/1/2017, only traditional asset class (public equity, public fixed income, public real estate) investment management fees will be included in the gross of fee return calculation.
 1 See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 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
Small Cap Equity (Gross)	-0.21	--	5.03	--	56.04	--	15.75	--	17.92	--	14.73	--	17.11	--	14.04	Jul-85
Small Cap Equity (Net)	-0.41	--	4.64	--	54.94	--	14.85	--	16.95	--	13.78	--	16.14	--	--	
<i>Russell 2000</i>	-4.36	--	-0.26	--	47.68	--	10.54	--	13.45	--	11.90	--	14.63	--	9.96	Jul-85
Kennedy (Gross)	-0.89	30	4.53	26	65.12	33	10.22	40	11.90	47	10.51	49	15.37	26	13.02	Sep-10
Kennedy (Net)	-1.10	37	4.14	32	63.99	35	9.36	53	10.98	63	9.61	71	14.44	44	12.13	
<i>Russell 2000 Value</i>	-2.98	75	1.44	65	63.92	35	8.58	64	11.03	62	10.19	57	13.22	76	11.32	Sep-10
William Blair Small Cap Growth (Gross)	0.48	23	5.56	32	48.54	21	--	--	--	--	--	--	--	--	32.07	Oct-19
William Blair Small Cap Growth (Net)	0.28	24	5.15	35	47.46	25	--	--	--	--	--	--	--	--	31.18	
<i>Russell 2000 Growth</i>	-5.65	91	-1.96	94	33.26	79	11.70	89	15.34	91	13.19	89	15.74	88	23.53	Oct-19
International Equity (Gross)	-2.22	38	3.32	44	26.03	42	11.18	21	11.44	19	8.04	22	9.69	22	8.60	Dec-90
International Equity (Net)	-2.27	41	3.20	47	25.67	46	10.82	26	11.10	23	7.67	29	9.28	33	--	
<i>MSCI ACWI ex USA IMI Gross ¹</i>	-2.45	46	3.16	47	25.68	46	8.83	58	9.62	50	6.49	57	8.22	68	6.65	Dec-90
<i>InvMetrics All DB ex-US Eq Gross Median</i>	-2.53		3.02		25.31		9.30		9.60		6.67		8.79		7.26	Dec-90
Bivium Intl Equity (Gross)	-3.23	80	3.22	69	28.16	46	--	--	--	--	--	--	--	--	14.40	Oct-18
Bivium Intl Equity (Net)	-3.53	86	2.60	77	26.64	54	--	--	--	--	--	--	--	--	13.08	
<i>MSCI ACWI ex USA Gross</i>	-2.88	76	2.60	77	24.44	73	8.52	70	9.44	76	6.17	91	7.97	97	11.98	Oct-18
BlackRock MSCI World ex-US Index Fd A (Gross)	-0.57	51	5.18	47	27.09	48	--	--	--	--	--	--	--	--	13.43	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	-0.58	51	5.16	48	27.08	49	--	--	--	--	--	--	--	--	13.43	
<i>MSCI World ex US Gross</i>	-0.56	51	5.26	46	27.10	48	8.41	52	9.42	54	6.22	70	8.41	79	13.51	May-19
Capital Group (Gross)	-2.41	62	4.28	65	22.51	47	15.59	27	15.17	30	10.62	53	11.49	50	9.25	Dec-90
Capital Group (Net)	-2.45	62	4.21	66	22.35	47	15.27	31	14.92	32	10.34	62	11.15	59	--	
<i>MSCI ACWI ex USA Gross</i>	-2.88	68	2.60	73	24.44	24	8.52	99	9.44	97	6.17	99	7.97	99	6.60	Dec-90
<i>MSCI ACWI ex USA Growth Gross</i>	-3.58	76	2.91	73	17.27	78	12.30	75	11.59	87	8.64	88	9.69	92	--	Dec-90

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 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
Mondrian (Gross)	-3.67	95	0.79	79	28.20	73	5.62	73	6.89	72	4.45	73	6.66	82	7.04	Nov-03
Mondrian (Net)	-3.76	99	0.63	81	27.68	79	5.15	84	6.48	88	4.05	86	6.28	99	6.71	
MSCI ACWI ex USA Gross	-2.88	86	2.60	38	24.44	99	8.52	24	9.44	21	6.17	24	7.97	35	7.38	Nov-03
MSCI ACWI ex USA Value Gross	-2.14	65	2.30	51	32.15	54	4.43	91	7.06	69	3.54	90	6.11	99	6.56	Nov-03
Newton Emerging Mkt (Gross)	-1.91	11	1.23	32	28.27	30	--	--	--	--	--	--	--	--	31.07	May-19
Newton Emerging Mkt (Net)	-2.02	13	0.99	33	27.62	33	--	--	--	--	--	--	--	--	30.69	
MSCI Emerging Markets Gross	-7.97	69	-3.26	65	18.58	70	8.96	65	9.62	59	6.00	69	6.46	78	13.40	May-19
Templeton (Gross)	-2.04	87	4.67	94	26.61	85	9.25	68	10.16	76	7.95	80	10.32	86	7.61	Apr-11
Templeton (Net)	-2.17	87	4.39	94	25.92	88	8.60	79	9.50	82	7.26	85	9.57	94	6.90	
MSCI ACWI ex US Small Cap Gross	0.09	58	6.59	73	33.54	40	10.76	57	10.69	71	8.55	72	9.84	92	6.60	Apr-11
MSCI ACWI ex US Small Cap Value GD	-0.24	64	5.83	81	38.25	23	8.11	81	9.06	86	7.01	86	8.99	99	5.75	Apr-11
Total Fixed Income (Gross)	-0.23	95	2.15	59	3.45	31	6.96	18	4.76	26	4.60	23	5.30	19	7.25	Sep-86
Total Fixed Income (Net)	-0.26	96	2.06	68	3.27	35	6.75	21	4.57	33	4.40	27	5.08	22	--	
Fixed Income Blend ¹	-0.24	95	1.42	86	-0.19	82	5.13	67	2.97	85	3.23	77	3.08	89	6.26	Sep-86
InvMetrics All DB Total Fix Inc Gross Median	0.17		2.30		2.21		5.75		4.02		3.92		4.15		6.71	Sep-86
US Fixed Income (Gross)	0.21	41	2.57	32	1.82	37	7.08	22	4.78	25	4.81	24	5.58	17	7.16	Sep-86
US Fixed Income (Net)	0.18	47	2.49	36	1.69	39	6.92	23	4.61	31	4.64	27	5.40	18	--	
Bloomberg US Aggregate TR	0.05	72	1.88	66	-0.90	86	5.36	62	2.94	80	3.26	72	3.01	79	6.03	Sep-86
InvMetrics All DB US Fix Inc Gross Median	0.15		2.18		0.62		5.66		3.90		3.91		4.06		6.42	Sep-86
Baird Advisors (Gross)	0.20	18	2.29	39	0.01	48	6.28	25	3.87	23	4.22	10	4.39	10	5.12	Oct-01
Baird Advisors (Net)	0.19	22	2.24	41	-0.05	51	6.20	33	3.79	27	4.14	14	4.31	12	5.03	
Bloomberg US Aggregate TR	0.05	62	1.88	84	-0.90	84	5.36	88	2.94	92	3.26	92	3.01	95	4.24	Oct-01
Loomis Sayles (Gross)	0.24	46	3.17	9	5.71	5	8.77	3	6.61	2	5.99	2	7.86	1	8.29	Dec-00
Loomis Sayles (Net)	0.17	68	3.01	16	5.40	5	8.44	4	6.28	2	5.65	3	7.51	1	7.95	
Bloomberg US Credit BAA TR	0.03	85	3.75	1	3.27	16	7.83	7	5.11	11	4.95	10	5.32	10	6.38	Dec-00

¹ See Policy Index and Benchmark History.

Total Fund Performance Summary

Period Ending: September 30, 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
Global Fixed Income (Gross)	-3.25	90	-0.85	99	6.35	38	5.66	60	4.07	66	3.50	74	4.15	76	7.10	Nov-01
Global Fixed Income (Net)	-3.36	95	-1.04	99	6.01	41	5.32	66	3.77	77	3.21	80	3.81	82	6.79	
<i>FTSE WGBI TR</i>	-1.24	69	-0.27	85	-3.33	98	3.73	88	1.35	99	1.74	87	1.06	99	4.27	Nov-01
<i>InvMetrics All DB Gbl Fix Inc Gross Median</i>	-0.02		2.61		5.46		5.84		4.47		4.16		5.69		6.32	Nov-01
Brandywine (Gross)	-3.25	97	-0.85	91	6.35	32	5.66	48	4.07	52	3.50	53	4.15	46	7.10	Nov-01
Brandywine (Net)	-3.36	97	-1.04	93	6.01	33	5.32	56	3.77	56	3.21	58	3.81	52	6.79	
<i>Bloomberg Global Aggregate TR</i>	-0.88	70	0.42	73	-0.91	87	4.24	78	1.99	88	2.17	79	1.86	85	4.39	Nov-01
<i>FTSE WGBI TR</i>	-1.24	78	-0.27	84	-3.33	97	3.73	85	1.35	96	1.74	88	1.06	95	4.27	Nov-01
Absolute Return (Gross)	1.72	29	6.11	25	18.47	42	3.29	80	3.37	81	2.73	76	3.52	83	3.52	Sep-11
Absolute Return (Net)	1.72	29	6.11	25	18.47	42	3.29	80	3.37	81	2.73	76	3.52	83	3.52	
<i>HFRI Fund of Funds Composite Index</i>	0.78	59	3.67	60	14.35	72	6.51	57	5.81	58	4.16	58	4.47	73	4.47	Sep-11
<i>InvMetrics All DB Hedge Funds Gross Median</i>	0.99		4.97		17.55		7.09		6.40		4.76		5.73		5.73	Sep-11
Private Equity (Gross)	10.05	--	24.57	--	62.50	--	23.08	--	20.14	--	18.49	--	16.91	--	7.59	Nov-08
Private Equity (Net)	10.05	--	24.57	--	62.50	--	23.08	--	20.14	--	18.49	--	16.91	--	7.59	
<i>Thomson Reuters C A Global All PE 1 Qtr Lag</i>	9.48	--	14.55	--	41.47	--	14.66	--	14.40	--	10.97	--	10.87	--	9.58	Nov-08
Real Assets (Gross)	1.04	--	6.51	--	29.06	--	1.45	--	2.21	--	-1.86	--	-2.45	--	-2.45	Sep-11
Real Assets (Net)	1.02	--	6.45	--	28.88	--	1.38	--	2.17	--	-1.89	--	-2.48	--	-2.48	
<i>Real Asset Blend¹</i>	0.87	--	4.81	--	30.77	--	5.67	--	6.82	--	6.34	--	5.88	--	5.88	Sep-11
Private Credit (Gross)	2.60	--	5.29	--	11.66	--	--	--	--	--	--	--	--	--	6.27	Oct-19
Private Credit (Net)	2.60	--	5.29	--	11.66	--	--	--	--	--	--	--	--	--	6.27	
<i>S&P/LSTA Leveraged Loan Index +1.75%</i>	1.54	--	3.49	--	10.29	--	5.96	--	6.41	--	5.99	--	6.74	--	6.95	Oct-19

¹ See Policy Index and Benchmark History.

Total Fund
Performance Summary

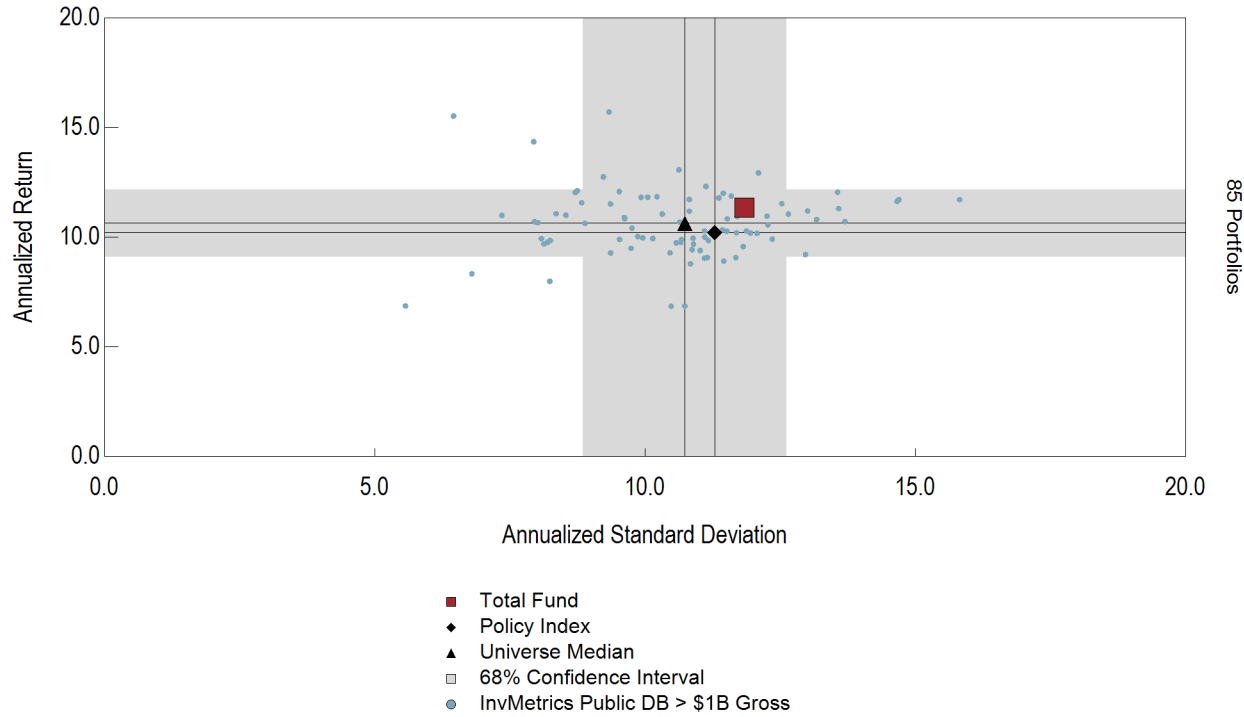
Period Ending: September 30, 2021

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Cash (Gross)	-0.01	--	0.39	--	0.55	--	1.12	--	1.15	--	0.87	--	0.64	--	3.01	Sep-85
Cash (Net)	-0.01	--	0.39	--	0.55	--	1.12	--	1.15	--	0.87	--	0.64	--	3.01	
91 Day T-Bills	0.01	--	0.01	--	0.04	--	1.04	--	1.10	--	0.82	--	0.59	--	3.09	Sep-85
Overlay (Gross)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-25.91	Jul-21
Overlay (Net)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-25.91	
Real Estate (Gross)	6.84	6	11.41	16	15.86	25	7.92	20	8.14	25	9.83	17	10.82	24	7.18	Mar-86
Real Estate (Net)	6.84	6	11.41	16	15.86	25	7.92	20	8.09	26	9.50	27	10.27	43	6.19	
NCREIF-ODCE	6.59	10	10.78	21	14.59	29	7.05	42	7.50	38	8.90	43	9.92	50	7.31	Mar-86
InvMetrics All DB Real Estate Pub+Priv Gross Median	5.03		9.25		13.24		6.71		7.16		8.61		9.90		7.52	Mar-86

1 See Policy Index and Benchmark History.

Total Fund
Risk vs. Return (3 Years)

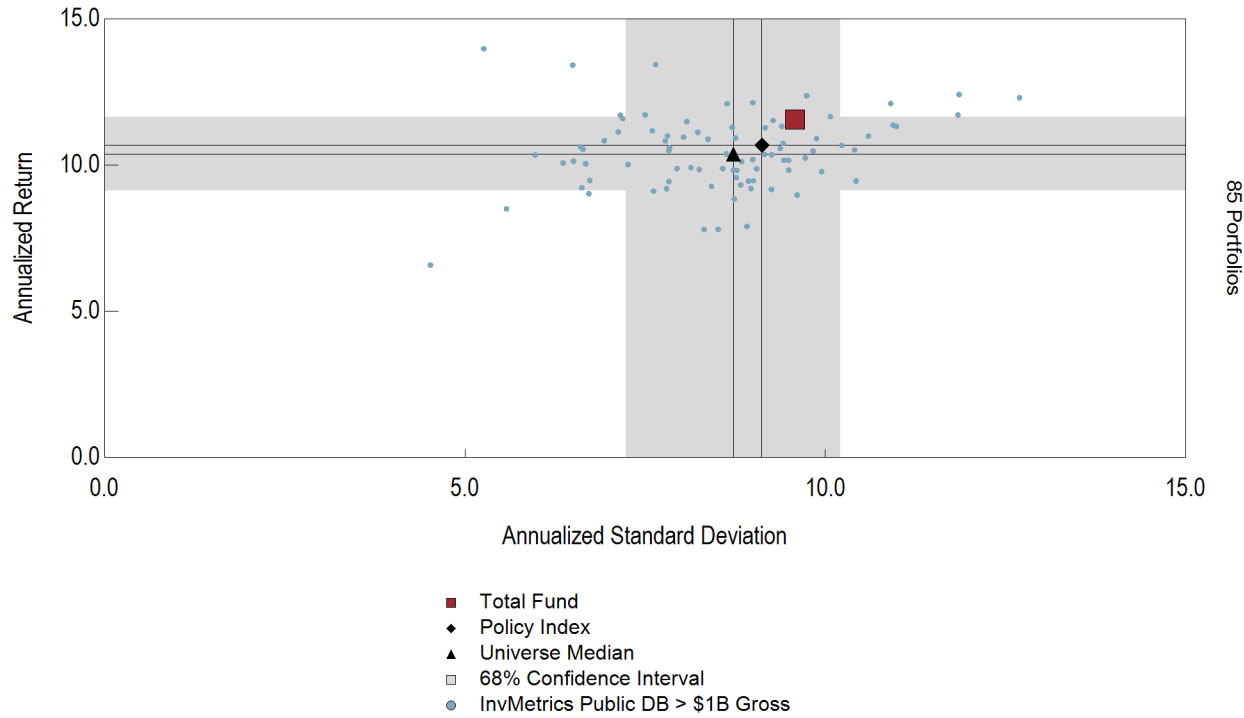
Period Ending: September 30, 2021



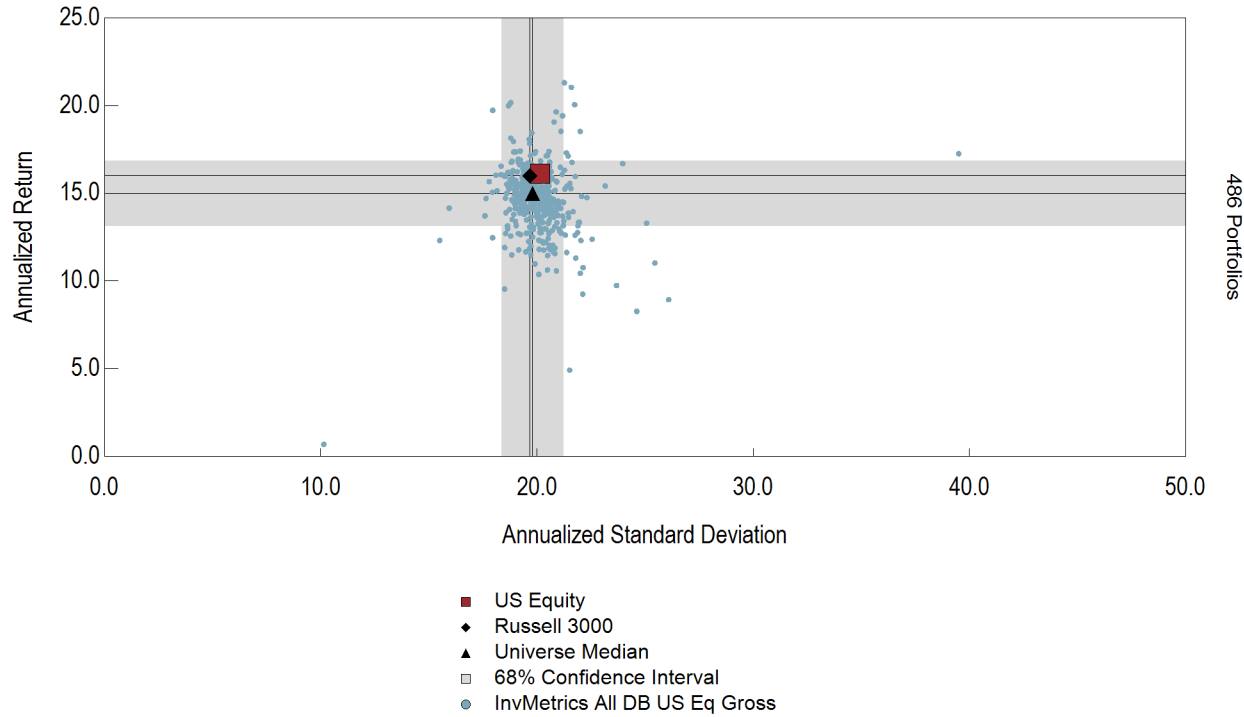
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	11.34%	29	11.84%	80	0.87	50	0.48	24	2.35%	67
Policy Index	10.21%	59	11.29%	67	0.81	62	--	--	0.00%	1
Allocation Index	10.38%	53	11.77%	79	0.79	68	0.25	40	0.66%	3
InvMetrics Public DB > \$1B Gross Median	10.63%	--	10.74%	--	0.87	--	0.14	--	1.76%	--

Total Fund
Risk vs. Return (5 Years)

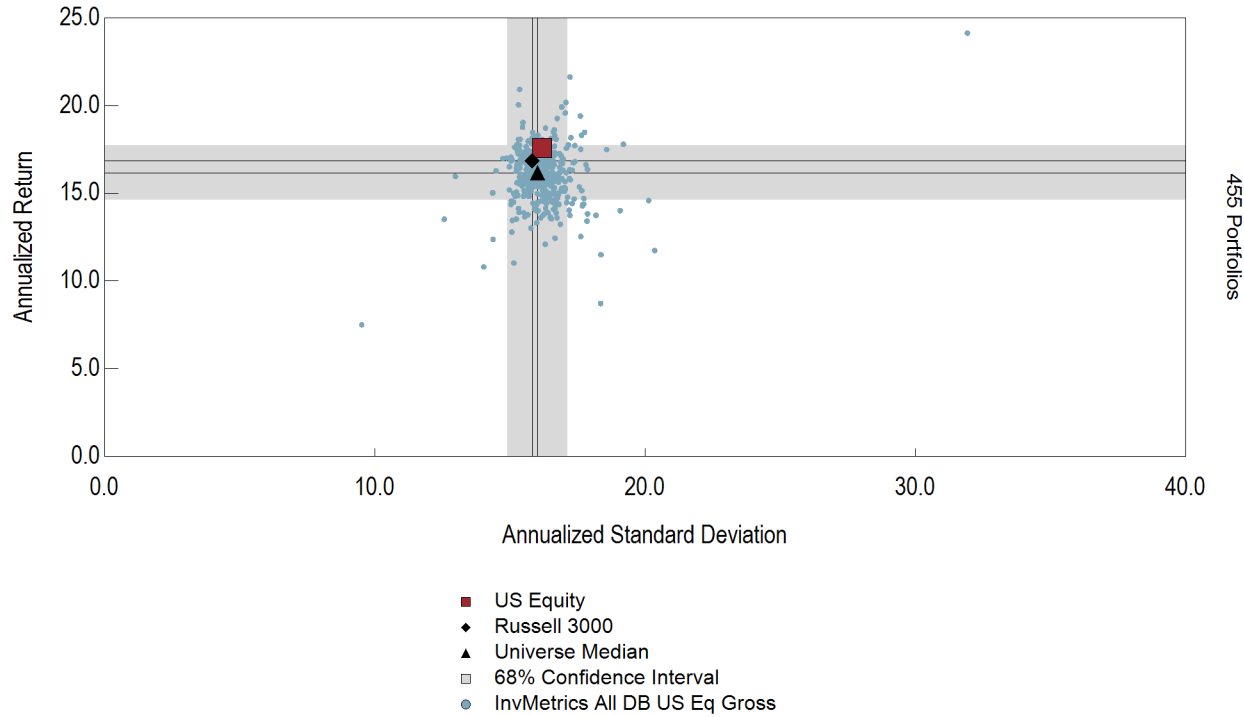
Period Ending: September 30, 2021



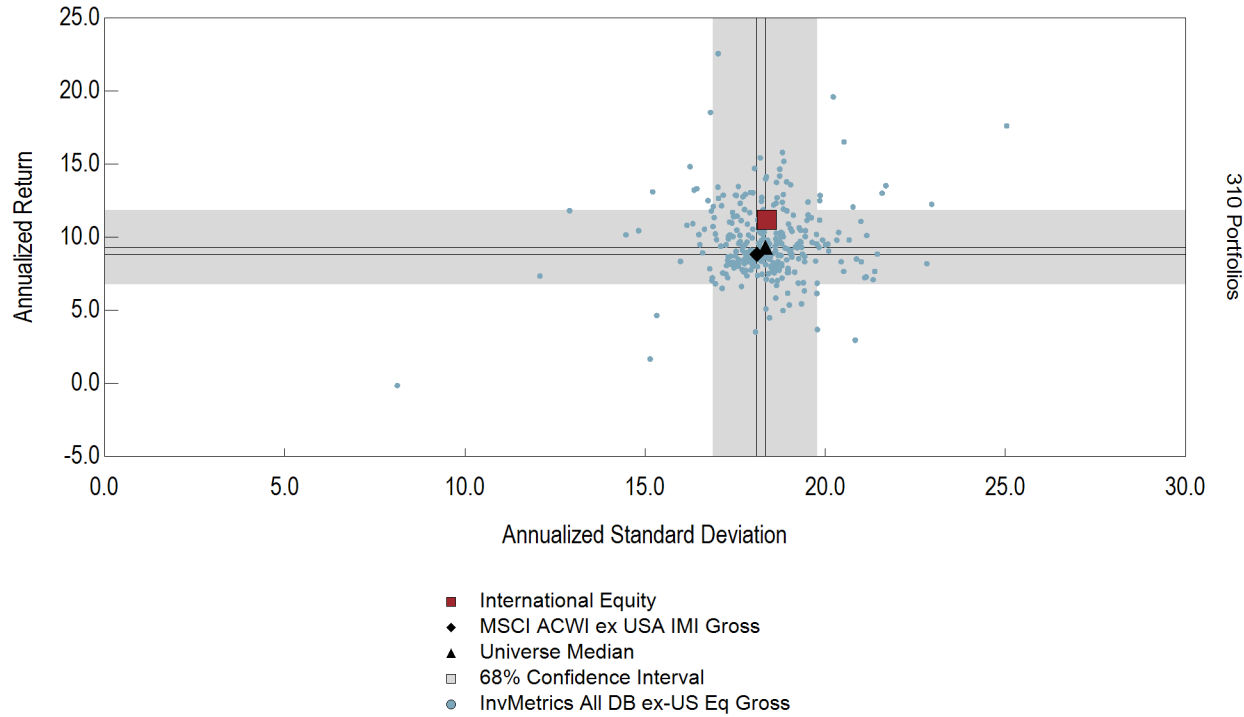
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	11.57%	16	9.58%	81	1.09	44	0.45	32	1.97%	65
Policy Index	10.67%	41	9.12%	67	1.05	52	--	--	0.00%	1
Allocation Index	10.73%	40	9.53%	80	1.01	60	0.09	70	0.61%	2
InvMetrics Public DB > \$1B Gross Median	10.38%	--	8.73%	--	1.06	--	0.23	--	1.63%	--



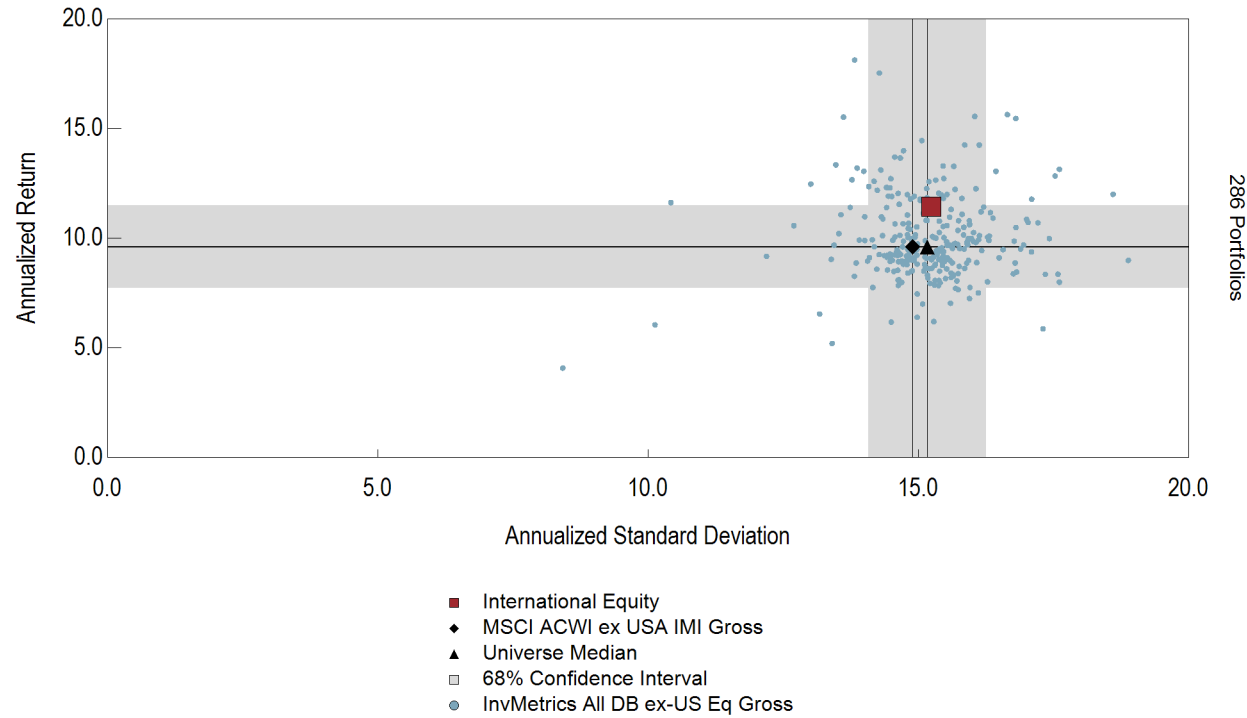
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	16.10%	15	20.14%	65	0.75	30	0.11	21	0.98%	13
Russell 3000	16.00%	21	19.68%	44	0.76	23	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	15.00%	--	19.80%	--	0.71	--	-0.45	--	2.33%	--



	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	17.59%	11	16.19%	60	1.02	16	0.61	8	1.21%	19
Russell 3000	16.85%	29	15.83%	38	1.00	26	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	16.17%	--	16.02%	--	0.94	--	-0.33	--	2.12%	--



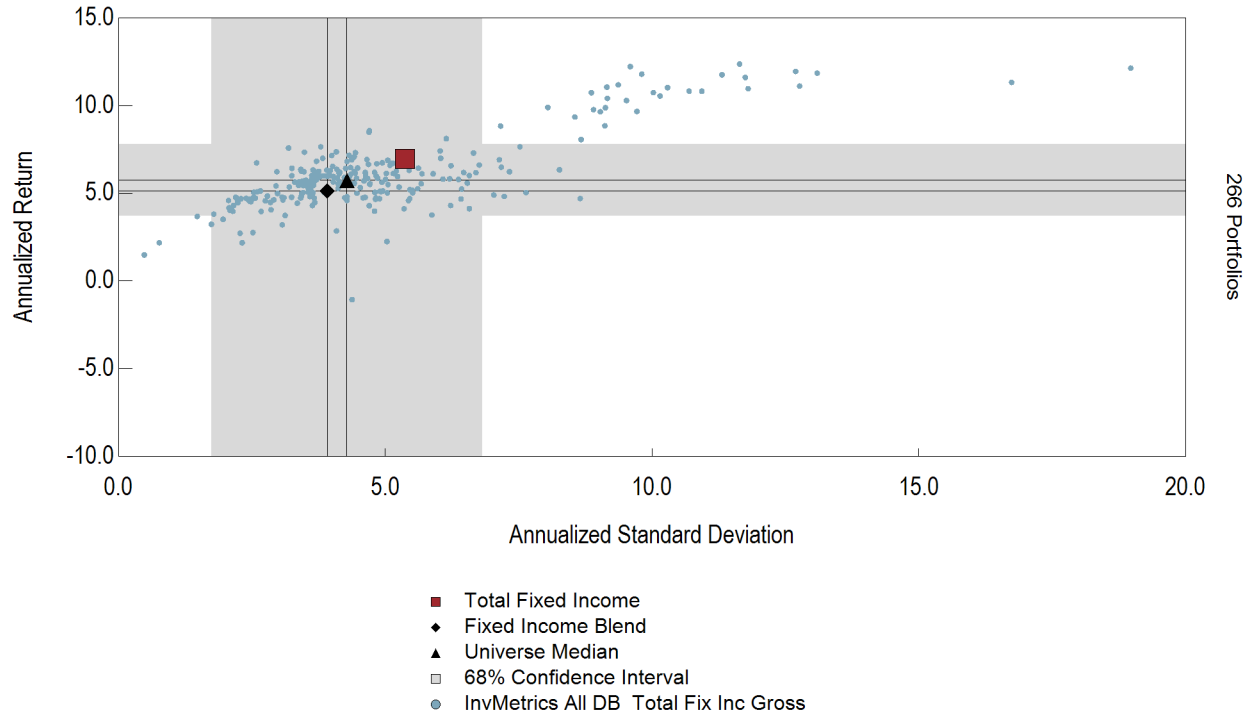
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	11.18%	21	18.38%	53	0.55	23	1.70	3	1.38%	8
MSCI ACWI ex USA IMI Gross	8.83%	58	18.10%	41	0.43	54	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	9.30%	--	18.34%	--	0.44	--	0.35	--	3.14%	--



	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	11.44%	19	15.23%	53	0.68	21	1.32	3	1.38%	8
MSCI ACWI ex USA IMI Gross	9.62%	50	14.90%	39	0.57	42	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	9.60%	--	15.17%	--	0.56	--	0.20	--	2.95%	--

Total Fixed Income
Risk vs. Return (3 Years)

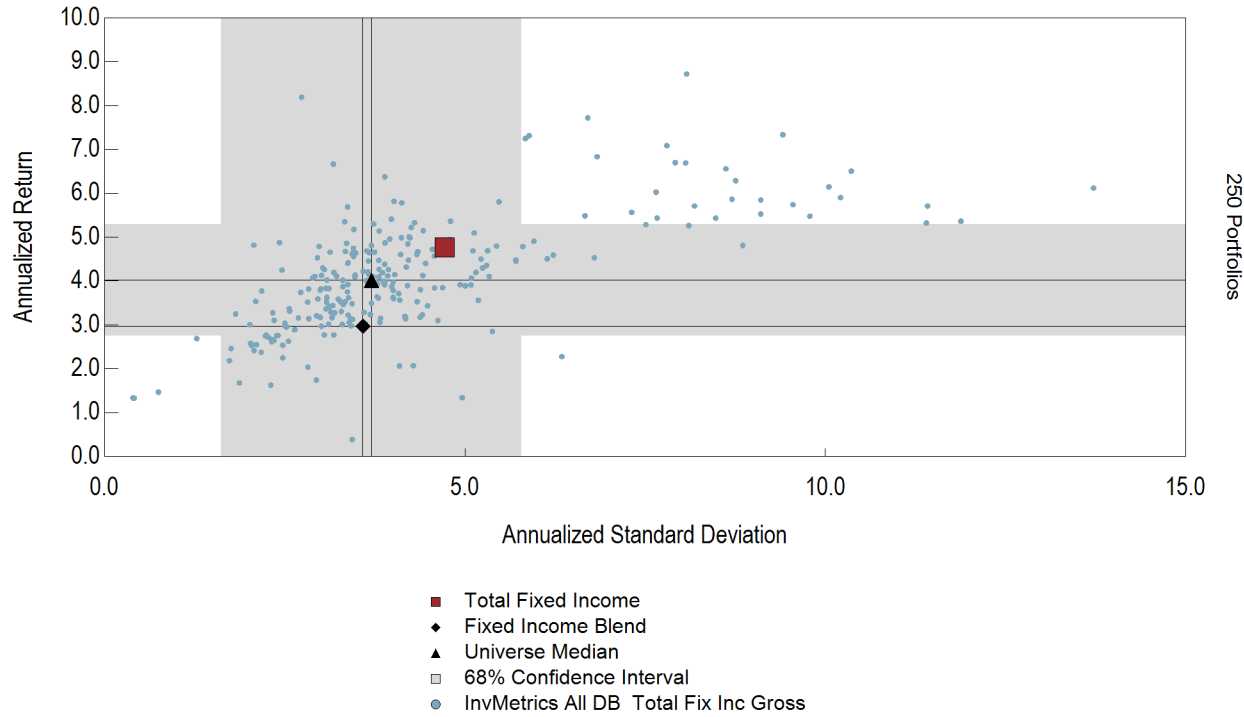
Period Ending: September 30, 2021



	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	6.96%	18	5.36%	75	1.10	50	0.70	10	2.60%	50
Fixed Income Blend	5.13%	67	3.91%	41	1.05	59	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	5.75%	--	4.28%	--	1.10	--	0.20	--	2.60%	--

Total Fixed Income
Risk vs. Return (5 Years)

Period Ending: September 30, 2021



	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	4.76%	26	4.72%	77	0.78	40	0.80	15	2.25%	51
Fixed Income Blend	2.97%	85	3.59%	45	0.52	87	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	4.02%	--	3.70%	--	0.73	--	0.44	--	2.21%	--

Equity environment

- Equity markets took a pause in Q3, a notable change from the seemingly non-stop rally year-to-date. U.S. equities delivered 0.6%, while international equities experienced slight losses of -0.4% and emerging market equities saw a larger selloff of -8.1%, on an unhedged currency basis.
- Size and value factor performance was negative during the quarter, as large capitalization stocks outperformed small capitalization stocks by a wide margin (Russell 1000 +0.2%, Russell 2000 -4.4%) and growth stocks beat value (Russell 1000 Growth +1.2%, Russell 1000 Value -0.8%).
- As we observed last quarter, it does seem that investors have put the 2020 pandemic-induced recession and its associated risks behind them. However, it is not clear that market risks have completely subsided, as the Delta-variant continues to spread, high

inflation could indeed persist, and most governments are set to pull back generous stimulus programs.

- The U.S. is facing acute supply chain issues, and 71% of S&P 500 companies reported negative impacts to their business during quarterly earnings calls, as reported by FactSet.
- Weakness in Chinese equities (MSCI China -18.2%) was the major driver of emerging market equity underperformance, as a wave of new regulations were implemented by the Communist Party of China which cascaded across a number of sectors including Technology, Property Management, and Financials.
- Within MSCI's long-short U.S. factor portfolios, momentum (+1.3%) led the way while volatility (-1.7%) posted a negative total return.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	0.6%		30.0%	
US Small Cap (Russell 2000)	(4.4%)		47.7%	
US Large Value (Russell 1000 Value)	(0.8%)		35.0%	
US Large Growth (Russell 1000 Growth)	1.2%		27.3%	
International Large (MSCI EAFE)	(0.4%)	1.5%	25.7%	28.2%
Eurozone (Euro Stoxx 50)	(2.4%)	0.1%	27.6%	30.6%
U.K. (FTSE 100)	(0.5%)	2.0%	30.7%	26.1%
Japan (NIKKEI 225)	2.5%	2.9%	21.9%	29.3%
Emerging Markets (MSCI Emerging Markets)	(8.1%)	(6.9%)	18.2%	15.9%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/21

Domestic equity

U.S. equities performed relatively well in Q2, delivering a slightly positive return of 0.6% (S&P 500). The index is expected to report Q3 earnings growth of 27.6% year-over-year, as indicated by FactSet. The U.S. is facing acute supply chain issues, and 71% of S&P 500 companies reported negative impacts to their business during quarterly earnings calls.

Mildly higher interest rates during the quarter likely supported Financials (+2.7%) while acting as a headwind to growth-oriented sectors such as Information Technology (+1.3%).

Performance over the near-term may be constrained by a degree of economic slowdown induced by the COVID-19 Delta variant, as well as moderating earnings growth expectations, although the analyst consensus price target for the S&P 500 over the next year is 5051, as of October 6th.

Recent price increases have raised questions around the defensibility of net profit margins, which are expected to moderate in Q3 but remain elevated well above recent averages. Some investors have begun to discuss positioning within sectors that have exhibited more pricing power.

S&P 500 INDEX



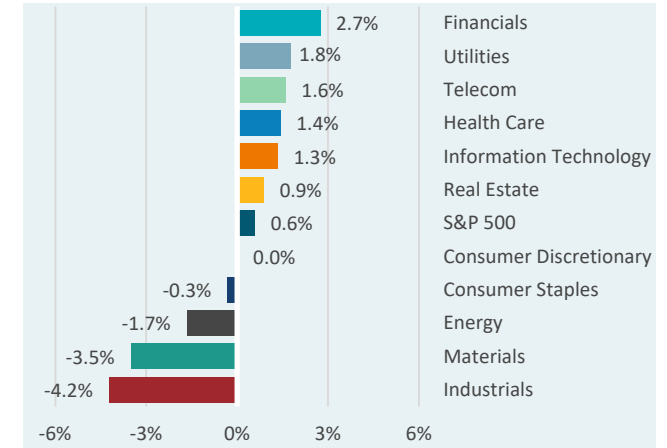
Source: Standard & Poor's, as of 9/30/21

S&P 500 NET PROFIT MARGINS



Source: FactSet, as of 10/18/21

Q3 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 9/30/21

Domestic equity size & style

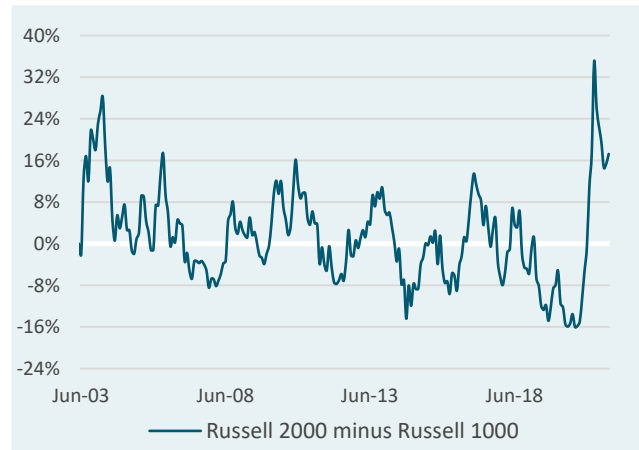
Large capitalization stocks outperformed small cap during the quarter by a wide margin (Russell 1000 +0.2%, Russell 2000 -4.4%) and growth stocks beat value (Russell 1000 Growth +1.2%, Russell 1000 Value -0.8%).

Following the notable turnaround in value stock performance during Q1, growth stocks took the lead in Q2, dampening excitement for a value comeback. Growth further outperformed in Q3. As we expressed earlier in the year, style performance is often impacted heavily by sector

randomness, which suggests that investors should be cautious in assuming that performance is *signal* rather than *noise*. Value stocks continue to be cheap relative to growth stocks, historically speaking. However, there does not appear to be a clear catalyst on the horizon that would imply a value timing opportunity. Factor performance tends to be noisy and difficult to predict, which suggests that style investing should in most cases involve a longer-term focus.

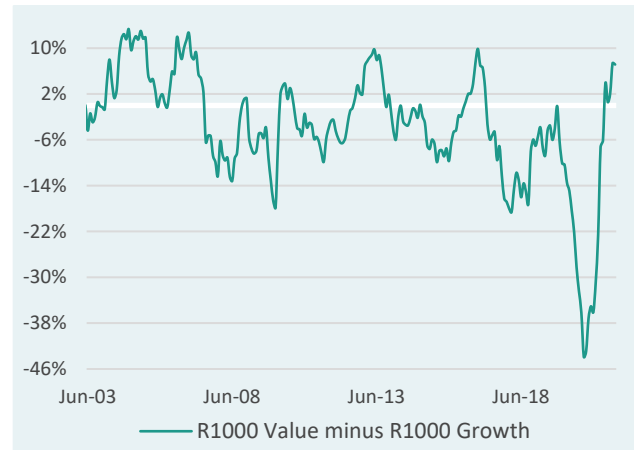
Large cap and growth stocks outperformed during Q3

SMALL CAP VS LARGE CAP (YOY)



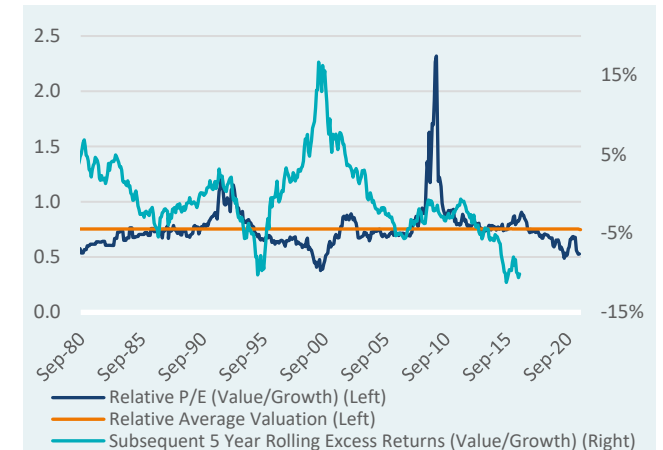
Source: FTSE, as of 9/30/21

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/21

VALUE VS. GROWTH RELATIVE VALUATIONS

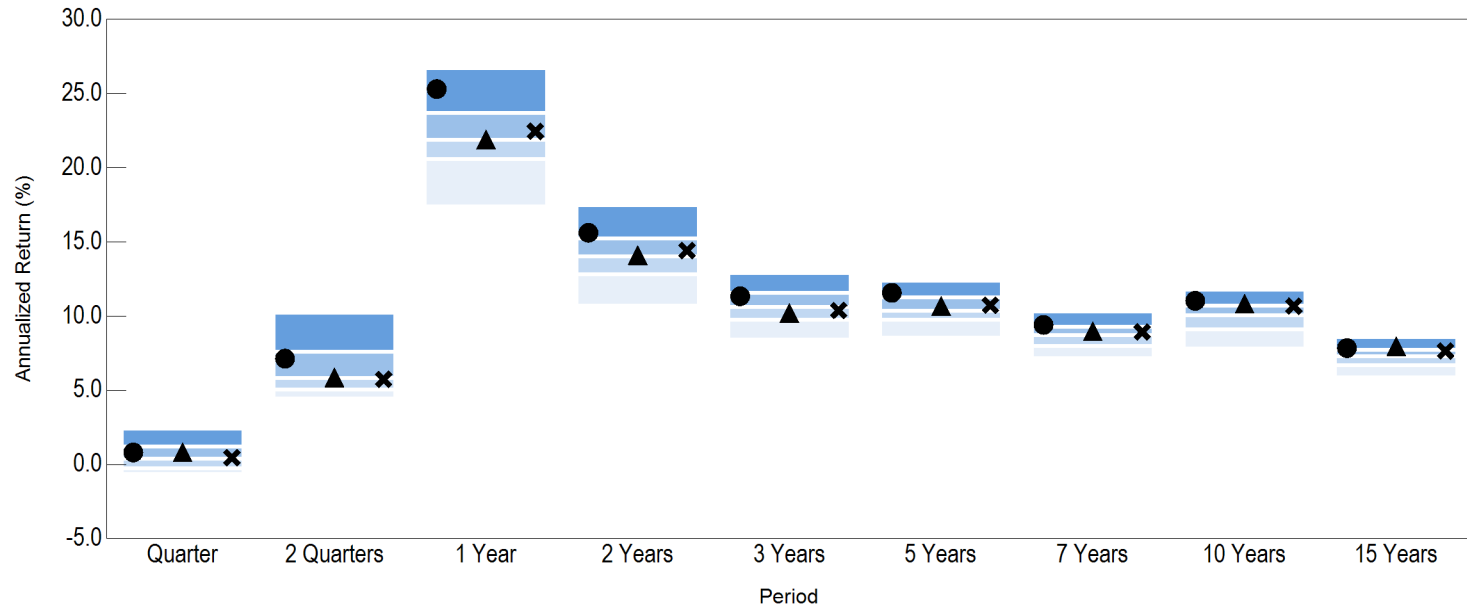


Source: Standard & Poor's, as of 9/30/21

Total Fund
Peer Universe Comparison

Period Ending: September 30, 2021

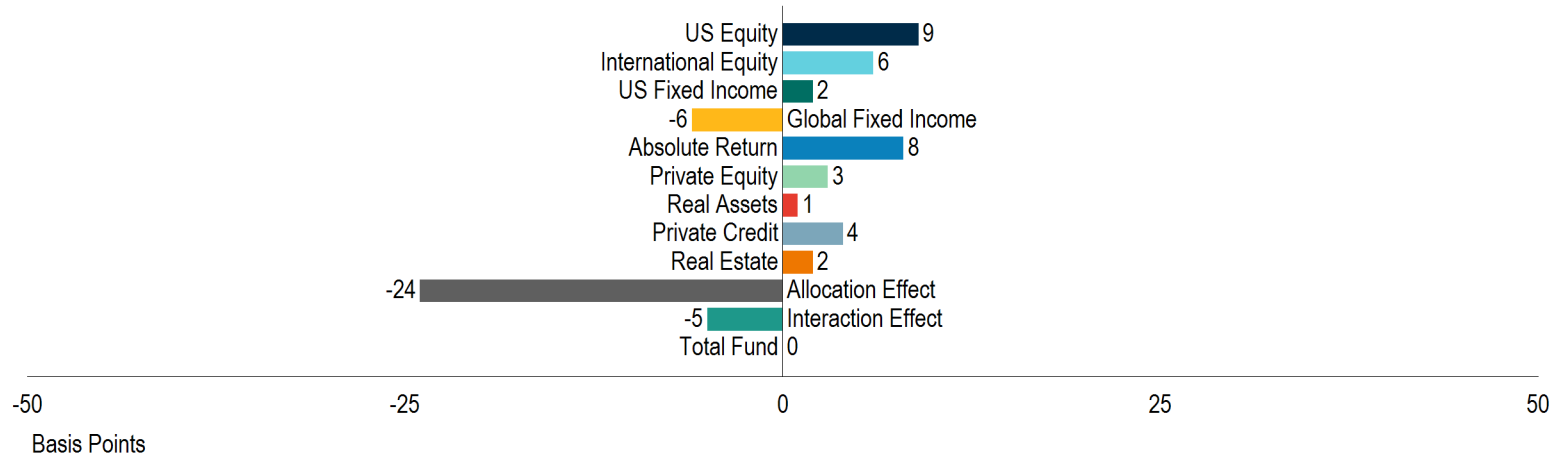
InvMetrics Public DB > \$1B Gross Return Comparison



	Return (Rank)								
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	15 Years
5th Percentile	2.41	10.21	26.71	17.43	12.89	12.36	10.28	11.76	8.59
25th Percentile	1.24	7.64	23.73	15.24	11.57	11.27	9.31	10.74	7.74
Median	0.39	5.86	21.90	14.05	10.63	10.38	8.73	10.09	7.30
75th Percentile	-0.23	5.06	20.61	12.83	9.77	9.77	8.02	9.15	6.71
95th Percentile	-0.64	4.45	17.43	10.72	8.42	8.57	7.18	7.85	5.89
# of Portfolios	85	85	85	85	85	85	84	80	75
● Total Fund	0.81 (38)	7.13 (32)	25.29 (18)	15.62 (21)	11.34 (29)	11.57 (16)	9.41 (19)	11.03 (16)	7.84 (18)
▲ Policy Index	0.83 (37)	5.87 (49)	21.90 (50)	14.11 (48)	10.21 (59)	10.67 (41)	8.98 (38)	10.84 (20)	7.98 (16)
✕ Allocation Index	0.46 (45)	5.74 (54)	22.45 (44)	14.41 (44)	10.38 (53)	10.73 (40)	8.93 (39)	10.67 (27)	7.64 (30)

Total Fund
Performance Attribution (One Quarter)

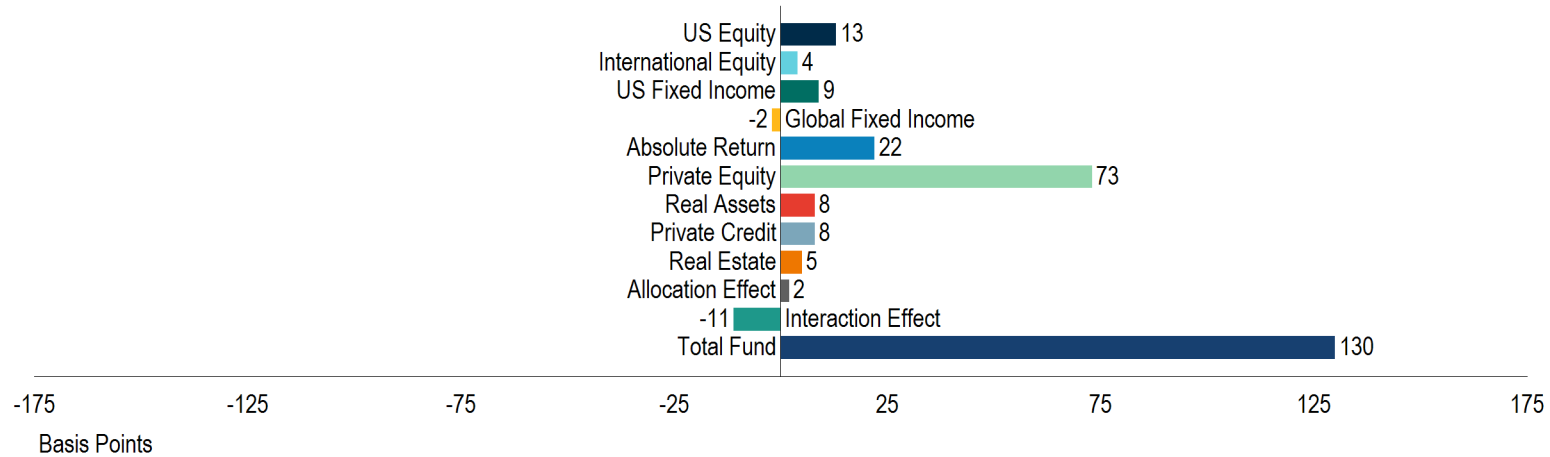
Period Ending: September 30, 2021



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	0.24%	-0.10%	0.34%	0.09%	-0.02%	0.01%	0.07%
International Equity	-2.22%	-2.45%	0.24%	0.06%	-0.08%	0.01%	-0.01%
US Fixed Income	0.21%	0.05%	0.16%	0.02%	-0.05%	0.01%	-0.02%
Global Fixed Income	-3.25%	-1.24%	-2.01%	-0.06%	0.05%	-0.02%	-0.04%
Absolute Return	1.72%	0.78%	0.94%	0.08%	0.00%	-0.02%	0.06%
Private Equity	10.05%	9.48%	0.57%	0.03%	0.03%	0.01%	0.06%
Real Assets	1.04%	0.87%	0.17%	0.01%	0.00%	0.00%	0.01%
Private Credit	2.60%	1.54%	1.05%	0.04%	-0.02%	-0.03%	-0.01%
Real Estate	6.84%	6.59%	0.25%	0.02%	-0.14%	0.00%	-0.12%
Total	0.84%	0.84%	0.00%	0.29%	-0.24%	-0.05%	0.00%

Total Fund
Performance Attribution (6 Months)

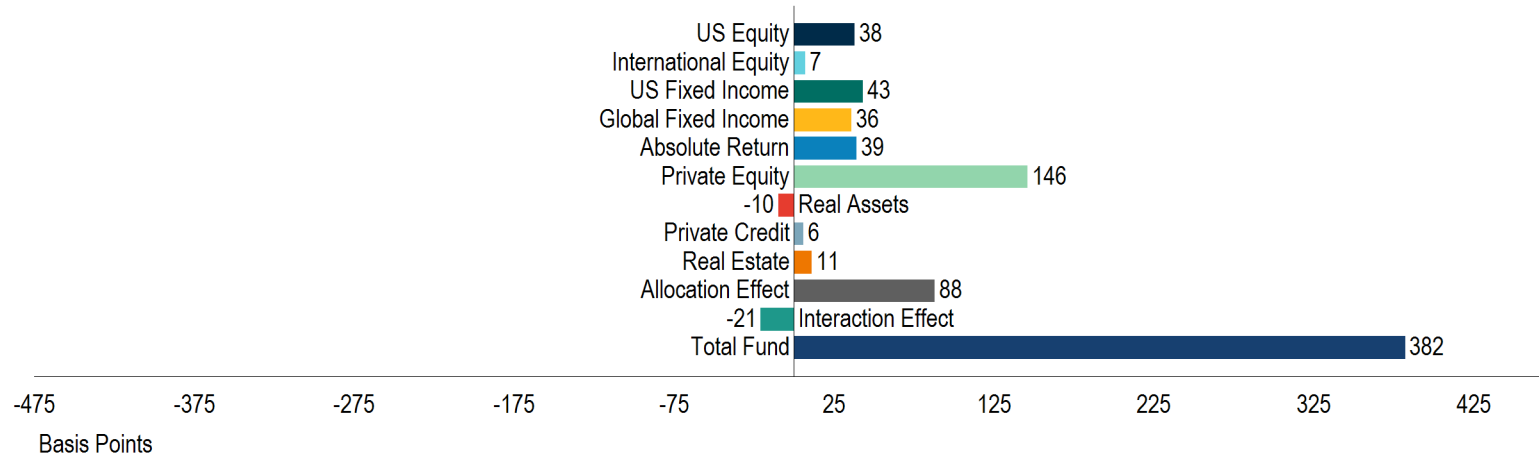
Period Ending: September 30, 2021



	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	8.65%	8.13%	0.52%	0.13%	0.08%	0.02%	0.23%
International Equity	3.32%	3.16%	0.16%	0.04%	-0.07%	0.00%	-0.03%
US Fixed Income	2.57%	1.88%	0.69%	0.09%	-0.04%	0.00%	0.06%
Global Fixed Income	-0.85%	-0.27%	-0.58%	-0.02%	0.01%	-0.01%	-0.01%
Absolute Return	6.11%	3.67%	2.44%	0.22%	0.04%	-0.06%	0.21%
Private Equity	24.57%	14.55%	10.02%	0.73%	0.04%	-0.01%	0.76%
Real Assets	6.51%	4.81%	1.69%	0.08%	0.00%	0.00%	0.08%
Private Credit	5.29%	3.49%	1.81%	0.08%	0.07%	-0.05%	0.10%
Real Estate	11.41%	10.78%	0.63%	0.05%	-0.13%	-0.01%	-0.10%
Total	7.18%	5.88%	1.30%	1.40%	0.02%	-0.11%	1.30%

Total Fund
Performance Attribution (One Year)

Period Ending: September 30, 2021

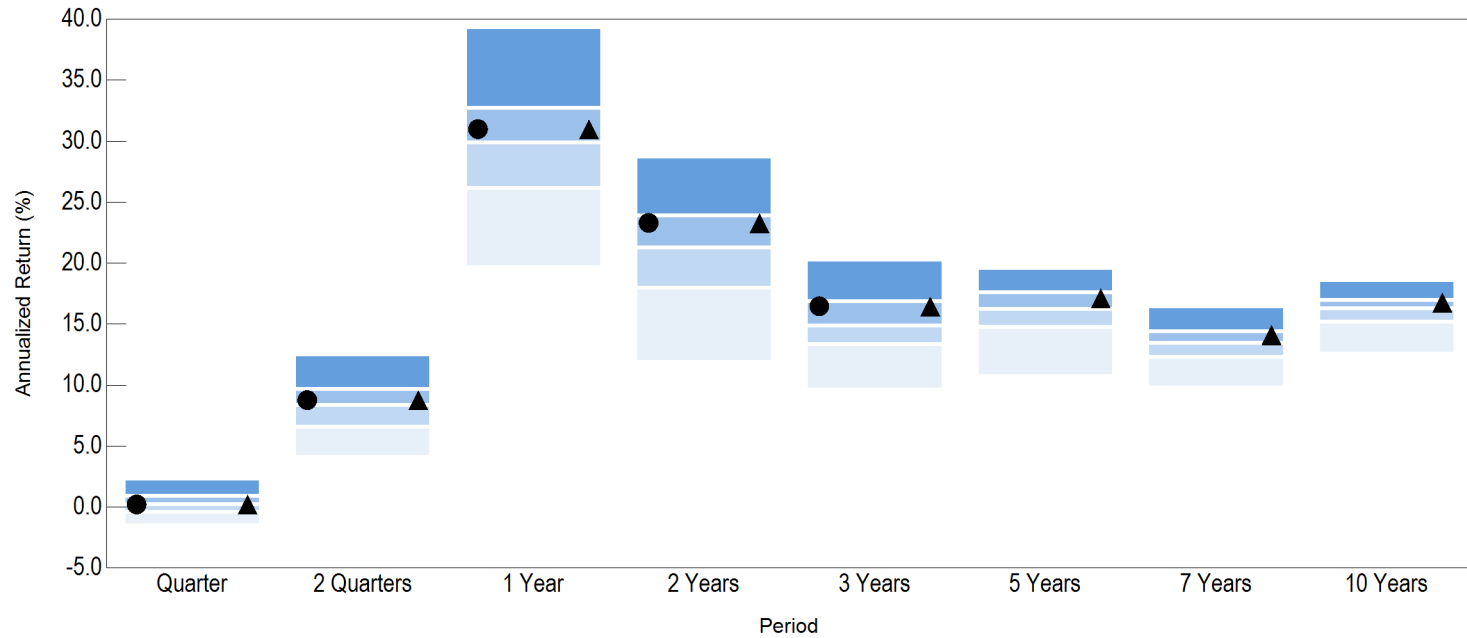


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	33.50%	31.87%	1.62%	0.38%	0.33%	0.04%	0.75%
International Equity	26.03%	25.68%	0.34%	0.07%	0.12%	0.02%	0.21%
US Fixed Income	1.82%	-0.90%	2.72%	0.43%	0.06%	-0.01%	0.47%
Global Fixed Income	6.35%	-3.33%	9.68%	0.36%	-0.21%	0.13%	0.28%
Absolute Return	18.47%	14.35%	4.12%	0.39%	0.14%	-0.10%	0.42%
Private Equity	62.50%	41.47%	21.03%	1.46%	0.06%	-0.24%	1.28%
Real Assets	29.06%	30.77%	-1.71%	-0.10%	-0.03%	0.01%	-0.12%
Private Credit	11.66%	10.29%	1.37%	0.06%	0.41%	-0.03%	0.44%
Real Estate	15.86%	14.59%	1.27%	0.11%	0.01%	-0.02%	0.10%
Total	25.50%	21.68%	3.82%	3.15%	0.88%	-0.21%	3.82%

US Effective Style Map



eV US Large Cap Core Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.34		12.51		39.31		28.73		20.28		19.59		16.42		18.58	
25th Percentile	0.95		9.70		32.78		23.95		16.93		17.65		14.42		17.01	
Median	0.26		8.39		29.92		21.30		14.94		16.30		13.52		16.32	
75th Percentile	-0.34		6.64		26.19		18.00		13.38		14.83		12.35		15.24	
95th Percentile	-1.49		4.16		19.72		11.91		9.66		10.78		9.81		12.59	
# of Portfolios	324		324		324		320		314		291		273		234	
● BlackRock Russell 1000 Index Fund	0.22	(52)	8.77	(44)	30.99	(41)	23.30	(33)	16.47	(32)	--	(--)	--	(--)	--	(--)
▲ Russell 1000	0.21	(53)	8.76	(44)	30.96	(41)	23.26	(33)	16.43	(33)	17.11	(34)	14.09	(33)	16.76	(34)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,025	1,025
Weighted Avg. Market Cap. (\$B)	497.1	497.9
Median Market Cap. (\$B)	15.5	15.5
Price To Earnings	24.6	24.7
Price To Book	4.5	4.5
Price To Sales	3.5	3.5
Return on Equity (%)	24.8	24.8
Yield (%)	1.4	1.4

Top Holdings

APPLE INC	5.4%
MICROSOFT CORP	5.2%
AMAZON.COM INC	3.5%
META PLATFORMS INC	2.0%
ALPHABET INC	2.0%
ALPHABET INC	1.8%
TESLA INC	1.5%
BERKSHIRE HATHAWAY INC	1.2%
NVIDIA CORPORATION	1.2%
JPMORGAN CHASE & CO	1.2%

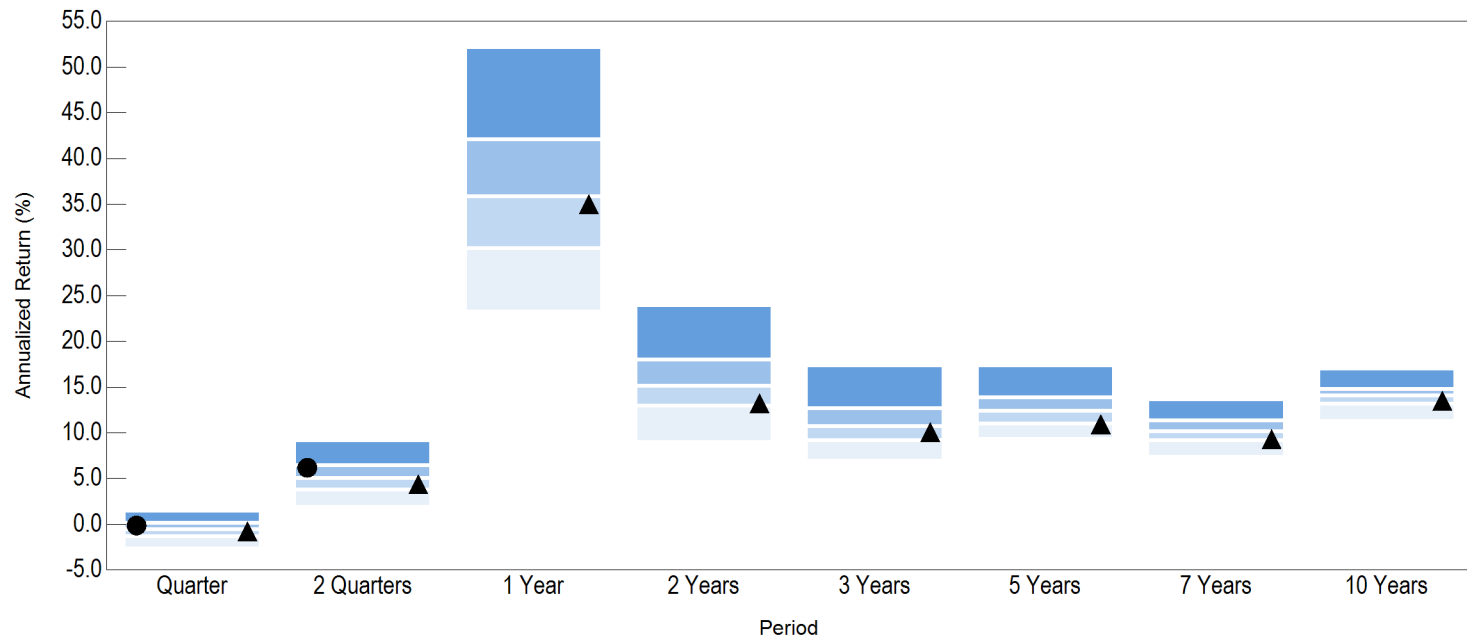
Best Performers

	Return %
STATE AUTO FINANCIAL CORP (STFC)	198.2%
FULCRUM THERAPEUTICS INC (FULC)	169.2%
IVERIC BIO INC (ISEE)	157.4%
UPSTART HOLDINGS INC (UPST)	153.4%
KADMON HOLDINGS INC (KDMN)	125.1%
GREENSKY INC (GSKY)	101.4%
DYNAVAX TECHNOLOGIES CORP (DVAX)	95.0%
GRID DYNAMICS HOLDINGS INC (GDYN)	94.4%
Peabody Energy Corp (BTU)	86.5%
TRILLIUM THERAPEUTICS INC (TRIL)	81.0%

Worst Performers

	Return %
FORTE BIOSCIENCES INC (FBRX)	-91.2%
EARGO INC COMMON STOCK (EAR)	-83.1%
SESEN BIO INC (SESN)	-82.8%
ARDELYX INC (ARDX)	-82.6%
MedAvail Holdings Inc (MDVL)	-76.2%
SERES THERAPEUTICS INC (MCRB)	-70.8%
ONTRAK INC (OTRK)	-69.1%
INNOVAGE HOLDING CORP. COM UDS0.00	-69.0%
ASHFORD HOSPITALITY TRUST INC (AHT)	-67.7%
SILVERBACK THERAPEUTICS INC	-67.7%

eV US Large Cap Value Equity Gross Return Comparison



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.48	9.20	52.15	23.92	17.38	17.37	13.66	17.03								
25th Percentile	0.21	6.49	42.12	18.05	12.76	13.91	11.41	14.85								
Median	-0.53	5.09	35.92	15.22	10.75	12.43	10.25	14.11								
75th Percentile	-1.27	3.87	30.27	13.02	9.23	11.05	9.24	13.21								
95th Percentile	-2.58	1.94	23.33	8.99	7.02	9.35	7.45	11.36								
# of Portfolios	341	341	340	336	332	315	302	273								
● Aristotle	-0.13	(38)	6.18	(30)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 1000 Value	-0.78	(61)	4.39	(64)	35.01	(54)	13.24	(74)	10.07	(65)	10.94	(77)	9.32	(74)	13.51	(70)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	44	848
Weighted Avg. Market Cap. (\$B)	177.8	156.3
Median Market Cap. (\$B)	42.1	13.8
Price To Earnings	21.0	18.7
Price To Book	3.2	2.6
Price To Sales	3.2	2.4
Return on Equity (%)	18.2	14.9
Yield (%)	1.5	2.0

Top Holdings

DANAHER CORP	4.7%
MICROSOFT CORP	4.2%
ADOBE INC	4.2%
SONY GROUP CORPORATION	3.6%
CAPITAL ONE FINANCIAL CORP.	3.6%
ANSYS INC	3.2%
MICROCHIP TECHNOLOGY INC	2.9%
JOHNSON CONTROLS INTERNATIONAL PLC	2.8%
THE PNC FINANCIAL SERVICES GROUP INC	2.8%
LENNAR CORP	2.8%

Best Performers

	Return %
COTERRA ENERGY INC (CTRA)	25.5%
ALCON INC (ALC)	14.5%
SONY GROUP CORPORATION (SONY)	13.7%
DANAHER CORP (DHR)	13.5%
CHUBB LTD (CB)	9.6%
MITSUBISHI UFJ FINANCIAL GROUP (MUFG)	9.4%
EAST WEST BANCORP INC (EWBC)	8.7%
SUN COMMUNITIES INC. (SUI)	8.5%
TYSON FOODS INC. (TSN)	7.6%
CULLEN/FROST BANKERS INC (CFR)	6.6%

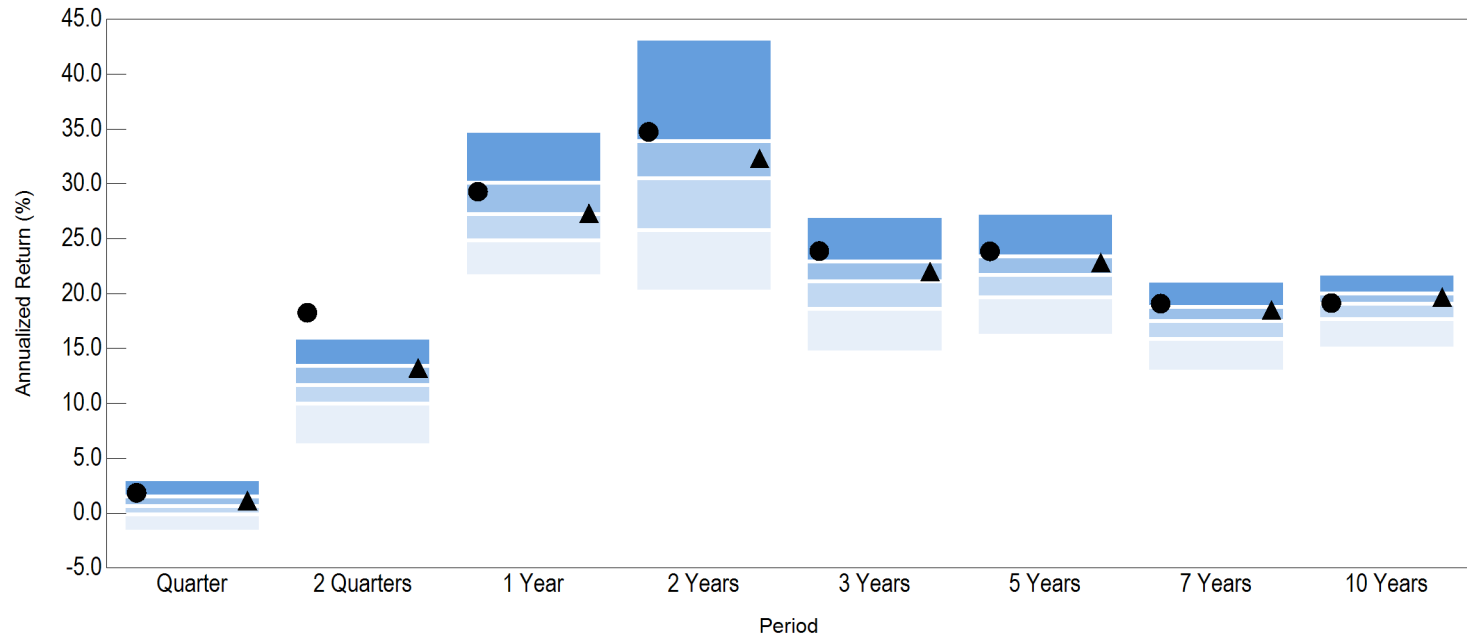
Worst Performers

	Return %
PHILLIPS 66 (PSX)	-17.3%
TWITTER INC (TWTR)	-12.2%
AMGEN INC (AMGN)	-12.1%
RPM INTERNATIONAL INC (RPM)	-12.1%
PAYPAL HOLDINGS INC (PYPL)	-10.7%
CROWN CASTLE INTERNATIONAL CORP (CCI)	-10.5%
NOVARTIS AG (NVS)	-10.4%
WALGREENS BOOTS ALLIANCE INC (WBA)	-9.7%
QUALCOMM INC. (QCOM)	-9.3%
PARKER-HANNIFIN CORP (PH)	-8.6%

Aristotle Performance Attribution vs. Russell 1000 Value

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.16%	0.25%	0.00%	-0.08%	2.16%	-2.53%	3.44%	4.58%			
Materials	-0.28%	-0.04%	-0.20%	-0.03%	-6.10%	-4.99%	6.71%	3.84%			
Industrials	0.30%	0.30%	0.00%	0.01%	-1.42%	-3.77%	12.35%	12.13%			
Consumer Discretionary	0.33%	0.25%	-0.06%	0.14%	2.16%	-2.49%	8.26%	5.36%			
Consumer Staples	0.14%	0.15%	0.00%	-0.02%	0.82%	-1.25%	6.61%	7.20%			
Health Care	0.14%	0.22%	-0.04%	-0.04%	1.52%	0.29%	14.36%	17.50%			
Financials	0.15%	0.35%	-0.14%	-0.05%	4.19%	2.46%	18.44%	21.08%			
Information Technology	-0.07%	0.06%	-0.14%	0.02%	-2.08%	-2.40%	19.01%	10.34%			
Communication Services	-0.06%	-0.80%	0.16%	0.58%	-12.24%	-3.23%	2.39%	8.57%			
Utilities	-0.10%	--	-0.10%	--	--	1.34%	0.00%	4.84%			
Real Estate	-0.23%	-0.23%	0.01%	-0.01%	-2.72%	2.20%	4.96%	4.56%			
Cash	0.00%	0.00%	0.00%	0.00%	0.01%	--	3.46%	0.00%			
Portfolio	0.50%	=	0.50%	+	-0.50%	+	0.50%	-0.26%	-0.77%	100.00%	100.00%

eV US Large Cap Growth Equity Gross Return Comparison



	Return (Rank)															
	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	3.05	15.95	34.82	43.22	27.02	27.32	21.18	21.80								
25th Percentile	1.55	13.44	30.17	33.92	22.97	23.44	18.83	20.07								
Median	0.68	11.70	27.30	30.54	21.17	21.75	17.55	19.10								
75th Percentile	-0.11	9.98	24.89	25.84	18.65	19.70	15.93	17.73								
95th Percentile	-1.65	6.22	21.64	20.22	14.69	16.17	12.90	15.03								
# of Portfolios	260	260	260	257	254	236	227	210								
● TCW	1.86	(15)	18.26	(2)	29.29	(30)	34.74	(19)	23.88	(19)	23.86	(24)	19.09	(22)	19.14	(49)
▲ Russell 1000 Growth	1.16	(37)	13.23	(28)	27.32	(50)	32.33	(36)	22.00	(39)	22.84	(36)	18.51	(35)	19.68	(36)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	34	500
Weighted Avg. Market Cap. (\$B)	422.2	815.3
Median Market Cap. (\$B)	122.0	19.5
Price To Earnings	51.3	34.6
Price To Book	11.1	12.8
Price To Sales	9.7	6.2
Return on Equity (%)	32.2	43.1
Yield (%)	0.3	0.7
Beta	1.0	1.0

Top Holdings

ALPHABET INC	6.9%
AMAZON.COM INC	6.4%
ADOBE INC	6.1%
SERVICENOW INC	6.0%
PAYPAL HOLDINGS INC	5.1%
META PLATFORMS INC	5.0%
NVIDIA CORPORATION	4.9%
SALESFORCE.COM INC	4.4%
VISA INC	4.2%
AMERICAN TOWER CORP	3.9%

Best Performers

	Return %
DEXCOM INC (DXCM)	28.1%
SNOWFLAKE INC (SNOW)	25.1%
NETFLIX INC (NFLX)	15.6%
COSTCO WHOLESALE CORP (COST)	13.8%
SERVICENOW INC (NOW)	13.2%
SALESFORCE.COM INC (CRM)	11.0%
ALIGN TECHNOLOGY INC (ALGN)	8.9%
ASML HOLDING NV (ASML)	7.9%
ALPHABET INC (GOOG)	6.3%
WASTE CONNECTIONS INC. (WCN)	5.6%

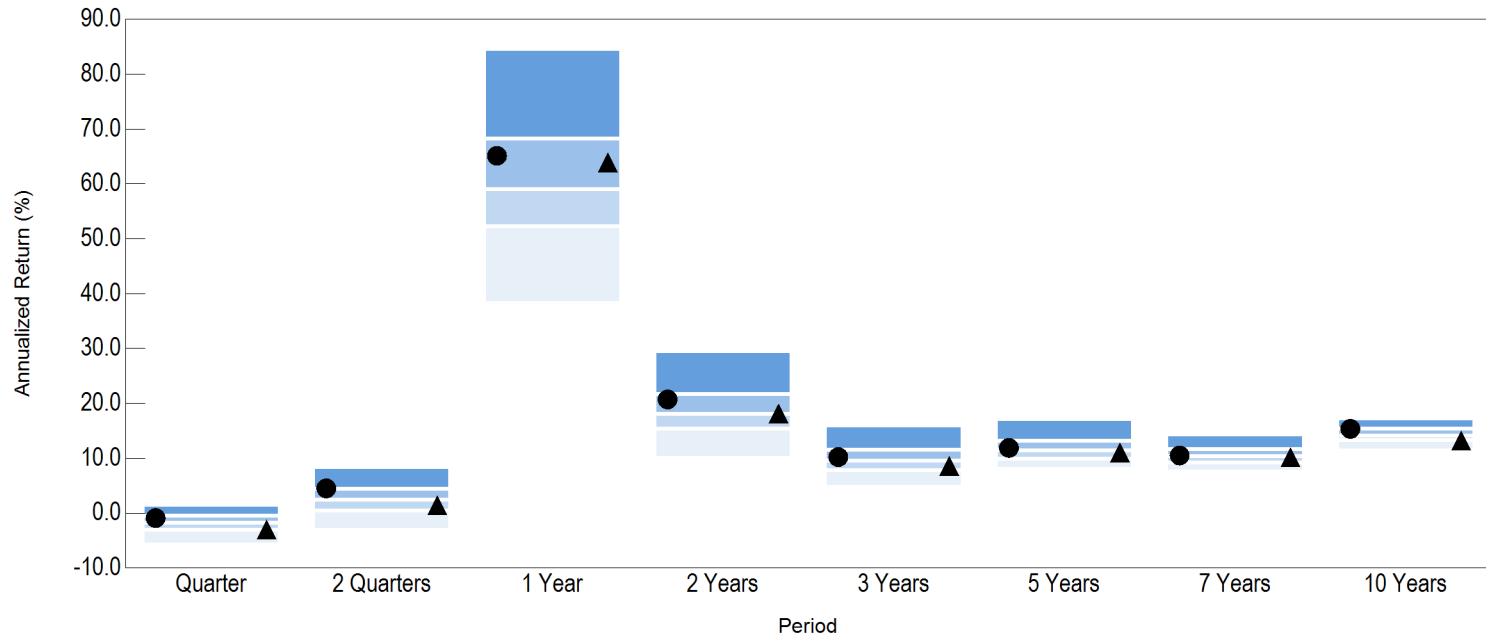
Worst Performers

	Return %
TWILIO INC (TWLO)	-19.1%
ILLUMINA INC (ILMN)	-14.3%
PAYPAL HOLDINGS INC (PYPL)	-10.7%
TRADE DESK INC (THE) (TTD)	-9.1%
NIKE INC (NKE)	-5.8%
MASTERCARD INC (MA)	-4.7%
VISA INC (V)	-4.6%
AMAZON.COM INC (AMZN)	-4.5%
META PLATFORMS INC (FB)	-2.4%
ADOBE INC (ADBE)	-1.7%

TCW Performance Attribution vs. Russell 1000 Growth

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.01%	--	-0.01%	--	--	0.98%	0.00%	0.24%			
Materials	0.04%	--	0.04%	--	--	-2.90%	0.00%	1.03%			
Industrials	0.61%	0.62%	-0.01%	0.00%	3.66%	-5.99%	6.31%	6.37%			
Consumer Discretionary	-0.07%	-0.28%	0.09%	0.12%	-1.48%	0.08%	10.55%	18.52%			
Consumer Staples	0.29%	0.49%	0.01%	-0.22%	13.78%	0.39%	2.11%	3.88%			
Health Care	0.42%	0.23%	0.10%	0.09%	6.15%	3.60%	12.91%	9.07%			
Financials	-0.13%	-0.12%	0.06%	-0.06%	1.69%	7.17%	3.40%	2.33%			
Information Technology	-0.59%	-0.60%	0.00%	0.01%	0.43%	1.80%	43.11%	44.14%			
Communication Services	0.34%	0.30%	0.01%	0.03%	4.53%	2.11%	13.76%	12.64%			
Utilities	0.00%	--	0.00%	--	--	0.03%	0.00%	0.03%			
Real Estate	-0.07%	0.02%	-0.13%	0.04%	-1.31%	-2.26%	5.84%	1.74%			
Cash	-0.01%	0.00%	-0.01%	0.00%	0.01%	--	2.01%	0.00%			
Portfolio	0.82%	=	0.66%	+	0.14%	+	0.01%	1.97%	1.15%	100.00%	100.00%

eV US Small Cap Value Equity Gross Return Comparison



Return (Rank)

5th Percentile	1.50	8.39	84.59	29.43	15.98	17.13	14.26	17.22
25th Percentile	-0.42	4.53	68.32	21.80	11.61	13.25	11.71	15.43
Median	-1.72	2.56	59.13	18.13	9.59	11.50	10.46	14.22
75th Percentile	-2.99	0.55	52.34	15.50	7.86	9.96	9.31	13.34
95th Percentile	-5.64	-2.97	38.35	10.08	4.81	8.12	7.63	11.47
# of Portfolios	212	212	212	210	206	198	188	176
● Kennedy	-0.89 (30)	4.53 (26)	65.12 (33)	20.72 (33)	10.22 (40)	11.90 (47)	10.51 (49)	15.37 (26)
▲ Russell 2000 Value	-2.98 (75)	1.44 (65)	63.92 (35)	18.12 (51)	8.58 (64)	11.03 (62)	10.19 (57)	13.22 (76)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	253	1,426
Weighted Avg. Market Cap. (\$B)	3.2	2.9
Median Market Cap. (\$B)	2.1	1.1
Price To Earnings	15.9	13.8
Price To Book	2.0	1.8
Price To Sales	1.5	1.4
Return on Equity (%)	7.1	3.8
Yield (%)	1.3	1.7
Beta	1.0	1.0

Top Holdings

GOODYEAR TIRE & RUBBER CO	1.1%
PDC ENERGY INC	1.1%
TRONOX HOLDINGS PLC	1.1%
METROPOLITAN BANK HOLDING CORP	1.0%
PACWEST BANCORP	1.0%
BANCORP INC (THE)	0.9%
SCRIPPS (E.W.) CO (THE)	0.9%
TEXAS CAPITAL BANCSHARES INC	0.9%
BUILDERS FIRSTSOURCE INC	0.8%
WILLSCOT MOBILE MINI HOLDINGS CORP	0.8%

Best Performers

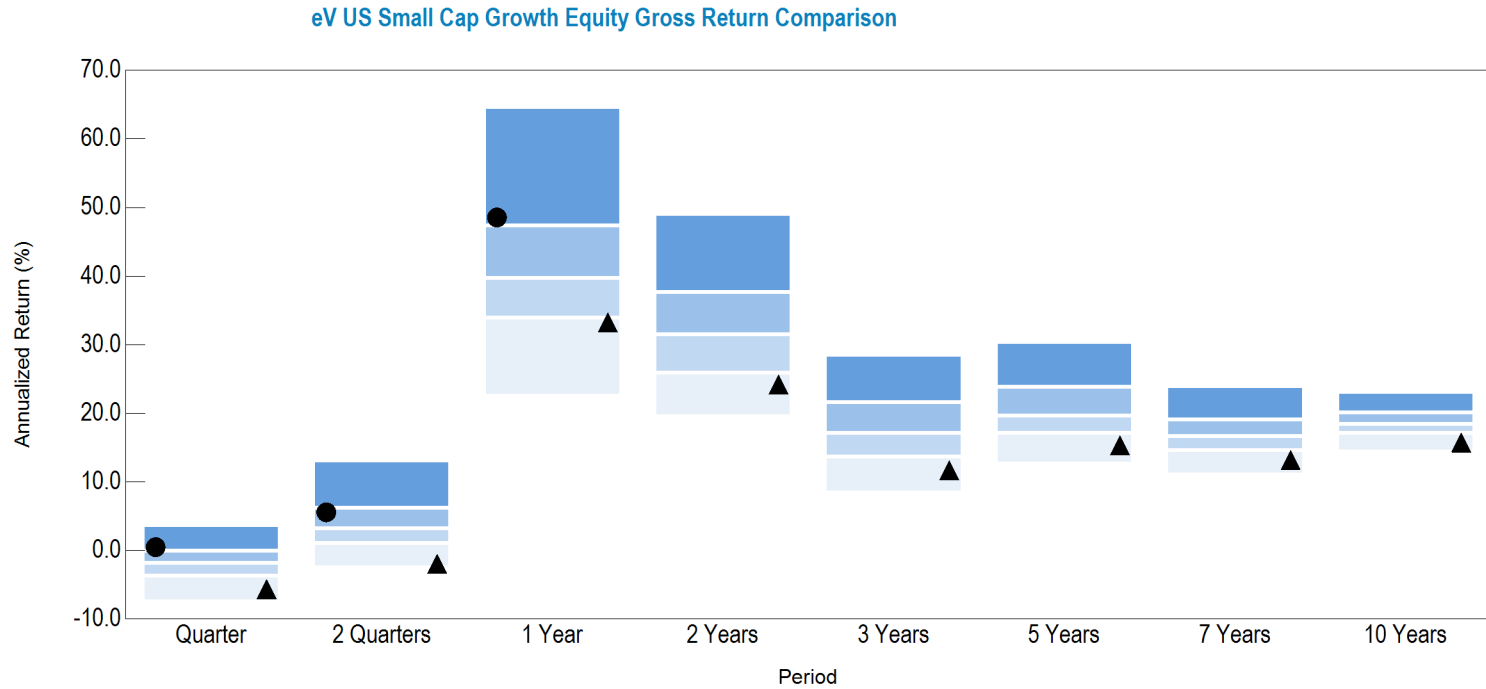
	Return %
KADMON HOLDINGS INC (KDMN)	125.1%
KEZAR LIFE SCIENCES INC (KZR)	59.1%
ASPEN AEROGELS INC (ASPN)	53.8%
VERITIV CORP (VRTV)	45.8%
CITY OFFICE REIT INC (CIO)	45.5%
PERFICIENT INC (PRFT)	43.9%
METROPOLITAN BANK HOLDING CORP (MCB)	40.0%
ARC DOCUMENT SOLUTIONS INC (ARC)	38.5%
RANGE RESOURCES CORP. (RRC)	35.0%
TRIUMPH BANCORP INC (TBK)	34.9%

Worst Performers

	Return %
ARDELYX INC (ARDX)	-82.6%
REGIS CORP (RGS)	-62.8%
CALAVO GROWERS INC (CVGW)	-39.7%
AIRGAIN INC (AIRG)	-38.8%
HYDROFARM HOLDINGS GROUP INC COMMON STOCK USD (HYFM)	-36.0%
HIMAX TECHNOLOGIES INC (HIMX)	-36.0%
DMC GLOBAL INC (BOOM)	-34.3%
FARMER BROTHERS CO (FARM)	-33.7%
SI-BONE INC (SIBN)	-31.9%
FATE THERAPEUTICS INC (FATE)	-31.7%

Kennedy Performance Attribution vs. Russell 2000 Value

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.33%	-0.31%	-0.09%	0.07%	-1.68%	2.97%	5.13%	6.65%			
Materials	0.05%	0.06%	-0.05%	0.04%	-3.40%	-4.78%	7.33%	4.65%			
Industrials	0.39%	0.34%	-0.01%	0.06%	-1.06%	-3.32%	17.94%	15.18%			
Consumer Discretionary	0.12%	0.20%	-0.15%	0.07%	-5.61%	-7.95%	11.28%	8.41%			
Consumer Staples	0.05%	0.05%	0.00%	0.00%	-2.70%	-4.40%	2.92%	2.81%			
Health Care	0.13%	-0.13%	0.20%	0.06%	-7.76%	-6.59%	6.17%	11.43%			
Financials	0.69%	0.81%	-0.07%	-0.05%	5.18%	2.01%	23.95%	25.40%			
Information Technology	-0.16%	-0.06%	-0.05%	-0.04%	-5.62%	-4.44%	8.62%	5.39%			
Communication Services	0.47%	0.26%	0.40%	-0.18%	-9.68%	-15.63%	1.31%	4.40%			
Utilities	-0.03%	-0.11%	0.03%	0.05%	-6.57%	-4.29%	2.66%	4.65%			
Real Estate	0.36%	0.49%	-0.04%	-0.09%	3.50%	-0.92%	9.03%	11.03%			
Cash	0.10%	0.00%	0.10%	0.00%	0.01%	--	3.65%	0.00%			
Portfolio	1.84%	=	1.59%	+	0.26%	+	-0.01%	-0.95%	-2.79%	100.00%	100.00%



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	3.67	13.12	64.60	49.03	28.45	30.32	23.89	23.08								
25th Percentile	0.03	6.29	47.41	37.76	21.69	23.90	19.18	20.16								
Median	-1.74	3.27	39.78	31.61	17.23	19.74	16.76	18.52								
75th Percentile	-3.58	1.16	34.00	26.01	13.76	17.18	14.64	17.16								
95th Percentile	-7.32	-2.37	22.63	19.58	8.49	12.67	11.15	14.46								
# of Portfolios	160	160	160	157	156	150	143	134								
● William Blair Small Cap Growth	0.48	(23)	5.56	(32)	48.54	(21)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 2000 Growth	-5.65	(91)	-1.96	(94)	33.26	(79)	24.18	(84)	11.70	(89)	15.34	(91)	13.19	(89)	15.74	(88)

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	3,351	1,224
Weighted Avg. Market Cap. (\$B)	274.9	3.8
Median Market Cap. (\$B)	12.6	1.4
Price To Earnings	21.4	26.1
Price To Book	3.5	5.1
Price To Sales	2.3	2.8
Return on Equity (%)	17.5	-2.2
Yield (%)	1.8	0.4

Top Holdings

CAMECO CORP	2.1%
BUILDERS FIRSTSOURCE INC	2.0%
THE BEAUTY HEALTH CO COMMON STOCK	2.0%
BROOKS AUTOMATION INC	2.0%
CASELLA WASTE SYSTEMS INC	2.0%
MONTROSE ENVIRONMENTAL GROUP INC	1.9%
DUCOMMUN INC	1.9%
BRINK'S CO (THE)	1.9%
SKYLINE CHAMPION CORP	1.9%
BWX TECHNOLOGIES INC	1.8%

Best Performers

	Return %
GRID DYNAMICS HOLDINGS INC (GDYN)	94.4%
SITIME CORP (SITM)	61.3%
RUSH STREET INTERACTIVE INC	56.7%
THE BEAUTY HEALTH CO COMMON STOCK	54.6%
GOGO INC (GOGO)	52.0%
PURE STORAGE INC (PSTG)	28.8%
PDF SOLUTIONS INC (PDFS)	26.7%
BUILDERS FIRSTSOURCE INC (BLDR)	21.3%
INSPIRE MEDICAL SYSTEMS INC (INSP)	20.5%
CASELLA WASTE SYSTEMS INC (CWST)	19.7%

Worst Performers

	Return %
INNOVAGE HOLDING CORP. COM UDS0.00	-69.0%
STEM INC	-33.7%
PAE INCORPORATED (PAE)	-32.8%
CAREDX INC (CDNA)	-30.8%
AERIE PHARMACEUTICALS INC (AERI)	-28.8%
MERCURY SYSTEMS INC (MRCY)	-28.5%
BUTTERFLY NETWORK INC	-27.9%
PACIFIC BIOSCIENCES OF CALIFORNIA INC (PACB)	-26.9%
AXOGEN INC (AXGN)	-26.9%
PROS HOLDINGS INC (PRO)	-22.1%

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

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.37%	0.12%	0.31%	-0.06%	6.29%	-1.09%	2.86%	2.05%			
Materials	0.04%	0.07%	0.01%	-0.05%	-4.00%	-6.23%	1.36%	2.93%			
Industrials	-0.58%	-0.65%	0.53%	-0.46%	-4.74%	-0.04%	24.03%	13.27%			
Consumer Discretionary	1.24%	2.02%	0.04%	-0.82%	7.48%	-6.12%	9.37%	15.24%			
Consumer Staples	1.06%	1.15%	-0.01%	-0.08%	26.86%	-5.80%	2.81%	3.59%			
Health Care	0.90%	0.74%	0.27%	-0.11%	-9.39%	-11.62%	26.04%	30.46%			
Financials	0.08%	0.15%	-0.02%	-0.04%	1.23%	-1.28%	4.45%	4.92%			
Information Technology	2.04%	1.82%	0.07%	0.15%	7.46%	-1.08%	23.39%	21.37%			
Communication Services	0.83%	0.83%	0.03%	-0.03%	18.14%	-11.52%	2.30%	2.97%			
Utilities	-0.03%	--	-0.03%	--	--	6.91%	0.00%	0.27%			
Real Estate	0.20%	0.28%	-0.03%	-0.06%	9.59%	-0.18%	2.27%	2.80%			
Cash	0.13%	0.00%	0.13%	0.00%	0.01%	--	1.13%	0.00%			
Unclassified	0.00%	--	0.00%	--	--	-5.52%	0.00%	0.13%			
Portfolio	6.27%	=	6.52%	+	1.31%	+	-1.56%	0.75%	-5.52%	100.00%	100.00%

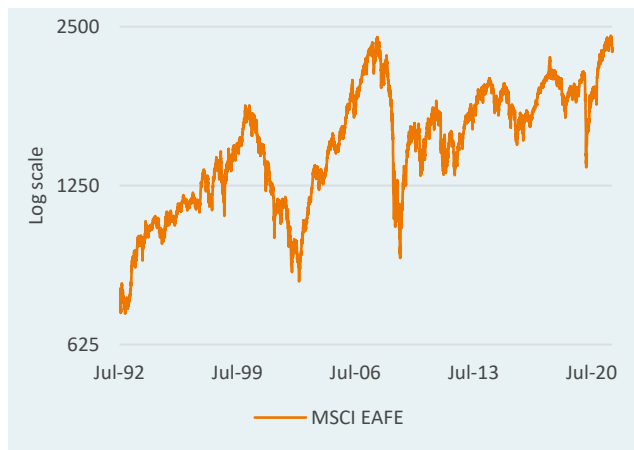
International developed equity

International equities experienced slight losses of -0.4% (MSCI EAFE Index) during the quarter on an unhedged currency basis, lagging U.S. equities but outperforming emerging markets. Currency movement during the quarter resulted in a loss of -1.9% relative to those investors with a currency hedging program.

Japanese equities (MSCI Japan +4.6%) rallied on strong earnings, and on the news that Prime Minister Suga's successor, Fumio Kishida, would be less likely to pursue tax hikes on investment income. Japan's vaccination rate also improved considerably, and ended the quarter in line with major European countries, laying the groundwork for a broader reopening of the economy.

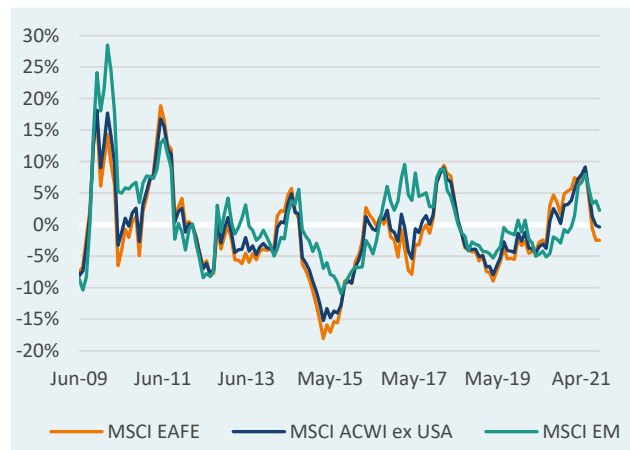
The strong performance of Japanese equities helped to offset for international developed equity investors the negative returns delivered by European equities (MSCI Europe -1.6%), which faced headwinds from a significant weakening in the pound sterling (-2.4%) and euro (-2.3%) relative to the U.S. dollar. According to futures market positioning data from the CFTC, more people are betting that the euro will depreciate in value than those betting that it will appreciate in value, for the first time since March 2020.

INTERNATIONAL DEVELOPED EQUITIES



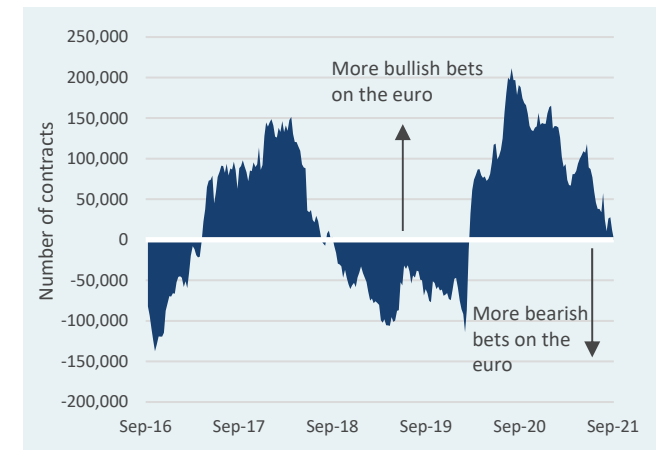
Source: MSCI, as of 9/30/21

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/21

EURO NET FUTURES POSITIONING



Source: CFTC, non-commercial positioning, as of 9/28/21

Emerging market equity

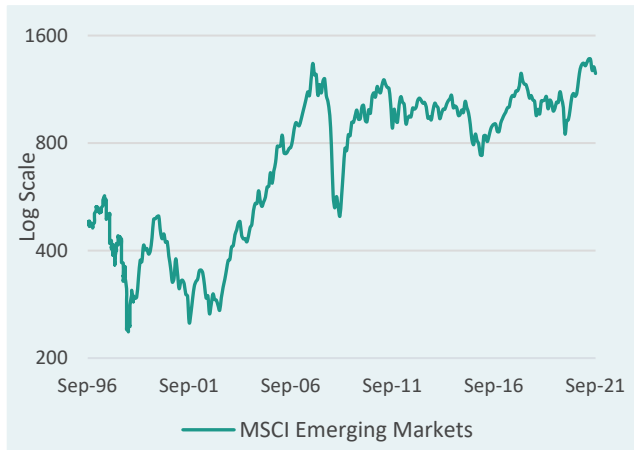
Emerging market equities saw large losses (MSCI EM -8.1%) on an unhedged currency basis, underperforming other markets during the third quarter. China has dragged down emerging markets performance considerably, producing losses of -18.2% in Q3 relative to ex-China emerging market performance of -2.0%, and producing losses of -7.2% over the past year relative to ex-China emerging market performance of 36.9% (MSCI China vs. MSCI Emerging Markets ex-China). China comprises 34% of the MSCI Emerging Markets Index.

Latin American emerging markets have taken the lead over Asian emerging markets over the past year, a notable change from strong Asian

leadership in recent years (MSCI EM Latin America +27.3%, MSCI EM Asia +13.9%)

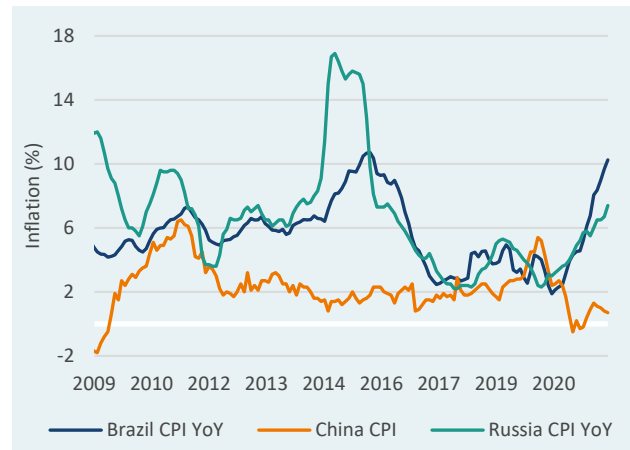
Inflation in Brazil has risen to 10.3%, and in Russia to 7.4%, which has generated responses from central banks. Brazil has hiked their central bank rate from 2.00% to 6.25% to battle rising prices, while Russia has hiked its rate from 4.25% to 6.75% year-to-date. While inflation rate in the U.S. is one of the highest in the developed world, emerging markets are also facing tough decisions regarding the balance between economic recovery and the risks of uncomfortably high inflation.

EMERGING MARKET EQUITY



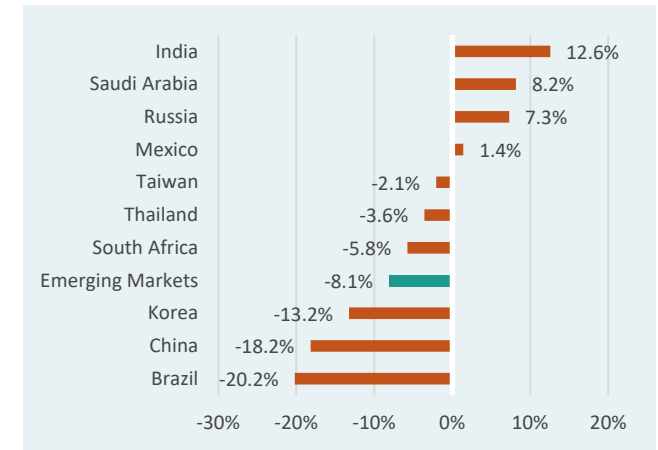
Source: MSCI, as of 9/30/21

INFLATION (YOY)



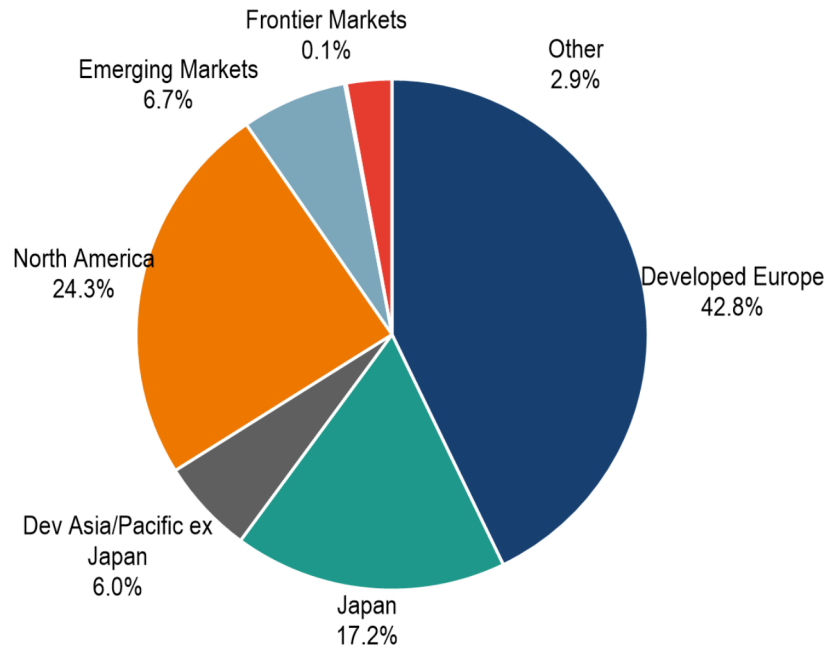
Source: Bloomberg, as of 9/30/21 or most recent data

Q3 PERFORMANCE – TOP 10 EM CONSTITUENTS

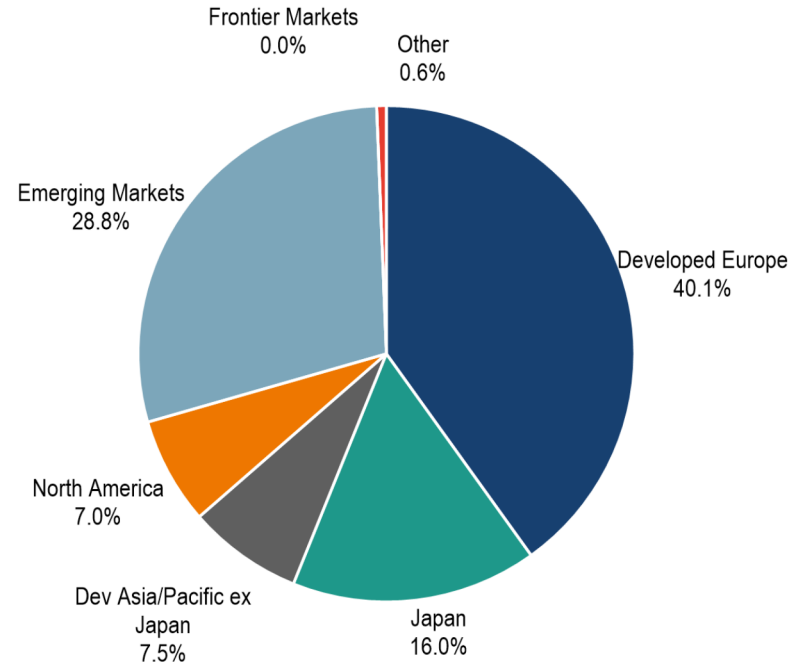


Source: Bloomberg, MSCI, as of 9/30/21, performance in USD terms

International Equity

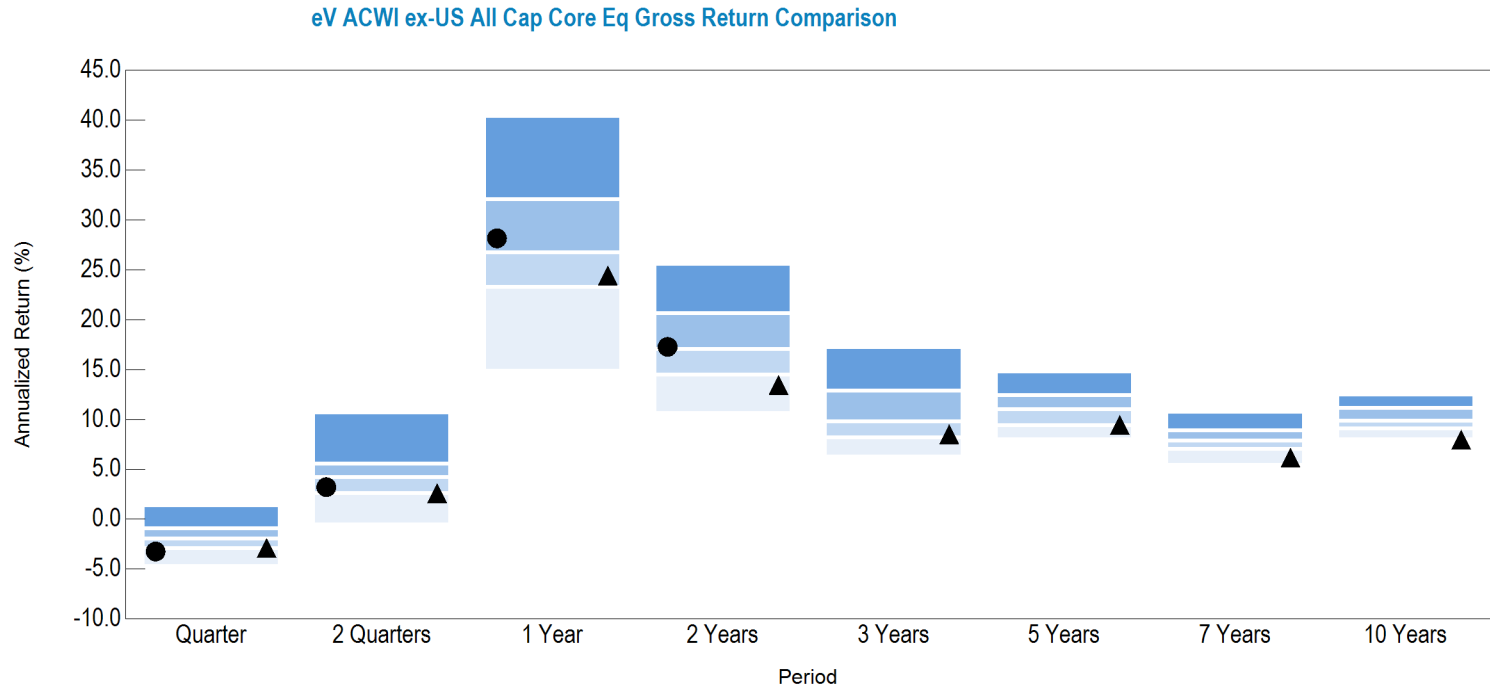


MSCI ACWI ex US IMI



ACWI ex-US All Cap Core Equity
Peer Universe Comparison

Period Ending: September 30, 2021



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
Return (Rank)																
5th Percentile	1.37		10.69		40.40		25.57		17.25		14.80		10.76		12.50	
25th Percentile	-0.89		5.61		32.12		20.72		12.91		12.51		8.95		11.21	
Median	-1.88		4.26		26.77		17.12		9.86		11.06		7.92		9.91	
75th Percentile	-2.87		2.65		23.31		14.52		8.27		9.46		7.08		9.16	
95th Percentile	-4.68		-0.47		14.91		10.66		6.31		8.07		5.49		8.04	
# of Portfolios	56		56		56		54		52		51		47		40	
● Bivium Intl Equity	-3.23	(80)	3.22	(69)	28.16	(46)	17.28	(48)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	-2.88	(76)	2.60	(77)	24.44	(73)	13.46	(81)	8.52	(70)	9.44	(76)	6.17	(91)	7.97	(97)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	348	2,348
Weighted Avg. Market Cap. (\$B)	73.6	94.6
Median Market Cap. (\$B)	12.1	10.3
Price To Earnings	17.5	15.8
Price To Book	3.2	2.7
Price To Sales	1.5	1.5
Return on Equity (%)	13.8	13.6
Yield (%)	2.0	2.6

Top Holdings

ISHARES CORE MSCI EMERGING MARKETS ETF	6.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.8%
ASML HOLDING NV	1.6%
AIRBUS SE	1.6%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.4%
DIAGEO PLC	1.4%
NOVO NORDISK 'B'	1.3%
DASSAULT SYST SHS	1.2%
LONZA GROUP AG, ZUERICH	1.2%
L'OREAL S.A., PARIS	1.1%

Best Performers

	Return %
ILIAD SA	44.2%
GAZPROM PJSC	37.0%
SAMHALLSBYGGNADSBOLAGET I NORDEN AB	32.9%
VANGUARD INTERNATIONAL SEMICONDUCTOR CORP	32.2%
AEGON NV	27.2%
ALUMINA LTD	26.8%
MISUMI GROUP INC	26.3%
RECRUIT HOLDINGS CO LTD	24.5%
RAFFLES MEDICAL GROUP LTD	22.6%
JBS SA	21.8%

Worst Performers

	Return %
C&A MODAS S A	-53.6%
SANDS CHINA LTD	-51.2%
STONECO LTD (STNE)	-48.2%
SSY GROUP LTD	-38.8%
MELCO RESORTS & ENTERTAINMENT LTD (MLCO)	-38.2%
FLATEXDEGIRO AG	-36.7%
QUALICORP CONSULTORIA E CORRETORA DE SEGUROS SA	-35.9%
GALAXY ENTERTAINMENT GROUP LTD	-35.8%
ALIBABA GROUP HOLDING LTD	-35.5%
CHINA LESSO GROUP HOLDINGS LTD	-34.4%

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	-0.21%	0.07%	-0.30%	0.01%	8.79%	7.15%	1.62%	4.55%			
Materials	0.15%	0.06%	0.03%	0.05%	-4.05%	-5.25%	7.62%	8.31%			
Industrials	0.22%	0.09%	0.13%	0.00%	1.42%	0.33%	15.84%	11.81%			
Consumer Discretionary	0.14%	-0.26%	0.28%	0.12%	-13.27%	-11.19%	11.06%	13.83%			
Consumer Staples	0.11%	0.14%	0.00%	-0.03%	-1.86%	-3.27%	8.85%	8.49%			
Health Care	0.13%	0.14%	0.02%	-0.03%	-0.21%	-1.81%	10.26%	9.30%			
Financials	-0.22%	-0.11%	-0.28%	0.17%	0.80%	1.34%	12.30%	18.61%			
Information Technology	-0.09%	-0.14%	0.01%	0.03%	-1.62%	-0.77%	14.23%	12.97%			
Communication Services	0.44%	0.33%	0.26%	-0.15%	-4.51%	-9.35%	2.73%	6.63%			
Utilities	0.00%	-0.04%	-0.03%	0.07%	-2.44%	-1.60%	1.29%	2.98%			
Real Estate	0.20%	0.21%	0.00%	-0.01%	2.68%	-5.65%	2.34%	2.52%			
Cash	0.03%	0.00%	0.03%	0.00%	0.01%	--	2.23%	0.00%			
Unclassified	-0.46%	0.00%	-0.40%	-0.07%	-5.68%	--	9.63%	0.00%			
Portfolio	0.42%	=	0.50%	+	-0.24%	+	0.16%	-2.31%	-2.73%	100.00%	100.00%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	1.97%	10.44%	0.98%	0.12%	-0.01%	0.12%	-0.02%	-0.08%	0.02%
Belgium	-5.87%	-5.61%	0.27%	0.59%	0.00%	0.01%	0.01%	0.00%	0.01%
Czech Republic*	--	16.24%	0.00%	0.03%	--	-0.01%	0.00%	--	-0.01%
Denmark	1.91%	2.71%	3.42%	1.60%	-0.01%	0.11%	-0.04%	-0.01%	0.04%
Finland	-0.88%	-3.07%	0.33%	0.65%	0.01%	0.00%	0.01%	-0.01%	0.01%
France	-2.12%	-1.57%	12.44%	7.10%	-0.04%	0.10%	-0.11%	-0.03%	-0.09%
Germany	-9.22%	-3.97%	2.24%	5.79%	-0.30%	0.03%	0.07%	0.19%	-0.02%
Greece*	-6.85%	4.70%	0.03%	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%
Hungary*	--	7.92%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
Ireland	11.54%	0.06%	1.13%	0.44%	0.04%	0.02%	0.01%	0.06%	0.14%
Italy	5.50%	-0.91%	1.47%	1.53%	0.10%	0.00%	0.00%	0.00%	0.09%
Luxembourg	5.54%	-2.72%	0.10%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
Netherlands	8.38%	3.56%	4.49%	2.69%	0.13%	0.13%	-0.05%	0.09%	0.30%
Norway	-1.07%	5.63%	0.91%	0.32%	-0.02%	0.05%	-0.01%	-0.04%	-0.02%
Poland*	13.93%	1.82%	0.37%	0.22%	0.03%	0.01%	-0.01%	0.02%	0.05%
Portugal	--	3.87%	0.00%	0.11%	--	-0.01%	0.00%	--	-0.01%
Russia*	22.35%	10.32%	0.52%	0.95%	0.13%	-0.05%	-0.01%	-0.06%	0.01%
Spain	-2.14%	-3.16%	1.40%	1.52%	0.02%	0.00%	0.00%	0.00%	0.02%
Sweden	-2.63%	-2.47%	2.62%	2.33%	0.00%	0.00%	-0.01%	0.00%	-0.01%
Switzerland	0.05%	-3.25%	7.61%	6.06%	0.21%	-0.02%	-0.02%	0.05%	0.22%
United Kingdom	-1.14%	-0.25%	9.38%	8.89%	-0.08%	0.02%	-0.01%	0.00%	-0.08%

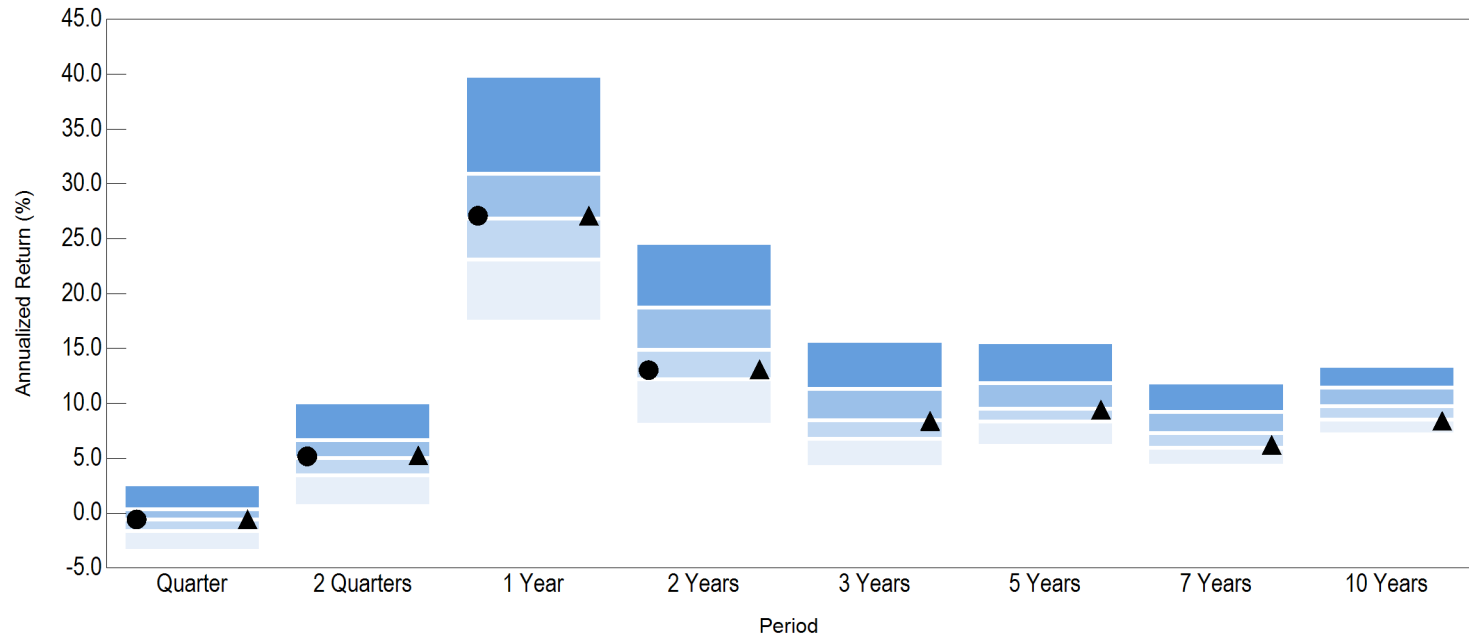
Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	-5.29%	-2.75%	1.69%	4.43%	-0.12%	-0.05%	0.09%	0.07%	0.00%
China*	-17.88%	-17.89%	2.24%	11.75%	0.00%	1.58%	0.01%	0.00%	1.59%
Hong Kong	-23.26%	-9.26%	4.71%	2.01%	-0.28%	-0.21%	0.00%	-0.38%	-0.88%
India*	-1.53%	12.83%	1.08%	3.11%	-0.44%	-0.28%	-0.01%	0.29%	-0.44%
Indonesia*	3.60%	10.06%	0.85%	0.35%	-0.02%	0.05%	0.01%	-0.03%	0.00%
Japan	4.18%	4.88%	13.68%	14.34%	-0.10%	-0.04%	0.00%	0.00%	-0.14%
Korea*	-10.43%	-12.71%	3.22%	4.15%	-0.06%	0.07%	0.16%	0.01%	0.18%
Malaysia*	0.29%	0.42%	0.06%	0.39%	0.00%	-0.01%	0.00%	0.00%	-0.01%
New Zealand	1.87%	2.58%	0.67%	0.15%	0.00%	0.02%	0.00%	0.00%	0.01%
Pakistan*	--	-17.25%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	-12.09%	-3.38%	0.15%	0.19%	-0.02%	0.00%	0.00%	0.00%	-0.01%
Singapore	3.40%	-0.03%	1.43%	0.66%	0.02%	0.02%	-0.01%	0.03%	0.06%
Taiwan*	-5.47%	-1.40%	2.50%	4.38%	-0.17%	0.01%	-0.01%	0.07%	-0.10%
Thailand*	-3.81%	-2.52%	0.07%	0.50%	-0.03%	-0.01%	0.02%	0.02%	0.00%
Americas									
Argentina*	--	22.10%	0.00%	0.04%	--	-0.01%	0.00%	--	-0.01%
Brazil*	-2.47%	-19.95%	1.18%	1.63%	0.31%	0.06%	0.01%	-0.08%	0.29%
Canada	-1.25%	-2.23%	5.97%	7.05%	0.07%	-0.01%	0.02%	-0.01%	0.07%
Chile*	--	-7.23%	0.00%	0.14%	--	-0.01%	0.01%	--	0.01%
Colombia*	--	10.94%	0.00%	0.05%	--	-0.01%	0.00%	--	-0.01%
Mexico*	-4.68%	1.79%	0.22%	0.55%	-0.04%	-0.02%	0.01%	0.02%	-0.02%
Peru*	--	-11.07%	0.00%	0.06%	--	0.01%	0.00%	--	0.01%
United States	-9.55%	0.31%	7.67%	0.00%	0.00%	0.11%	0.00%	-0.76%	-0.64%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.25%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Israel	6.56%	2.90%	0.30%	0.37%	0.01%	0.00%	0.00%	0.00%	0.01%
Kuwait*	--	9.06%	0.00%	0.16%	--	-0.02%	0.00%	--	-0.02%
Qatar*	--	7.30%	0.00%	0.20%	--	-0.02%	0.00%	--	-0.02%
Saudi Arabia*	--	8.24%	0.00%	0.90%	--	-0.08%	0.00%	--	-0.08%
South Africa*	-14.18%	-4.86%	0.15%	1.11%	-0.16%	-0.01%	0.05%	0.14%	0.02%
Turkey*	--	1.96%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
United Arab Emirates*	-9.74%	6.36%	0.10%	0.22%	-0.04%	-0.01%	0.00%	0.02%	-0.02%
Totals									
Americas	-5.63%	-5.00%	15.04%	9.51%	-0.20%	-0.05%	0.06%	-0.12%	-0.31%
Europe	0.29%	-1.08%	49.72%	41.05%	0.57%	0.18%	-0.18%	0.12%	0.69%
Asia/Pacific	-4.43%	-4.05%	32.34%	46.40%	-0.37%	0.28%	0.27%	0.11%	0.28%
Other	-2.01%	2.49%	0.54%	3.05%	-0.21%	-0.14%	0.06%	0.17%	-0.12%
Cash	0.01%	--	2.36%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-2.15%	-2.72%	100.00%	100.00%	-0.21%	0.30%	0.20%	0.29%	0.58%
Totals									
Developed	-1.61%	-0.45%	84.90%	68.74%	-0.97%	0.39%	-0.06%	-0.23%	-0.87%
Emerging*	-6.15%	-7.72%	12.73%	31.26%	0.41%	0.99%	0.26%	-0.24%	1.42%
Cash	0.01%	--	2.36%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%

eV All EAFE Equity Gross Return Comparison



	Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)			
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	2.61	10.07	39.83	24.63	15.68	15.53	11.86	13.38	2.61	10.07	39.83	24.63	15.68	15.53	11.86	13.38
25th Percentile	0.41	6.67	30.94	18.77	11.38	11.88	9.27	11.48	0.41	6.67	30.94	18.77	11.38	11.88	9.27	11.48
Median	-0.54	5.04	26.90	14.89	8.48	9.57	7.34	9.76	-0.54	5.04	26.90	14.89	8.48	9.57	7.34	9.76
75th Percentile	-1.59	3.45	23.15	12.24	6.78	8.38	6.01	8.55	-1.59	3.45	23.15	12.24	6.78	8.38	6.01	8.55
95th Percentile	-3.40	0.70	17.45	8.08	4.24	6.15	4.34	7.23	-3.40	0.70	17.45	8.08	4.24	6.15	4.34	7.23
# of Portfolios	390	390	390	382	373	346	302	253	390	390	390	382	373	346	302	253
● BlackRock MSCI World ex-US Index Fd A	-0.57 (51)	5.18 (47)	27.09 (48)	13.03 (67)	-- (--)	-- (--)	-- (--)	-- (--)	-0.57 (51)	5.18 (47)	27.09 (48)	13.03 (67)	-- (--)	-- (--)	-- (--)	-- (--)
▲ MSCI World ex US Gross	-0.56 (51)	5.26 (46)	27.10 (48)	13.09 (67)	8.41 (52)	9.42 (54)	6.22 (70)	8.41 (79)	-0.56 (51)	5.26 (46)	27.10 (48)	13.09 (67)	8.41 (52)	9.42 (54)	6.22 (70)	8.41 (79)

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	938	933
Weighted Avg. Market Cap. (\$B)	77.9	77.9
Median Market Cap. (\$B)	13.8	14.2
Price To Earnings	17.8	17.6
Price To Book	2.7	2.7
Price To Sales	1.6	1.6
Return on Equity (%)	13.7	13.6
Yield (%)	2.7	2.7

Top Holdings

NESTLE SA, CHAM UND VEVEY	1.8%
ASML HOLDING NV	1.7%
ROCHE HOLDING AG	1.3%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.1%
TOYOTA MOTOR CORP	1.0%
ASTRAZENECA PLC	1.0%
NOVARTIS AG	0.9%
NOVO NORDISK 'B'	0.9%
SHOPIFY INC	0.8%
ROYAL BANK OF CANADA	0.8%

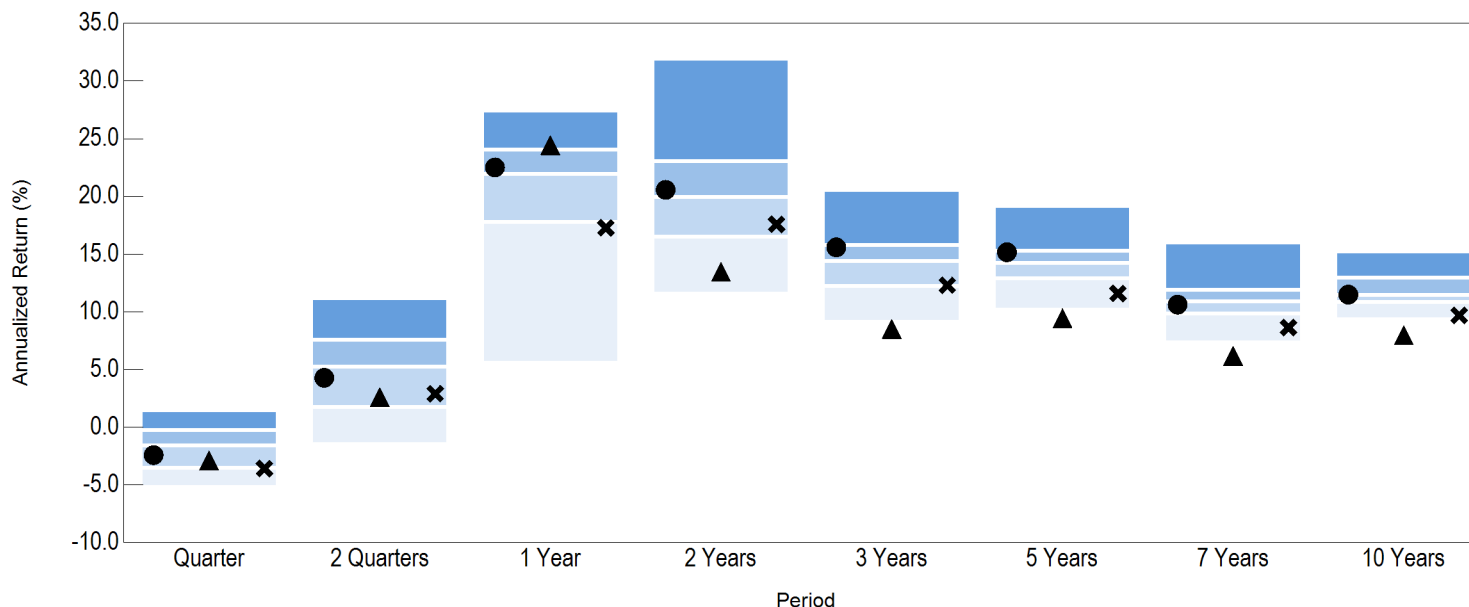
Best Performers

	Return %
WISETECH GLOBAL LTD	62.5%
NIPPON YUSEN KK	52.5%
ILIAD SA	44.2%
NUVEI CORP COM	40.1%
AUSNET SERVICES	39.1%
ROLLS ROYCE HOLDINGS PLC	38.5%
SYDNEY AIRPORT	37.5%
NEMETSCHKE SE	37.4%
JFE HOLDINGS INC	34.2%
SHIONOGI & CO LTD	32.5%

Worst Performers

	Return %
SANDS CHINA LTD	-51.2%
FUTU HOLDINGS LTD (FUTU)	-49.2%
WYNN MACAU LTD	-46.8%
CANOPY GROWTH CORP (WEED.)	-42.6%
MELCO RESORTS & ENTERTAINMENT LTD (MLCO)	-38.2%
SJM HOLDINGS (K:SJMH)	-37.7%
GALAXY ENTERTAINMENT GROUP LTD	-35.8%
MAGELLAN FINANCIAL GP. (A:MFGX)	-34.9%
PEPTIDREAM INC	-33.5%
WIX.COM LTD (WIX)	-32.5%

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



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.46	11.18	27.39	31.88	20.55	19.17	15.99	15.23
25th Percentile	-0.19	7.63	24.07	23.07	15.80	15.33	11.96	12.97
Median	-1.54	5.28	21.96	19.97	14.44	14.28	10.96	11.47
75th Percentile	-3.48	1.80	17.82	16.56	12.27	12.95	9.87	10.87
95th Percentile	-5.15	-1.44	5.62	11.61	9.17	10.20	7.41	9.40
# of Portfolios	38	38	38	36	36	32	27	18
● Capital Group	-2.41 (62)	4.28 (65)	22.51 (47)	20.57 (48)	15.59 (27)	15.17 (30)	10.62 (53)	11.49 (50)
▲ MSCI ACWI ex USA Gross	-2.88 (68)	2.60 (73)	24.44 (24)	13.46 (91)	8.52 (99)	9.44 (97)	6.17 (99)	7.97 (99)
✕ MSCI ACWI ex USA Growth Gross	-3.58 (76)	2.91 (73)	17.27 (78)	17.59 (73)	12.30 (75)	11.59 (87)	8.64 (88)	9.69 (92)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	208	2,348
Weighted Avg. Market Cap. (\$B)	106.5	94.6
Median Market Cap. (\$B)	33.8	10.3
Price To Earnings	27.6	15.8
Price To Book	4.8	2.7
Price To Sales	3.8	1.5
Return on Equity (%)	15.3	13.6
Yield (%)	1.7	2.6
Beta	1.0	1.0

Top Holdings

ASML HOLDING NV	3.9%
EVOLUTION AB (PUBL)	2.8%
KEYENCE CORP	2.6%
YANDEX NV	2.2%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.2%
OCADO GROUP PLC	2.0%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.9%
TOKYO ELECTRON LTD	1.8%
GENMAB A/S	1.8%
AIA GROUP LTD	1.7%

Best Performers

	Return %
ZOPLUS AG	74.3%
ATLISSIAN CORP PLC (TEAM)	52.4%
SHIFT INC	37.5%
NEMETSCHEK SE	37.4%
GAZPROM PJSC (OGZPY)	34.9%
SHIONOGI & CO LTD	32.5%
TECHNOPRO HOLDINGS INC	28.2%
RECRUIT HOLDINGS CO LTD	24.5%
DAIICHI SANKYO COMPANY LTD	24.4%
STMICROELECTRONICS NV	20.8%

Worst Performers

	Return %
WYNN MACAU LTD	-46.8%
ALIBABA GROUP HOLDING LTD	-35.5%
ALIBABA HEALTH INFORMATION TECHNOLOGY LTD	-35.1%
VALE SA (VALE)	-32.4%
VALE SA	-31.3%
PING AN INSURANCE GROUP	-28.8%
NEXON CO LTD	-27.4%
COUNTRY GARDEN SERVICES HOLDINGS COMPANY LIMITED	-26.9%
NETEASE INC (NTES)	-25.7%
NETEASE INC	-25.2%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	-0.12%	0.40%	-0.33%	-0.20%	17.57%	7.15%	1.37%	4.55%			
Materials	-0.51%	-1.16%	0.07%	0.58%	-18.46%	-5.27%	4.91%	8.32%			
Industrials	0.03%	0.03%	0.00%	0.00%	0.82%	0.57%	11.82%	11.74%			
Consumer Discretionary	0.25%	0.55%	-0.33%	0.04%	-7.50%	-11.10%	17.63%	13.79%			
Consumer Staples	-0.25%	-0.38%	0.01%	0.12%	-7.56%	-3.28%	6.70%	8.55%			
Health Care	0.70%	0.57%	0.03%	0.10%	3.83%	-1.88%	12.62%	9.31%			
Financials	-0.55%	-0.75%	-0.34%	0.54%	-2.01%	1.33%	10.31%	18.54%			
Information Technology	1.55%	0.83%	0.18%	0.54%	5.63%	-0.81%	23.44%	12.98%			
Communication Services	0.52%	0.47%	0.17%	-0.12%	-1.66%	-9.30%	4.15%	6.63%			
Utilities	-0.31%	-0.29%	0.00%	-0.03%	-11.04%	-1.59%	3.27%	2.99%			
Real Estate	0.01%	-0.15%	0.06%	0.10%	-11.68%	-6.41%	1.21%	2.61%			
Cash	0.03%	0.00%	0.03%	0.00%	0.01%	--	2.59%	0.00%			
Portfolio	1.35%	=	0.13%	+	-0.45%	+	1.67%	-1.37%	-2.72%	100.00%	100.00%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	20.25%	10.44%	0.00%	0.12%	0.01%	-0.02%	0.00%	-0.01%	-0.01%
Belgium	-15.40%	-5.61%	1.04%	0.59%	-0.06%	-0.01%	-0.01%	-0.05%	-0.12%
Czech Republic*	--	16.24%	0.00%	0.03%	--	-0.01%	0.00%	--	-0.01%
Denmark	2.44%	2.71%	5.38%	1.60%	-0.01%	0.24%	-0.09%	-0.01%	0.13%
Finland	--	-3.07%	0.00%	0.65%	--	0.00%	0.01%	--	0.01%
France	-6.36%	-1.57%	9.78%	7.10%	-0.35%	0.05%	-0.05%	-0.13%	-0.48%
Germany	2.24%	-3.97%	3.91%	5.79%	0.37%	0.01%	0.03%	-0.12%	0.30%
Greece*	--	4.70%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Hungary*	--	7.92%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
Ireland	5.32%	0.06%	0.77%	0.44%	0.02%	0.01%	0.00%	0.02%	0.04%
Italy	-8.65%	-0.91%	1.91%	1.53%	-0.12%	0.01%	-0.01%	-0.03%	-0.15%
Luxembourg	3.04%	-2.72%	0.72%	0.00%	0.00%	0.00%	-0.02%	0.05%	0.03%
Netherlands	8.82%	3.56%	9.17%	2.69%	0.13%	0.46%	-0.12%	0.32%	0.79%
Norway	-10.24%	5.63%	0.48%	0.32%	-0.05%	0.01%	0.00%	-0.03%	-0.07%
Poland*	--	1.82%	0.00%	0.22%	--	-0.02%	0.01%	--	-0.01%
Portugal	7.86%	3.87%	0.23%	0.11%	0.00%	0.01%	0.00%	0.00%	0.02%
Russia*	16.88%	10.32%	1.19%	0.95%	0.07%	0.03%	-0.01%	0.02%	0.10%
Spain	-2.85%	-3.16%	1.02%	1.52%	0.00%	0.00%	0.01%	0.00%	0.01%
Sweden	-1.26%	-2.47%	4.05%	2.33%	0.03%	0.02%	-0.04%	0.02%	0.03%
Switzerland	0.19%	-3.25%	4.77%	6.06%	0.21%	0.02%	0.01%	-0.04%	0.19%
United Kingdom	-6.77%	-0.25%	8.88%	8.89%	-0.60%	0.00%	0.02%	0.00%	-0.58%

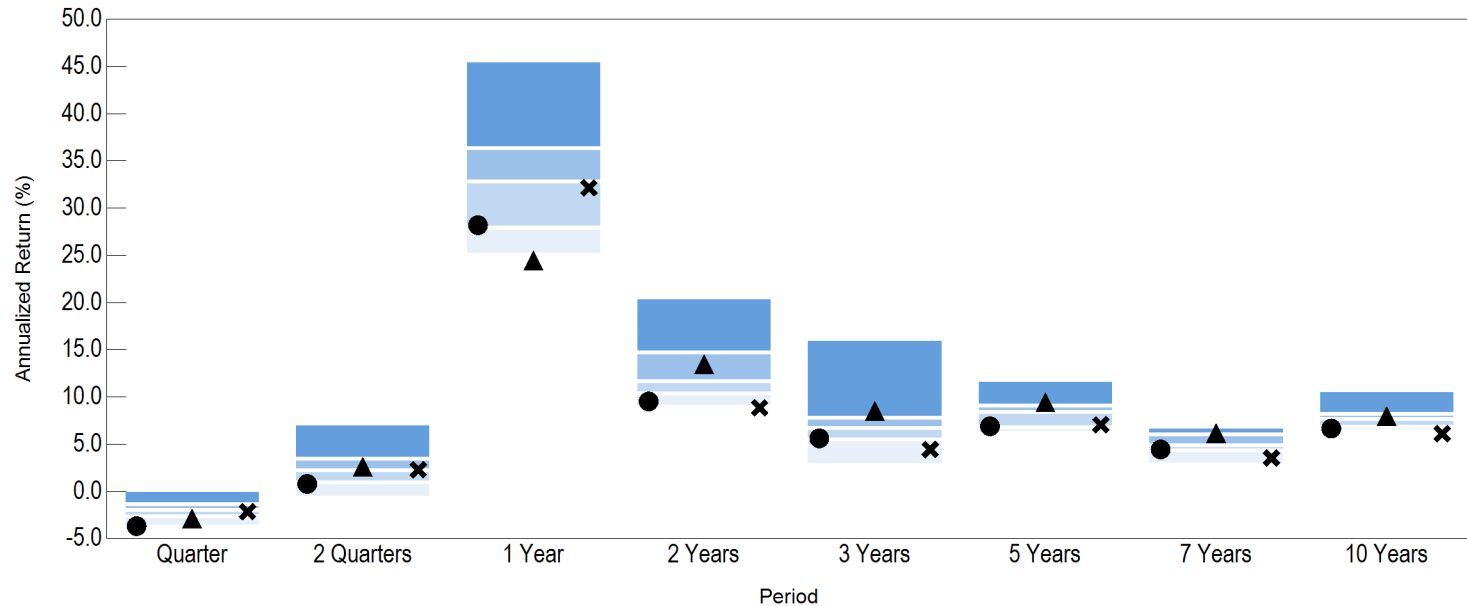
Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	52.39%	-2.75%	0.32%	4.43%	2.29%	-0.07%	0.15%	-2.13%	0.24%
China*	-8.57%	-17.89%	6.43%	11.75%	1.08%	0.88%	0.01%	-0.49%	1.49%
Hong Kong	-12.97%	-9.26%	5.04%	2.01%	-0.07%	-0.24%	-0.02%	-0.11%	-0.43%
India*	8.97%	12.83%	1.72%	3.11%	-0.11%	-0.19%	-0.01%	0.05%	-0.26%
Indonesia*	8.27%	10.06%	0.26%	0.35%	-0.01%	-0.01%	0.00%	0.00%	-0.01%
Japan	7.25%	4.88%	13.75%	14.34%	0.34%	-0.04%	0.00%	-0.01%	0.29%
Korea*	-11.74%	-12.71%	0.93%	4.15%	0.04%	0.24%	0.13%	-0.03%	0.38%
Malaysia*	--	0.42%	0.00%	0.39%	--	-0.01%	0.00%	--	-0.01%
New Zealand	--	2.58%	0.00%	0.15%	--	-0.01%	0.00%	--	-0.01%
Pakistan*	--	-17.25%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-3.38%	0.00%	0.19%	--	0.00%	0.01%	--	0.00%
Singapore	1.89%	-0.03%	0.41%	0.66%	0.01%	-0.01%	0.00%	0.00%	0.00%
Taiwan*	-3.16%	-1.40%	5.22%	4.38%	-0.07%	0.00%	0.00%	-0.01%	-0.09%
Thailand*	-1.97%	-2.52%	0.12%	0.50%	0.00%	-0.01%	0.02%	0.00%	0.01%
Americas									
Argentina*	7.81%	22.10%	1.13%	0.04%	-0.01%	0.25%	0.00%	-0.16%	0.09%
Brazil*	-28.42%	-19.95%	3.42%	1.63%	-0.20%	-0.22%	0.02%	-0.22%	-0.63%
Canada	9.48%	-2.23%	2.26%	7.05%	0.84%	-0.04%	0.09%	-0.57%	0.32%
Chile*	--	-7.23%	0.00%	0.14%	--	-0.01%	0.01%	--	0.01%
Colombia*	--	10.94%	0.00%	0.05%	--	-0.01%	0.00%	--	-0.01%
Mexico*	-12.10%	1.79%	0.08%	0.55%	-0.08%	-0.03%	0.01%	0.07%	-0.02%
Peru*	--	-11.07%	0.00%	0.06%	--	0.01%	0.00%	--	0.01%
United States	-4.82%	0.31%	1.45%	0.00%	0.00%	0.02%	-0.03%	-0.04%	-0.05%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.25%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Israel	14.78%	2.90%	0.29%	0.37%	0.05%	0.00%	0.00%	-0.01%	0.03%
Kuwait*	--	9.06%	0.00%	0.16%	--	-0.02%	0.00%	--	-0.02%
Qatar*	--	7.30%	0.00%	0.20%	--	-0.02%	0.00%	--	-0.02%
Saudi Arabia*	--	8.24%	0.00%	0.90%	--	-0.08%	0.00%	--	-0.08%
South Africa*	-7.70%	-4.86%	0.78%	1.11%	-0.03%	0.00%	0.02%	0.01%	-0.01%
Turkey*	--	1.96%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
United Arab Emirates*	--	6.36%	0.00%	0.22%	--	-0.02%	0.00%	--	-0.02%
Totals									
Americas	-9.00%	-5.00%	8.34%	9.51%	-0.46%	0.01%	0.10%	0.06%	-0.29%
Europe	-0.67%	-1.08%	53.79%	41.05%	0.17%	0.26%	-0.25%	0.05%	0.23%
Asia/Pacific	-0.40%	-4.05%	34.20%	46.40%	1.45%	0.24%	0.30%	-0.38%	1.60%
Other	-1.68%	2.49%	1.07%	3.05%	-0.08%	-0.11%	0.02%	0.05%	-0.12%
Cash	0.01%	--	2.61%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	-1.27%	-2.72%	100.00%	100.00%	1.08%	0.44%	0.16%	-0.22%	1.46%
Totals									
Developed	0.19%	-0.45%	75.63%	68.74%	0.37%	0.17%	-0.05%	0.04%	0.53%
Emerging*	-6.61%	-7.72%	21.28%	31.26%	0.19%	0.53%	0.23%	-0.06%	0.89%
Frontier**	-0.84%	--	0.48%	0.00%	0.00%	0.00%	-0.02%	0.03%	0.00%
Cash	0.01%	--	2.61%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%

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



	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	0.12	7.15	45.63	20.55	16.08	11.80	6.86	10.71
25th Percentile	-1.33	3.51	36.38	14.74	7.87	9.13	6.06	8.28
Median	-1.91	2.30	32.89	11.72	6.75	8.47	4.93	7.70
75th Percentile	-2.62	0.98	27.97	10.44	5.57	6.80	4.37	6.88
95th Percentile	-3.70	-0.61	25.12	8.96	2.82	6.23	2.89	6.45
# of Portfolios	20	20	20	20	20	20	19	14
● Mondrian	-3.67 (95)	0.79 (79)	28.20 (73)	9.52 (84)	5.62 (73)	6.89 (72)	4.45 (73)	6.66 (82)
▲ MSCI ACWI ex USA Gross	-2.88 (86)	2.60 (38)	24.44 (99)	13.46 (40)	8.52 (24)	9.44 (21)	6.17 (24)	7.97 (35)
✕ MSCI ACWI ex USA Value Gross	-2.14 (65)	2.30 (51)	32.15 (54)	8.86 (96)	4.43 (91)	7.06 (69)	3.54 (90)	6.11 (99)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	59	2,348
Weighted Avg. Market Cap. (\$B)	53.0	94.6
Median Market Cap. (\$B)	34.0	10.3
Price To Earnings	13.1	15.8
Price To Book	1.7	2.7
Price To Sales	1.1	1.5
Return on Equity (%)	9.1	13.6
Yield (%)	3.4	2.6
Beta	1.0	1.0

Top Holdings

SANOFI	3.7%
FUJIFILM HOLDINGS CORP	3.5%
SCOTTISH AND SOUTHERN ENERGY PLC	3.5%
HONDA MOTOR CO LTD	3.4%
LLOYDS BANKING GROUP PLC	3.3%
CK HUTCHISON HOLDINGS LTD	3.3%
GLAXOSMITHKLINE PLC	3.3%
BANCO SANTANDER SA	3.3%
UNITED OVERSEAS BANK LTD	3.3%
TAKEDA PHARMACEUTICAL CO LTD	3.1%

Best Performers

	Return %
TOKIO MARINE HOLDINGS INC	19.4%
FUJIFILM HOLDINGS CORP	17.0%
ROYAL DUTCH SHELL PLC	16.7%
SONY GROUP CORPORATION	14.9%
ENI SPA	14.4%
ROYAL DUTCH SHELL PLC	13.0%
BOUYGUES, GUYANCOURT	12.5%
RED ELECTRICA CORP SA	8.1%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	7.9%
BP PLC	7.0%

Worst Performers

	Return %
JARDINE MATHESON HOLDINGS LTD	-16.4%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	-15.0%
CK HUTCHISON HOLDINGS LTD	-13.1%
ISS A/S	-9.9%
KINGFISHER PLC	-9.7%
NOVARTIS AG	-9.7%
SANOFI	-8.1%
COCA-COLA BOTTLERS JAPAN HOLDINGS INC	-7.2%
TELIA COMPANY AB	-7.0%
ESSITY AKTIEBOLAG	-6.3%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Total Effects	Attribution Effects			Returns		Sector Weights				
		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark			
Energy	0.60%	0.25%	0.29%	0.06%	12.32%	7.15%	7.28%	4.55%			
Materials	0.21%	-0.03%	0.12%	0.13%	-5.74%	-5.25%	2.85%	8.31%			
Industrials	-0.87%	-0.83%	0.07%	-0.10%	-6.01%	0.33%	14.26%	11.81%			
Consumer Discretionary	1.57%	1.51%	0.12%	-0.06%	0.27%	-11.19%	12.35%	13.83%			
Consumer Staples	0.06%	-0.32%	0.03%	0.36%	-7.00%	-3.27%	2.00%	8.49%			
Health Care	-0.34%	-0.20%	0.06%	-0.20%	-3.68%	-1.81%	15.92%	9.30%			
Financials	-0.09%	0.09%	-0.21%	0.04%	1.63%	1.34%	13.71%	18.61%			
Information Technology	0.64%	1.05%	-0.09%	-0.32%	7.65%	-0.77%	8.42%	12.97%			
Communication Services	0.69%	0.68%	-0.09%	0.10%	0.68%	-9.35%	7.89%	6.63%			
Utilities	-0.13%	-0.01%	0.09%	-0.22%	-2.06%	-1.60%	9.93%	2.98%			
Real Estate	0.09%	0.09%	0.04%	-0.04%	-3.25%	-5.65%	1.39%	2.52%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Unclassified	0.22%	0.00%	0.31%	-0.10%	4.30%	--	4.01%	0.00%			
Portfolio	2.66%	=	2.27%	+	0.73%	+	-0.34%	-0.08%	-2.73%	100.00%	100.00%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

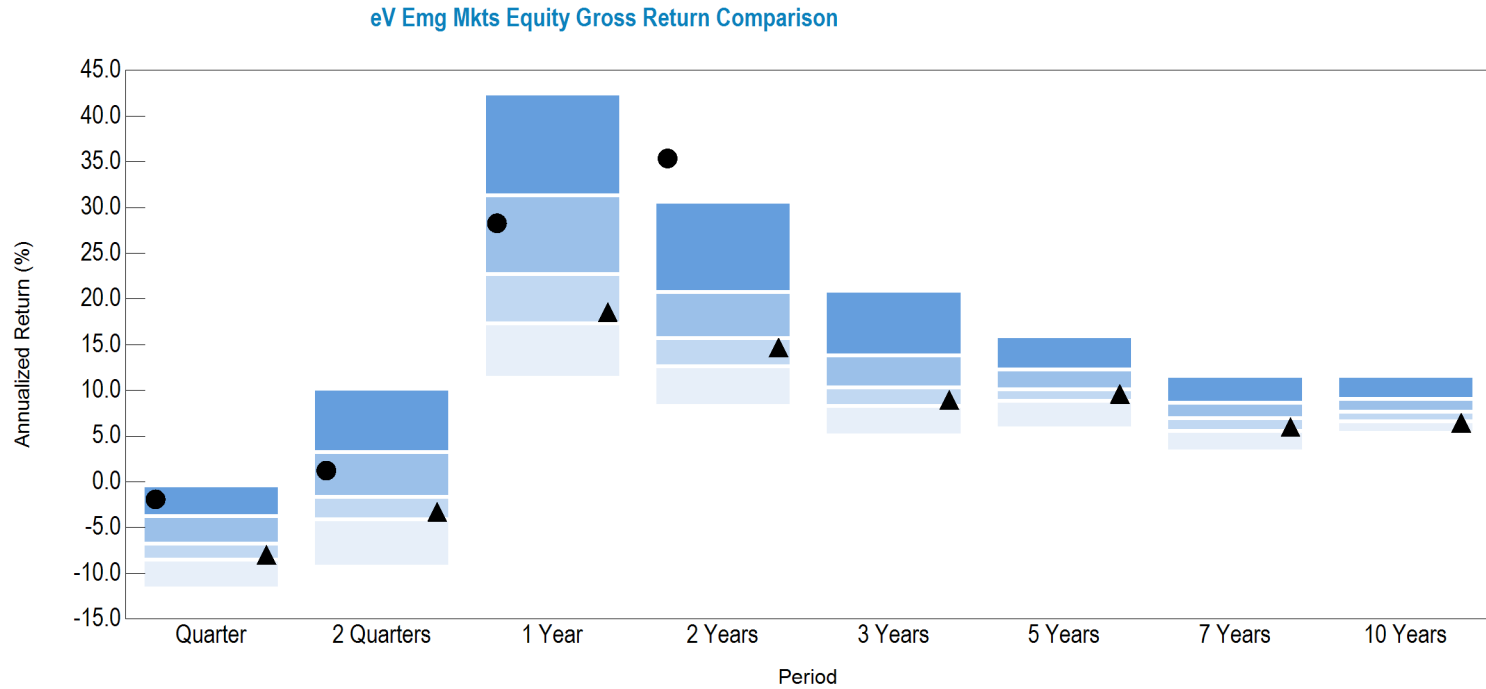
	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	10.44%	0.00%	0.12%	--	-0.02%	0.00%	--	-0.01%
Belgium	--	-5.61%	0.00%	0.59%	--	0.01%	0.01%	--	0.03%
Czech Republic*	--	16.24%	0.00%	0.03%	--	-0.01%	0.00%	--	-0.01%
Denmark	-9.91%	2.71%	1.76%	1.60%	-0.21%	0.01%	0.00%	-0.02%	-0.22%
Finland	--	-3.07%	0.00%	0.65%	--	0.00%	0.01%	--	0.01%
France	-2.05%	-1.57%	10.26%	7.10%	-0.03%	0.06%	-0.07%	-0.02%	-0.06%
Germany	-5.74%	-3.97%	2.93%	5.79%	-0.10%	0.02%	0.06%	0.05%	0.03%
Greece*	--	4.70%	0.00%	0.04%	--	0.00%	0.00%	--	0.00%
Hungary*	--	7.92%	0.00%	0.07%	--	-0.01%	0.00%	--	-0.01%
Ireland	--	0.06%	0.00%	0.44%	--	-0.02%	0.01%	--	-0.01%
Italy	-3.27%	-0.91%	6.14%	1.53%	-0.04%	0.12%	-0.10%	-0.11%	-0.13%
Netherlands	13.02%	3.56%	1.25%	2.69%	0.26%	-0.10%	0.03%	-0.14%	0.05%
Norway	--	5.63%	0.00%	0.32%	--	-0.03%	0.00%	--	-0.02%
Poland*	--	1.82%	0.00%	0.22%	--	-0.02%	0.01%	--	-0.01%
Portugal	--	3.87%	0.00%	0.11%	--	-0.01%	0.00%	--	-0.01%
Russia*	--	10.32%	0.00%	0.95%	--	-0.10%	-0.01%	--	-0.11%
Spain	-2.56%	-3.16%	5.78%	1.52%	0.01%	0.01%	-0.10%	0.03%	-0.05%
Sweden	-6.85%	-2.47%	3.13%	2.33%	-0.10%	0.01%	-0.01%	-0.04%	-0.15%
Switzerland	-9.52%	-3.25%	3.01%	6.06%	-0.38%	0.04%	0.03%	0.19%	-0.12%
United Kingdom	1.88%	-0.25%	21.22%	8.89%	0.19%	0.39%	-0.29%	0.27%	0.56%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	--	-2.75%	0.00%	4.43%	--	-0.08%	0.15%	--	0.07%
China*	--	-17.89%	0.00%	11.75%	--	1.95%	0.01%	--	1.97%
Hong Kong	-13.12%	-9.26%	4.22%	2.01%	-0.08%	-0.17%	0.00%	-0.08%	-0.34%
India*	--	12.83%	0.00%	3.11%	--	-0.43%	-0.01%	--	-0.43%
Indonesia*	--	10.06%	0.00%	0.35%	--	-0.03%	-0.01%	--	-0.04%
Japan	4.20%	4.88%	32.65%	14.34%	-0.10%	1.20%	-0.10%	-0.13%	0.88%
Korea*	--	-12.71%	0.00%	4.15%	--	0.32%	0.16%	--	0.48%
Malaysia*	--	0.42%	0.00%	0.39%	--	-0.01%	0.00%	--	-0.01%
New Zealand	--	2.58%	0.00%	0.15%	--	-0.01%	0.00%	--	-0.01%
Pakistan*	--	-17.25%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Philippines*	--	-3.38%	0.00%	0.19%	--	0.00%	0.01%	--	0.00%
Singapore	1.50%	-0.03%	3.59%	0.66%	0.01%	0.06%	-0.03%	0.05%	0.09%
Taiwan*	--	-1.40%	0.00%	4.38%	--	0.02%	-0.01%	--	0.01%
Thailand*	--	-2.52%	0.00%	0.50%	--	-0.02%	0.02%	--	0.01%
Americas									
Argentina*	--	22.10%	0.00%	0.04%	--	-0.01%	0.00%	--	-0.01%
Brazil*	--	-19.95%	0.00%	1.63%	--	0.20%	0.11%	--	0.31%
Canada	-3.25%	-2.23%	1.43%	7.05%	-0.07%	-0.05%	0.11%	0.06%	0.05%
Chile*	--	-7.23%	0.00%	0.14%	--	-0.01%	0.01%	--	0.01%
Colombia*	--	10.94%	0.00%	0.05%	--	-0.01%	0.00%	--	-0.01%
Mexico*	--	1.79%	0.00%	0.55%	--	-0.03%	0.02%	--	-0.02%
Peru*	--	-11.07%	0.00%	0.06%	--	0.01%	0.00%	--	0.01%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.25%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Israel	--	2.90%	0.00%	0.37%	--	-0.01%	0.00%	--	-0.02%
Kuwait*	--	9.06%	0.00%	0.16%	--	-0.02%	0.00%	--	-0.02%
Qatar*	--	7.30%	0.00%	0.20%	--	-0.02%	0.00%	--	-0.02%
Saudi Arabia*	--	8.24%	0.00%	0.90%	--	-0.08%	0.00%	--	-0.08%
South Africa*	--	-4.86%	0.00%	1.11%	--	-0.01%	0.05%	--	0.04%
Turkey*	--	1.96%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
United Arab Emirates*	--	6.36%	0.00%	0.22%	--	-0.02%	0.00%	--	-0.02%
Totals									
Americas	-3.25%	-5.00%	1.43%	9.51%	0.08%	0.08%	0.25%	-0.07%	0.34%
Europe	-1.52%	-1.08%	55.48%	41.05%	-0.09%	0.30%	-0.40%	-0.03%	-0.23%
Asia/Pacific	2.16%	-4.05%	40.45%	46.40%	2.70%	0.12%	0.21%	-0.35%	2.68%
Other	--	2.49%	0.00%	3.05%	--	-0.16%	0.05%	--	-0.11%
Cash	0.01%	--	2.64%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%
Total	-0.01%	-2.72%	100.00%	100.00%	2.68%	0.36%	0.11%	-0.45%	2.71%
Totals									
Developed	-0.02%	-0.45%	97.36%	68.74%	0.14%	0.69%	-0.27%	0.06%	0.62%
Emerging*	--	-7.72%	0.00%	31.26%	--	1.67%	0.39%	--	2.05%
Cash	0.01%	--	2.64%	0.00%	0.00%	0.03%	0.00%	0.00%	0.03%



	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-0.39	10.16	42.46	30.57	20.85	15.86	11.55	11.55								
25th Percentile	-3.72	3.32	31.39	20.78	13.84	12.33	8.66	9.12								
Median	-6.74	-1.59	22.78	15.76	10.34	10.16	7.01	7.67								
75th Percentile	-8.43	-4.07	17.34	12.67	8.31	8.88	5.63	6.64								
95th Percentile	-11.64	-9.23	11.40	8.36	5.09	5.87	3.38	5.41								
# of Portfolios	390	390	388	374	359	321	278	200								
● Newton Emerging Mkt	-1.91	(11)	1.23	(32)	28.27	(30)	35.36	(2)	--	(--)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets Gross	-7.97	(69)	-3.26	(65)	18.58	(70)	14.68	(59)	8.96	(65)	9.62	(59)	6.00	(69)	6.46	(78)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	52	1,415
Weighted Avg. Market Cap. (\$B)	114.1	136.2
Median Market Cap. (\$B)	19.1	7.1
Price To Earnings	29.1	13.3
Price To Book	4.9	2.8
Price To Sales	5.4	1.5
Return on Equity (%)	15.3	13.4
Yield (%)	0.9	2.5

Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.7%
HOUSING DEVELOPMENT FINANCE CORP LTD	4.6%
AIA GROUP LTD	4.0%
INFO EDGE (INDIA) LTD	3.8%
SAMSUNG SDI CO LTD	3.3%
ILJIN MATERIALS CO LTD	3.2%
MARUTI SUZUKI INDIA LTD	3.1%
LONGI GREEN ENERGY TECHNOLOGY CO LTD	3.0%
ASIAN PAINTS	2.9%
MERCADOLIBRE INC	2.8%

Best Performers

	Return %
TOKIO MARINE HOLDINGS INC	19.4%
FUJIFILM HOLDINGS CORP	17.0%
ROYAL DUTCH SHELL PLC	16.7%
SONY GROUP CORPORATION	14.9%
ENI SPA	14.4%
ROYAL DUTCH SHELL PLC	13.0%
BOUYGUES, GUYANCOURT	12.5%
RED ELECTRICA CORP SA	8.1%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	7.9%
BP PLC	7.0%

Worst Performers

	Return %
JARDINE MATHESON HOLDINGS LTD	-16.4%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	-15.0%
CK HUTCHISON HOLDINGS LTD	-13.1%
ISS A/S	-9.9%
KINGFISHER PLC	-9.7%
NOVARTIS AG	-9.7%
SANOFI	-8.1%
COCA-COLA BOTTLERS JAPAN HOLDINGS INC	-7.2%
TELIA COMPANY AB	-7.0%
ESSITY AKTIEBOLAG	-6.3%

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	-0.81%	--	-0.88%	--	--	9.59%	0.00%	5.05%			
Materials	1.42%	1.24%	0.02%	0.15%	11.30%	-4.42%	8.95%	8.45%			
Industrials	1.06%	1.80%	-0.07%	-0.67%	36.01%	-4.75%	2.68%	4.64%			
Consumer Discretionary	1.37%	1.63%	-0.88%	0.62%	-12.96%	-22.78%	23.36%	17.64%			
Consumer Staples	0.42%	0.18%	0.15%	0.09%	-0.27%	-3.97%	9.00%	5.59%			
Health Care	0.32%	--	0.26%	--	--	-12.79%	0.00%	5.05%			
Financials	-1.10%	-1.11%	-0.09%	0.10%	-4.66%	1.38%	16.83%	17.84%			
Information Technology	3.68%	2.73%	0.15%	0.79%	7.71%	-5.46%	27.33%	20.48%			
Communication Services	0.09%	0.04%	-0.07%	0.11%	-14.12%	-15.48%	11.84%	11.02%			
Utilities	-0.29%	--	-0.32%	--	--	8.06%	0.00%	1.95%			
Real Estate	0.21%	--	0.19%	--	--	-15.71%	0.00%	2.29%			
Cash	0.00%	--	--	--	--	--	0.00%	0.00%			
Portfolio	6.36%	=	6.52%	+	-1.55%	+	1.39%	-1.42%	-7.78%	100.00%	100.00%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Czech Republic*	--	16.24%	0.00%	0.10%	--	-0.03%	0.00%	--	-0.02%
Greece*	--	4.70%	0.00%	0.13%	--	-0.02%	0.00%	--	-0.01%
Hungary*	9.17%	7.92%	0.95%	0.22%	0.00%	0.14%	-0.04%	0.01%	0.12%
Luxembourg	28.21%	-7.78%	2.01%	0.00%	0.00%	0.00%	0.00%	0.70%	0.70%
Netherlands	-7.53%	3.38%	4.95%	0.00%	0.00%	0.61%	-0.11%	-0.55%	-0.05%
Poland*	--	1.82%	0.00%	0.70%	--	-0.09%	0.03%	--	-0.06%
Russia*	15.18%	10.32%	1.24%	3.05%	0.17%	-0.29%	-0.02%	-0.10%	-0.24%

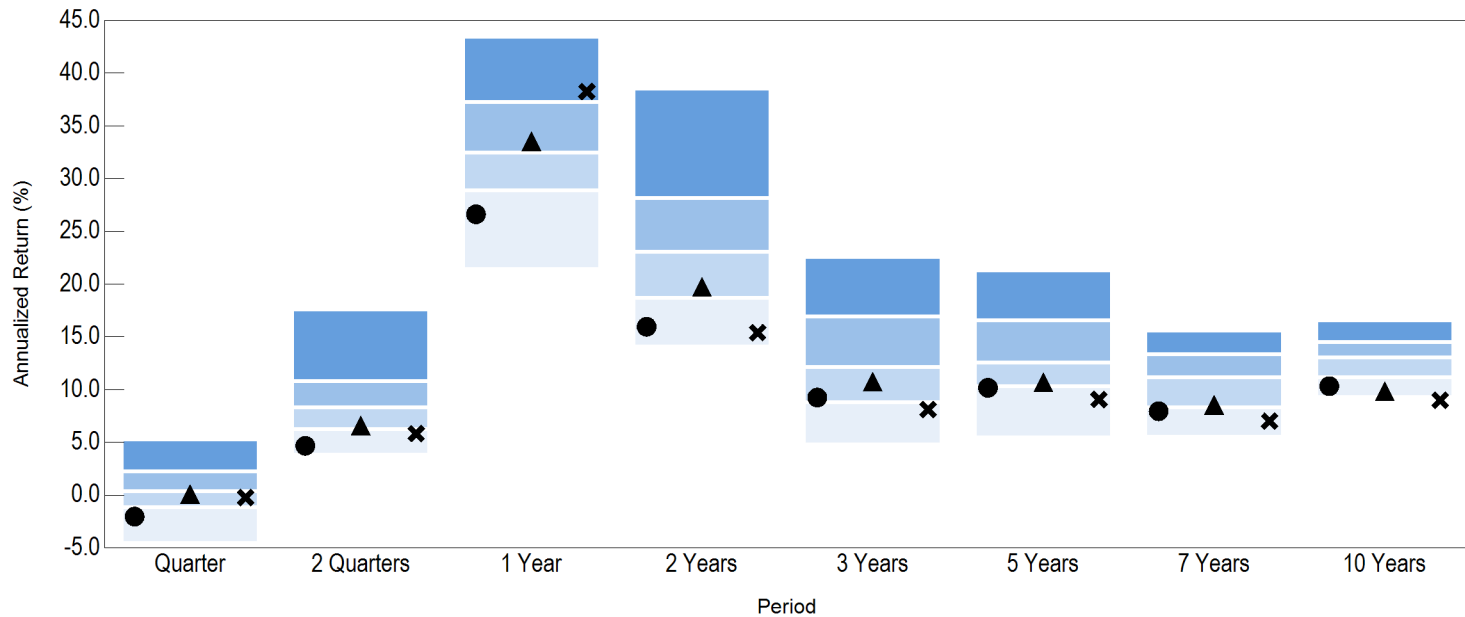
Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	29.76%	-2.98%	1.11%	0.00%	0.00%	0.08%	-0.05%	0.38%	0.40%
China*	-17.82%	-18.03%	26.91%	37.62%	0.05%	1.22%	0.03%	-0.01%	1.29%
Hong Kong	-22.01%	-9.41%	8.81%	0.00%	0.00%	-0.23%	-0.02%	-1.11%	-1.36%
India*	14.19%	12.83%	24.30%	9.93%	0.14%	2.75%	0.04%	0.20%	3.11%
Indonesia*	--	10.06%	0.00%	1.11%	--	-0.16%	-0.02%	--	-0.18%
Korea*	4.70%	-12.71%	8.45%	13.26%	2.41%	0.11%	0.12%	-0.88%	1.77%
Malaysia*	--	0.42%	0.00%	1.23%	--	-0.09%	0.01%	--	-0.09%
Pakistan*	--	-17.25%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Philippines*	-19.56%	-3.38%	0.00%	0.62%	-0.10%	-0.05%	0.03%	0.10%	-0.02%
Taiwan*	-1.01%	-1.40%	6.72%	13.99%	0.05%	-0.35%	-0.02%	-0.03%	-0.35%
Thailand*	--	-2.52%	0.00%	1.61%	--	-0.14%	0.08%	--	-0.06%
Americas									
Argentina*	7.81%	22.10%	2.25%	0.12%	-0.02%	0.61%	0.00%	-0.30%	0.29%
Brazil*	-28.86%	-19.95%	1.46%	5.21%	-0.50%	0.26%	0.25%	0.36%	0.37%
Chile*	14.15%	-7.23%	0.72%	0.44%	0.05%	0.03%	0.04%	0.03%	0.15%
Colombia*	--	10.94%	0.00%	0.15%	--	-0.03%	0.00%	--	-0.03%
Mexico*	4.73%	1.79%	1.32%	1.75%	0.05%	-0.05%	0.01%	-0.01%	0.00%
Peru*	--	-11.07%	0.00%	0.18%	--	0.01%	0.00%	--	0.01%
United States	15.86%	0.31%	4.79%	0.00%	0.00%	0.33%	0.00%	0.75%	1.07%

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*	--	4.25%	0.00%	0.06%	--	-0.01%	0.00%	--	-0.01%
Kuwait*	--	9.06%	0.00%	0.50%	--	-0.08%	0.00%	--	-0.08%
Qatar*	--	7.30%	0.00%	0.64%	--	-0.09%	0.00%	--	-0.09%
Saudi Arabia*	--	8.24%	0.00%	2.88%	--	-0.43%	0.00%	--	-0.43%
South Africa*	5.59%	-4.86%	1.60%	3.55%	0.39%	-0.13%	0.09%	-0.21%	0.13%
Turkey*	--	1.96%	0.00%	0.24%	--	-0.03%	0.01%	--	-0.02%
United Arab Emirates*	--	6.36%	0.00%	0.70%	--	-0.09%	0.00%	--	-0.09%
Totals									
Americas	6.45%	-12.96%	10.54%	7.85%	1.18%	-0.02%	0.31%	0.40%	1.87%
Europe	5.14%	8.75%	9.15%	4.21%	-0.11%	0.79%	-0.13%	-0.13%	0.43%
Asia/Pacific	-3.44%	-9.24%	76.30%	79.39%	4.43%	0.06%	0.20%	-0.17%	4.51%
Other	5.59%	2.44%	1.60%	8.56%	0.55%	-0.77%	0.09%	-0.45%	-0.57%
Cash	0.01%	--	2.41%	0.00%	0.00%	0.16%	0.00%	0.00%	0.16%
Total	-1.39%	-7.78%	100.00%	100.00%	6.05%	0.21%	0.47%	-0.34%	6.39%
Totals									
Developed	-3.00%	--	21.68%	0.00%	0.00%	0.00%	-0.17%	0.94%	0.77%
Emerging*	-0.97%	-7.78%	75.91%	100.00%	6.35%	0.00%	0.65%	-1.53%	5.47%
Cash	0.01%	--	2.41%	0.00%	0.00%	0.16%	0.00%	0.00%	0.16%

eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Return (Rank)															
	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	5.25	17.59	43.41	38.47	22.56	21.29	15.54	16.52								
25th Percentile	2.29	10.84	37.31	28.17	16.95	16.62	13.42	14.51								
Median	0.42	8.32	32.50	23.11	12.17	12.61	11.21	13.09								
75th Percentile	-1.13	6.31	28.92	18.73	8.86	10.36	8.35	11.21								
95th Percentile	-4.49	3.86	21.48	14.09	4.84	5.52	5.53	9.34								
# of Portfolios	56	56	56	54	50	45	37	24								
● Templeton	-2.04 (87)	4.67 (94)	26.61 (85)	15.96 (86)	9.25 (68)	10.16 (76)	7.95 (80)	10.32 (86)								
▲ MSCI ACWI ex US Small Cap Gross	0.09 (58)	6.59 (73)	33.54 (40)	19.74 (72)	10.76 (57)	10.69 (71)	8.55 (72)	9.84 (92)								
✕ MSCI ACWI ex US Small Cap Value GD	-0.24 (64)	5.83 (81)	38.25 (23)	15.39 (92)	8.11 (81)	9.06 (86)	7.01 (86)	8.99 (99)								

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	111	4,388
Weighted Avg. Market Cap. (\$B)	2.8	3.1
Median Market Cap. (\$B)	1.8	1.2
Price To Earnings	17.8	15.9
Price To Book	2.6	2.5
Price To Sales	1.5	1.2
Return on Equity (%)	11.6	10.5
Yield (%)	2.5	2.2
Beta	1.0	1.0

Top Holdings

INTERPUMP GROUP SPA, SANT'ILARIO (RE)	2.0%
TECHNOGYM SPA	1.9%
SIEGFRIED HOLDING AG, ZOFINGEN	1.9%
SANLORENZO SPA	1.9%
TSUMURA & CO	1.9%
STOCK SPIRITS GROUP PLC	1.8%
DOMETIC GROUP AB	1.7%
ISHARES MSCI EAFE SMALL-CAP ETF	1.6%
MAN GROUP PLC	1.6%
BUCHER INDUSTRIES AG, NIEDERWENINGEN	1.5%

Best Performers

	Return %
IDOM INC	54.2%
SOLUTIONS 30 SE	42.5%
STOCK SPIRITS GROUP PLC	40.0%
SANLORENZO SPA	32.9%
TECHNOPRO HOLDINGS INC	28.2%
JENOPTIK AG	24.2%
ARCADIS NV, ARNHEM	22.3%
KINEPOLIS GROUP (B:KIN)	20.3%
HOSOKAWA MICRON CORP	19.1%
SHIMA SEIKI MNFG. (J:SHMA)	19.0%

Worst Performers

	Return %
VIVA BIOTECH HOLDINGS	-38.6%
SHANGHAI HAOHAI BIOLOGICAL TECHNOLOGY CO LTD	-34.0%
LOGITECH INTERNATIONAL SA, APPLES (LOGI)	-27.1%
VTECH HOLDINGS LTD	-25.3%
XTEP INTERNATIONAL HOLDINGS LTD	-25.1%
JOHNSON HEALTH TECH. (TW:JHT)	-21.3%
VALUE PARTNERS GROUP LTD	-20.8%
BARCO NV, KORTRIJK	-20.6%
BASWARE OYJ	-20.6%
NISSEI ASB MACHINE CO LTD	-20.4%

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

	Total Effects	Attribution Effects				Returns		Sector Weights					
		Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark				
Energy	-0.31%	-0.51%	-0.11%	0.04%	0.27%	-11.58%	8.01%	1.18%	2.48%				
Materials	-0.18%	-0.63%	0.04%	0.11%	0.30%	-6.19%	-0.62%	5.60%	10.81%				
Industrials	0.45%	0.37%	0.01%	0.06%	0.01%	4.13%	2.02%	21.27%	20.93%				
Consumer Discretionary	-0.20%	0.22%	-0.52%	-0.15%	0.24%	-1.48%	-3.57%	26.30%	12.61%				
Consumer Staples	0.53%	0.49%	-0.04%	-0.16%	0.24%	5.88%	-1.42%	8.51%	5.68%				
Health Care	-0.72%	-0.93%	0.02%	0.08%	0.09%	-14.21%	-3.07%	6.84%	7.61%				
Financials	-0.09%	-0.06%	0.00%	-0.04%	0.00%	1.59%	2.50%	10.26%	10.25%				
Information Technology	-1.08%	-1.21%	0.00%	0.07%	0.06%	-8.83%	0.82%	11.23%	11.86%				
Communication Services	0.20%	0.22%	-0.01%	0.06%	-0.08%	7.75%	1.02%	2.75%	4.18%				
Utilities	0.03%	--	-0.03%	0.07%	--	--	0.88%	0.00%	3.30%				
Real Estate	0.20%	--	0.04%	0.17%	--	--	-0.05%	0.00%	10.29%				
Cash	-0.09%	0.00%	-0.09%	0.00%	0.00%	0.01%	--	4.50%	0.00%				
Unclassified	-0.02%	0.00%	-0.02%	0.00%	0.00%	0.34%	--	1.56%	0.00%				
Portfolio	-1.29%	=	-2.03%	+	-0.72%	+	0.32%	+	1.14%	-1.08%	0.21%	100.00%	100.00%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Europe									
Austria	--	-0.60%	0.00%	0.65%	--	0.00%	0.01%	--	0.02%
Belgium	-7.09%	-0.57%	3.27%	1.11%	-0.07%	0.00%	-0.04%	-0.14%	-0.27%
Czech Republic*	--	9.62%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Denmark	4.09%	-3.14%	0.73%	1.21%	0.09%	0.01%	0.01%	-0.04%	0.08%
Finland	-6.11%	-7.68%	2.45%	1.24%	0.02%	-0.09%	-0.03%	0.02%	-0.08%
France	-1.02%	-0.14%	1.37%	2.29%	-0.02%	0.00%	0.02%	0.01%	0.01%
Germany	11.87%	1.17%	2.13%	3.43%	0.38%	-0.02%	0.02%	-0.14%	0.24%
Greece*	0.69%	-6.65%	0.77%	0.29%	0.02%	-0.03%	-0.01%	0.04%	0.02%
Hungary*	--	-3.18%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Ireland	--	6.22%	0.00%	0.36%	--	-0.02%	0.01%	--	-0.02%
Italy	6.24%	1.31%	7.05%	1.97%	0.10%	0.09%	-0.13%	0.26%	0.32%
Luxembourg	-13.65%	0.21%	1.57%	0.00%	0.00%	0.00%	-0.03%	-0.21%	-0.24%
Netherlands	-5.68%	3.33%	4.43%	1.67%	-0.15%	0.10%	-0.06%	-0.25%	-0.36%
Norway	-10.93%	-2.13%	1.29%	1.66%	-0.15%	0.01%	0.01%	0.03%	-0.10%
Poland*	--	6.73%	0.00%	0.33%	--	-0.03%	0.01%	--	-0.02%
Portugal	--	7.52%	0.00%	0.14%	--	-0.01%	0.00%	--	-0.01%
Russia*	--	-1.41%	0.00%	0.25%	--	0.01%	0.00%	--	0.01%
Spain	-1.14%	1.19%	0.73%	1.31%	-0.03%	-0.01%	0.01%	0.01%	-0.01%
Sweden	-3.65%	0.17%	5.18%	5.09%	-0.20%	0.00%	0.00%	0.00%	-0.20%
Switzerland	-8.91%	1.71%	5.50%	3.51%	-0.38%	0.01%	-0.01%	-0.22%	-0.59%
United Kingdom	10.43%	0.58%	9.94%	11.88%	1.18%	-0.02%	0.03%	-0.19%	1.01%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
AsiaPacific									
Australia	--	0.46%	0.00%	6.19%	--	-0.13%	0.22%	--	0.09%
China*	-24.22%	-12.89%	4.03%	2.58%	-0.29%	-0.21%	0.00%	-0.16%	-0.67%
Hong Kong	-11.99%	-14.44%	3.64%	1.53%	0.04%	-0.34%	0.00%	0.05%	-0.25%
India*	--	13.20%	0.00%	4.43%	--	-0.49%	-0.01%	--	-0.50%
Indonesia*	15.84%	10.33%	0.67%	0.35%	0.02%	0.02%	0.01%	0.02%	0.06%
Japan	6.89%	3.53%	19.23%	19.26%	0.65%	0.00%	0.00%	0.00%	0.65%
Korea*	4.91%	-4.54%	1.81%	4.55%	0.45%	0.06%	0.11%	-0.27%	0.35%
Malaysia*	--	4.93%	0.00%	0.72%	--	-0.03%	0.01%	--	-0.02%
New Zealand	--	3.09%	0.00%	0.63%	--	-0.01%	0.01%	--	-0.01%
Pakistan*	--	-9.95%	0.00%	0.09%	--	0.00%	0.01%	--	0.01%
Philippines*	9.65%	1.17%	0.64%	0.23%	0.02%	0.02%	-0.02%	0.04%	0.05%
Singapore	--	-0.98%	0.00%	1.26%	--	0.03%	0.01%	--	0.04%
Taiwan*	-5.39%	-3.37%	10.17%	5.47%	-0.11%	-0.26%	0.01%	-0.10%	-0.45%
Thailand*	--	-4.97%	0.00%	0.87%	--	0.02%	0.04%	--	0.06%
Americas									
Argentina*	--	5.70%	0.00%	0.10%	--	0.00%	0.00%	--	0.00%
Brazil*	-4.60%	-17.11%	2.28%	1.71%	0.23%	-0.07%	-0.06%	0.08%	0.18%
Canada	-5.00%	-0.79%	4.85%	6.49%	-0.30%	0.01%	0.05%	0.08%	-0.16%
Chile*	--	-17.42%	0.00%	0.20%	--	0.02%	0.02%	--	0.04%
Colombia*	--	5.79%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Mexico*	--	-3.32%	0.00%	0.46%	--	0.01%	0.01%	--	0.02%
Peru*	--	-11.11%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
United States	0.34%	0.31%	1.61%	0.00%	0.00%	-0.03%	0.00%	0.00%	-0.03%

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

	Returns and Weights				Attribution Effects				Total Effects
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	
Other									
Egypt*	--	4.42%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
Israel	--	3.60%	0.00%	1.92%	--	-0.02%	-0.01%	--	-0.03%
Kuwait*	--	2.66%	0.00%	0.21%	--	0.00%	0.00%	--	0.00%
Qatar*	--	3.48%	0.00%	0.20%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	-1.76%	0.00%	0.61%	--	0.02%	0.00%	--	0.02%
South Africa*	--	1.14%	0.00%	0.90%	--	-0.04%	0.05%	--	0.01%
Turkey*	--	2.12%	0.00%	0.31%	--	-0.01%	0.01%	--	0.00%
United Arab Emirates*	--	2.97%	0.00%	0.14%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	-3.91%	-4.30%	8.74%	9.03%	0.02%	0.01%	0.02%	0.00%	0.05%
Europe	0.16%	0.33%	46.42%	38.42%	-0.08%	0.04%	-0.15%	-0.02%	-0.20%
Asia/Pacific	-0.94%	0.79%	40.19%	48.18%	-1.17%	0.00%	0.37%	0.19%	-0.60%
Other	--	2.18%	0.00%	4.37%	--	-0.05%	0.04%	--	-0.01%
Cash	0.01%	--	4.65%	0.00%	0.00%	-0.09%	0.00%	0.00%	-0.09%
Total	-0.64%	0.21%	100.00%	100.00%	-1.22%	-0.09%	0.28%	0.18%	-0.85%
Totals									
Developed	0.96%	0.85%	74.98%	74.82%	-0.03%	0.00%	0.11%	0.00%	0.08%
Emerging*	-6.71%	-1.70%	20.37%	25.18%	-1.37%	0.09%	0.17%	0.26%	-0.85%
Cash	0.01%	--	4.65%	0.00%	0.00%	-0.09%	0.00%	0.00%	-0.09%

Fixed income environment

— The 10-year U.S. Treasury yield increased slightly during the quarter, from 1.45% to 1.52%. Longer-term Treasury bond yields drifted lower in July and August before picking up considerably in September, as speculation mounted that the Federal Reserve would begin tapering the current asset purchase program (\$80 billion in monthly Treasury purchases and \$40 billion in monthly agency mortgage-backed-securities) in November or December of this year.

— Credit spreads traded in a relatively tight range during the quarter and remained at a very low level relative to the historical average. Historically low credit default rates have supported tight spread levels. Above-average credit quality has also been supportive, specifically in the high-yield universe. Although credit spreads are tight, spreads arguably remain healthy relative to current bond default levels.

— Reports that Evergrande, one of the

largest property developers in China, was on track to miss debt service payments led to a sell-off in Chinese high-yield debt as investors braced for potential contagion. Dollar-denominated high-yield Chinese bonds in aggregate fell by around 20% in value.

— Realized and expected inflation metrics reached high levels relative to history, sparking a number of different policy responses from central bankers. The base case at the Fed and at the ECB remains that inflation will be transitory, and that rates can remain at current levels at least until late next year. In contrast, officials at the Bank of England are now expected to begin hiking rates in November, and many central banks in the emerging markets have already begun tightening policy.

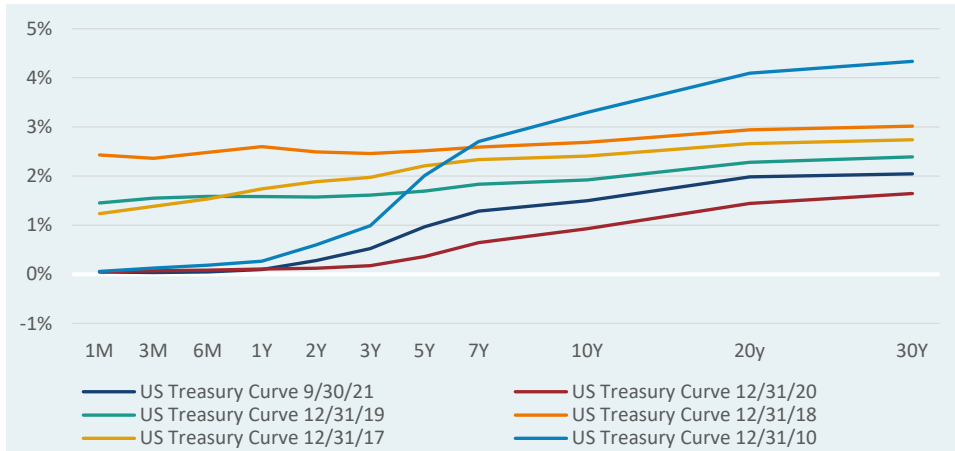
— The four-year discount margin, our preferred spread metric for bank loans, compressed slightly over the quarter from 4.32% to 4.28%.

	QTD Total Return	1 Year Total Return
Core Fixed Income (BBgBarc U.S. Aggregate)	0.1%	(0.9%)
Core Plus Fixed Income (BBgBarc U.S. Universal)	0.1%	0.2%
U.S. Treasuries (BBgBarc U.S. Treasury)	0.1%	(3.3%)
U.S. High Yield (BBgBarc U.S. Corporate HY)	0.9%	11.3%
Bank Loans (S&P/LSTA Leveraged Loan)	1.1%	8.4%
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(3.1%)	2.6%
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(0.7%)	4.4%
Mortgage-Backed Securities (BBgBarc MBS)	0.1%	(0.4%)

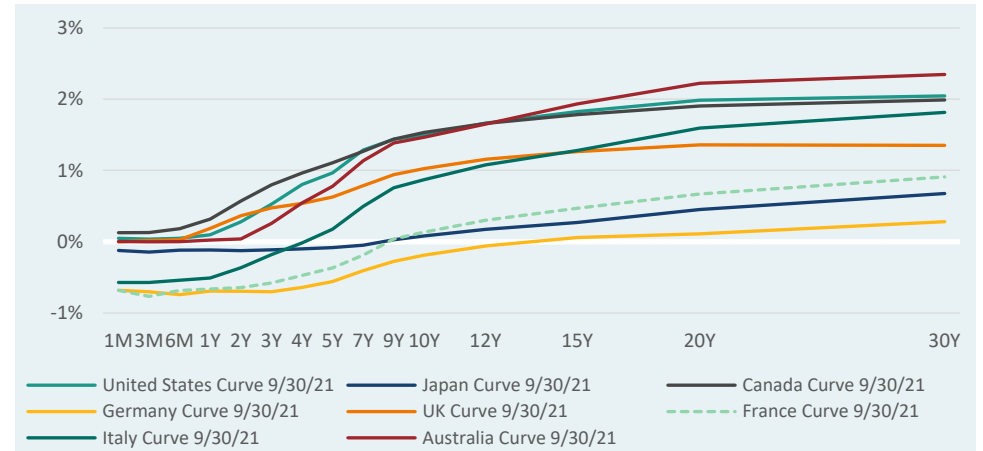
Source: Bloomberg, as of 9/30/21

Yield environment

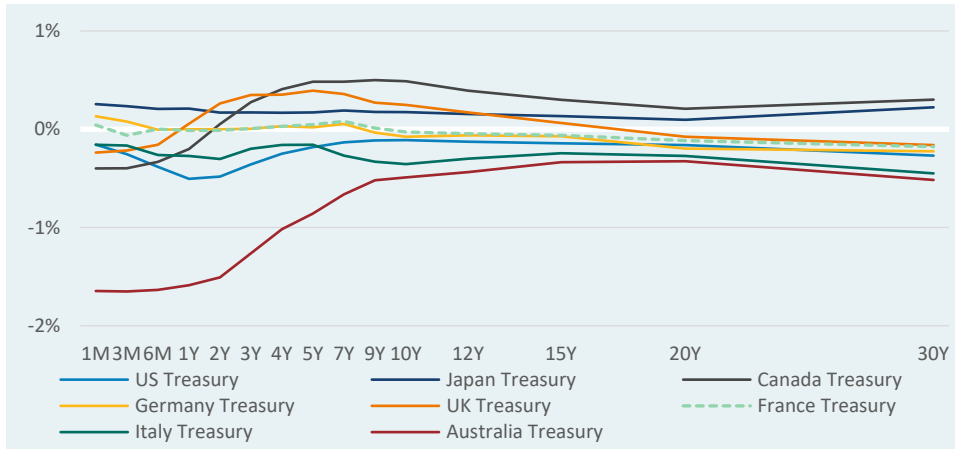
U.S. YIELD CURVE



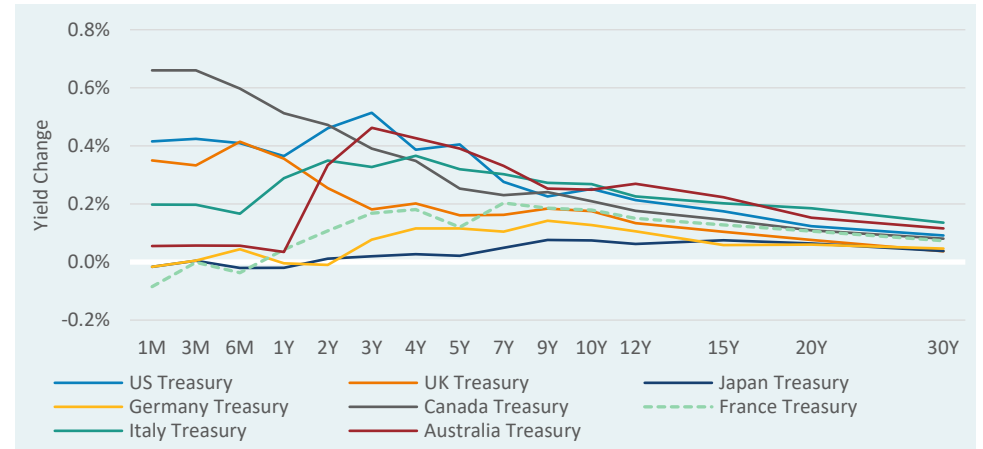
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/21

Currency

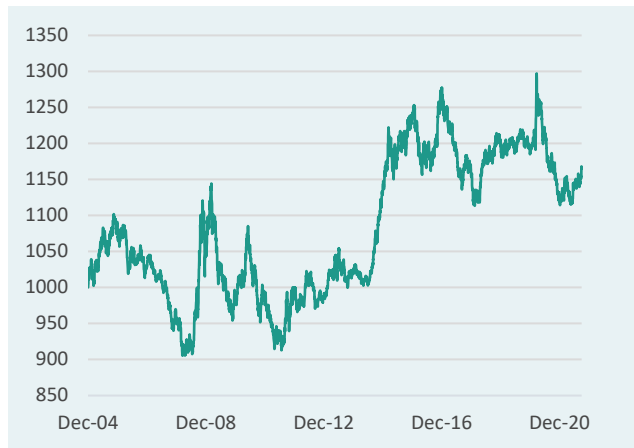
The U.S. dollar appreciated 2% during the quarter, continuing its modest rise year-to-date. This move coincided with a slight increase in U.S. Treasury yields and European government bond yields, resulting in little change to interest rate differentials.

U.S. dollar sentiment reached its most optimistic level since late 2019, while sentiment surrounding the euro and pound turned from optimistic to pessimistic. Differences in monetary policy from country-to-country appear to be driving this shift in sentiment. While the U.S. Federal Reserve is expected to begin tapering asset purchases by year-end, the ECB is planning on simply shifting the complexion of its asset purchase program, and the

BOE is planning on adjusting short-term interest rates higher while retaining the majority of its asset purchase program which targets longer-duration bonds.

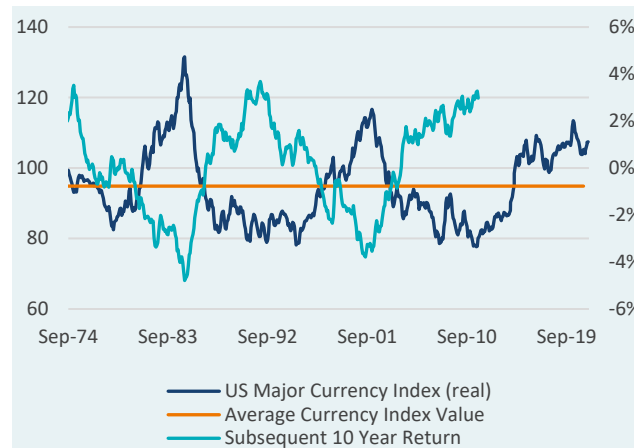
The MSCI Currency Factor Mix Index, Verus' preferred currency beta benchmark, outperformed the currency portfolio of the MSCI ACWI ex-US Index over the twelve months ending September 30th, while exhibiting 1.1% less volatility.

BLOOMBERG DOLLAR SPOT INDEX



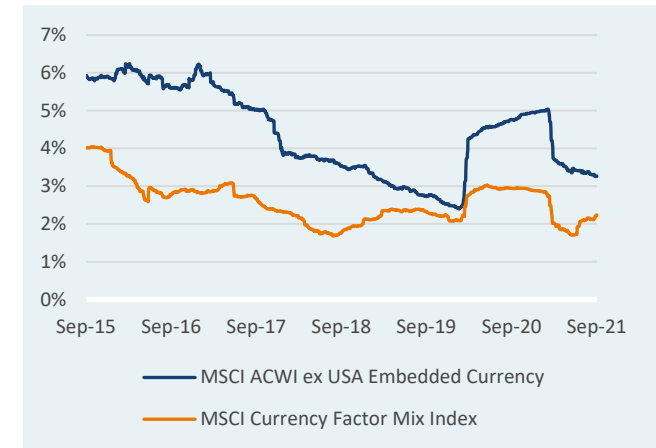
Source: Bloomberg, as of 9/30/21

U.S. DOLLAR MAJOR CURRENCY INDEX



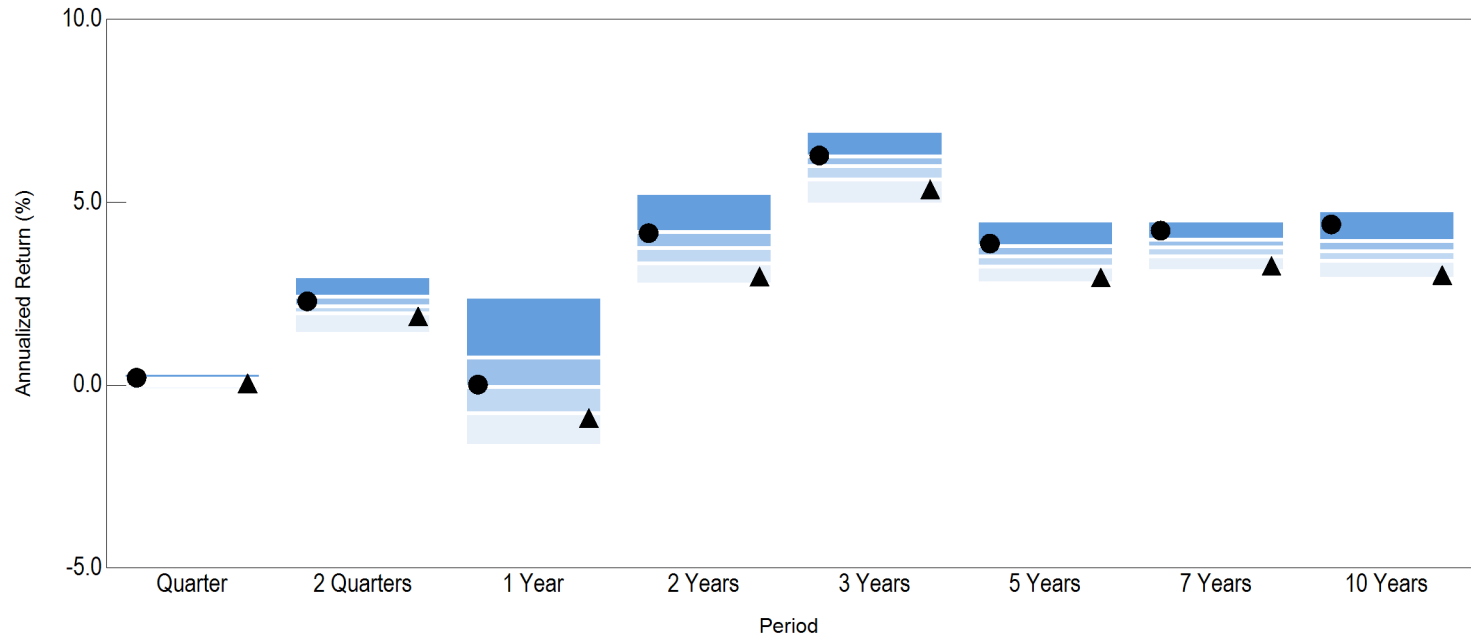
Source: Federal Reserve, as of 9/30/21

TRAILING ONE-YEAR ANNUALIZED VOLATILITY



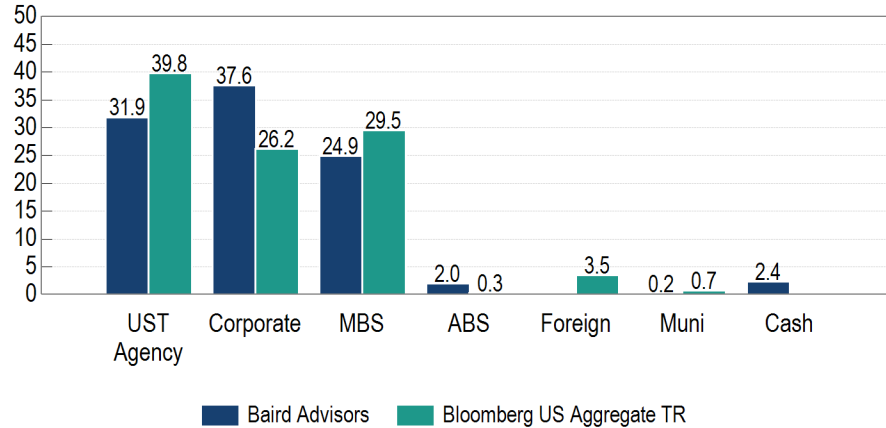
Source: Bloomberg, MSCI, as of 9/30/21

eV US Core Fixed Inc Gross Return Comparison

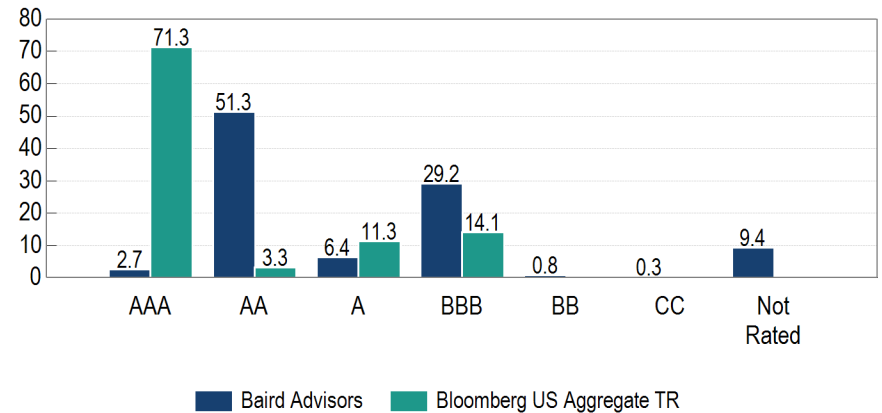


	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	0.32		2.97		2.41		5.25		6.94		4.49		4.49		4.76	
25th Percentile	0.18		2.43		0.77		4.20		6.27		3.80		3.98		3.94	
Median	0.10		2.16		-0.04		3.76		6.00		3.53		3.77		3.68	
75th Percentile	0.00		1.97		-0.75		3.33		5.62		3.25		3.53		3.41	
95th Percentile	-0.13		1.41		-1.65		2.75		4.95		2.79		3.13		2.91	
# of Portfolios	214		214		214		212		210		208		204		200	
● Baird Advisors	0.20	(18)	2.29	(39)	0.01	(48)	4.15	(28)	6.28	(25)	3.87	(23)	4.22	(10)	4.39	(10)
▲ Bloomberg US Aggregate TR	0.05	(62)	1.88	(84)	-0.90	(84)	2.97	(92)	5.36	(88)	2.94	(92)	3.26	(92)	3.01	(95)

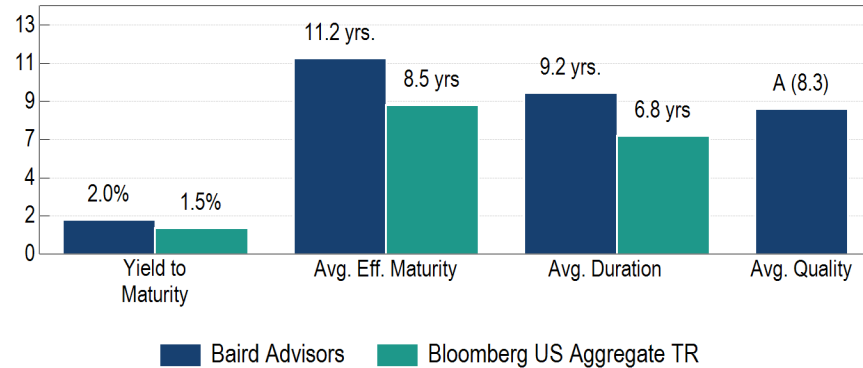
US Sector Allocation
Baird Advisors



Credit Quality Allocation
Baird Advisors



Characteristics
Baird Advisors

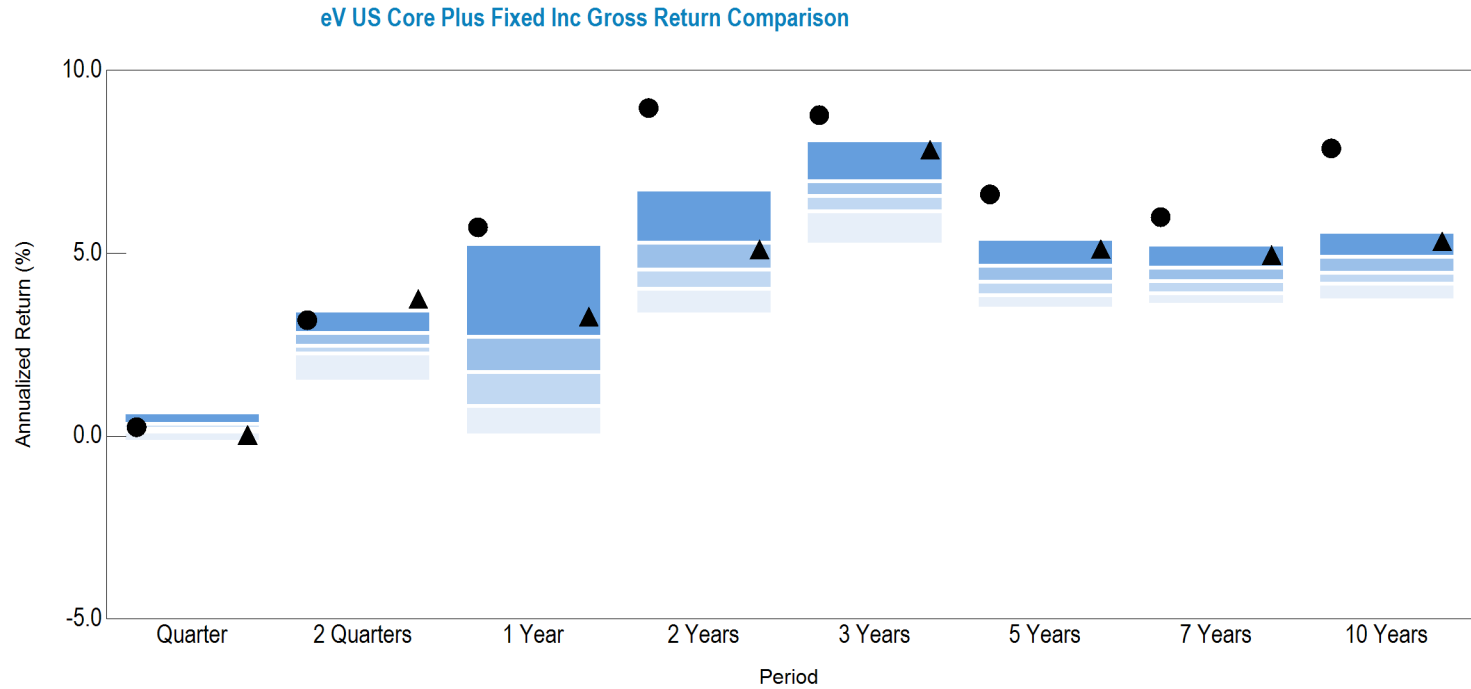


PERFORMANCE BY QUALITY

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Cash & Equiv	1	32,504	2.4	0.01	0.00
Govt & Agency	141	698,846	51.6	0.20	0.08
AAA	33	94,805	7.0	0.20	0.01
AA	7	4,063	0.3	1.80	0.01
A	45	135,435	10.0	0.40	0.04
BAA	124	369,738	27.3	0.30	0.08
Below BAA	13	18,961	1.4	1.60	0.02
Other	0	-	0.0	0.00	0.00
Total Account	364	\$1,354,352	100.0	0.24	0.24

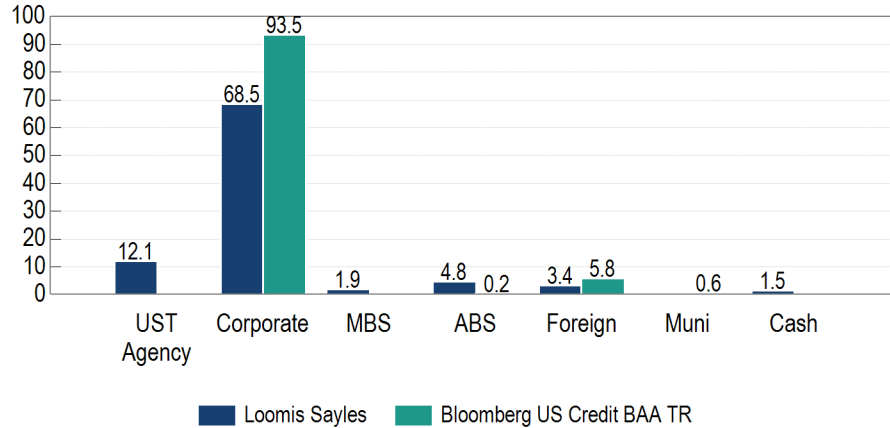
PERFORMANCE BY DURATION

	<u>NUMBER OF ISSUES</u>	<u>FINAL MARKET VALUE (\$000)</u>	<u>FINAL MARKET VALUE %</u>	<u>QUARTERLY RETURN %</u>	<u>QUARTERLY CONTRIBUTION TO TOTAL RETURN %</u>
Under 1 Year	17	54,174	4.0	-0.07	0.00
1 - 3 Years	76	265,453	19.6	0.29	0.06
3 - 6 Years	170	549,867	40.6	0.24	0.10
Over 6 Years	101	484,858	35.8	0.26	0.09
Total Account	364	\$1,354,352	100.0	0.24	0.24

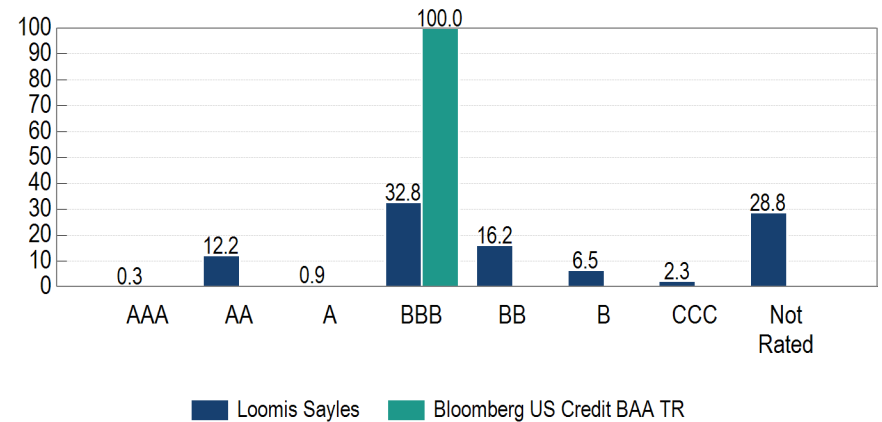


	Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)		Return (Rank)			
5th Percentile	0.64	3.42	5.24	6.73	8.08	5.39	5.23	5.57								
25th Percentile	0.34	2.83	2.72	5.30	6.98	4.66	4.62	4.91								
Median	0.23	2.48	1.77	4.56	6.57	4.22	4.25	4.47								
75th Percentile	0.14	2.27	0.84	4.04	6.15	3.86	3.91	4.17								
95th Percentile	-0.14	1.50	0.03	3.34	5.25	3.49	3.60	3.72								
# of Portfolios	122	122	122	120	117	113	110	101								
● Loomis Sayles	0.24	(46)	3.17	(9)	5.71	(5)	8.97	(2)	8.77	(3)	6.61	(2)	5.99	(2)	7.86	(1)
▲ Bloomberg US Credit BAA TR	0.03	(85)	3.75	(1)	3.27	(16)	5.10	(32)	7.83	(7)	5.11	(11)	4.95	(10)	5.32	(10)

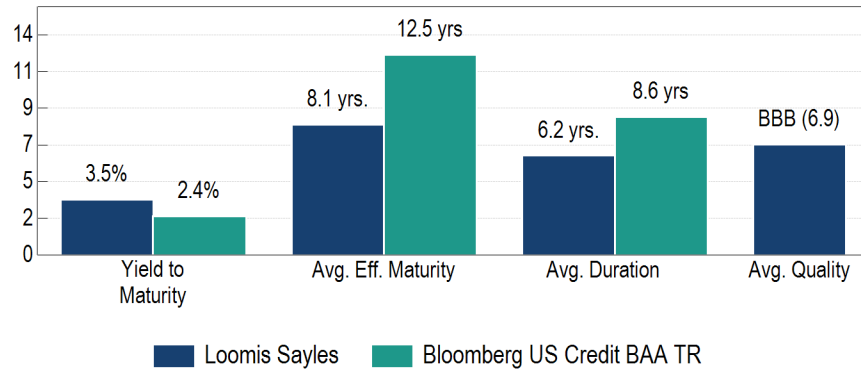
US Sector Allocation
Loomis Sayles



Credit Quality Allocation
Loomis Sayles



Characteristics
Loomis Sayles



Summary

Account Return	0.22
Benchmark Return	0.03
Excess Return	0.18
Sector Allocation	-0.43
Security Selection	0.74
Trading	-0.13
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	0.35	0.03	0.35	0.03	-0.43	0.74	0.31	0.31
CASH	1.81	0.00	0.43	0.03	0.01	0.00	0.00	-0.03	-0.03	-0.03
AAA	12.62	0.00	0.02	0.03	0.00	0.00	0.00	-0.01	-0.01	-0.01
AA	1.16	0.00	1.25	0.03	0.01	0.00	0.00	0.02	0.02	0.02
A	3.42	0.17	0.12	-0.96	0.00	-0.01	0.00	0.00	0.00	0.00
BAA	40.38	99.67	0.27	0.04	0.11	0.04	0.00	0.09	0.09	0.09
BA	21.73	0.16	0.93	-2.10	0.19	0.00	-0.43	0.64	0.21	0.21
B	7.41	0.00	0.11	0.03	0.01	0.00	0.00	0.01	0.01	0.01
CAA	3.41	0.00	-0.36	0.03	-0.01	0.00	0.00	-0.01	-0.01	-0.01
CA	0.05	0.00	13.22	0.03	0.03	0.00	0.00	0.03	0.03	0.03
C	0.13	0.00	-9.24	0.03	-0.01	0.00	0.00	-0.01	-0.01	-0.01
NR	6.08	0.00	1.16	0.03	0.07	0.00	0.00	0.07	0.07	0.07
Unclassified	1.81	0.00	-1.84	0.03	-0.06	0.00	0.00	-0.06	-0.06	-0.06

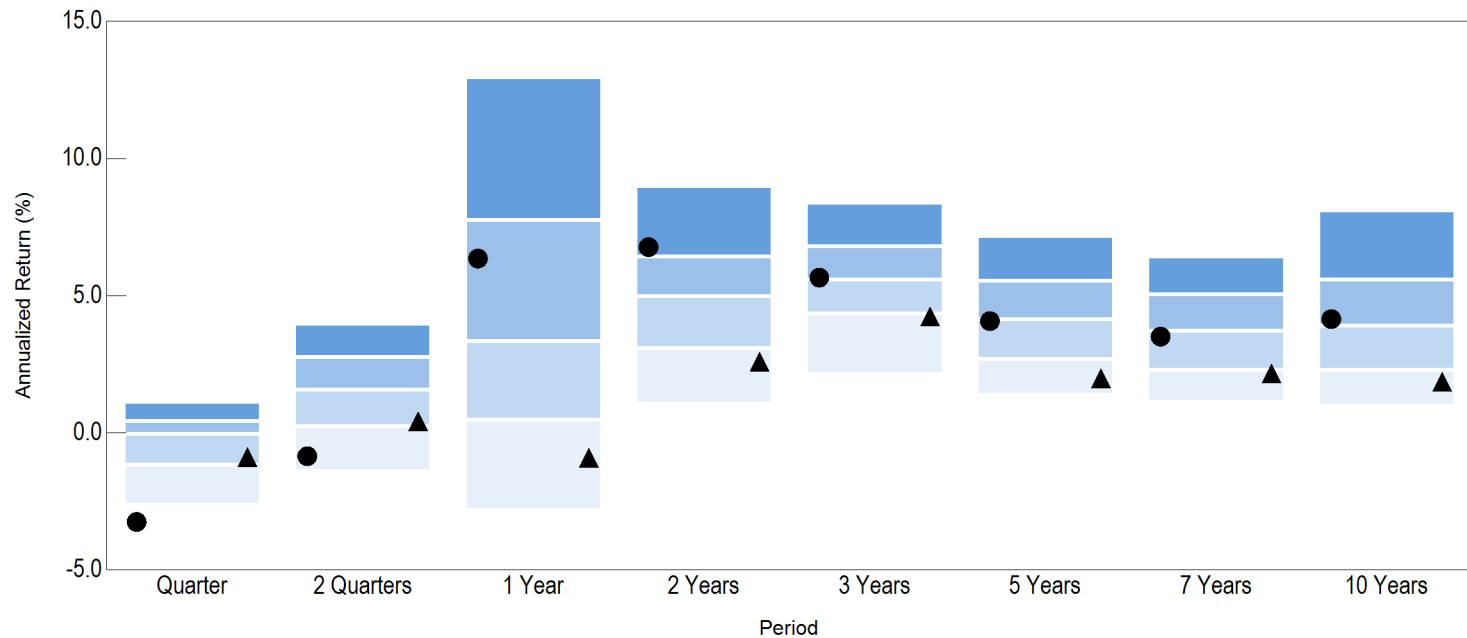
Summary	
Account Return	0.22
Benchmark Return	0.03
Excess Return	0.18
Sector Allocation	0.11
Security Selection	0.20
Trading	-0.13
Pricing Differences	0.00
Compounding	0.00

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	0.35	0.03	0.35	0.03	0.11	0.20	0.31	0.31
Less than 0.5	12.74	0.22	0.32	0.48	0.06	0.00	0.01	0.00	0.01	0.01
0.5 - 1.0	2.62	1.18	6.15	0.19	0.15	0.00	0.03	0.14	0.17	0.17
1.0 - 1.5	8.76	3.07	-0.60	0.17	-0.04	0.00	-0.01	-0.06	-0.07	-0.07
1.5 - 2.0	7.02	3.51	-0.09	0.23	0.00	0.01	0.00	-0.01	-0.02	-0.02
2.0 - 2.5	6.26	3.62	0.51	0.19	0.03	0.01	0.03	0.02	0.05	0.05
2.5 - 3.0	5.34	3.38	-0.30	0.24	-0.02	0.01	-0.01	-0.03	-0.04	-0.04
3.0 - 3.5	5.20	5.67	-0.36	0.07	-0.01	0.00	0.00	-0.02	-0.02	-0.02
3.5 - 4.0	3.85	4.13	-1.70	0.02	-0.07	0.00	0.00	-0.07	-0.07	-0.07
4.0 - 4.5	4.53	4.43	-0.35	0.18	-0.01	0.01	0.00	-0.01	-0.01	-0.01
4.5 - 5.0	6.35	4.24	0.69	0.46	0.04	0.02	0.02	0.01	0.03	0.03
5.0 - 5.5	5.35	3.57	0.99	0.47	0.05	0.02	0.01	0.03	0.04	0.04
5.5 - 6.0	4.68	4.14	0.69	0.03	0.04	0.00	0.00	0.03	0.03	0.03
6.0 - 6.5	3.31	3.95	1.21	-0.06	0.03	0.00	0.00	0.05	0.05	0.05
6.5 - 7.0	4.35	2.74	0.24	0.14	0.01	0.00	0.00	0.00	0.01	0.01
7.0 - 7.5	5.63	4.50	0.47	0.06	0.04	0.00	0.00	0.02	0.02	0.02
7.5 - 8.0	3.83	3.51	0.31	0.17	0.00	0.02	0.00	0.01	0.01	0.01
8.0 - 8.5	3.39	3.16	0.75	-0.04	0.03	-0.01	0.00	0.03	0.03	0.03
8.5 - 9.0	0.97	2.32	0.50	0.04	0.00	0.02	0.00	0.00	0.00	0.00
9.0 - 9.5	-8.36	0.75	0.05	0.08	-0.01	0.00	0.00	0.01	0.01	0.01
9.5 - 10.0	0.80	1.13	1.36	-0.25	0.01	-0.01	0.00	0.02	0.02	0.02

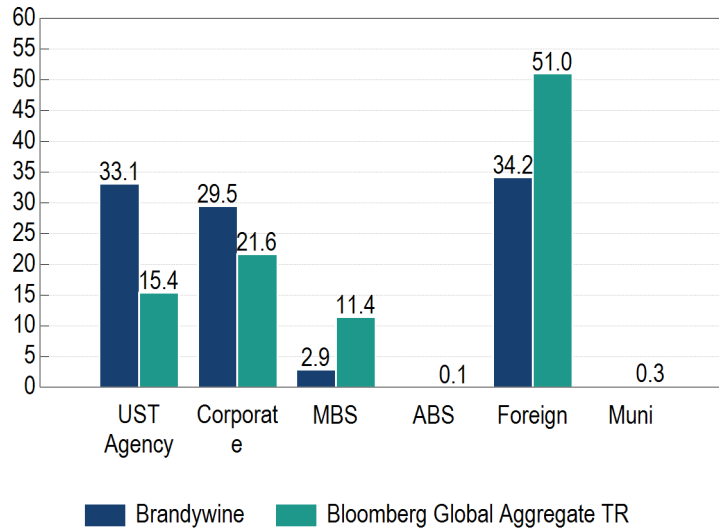
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
10.0 - 10.5	0.14	1.30	4.84	5.14	0.01	0.06	-0.01	0.00	-0.01	-0.01
10.5 - 11.0	0.08	1.61	6.25	5.34	0.00	0.08	-0.02	0.00	-0.02	-0.02
11.0 - 11.5	0.22	2.04	5.78	5.35	0.01	0.11	-0.03	0.00	-0.03	-0.03
11.5 - 12.0	0.39	1.20	2.49	5.85	0.01	0.07	-0.02	-0.01	-0.03	-0.03
12.0 - 12.5	0.10	1.62	1.89	5.85	0.00	0.09	-0.03	0.00	-0.03	-0.03
12.5 - 13.0	0.58	1.08	8.35	6.07	0.03	0.07	-0.02	0.01	-0.01	-0.01
13.0 - 13.5	0.87	1.05	6.93	6.57	0.07	0.06	0.00	0.01	0.01	0.01
13.5 - 14.0	0.99	1.69	6.38	5.99	0.07	0.10	-0.01	0.01	0.00	0.00
14.0 - 14.5	0.63	2.20	6.13	6.34	0.07	0.13	-0.03	0.02	-0.01	-0.01
14.5 - 15.0	0.77	2.75	3.53	6.95	0.02	0.18	-0.06	-0.03	-0.09	-0.09
15.0 - 15.5	1.50	3.19	6.85	6.66	0.06	0.21	-0.07	-0.02	-0.09	-0.08
15.5 - 16.0	1.78	2.67	8.82	7.11	0.17	0.17	-0.01	0.03	0.02	0.02
16.0 - 16.5	0.98	2.81	7.50	6.89	0.06	0.20	-0.05	0.01	-0.04	-0.04
16.5 - 17.0	0.32	2.18	10.50	7.53	0.04	0.18	-0.08	0.01	-0.07	-0.07
17.0 - 17.5	0.79	1.71	6.91	7.38	0.04	0.12	-0.04	-0.01	-0.04	-0.04
17.5 - 18.0	0.48	1.32	3.46	6.76	0.03	0.09	-0.02	-0.01	-0.03	-0.03
18.0 - 18.5	0.24	1.19	18.95	7.07	0.04	0.11	-0.05	0.03	-0.03	-0.03
18.5 - 19.0	0.91	1.45	7.62	7.87	0.02	0.10	-0.05	-0.01	-0.05	-0.05
19.0 - 19.5	1.80	0.88	5.14	8.87	0.17	0.09	0.09	-0.05	0.04	0.04
19.5 - 20.0	0.34	0.63	9.07	6.64	0.04	0.04	0.00	0.00	0.00	0.00
20.0 - 20.5	0.11	0.42	10.80	11.30	0.01	0.06	-0.03	-0.01	-0.04	-0.04
20.5 - 21.0	0.02	0.28	3.43	8.80	0.01	0.03	-0.01	0.01	-0.01	-0.01
21.0 - 21.5	0.00	0.23	0.00	8.62	0.00	0.02	-0.01	0.00	-0.01	-0.01
21.5 - 22.0	0.04	0.08	-5.35	7.98	-0.01	0.01	-0.01	0.00	-0.01	-0.01
22.0 - 22.5	0.12	0.12	10.39	5.75	0.02	0.01	0.00	0.01	0.01	0.01
22.5 - 23.0	0.02	0.07	3.72	15.77	0.01	0.01	-0.01	0.00	-0.01	-0.01
23.0 - 23.5	0.00	0.05	0.00	8.83	0.00	0.00	0.00	0.00	0.00	0.00
23.5 - 24.0	0.00	0.03	0.00	10.59	0.00	0.00	0.00	0.00	0.00	0.00
24.0 - 24.5	0.00	0.01	0.00	6.60	0.00	0.00	0.00	0.00	0.00	0.00
24.5 - 25.0	0.00	0.01	0.00	-0.49	0.00	0.00	0.00	0.00	0.00	0.00
Greater than 25.0	0.00	0.02	0.00	18.02	0.00	0.00	0.00	0.00	0.00	0.00

eV All Global Fixed Inc Gross Return Comparison

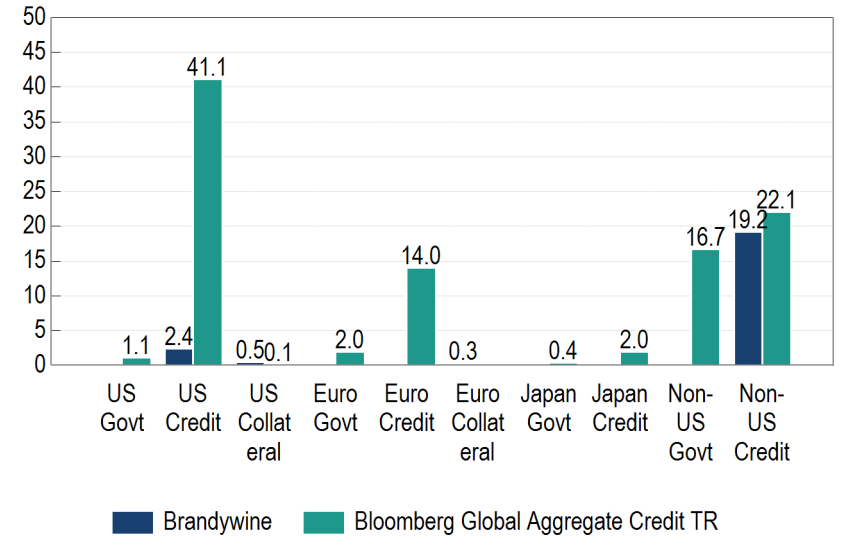


	Return (Rank)							
	Quarter	2 Quarters	1 Year	2 Years	3 Years	5 Years	7 Years	10 Years
5th Percentile	1.12	3.96	12.96	8.99	8.37	7.17	6.41	8.11
25th Percentile	0.44	2.77	7.77	6.43	6.81	5.55	5.05	5.60
Median	-0.03	1.60	3.36	4.99	5.60	4.15	3.73	3.91
75th Percentile	-1.14	0.26	0.49	3.11	4.37	2.70	2.31	2.32
95th Percentile	-2.61	-1.39	-2.80	1.07	2.16	1.40	1.14	1.00
# of Portfolios	503	503	503	495	483	449	394	299
● Brandywine	-3.25 (97)	-0.85 (91)	6.35 (32)	6.77 (22)	5.66 (48)	4.07 (52)	3.50 (53)	4.15 (46)
▲ Bloomberg Global Aggregate TR	-0.88 (70)	0.42 (73)	-0.91 (87)	2.60 (83)	4.24 (78)	1.99 (88)	2.17 (79)	1.86 (85)

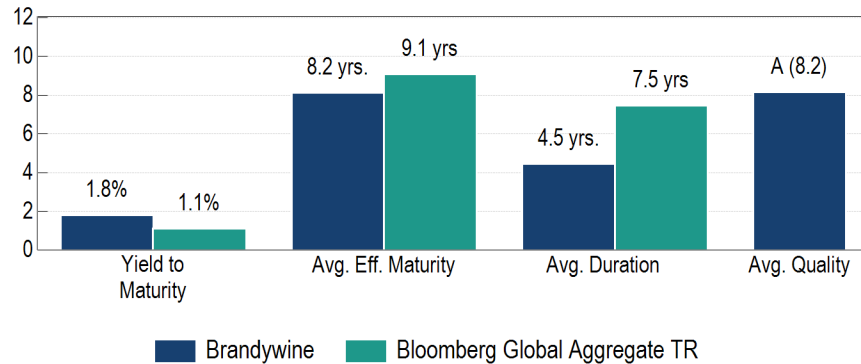
US Sector Allocation



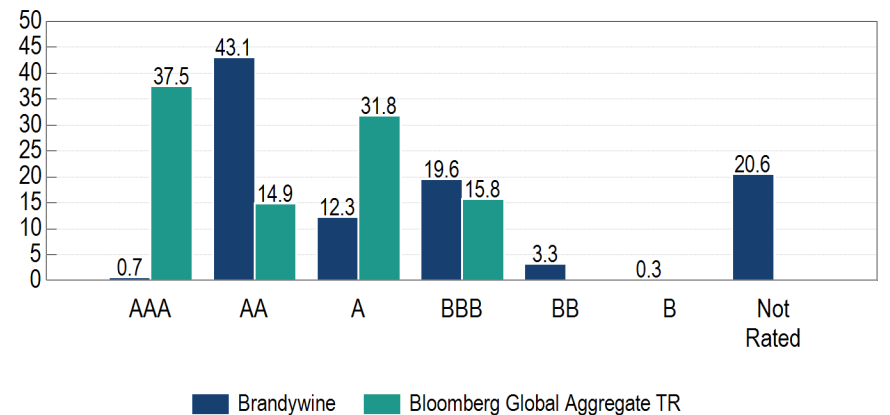
Global Sector Allocation



Characteristics
Brandywine

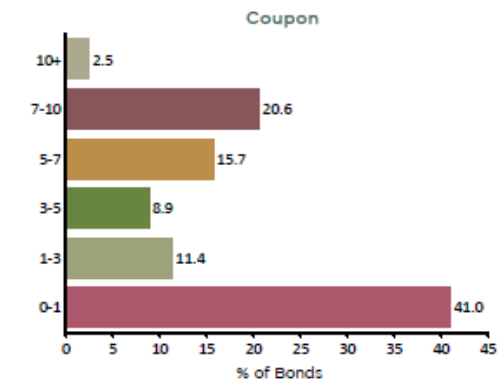
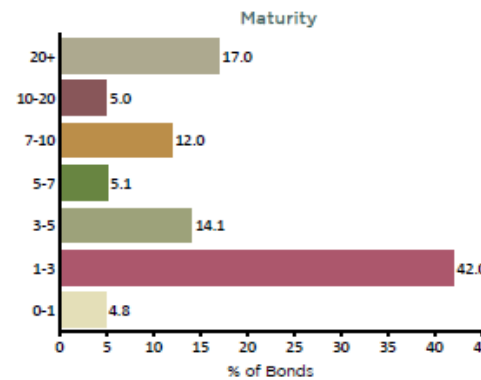


Credit Quality Allocation
Brandywine



Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	3.19	0.60
Yield to Worst (%)	3.15	0.60
Modified Duration	3.02	8.68
Effective Duration	3.02	8.85
Average Maturity	8.08	9.78
Average Market Price	100.94	-
Average Coupon (%)	3.47	1.70
Current Yield (%)	3.24	-
# of Issues	175	1,098



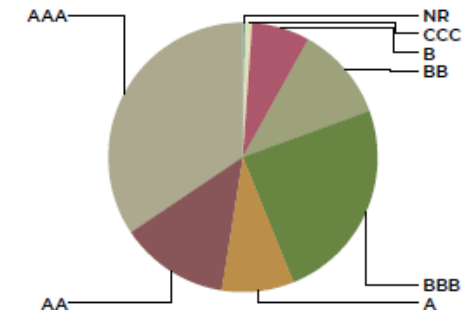
Sector Breakdown

	Market Value (%)	Duration Contribution (In Years)
Government Sovereign	59.23	2.42
Corporate Bond - Investment Grade	17.64	0.56
Corporate Bond - High Yield	10.90	0.48
Government Owned - No Guarantee	2.94	0.30
Government Regional Agencies	2.49	0.04
Mortgage Backed Securities	1.90	0.03
Cash	6.35	-
Derivatives	(1.44)	(0.82)
Total:	100.00	3.02

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	34.6	34.6
AA	13.0	47.6
A	8.6	56.1
BBB	24.5	80.7
BB	11.6	92.2
B	6.8	99.0
CCC	0.9	99.9
NR	0.1	100.0

Average Quality: A



PRIMARY BENCHMARK is FTSE WGBI (USD)

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

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

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

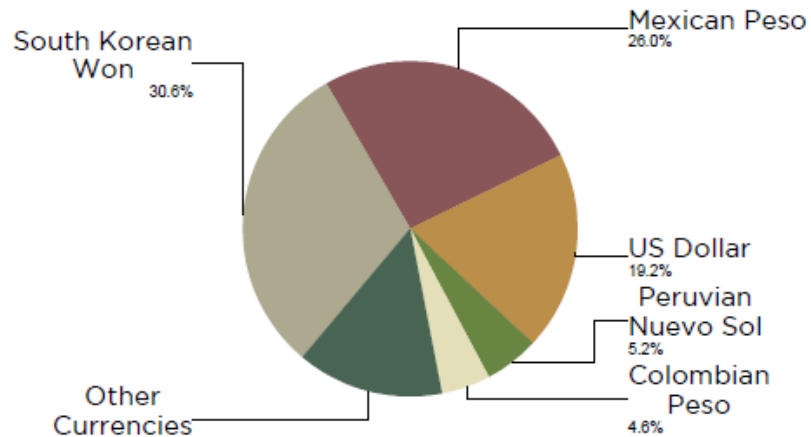
Brandywine
Country & Currency Allocation

Period Ending: September 30, 2021

Country Allocation	9/30/2021			6/30/2021		Currency Allocation	9/30/2021			6/30/2021	
	Portfolio	Index	Active	Portfolio	Change		Portfolio	Index	Active	Portfolio	Change
Japan	-	16.73	(16.73)	-	-	Euro	5.30	33.32	(28.02)	8.23	(2.93)
*Mexico	12.44	0.59	11.85	12.40	0.04	Japanese Yen	5.01	16.73	(11.73)	-	5.01
France	0.05	8.55	(8.50)	0.07	(0.02)	*Polish Zloty	9.47	0.46	9.01	7.66	1.81
South Korea	7.47	-	7.47	-	7.47	*Chilean Peso	7.36	-	7.36	9.15	(1.79)
United States	45.73	38.81	6.93	51.31	(5.58)	US Dollar	31.69	38.81	(7.12)	30.47	1.22
Australia	6.61	1.51	5.10	4.55	2.06	*Mexican Peso	6.49	0.59	5.89	8.58	(2.09)
Spain	0.19	5.02	(4.83)	0.11	0.08	British Pound Sterling	0.09	4.92	(4.83)	5.38	(5.28)
Canada	5.49	1.62	3.87	5.28	0.21	*Hungarian Forint	3.88	-	3.88	5.88	(2.00)
*Colombia	3.83	-	3.83	4.52	(0.70)	*South African Rand	3.34	-	3.34	0.41	2.93
*Russian Federation	3.81	-	3.81	3.53	0.28	*Russian Ruble	3.26	-	3.26	4.98	(1.72)
*Brazil	2.74	-	2.74	3.69	(0.95)	*Thai Baht	3.20	-	3.20	2.44	0.76
*China	2.42	-	2.42	0.38	2.04	*Malaysian Ringgit	3.34	0.41	2.93	4.56	(1.21)
*Egypt	1.98	-	1.98	1.85	0.13	South Korean Won	2.67	-	2.67	-	2.67
*South Africa	1.94	-	1.94	3.59	(1.65)	*Brazilian Real	2.63	-	2.63	3.82	(1.19)
*Peru	1.91	-	1.91	-	1.91	*Egyptian Pound	1.98	-	1.98	1.85	0.13
*Malaysia	1.79	0.41	1.38	1.69	0.10	*Peruvian Nuevo Sol	1.91	-	1.91	2.00	(0.09)
*Chile	0.44	-	0.44	0.32	0.12	*Czech Koruna	1.86	-	1.86	0.89	0.97
*Turkey	0.37	-	0.37	0.21	0.16	*Colombian Peso	1.74	-	1.74	0.67	1.07
*Zambia	0.37	-	0.37	0.31	0.05	Australian Dollar	3.18	1.51	1.67	0.28	2.90
Bahamas	0.31	-	0.31	0.11	0.20	Canadian Dollar	-	1.62	(1.62)	0.07	(0.07)
*Uruguay	0.24	-	0.24	0.19	0.06	*Indonesian Rupiah	1.61	-	1.61	2.68	(1.07)
Israel	0.55	0.38	0.16	0.48	0.06	Danish Krone	-	0.43	(0.43)	-	-
Luxembourg	0.11	-	0.11	0.07	0.05	Israeli Shekel	-	0.38	(0.38)	-	-
*Panama	0.10	-	0.10	0.06	0.04	Singapore Dollar	-	0.36	(0.36)	-	-
*Ukraine	0.09	-	0.09	0.11	(0.02)	Swedish Krona	-	0.25	(0.25)	-	-
*Poland	0.38	0.46	(0.08)	0.22	0.16	Norwegian Krone	-	0.21	(0.21)	-	-
*Ecuador	0.07	-	0.07	0.04	0.03						
European Union	0.01	-	0.01	0.03	(0.02)						
Other Countries	-	25.91	(25.91)	5.19	(5.19)						
Derivative P/L	(1.44)	-	(1.44)	(0.31)	(1.13)						
Total:	100.00	100.00	-	100.00	-	Total:	100.00	100.00	-	100.00	-

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

Source of Portfolio Duration by Currency Denomination



Modified Duration Contribution by Currency
(In Years)

Currency	9/30/2021				6/30/2021	
	0-3	>3-10	>10-20	>20+	Total	Total Change
South Korean Won	-	0.47	-	0.45	0.92	0.92
*Mexican Peso	-	0.11	0.13	0.54	0.78	(0.03)
US Dollar	0.02	0.40	(0.75)	0.92	0.58	(0.14)
*Peruvian Nuevo Sol	-	-	0.16	-	0.16	0.16
*Colombian Peso	-	0.14	-	-	0.14	(0.18)
*Russian Ruble	-	0.14	-	-	0.14	0.01
*South African Rand	-	0.04	-	0.09	0.12	(0.15)
Australian Dollar	0.06	-	-	-	0.06	(0.01)
*Malaysian Ringgit	0.00	0.06	-	-	0.06	0.01
*Brazilian Real	-	0.03	-	-	0.03	(0.09)
Euro	-	0.00	-	0.01	0.01	0.00
*Polish Zloty	0.01	-	-	-	0.01	0.00
*Egyptian Pound	0.01	-	-	-	0.01	(0.00)
*Czech Koruna	-	-	-	-	-	(0.13)
*Indonesian Rupiah	-	-	-	-	-	(0.27)
Canadian Dollar	-	-	-	-	-	(0.00)
Total	0.09	1.39	(0.46)	2.00	3.02	0.11

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

(In Years)

Country	9/30/2021				Total	Index	6/30/2021	
	0-3	>3-10	>10-20	>20+			Total	Active Change
United States	0.00	0.11	(0.78)	0.62	(0.04)	2.68	(2.72)	(0.25)
Japan	-	-	-	-	-	2.04	(2.04)	-
*Mexico	-	0.14	0.13	0.84	1.11	0.03	1.08	(0.03)
South Korea	-	0.47	-	0.45	0.92	-	0.92	0.92
France	-	0.00	-	-	0.00	0.77	(0.77)	(0.00)
United Kingdom	-	-	-	-	-	0.66	(0.66)	(0.01)
Italy	-	-	-	-	-	0.59	(0.59)	-
Spain	-	-	-	0.01	0.01	0.41	(0.40)	0.00
*Colombia	-	0.17	-	-	0.17	-	0.17	(0.17)
*Peru	-	-	0.16	-	0.16	-	0.16	0.16
*Russian Federation	-	0.14	-	-	0.14	-	0.14	0.01
*South Africa	-	0.04	-	0.09	0.12	-	0.12	(0.15)
Canada	0.00	0.00	-	-	0.00	0.12	(0.12)	(0.00)
*Brazil	-	0.09	0.01	0.00	0.10	-	0.10	(0.06)
*China	0.00	0.08	-	-	0.09	-	0.09	0.08
Australia	0.06	0.01	-	-	0.07	0.11	(0.05)	(0.01)
*Malaysia	0.00	0.06	-	-	0.06	0.03	0.03	0.01
*Chile	-	0.02	-	-	0.02	-	0.02	0.00
*Poland	0.01	-	-	-	0.01	0.02	(0.01)	0.00
Bahamas	0.00	-	0.01	-	0.01	-	0.01	0.01
*Turkey	0.00	0.01	-	-	0.01	-	0.01	0.00
*Ukraine	-	-	0.01	-	0.01	-	0.01	(0.00)
*Panama	-	0.01	-	-	0.01	-	0.01	0.00
Luxembourg	-	0.01	-	-	0.01	-	0.01	0.00
*Zambia	0.00	0.00	-	-	0.01	-	0.01	0.00
*Egypt	0.01	-	-	-	0.01	-	0.01	(0.00)
*Ecuador	-	0.00	-	-	0.00	-	0.00	0.00
*Uruguay	-	0.00	-	-	0.00	-	0.00	0.00
Israel	-	0.02	-	-	0.02	0.03	0.00	0.00
Other Countries	-	-	-	-	-	1.19	(1.19)	(0.42)
Total	0.09	1.39	(0.46)	2.00	3.02	8.69	(5.67)	0.11

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

Policy Index and Benchmark History

Period Ending: September 30, 2021

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%	
Bloomberg US Aggregate	11.40%	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%	
Bloomberg US High Yield	1.60%	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%						
Bloomberg Commodity	0.75%	0.75%	0.75%													
FTSE WGBI	3.00%	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%						
CPI-U +3% (RR)				5.00%	5%											
MSCI ACWI ex US							23%	22%	22%	22%						
MSCI ACWI ex US IMI	25.00%	26.00%	26.00%	27.00%	25%	23%										
MSCI EAFE											10%	10%	10%	10%		
MSCI Emg Mkts Free ex Malaysia											3%					
MSCI World net															10%	
NCREIF						6%	6%	9%	9%	9%						
NCREIF ODCE	8.00%	8.00%	8.00%	6.00%	6%											
Russell 3000	25.00%	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%		
HFRI FoF Composite	9.00%	9.00%														
Thomson Reuters CJA Global All PE	8.00%	9.00%														
Russell 3000 +1% (PE)			18.00%	15.00%	10%											
Russell 3000 +1.5% (PE)						10%	10%									
Russell 3000 +4% (AI)											2%					
S&P 500															55%	
S&P Global Infrastructure	1.75%	1.75%	1.75%													
S&P Global 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
Bloomberg US Aggregate	71.25%	75%	100%
Bloomberg US 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: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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PERIOD ENDING: SEPTEMBER 30, 2021

Absolute Return Performance Report

Alameda County Employees' Retirement Association

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Hedge Fund Environment **PAGE 3**

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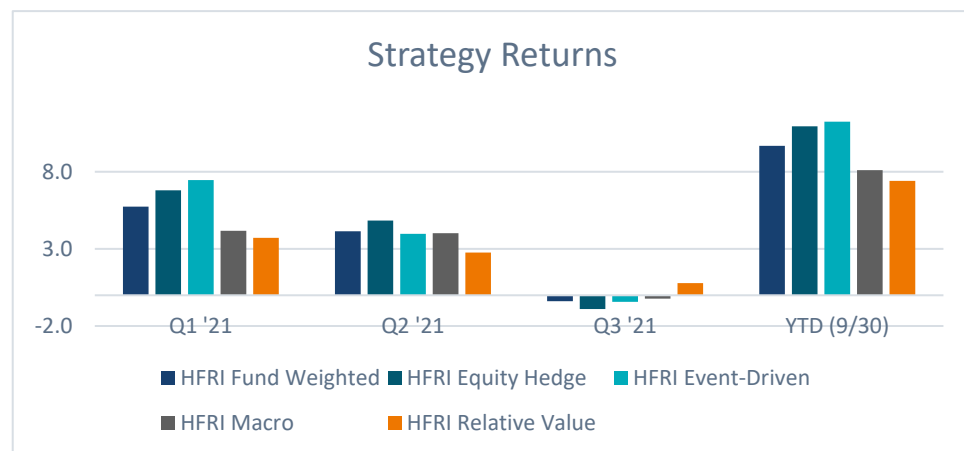
Hedge Fund Environment

Hedge fund trends & flows

Hedge funds see fifth consecutive quarter of inflows

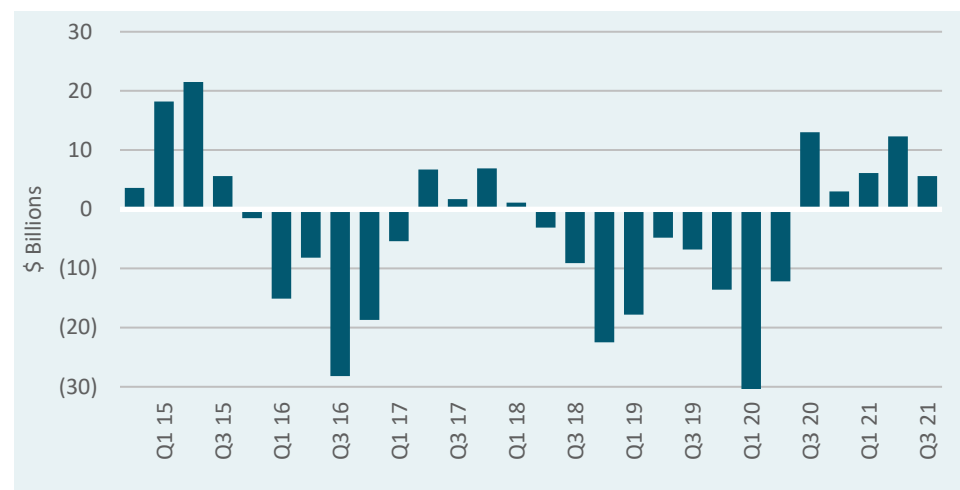
- Muted performance for Q3 (-0.3% for HFRI Fund Weighted Composite) followed a strong first half for the calendar year with a YTD return of 9.1% through September.
- As interest rates rose at the end of Q3, credit and interest rate-sensitive fixed income relative value strategies posted asset growth of \$16.8 billion with contributions from investors and performance-based gains.
- Equity hedge fund strategies had the largest inflow of capital in Q3 as equity volatility increased. Assets held steady at \$1.21 trillion in total AUM with a modest performance decline (-0.8 for Q3) partially offsetting net asset inflows.
- Event driven strategies, which focus on out-of-favor, deep value equity and credit positions, experienced minimal capital changes in Q3.
- After leading inflows in Q2 '21, uncorrelated Macro strategies had modest outflows in Q3 with inflows to commodity-focused strategies but greater outflows in Systematic Diversified CTA strategies.
- Investor inflows were distributed across firms of all sizes, with total inflows for the quarter of \$5.6 billion.

HFRI STRATEGY RETURNS, LAST 3 QUARTERS



Source: HFR, eVestment

QUARTERLY NET FLOWS TO HEDGE FUNDS



Source: HFR

Factors returns

Factor	1M	3M	YTD	1 Year	3 Year	5 Year
Momentum	1.5	2.5	3.1	3.0	-0.9	0.1
Leverage	-0.5	-0.5	0.3	1.2	0.7	-0.4
Volatility	-0.5	0.5	1.5	2.7	3.7	1.9
Value	-0.7	-1.3	6.4	6.4	-1.8	-2.5
Growth	0.0	0.5	-0.3	-0.3	2.9	1.9
Size	-0.3	-1.2	0.4	-0.6	1.1	0.8
Dividend Yield	-0.4	-0.9	1.3	0.3	-0.4	0.0

- Factor returns are mostly positive over longer time periods and are a key component of most alternative risk premia strategies.
- 2020 saw major drawdowns in several factors, including Value, with only minor gains to offset losses.
- Factor returns shifted tremendously in late 2020 with Value having a strong rebound. This factor return has since declined and Momentum has been more additive to returns.

Source: Bloomberg; U.S. equity data

ACERA Performance

Allocations

Target

Sub-categories	Target Allocations	Min./Max. Ranges
AR Portfolio	8.0%	4% to 10%
▪ <i>Fund of Funds</i>	6.4%	4% to 10%
▪ <i>Other Alternatives/Oppportunistic</i>	1.6%	0% to 4%

Current (as of 9/30/2021)

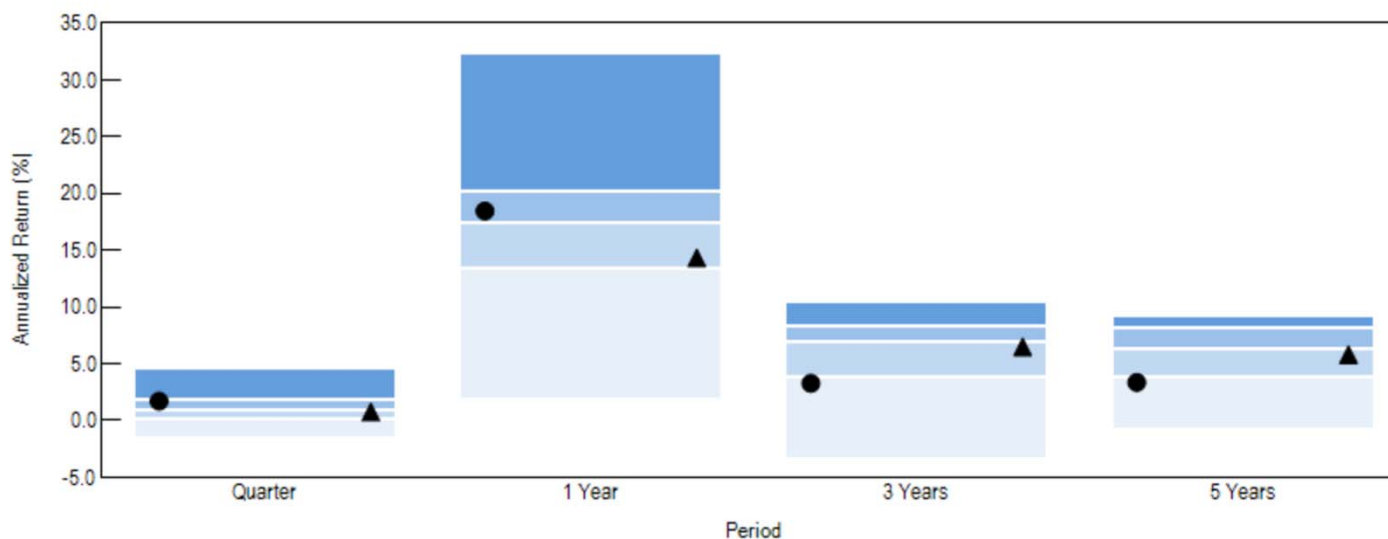
Sub-categories	Current Allocations	Min./Max. Ranges
AR Portfolio	6.4%	4% to 10%
▪ <i>Fund of Funds</i>	3.3%	4% to 10%
▪ <i>Other Alternatives/Oppportunistic</i>	3.1%	0% to 4%

Performance Summary

	Ending September 30, 2021															
	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
Absolute Return*	744,911,989	100.0	1.7	10.7	10.7	18.5	3.3	3.4	3.5	-0.6	1.8	-2.2	3.3	5.4	3.5	Sep-11
<i>HFRI Fund of Funds Composite Index</i>			0.8	5.8	5.8	14.3	6.5	5.8	4.5	10.9	8.4	-4.0	7.8	0.5	4.5	Sep-11

Relative Performance

InvMetrics All DB Hedge Funds Gross Return Comparison
Ending September 30, 2021



	Return (Rank)			
	Quarter	1 Year	3 Years	5 Years
5th Percentile	4.6	32.3	10.4	9.1
25th Percentile	1.9	20.3	8.4	8.2
Median	1.0	17.5	7.1	6.4
75th Percentile	0.2	13.5	3.9	3.9
95th Percentile	-1.4	1.9	-3.3	-0.7
# of Portfolios	169	168	163	154
● Absolute Return	1.7 (29)	18.5 (42)	3.3 (80)	3.4 (81)
▲ HFRI Fund of Funds Composite Index	0.8 (59)	14.3 (72)	6.5 (57)	5.8 (58)

Portfolio Statistics* (as of 9/30/2021)

	Benchmark HFRI FoF Composite	Absolute Return Portfolio	MSCI ACWI
Max Drawdown	-9.0	-10.5	-21.3
Sharpe Ratio	0.72	0.57	0.80
Beta	0.30	0.12	1.00
Correlation to MSCI ACWI	0.84	0.36	1.00
Annualized StDev	4.9	4.4	13.8

*Since inception of AR Portfolio (9/2011)

Portfolio performance and risk targets are:

AR portfolio returns to exceed benchmark

Correlation to global equities less than or equal to 0.5

Appendix

Glossary

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

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

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

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

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

Glossary

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

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



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PERIOD ENDING JUNE 30, 2021

Private Equity Review

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- By Strategy
 - By Geography
 - By Industry
 - By Vintage Year
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Market Commentary

DEBT RELATED

- **HY issuance and leveraged loan issuance both were up.** In the first half of 2021, US high yield issuance was up 21.6% at \$267.1 billion compared to 1H 2020¹. Leverage loan issuance volume was \$763.5 billion in 1H 2021, up 59.7% from the same time last year².
- **Spreads tightened across the board.** US HY Credit Index tightened by 331 bps or 51.0%³ decrease in 1H 2021 versus the same period last year. BB and B index tightened by 142 bps and 214 bps, a 31.4%³ and 32.6%³ decreases versus the same period last year. In the meantime, CCC index decreased by 51.2%³ in the first half of 2021 from 2020 same period.
- **With significant increase in LBO debt issuance, interest coverage decreased in US.** Total leverage averaged 5.9x (Debt / EBITDA) in 1H 2021 for US new issue loans up 14.0% from 1H 2020⁴. Interest coverage averaged 3.5x (EBITDA / Cash Interest), down 2.0% from 1H 2020⁴. In Europe with 1H 2021 LBO Loan volume at \$64.9 billion up 137.1% from 1H 2020 and down 39.5% from \$137.7 billion peak in 2007⁵, leverage multiples decreased 4.9% to 5.5x in 1H 2021⁵, below 6.1x peak in 2007⁵.

GLOBAL

- **Both investment activity and average deal size increased.** During 1H 2021, global PE firms invested in \$960.5 billion worth of deals, up 96.9% from the same time prior year and closed on 27,755 transactions, up 14.5%⁶.
- **PE dry powder decreased globally.** In the first half of 2021, global total PE dry powder was at \$2.3 trillion, down 13.1% from 1H 2020⁶. US total PE was down by 14.5% to \$1.5 trillion⁶; Europe total PE decreased by 4.4% to \$596.7 billion⁶; Asia total PE was down by 21.8% to \$135.4 billion⁶; and the rest of world total PE was down by 36.1% to \$39.0 billion⁶.

US BUYOUTS

- **Dry powder decreased.** In 1H 2021, US buyout dry powder was \$960.8 billion, down by 15.0% from the same time in 2020⁶.
- **Fundraising activity picked up.** In 1H 2021, US firms across all buyout strategies raised \$155.1 billion, up by 86.9% from same time prior year⁶. Average fund size was down 12.6%, from \$1.2 billion in 1H 2020 to \$1.0 billion in 1H 2020⁶.
- **Investment activity was up significantly.** During the first half of 2021, US buyout firms invested in \$348.0 billion worth of deals +101.8% from 1H 2020 into 2,780 deals (+65.7%)⁶.

Market Commentary

- **LBO price multiples were up.** As of June 30, 2021, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 11.1x , a 4.6% increase from June 30, 2020⁴.
- **Exit activity increased.** During 1H 2021, US buyout firms exited 496 companies, representing \$290.2 billion in total transaction value⁶. This represented a 61.6% increase in the number of exits and a 161.7% increase in total transaction value compared to the same time last year⁶.

US VENTURE CAPITAL

- **Dry powder decreased.** In 1H 2021, US VC dry powder was at \$100.5 billion, down 19.6% from 1H 2020⁶.
- **Fundraising activity increased.** US VC firms raised \$74.1 billion during 1H 2021, a 73.4% increase from the same period last year⁶. 338 funds closed in 1H 2021, a 128.4% increase from the same period last year⁶. The average US VC fund size decreased to \$219.2 million by 24.1% versus the same period last year⁶.
- **Investment activity and average deal size increased.** US VC firms deployed \$150.0 billion in capital in 1H 2021, a 117.0% increase from 1H 2020 as deal activity skewed from early to late stage⁶. The number of deals closed at 7,058, a 39.5% increase from the same time last year⁶. The average investment per deal increased to \$21.3 million, a 55.5% increase from prior year⁶.
- **All stages valuations were up.** Compared to June 30, 2020, the average pre-money valuations increased for all stages in 1H 2021: up 6.7% at \$8.0 million⁶ for Seed stage, 40% at \$42 million⁶ for early-stage VC, and 13.8% at \$136.5 million⁶ for late-stage VC.
- **Exit activity increased significantly with larger transactions.** US VC firms exited 699 companies in 1H 2021, up by 85.9% from last year and 66.8% from three years ago⁶. This represented the record high \$372.2 billion in transaction value, up by 721.6% from the same period last year and 1,198.7% from three years ago⁶. Largest sectors exited were Software and Pharma & Biotech.

EX US

- **Dry powder decreased ex-US.** PE dry powder outside the US decreased 10.2% to \$771.1 billion⁶ for 1H 2021. Dry powder outside the US was 50.1% less than dry powder in the US (\$1.5 trillion)⁶.
 - **Europe VC and buyout dry powders both down.** VC at \$53.3 billion and buyout at \$354.7 billion were down 7.4% and 11.0% from 1H 2020, respectively⁶.
 - **In Asia, VC, buyout and growth dry powder decrease paralleled US and Europe.** VC at \$4.6 billion, buyout at \$113.9 billion, and growth at \$7.9 billion were down 44.4%, 15.6% and 37.1% from 1H 2020, respectively⁶.

Market Commentary

- **Ex-US fundraising up.** In 1H 2021, ex-US fundraising increased 202.3% from 1H 2020 to \$138.4 billion⁶. Fundraising in Europe and Asia increased by 154.0% and 27.7% from 1H 2020 to \$80.1 billion and \$35.2 billion, respectively⁶.
- **Capital deployment increased in all but European buyouts.**
 - **In both Europe and Asia, VCs invested more capital into fewer deals.** Investment activity increase by 59.1% in Europe and 127.2% in Asia from 1H 2020⁶. Capital deployed increased by 155.2% to \$54.6 billion and by 38.8% to \$39.3 billion, respectively, in Europe and Asia⁶.
 - **Buyout deal activity and capital deployment rose in Europe and Asia.** In Europe, buyout firms transacted invested \$274.3 billion in aggregate value (+72.6% from 1H 2020)⁶. Asia buyout firms invested \$33.9 billion in aggregate value (+119.5%)⁶.
- **Europe purchase price multiples increased.** As of June 30, 2021, Europe median purchase price multiples increased 28.6% from 8.1x to 9.3x EBITDA from the same time last year⁶.
- **Similar to US, exit activity strengthened in Asia and Europe.** Europe PE aggregate exit value amounted to \$223.7 billion, a 150.8% increase from 1H 2020, while Asia PE exit value grew by 8.4% to \$75.2 billion⁶.

Notes

1. <https://www.jdsupra.com/legalnews/high-yield-issuance-surges-in-the-us-2965861>
2. <https://www.lexology.com/library/detail.aspx?g=67ef22e3-f17c-4b06-a66d-48071860b5fe>
3. *Guggenheim High-Yield Bank Loan Outlook*
4. *S&P Global US LBO Review*
5. *S&P Global LCD European Leveraged Buyout Review*
6. *Pitchbook*
7. *Preqin*

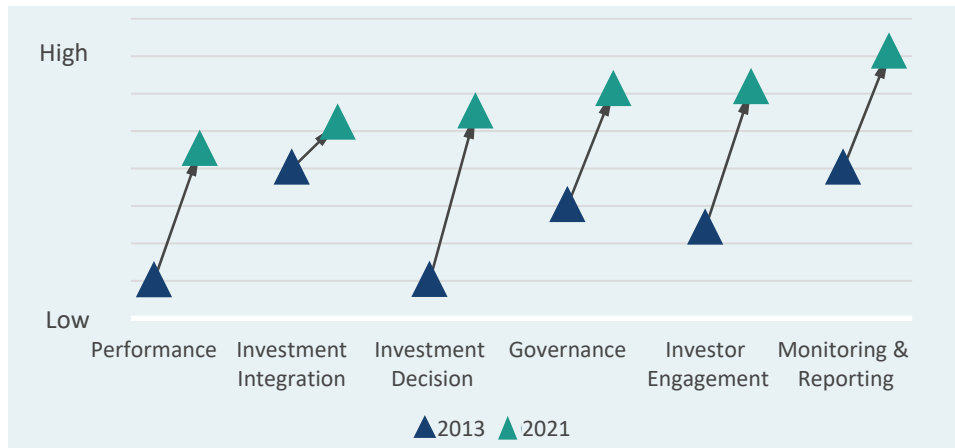
Topical focus

ESG gains private equity attention

Investor appetite brings ESG to mainstream private equity

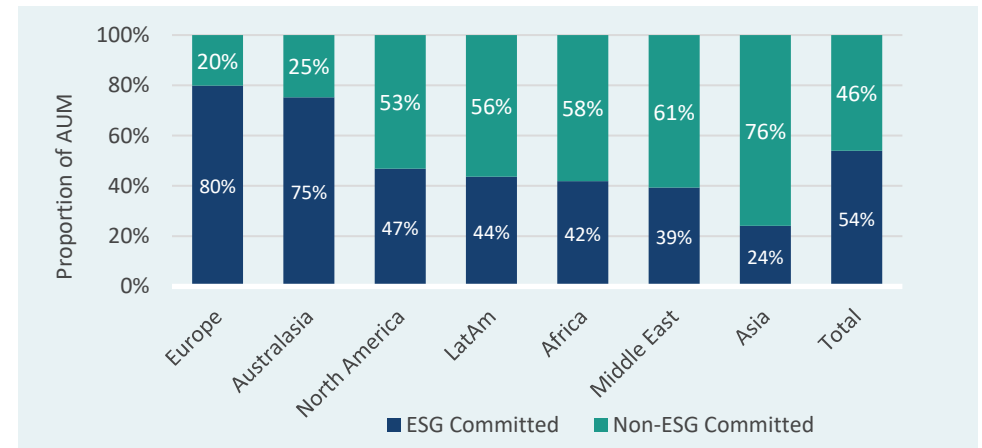
- Private equity firms have continued to make inroads incorporating environmental, social and governance (“ESG”) factors into their investment programs through the formation of dedicated “impact” funds, participation in global responsible investing standards, and use of new metrics and methods in managing portfolio companies.
- Private equity, always focused on governance risk, is increasingly growing aware environmental, social and governance issues are highly interrelated and that the biggest benefits over time accrue to companies that balance efforts between all three.
- Initiatives like the UN Paris Agreement and the European Commission Action Plan have pushed Europe into the epicenter of ESG-commitment (80%); whereas in North America less than half of institutional capital is managed under ESG considerations with Asia even lower at 24%.

PE FIRMS ARE PLACING GREATER EMPHASIS ON ALL AREAS ESG



Source: PWC Private Equity Responsible Investment Survey 2021 & 2013

REGIONAL PRIVATE CAPITAL MANAGED UNDER ESG COMMITMENT



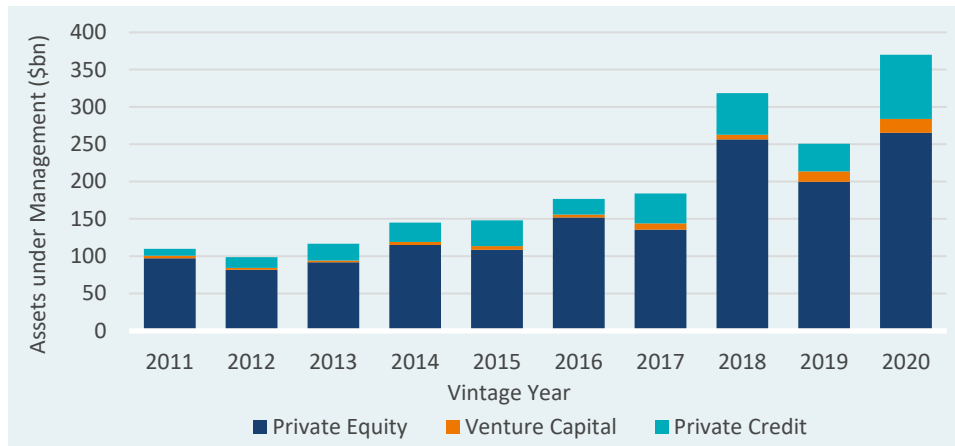
Source: Preqin

Capital is flowing to ESG strategies

A new commitment to ESG

- Capital flowing into ESG-related investment strategies saw unprecedented growth in 2020: nearly \$400 billion in cumulative ESG-focused private capital was raised from 2015 to 2020, with over a quarter being raised in 2020 alone¹.
- Despite the challenges of 2020, ESG-committed fundraising remains strong, led by private credit and buyout strategies. A key driver in this trend has been firmwide ESG commitments by the largest alternatives managers.
- The average size of ESG-committed funds far outpaces that of non-ESG funds; while these vehicles are not solely focused on environmental, social, and governance issues, they are pledging that they will, at the very least, not have a negative impact through their portfolios.

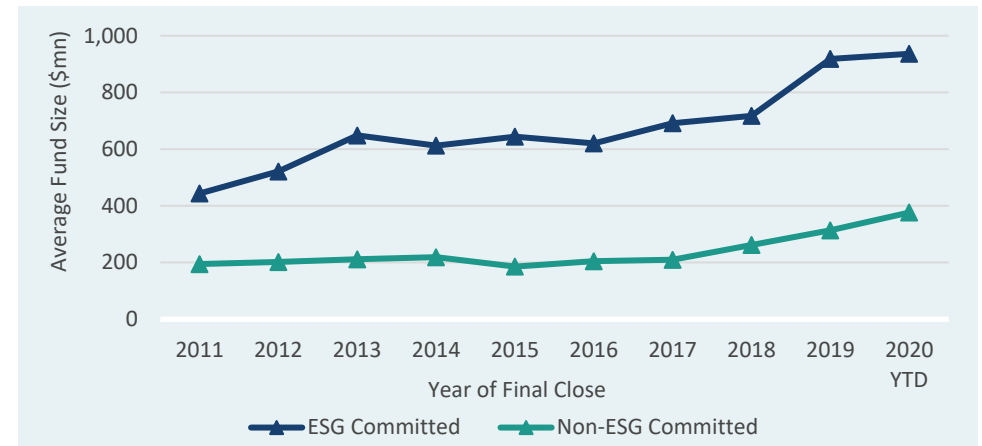
ESG-COMMITTED PRIVATE CAPITAL AUM BY ASSET CLASS



Source: Preqin as of September 2020

¹ McKinsey Global Private Markets Review 2021

AVG FUND SIZE CLOSED ESG-COMMITTED VS. NON-ESG-COMMITTED



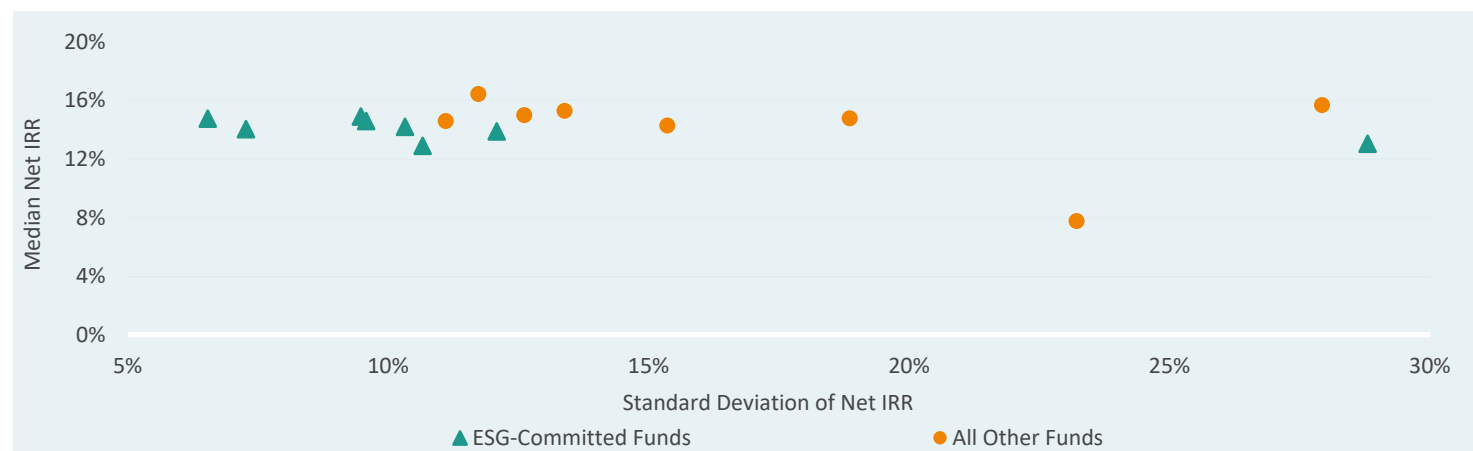
Source: Preqin as of September 2020

ESG-committed fund performance

The relationship between ESG factors and company financial performance remains unclear

- A major roadblock to ESG investing is the concern about its impact on returns. Managers and investors worry that by limiting their opportunity set to transactions that meet ESG requirements, they will be losing out.
- According to Preqin, analysis shows that ESG investments perform on par with their non-ESG counterparts and with less dispersion; however, the data is skewed under a relatively small sample set which include the largest private capital managers who broadly commit to ESG.
- Investor demand for ESG is strong, but the lack of high quality, consistent ESG data is the top challenge for fund managers who are also balancing the additional burden on portfolio company management and internal resources.
- Sponsors face the same challenges as public companies emanating from the lack of standardization and clearly adopted definitions of the goals of, and appropriate metrics to measure, ESG or “sustainable investment,” as well as pressure from investors to prioritize ESG. As the broader market becomes more sophisticated in operationalizing ESG, so too will the private equity industry.

RISK/RETURN OF ESG-COMMITTED FUNDS (VINTAGE 2010-2017)*



*Net IRRs are since inception. Source: Preqin

Private Equity portfolio

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
ACERA Plan Assets - Total				\$11,457,179		
Private Equity:	11.0%	8-13%	8.6%	\$984,164	\$549,490	\$1,533,654
Buyouts	60.0%	30-80%	51.4%	\$506,074	\$358,548	\$864,622
Venture Capital	20.0%	0-40%	31.4%	\$309,458	\$35,276	\$344,734
Debt-Related/Special Situations	20.0%	0-30%	17.1%	\$168,632	\$155,666	\$324,298

Portfolio Summary

- As of June 30, 2021, the Private Equity portfolio had a total market value of \$984.2M, with \$506.1M in Buyouts, \$309.5M in Venture Capital, and \$168.6M in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008, ACERA has contributed \$1.1B towards its Private Equity commitments, with \$571.8M to Buyouts, \$183.2M to Venture Capital, and \$315.6M in Debt-Related / Special Situations. Unfunded commitments total \$549.5M
- The portfolio exposure at 8.6% is below the new 11.0% policy target approved in 2021, but within its 8-13% target range. Compared to December 31, 2020, portfolio exposure is down 0.1%, in part due to significant growth in plan value (\$1.8B), coupled with strong distributions from Private Equity (\$138.9M) in 1H'21 . 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 first half of 2021, ACERA committed \$27.0M to ABRY Senior Equity VI, L.P., 30.0M to Genstar Capital Partners X, L.P., \$20.0M to Peak Rock Capital III, L.P. and \$27.0M to SVP Special Situations Fund V L.P.

Private Equity Portfolio Performance

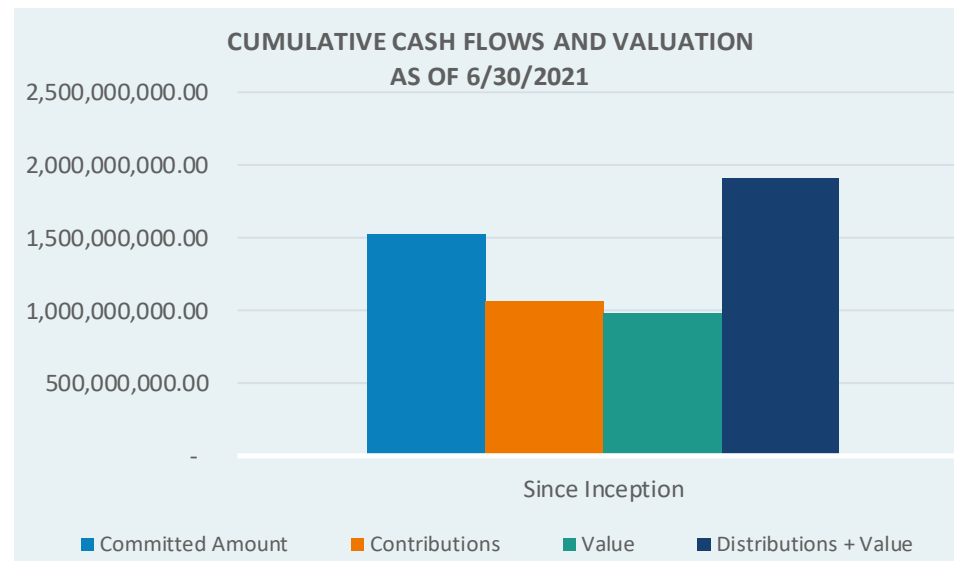
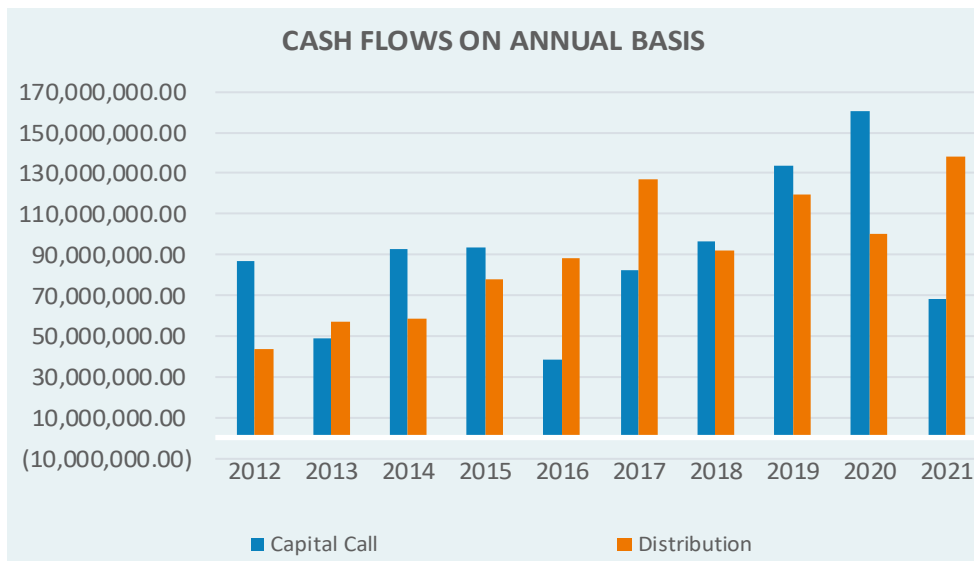
Period Ending: June 30, 2021

Performance

- Current Private Equity portfolio is valued at \$984.2M. Portfolio investments have a capital-weighted average life of 4.8 years. Since inception (2008):
 - The portfolio has produced +17.63% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 16.53% by 110 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 TVPI, and DPI and below Median on IRR; Venture Capital ranks above Top-Quartile on TVPI and DPI and above Median on IRR; and Debt Related/ Special Situations ranks above Median on IRR and DPI and slightly below Median on TVPI.
- Together with \$926.8M in realized distributions (0.87x cost), Private Equity’s Total Value at \$1,911.0M is approximately \$840.3M above \$1070.6M cost (1.78x cost), net of fees. Return drivers include:
 - Venture Capital up \$376.4M/+205.4% versus cost (General Catalyst VI; Khosla Ventures III, IV, V & Seed B; Third Rock Venture II & III; NEA 13, 14, 15; and Great Hill IV, VI, and VII leading), with 136.5% of called capital realized and distributed.

Since inception, this portfolio produced 24.96% net IRR versus its peer global benchmark of 22.55% pooled IRR.

- Buyout up \$374.4M/+65.5% versus cost (Great Hill V and VI, Sycamore Partners I, Warburg XI, Insight II and Peak Rock Capital Fund II leading) with 77.0% of called capital realized and distributed. Since inception, the Buyout portfolio produced 16.59% net IRR versus its peer global benchmark of 17.43% pooled IRR.
- Debt-Related / Special Situations was up \$89.6M/+28.4% versus cost (ABRY Advanced Securities II and Senior Equity IV and V, Centerbridge Special Credit Partners, Partners Group 2009, and Angelo Grodon CSF1A Annex leading), with 74.9% of called capital realized and distributed. Since inception, this portfolio produced 10.46% net IRR versus its peer global benchmark of 11.10% pooled IRR.
- Distributions outpaced contributions by a ratio of 2.02:1.0 in 1H’21.
- Within Private Equity, the current allocation of invested capital is 51.4% to Buyouts, 17.1% to Debt / Special Situations and 31.4% to Venture Capital. Of \$926.8M in cash distributions, 47.5% were from Buyouts, 25.5% from Debt-Related/Special Situations, and 27.0% from Venture Capital.



Portfolio Performance vs. Pooled Benchmark IRR

Period Ending: June 30, 2021

	1-Year	3-Year	5-Year	10-Year	Since Inception ²
Buyout	55.32%	19.18%	17.15%	17.45%	16.59%
<i>Thomson Reuters C/A Global Buyout Benchmark¹</i>	52.26%	22.65%	22.04%	18.27%	17.43%
Venture Capital	100.88%	38.63%	30.21%	25.28%	24.96%
<i>Thomson Reuters C/A Global Venture Capital & Growth Equity Benchmark¹</i>	74.51%	33.68%	27.45%	23.00%	22.55%
Debt-Related / Special Situation	33.35%	7.29%	9.73%	8.35%	10.46%
<i>Thomson Reuters C/A Global All Debt Benchmark¹</i>	28.97%	10.37%	11.34%	10.00%	11.10%
Total Private Equity	63.57%	23.27%	20.57%	17.77%	17.63%
<i>Thomson Reuters C/A Global All Private Equity Benchmark¹</i>	55.07%	22.39%	20.69%	16.86%	16.53%

Identical cash flows from the portfolio inception through 6/30/2021 invested in the Russell 3000 Total Return index would yield a 15.59% (Long Nickels). The Private Equity Portfolio outperformed the Russell 3000 by 2.04%. Public Market Equivalent analysis provided by Solovis.

¹ Benchmarks: Thomson Reuters C/A as of 6/30/2021, vintage 2008 through present.

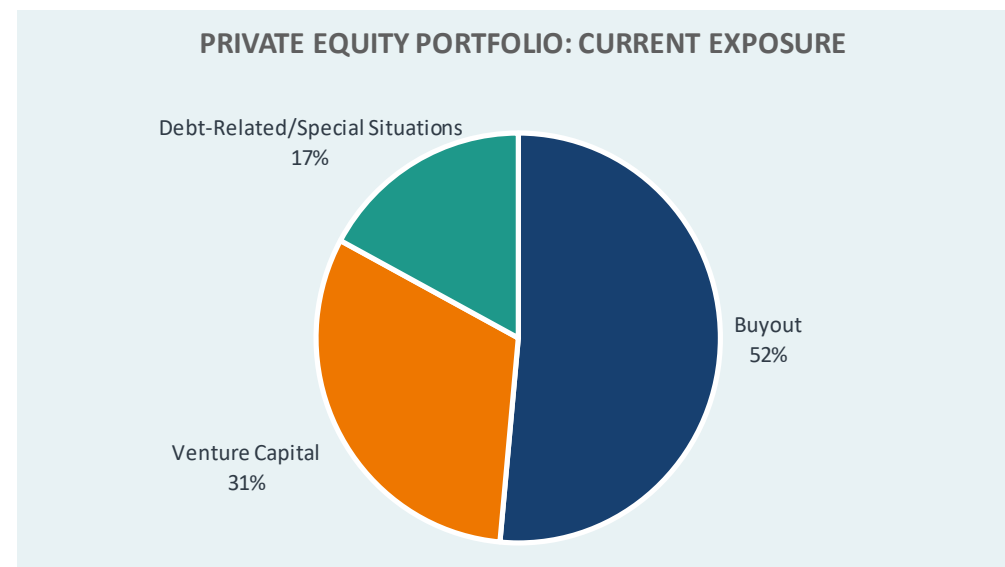
² ACERA's inception date of November 21, 2008 vs. Thomson Reuters C/A's inception date of January 1, 2008.

Portfolio Diversification

Period Ending: June 30, 2021

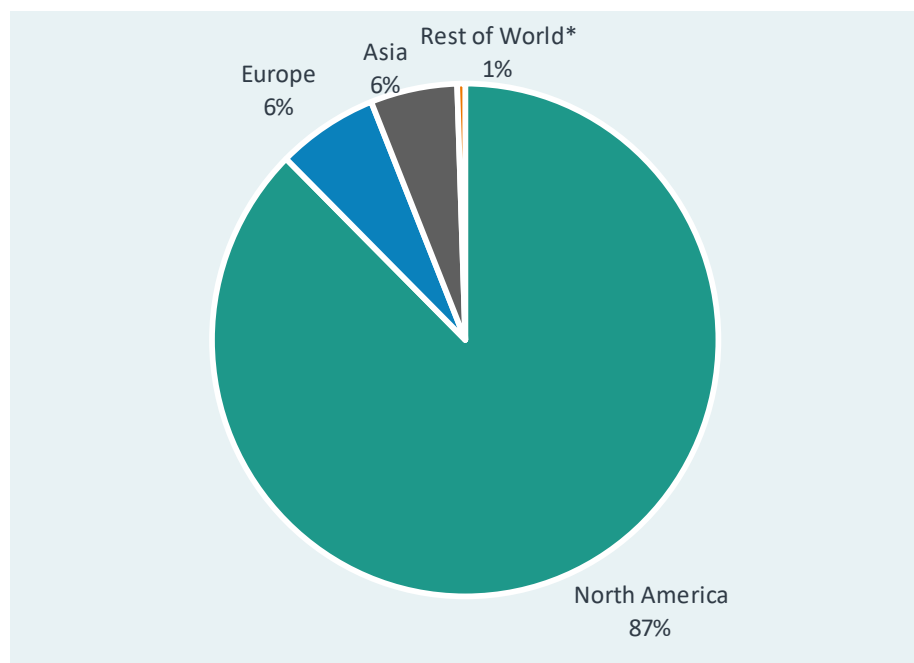
Investment Type	Commitment	Current Exposure	Current Exposure as % of Private Equity
Buyout	856,806,404	506,074,461	51.4%
Venture Capital	218,100,000	309,458,193	31.4%
Debt-Related/Special Situations	379,247,675	168,631,570	17.1%
Total Private Equity	1,454,154,079	984,164,224	100.0%

Investment Type	Target Range	Target Exposure	Current Exposure as % of Target	Difference
Buyout	3.3%-8.8%	6.6%	4.4%	-2.2%
Venture Capital	0.0%-4.4%	2.2%	2.6%	0.4%
Debt-Related/Special Situations	0.0%-3.3%	2.2%	1.6%	-0.6%
Total Private Equity	8%-13%	11.0%	8.6%	-2.4%



Strategy

Geography	Current Exposure
North America	852,998,302
Europe	62,980,751
Asia	53,960,985
Rest of World*	5,093,668
Total Private Equity	984,164,224



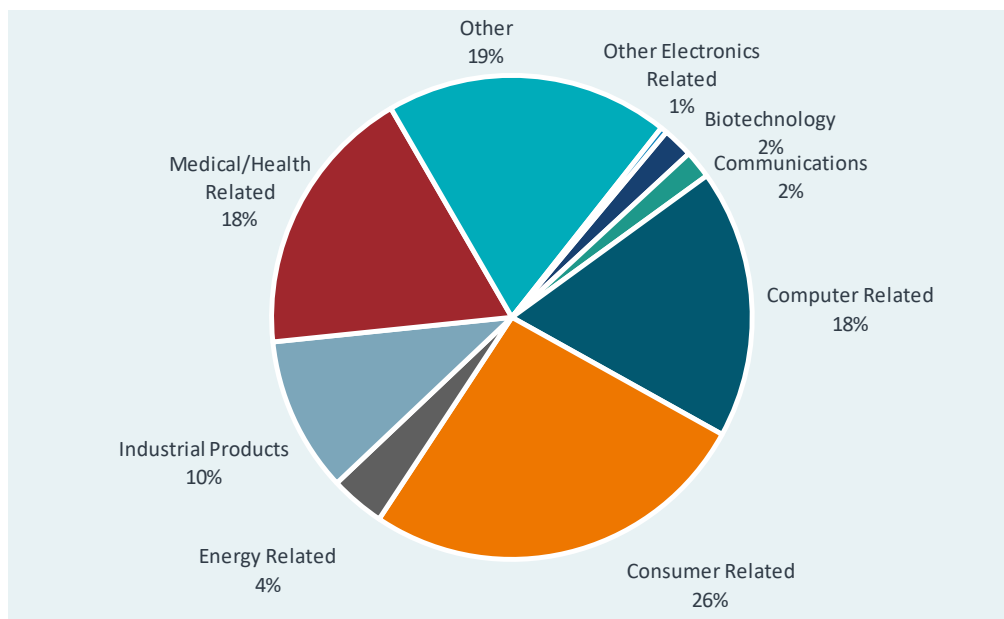
Based on the value of private equity portfolio companies as of June 30, 2021, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

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

Private Equity Portfolio Diversification

Period Ending: June 30, 2021

Industry	Current Exposure
Biotechnology	19,979,186
Communications	18,189,799
Computer Related	174,296,262
Consumer Related	254,563,201
Energy Related	35,606,168
Industrial Products	100,543,551
Medical/Health Related	176,536,739
Other	184,877,312
Other Electronics Related	4,139,175
Total Private Equity	984,164,224

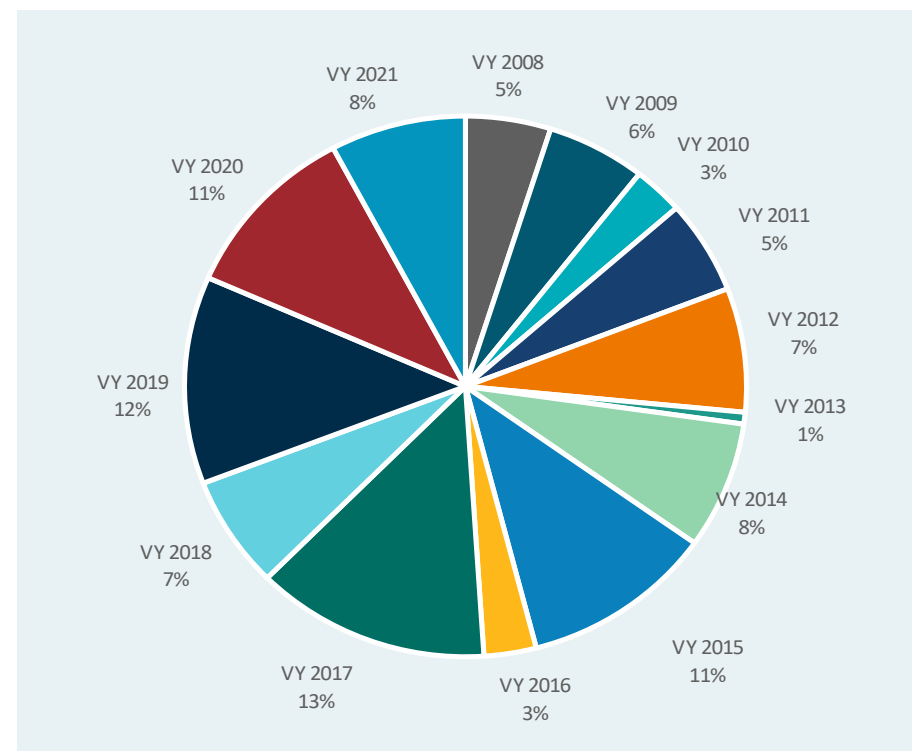


Based on the value of private equity portfolio companies as of June 30, 2021, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

Private Equity Portfolio Diversification

Period Ending: June 30, 2021

Vintage Year	Commitment as of 6/30/2021	% of Portfolio Commitment	Reported Value as of 6/30/2021
2008	72,370,855	4.9%	9,652,194
2009	83,500,000	5.7%	32,335,960
2010	42,500,000	2.9%	2,781,944
2011	82,500,000	5.6%	84,938,701
2012	108,500,000	7.4%	145,550,631
2013	10,000,000	0.7%	10,934,257
2014	112,080,000	7.6%	113,693,391
2015	163,250,000	11.1%	175,399,893
2016	43,250,000	3.0%	33,670,644
2017	197,251,820	13.5%	214,970,491
2018	98,000,000	6.7%	34,247,764
2019	181,000,000	12.4%	87,460,902
2020	155,951,404	10.6%	36,603,936
2021	115,000,000	7.8%	1,923,518
Total Private Equity	1,465,154,079	100%	984,164,224



Vintage Year

- **As of June 30, 2021, the Private Equity Portfolio's market value at 8.6%, below its new target allocation of 11.0% approved in 2021, but within its target range.**

Appendix

Private Credit Portfolio

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
ACERA Plan Assets - Total				\$11,457,179		
Private Credit:	4.0%	3-5%	1.1%	\$123,327	\$111,509	\$234,836

Portfolio Summary

- As of June 30, 2021, the Private Credit portfolio had a total market value of \$123.3M. 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 \$120.1M towards its Private Credit commitments. Unfunded commitments total \$111.5M.
- The portfolio exposure at 1.1% 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 Equity in the second half of 2020: \$75.0M to Blackrock Direct Lending Fund IX, L.P, and \$75.0M to HPS Specialty Loan Fund V, L.P.

Private Credit Portfolio Performance

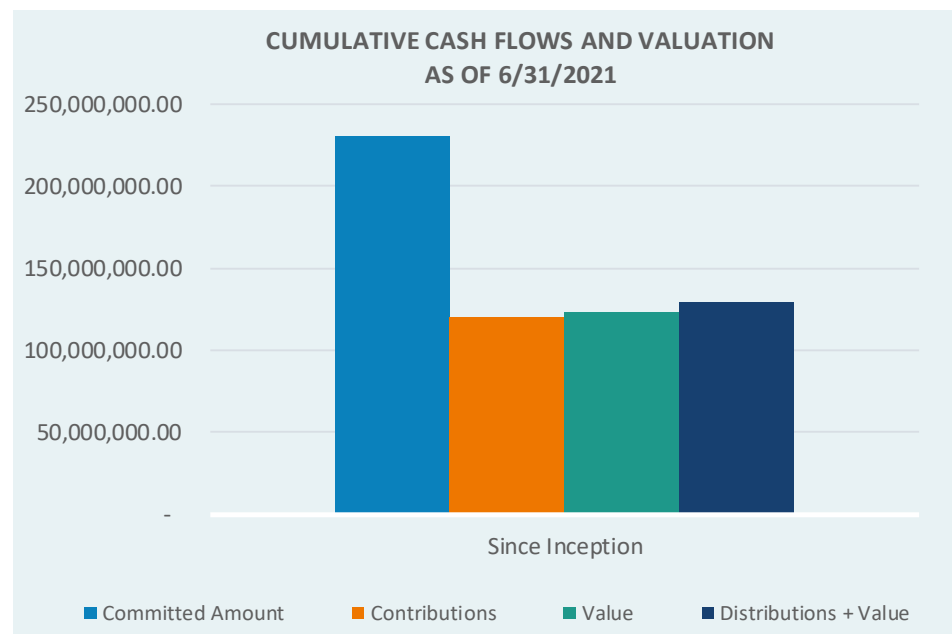
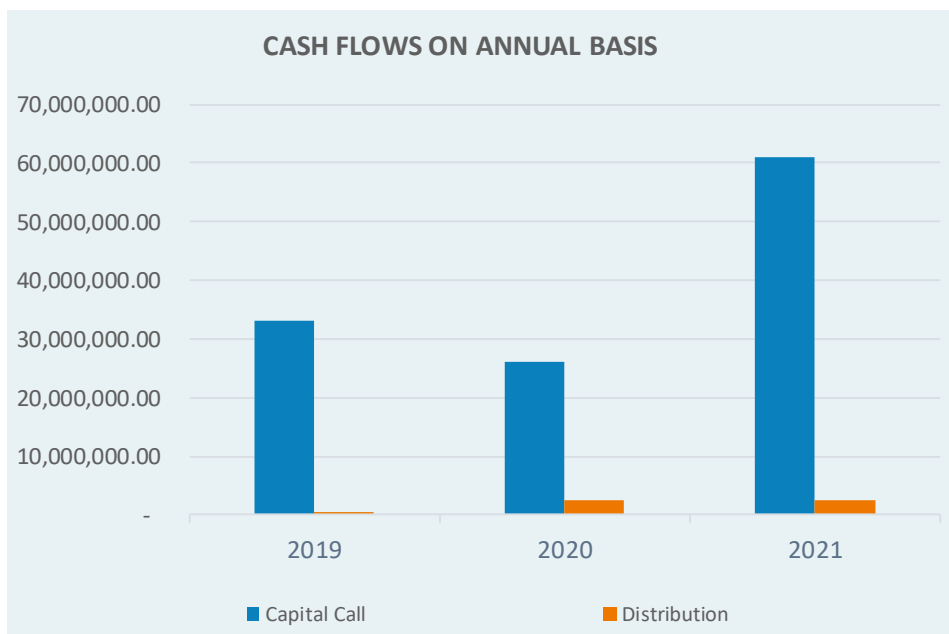
Period Ending: June 30, 2021

Performance

- The Private Credit’s performance, as measured by net IRR, is 9.56%, 444 bps above the same cash flow invested in the S&P LSTA U.S. Leveraged Loan 100 Index of 5.12%. With a capital-weighted average life of investments at 0.8 years, portfolio IRR is not meaningful.
- The portfolio is currently valued at \$123.3M. Together with \$5.5M in realized distributions (0.05x cost), Private Credit’s Total Value at \$128.81M is approximately \$8.8M above \$120.1M cost (1.07x 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





**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: JUNE 30, 2021

Real Assets Review

Alameda County Employees' Retirement Association

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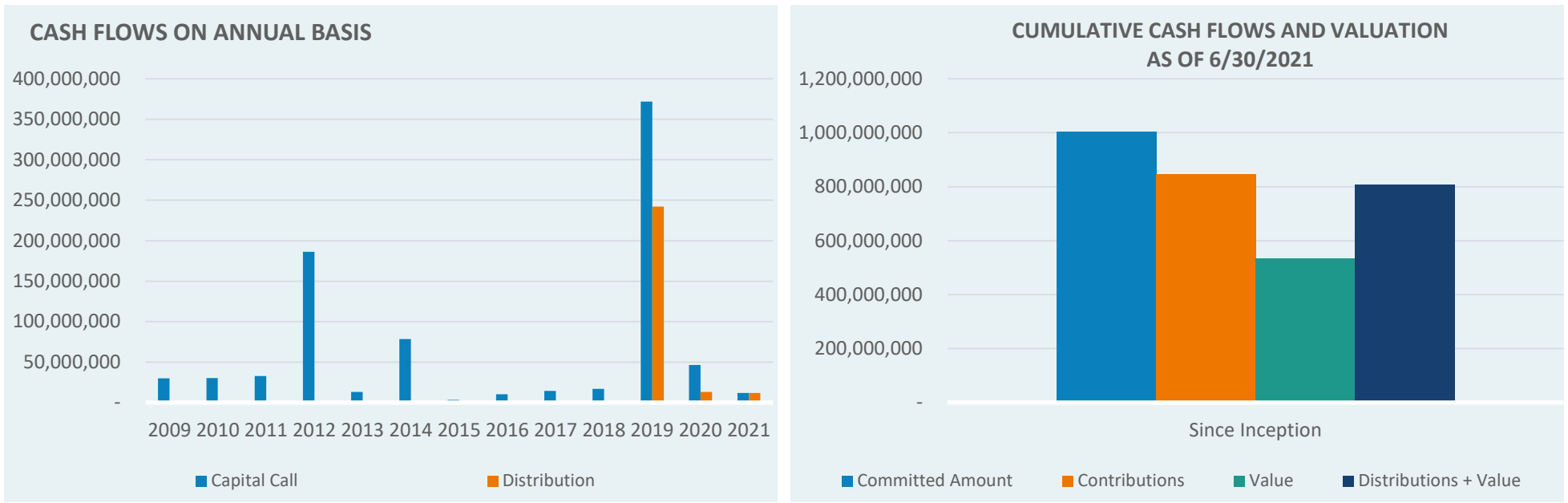
Real Assets Portfolio Performance	3	Real Assets Program Update	9
Real Assets Portfolio Diversification	6	Real Assets Pacing Study	10
<ul style="list-style-type: none">— RA Portfolio Diversification by Strategy— RA Portfolio Diversification by Geography— RA Portfolio Diversification by Vintage Year			

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Real Asset Performance

Performance

— ACERA’s Real Asset Pool has produced a -1.11% IRR since inception. The portfolio’s poor performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and from earlier investments in energy (Sheridan). 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.



Real Assets Performance vs. Pooled Benchmark IRR

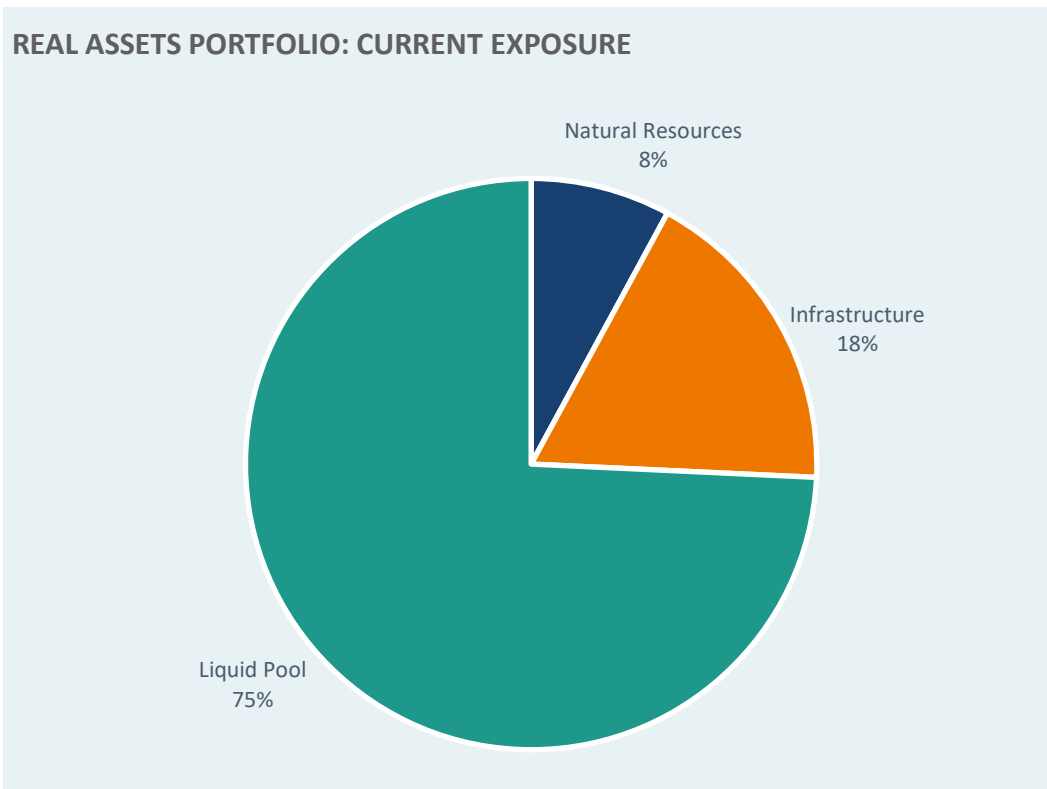
Period Ending: June 30, 2021

	1-Year	3-Year	5-Year	10-Year	Since Inception
Natural Resources Funds	50.35%	0.64%	-2.67%	-3.96%	-3.94%
<i>S&P Global Natural Resources Index¹</i>	48.44%	6.16%	9.44%	4.98%	4.95%
Infrastructure Funds	19.87%	15.32%			13.17%
<i>S&P Global Infrastructure Index¹</i>	23.73%	7.04%	6.30%	6.30%	6.30%
Liquid Pool Funds	33.33%	1.90%	2.77%	-2.34%	-1.60%
<i>Bloomberg Commodity Index¹</i>	49.93%	4.96%	3.32%	-2.99%	-2.39%
Total Real Assets	32.27%	3.10%	3.10%	-1.76%	-1.11%
<i>Blended Real Assets Benchmark²</i>	33.72%	5.26%	7.21%	5.94%	5.94%

¹ Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 6/30/2021. Analysis provided by Solovis.

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

Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Natural Resources	104,000,000	41,822,866	7.8%
Infrastructure	210,000,000	93,931,547	17.6%
Liquid Pool	689,235,893	398,564,703	74.6%
Total Portfolio	1,003,235,893	534,319,116	100.0%

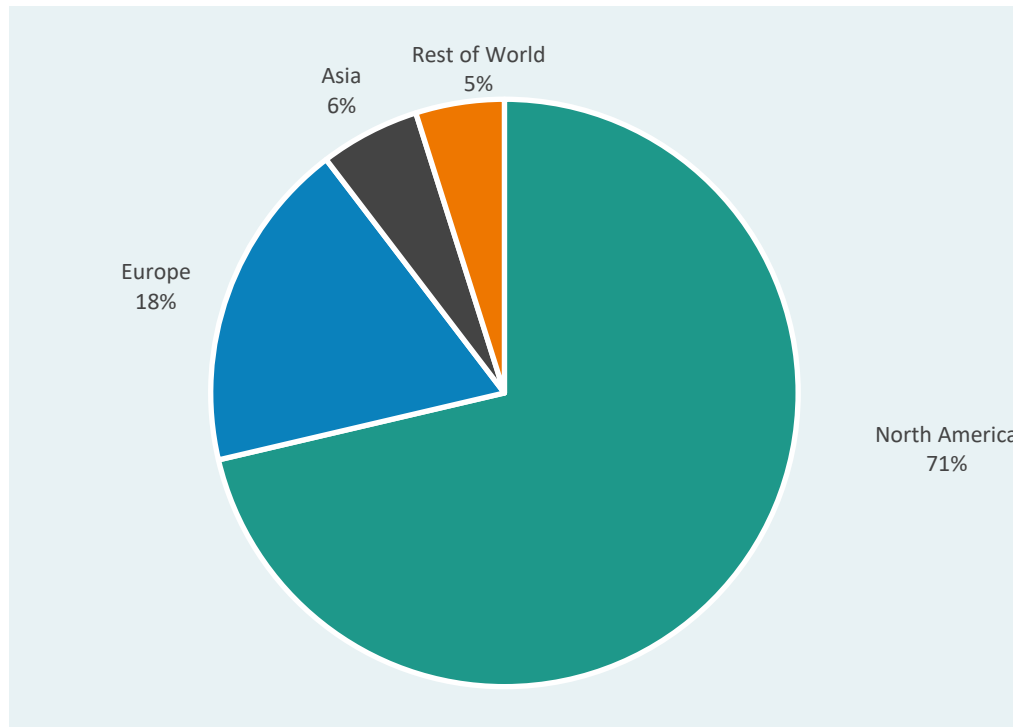


Geography Portfolio Diversification

Period Ending: June 30, 2021

Geography	Reported Fair Value
North America	96,845,639
Europe	24,818,998
Asia	7,469,161
Rest of World	6,620,615
Total Portfolio*	135,754,413

* Excludes Liquid assets.

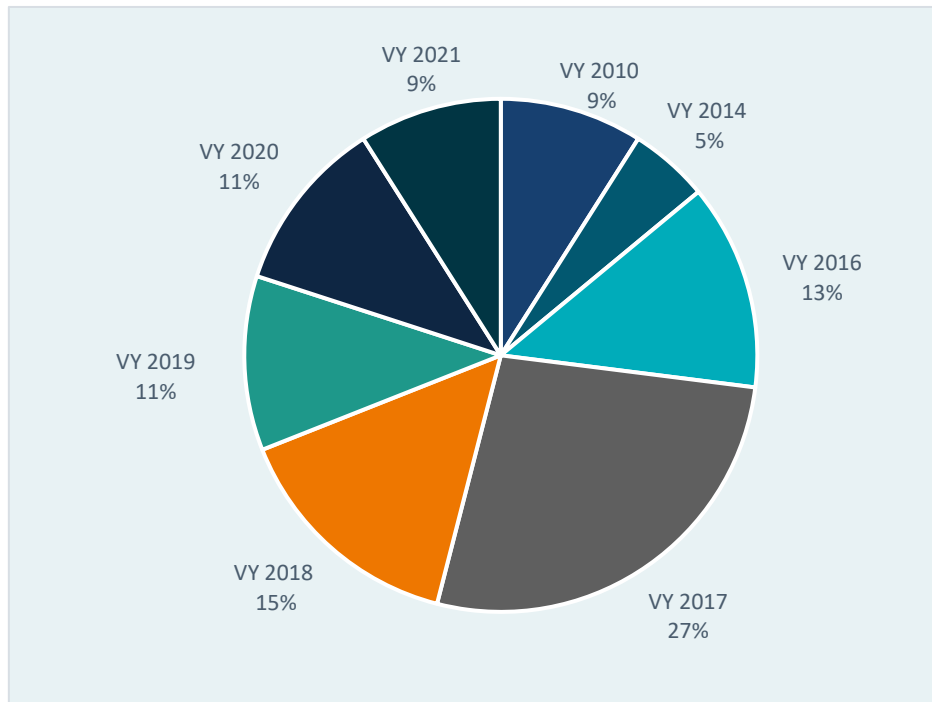


Vintage Year Portfolio Diversification

Period Ending: June 30, 2021

Vintage Year	Commitment as of 6/30/21	% of Portfolio Commitment	Reported Value as of 6/30/21
2010	24,000,000	8.8%	0
2014	15,000,000	5.5%	8,881,311
2016	35,000,000	12.8%	31,339,042
2017	75,000,000	27.4%	62,261,256
2018	40,000,000	14.6%	29,330,807
2019	30,000,000	10.9%	3,941,997
2020	30,000,000	10.9%	0
2021	25,000,000	9.1%	0
Total Portfolio	274,000,000	100%	135,754,413

* 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.
- Verus plans to recommend a \$25-30 million investment in a growth-oriented infrastructure fund at the December board meeting.
- 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.

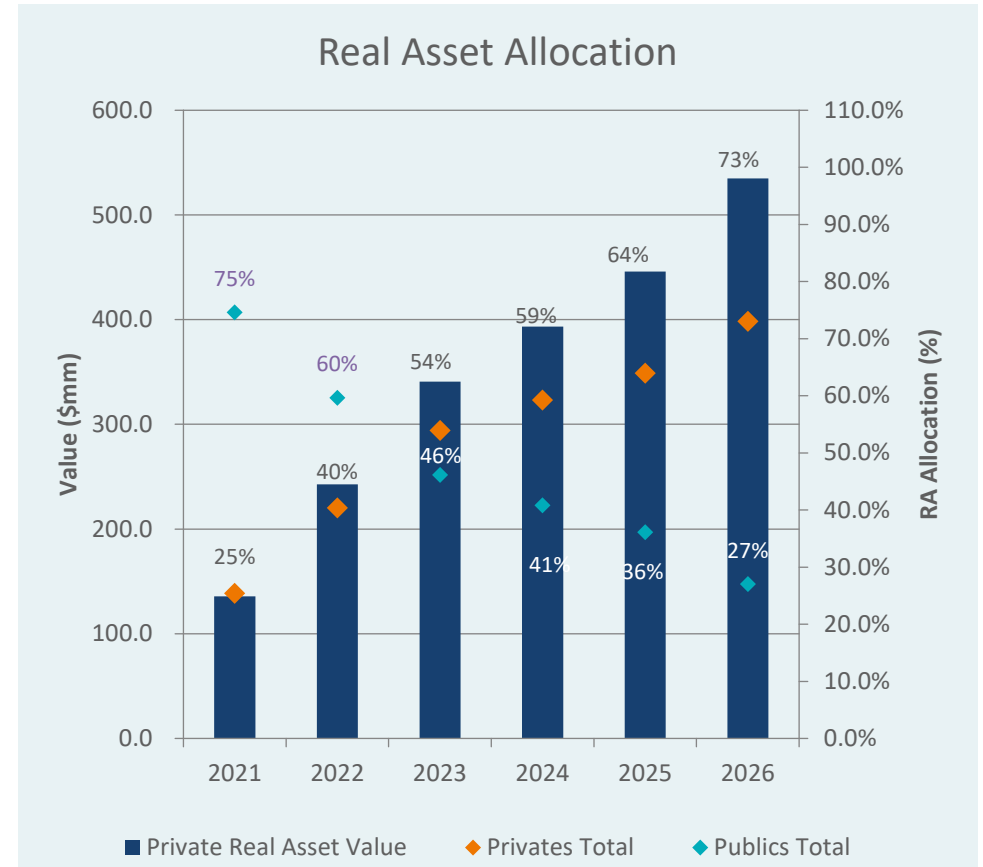
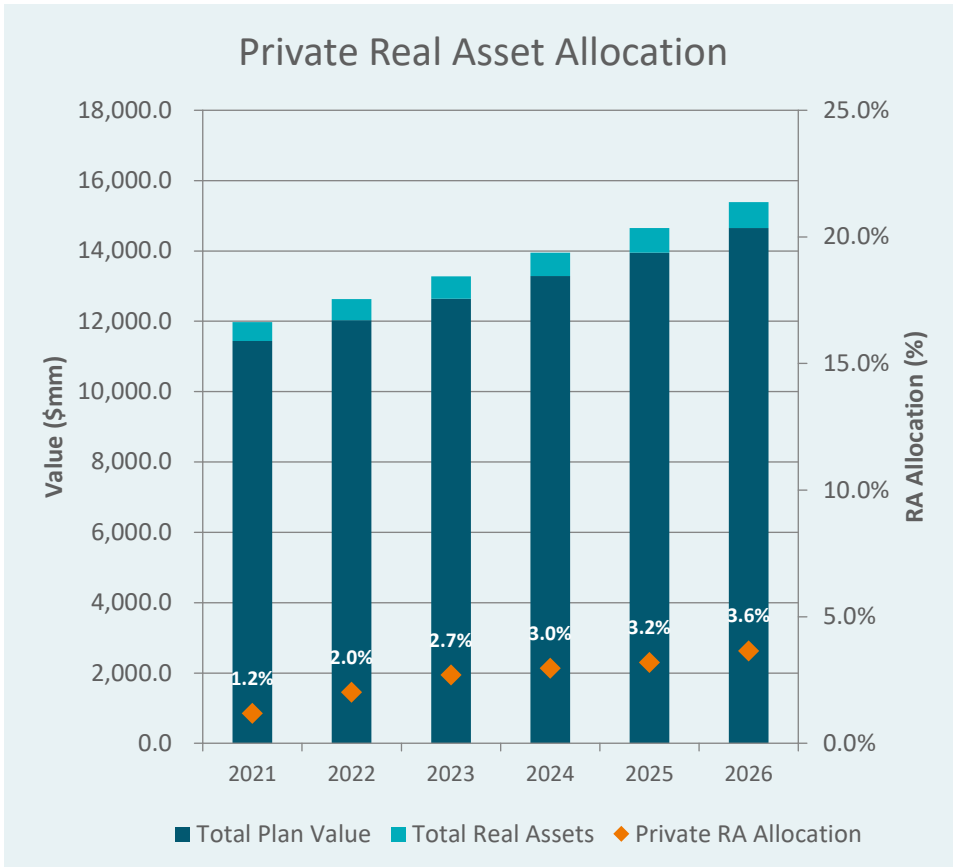
Real Asset Pacing Study

RA Category	2021	2022	2023	2024	2025	2026
	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)	Projected Commit (\$)
Value-Add Infrastructure	\$ 55,000,000	\$ 50,000,000		\$ 50,000,000	\$ 50,000,000	
Core Infrastructure			\$ 50,000,000			\$ 50,000,000
Natural Resources	\$ -	\$ 50,000,000	\$ 50,000,000	\$ 50,000,000	\$ 50,000,000	\$ 50,000,000
Total RA Portfolio	\$ 55,000,000	\$ 100,000,000	\$ 100,000,000	\$ 100,000,000	\$ 100,000,000	\$ 100,000,000

Listed Infrastructure		\$ (40,915,514)	\$ (55,683,359)	\$ (24,699,786)	\$ (22,981,934)	\$ (43,030,931)
Listed Natural Resources		\$ (22,890,900)	\$ (31,603,217)	\$ (13,694,450)	\$ (12,742,550)	\$ (24,484,527)
Commodities		\$ (2,851,636)	\$ (4,138,142)	\$ (1,650,453)	\$ (1,535,973)	\$ (3,233,425)
Total Public		\$ (66,658,050)	\$ (91,424,717)	\$ (40,044,689)	\$ (37,260,457)	\$ (70,748,883)

	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)	Projected Commit (#)
Value-Add Infrastructure	2	1		1	1	
Core Infrastructure			1			1
Natural Resources		1	1	1	1	1
Total	2	2	2	2	2	2

- This pacing model assumes a 5.0% target allocation to real assets with a private to public ratio of 75:25.
- Deploying ~\$100M/year should result in hitting the target allocation in 5-6 years.





December 2021

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

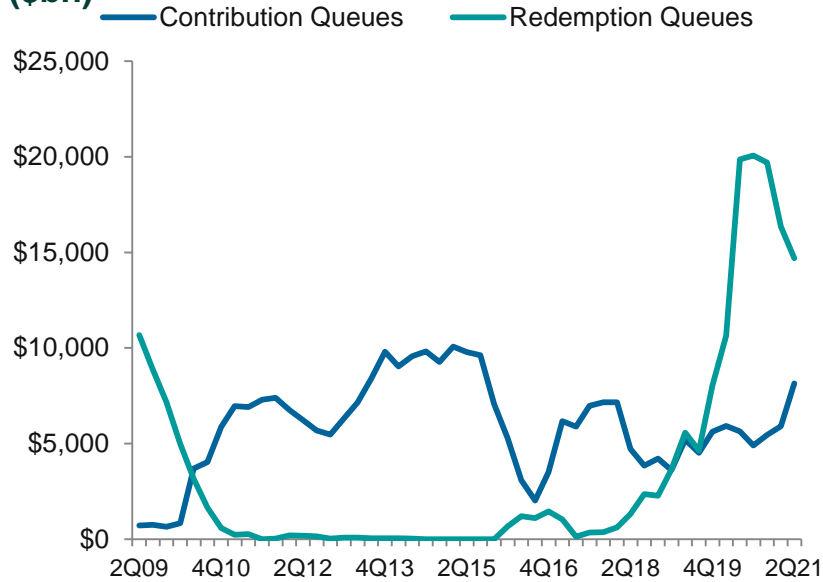
Callan

Avery Robinson, CAIA
Senior Vice President

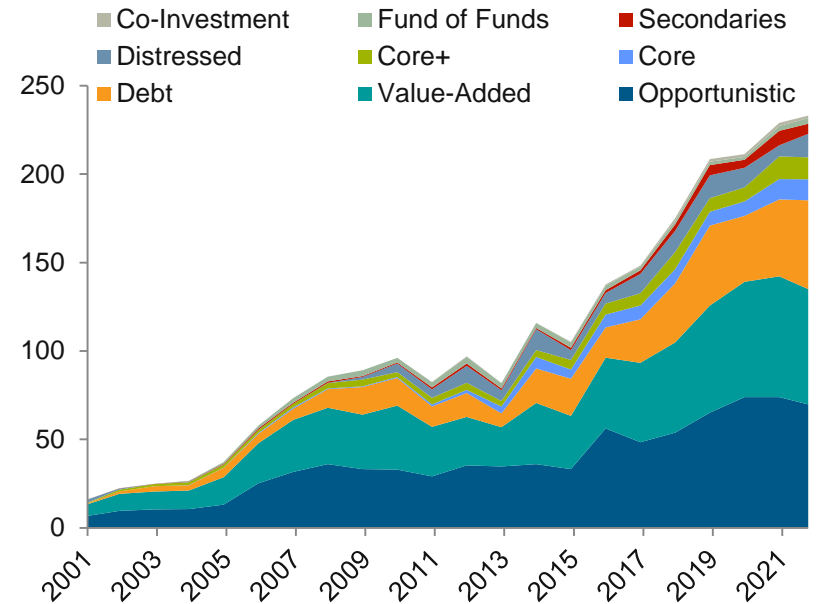
U.S. Private Real Estate Market Trends

Dry powder increasing and exceeds \$200 billion

Core Fund Contribution/Redemption Queues (\$bn)



Dry Powder Available for CRE investment in North America (\$bn)



- Net core activity has rebounded considerably during the past two quarters.
- >\$200 billion of capital waiting to be deployed in North America
- Majority of dry powder capital in opportunistic, value-add, and debt funds

Sources: NCREIF, AEW, Prequin

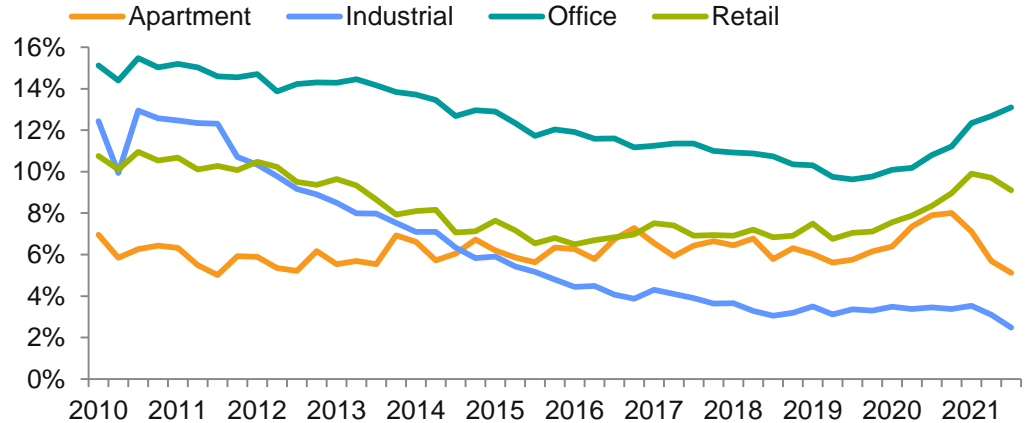
U.S. Private Real Estate Market Trends

Signs of recovery in retail (3Q21)

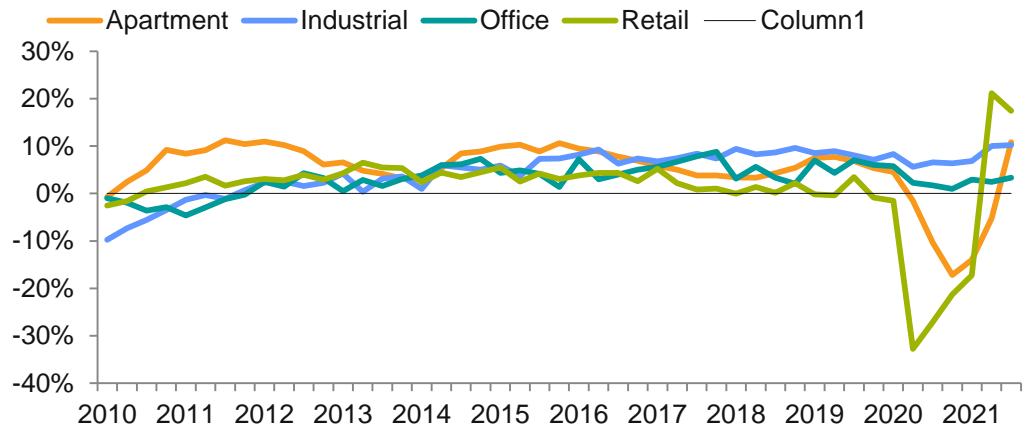
Compression in vacancy rates

- Vacancy rates kept compressing in Industrial and Multifamily as demand continued.
- Net operating income remained negative for Retail but the recovery continue; pent-up demand was evident through foot traffic in retail centers.
- 3Q21 rent collections have stabilized across all sectors.
- Demand outpaced supply as new construction of preleased Industrial and Multifamily occurred.

Vacancy by Property Type



Rolling 4-Quarter NOI Growth by Property Type



Source: NCREIF

Alameda County Employees' Retirement Association Performance Measurement Report Summary

Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") Quarter ending September 30, 2021 ("Quarter").

Funding Status as of September 30, 2021

	(\$) Millions	(%)
ACERA Plan Assets	11,490.116	100.00%
Real Estate Target ⁽¹⁾	1,034.111	9.00%
Plan's Real Estate Market Value	696.651	6.06%
Net Unfunded Commitments	119.297	1.04%
RE Market Value & Unfunded Commitments	815.948	7.10%
Remaining Allocation	337.459	2.94%

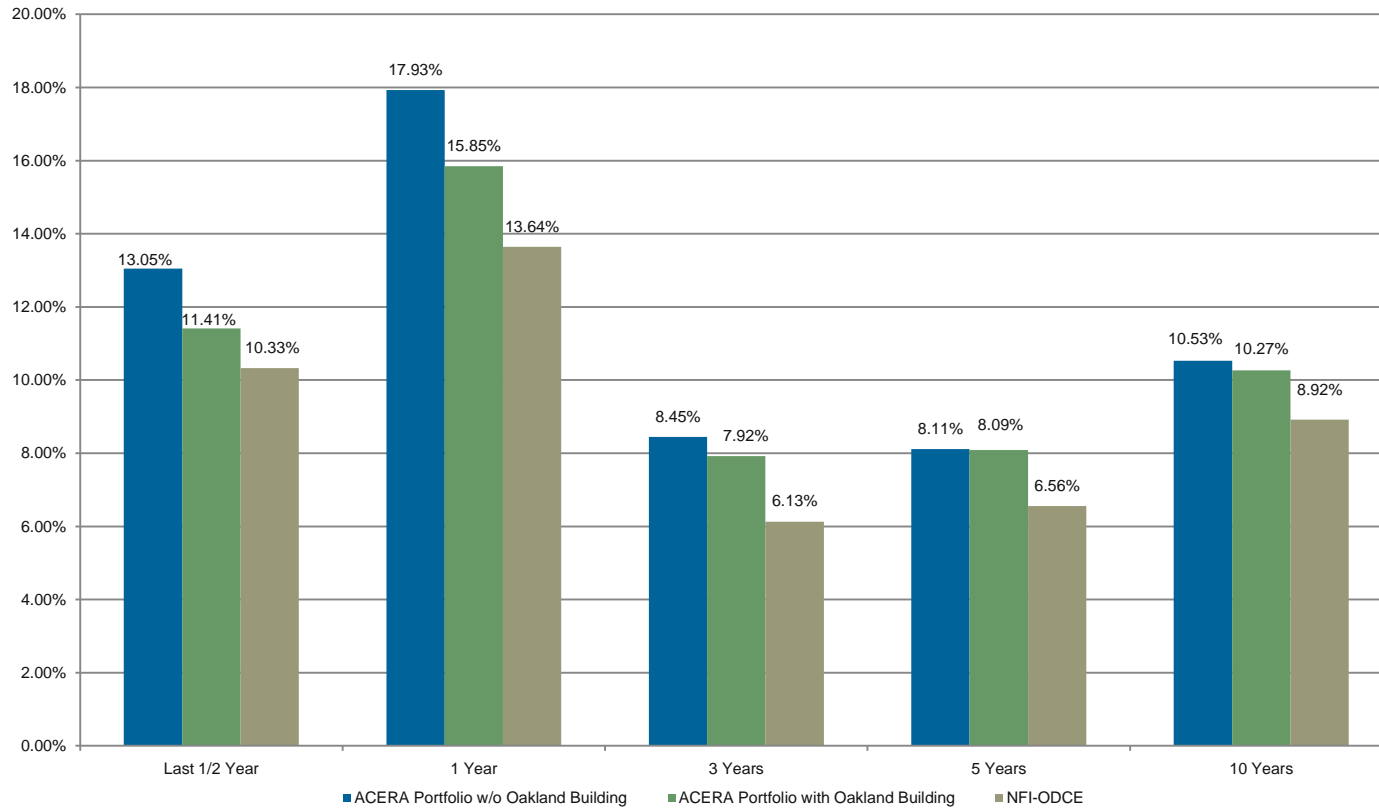
	Target	Funded	Funded & Committed
Core	70.00%	75.83%	64.74%
Non-Core	30.00%	24.17%	35.26%

⁽¹⁾ The real estate target changed from 8% to 9% effective 6/30/2021.

Portfolio Net Returns

For Period Ended September 30, 2021

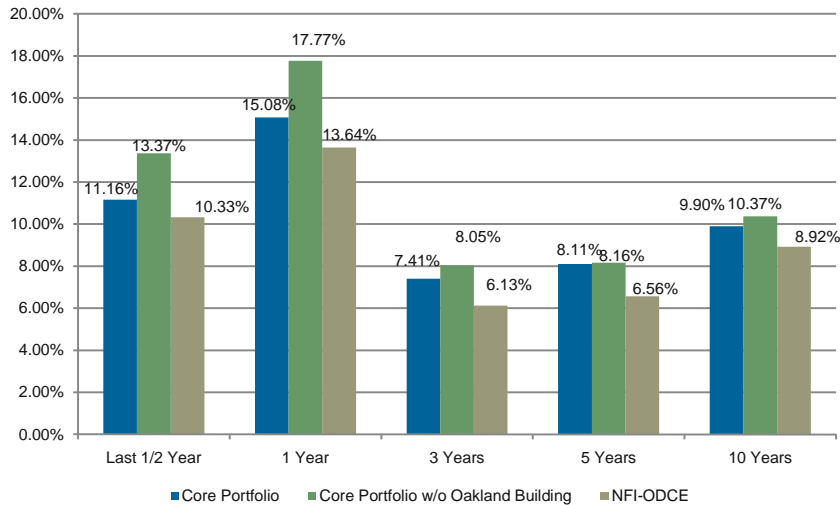
Total Net Real Estate Portfolio Returns



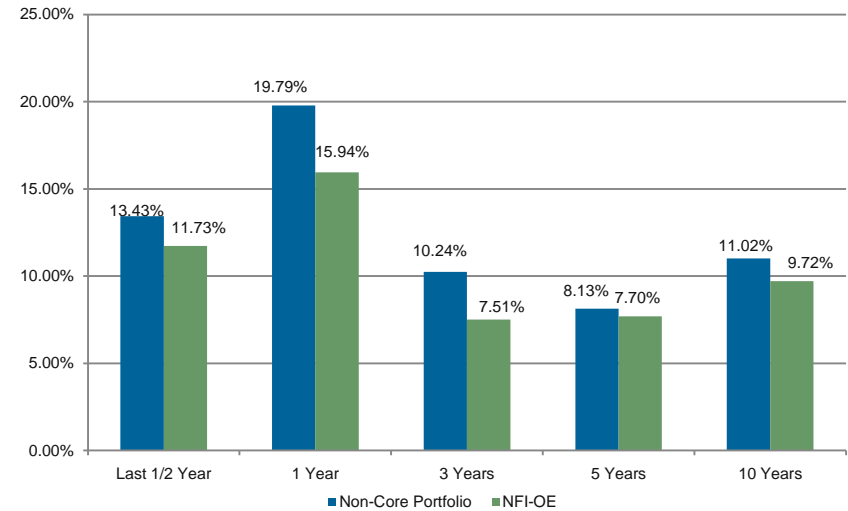
Portfolio Returns by Style

For Period Ended September 30, 2021

Net Core Returns



Net Non-Core Returns



Net Portfolio w/o Oakland Building	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	13.37%	17.77%	8.05%	8.16%	10.37%
Non-Core Portfolio	13.43%	19.79%	10.24%	8.13%	11.02%
Total Portfolio w/o Oakland Building	13.05%	17.93%	8.45%	8.11%	10.53%

Net Total Portfolio	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio	11.16%	15.08%	7.41%	8.11%	9.90%
Non-Core Portfolio	13.43%	19.79%	10.24%	8.13%	11.02%
Total Portfolio	11.41%	15.85%	7.92%	8.09%	10.27%

Performance Drivers and Detractors by Style

Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio outperformed the NFI-ODCE Value Weight Index (Net) by 83 bps for the half year ending 09/30/2021. 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 once again the strongest performer over the period.
- Jamestown Premier Property Fund was the largest detractor from performance over the last half year.

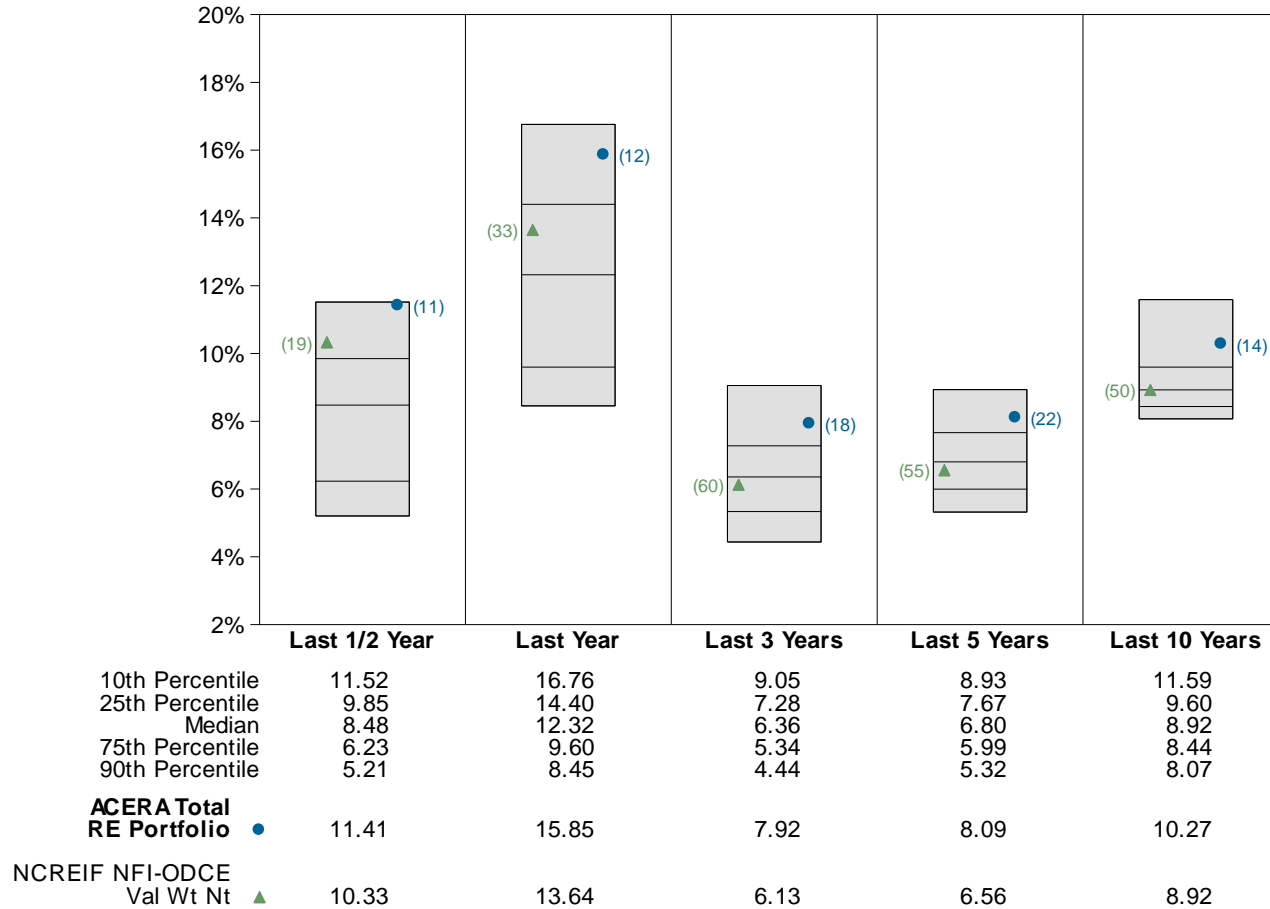
Non-Core Portfolio

- The Non-Core Portfolio outperformed the NFI-OE Value Weight Index (Net) by 17 bps for the period.
- AEW Partners VIII was the primary driver of performance, while CIM VI was the largest detractor.

Performance vs. Peer Group

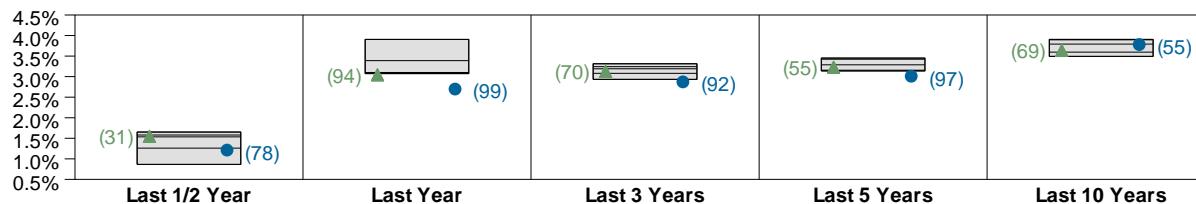
For Period Ended September 30, 2021

Performance vs Callan Open End Core Cmmingled Real Est



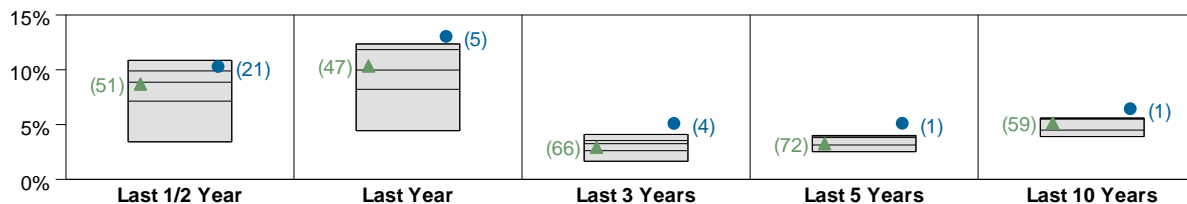
Performance vs. Peer Group

Income Rankings vs Callan OE Core Cmngld RE Periods ended September 30, 2021



	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	1.66	3.91	3.31	3.45	3.91
25th Percentile	1.58	3.39	3.24	3.43	3.90
Median	1.54	3.10	3.19	3.29	3.79
75th Percentile	1.26	3.09	3.08	3.16	3.60
90th Percentile	0.87	3.07	2.94	3.14	3.50
ACERA Total RE Portfolio ●	1.18	2.67	2.84	2.98	3.75
NCREIF NFI-ODCE Val Wt Nt ▲	1.55	3.05	3.13	3.23	3.64

Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended September 30, 2021



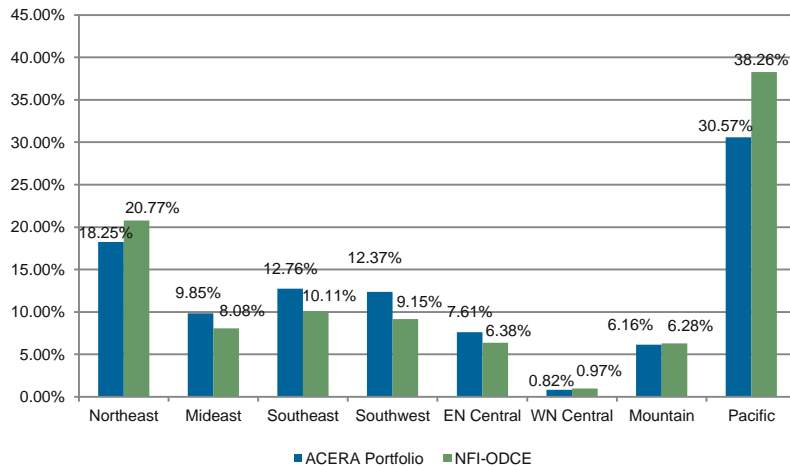
	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	10.87	12.36	4.11	4.01	5.59
25th Percentile	9.90	11.84	3.54	3.95	5.59
Median	8.87	9.97	3.26	3.82	5.50
75th Percentile	7.14	8.22	2.62	3.15	4.50
90th Percentile	3.43	4.44	1.66	2.53	3.91
ACERA Total RE Portfolio ●	10.17	12.92	4.98	5.00	6.31
NCREIF NFI-ODCE Val Wt Nt ▲	8.71	10.36	2.94	3.25	5.14

Diversification & Debt

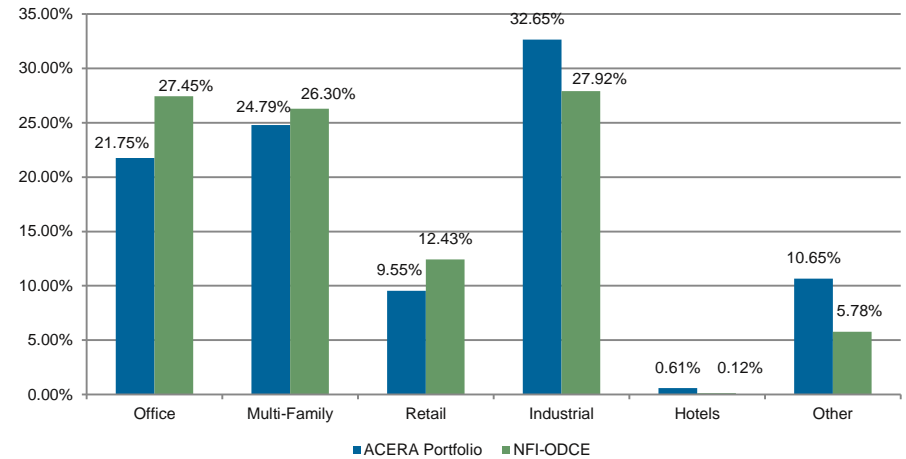
Diversification – Total Portfolio (excluding Oakland Building)

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

Geographic Diversification



Property Type Diversification



Debt Compliance

- The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of September 30, 2021, the loan-to-value (“LTV”) ratio of the Portfolio was 29.40%.

Definitions

Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment. $\text{Cap rate} = \text{Net operating income} / \text{Current market value (Sale price) of the asset}$.

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property, taking into account all income collected from operations, and deducting all expenses incurred from operations.

Real Estate Appraisal: The act of estimating the value of a property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

Income Return (“INC”): Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

Appreciation Return (“APP”): Increase or decrease in an investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value, uncollectible accrued income, or realized gain or loss from sales.

Total Gross Return (“TGRS”): The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

Total Net Return (“TNET”): Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.

Inception Returns: The total net return for an investment or portfolio over the period of time the client has had funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.

Net IRR: IRR after advisory fees, incentive, and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

Equity Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

Definitions

Style Groups

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.

Definitions

Indices

Stylized Index: Weights the various style group participants so as to be comparable to the investor's portfolio holdings for each period.

Open-End Diversified Core Equity Index ("ODCE"): A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (24 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.

NCREIF Fund Index Open-End Index ("OE"): NFI-OE is an aggregate of open-end, commingled equity real estate funds with diverse investment strategies. Funds comprising NFI-OE have varied concentrations of sector and region, core and non-core, leverage, and life cycle.

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

Definitions

Cash Flow Statements

Beginning Market Value: Value of real estate, cash, and other holdings from prior period end.

Contributions: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Distributions: Actual cash returned from the investment, representing distributions of income from operations.

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

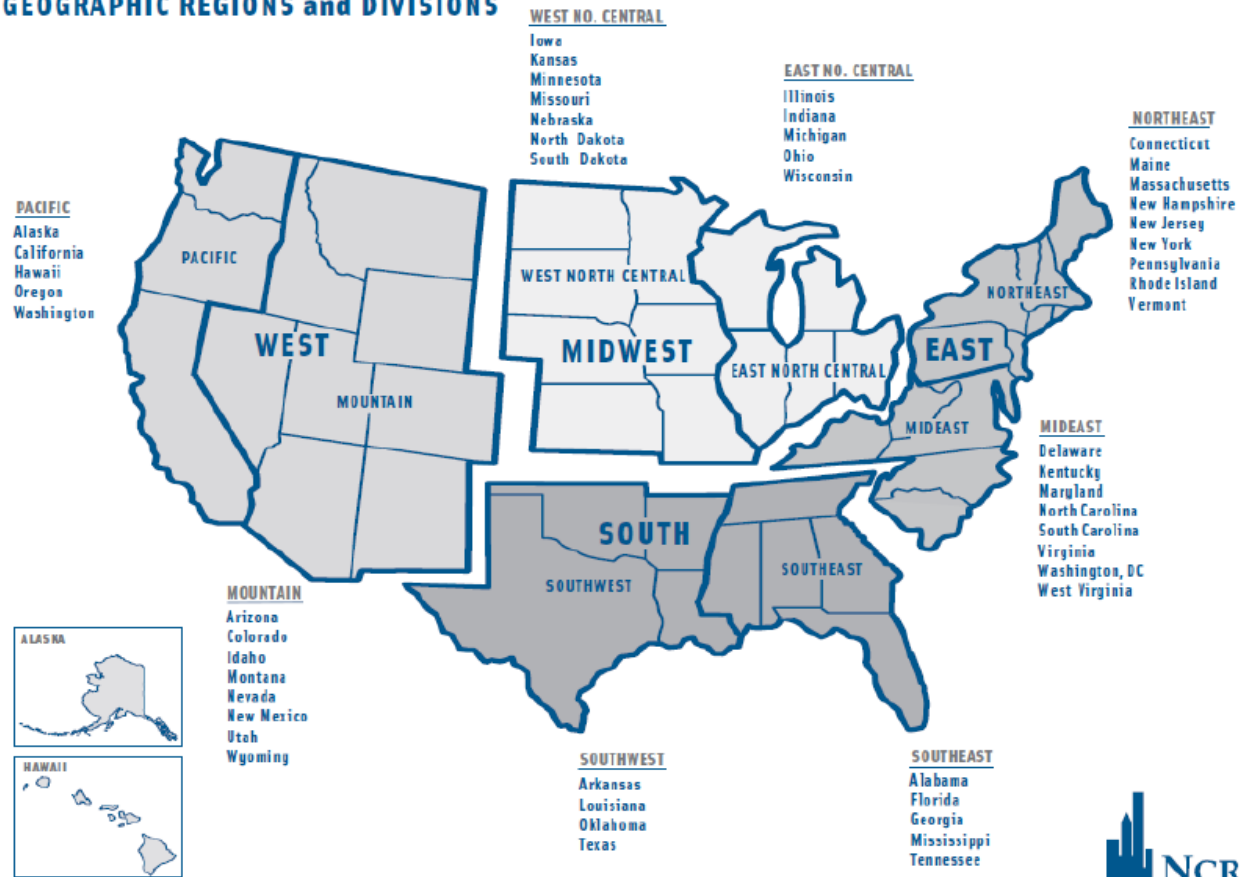
Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Unfunded Commitments: Capital allocated to managers which has not yet been called for investment. Amounts are as reported by managers.

Remaining Allocation: The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

NCREIF Region Map

GEOGRAPHIC REGIONS and DIVISIONS





Investment Committee Workplan for 2022

February 9, 2022

Action Items

Information Items

Action Items	Information Items
<p>January 12</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$60 Million Investment in Great Hill Partners Fund VIII as part of ACERA’s Private Equity Portfolio – Buyout, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations 2. Discussion and Possible Motion to Recommend that the Board Adopt an Implementation Plan for its ESG Policy <p>Adjournment into Closed Session</p> <p>Consider the Purchase of Particular, Specific Pension Fund Investments (Cal. Gov. Code § 54956.81) (3 fund-of-hedge-funds investments – (i) BlackRock ; (ii) GCM Grosvenor; and (iii) Morgan Stanley</p>	<ol style="list-style-type: none"> 1. Proposed Investment Committee Work Plan for 2022
<p>February 9</p>	<ol style="list-style-type: none"> 1. 2022 Capital Market Assumptions 2. Semiannual Performance Review for the Period Ending September 30, 2021 – Equities and Fixed Income 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 Equity 5. Semiannual Performance Review for the Period Ending June 30, 2021 – Private Credit 6. Semiannual Performance Review for the Period Ending June 30, 2021 – Real Assets 7. Semiannual Performance Review for the Period Ending September 30, 2021 – Real Estate

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, Private Credit, and Real Assets investments will be added to the Agenda from time-to-time.



Investment Committee Workplan for 2022

February 9, 2022

Action Items	Information Items
<p>March 9</p> <ol style="list-style-type: none"> 1. Discussion and Possible Motion to Recommend that the Board Adopt an up to \$XX million Investment in XX as part of ACERA’s Real Estate Portfolio – Core Plus, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder) 2. Discussion and Possible Motion to Recommend that the Board Adopt an up to \$XX million Investment in XX as part of ACERA’s Real Estate Portfolio – Core, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder) 3. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Equity Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder) 	<p>8. Investment Committee Work Plan 2022</p> <ol style="list-style-type: none"> 1. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the fourth quarter of 2021</i> 2. <i>Quarterly report on ACERA’s rebalancing activities for the fourth quarter 2021</i> 3. <i>Quarterly report on ACERA’s securities lending activities for the fourth quarter of 2021</i> 4. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the fourth quarter of 2021</i> 5. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the fourth quarter of 2020</i> 6. <i>Investment Committee Work Plan 2022</i>
<p>April 13</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Approve Amendments to ACERA’s General Investment Guidelines, Policies and Procedures 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Equity Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder) 3. Discussion and Possible Motion to Recommend to the Board to Approve the Qualified List of Candidates for ACERA’s 	

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Investment Committee Workplan for 2022

February 9, 2022

	Action Items	Information Items
	Emerging Markets Equity Manager Search – International Equities	
May 4 (meeting moved to third Wednesday due to SACRS Conference)	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Real Asset Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)	1. Possible manager review and/or education session (Placeholder)
June 8	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Equity Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)	1. Semiannual Performance Review for the Period Ending March 31, 2022 – Real Estate 2. Semiannual Performance Review for the Period Ending March 31, 2022 – Equities and Fixed Income 3. Semiannual Performance Review for the Period Ending March 31, 2022 – Absolute Return 4. Semiannual Performance Review for the Period Ending December 31, 2021 – Private Equity 5. Semiannual Performance Review for the Period Ending December 31, 2021 – Private Credit 6. Semiannual Performance Review for the Period Ending December 31, 2021 – Real Assets 7. Status Report of ESG Implementation 8. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian fees for the first quarter of 2022</i> 9. <i>Quarterly report on ACERA’s rebalancing activities for the first quarter of 2022</i> 10. <i>Quarterly report on ACERA’s securities lending activities for the first quarter of 2022</i>

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Investment Committee Workplan for 2022

February 9, 2022

Action Items	Information Items
	<p>11. Quarterly report on ACERA’s Directed Brokerage (DB) Program for the first quarter of 2022</p> <p>12. Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2022</p> <p>13. Updated Investment Committee Work Plan 2022</p>
July 13	<p>1. Interview of the Finalists for ACERA’s Emerging Markets Equity Manager Search – International Equities and Possible Motion by the Investment Committee to Recommend Finalist (s) to the Board</p>
August 10	<p>1. Discussion and Possible Motion to Recommend that the Board Adopt an up to \$XX million Investment in XX as part of ACERA’s Real Estate Portfolio – Core, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)</p> <p>2. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Equity Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)</p> <p>1. Education session on rebalancing-Doug McCalla (Placeholder)</p>
September 14	<p>1. Discussion of and Possible Motion to Recommend to the Board to Adopt Amendments on ACERA’s Emerging Investment Manager Policy</p> <p>1. Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the second quarter of 2022</p> <p>2. Quarterly report on ACERA’s rebalancing activities for the second quarter of 2022</p>

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Investment Committee Workplan for 2022

February 9, 2022

Action Items

Information Items

	Action Items	Information Items
		3. <i>Quarterly report on ACERA’s securities lending activities for the second quarter of 2022</i> 4. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the second quarter of 2022</i> 5. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2022</i> 6. <i>Updated Investment Committee Work Plan for 2022</i>
October 12	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Real Asset Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)	1. Possible manager review and/or education session (Placeholder)
November 2 (meeting moved to first Wednesday due to SACRS Conference)	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$XX million Investment in XX as part of ACERA’s Private Equity Portfolio – XXXX, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)	
December 14	1. Discussion and Possible Motion to Recommend that the Board Adopt an up to \$XX million Investment in XX as part of ACERA’s Real Estate Portfolio – Core, Pending Completion of Legal and Investment Due Diligence and Successful Contract Negotiations (Placeholder)	1. Semiannual Performance Review for the Period Ending September 30, 2022 – Equities and Fixed Income 2. Semiannual Performance Review for the Period Ending June 30, 2022 – Private Equity 3. Semiannual Performance Review for the Period Ending September 30, 2022 – Absolute Return 4. Semiannual Performance Review for the Period Ending June 30, 2022 – Private Credit

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Investment Committee Workplan for 2022

February 9, 2022

Action Items

Information Items

Action Items		Information Items
		<ol style="list-style-type: none">5. Semiannual Performance Review for the Period Ending June 30, 2022 – Real Assets6. Semiannual Performance Review for the Period Ending September 30, 2022 – Real Estate7. CA Gov. Code § 7514.7 Information Report8. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the third quarter of 2022</i>9. <i>Quarterly report on ACERA’s rebalancing activities for the third quarter 2022</i>10. <i>Quarterly report on ACERA’s securities lending activities for the third quarter of 2022</i>11. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the third quarter of 2022</i>12. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2022</i>13. <i>Updated Investment Committee Work Plan 2023</i>

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