



Alameda County Employees' Retirement Association
BOARD OF RETIREMENT

INVESTMENT COMMITTEE/BOARD MEETING

ACERA MISSION:

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

Thursday, February 13, 2020
 9:30 a.m.

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

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

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

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

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

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

INVESTMENT COMMITTEE/BOARD MEETING

NOTICE and AGENDA, Page 2 of 2 – Thursday, February 13, 2020

Call to Order: 9:30 a.m.

Public Input (Time Limit: 4 minutes per speaker)

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

1. Discussion of and Possible Motion to Recommend to the Board to Adopt ACERA's ESG Belief Statement

9:30 – 10:15 Margaret Jadallah, Verus Advisory Inc.
Betty Tse, ACERA

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

1. Review of the 2020 Capital Market Assumptions

Margaret Jadallah, Verus Advisory Inc.
Betty Tse, ACERA

2. Investment Committee Workplan 2020³

Agnes Ducanes, ACERA
Betty Tse, ACERA

Trustee Remarks


Future Discussion Items

Establishment of Next Meeting Date

March 18, 2020 at 9:30 a.m.

³ The workplan is subject to change without prior notice. Periodic rearrangement of agenda items will be made to the workplan to provide reasonable length of time for each meeting.



TO: Members of the Investment Committee,
FROM: Betty Tse – Chief Investment Officer 
DATE: February 13, 2020
SUBJECT: Discussion of and Possible Motion to Recommend to the Board to Adopt ACERA's ESG Belief Statement

Recommendation:

Adopt ACERA's ESG (Environmental, Social and Governance) Belief Statement

Background:

In early 2019, Verus conducted a confidential Enterprise Risk Tolerance (ERT) survey (see attachment #2) of all ACERA trustees to help prioritize the long term goals of ACERA. At the subsequent ICM, Verus reported the consolidated results of the named survey highlighting Long-term sustainability of the Plan and Prevent deterioration of funding status of the Plan as ACERA's top priority, while incorporating additional risk considerations (e.g. ESG) viewed as financially material to the Plan as priority #7 on the survey results. With that in mind and later in the year, the Board approved the formation of an ACERA Working Group of trustees (Elizabeth Rogers, Dale Amaral, Henry Levy, and Tarrell Gamble) to develop a thoughtful ESG Belief Statement with input from Verus and staff to present to the Investment Committee for full discussion.

Discussion:

The Working Group held its inaugural meeting on August 2, 2019 with Verus and staff after researching and exchanging relevant information. After much discussion and reviews of many research materials including sample ESG Belief/Policy Statements of other Plan Sponsors and sample ESG Belief/Policy Statements of some Investment Management Companies, the Working Group instructed Verus and staff to draft an ESG Belief Statement incorporating the following considerations:

- a) Explicit statement of fiduciary responsibilities and legal duties of all Trustees;
- b) ACERA's primary Plan objectives as described in the ERT survey;
- c) Consideration of material ESG risk factors that may adversely affect the long term performance of the Plan;
- d) Acknowledge the need to mitigate ESG risk factors along with other investment risk factors in the Plan;

- e) Solicit legal review of the draft ESG Belief Statement before presenting it to the Investment Committee.

Conclusion:

We believe we have drafted a thoughtful ESG Belief Statement (see attachment #1) that satisfies these five considerations and the named Statement has been reviewed by the Working Group. Staff proposes that the Investment Committee recommend to the Board of Retirement to adopt the attached ESG Belief Statement which will serve as a foundation for ACERA's ESG Policy.

Attachment:

- 1) Proposed ESG Belief Statement
- 2) ERT Survey Results (page 2), dated March 2019.



Memorandum

To: ACERA
From: Verus
Date: February 13, 2020
RE: ACERA ESG Mission Statement recommendation

Executive Summary

The recommended ACERA ESG mission statement below is the result of the combined effort of the ACERA ESG Working Group and represents the initial phase for ACERA's development of an ESG Investment Policy Statement and implementation plan. It has also been reviewed and edited by ACERA's legal staff. The mission statement reflects our understanding of ACERA's broad ESG objectives. Once the mission statement is approved, the Working Group will then continue with identifying ACERA's shared core beliefs and, pursuant to that, develop a dedicated ESG Investment Policy Statement for the Fund. The ESG mission statement will act as the cornerstone to this future activity.

ACERA ESG Mission Statement

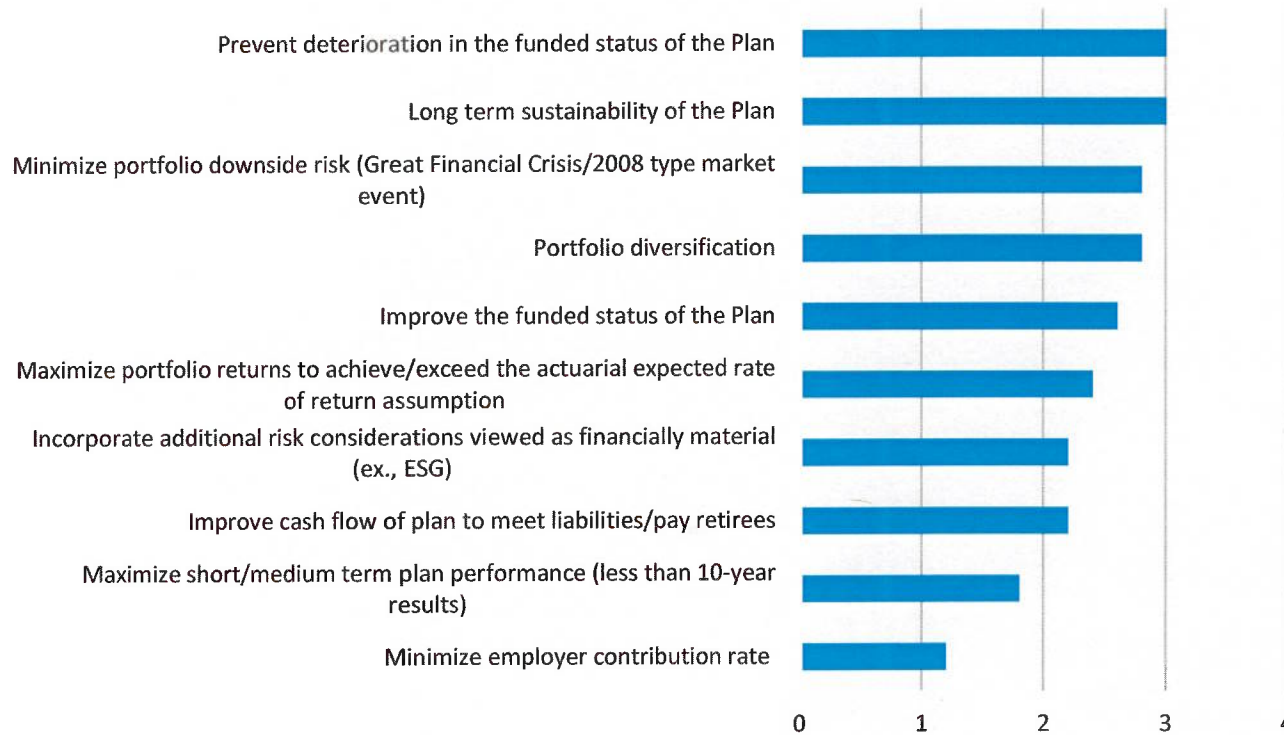
ACERA's Board members are fiduciaries and their legal duty remains, at all times, to promote the growth and sustainability of the Fund to provide timely retirement and related benefits to ACERA members and their beneficiaries. The Board's fiduciary duties require loyalty to ACERA's members and beneficiaries and prudence in all decisions made regarding ACERA's investments and administration. Within this context, the Board recognizes the need to mitigate risks that may have a negative impact on the Fund's long-term financial results while adhering to a diversified investment strategy designed to meet ACERA's desired return and risk objectives.

Risk mitigation includes the prudent consideration of Environmental, Social, and/or Governance (ESG) risk factors that may materially impact the Fund's long-term financial returns. ESG considerations will be evaluated, where applicable, with the goal of mitigating risk while maintaining or improving Plan returns over the long term. The Board shall analyze and consider ESG factors in its decision to approve investments when those factors are reasonably deemed by the Board, in consultation with its internal and external professional investment advisors, to be material to its financial returns.

ACERA's Board will develop and adopt an ESG policy statement which codifies its values, policies and procedures and will revisit and update this policy periodically.

ACERA's long-term objectives

LONG TERM OBJECTIVES





**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



FEBRUARY 2020

Alameda County Employees' Retirement Association

2020 Capital Market Assumptions

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VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

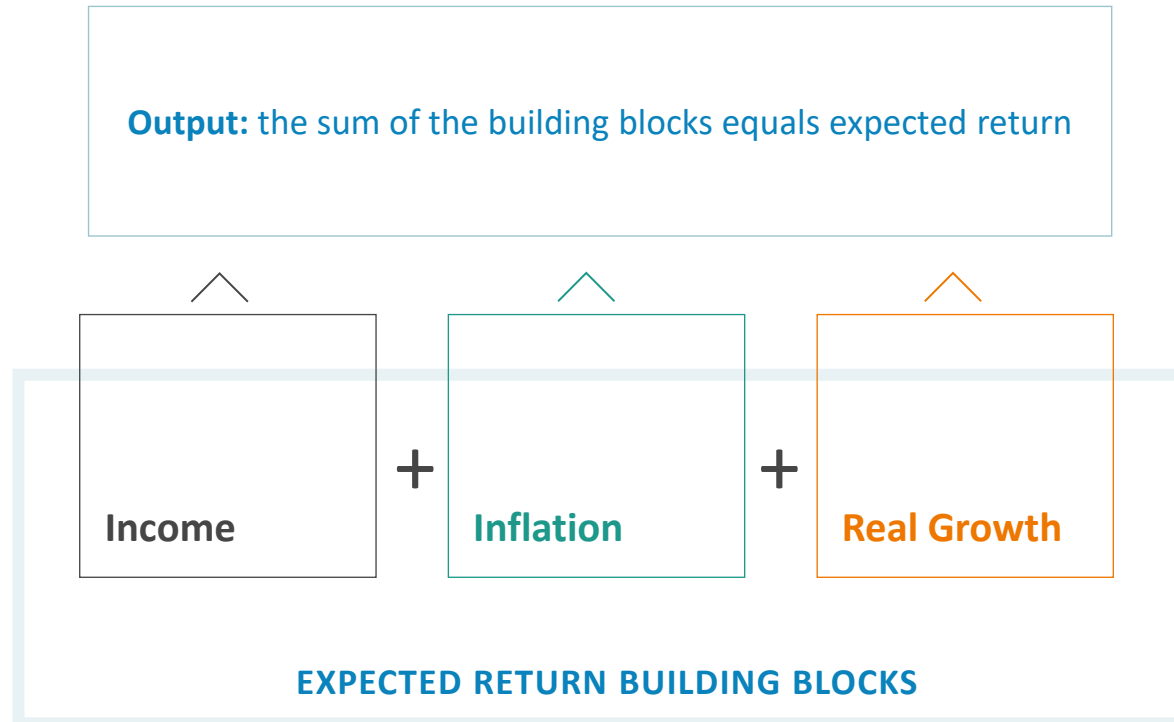
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

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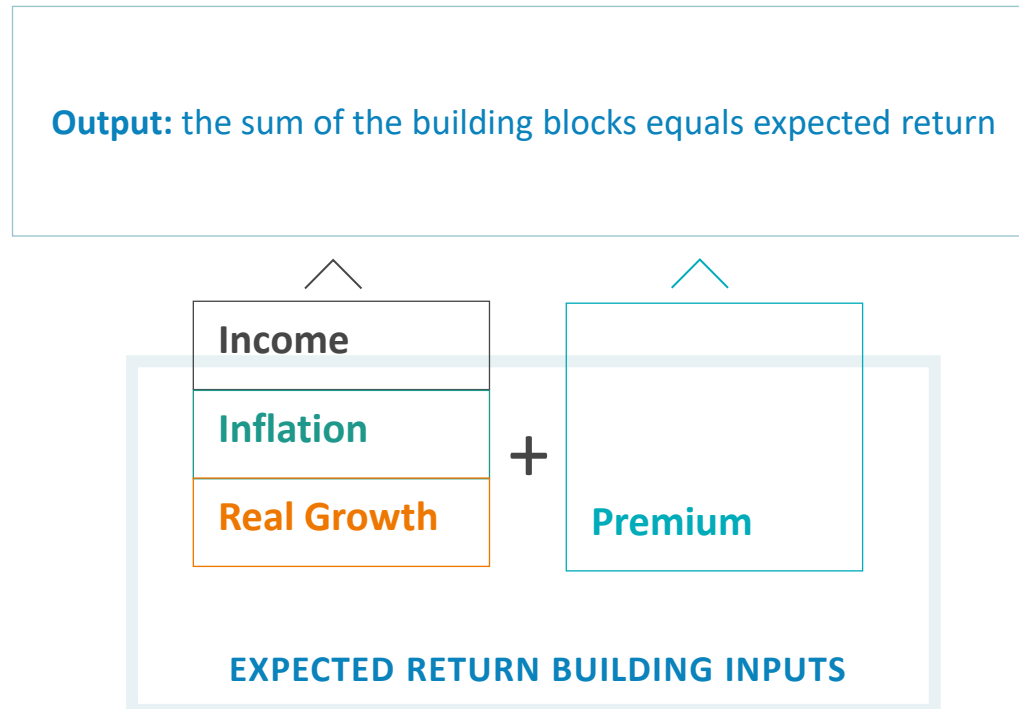
Past performance is no guarantee of future results. This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax 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™.

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

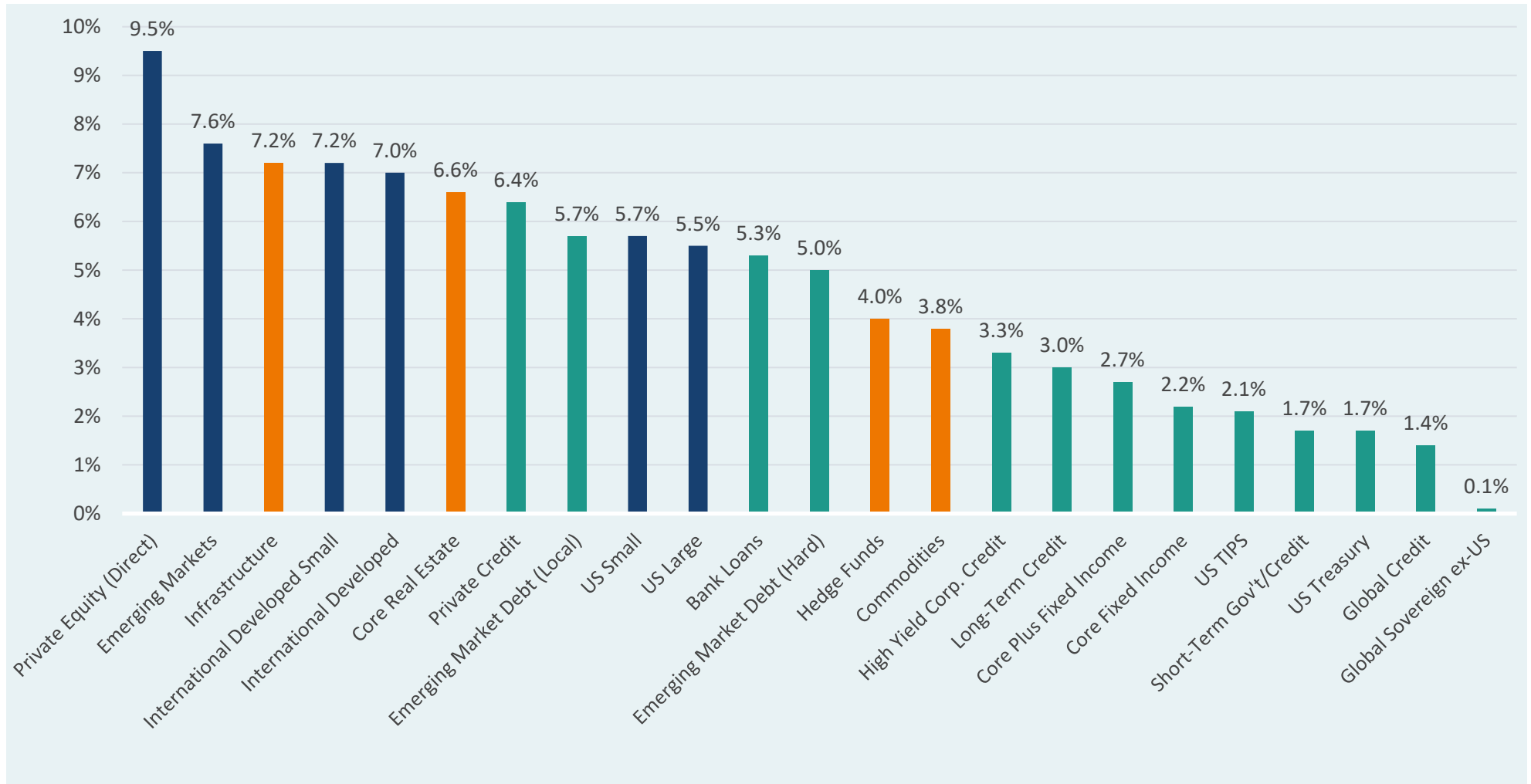
BUILDING BLOCK METHODOLOGY

Cash	Real yield estimate + inflation forecast
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change
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
Infrastructure	Current yield + real income growth + inflation on earnings (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

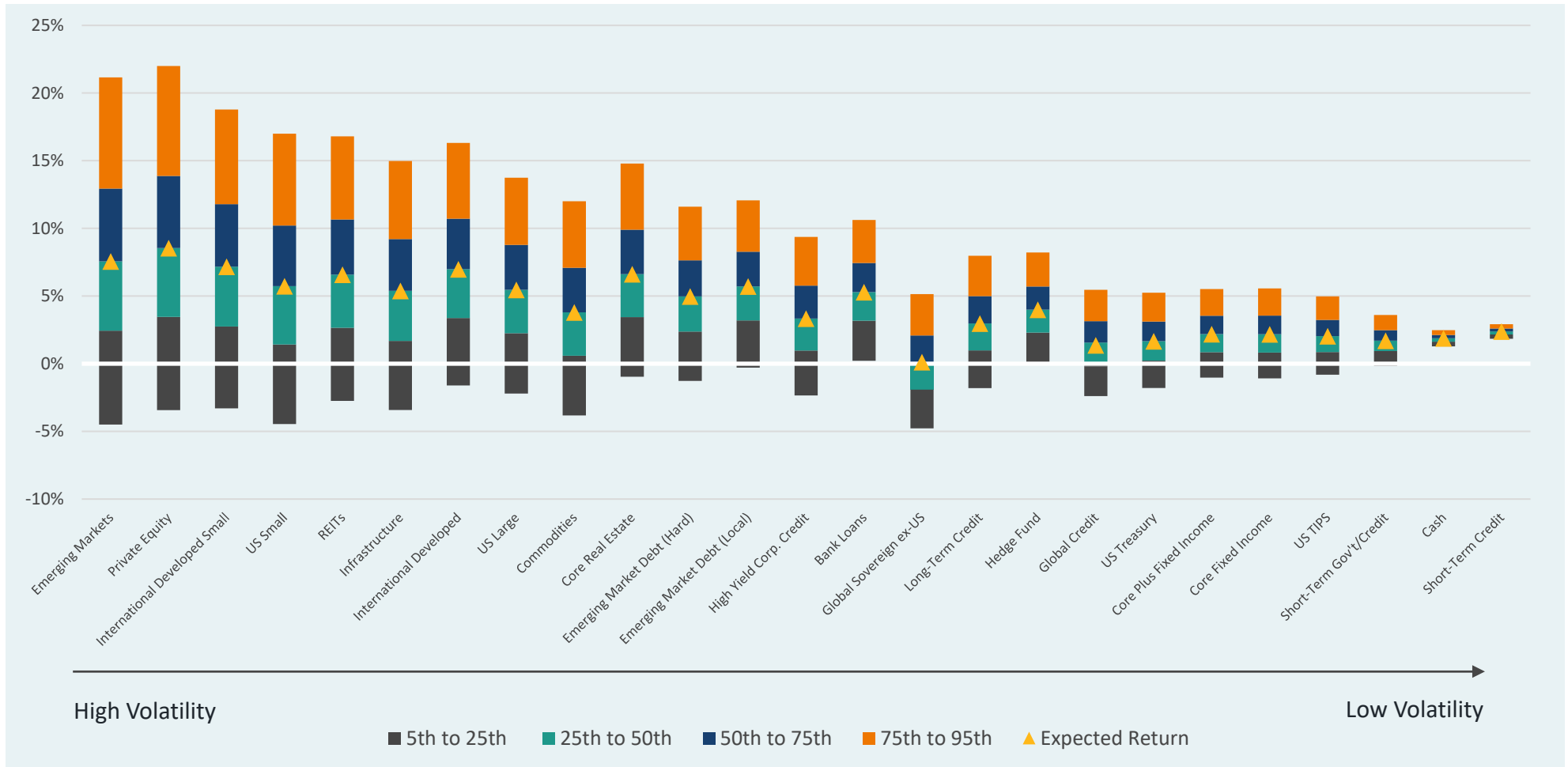
2020 10-year expected returns



Source: Verus

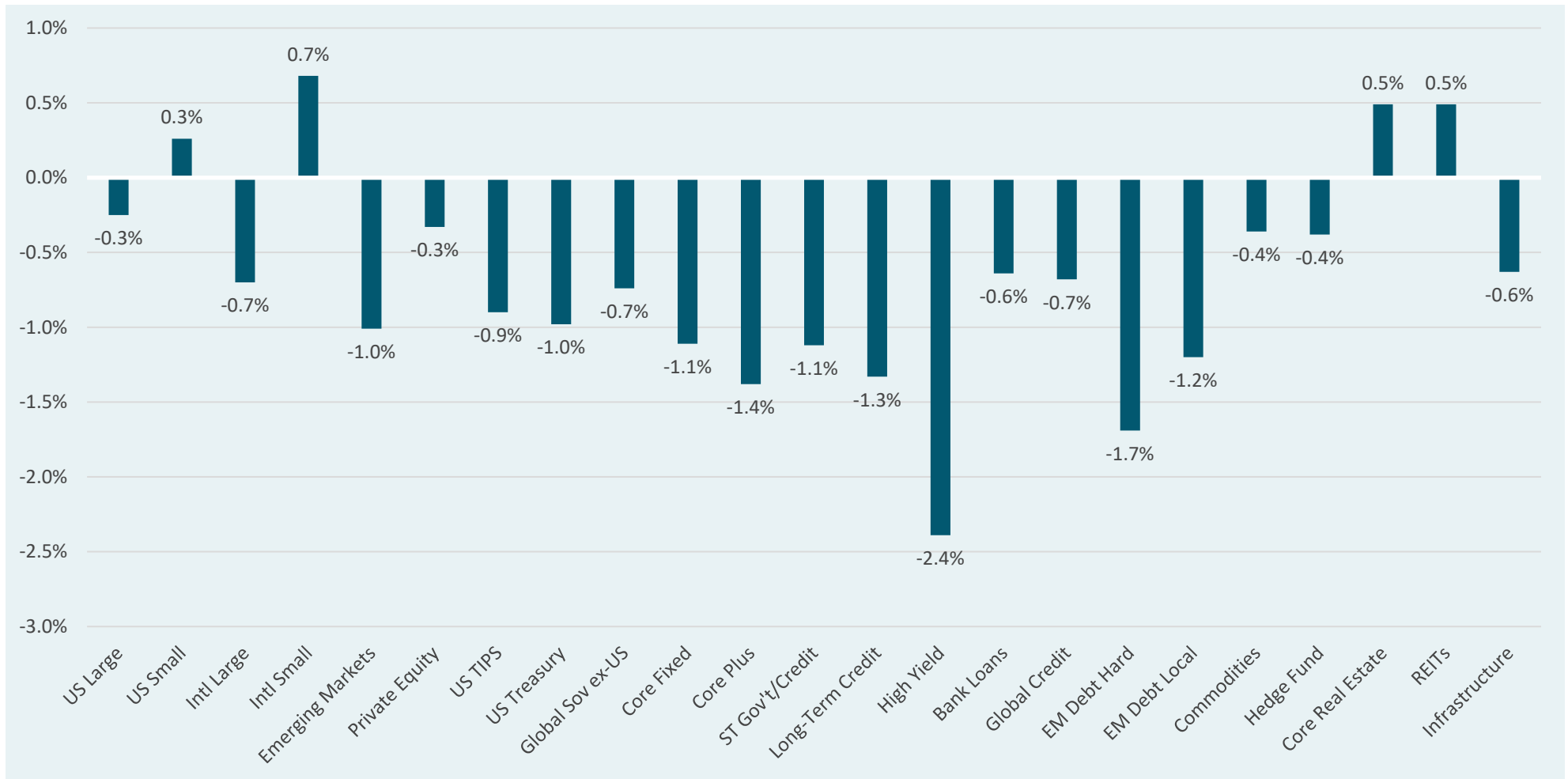
Range of likely 10-year outcomes

10-YEAR RETURN 90% CONFIDENCE INTERVAL



Source: Verus, MPI

2020 vs. 2019 return forecast



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

Equity

Equity return forecasts



Source: Verus

Equity summary

	U.S. Large	U.S. Small	EAFE	EAFE Small	EM
Index	S&P 500	Russell 2000	MSCI EAFE Large	MSCI EAFE Small	MSCI EM
Method	Building Block Approach: current dividend yield + historical average real earnings growth + inflation on earnings + repricing				
Current Shiller P/E Ratio	29.0	45.1	17.5	-	10.5
Regular P/E Ratio	19.5	41.0	16.7	18.7*	13.3
2019 Shiller P/E Change	+1.8%	+5.6%	+9.4%	-	+4.0%
2019 Regular P/E Change	+14.0%	-8.3%	+24.6%	-21.4%	+14.9%
Current Shiller P/E Percentile Rank	81%	93%	34%	-	18%
Current Regular P/E Percentile Rank	74%	90%	46%	18%*	34%
Average of P/E Methods' Percentile Rank	77%	92%	40%	18%*	26%
2019 YTD Return	20.5%	14.2%	12.8%	12.1%	5.9%
Shiller PE History	1982	1988	1982	Not Enough History	2005
Long-Term Average Shiller P/E	22.9	31.1	22.6	-	15.1
Current Dividend Yield	2.0%	1.8%	3.5%	2.7%	3.0%
Long-Term Average Real Earnings Growth	2.1%	3.1%	1.9%	1.9%	1.9%
Inflation on Earnings	1.9%	1.9%	1.1%	1.1%	1.9%
Repricing Effect (Estimate)	-0.5%	-1.0%	0.5%	1.5%	0.8%
Nominal Return	5.5%	5.7%	7.0%	7.2%	7.6%
Inflation Forecast	1.9%	1.9%	1.9%	1.1%	1.9%
Real Return	3.6%	3.8%	5.1%	6.1%	5.7%

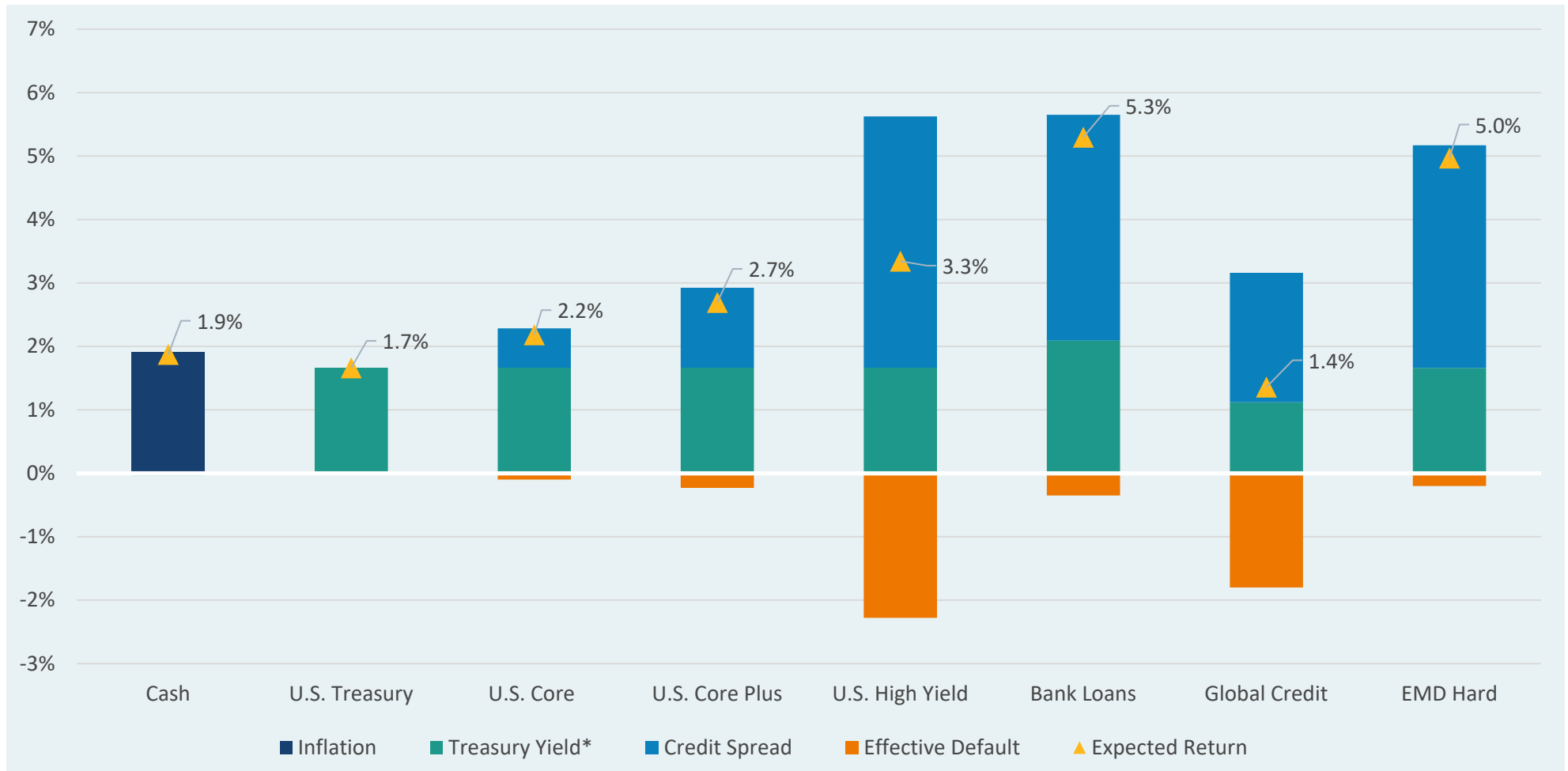
Data as of 9/30/19

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

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

Fixed income

Fixed income return forecasts

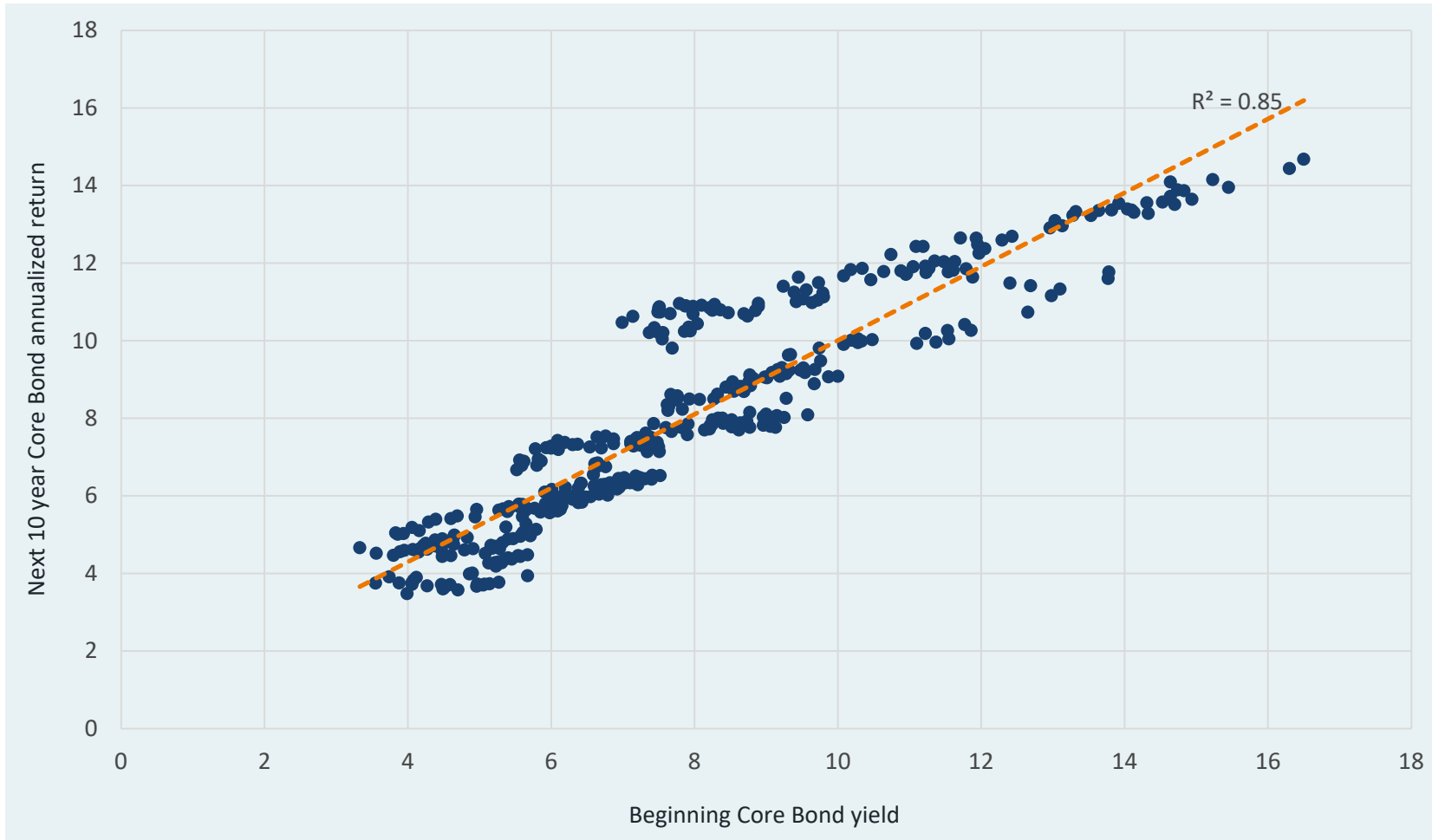


Source: Verus

*Bank loans uses 3-month USD Libor instead of the Treasury yield

Fixed income

CORE FIXED INCOME



Bond yields have been a very accurate predictor of future returns

Source: BBgBarc US Aggregate Index, Verus – performance since 1976

Alternatives

Hedge funds

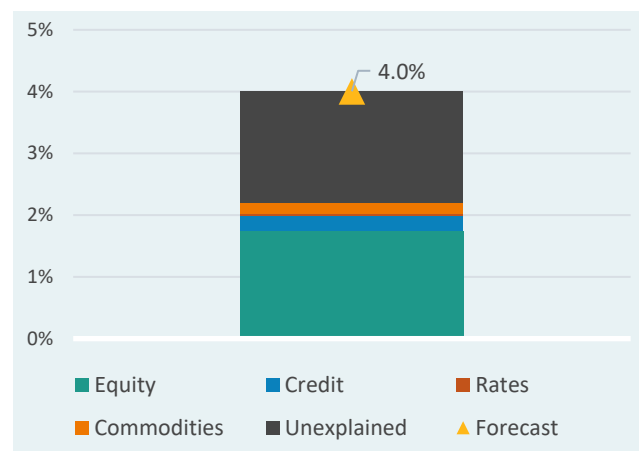
Hedge fund performance variation through time can be partly explained by public market betas (ex: equity, rates, credit, commodities) and partly explained by non-public sources of return (ex: alternative betas, skill, luck). Certain hedge fund strategies can be mostly explained by public market betas, while other types of hedge fund strategies are driven mostly by non-public sources of return.

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 over the next 10 years.

HEDGE FUND FORECAST



Source: Verus, as of 9/30/19

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	+2.2%
Non-Public Market % of Return	+1.8%
Nominal Return	+4.0%
Inflation Forecast	-1.9%
Real Return	+2.1%

Source: Verus, as of 9/30/19

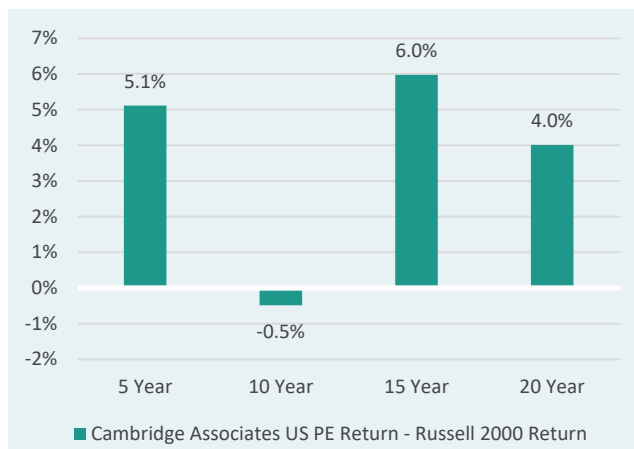
Private equity

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 8.5%. 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 9.5%. Private equity fund-of-fund programs have historically lagged the universe by 1.0%, and we forecast private equity FoF at 7.5% to reflect this drag.

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



Source: Cambridge, Russell, as of 3/31/19

PRIVATE EQUITY IMPLEMENTATION FORECASTS

	10-Year Forecast
Private Equity Universe Forecast	+8.5%
Private Equity FoF Forecast	+7.5%
Private Equity Direct Forecast	+9.5%

Source: Verus, as of 9/30/19

PRIVATE EQUITY UNIVERSE FORECAST

	10-Year Forecast
U.S. Large Cap Forecast	+5.5%
1.85 Beta Multiplier	+3.0%
Nominal Return	+8.5%
Inflation Forecast	-1.9%
Real Return	+6.6%

Source: Verus, as of 9/30/19

Private core real estate/REITS

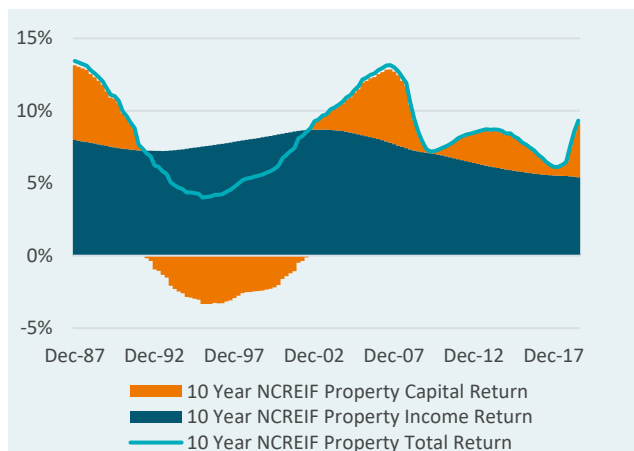
Performance of the NCREIF property index can be decomposed into an income return (cap rate) and capital return. The return coming from income has historically been more stable than the return derived from capital changes.

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 track inflation as higher prices are passed through to rents.

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 smoothing effects. While private real estate appears to be less volatile than REITs, the true risks to investors are 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 6/30/19

PRIVATE REAL ESTATE

	Private Real Estate 10-Year Forecast
Current Cap Rate	+4.4%
Real Income Growth	+2.3%
Capex Assumption	-2.0%
Inflation	+1.9%
Nominal Return	6.6%
Inflation Forecast	-1.9%
Real Return	4.7%

Source: Verus, as of 9/30/19

REITS

	10-Year Forecast
Nominal Return Forecast	6.6%
Inflation Forecast	-1.9%
Real Return	4.7%

Source: Verus, as of 9/30/19

Infrastructure

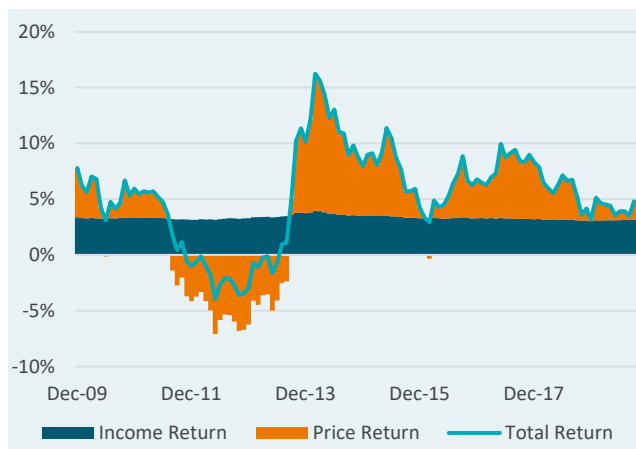
Infrastructure includes a variety of investment types across a subset of industries. There is not one definition for what can be included within infrastructure. The asset class has grown dramatically in the last decade as investors sought assets that might provide more attractive yield relative to fixed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

Similar to real estate investment, income plays a significant role in the returns 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 9/30/19

ADVANCED ECONOMY REAL GDP GROWTH



Source: IMF, as of 9/30/19

FORECAST

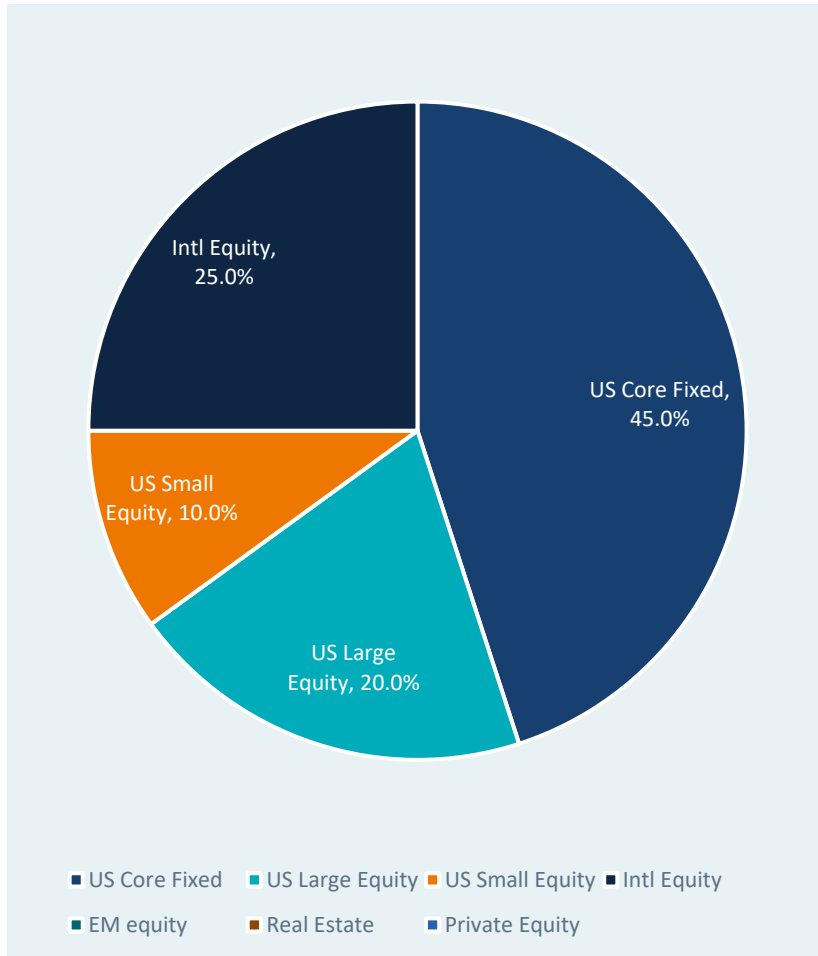
	10-Year Forecast
Inflation	1.7%
Yield	4.1%
Income Growth	1.5%
Nominal Return	7.2%
Global Inflation Forecast	-1.7%
Real Return	5.5%

Source: Verus, as of 9/30/19, may not sum due to rounding

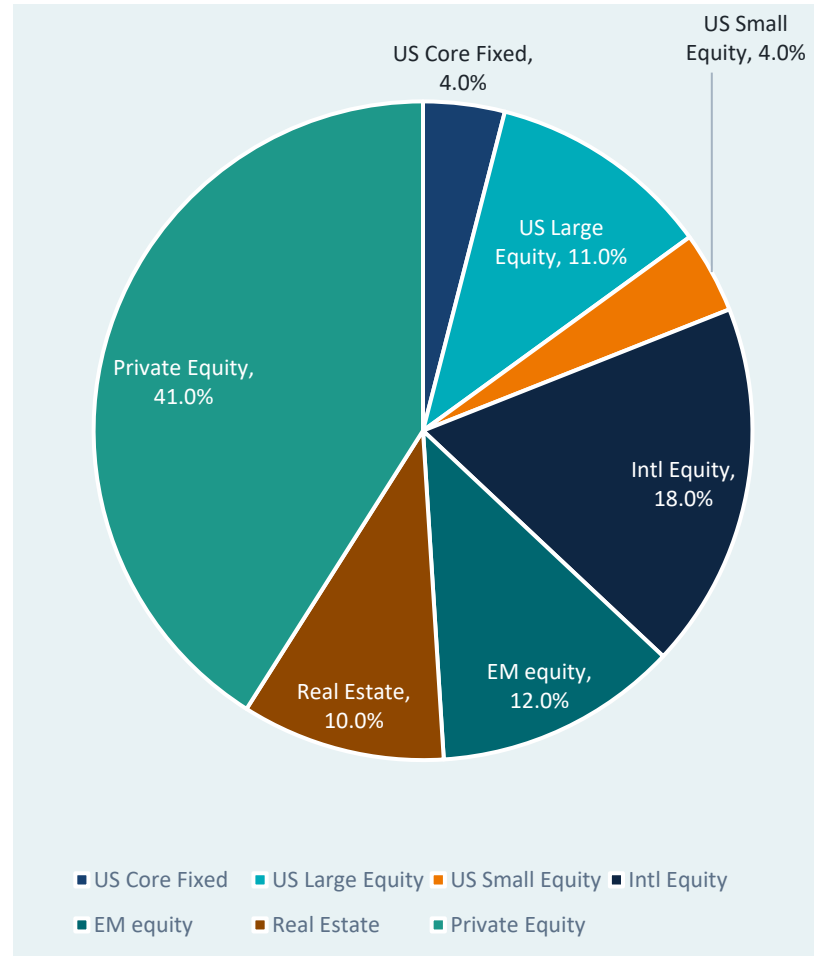
ACERA portfolio expectations

Achieving a 7.25% rate of return

PORTFOLIO IN 2005



PORTFOLIO IN 2020

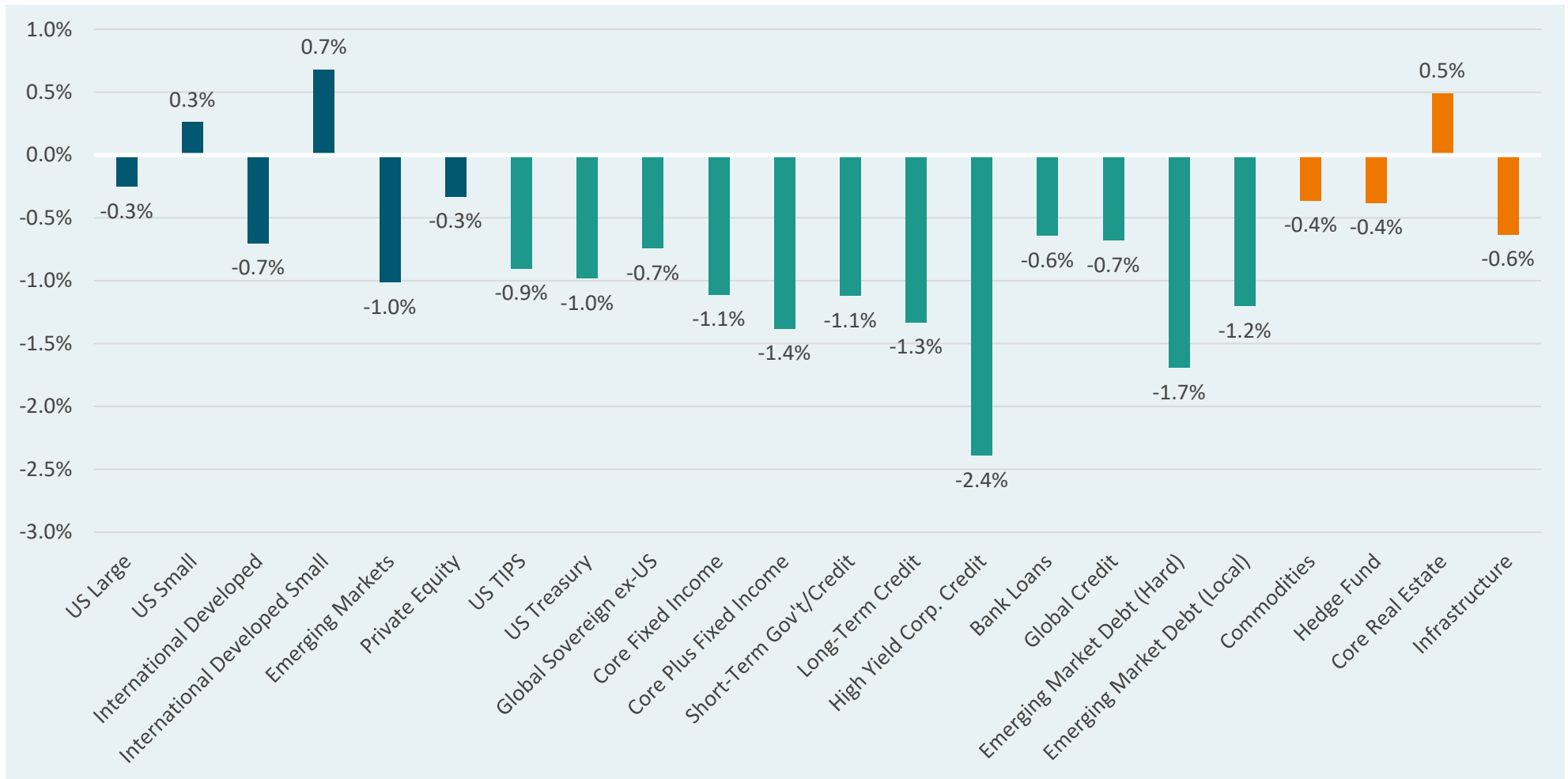


A 55/45 Global equity/Core fixed income portfolio had an expected return of 7.25% in 2005.

A 7.25% portfolio today requires a large allocation to private markets and allows for little in fixed income.

Based on Verus CMAs from 2005 and 2020

2020 vs. 2019 return forecast



Note: the year-over-year change is based on the 2020 methodology

Portfolio expectation

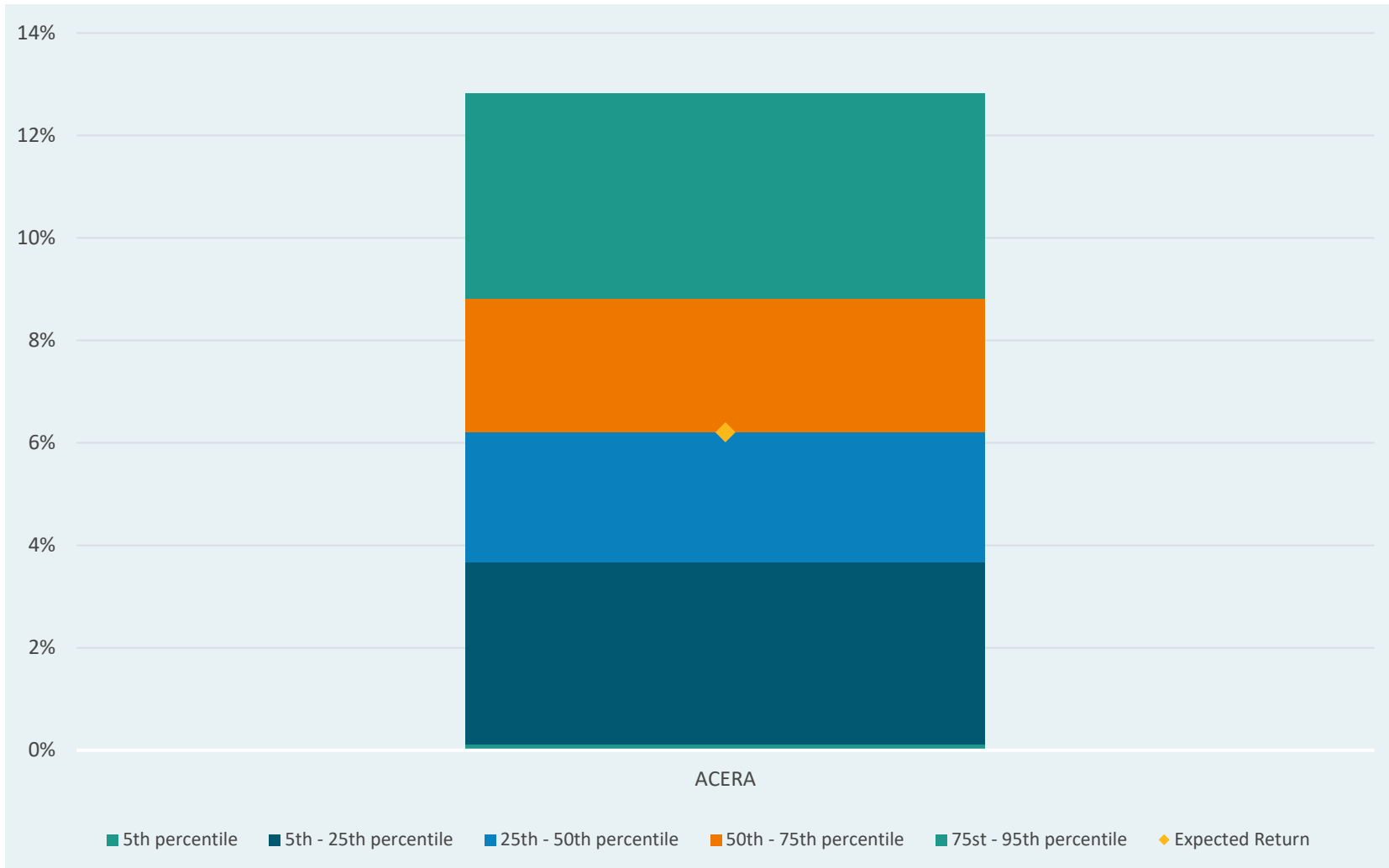
	Strategic Target	Return (g)	Std Dev	Sharpe Ratio
US Large Equity	22.4	5.5	15.4	0.2
US Small Equity	2.5	5.7	21.1	0.2
Intl. Developed Equity	17.0	7.0	17.5	0.3
International SC Equity	3.0	7.2	21.8	0.3
Emerging Markets Equity	5.0	7.6	25.6	0.2
High Yield Corp. Credit	1.6	3.3	11.3	0.1
Private Equity*	10.5	9.5	25.7	0.3
Private Credit	4.0	7.0	10.0	0.5
Total Growth	66.0			
Core Plus Fixed Income	11.5	2.7	8.3	0.1
Global Fixed Income	3.0	1.4	7.4	-0.1
Absolute Return	9.0	4.0	7.6	0.3
Total Diversifying	23.5			
Core Real Estate	8.0	6.6	12.4	0.4
Commodities*	0.8	3.8	15.4	0.2
Infrastructure*	1.8	7.2	27.8	0.4
Total Real Return	10.5			
Total Allocation	100			

	Policy 2019 CMAs	Policy 2020 CMAs
Mean Variance Analysis		
Forecast 10 Year Return	6.7	6.2
Standard Deviation	12.3	12.2
Return/Std. Deviation	0.5	0.5
Sharpe Ratio	0.42	0.41

- Forecasted expected return fell 50bps from last year's CMAs primarily due to bond yield declines and equity repricing (valuation)

*Real Assets is modelled as 0.75% Commodities, 1.75% Infrastructure, and 2.5% private equity

Portfolio expectation range



There is wide range of possible outcomes around the expected return based on the portfolio standard deviation.

**Real Assets is modelled as 0.75% Commodities, 1.75% Infrastructure, and 2.5% private equity*

Appendix

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	Real yield estimate + inflation forecast	Long-term volatility
Bonds	Nominal bonds: current yield; Real bonds: real yield + inflation forecast	Long-term volatility
International Bonds	Current yield	Long-term volatility
Credit	Current option-adjusted spread + U.S. 10-year Treasury – effective default rate	Long-term volatility
International Credit	Current option-adjusted spread + foreign 10-year Treasury – effective default rate	Long-term volatility
Private Credit	Bank loan forecast + 1.75% private credit premium**	Long-term volatility
Equity	Current yield + real earnings growth (historical average) + inflation on earnings (inflation forecast) + expected P/E change	Long-term volatility
Intl Developed Equity	Current yield + real earnings growth (historical average) + inflation on earnings (intl. inflation forecast) + expected P/E change	Long-term volatility
Private Equity	US large cap domestic equity forecast * 1.85 beta adjustment	1.2 * Long-term volatility of U.S. small cap
Commodities	Collateral return (cash) + spot return (inflation forecast) + roll return (assumed to be zero)	Long-term volatility
Hedge Funds	Return coming from traditional betas + 15-year historical idiosyncratic return	Long-term volatility
Core Real Estate	Cap rate + real income growth – capex + inflation forecast	65% of REIT volatility
REITs	Core real estate	Long-term volatility
Value-Add Real Estate	Core real estate + 2%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Opportunistic Real Estate	Core real estate + 4%	Volatility to produce Sharpe Ratio (g) equal to core real estate
Infrastructure	Current yield + real income growth + inflation on earnings (inflation forecast)	Long-term volatility
Risk Parity	Expected Sharpe Ratio * target volatility + cash rate	Target volatility

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

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

10-year return & risk assumptions

Asset Class	Index Proxy	Ten Year Return Forecast		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	5.5%	6.6%	15.4%	0.23	0.31	1.01	1.02
U.S. Small	Russell 2000	5.7%	7.7%	21.1%	0.18	0.28	0.62	0.67
International Developed	MSCI EAFE	7.0%	8.4%	17.5%	0.29	0.37	0.30	0.37
International Small	MSCI EAFE Small Cap	7.2%	9.3%	21.8%	0.24	0.34	0.46	0.52
Emerging Markets	MSCI EM	7.6%	10.4%	25.6%	0.22	0.33	0.17	0.25
Global Equity	MSCI ACWI	6.4%	7.7%	16.8%	0.27	0.34	0.59	0.63
Private Equity*	Cambridge Private Equity	8.5%	11.3%	25.3%	0.26	0.37	-	-
Fixed Income								
Cash	30 Day T-Bills	1.9%	1.9%	1.2%	-	-	-	-
U.S. TIPS	BBgBarc U.S. TIPS 5-10	2.1%	2.2%	5.4%	0.04	0.06	0.65	0.66
U.S. Treasury	BBgBarc Treasury 7-10 Year	1.7%	1.9%	6.7%	-0.03	0.00	0.68	0.69
Global Sovereign ex U.S.	BBgBarc Global Treasury ex U.S.	0.1%	0.6%	9.7%	-0.19	-0.13	0.10	0.14
Global Aggregate	BBgBarc Global Aggregate	1.2%	1.4%	6.2%	-0.11	-0.08	0.39	0.37
Core Fixed Income	BBgBarc U.S. Aggregate Bond	2.2%	2.4%	6.3%	0.05	0.08	1.08	1.09
Core Plus Fixed Income	BBgBarc U.S. Corporate IG	2.7%	3.0%	8.3%	0.10	0.14	1.21	1.22
Short-Term Gov't/Credit	BBgBarc U.S. Gov't/Credit 1-3 Year	1.7%	1.8%	3.6%	-0.06	-0.03	1.16	1.17
Short-Term Credit	BBgBarc Credit 1-3 Year	1.9%	2.0%	3.6%	0.01	0.03	1.76	1.78
Long-Term Credit	BBgBarc Long U.S. Corporate	3.0%	3.4%	9.4%	0.12	0.16	0.93	0.94
High Yield Corp. Credit	BBgBarc U.S. Corporate High Yield	3.3%	4.0%	11.3%	0.12	0.18	1.25	1.26
Bank Loans	S&P/LSTA Leveraged Loan	5.3%	5.8%	10.0%	0.34	0.39	1.47	1.50
Global Credit	BBgBarc Global Credit	1.4%	1.6%	7.4%	-0.07	-0.03	0.77	0.78
Emerging Markets Debt (Hard)	JPM EMBI Global Diversified	5.0%	5.7%	12.4%	0.25	0.31	1.03	1.03
Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	5.7%	6.4%	12.0%	0.32	0.37	0.17	0.22
Private Credit	Bank Loans + 175bps	7.0%	7.5%	10.0%	0.51	0.56	-	-
Other								
Commodities	Bloomberg Commodity	3.8%	4.9%	15.4%	0.12	0.20	-0.36	-0.29
Hedge Funds*	HFRI Fund Weighted Composite	4.0%	4.3%	7.7%	0.27	0.31	0.55	0.56
Real Estate Debt	BBgBarc CMBS IG	4.0%	4.3%	7.6%	0.27	0.31	1.55	1.58
Core Real Estate	NCREIF Property	6.6%	7.3%	12.4%	0.38	0.44	1.84	1.89
Value-Add Real Estate	NCREIF Property + 200bps	8.6%	10.0%	17.7%	0.38	0.46	-	-
Opportunistic Real Estate	NCREIF Property + 400bps	10.6%	12.9%	23.0%	0.38	0.48	-	-
REITs	Wilshire REIT	6.6%	8.2%	19.1%	0.25	0.33	0.80	0.83
Global Infrastructure	S&P Global Infrastructure	7.2%	8.6%	17.8%	0.30	0.38	0.52	0.56
Risk Parity	Risk Parity	6.9%	7.4%	10.0%	0.50	0.55	-	-
Currency Beta	MSCI Currency Factor Index	1.8%	1.8%	3.6%	-0.04	-0.02	0.19	0.21
Inflation		1.9%	-	-	-	-	-	-

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.

*Returns highlighted in orange are at or above ACERA' required return

Correlation assumptions

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



Investment Committee Workplan for 2020

February 13, 2020

Action Items

Information Items

Action Items	Information Items
January 8 1. Discussion of and Possible Motion to Recommend that the Board Authorize Staff to Negotiate an Extension of the Custody Contract with State Street Bank and Trust Company 2. Discussion of and Possible Motion to Recommend to the Board to approve short list of candidates for ACERA's Large Cap Value Manager Search	1. Education Session: Cash Overlay 2. Proposed Investment Committee Workplan for 2020
February 13 (schedule change due to 2 nd Wednesday falls on Lincoln Day – County Holiday) 1. Discussion of and Possible Motion to Recommend to the Board to Adopt ACERA's ESG Belief Statement	1. Review of 2020 Capital Market Assumptions 2. Investment Committee Workplan 2020
March 18 (schedule change to accommodate Trustees availability) 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Estate (AEW Partners Real Estate Fund IX)	1. Review of the Absolute Return Structure and Investment Plan 2. <i>Report of ACERA's Proxy Voting Activities in 2019</i> 3. <i>Quarterly report of ACERA's investment manager, consultant, and custodian bank fees for the fourth quarter of 2019</i> 4. <i>Quarterly report on ACERA's rebalancing activities for the fourth quarter of 2019</i> 5. <i>Quarterly report on ACERA's securities lending activities for the fourth quarter of 2019</i> 6. <i>Quarterly report on ACERA's Directed Brokerage (DB) Program for the fourth quarter of 2019</i> 7. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the fourth quarter of 2018</i> 8. <i>Updated Investment Committee Workplan 2020</i>

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2. Meeting date is assumed to be the second Wednesday of each month.
3. Educational sessions may be added to the Agenda from time-to-time e.g., Portable Alpha, Market and Currency Overlay, Equity Overlay, and Emerging Managers in Private Equity investments. Recommendations and reports on ACERA's Real Estate, Private Equity, Absolute Return, and Real Assets investments will be added to the Agenda from time-to-time.



Investment Committee Workplan for 2020

February 13, 2020

Action Items	Information Items
<p>April 8</p> <ol style="list-style-type: none"> 1. Interview of the Finalists for ACERA’s U.S. Large Cap Value Manager Search and Possible Motion by the Investment Committee to Recommend one Finalist to the Board 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Assets Portfolio (Placeholder) 3. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Credit Portfolio (Placeholder) 	<ol style="list-style-type: none"> 1. Education Session: Real Assets and ESG implications (tentative) 2. Review of Cash Overlay Implementation (tentative)
<p>May 20 (meeting moved to third Wednesday due to SACRS Conference)</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate (Cityview Real Estate Partners VII) 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Absolute Return Portfolio (Placeholder) 	<ol style="list-style-type: none"> 1. Education Session: Risk Reporting (tentative) 2. Education Session: Portable Alpha (tentative)
<p>June 10</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equities Portfolio (Placeholder) 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Assets Portfolio (Placeholder) 	<ol style="list-style-type: none"> 1. Semiannual Performance Review for the Period Ending March 31, 2020 – Equities and Fixed Income 2. Semiannual Performance Review for the Period Ending December 31, 2019 – Private Equities 3. Semiannual Performance Review for the Period Ending March 31, 2020 – Absolute Return 4. Semiannual Performance Review for the Period Ending December 31, 2019 – Real Assets 5. Semiannual Performance Review for the Period Ending March 31, 2020 – Real Estate 6. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian fees for the first quarter of 2020</i>

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Investment Committee Workplan for 2020

February 13, 2020

Action Items

Information Items

	Action Items	Information Items
		7. <i>Quarterly report on ACERA’s rebalancing activities for the first quarter of 2020</i> 8. <i>Quarterly report on ACERA’s securities lending activities for the first quarter of 2020</i> 9. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the first quarter of 2020</i> 10. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2020</i> 11. <i>Updated Investment Committee Workplan 2020</i>
July 8	1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate (Placeholder) 2. Discussion and Possible Motion to Recommend to the Board to Adopt an Investment in Private Credit Portfolio (Placeholder)	1. Review ACERA’s International Equities Manager Structure – tentative
August 12	1. Discussion and Possible Motion to Recommend to the Board to Adopt an Investment in Private Equities Portfolio (Placeholder) 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Absolute Return (Placeholder)	

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Investment Committee Workplan for 2020

February 13, 2020

Action Items	Information Items
<p>September 9</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Assets Portfolio (Placeholder) 2. Discussion and Possible Motion to Recommend to the Board to Adopt an Investment in Private Credit Portfolio (Placeholder) 	<ol style="list-style-type: none"> 1. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the second quarter of 2020</i> 2. <i>Quarterly report on ACERA’s rebalancing activities for the second quarter of 2020</i> 3. <i>Quarterly report on ACERA’s securities lending activities for the second quarter of 2020</i> 4. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the second quarter of 2020</i> 5. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2020</i> 6. <i>Updated Investment Committee Workplan for 2020</i>
<p>October 14</p> <ol style="list-style-type: none"> 1. Discussion and Possible Motion to Recommend to the Board to Adopt an Investment in Private Equities Portfolio (Placeholder) 	
<p>November 4 (meeting moved to first Wednesday due to SACRS Conference)</p> <ol style="list-style-type: none"> 1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate (Placeholder) 	

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Investment Committee Workplan for 2020

February 13, 2020

	Action Items	Information Items
December 9	1. Discussion and Possible Motion to Recommend to the Board to Adopt an Investment in Absolute Return Portfolio (Placeholder)	1. Semiannual Performance Review for the Period Ending September 30, 2020 – Equities and Fixed Income 2. Semiannual Performance Review for the Period Ending June 30, 2020 – Private Equity 3. Semiannual Performance Review for the Period Ending September 30, 2020 – Absolute Return 4. Semiannual Performance Review for the Period Ending June 30, 2020 – Real Assets 5. Semiannual Performance Review for the Period Ending September 30, 2020 – Real Estate 6. CA Gov. Code § 7514.7 Information Report 7. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the third quarter of 2020</i> 8. <i>Quarterly report on ACERA’s rebalancing activities for the third quarter 2020</i> 9. <i>Quarterly report on ACERA’s securities lending activities for the third quarter of 2020</i> 10. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the third quarter of 2020</i> 11. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2020</i> 12. <i>Updated Investment Committee Workplan for 2020</i>

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