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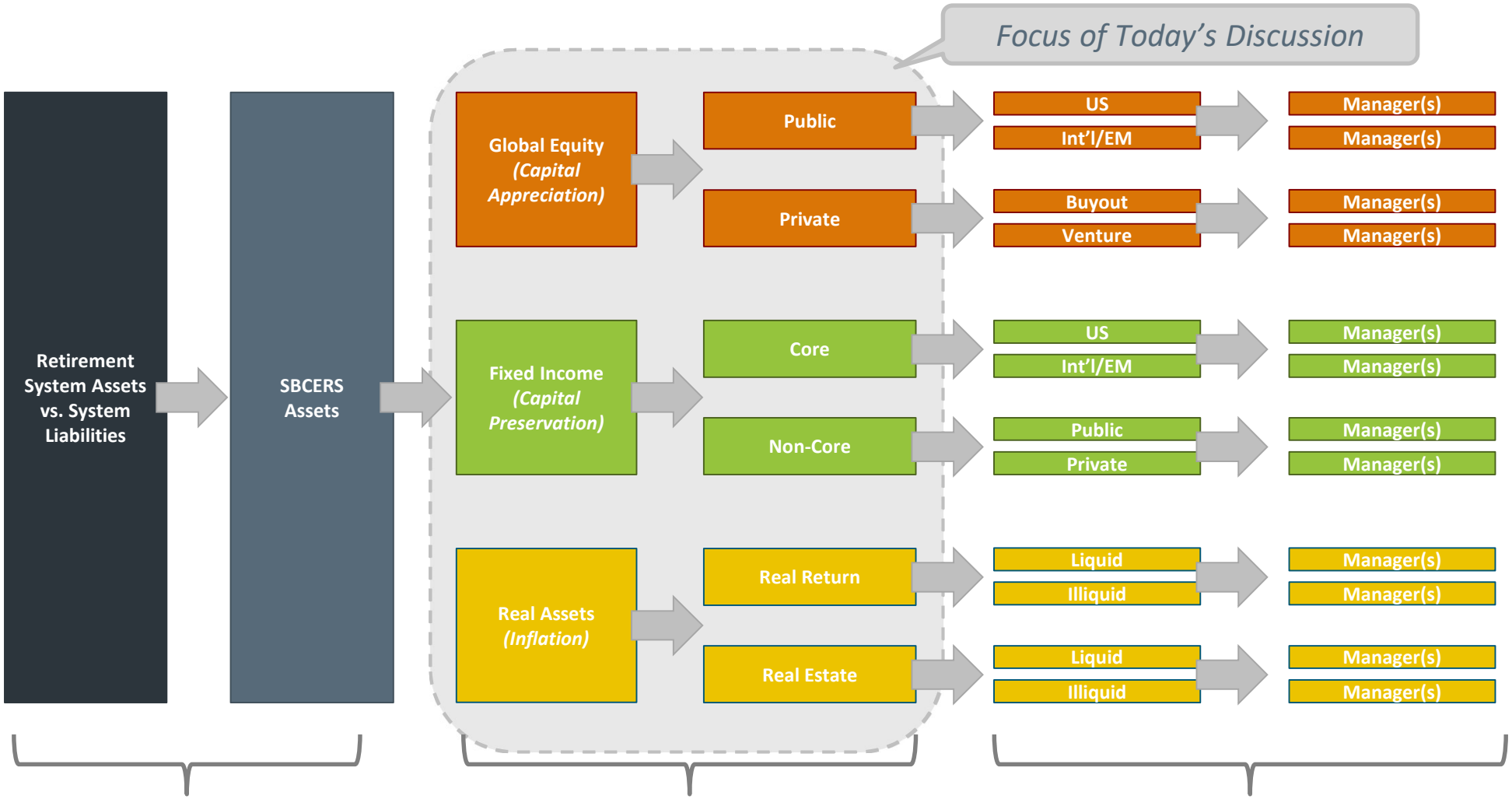
2025 Asset Allocation Review

Santa Barbara County Employees' Retirement System

April 2025

Introduction

Investment Decision-Making Hierarchy



- Assesses health of the Plan
- Models risk and return parameters including prevailing and expected cash flows
- Links Investment Policy, Contribution Policy and Benefit Policy

Asset Allocation Study

- Models specific targets to asset classes
- Used to select overall target/policy allocation
- Generally uses passive capital market assumptions

Asset Class Structure Studies

- Implementation guide with targets to sub-asset classes
- Mix of active and passive investments determined
- Optimal mix of managers

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Introduction

Asset/Liability Summary

"The System can best meet its objectives through the continued use of a well-diversified investment portfolio. However, positive outcomes are extremely dependent on the contribution policy.

This study does not suggest changes to the long-term strategic target allocation. The incremental cost of additional volatility does not justify the potential increase in median outcomes. Additionally, reducing volatility increases contributions and does not improve the expected median outcome."

20 Years	Probability of Full Funding in 2042	Probability of < 83% (Current) Funding in 2042	Probability of < 50% Funding in 2042	Maximum 1 Year Investment Loss
100% Fixed Income	0%	98%	2%	-18%
Lower Risk	18%	56%	2%	-26%
Target Allocation	30%	45%	3%	-30%
Higher Risk	39%	41%	5%	-36%
100% Equity	50%	36%	8%	-47%

20 Years	Market Funded Ratio in Year 20			Cumulative Employer Contributions in Year 20 (Billions)			Payout Ratios		
	50th	5th	95th	50th	5th	95th	Year 20 Median	Years 1 to 20 Peak	Years 1 to 20 Trough
100% Fixed Income	65%	53%	79%	$6.1	$7.5	$4.7	9%	12%	6%
Lower Risk	80%	55%	124%	$4.4	$6.9	$2.2	8%	11%	5%
Target Allocation	86%	53%	158%	$3.9	$7.0	$2.0	7%	12%	4%
Higher Risk	90%	50%	199%	$3.7	$7.3	$1.9	7%	12%	3%
100% Equity	100%	46%	303%	$3.4	$7.9	$1.7	6%	14%	2%

Most recent A/L study was completed in September 2022, with data shown as of June 30, 2022.

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Introduction

Asset Allocation Overview

- **Selecting an asset allocation is one of the most important investment decisions a fiduciary will make.**

- **There are two steps to the asset allocation decision:**
  1. Identification of the asset classes to be considered.
  2. Selection of the portfolio mix that best meets plan objectives.

- **Strategic asset allocation is the most powerful determinant of total fund performance in the long run:**
  - While good manager evaluation decisions will unquestionably add to performance over a full market cycle, they cannot make up for a poorly diversified, inefficient allocation.

- **Multiple studies have shown asset allocation's effect on portfolio returns can be a significant driver of performance over a full market cycle.**

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Introduction

Current Target Allocation

The current Target Allocation was adopted in late-2016

- The A/L study indicated through low payout ratios that liquidity is not a concern. This suggested that additional illiquidity could be assumed with private assets to achieve a better return/risk ratio.

- The following asset class targets were decreased:
  - **US Equity** (23% ↓ 19%).
  - **Emerging Markets Equity** (11% ↓ 7%).
  - **Core Fixed Income** (21% ↓ 17%).

- The following asset class targets were increased:
  - **Developed Non-US Equity** (9% ↑ 11%).
  - **Non-Core Fixed Income** (9% ↑ 11%).
  - **Real Return** (12% ↑ 15%).
  - **Real Estate** (8% ↑ 10%).
  - **Private Equity** (7% ↑ 10%).

	SBCERS Target
Broad US Equity	19
Dev'd Market Non-US Equity	11
Emerging Markets Equity	7
Core Fixed Income	17
Custom Non-Core Fixed Income	11
Custom Real Return	15
Custom Real Estate	10
Private Equity	10
Capital Appreciation	58
Capital Preservation	17
Alpha	0
Inflation	25
Expected Arithmetic Return	7.1
Expected Compound Return	6.5
Expected Risk (Std. Dev.)	10.8
Expected Return (Arithmetic)/Risk Ratio	0.66
Expected Equity Beta (S&P 500)	0.60
1-Year Max Drawdown	-32.7
RVK Liquidity Metric (T-Bills = 100)	61

Asset Allocation Study

Asset Allocation Study

Key Inputs

Return/Risk Assumptions

	Nominal Return (Geo.)	Standard Deviation Assumption	Nominal Return (Arith.)	Return/Risk Ratio (Geo.)	RVK Liquidity Metric	Thematic Bucket
Broad US Equity	4.84	16.04	6.04	0.30	95	Capital Appreciation
Dev'd Market Non-US Equity	6.94	17.00	8.25	0.41	90	Capital Appreciation
Emerging Markets Equity	8.03	25.00	10.75	0.32	85	Capital Appreciation
Core Fixed Income	4.38	5.00	4.50	0.88	85	Capital Preservation
Custom Non-Core Fixed Income	6.48	7.64	6.76	0.85	30	Capital Appreciation
Custom Real Return	6.49	9.65	6.93	0.67	50	Inflation
Custom Real Estate	6.14	15.41	7.23	0.40	15	Inflation
Private Equity	7.61	22.00	9.75	0.35	5	Capital Appreciation

Correlations

	Broad US Equity	Dev'd Market Non-US Equity	Emerging Market Equity	Core Fixed Income	Custom Non-Core Fixed Income	Custom Real Return	Custom Real Estate	Private Equity
Broad US Equity	1.00	0.87	0.73	0.27	0.61	0.78	0.29	0.67
Dev'd Market Non-US Equity	0.87	1.00	0.84	0.31	0.65	0.77	0.27	0.67
Emerging Market Equity	0.73	0.84	1.00	0.28	0.65	0.77	0.25	0.63
Core Fixed Income	0.27	0.31	0.28	1.00	0.17	0.05	0.03	0.02
Custom Non-Core Fixed Income	0.61	0.65	0.65	0.17	1.00	0.73	0.12	0.58
Custom Real Return	0.78	0.77	0.77	0.05	0.73	1.00	0.49	0.73
Custom Real Estate	0.29	0.27	0.25	0.03	0.12	0.49	1.00	0.59
Private Equity	0.67	0.67	0.63	0.02	0.58	0.73	0.59	1.00

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Asset Allocation Study

Efficient Portfolios

	Min	Max	1	2	3	4	5	6	7	8	9	10	Current Target	2/28 Allocation
Broad US Equity	15	30	15	15	15	15	15	15	15	16	20	30	**19**	**18**
Dev'd Market Non-US Equity	10	30	10	10	10	10	10	10	10	10	12	20	**11**	**11**
Emerging Markets Equity	0	10	0	1	3	5	5	5	5	6	8	10	**7**	**6**
Core Fixed Income	10	35	35	30	27	24	21	19	16	13	10	10	**17**	**16**
Custom Non-Core Fixed Income	0	15	15	15	15	15	14	12	11	9	7	0	**11**	**11**
Custom Real Return	0	15	15	15	15	15	15	15	15	15	13	0	**15**	**14**
Custom Real Estate	0	15	10	14	15	15	15	15	15	15	15	15	**10**	**11**
Private Equity	0	15	0	0	0	1	5	9	13	15	15	15	**10**	**13**
Cash Equivalents	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**2**
Total			100	100	100	100	100	100	100	100	100	100	**100**	**100**
Capital Appreciation			40	41	43	46	50	53	53	55	59	75	**58**	**58**
Capital Preservation			35	29	27	24	23	21	17	15	11	10	**17**	**17**
Alpha			0	0	0	0	0	0	0	0	0	0	**0**	**0**
Inflation			25	30	30	30	27	27	30	30	30	15	**25**	**25**
Expected Return			**6.09**	**6.25**	**6.41**	**6.57**	**6.73**	**6.89**	**7.05**	**7.21**	**7.37**	**7.53**	**7.05**	**7.08**
Risk (Standard Deviation)			**7.31**	**7.72**	**8.19**	**8.67**	**9.18**	**9.75**	**10.34**	**10.95**	**11.79**	**13.79**	**10.75**	**10.80**
Return (Compound)			**5.84**	**5.97**	**6.10**	**6.22**	**6.34**	**6.45**	**6.55**	**6.66**	**6.73**	**6.66**	**6.51**	**6.54**
Return/Risk Ratio			0.83	0.81	0.78	0.76	0.73	0.71	0.68	0.66	0.63	0.55	**0.66**	**0.66**
RVK Expected Eq Beta			0.41	0.43	0.46	0.48	0.51	0.53	0.56	0.59	0.64	0.78	**0.60**	**0.60**
RVK Liquidity Metric			65	63	62	61	60	58	56	54	56	67	**61**	**59**
Allocation to Privates			29	33	34	36	36	39	43	46	45	30	**36**	**39**

Allocations shown may not sum up to 100% exactly due to rounding.
Total International Equity cannot exceed Broad US Equity allocation.
Custom Non-Core Fixed Income cannot exceed 2/3 Core Fixed Income allocation.
Emerging Markets Equity cannot exceed 2/3 Developed International Equity allocation.

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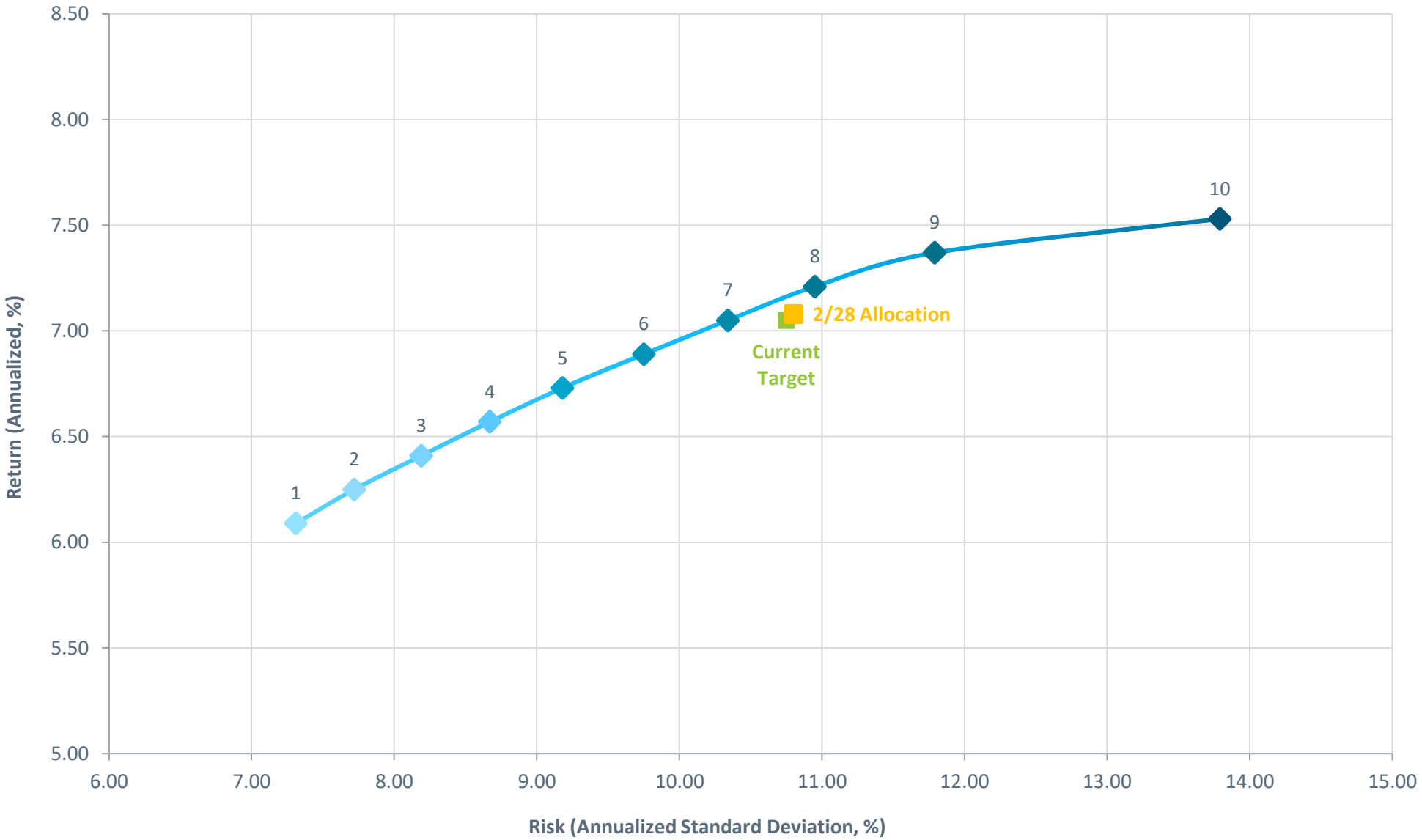
Asset Allocation Study

Efficient Frontier



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Monte Carlo Analysis

What is it and why is it important?

Monte Carlo simulation uses a random sampling of asset class returns, based on the probability distribution implied by the empirical returns, to create several thousand estimates of portfolio performance. Undergoing a Monte Carlo simulation provides insight into the performance of the asset allocation by examining many randomly sampled return outcomes.

In the simplest terms, Monte Carlo analysis introduces uncertainty into the modeling framework.

An asset allocation study allows for the construction of an "efficient," or return-maximizing, portfolio of asset class investments at each given level of portfolio volatility. These calculations are based on expected return, risk, and correlations for each asset class. The asset allocation process provides a snapshot of portfolio performance that is highly dependent on the mean return expectations. A Monte Carlo simulation process "stress tests" these assumptions and asset allocation recommendations that stem from them through thousands of independent samplings of portfolio returns, based on the assumptions and indicated asset allocations. Through the Monte Carlo simulation process, we are better able to ascertain the real-world probability of achieving various return targets over time.

Our Monte Carlo simulation model assumes a non-normal distribution of returns for equity asset classes (as other high-risk asset classes), which we believe provides a more realistic representation of historical market experience than the typically used normal distribution. Given this non-normal distribution of random returns derived from our assumption inputs and empirical return dispersion, we can estimate the potential return for a given portfolio over the indicated time period.

It is important to note that the output that follows refers to geometric (compound) return, rather than the arithmetic return assumptions used in the asset allocation analysis. The geometric return of a portfolio will be less than (or equal to) its arithmetic return over time, because geometric return accounts for the dampening effect of volatility on the portfolio's compound returns.

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Asset Allocation Study

Monte Carlo Analysis: Expected Compound Return by Percentile

Time Period	Percentile	1	2	3	4	5	6	7	8	9	10	Current Target	2/28 Allocation
1 Year	1st Percentile	-22.39	-25.25	-26.46	-27.80	-28.45	-29.75	-32.13	-33.71	-36.14	-34.08	**-32.70**	**-32.61**
	5th Percentile	-8.01	-8.97	-9.67	-10.50	-10.90	-11.64	-13.02	-14.05	-15.50	-17.23	**-13.84**	**-13.81**
	25th Percentile	1.50	1.48	1.24	1.01	0.72	0.40	0.07	-0.31	-0.92	-2.40	**-0.52**	**-0.52**
	50th Percentile	**6.57**	**6.84**	**6.95**	**7.08**	**7.13**	**7.25**	**7.39**	**7.52**	**7.63**	**7.23**	**7.28**	**7.29**
	75th Percentile	11.40	11.93	12.48	12.97	13.44	14.02	14.74	15.42	16.24	17.37	**15.11**	**15.17**
	95th Percentile	18.63	19.61	20.90	22.18	23.37	24.74	26.18	27.57	29.66	33.37	**27.54**	**27.55**
	99th Percentile	23.55	24.98	26.77	28.74	30.54	32.49	34.89	36.81	39.95	45.85	**36.86**	**37.04**
3 Years	1st Percentile	-11.18	-13.16	-14.08	-14.97	-15.18	-16.00	-17.99	-19.22	-20.62	-20.03	**-18.12**	**-18.26**
	5th Percentile	-3.03	-3.70	-4.18	-4.75	-4.94	-5.52	-6.32	-6.81	-7.75	-8.80	**-6.86**	**-6.80**
	25th Percentile	3.15	3.15	3.01	2.89	2.77	2.63	2.46	2.24	1.89	1.08	**2.08**	**2.12**
	50th Percentile	**6.19**	**6.38**	**6.49**	**6.60**	**6.68**	**6.81**	**6.94**	**7.05**	**7.08**	**6.84**	**6.78**	**6.82**
	75th Percentile	9.08	9.50	9.87	10.23	10.53	10.89	11.37	11.74	12.25	12.76	**11.51**	**11.57**
	95th Percentile	13.27	13.96	14.69	15.44	16.09	16.91	17.82	18.72	19.83	21.52	**18.42**	**18.53**
	99th Percentile	16.42	17.24	18.18	19.29	20.39	21.35	22.57	23.75	25.38	28.01	**23.60**	**23.82**
5 Years	1st Percentile	-7.15	-8.58	-9.41	-10.17	-10.44	-11.16	-12.62	-13.57	-15.01	-14.89	**-13.29**	**-13.10**
	5th Percentile	-1.42	-1.98	-2.39	-2.78	-2.90	-3.35	-4.07	-4.56	-5.28	-5.81	**-4.45**	**-4.43**
	25th Percentile	3.52	3.52	3.48	3.39	3.33	3.21	3.04	2.88	2.60	2.03	**2.80**	**2.78**
	50th Percentile	**6.04**	**6.23**	**6.32**	**6.41**	**6.50**	**6.60**	**6.72**	**6.80**	**6.85**	**6.63**	**6.59**	**6.61**
	75th Percentile	8.37	8.73	9.03	9.32	9.59	9.90	10.24	10.51	10.88	11.30	**10.37**	**10.36**
	95th Percentile	11.61	12.15	12.72	13.36	13.89	14.55	15.30	15.94	16.80	18.05	**15.66**	**15.73**
	99th Percentile	13.88	14.62	15.39	16.20	16.92	17.73	18.67	19.57	20.79	22.60	**19.30**	**19.39**
10 Years	1st Percentile	-2.76	-3.68	-4.11	-4.63	-4.75	-5.16	-6.23	-6.99	-8.12	-8.47	**-6.57**	**-6.49**
	5th Percentile	0.60	0.15	-0.13	-0.40	-0.52	-0.72	-1.26	-1.67	-2.24	-2.74	**-1.60**	**-1.52**
	25th Percentile	4.05	4.05	4.03	3.98	3.95	3.92	3.81	3.73	3.55	3.17	**3.63**	**3.65**
	50th Percentile	**5.98**	**6.12**	**6.23**	**6.33**	**6.43**	**6.53**	**6.64**	**6.75**	**6.75**	**6.61**	**6.54**	**6.55**
	75th Percentile	7.69	7.96	8.21	8.45	8.66	8.91	9.17	9.42	9.68	9.91	**9.22**	**9.25**
	95th Percentile	10.11	10.55	11.01	11.52	11.89	12.34	12.90	13.35	13.99	14.78	**13.19**	**13.23**
	99th Percentile	11.64	12.17	12.75	13.30	13.85	14.45	15.17	15.83	16.65	18.00	**15.63**	**15.66**

Monte Carlo simulation results shown for the Current Target and efficient portfolios as detailed on page 9.

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Asset Allocation Study

Monte Carlo Analysis: Expected Gain/Loss by Percentile

Time Period	Percentile	1	2	3	4	5	6	7	8	9	10	Current Target	2/28 Allocation
1 Year	1st Percentile	-1,029.4	-1,160.9	-1,216.4	-1,278.1	-1,308.1	-1,367.7	-1,477.2	-1,549.8	-1,661.5	-1,566.9	**-1,503.7**	**-1,499.3**
	5th Percentile	-368.5	-412.5	-444.6	-483.0	-501.3	-535.3	-598.5	-646.0	-712.5	-792.3	**-636.5**	**-634.9**
	25th Percentile	69.1	68.1	57.0	46.4	33.1	18.3	3.2	-14.1	-42.5	-110.4	**-23.9**	**-24.1**
	50th Percentile	**301.9**	**314.4**	**319.4**	**325.7**	**328.0**	**333.5**	**339.9**	**345.8**	**350.8**	**332.5**	**334.9**	**335.2**
	75th Percentile	524.4	548.5	573.6	596.5	618.0	644.7	677.5	709.2	746.7	798.6	**694.8**	**697.7**
	95th Percentile	856.6	901.6	961.1	1,020.0	1,074.5	1,137.7	1,203.7	1,267.6	1,363.7	1,534.2	**1,266.3**	**1,266.9**
	99th Percentile	1,083.0	1,148.4	1,230.7	1,321.3	1,404.4	1,494.0	1,604.2	1,692.7	1,837.1	2,108.1	**1,694.7**	**1,703.3**
3 Years	1st Percentile	-1,378.1	-1,589.2	-1,683.8	-1,773.9	-1,794.5	-1,875.6	-2,064.5	-2,177.4	-2,301.3	-2,249.2	**-2,076.5**	**-2,090.0**
	5th Percentile	-406.2	-492.7	-554.3	-625.8	-649.9	-721.7	-819.4	-877.9	-990.4	-1,111.7	**-884.8**	**-877.1**
	25th Percentile	449.1	449.8	428.6	411.3	393.1	373.3	349.1	317.1	265.8	151.1	**293.4**	**298.6**
	50th Percentile	**909.0**	**938.6**	**955.7**	**973.4**	**985.9**	**1,007.3**	**1,026.8**	**1,044.5**	**1,048.8**	**1,011.9**	**1,002.2**	**1,007.9**
	75th Percentile	1,372.8	1,442.4	1,503.9	1,564.0	1,613.4	1,676.0	1,756.4	1,821.7	1,909.7	1,997.8	**1,780.9**	**1,791.9**
	95th Percentile	2,088.6	2,211.6	2,343.8	2,481.4	2,602.3	2,756.2	2,929.7	3,103.2	3,320.5	3,662.6	**3,045.3**	**3,065.7**
	99th Percentile	2,663.2	2,817.7	2,998.6	3,215.4	3,434.0	3,627.1	3,878.7	4,125.3	4,476.0	5,060.2	**4,093.5**	**4,141.5**
5 Years	1st Percentile	-1,424.9	-1,662.0	-1,793.4	-1,909.2	-1,948.4	-2,054.2	-2,255.7	-2,380.7	-2,558.6	-2,545.2	**-2,344.5**	**-2,319.8**
	5th Percentile	-316.6	-438.3	-523.1	-604.2	-628.6	-719.7	-862.6	-957.9	-1,093.2	-1,189.4	**-936.4**	**-931.5**
	25th Percentile	869.0	868.9	857.5	833.3	817.1	786.4	742.6	702.6	630.7	486.2	**680.4**	**676.0**
	50th Percentile	**1,568.2**	**1,621.7**	**1,648.8**	**1,676.2**	**1,701.1**	**1,729.9**	**1,767.9**	**1,792.3**	**1,804.9**	**1,739.4**	**1,727.3**	**1,735.6**
	75th Percentile	2,275.1	2,390.5	2,486.9	2,581.2	2,670.0	2,772.1	2,888.0	2,981.1	3,107.0	3,256.1	**2,933.3**	**2,930.2**
	95th Percentile	3,365.2	3,561.0	3,767.3	4,008.6	4,213.6	4,469.2	4,772.7	5,033.6	5,395.7	5,943.8	**4,918.0**	**4,948.9**
	99th Percentile	4,208.5	4,499.8	4,806.9	5,144.9	5,450.4	5,801.5	6,224.5	6,640.1	7,226.2	8,137.3	**6,513.0**	**6,556.5**
10 Years	1st Percentile	-1,121.5	-1,437.0	-1,576.6	-1,735.6	-1,772.2	-1,890.9	-2,182.2	-2,370.9	-2,626.3	-2,701.2	**-2,267.5**	**-2,247.7**
	5th Percentile	281.3	68.7	-59.3	-179.3	-232.6	-321.0	-549.5	-712.4	-931.6	-1,115.9	**-685.3**	**-654.4**
	25th Percentile	2,240.6	2,238.4	2,225.6	2,193.2	2,176.1	2,154.3	2,085.6	2,035.6	1,920.0	1,686.1	**1,967.0**	**1,984.0**
	50th Percentile	**3,622.3**	**3,733.0**	**3,813.9**	**3,897.7**	**3,977.6**	**4,055.6**	**4,145.9**	**4,235.2**	**4,237.7**	**4,122.0**	**4,065.1**	**4,071.5**
	75th Percentile	5,048.4	5,294.2	5,519.8	5,750.3	5,955.8	6,196.8	6,460.3	6,712.5	6,989.6	7,231.8	**6,507.0**	**6,542.1**
	95th Percentile	7,451.1	7,939.3	8,474.8	9,080.3	9,546.7	10,125.2	10,874.5	11,493.7	12,427.8	13,651.1	**11,274.1**	**11,337.3**
	99th Percentile	9,230.6	9,896.2	10,674.4	11,436.0	12,229.5	13,131.4	14,276.6	15,396.4	16,844.4	19,461.9	**15,049.5**	**15,097.7**

Monte Carlo simulation results shown for the Current Target and efficient portfolios as detailed on page 9.
Gain/Loss projections assume no cash flows and a starting market value of $4.6B. Gain/Loss projections shown in millions and are in nominal terms.

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Asset Allocation Study

Monte Carlo Analysis: Percentage Chance of Achieving Target Return

Time Period	Target Return	1	2	3	4	5	6	7	8	9	10	Current Target	2/28 Allocation
1 Year	Target 0%	81	80	79	78	77	76	75	74	73	70	**74**	**74**
	Target 6.25%	52	53	53	53	54	54	54	55	54	53	**53**	**53**
	Target 6.5%	50	52	52	53	52	53	53	54	54	52	**52**	**53**
	Target 6.75%	49	51	51	51	51	52	52	53	53	51	**52**	**52**
	Target 7%	**48**	**49**	**50**	**50**	**50**	**51**	**52**	**52**	**52**	**51**	**51**	**51**
	Target 7.25%	46	48	49	49	50	50	51	51	51	50	**50**	**50**
3 Years	Target 0%	89	88	87	86	86	85	84	83	81	79	**82**	**82**
	Target 6.25%	49	51	52	53	53	54	54	55	55	53	**53**	**53**
	Target 6.5%	47	49	50	51	51	52	53	53	53	52	**51**	**52**
	Target 6.75%	45	47	48	49	50	50	51	52	52	50	**50**	**50**
	Target 7%	**43**	**45**	**46**	**47**	**48**	**49**	**50**	**50**	**50**	**49**	**49**	**49**
	Target 7.25%	40	42	44	45	46	47	48	49	49	48	**47**	**47**
5 Years	Target 0%	92	91	91	90	90	89	88	87	85	83	**87**	**87**
	Target 6.25%	48	50	51	52	52	53	53	54	54	52	**52**	**53**
	Target 6.5%	45	47	48	49	50	51	52	52	52	51	**50**	**51**
	Target 6.75%	42	44	46	47	48	49	50	50	51	49	**49**	**49**
	Target 7%	**39**	**42**	**43**	**45**	**46**	**47**	**48**	**49**	**49**	**48**	**47**	**47**
	Target 7.25%	37	39	41	43	44	45	46	47	47	46	**45**	**46**
10 Years	Target 0%	96	95	95	94	94	93	92	92	91	89	**92**	**92**
	Target 6.25%	46	48	50	51	52	53	54	54	54	53	**53**	**53**
	Target 6.5%	42	45	47	48	49	50	51	52	52	51	**50**	**50**
	Target 6.75%	38	41	43	45	46	48	49	50	50	49	**48**	**48**
	Target 7%	**35**	**38**	**40**	**42**	**44**	**45**	**46**	**47**	**48**	**47**	**45**	**46**
	Target 7.25%	31	34	37	39	41	42	44	45	46	45	**43**	**43**

*SBCERS current Actuarial assumed rate of return is 7.0%

Monte Carlo simulation results shown for the Current Target and efficient portfolios as detailed on slide 9.

RVK

Target Allocation Considerations

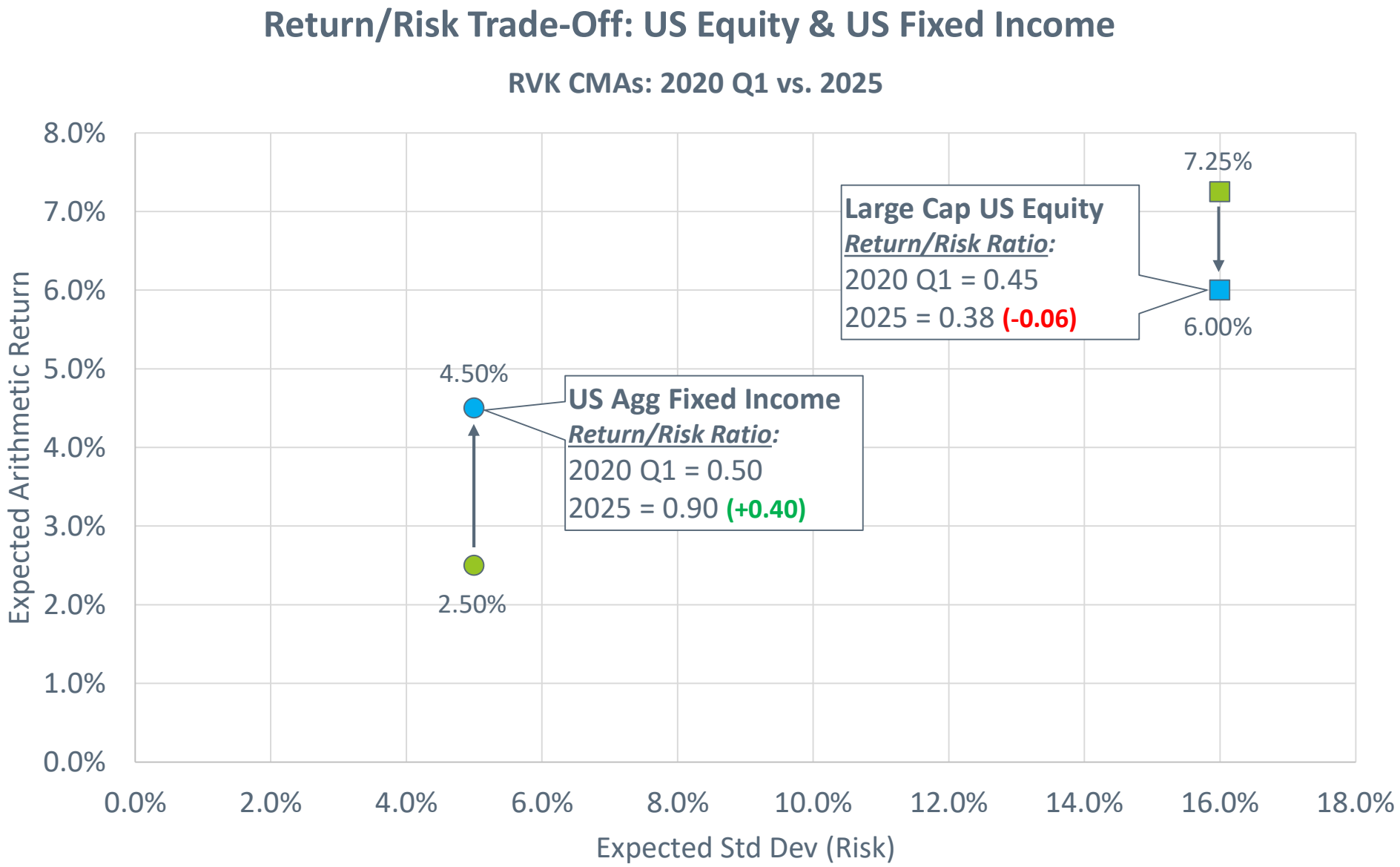
Target Allocation Considerations

- SBCERS remains well diversified and positioned for long-term success over a full market cycle.
- RVK is recommending no changes at this time and will revisit the topic of Asset Allocation in the fall once the Asset/Liability Study has been completed.
- Considerations that could lead to recommended changes in the Target Allocation include:

1. **Diminishing expected equity risk premium.**
    - Lower expected reward for taking on additional risk in public equities as return expectations for equities have decreased and return expectations for fixed income have increased.
2. **Elevated public equity valuations.**
    - Prices remain high compared to historical averages while earnings have not kept up with price growth.
    - Long term, RVK expects valuations to come back down to historical averages.
3. **Fixed income appears attractive.**
    - Fixed income yields remain attractive.
    - Potential opportunity to take risk off the table without significantly impacting expected long-term returns.
4. **Liquidity needs remains paramount, particularly as the System matures.**
    - Sufficient liquidity lessens the burden in times of severe market dislocations.
5. **Better balance across private market asset classes with targets that are attainable.**
    - Ensure private allocations remain appropriate for a maturing pension.
    - Evaluate return/risk tradeoffs for optimal allocation across private asset classes given current expectations.

RVK

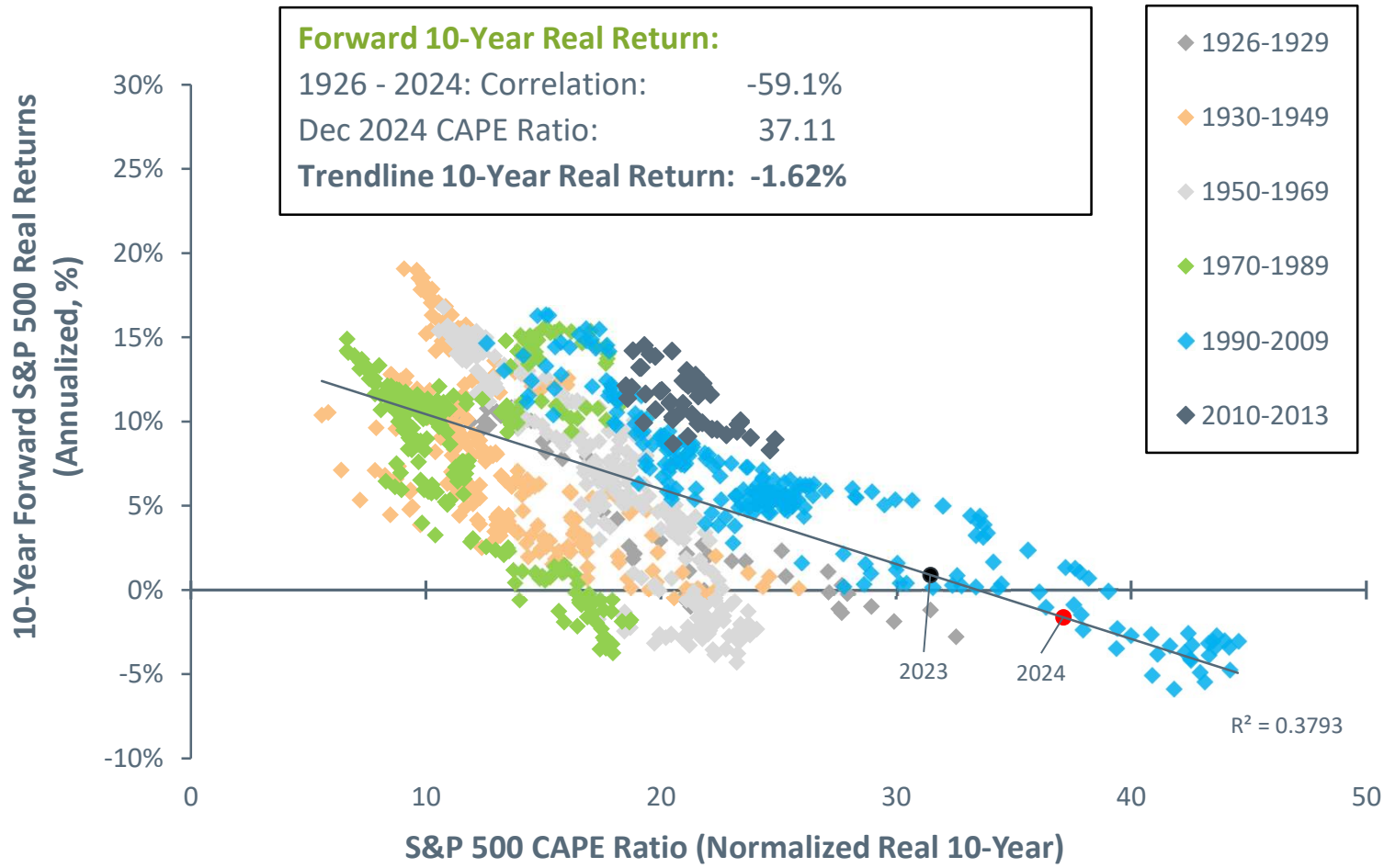
1. Diminishing Expected Equity Risk Premium



Green : 2020 Q1 RVK Capital Market Assumptions
Blue: 2025 RVK Capital Market Assumptions

2. Elevated Public Equity Valuations

Relationship between Shiller P/E and Forward 10-Year Returns



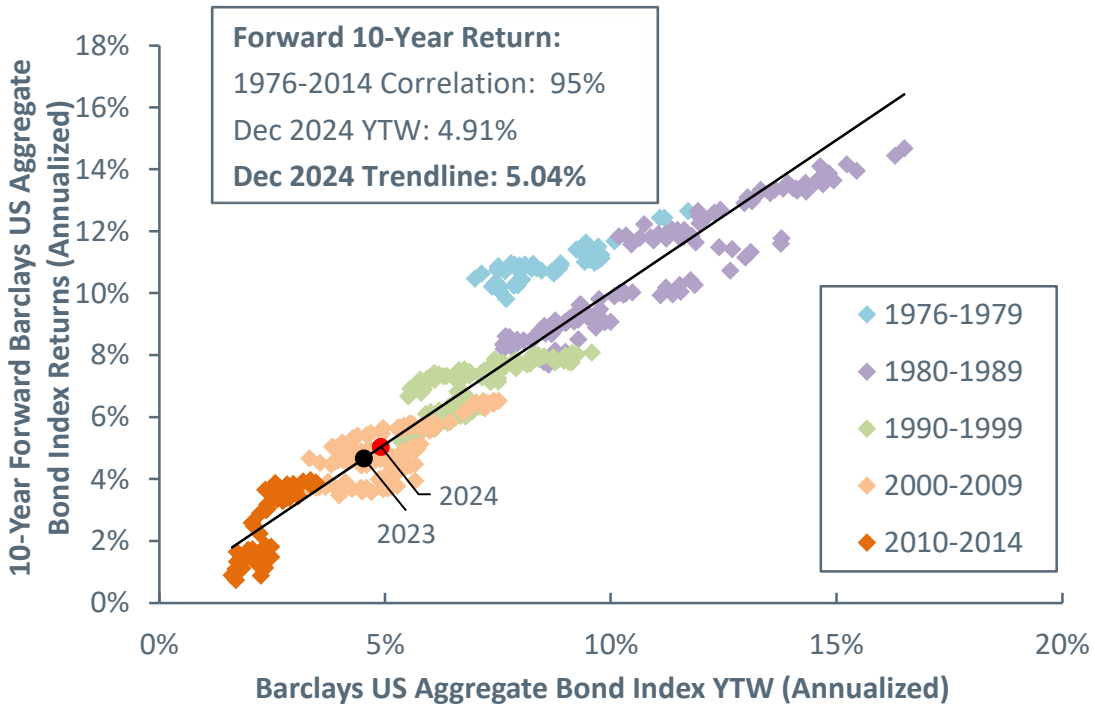
Shiller P/E (S&P 500 CAPE Ratio) – The cyclically adjusted price-to-earnings ratio is a valuation measure applied to the S&P 500 Index, which represents U.S. Large Cap Equities. It is defined as price divided by the average of ten years of earnings, adjusted for inflation. The ratio was invented by American economist Robert J. Shiller and is used to gauge whether the index is undervalued of overvalued by comparing the current market price to its inflation-adjusted historical earnings record.

RVK Broad US Equity assumption is a combination of 95.3% Large/Mid Cap US Equity and 4.7% Small Cap US Equity.
Source: RVK, based on data from FactSet (2025). December 2024 CAPE ratio uses the S&P 500 earnings estimate for the Q4 2024.
December 2023 CAPE Ratio: 31.34

3. Fixed Income Appears Attractive

Fixed Income									
Asset Class	2024			2025			One Year Adjustment		
	Nominal Return	Risk (StDev)	Nominal Return (Geo.)	Nominal Return	Risk (StDev)	Nominal Return (Geo).	Nominal Return	Risk (StDev)	Nominal Return (Geo.)
US Aggregate	4.00%	5.00%	3.88%	4.50%	5.00%	4.38%	+0.50%	--	+0.50%
Non-US Dev. Sovereign	2.50%	8.50%	2.15%	2.50%	8.50%	2.15%	--	--	--
Low Duration	3.25%	2.50%	3.22%	3.50%	2.50%	3.47%	+0.25%	--	+0.25%
Long Duration	5.00%	10.00%	4.53%	5.50%	10.00%	5.03%	+0.50%	--	+0.50%
TIPS	4.00%	5.50%	3.85%	4.00%	5.50%	3.85%	--	--	--

Relationship between YTW and Forward 10 Year Returns

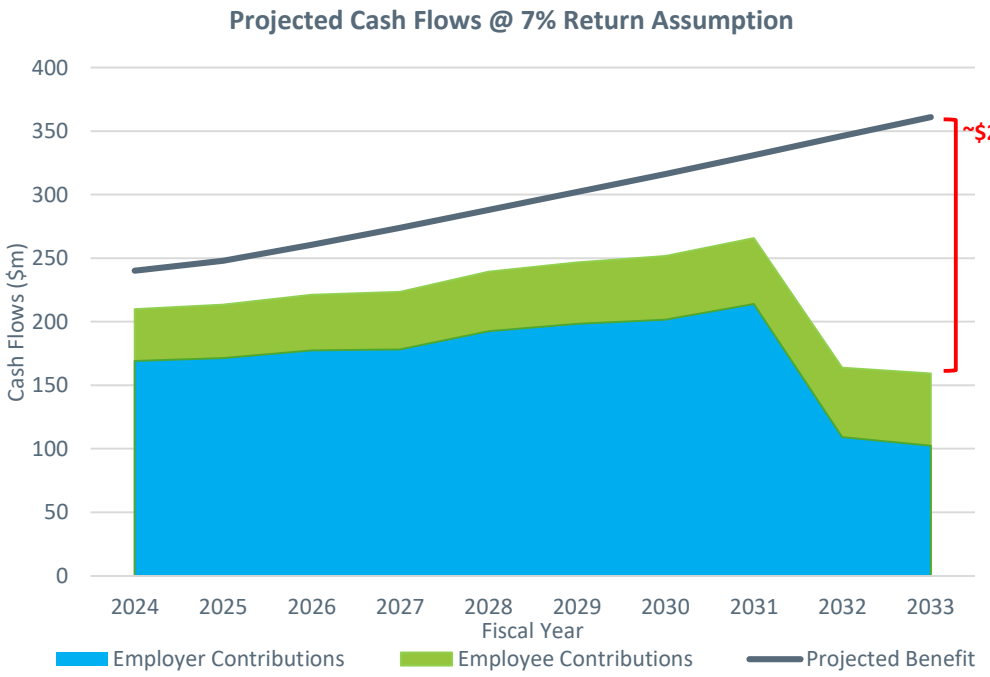


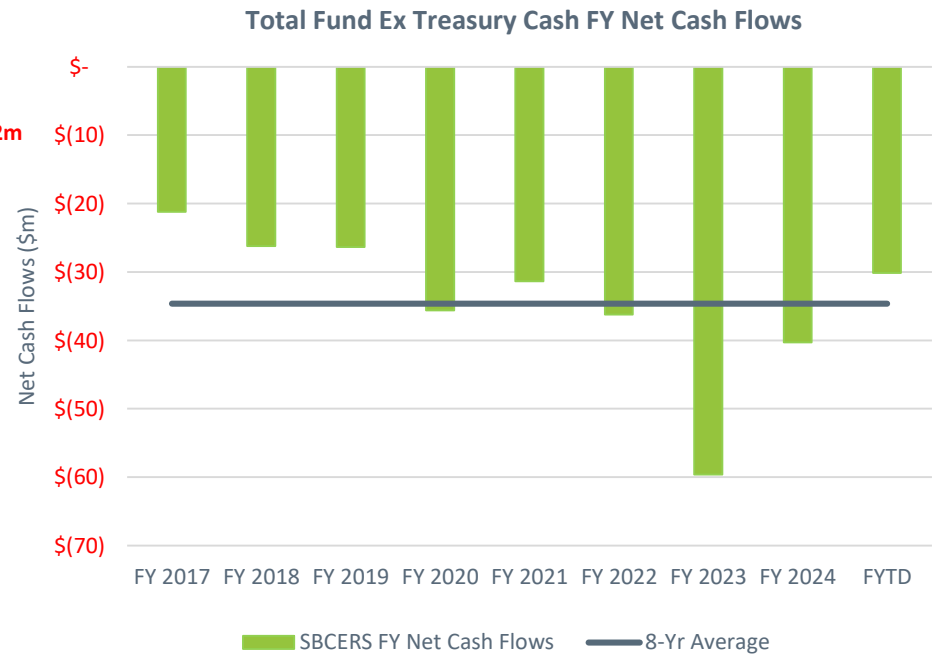
- The starting bond yield has historically been a reasonable starting point when forecasting future bond returns.
- Domestic fixed income return assumptions were increased, reflecting increased yields and somewhat offsetting spread changes, as well as the expectation that the inverted yield curve will normalize over time but remain "higher for longer" overall.
- Duration changes were generally nominal and thus did not have material impacts on return forecasts.

Source: FactSet (2025).
December 2023 YTW: 4.53%

4. Liquidity Needs Remain Paramount

- Since FY 2017, cash flows out of the portfolio have been increasing.
  - An average of ~$34m over the last 8 years.
  - Higher cash need requests in FY 2023 for benefits, expenses, and capital calls.
- Contributions are projected to drop starting in FY 2031.
  - Projected benefit payments and contributions will begin to widen.
    - Difference of ~$202m by FY 2033.
  - Projected cash outflows will notably increase.





8-Yr Average of $34.6m from FY2017-FY2024. FYTD Net Cash Flows is as of 2/28/2025. Projected cash flows provided by SBCERS.

5. Better Balance Across Private Market Asset Classes

- Realign the current private exposures in the portfolio based on expected risk/return tradeoffs.
  - By targeting allocations that are practical in implementation and most accretive to total portfolio risk, return, and liquidity profile, there is an opportunity to establish better balance of private assets in the portfolio.
- Notably, Non-Core Fixed Income and Real Return have similar expected return profiles, however Real Return takes on materially more expected risk with higher correlations to other portfolio assets.

Return/Risk Assumptions

	Nominal Return (Geo.)	Standard Deviation Assumption	Nominal Return (Arith.)	Return/Risk Ratio (Geo.)	Current Target
Custom Non-Core Fixed Income	6.48	7.64	6.76	0.85	11
Custom Real Return	6.49	9.65	6.93	0.67	15
Custom Real Estate	6.14	15.41	7.23	0.40	10
Private Equity	7.61	22.00	9.75	0.35	10

Correlations

	Broad US Equity	Dev'd Market Non-US Equity	Emerging Market Equity	Core Fixed Income	Custom Non-Core Fixed Income	Custom Real Return	Custom Real Estate	Private Equity
Broad US Equity	1.00	0.87	0.73	0.27	0.61	0.78	0.29	0.67
Dev'd Market Non-US Equity	0.87	1.00	0.84	0.31	0.65	0.77	0.27	0.67
Emerging Market Equity	0.73	0.84	1.00	0.28	0.65	0.77	0.25	0.63
Core Fixed Income	0.27	0.31	0.28	1.00	0.17	0.05	0.03	0.02
Custom Non-Core Fixed Income	0.61	0.65	0.65	0.17	1.00	0.73	0.12	0.58
Custom Real Return	0.78	0.77	0.77	0.05	0.73	1.00	0.49	0.73
Custom Real Estate	0.29	0.27	0.25	0.03	0.12	0.49	1.00	0.59
Private Equity	0.67	0.67	0.63	0.02	0.58	0.73	0.59	1.00

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Appendix

Custom Assumption Definitions

Custom Non-Core Fixed Income		
SBCERS Target Structure		**RVK Assumption Index**
45.0%	Private Credit (Senior Secured Direct Lending)	Cambridge Private Credit Index
25.0%	EMD Blend	50% JPM GBI EM Global Div./50% JPM EMBI Global Div.
30.0%	Bank Loans	S&P USB Leveraged Loan
100.0%		

Custom Real Return		
SBCERS Target Structure		**RVK Assumption Index**
25.0%	Diversified Inflation Strategies	33.3% Bloomberg US TIPS/33.3% Bloomberg Cmdty/33.3% MSCI Gbl Real Estate (Gross)
48.0%	Private Infrastructure	S&P Global Infrastructure
27.0%	Private Natural Resources	45% Alerian MLP/39% NCREIF Farmland/16% S&P Global NR
100.0%		

Custom Real Estate		
SBCERS Target Structure		**RVK Assumption Index**
51.0%	Core Real Estate	NCREIF ODCE (Gross) (AWA)
49.0%	Non-Core Real Estate	Preqin Non-Core Real Estate
100.0%		

- **Custom Non-Core Fixed Income:** Targets are based on the current approved structure for Non-Core Fixed Income.
- **Custom Real Return:** Targets to public assets (25%) and private assets (75%) are based on the current approved structure for Real Return. The targets to Private Infrastructure and Private Natural Resources are based on the current Hamilton Lane allocation to these respective asset classes.
- **Custom Real Estate:** Targets are based on the current Hamilton Lane allocations to these respective asset classes.

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Current Policy Target and Ranges

Asset Class	Target Allocation (%)	Target Range (%)
U.S. Equity	19	15 - 23
Developed Market Non-U.S. Equity	11	8 - 14
Emerging Markets Equity	7	4 - 10
Core Fixed Income	17	14 - 20
Non-Core Fixed Income	11	8 - 14
Real Return	15	8 - 22
Real Estate	10	5 - 15
Private Equity	10	5 - 15
Cash Equivalents	0	0 - 2

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Active/Passive and Liquidity Profile

Composite	Target	Active/Passive	Liquidity
Total Fund	**100%**	**79% Active/21% Passive**	**64% Liquid**
U.S. Equity	19%	10% Active/90% Passive	100% Liquid
Dev'd Mkt. Non-U.S. Equity	11%	100% Active	100% Liquid
Emerging Mkt. Equity	7%	100% Active	100% Liquid
Core Fixed Income	17%	100% Active	100% Liquid
Non-Core Fixed Income	11%	100% Active	55% Liquid
Real Return	15%	75% Active/25% Passive	25% Liquid
Real Estate	10%	100% Active	0% Liquid
Private Equity	10%	100% Active	0% Liquid

All figures shown represent target allocations not actual allocations. Liquidity figures are illustrative of expected liquidity but do not represent a quantitative measure. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK liquidity metric is calculated using target investment weights applied to each corresponding asset class liquidity rating.

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