

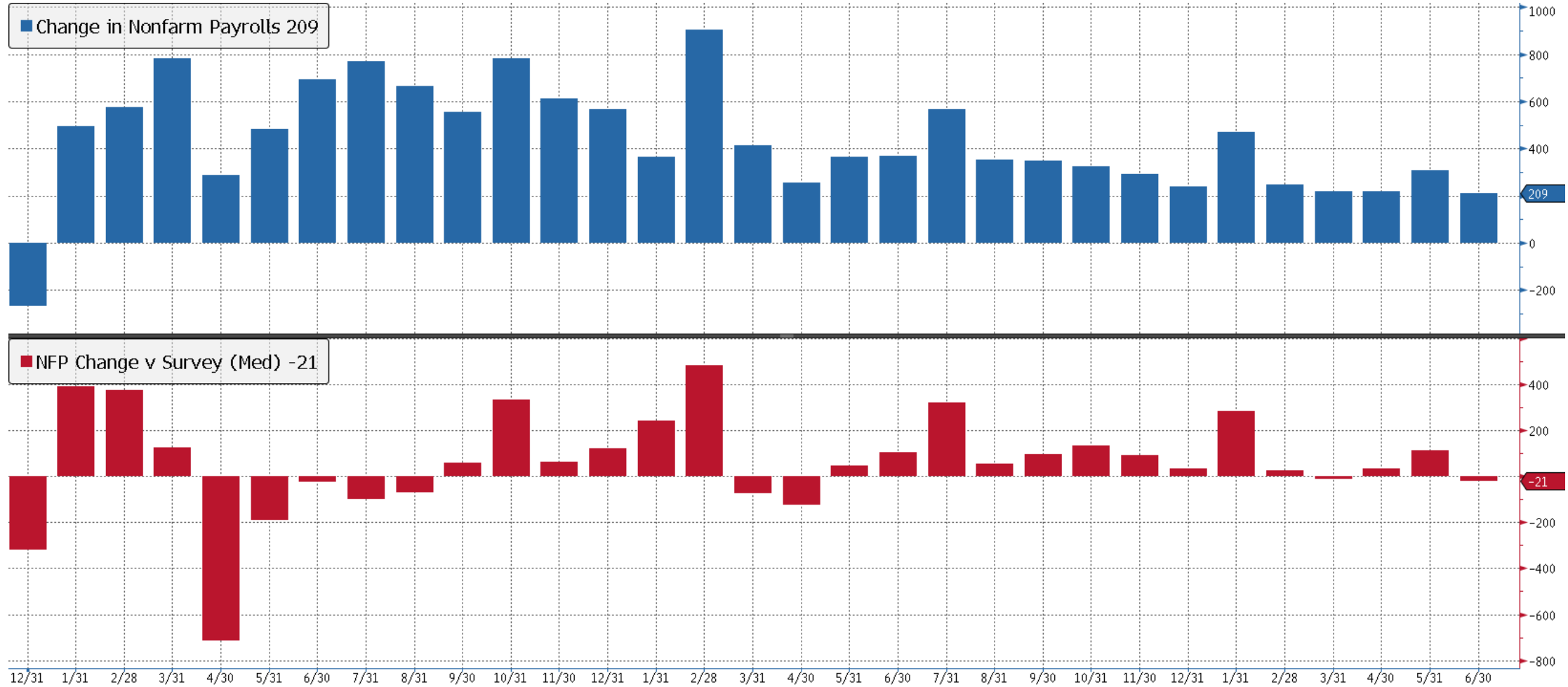
Wilshire

Quarterly Market Review

June 30, 2023

Economic Review

Job Market Looks Strong (and exceeding expectations)...



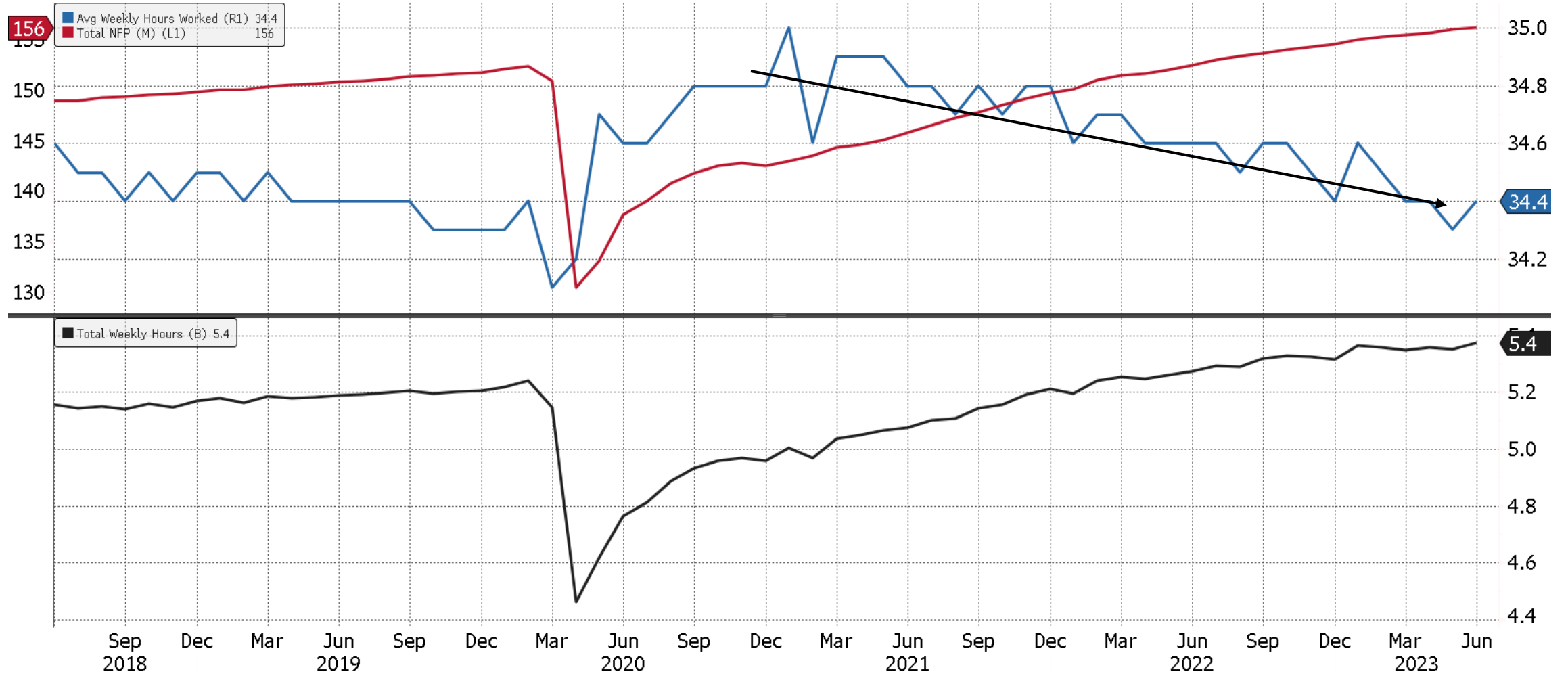
NFP TCH Index (US Employees on Nonfarm Payrolls Total MoM Net Change SA) NFP v Survey Daily 31DEC2020-30JUN2023

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07-Jul-2023 07:13:31

Data Source: Bloomberg

Early Signs of Slowing: Plateau in Hours Worked



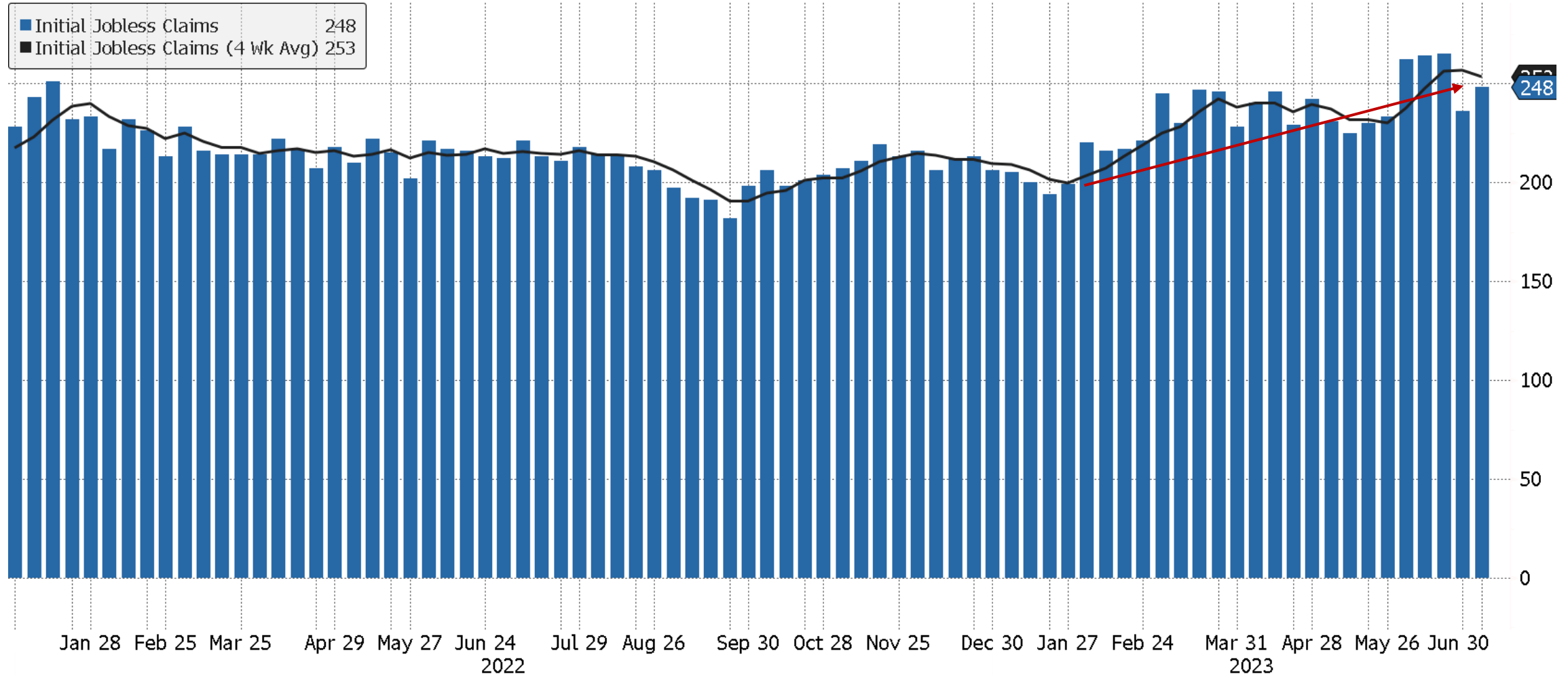
AWH TOTL Index (US Average Weekly Hours All Employees Total Private SA) Hours Worked Monthly 28JUN2018-07JUL2023

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07-Jul-2023 07:16:13

Data Source: Bloomberg

Early Signs of Slowing: Increase in Claims



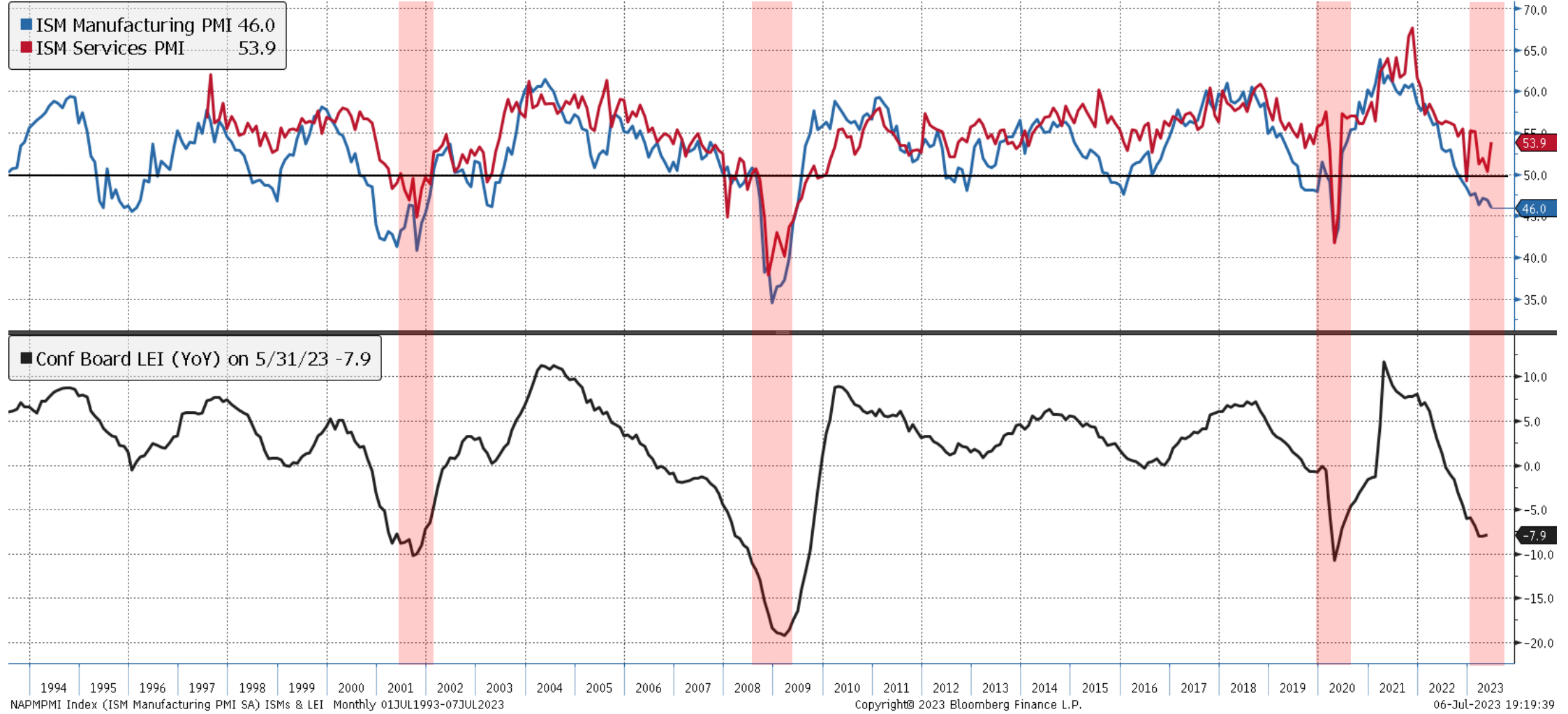
INJCJC Index (US Initial Jobless Claims SA) Claims Daily 31DEC2021-07JUL2023

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06-Jul-2023 19:16:52

Data Source: Bloomberg

ISM Surveys & Leading Indicators Pointing Down...



Data Source: Bloomberg

Are We There Yet?: Fed Journey towards the “Neutral Rate”



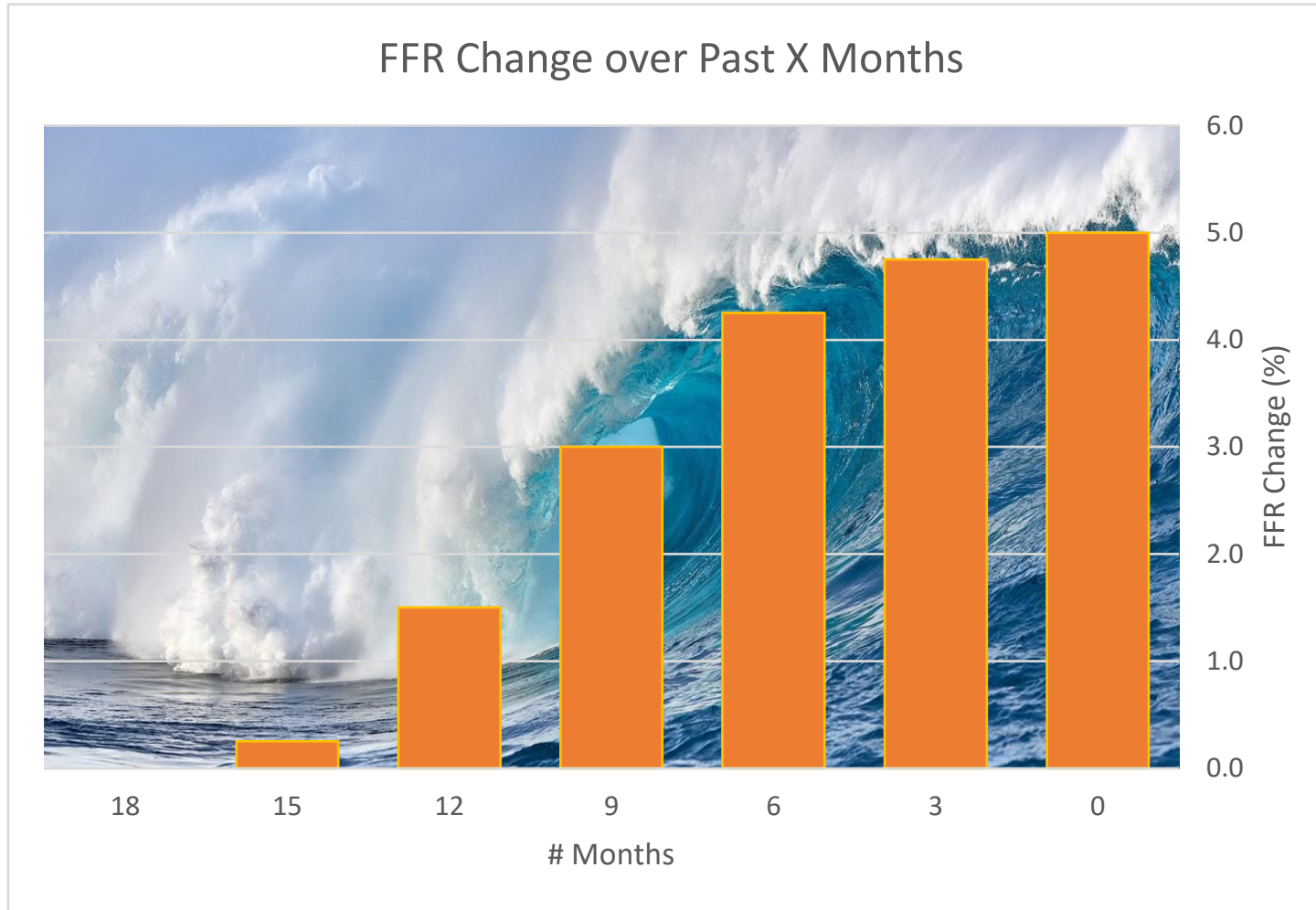
USGGBE01 Index (US Breakeven 1 Year) BE vs FFR Daily 28JUN2020-07JUL2023

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06-Jul-2023 19:29:28

Data Source: Bloomberg

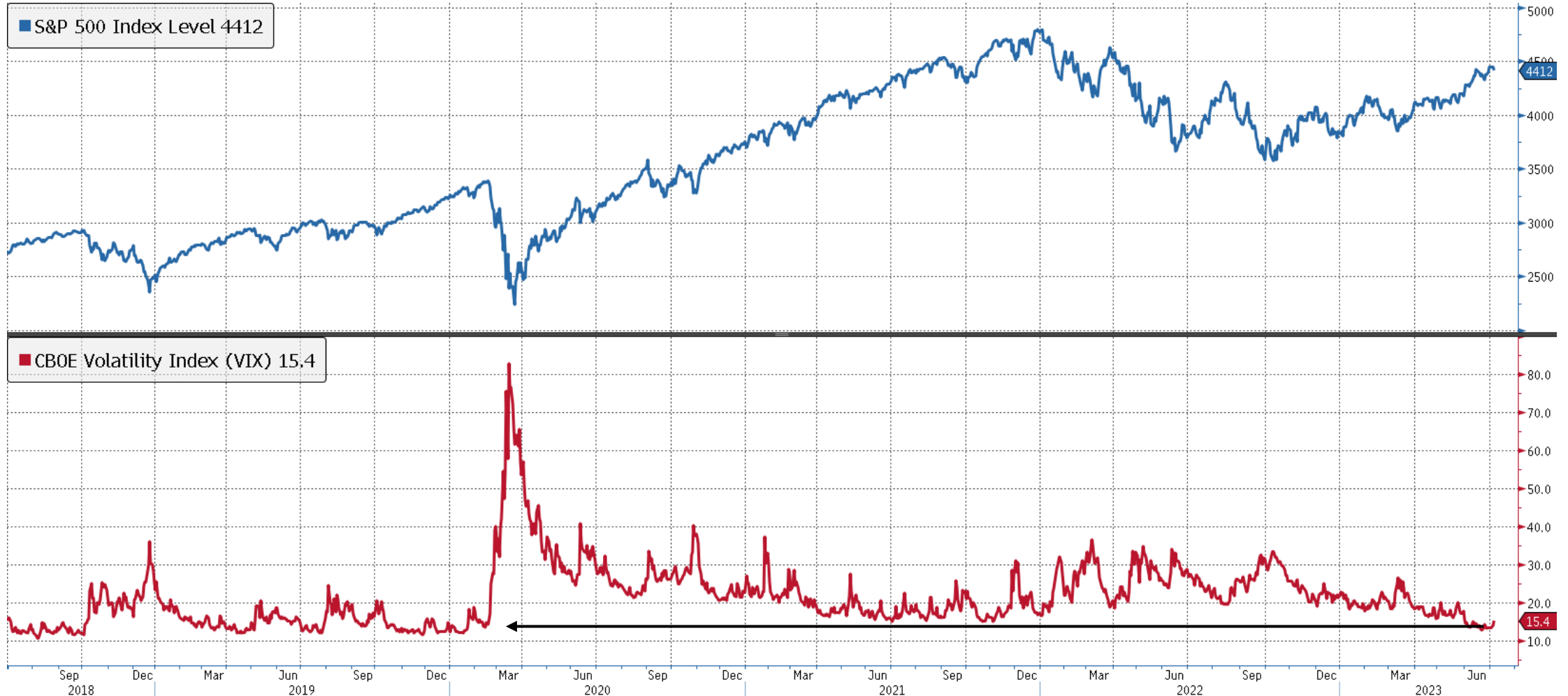
The Tightening Wave: Unpredictable but Building



Arguably less than a year since the overnight rate has been meaningfully higher, with a sizeable lag between rate changes and when they hit the real economy

Data Source: Bloomberg, Creative Source: 4ST

U.S. Stock Markets Showing No Fear...



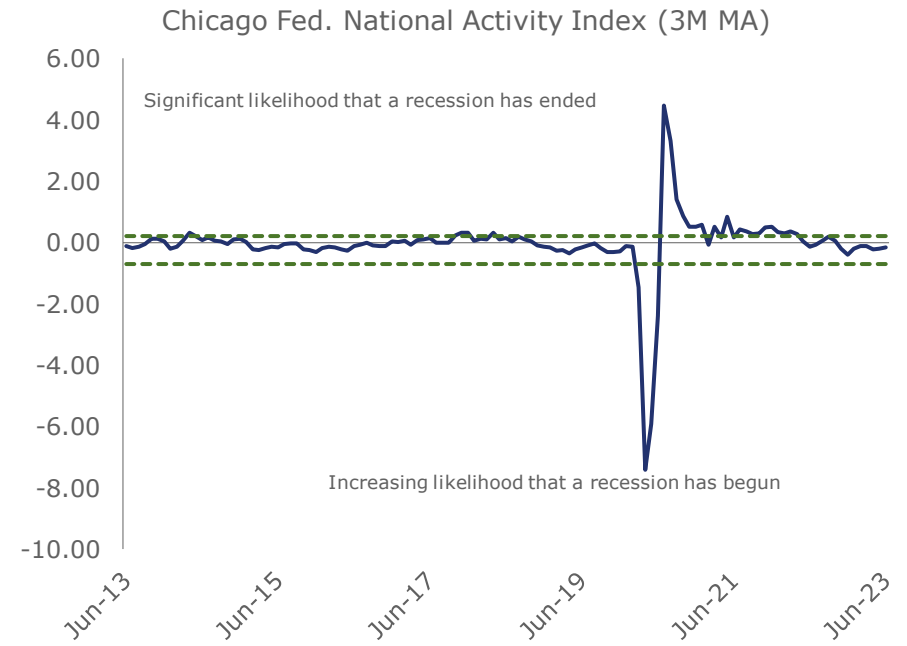
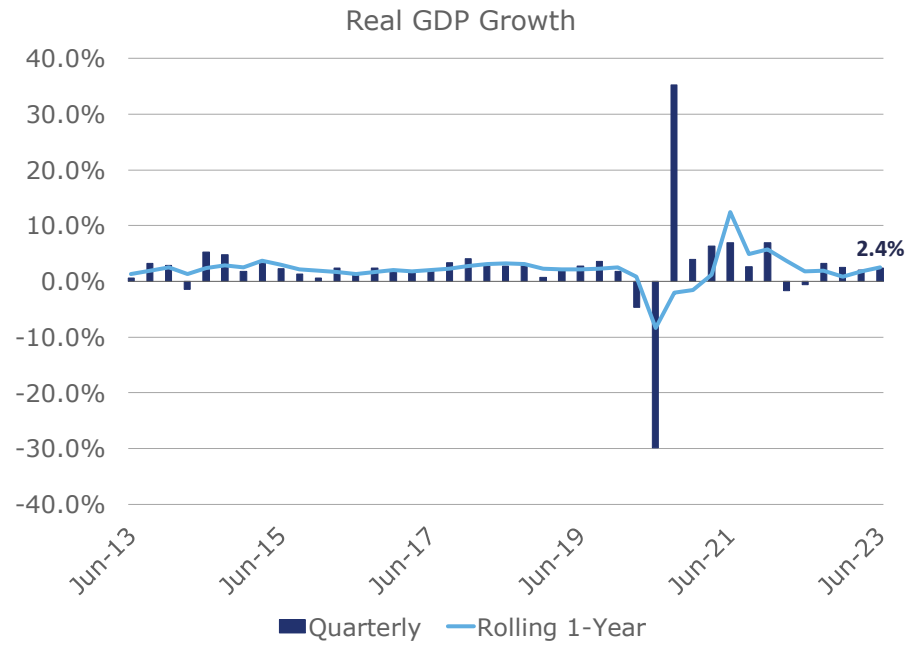
SPX Index (S&P 500 INDEX) VIX Daily 29JUN2018-07JUL2023

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06-Jul-2023 19:33:19

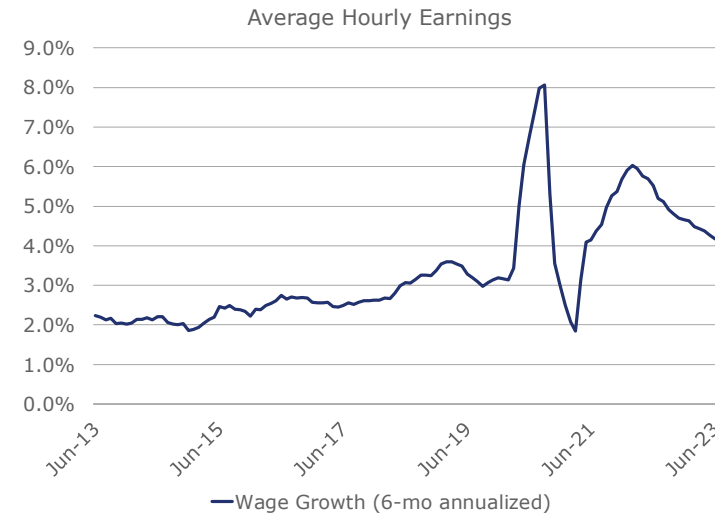
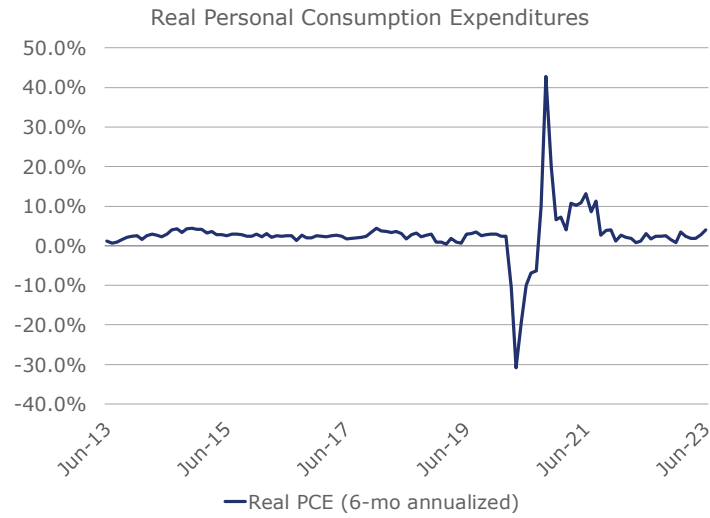
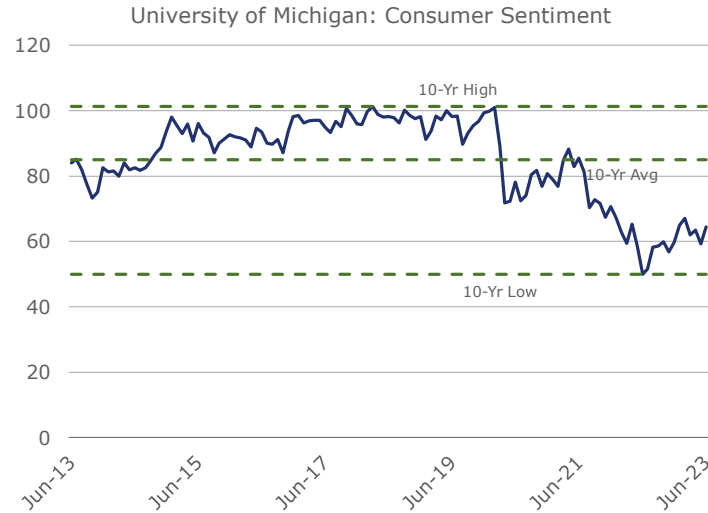
Data Source: Bloomberg

Economic Growth



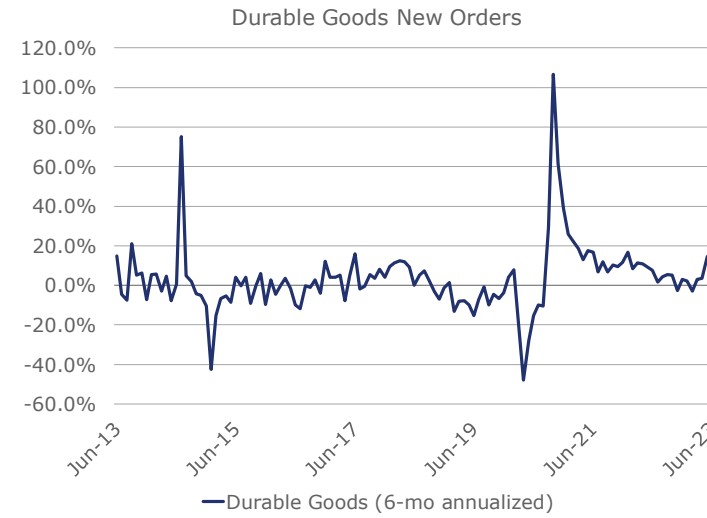
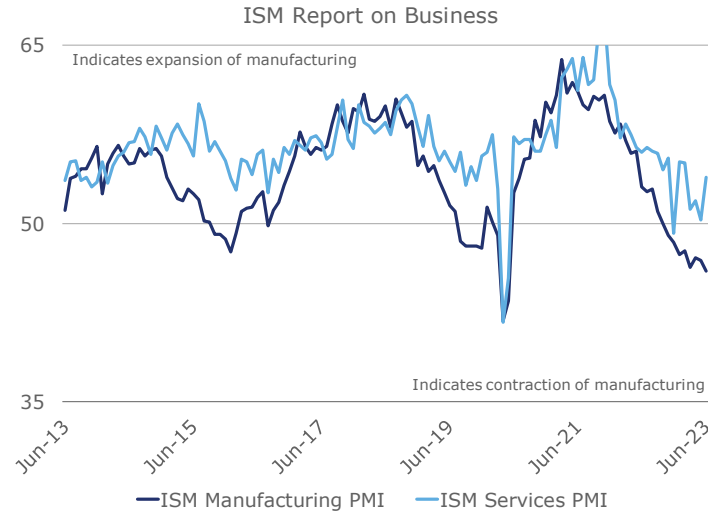
Data Sources: Bloomberg

Consumer Activity

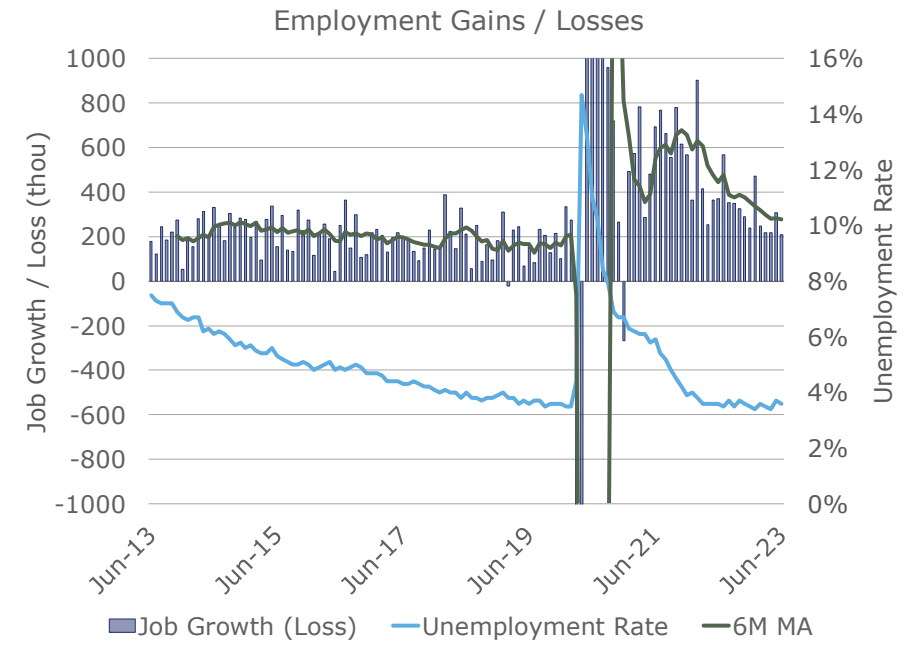
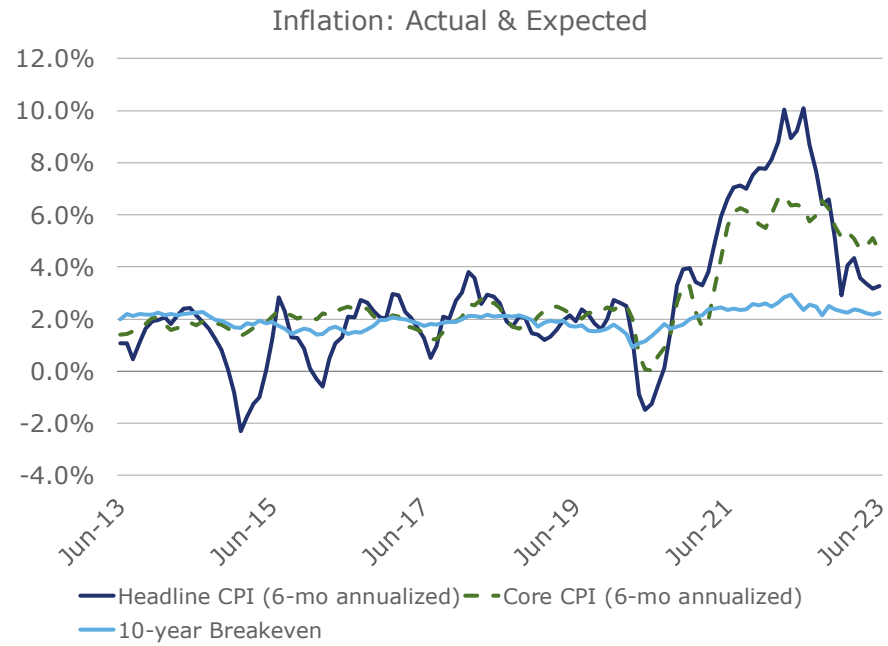


Data Sources: Bloomberg

Business Activity



Inflation and Employment



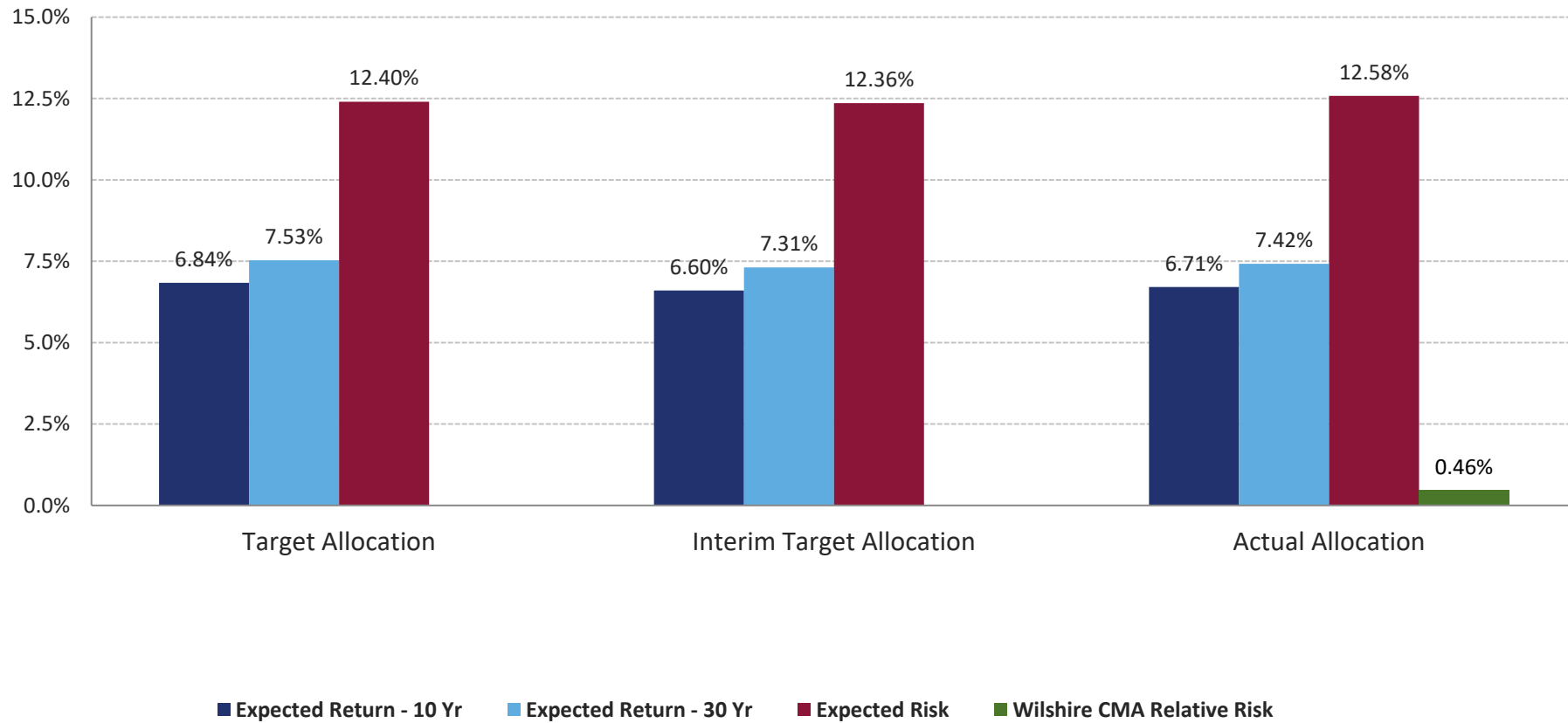
Data Sources: Bloomberg

June 2023 Asset Class Assumptions

	Equity						Fixed Income						Real Assets						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Private Credit	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	5.50	6.50	6.75	6.85	6.15	9.00	3.85	4.85	4.80	4.05	6.20	8.35	3.05	5.75	5.90	6.00	6.10	6.60	2.25
Expected Risk (%)	17.00	18.00	26.00	19.05	17.10	29.65	0.75	4.70	9.85	6.00	10.00	12.75	4.00	17.50	16.45	13.90	16.00	12.35	1.75
Cash Yield (%)	1.50	3.10	2.60	2.95	2.05	0.00	3.85	4.95	5.15	4.35	9.40	5.00	3.60	4.05	4.05	2.30	3.85	3.25	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.95	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70	0.00
Inflation Exposure	-3.00	0.00	5.00	1.45	-1.30	-3.75	0.00	-2.50	-6.80	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25	1.00
Correlations																			
US Stock	1.00																		
Dev ex-US Stock (USD)	0.81	1.00																	
Emerging Mkt Stock	0.74	0.74	1.00																
Global ex-US Stock	0.84	0.95	0.89	1.00															
Global Stock	0.95	0.91	0.84	0.94	1.00														
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00												
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00											
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00										
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00									
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00								
Private Credit	0.68	0.55	0.58	0.60	0.68	0.44	0.00	0.24	0.30	0.00	0.76	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.68	0.66	0.39	0.26	0.22	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.57	0.49	-0.05	0.17	0.22	0.10	0.56	0.62	0.05	1.00					
Global RE Securities	0.64	0.57	0.54	0.60	0.65	0.55	-0.05	0.17	0.21	0.11	0.61	0.68	0.04	0.96	1.00				
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.58	0.63	0.05	0.79	0.78	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.62	0.63	0.65	0.69	0.67	0.57	-0.03	0.22	0.24	0.30	0.64	0.69	0.04	0.78	0.84	0.76	0.64	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	0.00	-0.08	0.05	0.04	0.05	0.44	0.22	1.00

CalPERS PERF Expected Return and Risk Estimates

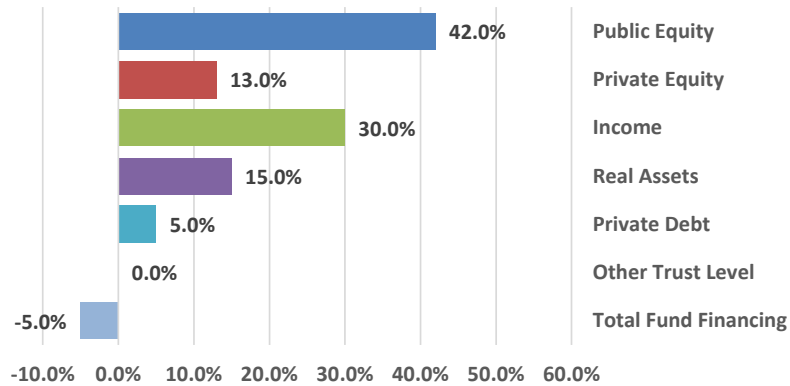
As of June 30, 2023



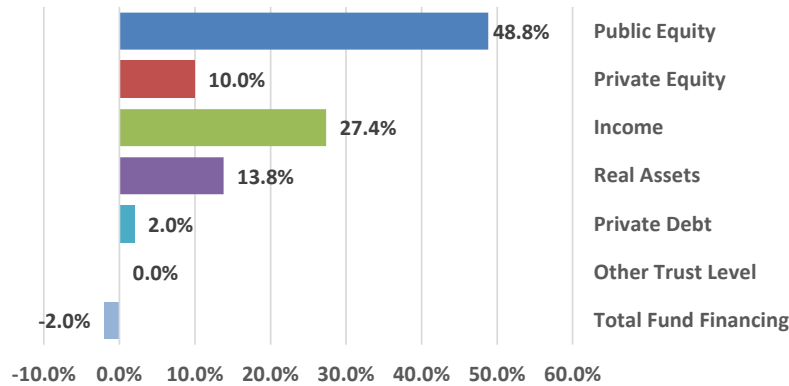
CalPERS PERF Assets and Risk Allocation

As of June 30, 2023

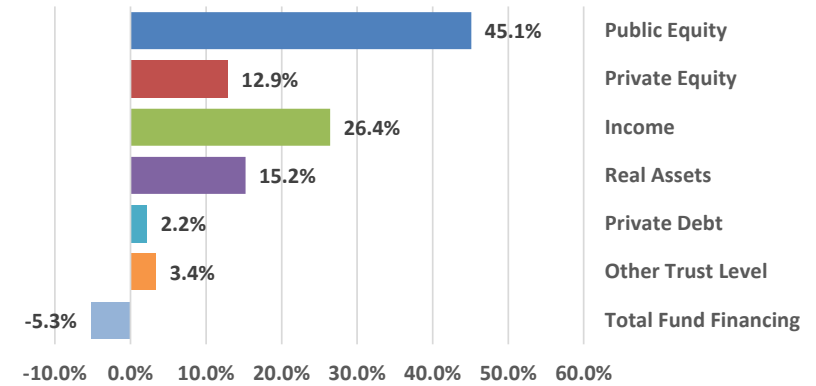
Target Asset Allocation



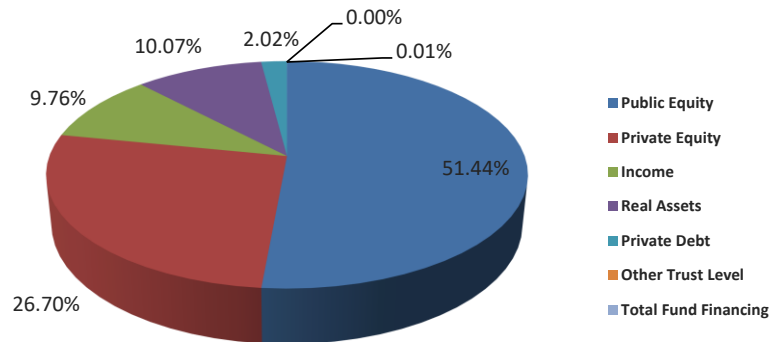
Interim Target Asset Allocation



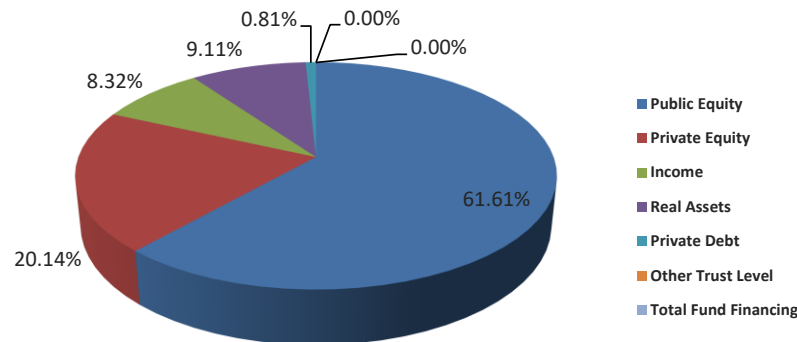
Actual Asset Allocation



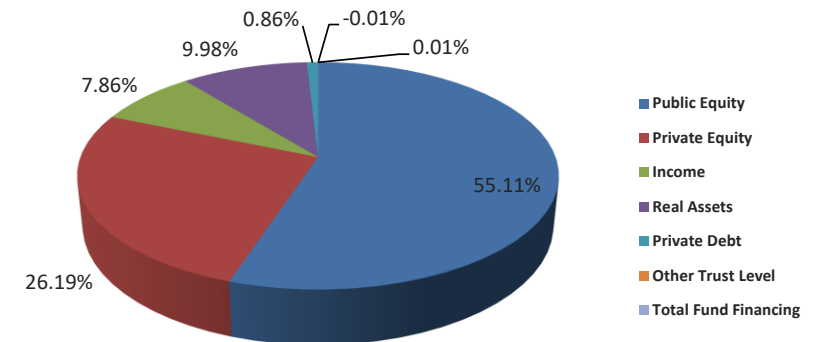
Contribution to Total Risk - Target Allocation



Contribution to Total Risk - Interim Target



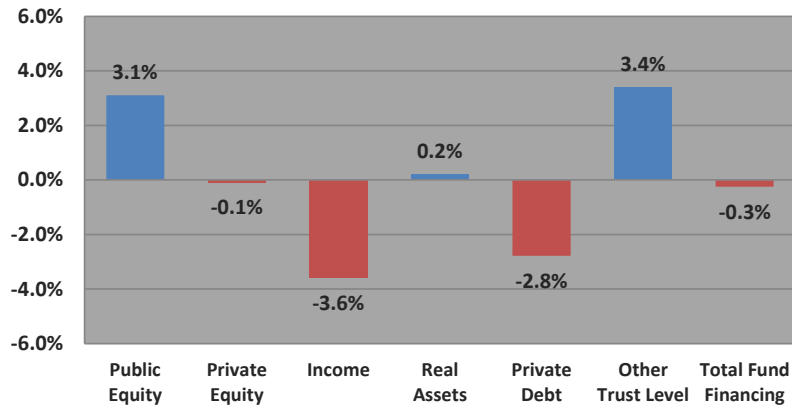
Contribution to Total Risk - Actual Allocation



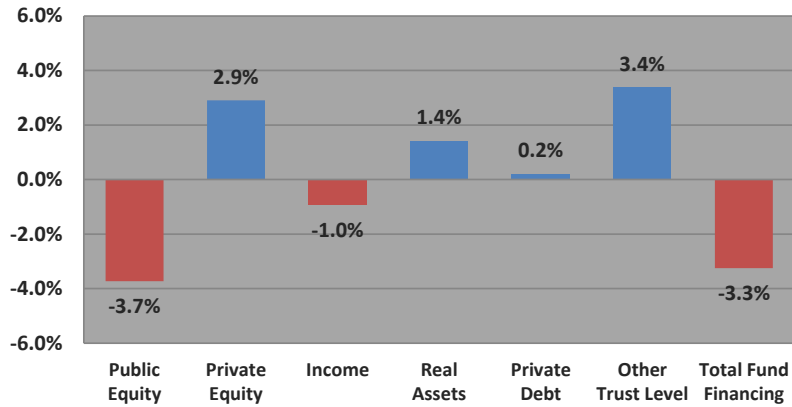
CalPERS PERF Drivers of Expected Excess Risk

As of June 30, 2023

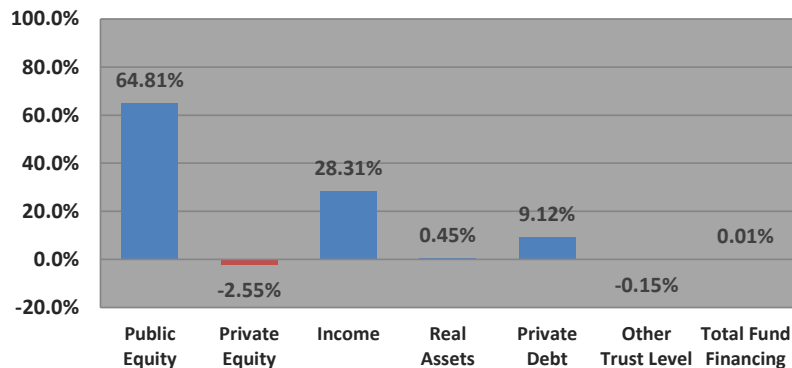
Allocation vs. Long-Term Strategic Targets



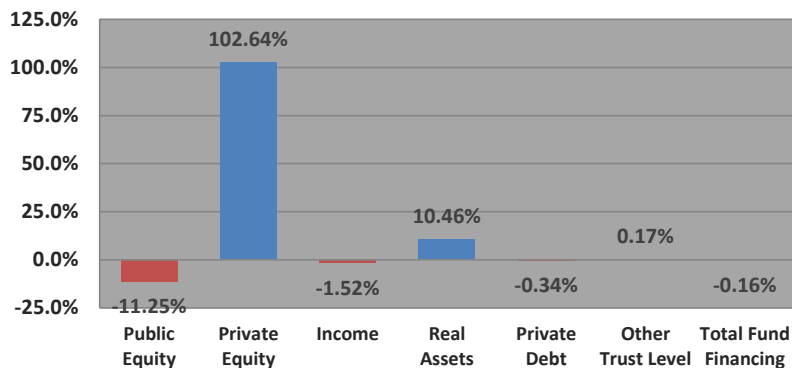
Allocation vs. Interim Targets



Contribution to Tracking Error vs. Long-Term Strategic Targets



Contribution to Tracking Error vs. Interim Targets



- This excess risk forecast is based on asset allocation variance only.
- Other sources of risk (structural within asset classes, manager/program specific source of tracking error, covariance, etc.) are not considered here.

CalPERS Total Fund Performance

CalPERS PERF – Performance

As of June 30, 2023

	Asset Value						VaR	5-Year Ratios	
	(\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year		(\$Billion)	Sharpe
CALPERS PERF	\$ 462.8	2.4%	5.8%	6.4%	6.1%	7.1%	\$ 62.7	0.5	0.1
<i>CalPERS PERF Policy Benchmark</i>		2.7%	5.6%	6.1%	5.9%	7.0%		0.5	0.0
<i>Actuarial Rate</i>		1.7%	6.8%	6.9%	7.0%	7.3%			
PUBLIC EQUITY*	\$ 208.8	5.2%	14.1%	10.6%	7.6%	8.9%	\$ 42.2	0.4	0.4
<i>Public Equity Policy Benchmark</i>		5.3%	14.1%	10.4%	7.5%	8.8%		0.4	0.0
PRIVATE EQUITY	\$ 59.7	2.8%	-2.3%	19.5%	11.8%	11.8%	\$ 23.7	1.2	0.2
<i>Private Equity Policy Benchmark</i>		7.6%	-5.9%	18.0%	8.7%	11.4%		0.4	0.0
INCOME*	\$ 122.2	-0.2%	0.0%	-5.1%	1.0%	2.4%	\$ 7.0	-0.1	0.9
<i>Income Blended Benchmark</i>		-0.2%	0.0%	-5.3%	0.8%	2.0%		-0.1	0.0
REAL ASSETS	\$ 70.4	-1.8%	-3.1%	7.2%	6.0%	7.7%	\$ 10.4	1.0	-0.1
<i>Real Assets Policy Benchmark</i>		-3.4%	-4.0%	7.3%	6.5%	8.0%		0.7	0.0
PRIVATE DEBT	\$ 10.3	3.3%	6.5%	--%	--%	--%	\$ 0.8	N/A	N/A
<i>Private Debt Policy Benchmark</i>		3.2%	3.7%	--%	--%	--%		N/A	N/A
OTHER TRUST LEVEL	\$ 15.7							N/A	N/A
TOTAL FUND FINANCING	\$ (24.3)							N/A	N/A
TERMINATED AGENCY POOL	\$ 0.2	-1.2%	-3.1%	-4.8%	1.4%	2.3%		N/A	N/A
CaIPERS PERF PLUS TAP	\$ 463.0	2.4%	5.8%	6.4%	6.1%	7.1%		N/A	N/A

* The CalPERS PERF asset values shown include derivative exposure.

CalPERS PERF – Attribution (Quarter)

As of June 30, 2023

Asset Class	Actual (%)		Benchmark (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
Public Equity	45.39	5.24	45.57	5.27	-0.17	-0.03	-0.02	-0.01	-0.03
Public Equity - Cap Weighted	33.30	6.18	33.50	6.23	-0.20	-0.05	-0.02	-0.02	-0.03
Public Equity - Factor Weighted	12.09	2.68	12.07	2.66	0.02	0.02	0.00	0.00	0.00
Private Equity	12.44	2.77	12.16	7.16	0.28	-4.39	0.03	-0.60	-0.57
Income	26.45	-0.17	26.61	-0.23	-0.17	0.05	0.00	0.01	0.02
Treasury	3.64	-2.13	5.08	-2.13	-1.44	0.00	0.07	0.00	0.07
Mortgage-Backed Securities	5.07	-0.57	5.17	-0.63	-0.10	0.07	0.00	0.00	0.00
Investment Grade Credit	6.61	-0.47	6.64	-0.52	-0.03	0.05	0.00	0.00	0.00
High Yield	4.58	1.51	4.58	1.44	0.00	0.07	0.00	0.00	0.00
EM Sovereign	5.10	1.17	5.13	1.00	-0.03	0.17	0.00	0.01	0.01
Total Fund Income	1.44	-2.40	0.00	-2.13	1.44	-0.26	-0.07	0.00	-0.07
Real Assets	15.64	-1.79	15.73	-3.38	-0.09	1.59	0.01	0.23	0.25
Private Debt	2.13	3.25	2.06	3.25	0.07	0.00	0.00	0.00	0.00
Other Trust Level	3.67	-	0.00	-	3.67	-	-0.07	0.04	-0.03
LLER	3.13	2.03	0.00	0.91	3.13	1.12	-0.06	0.04	-0.02
Opportunistic Strategies	0.05	3.76	0.00	1.70	0.05	2.06	0.00	0.00	0.00
Other PERF	0.04	-	0.00	-	0.04	-	0.00	0.00	0.00
TLPM	0.46	-	0.00	-	0.46	-	-0.01	0.00	-0.01
Total Fund Financing	-5.72	-	-2.13	-	-3.59	-	0.05	-0.07	-0.02
Monthly Linked Return	100.00	2.37	100.00	2.76	-	-0.39	0.01	-0.40	-0.39
Residual		0.04		-0.01		0.06			0.06
Total PERF		2.42		2.75		-0.33			-0.33

* Average period weight displayed.

CalPERS PERF – Attribution (Fiscal YTD)

As of June 30, 2023

Asset Class	Actual (%)		Benchmark (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
Public Equity	46.53	14.06	46.61	14.13	-0.09	-0.07	-0.05	-0.03	-0.07
Public Equity - Cap Weighted	33.88	16.66	33.96	16.77	-0.08	-0.11	-0.04	-0.03	-0.07
Public Equity - Factor Weighted	12.65	7.44	12.66	7.44	-0.01	0.00	-0.01	0.00	-0.01
Private Equity	11.64	-2.29	11.58	-7.31	0.06	5.02	0.04	0.21	0.24
Income	25.13	-0.04	25.30	-0.02	-0.17	-0.01	0.07	-0.13	-0.06
Treasury	4.19	-5.59	5.71	-5.59	-1.52	0.00	0.21	0.00	0.21
Mortgage-Backed Securities	5.64	-1.25	5.74	-1.50	-0.09	0.24	0.01	0.01	0.03
Investment Grade Credit	6.11	0.87	6.12	1.28	-0.01	-0.40	0.00	-0.03	-0.02
High Yield	4.50	9.09	4.47	8.93	0.03	0.16	0.01	0.01	0.02
EM Sovereign	3.25	3.10	3.26	5.99	-0.01	-2.90	0.00	-0.13	-0.13
Total Fund Income	1.45	-5.68	0.00	-5.59	1.45	-0.09	-0.17	0.00	-0.17
Real Assets	16.11	-3.08	16.12	-4.05	-0.02	0.97	0.03	0.04	0.06
Private Debt	1.76	6.50	1.87	3.69	-0.10	2.80	0.05	0.03	0.09
Other Trust Level	3.72	-	0.00	-	3.72	-	-0.12	0.09	-0.03
LLER	3.08	6.53	0.00	3.34	3.08	3.19	-0.05	0.10	0.04
Opportunistic Strategies	0.16	-1.62	0.00	5.05	0.16	-6.67	-0.05	0.00	-0.06
Other PERF	0.04	-	0.00	-	0.04	-	0.00	0.00	0.00
TLPM	0.43	-	0.00	-	0.43	-	-0.01	0.00	-0.01
Total Fund Financing	-4.89	-	-1.48	-	-3.40	-	0.02	-0.15	-0.13
Monthly Linked Return	100.00	5.59	100.00	5.50		0.10	0.03	0.06	0.10
Residual		0.21		0.06		0.15			0.15
Total PERF		5.80		5.56		0.25			0.25

* Average period weight displayed.

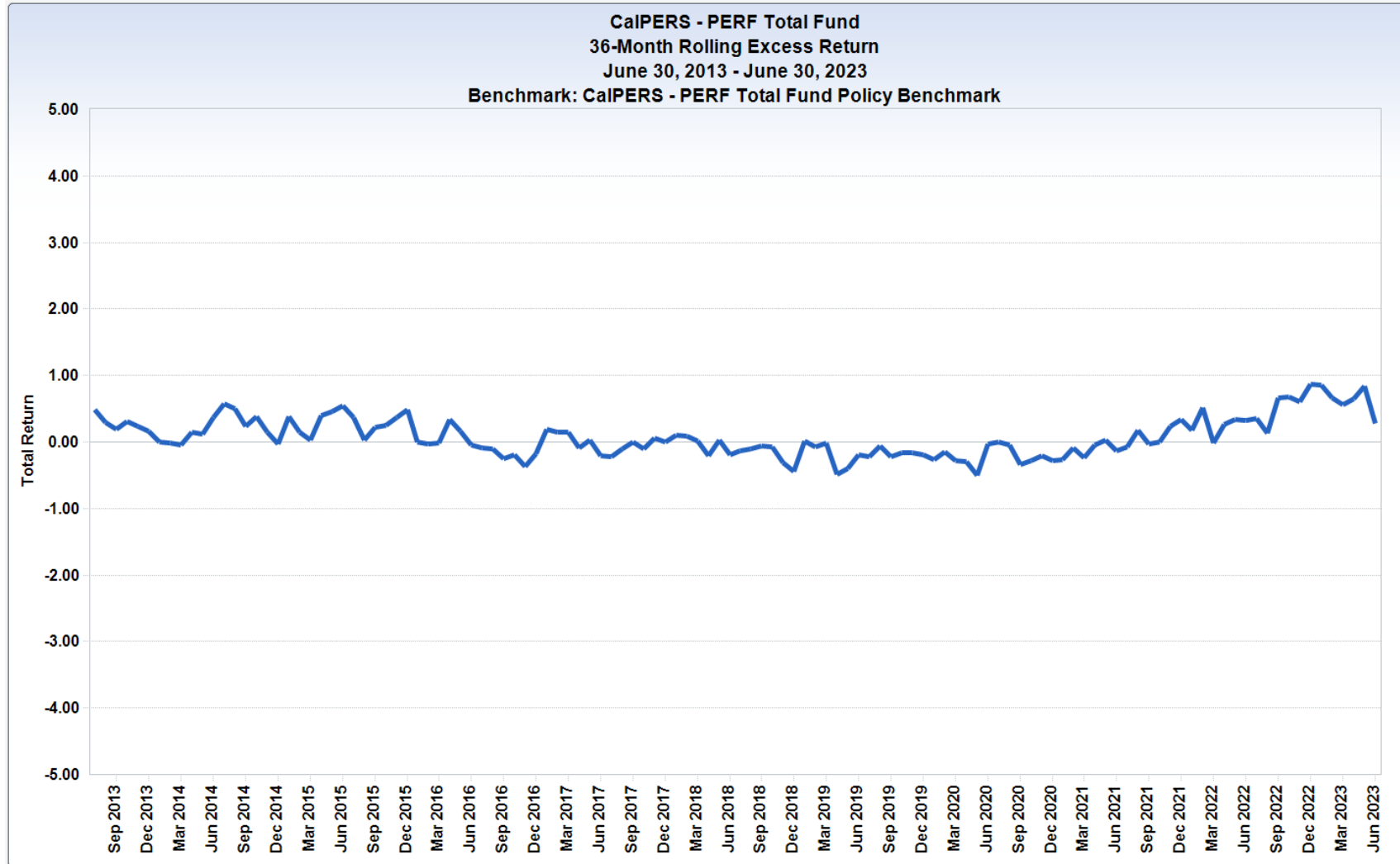
CalPERS PERF – Attribution (Calendar YTD)

As of June 30, 2023

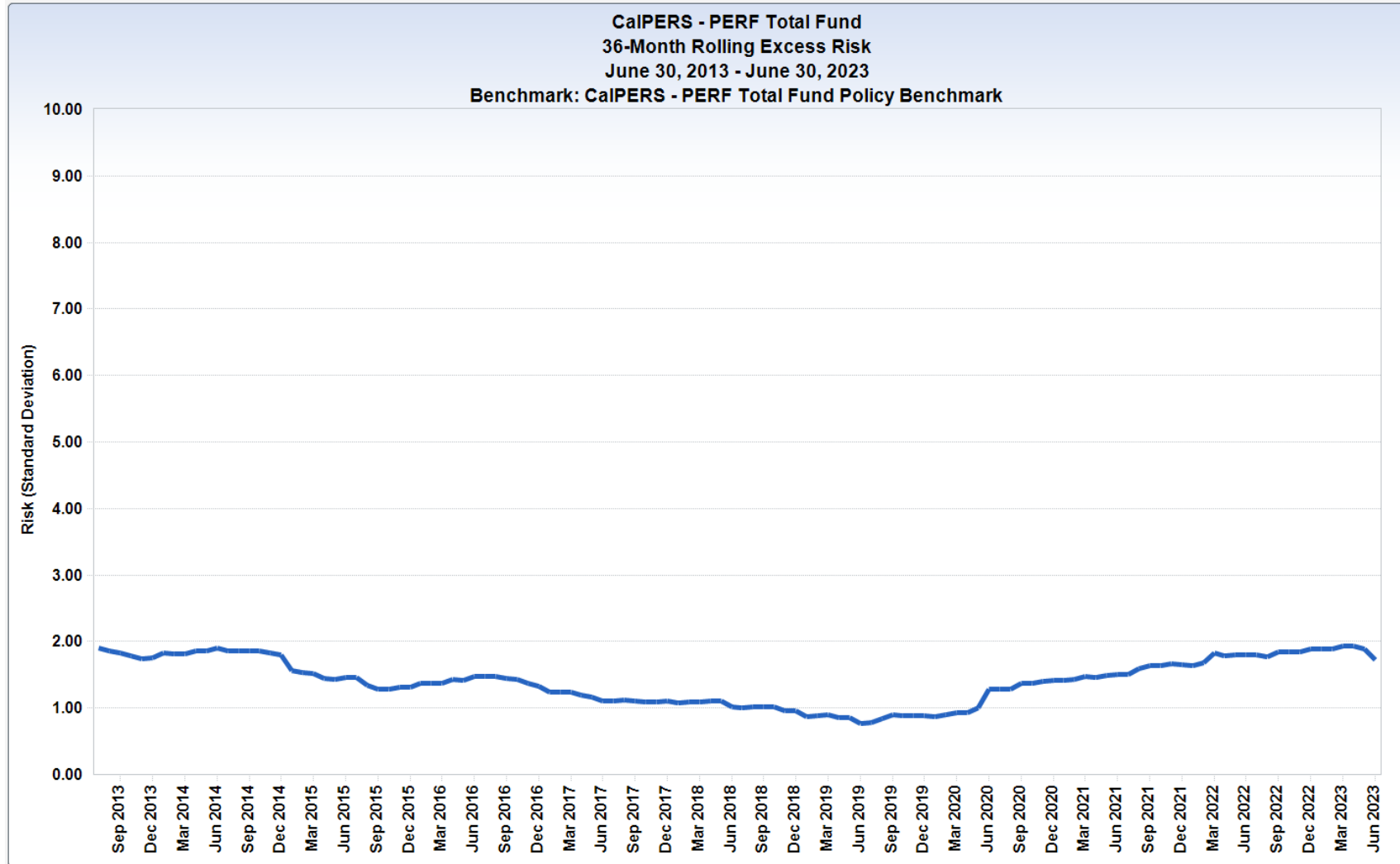
Asset Class	Actual (%)		Benchmark (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
Public Equity	46.17	11.49	46.27	11.64	-0.10	-0.16	-0.02	-0.07	-0.09
Public Equity - Cap Weighted	34.16	13.61	34.26	13.84	-0.10	-0.22	-0.02	-0.07	-0.09
Public Equity - Factor Weighted	12.01	5.53	12.01	5.51	0.00	0.02	0.00	0.00	0.00
Private Equity	11.96	3.97	11.83	17.71	0.14	-13.74	0.03	-1.72	-1.68
Income	25.68	3.56	25.76	3.50	-0.08	0.06	0.01	0.01	0.02
Treasury	3.50	3.01	4.93	3.01	-1.43	0.00	0.06	0.00	0.06
Mortgage-Backed Securities	5.21	2.03	5.26	1.82	-0.05	0.20	0.00	0.01	0.01
Investment Grade Credit	6.34	4.08	6.35	4.35	-0.01	-0.26	0.00	-0.02	-0.02
High Yield	4.59	5.20	4.60	5.03	0.00	0.17	0.00	0.01	0.01
EM Sovereign	4.61	3.10	4.64	2.92	-0.02	0.17	0.00	0.01	0.01
Total Fund Income	1.42	3.35	0.00	3.01	1.42	0.33	-0.06	0.01	-0.05
Real Assets	15.99	-5.67	16.05	-8.35	-0.05	2.68	0.01	0.42	0.43
Private Debt	2.07	4.61	2.03	7.44	0.03	-2.83	0.00	-0.06	-0.06
Other Trust Level	3.69	-	0.00	-	3.69	-	-0.21	0.08	-0.13
LLER	3.15	4.20	0.00	1.74	3.15	2.46	-0.17	0.08	-0.09
Opportunistic Strategies	0.05	4.60	0.00	3.43	0.05	1.16	0.00	0.00	0.00
Other PERF	0.03	-	0.00	-	0.03	-	0.00	0.00	0.00
TLPM	0.46	-	0.00	-	0.46	-	-0.03	0.00	-0.03
Total Fund Financing	-5.56	-	-1.93	-	-3.63	-	0.17	-0.12	0.05
Monthly Linked Return	100.00	5.62	100.00	7.07		-1.46	0.00	-1.45	-1.46
Residual		0.07		0.05		0.02			0.02
Total PERF		5.69		7.12		-1.44			-1.44

* Average period weight displayed.

CalPERS PERF – Rolling Excess Return



CalPERS PERF – Rolling Tracking Error



CalPERS Affiliate Investment Programs – Performance

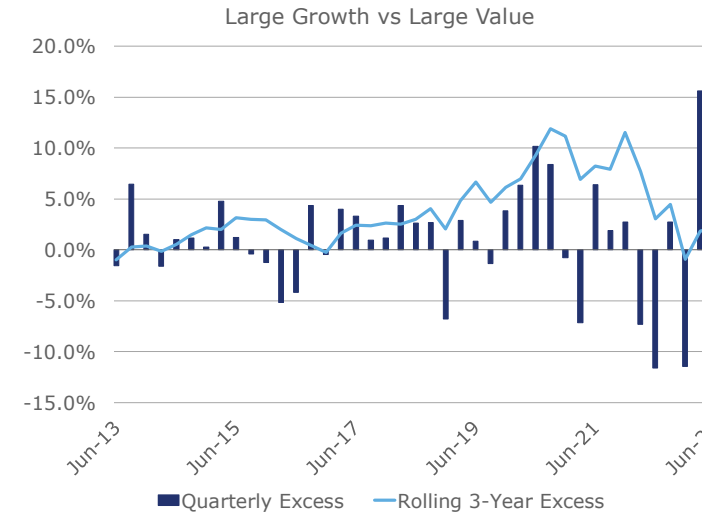
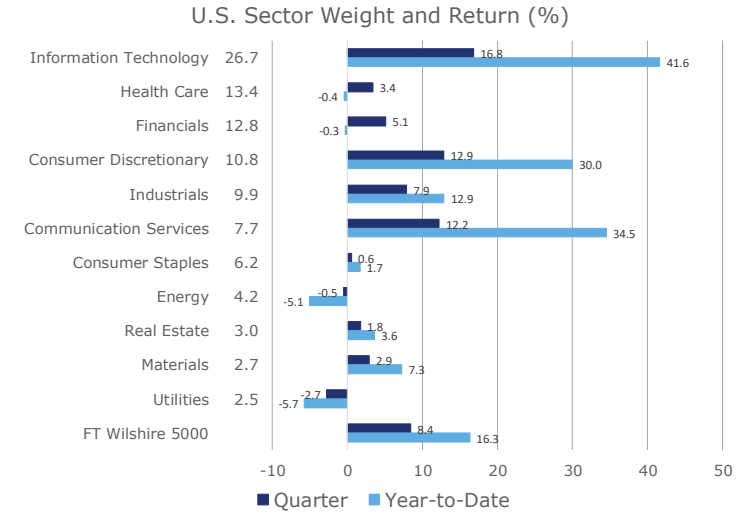
As of June 30, 2023

	Asset Value (\$Million)	Quarter	1-Year	3-Year	5-Year	10-Year
Judges I	\$ 47.0	1.3%	4.1%	1.5%	1.7%	1.1%
91-Day Treasury Bill		1.2%	3.6%	1.3%	1.6%	1.0%
Judges II	\$ 2,319.1	2.7%	7.1%	4.9%	5.2%	6.2%
Weighted Policy Benchmark		2.7%	6.7%	4.7%	4.9%	6.0%
Legislators' Retirement System	\$ 95.7	0.2%	0.8%	0.7%	3.1%	4.1%
Weighted Policy Benchmark		0.2%	0.7%	0.6%	3.0%	3.9%
Long-Term Care ("LTC")	\$ 4,843.3	0.0%	-0.6%	0.4%	2.6%	3.3%
Weighted Policy Benchmark		0.0%	-0.7%	0.2%	2.5%	3.2%
CERBT Strategy 1	\$ 14,982.6	2.6%	6.4%	5.5%	5.3%	6.3%
CERBT Strategy 1 Policy Benchmark		2.5%	6.3%	5.4%	5.0%	6.0%
CERBT Strategy 2	\$ 1,859.5	1.5%	3.6%	2.7%	4.1%	5.1%
CERBT Strategy 2 Policy Benchmark		1.4%	3.5%	2.6%	4.0%	4.9%
CERBT Strategy 3	\$ 773.2	0.6%	1.6%	1.0%	3.3%	4.2%
CERBT Strategy 3 Policy Benchmark		0.6%	1.5%	0.9%	3.2%	3.9%
CEPPT Strategy 1	\$ 96.7	1.8%	5.2%	2.9%	-.%	-.%
CEPPT Strategy 1 Policy Benchmark		1.8%	5.1%	2.7%	-.%	-.%
CEPPT Strategy 2	\$ 43.5	0.6%	2.3%	-0.6%	-.%	-.%
CEPPT Strategy 2 Policy Benchmark		0.6%	2.4%	-0.6%	-.%	-.%
Health Care Fund	\$ 205.1	-0.9%	-1.0%	-4.0%	0.8%	1.6%
Bloomberg U.S. Aggregate Bond Index		-0.8%	-0.9%	-4.0%	0.8%	1.5%
Supplemental Contribution Plan	\$ 108.3	NM	NM	NM	NM	NM
457 Program	\$ 2,124.6	NM	NM	NM	NM	NM

Appendix 1: Asset Class Performance Detail

U.S. Equity Market

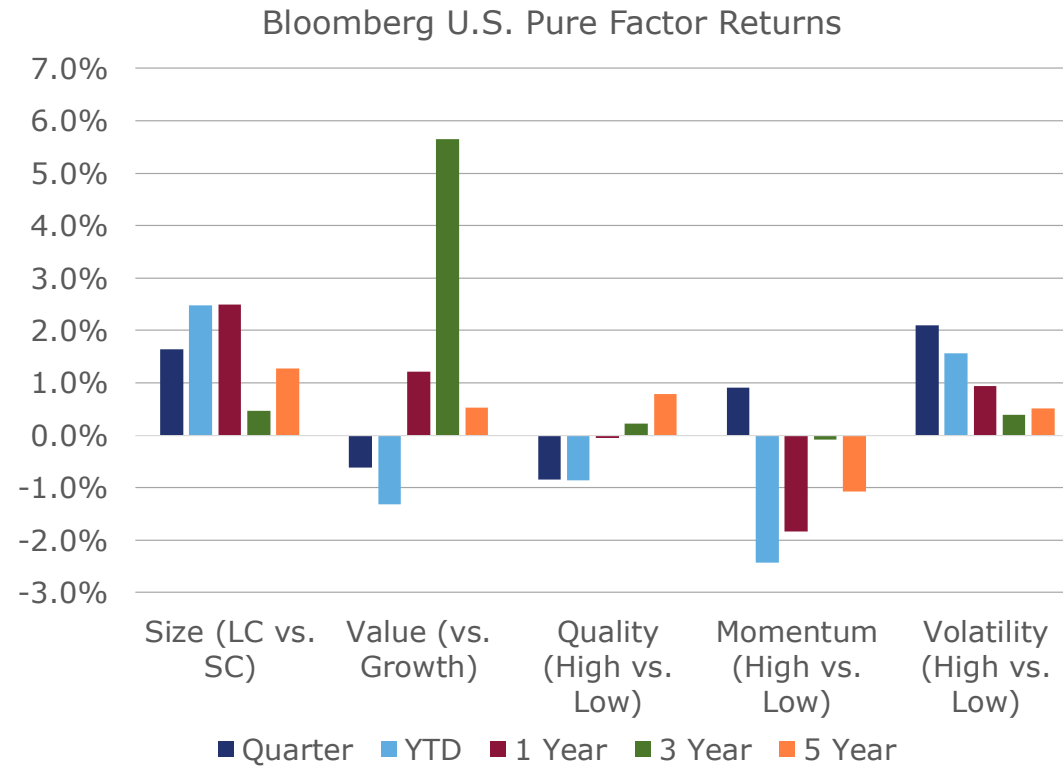
As of 6/30/2023	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	8.4	16.3	19.0	14.2	11.7	12.5
Wilshire U.S. Large Cap	8.7	17.0	19.6	14.4	12.3	12.9
Wilshire U.S. Small Cap	5.1	8.8	13.3	12.9	5.4	8.9
Wilshire U.S. Large Growth	14.2	32.1	28.7	15.5	14.9	15.5
Wilshire U.S. Large Value	2.6	2.7	9.9	12.9	9.5	10.2
Wilshire U.S. Small Growth	6.7	13.5	19.1	10.1	6.2	9.4
Wilshire U.S. Small Value	3.5	4.6	8.2	15.7	4.7	8.4
Wilshire REIT Index	3.3	6.7	-0.3	8.5	4.4	6.4
MSCI USA Min. Vol. Index	2.6	4.0	8.0	8.9	9.1	10.9
FTSE RAFI U.S. 1000 Index	5.0	6.7	13.2	17.4	10.4	11.2



Data Sources: Bloomberg, Wilshire Atlas

U.S. Factor Returns

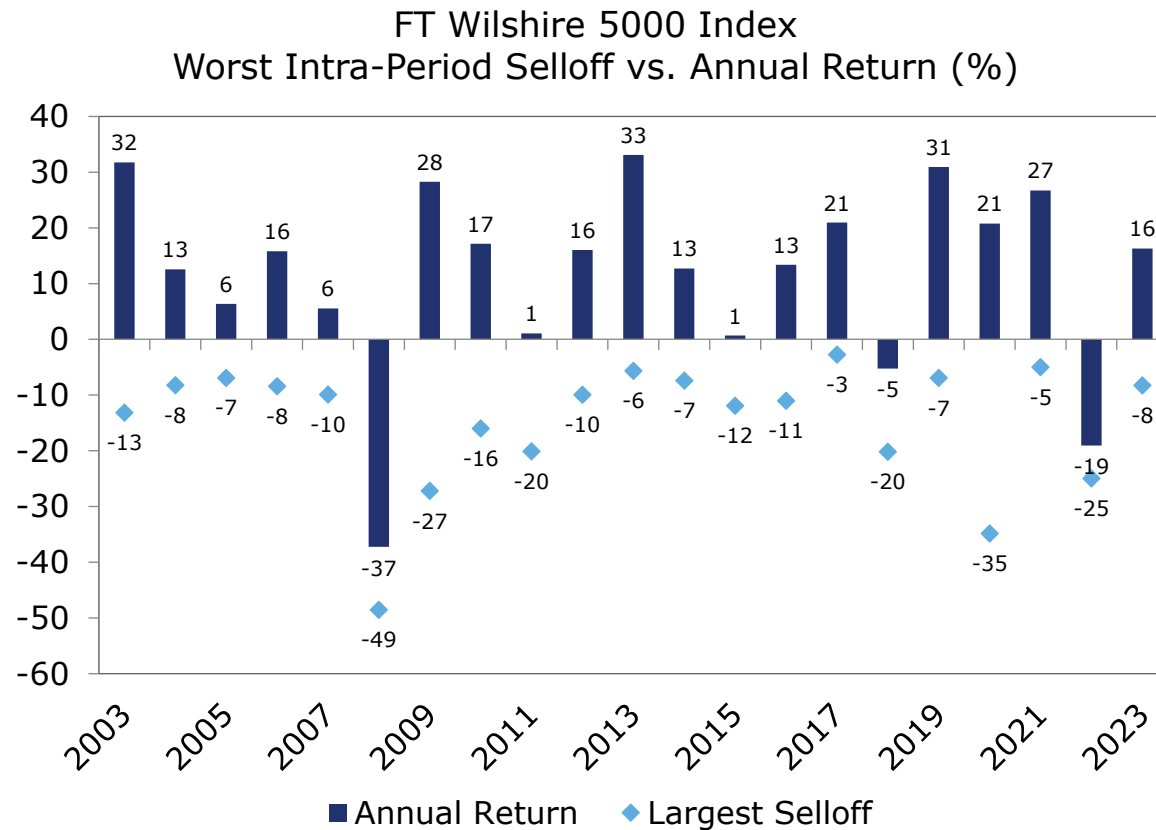
- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg’s Portfolio & Risk Analytics module
- Large cap and high volatility have mostly outperformed this year



Data Sources: Bloomberg

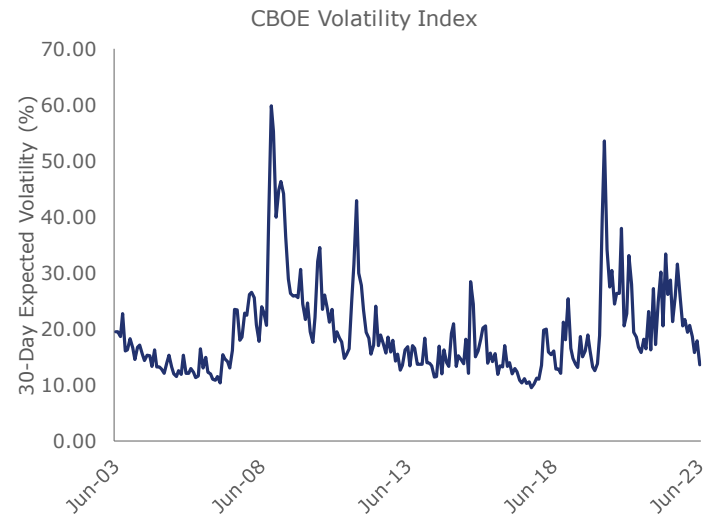
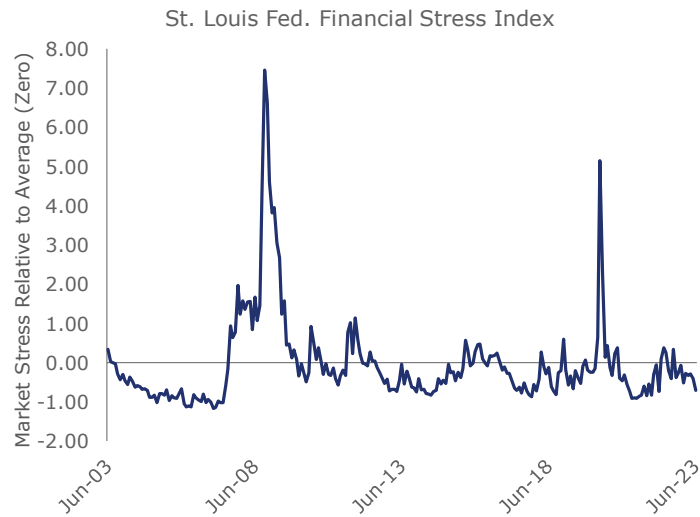
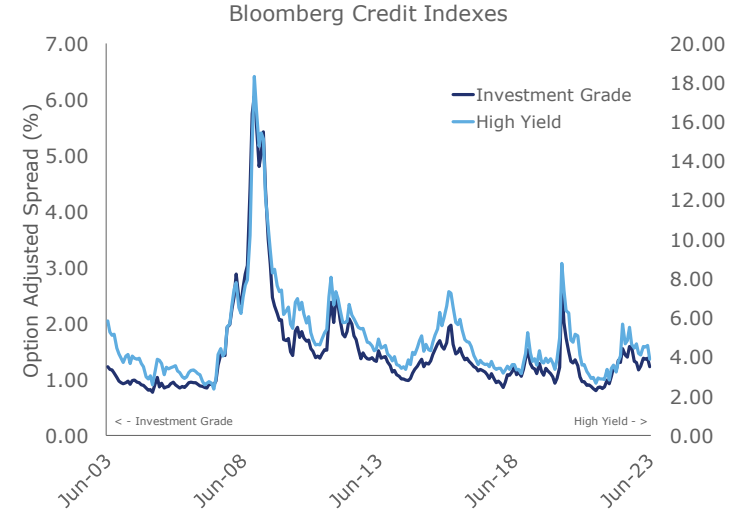
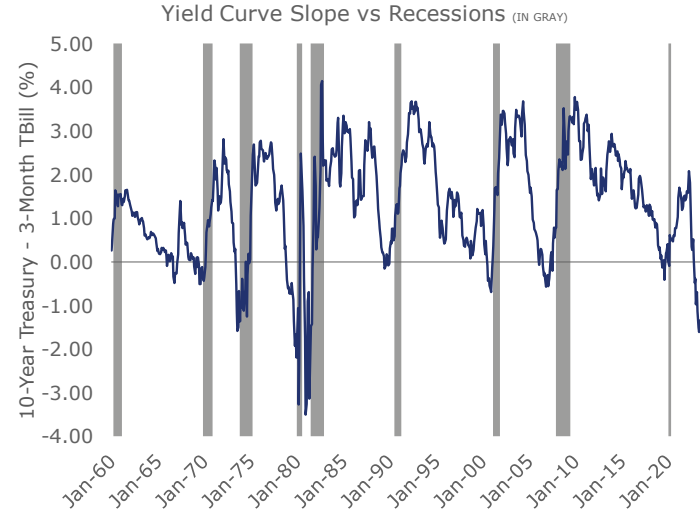
Annual Equity Market Selloffs

U.S. equity suffered a meaningful selloff in Feb.-Mar. but is generally rebounding from 2022



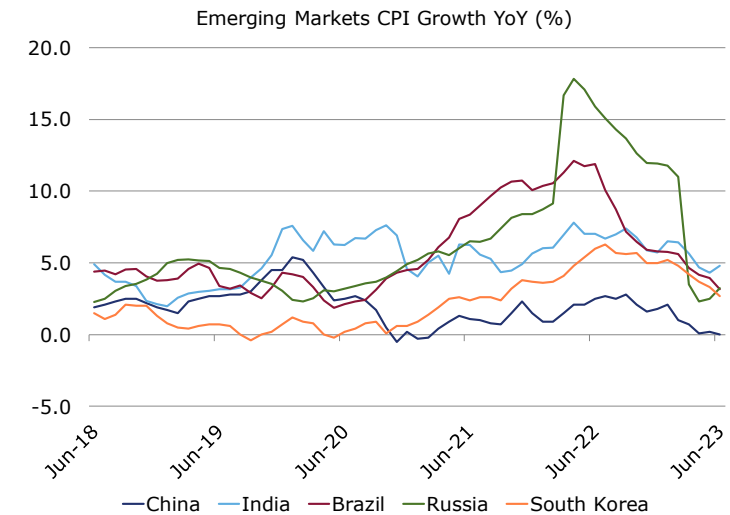
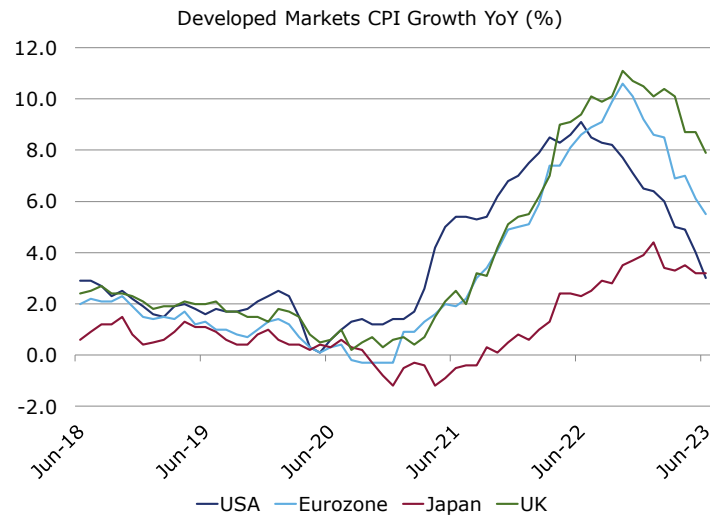
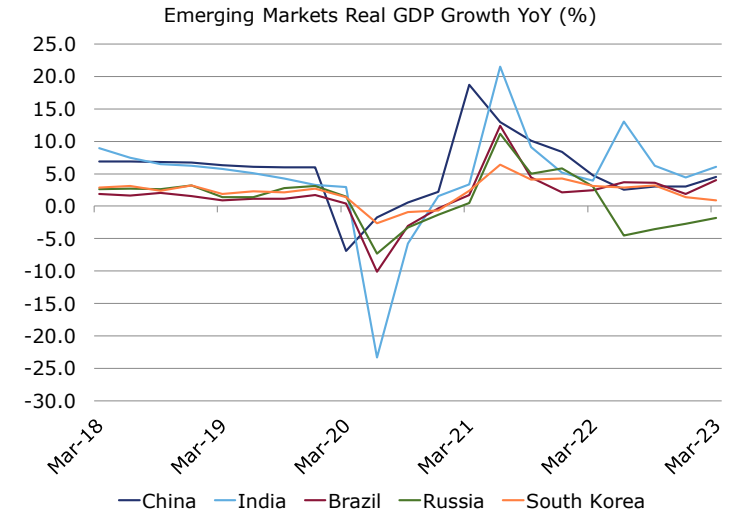
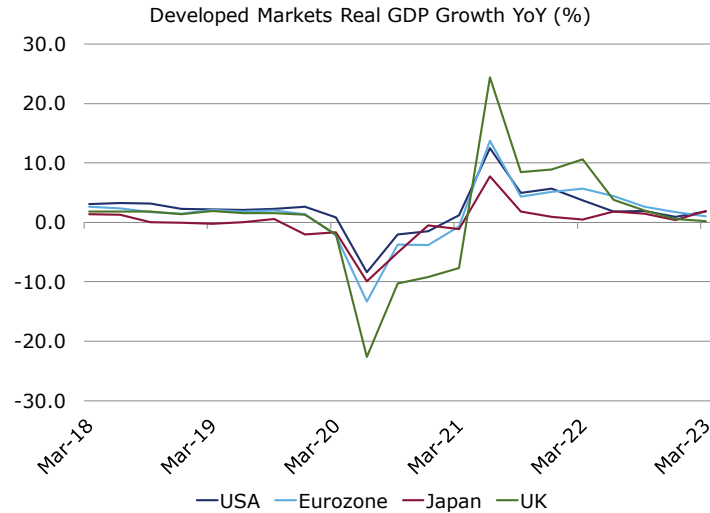
Data Sources: Wilshire Web, Bloomberg

Risk Monitor



Data Sources: Bloomberg

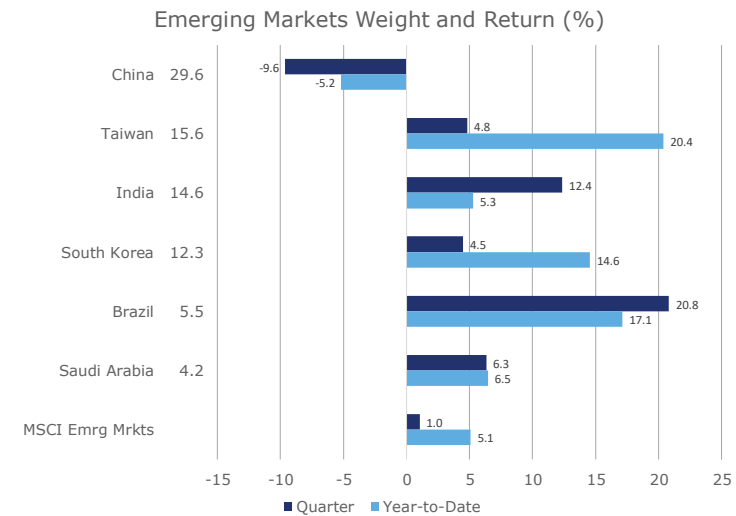
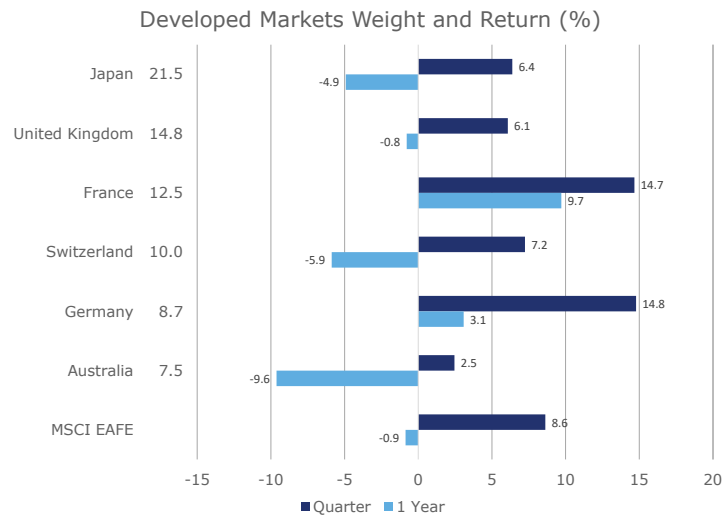
Non-U.S. Growth and Inflation



Data Sources: Bloomberg

Non-U.S. Equity Market

As of 6/30/2023	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	2.7	9.9	13.3	7.7	4.0	5.2
MSCI EAFE (\$G)	3.2	12.1	19.4	9.5	4.9	5.9
MSCI Emerging Markets (\$G)	1.0	5.1	2.2	2.7	1.3	3.3
MSCI Frontier Markets (\$G)	2.2	4.8	4.6	3.4	-1.0	0.8
MSCI ACWI ex-US Growth (\$G)	2.1	11.0	13.7	4.3	4.4	6.0
MSCI ACWI ex-US Value (\$G)	3.2	8.5	12.9	11.2	3.3	4.5
MSCI ACWI ex-US Small (\$G)	2.2	7.2	11.5	8.6	3.1	6.2
MSCI ACWI Minimum Volatility	2.4	4.1	6.4	6.3	6.0	7.9
MSCI EAFE Minimum Volatility	1.8	7.7	9.9	3.4	2.1	5.2
FTSE RAFI Developed ex-US	3.4	10.4	17.4	13.2	4.5	5.7
MSCI EAFE LC (G)	4.6	12.6	18.1	12.3	6.9	8.2
MSCI Emerging Markets LC (G)	1.8	5.8	3.8	4.3	3.4	6.1



Data Sources: Bloomberg

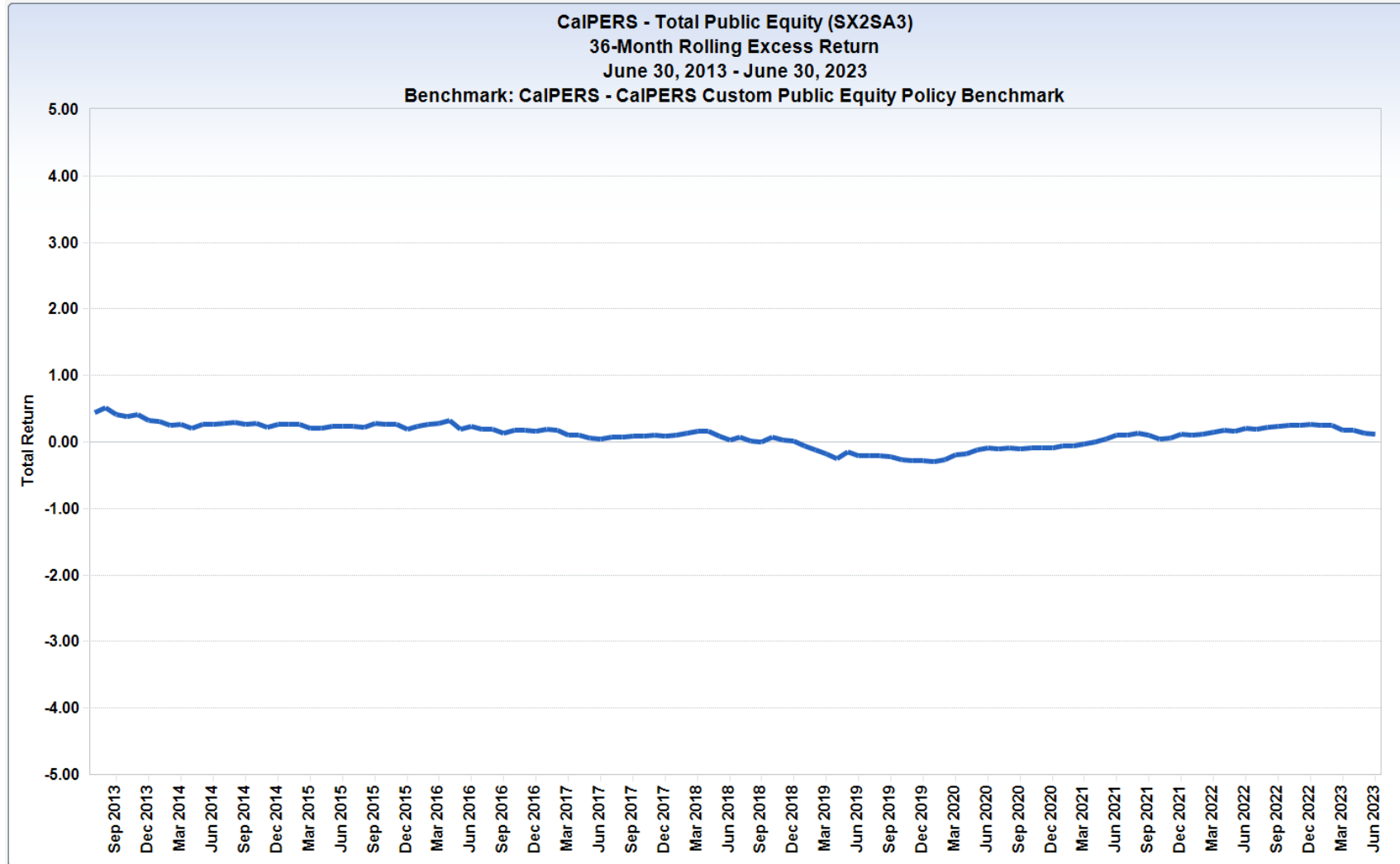
CalPERS PERF Public Equity – Performance

As of June 30, 2023

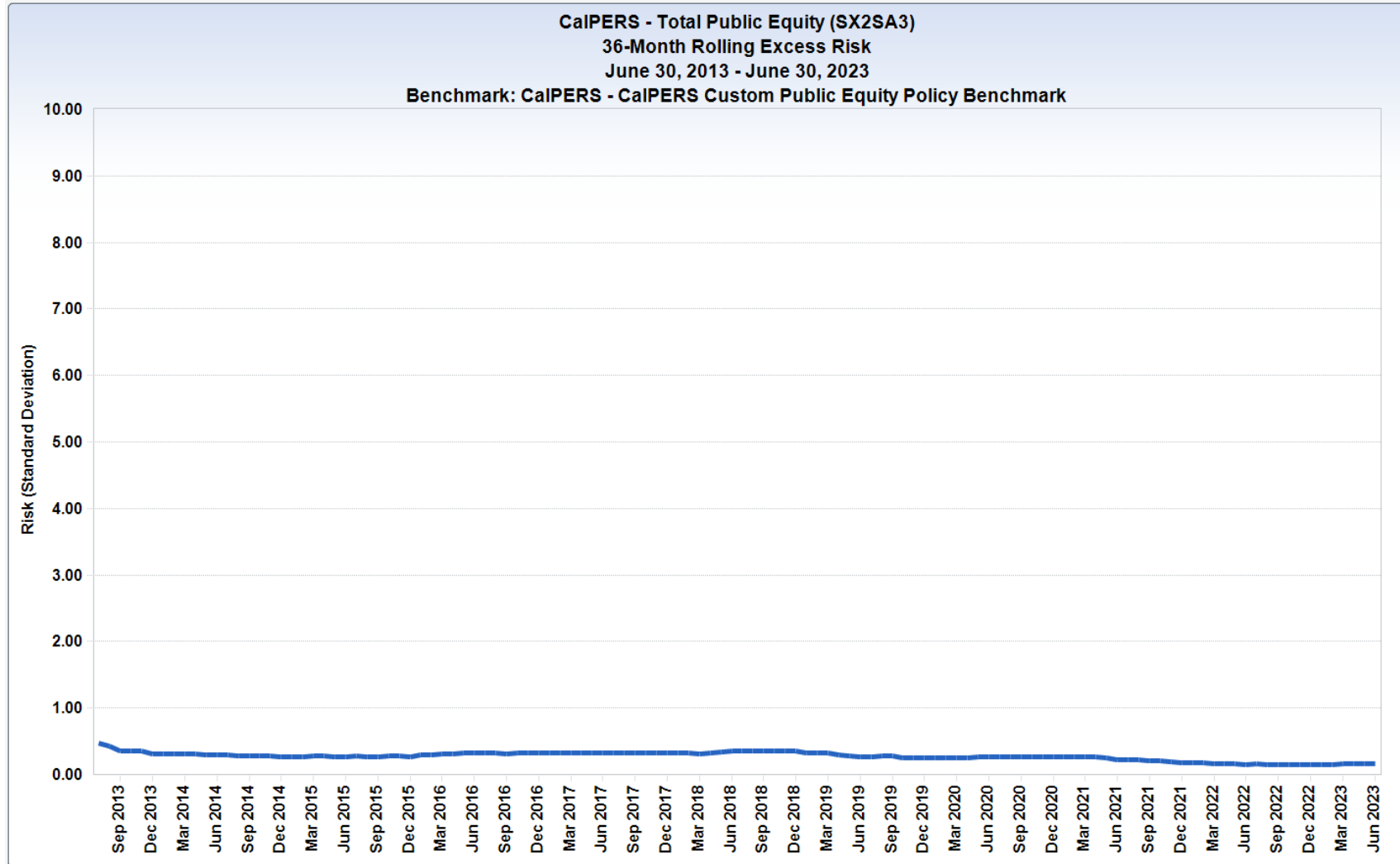
	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
PUBLIC EQUITY*	\$ 208.8	5.2%	14.1%	10.6%	7.6%	8.9%	\$ 42.2	0.4	0.4
<i>Public Equity Policy Benchmark</i>		5.3%	14.1%	10.4%	7.5%	8.8%		0.4	0.0
Public Equity - Cap Weighted*	\$ 153.3	6.2%	16.7%	11.7%	8.3%	9.3%	\$ 33.7	0.4	0.4
<i>CalPERS Custom FTSE Global Benchmark</i>		6.2%	16.8%	11.5%	8.2%	9.2%		0.4	0.0
Public Equity - Factor Weighted	\$ 55.4	2.7%	7.4%	7.1%	6.3%	-.%	\$ 9.1	0.3	0.1
<i>CalPERS Custom FTSE Factor Weighted Bmrk</i>		2.7%	7.4%	7.1%	6.3%	-.%		0.3	0.0

* The CalPERS asset values shown include derivative exposure.

CalPERS PERF Public Equity – Rolling Excess Return

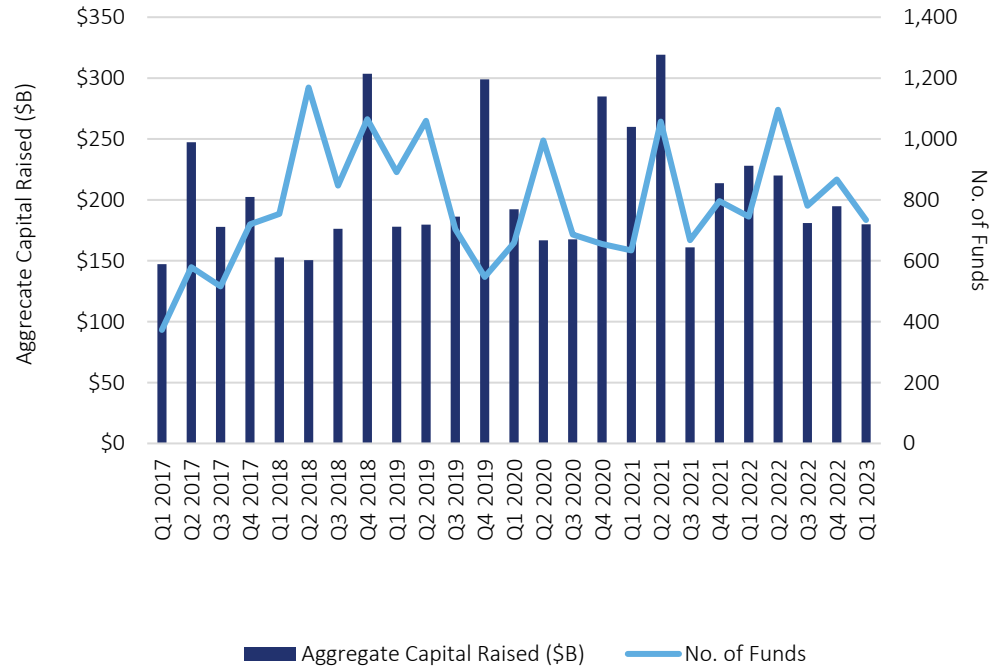


CalPERS PERF Public Equity – Rolling Tracking Error

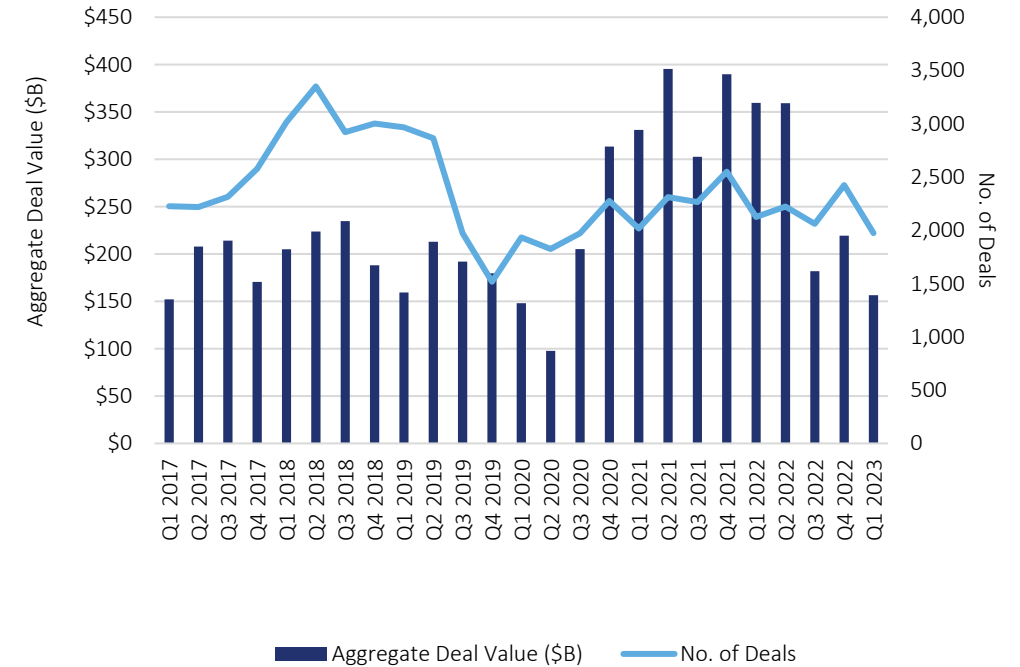


Private Equity – Fundraising & Investment Activity

Global Private Equity Fundraising, by Quarter



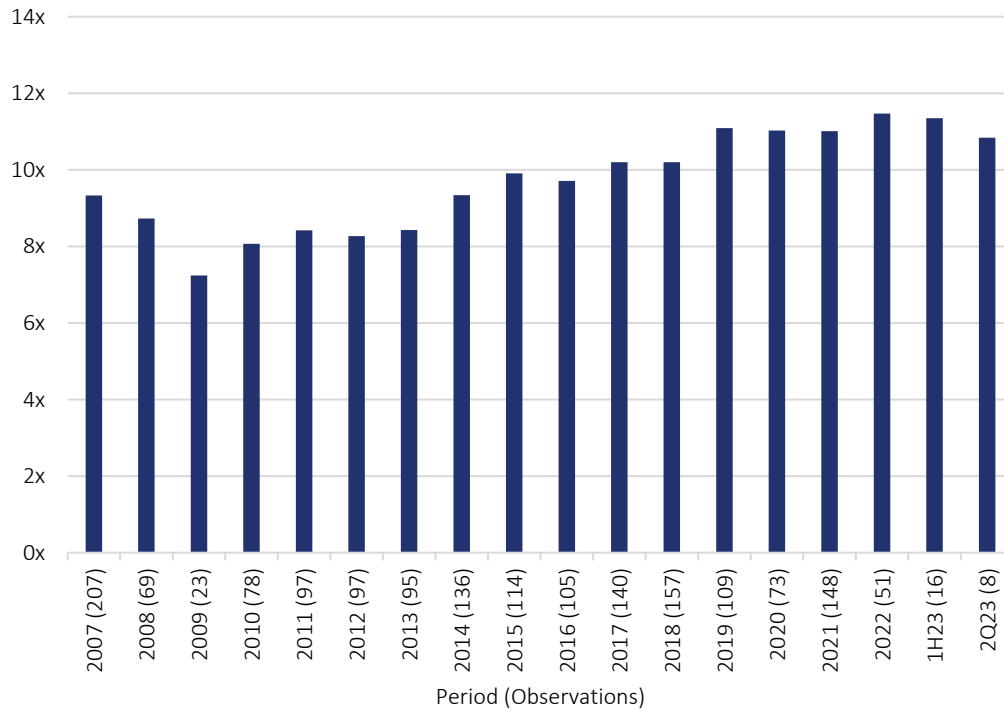
Global Private Equity-Backed Deals, by Quarter



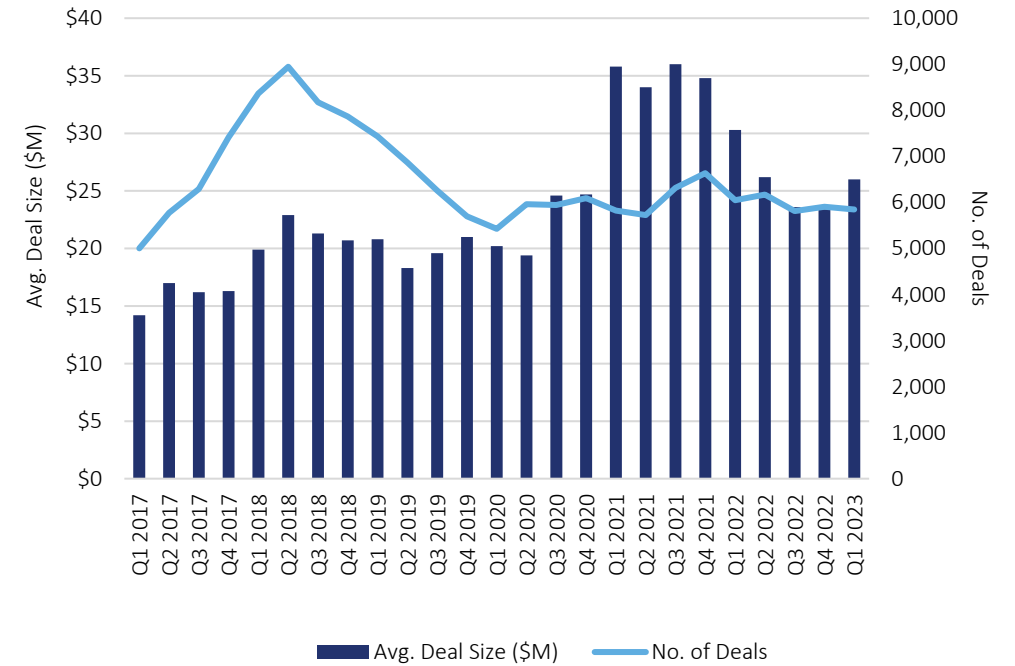
Source: Preqin as of July 31, 2023.

Private Equity – Pricing & Valuations

LBO Purchase Price Multiples



Global Venture Capital Deals, by Quarter

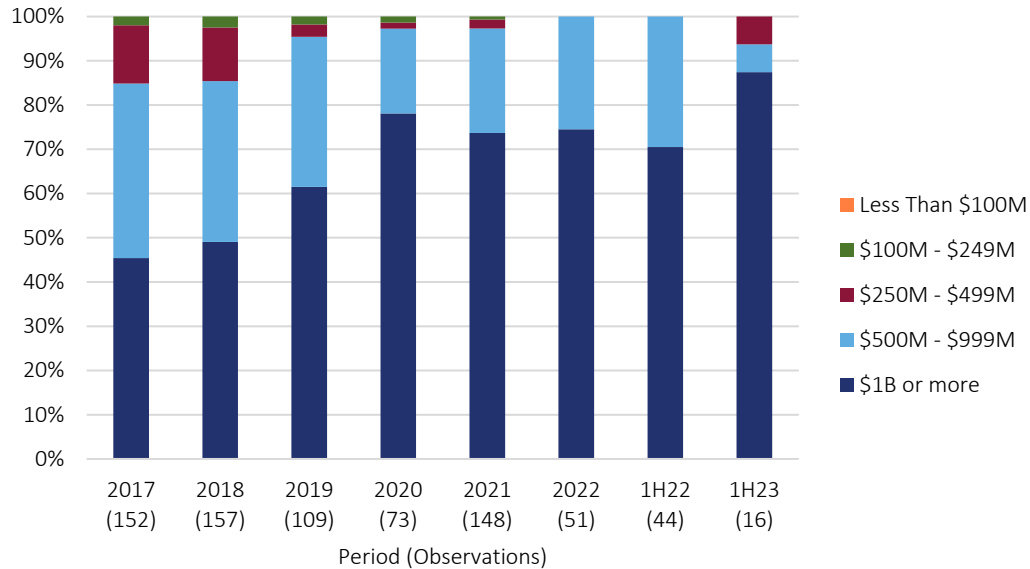


Source: S&P LCD Q2 2023 Report; Preqin as of July 31, 2023.

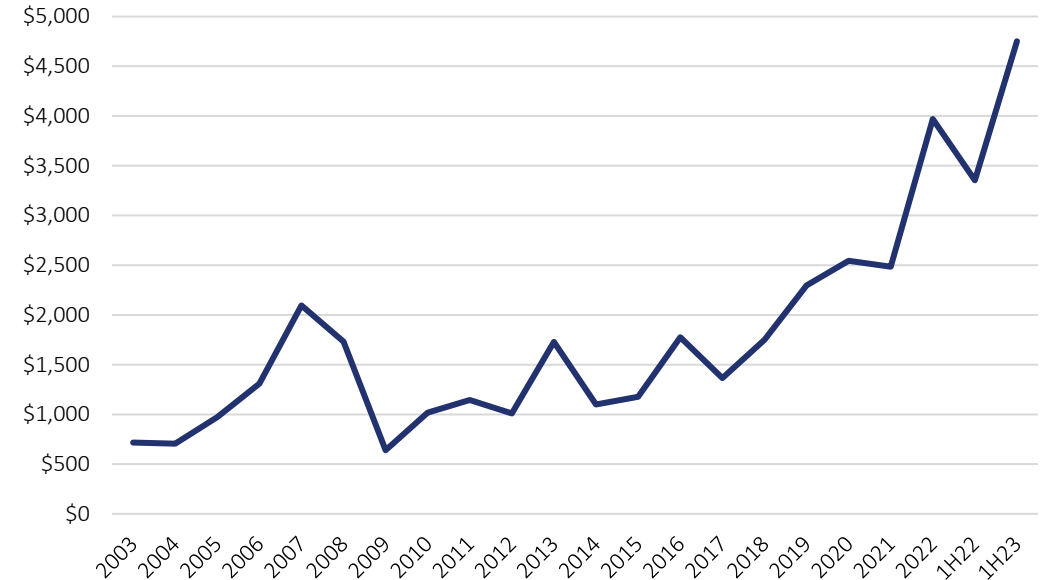
U.S. Investment Activity by Deal Size

- Deal volume continued to move downwards as deals have shifted into the upper, large cap market
- During the first half of 2023, large cap deals compose the highest percent of total deals since 2005

Distribution of U.S. LBO Transactions, by Deal Size



Average Transaction Size of U.S. LBOs

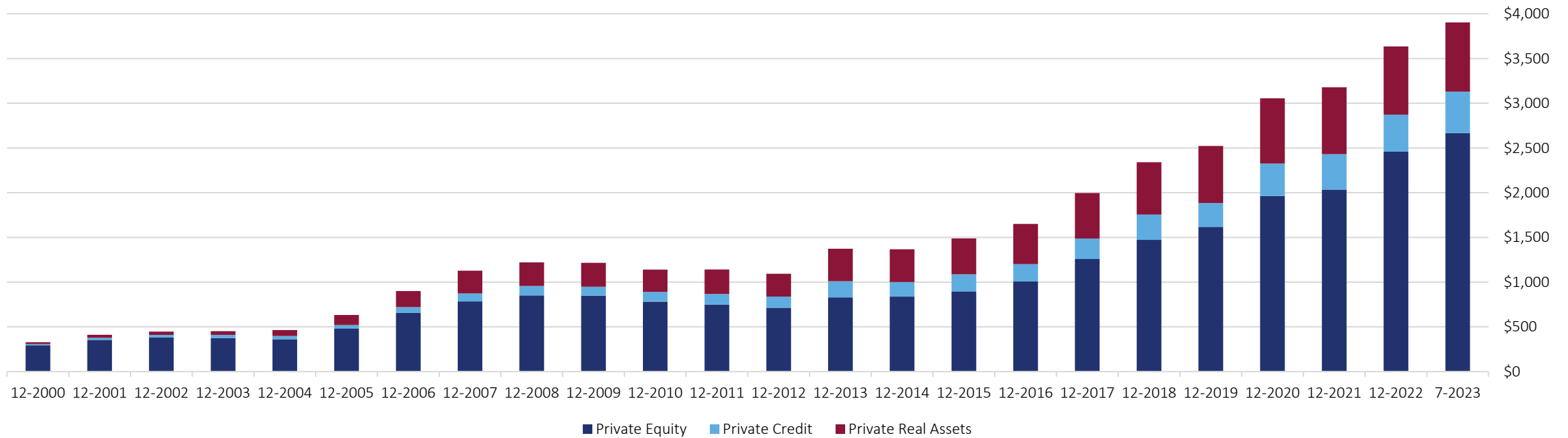


Source: S&P LCD Q2 2023 Report.

Private Capital Dry Powder

- Global private capital dry powder increased relative to year end 2022, reflecting a notable shift from the overall decrease measured in April
- Dry powder increased across sectors in an even ratio, compared to prior years, with credit and real assets representing marginally higher percentages

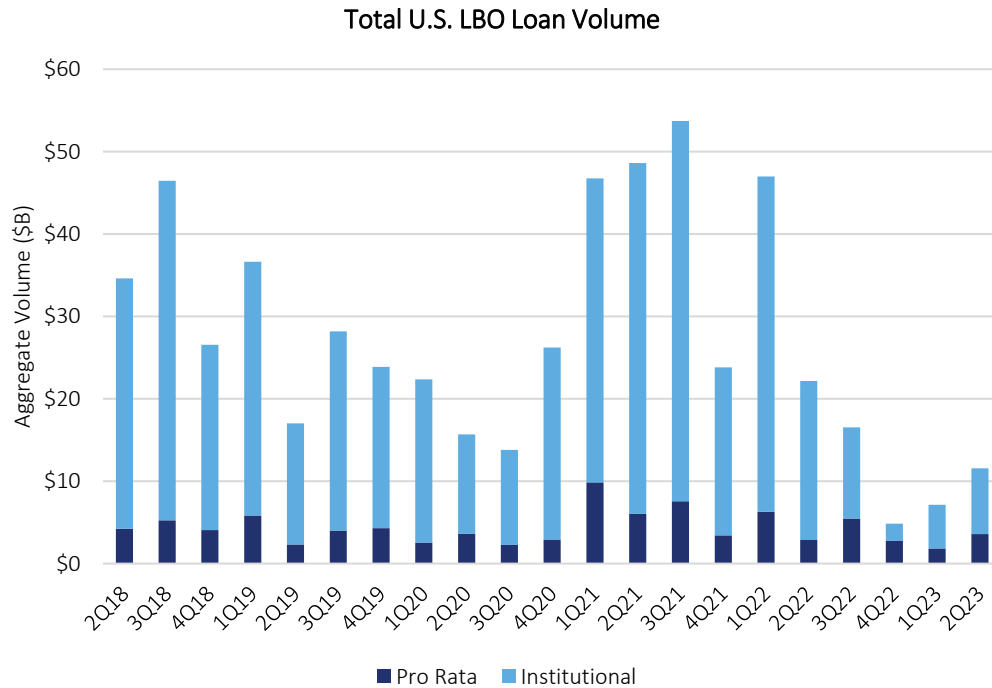
Global Private Capital Dry Powder, at Month



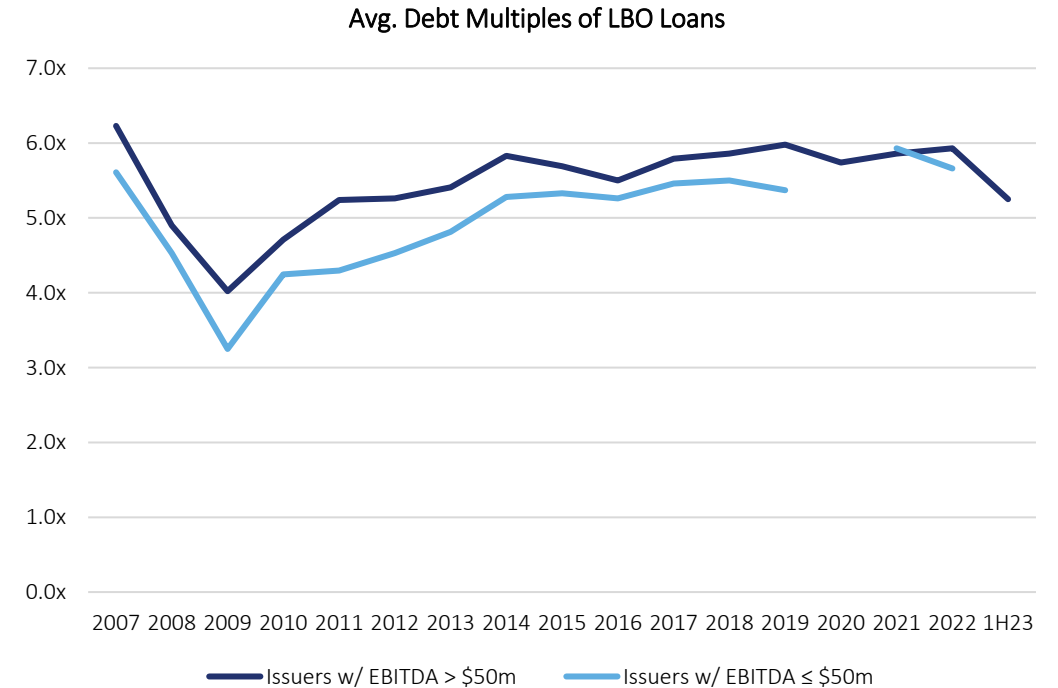
Source: Preqin as of July 31, 2023.

Private Equity – U.S. Debt Markets

- Q2 2023 saw ~\$12 billion in supporting loan issuance, an increase from the prior two quarters but remains at depressed levels
- Debt multiples of sponsor-backed, large corporate loan dropped materially during the first half of 2023 to 5.3x, compared to just under 6.0x in recent years



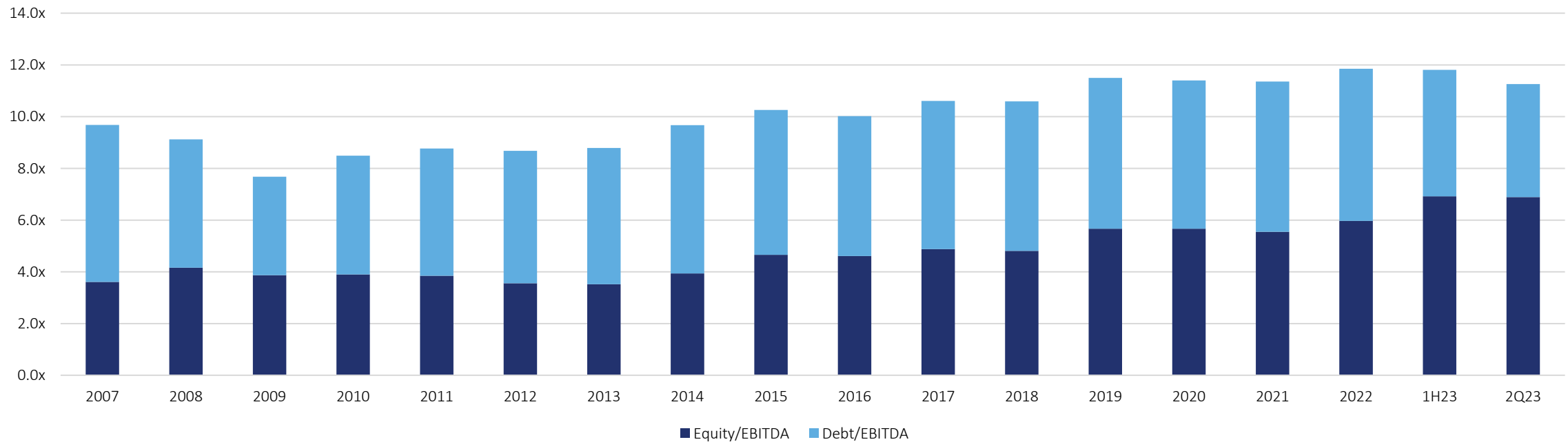
Source: S&P LCD Q2 2023 Report.



Private Equity – U.S. LBO Purchase Price Multiples

- All in purchase price multiples shrank in Q2 2023 relative to the prior quarter, driven by a continued increase of equity contributions from 50% to 61%
- Accordingly, debt multiples as a percent of overall financing fell materially in parallel with lower overall debt levels

LBO Purchase Price Multiples



Source: S&P LCD Q2 2023 Report.

CalPERS PERF Private Equity – Performance

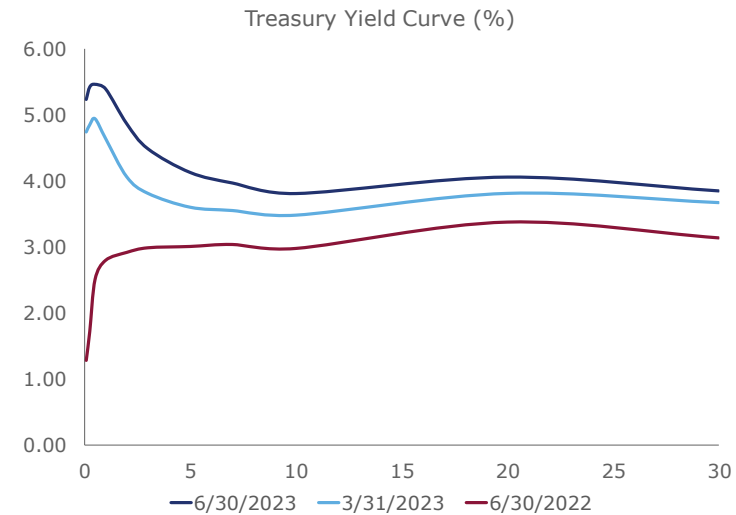
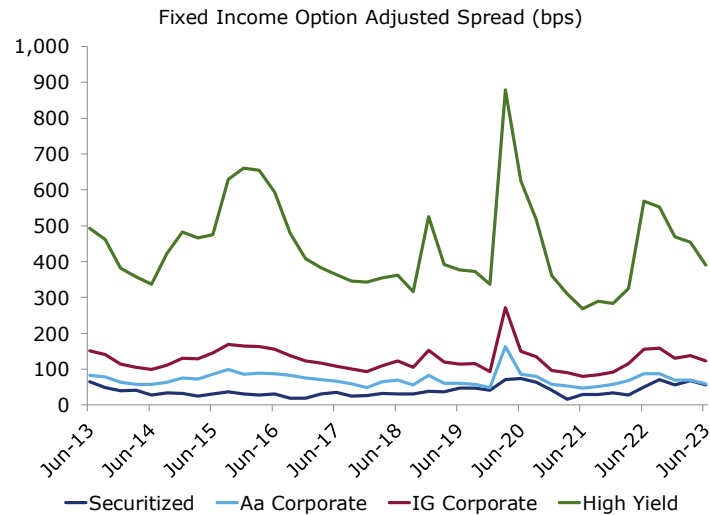
As of June 30, 2023

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios	
								Sharpe	Info
PRIVATE EQUITY	\$ 59.7	2.8%	-2.3%	19.5%	11.8%	11.8%	\$ 23.7	1.2	0.2
<i>Private Equity Policy Benchmark</i>		7.6%	-5.9%	18.0%	8.7%	11.4%		0.4	0.0
Private Equity Partnership Investments	\$ 59.7	2.8%	-2.2%	19.5%	11.8%	11.9%		N/A	N/A
Private Equity Distribution Stock	\$ 0.0	-2.0%	-9.9%	-38.7%	-25.5%	-19.1%		N/A	N/A

U.S. Fixed Income

As of 6/30/2023	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	4.8	6.3	-0.8	2.1	-0.9	-4.0	0.8	1.5
Bloomberg Treasury	4.4	6.2	-1.4	1.6	-2.1	-4.8	0.4	1.0
Bloomberg Gov't-Rel.	4.9	5.3	-0.5	2.4	0.2	-2.9	1.1	1.7
Bloomberg Securitized	4.8	5.9	-0.6	1.8	-1.5	-3.6	0.1	1.2
Bloomberg Corporate	5.5	7.1	-0.3	3.2	1.5	-3.4	1.8	2.6
Bloomberg LT Gov't/Credit	4.8	14.3	-1.3	4.4	-2.6	-8.6	0.7	2.9
Bloomberg LT Treasury	4.0	16.0	-2.3	3.7	-6.8	-12.1	-0.9	1.8
Bloomberg LT Gov't-Rel.	5.2	11.8	0.3	5.5	1.2	-5.5	1.0	3.2
Bloomberg LT Corporate	5.4	13.0	-0.5	4.9	1.0	-6.2	1.6	3.5
Bloomberg U.S. TIPS *	3.8	7.4	-1.4	1.9	-1.4	-0.1	2.5	2.1
Bloomberg High Yield	8.5	3.5	1.7	5.4	9.1	3.1	3.4	4.4
S&P/LSTA Leveraged Loan	9.6	0.3	3.1	6.5	10.7	6.3	4.1	4.1
Treasury Bills	5.3	0.3	1.2	2.3	3.6	1.2	1.5	1.0

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

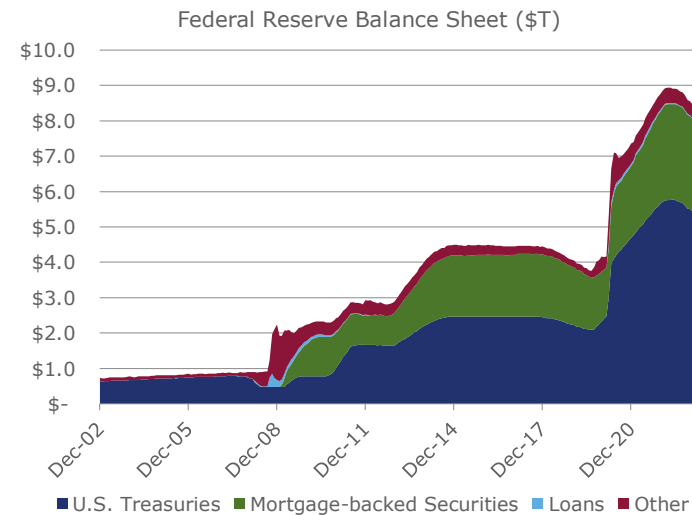
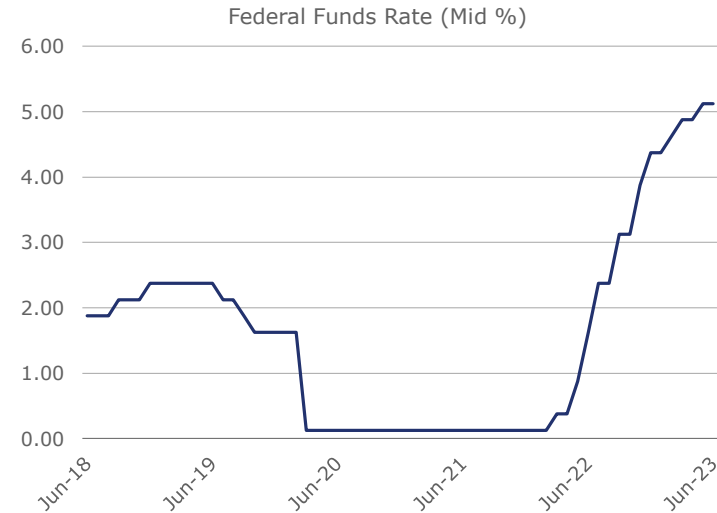


Data Sources: Bloomberg

Federal Reserve

- The Federal Open Market Committee increased the rate an additional 25 basis points in May before pausing increases in June
- QE4 was larger than the 3 phases of quantitative easing – combined – following the global financial crisis
- The Fed’s balance sheet has begun to shrink again during the past quarter

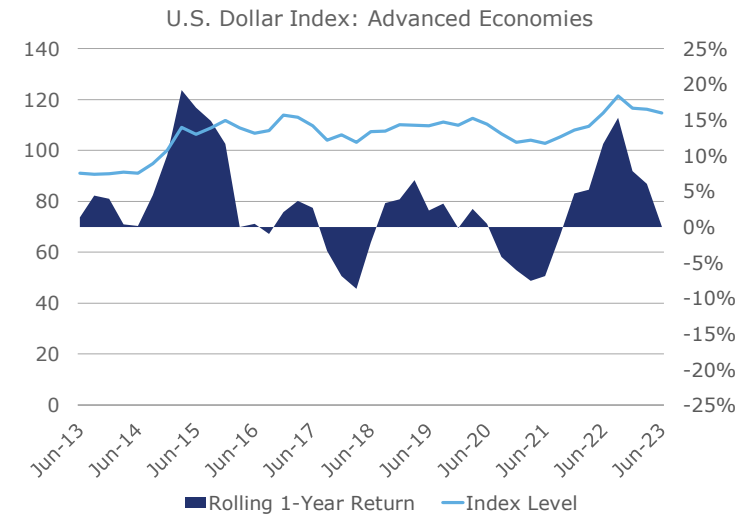
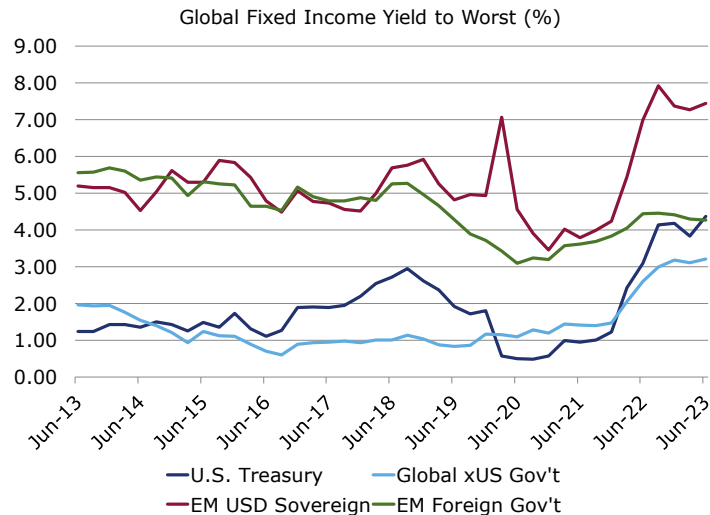
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779



Non-U.S. Fixed Income

As of 6/30/2023	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Developed Markets						
Bloomberg Global Aggregate xUS	-2.2	0.8	-1.8	-5.9	-2.7	-0.9
Bloomberg Global Aggregate xUS *	0.7	3.6	1.5	-2.1	1.0	2.5
Bloomberg Global Inflation Linked xUS	-2.0	3.3	-5.4	-6.6	-2.8	0.1
Bloomberg Global Inflation Linked xUS *	-2.5	1.4	-6.2	-5.1	-0.2	2.9
Emerging Markets (Hard Currency)						
Bloomberg EM USD Aggregate	1.1	3.3	5.6	-2.7	1.0	2.7
Emerging Markets (Foreign Currency)						
Bloomberg EM Local Currency Gov't	-1.4	1.7	2.3	0.0	1.6	1.0
Bloomberg EM Local Currency Gov't *	2.0	4.2	6.9	0.1	2.9	2.5
Euro vs. Dollar	0.6	1.9	4.1	-1.0	-1.4	-1.7
Yen vs. Dollar	-7.9	-9.1	-6.0	-9.2	-5.2	-3.7
Pound vs. Dollar	3.0	5.1	4.3	0.8	-0.8	-1.8

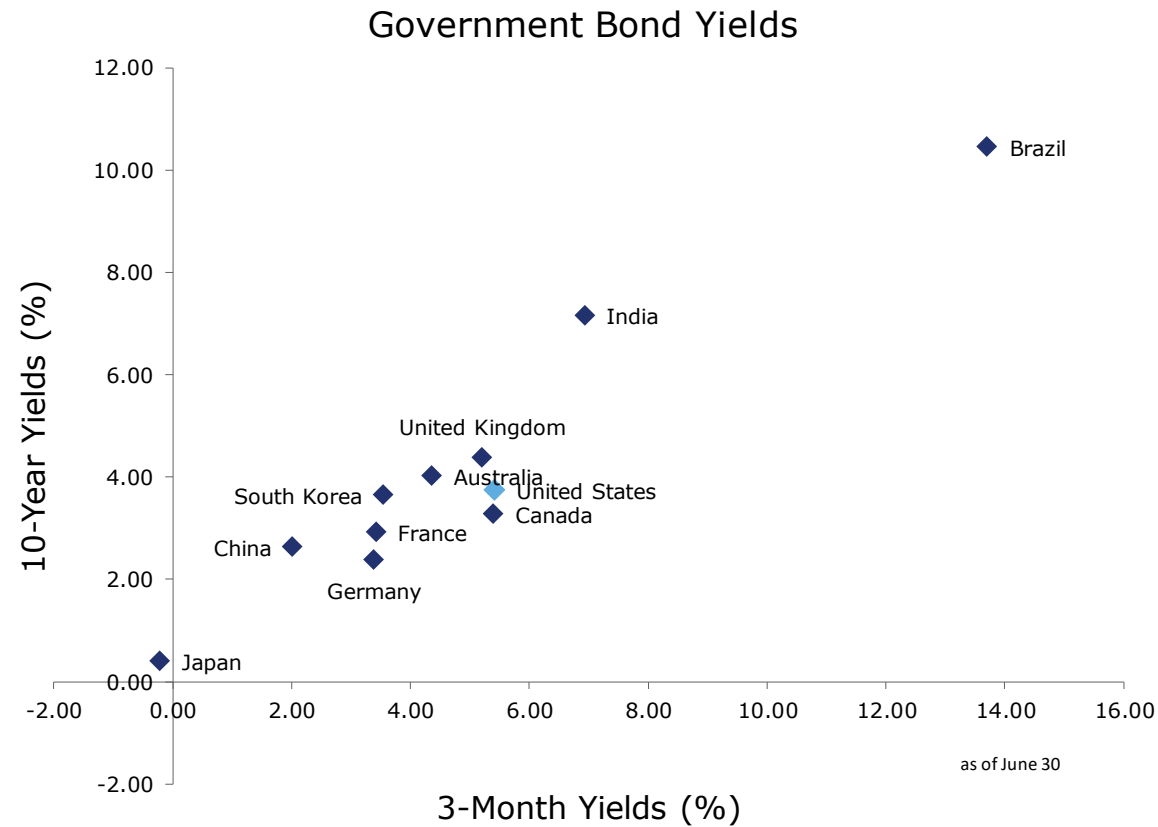
* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

Global Interest Rates

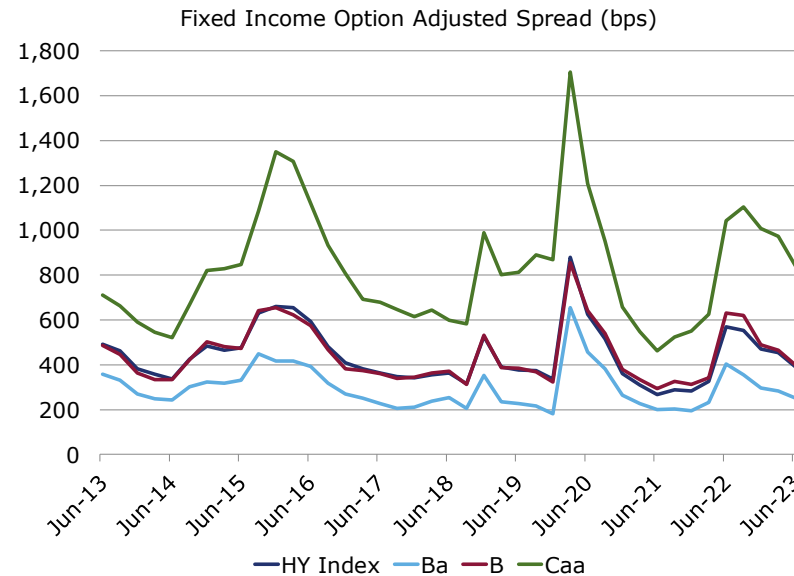
Short-term rates have turned positive in most larger countries; longer-term rates around 4.0% in the U.K. and the U.S.



Data Sources: Bloomberg

High Yield Bond Market

As of 6/30/2023		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		8.5	1.7	5.4	9.1	3.1	3.4	4.4
S&P LSTA Leveraged Loan		9.1	3.3	6.4	11.8	5.4	4.0	3.7
High Yield Quality Distribution	Weight							
Ba U.S. High Yield	47.9%	7.1	0.9	4.4	8.1	2.3	4.2	4.8
B U.S. High Yield	39.9%	8.7	1.9	5.4	9.9	3.1	3.1	4.0
Caa U.S. High Yield	11.2%	12.9	4.2	9.3	9.4	5.5	0.7	3.9
Ca to D U.S. High Yield	0.9%	22.2	11.5	7.5	18.7	15.7	-2.1	-4.4



Data Sources: Bloomberg

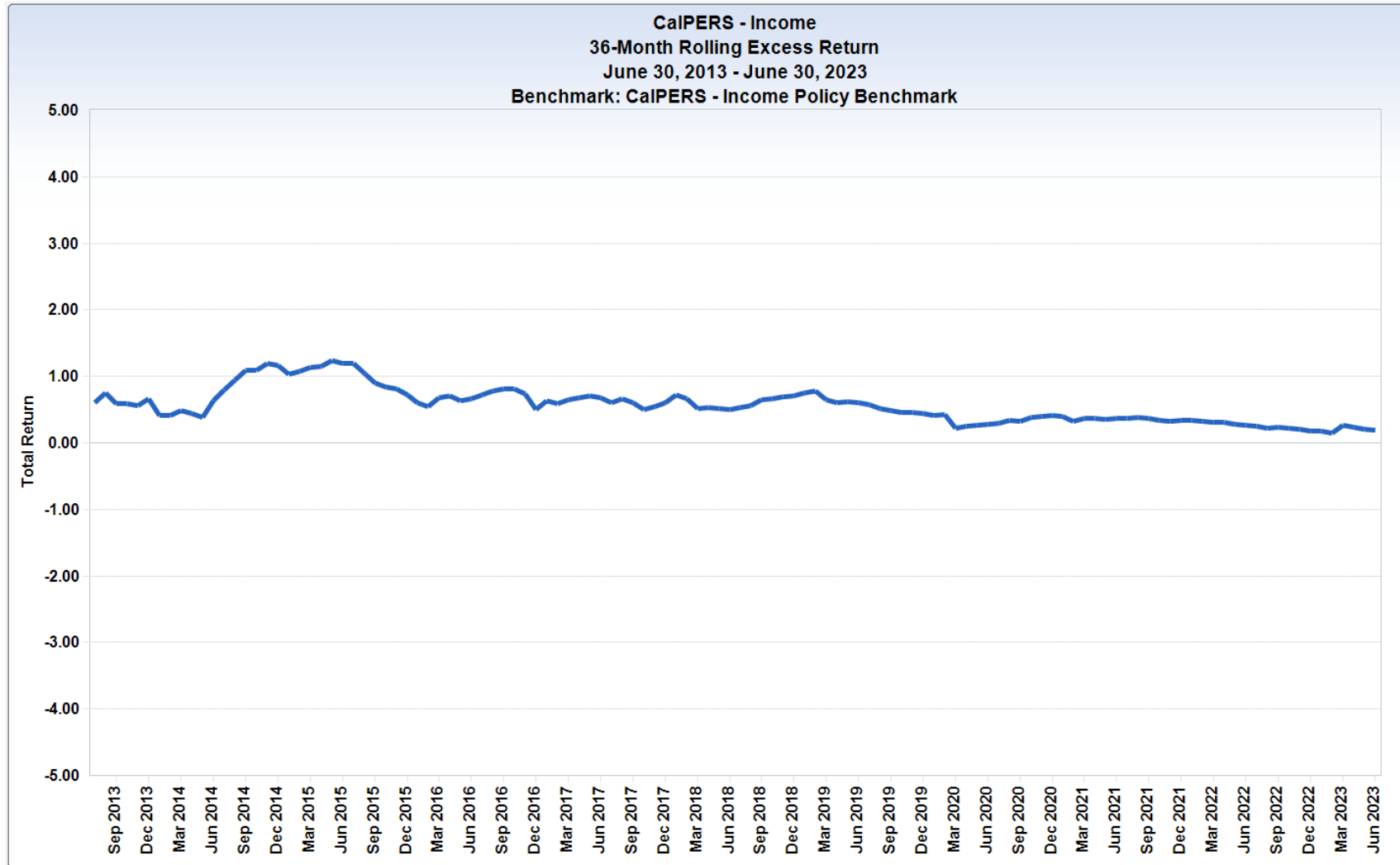
CalPERS PERF Income – Performance

As of June 30, 2023

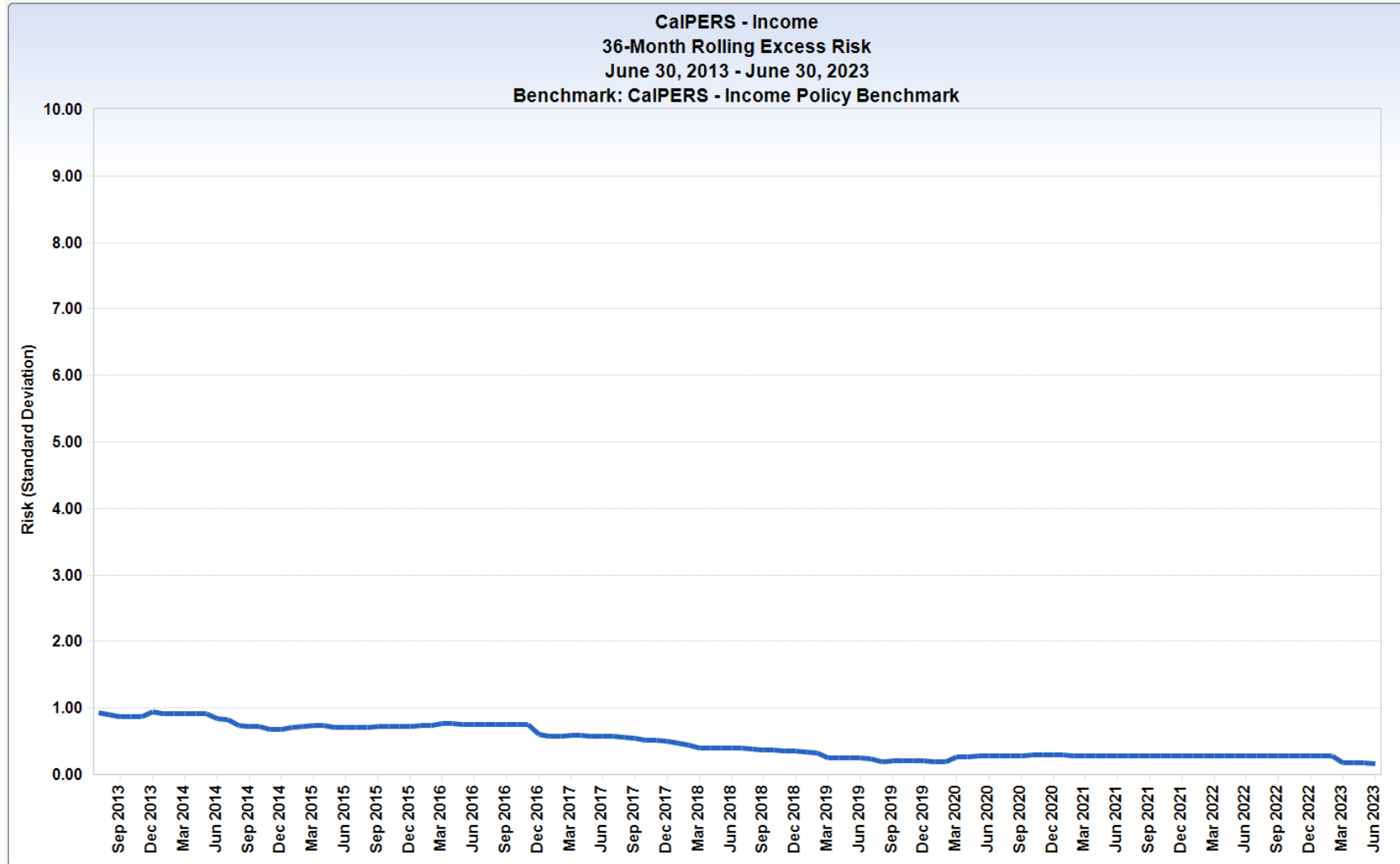
	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
INCOME*	\$ 122.2	-0.2%	0.0%	-5.1%	1.0%	2.4%	\$ 7.0	-0.1	0.9
<i>Income Policy Benchmark</i>		-0.2%	0.0%	-5.3%	0.8%	2.0%		-0.1	0.0
Treasury*	\$ 17.1	-2.1%	-5.6%	-10.2%	-0.8%	1.2%	\$ 2.4	-0.2	-0.2
Total Fund Income	\$ 6.4	-2.4%	-5.7%	-.-%	-.-%	-.-%	\$ 0.9	N/A	N/A
<i>CalPERS Custom Treasury Benchmark</i>		-2.1%	-5.6%	-10.2%	-0.7%	1.2%		-0.2	0.0
Mortgage-Backed Securities	\$ 23.5	-0.6%	-1.3%	-3.5%	0.3%	2.0%	\$ 0.2	-0.2	0.6
<i>Bloomberg LMTG</i>		-0.6%	-1.5%	-3.6%	0.1%	1.2%		-0.3	0.0
Investment Grade Credit	\$ 30.7	-0.5%	0.9%	-5.3%	2.0%	3.7%	\$ 3.2	0.0	0.7
<i>Bloomberg LCORPXS0V</i>		-0.5%	1.3%	-5.2%	1.6%	3.2%		0.0	0.0
High Yield	\$ 21.0	1.5%	9.1%	3.0%	3.2%	-.-%	\$ 2.1	0.2	0.4
<i>BBG US High Yield BB/B Liquid Index</i>		1.4%	8.9%	2.9%	3.1%	-.-%		0.2	0.0
EM Sovereign	\$ 23.5	1.2%	-.-%	-.-%	-.-%	-.-%	\$ 1.3	N/A	N/A
<i>JPM EMBIG Diversified Index</i>		1.0%	-.-%	-.-%	-.-%	-.-%		N/A	N/A

* The CalPERS asset values shown include derivative exposure.

CalPERS PERF Income – Rolling Excess Return

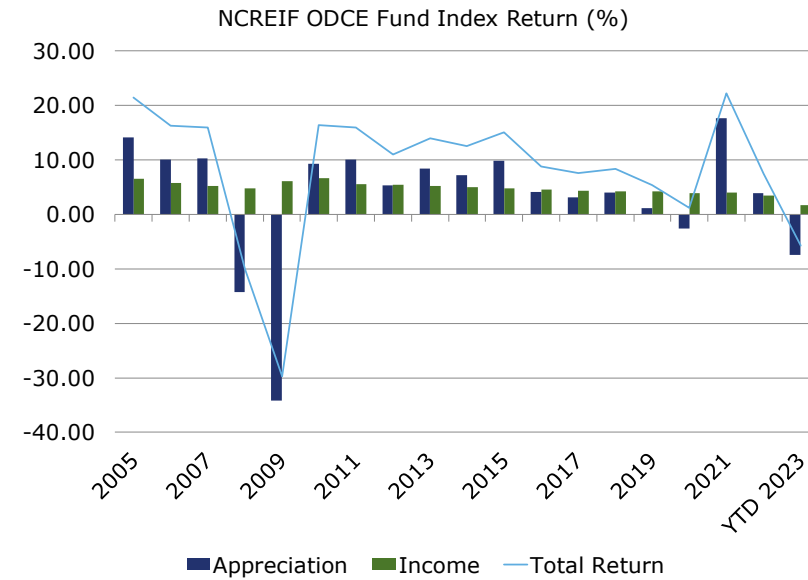
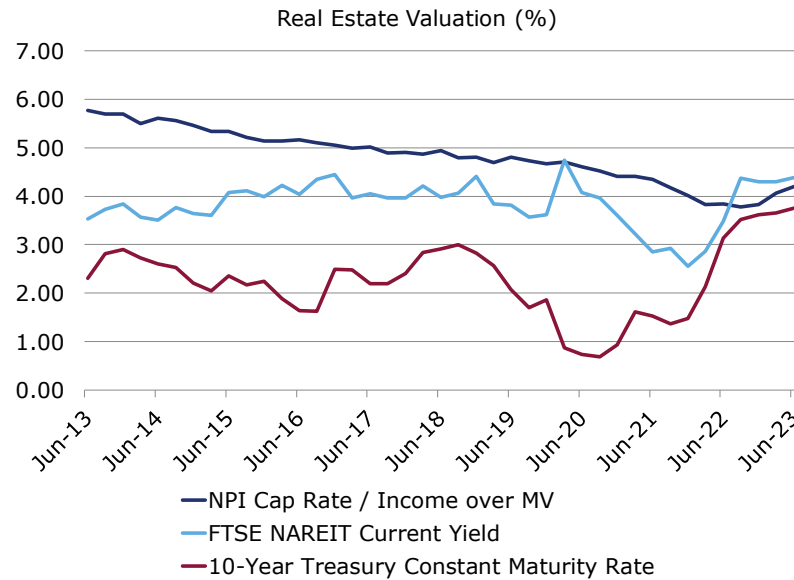


CalPERS PERF Income – Rolling Tracking Error



Real Assets

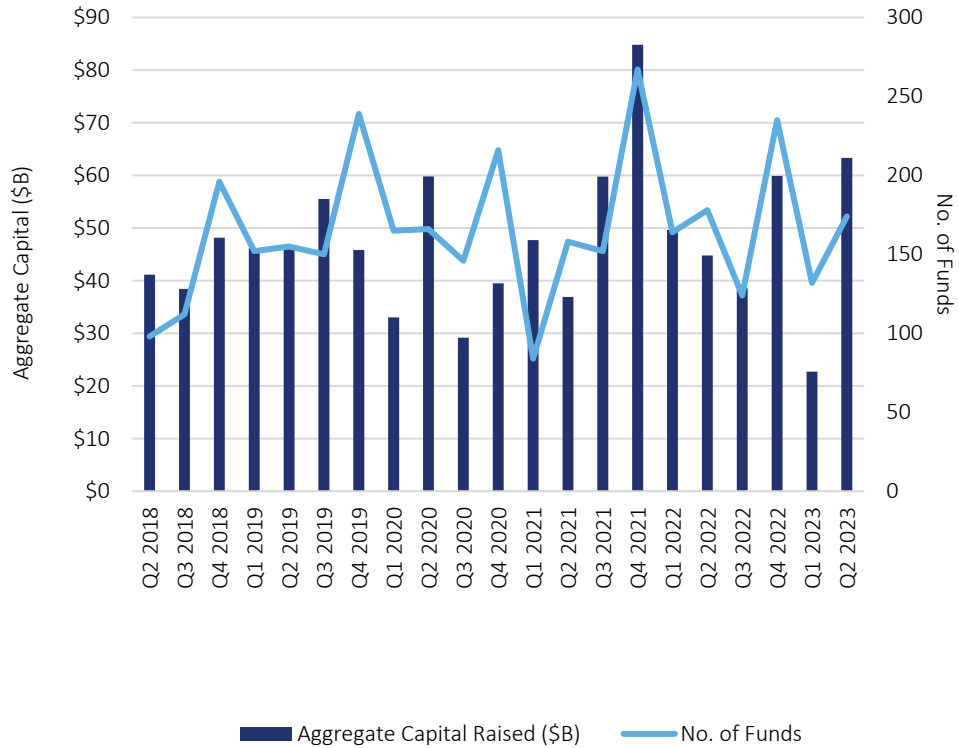
As of 6/30/2023	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-1.4	1.9	-1.4	-0.1	2.5	2.1
Bloomberg Commodity Index	-2.6	-7.8	-9.6	17.8	4.7	-1.0
Bloomberg Gold Index	-2.5	5.4	6.2	1.1	7.8	3.8
Wilshire Global RESI Index	1.9	4.3	-1.5	6.4	2.4	4.9
NCREIF ODCE Fund Index	-2.7	-5.8	-10.0	8.0	6.5	8.7
NCREIF Timberland Index	1.7	3.5	11.1	8.7	5.8	5.9
FTSE Global Core Infrastructure 50/50	-0.1	0.6	0.2	7.4	6.0	7.3
Alerian Midstream Energy	3.7	4.5	12.2	24.2	7.6	n.a.
Bitcoin	7.0	83.7	62.2	49.2	38.8	77.7



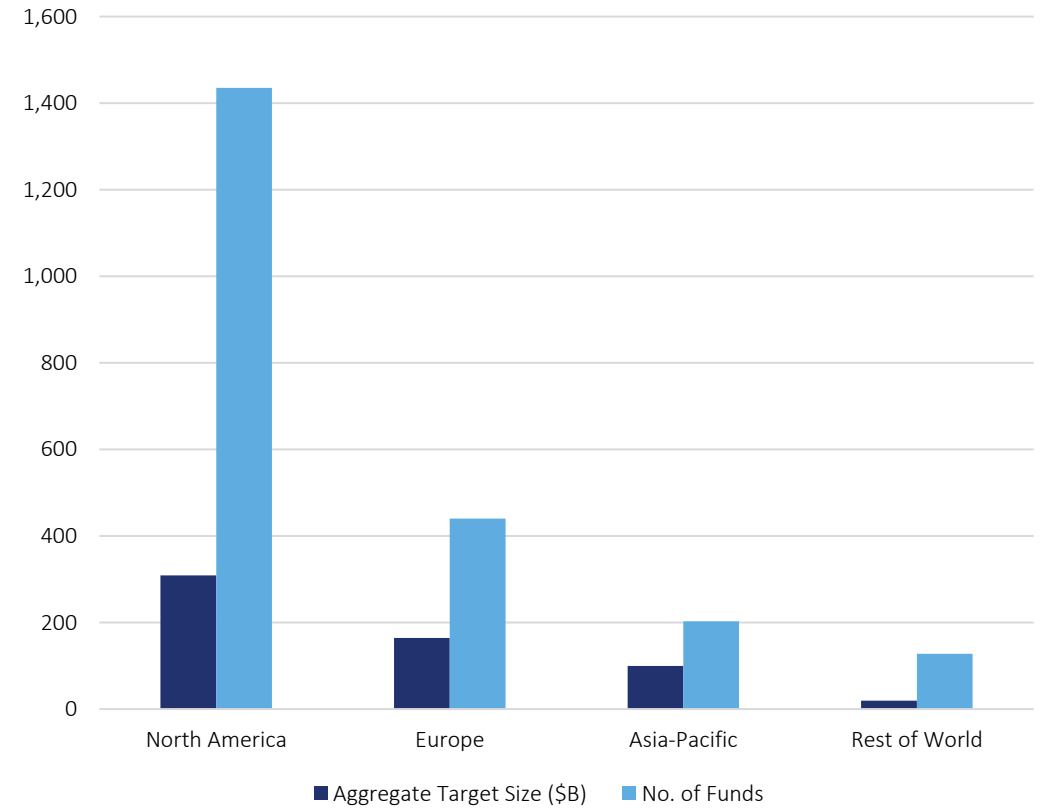
Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

Private Real Assets – Real Estate Fundraising Activity

Global Real Estate Fundraising



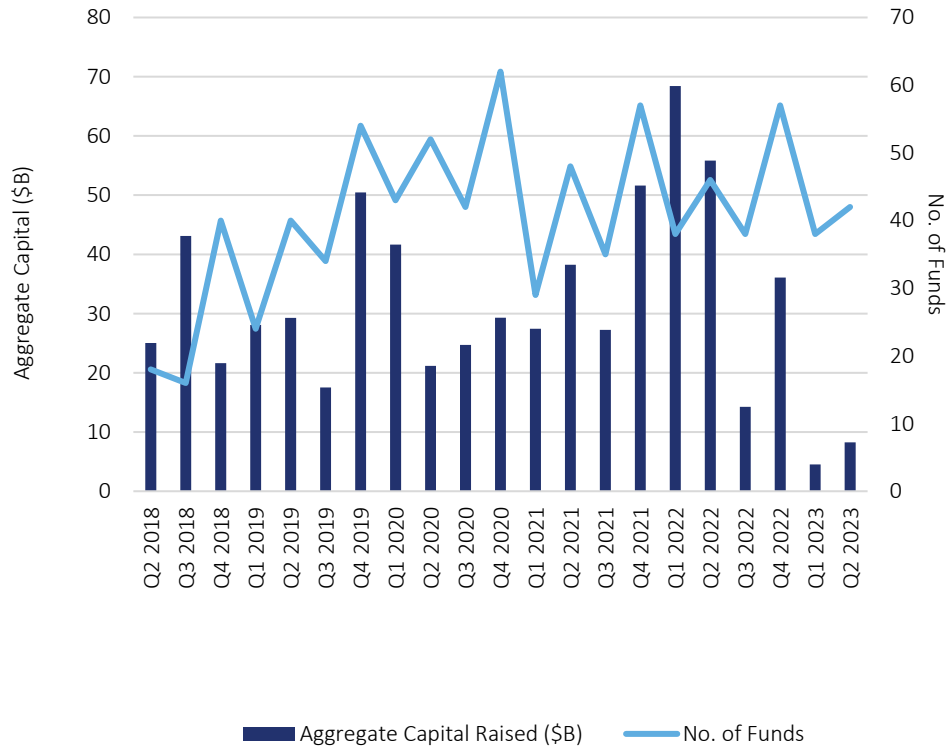
Private Real Estate Funds in Market



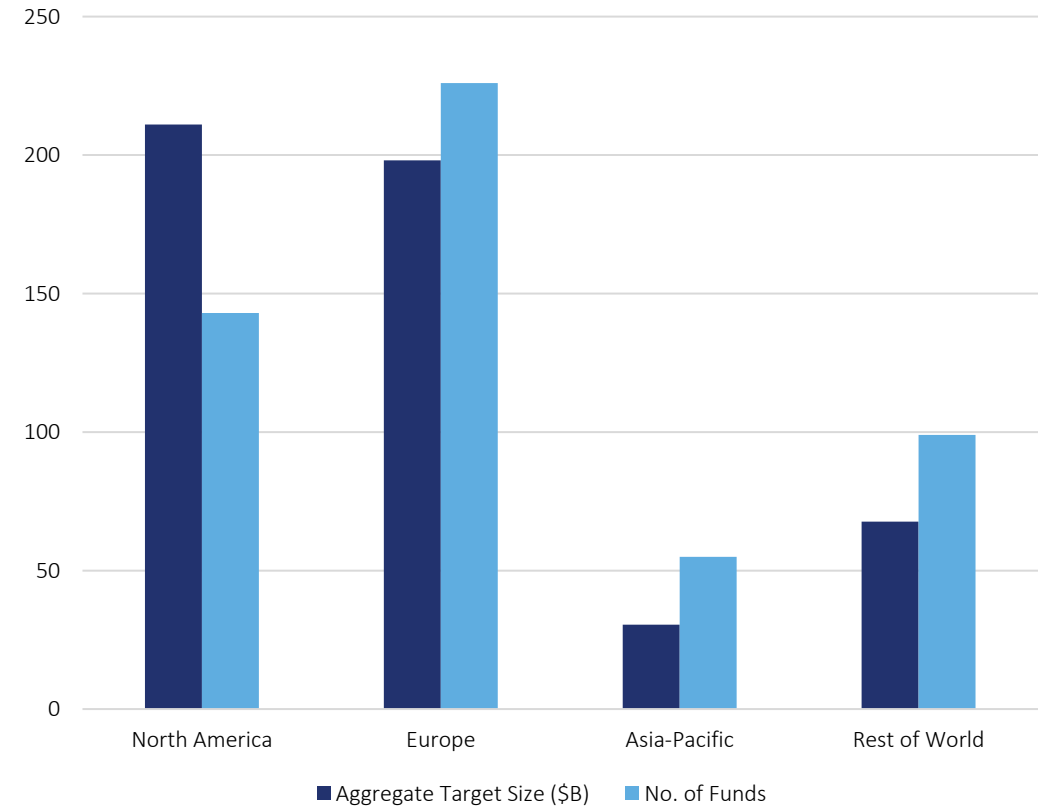
Source: Preqin as of July 31, 2023.

Private Real Assets – Infrastructure Fundraising

Global Infrastructure Fundraising



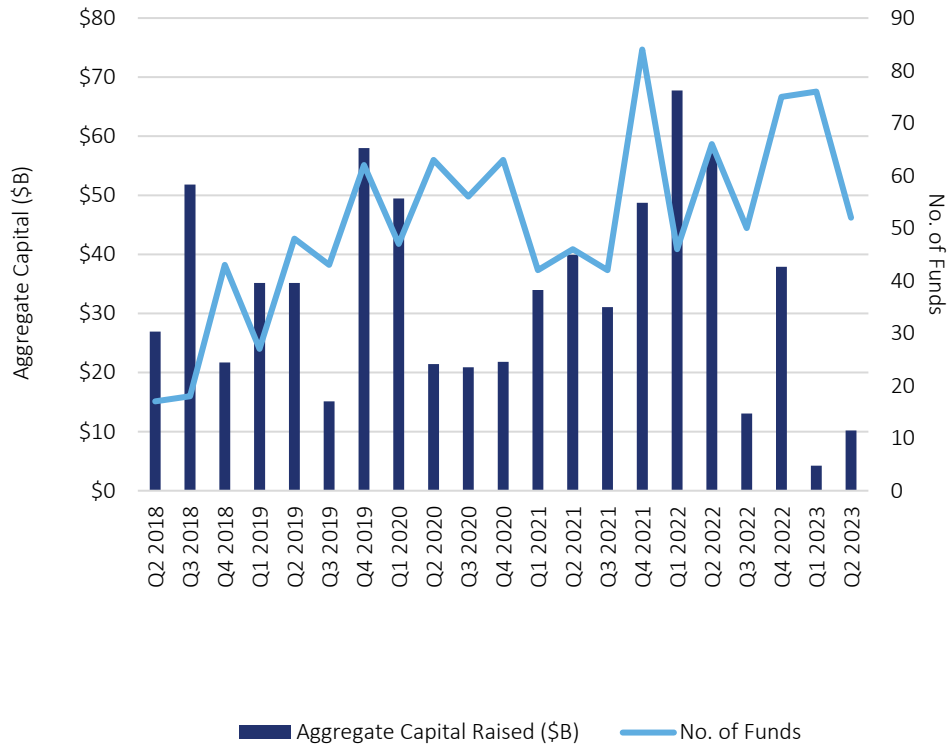
Private Infrastructure Funds in Market



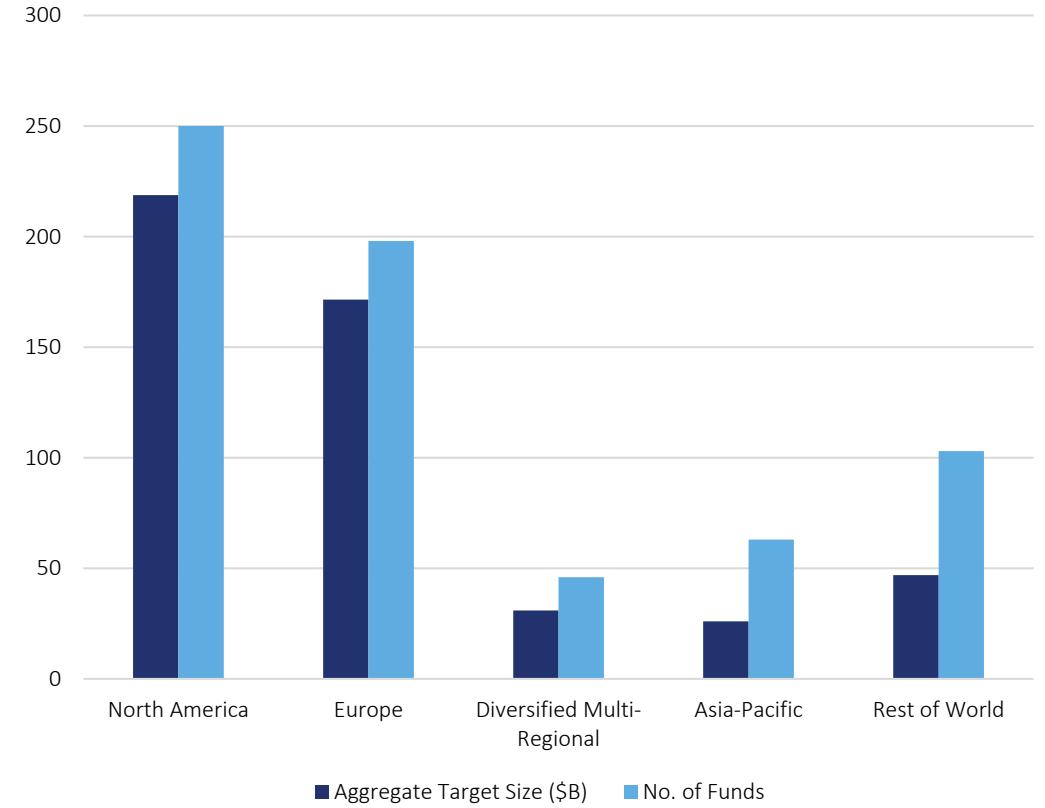
Source: Preqin as of July 31, 2023.

Private Real Assets – Natural Resources Fundraising

Global Natural Resources Fundraising

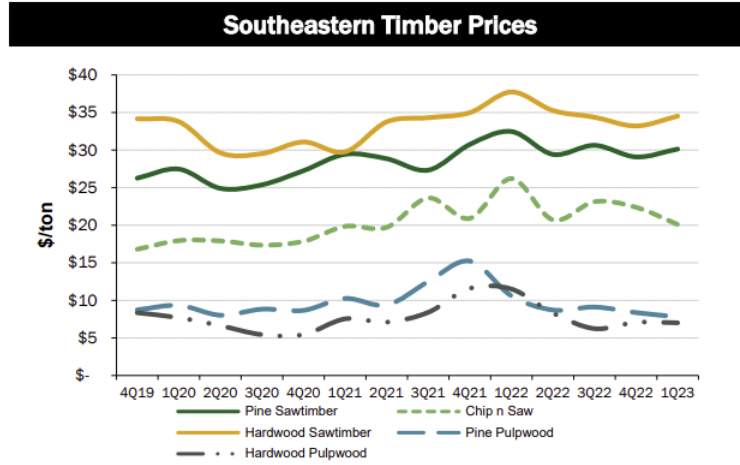


Private Natural Resources Funds in Market

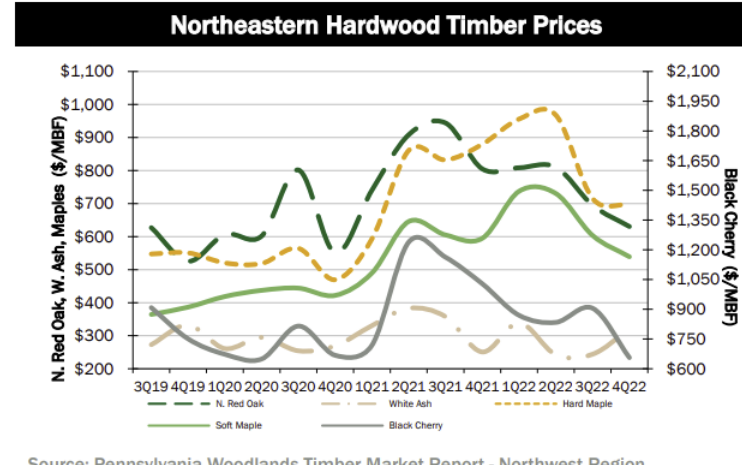


Source: Preqin as of July 31, 2023.

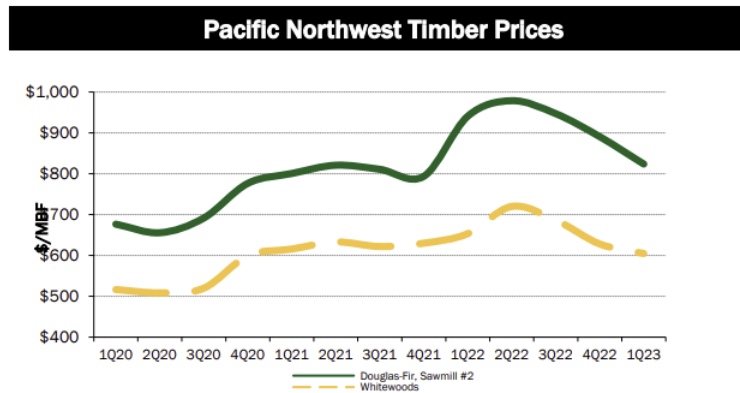
Timber Investments



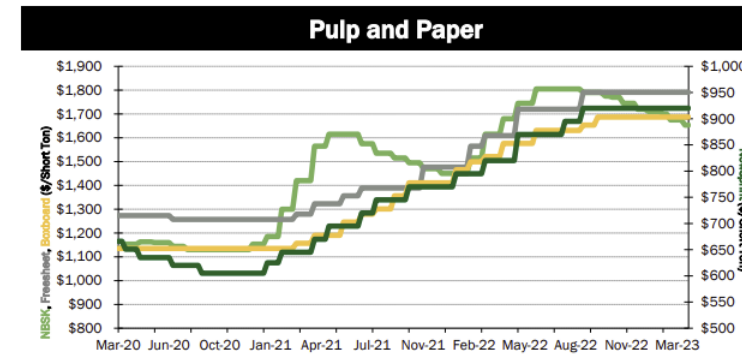
Source: Forest2Market®



Source: Pennsylvania Woodlands Timber Market Report - Northwest Region



Source: Fastmarkets RISI - Log Lines®



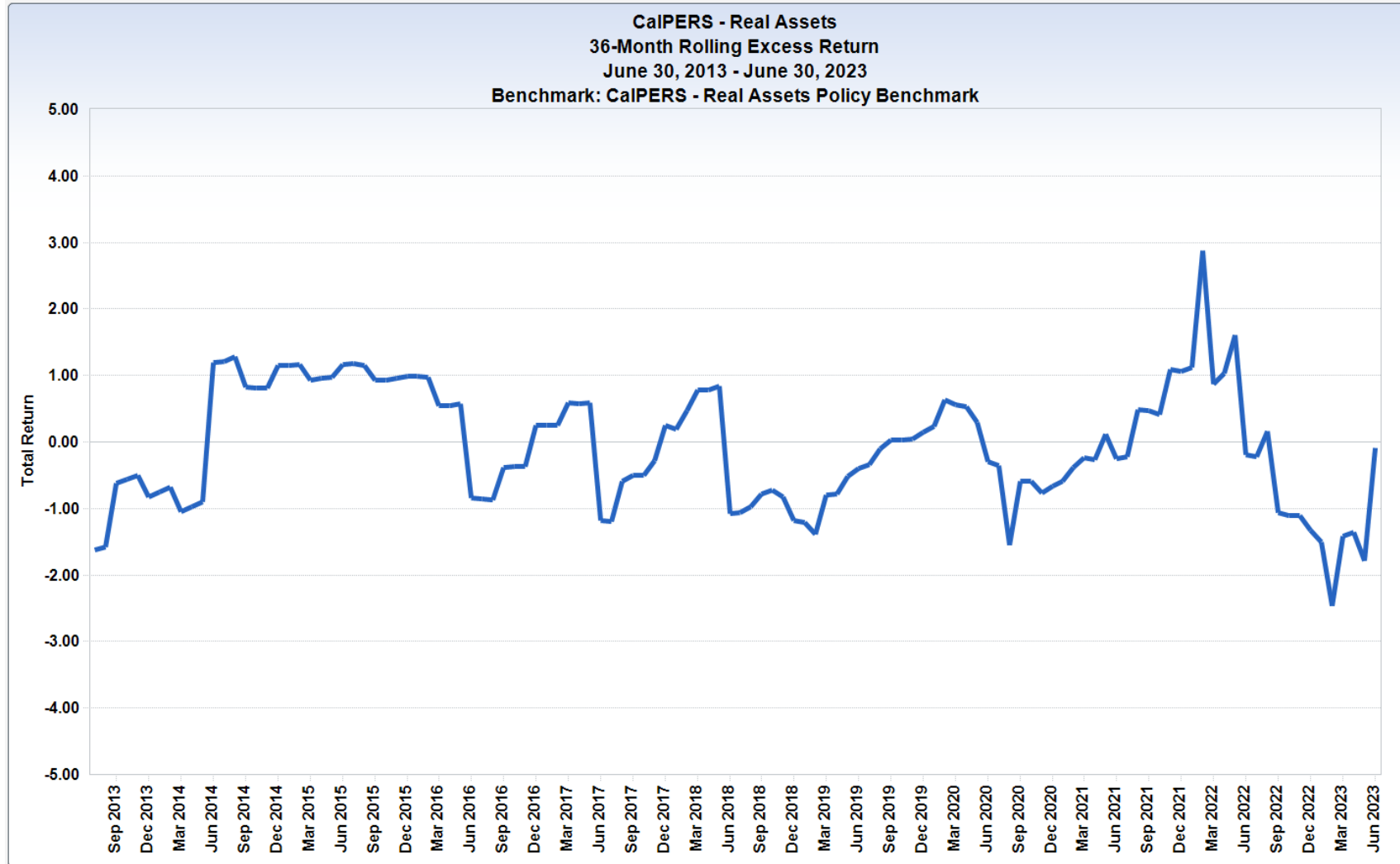
Source: Fastmarkets RISI

CalPERS PERF Real Assets – Performance

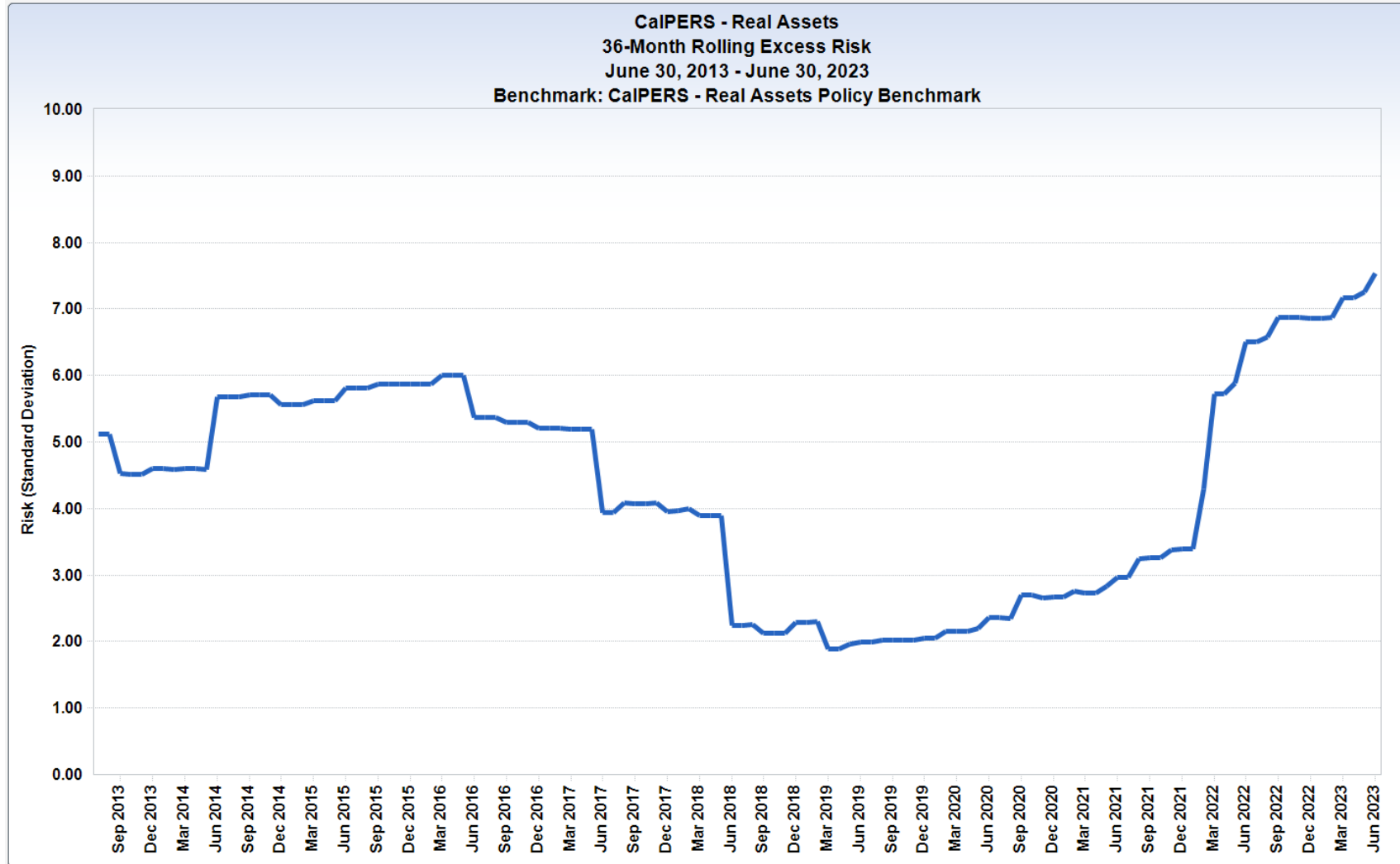
As of June 30, 2023

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
REAL ASSETS <i>Real Assets Policy Benchmark</i>	\$ 70.4	-1.8% -3.4%	-3.1% -4.0%	7.2% 7.3%	6.0% 6.5%	7.7% 8.0%	\$ 10.4	1.0 0.7	-0.1 0.0
Real Estate <i>CalPERS Custom Real Estate Benchmark</i>	\$ 55.5	-2.8% -3.4%	-5.1% -4.0%	7.0% 7.3%	5.9% 6.5%	7.8% 8.4%	\$ 8.2	0.9 0.7	-0.1 0.0
Infrastructure <i>CalPERS Custom Infrastructure Benchmark</i>	\$ 14.6	2.3% -3.4%	4.8% -4.0%	8.8% 7.3%	7.5% 6.5%	11.2% 6.0%	\$ 2.2	1.0 0.7	0.1 0.0
Forestland <i>CalPERS Custom Forestland Benchmark</i>	\$ 0.3	-1.0% -3.4%	13.4% -4.0%	5.9% 7.3%	1.2% 6.5%	0.1% 6.3%	\$ 0.1	-0.1 0.7	-0.5 0.0

CalPERS PERF Real Assets – Rolling Excess Return



CalPERS PERF Real Assets – Rolling Tracking Error



CalPERS PERF Private Debt, Other Trust Level, TF Financing – Performance

As of June 30, 2023

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
PRIVATE DEBT	\$ 10.3	3.3%	6.5%	-.%	-.%	-.%	\$ 0.8	N/A	N/A
<i>Private Debt Policy Benchmark</i>		3.2%	3.7%	-.%	-.%	-.%		N/A	N/A

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
OTHER TRUST LEVEL	\$ 15.7								
LLER	\$ 14.1	2.0%	6.5%	3.1%	2.7%	-.%	\$ 0.1	0.4	0.4
<i>LIBOR 1 Month Rate</i>		0.9%	2.9%	1.1%	1.2%	-.%		-0.4	0.0
Opportunistic Strategies	\$ 0.2	3.8%	-1.6%	6.4%	-.%	-.%	\$ 0.0	N/A	N/A
<i>Custom Opportunistic Strategies Benchmark</i>		1.7%	7.0%	7.0%	-.%	-.%		N/A	N/A
Trust Level Portfolio Management	\$ 1.2	NM	NM	NM	NM	NM		N/A	N/A
Other Perf	\$ 0.2	NM	NM	NM	NM	NM		N/A	N/A

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
TOTAL FUND FINANCING	\$ (24.3)	-.%	-.%	-.%	-.%	-.%		N/A	N/A
Strategic	\$ (8.6)	-.%	-.%	-.%	-.%	-.%		N/A	N/A
Active	\$ (15.7)	-.%	-.%	-.%	-.%	-.%		N/A	N/A

Asset Class Performance

Asset Class Returns - Best to Worst						Annualized 5-Year as of 6/23
2018	2019	2020	2021	2022	2023 YTD	
T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 16.1%	U.S. Equity 16.3%	U.S. Equity 11.7%
Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 1.3%	Developed 12.1%	Developed 4.9%
U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	High Yield -11.2%	REITs 6.7%	Commodities 4.7%
High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	U.S. TIPS -11.8%	High Yield 5.4%	REITs 4.4%
REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	Core Bond -13.0%	Emrg Mrkts 5.1%	High Yield 3.4%
U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Developed -14.0%	T-Bills 2.3%	U.S. TIPS 2.5%
Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	U.S. Equity -19.0%	Core Bond 2.1%	T-Bills 1.5%
Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	Emrg Mrkts -19.7%	U.S. TIPS 1.9%	Emrg Mrkts 1.3%
Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -26.8%	Commodities -7.8%	Core Bond 0.8%

Data Sources: Bloomberg Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

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