

**Wilshire**

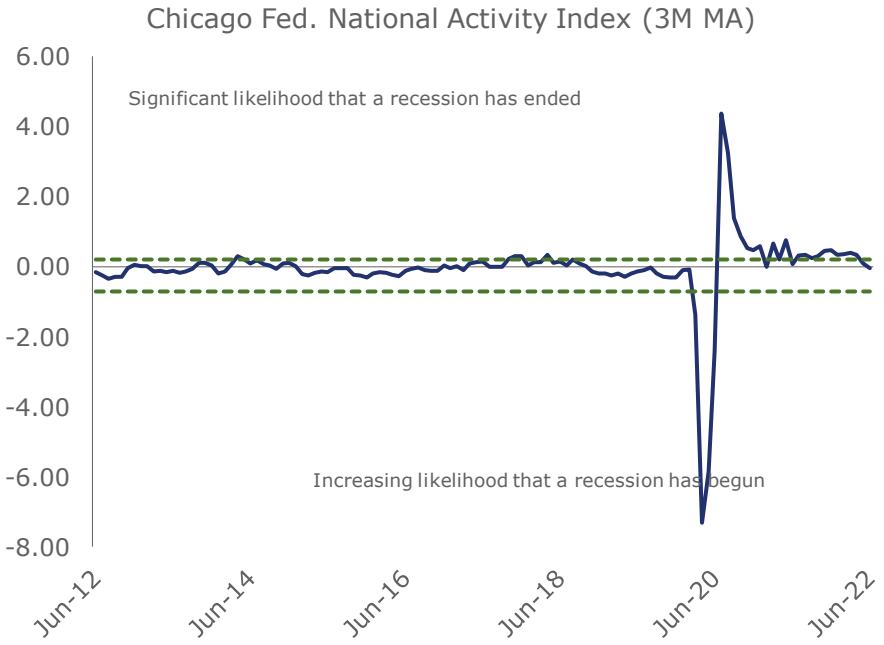
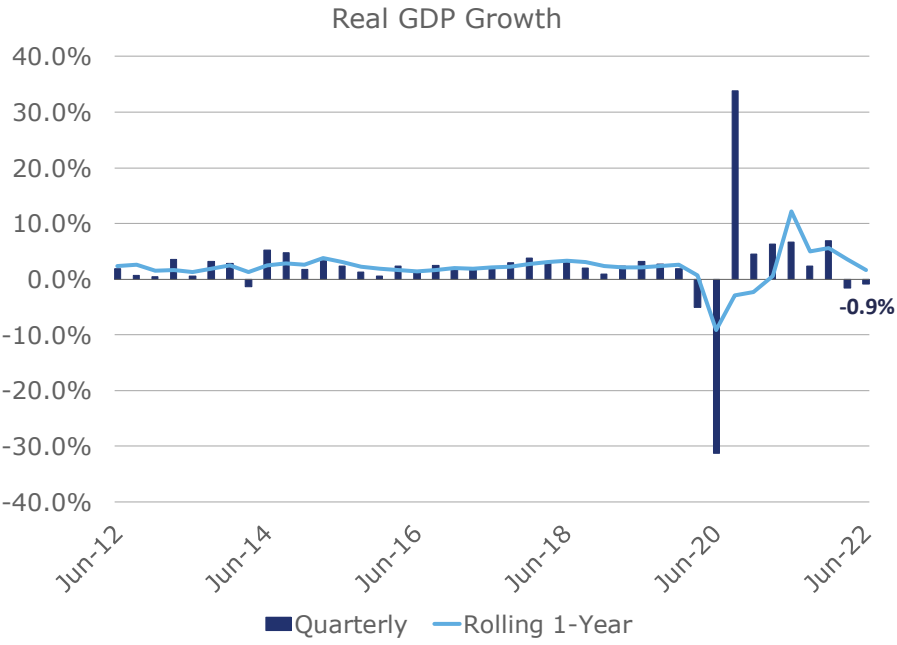
# California Public Employees' Retirement System

Performance Review

Second Quarter 2022

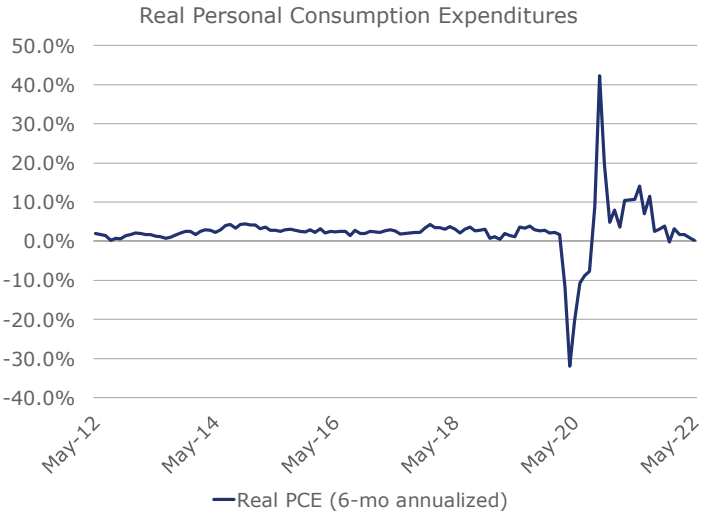
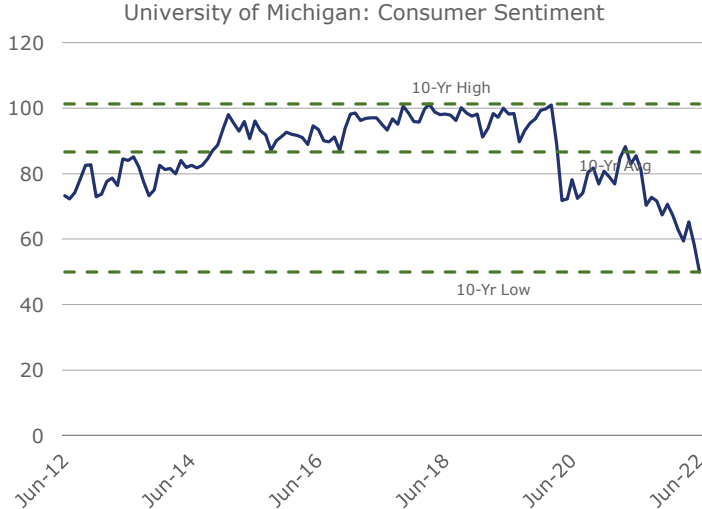
# Economic Review

# Economic Growth



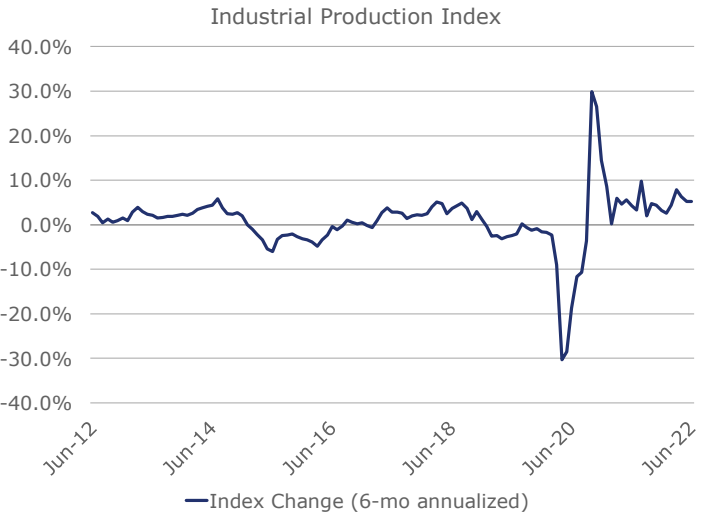
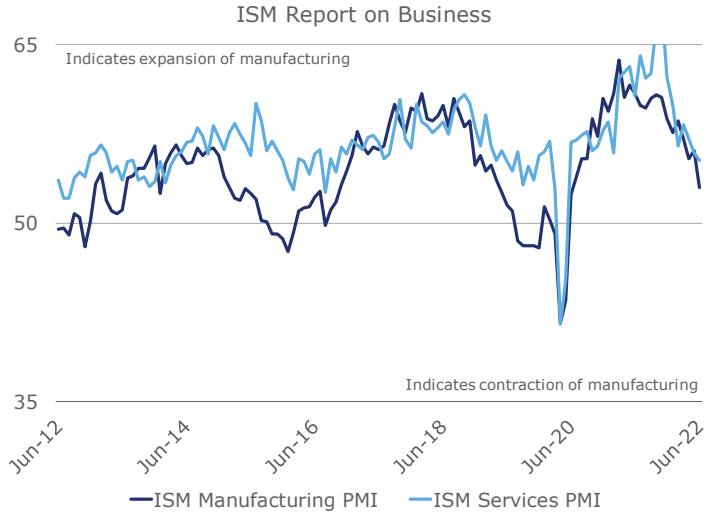
Data Sources: Bloomberg

# Consumer Activity



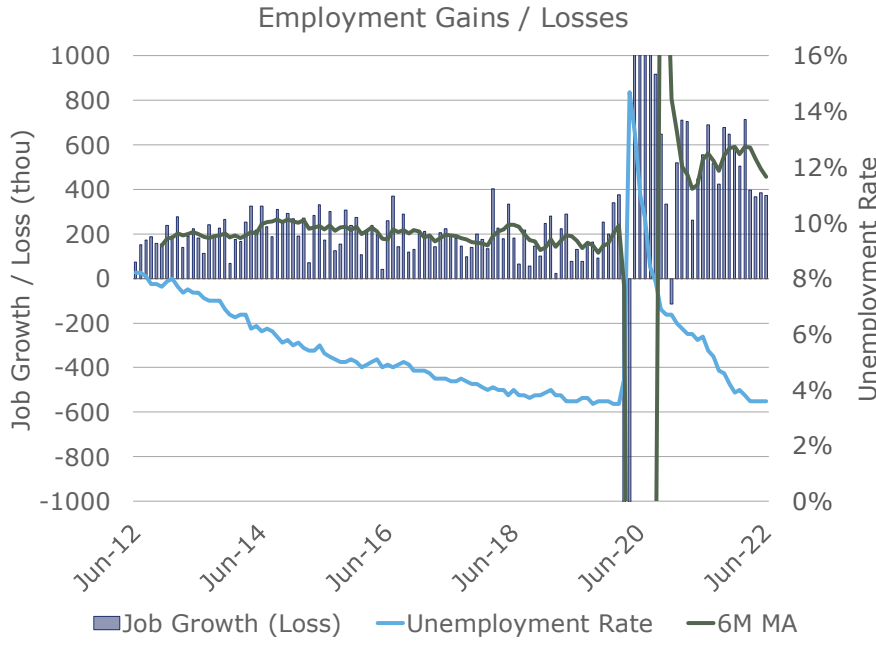
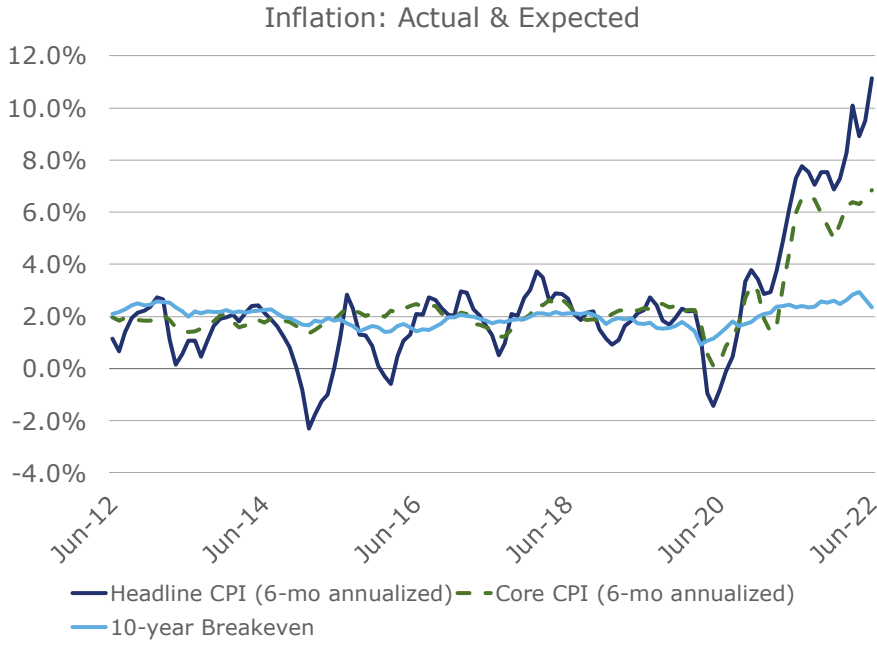
Data Sources: Bloomberg

# Business Activity



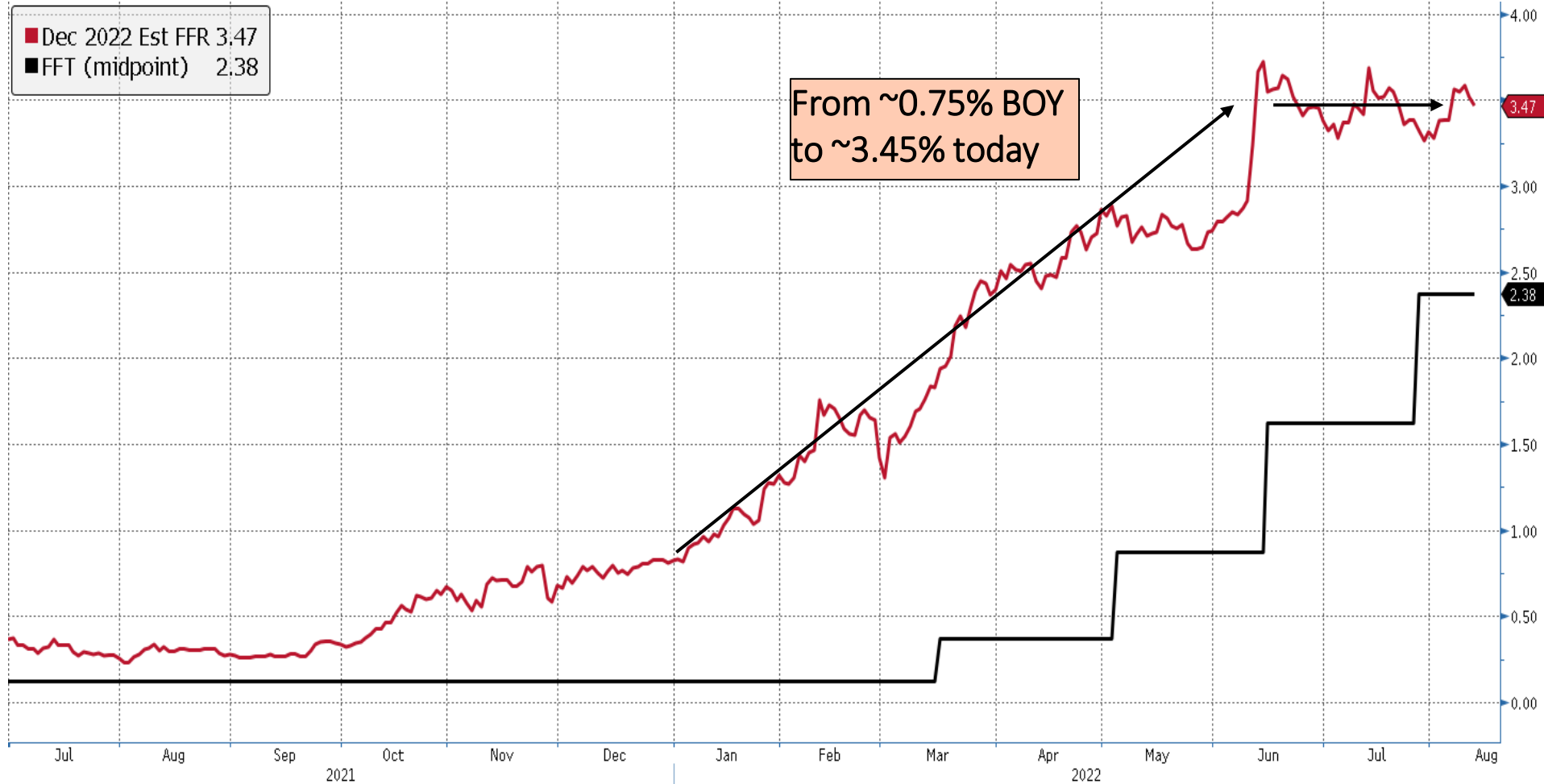
Data Sources: Bloomberg

# Inflation and Employment



Data Sources: Bloomberg

## How Quickly Discounting Can Change...



US0AFR SEP2022 Index (WIRP Implied Overnight Rate fo) Fed Fut Imp Rate Daily 30JUN2021-11AUG2022

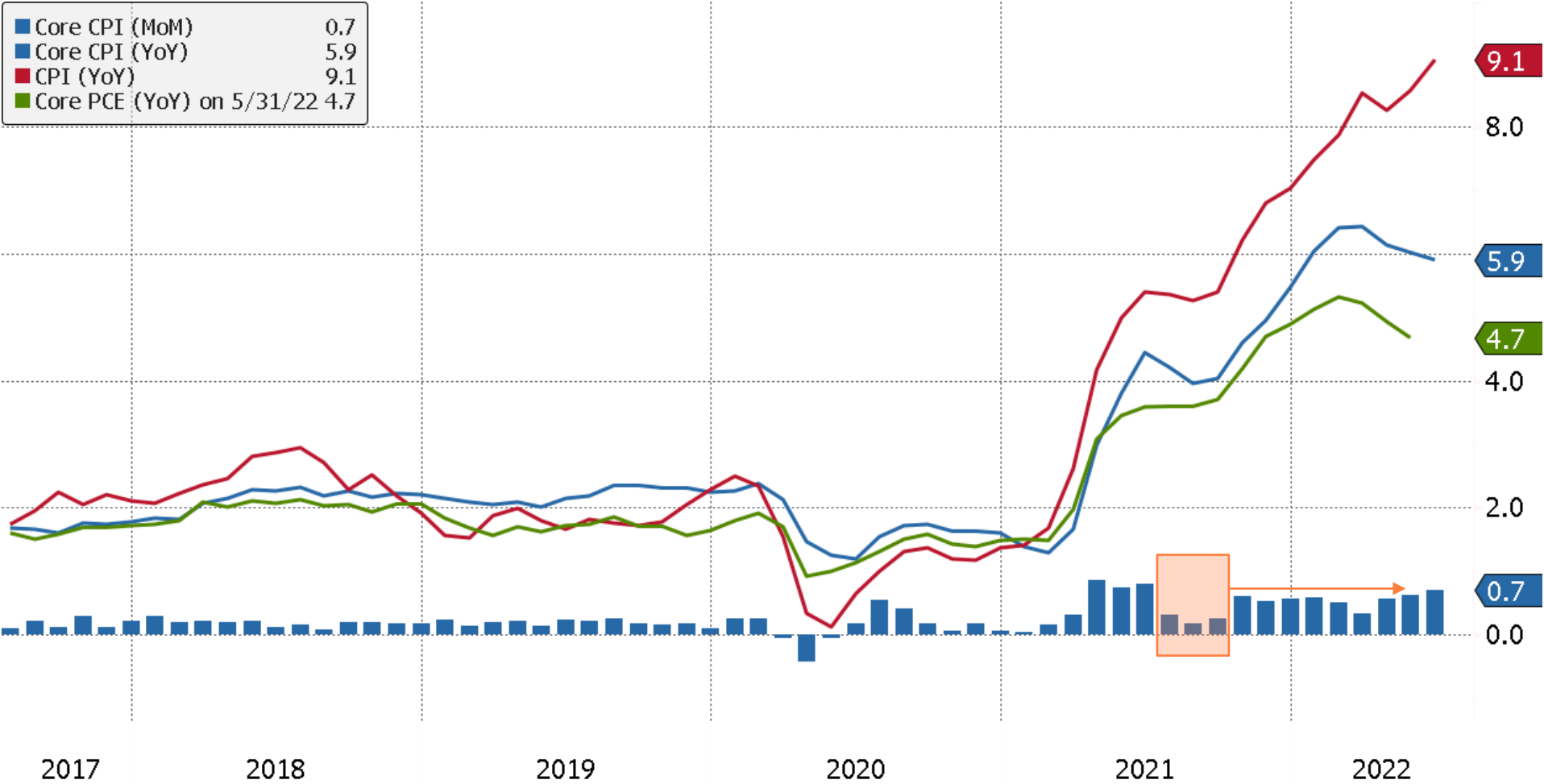
Copyright© 2022 Bloomberg Finance L.P.

11-Aug-2022 05:33:09

Data Source: Bloomberg

# Any Signs of Inflation Slowing?

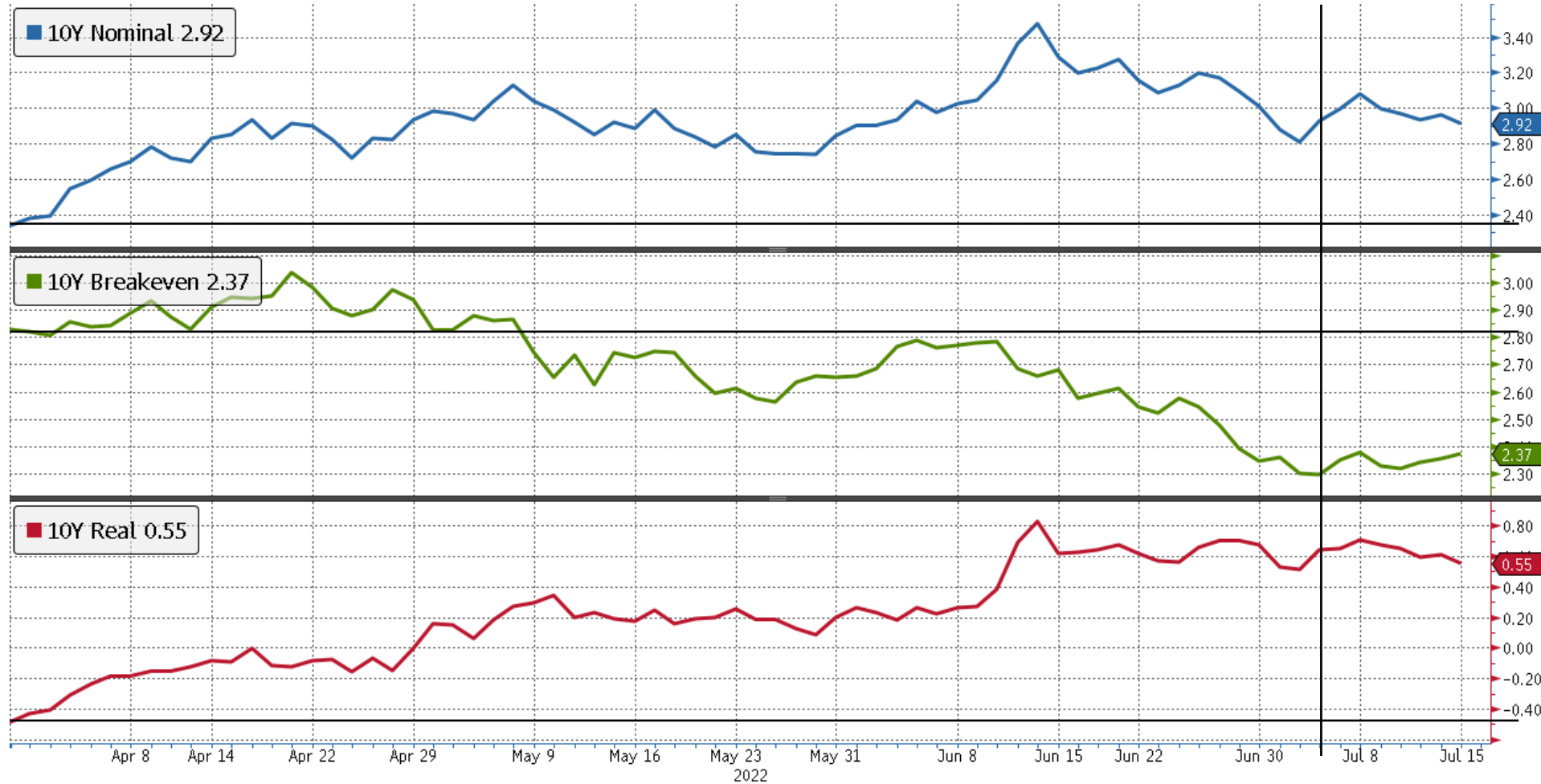
Core CPI (MoM)	0.7
Core CPI (YoY)	5.9
CPI (YoY)	9.1
Core PCE (YoY) on 5/31/22	4.7



CPUPXCHG Index (US CPI Urban Consumers Less Food & Energy MoM SA) CPI & PCE Monthly 18JUL2017-17JUL2022 Copyright© 2022 Bloomberg Finance L.P. 17-Jul-2022 08:33:04  
Data Source: Bloomberg



## Quarterly Rate Moves (10Y Nominal, Real & BEI)



USGG10YR Index (US Generic Govt 10 Yr) 10yr Splits Daily 31MAR2022-15JUL2022

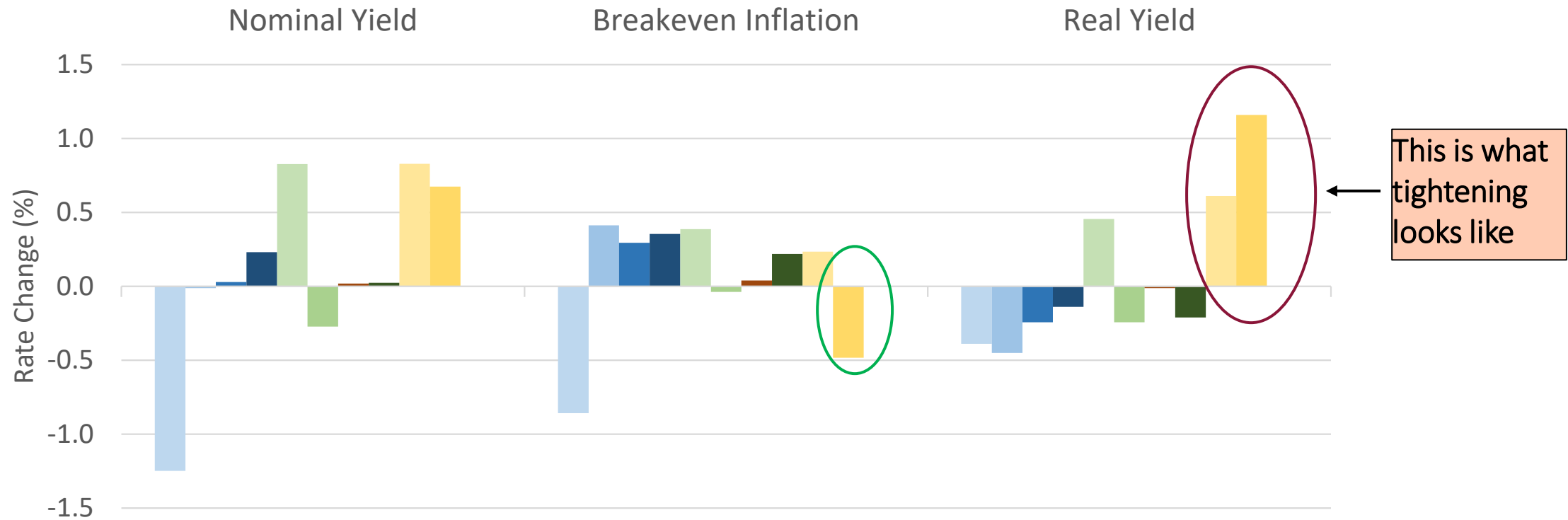
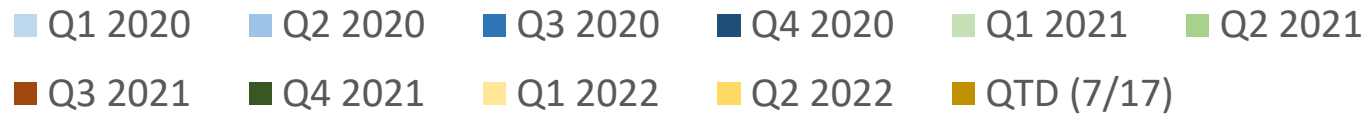
Copyright© 2022 Bloomberg Finance L.P.

17-Jul-2022 08:35:33

Data Source: Bloomberg

# Rate Changes (2020 – YTD 2022)

## Quarterly Rate Changes

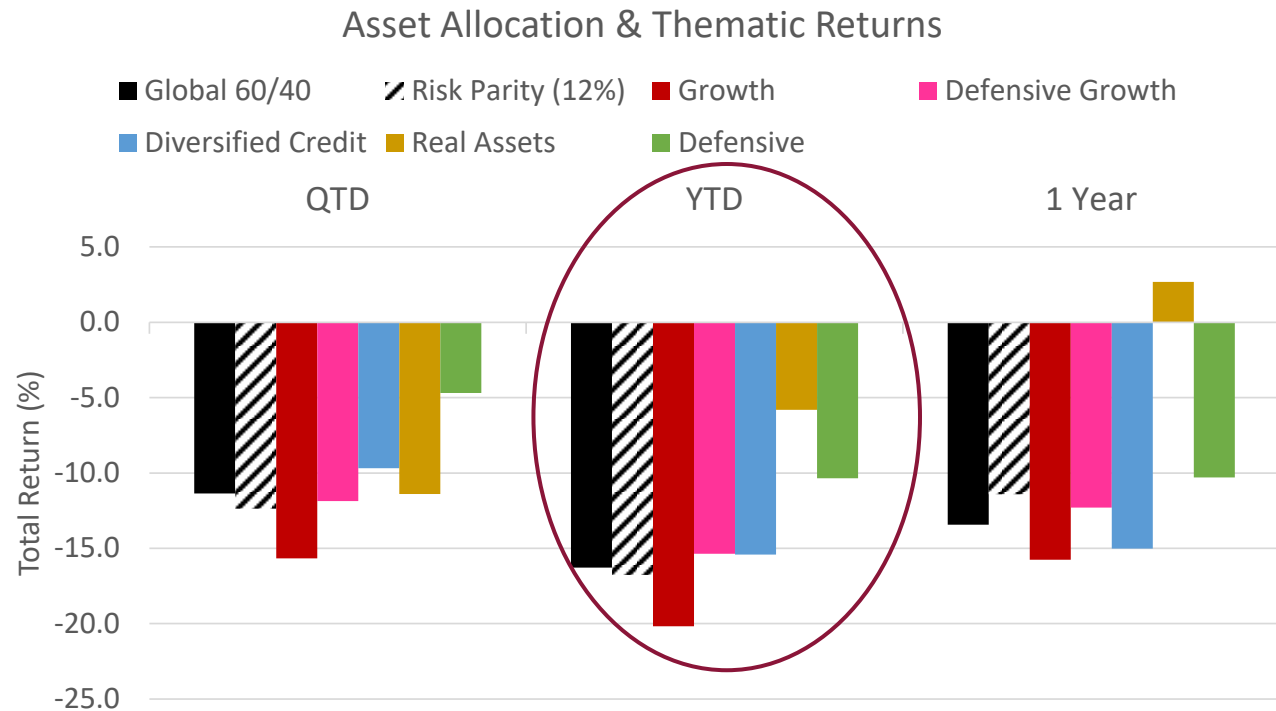


Data Source: Bloomberg

# 2022 Environmental Risk: A Year of Payback

If some/much of COVID market returns have been liquidity fueled, can we expect to hang on to these gains when support is withdrawn?

- Year-to-date 2022 has shown it will be challenging

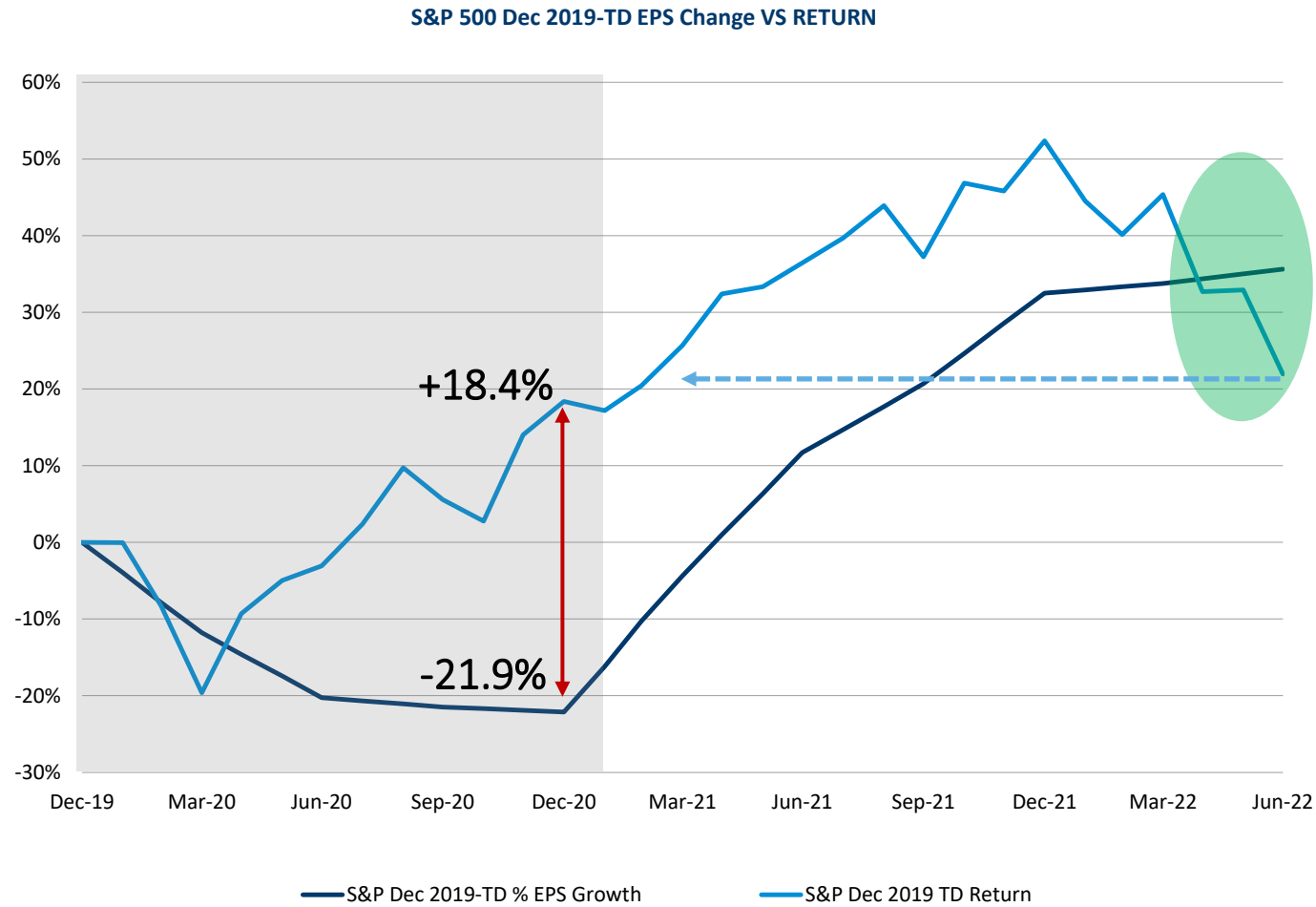


Return through June 30, 2022

	QTD	YTD	1 Year
Global 60/40	(11.36)	(16.28)	(13.42)
Risk Parity (12%)	(12.37)	(16.77)	(11.41)
Growth	(15.66)	(20.18)	(15.75)
Defensive Growth	(11.86)	(15.36)	(12.30)
Diversified Credit	(9.68)	(15.42)	(15.02)
Real Assets	(11.39)	(5.81)	2.69
Defensive	(4.69)	(10.35)	(10.29)

Data Source: Bloomberg, Wilshire

## Earnings Per Share Growth vs. Equity Market Performance



Data Source: S&P, Bloomberg

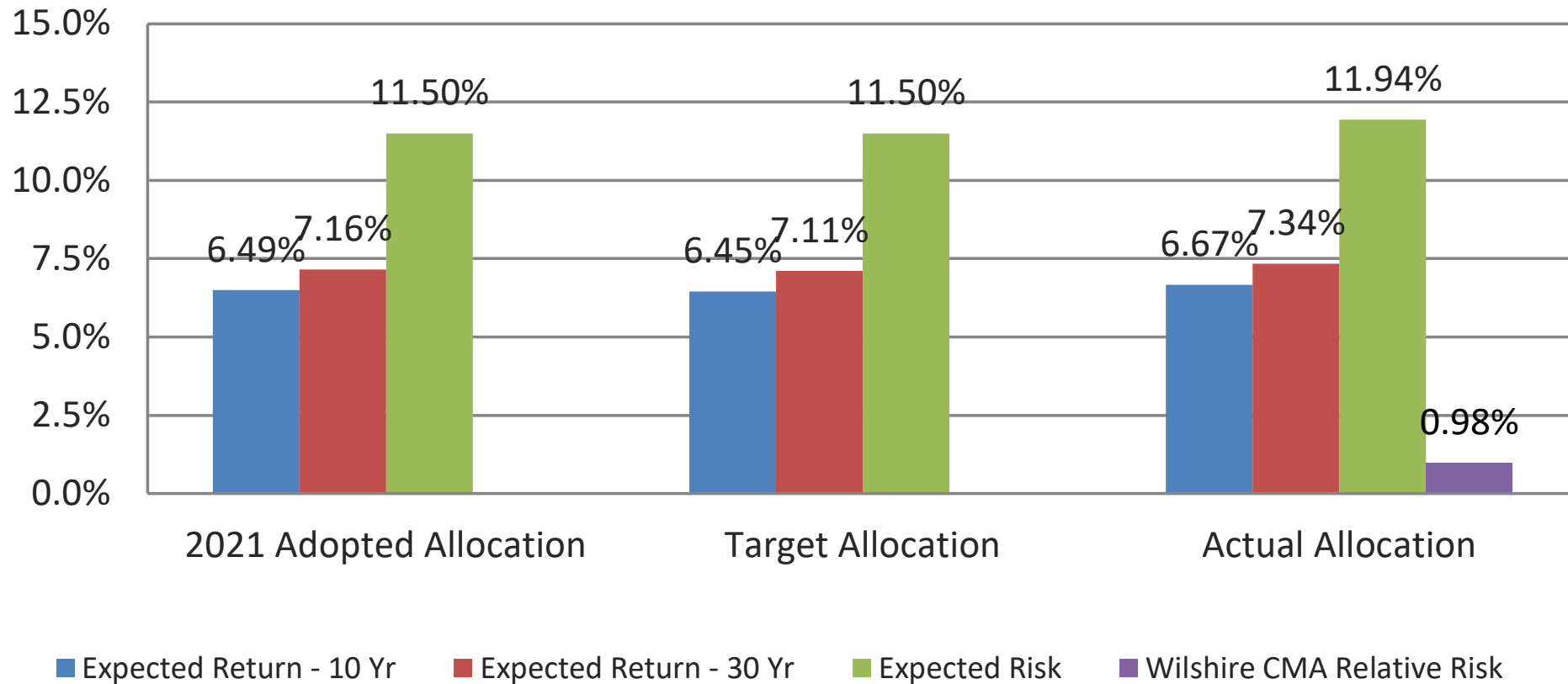
## June 2022 Asset Class Assumptions

	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	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	6.00	7.00	7.00	7.25	6.60	10.05	3.15	4.05	4.30	3.15	6.25	2.20	5.20	5.35	6.50	5.50	6.75	2.35
Expected Risk (%)	17.00	18.00	26.00	19.10	17.10	28.00	0.75	4.25	8.90	6.00	10.00	4.25	17.50	16.45	14.00	16.00	10.35	1.75
Cash Yield (%)	1.65	3.30	2.60	3.10	2.20	0.00	3.15	4.55	4.60	3.80	9.10	2.95	3.45	3.45	2.30	3.15	2.50	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.85	-2.25	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.80	0.00
Inflation Exposure	-3.00	0.00	5.00	1.50	-1.25	-3.80	0.00	-2.50	-6.70	2.50	-1.00	-3.00	1.00	1.80	1.00	12.00	4.85	1.00
<b>Correlations</b>																		
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	0.83	0.96	0.87	1.00														
Global Stock	0.95	0.92	0.83	0.94	1.00													
Private Equity	0.74	0.64	0.62	0.67	0.74	1.00												
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00											
Core Bond	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00										
LT Core Bond	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.92	1.00									
TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.59	0.47	1.00								
High Yield Bond	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.17	0.18	0.26	0.10	0.66	0.65	0.39	0.26	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00					
Global RE Securities	0.64	0.58	0.56	0.61	0.65	0.58	-0.05	0.17	0.22	0.11	0.61	0.03	0.96	1.00				
Private Real Estate	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.77	0.75	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.48	0.51	0.58	0.57	0.54	0.47	-0.02	0.23	0.25	0.39	0.56	0.05	0.70	0.75	0.70	0.65	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	-0.08	0.05	0.03	0.05	0.44	0.26	1.00

# CalPERS Total Fund Performance

# CalPERS PERF Expected Return and Risk Estimates

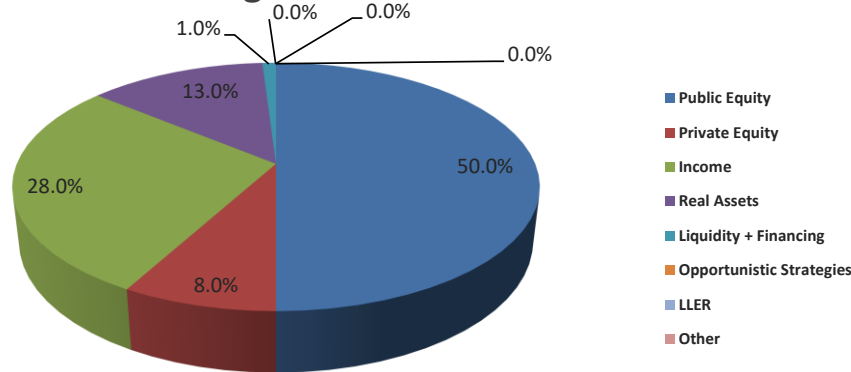
As of June 30, 2022



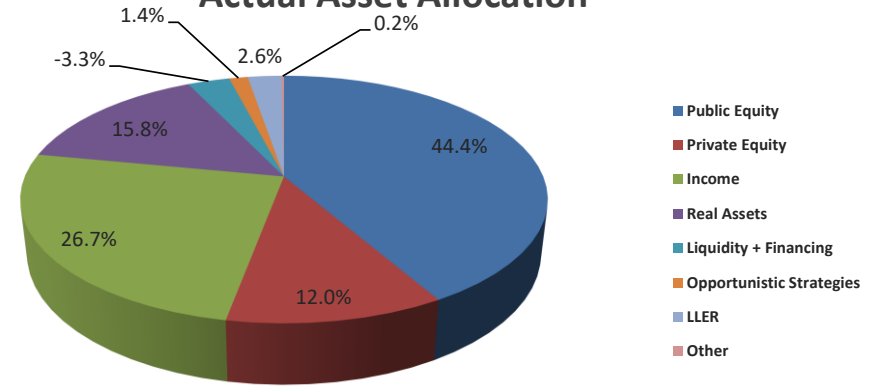
# CalPERS PERF Assets and Risk Allocation

As of June 30, 2022

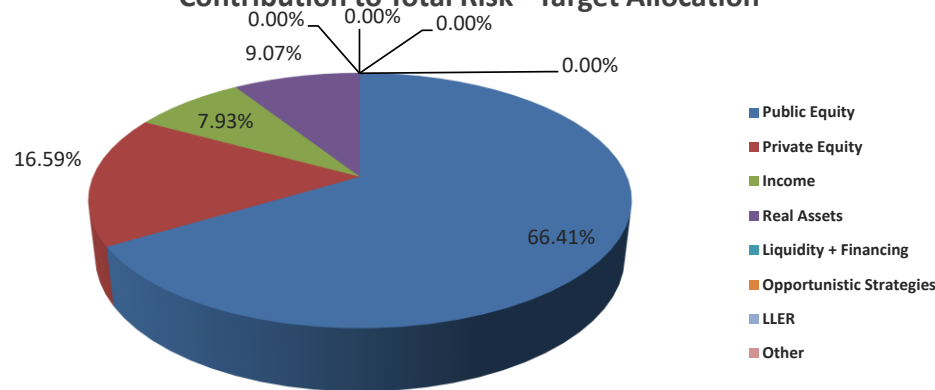
**Target Asset Allocation**



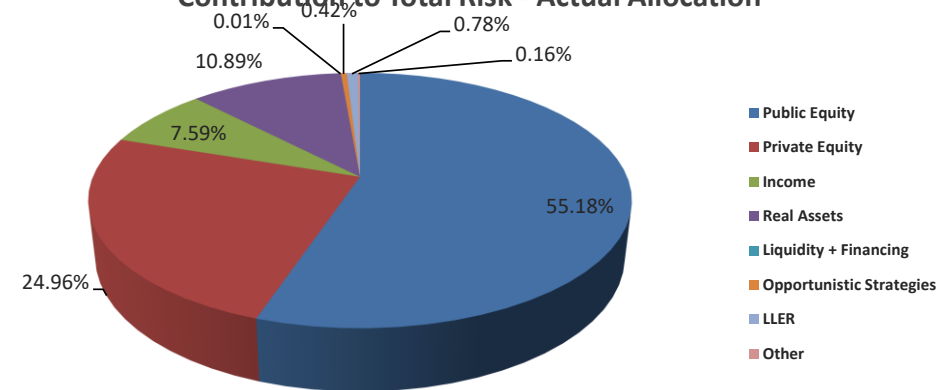
**Actual Asset Allocation**



**Contribution to Total Risk - Target Allocation**



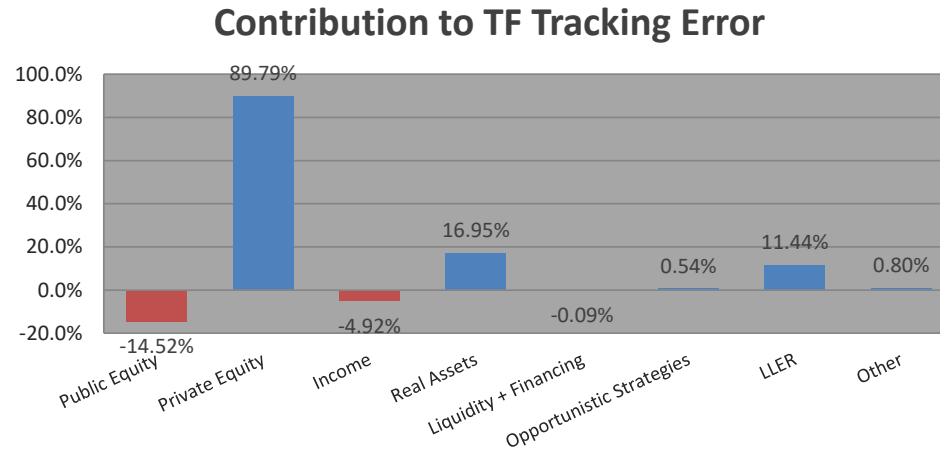
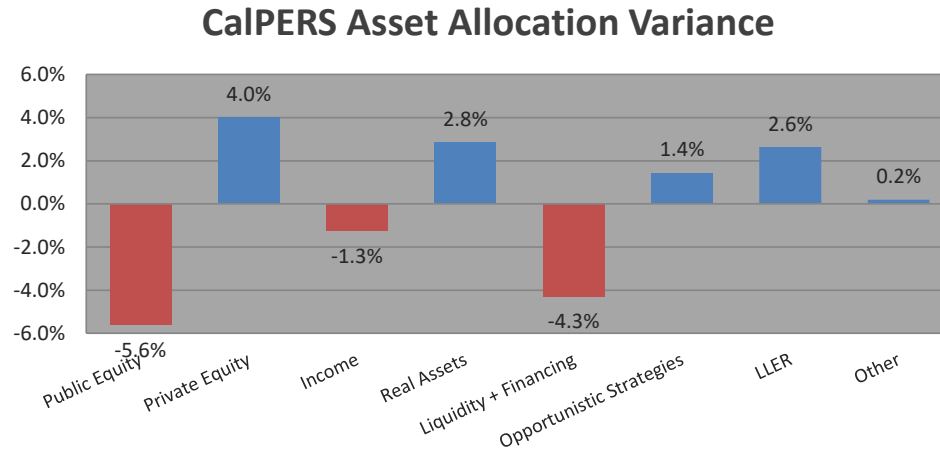
**Contribution to Total Risk - Actual Allocation**





# CalPERS PERF Drivers of Expected Excess Risk

As of June 30, 2022



- 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 PERF – Performance

As of June 30, 2022

	Asset Value						VaR	5-Year Ratios	
	(\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year		(\$Billion)	Sharpe
<b>CalPERS PERF</b>	\$ 439.6	-8.0%	-6.1%	6.0%	6.7%	7.7%	\$ 54.8	0.7	0.1
<i>CalPERS PERF Policy Benchmark</i>		-8.5%	-7.0%	5.7%	6.6%	7.6%		0.7	0.0
<i>Actuarial Rate</i>		1.7%	6.8%	7.0%	7.2%	7.3%			
<b>PUBLIC EQUITY *</b>	\$ 195.1	-13.5%	-13.1%	6.0%	7.1%	9.4%	\$ 38.2	0.4	0.1
<i>Public Equity Policy Benchmark</i>		-13.7%	-13.2%	5.8%	7.1%	9.2%		0.4	0.0
<b>PRIVATE EQUITY</b>	\$ 52.8	0.3%	21.3%	18.3%	15.7%	13.5%	\$ 20.3	1.8	0.1
<i>Private Equity Policy Benchmark</i>		-5.1%	8.3%	15.8%	13.9%	13.8%		0.8	0.0
<b>INCOME *</b>	\$ 117.6	-8.5%	-14.5%	-1.3%	1.1%	2.3%	\$ 8.1	0.0	1.2
<i>Income Policy Benchmark</i>		-8.5%	-14.5%	-1.6%	0.8%	1.6%		0.0	0.0
<b>REAL ASSETS</b>	\$ 69.6	5.2%	24.1%	10.0%	8.3%	9.2%	\$ 10.1	1.8	-0.1
<i>Real Assets Policy Benchmark</i>		7.2%	27.1%	10.2%	8.8%	9.5%		1.3	0.0
<b>TOTAL FUND</b>	\$ 18.8								
<b>LLER</b>	\$ 11.6	-1.6%	-1.2%	1.3%	2.1%	-.%	\$ 1.5	0.3	0.4
<i>LIBOR 1 Month Rate</i>		0.2%	0.3%	0.5%	0.8%	-.%		-1.4	0.0
<b>OPPORTUNISTIC STRATEGIES</b>	\$ 6.4	2.0%	8.4%	-.%	-.%	-.%	\$ 0.3	N/A	N/A
<i>Custom Opportunistic Strategies Benchmark</i>		1.7%	7.0%	-.%	-.%	-.%		N/A	N/A
<b>OTHER **</b>	\$ 0.8	NM	NM	NM	NM	NM		N/A	N/A
<b>LIQUIDITY</b>	\$ 10.1	0.1%	0.3%	0.7%	1.2%	0.8%	\$ (0.2)	0.5	3.3
<i>Liquidity Policy Benchmark</i>		0.1%	0.1%	0.5%	1.0%	0.8%		-0.5	0.0
<b>TRUST LEVEL FINANCING</b>	\$ (24.5)	-.%	-.%	-.%	-.%	-.%		N/A	N/A
<b>TERMINATED AGENCY POOL</b>	\$ 0.2	-10.8%	-12.4%	1.1%	2.5%	-.%		N/A	N/A
<b>CalPERS PERF PLUS TAP</b>	\$ 439.8	-8.0%	-6.1%	6.0%	6.7%	7.7%		N/A	N/A

\* The CalPERS PERF asset values shown include derivative exposure.

\*\* More details on investments included in OTHER can be found in the program section, page 59.

# CalPERS PERF – Attribution (Quarter)

As of June 30, 2022

Asset Class	Actual (%)		Benchmark (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
<b>Public Equity</b>	46.23	-13.54	46.45	-13.68	-0.22	0.15	0.03	0.07	0.10
<b>Public Equity - Cap Weighted</b>	31.22	-15.46	31.45	-15.68	-0.23	0.22	0.03	0.07	0.10
<b>Public Equity - Factor Weighted</b>	15.01	-9.45	15.00	-9.41	0.01	-0.04	0.00	-0.01	-0.01
<b>Private Equity</b>	11.40	0.27	11.27	-5.42	0.14	5.69	0.00	0.60	0.60
<b>Income</b>	27.34	-8.51	27.80	-8.47	-0.46	-0.03	-0.01	-0.01	-0.01
<b>Spread</b>	14.85	-7.52	14.97	-7.50	-0.12	-0.02	0.00	0.00	0.00
<b>Treasury</b>	7.97	-9.62	9.79	-9.62	-1.82	0.00	0.01	0.00	0.01
<b>Total Fund Income</b>	1.49	-9.89	0.00	-9.62	1.49	-0.27	-0.02	0.00	-0.02
<b>High Yield</b>	3.03	-9.52	3.04	-9.54	-0.01	0.02	0.00	0.00	0.00
<b>Real Assets</b>	13.89	5.24	13.45	7.15	0.44	-1.91	0.10	-0.31	-0.21
<b>Total Fund</b>	3.38	NM	0.00	0.00	3.38	NM	0.30	-0.04	0.26
<b>Opportunistic Strategies</b>	1.23	1.97	0.00	1.70	1.23	0.27	0.12	0.00	0.12
<b>LLER</b>	2.10	-1.65	0.00	0.18	2.10	-1.83	0.17	-0.04	0.14
<b>Other</b>	0.04	NM **	0.00	0.00	0.04	NM **	0.00	-0.01	-0.01
<b>TLPM</b>	0.00	NM **	0.00	-13.63	0.00	NM **	0.00	0.00	0.00
<b>Liquidity</b>	1.95	0.10	1.03	0.10	0.92	0.01	0.09	0.00	0.09
<b>Trust Level Financing</b>	-4.19	0.00	0.00	NM	-4.19	NM	-0.33	-0.01	-0.34
<b>Monthly Linked Return</b>	<b>100.00</b>	<b>-7.98</b>	<b>100.00</b>	<b>-8.45</b>		<b>0.47</b>	<b>0.17</b>	<b>0.30</b>	<b>0.47</b>
<b>Residual</b>		-0.02		0.00		-0.02			-0.02
<b>Total PERF</b>		<b>-8.00</b>		<b>-8.45</b>		<b>0.45</b>			<b>0.45</b>

\* Average period weight displayed.

\*\* More details of the OTHER and TLPM programs can be found in the program section, page 59.

# CalPERS PERF – Attribution (Fiscal YTD)

As of June 30, 2022

Asset Class	Actual (%)		Benchmark (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
<b>Public Equity</b>	49.05	-13.06	49.30	-13.21	-0.26	0.15	0.03	0.07	0.10
<b>Public Equity - Cap Weighted</b>	34.08	-15.83	34.31	-16.04	-0.23	0.21	0.04	0.07	0.11
<b>Public Equity - Factor Weighted</b>	14.97	-6.86	15.00	-6.83	-0.03	-0.03	0.00	0.00	-0.01
<b>Private Equity</b>	9.87	21.34	9.65	6.75	0.22	14.58	0.05	1.02	1.07
<b>Income</b>	28.62	-14.49	28.94	-14.46	-0.33	-0.03	0.03	-0.01	0.02
<b>Spread</b>	14.85	-13.96	14.95	-13.93	-0.10	-0.02	0.00	0.00	0.00
<b>Treasury</b>	9.29	-16.05	11.00	-16.05	-1.71	0.00	0.17	0.00	0.17
<b>Total Fund Income</b>	1.49	-16.36	0.00	-16.05	1.49	-0.31	-0.14	-0.01	-0.15
<b>High Yield</b>	2.99	-11.87	3.00	-11.86	-0.01	-0.01	0.00	0.00	0.00
<b>Real Assets</b>	11.35	24.05	11.09	27.10	0.26	-3.04	0.17	-0.47	-0.30
<b>Total Fund</b>	2.83	NM	0.00	0.00	2.83	NM	0.30	0.02	0.32
<b>Opportunistic Strategies</b>	0.89	8.40	0.00	7.00	0.89	1.40	0.16	0.01	0.17
<b>LLER</b>	1.77	-1.19	0.00	0.25	1.77	-1.44	0.15	-0.03	0.12
<b>Other</b>	0.04	NM **	0.00	0.00	0.04	NM **	0.00	-0.02	-0.01
<b>TLPM</b>	0.13	NM **	0.00	-14.00	0.13	NM **	-0.02	0.06	0.04
<b>Liquidity</b>	1.76	0.26	1.01	0.13	0.75	0.13	0.10	0.00	0.11
<b>Trust Level Financing</b>	-3.47	-0.04	0.00	NM	-3.47	NM	-0.34	-0.02	-0.36
<b>Monthly Linked Return</b>	<b>100.00</b>	<b>-6.08</b>	<b>100.00</b>	<b>-7.03</b>		<b>0.95</b>	<b>0.26</b>	<b>0.60</b>	<b>0.95</b>
<b>Residual</b>		-0.04		0.00		-0.04			<b>-0.04</b>
<b>Total PERF</b>		<b>-6.12</b>		<b>-7.03</b>		<b>0.91</b>			<b>0.91</b>

\* Average period weight displayed.

\*\* More details of the OTHER and TLPM programs can be found in the program section, page 59.

# CalPERS PERF – Attribution (2022 YTD)

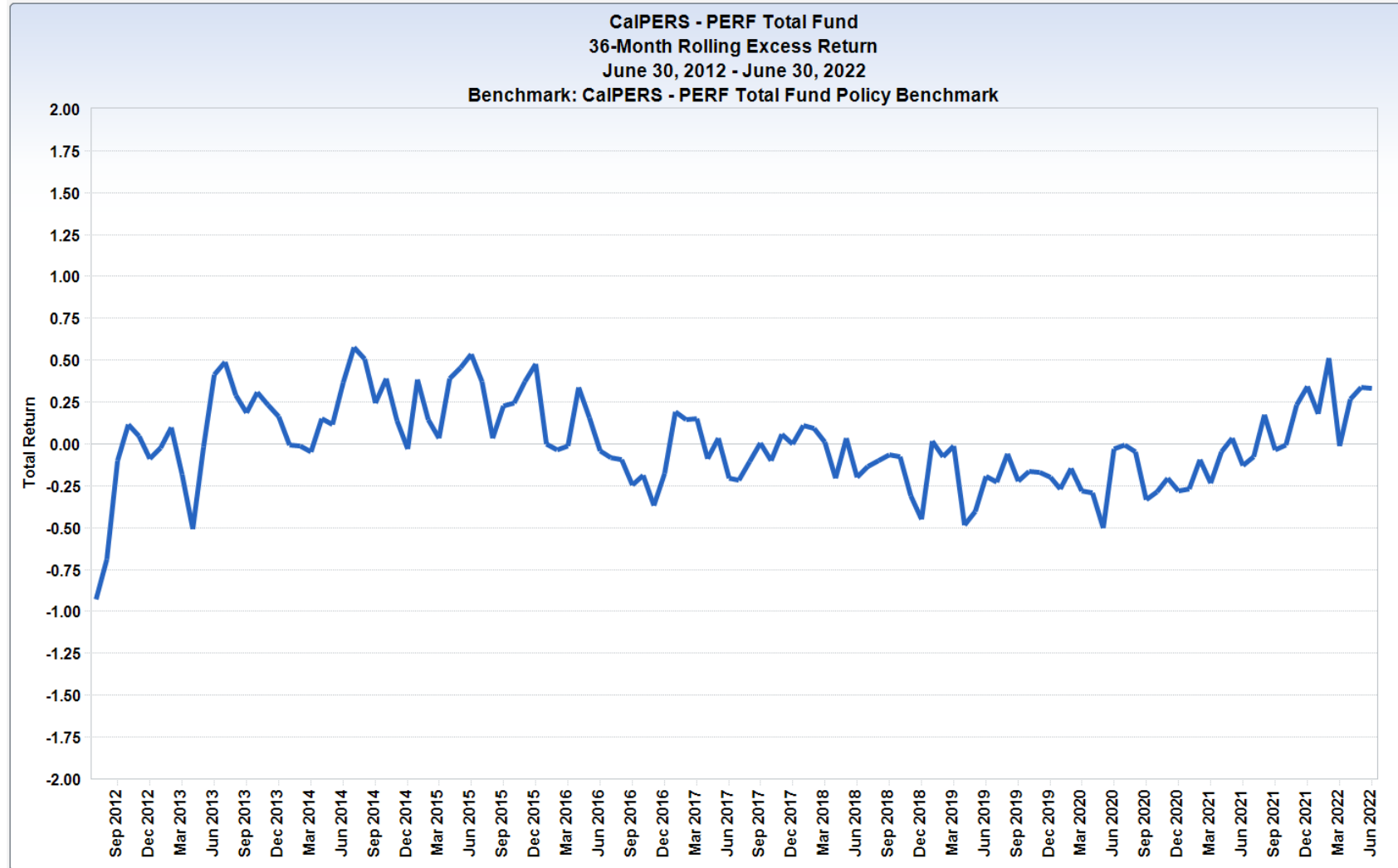
As of June 30, 2022

Asset Class	Actual (%)		Benchmark (%)		Difference (%)		Total Fund Return Contribution (%)		
	Weight *	Return	Weight *	Return	Weight	Return	Actual Allocation	Active Management	Total
<b>Public Equity</b>	47.31	-17.73	47.49	-17.85	-0.18	0.12	0.02	0.05	0.07
<b>Public Equity - Cap Weighted</b>	32.40	-20.07	32.57	-20.25	-0.17	0.18	0.02	0.06	0.08
<b>Public Equity - Factor Weighted</b>	14.91	-12.61	14.92	-12.55	-0.01	-0.06	0.00	-0.01	-0.01
<b>Private Equity</b>	10.82	4.01	10.67	0.63	0.15	3.38	0.01	0.30	0.31
<b>Income</b>	27.95	-15.61	28.42	-15.57	-0.47	-0.05	0.02	-0.01	0.00
<b>Spread</b>	14.84	-14.29	15.00	-14.20	-0.15	-0.09	0.00	-0.01	-0.01
<b>Treasury</b>	8.60	-18.10	10.40	-18.10	-1.80	0.00	0.12	0.00	0.12
<b>Total Fund Income</b>	1.49	-18.10	0.00	-18.10	1.49	0.00	-0.10	0.00	-0.10
<b>High Yield</b>	3.02	-13.38	3.03	-13.38	-0.01	0.00	0.00	0.00	0.00
<b>Real Assets</b>	12.72	11.29	12.39	15.41	0.33	-4.12	0.13	-0.53	-0.41
<b>Total Fund</b>	3.26	NM	0.00	0.00	3.26	NM	0.36	0.01	0.37
<b>Opportunistic Strategies</b>	1.16	3.36	0.00	3.41	1.16	-0.05	0.16	0.00	0.16
<b>LLER</b>	1.84	-1.88	0.00	0.22	1.84	-2.10	0.21	-0.04	0.17
<b>Other</b>	0.04	NM **	0.00	0.00	0.04	NM **	0.00	-0.01	-0.01
<b>TLPM</b>	0.23	NM **	0.00	-18.56	0.23	NM **	-0.02	0.06	0.04
<b>Liquidity</b>	1.95	0.21	1.03	0.11	0.92	0.10	0.12	0.00	0.12
<b>Trust Level Financing</b>	-4.01	0.10	0.00	NM	-4.01	NM	-0.45	-0.02	-0.47
<b>Monthly Linked Return</b>	<b>100.00</b>	<b>-11.29</b>	<b>100.00</b>	<b>-11.31</b>		<b>0.01</b>	<b>0.22</b>	<b>-0.20</b>	<b>0.01</b>
<b>Residual</b>		-0.03		0.00		-0.02			<b>-0.02</b>
<b>Total PERF</b>		<b>-11.32</b>		<b>-11.31</b>		<b>-0.01</b>			<b>-0.01</b>

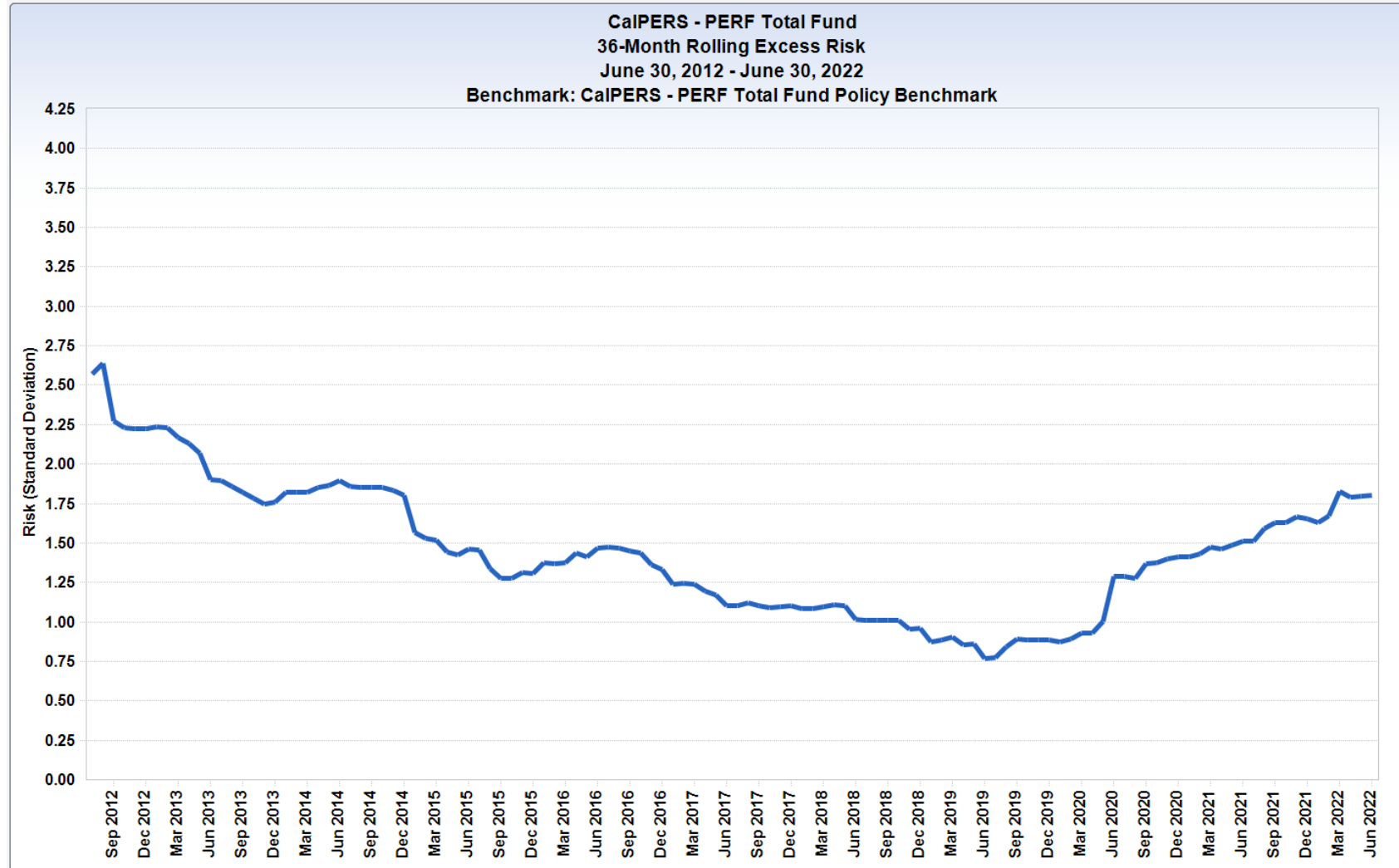
\* Average period weight displayed.

\*\* More details of the OTHER and TLPM programs can be found in the program section, page 59.

# CalPERS PERF – Rolling Excess Return



# CalPERS PERF – Rolling Tracking Error



# CalPERS Affiliate Investment Programs – Performance

As of June 30, 2022

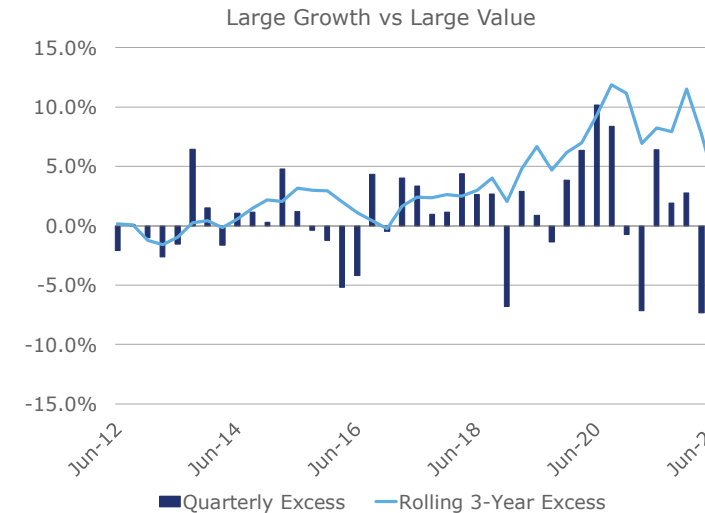
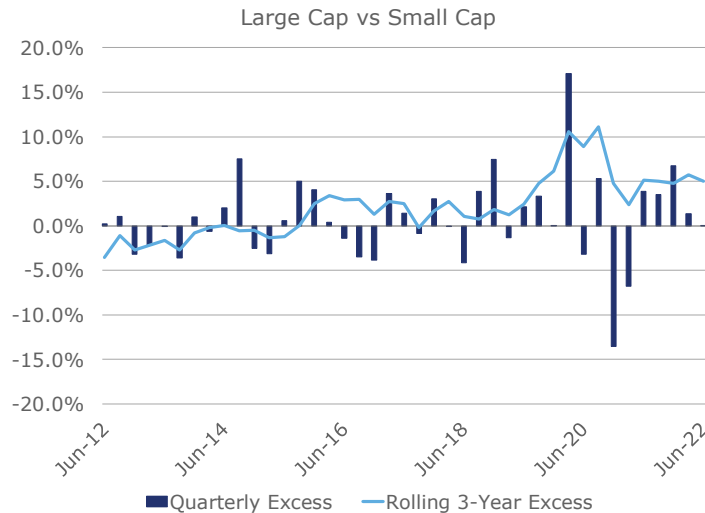
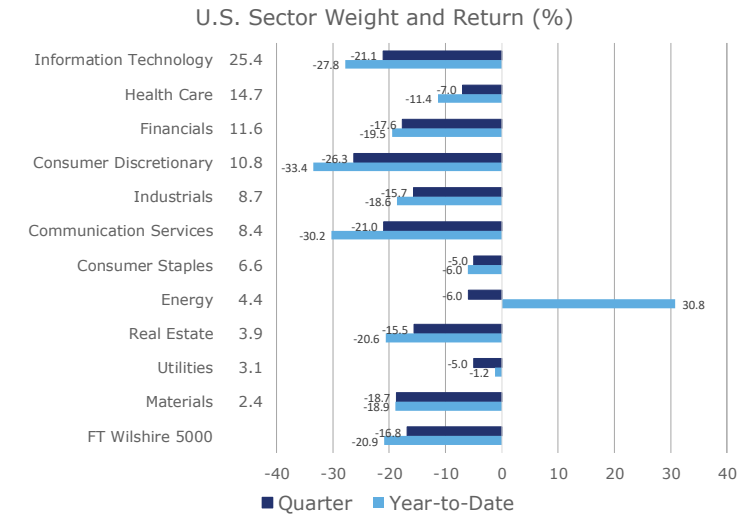
	Asset Value (\$Million)	Quarter	1-Year	3-Year	5-Year	10-Year
<b>Judges I</b>	\$ 48.9	0.2%	0.3%	0.7%	1.2%	0.7%
91-Day Treasury Bill		0.1%	0.2%	0.6%	1.1%	0.6%
<b>Judges II</b>	\$ 2,126.6	-12.5%	-13.3%	4.1%	5.3%	6.7%
Weighted Policy Benchmark		-12.5%	-13.4%	3.8%	5.0%	6.4%
<b>Legislators' Retirement System</b>	\$ 102.7	-9.8%	-10.7%	2.5%	3.9%	4.6%
Weighted Policy Benchmark		-9.8%	-10.8%	2.4%	3.8%	4.4%
<b>Long-Term Care ("LTC")</b>	\$ 4,886.9	-9.5%	-9.8%	2.2%	3.5%	3.7%
Weighted Policy Benchmark		-9.5%	-9.9%	2.1%	3.4%	3.6%
<b>CERBT Strategy 1</b>	\$ 12,805.8	-13.0%	-13.4%	4.6%	5.6%	6.8%
CERBT Strategy 1 Policy Benchmark		-13.1%	-13.6%	4.3%	5.3%	6.5%
<b>CERBT Strategy 2</b>	\$ 1,750.2	-11.5%	-12.6%	3.3%	4.6%	5.7%
CERBT Strategy 2 Policy Benchmark		-11.5%	-12.7%	3.2%	4.4%	5.4%
<b>CERBT Strategy 3</b>	\$ 747.1	-9.8%	-10.8%	2.5%	3.9%	4.5%
CERBT Strategy 3 Policy Benchmark		-9.8%	-10.8%	2.4%	3.7%	4.2%
<b>CEPPT Strategy 1</b>	\$ 58.1	-10.1%	-12.5%	-.%	-.%	-.%
CEPPT Strategy 1 Policy Benchmark		-10.2%	-12.6%	-.%	-.%	-.%
<b>CEPPT Strategy 2</b>	\$ 25.8	-7.3%	-11.0%	-.%	-.%	-.%
CEPPT Strategy 2 Policy Benchmark		-7.3%	-11.0%	-.%	-.%	-.%
<b>Health Care Fund</b>	\$ 327.5	-4.7%	-10.3%	-0.9%	0.9%	1.8%
Barclays U.S. Aggregate		-4.7%	-10.3%	-0.9%	0.9%	1.5%
<b>Supplemental Contribution Plan</b>	\$ 105.3	NM	NM	NM	NM	NM
CalPERS Custom SCP Plan Index		NM	NM	NM	NM	NM
<b>457 Program</b>	\$ 1,868.5	NM	NM	NM	NM	NM
CalPERS Custom 457 Plan Index		NM	NM	NM	NM	NM



# Appendix 1: Asset Class Performance Detail

# U.S. Equity Market

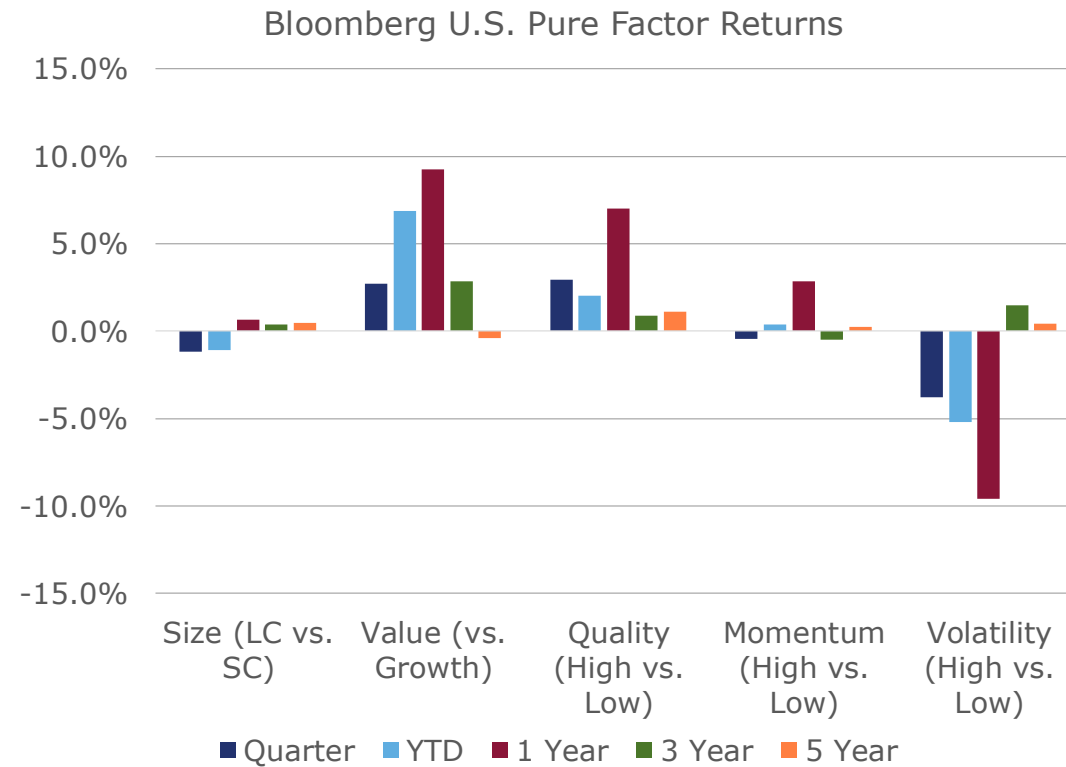
As of 6/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
FT Wilshire 5000	-16.8	-20.9	-13.2	10.2	10.8	12.7
Wilshire U.S. Large Cap	-16.8	-20.8	-12.3	10.7	11.3	13.0
Wilshire U.S. Small Cap	-16.8	-21.8	-21.7	5.4	6.1	10.1
Wilshire U.S. Large Growth	-21.4	-27.7	-18.3	12.2	13.2	14.5
Wilshire U.S. Large Value	-11.2	-11.8	-4.8	8.9	9.3	11.5
Wilshire U.S. Small Growth	-18.2	-26.7	-28.2	3.9	6.3	10.1
Wilshire U.S. Small Value	-15.5	-17.0	-14.6	6.8	5.7	10.0
Wilshire REIT Index	-18.5	-21.6	-6.7	4.0	5.3	7.3
MSCI USA Min. Vol. Index	-9.1	-12.6	-3.2	6.3	9.6	11.7
FTSE RAFI U.S. 1000 Index	-12.7	-12.7	-5.6	11.0	10.1	12.4



Data Sources: Bloomberg, Wilshire Atlas

## U.S. Factor Returns

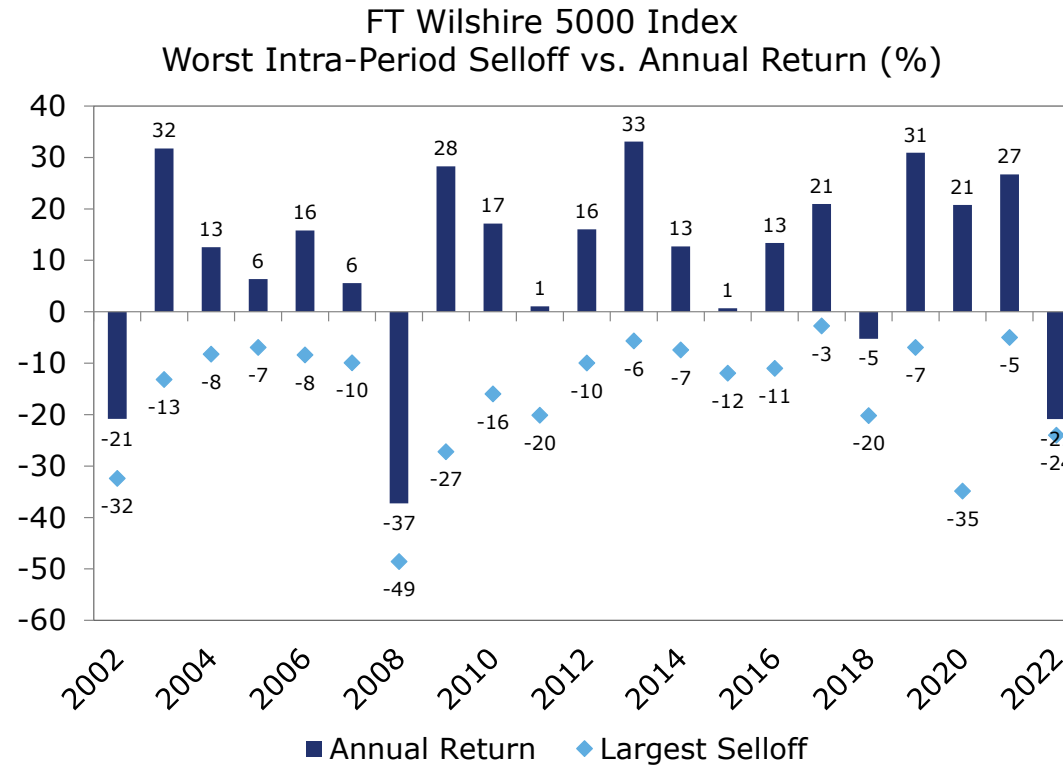
- Factor returns represent the contribution from large cap, value, etc. stocks within Bloomberg’s Portfolio & Risk Analytics module
- Value stocks have rebounded during the past year



Data Sources: Bloomberg

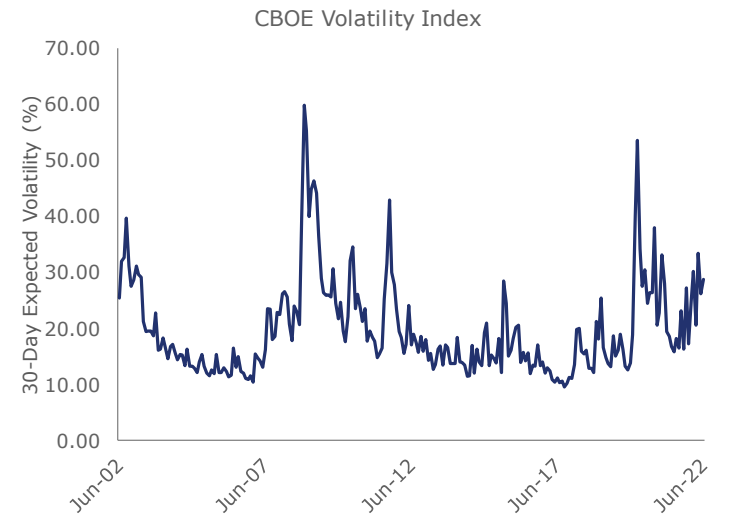
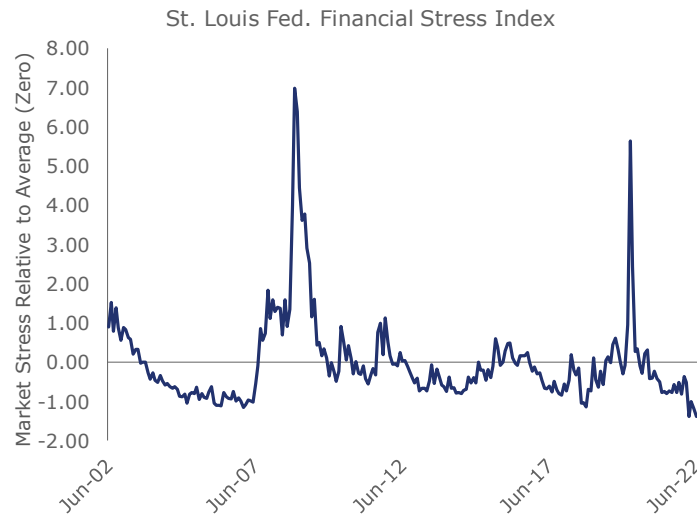
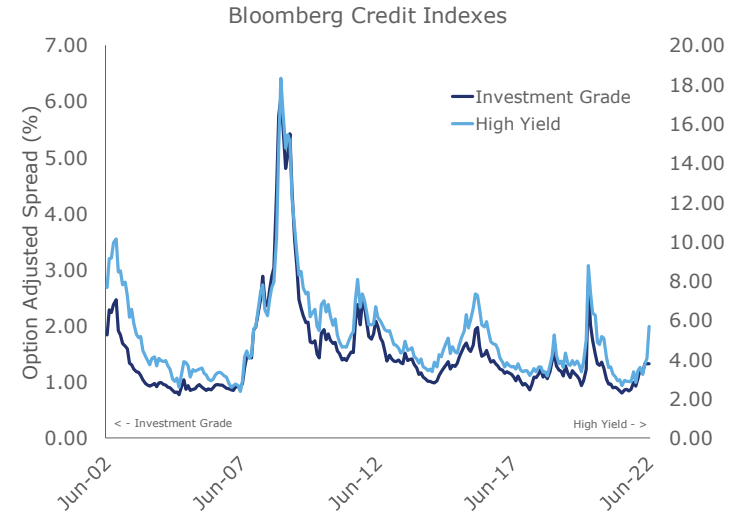
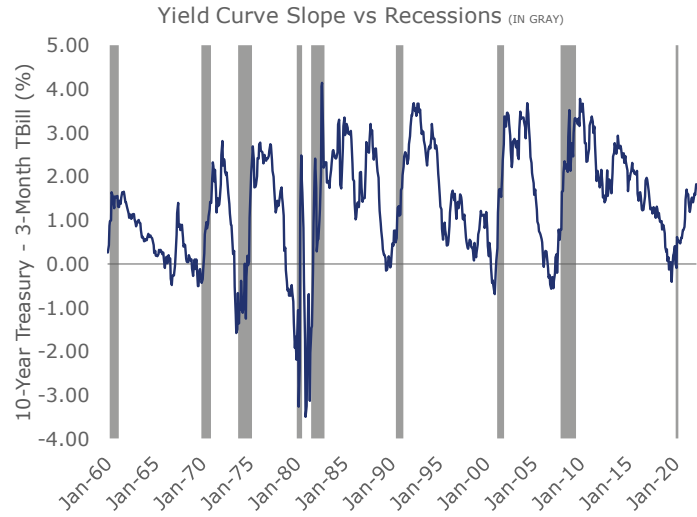
## Annual Equity Market Selloffs

U.S. equity has been selling-off all year, hitting its last market high on January 3<sup>rd</sup>



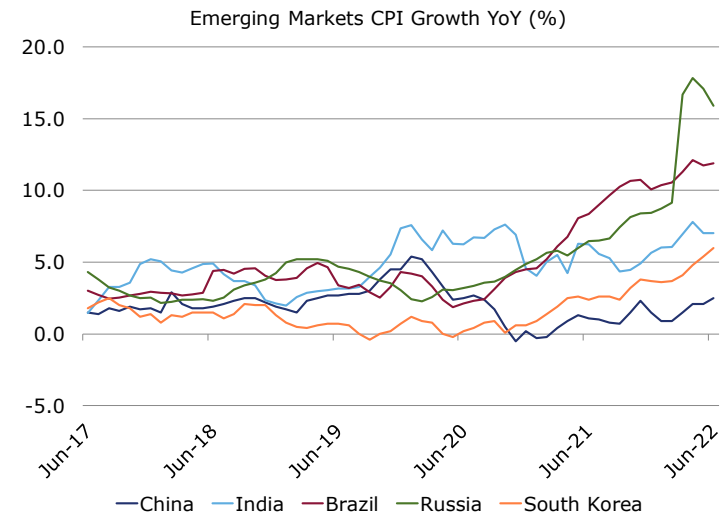
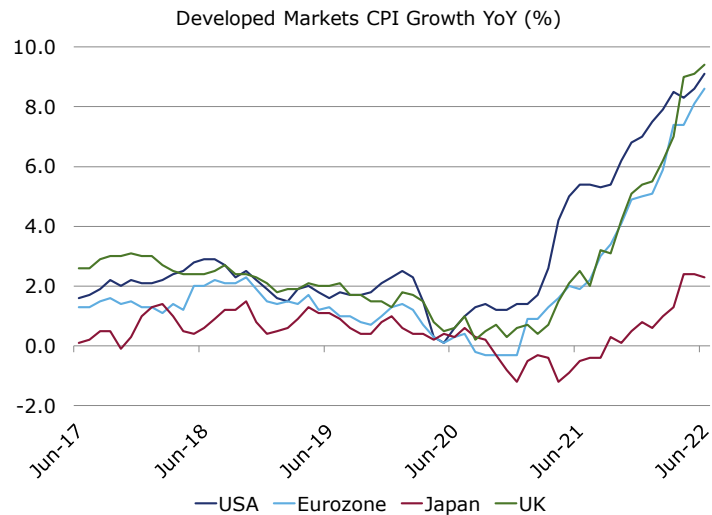
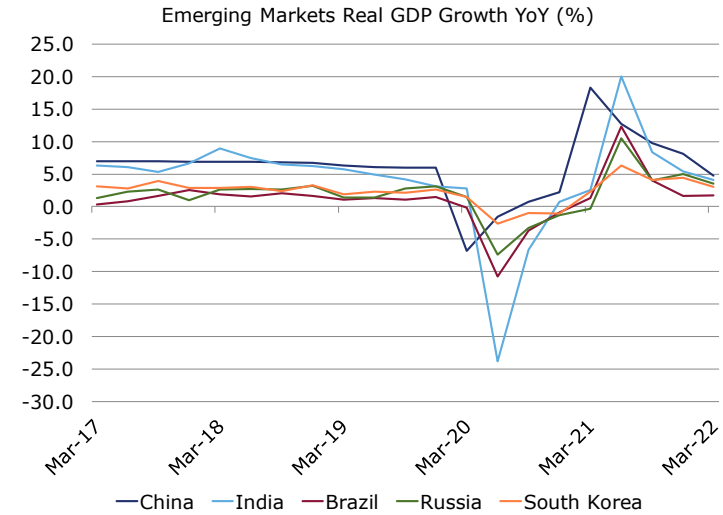
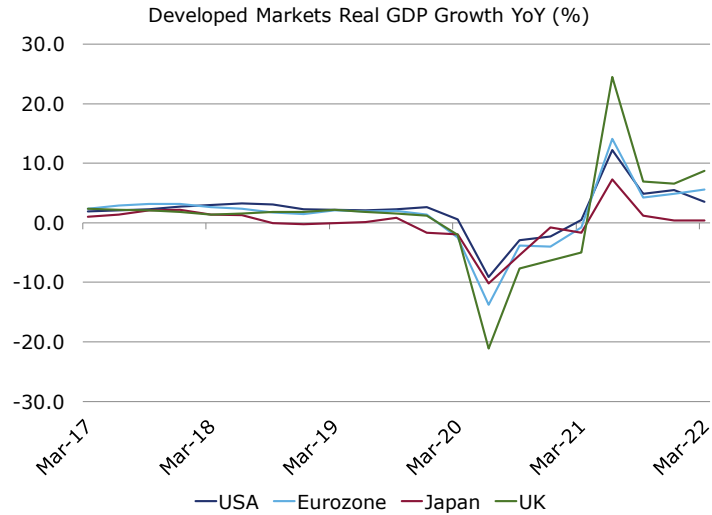
Data Sources: Wilshire Web, Bloomberg

# Risk Monitor



Data Sources: Bloomberg

## Non-U.S. Growth and Inflation

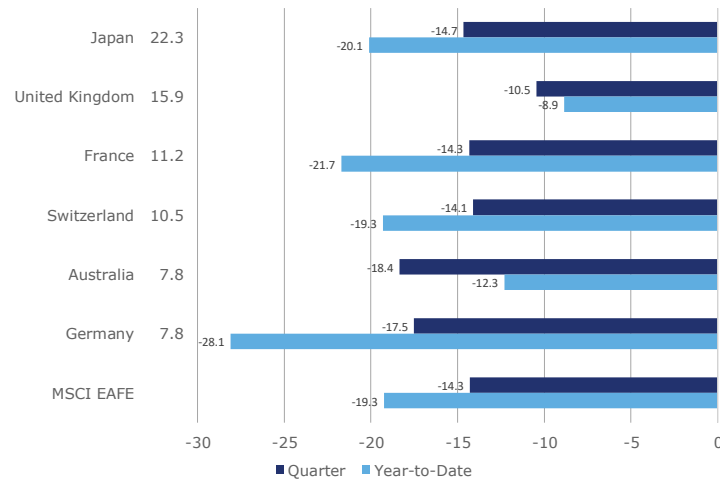


Data Sources: Bloomberg

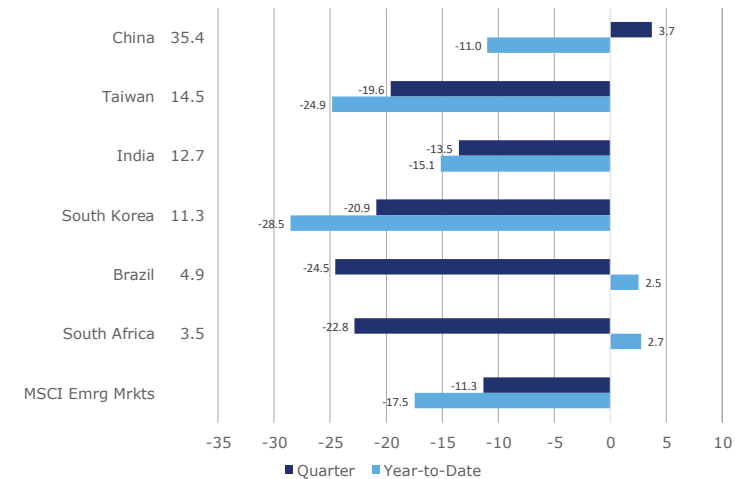
## Non-U.S. Equity Market

As of 6/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
MSCI ACWI ex-US (\$G)	-13.5	-18.2	-19.0	1.8	3.0	5.3
MSCI EAFE (\$G)	-14.3	-19.3	-17.3	1.5	2.7	5.9
MSCI Emerging Markets (\$G)	-11.3	-17.5	-25.0	0.9	2.5	3.4
MSCI Frontier Markets (\$G)	-18.2	-17.7	-14.7	-5.7	-1.7	1.3
MSCI ACWI ex-US Growth (\$G)	-15.6	-24.6	-25.6	1.9	3.8	6.1
MSCI ACWI ex-US Value (\$G)	-12.2	-12.3	-12.9	1.4	1.9	4.6
MSCI ACWI ex-US Small (\$G)	-17.4	-22.7	-22.1	3.4	3.0	6.6
MSCI ACWI Minimum Volatility	-9.1	-11.8	-5.9	3.5	6.3	8.6
MSCI EAFE Minimum Volatility	-11.6	-16.3	-14.0	-1.5	1.4	5.7
FTSE RAFI Developed ex-US	-13.4	-14.5	-13.2	2.8	2.6	5.8
MSCI EAFE LC (G)	-7.6	-10.9	-6.1	4.9	4.8	8.8
MSCI Emerging Markets LC (G)	-8.0	-13.5	-19.9	3.6	4.7	6.3

Developed Markets Weight and Return (%)



Emerging Markets Weight and Return (%)



Data Sources: Bloomberg

# CalPERS Public Equity – Performance

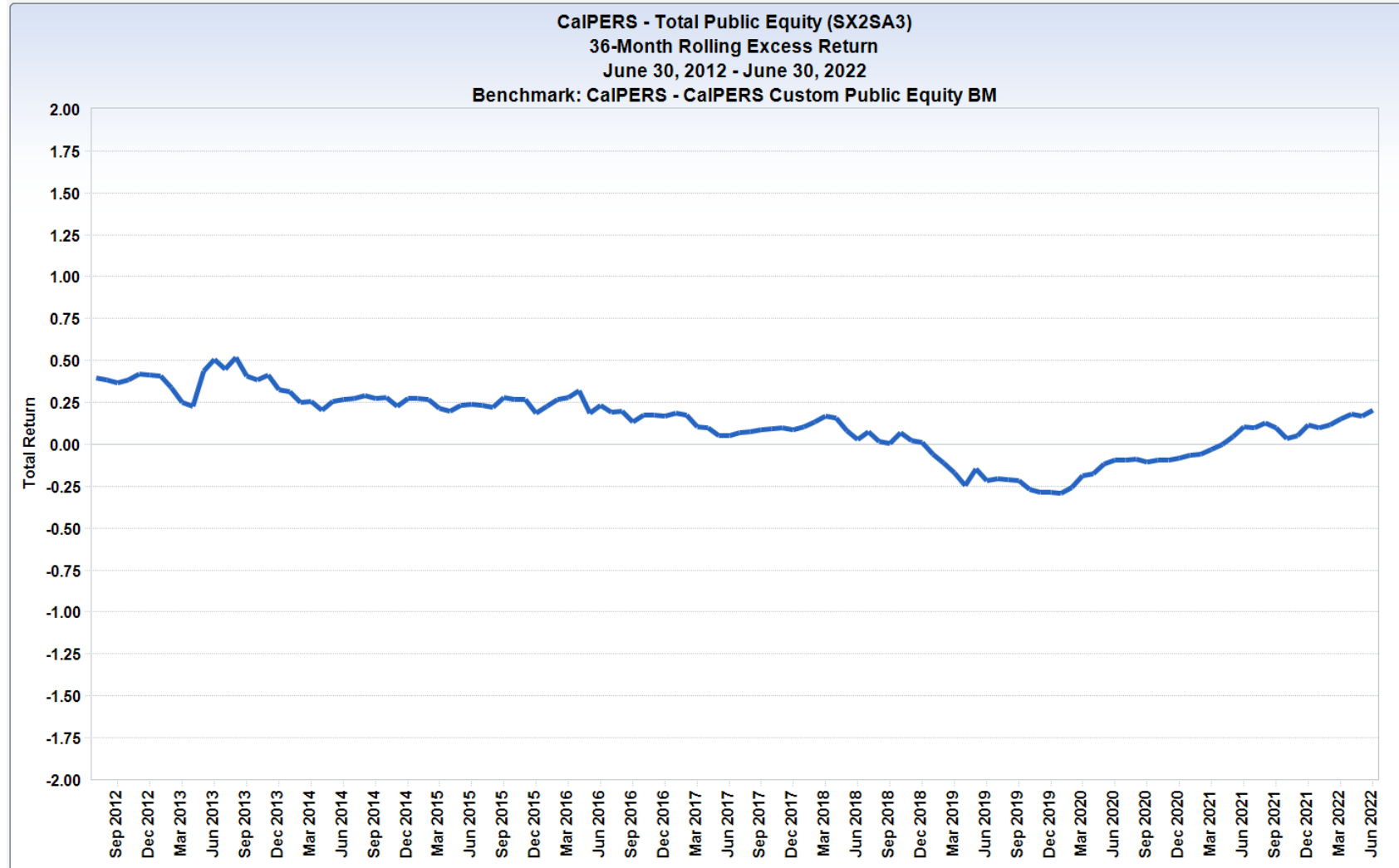
As of June 30, 2022

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
<b>PUBLIC EQUITY*</b>	\$ 195.1	-13.5%	-13.1%	6.0%	7.1%	9.4%	\$ 38.2	0.4	0.1
<i>Public Equity Policy Benchmark</i>		-13.7%	-13.2%	5.8%	7.1%	9.2%		0.4	0.0
<b>Public Equity - Cap Weighted*</b>	\$ 130.5	-15.5%	-15.8%	6.8%	7.4%	9.5%	\$ 28.1	0.4	0.2
<i>CalPERS Custom FTSE Global Benchmark</i>		-15.7%	-16.0%	6.5%	7.3%	9.3%		0.4	0.0
<b>Public Equity - Factor Weighted</b>	\$ 64.7	-9.5%	-6.9%	3.6%	-.-%	-.-%	\$ 10.1	N/A	N/A
<i>CalPERS Custom FTSE Factor Weighted Benchmark</i>		-9.4%	-6.8%	3.6%	-.-%	-.-%		N/A	N/A

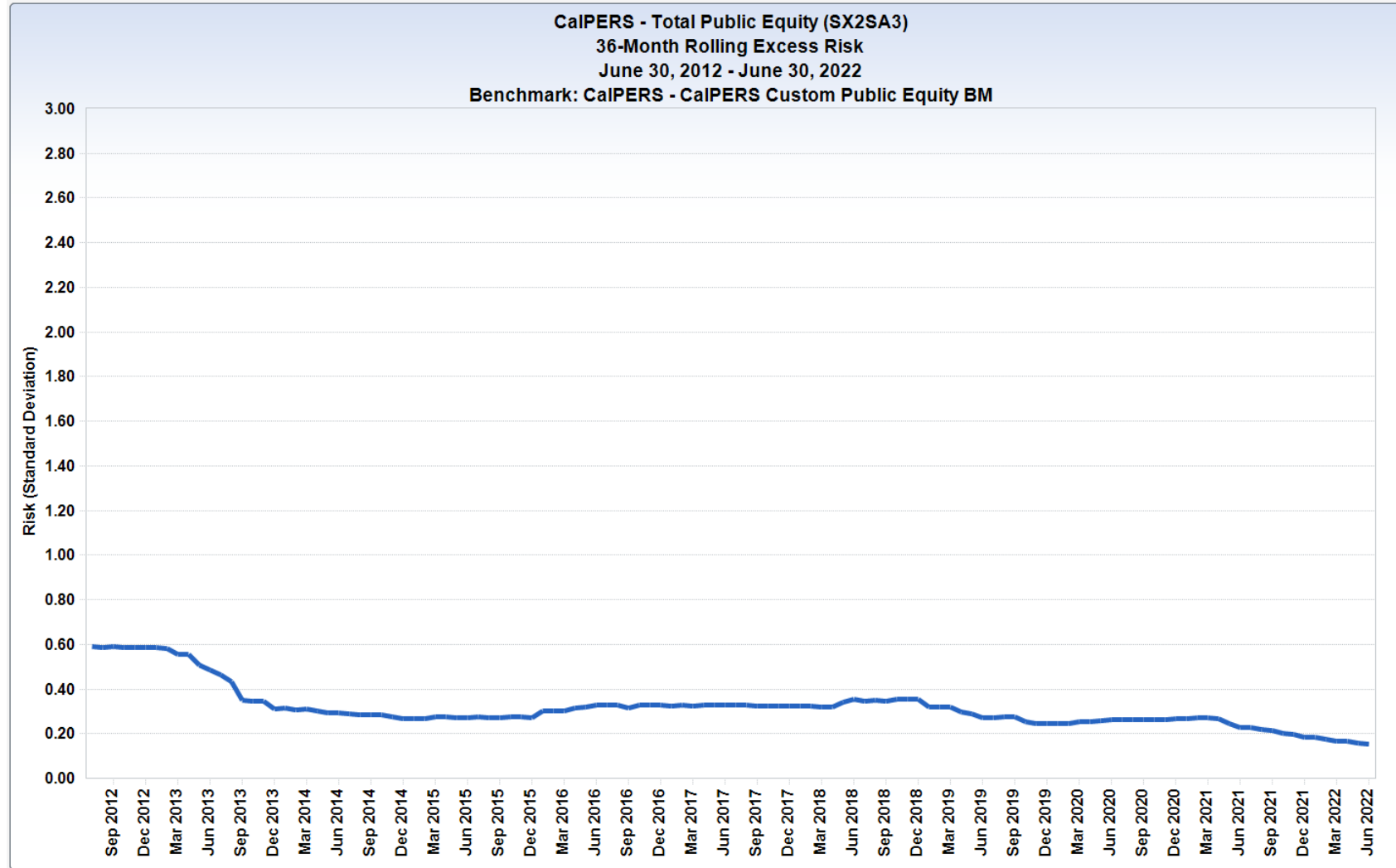
\* The CalPERS asset values shown include derivative exposure.



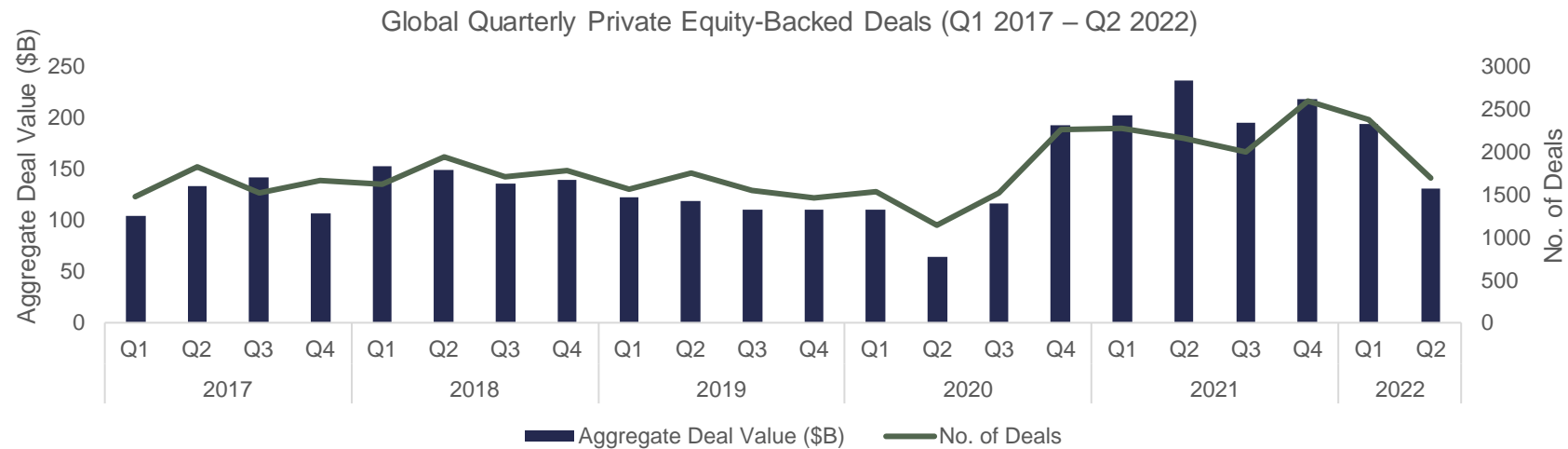
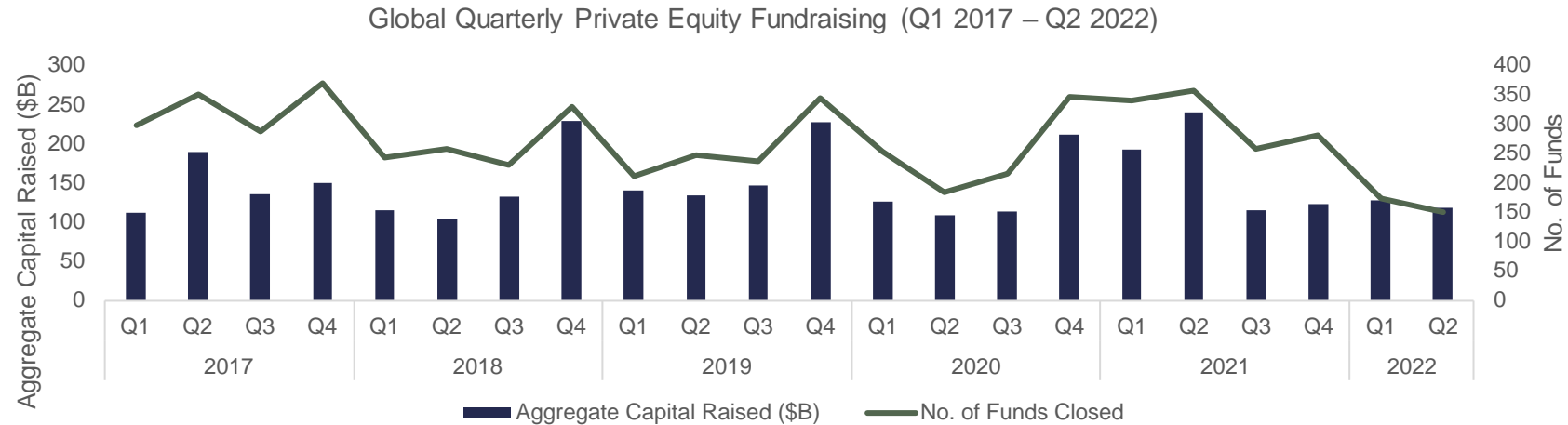
# CalPERS Public Equity – Rolling Excess Return



# CalPERS Public Equity – Rolling Tracking Error



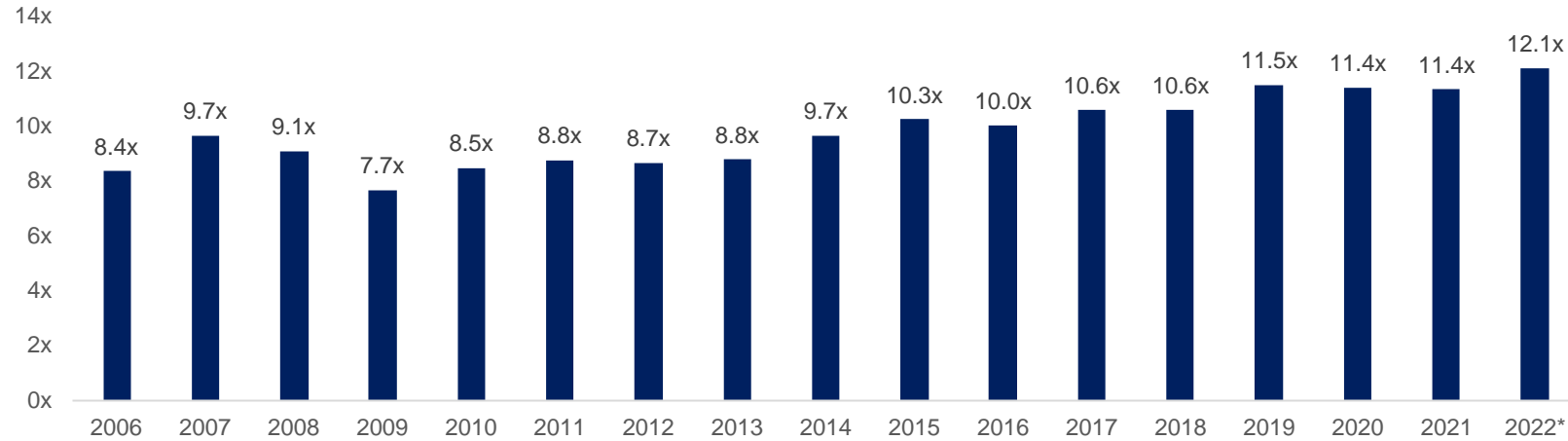
## Private Equity – Fundraising & Investment Activity



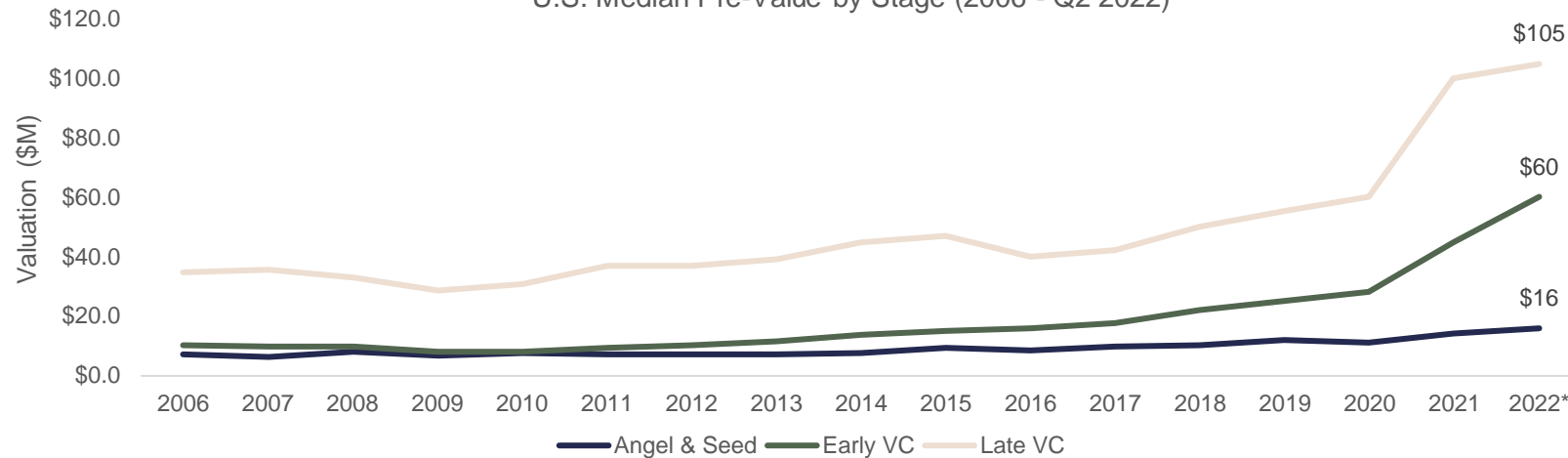
Source: Preqin, as of June 30, 2022.

## Private Equity – Pricing & Valuations

LBO Purchase Price Multiples (2006 – Q2 2022)

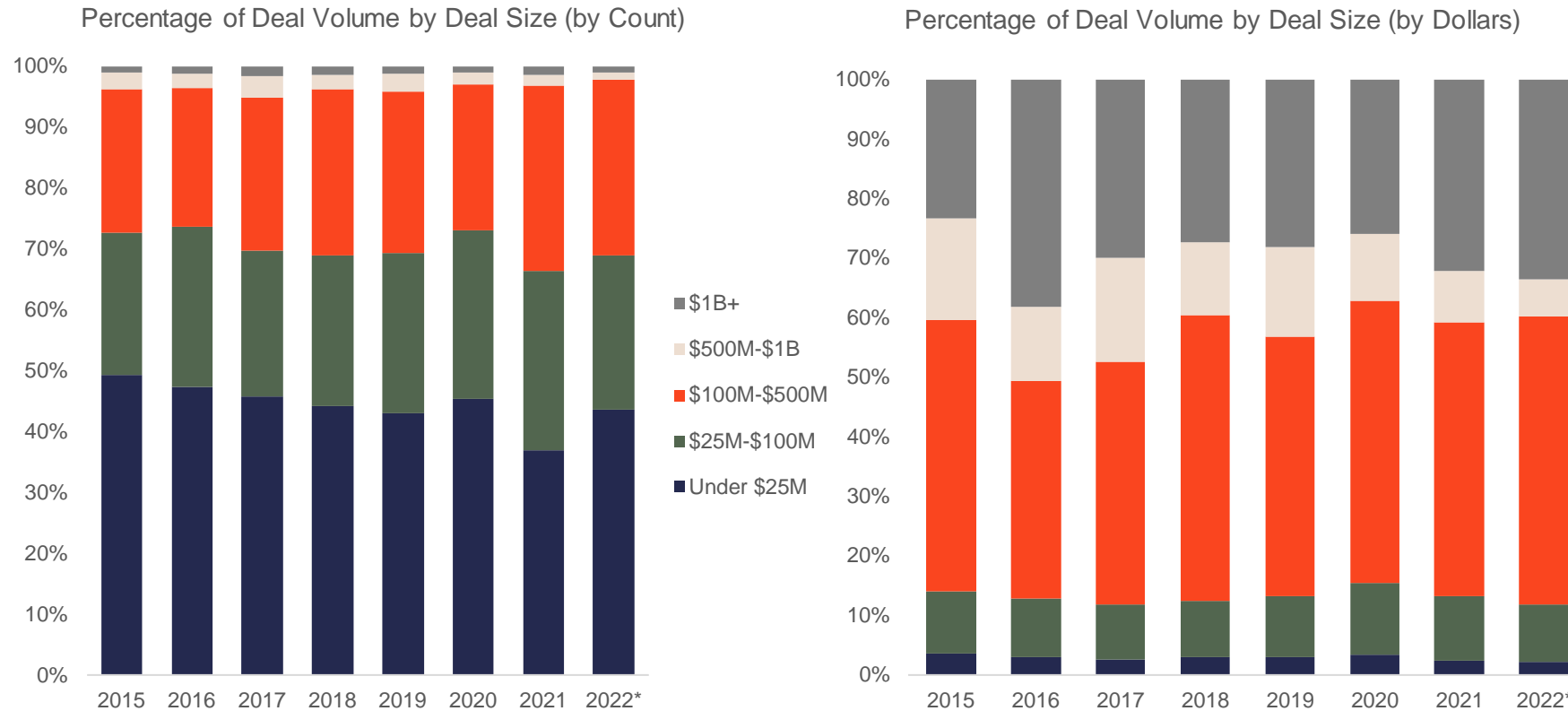


U.S. Median Pre-Value by Stage (2006 - Q2 2022)



Source: S&P LBO; Pitchbook, \*as of June 30, 2022.

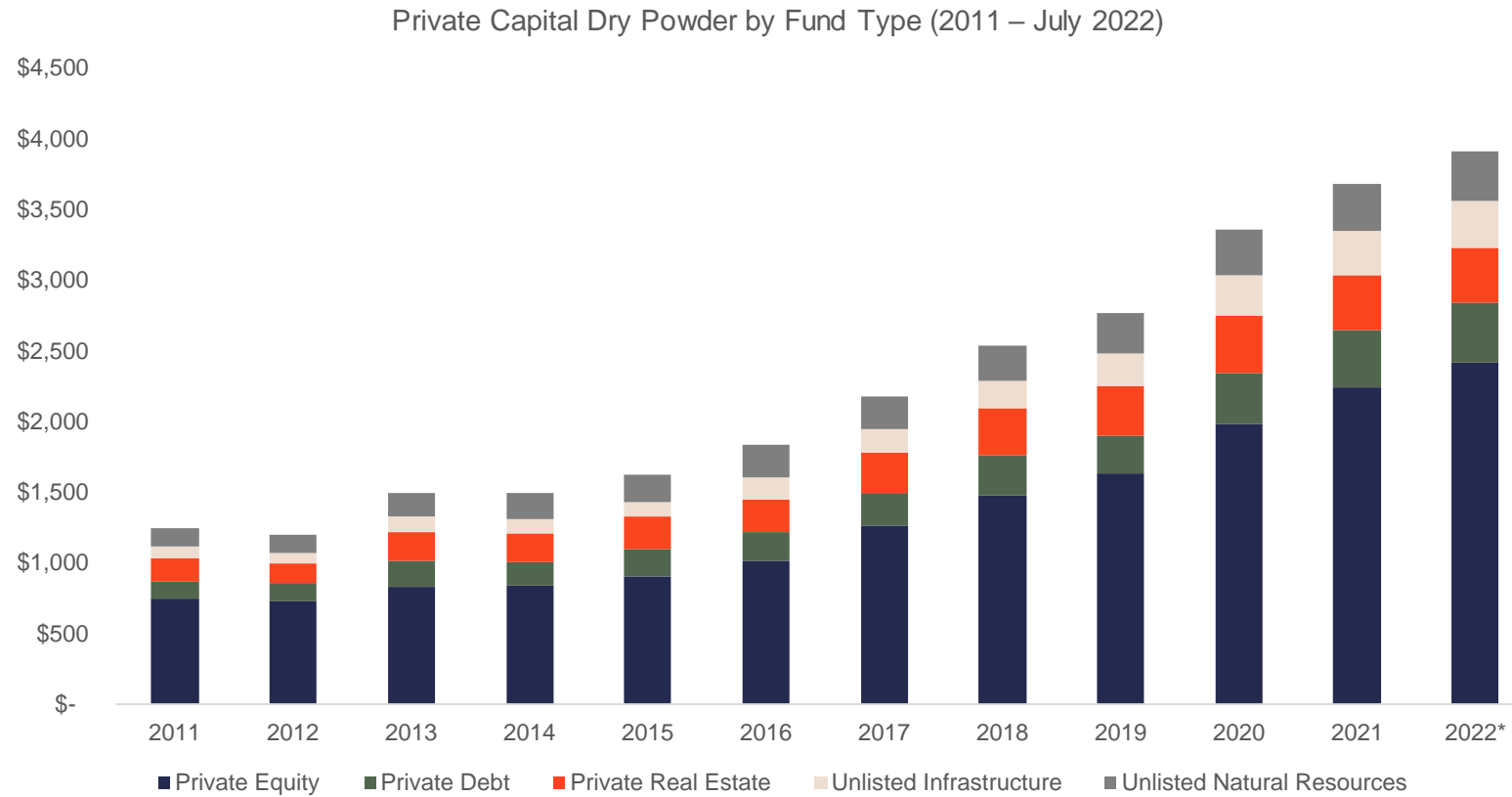
## U.S. Investment Activity by Deal Size



- Deal volume continues to be dominated by lower middle market deals with investment sizes below \$100 million through the second quarter of 2022
- However, deals with below \$100 million check sizes comprised only 12% of all deal volume by amount of capital invested through the second quarter of 2022

Source: Pitchbook, \*as of June 30, 2022.

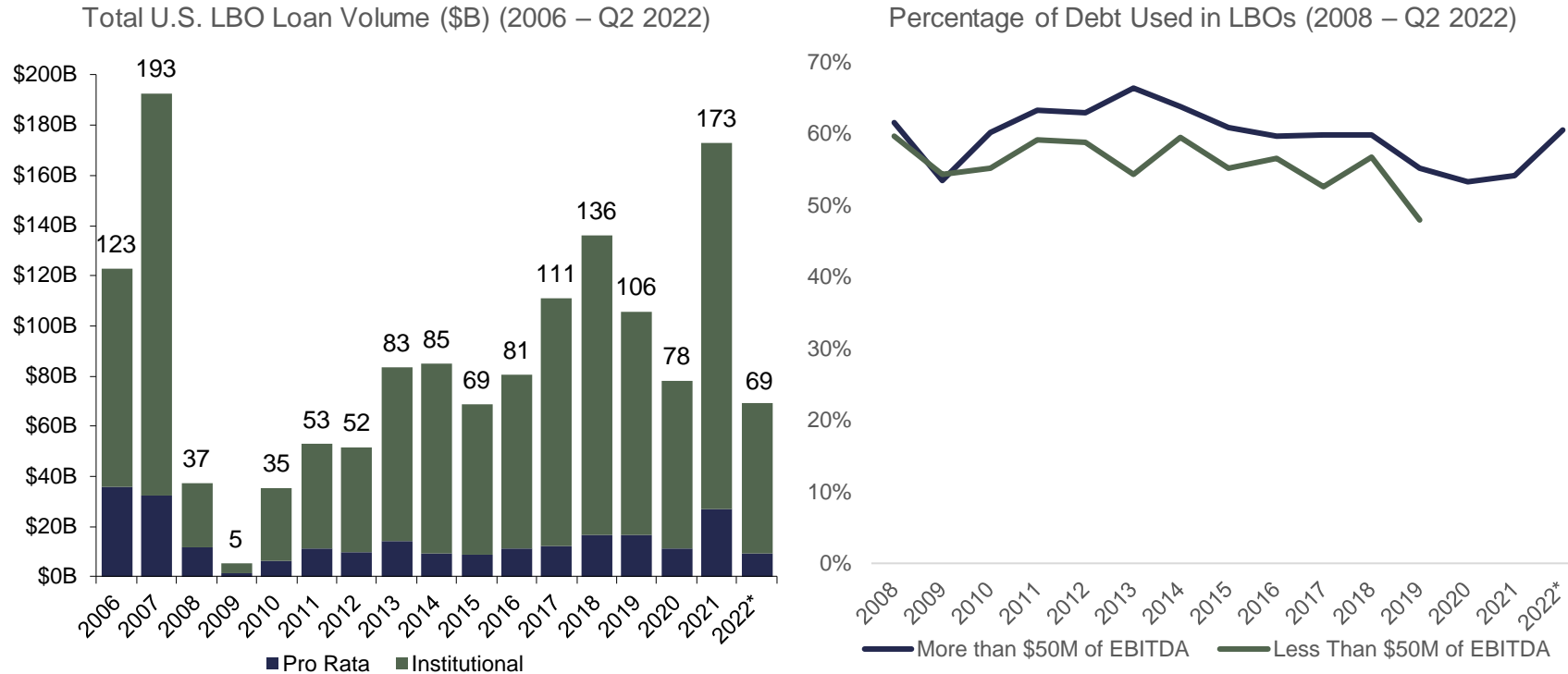
## Private Capital Dry Powder



- Global private capital dry power continues to increase, topping \$3.9 trillion across all fund types
- Private equity comprises just under 62% of total dry powder in the market as of July 2022

Source: Preqin, \*as of July 14, 2022.

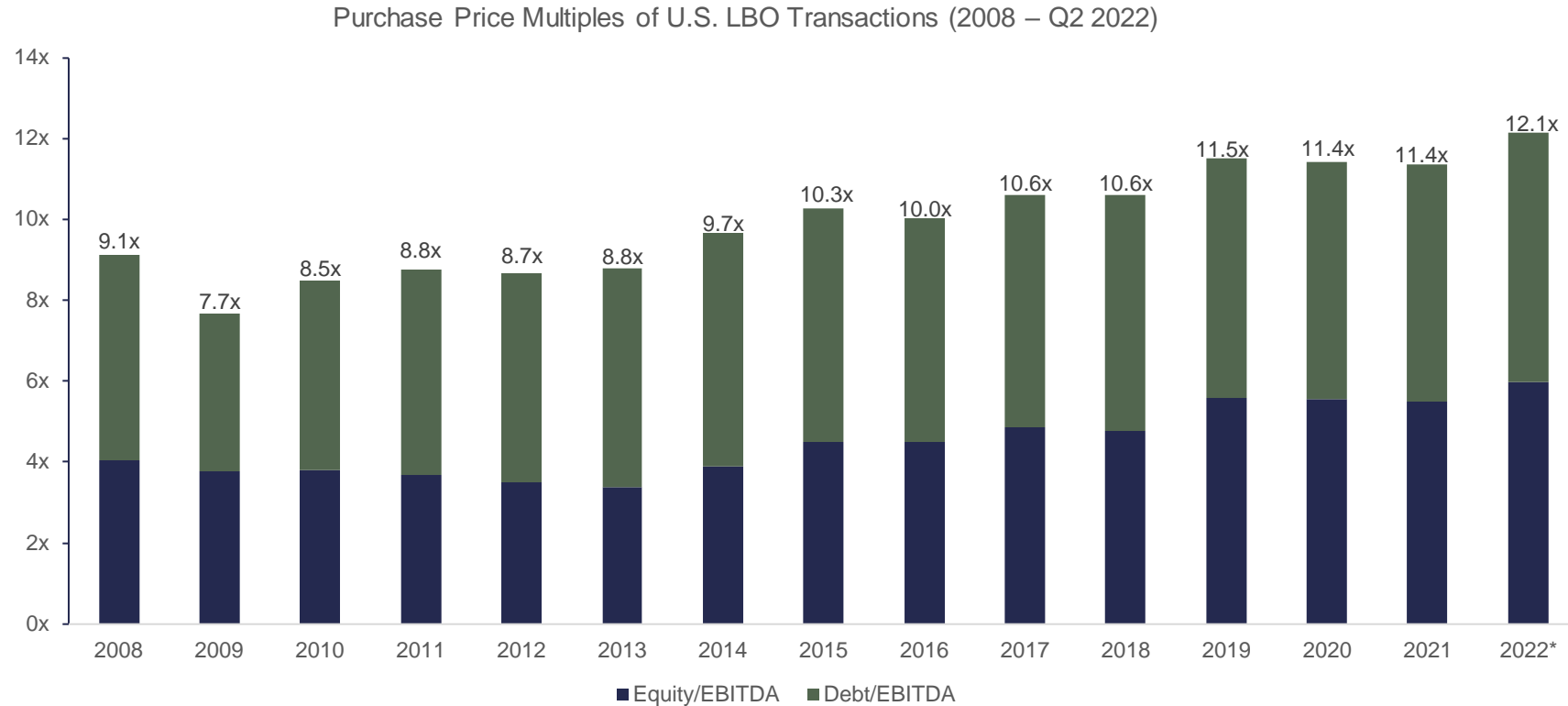
## Private Equity – U.S. Debt Markets



- 2022 has generated approximately \$69 billion in loan volume as of Q2 2022, which has slowed down comparatively to the Q1 2022 pace of \$47 billion
- As debt multiples have increased, the percentage of debt used to finance leveraged buyouts through Q2 2022 has increased from the 2021 marks

Source: S&P LBO, \*as of June 30, 2022. "Less than \$50M of EBITDA" data for 2020, 2021 and 2022 not yet available.

## Private Equity – U.S. LBO Purchase Price Multiples



- Purchase price multiples for U.S. LBOs have remained steady from 2019 to 2021 and have increased through Q2 2022 compared to previous years.

Source: S&P LBO, \*as of June 30, 2022.



# CalPERS Private Equity – Performance

As of June 30, 2022

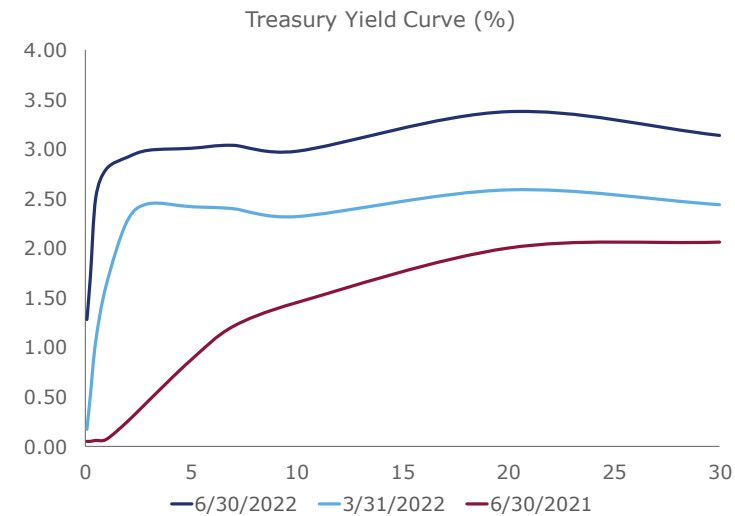
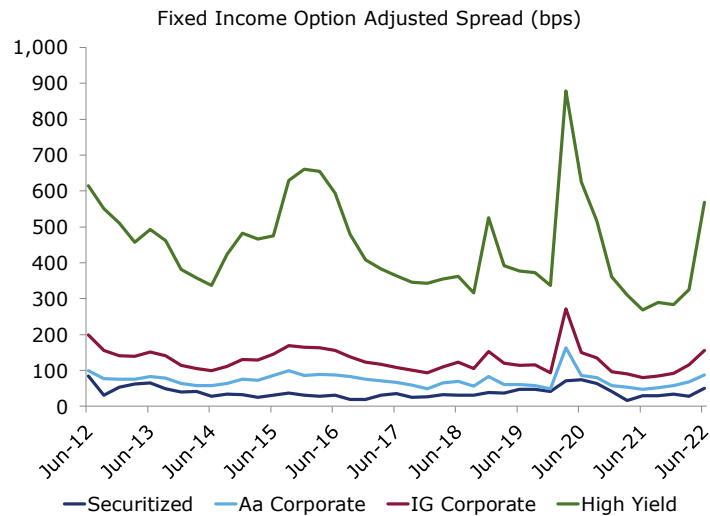
	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios	
								Sharpe	Info
<b>PRIVATE EQUITY</b>	\$ 52.8	0.3%	21.3%	18.3%	15.7%	13.5%	\$ 20.3	1.8	0.1
<i>CalPERS Custom Private Equity Benchmark</i>		-5.1%	8.3%	15.8%	13.9%	13.8%		0.8	0.0

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios	
								Sharpe	Info
<i>Private Equity</i>									
Private Equity Partnership Investments	\$ 52.8	0.3%	21.5%	18.4%	15.7%	13.6%		N/A	N/A
Private Equity Distribution Stock	\$ 0.0	-42.9%	-66.1%	-41.5%	-18.0%	-20.7%		N/A	N/A

# U.S. Fixed Income

As of 6/30/2022	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg Aggregate	3.7	6.4	-4.7	-10.3	-10.3	-0.9	0.9	1.5
Bloomberg Treasury	3.1	6.4	-3.8	-9.1	-8.9	-0.9	0.7	1.0
Bloomberg Gov't-Rel.	3.7	5.4	-4.0	-9.2	-9.3	-0.8	1.0	1.6
Bloomberg Securitized	3.8	5.8	-3.9	-8.7	-9.0	-1.3	0.5	1.3
Bloomberg Corporate	4.7	7.6	-7.3	-14.4	-14.2	-1.0	1.3	2.6
Bloomberg LT Gov't/Credit	4.3	15.1	-12.3	-21.9	-20.1	-2.3	1.0	2.6
Bloomberg LT Treasury	3.3	17.2	-11.9	-21.3	-18.5	-2.9	0.5	1.6
Bloomberg LT Gov't-Rel.	4.8	12.2	-10.7	-19.4	-18.3	-2.8	1.0	2.6
Bloomberg LT Corporate	5.1	13.5	-12.8	-22.7	-21.7	-2.3	1.1	3.3
Bloomberg U.S. TIPS *	3.0	8.0	-6.1	-8.9	-5.1	3.0	3.2	1.7
Bloomberg High Yield	8.9	4.3	-9.8	-14.2	-12.8	0.2	2.1	4.5
S&P/LSTA Leveraged Loan	6.9	0.3	-4.5	-4.6	-2.8	2.1	2.9	3.7
Treasury Bills	1.8	0.3	0.1	0.0	0.0	0.6	1.1	0.6

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

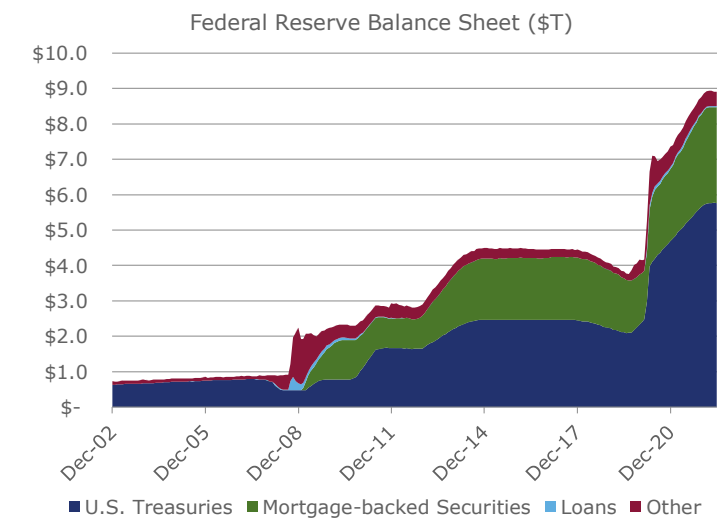
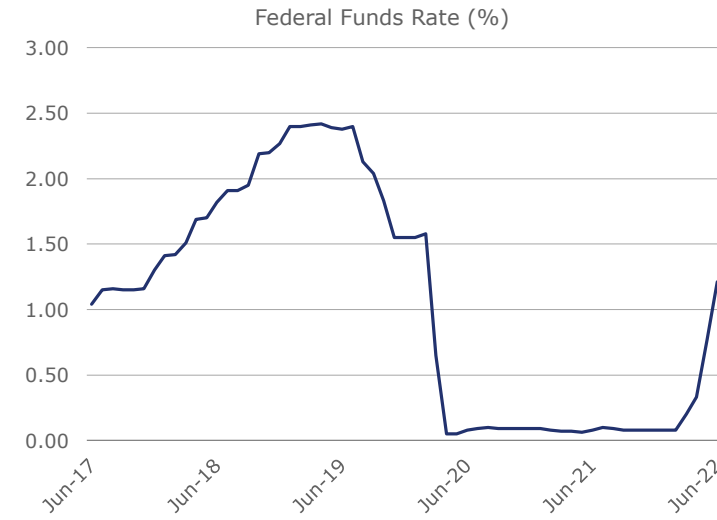


Data Sources: Bloomberg

## Federal Reserve

- After 150 basis point increase in the Fed-funds rate since the start of the year, current FOMC expectation is for another 175 basis point increase by the end of 2022
- Federal Reserve has added more than \$4.5 trillion in assets to their balance sheet during the past two years
- QE4 is now larger than the 3 phases of quantitative easing – combined – following the global financial crisis

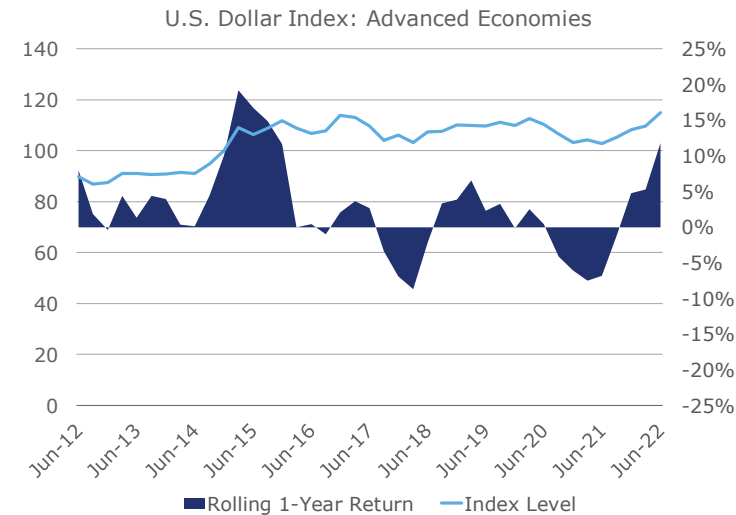
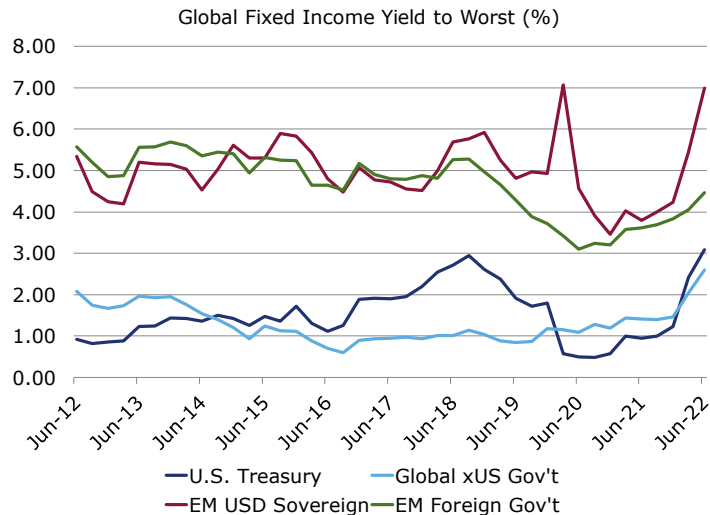
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020	3/15/2022	\$4,779



# Non-U.S. Fixed Income

As of 6/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
<b>Developed Markets</b>						
Bloomberg Global Aggregate xUS	-11.0	-16.5	-18.8	-5.1	-1.8	-1.1
Bloomberg Global Aggregate xUS *	-4.0	-7.9	-7.7	-1.4	1.3	2.7
Bloomberg Global Inflation Linked xUS	-18.9	-23.2	-21.0	-3.8	-0.9	0.8
Bloomberg Global Inflation Linked xUS *	-12.2	-14.7	-9.6	-0.8	1.9	4.0
<b>Emerging Markets (Hard Currency)</b>						
Bloomberg EM USD Aggregate	-8.7	-17.1	-18.0	-3.5	-0.3	2.5
<b>Emerging Markets (Foreign Currency)</b>						
Bloomberg EM Local Currency Gov't	-7.0	-9.0	-9.6	-0.8	0.9	1.0
Bloomberg EM Local Currency Gov't *	-1.6	-5.1	-5.2	-0.1	1.7	2.0
Euro vs. Dollar	-5.3	-7.8	-11.6	-2.7	-1.7	-1.9
Yen vs. Dollar	-10.3	-15.2	-18.1	-7.4	-3.7	-5.2
Pound vs. Dollar	-7.3	-10.0	-12.0	-1.4	-1.3	-2.5

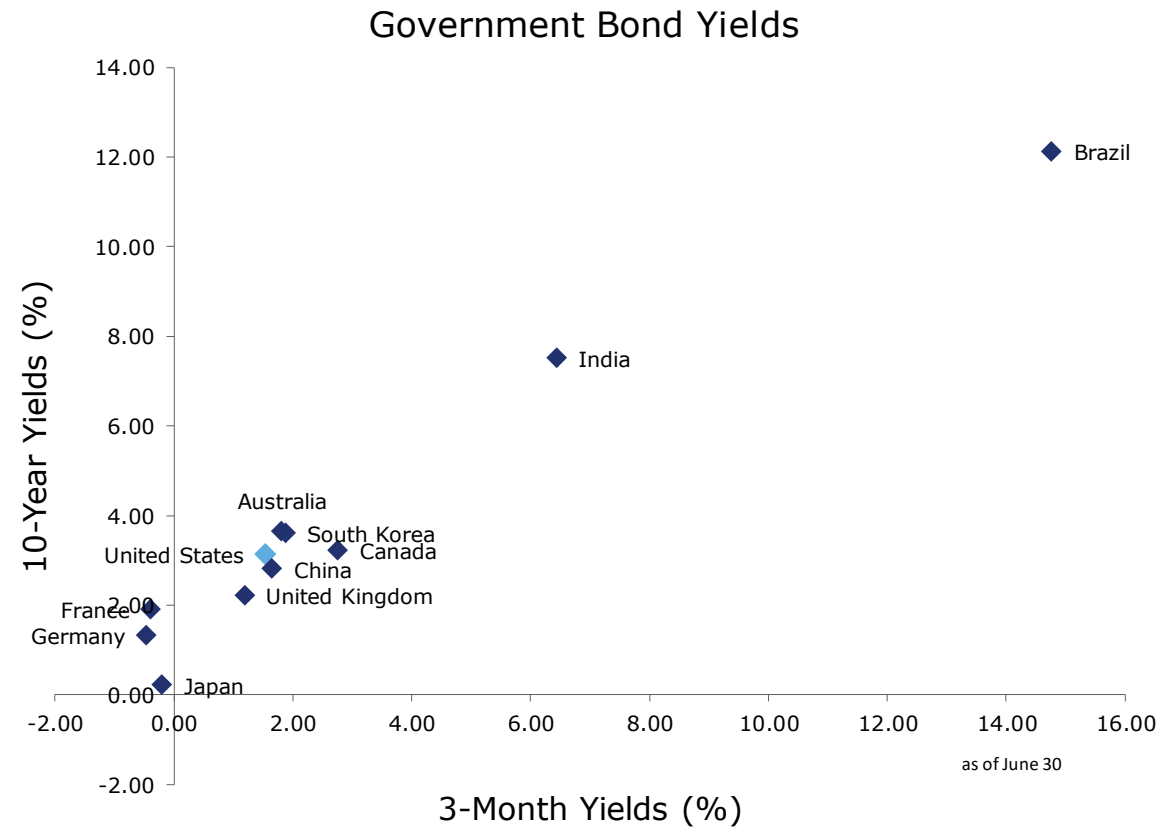
\* Returns are reported in terms of local market investors, which removes currency effects.



Data Sources: Bloomberg

## Global Interest Rates

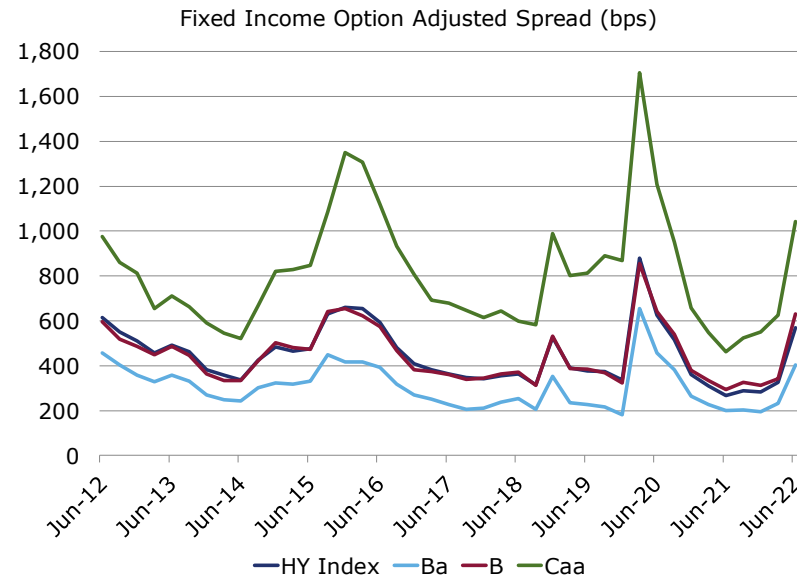
Negative rates found in Germany and France; higher rates, and at similar levels, in the U.S., Australia and in the U.K.



Data Sources: Bloomberg

## High Yield Bond Market

As of 6/30/2022		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Bloomberg High Yield		8.9	-9.8	-14.2	-12.8	0.2	2.1	4.5
S&P LSTA Leveraged Loan		4.4	-5.3	-5.5	-4.2	1.4	2.4	3.3
<b>High Yield Quality Distribution</b>	<b>Weight</b>							
Ba U.S. High Yield	52.3%	7.2	-8.4	-13.9	-12.3	1.2	2.8	4.8
B U.S. High Yield	36.1%	9.5	-10.8	-13.9	-12.7	-0.5	1.8	4.0
Caa U.S. High Yield	11.4%	13.6	-13.0	-16.4	-15.3	-1.8	0.3	4.3
Ca to D U.S. High Yield	0.3%	42.3	-15.7	-18.9	-29.2	-6.8	-1.2	-4.5



Data Sources: Bloomberg

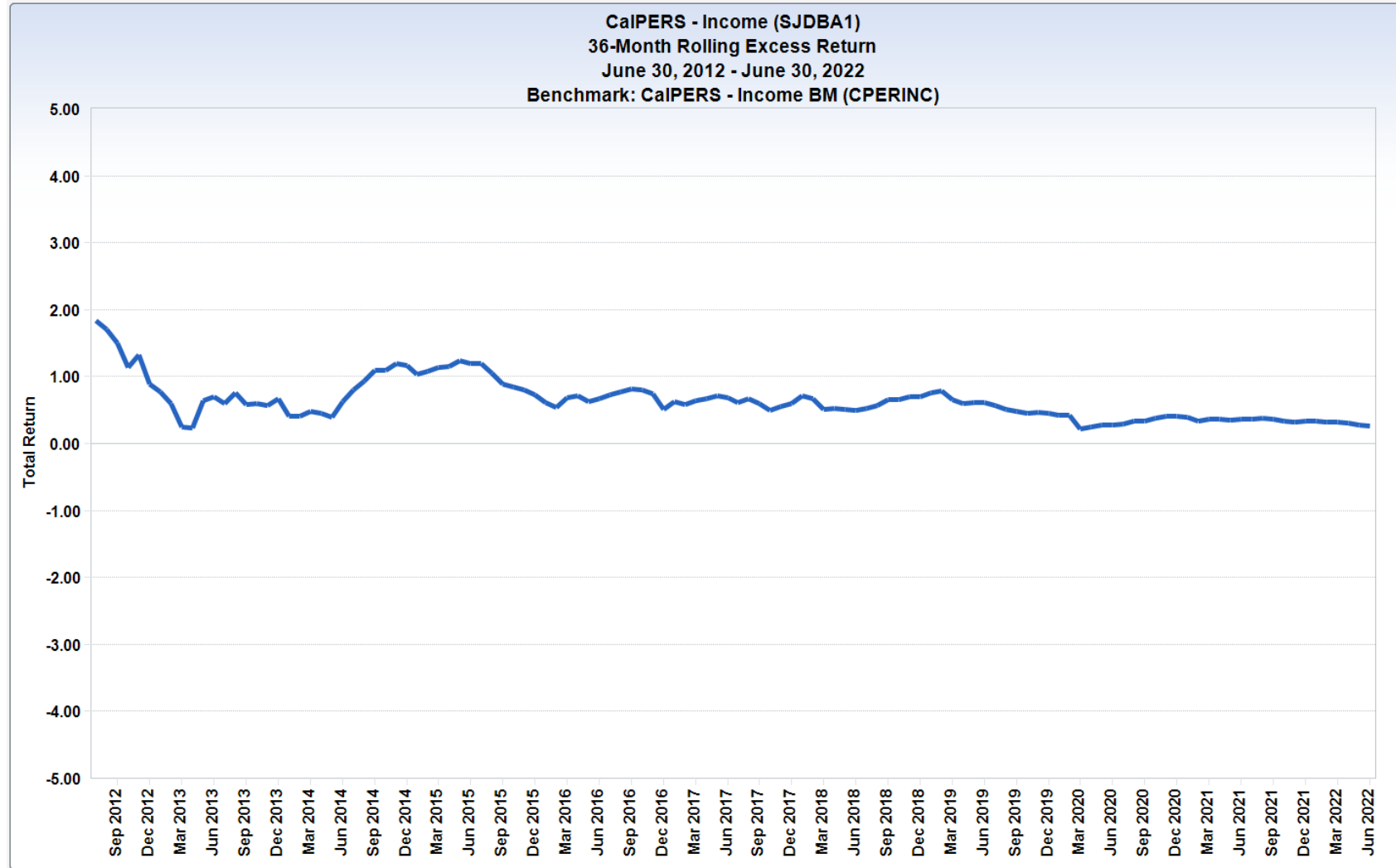
# CalPERS Income – Performance

As of June 30, 2022

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
<b>INCOME*</b>	\$ 117.6	-8.5%	-14.5%	-1.3%	1.1%	2.3%	\$ 8.1	0.0	1.2
<i>Income Policy Benchmark</i>		-8.5%	-14.5%	-1.6%	0.8%	1.6%		0.0	0.0
<b>Spread</b>	\$ 66.4	-7.5%	-14.0%	-1.1%	-.%	-.%	\$ 3.7	N/A	N/A
<i>BBG Custom Global Long Spread Index</i>		-7.5%	-13.9%	-1.6%	-.%	-.%		N/A	N/A
<b>Treasury*</b>	\$ 31.4	-9.6%	-16.1%	-2.7%	0.4%	1.1%	\$ 3.6	-0.1	-0.2
<b>Total Fund Income</b>	\$ 6.8	-9.9%	-16.4%	-.%	-.%	-.%	\$ 0.8	N/A	N/A
<i>CalPERS Custom Treasury Benchmark</i>		-9.6%	-16.1%	-2.6%	0.4%	1.1%		-0.1	0.0
<b>High Yield</b>	\$ 13.0	-9.5%	-11.9%	-0.3%	-.%	-.%	\$ 1.3	N/A	N/A
<i>BBG US High Yield BB/B Liquid Index</i>		-9.5%	-11.9%	-0.3%	-.%	-.%		N/A	N/A

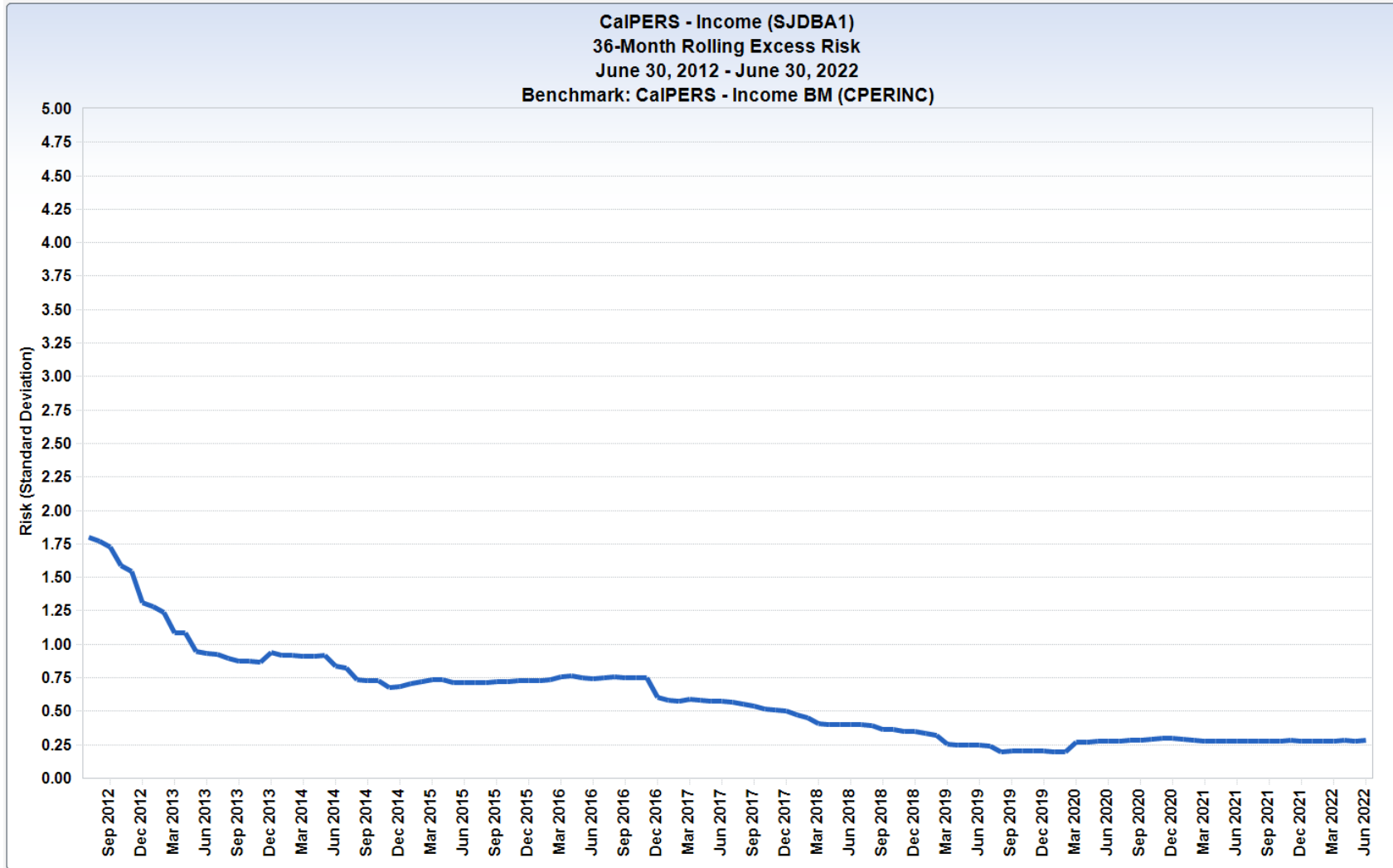
\* The CalPERS asset values shown include derivative exposure.

# CalPERS Income – Rolling Excess Return



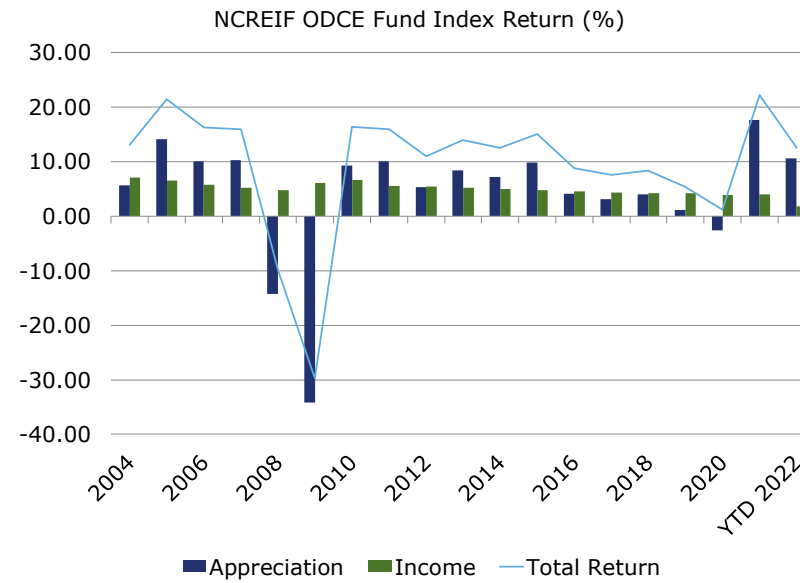
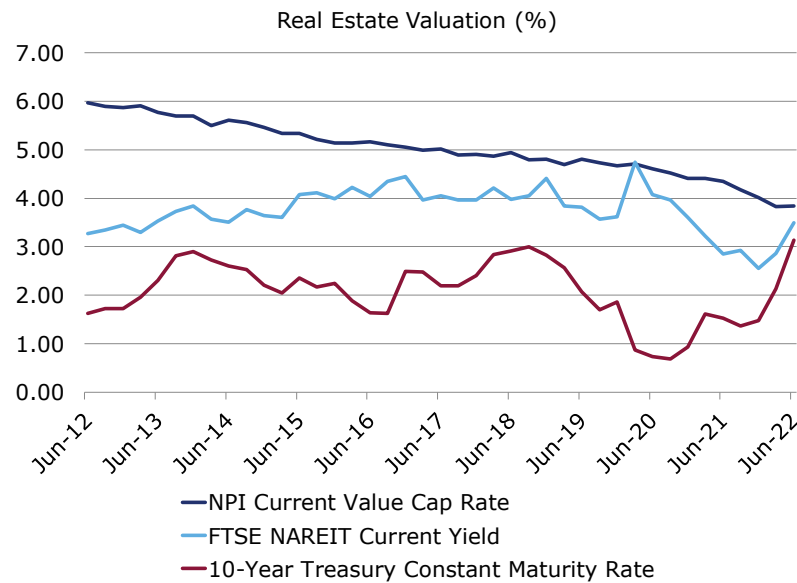


# CalPERS Income – Rolling Tracking Error



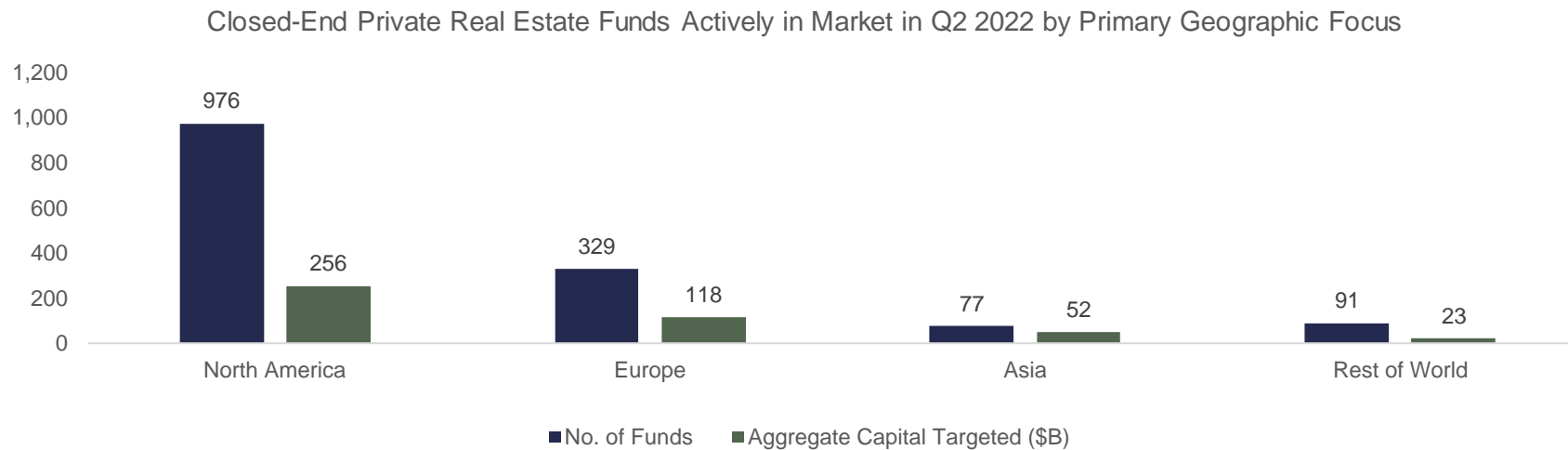
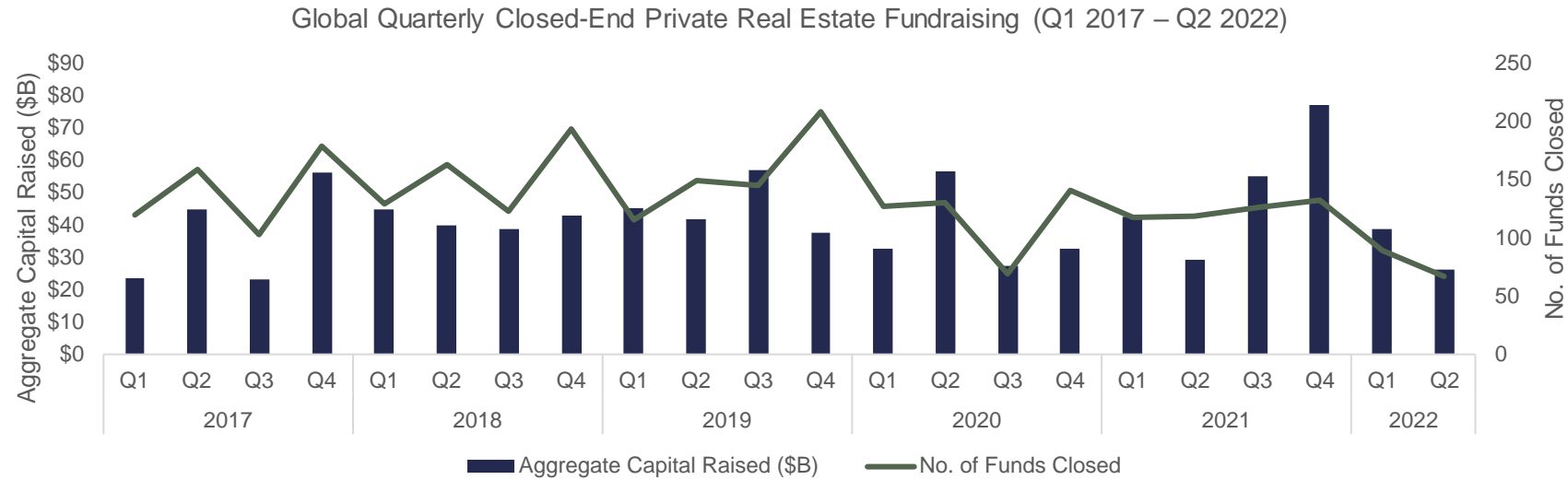
# Real Assets

As of 6/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg U.S. TIPS	-6.1	-8.9	-5.1	3.0	3.2	1.7
Bloomberg Commodity Index	-5.7	18.4	24.3	14.3	8.4	-0.8
Bloomberg Gold Index	-7.6	-1.5	1.3	6.9	6.6	0.3
Wilshire Global RESI Index	-18.0	-20.5	-9.7	1.3	3.7	6.3
NCREIF ODCE Fund Index	4.8	12.5	29.5	12.7	10.5	11.2
NCREIF Timberland Index	1.9	5.1	12.0	5.0	4.3	5.7
FTSE Global Core Infrastructure 50/50	-7.3	-3.7	3.7	4.7	6.7	8.7
Alerian Midstream Energy	-8.6	13.2	11.4	6.4	5.2	n.a.
Bitcoin	-59.1	-59.6	-45.8	18.0	49.6	121.3



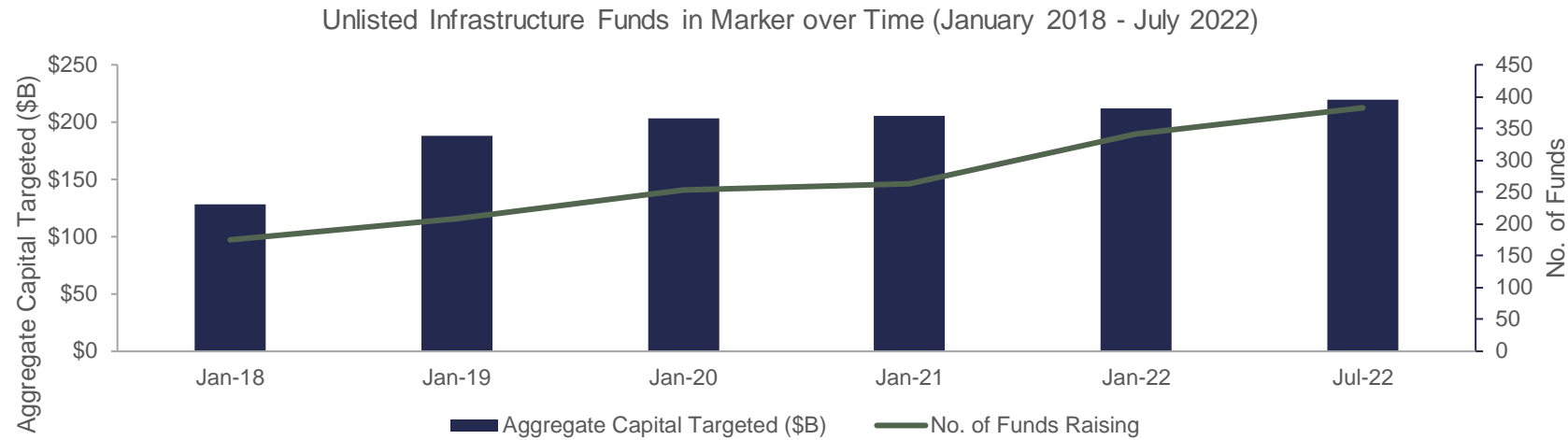
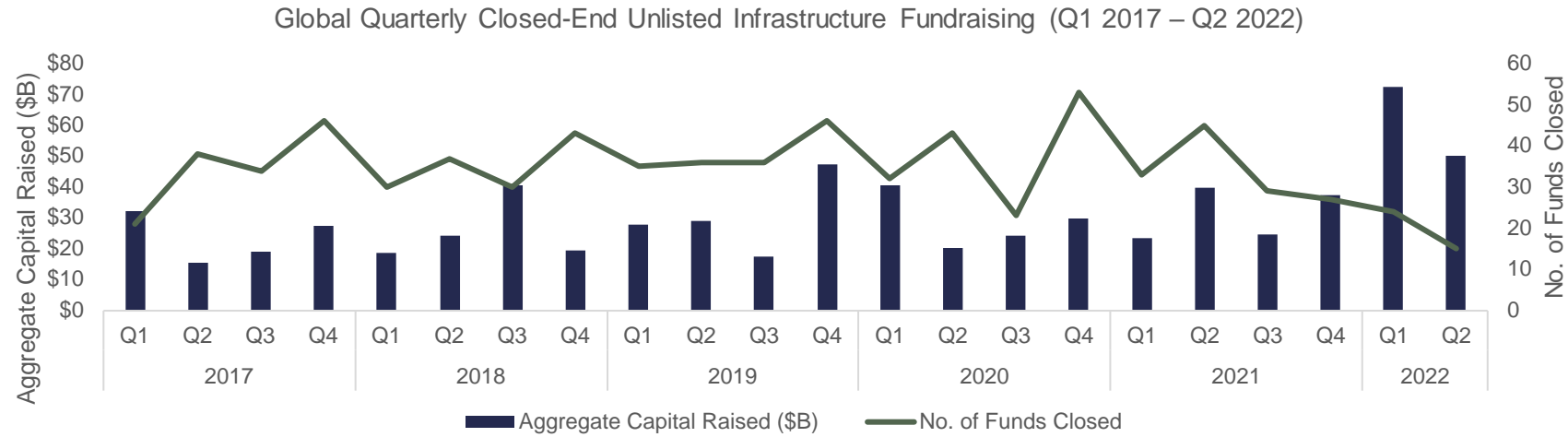
Data Sources: Bloomberg, National Council of Real Estate Investment Fiduciaries

## Private Real Estate – Fundraising Activity



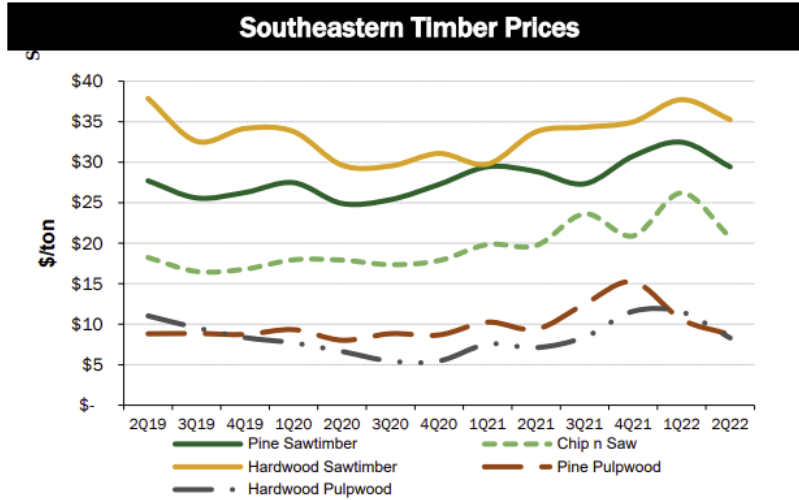
Source: Preqin, as of June 30, 2022.

## Unlisted Infrastructure – Fundraising & Investment Activity

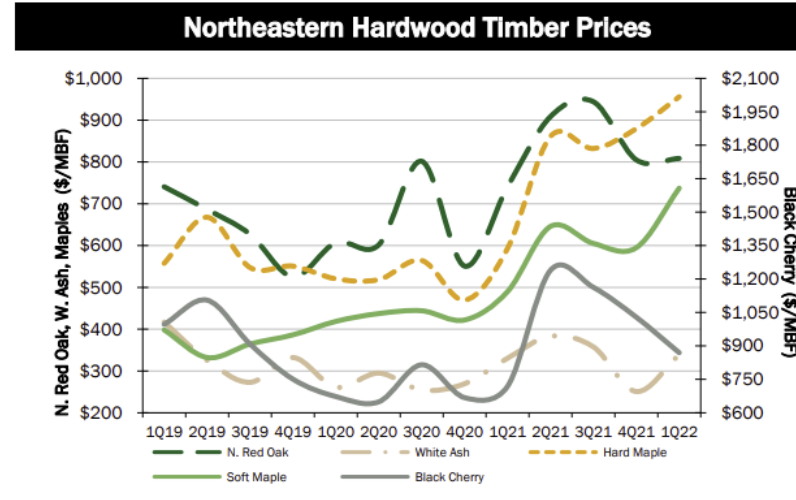


Source: Preqin, as of June 30, 2022.

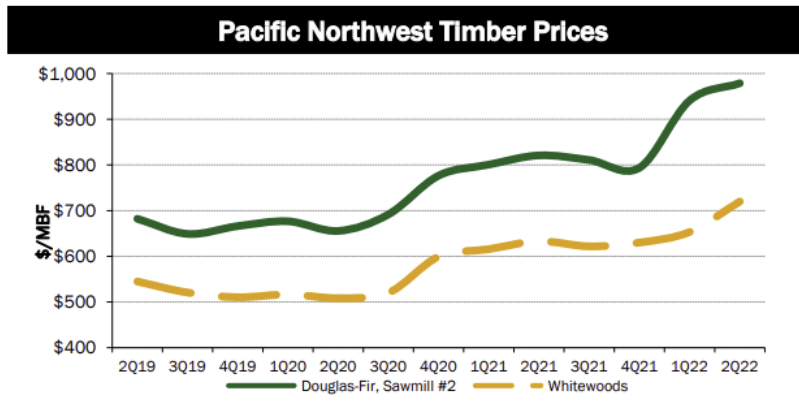
# Timber Investments



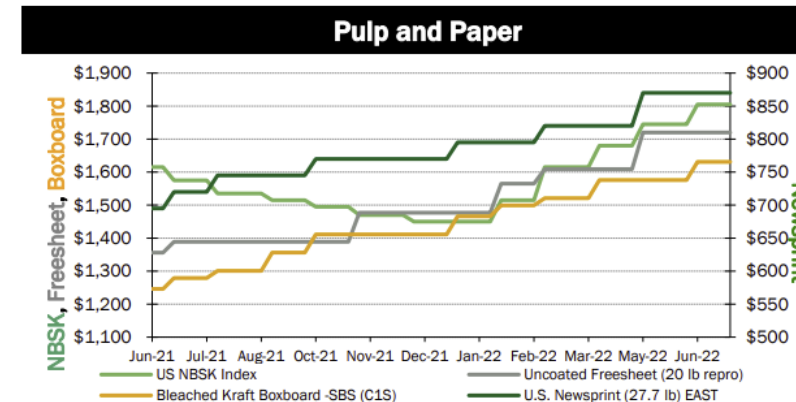
Source: Forest2Market®



Source: Pennsylvania Woodlands Timber Market Report - Northwest Region



Source: Fastmarkets RISI - Log Lines®



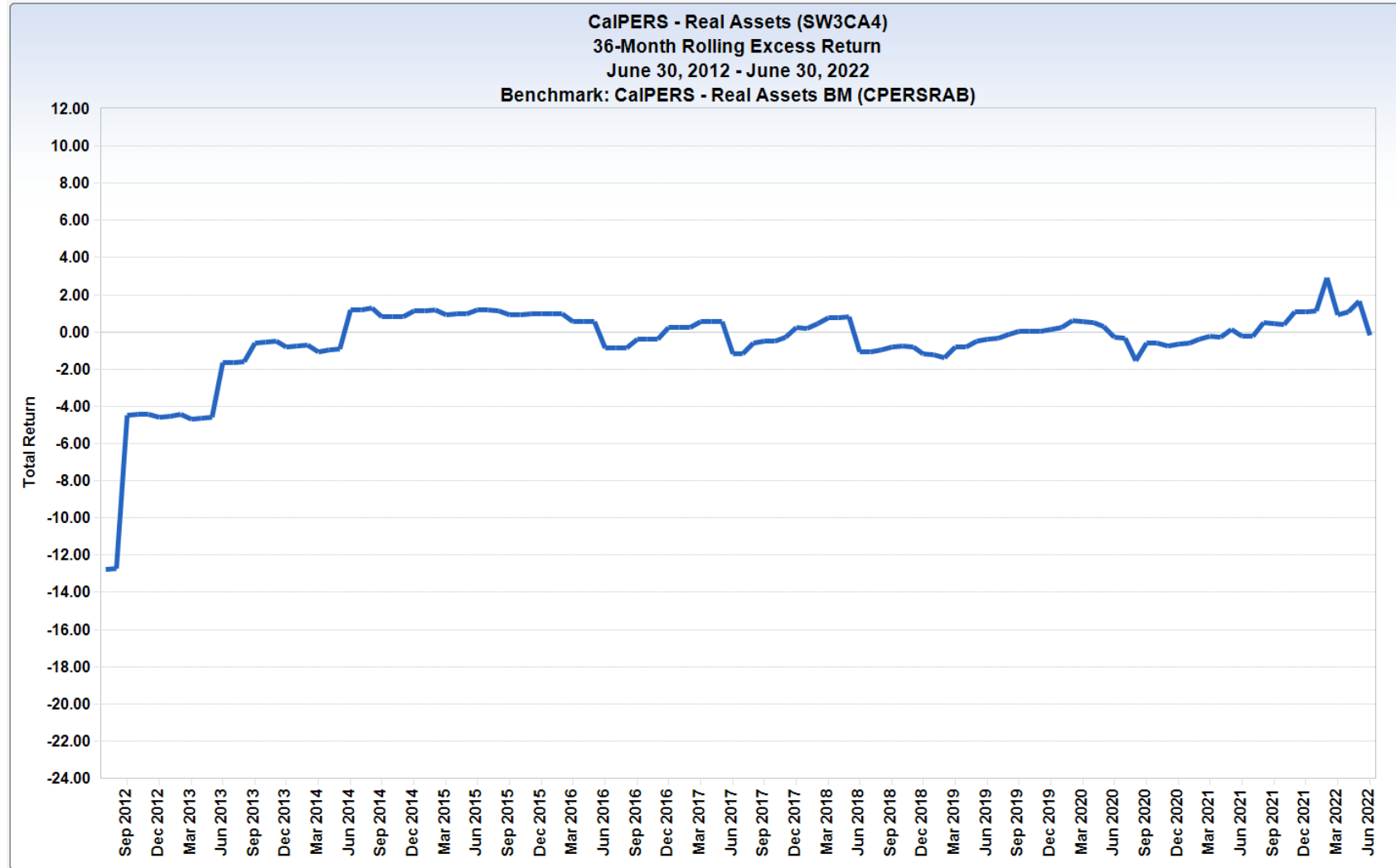
Source: Fastmarkets RISI

# CalPERS Real Assets – Performance

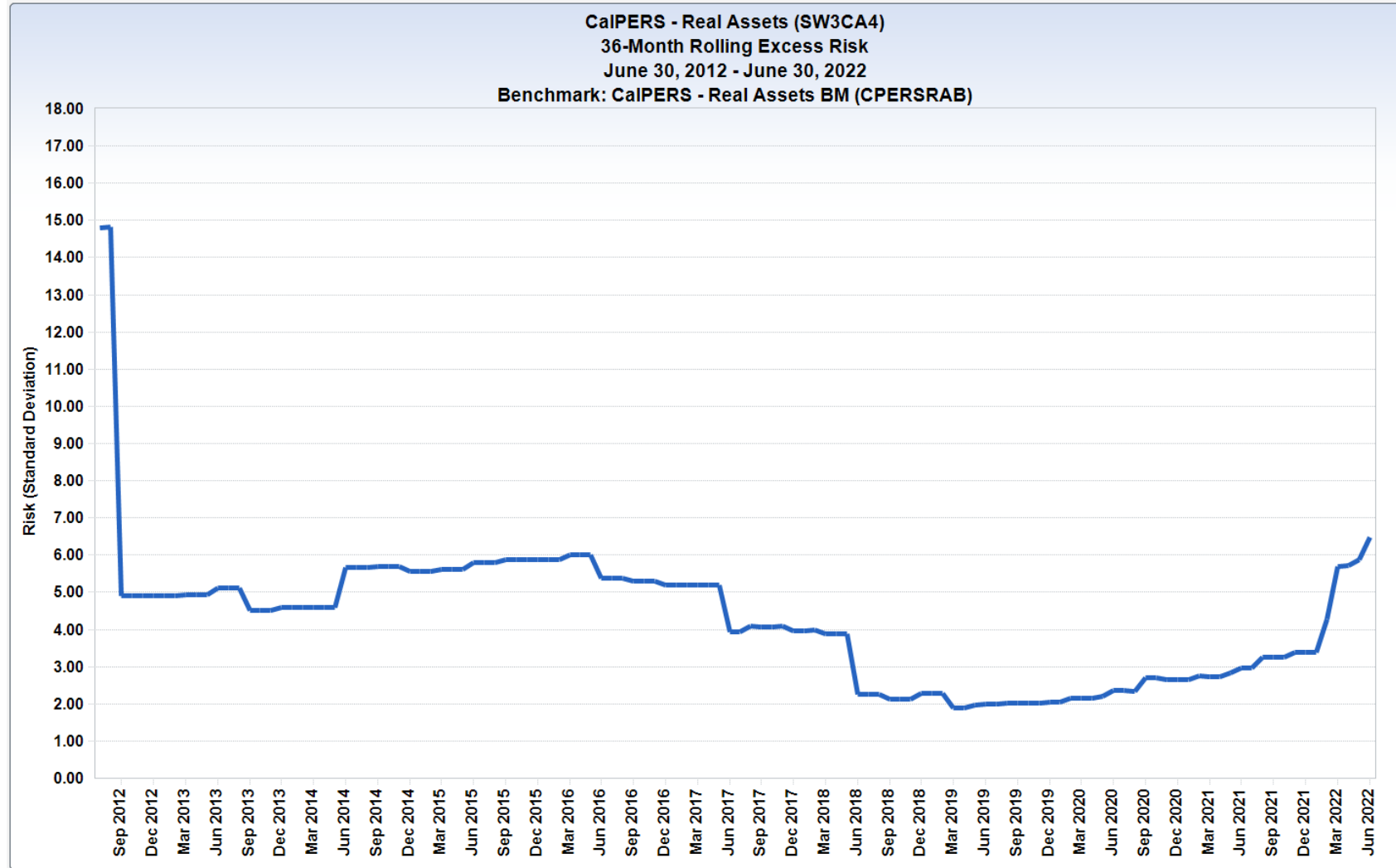
As of June 30, 2022

	Asset Value							VaR	5-Year Ratios	
	(\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	(\$Billion)	Sharpe	Info	
<b>REAL ASSETS</b>	\$ 69.6	5.2%	24.1%	10.0%	8.3%	9.2%	\$ 10.1	1.8	-0.1	
<i>Real Assets Policy Benchmark</i>		7.2%	27.1%	10.2%	8.8%	9.5%		1.3	0.0	
<b>Real Estate</b>	\$ 57.2	5.3%	26.5%	10.8%	8.5%	9.6%	\$ 8.3	1.7	-0.1	
<i>CalPERS Custom Real Estate Benchmark</i>		7.2%	27.1%	10.2%	8.8%	9.9%		1.3	0.0	
<b>Infrastructure</b>	\$ 11.6	5.3%	14.7%	7.2%	10.5%	11.3%	\$ 1.7	1.4	0.2	
<i>CalPERS Custom Infrastructure Benchmark</i>		7.2%	27.1%	10.2%	8.7%	7.0%		1.3	0.0	
<b>Forestland</b>	\$ 0.8	1.1%	3.3%	1.5%	-1.0%	-0.5%	\$ 0.1	-0.3	-1.1	
<i>CalPERS Custom Forestland Benchmark</i>		7.2%	27.1%	10.2%	8.1%	7.6%		1.2	0.0	

# CalPERS Real Assets – Rolling Excess Return



# CalPERS Real Assets – Rolling Tracking Error





# CalPERS Liquidity – Performance

As of June 30, 2022

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
<b>LIQUIDITY</b>	\$ 10.1	0.1%	0.3%	0.7%	1.2%	0.8%	\$ (0.2)	0.5	3.3
<i>Liquidity Policy Benchmark</i>		0.1%	0.1%	0.5%	1.0%	0.8%		-0.5	0.0
<b>Internal Short Term Cash Portfolio</b>	\$ 10.1	0.1%	0.3%	0.7%	1.3%	0.8%	\$ (0.2)	0.5	3.3
<i>CalPERS Short Term Benchmark</i>		0.1%	0.1%	0.5%	1.0%	0.6%		-0.5	0.0
<b>Trust Level Financing</b>	\$ (24.5)	--%	--%	--%	--%	--%		N/A	N/A

# CalPERS LLER, Opportunistic Strategies – Performance

As of June 30, 2022

	Asset Value							VaR	5-Year Ratios	
	(\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	(\$Billion)	Sharpe	Info	
<b>LLER</b>	\$ 11.6	-1.6%	-1.2%	1.3%	2.1%	--%	\$ 1.5	0.3	0.4	
<i>LIBOR 1 Month Rate</i>		0.2%	0.3%	0.5%	0.8%	--%		-1.4	0.0	
<b>Enhanced Return</b>	\$ 9.2	-1.7%	-1.2%	1.3%	2.1%	--%		N/A	N/A	
<b>Direct Lending Financing</b>	\$ 2.2	-1.8%	-1.4%	1.2%	--%	--%		N/A	N/A	
<b>Senior Lending in Private Cre Debt</b>	\$ 0.2	0.6%	2.4%	--%	--%	--%		N/A	N/A	
<i>LIBOR 1 Month + 20 Basis Points</i>		0.2%	0.5%	0.7%	1.0%	--%		N/A	N/A	
<b>Federated Trade Finance</b>	\$ 0.0	NM	NM	--%	--%	--%		N/A	N/A	
<b>Asset Based Lending</b>	\$ 0.0	NM	NM	--%	--%	--%		N/A	N/A	
<b>OPPORTUNISTIC STRATEGIES</b>	\$ 6.4	2.0%	8.4%	--%	--%	--%	\$ 0.3	N/A	N/A	
<i>Custom Opportunistic Strategies Benchmark</i>		1.7%	7.0%	--%	--%	--%		N/A	N/A	

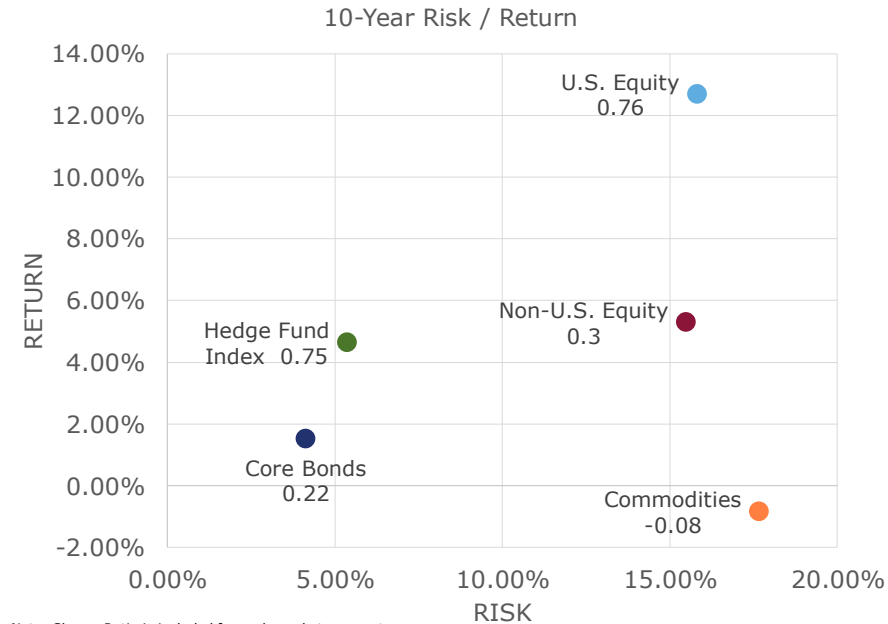
# CalPERS Other (TLPM) – Performance

As of June 30, 2022

	Asset Value (\$Billion)	Quarter	1-Year	3-Year	5-Year	10-Year	VaR (\$Billion)	5-Year Ratios Sharpe	Info
<b>OTHER</b>	\$ 0.8	NM	NM	NM	NM	NM	\$ -	N/A	N/A
<b>Absolute Return Strategies</b>	\$ 0.2	-10.7%	-15.1%	9.9%	2.0%	2.7%		0.0	-0.2
<i>Total ARS Program Blended Benchmark</i>		0.7%	3.5%	5.6%	6.1%	5.8%		6.8	0.0
<b>MHLP Loans</b>	\$ 0.0	-1.3%	-0.1%	-0.4%	0.7%	-.%		N/A	N/A
<i>Bloomberg LMTG</i>		-3.9%	-9.0%	-1.3%	0.5%	-.%		N/A	N/A
<b>TLPM Strategic Completion Overlay</b>	\$ 0.7	-.%	-.%	-.%	-.%	-.%		N/A	N/A

## Hedge Fund Performance

As of 6/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Credit Suisse Hedge Fund Index	-2.3	-0.2	1.9	5.7	4.8	4.7
Event Driven	-5.6	-7.7	-5.4	3.9	3.5	4.0
Global Macro	1.4	17.8	21.6	12.3	9.5	6.1
Long/Short Equity	-5.0	-8.2	-5.5	4.1	4.1	5.5
Multi-Strategy	-4.4	-1.4	1.0	4.3	3.7	5.6
FT Wilshire 5000	-16.8	-20.9	-13.2	10.2	10.8	12.7
MSCI ACWI ex-US (\$G)	-13.5	-18.2	-19.0	1.8	3.0	5.3
Bloomberg Aggregate	-4.7	-10.3	-10.3	-0.9	0.9	1.5
Bloomberg Commodity Index	-5.7	18.4	24.3	14.3	8.4	-0.8



Note: Sharpe Ratio is included for each market segment

Data Source: Bloomberg

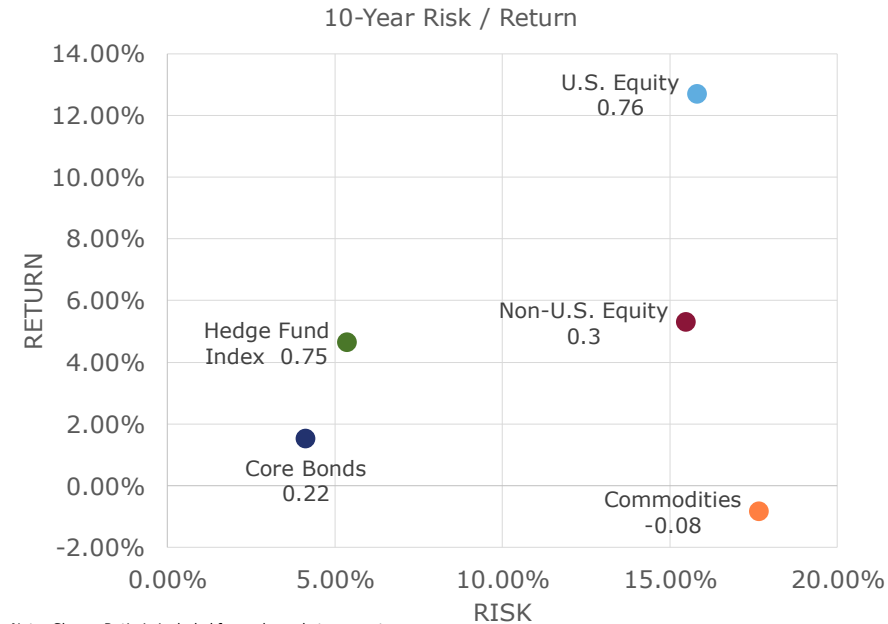
## Asset Class Performance

Asset Class Returns - Best to Worst						Annualized 5-Year as of 6/22
2017	2018	2019	2020	2021	2022 YTD	
Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. Equity 20.8%	REITs 46.2%	Commodities 18.4%	U.S. Equity 10.8%
Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Emrg Mrkts 18.7%	Commodities 27.1%	T-Bills 0.0%	Commodities 8.4%
U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. TIPS 11.0%	U.S. Equity 26.7%	U.S. TIPS -8.9%	REITs 5.3%
High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	Developed 8.3%	Developed 11.8%	Core Bond -10.3%	U.S. TIPS 3.2%
REITs 4.2%	REITs -4.8%	High Yield 14.3%	Core Bond 7.5%	U.S. TIPS 6.0%	High Yield -14.2%	Developed 2.7%
Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	High Yield 7.1%	High Yield 5.3%	Emrg Mrkts -17.5%	Emrg Mrkts 2.5%
U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	T-Bills 0.7%	T-Bills 0.0%	Developed -19.3%	High Yield 2.1%
Commodities 1.7%	Developed -13.4%	Commodities 7.7%	Commodities -3.1%	Core Bond -1.5%	U.S. Equity -20.9%	T-Bills 1.1%
T-Bills 0.8%	Emrg Mrkts -14.2%	T-Bills 2.3%	REITs -7.9%	Emrg Mrkts -2.2%	REITs -21.6%	Core Bond 0.9%

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

## Hedge Fund Performance

As of 6/30/2022	Quarter	YTD	1 Year	3 Year	5 Year	10 Year
Credit Suisse Hedge Fund Index	-2.3	-0.2	1.9	5.7	4.8	4.7
Event Driven	-5.6	-7.7	-5.4	3.9	3.5	4.0
Global Macro	1.4	17.8	21.6	12.3	9.5	6.1
Long/Short Equity	-5.0	-8.2	-5.5	4.1	4.1	5.5
Multi-Strategy	-4.4	-1.4	1.0	4.3	3.7	5.6
FT Wilshire 5000	-16.8	-20.9	-13.2	10.2	10.8	12.7
MSCI ACWI ex-US (\$G)	-13.5	-18.2	-19.0	1.8	3.0	5.3
Bloomberg Aggregate	-4.7	-10.3	-10.3	-0.9	0.9	1.5
Bloomberg Commodity Index	-5.7	18.4	24.3	14.3	8.4	-0.8



Note: Sharpe Ratio is included for each market segment

Data Source: Bloomberg