

CalPERS Trust Level Review

Investment Committee

March 15, 2021

PERF Risk – Key Figures

95%

Contribution to PERF Volatility from Assets Sensitive to Economic Growth

-4.0%

Current Underweight to Private Assets Vs. Strategic Asset Allocation Targets

26 bps

Total Fund Actionable Tracking Error

Performance Summary | PERF and AIP (as of Dec 31, 2020)

Funds Managed	Ending Asset Value (MM)	20-Yr		10-Yr		5-Yr		3-Yr		1-Yr		FYTD	
		Net Return	Excess bps										
Public Employees' Retirement Fund	442,668	6.3%	(44)	8.4%	(7)	9.7%	(30)	8.4%	(30)	12.4%	(4)	13.4%	(48)
CalPERS Health Care Bond Fund	527	4.3%	9	4.1%	29	4.5%	3	5.4%	5	7.6%	7	1.3%	(3)
CEPPT Strategy 1	15	-	-	-	-	-	-	-	-	11.4%	(7)	12.0%	15
CEPPT Strategy 2	8	-	-	-	-	-	-	-	-	8.7%	4	5.9%	7
CERBT Strategy 1	11,595	-	-	8.0%	27	10.0%	39	8.7%	27	13.4%	39	17.1%	9
CERBT Strategy 2	1,673	-	-	-	-	9.0%	37	8.2%	22	12.3%	27	12.8%	9
CERBT Strategy 3	802	-	-	-	-	7.7%	31	7.3%	17	10.8%	23	9.1%	6
Judges' Retirement Fund	55	1.6%	10	0.7%	6	1.3%	12	1.7%	6	0.6%	(5)	0.1%	1
Judges' Retirement System II Fund	2,188	6.3%	11	8.2%	18	9.8%	34	8.7%	30	13.2%	42	15.5%	12
Legislators' Retirement System Fund	121	5.9%	6	6.6%	21	7.8%	28	7.4%	20	10.8%	28	9.1%	6
Long-Term Care Fund	5,279	4.9%	11	5.2%	8	6.7%	(5)	6.3%	(8)	8.4%	(21)	8.2%	18
Terminated Agency Pool	197	-	-	-	-	7.1%	-	8.4%	-	16.0%	-	3.0%	-



All returns are net of investment expenses.

Performance Details | PERF (as of Dec 31, 2020)

Performance Summary	Total Assets (bil)	10-Yr			5-Yr			3-Yr			1-Yr			FYTD		
		Total Return	BM Return	Excess Bps	Total Return	BM Return	Excess Bps	Total Return	BM Return	Excess Bps	Total Return	BM Return	Excess Bps	Total Return	BM Return	Excess Bps
Public Equity	\$ 232.8	9.4%	9.3%	10	12.1%	12.1%	4	9.2%	9.3%	(9)	13.7%	13.3%	37	22.2%	22.2%	4
Cap Wtd.	\$ 166.0	9.7%	9.6%	10	12.8%	12.8%	3	10.3%	10.4%	(11)	17.4%	17.0%	42	25.6%	25.5%	10
Factor Wtd.	\$ 66.8	-	-	-	-	-	-	-	-	-	4.6%	4.4%	11	14.0%	14.1%	(10)
Private Equity	\$ 30.8	11.5%	13.2%	(165)	10.4%	13.2%	(280)	9.2%	9.0%	20	12.5%	11.7%	82	20.4%	31.0%	(1,062)
Income	\$ 129.6	5.8%	5.2%	57	6.9%	6.3%	64	7.4%	6.9%	45	11.7%	11.2%	58	2.7%	2.1%	55
Long Spread	\$ 66.0	-	-	-	-	-	-	-	-	-	9.2%	8.2%	103	4.3%	3.8%	41
Long Treasury	\$ 44.2	6.1%	6.1%	(9)	6.6%	6.6%	2	8.3%	8.4%	(13)	14.5%	15.0%	(54)	(2.2%)	(2.3%)	14
Total Fund Income	\$ 6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
High Yield	\$ 13.2	-	-	-	-	-	-	-	-	-	5.1%	5.2%	(10)	10.6%	10.4%	17
Real Assets	\$ 44.3	8.5%	8.5%	(6)	4.9%	5.4%	(51)	3.4%	4.1%	(69)	(0.1%)	0.4%	(50)	(1.3%)	(1.6%)	35
Total Fund	\$ 12.2															
Opportunistic	\$ 0.9	-	-	-	-	-	-	-	-	-	-	-	-	2.9%	3.5%	(51)
LLER	\$ 11.1	-	-	-	3.1%	0.9%	222	3.0%	1.1%	181	2.0%	0.4%	160	2.9%	0.1%	286
Other	\$ 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financing & Liquidity	\$ (7.1)															
Trust Level Financing	\$ (17.4)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Liquidity	\$ 10.3	1.2%	1.3%	(5)	1.4%	1.1%	31	1.8%	1.4%	35	0.5%	0.4%	10	0.1%	0.0%	3
Total PERF	\$ 442.7	8.4%	8.5%	(7)	9.7%	10.0%	(30)	8.4%	8.7%	(30)	12.4%	12.4%	(4)	13.4%	13.9%	(48)



All returns are net of investment expenses.

Reporting Enhancements

Performance Summary	Total Assets (bil)
Public Equity	\$ 232.8
Cap Wtd.	\$ 166.0
Factor Wtd.	\$ 66.8
Private Equity	\$ 30.8
Income	\$ 129.6
Long Spread	\$ 66.0
Long Treasury	\$ 44.2
Total Fund Income	\$ 6.1
High Yield	\$ 13.2
Real Assets	\$ 44.3
Total Fund	\$ 12.2
Opportunistic	\$ 0.9
LLER	\$ 11.1
Other	\$ 0.3
Financing & Liquidity	\$ (7.1)
Trust Level Financing	\$ (17.4)
Liquidity	\$ 10.3
Total PERF	\$ 442.7

- Economic exposure of PERF has not changed
- Low Liquidity Enhanced Return (LLER) is now shown as a distinct Total Fund Program
- Financing activities (via derivatives and repo borrowing against Cap Weighted and Treasury assets) are now shown explicitly at total fund level
- These changes are intended to enhance transparency and reflect the shift to managing liquidity and leverage at the total fund level

Investment Office Operating Model

Total INVO
Operational
Risk Score

4

Functions		Sub-Functions					
Industry Aligned	Trust Level Management	Policy & Governance	Strategic & Dynamic Asset Allocations	Liquidity & Leverage	Risk Management	Fund Structure & Business Model	Controls Environment
	Portfolio Construction, Management & Trading	Portfolio Construction - Public Markets	Securities Trading - Public Markets	Private Asset Strategy & Transactions	Manager/ Partner Selection & Oversight		
	Investment Operations & Data	Trade Operations	Private Market Analysis & Operations	Valuation / Pricing	Investment Accounting & Custody	Performance, Attribution & Risk Reporting	Data Management
	Investment Technology & Support Services	Technology Management & Information Security	Vendor Utilization & Management	Business Continuity / Disaster Recovery	Resource Management	Financial Management	
CaIPERS	Engagement	Manager & Industry Peer Engagement	ESG Advocacy & Integration	Stakeholder Engagement			

Major Accomplishments and 2021 Initiatives

Accomplishments

- Pivoted to fully remote work in March 2020, and worked remotely to date, navigating market volatility and portfolio positioning
- Liquidity and Leverage Centralization and Management
- Technology and Data Progress (e.g., MATP, BCP, Risk and Performance, etc.)
- Conducted employee engagement focus groups and implemented a communication framework to keep the Investment Office connected during the pandemic

Initiatives

- Asset Liability Management Cycle
- Capability and Deployment in Private Assets
- Technology and Data Strategies
- People Strategy Initiative

Economic Update | Review

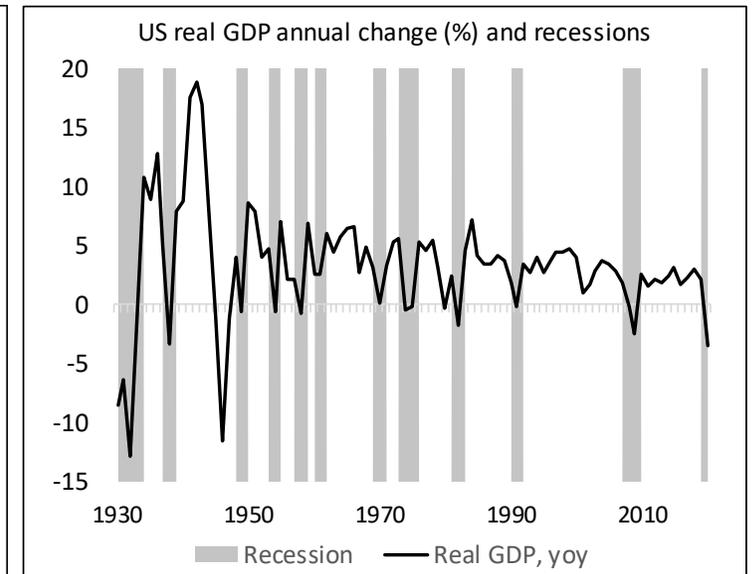
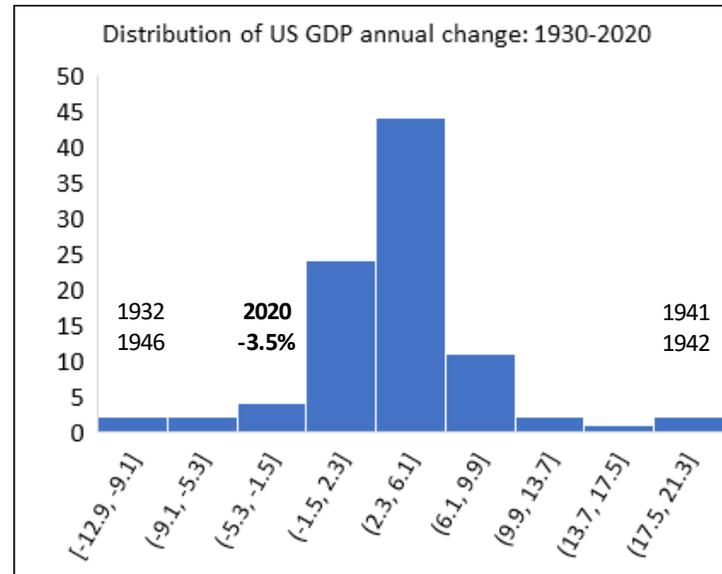
Swift global and US economic declines; rapid rebound

The coronavirus virus spread and related lockdowns severely impacted global economic activity.

Economies have partially recovered.

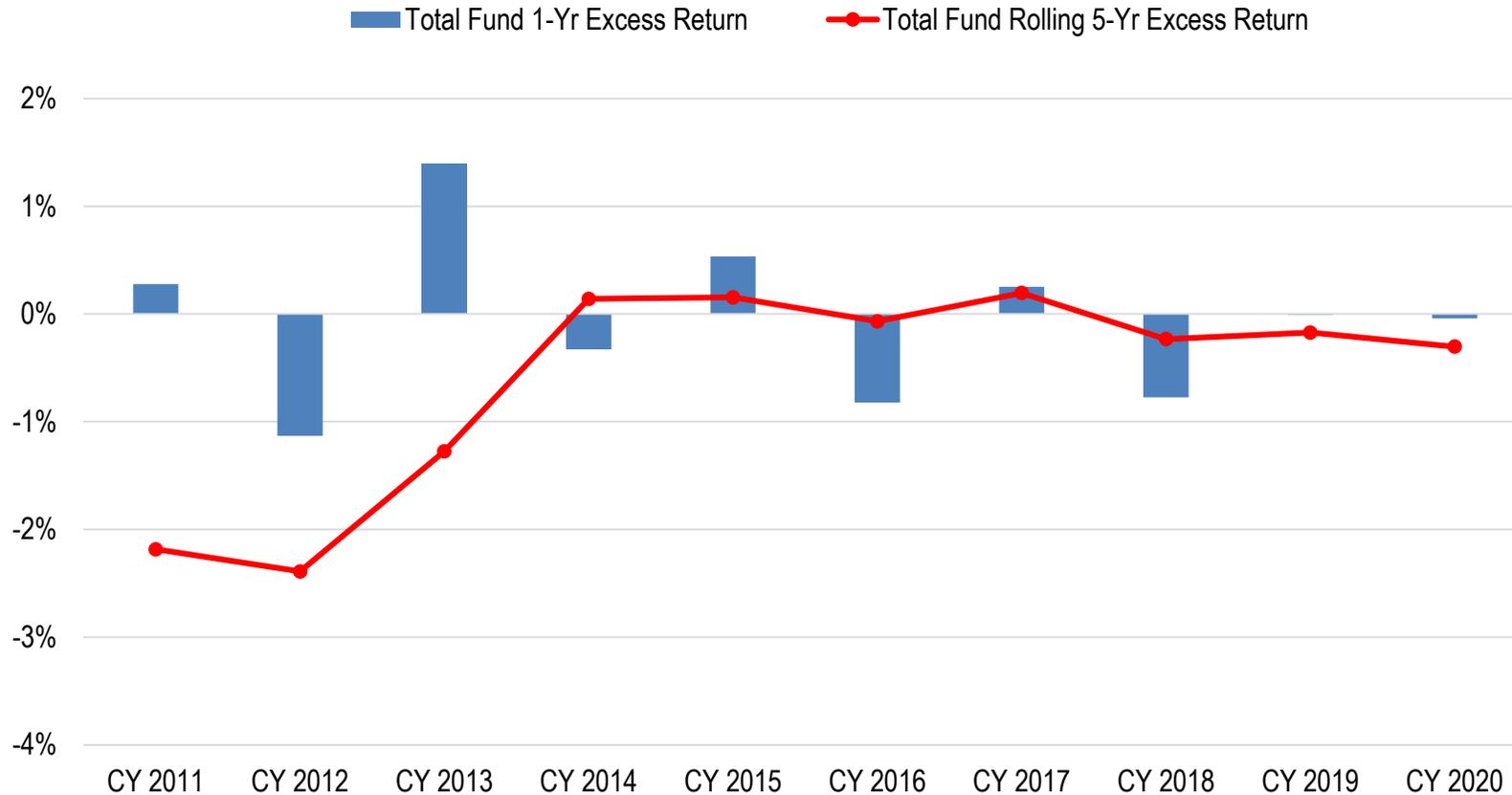
The policy response has been exceptional, supporting individuals, households, and businesses; and stabilizing global markets.

Analysts expect economic activity to continue to rise over 2021.



Appendix

PERF Excess Returns: Rolling 5-Year (as of December 31, 2020)



1 Year (-4 bps excess return)

- Primary Detractors
 - Private Equity (-36 bps)
 - Real Assets (-7 bps)
- + Primary Contributors
 - Income (+26 bps)
 - Public Equity (+4)

5 Year (-30 bps/yr excess return)

- Primary Detractors
 - Private Equity (-30 bps)
 - Real Assets (-6 bps)
- + Primary Contributors
 - Income (+13 bps)

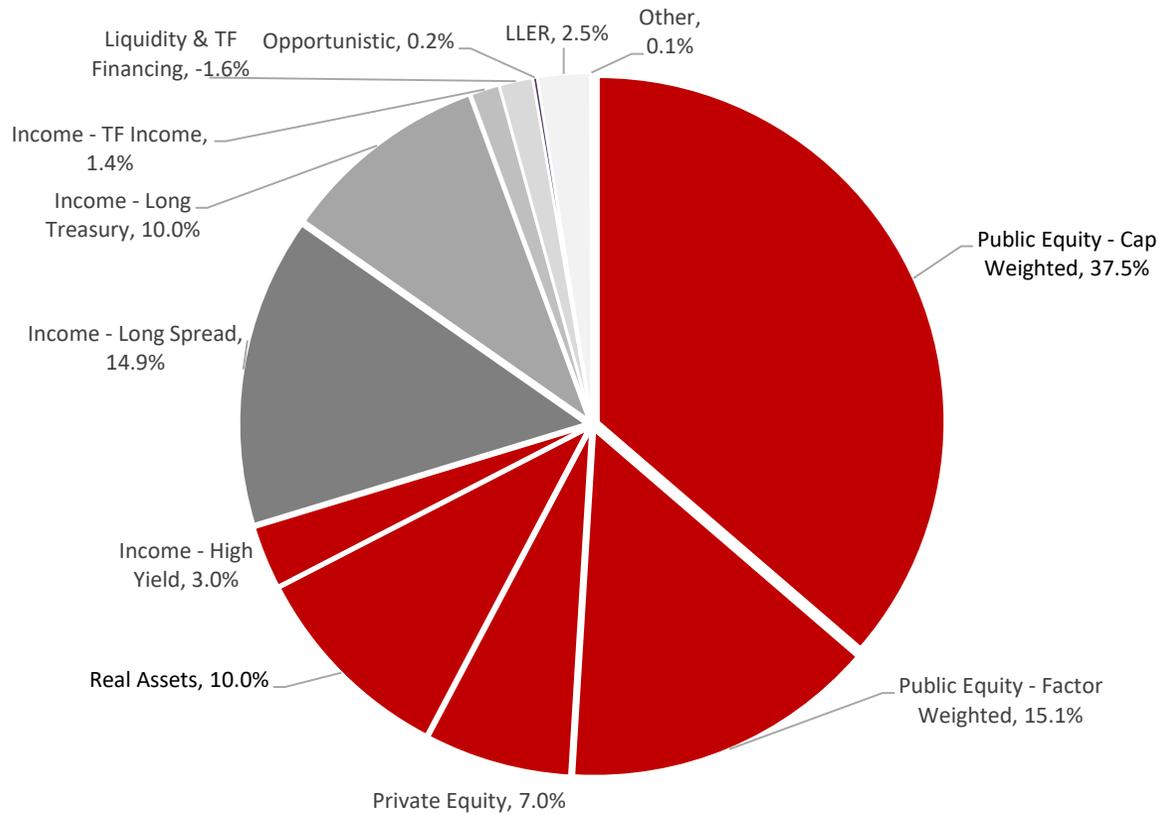
PERF Leverage

Total Fund Leverage Breakdown ¹	Asset Value (\$ Mill)	Share of Plan NAV
Total Fund Financing and Liquidity	7,089	1.6%
Total Financing (Derivatives & Repos)	17,422	
- Liquidity Segment	(10,333)	
Real Asset Financing ²	21,432	4.8%
Non-recourse Debt	22,016	
- Cash	(584)	
PE Subscription Financing	1,745	0.4%
Program Level Financing	1,446	0.3%
Public Equity	75	
Income	564	
Total Fund Income	811	
Other ³	(4)	
Total Fund Leverage	31,713	7.2%
Leverage in Strategic Asset Allocation		2.8%
Policy Leverage		4.4%

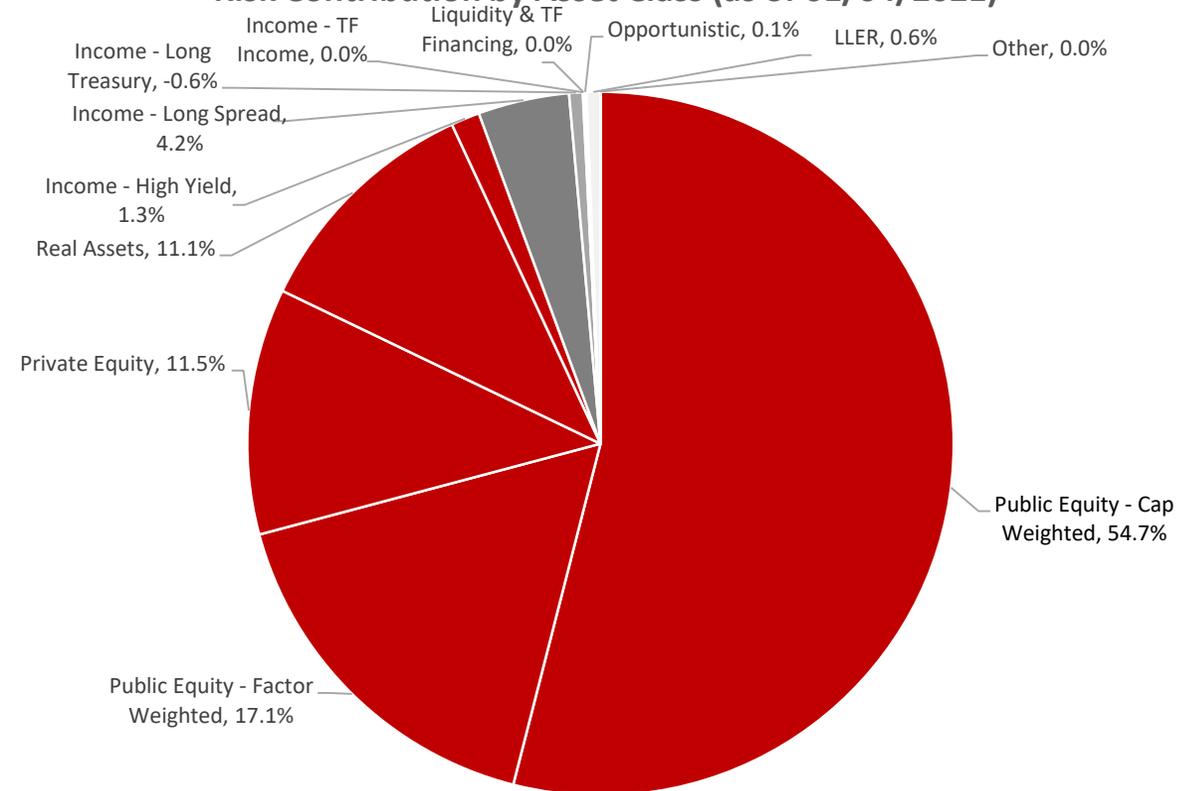
1. All debt is recourse except for Real Assets as listed.
2. Real Asset Debt is reported as of 3/31/20. There is no recourse debt as of 3/31/20.
3. Other in Program Level Financing includes Opportunistic, LLER and Trust Level.

Assets Sensitive to Economic Growth Dominate Risk

Asset Allocation (as of 12/31/2020)

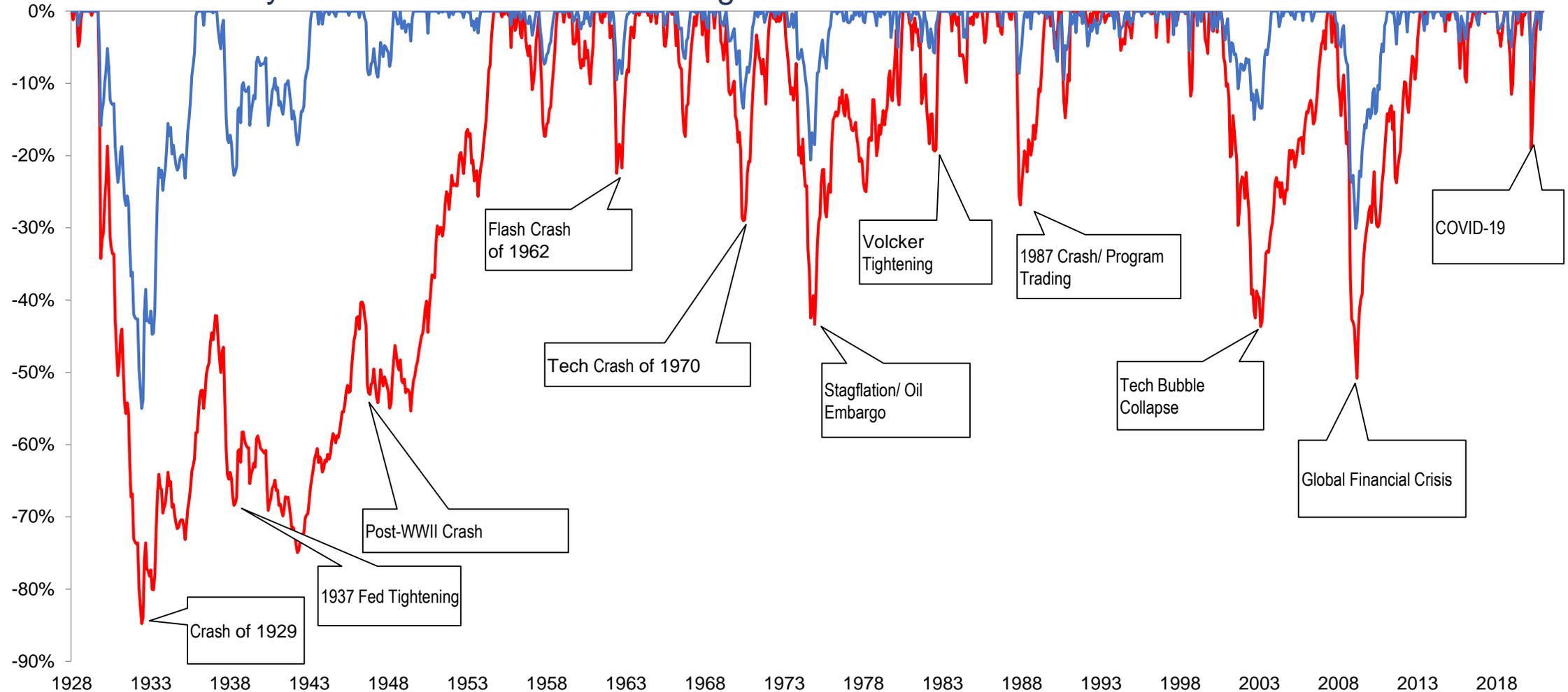


Risk Contribution by Asset Class (as of 01/04/2021)



Equity Markets Drive PERF Drawdowns

Simulated Monthly Performance of PERF Strategic Asset Allocation*

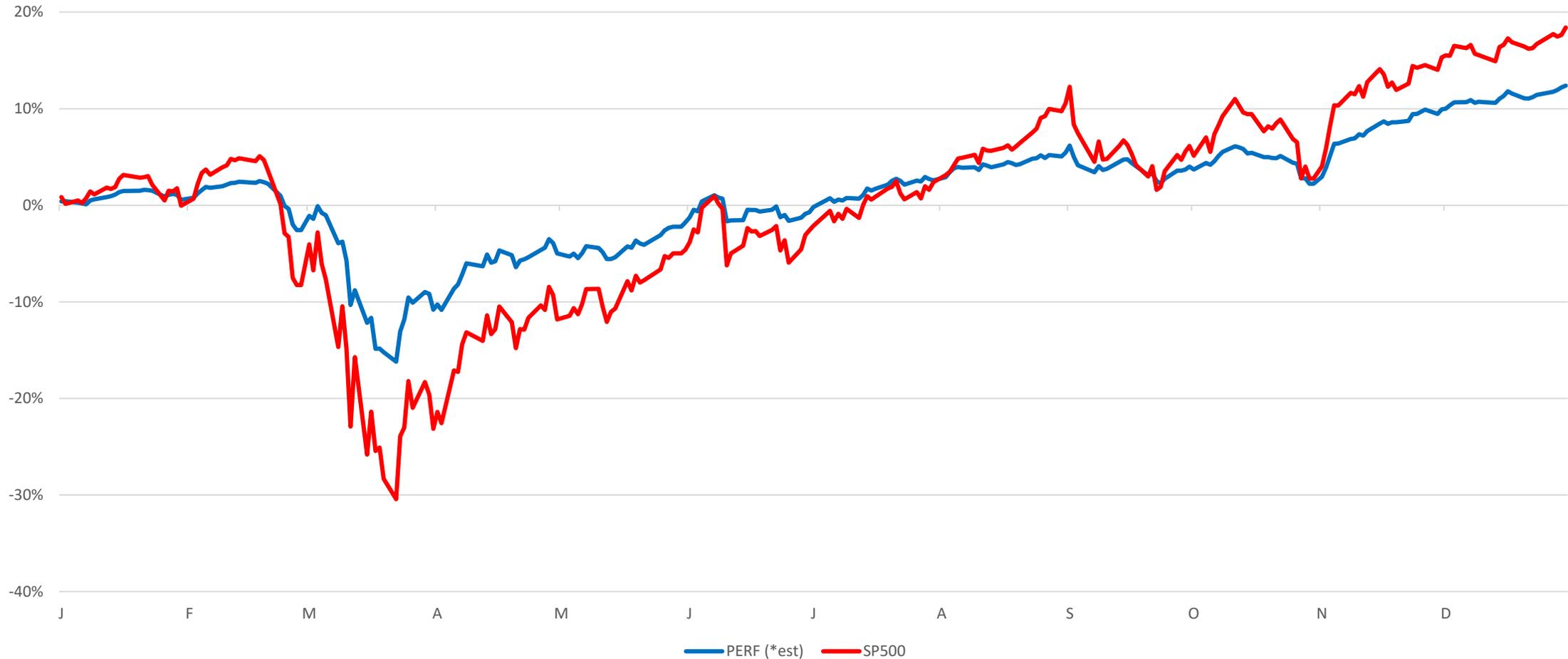


*Simulated performance of current PERF asset allocation rebalanced quarterly to current policy targets based on historical returns for current benchmarks or their proxies.

Data Source: Bloomberg Finance L.P., MSCI, Inc., Kenneth R. French & Robert J. Shiller



2020 Returns: PERF vs SP500



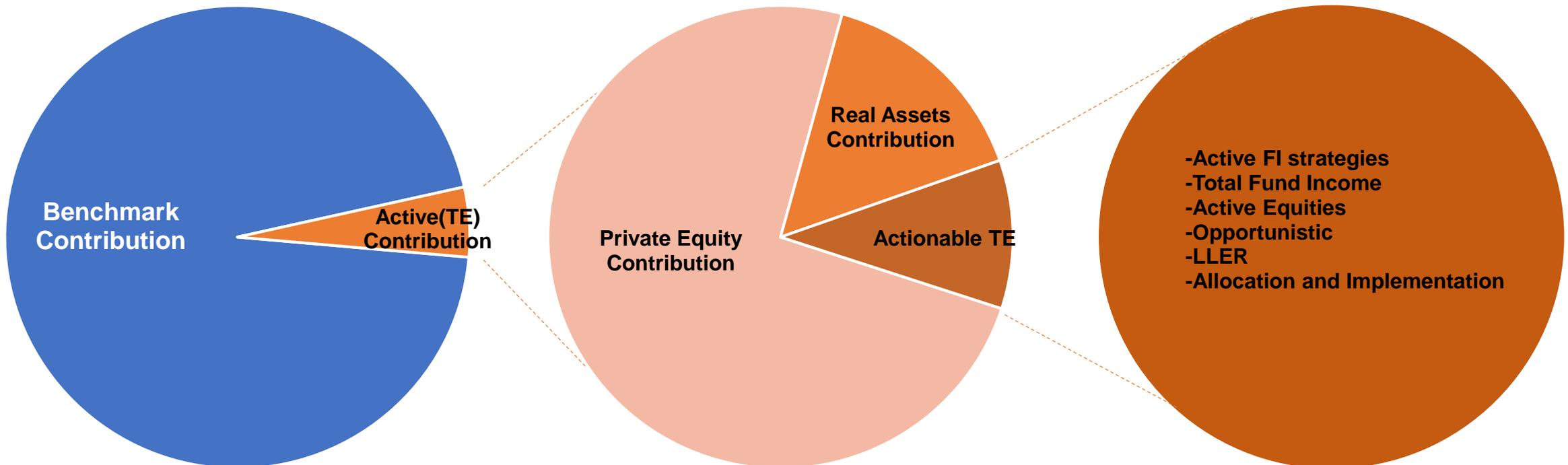
* PERF daily returns are an estimate as official performance is reported on a quarterly cycle to account for quarterly reporting cycle of private equity and real assets.

PERF Tracking Error in Total Fund Context (as of Jan 4, 2021)

Total Volatility = 11.5%

Total Tracking Error = 110 bps

Actionable Tracking Error = 26 bps



Investment Program Purpose

- Our Mission

Manage the CalPERS investment portfolio in an efficient and risk aware manner to generate returns to sustainably pay benefits

- Our Vision

Work as one team, with a culture of trust, respect, and accountability to effectively manage one Total Fund

- Key CalPERS 2017-22 Strategic Plan Goal

Strengthen long-term sustainability of the pension fund

Chief Investment Officer (338)

Strategy & Research

Implement

Monitor, Review, & Assess

Board Governance & Sustainability

Research & Strategy Group

Global Equity

Global Fixed Income

Opportunistic Strategies

Private Equity

Real Assets

Trust Level Portfolio Management & Implementation

Investment Controls & Operational Risk

Investment Servicing Division

Investment Risk & Performance

Total Fund Business & Analytical Services