Active Risk Budgeting

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June 20, 2023

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Summary

- This item introduces the concept of Active Risk Budgeting, a staff-level activity to manage active risk across the PERF from a total portfolio perspective. The goal of risk budgeting is to generate value add commensurate to the risks being taken
- The presentation discusses the theoretical foundation of investment return drivers and how that relates to portfolio construction before addressing the practical governance and management aspects of Risk Budgeting
- Key points:
  - Traditional active portfolio construction is asset-class centric and tends to leave active risk taking as second order effect
  - But a correct understanding of investment return drivers points to two fundamentally different sources of return, each requiring discrete allocation processes: 1. Systematic drivers tied to macroeconomic and market outcomes; 2. active management (value add)
  - Active Risk Budgeting seeks to apply an analogous level of top-down portfolio construction discipline to the value add process as we do for strategic asset allocation
  - Active Risk Budgeting is primarily a staff-level activity. The Board’s formal role is the establishment of limits on discretionary risk via policy that define the playing field for active risk taking (as today). Risk Budgeting seeks to use that leeway in the most effective way possible
  - By and large, Risk Budgeting is expected to be a complementary overlay to existing Program-level business planning and risk management activities
  - Key elements of the process are expected to include: annual establishment of value add targets and active risk allocation for each Program; ongoing review of underlying strategies
  - Work to implement an Active Risk Budgeting process is already underway within the Investment Office

Section I

- Theoretical context: return drivers and their impact on risk allocation
- Governance and implementation

Schematic of a traditional risk allocation process

- Active risk allocation follows strategic allocation weight which may have no connection to actual opportunity set
- Natural gravity of management process tends to focus on active risk bottom-up vs. taking holistic top-down view

Establish return target / risk tolerance

Construct policy portfolio to maximize return-to-risk

Strategic Allocation	Weights
Cap Weighted Segment	30%
Factor Weighted Segment	12%
Private Equity Segment	13%
Treasury Segment	5%
MBS Segment	5%
IG Corporate Segment	10%
High Yield Segment	5%
EM Sovereign Segment	5%
Real Assets Segment	15%
Private Debt Segment	5%

Take active risk bottom-up within each segment (within policy limits)

Value Add (Active Risk)
Cap Weighted Active Risk
Factor Weighted Active Risk
Private Equity Active Risk
Treasury Active Risk
MBS Active Risk
IG Corporate Active Risk
High Yield Active Risk
EM Sovereign Active Risk
Real Assets Active Risk
Private Debt Active Risk

Strategic Asset Allocation process

Two fundamentally different types of return

- A good way to look at any investment strategy is to ask, “why am I getting paid this return?”

Systematic Returns

Returns = (1) [Risk Free Rate + Risk Premiums] + (2) [Value Add]

Risk Free Rate: The return on cash; the value of money.

Established by central banks

Risk Premiums: Incremental returns paid by users of capital to compensate for risk - e.g. equities return more than bonds, high yield pays more than US govt

Value Add: Returns from active management decisions: strategy weighting, security selection, manager selection, deal sourcing, market timing. “Alpha”

Driven by macroeconomics, broad market outcomes (Risk Free Rate, Risk Premiums)

Driven by skill (Value Add)

Example: the return drivers for PERF

- PERF experience starts to give a sense of scale of the various drivers, including the challenges of generating value add
- The bulk of returns were based on harvesting risk premiums

			Systematic Returns				
			1				2
	Returns	=	Risk Free Rate	+	Risk Premiums	+	Value Add
Realized (10 yr annualized rtn. as of 3/31/23)	6.9%	=	0.9%	+	5.9%	+	0.1%
Expected (2021 CMAs)	6.8%	=	1.7%	+	5.1%		

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Differences between return drivers impact how to allocate risk

1 Systematic Returns

- Compensation for the economic service of providing risk capital
- Mostly straightforward to access
- Proven, reliable (in the long run)
- Macroeconomic risk (painful drawdowns)

*Risk allocation is about research into the nature of asset classes and their interactions. (i.e., **Strategic Asset Allocation**)*

2 Value Add

- Compensation for skill (competitive)
- Complex, resource intensive to access
- Ephemeral
- Risk from being different

Risk allocation is about managing skill-based processes: identifying opportunities, building teams, hiring managers, vetting outcomes

"Risk" means different things for the two return sources

	1 Systematic Risk	2 Value Add Risk
Risk Driver	Broad: investment markets & macroeconomics	Narrow: individual decisions
Scope of Impact	Absolute	Relative
Examples	Recession causing a stock market drawdown Rising interest rates hurting bond returns	An active equity manager underperforms the market Under-investing during strong PE vintages

Schematic of an updated risk allocation process

- Allocation of active risk no longer “falls out” from strategic allocation
- Active risk is allocated in a total portfolio context considering relative opportunities to add value
- Explicit value add targets and risk budgets are established at Program level, not necessarily tied to segment allocations

Establish return target / risk tolerance → Construct policy portfolio to maximize return-to-risk

Strategic Allocation (as today)

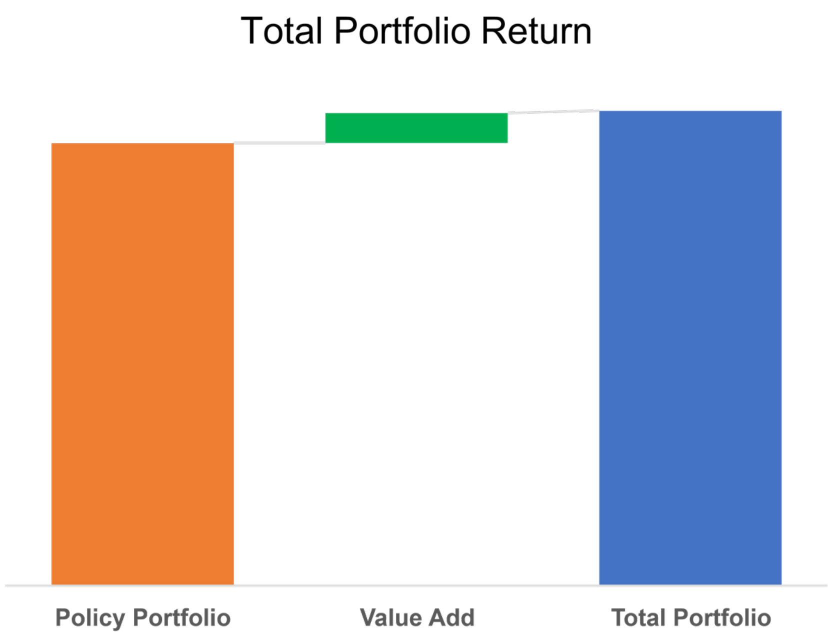
Establish CIO active risk budget (within policy limits) → Assign active risk and return targets to Programs based on relative opportunities (within policy limits)

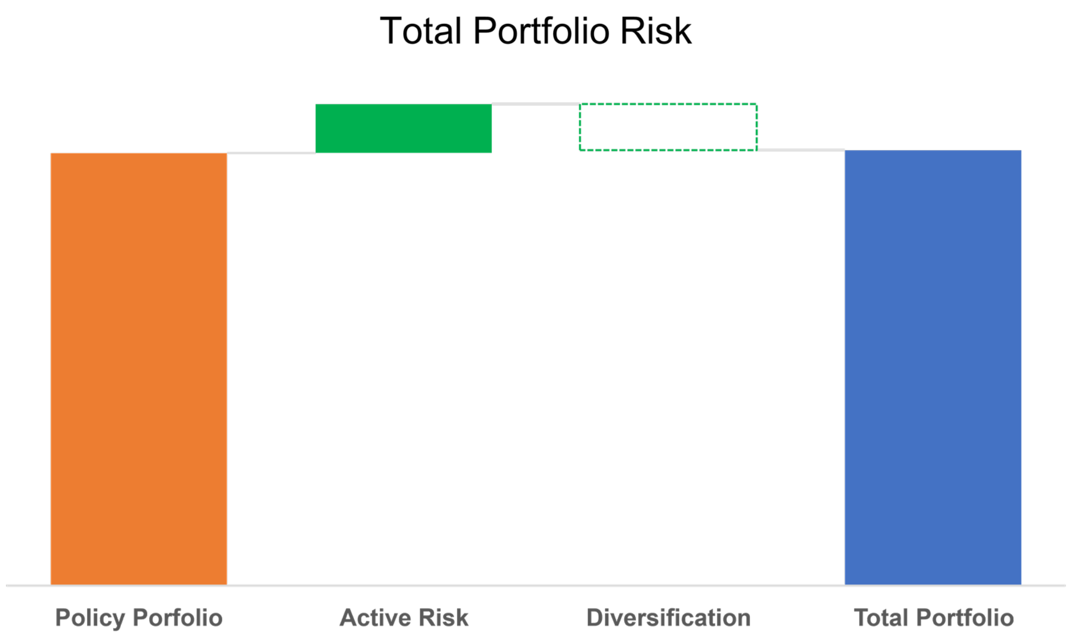
Program	Target Value Add	Active Risk Budget
Global Equity Program	$x	$x
Private Equity Program	$x	$x
Fixed Income Program	$x	$x
Real Asset Program	$x	$x
Private Debt Program	$x	$x

Active Risk Budgeting

True value add is diversifying to systematic risk

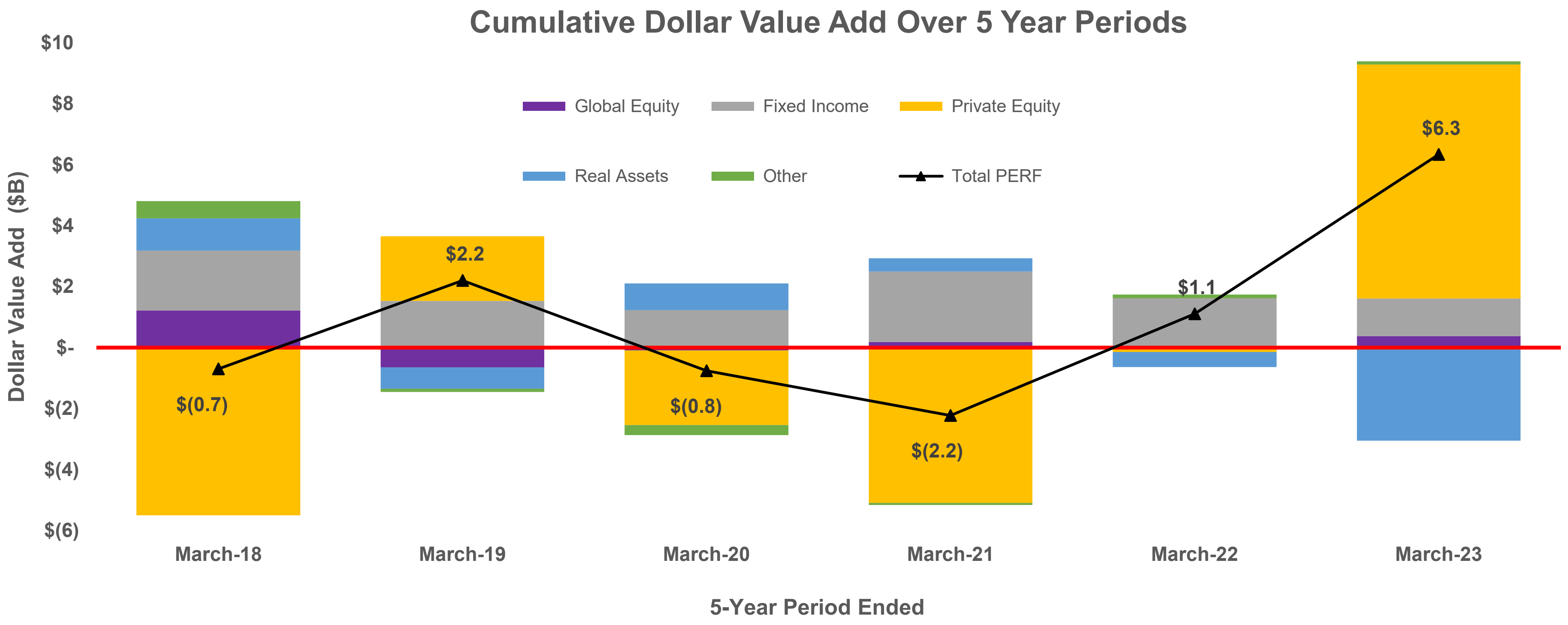
- Active management should not simply layer on more of the same risk already in the Strategic Asset Allocation (otherwise, the Investment Committee could simply adopt a higher-return, higher-risk SAA during ALM process)
- Diversification means total portfolio risk still increases somewhat with active management, but significantly less than with a non-diversifying strategy





Value add strategies can diversify each other

- Even using longer lookback horizons, value add can still fluctuate year to year (particularly for private assets with imperfect benchmarking)
- That said, holding a variety of strategies can help diversify the overall portfolio of value add



Section II

- Theoretical context: return drivers and their impact on risk allocation

- Governance and implementation

Risk budgeting falls under existing CalPERS governance model

- Active risk budgeting is a staff-level activity and does not require changes to Policy or the role of the Investment Committee to implement

	Strategic Asset Allocation	Active Risk / Value Add
Key Decision Maker	• Board (Investment Committee)	• CIO
Roles of Board	• Approve CMAs • Select Policy Portfolio	• Establish policies governing staff discretion to depart from policy portfolio • Authorize significant business changes • Monitor outcomes
Roles of Staff	• Research and recommend CMAs and portfolio options to Board • Advise on risks & tradeoffs	• Propose, build, and execute value add strategies • Manage total portfolio tradeoffs between strategies • Provide transparency

The Board sets policy to govern staff's use of active risk

- The Investment Committee establishes the playing field (policy) that defines staff's discretion to pursue value add
- Policy constraints are multi-faceted, reflecting the complex and multi-faceted nature of investment risk*
- Active Risk Budgeting aims to more efficiently manage the use of the discretion allowed under policy
- Existing policy supports the implementation of active risk budgeting and is not expected to require immediate changes

Sampling of Current PERF Policy Constraints

Total Fund	• Actionable Tracking Error Limit (100 bps) • Active Leverage Limit (15%) • Asset Allocation Ranges
Global Equity	• Active Risk (0-50 bps forecast TE)
Global Fixed Income	• Treasury segment: Duration +/- 10% of BM • MBS/Investment Grade/High Yield/ EM Sov segments: Duration +/-0.5 of BM
Private Equity	• External manager selection criteria and limits • Staff authority limits • Strategy targets and ranges • Diversification requirements • GP exposure limits
Real Assets	• Limitations by sub-program risk classification (Core, Value-add, Opportunistic) • Limitation on ownership of public securities (<10%) • Staff authority limits • Partner relationship exposure limits (<20%)
Private Debt	• External manager selection criteria and exposure limits • Staff authority limits • Strategy ranges • Diversification requirements
Opportunistic Strategies	• Max 5% exposure limit by market value • Staff authority limits
Securities Lending	• Liquidity constraint (min. 20% of cash collateral pool exercisable within 7 BDs) • Margin requirements (102%/105% for securities)
Low Liquidity Enhanced Return	• Duration limits • Maturity and rating constraints
Liquidity	• Maturity constraints (max 15 months for internal STIF) • Minimum credit quality

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*See CalPERS Investment Belief #9: "Risk to CalPERS is multi-faceted and not fully captured through measures such as volatility or tracking error"

Team roles in Risk Budgeting

CIO

- Sign-off on Program value add targets, risk budgets, and underlying strategies

Programs
(i.e., Global Equity, Private Equity, Fixed Income, Real Assets, Private Debt)

- Develop strategies
- Propose value add targets and risk usage
- Provide supporting analysis /transparency
- Implement targets in annual plans

Total Fund Portfolio Management

- Provide independent perspective on proposed strategies (value add and risk characteristics)
- Model and advise on overall portfolio options
- Facilitate the risk budgeting dialog between Programs and CIO

Progress to establishing Risk Budgeting process

- [x] In place
- [x] In progress
- [ ] Planned 2023-24

Business processes

- [x] Annual Program-level strategy planning
- [x] CIO deep dives into individual strategies and go-forward expectations
- [ ] Formalized annual cycle of review and updating of total plan active portfolio

Risk budgets

- [x] Setting of explicit $ value add targets for each Program
- [x] Formalized internal active risk expectations across public and private assets with a consistent language of risk
- [x] Agreed total fund active “portfolio” from Program-level targets

Supporting infrastructure

- [x] Establishment of dedicated total fund team to manage process and maintain an independent point of view on risk and value add expectations
- [ ] Enhanced ongoing risk budget monitoring and review processes