Asset Liability Management: Exploring Risks and Tradeoffs

Stephen Gilmore

Chief Investment Officer

Investment Office

Scott Terando

Chief Actuary

Actuary Office

Michele Nix

Chief Financial Officer

Financial Office

Today’s Discussion

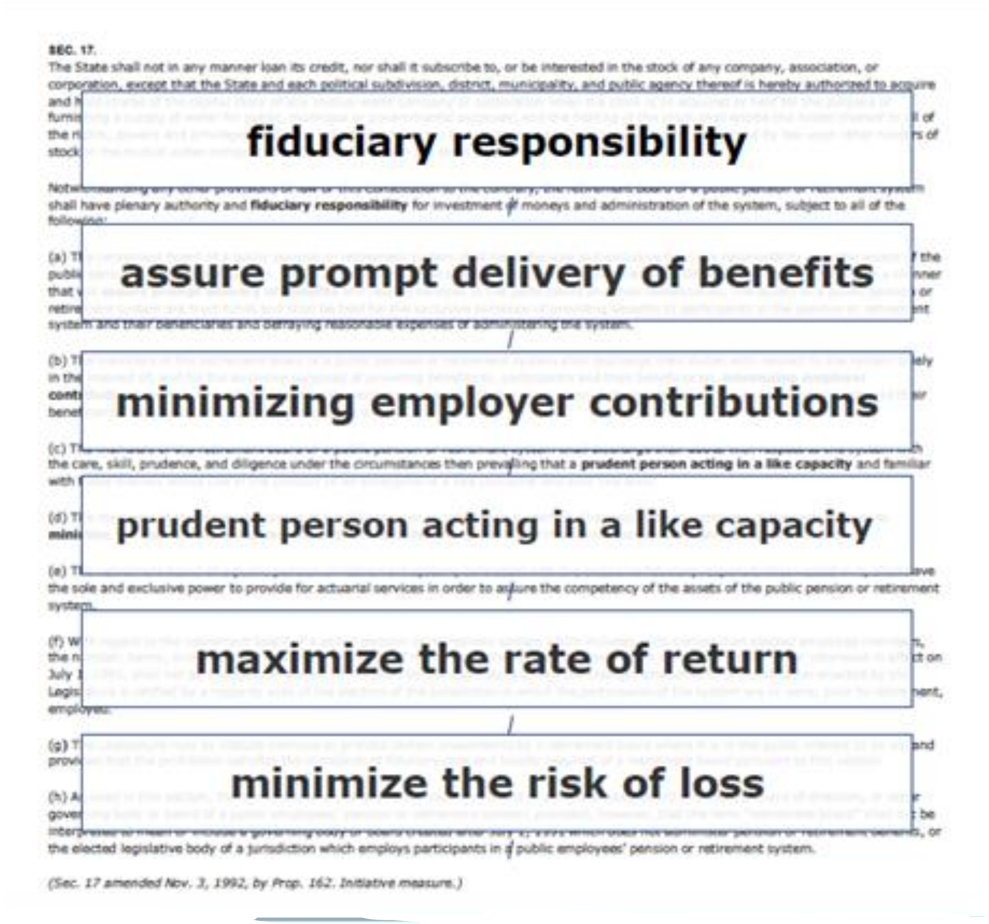
To Inform the 2025 Asset Liability Management (ALM) Process

I. Setting the Stage

II. Risk Tradeoffs Educational Activity

III. Results and Insights

The Board’s Role



The tradeoffs we confront are about balancing and implementing the Board's duties and obligations in sustaining the system

Risk Tradeoffs Educational Activity

Educational Activity

1. 3-5 minutes reviewing a question and discussing a risk tradeoff
2. Board electronically responds to a prompt
3. 11 prompts in total
4. Results aggregated
5. Discussion at the end. Informs the February ALM Workshop

Market Risk, Contributions, and Funding | Question #1

Option A

More investment risk, resulting in a higher expected return, a higher expected funded ratio, and lower expected long-term average contributions, but with higher volatility and higher risk of the funded ratio falling below 50%

Option B

Less investment risk, resulting in a lower expected return, a lower expected funded ratio, and higher expected contributions, but with lower volatility and a lower risk of the funded ratio falling below 50%

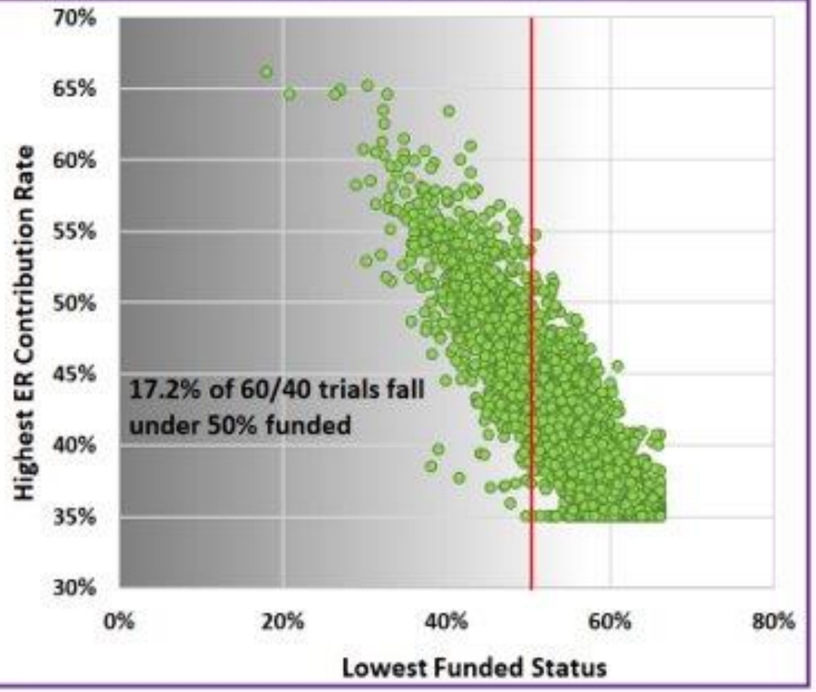
1	2	3	4	5	6
Fully Align Option A	Mostly Align Option A	Somewhat Align Option A	Somewhat Align Option B	Mostly Align Option B	Fully Align Option B

Market Risk, Contributions, and Funding

60% /40% Portfolio

Median Employer Contribution Rate	30.3%
Median Funded %	78.8%

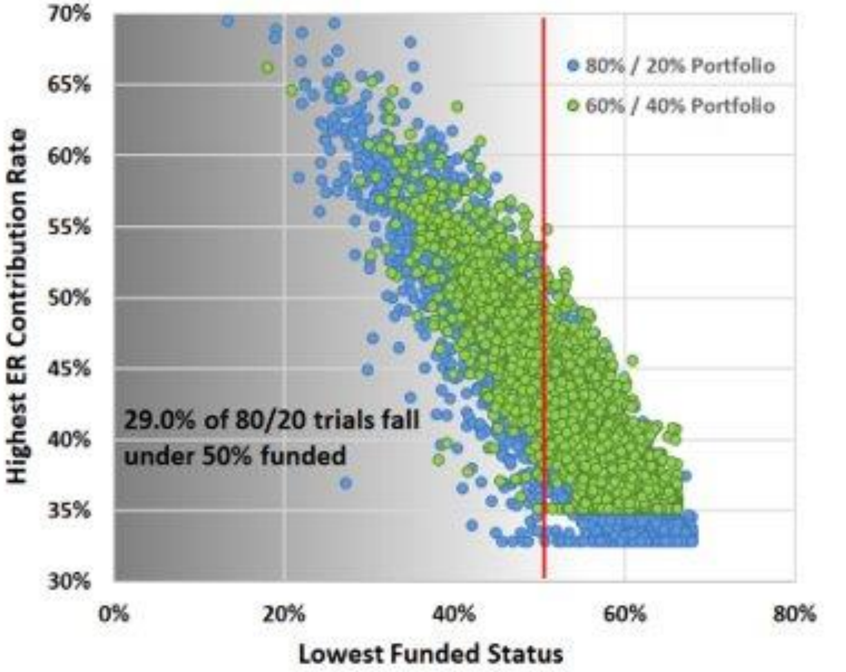
Advantage 60/40 Portfolio



80% /20% Portfolio

Median Employer Contribution Rate	28.4%
Median Funded %	79.9%

Advantage 80/20 Portfolio



Results based on 5,000 trials of simulated investment returns under the two portfolios over a 20-year period.

Market Risk, Contributions, and Funding | Question #1

Please enter your response now

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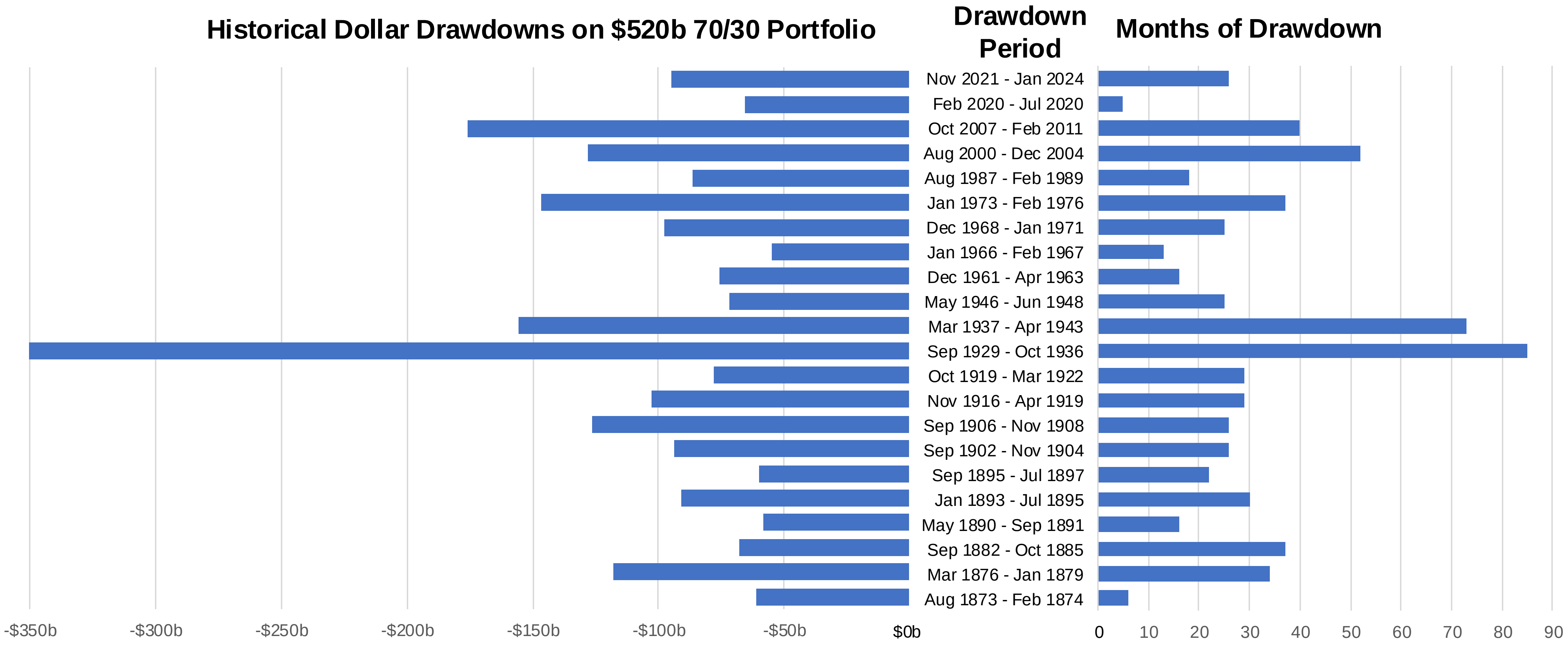
Tolerance for Loss | Question #2

*What is the number of years over which **cumulative** negative total returns are tolerable?*

1 2 3 4 5 6 7 8 9 10

Tolerance for Loss



Source: Robert Shiller, data available at http://www.econ.yale.edu/~shiller/data.htm.

Tolerance for Loss | Question #2

Please enter your response now

*What is the number of years over which **cumulative** negative total returns are tolerable?*

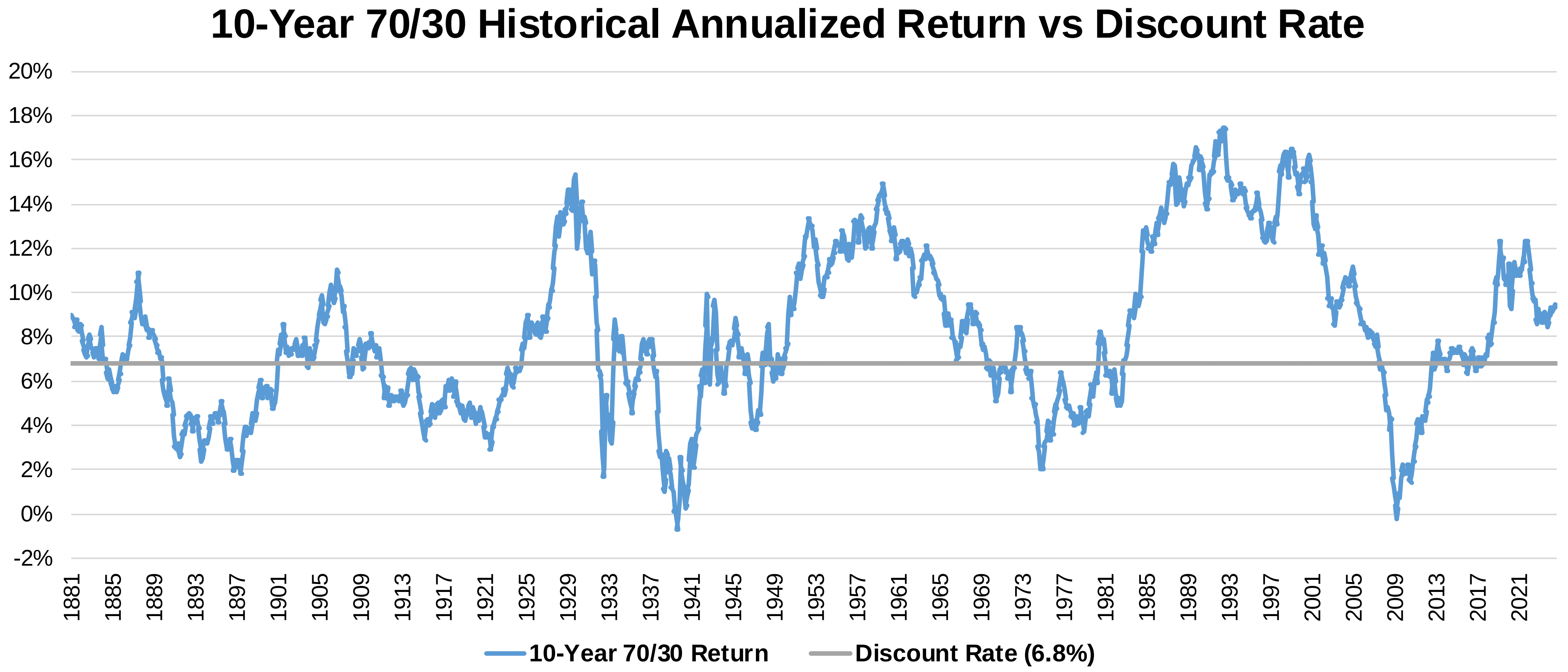
1 2 3 4 5 6 7 8 9 10

Timeline | Question #3

What is the minimum number of years for evaluating the portfolio's performance relative to the actuarial rate of return (6.8%)?

3 **5** **7** **10** **20** **Unsure** **No Opinion**

Timeline



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Timeline | Question #3

Please enter your response now

What is the minimum number of years for evaluating the portfolio's performance relative to the actuarial rate of return (6.8%)?

3 | **5** | **7** | **10** | **20** | **Unsure** | **No Opinion**

Complexity | Question #4

Option A

Run fewer, simpler, more scalable strategies, reducing management and oversight burden.

Option B

Run more complex, less scalable strategies to target incremental value add.

1	2	3	4	5	6
Fully Align Option A	Mostly Align Option A	Somewhat Align Option A	Somewhat Align Option B	Mostly Align Option B	Fully Align Option B

Portfolio Complexity

*Add strategies with potential to add returns without adding equity risk: **various private asset classes, opportunistic, leverage & derivatives, active publics, hedge funds, dynamic allocation, …***

*Run a simple, transparent, **index-like portfolio***

Complexity Demands:

- More difficult stakeholder communications
- Higher management fees and/or headcount
- Higher spend on technology, operations, control functions
- Complex governance
- Institutional flexibility

Complexity Offers:

- CEM peer* **target** value add: **60 bps**
- CEM peer* **realized median** value add: **38 bps**
- CEM peer* **realized top quartile** value add*: **79 bps**

*Source: CEM Benchmarking study for CalPERS staff 2023. Target is most common response. Realized values are net, rolling 5 year, 1992-2021.

Complexity | Question #4

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Investment Liquidity | Question #5

Option A

Maintain more excess liquidity to improve ability to dynamically respond to opportunities and to avoid having to sell illiquid assets at a discount

Option B

Make fuller use of available liquidity today to harvest premiums from illiquid strategies and forego future opportunities

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Investment Liquidity

More Dynamic / Opportunistic

Most of the time, maintain a more liquid portfolio, leaving ample capacity to seize opportunities when they arise

More Stable / Buy-and-Hold

Most of the time, maintain a less liquid portfolio, to monetize benefits of PERF liquidity on a continuous basis

Investment Liquidity

More Dynamic / Opportunistic Strategies

Examples	Frequency
Be the buyer of last resort in a severe downturn	1 / 10 Years
Rapidly capture innovative new opportunities	Periodic
Shift nimbly between strategies "Change your mind"	Ongoing
Tactical asset allocation	Ongoing

More Stable / Buy & Hold Type Strategies

Examples	Effective Holding Period
Short term financing	< 1 year
Highly secured credit (e.g. CLOs)	2-5 years
Private credit (w/ consistent deployment)	4-7 years
Private equity (w/ consistent deployment)	5-10 years
Real Assets (core evergreen holdings)	Variable w/ Income

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Diversification vs. Concentration | Question #6

Option A

Portfolio investments should be concentrated in those areas where we have high conviction or a perceived advantage with an expectation of higher returns

Option B

The portfolio should be more diversified, reducing concentration risk

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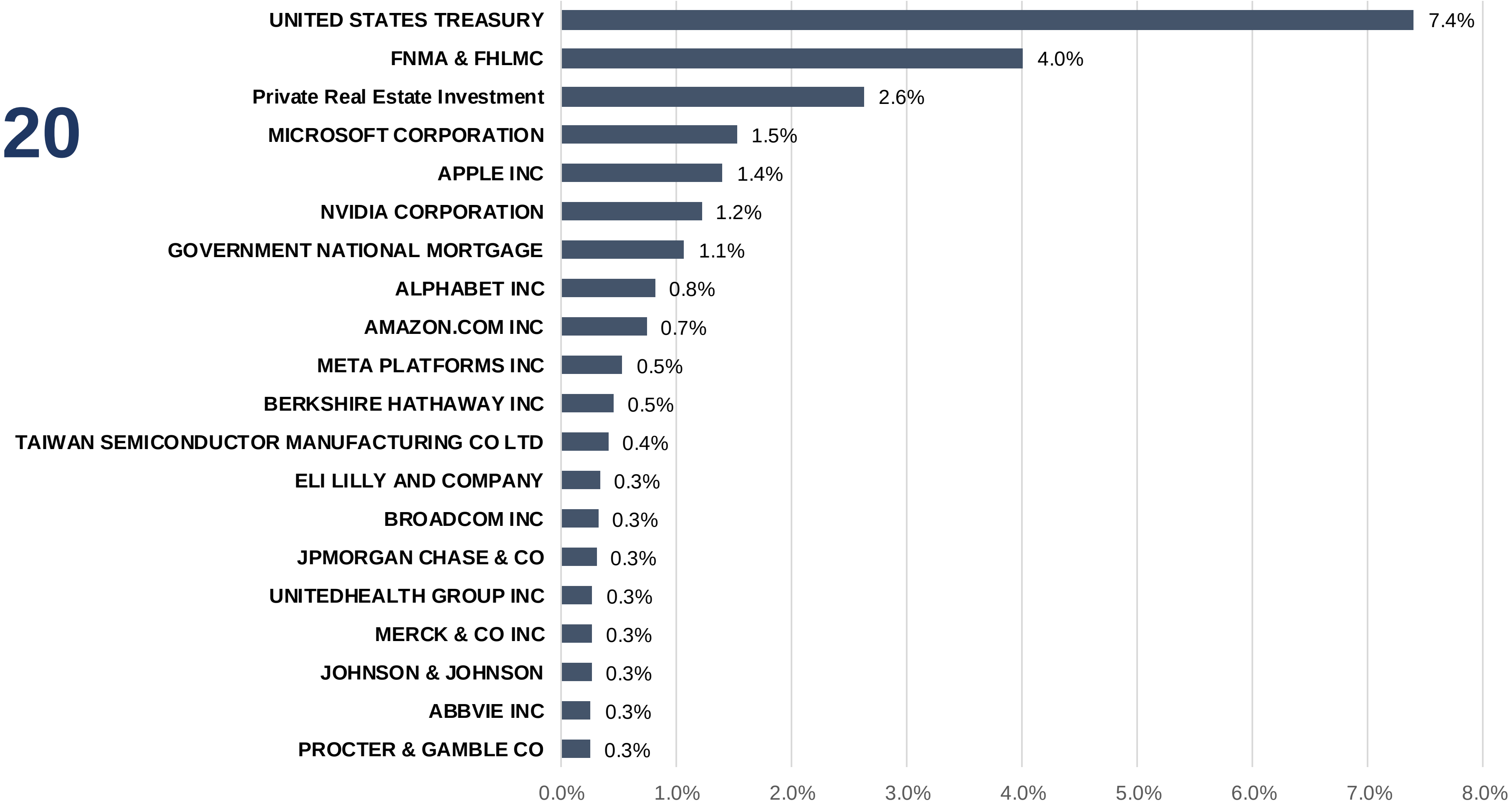
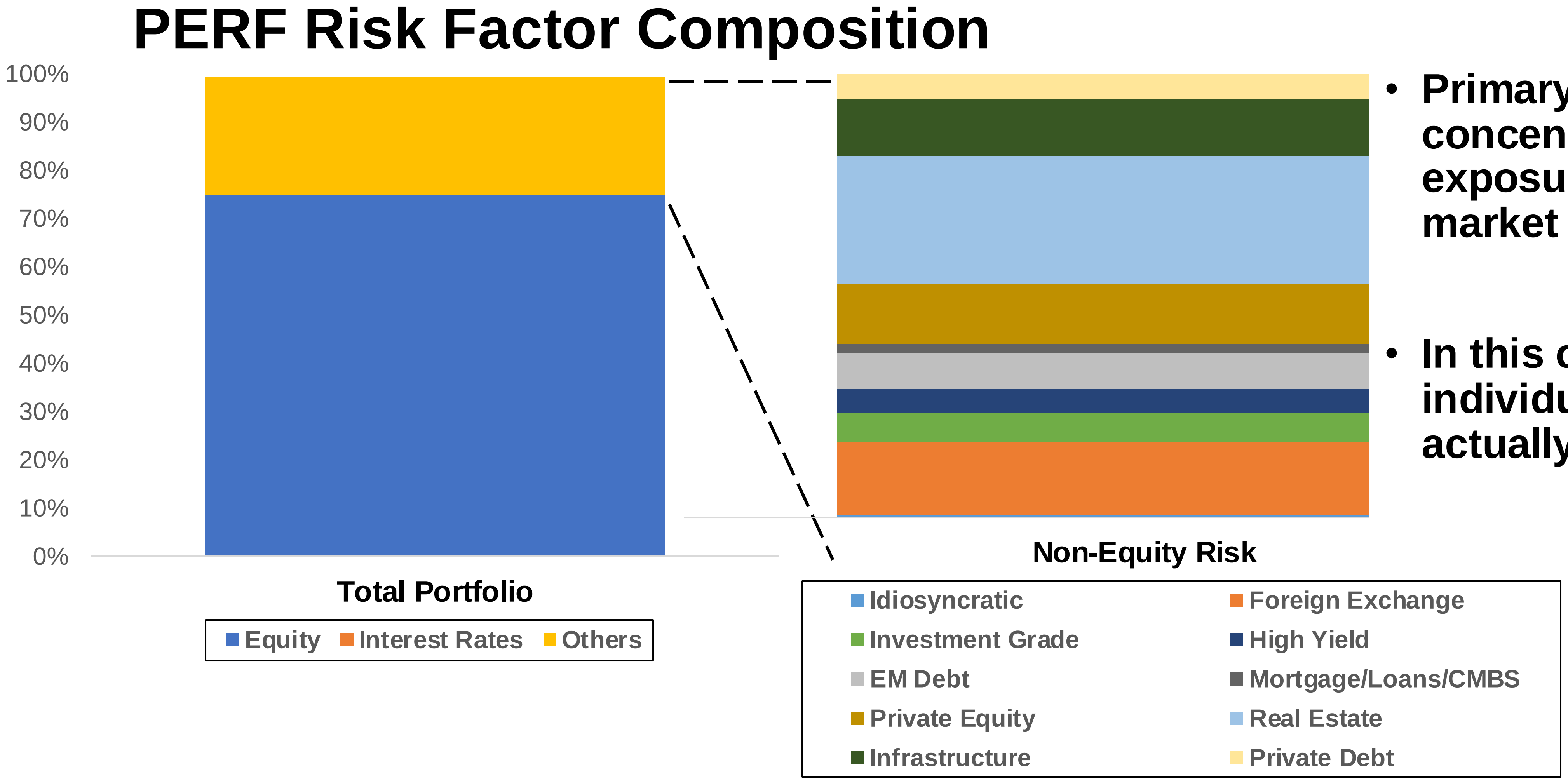
Diversification vs. Concentration: Issuers

PERF Top 20 Issuers



As of 6/30/2024

Diversification vs. Concentration: Factors



- **Primary source of concentration is exposure to equity market**
- **In this context, large individual positions can actually be diversifying**

As of December 4, 2024

Diversification vs. Concentration | Question #6

Please enter your response now

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Absolute Returns vs Relative Returns | Question #7

Option A

It is more important to generate high absolute returns, even if those returns are simply a function of the market, than to beat the benchmark

Option B

Portfolio outcomes are largely determined by the market and management should be assessed on whether it exceeds the benchmark, regardless of absolute returns

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Absolute Returns vs Relative Returns

Absolute (Total) Returns	Relative Returns
Emphasis here supports more complete and consistent alignment with that objective	Emphasis here supports more effective accountability for investment decisions
Total return is the portfolio objective	Relative returns are more directly controllable by management

Absolute Returns vs Relative Returns | Question #7

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Peer Aware | Question #8

Option A

It is important to judge performance against peers even if they have different mandates and risk tolerances.

Option B

It is more important to assess performance against objectives, like funding ratio, rather than peers.

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Peer Aware

Performance can be assessed both objectively and relative to peers

- Objectively, actual performance is assessed by CalPERS' fund mandates, investment goal and benchmarks, discount rate, and impact to the funding ratio

- Peer-based comparisons consider fund mandates, size, risk appetite, investment goal and benchmarks, and other factors, and provides insight into how well CalPERS is implementing its investment strategy

Focusing on objective performance emphasizes outperforming the benchmark, while emphasizing relative performance means outperforming peers

Source: https://equable.org/pension-plan-funded-ratio-rankings-2023/

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Innovation | Question #9

Option A

Adhere more closely to industry norms and proven approaches to reduce risk of failures.

Option B

Make greater use of innovative or non-standard approaches with upside potential.

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Innovation

Google AI Overview of Innovation Organization Types

Key Characteristics of a Continuous Improvement Organization

- Data-driven decision making
- Standardized processes
- Employee engagement
- Small, incremental changes
- Lean methodologies
- Focus on efficiency

Key Characteristics of an Innovation Organization

- High tolerance for risk
- Creative thinking and ideation
- Agile methodology
- Customer-centric focus
- Cross-functional collaboration
- Long-term vision

Source: Google.com

Innovation | Question #9

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Internal vs External | Question #10

Option A

More use of external managers to maximize breadth of expertise we can access, even if it results in higher costs

Option B

More use of internal staff and supporting infrastructure to internalize skillsets and reduce costs.

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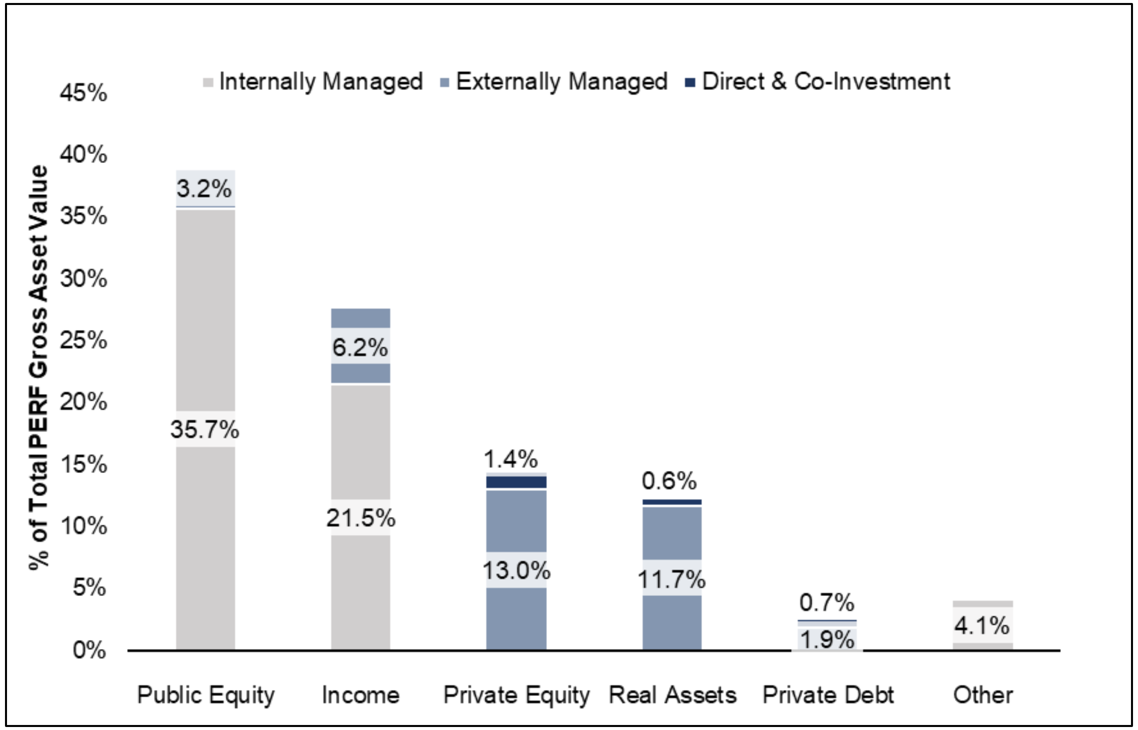
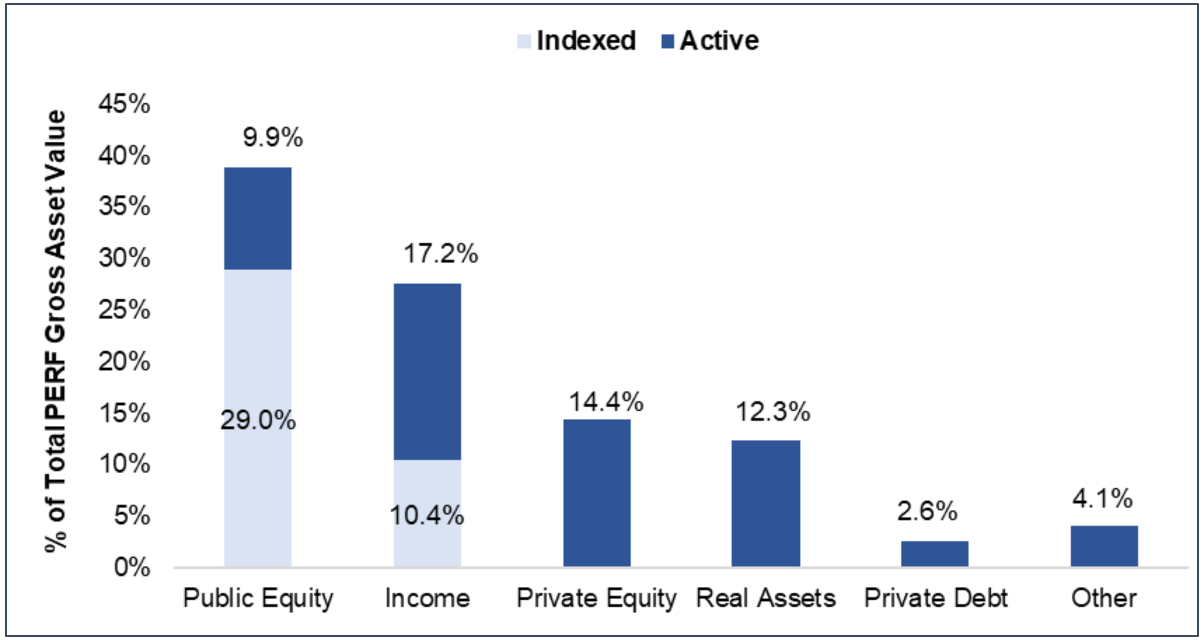
Internal vs External

Internal vs External Management



Indexed vs Active Management



*As of June 30, 2024

[CalPERS Trust Level Review, September 2024 Investment Committee, Item 6a-01]

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Costs | Question #11

Option A

Risk adjusted returns net of costs and portfolio diversification benefits should be the primary focus.

Option B

The level of fees paid to external managers, such as for private market investments, are an important consideration.

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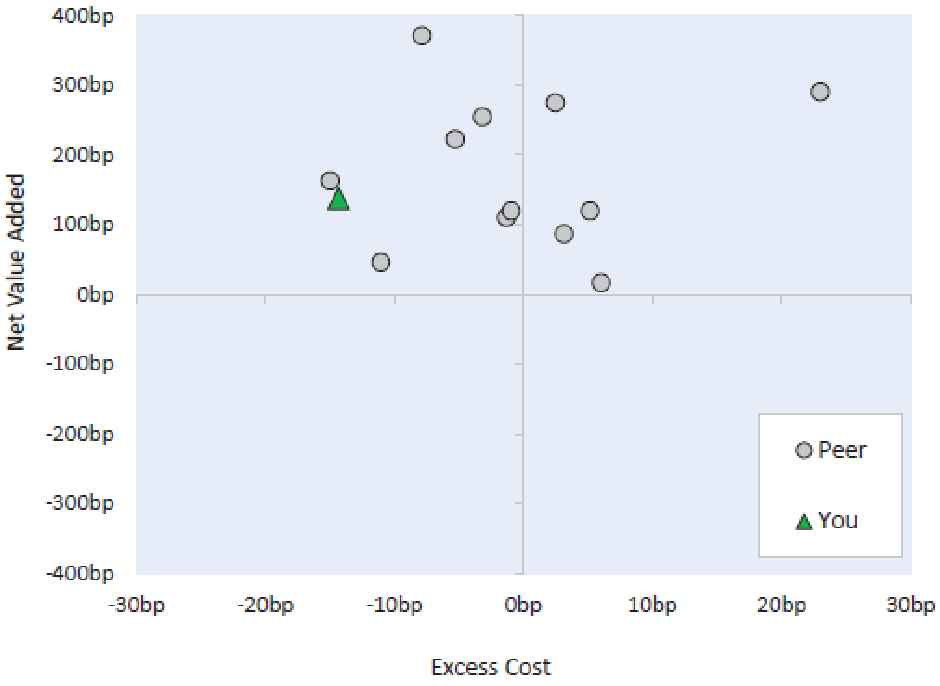
Costs

2022 Net value added versus excess cost

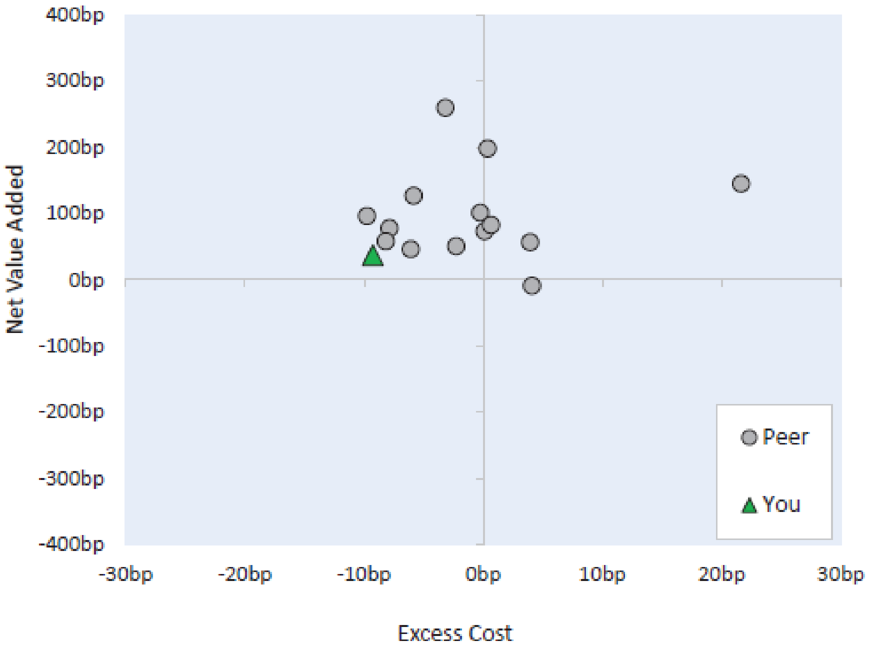
(CalPERS 2022: net value added 137 bps, cost savings 14 bps [1])



	2022
Net value added	137.4 bp
Excess Cost	(14.3) bp

5-year net value added versus excess cost

(CalPERS 5-year: net value added 37 bps, cost savings 9 bps [1])



1. Your 5-year savings of 9.3 basis points is the average of your peer-based savings for the past 5 years.

	2022	2021	2020	2019	2018	5-year
Net value added	137.4bp	120.0bp	(5.0) bp	(1.0) bp	(78.0) bp	37.1bp
Excess cost	(14.3) bp	(15.0) bp	(14.3) bp	(1.1) bp	(1.7) bp	(9.3) bp

- 2022 net value added versus excess cost", Cost effectiveness chart from CEM's Investment Benchmarking Analysis (for the period ending December 31, 2022). Copyright © 2023 by CEM Benchmarking Inc. ('CEM'). Used with permission.
- 5-year net value added versus excess cost", Cost effectiveness chart from CEM's Investment Benchmarking Analysis (for the period ending December 31, 2022). Copyright © 2023 by CEM Benchmarking Inc. ('CEM'). Used with permission

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Results and Insights

- ❑ Key trends and overarching themes
- ❑ Areas of consensus or divergence
- ❑ Tradeoffs that warrant further discussion

Next Steps:

- ✓ ALM Workshop at February Board
- ✓ March Investment Committee