

Alameda County Employees' Retirement Association BOARD OF RETIREMENT

INVESTMENT COMMITTEE/BOARD MEETING

ACERA MISSION:

<u>To provide ACERA members and employers with flexible, cost-effective, participant-oriented benefits through prudent investment management and superior member services.</u>

Wednesday, February 5, 2025 10:30 a.m.

LOCATION AND TELECONFERENCE	COMMITTEE MEMBERS		
ACERA C.G. "BUD" QUIST BOARD ROOM 475 14 TH STREET, 10 TH FLOOR	GEORGE WOOD CHAIR	ELECTED GENERAL	
OAKLAND, CALIFORNIA 94612-1900 MAIN LINE: 510.628.3000 FAX: 510.268.9574	TARRELL GAMBLE VICE CHAIR	APPOINTED	
The public can observe the meeting and offer public comment by using the	OPHELIA BASGAL	APPOINTED	
below Webinar ID and Passcode after clicking on the below link or calling the	KEITH CARSON	APPOINTED	
below call-in number.	ROSS CLIPPINGER	ELECTED SAFETY	
Link: https://zoom.us/join Call-In: 1 (669) 900-6833 US	HENRY LEVY	TREASURER	
Webinar ID: 879 6337 8479 Passcode: 699406	ELIZABETH ROGERS	ELECTED RETIRED	
For help joining a Zoom meeting, see: https://support.zoom.us/hc/en-	KELLIE SIMON	ELECTED GENERAL	
<u>us/articles/201362193</u>	STEVEN WILKINSON	APPOINTED	
	CYNTHIA BARON	ALTERNATE RETIRED ¹	
	KEVIN BRYANT	ALTERNATE SAFETY ²	

Note regarding accommodations: If you require a reasonable modification or accommodation for a disability, please contact ACERA between 9:00 a.m. and 5:00 p.m. at least 72 hours before the meeting at accommodation@acera.org or at 510-628-3000.

Public comments are limited to four (4) minutes per person in total. The order of items on the agenda is subject to change without notice.

Board and Committee agendas and minutes and all documents distributed to the Board or a Committee in connection with a public meeting (unless exempt from disclosure) are posted online at www.acera.org and also may be inspected at 475 14th Street, 10th Floor, Oakland, CA 94612-1916.

¹ The Alternate Retired Member votes in the absence of the Elected Retired Member, or, if the Elected Retired Member is present, then votes if both Elected General members, or the Safety Member and an Elected General member, are absent.

² The Alternate Safety Member votes in the absence of the Elected Safety, either of the two Elected General Members, or both the Retired and Alternate Retired members.

INVESTMENT COMMITTEE/BOARD MEETING

NOTICE and AGENDA Wednesday, February 5, 2025

Call to Order: 10:30 a.m.

Roll Call

Public Input (The Chair allows public input on each agenda item at the time the item is discussed)

Action Items: Matters for discussion and possible motion by the Committee

1. Discussion and Possible Motion to Recommend that the Board Adopt the Updated Private Equity Policy

10:35 – 11:05 Sam Austin, NEPC

Rose Dean, NEPC John Ta, ACERA Betty Tse, ACERA

<u>Information Items: These items are not presented for Committee action but consist of status updates and cyclical reports</u>

1. Report on Private Credit Investment Made Under Delegated Authority – Orchard Global EleganTree Opportunities Fund III (\$60 million)

11:05 – 11:35 Rose Dean, NEPC

Clint Kuboyama, ACERA

Betty Tse, ACERA

2. 2025 Capital Market Assumptions

11:35 – 12:05 Sam Austin, NEPC

Dan Hennessy, NEPC Betty Tse, ACERA

3. Investment Committee Meeting WorkPlan for 2025

12:05 – 12:35 Sam Austin, NEPC

Betty Tse, ACERA

Trustee Remarks

Future Discussion Items

None

Establishment of Next Meeting Date

March 5, 2025 at 10:30 a.m.



ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

475 14th Street, Suite 1000, Oakland, CA 94612 | Phone: 510-628-3000 | Fax: 510-268-9574 | www.acera.org

TO: Members of the Investment Committee

FROM: John Ta, Senior Investment Officer

DATE: February 5, 2025

SUBJECT: Discussion and Possible Motion to Recommend that the Board Adopt the Updated Private

Equity Policy

Executive Summary:

This action item follows the information item presented last month (January 2025) regarding Staff's and NEPC's proposed changes to ACERA's Private Equity (PE) Investment Policy. The final proposal has incorporated input from the Investment Committee (IC) and legal Staff.

Recommendation:

Staff recommend that the IC accept the updated PE Policy as proposed and motion to the Board for approval.

Discussion:

There were three additional changes made to the PE Policy redline since the previous ICM (highlighted in yellow in *Attachment #1*):

- 1. The vintage year language within the compliance checklist (*p.16 Attachment #1*) was updated to match the vintage year language within the policy (*p.6 Attachment #1*).
- 2. Legal code numbers were updated to current and defined terms were capitalized.
- 3. Asterisks were added to Appendix I of the PE Policy (p.14 Attachment #1) to clearly note that Staff's Executive Summary is available to the Trustees upon request. This change is consistent with the approved language in Appendix I of ACERA's Private Credit Policy.

For reference, the memo from last month is also attached. This memo outlines the significant changes proposed for the PE Policy that were previously discussed.

Attachments:

- #1 Final redlined ACERA Private Equity Policy, prepared by Staff and NEPC
- #2 Review of Private Equity Policy Memo (Jan 2025 ICM), prepared by Staff

Alameda County Employees' Retirement Association

ACERA

PRIVATE EQUITY INVESTMENT POLICY

Amended October 21, 2021 TBD

ACERA PRIVATE EQUITY INVESTMENT POLICY

TABLE OF CONTENTS

I.	SCOPE	3
II.	PURPOSE	3
III.	LEGAL AUTHORITY	3
IV.	TYPES OF PRIVATE EQUITY INVESTMENTS	3
V.	STRATEGIC OBJECTIVE OF PRIVATE EQUITY PORTFOLIO	4
VI.	STRATEGIC ALLOCATION TO PRIVATE EQUITY	4
VII.	SPECIFIC GUIDELINES	5
VIII.	ROLES AND RESPONSIBILITIES	6
IX.	DUE DILIGENCE PROCESS FOR PRIVATE EQUITY INVESTMENT SELECTION	9
X.	SPECIFIC PERFORMANCE EVALUATION CRITERIA	11
XI.	MONITORING AND REPORTING	11
XII.	PRIVATE EQUITY INVESTMENT INFORMATION DISCLOSURE POLICY	11
XIII.	TABLE OF AMENDMENT DATES	11
Appen Appen	ndix I – List of Reports Required for Each Investment Recommendation/Approval adix II – Executive Summary Report Template adix III – Compliance Checklist Template for Private Equity Investment Selection adix IV - Details of Disclosure Policy for Private Equity Investments	12 13 14 17

I. SCOPE

This Private Equity Investment Policy ("PE Policy") governs all investments in the Private Equity ("PE") asset class made by Alameda County Employees' Retirement Association ("ACERA")¹. The investments governed under this PE Policy are subject to applicable law and the applicable limitations and requirements of ACERA's General Investment Guidelines, Policies and Procedures. If there is any conflict between this PE Policy and ACERA's General Investment Guidelines, Policies and Procedures pertaining to investments in the Private Equity asset class, the PE Policy prevails. The ACERA Board ("Board") reserves the right to amend, supplement, or rescind this PE Policy at any time.

II. PURPOSE

The purpose of this PE Policy is to 1) set forth the private equity policies and guidelines which are deemed to be appropriate and prudent; 2) establish criteria against which private equity opportunities are to be measured; and 3) serve as a review document to guide the ongoing oversight of ACERA's Private Equity Portfolio ("PE Portfolio") on a consistent basis. This PE Policy also defines the roles and responsibilities of the Board, the ACERA Investment Committee ("Investment Committee"), the ACERA Staff ("Staff"), the ACERA PE Consultant ("Consultant"), and the PE Investment Managers hired by ACERA to manage its assets ("Investment Managers").

It is expected that this PE Policy will be a living document and that changes will be made from time to time to reflect experience, evolving investment products, and opportunities and changes in the economic and capital market environment.

III. LEGAL AUTHORITY

This PE Policy is established in accordance with Article XVI, Section 17 of the California Constitution and California Government Code Sections 31594 and 31595, which establish the exclusive authority and fiduciary responsibility of the Board for the investment and administration of the ACERA Trust Fund ("Fund").

IV. TYPES OF PRIVATE EQUITY INVESTMENTS

For purpose of this PE Policy, Private Equity may include, but not be limited to, venture capital, corporate buyouts², and growth equityand debt related/special situations. ACERA may consider investing in these assets if and only if the fund vehicles meet all legal standards and PE Policy requirements. Private Equity investments may be denominated in U.S. dollars or other currencies and may use leverage to enhance returns. With the exception of short-term facilities utilized for capital call / cash flow management or warehousing, ACERA expects that in general the investments will not utilize leverage exceeding 100% of the NAV. Both Staff and the Ceonsultant will review each fund's use of leverage during the due diligence process. - ACERA intends not to exceed leverage equal to 100% of the 11% Private Equity allocation and both staff and the consultant will review each fund's use of leverage during the due diligence process.

¹ See ACERA's Absolute Return Policy, Real Estate Policy and Real Assets Policy for investments in other asset classes.

² Buyouts include niche strategies such as secondaries, fund of funds, and structured equity.

V. STRATEGIC OBJECTIVE OF THE PRIVATE EQUITY PORTFOLIO

The Board recognizes that when ACERA invests in new PE Private Equity investments, the investment performance results may be difficult to evaluate during the first several years of the investments³, and possibly longer. However, this PE Policy establishes performance expectations and ongoing monitoring and reporting duties for each investment strategy and for the PE Portfolio as a whole. Such duties are designed to address these challenges and are described in detail below.

The Board believes the Fund's overall returns can be enhanced, on a risk-adjusted basis, by investing a portion of its assets in PErivate Equity. The strategic objective of such investments is to: 1) generate returns superior to those available in the public equity market to compensate the Fund for the longer term and illiquid commitments associated with PErivate Equity investments; 2) enhance ACERA's long-term risk adjusted return and provide additional diversification to ACERA's overall investment Fund; and -3) generate The total PE Portfolio performance shall be benchmarked against in excess of the Thomson Reuters C|ACambridge Associates Global Private Equity and Venture Capital Index Benchmark (see Section VII).

VI. STRATEGIC ALLOCATION TO PRIVATE EQUITY PORTFOLIO

The long term target allocation to the PErivate Equity asset class, as measured by Net Asset Value of the portfolio and not by dollars committed to underlying Investment Managers or funds, is 11% of the Total Fund. Portfolio construction shall be driven by careful manager selection. Due to the illiquid nature of investments, the allocation to PErivate Equity can range from 8% to 143%, with exposure to sub-asset classes as follows:

Portfolio	Long-Term Target Allocation	Min./Max. Ranges
Private Equity	11.0%	8% to 1 <u>4</u> 3%
 Buyouts Venture Capital Debt-related/Special Situations Growth Equity 	760% 2150% 2015%	530% to 980% 50% to 2540% 50% to 30025%
Total	11%	8% to 1 <u>4</u> 3%

Portfolio construction will be designed to produce a diversified mix of returns, subject to the guidelines and constraints outlined <u>under each subcategory belowherein</u>. As with any investment, invested capital may incur losses of all or part of the capital invested but it is expected that a diversified PE Portfolio will produce a positive return significantly in excess of publicly traded domestic equities. Diversifiable risks associated with this Portfolio include position in the capital structure, the timing and amounts of cash flows, the size of the individual investments, and their

³ The J-Curve effect occurs as fund expenses and management fees are high in the initial years of PEprivate equity investing. Due to this J-Curve effect, early returns both at the fund level, and potentially at the portfolio level, are not relevant to long-term results.

sensitivities to business cycles. The risks associated with PErivate Equity will be viewed within the context of the entire Fund. ACERA may take on over- and under-weights to the PErivate Equity asset class and to the sub-asset classes within the PE Portfolio to improve its risk/return posture based upon an assessment of the relative attractiveness of all available opportunities. As commitments and investments are expected to be made over time, the Portfolio is expected to reach and maintain its long-term target allocation within 4-6 years (subject to availability of quality managers) from the most recent date of change in allocation targets.

VII. SPECIFIC GUIDELINES FOR PRIVATE EQUITY PORTFOLIOS

ACERA will gain exposure to PE investments by hiring external investment managers either directly or through participation in secondary PE markets. Typically, the Fund will subscribe for interests in limited partnership or limited liability company vehicles, as applicable, sponsored by specialty external investment managers. The strategic objective of PE investments is to outperform the public equity market, with performance of the portfolio benchmarked against the Cambridge Associates Global Private Equity and Venture Capital IndexThomson Reuters C|A Benchmark (net of fees). Each sub-asset class (buyout, venture, debt-related) is to outperform the respective sub-asset class benchmark within the Thomson Reuters C|A Benchmark.

Portfolio	Benchmark
Private Equity	Thomson Reuters C A Global All Private Equity Benchmark
Buyouts	Thomson Reuters C A Global Buyout Benchmark
Venture Capital	Thomson Reuters C A Global Venture Capital & Growth Equity
Debt-	Benchmark
related/Special	Thomson Reuters C A Global Mezzanine & Distressed Benchmark
Situations	

The PE Portfolio shall be diversified over 4 to 6 years from the most recent date of change in allocation targets:by:

By sSub-asset class: Among Bbuyouts, Vventure Ceapital, and debt-related / special situations investments Growth Equity.

A. Buyout Investments

Description: Buyout investments typically involve acquiring a control position in mature companies (or a division of a company) using a mixture of equity and debt. Buyout returns are typically generated through operational improvements, debt reduction, and increased scale.

ACERA will look to hiregh external managers with the goal of achieving a diversified exposure across sectors, regions, and vintage year.

B. Venture Capital Investments

Description: Venture Capital investments typically involve acquiring minority stakes in companies at the early stages of development. These companies carry higher risk because the companies are unprofitable and have unproven business models. Venture Capital returns are typically generated through major revenue growth and market penetration.

ACERA will look to hiregh external managers with the goal of achieving a diversified exposure across sectors, regions, and vintage year.

C. Growth Equity Investments

Description: Growth Equity Investments typically involve acquiring minority stakes in rapidly growing companies with proven business models. Growth Equity returns are typically generated through sustained growth in revenue and operating margins.

ACERA will look to hiregh external managers with the goal of achieving a diversified exposure across sectors, regions, and vintage year.

By vintage year: It is expected that roughly equal amounts of new funding will be committed in each calendar year, that ACERA will commit capital to the PE Portfolio each year to take advantage of opportunities across vintage year. The commitment amounts will vary with deviations permitted to adjust for changes in the market value of ACERA's plan, and accommodate market opportunities. and to facilitate initial entry into the asset class.

By Investment Manager: No more than 20% of the Total Fund's 11% target allocation to the PE Portfolio may be committed to any one investment vehicle.

By geography: Through commitments to funds located and/or investing both in and outside of the United States As a result of the diversified commitments outlined above, it is expected that the PE portfolio will be generally diversified by exposure to companies in and outside the United States.

By industry: As a result of the diversified commitments outlined above, it is expected that the PE Portfolio will be generally diversified by sector/industry.

A. Buyout Investments

<u>Description</u>: Buyout investments typically involve the purchase of a control position (primarily majority positions, with some minority positions) in an established, privately held company. Investments are typically made in years one through three and returns typically occur in years three through six of the limited partnership.

<u>Investment Constraints</u>: No more than 35% of the target value of capital invested in the Buyout portfolio may be invested in a single sector of the domestic or international economy.

B. Venture Capital Investments

<u>Description</u>: Venture Capital investments are typically made in privately held companies at varying stages of development. Investments are often made in years one through five and returns typically occur in years four through ten of the limited partnership. Depending on the stage or risk profile of investments, a large portion of such investments may result in losses, while a few should provide substantially outsized returns. Other types of Private Equity Investments with similar risk/return profiles may be considered for the Fund under this category.

<u>Investment Constraints</u>: No more than 50% of the target value of capital invested in the Venture Capital portfolio may be invested in a single industry within a particular sector.

C. Debt-Related and Special Situations Investments

<u>Description</u>: Debt Related investments typically combine a debt instrument, which provides a current yield, with an equity participation of warrants, etc. Investments are typically made in years one through three of the partnership with a high level of current income that is combined with capital appreciation supplied by the warrants or other "equity kickers." Special Situations investments can encompass any variety of private investments in debt or equity, typically to generate returns from the turnaround or dissolution of stressed and distressed assets, including opportunistic real estate investments.

<u>Investment Constraints</u>: No more than 30% of the target value of the capital invested in the Debt-Related portfolio may be invested in any single debt-related asset.

VIII. ROLES AND RESPONSIBILITES

The delineation of roles and responsibilities is important for effective administration of ACERA's PE Portfolio. The duties and responsibilities of the Board, Investment Committee, Staff, Consultant, and Investment Managers are stated below:

A. Board

The Board shall be responsible for approving the PE Policy that governs the PE Portfolio and approving the investment plan of ACERA's PE Portfolio. The Board, with input from the Investment Committee, shall review this PE Policy to determine whether amendments are necessary. The Board shall also be responsible for reviewing and approving all PErivate Equity investments with individual commitments exceeding Staff's delegated authority as described in subparagraph C below.

B. Investment Committee

The Investment Committee shall be responsible for the following:

- 1. Establishing the PE Policy to govern all investments in the PErivate Equity asset class;
- 2. Reviewing the PE Policy, evaluating proposals for PE Policy amendments, if any, and making recommendations for approval by the Board;
- 3. Reviewing and approving the ACERA PE Investment Plan-every 1 to 3 years;
- 4. Reviewing <u>PErivate Equity</u> investments recommended by Staff and/or Consultant and making recommendations to the Board for adoption; and
- 5. Delegation⁴:
 - a. Delegating to Staff the authority to make final decisions on new proposed PErivate Equity investments with an individual commitment up to 5% of the target allocation to the total PE Portfolio.
 - b. Delegating to Staff the authority to make final decisions on proposed "re-up" PErivate Equity investments with existing managers in good standing, an individual commitment in addition to the existing commitments, up to 10% of the target allocation to the total PE Portfolio.

C. Staff

Staff shall be responsible for oversight of ACERA's PE Portfolio. Staff's responsibilities shall include, but not be limited to the following:

- 1. Developing and recommending all necessary changes to the PE Policy with input from Consultant;
- 2. Developing and maintaining specific procedures, if necessary, to comply with the approved PE Policy with input from Consultant;
- 3. Developing the investment plan of ACERA's PE Portfolio and making recommendations to the Committee for adoption with input from Consultant;
- 4. Delegation ⁵:
 - a. Approving Consultant's PErivate Equity investment proposals (new proposals) with each individual commitment up to 5% of the target allocation to the total PE Portfolio upon completion of a thorough review and due diligence process with satisfactory results. Staff and Consultant shall provide the Investment Committee all required reports (please see Appendices I through III).
 - b. Approving Consultant's <u>PErivate Equity</u> investment proposals for "re-ups" with existing managers with each individual commitment in addition to the existing commitments⁶, up to 10% of the target allocation to the total PE Portfolio to managers in good standing⁷ upon completion of a thorough review and due

⁴ Investment managers may not appear before the Investment Committee when Staff exercises its delegated authority.

⁵ Investment manager may not appear before the Investment Committee in circumstances when Staff has exercised its delegated authority.

⁶ Total commitments are calculated net of capital commitments returned.

⁷ An Linvestment Mmanager may be considered to be in good standing if there is sufficient comfort with factors including, but not limited to, its organization, strategy, performance, and compliance.

diligence process with satisfactory results. Staff and Consultant shall provide the Investment Committee all required reports (please see Appendices I through III).

- b.c. When the investment manager or general partner of existing investment vehicles offer related continuation vehicles (aka "continuation funds"), following a thorough evaluation of the investment options related to the continuation vehicle (i.e., subscribing to the continuation vehicle, receiving liquidity, or, in some cases, both), and in alignment with Consultant's recommendation, approving of investment in continuation vehicles or other related options such as receiving liquidity (i.e., receiving cash proceeds for the investments that are to be transferred into the continuation vehicle).
- 5. Through the ACERA Investment Products and Services Introduction (IPSI) program, and with the concurrence of the Consultant, recommend highly qualified PErivate Equity fund investments to the Investment Committee upon completion of a thorough review and due diligence process, providing the required Appendix I reports to Staff and/or the Investment Committee. (See Appendices I through III);
- 6. Monitoring the PE Portfolio for performance and compliance with this PE Policy;
- 7. Monitoring the performance of the underlying Investment Managers and their compliance with a) the investment guidelines set forth in their respective contracts; b) this PE Policy; and c) the applicable requirements of ACERA's General Investment Guidelines, Policies and Procedures;
- 8. Conducting comprehensive annual reviews of ACERA's PE Portfolio and the individual investments in the PE Portfolio;
- 9. Reporting any manager violations of this PE Policy to the Investment Committee, with appropriate recommendations;
- 10. Assisting ACERA's Legal Department in contract negotiations for the selected <u>PErivate</u> Equity investments;
- 11. Evaluating <u>PErivate Equity</u> investment opportunities with Consultant's input on an ongoing basis; and
- 12. Evaluating and making recommendations for retention, addition to, and/or termination of Investment Managers.

D. Consultant

The Consultant hired by the Board is a fiduciary to ACERA and its Board. Consultant shall independently and continuously monitor and analyze the performance of ACERA's PE Portfolio and make related recommendations to serve the best interests of the plan participants. Consultant shall assist Staff in developing this PE Policy and recommending all necessary changes to the PE Policy. In addition, Consultant shall be responsible for:

- 1. Analyzing the asset allocation of the PE Portfolio by typesub-asset class, implementation vehicle, geography, industry, and vintage year, and making recommendations for reallocation of assets, as appropriate;
- 2. Developing an investment plan for ACERA's PE Portfolio every 1 to 3 years;
- 3. Developing a search strategy for highly qualified <u>PErivate Equity</u> investments and maintaining a robust database containing information on Investment Managers;
- 4. Recommending highly qualified <u>PErivate Equity</u> fund investments to Staff and/or the Investment Committee upon completion of a thorough due diligence process and providing

- the required reports listed in the Appendix I of this PE Policy to Staff and/or the Investment Committee:
- 5. When continuation vehicles are offered related to existing investment vehicles, and following a thorough evaluation of the related investment options, recommending to Staff which investment option is most suitable for the PE Portfolio.
- 5.6. Ongoing monitoring of the investment performance of ACERA's PE Portfolio and individual investments-strategies in the PE Portfolio;
- 6.7. Conducting ongoing due diligence on Investment Managers, notifying ACERA of any significant developments and adverse events and providing analysis and advice on such issues;
- 7.8. Ongoing monitoring of Investment Managers' compliance with a) their respective investment guidelines as set forth in their contract; b) this PE Policy; and c) applicable requirements of ACERA's General Investment Guidelines, Policies and Procedures;
- <u>8.9.</u> Assisting Staff in contract negotiations for the selected <u>PErivate Equity</u> investments, as needed;
- 9.10. Submitting performance evaluation reports and conducting comprehensive reviews of the PE Portfolio and individual Investment Managers semi-annually, and when appropriate, quarterly to the Investment Committee;
- 40.11. Making recommendations for retention or termination of Investment Managers;
- 41.12. Attending meetings as needed; and
- 12.13. Performing other duties in accordance with the terms of its contract and applicable law.

E. Investment Managers

Investment Managers are fiduciaries and shall prudently manage ACERA's assets in the best interest of ACERA and its members. Investment Managers shall abide by all applicable ACERA policies and procedures, and fully comply with applicable law. Investment Managers shall be responsible for compliance with a) the specific investment guidelines as set forth in their respective contracts; b) this PE Policy; and c) applicable requirements of ACERA's General Investment Guidelines, Policies and Procedures. Investment Managers shall be responsible for all aspects of portfolio management as set forth in their respective contracts with ACERA. They shall also:

- 1. Communicate with Staff and/or Consultant promptly regarding investment strategy, investment results, and any non-conforming issues that may have significant and/or negative impact on the portfolio;
- 2. Cooperate fully with Staff, Consultant, ACERA's custodian, and other ACERA vendors concerning requests for information;
- 3. Submit reports in a timely manner to Staff and Consultant in accordance with their contract terms; and
- 4. Attend meetings as needed.

IX. DUE DILIGENCE PROCESS FOR PRIVATE EQUITY INVESTMENT SELECTION

ACERA recognizes that a proper due diligence process is essential to control the risks associated with PErivate-Equity investments and therefore, hereby establishes the following due diligence processes for both its Consultant and Staff:

A. Consultant

Consultant shall conduct extensive, documented due diligence before making any PErivate Equity investment recommendations to Staff and the Investment Committee. Consultant shall involve will work closely with Staff in the due diligence process, as necessary. When appropriate For those investments recommended to be included in the ACERA PE Portfolio, Consultant's duties -shall, but not be limited to:

- 1. Assessing the reputation of the individuals who manage the <u>PErivate Equity</u> investments, consider background checks, internet searches, and in-person meetings or conference calls with these individuals, etc.;
- 2. Conducting on-site visits to the offices of the Investment Managers;
- 3. Checking references from other investors that have invested in these <u>PErivate Equity</u> investments, and, when advisable, from competitors;
- 4. Determining that the Private Equity investment funds are audited, at least annually, by a reputable and recognized external independent auditing firm;
- 5. Reviewing Investment Managers investment strategies, policies, operating procedures, and historical performance;
- 6. Reviewing and understanding the valuation procedures employed by the Investment Managers;
- 7. Reviewing business terms of all legal agreements and other related documents for the Private Equity investments under consideration, such as offering memorandum, legal agreements, and Forms ADV, if and as available;
- 7. Reviewing and understanding the business terms of all operational documents and other related materials for the PErivate EquityCredit investments under consideration, including but not limited to offering memoranda, subscription agreements, fund policies, due diligence questionnaires, and Forms ADV, if and as available.

Review the investments for potential exposure to Unrelated Business Taxable Income (UBTI); and assessing what exit strategies exist to liquidate existing investments owing to poor performance and, if necessary, to avoid future investments in similar funds.

B. Staff

Staff shall ensure that Consultant has conducted extensive, documented due diligence on all PErivate Equity investment proposals recommended to Staff and the Investment Committee. Staff shall participate in Consultant's due diligence process when appropriate, shall conduct its own independent due diligence, and shall also be responsible for:

- 1. Reviewing the comprehensive analysis report prepared by Consultant on its recommended PErivate Equity investments;
- 2. Verifying the compliance of each recommended <u>PErivate Equity</u> investment with the PE Policy, the investment plan for ACERA's PE Portfolio and other applicable investment policies;

- 3. Discussing all issues related to the recommended <u>PErivate Equity</u> investments with Consultant and with Investment Managers to gain a thorough understanding of each strategy's primary return drivers, key terms, investment guidelines, and determine the investments suitability for ACERA's PE Portfolio; and
- 4. Performing independent due diligence regarding the business, economic, and legal aspects of the proposed PE investment and in accordance with the Executive Summary (Appendix II) and the Compliance Checklist (Appendix III).
- 5. Completing Appendices II and III of this document for each proposal.
- 6. Conducting an on-site due diligence visit to each manager's headquarters office whenever possible; and
- 7. Arranging presentations of select investment opportunities to the Investment Committee<u>as applicableas described under Section VIII.C.4.</u>

X. SPECIFIC PERFORMANCE EVALUATION CRITERIA

When appropriate, specific performance evaluation criteria, including but not limited to benchmarks, will be established for the Investment Managers in their respective contracts with ACERA.

XI. MONITORING AND REPORTING

Consultant and Staff will closely monitor and analyze the PE Portfolio so that the strategic objective of the Portfolio can be met.

Investment Managers shall submit reports to Staff, Consultant, ACERA's custodian, and other ACERA vendors as required in their respective contracts.

Consultant shall submit all reports to Staff in accordance with its contract terms and the PE Policy.

Consultant, in conjunction with Staff, shall perform evaluations of ACERA's PE Portfolio and the underlying Investment Managers semi-annually and when appropriate, quarterlyin addition to ongoing cooperation with the Staff. Consultant shall report the findings to Staff and the Investment Committee.

XII. PRIVATE EQUITY INVESTMENT INFORMATION DISCLOSURE POLICY

ACERA is a public agency subject to state laws, including, without limitation, (a) the California Public Records Act (Cal. Govt. Code § 7920.0006250, et seq.)(the "Public Records Act"), which provides generally that all records relating to a public agency's business are open to public inspection and copying unless exempted under the Public Records Act, (b) the Ralph M. Brown Act (Cal. Govt. Code § 54950 et. seq.)(the "Brown Act"), which provides generally for open meetings for local legislative bodies, and (c) the California Government Code Section 7514.7 ("Cal. Govt. Code § 7514.7") which provides generally that public pension systems in California obtain and publicly disclose certain information regarding fees, expenses and returns from the alternative investment vehicles in which they invest. See Appendix IV for details of the ACERA disclosure policy regarding its PErivate Equity investments:

XIII. TABLE OF AMENDMENT DATES

September 18, 2008* March 19, 2009* August 18, 2011* December 20, 2012* October 14, 2015* September 21, 2017 October 21, 2021

*PEARLS Policy, and Amended PEARLS Policies

Appendix I

List of Reports Required for Each Investment Recommendation/Approval

Name of Report	Source
Recommendation/Approval memo	Staff
Recommendation/Approval memo	Consultant
Executive Summary of the Fund	Consultant/ <mark>*</mark> Staff
Compliance Checklist	Staff
Comprehensive Due Diligence Report (Available to Trustees upon request due to confidentiality)	Consultant
Manager Pitchbook	Investment Manager

Note: Staff will provide an abbreviated Executive Summary Report that is available for review upon request by the Trustees.

Appendix II

Executive Summary Report Template

Fund Name

Section I: General Information

Fund Name; Total AUM of the Firm; Current Target Fund Size; Previous Fund Size; Fund Focus; etc.

Section II: Investment Management

Organization Structure; Management Group; Experience; Personnel Turnover; etc.

Section III: Investment Strategy

Investment Philosophy; Investment Strategy; Investment Process; Investment Objective; etc.

Section IV: Risk Management

Risk Control Methodology; Exit Strategy; etc.

Section V: Investment Rationale

Section VI: Investment Concerns

Section VII: Performance (example)

Benchmark:

Net Returns (%):

Periods Ending Date	YTD	1Year	3Years	5Years	Since Inception
Fund					
Benchmark (see § VII)					
Relative Performance: Account – Benchmark					

Section VIII: Key Terms

Fund Term; Preferred Return; Investment Period; Management Fee; Other Fees; General Partner Carry; GP Commitment; Advisory Board; Clawback; No-Fault Divorce; Key-Person Events; Closing Schedule; Drawdown Schedule; etc.

^{*} List of items to be addressed as appropriate. Data provided by Name as of Date; ICM Date

Appendix IIICompliance Checklist Template for Private Equity Investment Selection

Target allocation to Private Equity (PE) Portfolio:11.0% of the total Fund

A. PE Policy for PE Portfolio Fund Name In Compliance

1. Permissible Legal Structures

Any legally permissible vehicle will be	Specific legal structure.	Yes, No or N/A
allowed including, but not limited to, joint		
ventures, limited partnerships, and limited		
liability corporations.		

2. Investment Methods

Individual limited partnership funds	Specific investment methods.	Yes, No or N/A
Primary and/or Secondary		
Separate accounts		
Discretionary		
Fund-of-funds		
Direct investments/Co-Investments		
Combination of the above		

3. Investment Characteristics

PE shall include investments as specified in	Specific investment type.	Yes, No or N/A
Section VII of the PE Policy.may include,		
but not be limited to, buyouts, venture		
capital, debt-related / special situations.		
	Specific investment characteristics.	Yes, No or N/A
Buyouts: typically purchase of a control		
position in an established, privately held		
company,		
<u>Venture Capital</u> : typically purchase in		
privately-held companies at varying stages		
of formation, and		
Debt-related / special situations: typically		
combine a debt instrument, which provides		
a current yield, with an equity participation		
of warrants, etc. Special situations		
investments can encompass any variety of		
private investments in debt or equity.		
	Specific currency denomination.	Yes, No or N/A

PE may be denominated in U.S. dollars or	
other currencies.	

4. Portfolio Diversification

By sub-asset class: among buyouts, venture capital, and debt-related/special	Specific investment type.	Yes, No or N/A
situations Strategies may be classified as Buyout, Venture Capital, or Growth Equity	Specific vintage year.	Yes, No or N/A
By vintage year: roughly equal amounts of new funding will be committed in each calendar year with deviations permittelt is	Specific commitments to the Investment Manager.	Yes, No or N/A
expected that capital will be committed each yeard. The total commitment each year may vary due to market conditions and total plan AUM.	Specific location.	Yes, No or N/A
By Investment Manager: \leq 20% of the target allocation to total PE Portfolio may be committed to any one partnership.	Specific sector/industry.	Yes, No or N/A
By geography: commitments to funds located and/or investing in both in and outside of the U.S.		
By industry: PE Portfolio is generally diversified by sector/industry.		

5. Return Expectation

Cambridge Associates Global Private	Specific return target.	Yes, No, or N/A
Equity and Venture Capital Index in		
Aggregate. Thompson Reuters C A		
Benchmark (net of all fees) in aggregate.		
		Yes, No, or N/A
Each sub-asset class:		
Thomson Reuters C A Global Buyout		Yes, No, or N/A
Equity Benchmark		
Thomson Reuters C A Global Venture		
Capital & Growth Equity Benchmark		Yes, No, or N/A
Thomson Reuters C A Global Mezzanine		
& Distressed Benchmark		

6. Investment Allocations

PE Portfolio: range 8%-143% of the total	Expected allocations to the PE Portfolio	Yes, No, or N/A
Fund.	and the underlying portfolios including	
Buyouts: target 760%; range 530%-	specific commitment to the Investment	
<u>9</u> 80%.	Manager.	
Venture Capital: target 1520%; range		
<u>5</u> 0%-		

<u>2540</u> %.
Debt-related / Special Situations:
— targetGrowth Equity: target 2015%;
range <u>50</u> %- <u>2530</u> %.

7. Investment Constraints

Buyouts: ≤35% of the target value of the	Specific commitment to the Investment	Yes, No or N/A
buyout portfolio may be invested in a single	Manager.	
sector of the domestic or international		
economy.		
<u>Venture Capital</u> : ≤50% of the target value of		
the venture capital portfolio may be invested		
in a single industry within a particular		
sector.		
<u>Debt-related</u> / <u>Special Situations</u> : ≤30% of		
the target value of the debt-related portfolio		
may be invested in any single debt-related		
asset.		

B. PE Investment Plan for YEAR Approved: DATE **Fund Name** In Compliance

Specific Investment Plan.	Specific commitment to the Investment	Yes, No or N/A
	Manager.	

APPENDIX IV

Details of Disclosure Policy For Private Equity Investments ("PE Funds")

- 1. Upon request, ACERA shall disclose: (i) the name, address and vintage year of each PE Fund; (ii) the dollar amount of capital committed to each PE Fund by ACERA since inception; (iii) the dollar amount of cash contributions made to each PE Fund by ACERA since inception; (iv) the dollar amount of distributions received by ACERA from each PE Fund on a fiscal yearend basis; (v) the market value of ACERA's investment in each PE Fund on a fiscal yearend basis; (vi) each PE Fund's net internal rate of return ("IRR") since inception; (vii) the investment multiple of each PE Fund since inception; (viii) the dollar amount of total management fees and expenses paid on an annual fiscal yearend basis, by ACERA to each PE Fund; and (ix) the dollar amount of cash profit received by ACERA from each PE Fund on a fiscal yearend basis. (See Cal. Govt. Code § 7928.710(c)6254.26(b).)
- 2. ACERA shall disclose at least once annually in a report presented at a meeting open to the public: (i) the fees and expenses that ACERA pays directly to each PE Fund and, the PE Fund manager or related parties; (ii) ACERA's pro rata share of fees and expenses not included in (i) that are paid from each PE Fund to the PE Fund manager or related parties; (iii) ACERA's pro rata share of carried interest distributed by each PE Fund to the PE Fund manager or related parties; (iv) ACERA's pro rata share of aggregate fees and expenses paid by all of the portfolio companies held by each PE Fund to the PE Fund manager or related parties; (v) the information outlined in Section 1, above, and (vi) the gross and net IRR of each PE Fund, since inception. (See Cal. Govt. Code § 7514.7)

All other records regarding PErivate Equity Fund investments shall be exempt from disclosure to the fullest extent permitted under applicable law.

Notwithstanding the preceding, or anything else in this PE Policy, ACERA reserves the right to withhold any record when "on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." (See, Cal. Govt. Code §7922.0006255(a)). This weighing process contemplates a case-by-case balancing test between competing public interests based on the facts presented as the statute has been interpreted by the courts.⁸

⁸ Michaelis, Montanari & Johnson v Superior Court, 38 Cal.4th 1065, 1071 (2006).



ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION

475 14th Street, Suite 1000, Oakland, CA 94612 | Phone: 510-628-3000 | Fax: 510-268-9574 | www.acera.org

TO: Members of the Investment Committee

FROM: John Ta, Senior Investment Officer

DATE: January 8, 2025

SUBJECT: Review of Private Equity Policy

Executive Summary:

This information item reviews the proposed amendments to ACERA's Private Equity (PE) Policy as recommended by Staff and NEPC. A summary of the key changes is provided in this memo. Similar to the amendment process for the Private Credit Policy that was approved in October, Staff and NEPC plan to solicit feedback on the proposed changes before bringing the finalized version of the amended PE Policy for a formal vote.

Background:

The Board approved new asset allocation targets for ACERA's Total Fund (Mix C) on July 18, 2024. While the percentage allocated to PE (11% of the total fund) remained unchanged, the underlying composition of the PE portfolio was changed with the new allocation. As a result, Staff and NEPC reviewed ACERA's PE Policy and have proposed changes to reflect the revised goals and characteristics of ACERA's PE portfolio.

Discussion:

A full redline draft of the PE policy is attached for reference (Attachment #1). To note, much of the approved language from the recently amended Private Credit Policy were also incorporated into the PE Policy draft where appropriate. All the significant changes to the PE Policy are listed below:

- 1. **Reorganized Sub-Asset Classes** With the new asset allocation, all debt-related strategies with a similar risk/return profile to private credit were moved from the Private Equity Portfolio to the Private Credit Portfolio. This move creates better alignment for the asset classes and its benchmarks. What remains in ACERA's PE portfolio are all private, equity-related strategies (quite literally "private equity"). The private equity asset can be divided into three main sub-asset classes or strategy-types: Buyouts, Growth Equity, and Venture Capital. Language in the PE policy draft has been updated to delineate the new sub-asset classes. (*See p. 5-7 of Attachment #1*)
- 2. New Sub-Asset Class Target Weights and Benchmark The reorganized PE portfolio requires new long-term target weightings and an appropriate benchmark. After taking into consideration capital market expectations, historical performance and other market factors, Staff and NEPC determined the following sub-asset targets to be appropriate for ACERA's PE portfolio:

Buyouts: 70% (Range 50%-90%)

• Growth Equity: 15% (Range 5% to 25%)

• Venture Capital 15% (Range 5% to 25%)

A new benchmark was also selected to more accurately align the new long-term portfolio sub-asset targets: the Cambridge Associates Global Private Equity and Venture Capital Index. This benchmark has roughly the same sub-asset class concentration as the new targets listed above. (See p.4 of Attachment #1)

- 3. **Removal of Sub-Asset Class Benchmarks** The benchmarks for the sub-asset classes are no longer explicitly indicated (e.g., Buyouts or Venture Capital benchmark). Staff and ACERA's consultants have always focused on portfolio construction and risk management at the total PE portfolio level. For example, industry and geographic diversification is considered at the total PE portfolio level. As such, all investment decisions will revolve around what's best for the total PE portfolio versus what's best for the sub-asset class. The proposed language changes reflect this investment approach. However, Staff and NEPC will still use sub asset benchmarks as part of the peer group analysis for managers when appropriate. (*See p.5 of Attachment #1*)
- 4. Updated Definition for "Total Commitments" Under Delated Authority The definition for the sum of the commitments made to one investment manager was updated for clarification. The current language states that the total commitments to one investment manager cannot exceed 10% of the total PE Portfolio. Total commitments are now defined as net of capital commitments returned. This is to avoid a situation where the full commitment to older and terminated funds would count in the active commitment total to a manager. A generic example would be ACERA has invested in Funds 1-5 for "Great Manager A" and is fundraising for Fund 6. Funds 1-3 are wound down and terminated. Only Funds 4-5 would be count towards the 10% limit instead of all Funds 1-5. (See p.8 of Attachment #1)
- 5. Added Language for Continuation Funds Similar to ACERA's Private Credit Policy, language has been added to the PE policy to recognize and specify the process for continuation fund opportunities. The language is the same as the approved language in ACERA's Private Credit Policy. (See p.9-10 of Attachment #1)

Next Steps:

Staff and NEPC will solicit feedback from the IC on the proposed policy changes. A final draft of the amended PE Policy will be presented to the IC for a formal vote at the next investment committee meeting.

Attachments:

#1 Redlined ACERA Private Equity Policy, prepared by Staff and NEPC





2025 CAPITAL MARKET ASSUMPTIONS

ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION



FEBRUARY 5, 2025

Sam Austin, Partner
Dan Hennessy, Senior Consultant



ASSET CLASS ASSUMPTIONS

٠,	Introduction	3
	Macroeconomic	12
٠	Public Equity	17
٠	Fixed Income	22
٠	Real Assets	28
•	Alternative Assets	33

39

Appendix



CAPITAL MARKET ASSUMPTION PRINCIPLES

HOW SHOULD RETURN ASSUMPTIONS BE INTERPRETED

- NEPC return assumptions are meant to reflect a nominal return expectation for a buy-and-hold investor, net of fees, over a 10-year and 30-year investment horizon
- With this in mind, NEPC asset class return assumptions look to include all sources of return that flow to an asset class over time
 - Each major contributing source of return is a building block in our models
- NEPC's asset class models are designed to be forward-looking and not to replicate the past, which requires both model scrutiny and iteration
- Forecasting asset class returns, requires forward-looking assumptions about building block contributors and how they evolve over time
- Developing market trends require scrutiny and time to analyze data and research market shifts to understand whether they are cyclical or structural inputs contributing to an asset class's building blocks



RECOGNIZING ASSET CLASS EVOLUTIONS

CHANGES TO PUBLIC EQUITY BUILDING BLOCKS

- Public market equity asset classes were adjusted to better align the underlying assumption building blocks with long-term return drivers
 - NEPC public equity models assume that core building blocks will revert to long-term terminal levels over the 10-year and 30-year investment horizon
- The building blocks for U.S. Large Cap Equity were revised to reflect an updated pathway for valuations, profit margins and share buybacks
 - As a result, terminal value assumptions for valuations (P/E ratio) and profit margins were adjusted higher over the long-term investment horizon
 - With higher profit margins, we increased the input related to a sustainable long-term share buyback and revised the Shareholder Yield building block
- The building blocks for Non-U.S. Developed Equity were adjusted to reflect a marginally higher terminal value for profit margins
 - As a result, long-term earnings growth expectations have increased but remain well below historical averages
 - Ultimately no adjustments were made to emerging market equity and each of the small-cap equity assumptions



RECOGNIZING ASSET CLASS EVOLUTIONS

ADJUSTMENTS TO PRIVATE DEBT BUILDING BLOCKS

- Private Debt Credit Opportunities was adjusted to better align the underlying public market buildup with the investment opportunity
 - U.S. high yield securitized was added to public market beta and the contribution from U.S. small-cap equity was reduced
- NEPC private market assumptions rely on a buildup of public market asset classes that represent the underlying beta exposure of a private asset class plus an illiquidity premium
- The investment opportunity has evolved over time for Private Credit Credit Opportunities and the inclusion of some equity beta was not representative of the long-term return expectations



ASSET CLASS ASSUMPTIONS

DEVELOPMENT

- Capital market assumptions are published for over 70 core asset classes and over 30 composites
- Market data as of 12/31/2024
- NEPC proprietary models used to develop return forecasts based on a building block approach
- The 10-year return outlook is intended to support strategic asset allocation analysis
- 30-year return assumptions are used for actuarial inputs and long-term planning

Asset Allocation Process

- 1. Finalize list of new asset classes
- 2. Calculate asset class volatility and correlation assumptions
- 3. Set model terminal values, growth, and inflation inputs
- 4. Model data updated at quarter-end
- Review model outputs and produce asset class return assumptions
- 6. Assumptions released on the 15th calendar day after quarter-end



ASSET CLASS BUILDING BLOCKS

METHODOLOGY

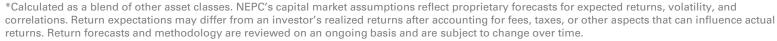
- Asset models reflect current and forecasted market data to inform expected returns
- Systematic inputs are paired with a long-term trend to terminal values
- Model inputs are aggregated to capture key return drivers for each asset class
- Building block inputs will differ across asset class categories





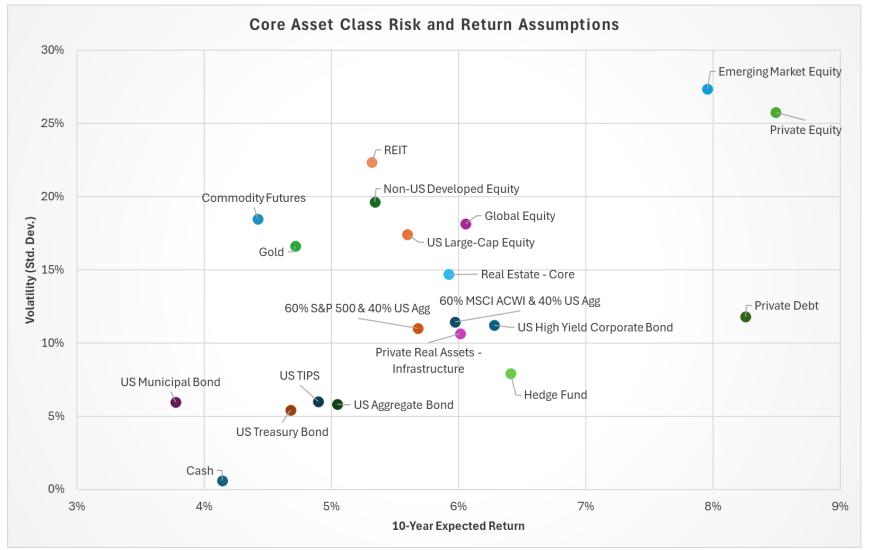
CORE ASSET CLASS RETURN ASSUMPTIONS

	Asset Class	12/31/2024 10-Year Return	12/31/2023 10-Year Return	Delta
	Cash	4.1%	3.9%	+0.2%
	U.S. Inflation	2.6%	2.6%	-
	U.S. Large-Cap Equity	5.6%	4.4%	+1.2%
	Non-U.S. Developed Equity	5.3%	4.6%	+0.7%
Equity	Emerging Market Equity	8.0%	8.6%	-0.6%
	Global Equity*	6.1%	5.4%	+0.7%
	Private Equity*	8.5%	9.0%	-0.5%
	U.S. Treasury Bond	4.7%	4.2%	+0.5%
	U.S. Municipal Bond	3.8%	3.5%	+0.3%
Fixed	U.S. Aggregate Bond*	5.0%	4.6%	+0.4%
Income	U.S. TIPS	4.9%	4.6%	+0.3%
	U.S. High Yield Corporate Bond	6.3%	6.1%	+0.2%
	Private Debt*	8.3%	8.3%	-
	Commodity Futures	4.4%	4.6%	-0.2%
	REIT	5.3%	6.0%	-0.7%
Real Assets	Gold	4.7%	4.9%	-0.2%
Assets	Real Estate - Core	5.9%	5.4%	+0.5%
	Private Real Assets - Infrastructure	6.0%	6.8%	-0.8%
Multi- Asset	60% S&P 500 & 40% U.S. Aggregate	5.7%	4.8%	+0.9%
	60% MSCI ACWI & 40% U.S. Agg.	6.0%	5.4%	+0.6%
	Hedge Fund*	6.4%	6.1%	+0.3%





CORE ASSET CLASS RISK AND RETURN ASSUMPTIONS





CORE ASSET CLASS CORRELATION ASSUMPTIONS

Asset Class	Cash	US Large-Cap Equity	Non-US Developed Equity	Emerging Market Equity	Global Equity	Private Equity	USTIPS	US Treasury Bond	US Aggregate Bond	US High Yield Corporate Bond	US Municipal Bond	Private Debt	Commodity Futures	REIT	Gold	Real Estate - Core	Private Real Assets - Infrastructure	Hedge Fund
Cash	1.00																	
US Large-Cap Equity	0.03	1.00																
Non-US Developed Equity	0.00	0.84	1.00															
Emerging Market Equity	(0.04)	0.71	0.80	1.00														
Global Equity	0.01	0.97	0.93	0.83	1.00													
Private Equity	(0.01)	0.91	0.85	0.76	0.94	1.00												
US TIPS	0.28	(0.09)	(0.11)	(0.13)	(0.11)	(0.14)	1.00											
US Treasury Bond	0.16	(0.10)	(0.11)	(0.13)	(0.12)	(0.14)	0.98	1.00										
US Aggregate Bond	0.15	0.13	0.13	0.09	0.13	0.10	0.91	0.93	1.00									
US High Yield Corporate Bond	(0.03)	0.67	0.68	0.65	0.72	0.71	(0.03)	(0.02)	0.27	1.00								
US Municipal Bond	0.08	0.16	0.18	0.13	0.17	0.16	0.62	0.64	0.75	0.37	1.00							
Private Debt	(0.01)	0.61	0.64	0.59	0.66	0.67	(0.16)	(0.16)	0.13	0.91	0.30	1.00						
Commodity Futures	0.03	0.35	0.45	0.47	0.42	0.40	(0.11)	(0.12)	(0.00)	0.38	(0.00)	0.43	1.00					
REIT	(0.01)	0.62	0.60	0.51	0.65	0.68	0.07	0.08	0.27	0.64	0.31	0.61	0.28	1.00				
Gold	(0.01)	0.05	0.18	0.26	0.12	0.10	0.24	0.26	0.30	0.15	0.17	0.10	0.38	0.15	1.00			
Real Estate - Core	(0.02)	0.52	0.51	0.44	0.54	0.56	0.04	0.04	0.22	0.60	0.27	0.56	0.25	0.74	0.12	1.00		
Private Real Assets - Infrastructure	0.01	0.51	0.55	0.51	0.56	0.56	(0.02)	(0.02)	0.14	0.54	0.16	0.54	0.66	0.67	0.27	0.52	1.00	
Hedge Fund	0.11	0.61	0.65	0.63	0.67	0.68	(0.06)	(0.07)	0.15	0.65	0.23	0.73	0.50	0.45	0.20	0.41	0.49	1.00





U.S. INFLATION ASSUMPTIONS

OVERVIEW

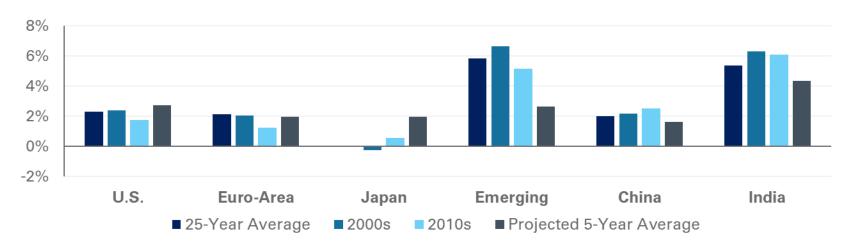
- Inflation is a key building block to develop asset class assumptions
- Inflation assumptions are model-driven and informed by multiple inputs for both the U.S. and global assets
- NEPC's inflation assumption forecasts near-term paths for major Consumer Price Index (CPI) components including food, energy, core services, and shelter costs
 - CPI is expected to converge with breakeven inflation forecast over the long-term
- The composite inflation assumption reflects a blend of NEPC's inflation forecast and market-implied breakeven inflation rates

U.S. Inflation Assumption			
Time Horizon Current 12-Month Chang			
10-Year	2.6%	_	
30-Year	2.7%	+0.1%	



GLOBAL INFLATION

HISTORICAL INFLATION

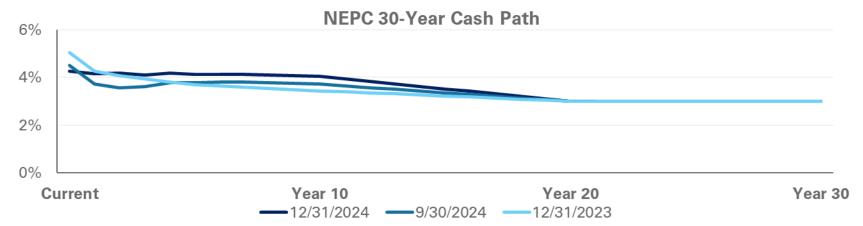


- Non-U.S. forecasts are guided by IMF forecasts, local consumer and producer price indices, and global interest rate curves
- Near-term inflation levels for developed markets are projected to be higher relative to history
 - Long-term inflation assumptions reflect NEPC's path and central bank targets
 - The expected inflation differential between emerging and developed markets has narrowed significantly



U.S. CASH

EXPECTATIONS



- Cash is a foundational input for all asset class return expectations that reflects forward expectations of inflation and real interest rates
 - Cash + risk premia is an input for long-term asset class return projections
- The composite cash assumption is built from a blend of NEPC's cash forecast and market forward pricing of short-term interest rates

Time Horizon	Current	12-Month Change
10-Year	4.1%	+0.2%
30-Year	3.6%	+0.2%



Sources: Bloomberg, FactSet, NEPC.

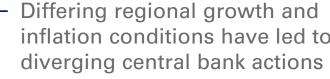
GLOBAL INTEREST RATES

EXPECTATIONS

- NEPC's outlook on forward U.S. interest rates has remained consistent over the past few years, generally higher than market expectations
- Market expectations shifted substantially higher in Q4 2024, contributing to a higher return outlook for fixed income
- The outlook is less attractive for non-U.S. developed markets due to the nominal yield differential relative to the U.S.
 - Differing regional growth and inflation conditions have led to diverging central bank actions



—US —Germany —UK —Japan





Sources: FactSet, NEPC

China



PUBLIC EQUITY ASSUMPTIONS

BUILDING BLOCKS

Illiquidity Premium	The return expected for assets with illiquidity risk	
Valuation	Represents P/E multiple contraction or expansion relative to long-term trend	
Inflation	Market-specific inflation based on country-level revenue exposure	
Real Earnings Growth	Market-specific real growth based on a weighted-average of country revenue exposure and GDP growth	
Shareholder Yield	Income distributed to shareholders via dividend distributions and net share repurchases	

12/31/24 10-Yr Return	12-Month Change
5.6%	+1.2%
5.8%	-0.2%
5.3%	+0.7%
6.7%	+0.3%
8.0%	-0.6%
7.1%	-0.8%
5.8%	+0.3%
6.1%	+0.7%
8.5%	-0.5%
	10-Yr Return 5.6% 5.8% 5.3% 6.7% 8.0% 7.1% 5.8% 6.1%

Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

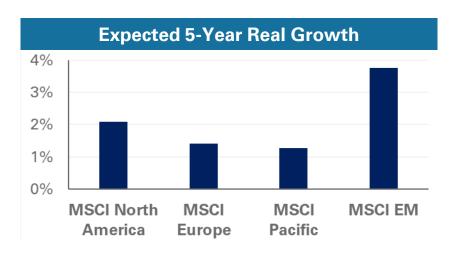
Source: NEPC

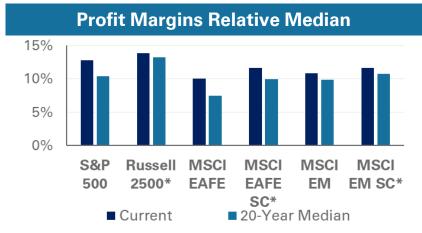


PUBLIC EQUITY

REAL EARNINGS GROWTH

- U.S. equities benefit from higher sales growth forecasts, reflecting the resiliency and consistency of the U.S. consumer
 - Relative to other markets, U.S. large cap companies have global revenue exposure that benefits from global growth rates
- Cyclically-high profit margin levels temper real earnings growth forecasts given expectations for normalization
 - Profit margin assumptions reflect a path towards long-term targets that consider the shift in index composition through time







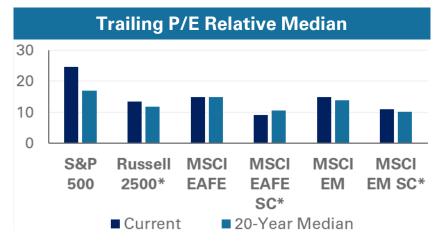
Note: *Small cap indices margins based on EBITDA margins Sources: S&P, Russell, MSCI, FactSet, NEPC

PUBLIC EQUITY

VALUATION

- Valuations have a large influence on short- to medium-term returns, but earnings growth is the driver of long-term returns
- U.S. large-cap valuations are elevated relative to long-term target levels
 - U.S. large-cap valuations represent the largest drag on returns across the equity complex
- Non-U.S. Developed valuations remain close to fair value
 - Lower long-term valuation targets reflect expectations of a more challenged economic profile



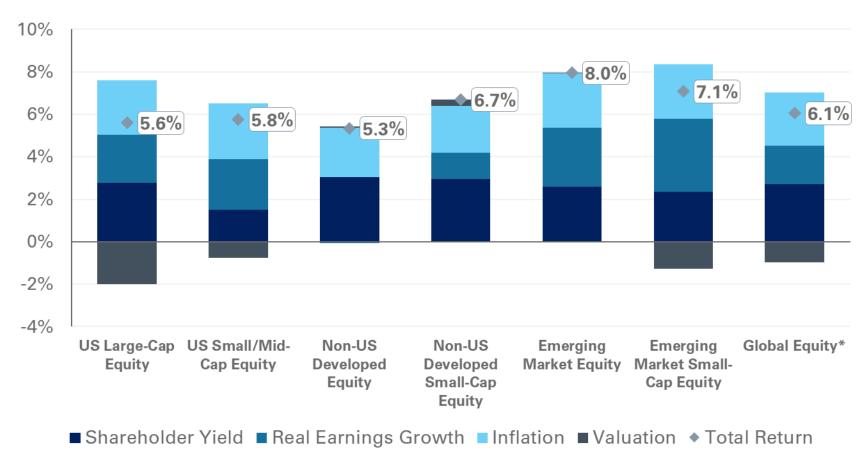




Note: *Small cap indices valuations based on EV/EBITDA multiples Sources: S&P, Shiller, Russell, MSCI, FactSet, NEPC; Shiller PE long-term average beginning in 1924

PUBLIC EQUITY

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

Source: NEPC





FIXED INCOME ASSUMPTIONS

BUILDING BLOCKS

Illiquidity Premium	The return expected for assets with illiquidity risk
Government Rates Price Change	Change due to shifts in current yields relative to forecasted rates
Credit Deterioration	The average loss for credit assets due to defaults and recovery rates
Spread Price Change	Valuation change due to changes in credit spreads relative to long-term targets
Credit Spread	Yield premium provided by securities with credit risk
Government Rates	The yield attributed to sovereign bonds that do not have credit risk

Asset Class	09/30/24 10-Yr Return	12-Month Change
U.S. TIPS	4.9%	+0.3%
U.S. Treasury Bond	4.7%	+0.5%
U.S. Corporate Bond	5.7%	+0.4%
U.S. MBS	4.9%	+0.5%
U.S. High Yield Corporate	6.3%	+0.2%
U.S. Leveraged Loan	7.3%	+0.1%
EMD External Debt*	6.9%	-0.2%
EMD Local Currency Debt	6.7%	+0.6%
Non-U.S. Govt. Bond	2.5%	+0.1%
U.S. Muni Bond (1-10 Year)	3.4%	+0.5%
U.S. High Yield Muni Bond	4.3%	-0.2%
Hedge Fund – Credit	6.9%	+0.3%
U.S. Aggregate Bond*	5.0%	+0.4%
Private Debt*	8.3%	-

Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

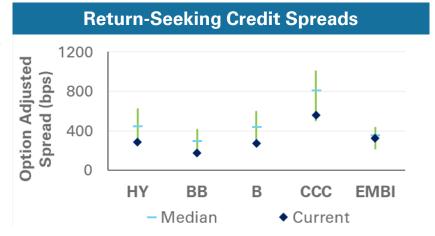
Source: NEPC



CREDIT SPREADS

- Credit spreads have tightened and are broadly below median levels
 - BB and B spreads have fallen near historical lows
- Lower spread levels weigh on future return expectations given less overall carry return
- Credit spread assumptions reflect a path towards long term medians
- Default and recovery rate assumptions are informed by long-term history

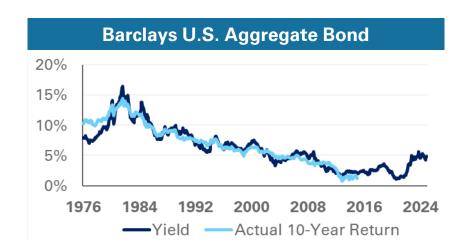






GOVERNMENT RATES

- Government rates price change reflects shifts in interest rates, the yield curve, and roll down
 - Roll down refers to the price change due to the aging of a bond along the yield curve
- U.S. Treasury yield curve has steepened substantially over the past 12 months - closer to what we would consider a normal, upward-sloping yield curve
- A normal, upward-sloping yield curve provides optimal return potential for fixed income







BUILDING BLOCKS: 10-YEAR EXPECTED RETURN

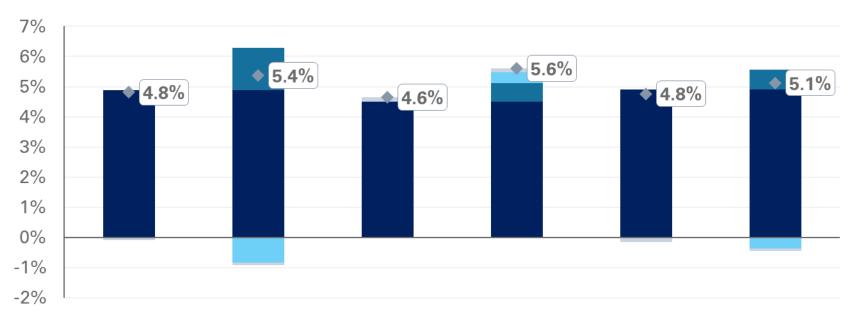


Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

Source: NEPC



BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



US Long-Term US Long-Term US Short-Term 20+ Year US US Long-Term Treasury Bond Corporate Bond Treasury Bond Corporate Bond Treasury STRIPS Govt/Credit*

- Government Rates
- Spread Price Change
- Government Rates Price Change

- Credit Spread
- Credit Deterioration
- Total Return

Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.





REAL ASSET ASSUMPTIONS

BUILDING BLOCKS

Illiquidity Premium	The return expected for assets with illiquidity risk
Valuation	The change in price of the asset moving to a terminal value or real average level
Inflation	Based on the inflation path as defined by breakeven-inflation rates and NEPC assumptions
Growth	Market-specific real growth based on a weighted-average of country- level revenue exposure and GDP growth
Real Income	The inflation-adjusted income produced by the asset

Asset Class	12/31/24 10-Yr Return	12-Month Change
Commodity Futures	4.4%	-0.2%
Midstream Energy	4.6%	-0.9%
REIT	5.3%	-0.7%
Global Infrastructure Equity	5.4%	-1.2%
Global Nat Resource Equity	7.0%	+0.8%
Gold	4.7%	-0.2%
Real Estate - Core	5.9%	+0.5%
Real Estate – Non-Core	7.6%	+0.5%
Private Debt - Real Estate	6.5%	+0.2%
Private Real Assets - Natural Resources	8.2%	-
Private Real Assets - Infrastructure	6.0%	-0.8%

Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

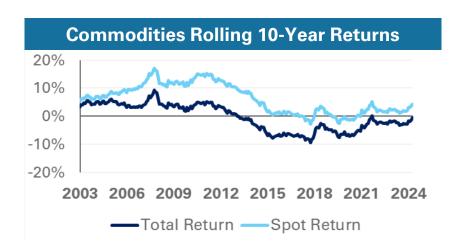
Source: NEPC



REAL ASSET

REAL INCOME

- Equity: Real income is inflationadjusted dividend yield
 - Includes public infrastructure, REITS, midstream energy, and natural resource equity
- Real Estate: Real income is net operating income (NOI)
 - NOI growth tracks the business cycle and economic regimes
- Commodity Futures: Real income reflects collateral return and the futures roll yield
 - Collateral is based on a cash proxy over the time horizon and has increased in-line with cash rates



Real Asset Yields			
	12/31/24	12/31/23	
Midstream Energy	3.1%	5.9%	
Real Estate - Core	3.1%	2.6%	
U.S. REITs	4.3%	4.2%	
Global Infrastructure Equities	3.6%	3.7%	
Natural Resource Equities	3.7%	3.7%	
U.S. 10-Year Breakeven Inflation	2.3%	2.2%	
Commodity Index Roll Yield	-0.9%	-0.9%	

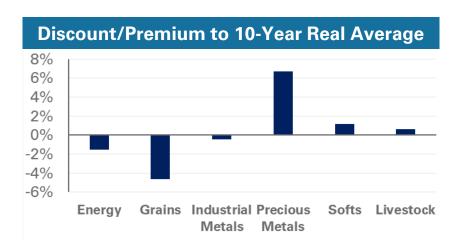


Note: *Commodity Index Roll Yield represents a proprietary calculation methodology Sources: Bloomberg, NCREIF, Alerian, NAREIT, S&P, FactSet, NEPC

REAL ASSET

VALUATION

- Commodity valuation inputs reflect the long-term average of spot prices
 - Energy and grains prices are trading at a large discount to longterm real averages
- Valuation assumptions for other real assets are based on assetspecific valuation inputs
 - Capitalization rates are used for core real estate, price-to-earnings for global infrastructure and global natural resources equity
 - Gold's valuation incorporates the asset's historical risk premia and the impact of the macroeconomic market regime



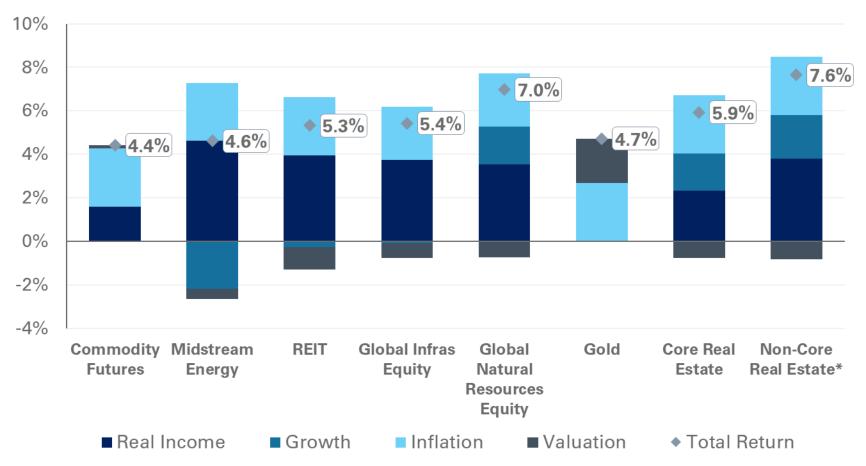




Sources: FactSet, NEPC

REAL ASSET

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

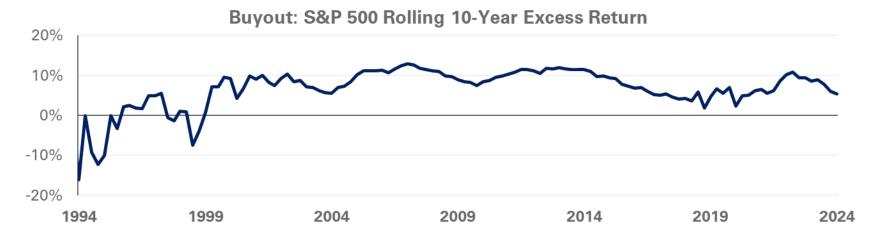
Source: NEPC





ALTERNATIVE ASSETS

METHODOLOGY

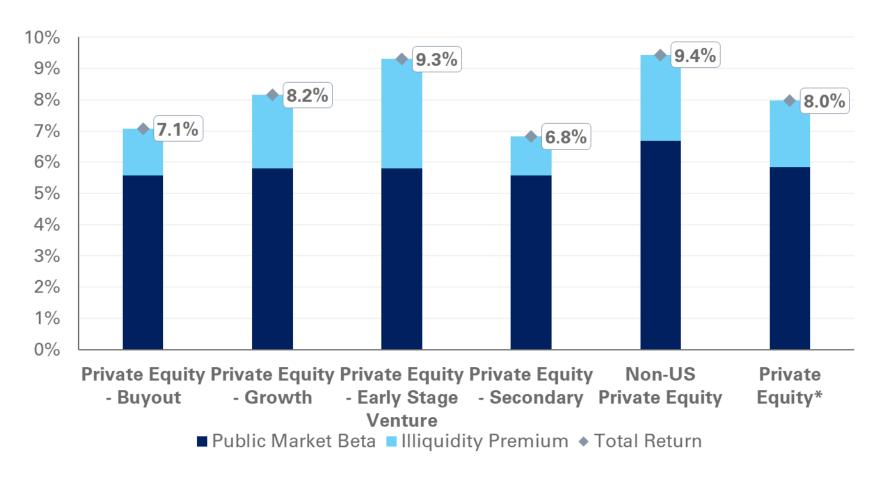


- Private market assumptions are constructed from public market betas with an added illiquidity premia
 - Historically, the observed illiquidity premium has been a significant component driving private market returns
- Hedge fund assumptions are constructed from betas to public markets with an added alpha assumption



PRIVATE EQUITY

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN

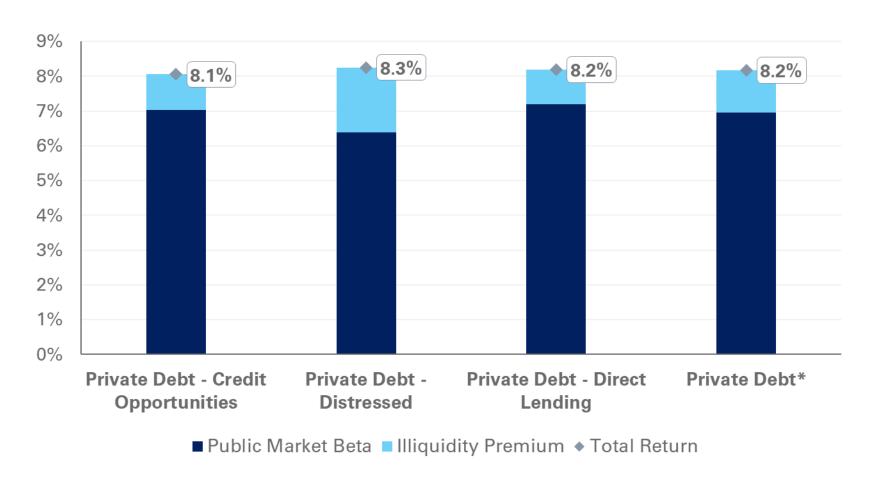






PRIVATE DEBT

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN

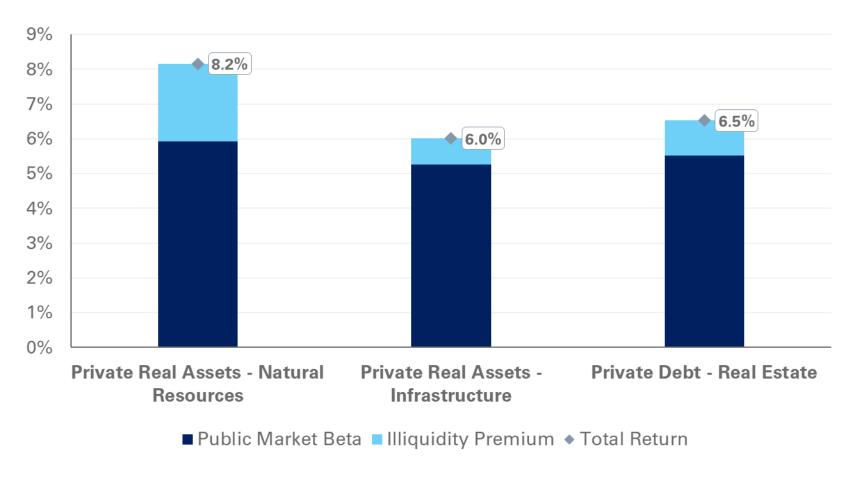




Note: *Private Debt is a derived composite of 25% Credit Opportunities, 25% Distressed, 50% Direct Lending. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time. Source: NEPC

PRIVATE REAL ASSET

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



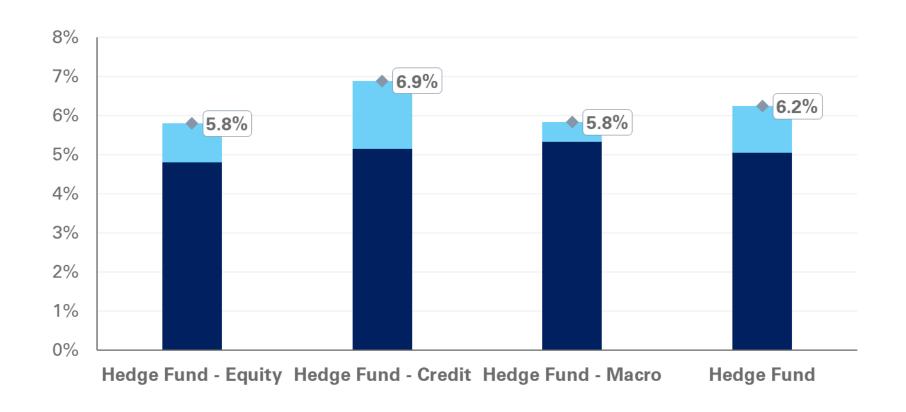
Note: NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.





HEDGE FUND

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



■ Public Market Beta
■ Alpha ◆ Total Return

Note: *Hedge Funds is a derived composite of 40% Long/Short, 40% Credit, 20% Macro. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

Source: NEPC





PRIVATE MARKETS COMPOSITES

PUBLIC MARKET BETA INPUTS FOR PRIVATE MARKETS

PRIVATE EQUITY

Buyout: 25% U.S. Large Cap, 75% U.S. Small/Mid Cap **Secondary:** 25% U.S. Large Cap, 75% U.S. Small/Mid Cap

Growth: 100% U.S. Small/Mid Cap

Early-Stage Venture: 100% U.S. Small/Mid Cap

Non-U.S.: 70% International Small Cap, 30% Emerging Small Cap

Composite: 34% Buyout, 34% Growth, 15 % Non-U.S., 8.5% Secondary, 8.5% Early Venture

PRIVATE DEBT

Direct Lending: 100% Bank Loans

Distressed: 20% U.S. Small/Mid Cap, 60% U.S. High Yield, 20% Bank Loans

Credit Opportunities: 34% High Yield Securitized, 33% U.S. High Yield, 33% Bank Loans

Composite: 50% Direct Lending, 25% Credit Opportunities, 25% Distressed

PRIVATE REAL ASSETS

Energy: 30% Comm., 35% Midstream, 35% Public Resource Equity

Infra/Land: 30% Commodities, 70% Public Infrastructure

Private Real Estate Debt: 50% CMBS, 50% Real Estate - Core



EQUITY

Geometric Expected Return				
Asset Class	12/31/2024	12/31/2023	Delta	
U.S. Large-Cap Equity	5.6%	4.4%	+1.2%	
U.S. Small/Mid-Cap Equity	5.8%	6.0%	-0.2%	
Non-U.S. Developed Equity	5.3%	4.6%	+0.7%	
Non-U.S. Developed Equity (USD Hedge)	5.6%	4.8%	+0.8%	
Non-U.S. Developed Small-Cap Equity	6.7%	6.4%	+0.3%	
Emerging Market Equity	8.0%	8.6%	-0.6%	
Emerging Market Small-Cap Equity	7.1%	7.9%	-0.8%	
Hedge Fund - Equity	5.8%	5.5%	+0.3%	
Private Equity - Buyout	7.1%	7.4%	-0.3%	
Private Equity - Growth	8.2%	8.7%	-0.5%	
Private Equity - Early Stage Venture	9.3%	9.8%	-0.5%	
Private Equity - Secondary	6.8%	6.9%	-0.1%	
Non-U.S. Private Equity	9.4%	10.3%	-0.9%	
China Equity	8.3%	9.9%	-1.6%	
Global Equity*	6.1%	5.4%	+0.7%	
Private Equity*	8.5%	9.0%	-0.5%	



Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

FIXED INCOME

Geometric Expected Return				
Asset Class	12/31/2024	12/31/2023	Delta	
Cash	4.1%	3.9%	+0.2%	
US TIPS	4.9%	4.6%	+0.3%	
US Treasury Bond	4.7%	4.2%	+0.5%	
US Corporate Bond	5.7%	5.3%	+0.4%	
US Corporate Bond - AAA	5.0%	4.4%	+0.6%	
US Corporate Bond - AA	5.2%	4.6%	+0.6%	
US Corporate Bond - A	5.5%	5.1%	+0.4%	
US Corporate Bond - BBB	5.9%	5.6%	+0.3%	
US Mortgage-Backed Securities	4.9%	4.4%	+0.5%	
US Securitized Bond	5.4%	5.2%	+0.2%	
US Collateralized Loan Obligation	5.7%	5.5%	+0.2%	
US Municipal Bond	3.8%	3.5%	+0.3%	
US Municipal Bond (1-10 Year)	3.4%	2.9%	+0.5%	
US Taxable Municipal Bond	5.6%	5.3%	+0.3%	



Note: NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

FIXED INCOME

Geometric Expected Return				
Asset Class	12/31/2024	12/31/2023	Delta	
Non-US Government Bond	2.5%	2.4%	+0.1%	
Non-US Government Bond (USD Hedge)	2.8%	2.6%	+0.2%	
Non-US Inflation-Linked Bond (USD Hedge)	3.6%	3.2%	+0.4%	
US Short-Term TIPS (1-3 Year)	4.8%	4.7%	+0.1%	
US Short-Term Treasury Bond (1-3 Year)	4.6%	4.4%	+0.2%	
US Short-Term Corporate Bond (1-3 Year)	5.6%	5.4%	+0.2%	
US Intermediate-Term TIPS (3-10 Year)	4.9%	4.6%	+0.3%	
US Intermediate-Term Treasury Bond (3-10 Year)	4.6%	4.2%	+0.4%	
US Intermediate-Term Corporate Bond (3-10 Year)	5.9%	5.6%	+0.3%	
US Long-Term TIPS (10-30 Year)	5.3%	4.5%	+0.8%	
US Long-Term Treasury Bond (10-30 Year)	4.8%	3.7%	+1.1%	
US Long-Term Corporate Bond (10-30 Year)	5.4%	4.7%	+0.7%	
20+ Year US Treasury STRIPS	4.8%	3.3%	+1.5%	
10 Year US Treasury Bond	4.8%	4.2%	+0.6%	
10 Year Non-US Government Bond (USD Hedge)	2.4%	2.1%	+0.3%	
US Aggregate Bond*	5.0%	4.6%	+0.4%	



Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

FIXED INCOME

Geometric Expected Return					
Asset Class	12/31/2024	12/31/2023	Delta		
US High Yield Corporate Bond	6.3%	6.1%	+0.2%		
US Corporate Bond - BB	6.9%	6.8%	+0.1%		
US Corporate Bond - B	6.6%	6.3%	+0.3%		
US Corporate Bond - CCC/Below	-0.2%	1.4%	-1.6%		
US Short-Term High Yield Corporate Bond (1-3 Year)	5.7%	5.5%	+0.2%		
US Leveraged Loan	7.3%	7.2%	+0.1%		
Emerging Market Investment Grade External Debt	5.7%	5.0%	+0.7%		
Emerging Market High Yield External Debt	7.8%	9.0%	-1.2%		
Emerging Market Local Currency Debt	6.7%	6.1%	+0.6%		
US High Yield Securitized Bond	9.3%	8.7%	+0.6%		
US High Yield Collateralized Loan Obligation	7.8%	7.8%	-		
US High Yield Municipal Bond	4.3%	4.5%	-0.2%		
Hedge Fund - Credit	6.9%	6.6%	+0.3%		
Private Debt - Credit Opportunities	8.1%	7.8%	+0.3%		
Private Debt - Distressed	8.3%	8.6%	-0.3%		
Private Debt - Direct Lending	8.2%	8.1%	+0.1%		
Private Debt*	8.3%	8.3%	-		



Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

REAL ASSETS

Geometric Expected Return				
Asset Class	12/31/2024	12/31/2023	Delta	
Commodity Futures	4.4%	4.6%	-0.2%	
Midstream Energy	4.6%	5.5%	-0.9%	
REIT	5.3%	6.0%	-0.7%	
Global Infrastructure Equity	5.4%	6.6%	-1.2%	
Global Natural Resources Equity	7.0%	6.2%	+0.8%	
Gold	4.7%	4.9%	-0.2%	
Real Estate - Core	5.9%	5.4%	+0.5%	
Real Estate – Value-Add	7.1%	6.6%	+0.5%	
Real Estate - Opportunistic	8.1%	7.6%	+0.5%	
Private Debt - Real Estate	6.5%	6.3%	+0.2%	
Private Real Assets - Natural Resources	8.2%	8.2%	-	
Private Real Assets - Infrastructure	6.0%	6.8%	-0.8%	



Note: NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

EQUITY

Geometric Expected Return				
Asset Class	12/31/2024	12/31/2023	Delta	
U.S. Large-Cap Equity	7.1%	6.7%	+0.4%	
U.S. Small/Mid-Cap Equity	7.2%	7.4%	-0.2%	
Non-U.S. Developed Equity	6.7%	6.4%	+0.3%	
Non-U.S. Developed Equity (USD Hedge)	6.9%	6.6%	+0.3%	
Non-U.S. Developed Small-Cap Equity	7.8%	7.5%	+0.3%	
Emerging Market Equity	9.1%	9.2%	-0.1%	
Emerging Market Small-Cap Equity	8.5%	9.1%	-0.6%	
Hedge Fund - Equity	6.3%	6.0%	+0.3%	
Private Equity - Buyout	9.3%	8.8%	+0.5%	
Private Equity - Growth	10.3%	9.7%	+0.6%	
Private Equity - Early Stage Venture	11.2%	10.6%	+0.6%	
Private Equity - Secondary	8.7%	8.2%	+0.5%	
Non-U.S. Private Equity	10.5%	10.8%	-0.3%	
China Equity	9.0%	9.5%	-0.5%	
Global Equity*	7.5%	7.3%	+0.2%	
Private Equity*	10.5%	10.1%	+0.4%	



Note: *Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

FIXED INCOME

Geometric Expected Return				
Asset Class	12/31/2024	12/31/2023	Delta	
Cash	3.6%	3.4%	+0.2%	
US TIPS	5.0%	4.7%	+0.3%	
US Treasury Bond	4.8%	4.3%	+0.5%	
US Corporate Bond	6.3%	5.9%	+0.4%	
US Corporate Bond - AAA	5.7%	5.1%	+0.6%	
US Corporate Bond - AA	5.5%	5.1%	+0.4%	
US Corporate Bond - A	6.0%	5.5%	+0.5%	
US Corporate Bond - BBB	6.5%	6.1%	+0.4%	
US Mortgage-Backed Securities	5.0%	4.6%	+0.4%	
US Securitized Bond	5.6%	5.4%	+0.2%	
US Collateralized Loan Obligation	5.1%	4.9%	+0.2%	
US Municipal Bond	4.1%	3.8%	+0.3%	
US Municipal Bond (1-10 Year)	3.8%	3.5%	+0.3%	
US Taxable Municipal Bond	6.4%	6.0%	+0.4%	



Note: NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual returns. Return forecasts and methodology are reviewed on an ongoing basis and are subject to change over time.

30-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	12/31/2024	12/31/2023	Delta
Non-US Government Bond	3.1%	2.9%	+0.2%
Non-US Government Bond (USD Hedge)	3.3%	3.2%	+0.1%
Non-US Inflation-Linked Bond (USD Hedge)	3.6%	3.3%	+0.3%
US Short-Term TIPS (1-3 Year)	4.6%	4.4%	+0.2%
US Short-Term Treasury Bond (1-3 Year)	4.4%	4.2%	+0.2%
US Short-Term Corporate Bond (1-3 Year)	5.5%	5.2%	+0.3%
US Intermediate-Term TIPS (3-10 Year)	5.0%	4.7%	+0.3%
US Intermediate-Term Treasury Bond (3-10 Year)	4.8%	4.4%	+0.4%
US Intermediate-Term Corporate Bond (3-10 Year)	6.4%	6.0%	+0.4%
US Long-Term TIPS (10-30 Year)	5.4%	4.8%	+0.6%
US Long-Term Treasury Bond (10-30 Year)	5.1%	4.3%	+0.8%
US Long-Term Corporate Bond (10-30 Year)	6.6%	6.0%	+0.6%
20+ Year US Treasury STRIPS	5.3%	4.2%	+1.1%
10 Year US Treasury Bond	5.3%	4.8%	+0.5%
10 Year Non-US Government Bond (USD Hedge)	3.2%	2.8%	+0.4%
US Aggregate Bond*	5.3%	4.9%	+0.4%



30-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	12/31/2024	12/31/2023	Delta
US High Yield Corporate Bond	7.4%	7.1%	+0.3%
US Corporate Bond - BB	7.8%	7.7%	+0.1%
US Corporate Bond - B	7.3%	7.1%	+0.2%
US Corporate Bond - CCC/Below	1.3%	1.9%	-0.6%
US Short-Term High Yield Corporate Bond (1-3 Year)	5.9%	5.6%	+0.3%
US Leveraged Loan	6.7%	6.6%	+0.1%
Emerging Market Investment Grade External Debt	6.4%	5.0%	+1.4%
Emerging Market High Yield External Debt	8.3%	9.0%	-0.7%
Emerging Market Local Currency Debt	5.8%	5.5%	+0.3%
US High Yield Securitized Bond	8.8%	8.3%	+0.5%
US High Yield Collateralized Loan Obligation	7.5%	7.3%	+0.2%
US High Yield Municipal Bond	5.1%	4.9%	+0.2%
Hedge Fund - Credit	7.2%	7.0%	+0.2%
Private Debt - Credit Opportunities	8.9%	8.4%	+0.5%
Private Debt - Distressed	9.7%	9.3%	+0.4%
Private Debt - Direct Lending	8.9%	8.9%	-
Private Debt*	9.2%	9.0%	+0.2%



30-YEAR RETURN FORECASTS

REAL ASSETS

Geometric Expected Return			
Asset Class	12/31/2024	12/31/2023	Delta
Commodity Futures	3.9%	3.9%	-
Midstream Energy	6.3%	6.6%	-0.3%
REIT	7.1%	7.3%	-0.2%
Global Infrastructure Equity	6.5%	7.0%	-0.5%
Global Natural Resources Equity	7.5%	7.1%	+0.4%
Gold	4.8%	4.8%	-
Real Estate - Core	6.5%	6.1%	+0.4%
Real Estate – Value-Add	7.8%	7.3%	+0.5%
Real Estate - Opportunistic	8.7%	8.2%	+0.5%
Private Debt - Real Estate	6.9%	6.6%	+0.3%
Private Real Assets - Natural Resources	8.9%	8.7%	+0.2%
Private Real Assets - Infrastructure	6.8%	7.1%	-0.3%



EQUITY

Volatility			
Asset Class	12/31/2024	12/31/2023	Delta
U.S. Large-Cap Equity	17.4%	17.2%	+0.2%
U.S. Small/Mid-Cap Equity	21.4%	21.0%	+0.4%
Non-U.S. Developed Equity	19.6%	19.7%	-0.1%
Non-U.S. Developed Equity (USD Hedge)	17.4%	17.7%	-0.3%
Non-U.S. Developed Small-Cap Equity	23.3%	24.2%	-0.9%
Emerging Market Equity	27.4%	28.1%	-0.7%
Emerging Market Small-Cap Equity	30.6%	31.4%	-0.8%
Hedge Fund - Equity	10.9%	11.0%	-0.1%
Private Equity - Buyout	20.7%	20.0%	+0.7%
Private Equity - Growth	30.8%	31.5%	-0.7%
Private Equity - Early Stage Venture	48.0%	46.5%	+1.5%
Private Equity - Secondary	20.4%	20.4%	-
Non-U.S. Private Equity	29.0%	32.0%	-3.0%
China Equity	30.4%	30.6%	-0.2%
Global Equity*	18.2%	18.2%	-
Private Equity*	25.8%	25.9%	-0.1%



FIXED INCOME

Volatility				
Asset Class 12/31/2024 12/31/2023 Delta				
Cash	0.6%	0.6%	-	
US TIPS	6.0%	6.0%	-	
US Treasury Bond	5.5%	5.4%	+0.1%	
US Corporate Bond	7.9%	7.7%	+0.2%	
US Corporate Bond - AAA	7.0%	6.8%	+0.2%	
US Corporate Bond - AA	6.7%	6.6%	+0.1%	
US Corporate Bond - A	7.7%	7.6%	+0.1%	
US Corporate Bond - BBB	8.6%	8.4%	+0.2%	
US Mortgage-Backed Securities	6.5%	6.5%	-	
US Securitized Bond	7.9%	8.0%	-0.1%	
US Collateralized Loan Obligation	6.5%	7.7%	-1.2%	
US Municipal Bond	6.0%	6.0%	-	
US Municipal Bond (1-10 Year)	4.5%	4.5%	-	
US Taxable Municipal Bond	7.5%	7.5%	-	



FIXED INCOME

Volatility			
Asset Class	12/31/2024	12/31/2023	Delta
Non-US Government Bond	9.8%	9.5%	+0.3%
Non-US Government Bond (USD Hedge)	4.1%	4.1%	-
Non-US Inflation-Linked Bond (USD Hedge)	6.7%	6.7%	-
US Short-Term TIPS (1-3 Year)	3.3%	3.3%	-
US Short-Term Treasury Bond (1-3 Year)	2.3%	2.3%	-
US Short-Term Corporate Bond (1-3 Year)	2.8%	2.8%	-
US Intermediate-Term TIPS (3-10 Year)	5.8%	6.0%	-0.2%
US Intermediate-Term Treasury Bond (3-10 Year)	5.4%	5.9%	-0.5%
US Intermediate-Term Corporate Bond (3-10 Year)	7.4%	7.1%	+0.3%
US Long-Term TIPS (10-30 Year)	12.6%	12.4%	+0.2%
US Long-Term Treasury Bond (10-30 Year)	12.3%	11.8%	+0.5%
US Long-Term Corporate Bond (10-30 Year)	12.4%	11.9%	+0.5%
20+ Year US Treasury STRIPS	21.0%	20.7%	+0.3%
10 Year US Treasury Bond	7.6%	7.5%	+0.1%
10 Year Non-US Government Bond (USD Hedge)	4.9%	5.0%	-0.1%
US Aggregate Bond*	5.8%	5.8%	-



FIXED INCOME

Volatility			
Asset Class	12/31/2024	12/31/2023	Delta
US High Yield Corporate Bond	11.3%	11.2%	+0.1%
US Corporate Bond - BB	9.7%	9.7%	-
US Corporate Bond - B	11.7%	11.6%	+0.1%
US Corporate Bond - CCC/Below	20.4%	20.3%	+0.1%
US Short-Term High Yield Corporate Bond (1-3 Year)	8.2%	8.2%	-
US Leveraged Loan	6.1%	9.1%	-3.0%
Emerging Market Investment Grade External Debt	8.7%	8.7%	-
Emerging Market High Yield External Debt	17.5%	17.5%	-
Emerging Market Local Currency Debt	12.6%	12.7%	-0.1%
US High Yield Securitized Bond	13.0%	11.2%	+1.8%
US High Yield Collateralized Loan Obligation	15.9%	10.4%	+5.5%
US High Yield Municipal Bond	12.0%	12.0%	-
Hedge Fund - Credit	9.7%	9.9%	-0.2%
Private Debt - Credit Opportunities	14.3%	14.5%	-0.2%
Private Debt - Distressed	13.9%	14.4%	-0.5%
Private Debt - Direct Lending	11.0%	11.0%	-
Private Debt*	11.8%	11.8%	-



REAL ASSETS

Volatility			
Asset Class	12/31/2024	12/31/2023	Delta
Commodity Futures	18.5%	18.5%	-
Midstream Energy	27.7%	28.2%	-0.5%
REIT	22.4%	21.8%	+0.6%
Global Infrastructure Equity	19.3%	19.4%	-0.1%
Global Natural Resources Equity	22.9%	23.3%	-0.4%
Gold	16.6%	16.4%	+0.2%
Real Estate - Core	14.7%	15.0%	-0.3%
Real Estate – Value-Add	23.0%	23.4%	-0.4%
Real Estate - Opportunistic	27.3%	25.8%	+1.5%
Private Debt - Real Estate	11.9%	11.9%	-
Private Real Assets - Natural Resources	32.5%	32.3%	+0.2%
Private Real Assets - Infrastructure	10.6%	12.4%	-1.8%



INFORMATION DISCLAIMER

Past performance is no guarantee of future results.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.

This report is provided as a management aid for the client's internal use only. This report may contain confidential or proprietary information and may not be copied or redistributed to any party not legally entitled to receive it.





	Action Items	Information Items
January 8		 Review of Private Equity Policy Annual Update for 2024 - ESG Proposed Investment Committee Meeting Workplan for 2025 CA Gov. Code § 7514.7 Information Report Update
February 5	Discussion and Possible Motion to Recommend that the Board Adopt the Updated Private Equity Policy	 Report on Private Credit Investment Made Under Delegated Authority – Orchard Global EleganTree Opportunities Fund III (\$60 million) 2025 Capital Market Assumptions Investment Committee Meeting WorkPlan for 2025
March 5	 Interview of the four Finalists for ACERA's Emerging Markets Manager Search – Public Equities and Possible Motion that the Investment Committee Recommends one Finalist to the Board (Placeholder) Discussion and Possible Motion to Recommend that the Board Adopt an Investment in ACERA's Private Equity Portfolio- (Placeholder) 	 Review of Real Asset Policy Asset Allocation Update (Placeholder) Semiannual Performance Review for the Period Ending September 30, 2024 – Total Fund Highlighting Public Markets Asset Classes Semiannual report on ACERA's Directed Brokerage from July to December 2024 Semiannual report on ACERA's Sec Lending from July to December 2024 Semiannual report of ACERA's investment manager, consultant, and custodian bank fees from July to December 2024



	Action Items	Information Items
April 2	 Discussion and Possible Motion to Recommend that the Board Approve the Updated Real Assets Policy Discussion and Possible Motion to Recommend that the Board Approve the 2025 Real Assets Investment Plan 	 Semiannual report on ACERA's rebalancing activities from July to December 2024 Semiannual report on Investment Products and Services Introductions (IPSI) from July to December 2024 Semiannual Update of the Investment Committee Meeting Work Plan for 2025 Report on Investment Made Under Delegated Authority – Real Assets (Placeholder) Report on Investment Made Under Delegated Authority – Private Credit (Placeholder) Proposed Investment Policy Statement Update on the New Policy Benchmark per Approved Asset Allocation (Placeholder/Tentative Working Title) Proposed Public Equity Restructure (Placeholder) Education Session: ESG (Placeholder)
May 7	 Discussion and Possible Motion to Recommend to the Board to Adopt the Investment Policy Statement Update on the New Policy Benchmark per Approved Asset Allocation (Placeholder) Discussion and Possible Motion to Recommend that the Board Approve a Real Assets Investment - Infrastructure (Placeholder) Discussion of and Possible Motion that the Board Approve a Safe Haven Fixed Income Investment Plan (Placeholder) 	 Report on Investment Made Under Delegated Authority – Private Credit (Placeholder) Review of the Environmental, Social, and Governance (ESG) Investment Policy (Placeholder) Review of the Emerging Investment Manager (EIM) Policy (Placeholder)



	Action Items	Information Items
June 4	 Discussion and Possible Motion to Recommend that the Board Adopt an Investment in ACERA's Real Estate Portfolio (Placeholder) Discussion and Possible Motion to Recommend that the Board Approve the updated Real Estate Investment Policy (Placeholder) Discussion and Possible Motion to Recommend that the Board Approve the 2025 Real Estate Investment Plan (Placeholder) Discussion of and Possible Motion to Recommend that the Board Adopt the Amendments to ACERA's Environmental, Social, and Governance (ESG) Investment Policy (Placeholder) Discussion of and Possible Motion to Recommend that the Board Adopt Amendments to ACERA's Emerging Investment Manager (EIM) Policy (Placeholder) 	 Semiannual Performance Review for the Period Ending December 31, 2024 – Real Estate Semiannual Performance Review for the Period Ending December 31, 2024 – Private Equity Semiannual Performance Review for the Period Ending December 31, 2024 – Private Credit Semiannual Performance Review for the Period Ending December 31, 2024 – Real Assets Semiannual Performance Review for the Period Ending December 31, 2024 – Real Assets Semiannual Performance Review for the Period Ending December 31, 2024 – Absolute Return (Placeholder) Report on Investment Made Under Delegated Authority – Private Credit (Placeholder)
July 2	Discussion and possible motion to recommend to the board to eliminate the Directed Brokerage Policy (Placeholder)	Review of Absolute Return Policy (Placeholder)
August 6	 Discussion and Possible Motion to Recommend that the Board Approve an updated Absolute Return Policy (Placeholder) Discussion and Possible Motion to Recommend that the Board Approve the 2025 Absolute Return Investment Plan (Placeholder) 	Report on Investment Made Under Delegated Authority – Private Credit (Placeholder)



	Action Items	Information Items
September 3	 Discussion and Possible Motion to Recommend that the Board Approve an Investment in ACERA's Real Assets Portfolio (Placeholder) Discussion and Possible Motion to Recommend that the Board Adopt an Investment in ACERA's Real Estate Portfolio (Placeholder) 	 Semiannual Performance Review for the Period Ending March 31, 2025 – Total Fund Highlighting Public Market Asset Classes Semiannual report on ACERA's Directed Brokerage from January to June 2025 (Placeholder) Semiannual report on ACERA's Sec Lending from January to June 2025 Semiannual report of ACERA's investment manager, consultant, and custodian bank fees from January to June 2025 Semiannual report on ACERA's rebalancing activities from January to June 2025 Semiannual report on Investment Products and Services Introductions (IPSI) from January to June 2025 Semiannual Update of the Investment Committee Meeting Work Plan for 2025
October 1	Discussion and Possible Motion to Recommend that the Board to Adopt an Investment in ACERA's Private Equity Portfolio-(Placeholder)	 Parametric Presentation & Proposed revisions to Cash Overlay/Rebalance Sections in the General Investment Guidelines, Policies, and Procedures (Placeholder) Discussion of Investment Governance and Delegated Authority (Placeholder)



February 5, 2025

Information Items

1. Annual Update for 2025 – ESG

4. Semiannual Performance Review for the

6. CA Gov. Code § 7514.7 Information

Return (Placeholder)

Report

Period Ending June 30, 2025 – Real Assets
5. Semiannual Performance Review for the Period Ending June 30, 2025 – Absolute

(Placeholder) December 3 1. Discussion and Possible Motion to Recommend that the Board 1. Semiannual Performance Review for the Approve an Investment in ACERA's Real Assets Portfolio Period Ending June 30, 2025 – Real Estate (Placeholder) 2. Semiannual Performance Review for the 2. Discussion of and Possible Motion that the Board Approve the Period Ending June 30, 2025 – Private 2026 Private Credit Investment Plan Equity 3. Discussion of and Possible Motion that the Board Approve the 3. Semiannual Performance Review for the 2026 Private Equity Investment Plan Period Ending June 30, 2025 – Private 4. Discussion of and Possible Motion that the Board Approve the Credit

Action Items

2026 Real Assets Investment Plan

November 5