

SWIB Board of Trustees Meeting of December 17, 2025

Table of Contents

Agenda	2
1. Committee Reports - Open Session Items	4
2. Consent Agenda	5
3. Investment Performance and Market Updates	18
4. Asset Allocation Recommendations for 2026	52
5. Committee Open Session Business	133
6. Quarterly Investment Update, Q3 2025	207
Closed Session	
7. Announcement of Matters Taken Up in Closed Session	230
8. Reports to Be Filed	231
9. Future Items for Discussion	248
10. Adjourn	

Name of Meeting: Regular Meeting of the Board of Trustees
Date/Time: Wednesday, December 17, 2025 9:00 am
Room: 1st Floor Conference Room
Address: 4703 Madison Yards Way, Madison, WI 53705
Virtual: [Join the meeting now](#) ; 608-267-3179, code 307271290#

OPEN SESSION	
1. Committee Reports – Open Session Items	<ul style="list-style-type: none"> A. Audit and Finance B. Benchmark and Performance C. Compensation and Workforce Development D. Strategic Planning and Corporate Governance
2. Consent Agenda	<ul style="list-style-type: none"> A. Open Session Minutes of September 10, 2025 and October 21-22, 2025 B. Recommended Actions from Committee Agendas – Open Session Items
3. Investment Performance and Market Updates	<ul style="list-style-type: none"> A. Board Investment Performance Report, Q3 2025 B. Callan Quarterly Report
4. Asset Allocation Recommendations for 2026	
5. Committee Open Session Business	<ul style="list-style-type: none"> A. Amendments to Investment Committee Charter B. Amendments to WRS Investment Committee Investment Guidelines C. Approved Open Session Investment Committee Meeting Minutes of August 26, September 23, and October 28, 2025 D. Final Open Session Investment Committee Agenda for November 25, 2025 and Draft Open Session Agendas for December 18, 2025 and January 27, 2026
6. Quarterly Investment Update, Q3 2025	
CLOSED SESSION*	

* The motion to go into closed session at this meeting is made pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies of internal WRS portfolios, asset allocation, and risk management, and/or for any comments or discussion on prior closed session minutes that discuss the same; (ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss the compensation and performance evaluation data of specific SWIB employees, including SWIB’s executive director/chief investment officer and SWIB’s board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same; and (iii) Section 19.85(1)(g) of the Wisconsin Statutes to confer with SWIB’s chief legal counsel to receive advice concerning legal strategy for ongoing and potential litigation, and/or for any comments or discussion on prior closed session minutes that discuss the same. The Board may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General’s Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the Board will subsequently reconvene in open session to cover remaining agenda items.

RECONVENE IN OPEN SESSION	
7.	Announcement of Matters Taken Up in Closed Session
8.	In the Absence of Questions, the Following Reports will be Filed Without Comment (For informational purposes): <ul style="list-style-type: none"> A. Quarterly Charges to Funds Reports, Q3 2025 B. Private Markets and Funds Alpha Commitments, Q3 2025 C. Board Contact Log
9.	Future Items for Discussion <ul style="list-style-type: none"> A. 2026 Board Meeting and Agenda Plan
10.	Motion to Adjourn
<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>Estimated times are for planning purposes only. Agenda items will last until discussion is concluded.</i></p> <p><i>The meeting site is physical accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	

*For further details on virtual format of meeting, please contact Dawn Tuescher (608-261-9341 or dawn.tuescher@swib.state.wi.us).

Board Meeting

Tab 1 – Committee Reports – Open Session Items

- A. Audit and Finance Committee
- B. Benchmark and Performance Committee
- C. Compensation and Workforce Development Committee
- D. Strategic Planning and Corporate Governance Committee

Board Meeting

Tab 2 – Consent Agenda

- A. Open Session Minutes of September 10, 2025 and October 21-22, 2025
- B. Recommended Actions from Committee Agendas – Open Session Items

Regular Meeting of the Board of Trustees

Wednesday, December 17, 2025

STATE OF WISCONSIN INVESTMENT BOARD

CONSENT AGENDA – OPEN SESSION ITEMS

Proposed Motions:

1. Move to approve the Open Session Minutes of September 10, 2025 and October 21-22, 2025, as presented.
2. Move to approve the Relative Performance Maximums effective beginning in 2026, as recommended by the Compensation and Workforce Development Committee and as set forth in the Committee's meeting materials.
3. Move to approve changes to the (i) Incentive Compensation Plan – Unclassified Investment Management Staff, (ii) Incentive Compensation Plan – Unclassified Investment Services Staff, and (iii) Incentive Compensation Plan – Executive Staff, as recommended by the Compensation and Workforce Development Committee and as set forth in the Committee's meeting materials.
4. Move to approve the Total Cost of Management Plan for Calendar Year 2026, as recommended by the Audit and Finance Committee and as set forth in the Committee's meeting materials.
5. Move to approve the changes to the SWIB Benchmarking Philosophy and the Benchmark and Performance Committee Policies, as recommended by the Benchmark and Performance Committee and as set forth in the Committee's meeting materials.
6. Move to approve the retention of all current benchmarks, as recommended by SWIB's benchmark consultant, NEPC, and SWIB's Investment Committee, and as recommended by the Benchmark and Performance Committee and as set forth in the Committee's meeting materials.

STATE OF WISCONSIN INVESTMENT BOARD
Board of Trustees Meeting – Open Session
Wednesday, September 10, 2025

Office of the Investment Board
4703 Madison Yards Way, Madison, WI

Board Members Present: Clyde Tinnen, Chair
Tom Merfeld, Vice Chair & Secretary
Esther Ancel, Trustee
Kathy Blumenfeld, Trustee
Barb Bolens, Trustee
Jeff DeAngelis, Trustee
John Voelker, Trustee

Staff/Others Present: Eric Barber, Chief Legal Counsel
Chris Benish, Senior Portfolio Manager
Brandon Brickner, Head of Internal Audit
Stefano Cavaglia, Senior Portfolio Manager
Sara Chandler, Chief of Staff & Strategy
Hassan Chehime, Head of Risk Management
Bridget Chen, Portfolio Manager
Christian Comito, Senior Portfolio Manager
John Culley, Portfolio Manager
Edwin Denson, Executive Director/Chief Investment Officer
Roger Ding, Senior Portfolio Manager
Derek Drummond, Head of Funds Alpha
Kliton Duri, Senior Portfolio Manager
Anne-Marie Fink, Private Markets & Funds Alpha CIO
Greg Fletcher, Performance Director
Thomas Freeman, Director of Quantamental Research
Scott Freundlich, Portfolio Manager
Shannon Gannon, Communications Director
George Gao, Senior Portfolio Manager
Jameson Greenfield, Chief Financial Officer
Dan Gyorog, Internal Auditor
Hillary Holstein, Portfolio Manager
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Lisa Lange, Director of Compliance & Senior Legal Counsel
Diane Linn, Senior Portfolio Manager
Jon Loboda, Performance Measurement Operations Manager
Todd Mattina, Head Economist, Asset & Risk Allocation CIO
Frank Mazzucco, Senior Legal Counsel
Jason Mirr, Senior Portfolio Manager
Nick Mokha, Portfolio Manager
Joy Mukherjee, Senior Portfolio Manager
Chris Nelms, Portfolio Manager
Chase Nicholson, Senior Portfolio Manager
Scott Parrish, Head of Private Equity

Chris Prestigiacomo, Head of Private Debt & Venture Capital
Jason Rothenberg, Head of Real Estate
Andrea Ruiz, Senior Portfolio Manager
Scott Schrier, Portfolio Manager
Mike Stamm, Portfolio Manager
Nick Stanton, Head of Multi-Asset Strategies
Matt Terpstra, Internal Auditor
Leif Thybony, Senior Portfolio Manager
Dawn Tuescher, Executive Administrative Assistant
Tim Wirkus, Portfolio Manager
Ping Wong, Portfolio Manager
Feng Zhao, Senior Portfolio Manager
Ted Zwieg, Site Reliability Manager
Sam Rebenstorf, Legislative Audit Bureau
David Buerger, Wisconsin Ethics Commission
Rick Funston, Funston Advisory Services
Randy Miller, Funston Advisory Services
Eric Hansen, Public Attendee
Peter Knotek, Public Attendee
Judith Stadler, Public Attendee
Anne Steinberg, Public Attendee
Alfred Crooks, PEI Group

(Some individuals may have attended only portions of the meeting.)

Trustee Tinnen, Chair of the Board of Trustees, declared a quorum was present and called the Board of Trustees meeting to order at 9:00 a.m. on September 10, 2025.

1. Consent Agenda

Eric Barber, Chief Legal Counsel, distributed a proposed consent agenda. Trustee Tinnen asked whether there were any motions listed on the consent agenda that should be removed for further discussion and individual action. Hearing none, he referred to the following items on the consent agenda:

- Move to approve the Open Session Minutes of June 11, 2025, as presented.
- Move to approve the benchmark for the global equities with emerging markets strategy to the MSCI ACWI Index (with China All Shares), effective as of July 1, 2025, as recommended by the Benchmark and Performance Committee, as recommended by SWIB's benchmark consultant, NEPC, and provisionally approved by SWIB's Investment Committee, and as set forth in the Committee's meeting materials.
- Move to approve the revisions to the SWIB Trustee Manual, as recommended by the Strategic Planning and Corporate Governance Committee and as set forth in the Committee's meeting materials.

Motion: A motion was made by Trustee Bolens and seconded by Trustee Voelker to approve the consent agenda, as presented. The motion passed unanimously.

2. Investment Forum Recap

Mr. Barber reviewed the topics and format of the June 2025 Investment Forum and asked for Trustee feedback. He commented that the virtual forum allowed SWIB to secure desired speakers and increased attendance, noting that over 230 individuals registered for the Investment Forum, including Wisconsin Retirement System (“WRS”) participants, CFA members, SWIB staff, and Trustees.

3. Committee Reports – Open Session Items

A. Audit and Finance Committee

Trustee Merfeld, Chair of the Audit and Finance Committee, reported that in open session, the Committee: (i) approved prior meeting minutes; (ii) reviewed the *Open Audit Issues Report as of August 31, 2025*; (iii) approved the draft *Ethics Policy Audit Report*; (iv) reviewed the *Internal Audit Plan Status as of September 9, 2025* and approved changes to the 2025 Internal Audit Plan; (v) reviewed the *2026 Internal Audit Plan Preview*; and (vi) received the *Quarterly Cost of Management Update* for Q2 2025.

B. Benchmark and Performance Committee

Trustee Voelker, Chair of the Benchmark and Performance Committee, reported that in open session, the Committee: (i) approved prior meeting minutes; and (ii) received NEPC’s 2025 *Annual Benchmark Review* and recommended that the Board approve the benchmark change recommended by NEPC and the Investment Committee.

C. Compensation and Workforce Development Committee

Trustee DeAngelis, Chair of the Compensation and Workforce Development Committee, reported that in open session, the Committee: (i) approved prior meeting minutes; (ii) received the Comprehensive RPM Review Preview; and (iii) heard a Talent Acquisition and Employee Engagement update.

D. Strategic Planning and Corporate Governance Committee

Trustee Tinnen, Chair of the Strategic Planning and Corporate Governance Committee, reported that in open session, the Committee: (i) approved prior meeting minutes; (ii) received a Private Equity and Private Debt Strategy Reports and Markets Outlook presentation from Aksia and staff; (iii) reviewed the Corporate Governance Policy and received a 2025 Proxy Voting Review; (iv) heard a preview of the upcoming October Board Workshop; and (v) considered revisions to the SWIB Trustee Manual and recommended that the Board approve the same.

4. Biennial Ethics Training

David Buerger, Staff Counsel, Wisconsin Ethics Commission, delivered a state ethics presentation entitled *Lobbying and the Code of Ethics for Investment Board Members and Employees*, included on pages 27-57 of the meeting materials.

5. Fiduciary & Public Records Topics

Mr. Barber noted that resources on the topics of fiduciary duties and public records would be sent via email to the Trustees for their review prior to the next Board meeting.

6. Investment Performance and Market Updates

A. Board Investment Performance Report, Q2 2025

Greg Fletcher, Performance Director, presented the *Investment Performance Report as of June 30, 2025*, included on pages 60-75 of the meeting materials. Mr. Fletcher reported that: (i) the Core Trust Fund (“CTF”) returned 5.71% net of all fees and expenses in Q2 2025, resulting in excess performance of 37 basis points (“bps”) for the quarter; (ii) the CTF returned 11.16% net of all fees and expenses for the one-year period, resulting in an excess return of 99 bps; (iii) the CTF five-year net of all fees and expenses return of 9.09% outperformed the Policy Benchmark by 93 bps on an annualized basis; and (iv) the CTF net of external manager fee return outperformed the 60/40 Reference Portfolio return by 27.9% (cumulative) over the past twenty years, which equates to an excess value add of \$15.4 billion over the same period.

Mr. Fletcher also highlighted that: (i) the CTF net of all fees and expenses return outperformed its benchmark for the year-to-date, one-, three-, and five-year time periods; (ii) the CTF net of external manager fee return outperformed its benchmark for the ten-, fifteen-, and twenty-year time periods; (iii) the CTF gross of fee return outperformed its benchmark for the thirty-year time period; (iv) the Variable Trust Fund (“VTF”) net of all fees and expenses return outperformed its benchmark for the year-to-date, one-, and five-year time periods and underperformed for the three-year period; (v) the VTF net of external manager fee return outperformed its benchmark for the ten-, fifteen-, and twenty-year time periods; and (vi) the VTF gross of fee return outperformed its benchmark for the thirty-year time period. Mr. Fletcher noted that SWIB’s investment management has added more than \$5.2 billion above benchmark returns to the WRS over the last five years.

Mr. Fletcher reviewed the overall assets under management (“AUM”) of SWIB, noting that the gross market value of assets increased by nearly \$11 billion over the past year. He then noted that the percentage of WRS assets that are actively managed has declined slightly year-over-year, and the percentage of WRS assets that are internally managed increased slightly over the same period. Next, Mr. Fletcher: (i) provided a breakdown of CTF asset class exposures, noting that the portfolio remains well diversified and all asset classes are within asset allocation target ranges; (ii) reviewed the asset class performance for the CTF over various time periods and discussed the performance of the alpha pool overlay; (iii) reviewed VTF performance and asset class exposures, noting that asset class exposures were within target ranges; and (iv) presented return information for the Separately Managed Funds.

Finally, Mr. Fletcher presented *Leverage Performance*, included on pages 76-77 of the meeting materials, commenting that policy leverage contributed 46 bps to CTF absolute performance year-to-date and remained a positive contributor over the one-, three-, and five-year periods.

B. Callan Quarterly Report

Mr. Fletcher noted that the *Callan Quarterly Report Summary as of June 30, 2025* was included on pages 78-92 of the meeting materials. He highlighted that the CTF’s total fund unadjusted performance rankings are in the first quartile for the one-year period, second quartile for the three- and ten-year periods, and third quartile for the five-year period. On an asset allocation adjusted basis, the CTF’s performance

rankings are in the first quartile for each of the one-, three-, five-, and ten-year periods. When comparing the CTF's ten-year cumulative performance to peers, Mr. Fletcher noted that the CTF exhibits low tracking error relative to its peers and produces stable, ascending cumulative performance over the ten-year period.

7. Committee Open Session Business

A. Approved Open Session Investment Committee Minutes

Mr. Barber stated that the approved open session minutes of the May 27, June 24, and July 29, 2025 Investment Committee meetings were included on pages 94-109 of the meeting materials for the Board's review and noted that staff had previously reviewed the agendas for these meetings with the Board.

B. Agendas for Upcoming Meetings

Mr. Barber also stated that the final open session agenda for the August 26, 2025 Investment Committee meeting, as well as draft open session agendas for the September 23 and October 28, 2025 Investment Committee meetings, were included on pages 110-115 of the meeting materials for the Board's review.

C. Draft Open Session Enterprise Risk and Compliance Committee Minutes

Mr. Barber noted that draft open session minutes of the May 22, 2025 Enterprise Risk and Compliance Committee meeting were included on pages 116-118 of the meeting materials for the Board's review.

8. Quarterly Investment Update, Q2 2025

Todd Mattina, Head Economist and Asset & Risk Allocation CIO, presented the *Quarterly Investment Update*, included on pages 120-148 of the meeting materials. With respect to performance trends and outlook, Mr. Mattina began with a review of the CTF five-year rolling annualized net of external manager fee return compared to the CTF twenty-year net of fee return and the actuarial target rate of return. He noted that, despite volatility over the last few years, the five-year rolling return continues to outperform the actuarial target as well as the policy benchmark.

Mr. Mattina then provided a brief commentary on the CTF five-year return estimate, which projected a five-year annualized return of 5.5% using NEPC's assumptions for 2025. He also discussed the five-year forward estimate and highlighted the potential negative impact to the five-year annualized return as the 2020 and 2021 performance years, which had meaningfully positive performance of 15.2% and 16.9%, respectively, fall out of the five-year performance time-period.

Mr. Mattina then presented an economic update, commenting that (i) U.S. economic momentum has slowed, while inflation remains above target and is trending higher; (ii) the imposition of tariffs and depreciation of the dollar may contribute to inflationary pressures; (iii) the labor market has cooled year-to-date, with a slower pace of net payroll gains; (iv) markets anticipate approximately two interest rate cuts by year-end; and (v) U.S. equity market valuations remain elevated, indicating a lower expected return looking forward based on historical patterns, while credit spreads are below historical averages.

9. Motion to Convene in Closed Session

Motion: A motion to convene in closed session pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies of internal WRS portfolios, asset allocation, and risk management and/or for any comments or discussion on prior closed session minutes that discuss the same;

(ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss the compensation and performance evaluation data of specific SWIB employees, including SWIB's executive director/chief investment officer and SWIB's board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same; and (iii) Section 19.85(1)(g) of the Wisconsin Statutes to confer with SWIB's chief legal counsel to receive advice concerning legal strategy for ongoing and potential litigation and/or for any comments or discussion on prior closed session minutes that discuss the same, was made by Trustee DeAngelis and seconded by Trustee Voelker.

The Chair called for a roll call vote.

Ancel–Aye Blumenfeld–Aye Bolens–Aye DeAngelis–Aye
Merfeld–Aye Tinnen–Aye Voelker–Aye

There being seven ayes and no nays, the Chair declared the motion passed. The Board convened in executive closed session at 11:00 a.m., for which separate minutes were prepared, and reconvened in open session at 1:37 p.m.

10. Announcement of Board Actions Relating to Items Taken up in Closed Session

Trustee Tinnen announced that while in closed session, the Board: (i) received closed session Committee reports; (ii) heard a risk management update; (iii) received a report on current Board and staff consultants; and (iv) received an update on Investment Committee and Enterprise Risk and Compliance Committee closed session business. While in executive closed session, the Board: (i) approved the closed session and executive closed session Consent Agenda, including closed session and executive closed session minutes from the meeting on June 11, 2025; (ii) received a private equity investment update from staff; and (iii) met with the Board Governance consultant to review the Board self-evaluation.

11. Reports Filed Without Comment

In the absence of questions, the following reports, included on pages 252-267 of the meeting materials, were filed without comment: (i) Quarterly Charges to Funds Report, Q2 2025; (ii) Private Markets and Funds Alpha Commitments, Q2 2025; and (iii) Board Contact Log.

12. Future Items for Discussion

Mr. Barber noted that the 2025 Board Meeting and Agenda Plan was included on pages 269-272 in the meeting materials for the Board's information.

13. Adjournment

Motion: A motion to adjourn was made by Trustee Voelker and seconded by Trustee Blumenfeld. The motion passed unanimously, and the meeting was adjourned at 1:38 p.m.

Date of Board Approval:

Signed: _____

Thomas J. Merfeld, Board Secretary

STATE OF WISCONSIN INVESTMENT BOARD
Board of Trustees Meeting – Open Session

Tuesday, October 21 and Wednesday, October 22, 2025

Lake Lawn Resort
Delavan, Wisconsin

Board Members Present: Clyde Tinnen, Chair
Tom Merfeld, Vice Chair & Secretary
Esther Ancel, Trustee
Kathy Blumenfeld, Trustee
Barb Bolens, Trustee
J. Michael Collins, Trustee
Jeff DeAngelis, Trustee
John Voelker, Trustee

Staff/Others Present: Eric Barber, Chief Legal Counsel
Chelsey Barczak, GPMS Business Director
Derek Bloom, Senior Portfolio Manager
Brandon Brickner, Head of Internal Audit
Sara Chandler, Chief of Staff & Strategy
Hassan Chehime, Head of Risk Management
Kim DeMane, Infrastructure Director
Edwin Denson, Executive Director/Chief Investment Officer
Derek Drummond, Head of Funds Alpha
Anne-Marie Fink, Private Markets & Funds Alpha Chief Investment Officer
Jameson Greenfield, Chief Financial Officer
Brian Heimsoth, Senior Portfolio Manager
Becca Hewison, Administrative Services Manager and Executive Assistant
Vince Janecky, Internal Auditor Data Analyst
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Diane Linn, Senior Portfolio Manager
Jeff Lucas, Senior Portfolio Manager
Matt Marek, Portfolio Engineer
Ed Martinez, PMFA Business Director
Todd Mattina, Head Economist, Asset & Risk Allocation CIO
Lin Maung, Senior Portfolio Manager
Frank Mazzucco, Senior Legal Counsel
Sunil Nair, Operational, Financing & Counterparty Risk Director
Scott Nichols, Head of Trading
Chase Nicholson, Senior Portfolio Manager
Olu Olubiyi, Information Security & Governance Manager
Scott Parrish, Head of Private Equity
Cefe Quesada, Chief Technology Officer
Jay Risch, Communications & Government Relations Manager
Jason Rothenberg, Head of Real Estate
Andrea Ruiz, Senior Portfolio Manager
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies

Rob Thornton, ARA Business Director
Dawn Tuescher, Executive Administrative Assistant
Joe Nankof, NEPC
Libby Cantrill, PIMCO
Kevin Gray, PIMCO
Jim Anderson, GRS
Mark Buis, GRS
Rich Koch, GRS
(Some individuals may have attended only portions of the meeting.)

TUESDAY, OCTOBER 21, 2025

Open Session

Trustee Tinnen, Chair of the Board of Trustees (the “Board”), declared a quorum was present and called the Board meeting to order at 12:30 p.m.

1. Workshop Welcome & Kickoff

Trustee Tinnen welcomed Trustees, SWIB staff, and external guests to SWIB’s annual workshop. He then introduced Edwin Denson, Executive Director/Chief Investment Officer, who also welcomed attendees to the workshop and reviewed the topics to be covered over the two-day meeting.

2. Motion to Convene in Closed Session

Motion: A motion to convene in closed session pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies and/or for any comments or discussion on prior closed session minutes that discuss the same; and (ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss performance evaluation data of specific SWIB employees, including SWIB’s executive director/chief investment officer and SWIB’s board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same, was made by Trustee DeAngelis and seconded by Trustee Voelker.

The Chair called for a roll call vote.

Ancel-Aye	Blumenfeld-Aye	Bolens-Aye	Collins-Aye
DeAngelis-Aye	Merfeld-Aye	Tinnen-Aye	Voelker- Aye

There being eight ayes and no nays, the Chair declared the motion passed. The Board then convened in closed session at 12:38 p.m. and reconvened in open session at 2:36 p.m.

3. Announcement of Board Actions Relating to Items Taken up in Closed Session

Trustee Tinnen announced that, while in closed session, the Board (i) received a presentation from PIMCO regarding the economic implications of current federal policymaking; and (ii) heard an update from the Private Markets & Funds Alpha division regarding net of fee returns and fee negotiations.

4. WRS Actuarial Overview and Projections

Jim Anderson, Mark Buis, and Rich Koch, from Gabriel Roeder & Smith Co. (“GRS”), presented the biennial *Wisconsin Retirement System Actuarial Overview and Stress Testing Scenarios*, included on pages 90-165 of the meeting materials. Mr. Anderson began by reviewing the breakdown of the Wisconsin Retirement System (“WRS”) beneficiaries, including the amount and type of benefits owed, and key attributes of the WRS plan, including risk sharing, return smoothing, and contribution rates.

Mr. Buis then provided highlights and observations of the stress test, explaining that the goal of stress testing is to understand the potential effect on the WRS of varying levels of stress. He reviewed the four deterministic stress tests: (i) a -20% one-year return, followed by 6.8% thereafter; (ii) a -25% one-year return, followed by 6.8% thereafter; (iii) a -25% one-year return followed by a 25% second-year return and 6.8% thereafter; and (iv) a -30% one-year return followed by 6.8% thereafter. In each scenario, he reviewed the impact on dividends, the dividend reserve, the retiree liability, and contribution rates. Mr. Koch discussed the stochastic stress testing, based on Monte Carlo simulations of 10,000 random trials for nine different risk/return scenarios, noting that the results looked at contribution rates, dividend rates, and impact on the dividend reserve for the one-, five-, 10-, 20-, and 50-year periods.

Mr. Anderson concluded by stating that a combination of all these results led GRS to recommend that SWIB continue to target the so-called “Goldilocks Zone” of a 6% to 7.5% rate of return, which provides for positive returns with appropriate downside protection. Finally, he noted that the overall results and recommendation were like the 2023 study with a similar range of dividend/contribution results in the stress testing.

5. 2026 Asset Allocation Preview

Joe Nankof, NEPC, and Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer, presented the *Asset Allocation Review*, included on pages 166-239 of the meeting materials. With respect to the 2026 asset allocation recommendations, Mr. Nankof reviewed the recommendation for the Core Trust Fund (“CTF”) to (i) decrease the public equities target by 2% from 38% to 36%, matched with a 2% decrease in the policy leverage target from -12% to -10%; and (ii) eliminate the long Treasury allocation and increase U.S. Treasuries from 24% to 28% of the public fixed income allocation. He also reviewed the 2026 recommendation for the Variable Trust Fund (“VTF”) to implement an active risk target range of zero to 90 basis points.

Mr. Nankof then discussed the market assumptions upon which the recommended asset allocation for 2026 was based, including (i) reviewing the 10- and 30-year return expectations for various asset classes, including year-over-year changes to those expected returns; (ii) noting that the stress-testing analysis from GRS supports a 10-year target return between 6% and 7.5%, exceeding the 5% dividend adjustment hurdle while promoting stable contributions, lower funding shortfall risk, and sustainable dividend increases; (iii) highlighting that the private markets allocation remains in line with the long-term pacing plan and remains within target allocation ranges; and (iv) reviewing the policy leverage framework, which suggests reducing leverage due to reduced expected excess return and higher volatility compared to historical averages. Finally, in response to trustee questions, Mr. Denson discussed that there were many factors that would need to be analyzed to determine the optimal cadence of future asset allocation reviews.

The Board recessed at 5:12 p.m.

WEDNESDAY, OCTOBER 22, 2025

Open Session

Chair Tinnen declared that a quorum was present and called the second session of the annual workshop to order at 9:05 a.m.

6. Motion to Convene in Closed Session

Motion: A motion to convene in closed session pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies and/or for any comments or discussion on prior closed session minutes that discuss the same; and (ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss performance evaluation data of specific SWIB employees, including SWIB's executive director/chief investment officer and SWIB's board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same, was made by Trustee Voelker and seconded by Trustee DeAngelis.

The Chair called for a roll call vote.

Ancel-Aye	Blumenfeld-Aye	Bolens-Aye	Collins-Aye
DeAngelis-Aye	Merfeld-Aye	Tinnen-Aye	Voelker- Aye

There being eight ayes and no nays, the Chair declared the motion passed. The Board then convened in closed session at 9:06 a.m. and reconvened in open session at 12:15 p.m.

7. Announcement of Board Actions Relating to Items Taken up in Closed Session

Trustee Tinnen announced that, while in closed session, the Board (i) heard an update on the Asset & Risk Allocation division; and (ii) received a presentation on SWIB's multiyear strategic plan. Trustee Tinnen also stated that, while in executive closed session, the Board engaged in a discussion regarding cyber risks.

8. WRS Investment Policy

Sara Chandler, Chief of Staff & Strategy, and Mr. Denson presented the *WRS Investment Policy: Investment Beliefs*, included on pages 263-276 of the meeting materials. Ms. Chandler led the Trustees in a discussion related to several potential paths for the Trustees in approaching SWIB's WRS investment philosophy/beliefs, including leaving them unchanged, delegating to staff, or re-articulating them. In her discussion, Ms. Chandler outlined the benefits and drawbacks of the various approaches and highlighted where SWIB's current investment philosophies overlap with peers' common investment beliefs. The Trustees directed staff to work with designated Board liaisons to explore and formulate new proposed beliefs for full Board consideration.

9. Motion to Reconvene in Closed Session

Motion: A motion to convene in closed session pursuant to: (i) Sections 19.36(5) and 19.85(1)(e) of the Wisconsin Statutes to consider confidential and proprietary strategies for the investment of public funds relating to specific proprietary investment strategies and/or for any comments or discussion on prior closed session minutes that discuss the same; and (ii) Section 19.85(1)(c) of the Wisconsin Statutes to discuss performance evaluation data of specific SWIB employees, including SWIB's executive director/chief investment officer and SWIB's board of trustees, and/or for any comments or discussion on prior closed session minutes that discuss the same, was made by Trustee Voelker and seconded by Trustee Merfeld.

The Chair called for a roll call vote.

Ancel-Aye

Blumenfeld-Aye

Bolens-Aye

Collins-Aye

Merfeld-Aye

Tinnen-Aye

Voelker- Aye

There being eight ayes and no nays, the Chair declared the motion passed. The Board then convened in executive closed session at 1:05 p.m., for which separate minutes were prepared, and reconvened in open session at 1:49 p.m.

10. Announcement of Board Actions Relating to Items Taken up in Closed Session

Trustee Tinnen announced that, while in executive closed session, the Board received a SWIB strategy update.

The Board adjourned at 1:50 p.m.

Date of Approval:

Signed:

Thomas J. Merfeld, Board Secretary

Board Meeting

Tab 3 – Investment Performance and Market Updates

- A. Board Investment Performance Report, Q3 2025
- B. Callan Quarterly Report



Investment Performance Report

as of September 30, 2025

Board Meeting

December 17, 2025

Investment Performance Report

3Q 2025 Key Insights

Strong Absolute and Relative Performance Continues YTD¹

- Quarterly Return: Core Trust Fund (CTF) up 4.20% and Variable Trust Fund (VTF) up 7.77% with performance lagging their benchmarks by 13 bps and 9 bps, respectively
- YTD Return: Core Trust Fund (CTF) up 11.91% and Variable Trust Fund (VTF) up 18.20% with excess performance of +67 bps and +17 bps, respectively

Key Portfolio Outcomes for 2025

- High absolute returns across all equity sub-asset classes, with SWIB outperforming in all but EM ex-China
- In fixed income, non-investment grade strategies are underperforming their benchmarks, while absolute returns across sub-asset classes are solid
- Real Estate absolute returns are muted and trail the benchmark, while Private Equity/Debt continues to generate strong excess returns
- Hedge Funds and Multi-Strat continue to add excess returns above an elevated cost of financing

Positioning Relative to Peers

- The CTF has relatively less public equity exposure compared to other large public plans, reflecting a cautious approach to high equity valuations
- Asset-allocation adjusted performance relative to peers demonstrates strong portfolio implementation. Results are more mixed when not controlling for asset allocation, reflecting this lower exposure to public equity during a market runup

¹ Return net of all fees and expenses

WRS Performance

as of September 30, 2025

Fund	Net of All Fees and Expenses Return %			
	Calendar – YTD	1 Year	3 Year	5 Year
Core Trust Fund	11.91	10.30	12.68	8.75
Core Trust Fund Benchmark	11.24	9.61	11.84	7.91
Excess	+0.67	+0.69	+0.84	+0.84
Net Excess Value Add (\$M)	+\$767.0	+\$823.9	+\$2,787.1	+\$4,817.8
Variable Trust Fund	18.20	17.68	23.40	14.33
Variable Trust Fund Benchmark	18.02	17.47	23.43	14.33
Excess	+0.17	+0.21	(0.03)	(0.01)
Net Excess Value Add (\$M)	+\$19.2	+\$23.7	(\$0.2)	+\$3.5

SWIB's investment management has added more than \$4.8 billion above benchmark returns over the last five years to the WRS after consideration of all fees and expenses.

Periods greater than 1 yr show annualized return

Fund	Net of External Manager Fee Return %			Gross of Fee Return %
	10 Year	15 Year	20 Year	30 Year
Core Trust Fund	8.92	8.30	7.23	8.07
Core Trust Fund Benchmark	8.33	7.76	6.84	7.57
Excess	+0.60	+0.54	+0.38	+0.50
Variable Trust Fund	12.97	12.00	9.30	9.23
Variable Trust Fund Benchmark	12.95	11.91	9.27	8.92
Excess	+0.02	+0.10	+0.03	+0.31

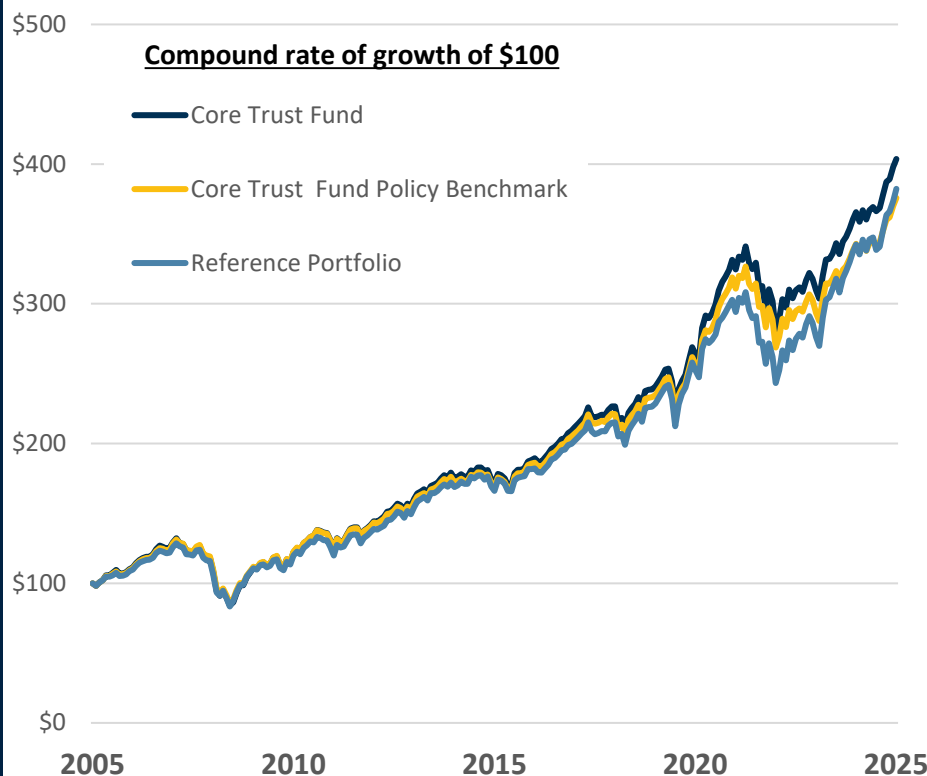
Periods greater than 1 yr show annualized return

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

CTF NoF Performance vs. 60/40 Reference Portfolio

20-year cumulative return¹: October 1, 2005 to September 30, 2025

Indexed Benefit of CTF's Asset Allocation & Active Management Over Time



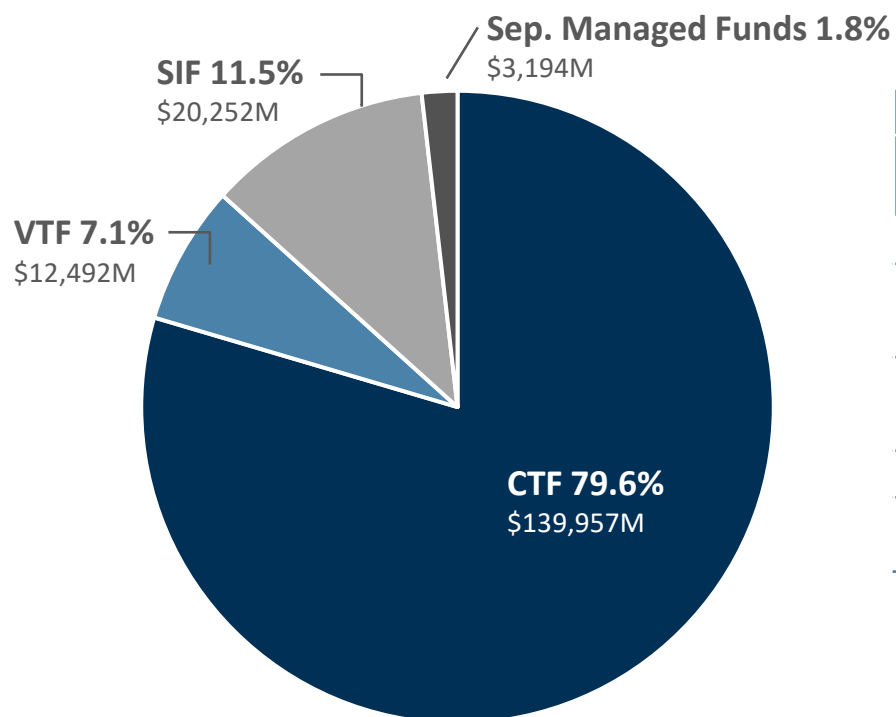
Net of External Manager Fee Return & EVA			
Portfolio / Benchmark	Annualized Return	Cumulative Return	Cumulative \$ Excess Value Added
Reference Portfolio ² (60% equity/40% bonds)	6.9%	282.3%	= Passive Market Return
Benefit of CTF Asset Allocation			
CTF Policy Benchmark	6.8%	275.8%	+\$1.1B
Benefit of CTF Active Management			
CTF	7.2%	303.7%	+\$11.8B
CTF Excess Return vs. Reference Portfolio	+0.3% pts	+21.4% pts	+\$12.9B

¹ Core Trust Fund beginning market value, as of October 1, 2005, was \$66.4B and ending market value, as of September 30, 2025, was \$139.9B.

² Reference Portfolio is composed of 60% MSCI World and 40% Bloomberg US Gov't / Credit (rebalanced monthly).

Total Assets Under Management (AUM)

as of September 30, 2025



Gross Market Value of Assets (\$millions)			
By Fund	9/30/2024	9/30/2025	1 Year Change
Total WRS	142,688	152,449	+9,761
Core Trust Fund	131,458	139,957	+8,499
Variable Trust Fund	11,230	12,492	+1,262
State Investment Fund (SIF) ¹	20,735	20,252	(483)
Separately Managed Funds	3,007	3,194	+187
Total SWIB AUM	\$166,430	\$175,895	+\$9,466

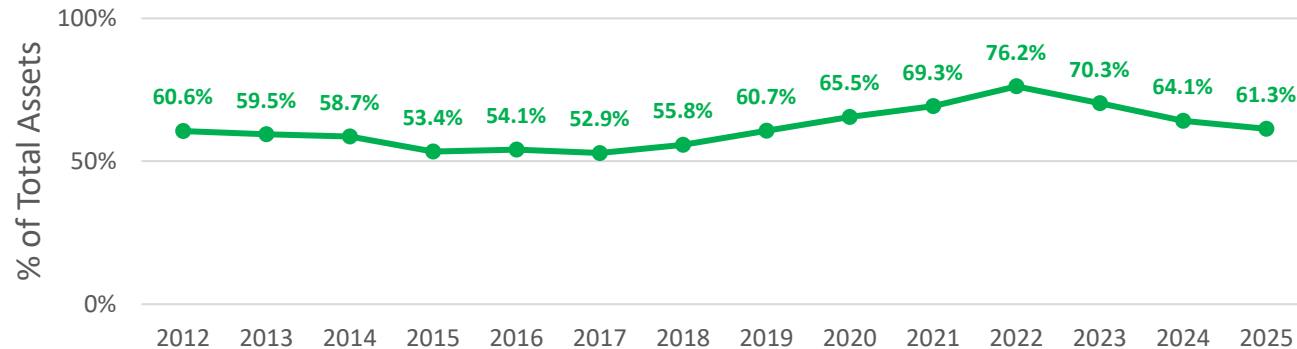
¹ Excludes cash invested in SIF held on behalf of CTF and VTF.

Refer to the disclosure section for additional details

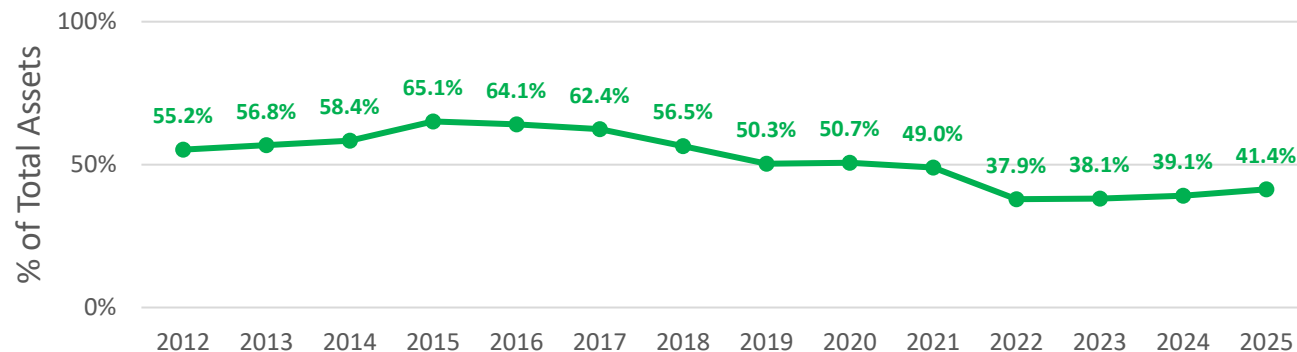
WRS Assets as of September 30, 2025

Breakdown of Active vs. Passive and Internal vs. External

Actively Managed Assets



Internally Managed Assets



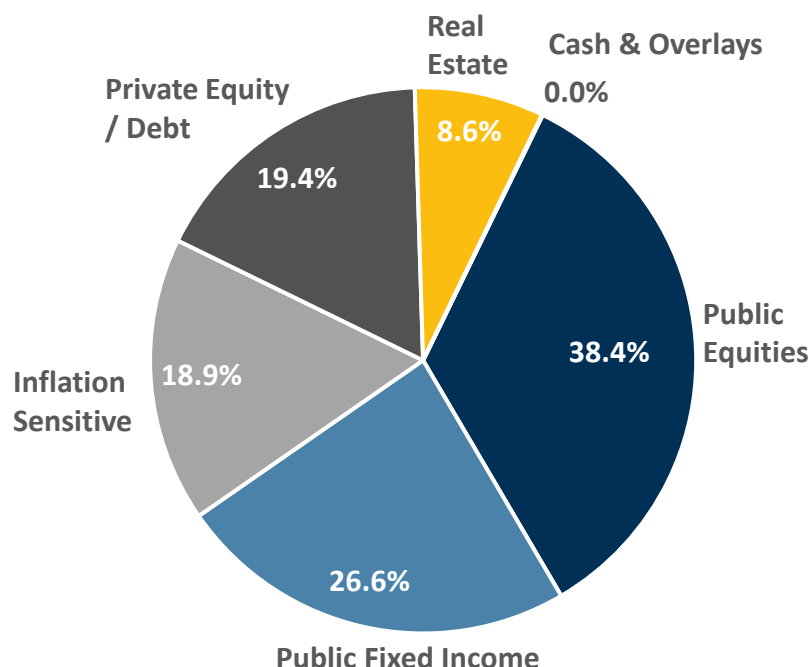
**47% of Total SWIB Assets
(including SIF) are
internally managed**

Refer to the disclosure section for additional details.

Core Trust Fund Assets Under Management

Breakdown by Asset Class as of September 30, 2025

**Total Exposure - % of Total
9/30/2025**



Total Exposure \$ & Adjusted AUM (\$millions)			
Total CTF by Asset Class	Total Exposure \$ ¹ 9/30/2024	Total Exposure \$ 9/30/2025	Year over Year Change
Public Equities	49,878	53,801	+3,923
Public Fixed Income	34,688	37,283	+2,595
Inflation Sensitive	24,860	26,452	+1,592
Real Estate ²	11,905	12,010	+105
Private Equity / Debt ²	25,714	27,085	+1,371
Cash & Overlays	101	68	(33)
Total Exposure	\$147,146	\$156,699	+9,553
<i>Less: Policy Leverage</i>	<i>15,686</i>	<i>16,741</i>	<i>+1,055</i>
Total CTF AUM	\$131,460	\$139,958	+8,498

¹ Total Exposure is composed of the gross market value of investments, plus beta exposure added or offset through derivative instruments.

² The Real Estate and Private Equity / Debt asset classes (28% of the Core Trust Fund) contain Illiquid Investments, as defined in "Report Disclosures: Glossary, Definitions & Data Sources", below.

Core Trust Fund Allocation

as of September 30, 2025

Allocation – Exposure Based

	(\$ millions)	As % of Total Fund			
Strategies	Total Exposure	Portfolio Exposure %	Benchmark Target %	Target Range %	Notes
Public Equities	53,801	38.4	38.4	32.4 – 44.4	Public & Private exposures include cash
Global Developed	43,522	31.1	31.0		
US Small Cap	3,089	2.2	2.2		
International Small Cap	2,796	2.0	2.0		
Emerging Markets	4,393	3.1	3.2		Cash / Overlays: Includes liquidity, overlay cash, cash used to fund synthetic beta related to Alpha Pool.
Public Fixed Income	37,283	26.6	26.7	20.7 – 32.7	
Investment Grade	22,388	16.0	16.0		
Non-Investment Grade	11,139	8.0	8.0		
Emerging Market Debt	3,756	2.7	2.7		Benchmark Target weights are adjusted monthly to reflect the actual exposure to Private Equity/Debt and Real Estate. Offsetting adjustments are made to Public Equities and Public Fixed Income.
Inflation Sensitive	26,452	18.9	19.0	14.0 – 24.0	
Real Estate	12,010	8.6	8.6	4.0 – 12.0	
Private Equity / Debt	27,085	19.4	19.4	12.0 – 28.0	
Cash / Overlays	68	0.0	0.0		Additional CTF leverage details available in disclosure section
Leverage	(16,741)	(12.0)	(12.0)	(20.0) to (4.0)	
Total Fund – Total Exposure	\$156,699	112.0	112.0	104.0 – 120.0	
Total Fund – Market Value	\$139,958	100.0	100.0		

Asset \$ exposures and % weights may contain rounding differences

Core Trust Fund: Asset Class Returns

as of September 30, 2025

Asset Class Group: Public Equities	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
Public Equities	12/31/2002	\$53,480	18.60	17.38	23.15	13.96	12.24
Benchmark			18.23	16.96	23.05	13.94	12.35
Excess			+0.38	+0.42	+0.10	+0.02	(0.11)
Global Developed	2/28/2017	\$40,940	17.93	17.70	24.16	14.70	12.53
Benchmark			17.84	17.76	24.28	14.92	12.81
Excess			+0.09	(0.06)	(0.12)	(0.22)	(0.28)
Global Equities w/EM	5/31/2021	\$2,556	20.43	19.84	23.84		11.49
Benchmark			18.77	17.69	23.61		9.97
Excess			+1.66	+2.15	+0.23		+1.52
US Small Cap	2/28/2017	\$3,089	10.04	11.48	17.58	12.83	9.59
Benchmark			9.39	10.38	16.18	12.26	8.63
Excess			+0.65	+1.10	+1.40	+0.57	+0.96
International Small Cap	1/31/2020	\$2,776	30.59	20.36	21.92	10.54	8.43
Benchmark			25.88	16.29	20.30	8.96	7.66
Excess			+4.71	+4.07	+1.62	+1.58	+0.76
Emerging Market ex China	3/31/2022	\$3,369	21.06	12.66	17.58		6.67
Benchmark			22.21	12.31	18.02		7.17
Excess			(1.15)	+0.35	(0.44)		(0.49)
Emerging Market China	3/31/2022	\$704	36.53	29.28	16.64		7.21
Benchmark			34.58	24.25	17.38		7.67
Excess			+1.95	+5.03	(0.74)		(0.46)

Periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history

Core Trust Fund: Asset Class Returns

as of September 30, 2025

Asset Class Group: Public Fixed Income & Inflation Sensitive	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
Public Fixed Income	12/31/2003	\$37,075	7.22	4.85	7.81	1.26	3.07
Benchmark			6.96	4.48	7.19	0.82	2.81
Excess			+0.25	+0.37	+0.62	+0.44	+0.26
Investment Grade US Credit	2/28/2022	\$8,929	7.49	4.28	7.69		1.81
Benchmark			6.90	3.65	6.87		1.45
Excess			+0.59	+0.63	+0.83		+0.36
US Treasuries	2/28/2022	\$8,993	5.27	1.91	3.30		(0.49)
Benchmark			5.36	2.06	3.56		(0.27)
Excess			(0.09)	(0.15)	(0.25)		(0.22)
US Long Treasuries	9/30/2022	\$1,291	5.93	(3.28)	0.66		0.66
Benchmark			5.64	(3.47)	0.43		0.43
Excess			+0.29	+0.19	+0.23		+0.23
MBS	4/30/2020	\$2,969	7.98	4.78	7.26	0.61	0.80
Benchmark			6.76	3.39	5.05	(0.14)	(0.11)
Excess			+1.22	+1.40	+2.21	+0.75	+0.90

Periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Asset Class Returns

as of September 30, 2025

Asset Class Group: Public Fixed Income & Inflation Sensitive	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
High Yield	7/31/2019	\$7,427	6.92	6.86	10.97	4.64	4.48
Benchmark			7.09	6.93	10.41	5.01	4.76
Excess			(0.17)	(0.07)	+0.56	(0.37)	(0.28)
Leveraged Loans	3/31/2023	\$3,712	4.15	6.88			9.50
Benchmark			5.31	7.93			9.63
Excess			(1.16)	(1.05)			(0.13)
Emerging Market Debt - USD	6/30/2005	\$1,892	11.33	9.70	12.82	3.36	4.77
Benchmark			10.66	8.52	12.29	2.27	4.19
Excess			+0.67	+1.19	+0.53	+1.09	+0.58
Emerging Market Debt - Local	7/31/2017	\$1,858	18.13	10.12	12.56	3.28	1.80
Benchmark			15.41	7.35	11.25	2.32	1.66
Excess			+2.72	+2.77	+1.30	+0.95	+0.14
Inflation Sensitive	12/31/2003	\$26,449	6.88	3.83	4.91	1.47	3.06
Benchmark			6.87	3.79	4.88	1.42	2.98
Excess			+0.01	+0.04	+0.03	+0.04	+0.08

Periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Asset Class Returns

as of September 30, 2025

Asset Class Group: Private Markets & Other Strategies	Performance Start Date	Total Exposure Value (\$millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
Real Estate	12/31/2003	\$12,010	1.72	1.83	(2.57)	4.58	5.82
Benchmark			2.65	2.67	(6.21)	2.54	4.41
Excess			(0.93)	(0.85)	+3.64	+2.04	+1.41
Private Equity / Debt	11/30/2006	\$27,085	8.94	10.10	7.58	15.41	13.47
Benchmark			7.82	9.18	7.43	13.99	11.16
Excess			+1.12	+0.92	+0.15	+1.42	+2.31
<i>Other strategies:</i>							
Alpha Pool Overlay	1/31/2011	\$14,936	3.46	4.07	3.03	4.34	2.63
Benchmark (set to zero as of 1/1/2019)			0.00	0.00	0.00	0.00	0.52
Excess			+3.46	+4.07	+3.03	+4.34	+2.12

Periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Asset Class Returns

Net of External Mgr Fee - Excess Returns as of September 30, 2025



Excess Return - % points

¹ Either 10-year annualized return or Since Inception (ITD) annualized return is used if there is insufficient return history.

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Core Trust Fund: Alpha Pool Overlay

as of September 30, 2025

Alpha Pool Return	Performance Start Date	Market Value (\$ millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year
Total Alpha Pool Composite	1/31/2011	\$14,936	3.46	4.07	3.03	4.34	2.63

- Prior to 2022, Hedge Fund sub strategy assets composed > 90% of the Alpha Pool Composite.
- Each sub strategy in the composite incurs the cost of implementation expense (assessed on a pro rata basis using AUM). Hence, each sub strategy is assigned a Zero Benchmark.

Alpha Pool: Key Sub Strategies	Inclusion Date	Market Value (\$ millions)	Calendar YTD NoF Return %	1 Year NoF Return %
Hedge Funds	1/31/2011	\$9,423 (63%)	4.09	6.58
Multi Strat	2/1/2022	\$2,572 (17%)	4.05	4.75

Alpha Pool Overlay Return (Alpha Pool + Beta Return)	Calendar YTD	1 Year	3 Year	5 Year	10 Year
CTF Policy Benchmark (Beta)	11.24	9.61	11.84	7.91	8.33
Alpha Pool Overlay Return (Alpha Pool + Beta)	14.70	13.68	14.87	12.24	10.96

Periods greater than 1 yr show annualized return

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Variable Trust Fund

as of September 30, 2025

Performance

Fund	Performance Start Date	Market Value (\$ millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year
Variable Trust Fund	6/30/77	\$12,492	18.21	17.71	23.46	14.38	12.97
Variable Trust Fund Benchmark			18.02	17.47	23.43	14.33	12.95
Excess			+0.18	+0.24	+0.02	+0.05	+0.02

Periods greater than 1 yr show annualized return

Portfolio Allocation

By Portfolio	(\$ millions)	As % of Total Fund		
	Total Exposure	Portfolio Exposure	Exposure Target	Target Range
Public Equities	12,454	99.7	100.0	
US Equities	8,724	69.8	70.0	65.0 – 75.0%
International Equities	3,730	29.9	30.0	25.0 – 35.0%
Cash & Overlays	37	0.3	0.0	
Total Fund	\$12,491	100.0	100.0	

- *Asset class exposures are within the Target Range*

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Separately Managed Funds

as of September 30, 2025

Fund	Performance Start Date	Market Value (\$ millions)	Net of External Manager Fee Return %				
			Calendar YTD	1 Year	3 Year	5 Year	10 Year or ITD
State Investment Fund (SIF)	6/30/1975	\$24,855	3.32	4.56	4.92	3.08	2.13
SIF Benchmark			3.20	4.38	4.74	3.01	2.07
Excess			+0.13	+0.19	+0.17	+0.07	+0.06
State Life Insurance Fund	10/31/1994	\$96	6.58	0.50	4.54	(2.15)	2.24
No Benchmark							
Historical Society Endowment Fund	12/31/1993	\$32	12.52	14.11	19.72	12.19	11.94
Historical Society Endowment Benchmark			12.30	13.75	19.17	11.70	11.63
Excess			+0.22	+0.36	+0.54	+0.49	+0.31
Injured Patients & Families Comp. Fund	10/31/1993	\$1,630	7.91	5.34	8.10	2.30	4.30
IP&FC Benchmark			7.41	4.87	7.61	1.81	3.82
Excess			+0.51	+0.47	+0.49	+0.49	+0.48
UW System Long Term Fund	3/31/2018	\$652	12.72	10.47	13.00	8.76	8.07
UW System Benchmark			12.54	10.29	12.87	8.64	7.89
Excess			+0.18	+0.18	+0.13	+0.13	+0.18
UW Cash Management Fund	4/30/2022	\$783	7.66	6.55	8.89		5.90
UW Cash Management Benchmark			7.70	6.55	8.89		5.93
Excess			(0.04)	(0.00)	+0.00		(0.03)

Periods greater than 1 yr show annualized return, since inception returns shown for strategies with less than 10-year history

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

Leverage Performance

As of September 30, 2025

CTF Policy Leverage Performance

as of September 30, 2025

Core Trust Fund	Net of All Fees and Expenses Return %			
	Calendar YTD	1 Year	3 Year	5 Year
Unlevered Returns (as estimated):				
Portfolio ¹	11.06	9.79	11.91	8.34
CTF Benchmark Return ¹	10.39	9.10	11.06	7.49
Excess Return	+0.67	+0.69	+0.85	+0.84
Levered Returns (as reported):				
Portfolio Return (Unlevered)	11.06	9.79	11.91	8.34
Absolute Return from Leverage ^{1,2}	0.85	0.52	0.78	0.41
Implementation (+) or (-)	(0.01)	(0.01)	0.00	0.00
Portfolio	11.91	10.30	12.68	8.75
CTF Benchmark	11.24	9.61	11.84	7.91
Excess	+0.67	+0.69	+0.84	+0.84

Periods greater than 1 yr show annualized return

Leverage notes:

¹ The Unlevered Portfolio Return, Unlevered CTF Benchmark Return, Absolute Return from Leverage and Implementation (+) or (-) are estimated.

² Policy leverage was first introduced into the CTF and the benchmark at the end of April 2012.

- Policy leverage at SWIB is implemented passively. Therefore, it generally does not contribute to active risk or excess returns.¹
- Policy leverage amplifies absolute returns (whether positive or negative), which is an important component in SWIB's strategy to meet the 6.8% actuarial target over the long-term.
- The CTF benchmark return is levered to create an apples-to-apples comparison for evaluating relative performance of the CTF (i.e., excess return).

Excess returns may contain rounding differences
Refer to the disclosure section for additional details

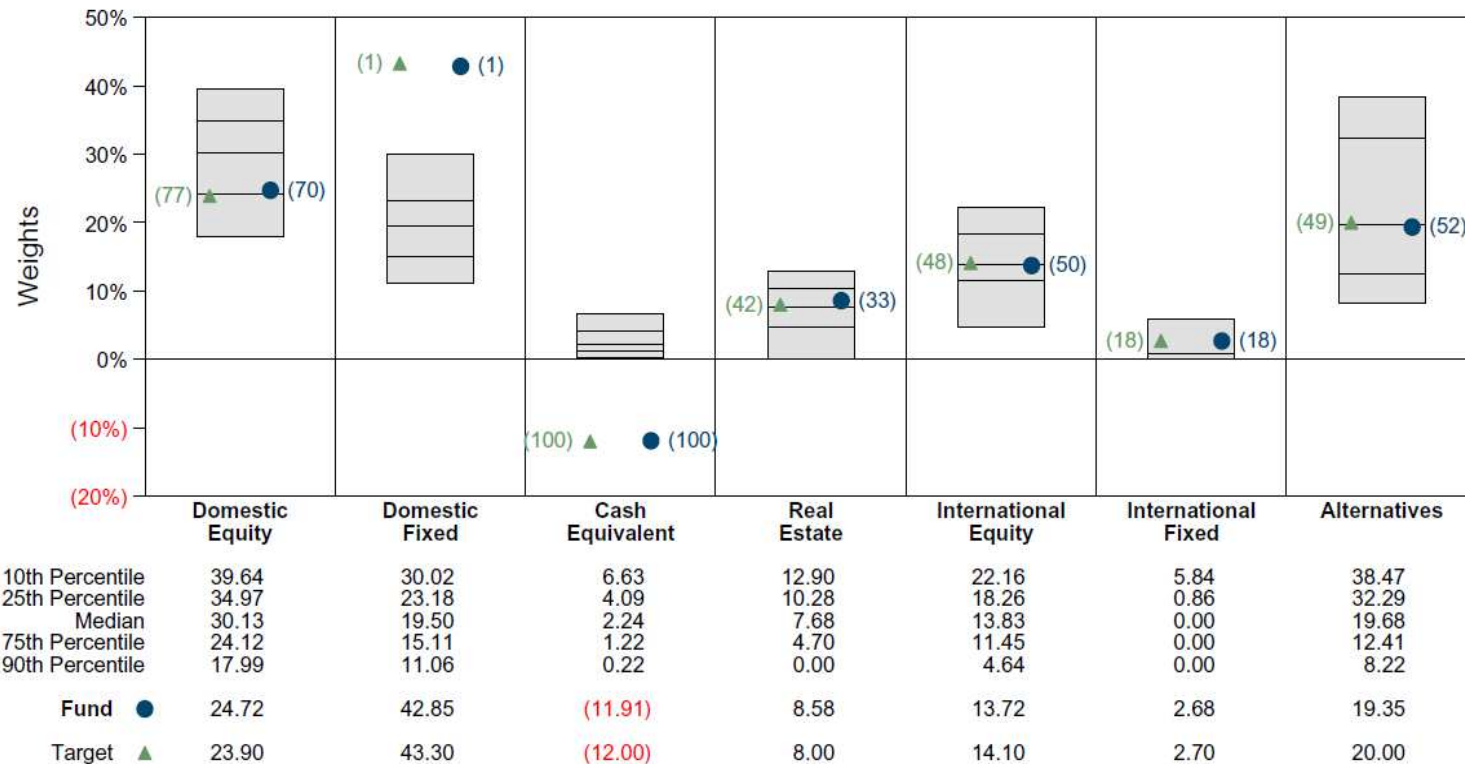
Callan Quarterly Report Summary

3rd Quarter 2025

Callan Peer Rank Update (9.30.2025)

CTF Asset Allocation Comparison to Peer Group

Asset Class Weights vs Callan Public Fund Spons- V Lg DB (>10B)

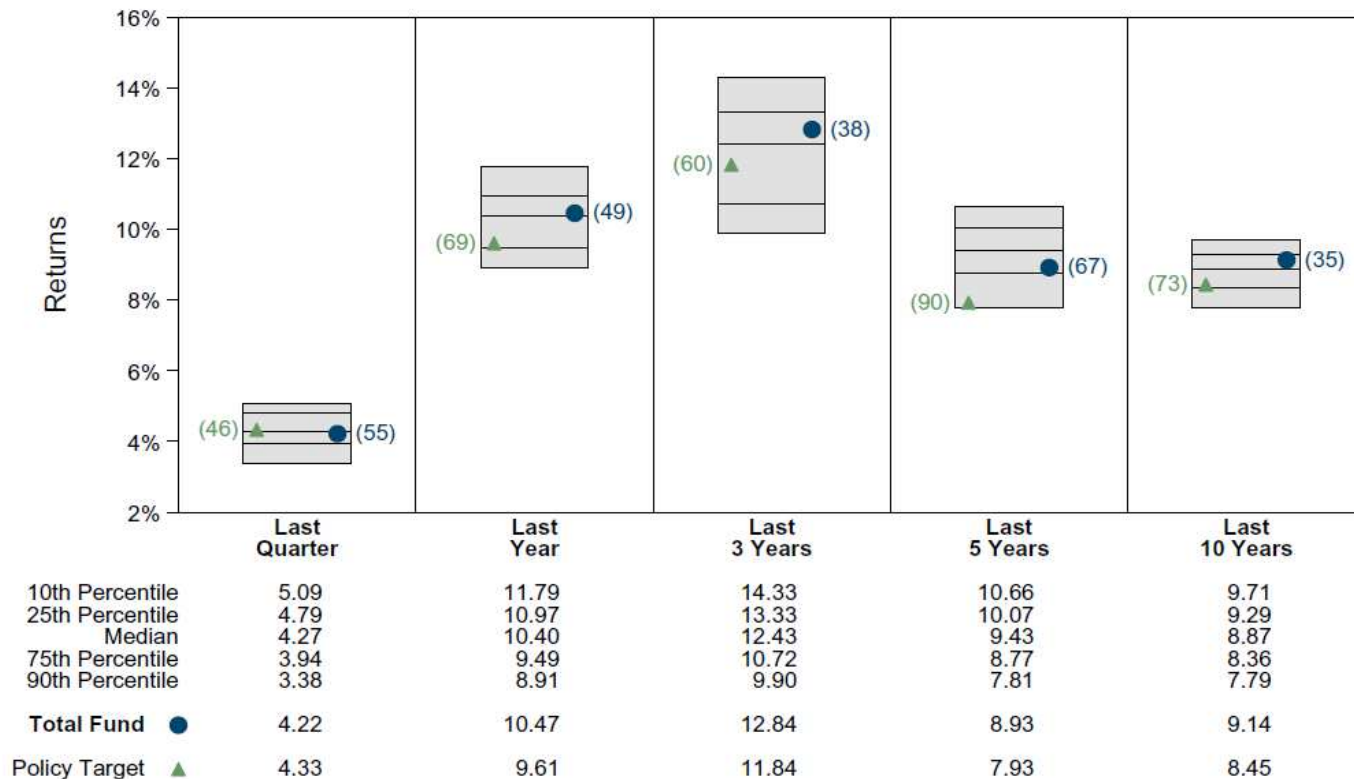


- SWIB's use of financial leverage (policy target of 12%) enables more risk reducing / diversifying assets without sacrificing growth assets.

Callan Peer Rank Update (9.30.2025)

CTF Performance vs. Peer Group Universe

Callan Public Fund Spons- V Lg DB (>10B)

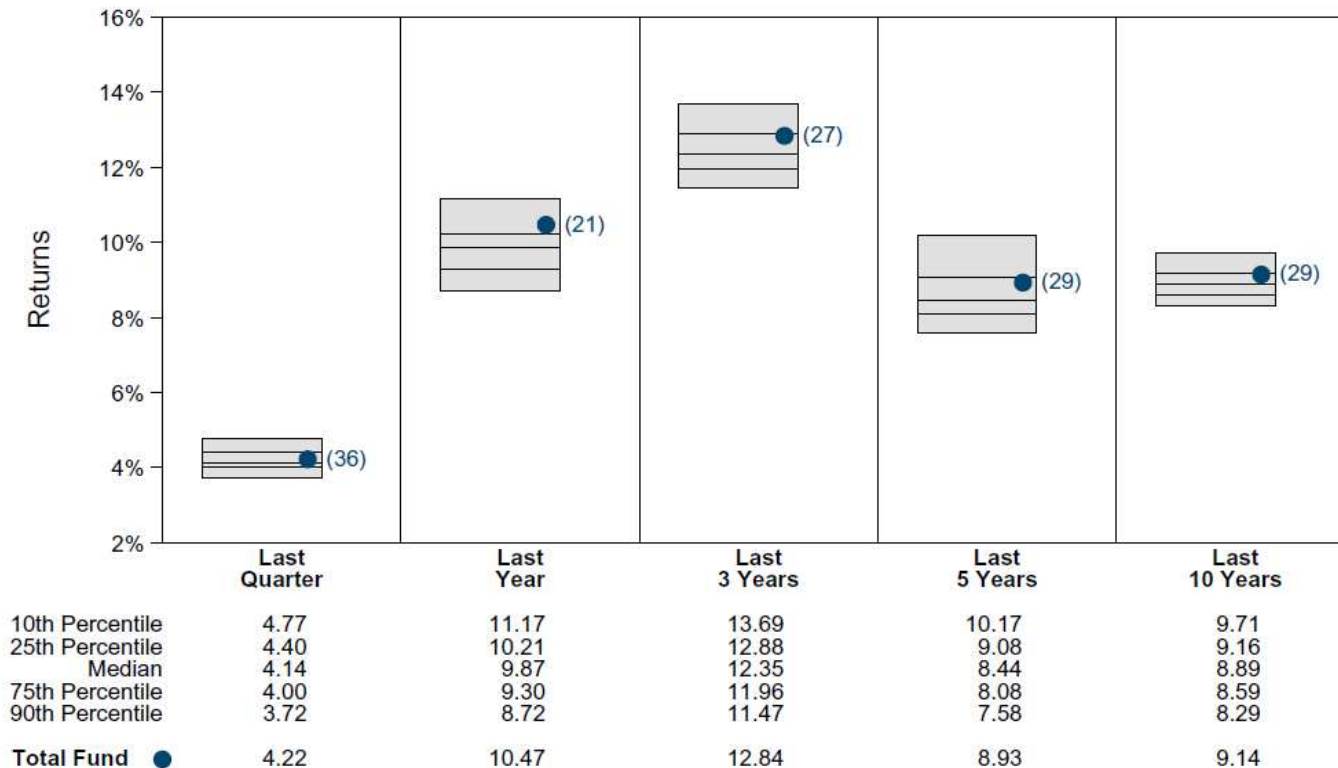


- CTF return exceeds Policy Target over 1-, 3-, 5-, and 10-year periods.
- The 1-, 3-, and 10-year returns are 2nd quartile, 5-year return is 3rd quartile.

Callan Peer Rank Update (9.30.2025)

CTF Performance on Asset Allocation Adjusted Basis vs. Peer Group

Asset Allocation Adjusted Ranking

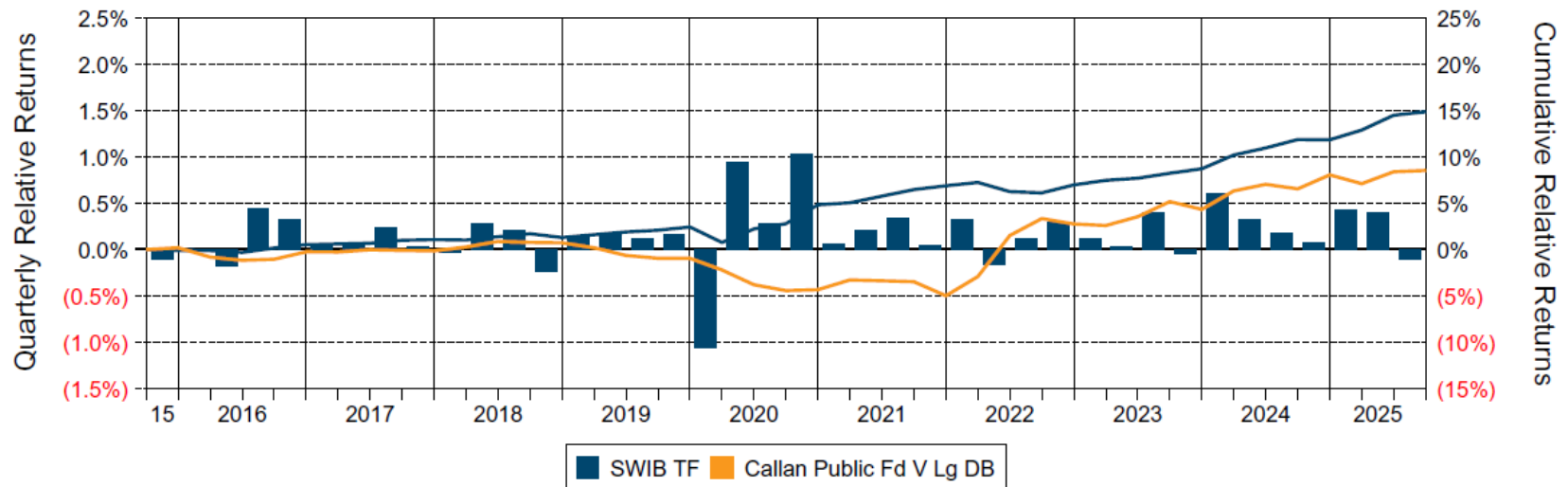


- Peer universe returns are adjusted to match the CTF risk-balanced allocation.
- CTF Fund achieved 1st quartile results for the 1-year period; 2nd quartile results for the 3-, 5-, and 10-year periods

Callan Peer Rank Update (9.30.2025)

10 Year Return Consistency vs. > \$10B Peer Group (Gross Returns)

Cumulative and Quarterly Relative Returns vs Target



- The CTF exhibits low tracking error relative to its peers and produces stable, ascending cumulative performance over 10 years.
- CTF Qtrly relative returns vs. Policy Benchmark are generally positive over the 10-year period.

Report Disclosures

Glossary, Definitions & Data Sources

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Gross of Fee Return (“GoF Return”)	The total investment fund, composite or investment portfolio return that reflects a reduction for: (i) transaction expenses, (ii) cost of implementing leverage expense (if applicable) (iii) all fees and expenses attributable to externally managed, pooled funds where expenses are included in the fund Net Asset Value (“NAV”). GoF Return is used by SWIB for long-term history (> 20 years), internal analytics and to fulfill consultant data submissions where GoF returns are requested. SWIB’s primary reported return types are NoF Return and NoA Return.
Net of External Manager Fee Return (“NoF Return”)	The GoF return plus additional deductions for external management fees, performance fees and any identifiable carried interest incurred in investment portfolios. SWIB has account records to support NoF return history over approximately 20 years.
Net of All Fees and Expenses Return (“NoA Return”)	The NoF return plus additional deductions for administrative expenses, categorized by SWIB as either Direct or Indirect expenses, that are permitted to be charged directly to the Trust Funds under statutory authority. The recording of official, NoA return at the portfolio or account level began in 2017.
Annualized Return Calculation	<p>SWIB reports containing portfolio and benchmark return calculations for time periods greater than 1 year generally utilize a geometric averaging calculation. Returns shown for periods of less than 1 year are not presented utilizing the annualization calculation method. In this instance, compound returns are reported for the specified calendar period (e.g., month to date, quarter to date or year to date).</p> <p>Annualized Return = $((1 + r^1) \times (1 + r^2) \times (1 + r^3) \dots)^{\text{calendar units} / \text{time interval measured}} - 1$; $r^{(n)}$ = series of holding period returns and calendar units are often expressed as days, months or years</p>
Cumulative Return Calculation	<p>SWIB uses the cumulative return calculation (“cumulative basis”) to reflect the aggregate amount an investment has gained or lost over time for portfolios and benchmarks. This measurement shares aspects of the annualized return calculation, however, it excludes the geometric averaging.</p> <p>Cumulative Return = $((1 + r^1) \times (1 + r^2) \times (1 + r^3) \dots) - 1$; $r^{(n)}$ = series of holding period returns</p>
Compound rate of growth of \$100	<p>The cumulative and compounded rate of growth of portfolio and benchmark returns may also be presented on an indexed basis over time (measurement may be calculated using any return type).</p> <p>Compound rate of growth of \$100 = $(\\$100 \times (1 + r^1) \times (1 + r^2) \times (1 + r^3) \dots)$; $r^{(n)}$ = series of holding period returns</p>

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Excess Return % ("Excess")	Portfolio return or security level return minus the benchmark return. Portfolio or Composite Returns are generally compared against benchmarks with a similar level of risk. It is widely used as a measure of the value added by the portfolio or investment manager or the manager's ability to outperform the market.
Net Excess Value Add \$ ("NEVA")	NEVA calculates the portfolio's performance NoA return in total dollars relative to a benchmark. NEVA is a measure used to assess the value-add dollars that a particular investment strategy or team generated over specified time periods. NEVA is also used to monitor the return objectives set forth in the annual Active Risk Budget which is prepared for the Core Trust Fund ("CTF") and Variable Trust Fund ("VTF") managed by SWIB.
Net of External Manager Fee Excess Value Add \$	A fund's Excess Value Add \$ may be calculated using NoF returns. The CTF Fund long-term performance comparisons vs. the 60/40 Reference Portfolio and Policy Benchmark are measured over 20-year time intervals. NoF return historical records date back to 1998.
SWIB Inception To Date Reporting	The Quarterly Performance Summary discloses a reporting period described as 10 years or ITD . The return disclosed in this reporting field yields either 10-year annualized returns for funds or portfolios with at least 10 years of return history or the data field may revert to the return since inception for portfolios with less than 10 years of history. The quarterly report provides a performance start date for those portfolios with the abbreviated return history.
Performance Start Date	The date denotes the initial period of a portfolio or composites' return data series that is stored and calculated by the SWIB Performance Measurement Service Agent.
Time-weighted Rate of Return	A method of calculating period-by-period returns that reflects the change in value and negates the effects of external cash flows. This methodology is applied to portfolios that are processed with daily frequency and where daily valuation updates of the underlying instruments are available.
Modified Dietz Total Rate of Return	A measurement that evaluates a portfolio's return based on a weighted calculation of its cash flow. The method considers the timing of cash flows and assumes a constant rate of return over the specified time period. This methodology is applied to portfolios and composites that are processed with monthly frequency (and where only monthly valuation updates are available).

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Policy Benchmark	The Fund level Benchmark as approved by the Benchmark Committee. The Benchmark is composed of multiple indices that reflect the Fund's exposure to a diverse set of investment strategies. (can also referred to as "Policy Target" as implemented through SWIB's Asset Allocation plan).
Reference Portfolio	Hypothetical global portfolio comprised of 60% MSCI World Net (using a SWIB custom net variant as of 2010) and 40% Bloomberg Barclays Government Credit Index. The return is presented on a gross of fee basis and assumes no contributions or withdrawals.
Zero or No Benchmark (for Official Measurement purposes)	<p>Zero Benchmark: This designation applies to the CTF Alpha Pool Overlay. Since 1/1/2019, the benchmark associated with the Alpha Pool Overlay has been set to zero. The Cost of Implementation (which includes an estimate of financing costs) is directly allocated to the underlying strategies that make up the Alpha Pool Overlay and the effect of the cost allocation will usually result in a deduction from the strategy's return.</p> <p>No Benchmark: In certain instances, a benchmark is not assigned for the purpose of measuring excess performance. For example, SWIB's client, the State Life Insurance Fund ("SLIF"), has no assigned benchmark for its investment mandate due to the limitations placed on SWIB's investment activities by the SLIF. The SLIF portfolio invests in fixed income securities that approximate the expected life of the Fund's insurance contracts, and SWIB is directed to hold all securities to maturity other than in extraordinary circumstances.</p>
Reported Benchmark Returns	<p>The SWIB Benchmark and Performance Committee and its designated benchmark consultant follow the parameters set forth in the SWIB Benchmarking Philosophy. Under the Philosophy, selected benchmarks should exhibit the characteristics described in the <i>Benchmark Qualities</i> criteria to ensure portfolio and benchmark attributes are closely aligned.</p> <p>Net Total Return Benchmarks: benchmark type commonly used for most publicly-traded portfolio strategies. The benchmark returns reflect the price performance, plus the net amount of all special and regular dividends after applying an assumed foreign tax withholding rate (as determined by the benchmark data provider.)</p> <p>SWIB Custom Net Benchmark for non-U.S. Public Equity Strategies: SWIB's custodian bank customizes SWIB's non-U.S. equity benchmarks to reflect the actual, historical reinvestment of withholding tax rates rather than index provider's assumption for varying countries.</p> <p>Net of External Manager Fee-based Benchmarks: benchmark type most frequently used to gain better alignment when the measured SWIB portfolio return is inclusive of external management fees, performance fees and carried interest charges (e.g., private market investments.)</p> <p>Gross Policy Benchmarks (limited use, 30-year annualized return): the benchmark is constructed using gross return index inputs with deductions for foreign withholding taxes. Prior to January 1, 2021, the CTF's Gross Benchmark private market inputs incorporated management fee gross-up adjustments to ensure consistency with fund's gross return calculations.</p>

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Custom Weighted Calculated Benchmarks	<p>SWIB managed funds and / or portfolios may require the construction of custom benchmarks that are created through applying static or asset weighted calculations to achieve a blended benchmark that is representative of the investment strategy. When available or feasible, SWIB will request its third-party benchmark data provider(s) to blend benchmarks as a part of the market data service. If this option is not available, SWIB will calculate the benchmark using market data inputs.</p> <p>In certain cases, SWIB may customize a benchmark to more accurately reflect the SWIB managed Fund's tax status and actual tax rate experience in non-U.S jurisdictions with investment portfolio with-holding taxes applicable to dividends and capital gains. This type of custom benchmark is designated as "SWIB Custom Net".</p>
Gross Market Value	The price at which the fund investor can buy or sell the underlying investment instruments held in the portfolio at a given time multiplied by the quantity held, plus any accrued income. The Gross Market Value of a portfolio is the market value of the portfolio or composite without any deduction for SWIB expenses.
Illiquid Investments	Those investments that may be difficult to sell or be sold quickly because of a lack of market or ready or willing investors.
Total Exposure	For SWIB managed funds governed by the Wisconsin Retirement System ("WRS") Investment Policy, this measure reflects the total value of the fund's exposure to investable markets by asset class and sub asset class. Total Exposure is inclusive of those instruments utilized under the WRS Leverage Use Policy to achieve the asset exposures approved under the asset allocation strategy and active risk target.
Internally Managed Portfolios	Portfolios managed by SWIB investment professionals. Each internal portfolio is assigned compulsory investment guidelines and is also assigned "soft risk parameters." Soft risk parameters refer to desired characteristics and/or risk exposures.
Externally Managed Portfolios	Portfolios managed by third-party investment managers hired by SWIB. External active and passive managers operate under contractual investment guidelines approved by SWIB's Investment Committee or by SWIB's investment management staff, as designated in the Investment Committee Charter.
Active Management	Actively managed portfolios have the objective of out-performing their respective benchmarks (or generating alpha) by using investment insights or quantitative tools to deploy buy, hold, and sell decisions. This style of management will result in portfolio positioning decisions that will add active risk and generate higher tracking error. Actively managed portfolios are governed through investment guidelines and soft risk parameters.
Passive Management	Passively managed portfolios have the objective of closely tracking the returns and risk of their respective benchmarks. This style of management usually involves mirroring the benchmark security holdings (or constituents) to closely replicate the benchmark risk and return.

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
Note on report data sources and processing	<p><u>Return Calculation Processing</u> Bank of New York (BNY), an independent 3rd party, provides services related to custodial records, accounting and performance return calculations for SWIB managed funds. BNY also serves as the source for certain standard, market-based benchmarks and static weight blended benchmarks.</p>
	<p><u>Return Calculations Prepared on a Notional or Unlevered Basis (CTF only)</u> SWIB uses leverage to help achieve the CTF's diversification objectives. A description of the Leverage Use Policy is contained in the WRS Investment Committee Investment Guidelines. For those accounts and composites deploying leverage, the calculation of notional or unlevered returns (using gross asset exposure) is required to achieve a comparable return vs. market indices. BNY performed the unlevered return calculation from 7/1/2017 – 9/30/2024. Beginning 10/1/2024, this calculation was processed using the SWIB IBOR. Consistent with Leverage Use Policy guidelines, this calculation is processed inside the reported composites that contain US Large Cap Equity, US Small Cap Equity, MSCI World x US Equity, US TIPS and US Treasury exposures.</p>
	<p><u>State Investment Fund ("SIF") Commingled Fund Processing</u> The SIF pools the cash of the State of Wisconsin and its agencies, WRS, and various local government units (Local Government Investment Pool) into a commingled fund with the investment objectives of safety of principal and liquidity while earning a competitive money market rate of return. For purposes of calculating earnings to each participant, all investments are valued at amortized cost. SIF returns are calculated using the monthly net earnings distributed to all commingled fund participants. SIF returns are presented net of all allocated SWIB administrative costs and State Controller's Office costs that are allocated to the participants of the Local Government Investment Pool.</p>
	<p><u>Benchmark Market Data and Selection Process</u> The data source for this information is provided by multiple investment industry market data vendors and analytics firms depending on the investment strategy. The SWIB Benchmark and Performance Committee governs the benchmark selection process. An independent consultant (selected by the Board of Trustees or "Board") makes recommendations to initially select or change benchmarks.</p>
	<p><u>Peer Rank Return Comparison Data</u> This information is provided and processed by industry consultants that consume return information for SWIB managed funds and then provide investor universe return comparisons and analytics using proprietary databases. When consultant info is included in the Quarterly Performance Summary the preparer of the work is identified.</p>
	<p><u>SWIB Annual Reports:</u> Additional WRS disclosures can be found in the Annual Reports, available at https://www.swib.state.wi.us/list-of-investments.</p>

Report Disclosures

Key Terms and Portfolio Return Information

Term	Description / Definitions
<p>(continued)</p> <p>Note on report data sources and processing</p>	<p>Reported Fund Market and Strategy Exposure Values</p> <p>On 1/1/2024, the BNY ABOR processing platform became the primary source for CTF and VTF return calculations and market value amounts contained in this report. Beginning 10/1/2024, returns and market values for the SIF and the SWIB-managed Separately Managed Funds were processed using the SWIB IBOR.</p> <p>Note that Total Fund Values may contain small rounding differences that are attributable to BNY ABOR vs. SWIB IBOR data sources.</p> <p>This report contains unlevered return calculations that are processed using Total Exposure (Notional-based) Assets for accounts with substantial derivative positions that generate leverage for the CTF. The objective of this calculation is to generate meaningful returns that compare to the account or composite's benchmark. The following composites are presented on an unlevered basis:</p> <p>CTF – Public Equities (pg. 9) CTF – Global Developed (pg. 9) CTF – Public Fixed Income (pg. 10) CTF – US Treasuries (pg. 10) CTF – Inflation Sensitive (pg. 11)</p>

Leverage Disclosures

Calculation formulas to estimate impact

Report Disclosures

Notes on CTF Leverage Analysis

Term	Description / Definitions
Portfolio Return (Unlevered)	<p>This is an estimated-only CTF return because SWIB does not implement a CTF unlevered portfolio to calculate actual performance against. Leverage is used to expand the CTF's entire asset base. All definitions that include (unlevered) are ESTIMATES only for this reason.</p> <p>It is estimated by:</p> <ol style="list-style-type: none"> 1) <u>Excess Return (Levered)</u> is first subtracted from the <u>Portfolio Return (Levered)</u>¹; 2) The result of Step 1 is then divided by the <u>Policy Leverage Factor</u>; then 3) <u>Excess Return (Levered)</u> is added back to the result of Step 2 and that number is then adjusted to account for the cost of financing (i.e., the expense of acquiring leverage, which would not be applicable to an unlevered portfolio). $\text{Portfolio Return (Unlevered)} = \left(\frac{\text{Portfolio Return (Levered)} - \text{Excess Return (Levered)}}{\text{Policy Leverage Factor}} \right) + \text{Excess Return (Levered)} - \text{cost of implementation}$ <p>¹ Note, because <u>Excess Return (Levered)</u> is the difference between two similarly "levered" portfolios (Portfolio Return (Levered) and Benchmark Return (Levered)), it represents outperformance that is not attributable to leverage. Accordingly, it is subtracted first as it would be inaccurate to reduce such amount by the Policy Leverage Factor for purposes of this calculation.</p> <p><u>Policy Leverage Factor</u> is the amount of the approved Policy Leverage during any given period, time weighted for multi-year periods. Policy Leverage was first introduced into the CTF Portfolio and Benchmark at the end of April 2012 and was raised from 10% to 15%, effective Calendar Year 2021.</p>
CTF Benchmark Return (Unlevered)	Estimated by the <u>Benchmark Return (Levered)</u> divided by the <u>Policy Leverage Factor</u> for the period.

Report Disclosures

Notes on CTF Leverage Analysis

Term	Description / Definitions
Excess Return (Unlevered)	<p>The Excess Return (Unlevered) is the excess return that it is estimated SWIB would have achieved if it did not implement leverage for the CTF.</p> <p>Estimated as <u>Portfolio Return (Unlevered)</u> minus <u>Benchmark Return (Unlevered)</u>.</p> <p>Can also be estimated by taking the actual <u>Excess Return (Levered)</u> minus <u>Implementation (+) or (-)</u> (see below for definition).</p>
Absolute Return from Leverage	Estimated by the <u>Portfolio Return (Levered)</u> minus <u>Portfolio Return (Unlevered)</u> minus <u>Implementation (+) or (-)</u> .
Implementation (+) or (-)	<p>The relative cost of financing (i.e., the actual cost of financing minus the CTF benchmark cost of financing). The CTF benchmark cost of financing is the CTF cash benchmark, previously LIBOR plus 30 bps and now BSBY plus 30 bps. Implementation (+) or (-) can also result from outperformance or underperformance relative to how efficiently SWIB replicates the index in connection with policy leverage (this is called basis risk).</p> <p>Can either be positive or negative. When the leverage implementation is achieved at a cost saving compared to the CTF cash benchmark (i.e., less than the CTF cash benchmark), it is positive (+); but when it is achieved with additional cost compared to the CTF cash benchmark (i.e., more than the CTF cash benchmark), it is negative (-). Cost savings can generate minor excess returns for the CTF. Basis risk can also generate minor contributions to or detractions from relative performance with respect to policy leverage.</p>
Portfolio Return (Levered)	Actual performance of the CTF Portfolio for the period presented, from all strategies including Policy Leverage.
CTF Benchmark Return (Levered)	Actual performance of the CTF Benchmark for the period, taking into account the use of Policy Leverage.
Excess Return (Levered)	Actual excess return of the CTF. Portfolio Return (Levered) minus Benchmark Return (Levered).

Board Meeting

Tab 4 – Asset Allocation Recommendations for 2026



ASSET ALLOCATION REVIEW

SWIB DECEMBER BOARD MEETING

DECEMBER 2025

Joseph Nankof, Partner

Todd Mattina, Head Economist and ARA, CIO



KEY INSIGHTS

- **GRS “on year” for assessing the balance between target return and downside risk:**
 - **6% to 7.5% target return** remains appropriate, balancing **plan stability** with **actuarial risk control** based on updated GRS stress testing
- **Recommended CTF Policy Portfolio reallocations:**
 - **2% reduction in Public Equity and Policy Leverage** achieves **comparable long-term returns** with **lower downside risk**, reflecting NEPC’s updated market assumptions
- **Stable target allocations in private investments:**
 - With **no major revisions** to the private investment pacing plan, **existing target allocations** in **Private Equity/Debt** and **Real Estate** remain appropriate
- **Improved Liquidity and Efficiency:**
 - **Shift Long Treasuries** into the **broader Treasuries index** to **enhance liquidity**
 - **Broaden VTF’s active risk range to 0–90 bps**, allowing for greater **passive investment flexibility** given that developed market equities are highly efficient

AGENDA

- Introduction
- Background & Assumptions
- Recommendations
- Scenario Analysis
- Summary
- Appendix



INTRODUCTION

INTRODUCTION

- **Significant changes in financial markets**

- Volatility as uncertainty builds around fiscal, monetary, and trade policy
- Labor market weakness
- Elevated equity market valuations
- Current credit spreads don't offer much upside

- **Themes of asset allocation analysis**

- On-Year with GRS stress testing results
- Evaluate policy leverage, private investment pacing plan, and the strategic allocation across fixed income

- **Preliminary recommendations**

- A decrease of 2% in Public Equities and a decrease in Policy Leverage by 2%.
- Eliminate Long Treasury allocation and replace with US Treasury in Public Fixed Income.
- Implementation of an active risk range of zero to 90 bps for VTF.

CURRENT POLICY AND RECOMMENDATION

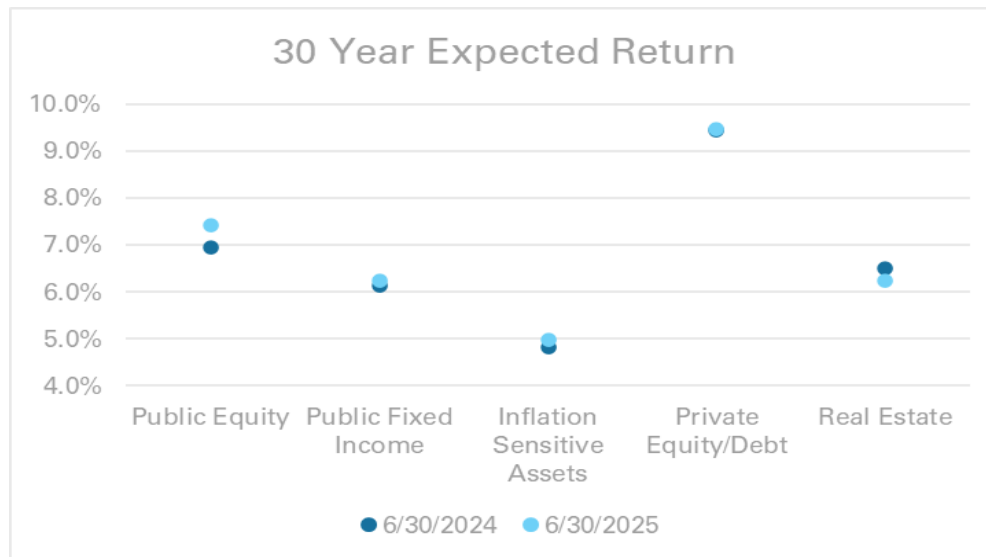
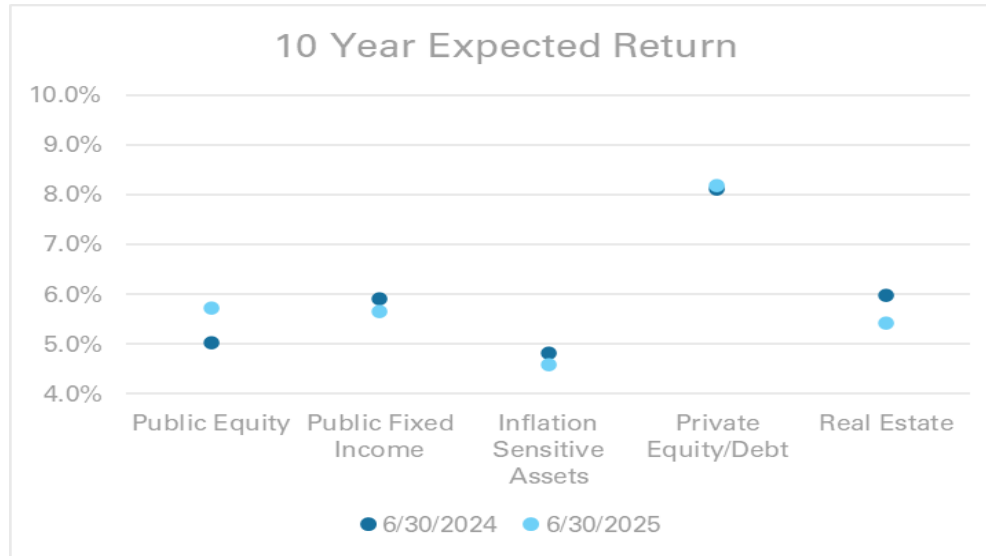
The biennial asset/liability review is an opportunity to review the asset allocation relative to the liabilities and consider adjustments to long-term investment policy. This exercise is intended to evaluate the long-term strategic decisions outlined in the table below.

Decision	Current Policy Targets	Preliminary Recommended Targets
Public Markets Allocation	38% Equity/27% Fixed Income/19% TIPS	36% Equity/27% Fixed Income/19% TIPS
Private Markets Allocation	20% Private Equity & Debt / 8% Real Estate	No Change
Leverage Level	-12%	-10%
Public Equity Structure	Global Market Capitalization (China Half Weight)	No Change
Public Fixed Income Structure	60% Investment-Grade / 40% Below Investment-Grade and Emerging Markets Debt	Eliminate Long Treasury allocation and increase US Treasury to 28% of Public Fixed Income allocation

BACKGROUND & ASSUMPTIONS



2024 & 2025 ASSUMPTIONS



ASSET CLASS ASSUMPTIONS

OVERVIEW

- **NEPC's capital market assumptions are updated quarterly with this release reflecting market data as of June 30, 2025**
- **U.S. equity markets fully recovered from the early April selloff – hitting new highs to end the quarter**
- **Despite recent valuation expansion, Non-U.S. developed market equity return assumptions improved, reflecting a modest increase in long-term earnings expectations**
- **Fixed income assumptions are lower as market rate expectations shifted modestly lower, pulling down interest rate forecasts**
- **Credit spreads remain tight and are below long-term medians, limiting the upside return potential within risk-seeking credit**

CAPITAL MARKET ASSUMPTION PRINCIPLES

HOW SHOULD RETURN ASSUMPTIONS BE INTERPRETED

- **NEPC return assumptions are meant to reflect a nominal return expectation, 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**

ASSET CLASS ASSUMPTIONS

DEVELOPMENT

- **Capital market assumptions are published for over 70 core asset classes and over 30 composites**
- **Market data as of 06/30/2025**
- **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
5. 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**

Illiquidity Premium

Valuation

Inflation

Real Growth

Yield

CORE ASSET CLASS RETURN ASSUMPTIONS

	Asset Class	6/30/2025 10-Year Return	6/30/2024 10-Year Return	Delta
	Cash	3.8%	4.2%	-0.4%
	U.S. Inflation	2.6%	2.6%	-
Equity	U.S. Large-Cap Equity	5.3%	4.0%	+1.3%
	Non-U.S. Developed Equity	5.3%	4.5%	+0.8%
	Emerging Market Equity	6.6%	7.8%	-1.2%
	Global Equity*	5.7%	5.0%	+0.7%
	Private Equity*	8.6%	8.7%	-0.1%
Fixed Income	U.S. Treasury Bond	4.4%	4.6%	-0.2%
	U.S. Municipal Bond	4.3%	3.8%	+0.5%
	U.S. Aggregate Bond*	4.8%	5.0%	-0.2%
	U.S. TIPS	4.6%	4.8%	-0.2%
	U.S. High Yield Corporate Bond	6.1%	6.3%	-0.2%
	Private Debt*	8.3%	8.3%	-
Real Assets	Commodity Futures	4.8%	4.4%	+0.4%
	REIT	5.5%	6.3%	-0.8%
	Gold	4.0%	5.0%	-1.0%
	Real Estate - Core	5.4%	6.0%	-0.6%
	Private Real Assets - Infrastructure	5.7%	6.6%	-0.9%
Multi-Asset	60% S&P 500 & 40% U.S. Aggregate	5.4%	4.7%	+0.7%
	60% MSCI ACWI & 40% U.S. Agg.	5.7%	5.3%	+0.4%
	Hedge Fund*	6.2%	6.2%	-

*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.

U.S. INFLATION ASSUMPTIONS

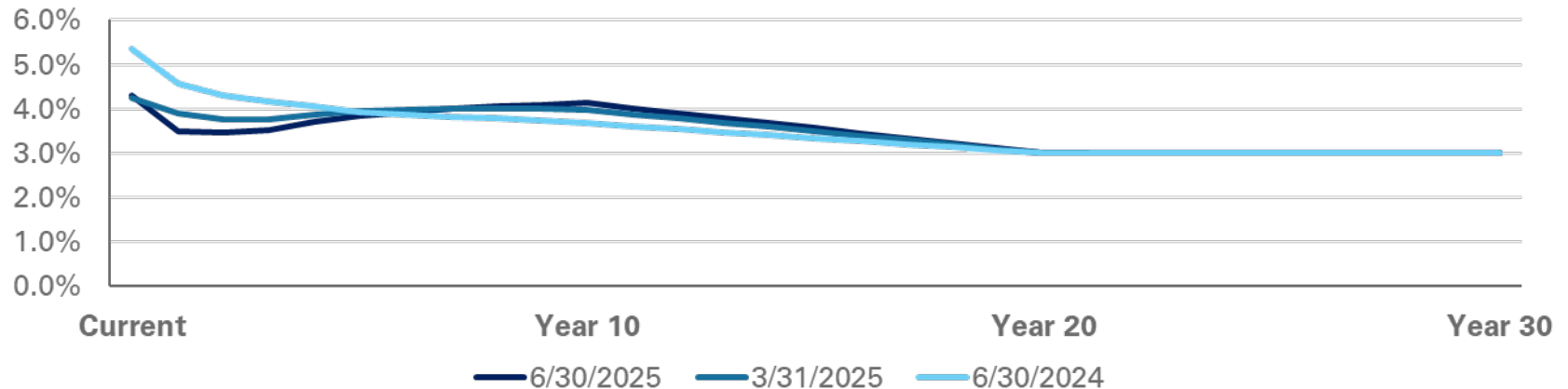
OVERVIEW

- 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 Change
10-Year	2.6%	—
30-Year	2.7%	+0.1%

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	3.8%	-0.4%
30-Year	3.5%	—

Sources: Bloomberg, FactSet, NEPC



RECOMMENDATIONS

POLICY ALLOCATION APPROACH

Summary

- Liability-aware strategy balances target returns with downside risks, limiting the chance of higher contributions, underfunding, or lower dividends.
- GRS analysis supports a 10-year target return between 6% and 7.5%, exceeding the 5% dividend adjustment hurdle while promoting stable contributions, lower funding shortfall risk, and sustainable dividend increases.
- Weak 2022 capital market returns continue to flow through the 5-year Market Recognition Account, pressuring dividend adjustment rates in 2025 and 2026.
- Dividend liability has risen to 22% of the total actuarial liability—the highest since 2008—providing a strong buffer in funding status against future adverse returns.
- The private investments allocation continues to progress in line with the updated pacing plan. Updates to the 2024 pacing plan of private investments indicate that the actual allocation is expected to be well within policy ranges this year.
- The Policy Leverage framework points to a lower target allocation, driven by the reduced expected excess return and higher volatility based on 30-year expectations.

GRS STRESS-TESTING SUPPORTS A POLICY PORTFOLIO WITH TARGET RETURNS OF 6% TO 7.5%

GRS Stress-Testing Results – October 2025

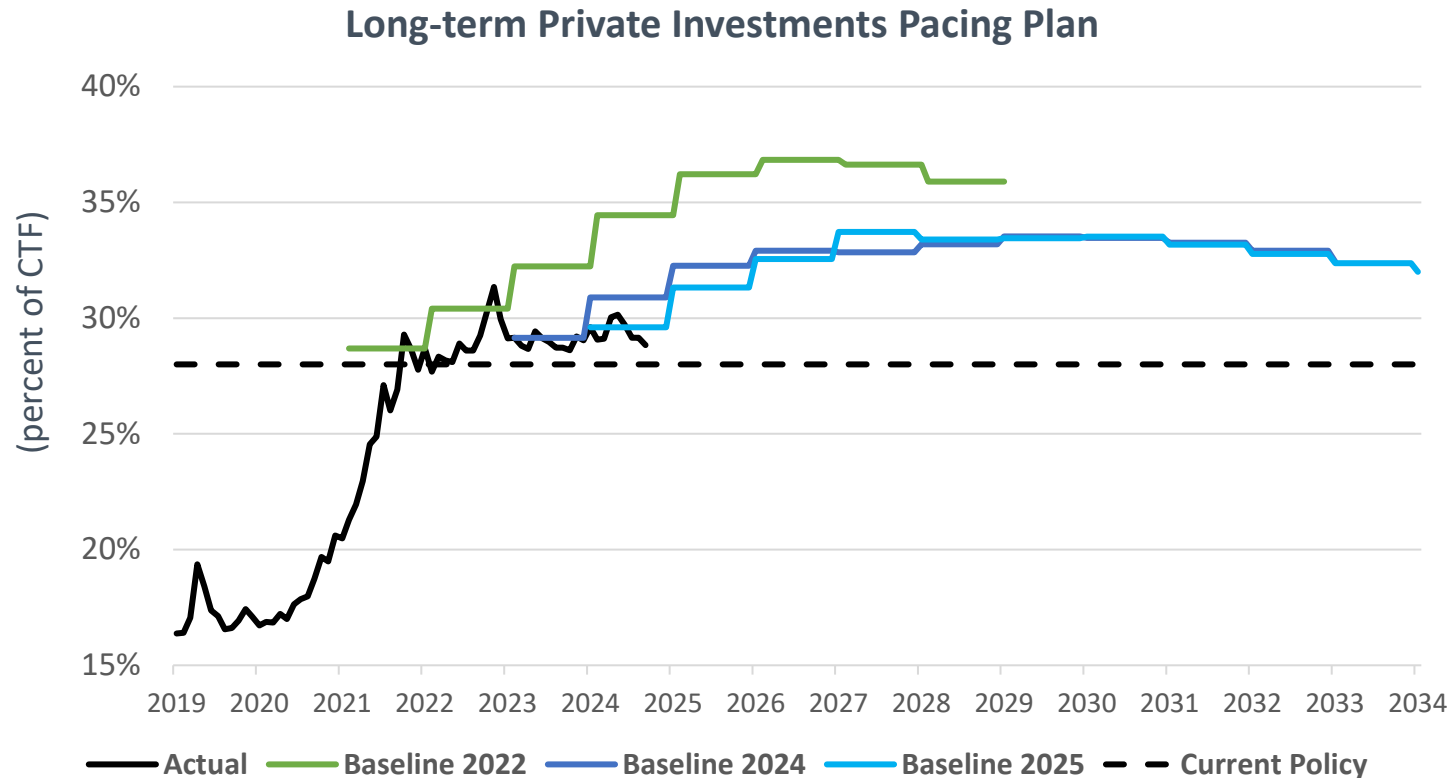
2035 Results by Percentile of Investment Return Outcomes										
Scenario	Expected RoR	Standard Deviation	Contribution Rates			Dividend Rates			Highest Div. Dep. PRB	Worst Retiree Funded %
			95th	50th	5th	95th	50th	5th		
1	4.5%	2.2%	16.6%	17.1%	17.6%	-0.1%	-0.6%	-1.1%	100%/Year50	72%/Year50
2	5.0%	4.1%	15.8%	16.8%	17.7%	0.8%	-0.1%	-1.1%	50%/Year50	86%/Year50
3	5.5%	6.2%	14.8%	16.4%	17.9%	1.8%	0.4%	-1.1%	10%/Year50	98%/Year50
4	6.0%	8.2%	13.8%	16.1%	18.0%	2.8%	0.8%	-1.0%	5%/Year50	106%/Year10
5	6.5%	10.7%	12.5%	15.8%	18.2%	3.9%	1.3%	-1.1%	6%/Year50	103%/Year10
6	7.0%	14.0%	10.9%	15.4%	18.6%	5.1%	1.8%	-1.4%	11%/Year50	96%/Year10
7	7.5%	16.9%	9.1%	15.1%	19.0%	6.3%	2.3%	-1.6%	15%/Year50	91%/Year10
8	8.0%	22.3%	6.1%	14.8%	19.8%	8.0%	2.7%	-2.5%	24%/Year50	79%/Year10
9	8.5%	28.3%	2.4%	14.7%	20.7%	9.8%	3.0%	-3.5%	30%/Year50	66%/Year10

Actuarial
Rate 6.8%



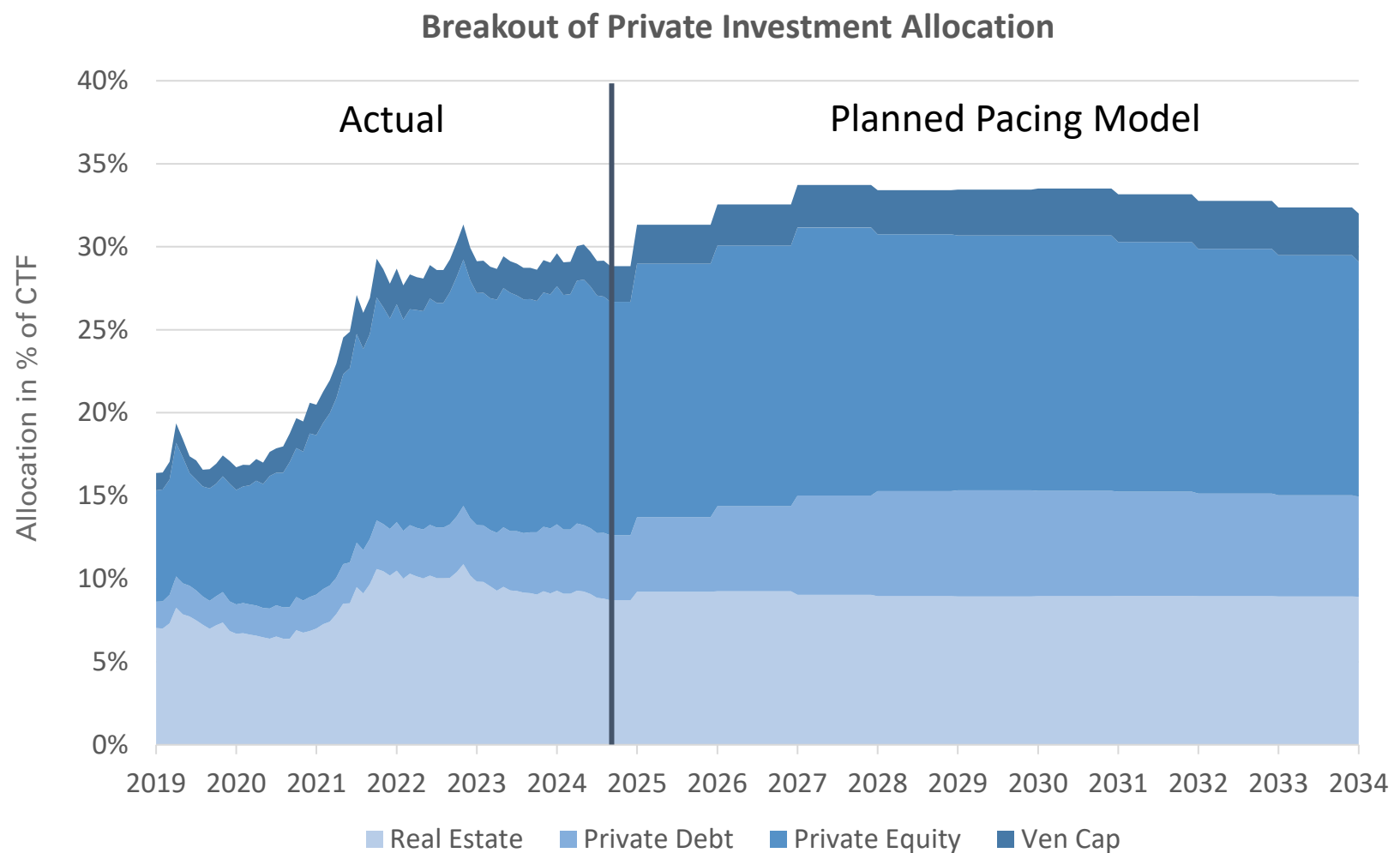
- GRS stress-testing helps select portfolios with target returns that balance upside potential against risks like higher contributions, plan under-funding, or lower dividend increases.
- Scenarios 4 to 7 with target returns of 6% and 7.5%, respectively, balance downside risks with sufficient return to keep the plan financially stable over time.
- Target returns above 7.5% sharply increase CTF volatility and the likelihood of adverse outcomes (higher contributions, underfunding, negative dividends).

LONG-TERM PRIVATE INVESTMENTS PACING PLAN SUGGESTS NO CHANGE IN TARGET ALLOCATIONS



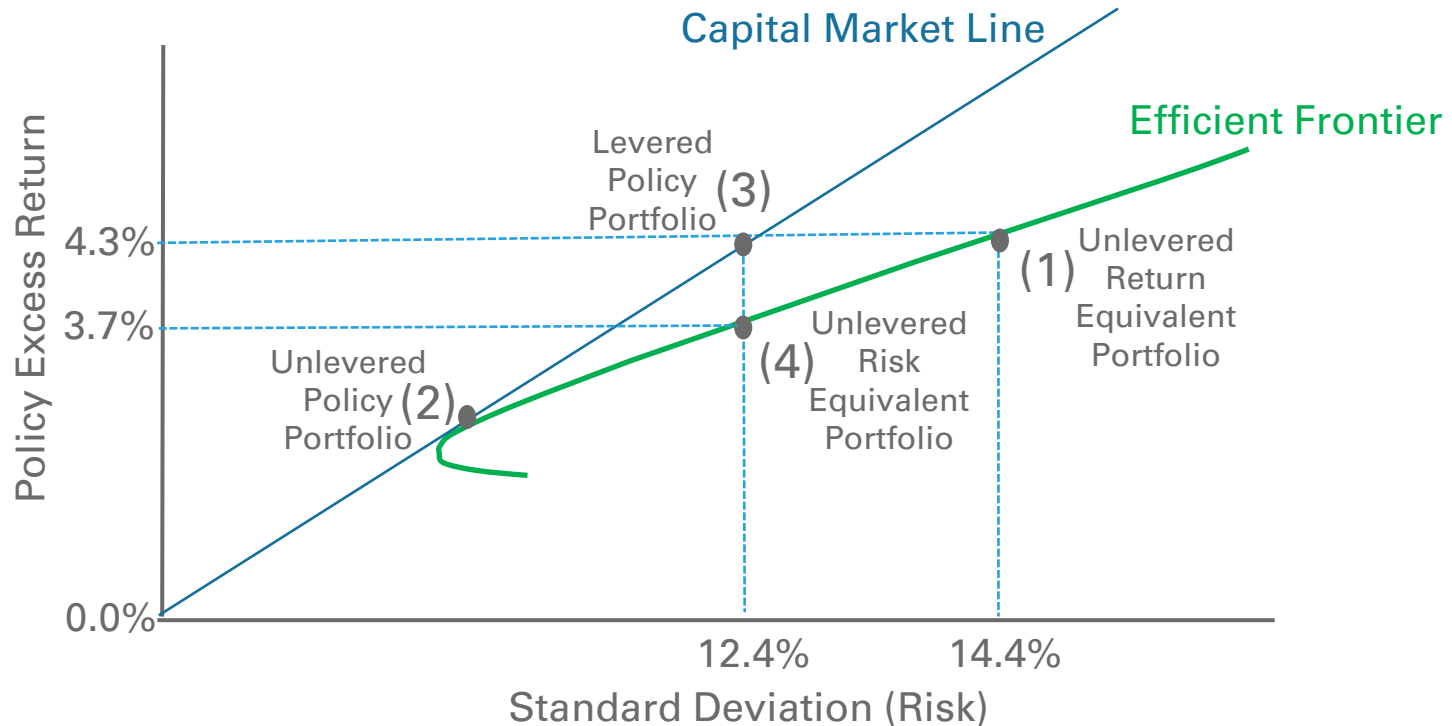
- Private investments allocation continues to evolve in line with the updated pacing plan of cash flow projections.
- Projected allocations are expected to remain within policy ranges this year.

COMPOSITION OF PRIVATE INVESTMENTS PACING PLAN BY SUB-ASSET CLASS



POLICY LEVERAGE FRAMEWORK - REVIEW

(HISTORICAL LEVERAGE PREFERENCE)



Steps:

1. Determine long term average return and risk for Policy Portfolio and cash
2. Determine long term average return of Unlevered Risk Equivalent Portfolio
3. Implied leverage preference over long term has averaged 1.16x.
4. Leverage changes over time:
 - Sharpe Ratio near term > Sharpe Ratio long term, Leverage ratio > 1.16x
 - Sharpe Ratio near term < Sharpe Ratio long term, Leverage ratio < 1.16x

TRENDS IN IMPLIED POLICY LEVERAGE PREFERENCE

	Policy Portfolio Characteristics			Implied Policy Leverage Preference			
	Excess	Vol.	Sharpe	Excess	Volatility	Average	Refined
	Return (%)	(%)	Ratio	Return [1]	Approach [2]	of [1] and [2] [3]	Vol. Approach [4]
15yr Avg	4.26	12.37	0.340	16%	16%	16%	16%
2022	4.45	12.70	0.350	21%	13%	17%	17%
2023	4.01	12.37	0.324	9%	16%	13%	13%
2024	4.01	12.40	0.323	9%	16%	12%	11%
2025*	4.01	12.55	0.320	9%	14%	12%	10%

[1]: When excess return is higher than the 15yr average of 4.26%, implied Policy Leverage goes up.

[2]: When volatility is higher than the 15 yr average of 12.37%, implied Policy Leverage falls.

[3]: The 2023 Policy Leverage framework took an average of approaches [1] and [2].

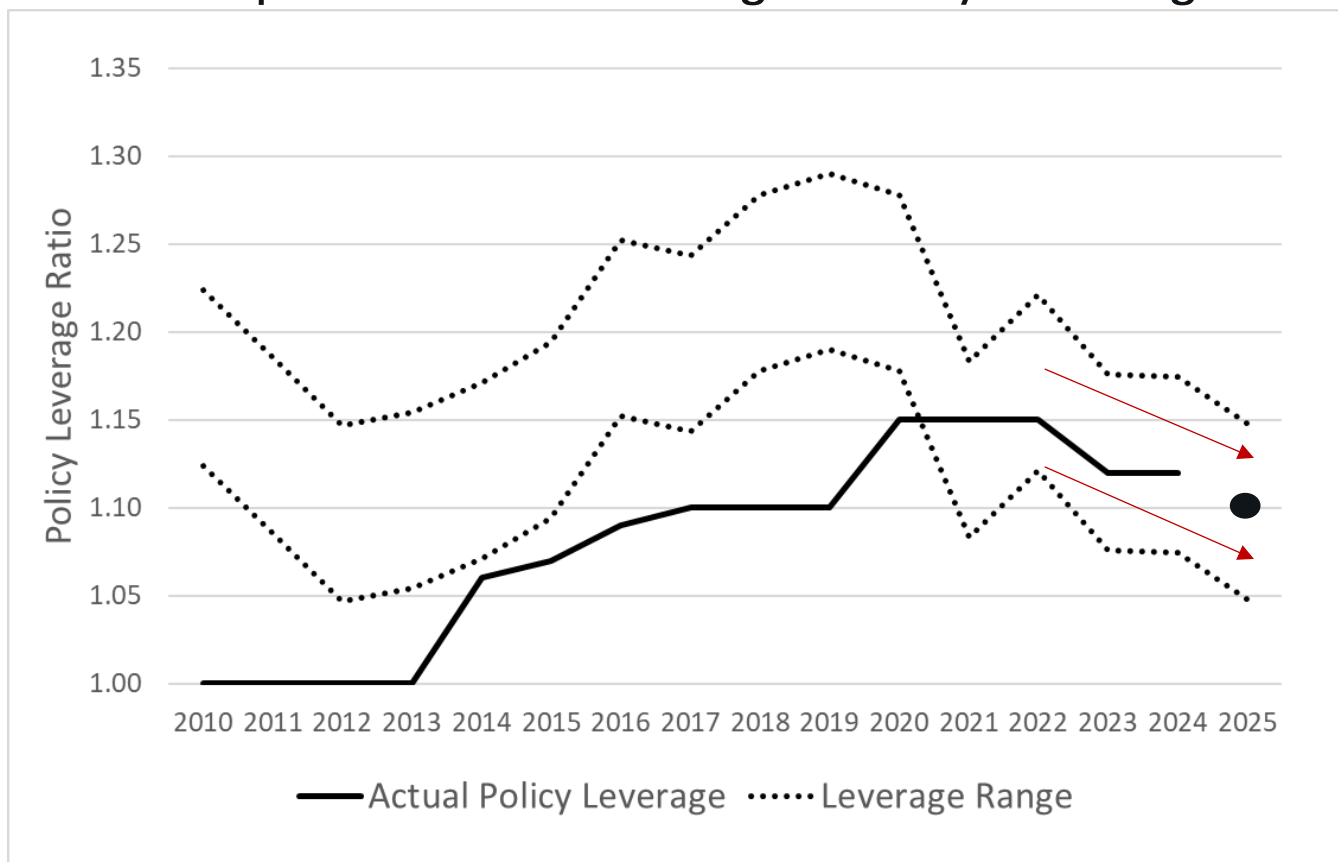
[4]: The refined Volatility Approach evaluates how the updated capital market assumptions impact the Sharpe Ratio of the current policy portfolio.

*ARA carried over the 2024 excess return into 2025 to control for a methodological change in the capital market assumptions.

POLICY LEVERAGE FRAMEWORK SUGGESTS A DECLINE

(ACTUAL POLICY LEVERAGE COMPARED TO MODEL-BASED LEVERAGE RANGE)

Model-Based Range in Policy Leverage Compared to Actual Target Policy Leverage



The declining model-based range in implied Policy Leverage preference reflects higher cash rates after 2022 and lower excess returns in recent years.

Volatility has also increased in recent years, which has reduced the expected Sharpe ratio.

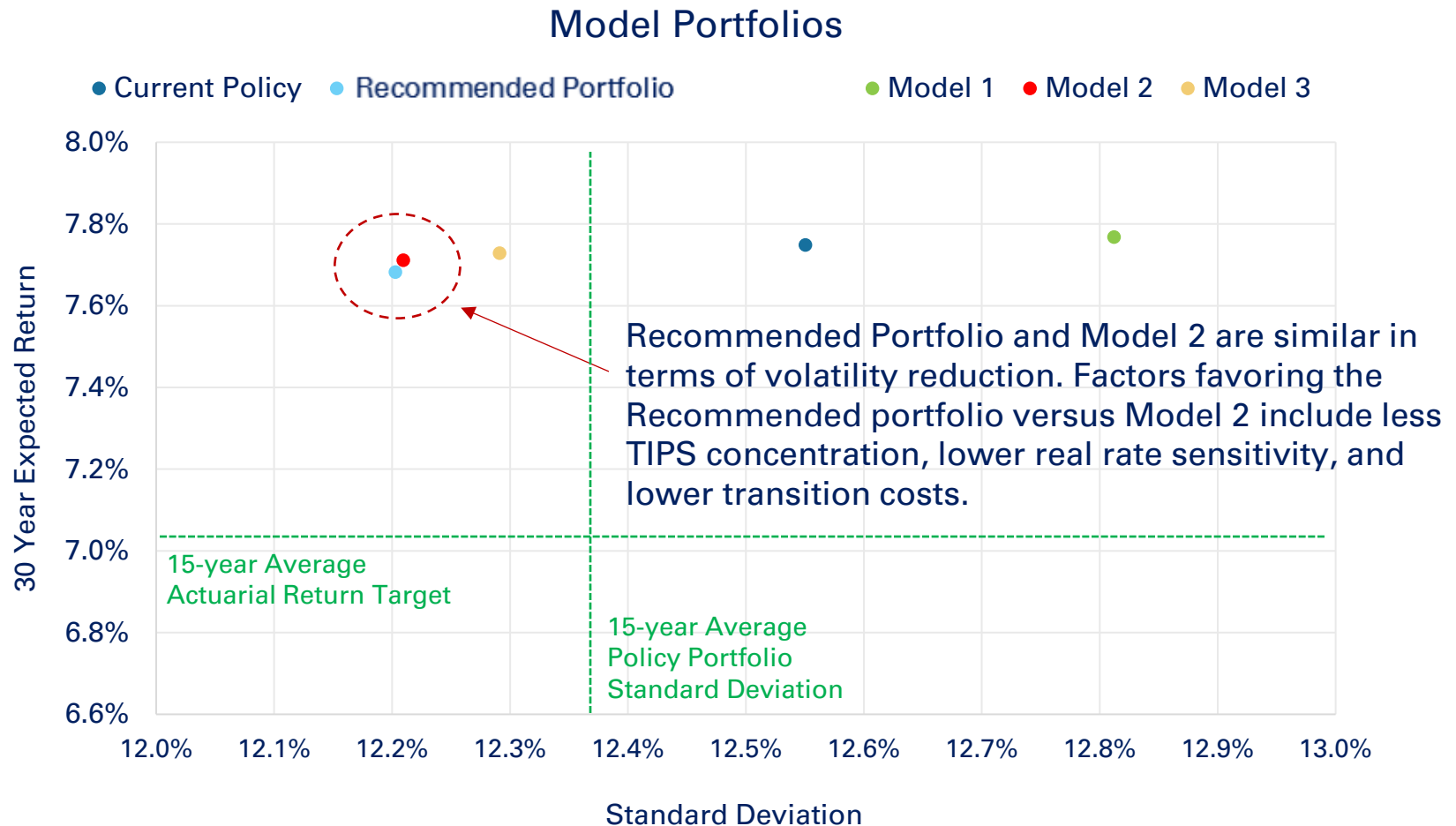
Dot in 2025 represents the preliminary recommendation for the Policy Leverage Target.

CURRENT AND RECOMMENDED ALLOCATIONS

SUMMARY

Asset Class	10 Year Return Geometric Return	10 Year Sharpe Ratio	30 Year Return Geometric Return	30 Year Sharpe Ratio	Standard Deviation	Current Policy	Recommended Portfolio	Model 1	Model 2	Model 3
Public Equity	5.7%	0.105	7.4%	0.217	18.1%	38%	36%	40%	36%	36%
Public Fixed Income	5.7%	0.291	6.2%	0.441	6.3%	27%	27%	25%	27%	29%
TIPS	4.6%	0.124	5.0%	0.248	6.0%	19%	19%	19%	21%	19%
Private Equity/Debt	8.2%	0.204	9.5%	0.281	21.3%	20%	20%	20%	20%	20%
Real Estate	5.4%	0.108	6.2%	0.188	14.7%	8%	8%	8%	8%	8%
Policy Leverage	4.0%	N/A	3.7%	N/A	0.7%	-12%	-10%	-12%	-12%	-12%
10 Year Compound Return						6.5%	6.5%	6.5%	6.5%	6.5%
10 Year Sharpe Ratio						0.211	0.215	0.206	0.216	0.216
30 Year Compound Return						7.7%	7.7%	7.8%	7.7%	7.7%
30 Year Sharpe Ratio						0.340	0.343	0.334	0.346	0.344
Standard Deviation						12.6%	12.2%	12.8%	12.2%	12.3%
Duration:										
- CTF Fund Level (years)						2.64	2.54	2.45	2.68	2.64
- Public Fixed Income (years)						5.74	5.53	5.56	5.57	5.5
Implementation Shortfall (\$M)							-4.7	-8.7	-8.8	-9.0
VaR 95% CL 1-Yr Horizon (\$B)							-18.3	-17.6	-17.6	-17.7
T-Cost (\$M)							N/A	-3.7	-8.0	-8.0

CURRENT POLICY AND MODEL PORTFOLIOS



PUBLIC EQUITY STRUCTURE

	Current Equity Allocation*	% of Total Portfolio	Recommended Public Equity Allocation*	% of Total Portfolio
Global Equities	79.1%	30.1%	79.1%	28.5%
US Small Cap Equities	7.5%	2.8%	7.5%	2.7%
Int'l Small Cap Equities	3.7%	1.4%	3.7%	1.3%
Emerging Market Large Cap				
China	1.3%	0.5%	1.3%	0.5%
x-China	6.9%	2.6%	6.9%	2.5%
Emerging Market Small Cap	1.6%	0.6%	1.6%	0.6%
Total		38%		36%
10-Year Compound Return	5.7%		5.7%	
30-Year Compound Return	7.4%		7.4%	
Standard Deviation	18.1%		18.1%	
10-Year Sharpe Ratio	0.105		0.105	
30-Year Sharpe Ratio	0.217		0.217	

* Market capitalization weights as of June 30, 2025; Actual market capitalization weights will float with market moves over time. Provided for informational purposes.

PUBLIC FIXED INCOME STRUCTURE

	Current Fixed Income Allocation	% of Total Portfolio	Recommended Fixed Income Allocation	% of Total Portfolio
US Treasuries	24.0%	6.5%	28.0%	7.6%
US Investment Grade Credit	24.0%	6.5%	24.0%	6.5%
Mortgage-Backed	8.0%	2.2%	8.0%	2.2%
Long Treasuries	4.0%	1.1%	0.0%	0.0%
High Yield Bonds	20.0%	5.4%	20.0%	5.4%
Leveraged Loans	10.0%	2.7%	10.0%	2.7%
Emerging Market Debt*	10.0%	2.7%	10.0%	2.7%
Total		27%		27%
10-Year Compound Return	5.7%		5.6%	
30-Year Compound Return	6.3%		6.2%	
Standard Deviation	6.3%		6.1%	
10-Year Sharpe Ratio	0.291		0.290	
30-Year Sharpe Ratio	0.440		0.450	
Duration (years)	5.74		5.53	

REFERENCE PORTFOLIO ATTRIBUTION

	10-Year Expected Return	Standard Deviation	30-Year Expected Return
Reference Portfolio	5.69%	11.46%	6.91%
Private Markets	0.55%	0.18%	0.45%
Portfolio Structure	0.12%	0.34%	0.12%
Leverage	0.10%	0.23%	0.19%
Recommended Portfolio	6.46%	12.20%	7.67%

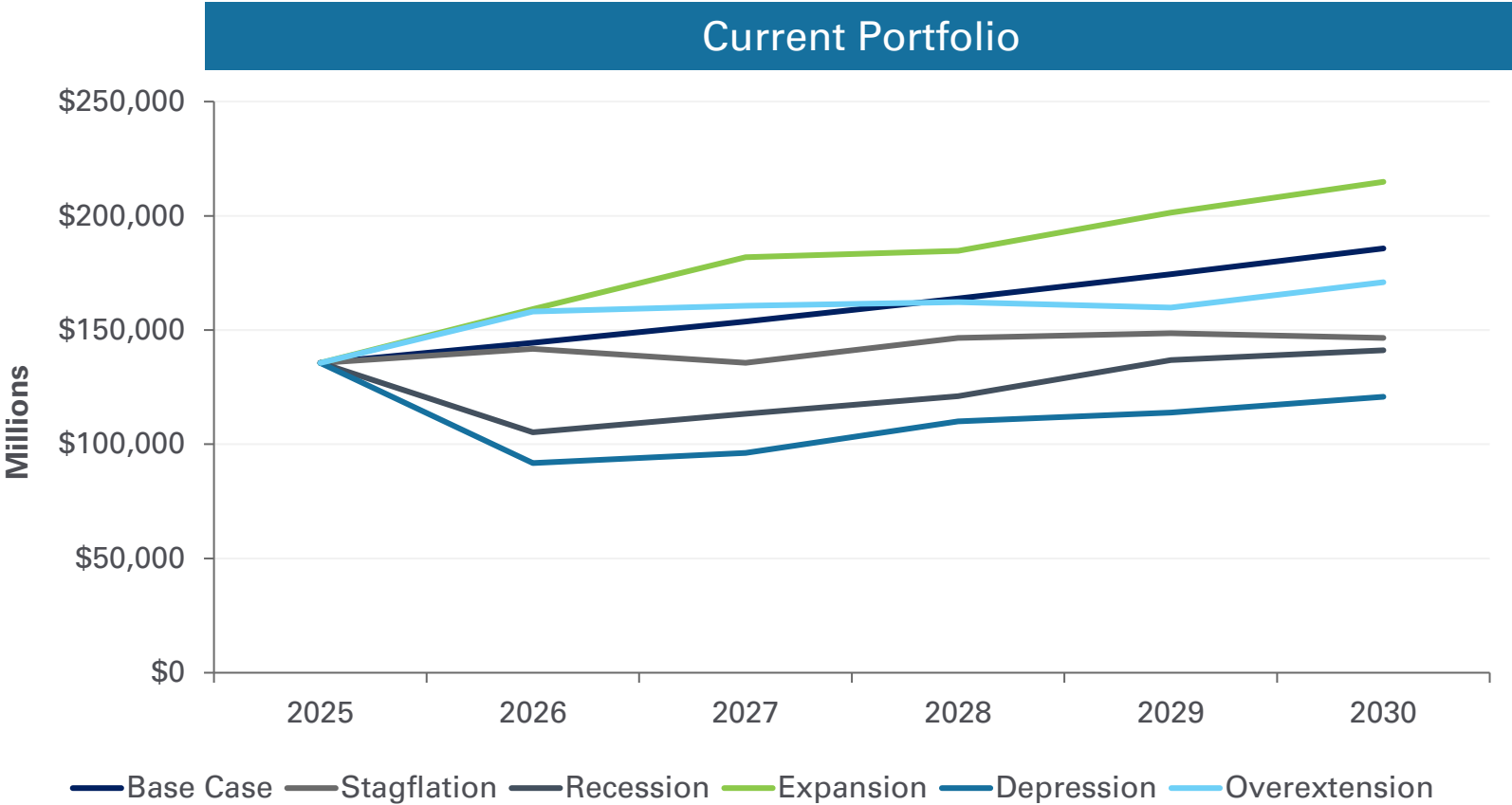
VARIABLE RETIREMENT TRUST ALLOCATION

	Current Policy Portfolio	Recommended Policy Portfolio	Rebalancing Range
US Equities	70%	70%	65 - 75%
Int'l Equities incl. Emerging	30%	30%	25 - 35%
10-Year Compound Return	5.73%	5.73%	
30-Year Compound Return	7.41%	7.41%	
Standard Deviation	17.24%	17.24%	
10-Year Sharpe Ratio	0.086	0.086	
30-Year Sharpe Ratio	0.218	0.218	
Target Active Risk	0.3 - 0.9%	0.0 - 0.9%	

SCENARIO ANALYSIS

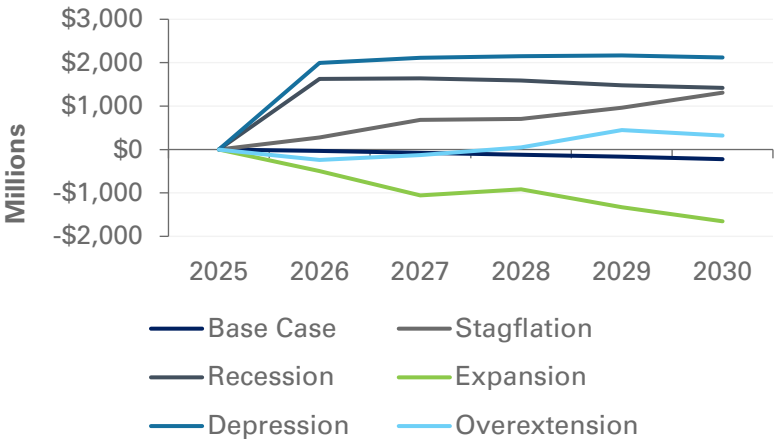


MACRO SCENARIOS: CURRENT PORTFOLIO

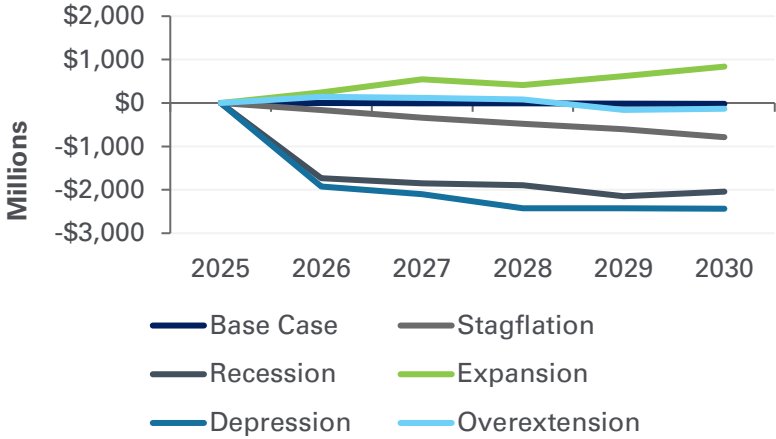


MACRO SCENARIOS: MODEL PORTFOLIOS RELATIVE TO CURRENT POLICY

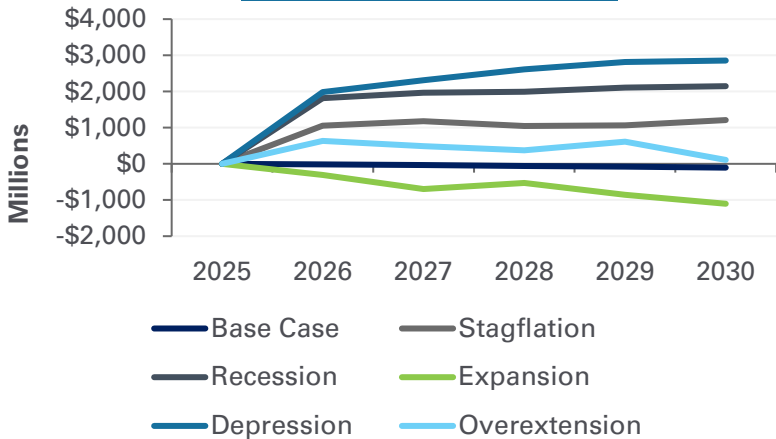
Recommended



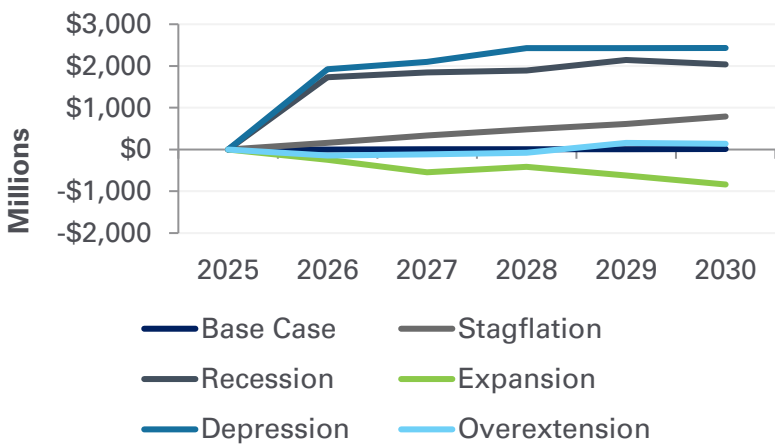
Model 1



Model 2



Model 3



SUMMARY

- **Update of NEPC capital market assumptions:**

- Key changes compared to 2024 include higher Public Equity returns and lower Real Estate returns

- **On-year for GRS stress-testing analysis:**

- Simulations support a Policy Portfolio with a target return between 6% and 7.5% to balance expected return, investment volatility, and downside risks

- **Updated Policy Leverage framework and private investments pacing plan:**

- Policy Leverage framework indicates a lower range, mainly due to higher volatility
- Private investments continue to evolve in line with updated pacing plan

- **Preview of recommendations:**

- Decrease Public Equities by 2% and reduce Policy Leverage by 2%
- Eliminate Long Treasury allocation and increase US Treasury allocation to 28% of Public Fixed Income
- Implement an active risk range in the VTF of zero to 90 basis points

APPENDIX



JULY 2025 MARKETS UPDATE



NEPC MARKET OUTLOOK



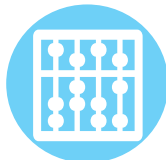
Labor market weakness is beginning to build as July payrolls posted subpar results along with large downward revisions to May and June



Brace for volatility as uncertainty builds surrounding tariff policy, labor market dynamics, and changes to Fed posture in response



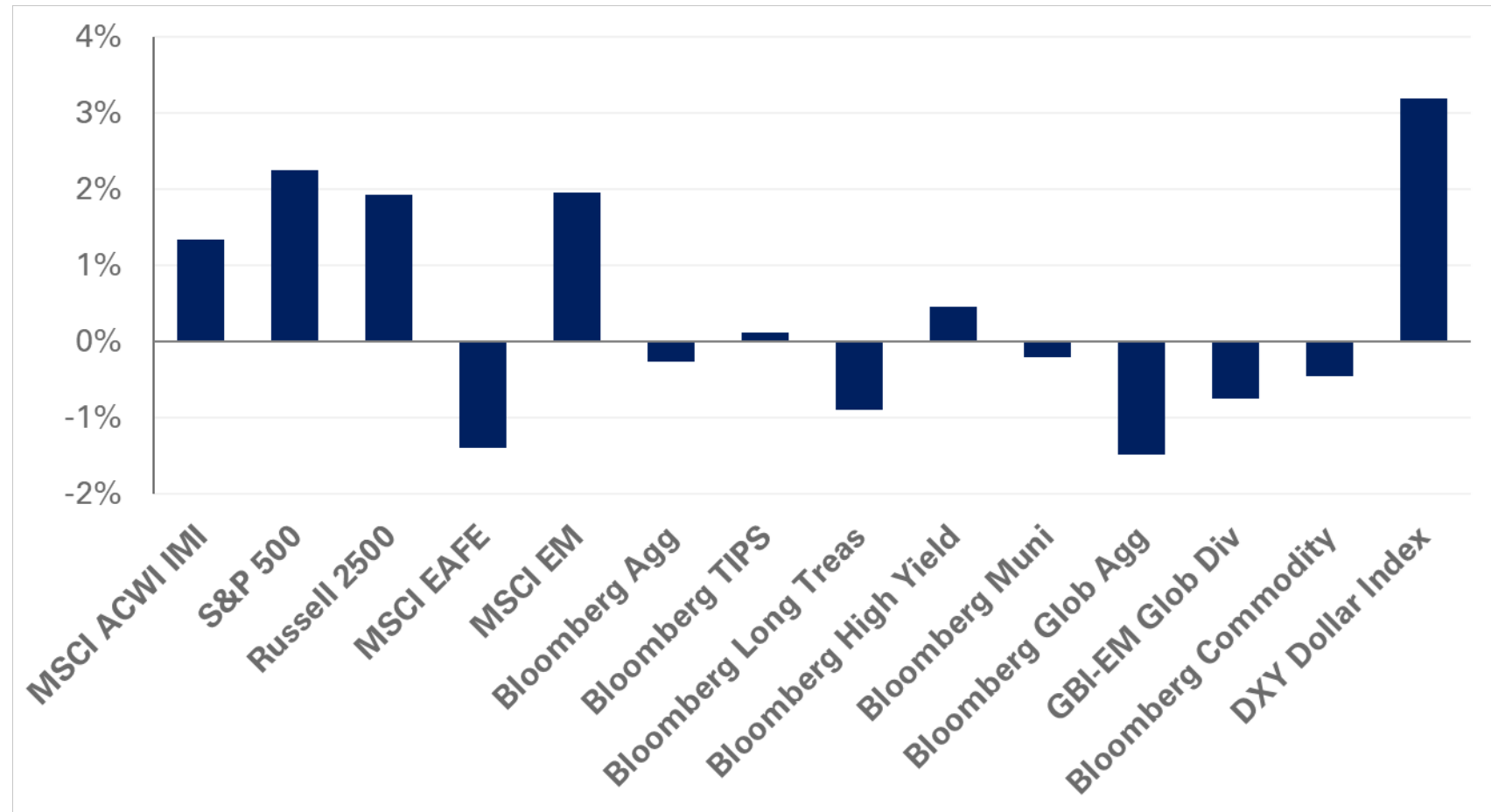
With equity markets posting strong returns, look to rebalance to maintain exposures in line with strategic policy targets



We recommend investors to ensure they have appropriate safe-haven fixed-income exposure and sufficient liquidity for cash flow needs

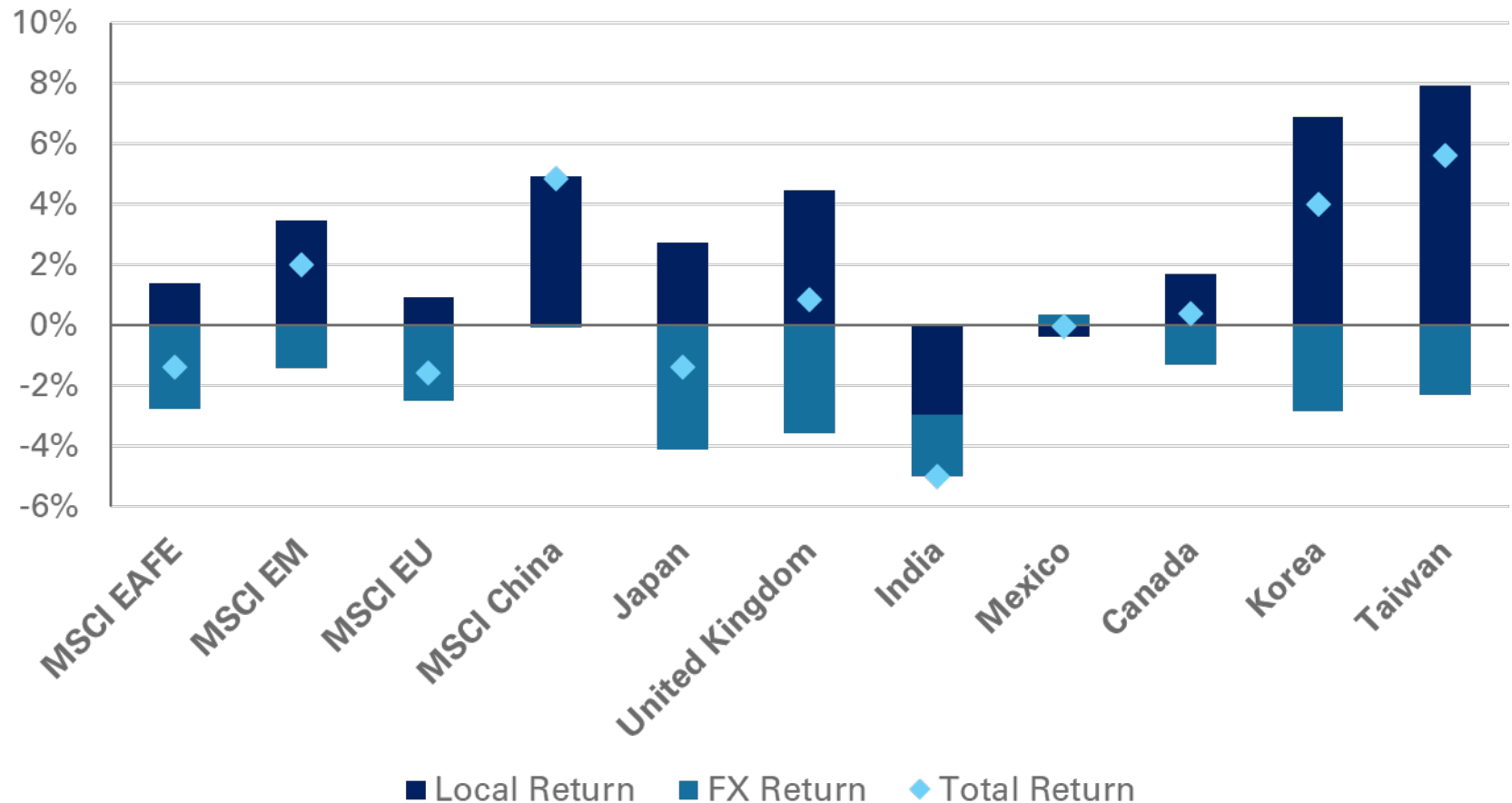
STRONG EARNINGS SEASON DRIVING US RETURNS

MONTHLY TOTAL RETURNS



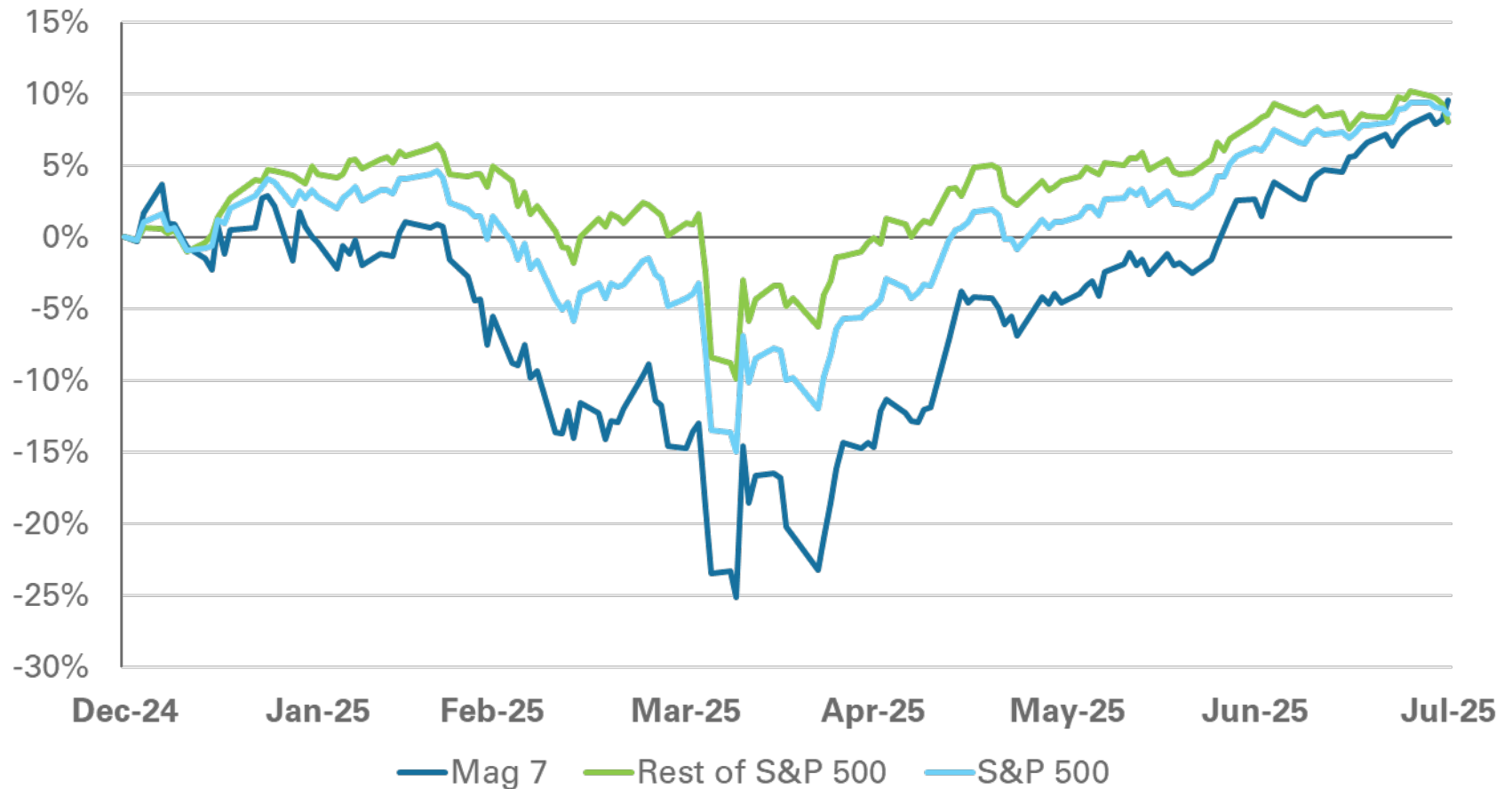
DOLLAR REBOUND WEIGHED ON NON-US EQUITY

MONTHLY TOTAL RETURNS



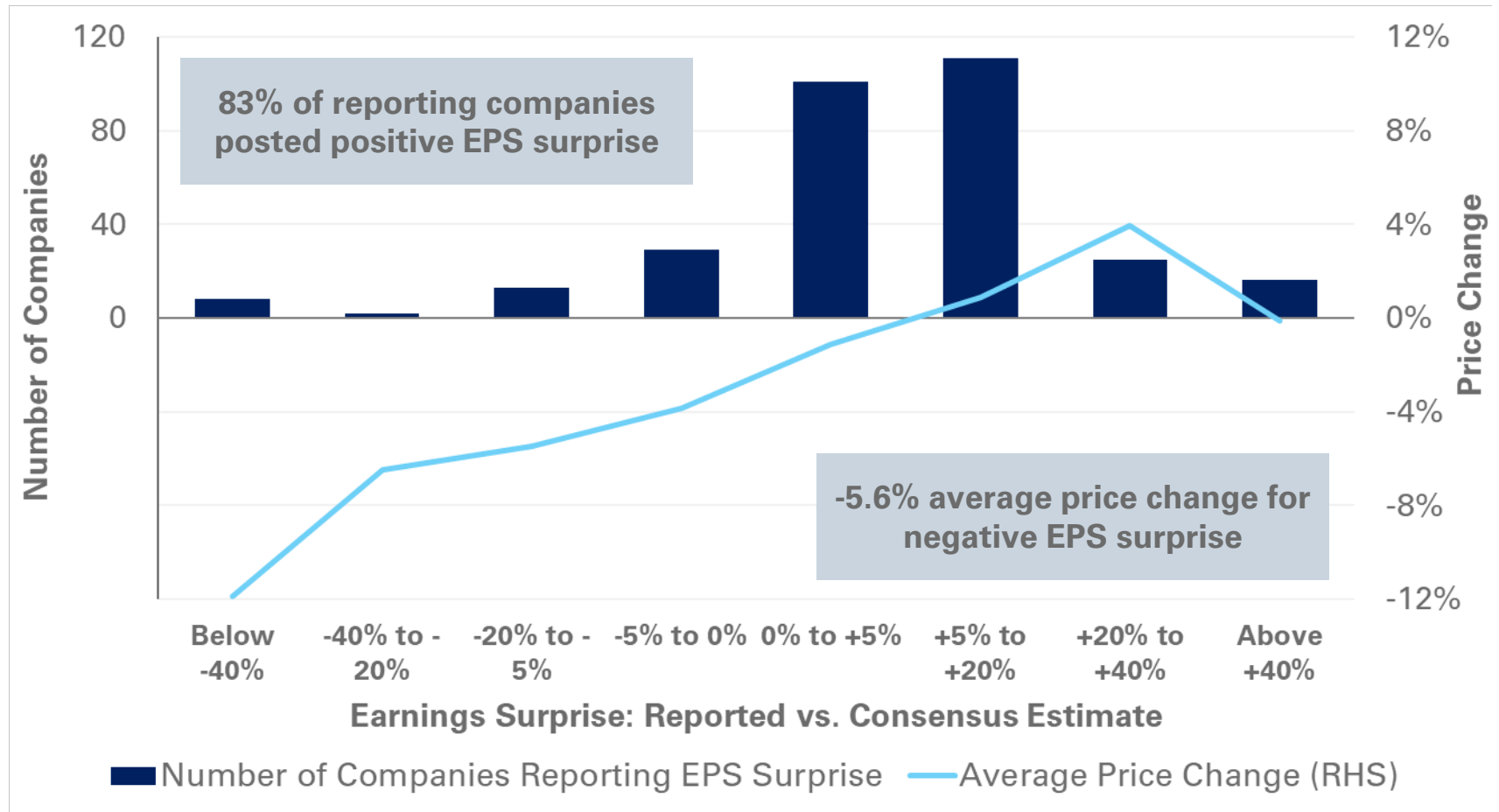
MAG 7: FROM LAGGARD TO LEADER

YEAR-TO-DATE TOTAL MARGINAL RETURN



EARNINGS LOSERS GETTING PUNISHED

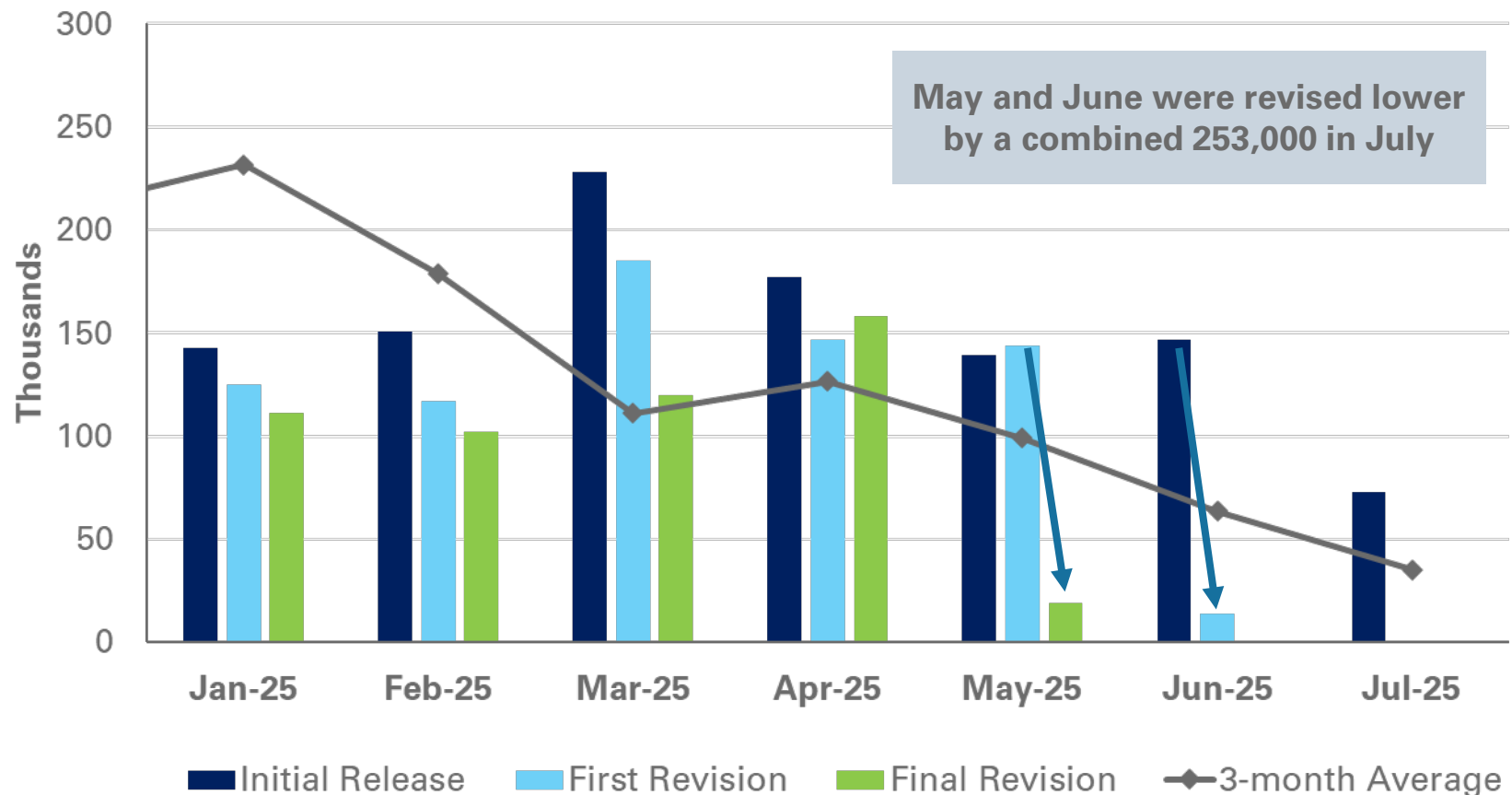
S&P 500 EARNINGS SURPRISE VERSUS PRICE CHANGE



Note: Q2 2025 reported earnings versus consensus estimate as of 7/31/2025. Price change is from 2 days prior to 2 days after respective release date.
Sources: FactSet, NEPC

RECENT LABOR MARKET NOT AS ADVERTISED

NONFARM PAYROLLS: MONTHLY JOBS ADDED

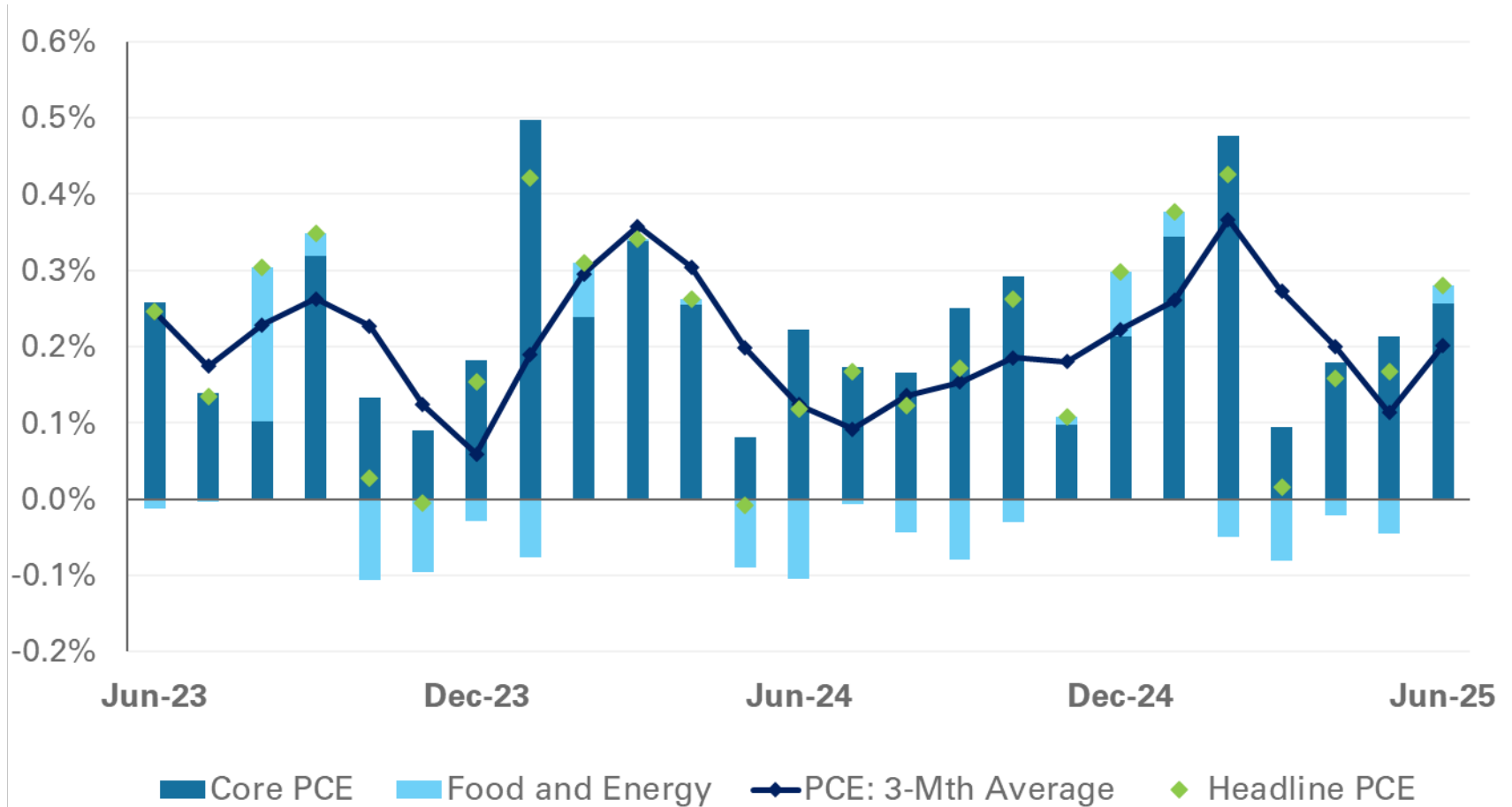


Notes: 3-month average reflects most recently revised number
Sources: U.S. Bureau of Labor Statistics, FactSet



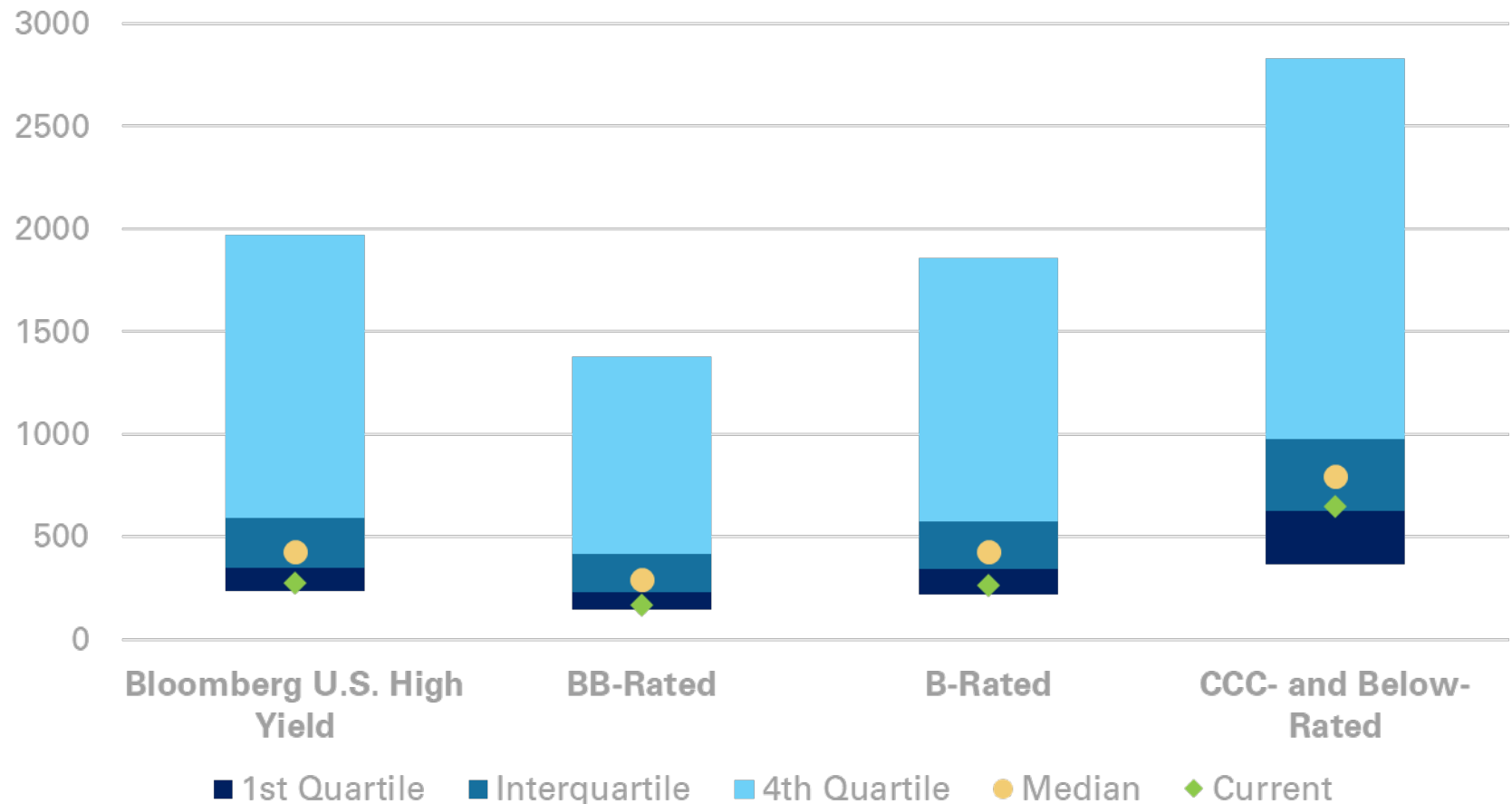
TARIFFS, SEASONALITY BUOYING INFLATION

PERSONAL CONSUMPTION EXPENDITURE INDEX



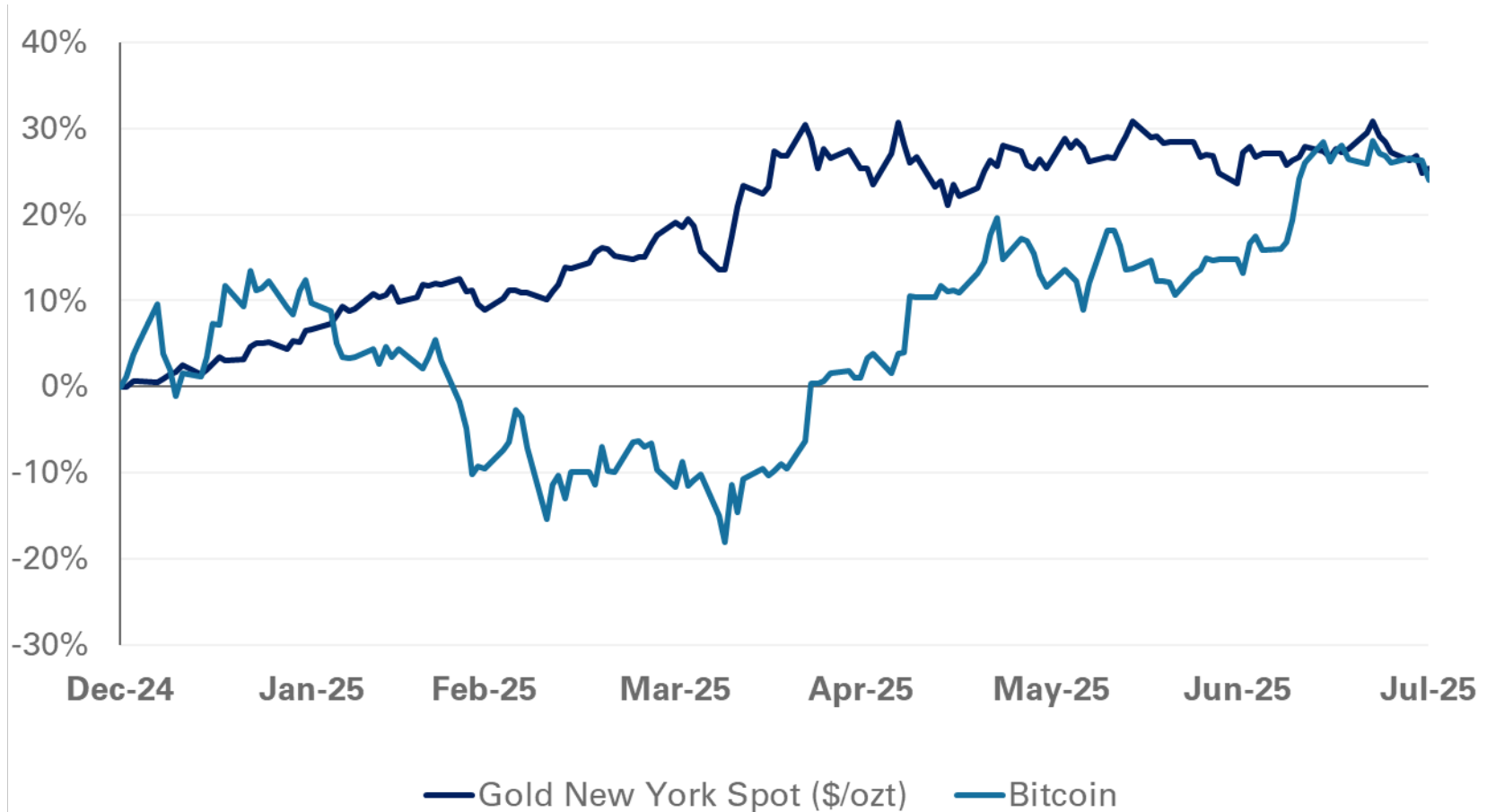
CURRENT SPREADS DON'T OFFER MUCH UPSIDE

BLOOMBERG U.S. HIGH YIELD OPTION-ADJUSTED SPREADS



GOLD AND BITCOIN NOW NECK AND NECK

YEAR-TO-DATE PERFORMANCE





JUNE 30, 2025 CAPITAL MARKET ASSUMPTIONS DETAIL



PUBLIC EQUITY ASSUMPTIONS

OVERVIEW

- **Recent equity performance has been strong across all regions, weighing on forward-looking return expectations**
 - U.S. equity return assumptions remain subdued relative to history given the extended valuation environment
- **Non-U.S. developed market equity return assumptions improved, reflecting a modest increase in earnings expectations for the region**
- **Emerging market forecasts declined meaningfully, reflecting the impact of significant valuation expansion among countries with a higher beta to U.S. markets**

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

Asset Class	6/30/25 10-Yr Return	12-Month Change
U.S. Large-Cap Equity	5.3%	+1.3%
U.S. Small/Mid-Cap Equity	5.7%	-0.5%
Non-U.S. Developed Equity	5.3%	+0.8%
Non-U.S. Developed Small-Cap Equity	6.0%	-0.7%
Emerging Market Equity	6.6%	-1.2%
Emerging Market Small-Cap Equity	6.6%	-0.5%
Hedge Fund - Equity	5.7%	+0.2%
Global Equity*	5.7%	+0.7%
Private Equity*	8.6%	-0.1%

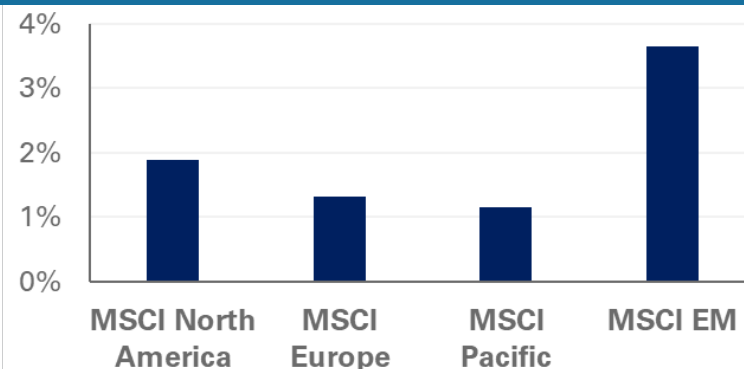
*Calculated as a blend of other asset classes. NEPC's capital market assumptions reflect proprietary forecasts for expected returns, volatility, and correlations. Return expectations may differ from an investor's realized returns after accounting for fees, taxes, or other aspects that can influence actual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

PUBLIC EQUITY

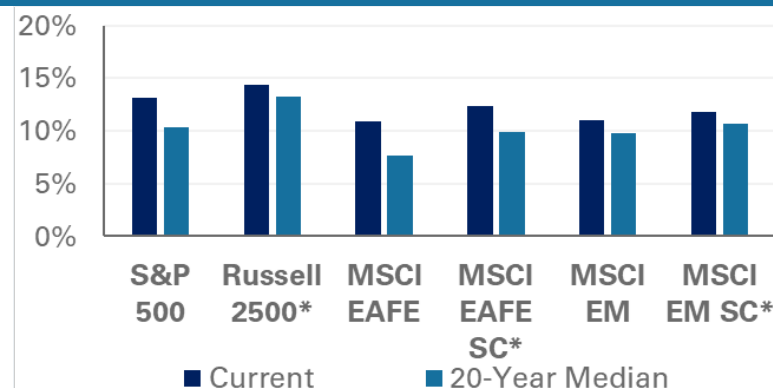
REAL EARNINGS GROWTH

- **U.S. equities benefit from higher sales growth forecasts, reflecting the impact of a resilient U.S. consumer**
 - U.S. large cap companies also 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 lower path towards long-term targets that consider the shift in index composition through time

Expected 5-Year Real Growth



Profit Margins Relative Median



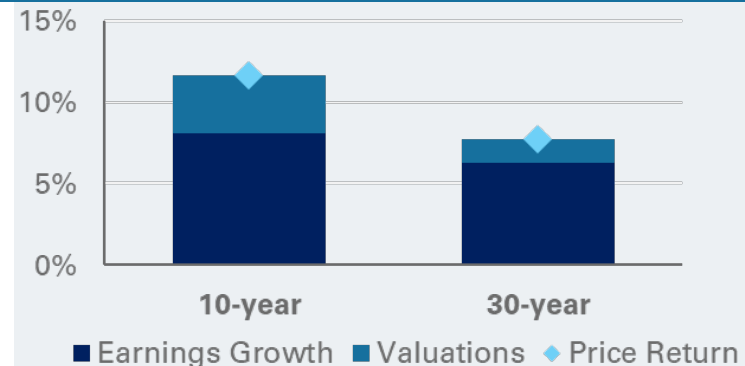
Note: *Small cap indices margins based on EBITDA margins
Sources: S&P, Russell, MSCI, FactSet, NEPC

PUBLIC EQUITY

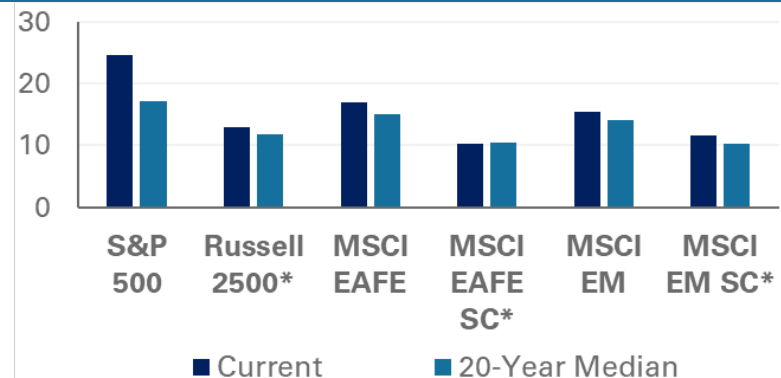
VALUATION

- **Valuations can heavily influence short- to medium-term returns, but earnings growth is the main driver of long-term equity returns**
- **Valuations across the equity spectrum 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 market valuations have expanded after an extended period of perceived U.S. exceptionalism**

Historical S&P 500 Price Return



Trailing P/E Relative Median

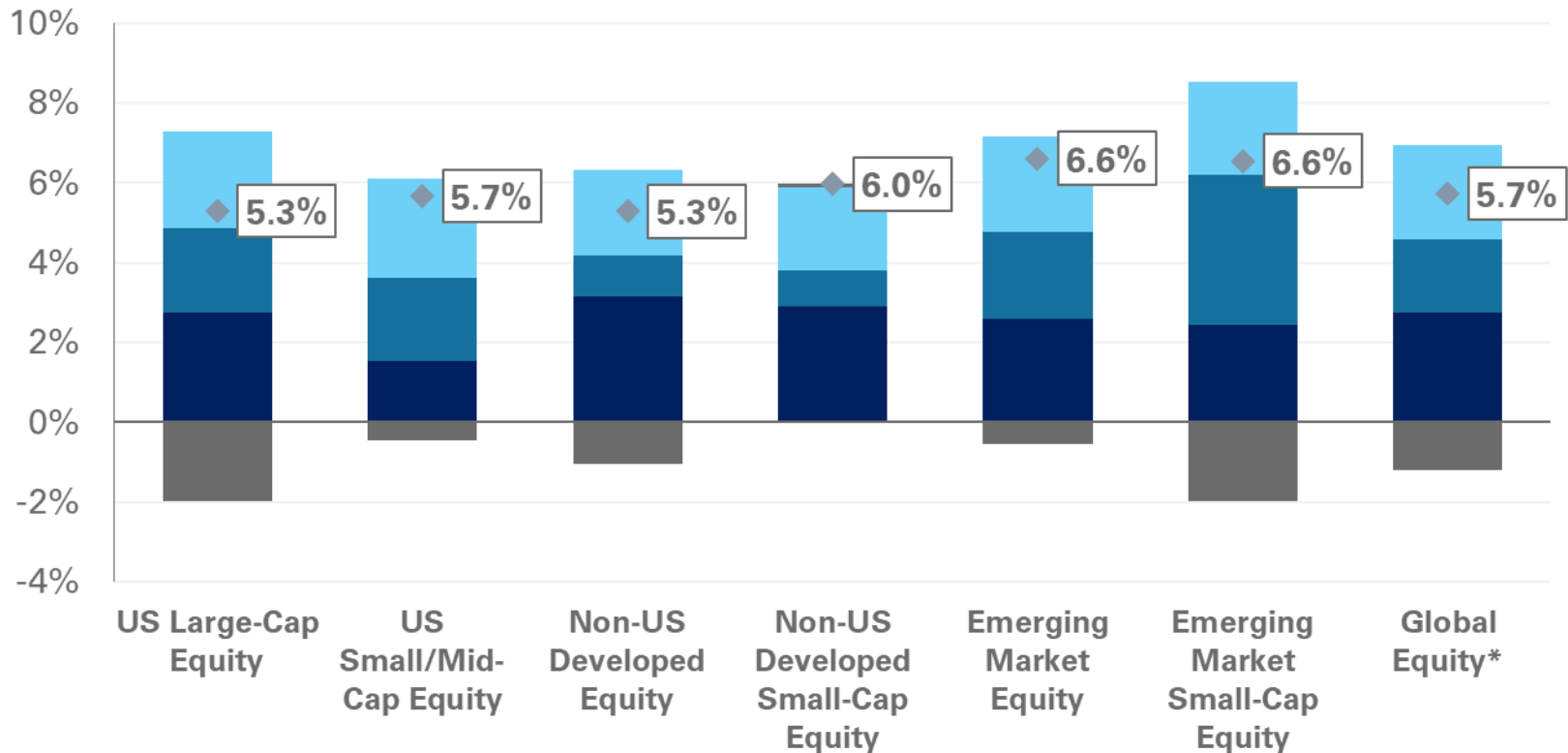


Note: *Small cap indices valuations based on EV/EBITDA multiples

Sources: S&P, Shiller, Russell, MSCI, FactSet, NEPC; Shiller PE long-term average beginning in 1924

PUBLIC EQUITY

BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



■ Shareholder Yield ■ Real Earnings Growth ■ Inflation ■ Valuation ◆ Total Return

*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

OVERVIEW

- **Expected returns across fixed income assets declined as markets react to ongoing uncertainty surrounding the path for economic growth and inflation**
- **Market interest rate expectations reflect an accelerated path for Fed easing – diverging from more hawkish short-term rate expectations expressed in the Fed’s dot plot**
- **NEPC’s internal interest rate forecast has remained consistent relative to changes in Fed expectations and market pricing**
- **Safe-haven fixed income exposure is a critical liquidity source for the portfolio and offers downside protection in periods of market stress**
 - Sizing of the safe-haven exposure is a strategic exercise and reflects investor return objectives, risk-tolerance, and private market pacing plan needs
- **High-quality fixed income is an asset class group designed to support lower volatility portfolios and larger strategic targets to fixed income**

FIXED INCOME ASSUMPTIONS

BUILDING BLOCKS

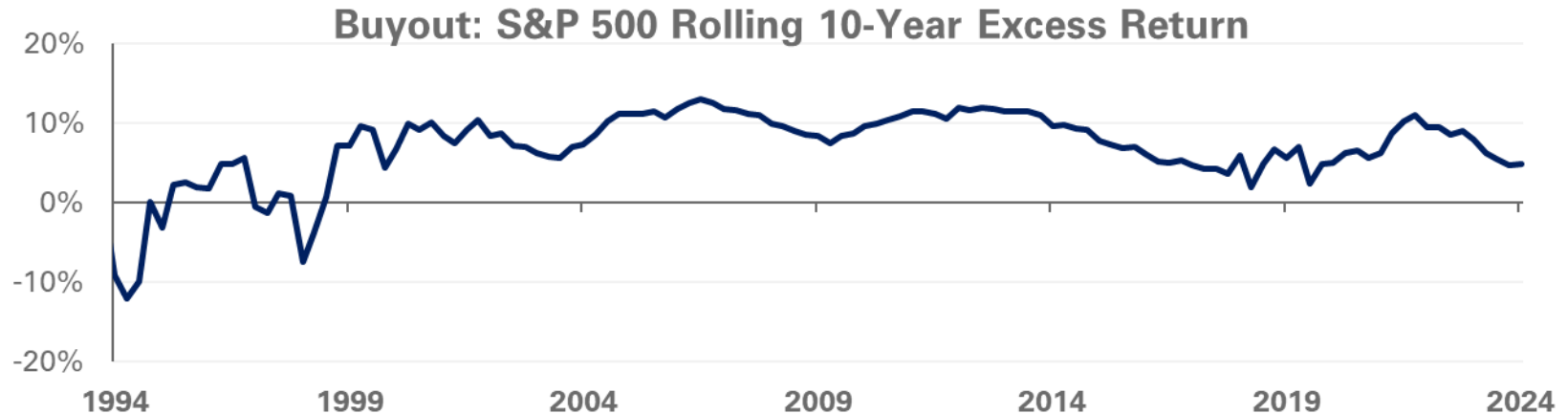
Illiquidity Premium	The return expected for assets with illiquidity risk
Government Rates Price Change	Change due to shifts in current yields relative to forecasted rates
Credit Deterioration	The average loss for credit assets due to defaults and recovery rates
Spread Price Change	Valuation change due 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	6/30/25 10-Yr Return	12-Month Change
U.S. TIPS	4.6%	-0.2%
U.S. Treasury Bond	4.4%	-0.2%
U.S. Corporate Bond	5.5%	-0.2%
U.S. MBS	4.7%	-0.1%
U.S. High Yield Corporate	6.1%	-0.2%
U.S. Leveraged Loan	7.0%	-0.4%
EMD External Debt*	6.6%	-1.1%
EMD Local Currency Debt	6.2%	-0.7%
Non-U.S. Govt. Bond	2.7%	-
U.S. Muni Bond (1-10 Year)	3.7%	+0.3%
U.S. High Yield Muni Bond	5.0%	+0.8%
Hedge Fund – Credit	6.6%	-0.1%
U.S. Aggregate Bond*	4.8%	-0.2%
Private Debt*	8.3%	-

*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

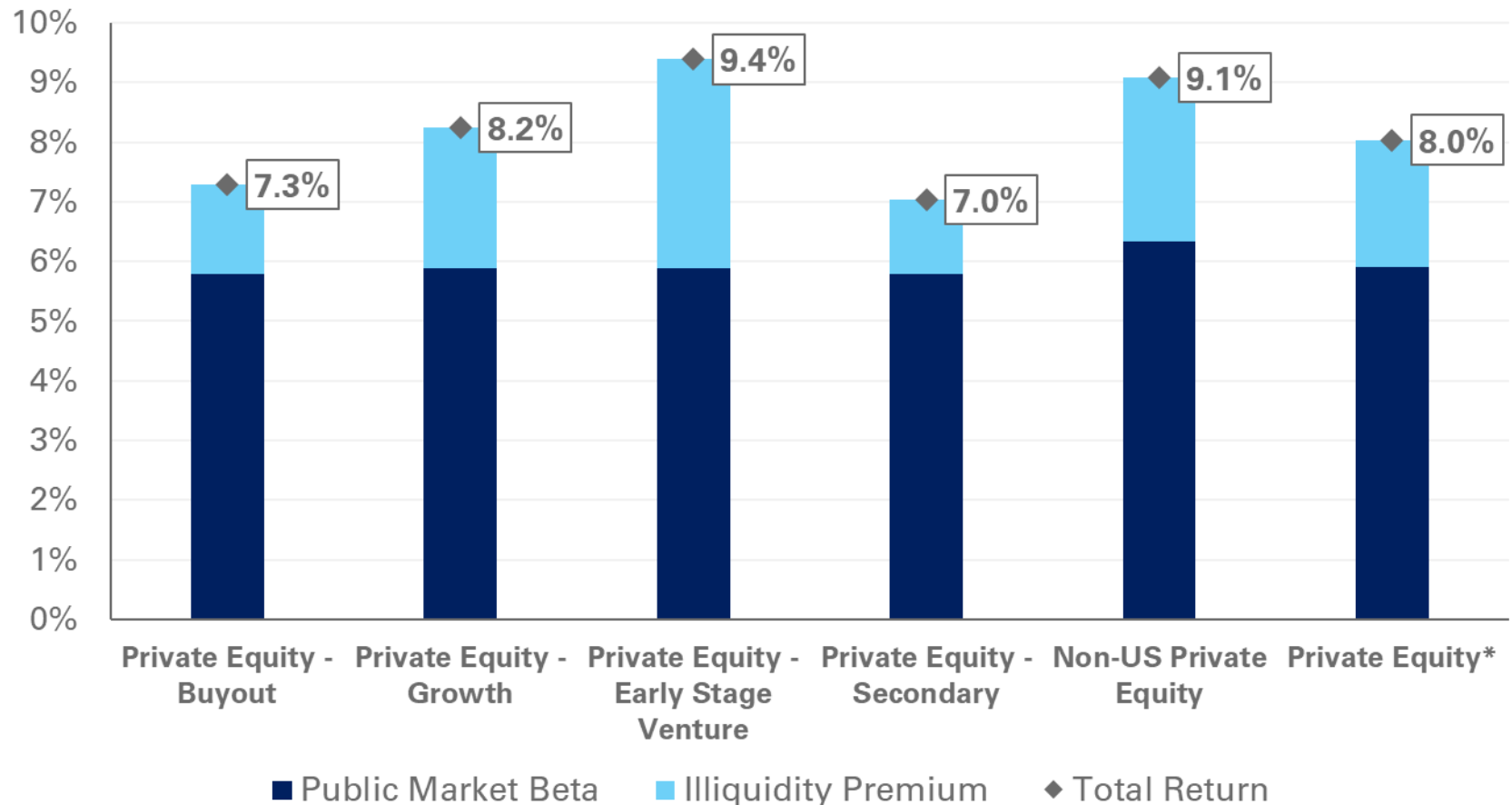
METHODOLOGY



- **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

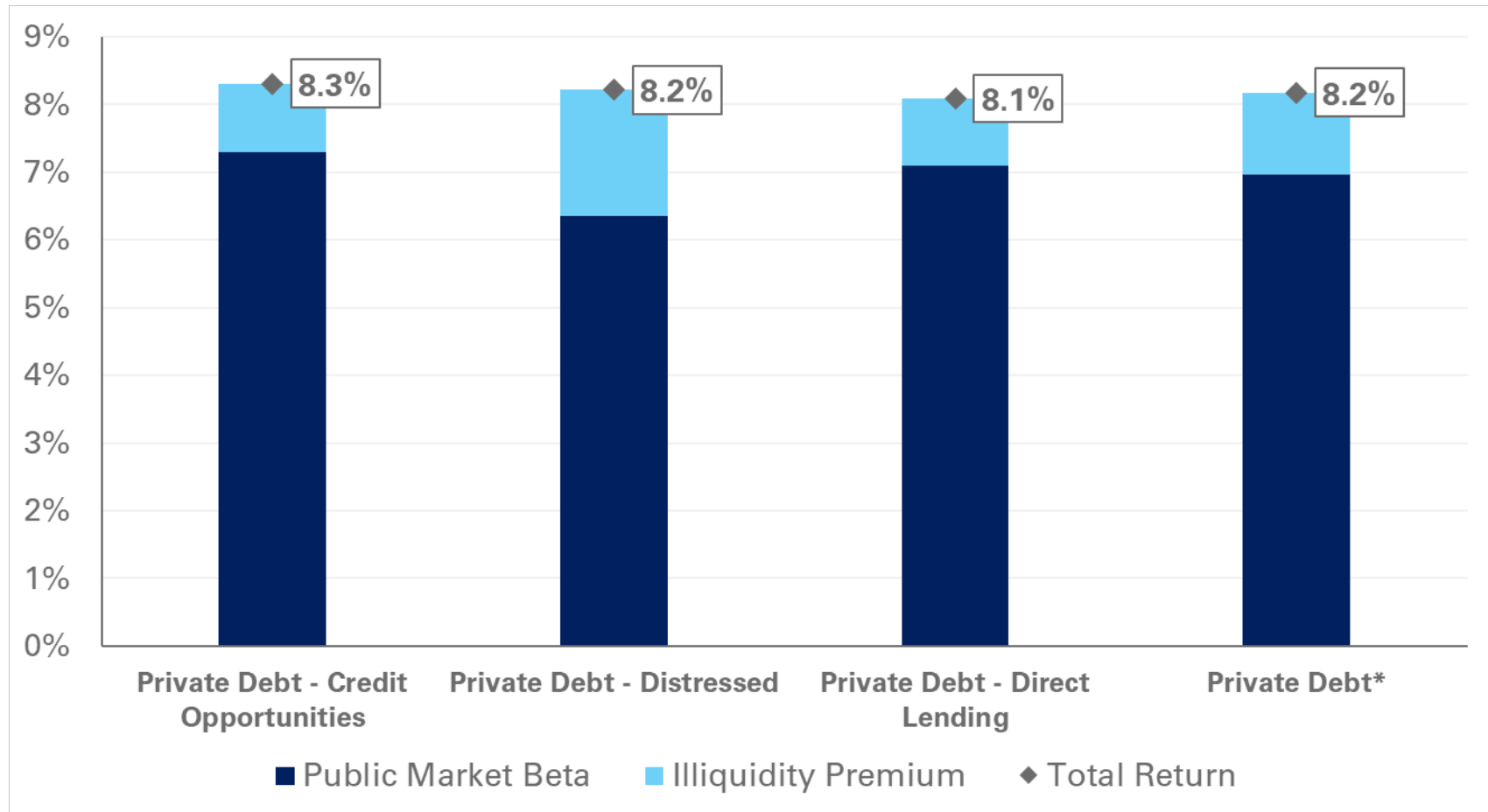
BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



*Private Equity is a derived composite of 34% U.S. Buyout, 34% U.S. Growth, 8.5% U.S. Secondary, 8.5% U.S. Venture, 15% Non-U.S. PE. 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 DEBT

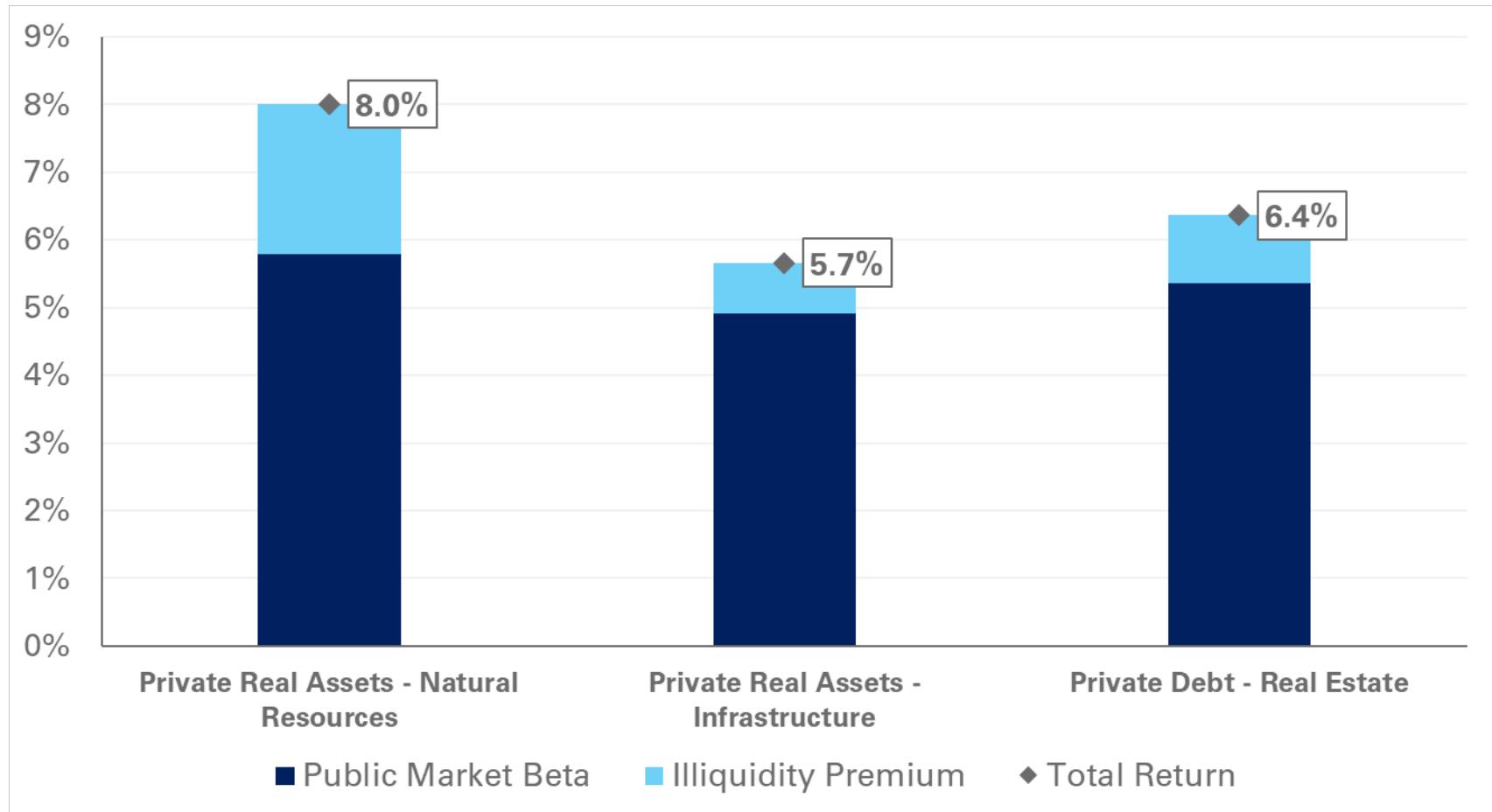
BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



*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

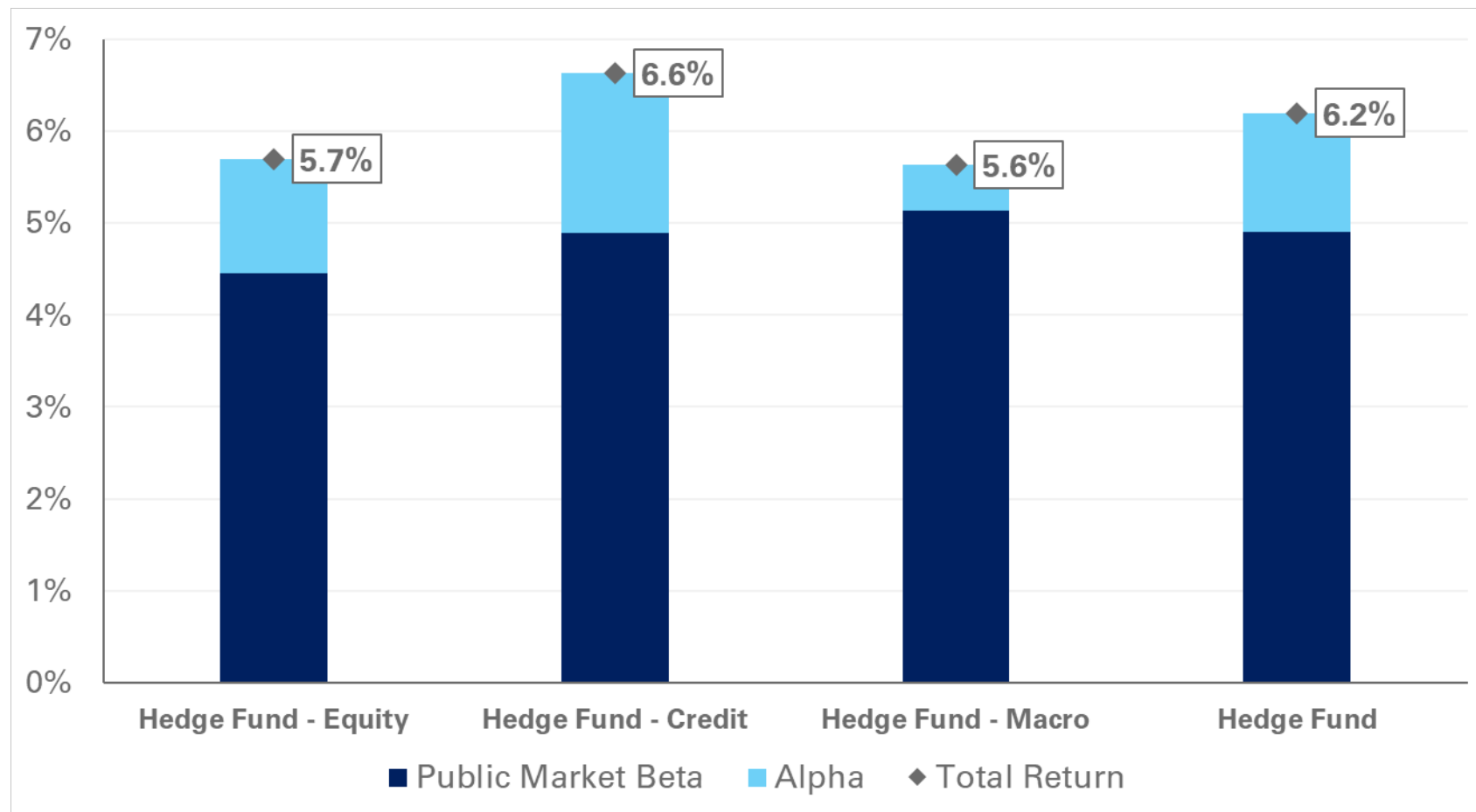
BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



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

HEDGE FUND

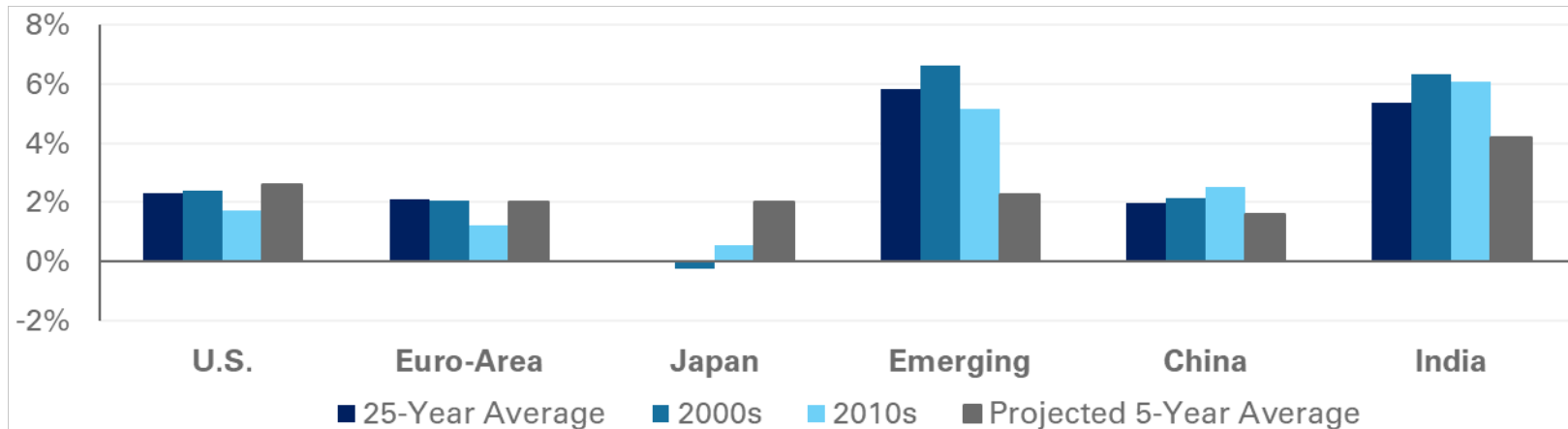
BUILDING BLOCKS: 10-YEAR EXPECTED RETURN



*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

GLOBAL INFLATION

HISTORICAL INFLATION



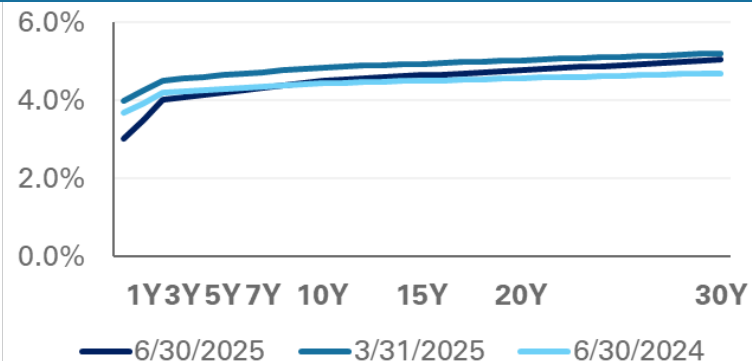
- **Non-U.S. forecasts are guided by IMF forecasts, local consumer and producer price indices, and global interest rate curves**
- **Near-term inflation levels for developed markets are projected to be higher relative to history**
 - Long-term inflation assumptions reflect NEPC's path and central bank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

GLOBAL INTEREST RATES

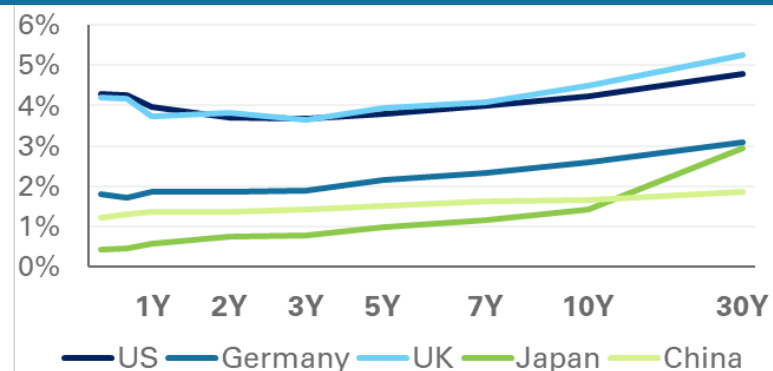
EXPECTATIONS

- **NEPC's outlook on U.S. interest rates has remained consistent over the past few years, generally above market expectations**
- **As interest rate expectations shift lower, the return outlook for base interest rates gradually declines**
- **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

NEPC 10-Year Forward U.S. Treasury Curve



Global Yield Curves



10-YEAR RETURN FORECASTS

EQUITY

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
U.S. Large-Cap Equity	5.3%	4.0%	+1.3%
U.S. Small/Mid-Cap Equity	5.7%	6.2%	-0.5%
Non-U.S. Developed Equity	5.3%	4.5%	+0.8%
Non-U.S. Developed Equity (USD Hedge)	5.5%	4.7%	+0.8%
Non-U.S. Developed Small-Cap Equity	6.0%	6.7%	-0.7%
Emerging Market Equity	6.6%	7.8%	-1.2%
Emerging Market Small-Cap Equity	6.6%	7.1%	-0.5%
Hedge Fund - Equity	5.7%	5.5%	+0.2%
Private Equity - Buyout	7.3%	7.2%	+0.1%
Private Equity - Growth	8.2%	8.5%	-0.3%
Private Equity - Early Stage Venture	9.4%	9.7%	-0.3%
Private Equity - Secondary	7.0%	6.7%	+0.3%
Non-U.S. Private Equity	9.1%	9.7%	-0.6%
China Equity	7.0%	9.8%	-2.8%
Global Equity*	5.7%	5.0%	+0.7%
Private Equity*	8.6%	8.7%	-0.1%

*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

10-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
Cash	3.8%	4.2%	-0.4%
US TIPS	4.6%	4.8%	-0.2%
US Treasury Bond	4.4%	4.6%	-0.2%
US Corporate Bond	5.5%	5.7%	-0.2%
US Corporate Bond - AAA	4.9%	4.9%	-
US Corporate Bond - AA	5.0%	5.1%	-0.1%
US Corporate Bond - A	5.3%	5.5%	-0.2%
US Corporate Bond - BBB	5.8%	6.0%	-0.2%
US Mortgage-Backed Securities	4.7%	4.8%	-0.1%
US Securitized Bond	5.2%	5.4%	-0.2%
US Collateralized Loan Obligation	5.4%	5.7%	-0.3%
US Municipal Bond	4.3%	3.8%	+0.5%
US Municipal Bond (1-10 Year)	3.7%	3.4%	+0.3%
US Taxable Municipal Bond	5.6%	5.5%	+0.1%

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



10-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
Non-US Government Bond	2.7%	2.7%	-
Non-US Government Bond (USD Hedge)	2.9%	3.0%	-0.1%
Non-US Inflation-Linked Bond (USD Hedge)	3.9%	3.7%	+0.2%
US Short-Term TIPS (1-3 Year)	4.4%	4.8%	-0.4%
US Short-Term Treasury Bond (1-3 Year)	4.3%	4.7%	-0.4%
US Short-Term Corporate Bond (1-3 Year)	5.2%	5.6%	-0.4%
US Intermediate-Term TIPS (3-10 Year)	4.5%	4.8%	-0.3%
US Intermediate-Term Treasury Bond (3-10 Year)	4.3%	4.6%	-0.3%
US Intermediate-Term Corporate Bond (3-10 Year)	5.7%	6.0%	-0.3%
US Long-Term TIPS (10-30 Year)	5.2%	4.9%	+0.3%
US Long-Term Treasury Bond (10-30 Year)	4.7%	4.3%	+0.4%
US Long-Term Corporate Bond (10-30 Year)	5.4%	5.4%	-
20+ Year US Treasury STRIPS	4.5%	4.2%	+0.3%
10 Year US Treasury Bond	4.5%	4.7%	-0.2%
10 Year Non-US Government Bond (USD Hedge)	2.7%	2.6%	+0.1%
US Aggregate Bond*	4.8%	5.0%	-0.2%

*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

10-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
US High Yield Corporate Bond	6.1%	6.3%	-0.2%
US Corporate Bond - BB	6.6%	6.9%	-0.3%
US Corporate Bond - B	6.3%	6.4%	-0.1%
US Corporate Bond - CCC/Below	0.0%	0.8%	-0.8%
US Short-Term High Yield Corporate Bond (1-3 Year)	5.6%	5.8%	-0.2%
US Leveraged Loan	7.0%	7.4%	-0.4%
Emerging Market Investment Grade External Debt	5.5%	5.4%	+0.1%
Emerging Market High Yield External Debt	7.4%	9.7%	-2.3%
Emerging Market Local Currency Debt	6.2%	6.9%	-0.7%
US High Yield Securitized Bond	8.8%	9.3%	-0.5%
US High Yield Collateralized Loan Obligation	7.6%	8.0%	-0.4%
US High Yield Municipal Bond	5.0%	4.2%	+0.8%
Hedge Fund - Credit	6.6%	6.7%	-0.1%
Private Debt - Credit Opportunities	8.3%	7.7%	+0.6%
Private Debt - Distressed	8.2%	8.5%	-0.3%
Private Debt - Direct Lending	8.1%	8.3%	-0.2%
Private Debt*	8.3%	8.3%	-

*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

10-YEAR RETURN FORECASTS

REAL ASSETS

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
Commodity Futures	4.8%	4.4%	+0.4%
Midstream Energy	5.4%	5.0%	+0.4%
REIT	5.5%	6.3%	-0.8%
Global Infrastructure Equity	4.7%	6.2%	-1.5%
Global Natural Resources Equity	6.0%	6.4%	-0.4%
Gold	4.0%	5.0%	-1.0%
Real Estate - Core	5.4%	6.0%	-0.6%
Real Estate – Value-Add	6.5%	7.2%	-0.7%
Real Estate - Opportunistic	7.6%	8.3%	-0.7%
Private Debt - Real Estate	6.4%	6.6%	-0.2%
Private Real Assets - Natural Resources	8.0%	8.1%	-0.1%
Private Real Assets - Infrastructure	5.7%	6.6%	-0.9%

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

30-YEAR RETURN FORECASTS

EQUITY

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
U.S. Large-Cap Equity	7.0%	6.3%	+0.7%
U.S. Small/Mid-Cap Equity	7.2%	7.5%	-0.3%
Non-U.S. Developed Equity	6.8%	6.1%	+0.7%
Non-U.S. Developed Equity (USD Hedge)	7.1%	6.4%	+0.7%
Non-U.S. Developed Small-Cap Equity	7.6%	7.9%	-0.3%
Emerging Market Equity	8.6%	9.0%	-0.4%
Emerging Market Small-Cap Equity	8.3%	8.5%	-0.2%
Hedge Fund - Equity	6.2%	6.0%	+0.2%
Private Equity - Buyout	8.7%	8.7%	-
Private Equity - Growth	9.5%	9.7%	-0.2%
Private Equity - Early Stage Venture	10.4%	10.5%	-0.1%
Private Equity - Secondary	8.2%	8.2%	-
Non-U.S. Private Equity	10.4%	10.6%	-0.2%
China Equity	8.5%	9.5%	-1.0%
Global Equity*	7.4%	7.0%	+0.4%
Private Equity*	9.9%	10.0%	-0.1%

*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

30-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
Cash	3.5%	3.5%	-
US TIPS	5.0%	4.8%	+0.2%
US Treasury Bond	4.8%	4.6%	+0.2%
US Corporate Bond	6.3%	6.1%	+0.2%
US Corporate Bond - AAA	5.7%	5.4%	+0.3%
US Corporate Bond - AA	5.6%	5.4%	+0.2%
US Corporate Bond - A	6.0%	5.8%	+0.2%
US Corporate Bond - BBB	6.6%	6.4%	+0.2%
US Mortgage-Backed Securities	5.0%	4.8%	+0.2%
US Securitized Bond	5.6%	5.5%	+0.1%
US Collateralized Loan Obligation	5.0%	5.1%	-0.1%
US Municipal Bond	4.3%	4.0%	+0.3%
US Municipal Bond (1-10 Year)	4.0%	3.7%	+0.3%
US Taxable Municipal Bond	6.4%	6.2%	+0.2%

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



30-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
Non-US Government Bond	3.3%	3.2%	+0.1%
Non-US Government Bond (USD Hedge)	3.6%	3.4%	+0.2%
Non-US Inflation-Linked Bond (USD Hedge)	4.0%	3.7%	+0.3%
US Short-Term TIPS (1-3 Year)	4.5%	4.5%	-
US Short-Term Treasury Bond (1-3 Year)	4.4%	4.4%	-
US Short-Term Corporate Bond (1-3 Year)	5.4%	5.4%	-
US Intermediate-Term TIPS (3-10 Year)	4.9%	4.8%	+0.1%
US Intermediate-Term Treasury Bond (3-10 Year)	4.7%	4.6%	+0.1%
US Intermediate-Term Corporate Bond (3-10 Year)	6.4%	6.3%	+0.1%
US Long-Term TIPS (10-30 Year)	5.5%	5.1%	+0.4%
US Long-Term Treasury Bond (10-30 Year)	5.2%	4.7%	+0.5%
US Long-Term Corporate Bond (10-30 Year)	6.7%	6.3%	+0.4%
20+ Year US Treasury STRIPS	5.4%	4.7%	+0.7%
10 Year US Treasury Bond	5.4%	5.1%	+0.3%
10 Year Non-US Government Bond (USD Hedge)	3.6%	3.3%	+0.3%
US Aggregate Bond*	5.3%	5.1%	+0.2%

*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

30-YEAR RETURN FORECASTS

FIXED INCOME

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
US High Yield Corporate Bond	7.5%	7.3%	+0.2%
US Corporate Bond - BB	7.7%	7.6%	+0.1%
US Corporate Bond - B	7.3%	7.1%	+0.2%
US Corporate Bond - CCC/Below	1.4%	1.5%	-0.1%
US Short-Term High Yield Corporate Bond (1-3 Year)	5.9%	5.9%	-
US Leveraged Loan	6.6%	6.7%	-0.1%
Emerging Market Investment Grade External Debt	6.4%	5.4%	+1.0%
Emerging Market High Yield External Debt	8.2%	9.7%	-1.5%
Emerging Market Local Currency Debt	5.5%	5.9%	-0.4%
US High Yield Securitized Bond	8.8%	8.6%	+0.2%
US High Yield Collateralized Loan Obligation	7.4%	7.4%	-
US High Yield Municipal Bond	5.4%	4.9%	+0.5%
Hedge Fund - Credit	7.2%	7.1%	+0.1%
Private Debt - Credit Opportunities	8.9%	8.4%	+0.5%
Private Debt - Distressed	9.4%	9.4%	-
Private Debt - Direct Lending	8.9%	8.9%	-
Private Debt*	9.1%	9.0%	+0.1%

*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

30-YEAR RETURN FORECASTS

REAL ASSETS

Geometric Expected Return			
Asset Class	06/30/2025	06/30/2024	Delta
Commodity Futures	4.3%	3.8%	+0.5%
Midstream Energy	6.1%	6.4%	-0.3%
REIT	7.1%	7.4%	-0.3%
Global Infrastructure Equity	6.3%	6.8%	-0.5%
Global Natural Resources Equity	7.1%	7.2%	-0.1%
Gold	4.8%	4.9%	-0.1%
Real Estate - Core	6.2%	6.5%	-0.3%
Real Estate – Value-Add	7.5%	7.8%	-0.3%
Real Estate - Opportunistic	8.4%	8.7%	-0.3%
Private Debt - Real Estate	6.8%	6.8%	-
Private Real Assets - Natural Resources	8.9%	8.9%	-
Private Real Assets - Infrastructure	6.8%	7.0%	-0.2%

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

VOLATILITY FORECASTS

EQUITY

Volatility			
Asset Class	06/30/2025	06/30/2024	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%

*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

VOLATILITY FORECASTS

FIXED INCOME

Volatility			
Asset Class	06/30/2025	06/30/2024	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%	-

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

VOLATILITY FORECASTS

FIXED INCOME

Volatility			
Asset Class	06/30/2025	06/30/2024	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%	-

*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

VOLATILITY FORECASTS

FIXED INCOME

Volatility			
Asset Class	06/30/2025	06/30/2024	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%	-

*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

VOLATILITY FORECASTS

REAL ASSETS

Volatility			
Asset Class	06/30/2025	06/30/2024	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%

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

INFORMATION DISCLAIMER

Past performance is no guarantee of future results.

The goal of this report is to provide a basis for monitoring financial markets. 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.

ASSET ALLOCATION

Overview and Recommendations for 2026

December 17, 2025

Edwin Denson
Executive Director/Chief Investment Officer

Todd Mattina
Head Economist & Asset and Risk Allocation CIO

In Consultation with NEPC and the Investment Committee

2026 RECOMMENDATIONS SUMMARY

Strategic Asset Allocation Targets and Ranges

2026 Core Trust Fund recommendation and expectations:

	<u>Policy Targets*</u>	<u>Ranges*</u>
Public Equity	36%	30% - 42%
Public Fixed Income	27%	21% - 33%
Inflation Sensitive Assets	19%	14% - 24%
Private Equity/Debt	20%	12% - 28%
Real Estate	8%	4% - 12%
Leverage	<u>-10%</u>	-2% [†] to -18%
Total (Including Leverage)	100%	
<i>10 Yr. Expected Return</i>	6.5%	
<i>30 Yr. Expected Return</i>	7.7%	
<i>Expected Standard Deviation</i>	12.2%	
<i>10 Yr. Expected Sharpe Ratio</i>	0.22	
<i>30 Yr. Expected Sharpe Ratio</i>	0.34	

Target Active Risk 120bps +/- 60bps

The Board of Trustees' external asset allocation consultant, NEPC, provided the following capital market assumptions used to develop the asset allocation recommendation and expectations:

<u>Asset Class</u>	<u>Long Term Expected Return</u>	<u>10 Year Expected Return</u>	<u>Standard Deviation</u>
Public Equity	7.4%	5.7%	18.1%
Public Fixed Income	6.2%	5.7%	6.3%
Inflation Sensitive Assets	5.0%	4.6%	6.0%
Private Equity/Debt	9.5%	8.2%	21.3%
Real Estate	6.2%	5.4%	14.7%

* Policy Targets and Ranges will vary from the above table. This is due to the Asset Allocation Corridor Treatment which requires that Private Equity/Debt and Real Estate asset class Policy Targets be derived from actual AUM, and then corresponding Policy Targets and Ranges for Public Equities and Public Fixed Income are adjusted. Mandatory rebalancing for Public Equities and Public Fixed Income as set forth in the Board of Trustees WRS Investment Policy is not triggered by the ranges in the above table, but by these adjusted ranges.

[†] SWIB Staff allowed to eliminate leverage (i.e., 0%).

- The recommended 2026 Policy Target for Public Equity (36%) is 2% lower than the 2024 target, reducing the volatility impact on the Core Trust Fund.
- The recommended 2026 Policy Targets for Public Fixed Income (27%) and Inflation Sensitive Assets (19%) remain unchanged.
- The recommended 2026 Policy Target for Private Equity/Debt (20%) remains unchanged as cash flows and commitments have tracked closely with SWIB's multi-year pacing model. The recommended Policy Target for Real Estate (8%) also remains unchanged.
- The recommended 2026 Policy Target for Policy Leverage (-10%) declines by 2% in absolute terms, reflecting a reduced risk-adjusted expected return from leverage primarily due to increased volatility in individual asset classes and a reduced diversification benefit from elevated stock-bond correlations in the most recent capital market assumptions.
- The Target Active Risk of 120 basis points \pm 60 basis points will be maintained for the Core Trust Fund in 2026.

The recommended 2026 Policy Targets may be implemented at any time after approval by the Board of Trustees as determined and approved by the ED/CIO, subject to market conditions and operational readiness.

2026 Variable Trust Fund recommendation and expectations:

	<u>Policy</u> <u>Targets</u>	<u>Ranges</u>
U.S. Equities	70.0%	65.0-75.0%
International Equities	30.0%	25.0-35.0%
	100.0%	
<i>10 Yr. Expected Return</i>	5.7%	
<i>30 Yr. Expected Return</i>	7.4%	
<i>Expected Standard Deviation</i>	17.2%	
<i>10 Yr. Expected Sharpe Ratio</i>	0.09	
<i>30 Yr. Expected Sharpe Ratio</i>	0.22	
Target Active Risk	0bps to 90bps	

- The recommended 2026 Policy Targets and Ranges are unchanged from 2025.
- Recommended Target Active Risk shifts to a range of 0 to 90 basis points compared to 60 basis points \pm 30 basis points last year, allowing for greater passive investment flexibility.

2026 ASSET ALLOCATION OVERVIEW

Since the late 1980s, SWIB has conducted an asset allocation exercise annually, leading to policy and funding recommendations at the beginning of each calendar year. In the late 1990s, the process was expanded to include several planning sessions with investment staff, senior staff, consultants, and Trustees. SWIB's process includes a full asset/liability modeling process, stress testing, and discussion sessions with the Board every other year (an "on-year"), opening the schedule to

consideration of other strategic issues or structural asset allocation adjustments on an annual basis.

SWIB launched the current “on-year” process for the 2026 asset allocation during the first quarter of 2025 by collaborating with the Employee Trust Fund’s (ETF) actuarial consultant, Gabriel, Roeder, Smith and Company (GRS), and NEPC to execute an Actuarial Overview and Stress Testing Scenarios for the Wisconsin Retirement System (WRS). The results were presented by GRS during the 2025 October Workshop attended by Trustees, staff, and guest experts. GRS presented updated results of the stress testing executed in their 2023 study. The result of the stress testing of the WRS was a recommendation to continue to target an allocation that provides for a target return with appropriate downside protection. The above recommended asset allocation Policy Targets for the Core Trust Fund are consistent with this prescription.

The recommended 2% reduction in the target allocation to Public Equity reflects an effort to achieve similar long-term portfolio returns in the Core Trust Fund with lower overall volatility. Compared to last year, this adjustment results in modestly higher expected returns at key horizons: the 10-year expected return increases slightly to 6.5% from 6.4%, and the 30-year expected return rises to 7.7% from 7.5%. By modestly reducing exposure to Public Equity, the portfolio maintains a long-term expected return that exceeds the actuarial assumed rate of 6.8% while lowering downside risks such as the potential for higher contribution rates or plan underfunding. This recommendation is not a blanket move toward de-risking the plan but rather a balanced approach that supports long-term financial stability and the ability to meet actuarial objectives over time, including an appropriate rate of dividend adjustment. In the current environment, a modestly lower target allocation to Public Equity provides an appropriate balance between return and risk consistent with the plan’s long-term goals.

The recommended reduction in Policy Leverage aligns with the lower target allocation to Public Equity and reflects application of the Policy Leverage framework. Under this framework, leverage is reduced when the expected return net of financing costs declines (i.e., a lower expected “return to leverage”) or when portfolio volatility is expected to rise (i.e., a lower expected risk-adjusted return to leverage). In recent years, increased volatility in individual asset classes and reduced diversification benefits due to increasing equity–bond correlations resulted in higher overall portfolio volatility.

The 10-year pacing plan for private market allocations was reviewed to reflect updated cash flow projections and return assumptions relative to last year. Expected allocations in Private Equity/Debt and Real Estate were modeled using revised estimates for future returns, commitments, capital contributions, and distributions from general partners. Overall, private investment cash flows and commitments have evolved largely as anticipated, and current allocations remain within their target ranges. Given this stability and the consistency of long-term expectations, no changes in the target allocations for Private Equity/Debt and Real Estate are recommended at this time.

Another theme of the review is a recommended shift towards greater passive investment flexibility in the Variable Trust Fund. Developed market equities represent a large share of the Variable Trust Fund’s target allocations, and adding value through active management in these markets has become increasingly challenging. In recent years, active risk in the Variable Trust Fund has trended towards the lower end of its target range. Expanding the active risk range to 0-90 basis points provides additional flexibility to increase passive exposure, allowing for a further reduction in active risk while maintaining alignment with the fund’s investment objectives.

The 2026 asset allocation recommendations at the asset and sub-asset class levels are summarized below:

1. **Public Equity:** While the overall target allocation is lower, sub-asset class targets remain aligned with the global investable market across regions and market capitalizations, as represented by the MSCI ACWI IMI. The portfolio continues to maintain a half-weight allocation to China large-cap equities.
2. **Public Fixed Income:** The total target allocation remains unchanged at 27%. Within Public Fixed Income, the recommended sub-asset allocations shift modestly, with Long Treasuries reallocated to U.S. Treasuries.
3. **Private Markets:** Target allocations to Private Equity/Debt (20%) and Real Estate (8%) remain unchanged, as private investment pacing and cash flows continue to track closely with prior expectations.
4. **Active Risk:** Active return remains an important contributor to the Core Trust Fund's total return and diversification. The recommended Target Active Risk is 120 basis points (± 60 bps). For the Variable Trust Fund, the range is widened to 0–90 basis points to support greater flexibility for passive investment management.

Strategic Sub-Asset Class Allocation Targets

2026 Core Trust Fund recommendation and expectations for information:

<u>Public Equity</u>	<u>Policy Target[‡]</u>
Global	28.5%
US Small Cap	2.7%
Int'l Small Cap	1.3%
EME Large Cap China	0.5%
EME Large Cap ex China	2.5%
EME Small Cap	<u>0.6%</u>
	36.0%
 <u>Public Fixed Income</u>	 <u>Policy Target</u>
US Treasuries	7.6%
US Investment Grade Credit	6.5%
MBS	2.2%
Long Treasuries	0.0%
High Yield Bonds	5.4%
Levered Loans	2.7%
EMD (External)	1.35%
EMD (Local Currency)	<u>1.35%</u>
	27.0%

[‡] Public Equity sub-asset class targets are informational and reflect the market capitalization of the MSCI ACWI Investable Market Index (IMI) with a 50% weight to the China large cap component as of 6/30/2025.

Board Meeting

Tab 5 – Committee Open Session Business

- A. Amendments to Investment Committee Charter
- B. Amendments to WRS Investment Committee Investment Guidelines
- C. Approved Open Session Investment Committee Meeting Minutes of August 26, September 23, and October 28, 2025
- D. Final Open Session Investment Committee Agenda for November 25, 2025, and Draft Open Session Agendas for December 18, 2025 and January 27, 2026

SWIB INVESTMENT COMMITTEE CHARTER

Board Approval Date: April 2005*Last revised ~~March 2024~~ [\[January 2026\]](#)*

The State of Wisconsin Investment Board (“SWIB”) Investment Committee, in conjunction with SWIB management and the Board of Trustees (the “Board” or “Trustees”), has developed the following policies and procedures relating to the prudent management of SWIB’s assets.

Committee Membership:

Executive Director/Chief Investment Officer (ED/CIO) (Chair)

Head of Asset & Risk Allocation

Head of Global Public Market Strategies

Head of Private Markets & Funds Alpha

[Head of Liquidity Management & Beta Implementation](#)

~~Two~~[One](#) individuals from the Investment Staff appointed by the Head of Asset & Risk Allocation with the approval of the ED/CIO

~~Two~~[One](#) individuals from the Investment Staff appointed by the Head of Global Public Market Strategies with the approval of the ED/CIO

~~Two~~[One](#) individuals from the Investment Staff appointed by the Head of Private Markets & Funds Alpha with the approval of the ED/CIO

[One individual from the Investment Staff appointed by the Head of Liquidity Management & Beta Implementation with the approval of the ED/CIO](#)

~~Two~~[Three](#) individuals from the Investment Staff appointed by the ED/CIO

Deputy Executive Director/Chief Operating Officer (non-voting)

Chief Legal Counsel (non-voting)

Head of Risk Management (non-voting)

The Chair of the Committee will appoint a Secretary of the Committee, who will serve in such role until the Chair appoints a replacement.

I. Committee Purpose and Charter

The Investment Committee (the “Committee”) is created to provide oversight of SWIB investments within the parameters established by the Board. Oversight will include an analysis of risk and return at the portfolio, asset class, and Core Trust Fund (“CTF”) and Variable Trust Fund (“VTF”) levels. Additionally, the Committee will provide input to the Board on asset allocation and benchmark recommendations.

In general, the Committee will focus on various policies and procedures of the agency to ensure they are consistent with industry standards and that they continue to keep pace with prudent investment theory and practice.

The Committee will review decisions made with regard to deviations from established benchmarks and allocation of investments among internal management and external management, including decisions with regard to passive, active and quantitative styles.

The Committee is responsible for (i) proposing to the Board changes to its Investment Policy; (ii) approving the SWIB Investment Committee Wisconsin Retirement System Investment Guidelines (“IC Guidelines”); (iii) ~~approving the general strategies~~reviewing annual scorecards for each investment division; and (iv) approving new investment instruments. All investment guidelines must be consistent with the investment authority provided in Wis. Stat. ch. 25. External investment guidelines are independent of, and are not limited by, the internal investment guidelines.

II. Duties and Responsibilities

- A. The Committee will suggest and recommend changes to the Board’s Investment Policy, as necessary.
- B. The Committee will review periodically and approve changes and additions to the IC Guidelines and will report any revisions to the Board.
- C. The Committee may examine internally and externally managed portfolios, individual investments, correlation among portfolios, and such other matters as the Committee deems appropriate for the purpose of understanding, measuring, controlling, monitoring and reporting SWIB investment exposure.
- D. The Committee will review and approve the use of new investment instruments prior to their implementation in internal SWIB portfolios.
- E. The Committee will oversee the review and implementation of any other new investment programs or initiatives in all SWIB portfolios and will coordinate any necessary related Trustee approvals.
- F. For purposes of fulfilling its risk management and oversight responsibilities, the Committee will act as liaison between Investment Staff and the Board on issues concerning investment risk management.
- G. The Committee will review ~~asset class~~active investment strategies at least quarterly to assess established risk limits and ~~evaluate strategy and will approve such~~review investment division scorecards annually. The Committee will monitor passive investment strategies monthly. The relevant Investment Staff shall be solely responsible for the specific investment decisions used to execute the approved strategies.

- H.** The Committee will review all compliance-related issues referred by the Enterprise Risk and Compliance Committee, including compliance with statutes, administrative rules, internal and external manager investment guidelines or as otherwise requested.
- I.** The Committee will review annual asset allocation plans and strategies and will review and approve any proposed changes to SWIB's strategic asset allocation and fund-level active risk objectives before they are presented to the Board for approval. The Committee will provide consultation and assistance to the Trustees, ED/CIO and Staff concerning total fund allocation changes or rebalancings, as needed.
- J.** The Committee may review and analyze other compliance-, risk- or derivative-related matters that are directed to the attention of the Committee by the Trustees, the Legislative Audit Bureau, the Internal Audit division, SWIB investment operations and fund accounting staff, the Risk Management division, the Compliance division or others and report as appropriate.
- K.** The Committee will receive quarterly reports regarding transitions and shall review with the applicable Investment Staff the costs and impacts associated with the transitions. It will also from time to time review reports on the trading effectiveness of the SWIB traders.
- L.** The Committee will review annual benchmark recommendations from the Board-appointed benchmark consultant and will provide its evaluation and recommendation to the Board.
- M.** The Committee will establish procedures for the methodology and frequency of review of (i) fund, asset class and portfolio performance, (ii) performance attribution, (iii) allocation within asset classes and (iv) risk levels. Procedures will be shared with the Board.
- N.** The Committee will conduct periodic round table discussions of the economic and investment environment.

III. General Committee Procedures

- A.** A majority of the voting members of the Committee constitute a quorum. A majority of a quorum is required to take any Committee action or approve any motion. If an approved motion lacked the support by the Committee Chair, the results of the vote shall be reported in a separate report to the Board at its next regularly scheduled meeting. Any member proposing or responsible for oversight of an investment being brought to the Committee for approval will be recused from the vote.
- B.** The Committee shall establish a regular monthly meeting schedule. Non-routine meetings may be called by any Committee member with sufficient lead time to

provide appropriate notice of the meeting under Wis. Stat. § 19.84(3).

- C. The Committee Charter shall be approved by the Board.
- D. Minutes of Committee meetings shall be kept and be provided to the Board. Regular Board meetings shall include an agenda item for discussion of Committee actions and proceedings.
- E. The Committee may establish standing subcommittees or temporary working groups to carry on assigned activities. Such subcommittees or working groups will report on their activities to the Committee as requested by the Committee.

IV. Derivative Investments

- A. Procedures for review, processing and monitoring of derivative investments will be established by the Committee.
- B. Specific investment policies regarding the use of derivative instruments are determined for each portfolio by the IC Guidelines. Such policies, as amended from time to time, are officially contained in the IC Guidelines or external manager contracts.
- C. The Chief Financial Officer or designee will review with the Committee any changes in the accounting treatment and required note disclosures for external reporting purposes used for derivative instruments, based on the applicable fund, the characteristics of the instrument and any underlying assets or liabilities.

♦

SWIB Investment Committee
**WISCONSIN RETIREMENT SYSTEM
INVESTMENT GUIDELINES**

Revised as of

~~April 22~~ September 23, 2025

Table of Contents

I.	INTRODUCTION.....	3
II.	LEVERAGE USE POLICY.....	3
III.	DERIVATIVES USE POLICY.....	6
IV.	REBALANCING PROCEDURES	8
V.	DRAWDOWN PROCEDURES	9
VI.	WRS GENERAL AND PORTFOLIO GUIDELINES – INTERNAL MANAGEMENT.....	10
A.	SMALL CAP PORTFOLIO	12
B.	ARA PASSIVE INTERNAL PORTFOLIOS.....	13
C.	ARA PASSIVE EXTERNAL MANAGERS	14
D.	INVESTMENT GRADE CREDIT PORTFOLIO	15
E.	EXPOSURE MANAGEMENT PORTFOLIOS	16 <u>17</u>
F.	MULTI-STRAT PORTFOLIO.....	17
G.	LONG TREASURY PORTFOLIO	17 <u>18</u>
H.	MORTGAGE-BACKED SECURITIES PORTFOLIO	18 <u>19</u>
I.	HIGH-YIELD BOND PORTFOLIO.....	20
J.	LEVERAGED LOAN PORTFOLIO.....	21 <u>22</u>
K.	TBA STRATEGY PORTFOLIO.....	23 <u>24</u>
L.	SHORT TERM CREDIT PORTFOLIO.....	24 <u>25</u>
M.	GENERAL GUIDELINES SPECIFIC FOR PRIVATE MARKETS AND FUNDS ALPHA PORTFOLIOS.....	26 <u>27</u>
N.	PRIVATE DEBT PORTFOLIO	27 <u>28</u>
O.	VENTURE CAPITAL PORTFOLIO	28 <u>29</u>
P.	PRIVATE EQUITY PORTFOLIO	30
Q.	REAL ESTATE EQUITY PORTFOLIO GUIDELINES	31
R.	CURRENT RETURN PORTFOLIO	32 <u>33</u>
S.	HEDGE FUND PORTFOLIO.....	33 <u>34</u>
T.	BETA ONE PORTFOLIO	35 <u>36</u>
U.	PRIVATE MARKETS AND FUNDS ALPHA OVERAGE PORTFOLIOS.....	37 <u>38</u>
VII.	EXTERNAL MANAGEMENT	37 <u>38</u>
	APPENDIX 1 - APPROVED EXCHANGES	38 <u>39</u>
	APPENDIX 2 - SOFT RISK PARAMETERS	39 <u>40</u>
	APPENDIX 3 – CTF AND VTF BENCHMARKS.....	44 <u>45</u>

I. INTRODUCTION

The SWIB Board of Trustees (the “Board”) has delegated to the investment staff of SWIB standing authority to manage the assets of the Core Retirement Trust Fund (the “Core Fund”) and the Variable Retirement Trust Fund (the “Variable Fund”), which together make up the Wisconsin Retirement System (the “WRS”), pursuant to the Board’s WRS Investment Policy and to section 25.15(2) of the Wisconsin Statutes and section IB 2.02 of the Wisconsin Administrative Code. The Investment Committee was created to provide oversight of WRS¹ investments within the parameters established by the Board and pursuant to the Investment Committee’s Charter approved by the Board. To properly and prudently execute its delegated authority and oversight functions, the Investment Committee has established guiding policies, guidelines and procedures, which are set forth in this document, the Investment Committee Investment Guidelines (these “IC Guidelines”). These IC Guidelines articulate the policies and guidelines that are employed in the day-to-day management of the WRS assets by SWIB’s staff. This document will be reviewed periodically and updated as necessary by the Investment Committee to reflect changes in investment strategies and to reflect best industry practices for prudent investors. Notwithstanding the delegation of authority by the Board to the Investment Committee for the establishment, approval, and amendment of the policies, guidelines and procedures included in these IC Guidelines, the Board reserves all rights to modify and amend these IC Guidelines at any time in its discretion. Any changes to these IC Guidelines will be periodically reported to the Board. In addition to these IC Guidelines, SWIB staff may also have to comply with Risk, Compliance Division or legal requirements, and review operational readiness with Operations staff prior to the trading of the instruments and securities authorized herein.

II. LEVERAGE USE POLICY

Introduction

Leverage is an exposure to an asset that is not fully collateralized by cash assets or an exposure to an asset acquired that has not been fully funded. Leverage by itself does not necessarily create additional market risk or variation in market returns. Leverage may result in greater diversification and lower market risk than an unlevered portfolio under normal market conditions. The funds managed by SWIB can have exposure to leverage through different structures, instruments and vehicles.

SWIB uses leverage in two primary ways. The first is to express the overall policy asset allocation, which includes leverage (“Policy Leverage”). Generally, Policy Leverage is implemented passively. The total amount of Policy Leverage is approved by the Board through the WRS asset allocation process. The Board-approved asset allocation targets for each asset class together with the approved Policy Leverage is called the “Policy Portfolio.” The second use of leverage is to fund the alpha pool (“Alpha Pool Leverage”), which overlays alpha-producing strategies on the overall Core Fund Policy Portfolio. Those alpha strategies are funded with

¹ The Investment Committee also has oversight of the State Investment Fund and other funds managed by SWIB as described in the Board’s SIF and Separately Managed Funds Investment Policy and Guidelines.

additional leverage but are not part of the Policy Portfolio. The total amount of Alpha Pool Leverage is limited by the Board-approved active risk target and range.

Certain internal active portfolios are also authorized to use portfolio-specific leverage. The Core Fund may provide limited unallocated cash (["Temporary Leverage"](#)) to such internal active portfolios, and to other portfolios, to fund short-term financing needs, and charge a market-based funding rate to the applicable portfolio. Active internal and external portfolios may also fund portfolio leverage by financing assets within the portfolio.

Use of leverage introduces distinct liquidity risk that can vary based on leverage sources and margin requirements. Often, leverage requires liquid assets to satisfy margin obligations. Liquidity risk is managed by monitoring the level of liquidity required in various market scenarios and ensuring that an adequate reserve of liquid assets is available to meet commitments in times of market stress. Having a variety of leverage sources diversifies the refinancing risk and mitigates cost under varied market scenarios.

Alpha Pool and Policy Leverage can be generated through several different mechanisms. These mechanisms may be utilized in different proportions given market conditions and asset allocations. Each of these mechanisms have unique counterparty dynamics and risks, all of which are addressed by SWIB's counterparty risk framework.

Derivative instruments. Leverage can be gained by replacing a physical instrument with a derivative instrument such as a futures contract, a swap contract, or a forward contract. Most of the proceeds generated from the sale of the physical instrument can then be used to finance further investment. The cost of the leverage is imbedded in the price of the derivative instrument. Use of derivative instruments provides the ability to source large scale leverage across many different asset classes in a standardized format. There is a risk of tracking error, or basis risk, between the physical instrument and the derivative instrument that could result in the returns of the two instruments diverging.

Securities Lending Cash Collateral. Through the course of securities lending, cash collateral may be received from borrowers. This cash may be used to finance leverage needs without creating basis risk. The available cash fluctuates day to day and is governed by the borrowing demand of and choice of collateral posted by market participants.

Repurchase Agreements (Repo). Repo is another way to gain leverage from physical instruments, like securities lending, without using derivative instruments. While securities lending relies on borrowing demand for the physical instrument, repo can generate leverage from physical instruments that do not have borrow demand, and also creates zero basis risk. The repo and the underlying asset management may be executed internally, externally or a mix of the two. An agency repo model can be used to facilitate operational scale, collateral efficiency, and market access by partnering with an external agent.

Secured Borrow Agreements. Physical instruments can be pledged as collateral in a secured borrow agreement to gain financing from a bank or other financial institution, as and when needed. This form of financing creates zero basis risk and may have

maturities ranging from three to six months. The stability of the available capital can vary based on the financing bank's or financial institution's balance sheet constraints.

Unsecured Borrowing. Unsecured borrowing, such as the issuance of commercial paper, is another way to gain leverage without encumbering assets or requiring collateral. This form of borrowing can diversify the cash providers purchasing the debt providing SWIB with access to new borrowing sources.

New mechanisms may be added from time to time and included herein.

Leverage Use Philosophy

Leverage is used where it can improve investment portfolio efficiency in terms of return for risk versus alternative choices that do not use leverage. Leverage will also be used to improve portfolio diversification and reduce portfolio concentration.

Leverage Monitoring

Detailed reporting is regularly (i.e., daily, monthly and quarterly) produced by SWIB to provide feedback regarding leverage exposures for review by portfolio managers, the head of Asset and Risk Allocation (ARA), the Risk Management Division, and the Executive Director/Chief Investment Officer (ED/CIO). Leverage use risk metrics are reported at least quarterly to the Investment Committee. Leverage use is also periodically reported by the ED/CIO to the Board.

Policy and Alpha Pool Leverage Guidelines

1. Leverage ratios govern leverage derived from beta sources (i.e., from levered asset class exposures). Established leverage ratio ranges for each levered asset class are set forth below. Current Leverage Ratio is defined as the ratio of notional exposure to capital available in the portfolio (or total exposure to unencumbered exposure in the case of repo). If the Current Leverage Ratio for any levered asset class exceeds the Maximum Target Leverage Ratio, SWIB will, within 30 days (unless such time limit is waived with majority approval of the rebalancing task force), reduce exposure or add capital to bring the Current Leverage Ratio within the established range. A Current Leverage Ratio below the Minimum Target Leverage Ratio will be monitored as part of the overall optimization of capital and funding costs.

<i>Levered Asset Class</i>	Minimum Target Leverage Ratio	Target Leverage Ratio	Maximum Target Leverage Ratio
<i>US Large Cap Equity</i>	2.7	3.3	4.0
<i>US Small Cap Equity</i>	2.7	3.3	4.0
<i>MSCI World xUS Equity</i>	2.7	3.3	4.0
<i>US TIPS</i>	6.0	8.0	10.0
<i>US Treasuries</i>	8.0	10.0	12.0

III. DERIVATIVES USE POLICY

Introduction

A "derivative instrument" is an investment instrument which usually derives its value and marketability from an underlying instrument which represents direct ownership of an asset or a direct obligation of an issuer (e.g. a "spot" or cash market instrument). SWIB recognizes that derivatives provide a means through which SWIB can implement investment strategies in a more cost and time efficient manner than through the physical investment of the underlying securities. Additionally, derivatives can be used to facilitate SWIB's risk management activities including risk mitigation. Derivatives include such instruments as futures, swaps, options and currency forwards and may be exchange traded, traded over-the-counter (OTC) and/or cleared.

Derivatives Use Objectives

The overall strategic objective of SWIB's use of derivatives is to facilitate risk exposure management and to manage the cost of investing. Objectives for derivatives use include:

1. Constructing portfolios with risk and return characteristics that could not efficiently be created using underlying physical securities,
2. Changing systematic exposures without executing trades in the underlying physical securities,
3. Hedging or managing risks, and
4. Effecting varying active and passive investment strategies including, but not limited to: portable alpha, currency hedging, equitization, relative value trades, transition management, and rebalancings.

Derivatives Use Monitoring and Reporting

Derivatives use exposures will be monitored by portfolio managers that employ derivatives and incorporated as part of the overall risk monitoring of the strategy by the ED/CIO and the Risk Management Division. The Investment Committee will be notified of material risks identified.

Derivatives Guidelines Applicable to all WRS Internal Portfolios:

1. Exchange-traded derivatives must be traded on a recognized exchange approved by the Investment Committee, except for exchange-traded derivatives that are traded pursuant to Exchange for Related Position (EFRP) transactions, which are traded off-exchange and not subject to this requirement. Such approved exchanges are listed on *Appendix 1*. As additional exchanges are approved *Appendix 1* shall be updated without amendment to these IC Guidelines.
2. OTC derivatives may only be traded with counterparties with which SWIB has a current International Swap and Derivative Association (ISDA) agreement that includes a Credit Support Annex (CSA).

In addition:

- a) The counterparty, or its guarantor, must, on each date on which a transaction is entered into, have an actual credit rating of not less than: (1) "A2/P2" on short-term debt from S&P or Moody's; and/or (2) "Baa2/BBB" on long-term debt from S&P or Moody's.
- b) The collateral that SWIB holds under a CSA may be invested in the following:
 - i. Bank deposit accounts;
 - ii. Any money market fund having a rating of at least "Aaa" by Moody's or at least "AAA" by S&P;
 - iii. Overnight commercial paper having a rating of at least "P-1" by Moody's and "A-1" by S&P;
 - iv. Overnight repurchase agreements with U.S. government, agency or dollar cash collateral;
 - v. Overnight reverse repurchase agreements with U.S. government, agency or dollar cash collateral; and
 - vi. The State Investment Fund or similar short term investment funds.
- 3. For clarity, Items 1 and 2 do not apply to exchange-traded funds (ETFs), or to over-the-counter derivatives entered into on behalf of SWIB, or a title-holding entity that is wholly-owned by SWIB, by either an external manager or advisor in connection with a real estate separate account.
- 4. Investments may be made in exchange-traded notes (ETNs) which are traded on exchanges included on an approved-exchange list maintained by the Compliance Division. The Risk and Compliance Divisions shall be notified upon any investment in a new ETN.
- 5. Investments may be made in put option contracts and call option contracts on securities, futures or an index of a group of securities. Put and call options may be purchased or sold on investments that could be held in the portfolio if the options were exercised.
- 6. Currency exposure management is permitted (but not required) through the use of exchange-traded currency instruments, and through the use of spot and forward contracts in foreign currencies (including FX Swaps). Direct currency hedging is permitted to directly hedge currency exposure back to the U.S. dollar. Cross-currency exposure management to transfer out of an exposed currency and into a benchmark currency is permitted.
- 7. Guideline limits and soft parameters for each portfolio will be applied to the aggregate exposures which include both physical and synthetic securities.
- 8. New derivatives instruments will be reviewed and approved by the Investment Committee before their implementation or use.
- 9. SWIB shall not enter into new derivatives agreements with new counterparties until the ED/CIO has approved the agreement. Each relevant division head or portfolio manager

shall submit to the ED/CIO a written summary of any proposed addition of a relationship that may require evaluation of counterparty credit risks. Such relationship may involve (a) entering into a master netting or trading agreement with a new counterparty, which acts either as a principal or as an agent on behalf of multiple principals, or (b) hiring an external manager to implement a strategy that may require the manager to evaluate and monitor counterparty credit risks on SWIB's behalf (excluding external managers selected by Private Markets and Funds Alpha staff and ARA staff pursuant to their portfolio guidelines). The ED/CIO will review all proposals of such new relationships to determine that (i) the addition of the relationship is consistent with SWIB's investment goals and strategies, (ii) the appropriate loss and drawdown limits for the credit risk associated with the proposed counterparty relationship have been considered, and (iii) appropriate due diligence has been conducted. The relevant division head or portfolio manager ("Initial Division User") shall retain responsibility for monitoring any such approved relationship. If another division expects to use the derivatives agreement for trading strategies after its initial approval, the ED/CIO, Initial Division User and the new division lead shall agree on the strategy for monitoring for the counterparty.

IV. REBALANCING PROCEDURES

1. Mandatory rebalancing is triggered by the procedures in the Board's WRS Investment Policy and the procedures below, as applicable. The Core Fund and Variable Fund asset mixes will be reviewed at least monthly for potential rebalancing.
2. A rebalancing task force will consist of the ED/CIO and the heads of ARA, Global Public Markets Strategies (GPMS) and Private Markets & Funds Alpha (PMFA). The ED/CIO may call a meeting of the rebalancing task force to consider a discretionary rebalancing from time to time. In consultation with the rebalancing task force, and with a majority approval of the task force, a discretionary rebalancing may be initiated pursuant to the plan developed by the ARA Division.
3. Discretionary rebalancing may be used to bring public market asset classes partially or fully back to their strategic target weights, to reduce or use active risk, to otherwise minimize asset allocation drift, or to intentionally overweight or underweight an asset or sub-asset class.
4. In connection with any rebalancing, the ARA Division will develop and implement a plan (a "Rebalancing Plan") to affect the rebalancing. The Rebalancing Plan will include the total amount of each asset class to be bought and sold, the intended market exposures, and the time frame of purchases and sales. The Rebalancing Plan is based on best estimates of market prices, private market valuations, and benefits cash flows for when the rebalance will take effect. To the extent that the market prices are different at the time of a rebalancing from the anticipated market prices, valuations or cash flows, the Rebalancing Plan may be subsequently adjusted for additional purchases and/or sales to true up the market exposures to the anticipated levels of the originally approved rebalancing without further approval by the rebalancing task force.

5. The ARA Division, under the supervision of the head of ARA, has the discretion to approve intra-month allocation adjustments of unallocated fund-level cash to passive portfolios and to manage asset class mis-alignments. Such adjustments may be, for example, to allocate unallocated fund-level cash arising from a distribution, to raise liquidity to fund private markets capital calls, to adjust for benchmark weight changes, or to otherwise make adjustments during the month as conditions may arise to return the asset allocation to its intended allocation targets consistent with most recently approved Rebalancing Plan. The manner in which intra-month allocation adjustments of unallocated fund-level cash are allocated or cash deficits are funded depends on the source of such unallocated cash or cash deficit and shall follow Guideline 8 below, as applicable. Only passive portfolios may be utilized for allocations or deallocations. Once unallocated fund level cash is allocated to a passive portfolio, investment of such cash shall be made in accordance with the underlying passive portfolio's guidelines. Aggregate daily portfolio allocations or deallocations shall not exceed \$250 million unless approved by the ED/CIO.
6. Exchange-traded and OTC options or other derivatives may be purchased or sold in conjunction with managing asset class exposure and rebalancing. The aggregate notional value of the options will be limited to 2% of the market value of the Core Fund at the date of purchase. The term of options used for this purpose may not exceed one year.
7. Cleared derivatives traded on a swap execution facility (SEF) may only be traded on or pursuant to the rules of the SEFs of which SWIB is a member or participant.
8. In connection with any rebalancing, the following procedures will be followed with respect to the following asset classes:
 - a. The Real Estate Asset Class will rebalance 50% to Public Equities and 50% to Public Fixed Income. Accordingly, in connection with any rebalancing, for any percentage increase in Real Estate there will be a corresponding 50% reduction to Public Equities and a corresponding 50% reduction to Public Fixed Income, and vice versa if the Real Estate assets decrease. The rebalancing does not have to be proportional through the sub-asset classes.
 - b. The Private Equity Asset Class will rebalance on a 1 for 1 basis to Public Equities. Accordingly, in connection with any rebalancing, for any percentage increase in Private Equity there will be a corresponding 1% reduction to Public Equities. The rebalancing does not have to be proportional through the sub-asset classes.

V. DRAWDOWN PROCEDURES

1. On an annual basis, the Investment Committee shall approve the active risk budget for the next calendar year and the relative drawdown limits per strategy (based on percentage of assets under management (AUM)) for the Core Fund. The relative drawdowns are measured against the benchmark for each strategy on a monthly basis by the Risk Management Division. Relative drawdown limits are intended to protect the Core Fund

from large relative drawdowns. Given the active risk that each strategy is expected to take and achieve, the Investment Committee acknowledges that (1) the relative drawdown limits may be reached in any given market environment, and (2) the probability of reaching the drawdown limits is not remote for the levels of active risk approved in the active risk budget.

2. If and when 60% of the relative drawdown limit is reached during the calendar year for any given strategy, the division head, the strategy head, the head of Risk Management, and the ED/CIO will all meet to discuss the relative drawdown limit, attribution, and outlook for the calendar year. The meeting will be documented by email confirmation sent to the Chief Legal Counsel and the head of Compliance.
3. If and when 90% of the relative drawdown limit is reached during the calendar year for any given strategy, the division head, strategy head, the head of Risk Management, and the ED/CIO will all meet to create a plan to address the drawdown for the strategy. The plan may require the strategy to reduce risk, stay the course until a given set of market conditions exist, make certain trades, and/or provide timing for implementation of the plan. A copy of the plan will be presented to the Investment Committee, generally at the next scheduled meeting.

VI. WRS GENERAL AND PORTFOLIO GUIDELINES – INTERNAL MANAGEMENT

Each internal portfolio is assigned compulsory investment guidelines. Portfolio managers are generally not allowed to deviate from compulsory guidelines. If a deviation from compulsory guidelines occurs or is expected to occur, the staff member who becomes aware of it must immediately notify the head of the Compliance and Risk Management divisions, ED/CIO, and the division head of the asset class in which the deviation occurred. Upon receiving notice of a deviation or potential deviation, the ED/CIO and relevant division head will either take action to correct the deviation or obtain a waiver approved by the ED/CIO. If the ED/CIO is not available, then the waiver may be granted by any division head (other than the division head of the portfolio that is requesting the waiver) and the Deputy Executive Director, in consultation with the head of Risk Management. All waivers will be reported to the Investment Committee and documented in the Investment Committee's meeting minutes.

All internal portfolios are also assigned "soft risk parameters." Soft risk parameters refer to desired characteristics and/or risk exposures. Portfolio managers are allowed, however, to deviate from soft parameters in pursuit of excess return or efficiency, subject to Investment Committee inquiry, discussion and concurrence of the continued exposure. Soft risk parameters for each portfolio are detailed in *Appendix 2*.

The following general compulsory guidelines ("General Guidelines") are applicable to all internally managed portfolios. Individual portfolio guidelines appear subsequently.

1. All portfolios must be managed in accordance with the fiduciary standards set forth in section 25.15(2) of the Wisconsin Statutes.

2. Credit quality rating requirements refer to an entire rating level, e.g., “A or better” includes “A-” and better ratings. The lower of split ratings is used. Investment grade securities are those rated “BBB-” or better (or the equivalent rating agency rating). Portfolios may invest in unrated securities, provided that the unrated securities have been assigned an internal SWIB rating by portfolio management staff using similar rating methodologies as the rating agencies.²
3. Fixed income securities backed by the full faith and credit of the U.S. government will be classified as U.S. government securities for purposes of these guidelines.
4. Any sovereign debt obligation (or the issuer in the event the obligation is unrated) in which SWIB invests must be rated “B3/B-” or above, unless otherwise approved in advance by the Investment Committee based on its guidelines for individual business case determinations.
5. Public equity investments in markets designated as “developed” or “emerging” are investments in entities that are incorporated or organized in countries included in the MSCI World Index or the MSCI Emerging Market Index, respectively. Public fixed income investments in markets designated as “emerging” are investments in the debt of countries (or of companies incorporated or organized in countries) included in the JP Morgan Emerging Markets Diversified Index. Public fixed income investments in the debt of countries (or of companies incorporated or organized in countries) not included in the JP Morgan Emerging Markets Diversified Index [\(other than frontier markets\)](#) will be designated as “developed.”
6. The Board approves the benchmarks for the Core Fund and Variable Fund, which are listed in *Appendix 3*. When new benchmarks are approved by the Board or modified by the Board, *Appendix 3* shall be updated without amendment to these IC Guidelines.
7. The Risk Management Division will monitor the risk exposures of all WRS portfolios. The head of Risk Management may recommend modifications to portfolio exposures to manage risk exposures. With the ED/CIO’s concurrence, the manager of a portfolio will make changes as recommended by the head of Risk Management. In addition to such recommendations, drawdown control procedures for all active internal WRS portfolios will be implemented and monitored by the Risk Management Division and adhered to by the portfolios.
8. Portfolios may utilize cash instruments or derivatives in their investment strategy. All investments used will be subjected to the risk analysis and monitoring processes at the portfolio, asset class and fund levels. New derivative and investment instruments will be reviewed with and approved by the Investment Committee prior to implementation.
9. Exposure limits and credit quality exposure limits are to be applied at the time of purchase. Unless otherwise indicated, “value” shall mean market value including un-invested cash.

² Using ratings models that are reviewed by Risk and Compliance staff.

10. Covered Agency Transactions as defined in FINRA Rule 4210³ may be traded only with a counterparty with which SWIB has a current Master Securities Forward Transaction Agreement (MSFTA), and the settlement of any such transaction shall not be more than 90 days from the date of the trade.
 - a. The counterparty, or its guarantor, must, on each date on which a transaction is initiated, have a credit rating of not less than “Baa2/BBB” on long-term debt from S&P or Moody’s.
 - b. If the counterparty is not rated, then its parent must have such a rating and must guarantee the obligations of the counterparty.
 - c. If a counterparty or its parent is downgraded to a credit rating below “Baa2/BBB” after the initiation of a trade, then trades may be initiated with that same counterparty only to reduce the existing exposure to that downgraded counterparty.
11. Internally managed portfolios, including separately managed funds, are prohibited from investing in commercial paper or other securities issued by SWIB.
12. “Centrally Arranged Leverage” means leverage sourced or provided by the ARA Division including Temporary Leverage and leverage created by shorting any securities by a portfolio which requires posting of Treasuries, including TIPS, as collateral.
13. “Fixed Income Portfolios” means the internally managed active public fixed income portfolios, including the Investment Grade Credit Portfolio, the Long Treasury Portfolio, the Mortgage-Backed Securities Portfolio, the High-Yield Bond Portfolio, the Leveraged Loan Portfolio, and the TBA Strategy Portfolio.

A. Small Cap Portfolio

The Small Cap Portfolio is invested primarily in publicly traded equity securities that are registered with the Securities and Exchange Commission, including common stocks, preferred stocks, ETFs, American Depositary Receipts (ADRs), American Depositary Shares (ADSs), convertible bonds, securities issued in initial public offerings, and when-issued securities. The Small Cap Portfolio may also be invested in equity securities that are publicly traded on stock exchanges in other developed countries, or that are issued through private placements.

1. No more than 5% (long or short) of outstanding shares of any single issuer, excluding shares held in commingled funds and ETFs, may be held.
2. No single issuer’s equity securities may represent (long or short) more than the greater of (a) 7% of the total market value of the Small Cap Portfolio, or (b) 5% over the percentage of such issuer’s equity securities in the portfolio’s benchmark. Shares held in commingled funds and ETFs are excluded from this guideline.

³ “Covered Agency Transactions” include certain to-be-announced (TBA) transactions, specified pooled transactions and collateralized mortgage obligations (CMOs).

3. Up to 10% of the portfolio's market value may be invested in international and emerging markets companies through common stocks, ADRs, ADSs, or country-specific ETFs.
4. The portfolio may use exchange-traded futures contracts or ETFs to equitize cash and receivables.
5. The portfolio may sell short any securities that may be purchased under applicable guidelines and may then use the proceeds from the short sale to purchase additional approved securities. The total value of the short sales in the portfolio may not exceed 50% of the portfolio's net market value.
6. The portfolio's aggregate ex-ante tracking error will not exceed 8.75% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 8.75% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
7. Except as provided in 3 above, securities must be issued by an entity (a) that is incorporated in the United States or (b) incorporated outside the United States if (1) the company's headquarters are located in the U.S. or (2) the primary exchange for the issuer's securities is located in the U.S. The issuers in (b) shall not count toward the 10% limit in 3 above.
8. The aggregate notional value of long or short puts and calls is limited to 5% of the market value of the portfolio.
9. Gross exposure for the portfolio shall not exceed 205% of the portfolio's market value, and net exposure for the portfolio shall not exceed 105% of the portfolio's market value, in each case unless approved by the ED/CIO.

B. ARA Passive Internal Portfolios

This guideline section pertains to all internally managed passive investment strategies, unless otherwise separately discussed in other sections. This includes, but is not limited to: passive physical equities, passive U.S. TIPS, passive U.S. Treasuries, synthetic liquidity, synthetic leverage, and overlay strategies. The objective of the passive portfolios is to closely track the returns and risk of their respective benchmarks.

1. The universe for inclusion in the portfolio shall be the full respective benchmark for each portfolio. Non-benchmark securities may be held from time to time as a result of corporate actions, purchases or sales in advance of expected changes to the benchmark in order to optimize trading costs or to provide synthetic/derivative exposure to the underlying benchmark. Retention of physical non-benchmark securities will only occur if the portfolio manager deems it beneficial to fund (Core Fund/Variable Fund)

performance and not significantly detrimental to tracking error. Portfolios that provide liquidity or leverage may hold primarily non-benchmark securities in the form of derivatives that replicate the underlying target beta exposure.

2. Securities offered or sold to U.S. investors pursuant to Regulation D or Rule 144A under the Securities Act of 1933 may be purchased if they are publicly traded on a stock exchange in a developed country.
3. Portfolios may use physical securities or synthetic instruments, including exchange-traded futures contracts, ETFs, swaps, or other Investment Committee-reviewed derivative instruments to equitize cash and receivables, to achieve policy fund level leverage within Trustee-approved limits; for liquidity purposes; to replicate beta for the alpha-beta overlay; or for other passive investment strategies. Passive portfolios used to achieve policy fund level leverage shall be monitored by the ARA Division so that the Policy Leverage does not exceed Board-approved limits.
4. Portfolios may sell short from time to time as a result of corporate actions, benchmark changes or other similar events. Short positions are also permitted to more closely, more efficiently and/or more cost effectively track the returns and risk of their respective benchmarks if the portfolio manager deems it beneficial to Core Fund/Variable Fund performance and not significantly detrimental to tracking error. Short positions are intended to be used opportunistically to enhance efficient beta management (e.g., transitions or rebalancing), but not solely to increase active risk. The portfolios may short any securities that may be purchased under Guidelines #1-3 and may then use the proceeds from the short sale to purchase additional approved securities.

C. ARA Passive External Managers

The ARA Passive External Managers will be comprised primarily of direct or commingled passive investments in strategies of external managers that are intended to generate a beta or SWIB policy benchmark return.

1. Investments in ARA Passive External Managers will be comprised of the following investment vehicles:
 - a. *Separately Managed Accounts ("SMAs")*: SWIB intends for its portfolio to be comprised primarily of direct investments in various strategies via SMAs, the assets of which would reside at SWIB's custodial bank.
 - b. *Commingled Investments or Fund Investments*: Investments can be made in commingled funds or in a Fund-of-One structure where SWIB is the sole investor, the assets of which may not reside at SWIB's custodial bank.
2. Investment Strategies and Broad Guidelines for ARA External Managers:
 - a. *Equities* –Strategies will be invested in traditional long only portfolios and other public equity securities approaches across various geographies and market cap weights. Derivatives may be used and will be set forth in the individual manager guidelines.

- b. *Fixed Income* –Strategies will primarily be invested in traditional long only portfolios across the credit quality spectrum, varying geographies, including emerging and frontier market debt, high yield and structured securities. Derivatives may be used and will be set forth in the individual manager guidelines.
 - c. *Levered Strategies* – Strategies that are designed to provide fund-level leverage will be subject to both the external manager guidelines in this section, as well as the applicable Leverage Use Policy guidelines in Section II above. The individual managers will also be subject to any additional guidelines outlined in the investment management agreement with respect to strategy and/or leverage management tool.
3. Approvals: ARA Passive External Manager allocations are subject to the following approvals:

Investment	Head of ARA	ED/CIO
New Manager Relationship	Up to \$1.75 billion	More than \$1.75 billion
Additional Allocations to Existing Manager	Up to \$2 billion	More than \$2 billion
Includes all ARA investments aggregated with the Manager, regardless of vehicle, strategy or portfolio, but excludes allocations to existing strategies managed by existing Managers as part of routine rebalancing activity.		

4. Other guideline limitations notwithstanding, the head of ARA or other staff authorized by the head of ARA may modify, amend or waive terms of ARA Passive External Manager investment management agreements and generally take any and all other actions that are necessary and reasonable to protect, maintain, or enhance the value of SWIB's position in the investments.
5. All redemptions, terminations or reductions of capital will be at the discretion of the head of ARA for rebalancing, liquidity management, leverage management and/or policy benchmark exposure consideration.

D. Investment Grade Credit Portfolio

The Investment Grade Credit Portfolio is primarily invested in publicly traded and Rule 144A investment grade corporate bonds or other fixed income instruments, primarily in the United States and other developed markets. Subject to the limitations set forth below, the portfolio may also invest in bank loans, convertible, and equity securities.

1. Maximum single issuer concentration is limited to 8% of the portfolio's market value on a net basis for developed markets investment grade issuers and 3% for all other issuers, in each case, excluding Treasuries, Treasury futures and ETFs.

2. Positions may be purchased long and sold short, and the use of leverage will be incorporated in ex-ante risk assessments and active risk/tracking error contributions. The portfolio may take short exposure by shorting individual securities, including cash bonds and equity securities, utilizing single name CDS and CDX index securities, and shorting ETFs that have been approved by Compliance and included on an approved ETF trading list (including put or call options thereon).
3. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of credit, duration, yield curve exposure, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) credit index swaps (e.g., CDX) and single-name CDS, including options on these instruments, and (g) options on equity securities, indices and ETFs for purposes of tail hedging.
4. Effective duration of the portfolio shall remain within two years of the assigned benchmark's duration.
5. Emerging market (EM) debt investment is limited to securities rated "B-" or above and:
 - a. EM sovereign debt must be of countries in the JP Morgan Emerging Market Bond Index Global Diversified ("JP Morgan EM Bond Index").
 - b. EM corporate debt must be denominated in U.S. Dollars.
 - c. Gross EM debt shall not exceed 15% of the portfolio's market value on a long or short basis (i.e., long % + short %). EM FX forwards used to hedge currency risk will not be counted against the EM debt exposure threshold.
6. Further limits:
 - a. Non-investment grade securities shall not exceed 20% of the portfolio's market value on a gross basis.
 - b. Exposure to bank loans, including CLOs, shall not exceed 15% of the portfolio's market value on a net basis.
 - c. Exposure to convertible securities shall not exceed 10% of the portfolio's market value on a net basis.
 - d. Equity exposure shall not exceed 2% of the portfolio's market value on a net basis.
7. Ex-ante tracking error shall not exceed 2.5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 2.5% then the portfolio may not trade or take

any other action which is predicted to increase the ex-ante tracking error of the portfolio.

8. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO. [The portfolio may create leverage through the use of derivatives, securities lending, and repurchase agreement transactions, as well as Centrally Arranged Leverage. Centrally Arranged Leverage in the aggregate across the Fixed Income Portfolios shall not exceed 15% of such portfolios' aggregate market value.](#)

E. Exposure Management Portfolios

Portfolios may be established at the asset class level for multi-asset, public equity and public fixed income asset classes to provide for adjustment and management of the Core Fund and Variable Fund exposures and to utilize or adjust active risk of the Core Fund and Variable Fund. In determining portfolio investments, exposures held in both internally and externally managed portfolios will be considered. These portfolios may also be used to express investment strategies and ideas where the sizing of the investment requires it to be outside of an individual internal portfolio.

The head of ARA may approve strategies and/or investment ideas in the portfolios up to an ex-ante contribution to overall Core Fund active risk of 0.20% (excluding investments in PMFA overage portfolios), as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If, at the time of investment, the portfolios' ex-ante contribution to active risk exceeds 0.20%, then the strategy and/or investment idea must be approved by the ED/CIO. Portfolio implementation, oversight and reporting to the Investment Committee will be the responsibility of the ARA Division. These portfolios may invest in any instrument approved for the relevant asset class portfolios described elsewhere in these guidelines. The portfolios may use derivative instruments. Portfolios will not have a separate benchmark or risk target, but will be included within the benchmark and risk parameters for the applicable aggregated asset class. The portfolios may include, for example, investments strategies to adjust aggregate equity beta, the allocations between specific sectors or sub-asset class exposures, currency exposures, volatility exposure, or credit exposure or duration.

F. Multi-Strat Portfolio

1. The Multi-Strat portfolio is authorized to invest in or short any instrument or derivative, subject to guidelines 5 and 6 below and the general guidelines contained herein.
2. Strategies may be managed either by internal investment staff or by an external manager.
3. Leverage and derivatives may be used to implement individual strategies and to adjust the market exposure of the Multi-Strat portfolio.
4. The Multi-Strat portfolio's aggregate ex-ante tracking error will not exceed 12% as measured by SWIB's standard model used at any given time by SWIB's Risk

Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 12% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

5. The ED/CIO and Head of Risk Management must be informed prior to the launch of a new strategy within the Multi-Strat portfolio. New strategies must be reported to the Investment Committee reasonably promptly following the launch.
6. ED/CIO approval, along with notice to the Head of Risk Management, is required prior to the Multi-Strat portfolio investing in an investment instrument or derivative that was previously approved by the Investment Committee for use by other asset class portfolios. Investment in such instruments must be reported reasonably promptly to the Investment Committee. Investment Committee review and approval is required prior to the Multi-Strat portfolio investing in any new investment instruments or derivatives not previously approved by the Investment Committee for any asset class portfolios.

G. Long Treasury Portfolio

The Long Treasury portfolio is a long duration, but not long-only, portfolio primarily invested in US Treasury securities, including nominal and inflation-indexed Treasuries and Treasury strips, and other US Government issued debt such as Agency debentures (which include debt, or bonds, issued by a US federal agency or a government-sponsored enterprise (GSE)). It may also invest in other fixed income securities, certain ETFs, and certain derivatives, as outlined below.

1. Securities other than nominal US Treasury securities including principal and interest strips, US Treasury Futures, and ETFs investing primarily in nominal US Treasury securities, but otherwise permitted in these portfolio guidelines, may not exceed 25%, in the aggregate, of the portfolio's market value.
2. Effective duration of the portfolio shall remain within five years of the assigned benchmark's duration.
3. The portfolio may invest long or short in ETFs that invest primarily in US Treasury securities and that have been approved by Compliance and included on an approved trading list (including put or call options thereon).
4. The portfolio's aggregate ex-ante tracking error will not exceed 3% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 3% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

5. Except for US Treasury securities, exchange-traded interest rate futures, and ETFs, no single issue may exceed 8% of the portfolio's market value.
6. The portfolio may use repurchase agreements and reverse repurchase agreements for cash management.
7. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, interest rate, yield curve, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures, and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, and (e) other volatility derivatives (including options).
8. All instruments permitted in these guidelines may be traded long or short. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO. [The portfolio may create leverage through the use of derivatives, securities lending, and repurchase agreement transactions, as well as Centrally Arranged Leverage. Centrally Arranged Leverage in the aggregate across the Fixed Income Portfolios shall not exceed 15% of such portfolios' aggregate market value.](#)

H. Mortgage-Backed Securities Portfolio

The Mortgage-Backed Securities (MBS) portfolio is primarily invested in Agency-issued mortgage-related securities, including MBS pools, collateralized mortgage obligations (CMOs), credit risk transfer (CRT) securities, as well as other securities in the structured products sector such as TBA MBS, commercial mortgage-backed (CMBS), asset-backed (ABS), and private label mortgage-related securities. It may also invest in other fixed income securities, certain ETFs, and certain derivatives as outlined below.

1. Securities other than agency-issued mortgage-related securities (e.g., pools, CMOs, CRTs), mortgage TBAs, and mortgage ETFs, but otherwise permitted in these portfolio guidelines and with effective duration of greater than one year, may not exceed 25%, in the aggregate, of the portfolio's market value.
2. Effective duration of the portfolio shall remain within two years of the assigned benchmark's duration.
3. Private label MBS may not exceed 10% of the portfolio's market value. Private label mortgage securities backed by borrower collateral other than prime may not exceed 5% of the portfolio's market value.
4. The portfolio may invest long or short in ETFs that invest primarily in U.S. MBS and that have been approved by Compliance and included on an approved trading list (including put or call options thereon).
5. The portfolio's aggregate ex-ante tracking error will not exceed 5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division.

If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

6. Except for TBA MBS, US Treasuries and ETFs, no single issue may exceed 5% of the portfolio's market value. No single BBB-rated issue may exceed 2% of the portfolio's market value. The average rating of securities covered by these limits will be "Baa2/BBB" or better. No single issue rated below investment grade may exceed 1% of the portfolio's market value. Each tranche of a securitized product is considered a separate issue. Total exposure to issues rated below investment grade may not exceed 20% of the portfolio's market value, in the aggregate.
7. Fixed income securities with an effective duration of one year or less will have an average credit rating of "A" or better. The portfolio may also use repurchase agreements and reverse repurchase agreements for cash management.
8. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, interest rate, yield curve, mortgage and structured products credit, prepayment and volatility management. Derivatives use is permitted through the use of (a) exchange-traded interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) MBS options, (g) credit index swaps (e.g., CMBX, CDX and similar instruments) and options, and (h) options on equity indices and ETFs for purposes of tail hedging.
9. All instruments permitted in these guidelines may be traded long or short. Excluding the TBA Strategy, gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO. [The portfolio may create leverage through the use of derivatives, securities lending, and repurchase agreement transactions, as well as Centrally Arranged Leverage. Centrally Arranged Leverage in the aggregate across the Fixed Income Portfolios shall not exceed 15% of such portfolios' aggregate market value.](#)
10. CLOs collateralized by corporate bank loans may not exceed 15% of the portfolio's market value.

I. High-Yield Bond Portfolio

The High-Yield Bond Portfolio is eligible to invest in any instruments included in the assigned benchmark — primarily U.S. dollar denominated publicly-traded and Rule 144A high-yield corporate bonds or other fixed income instruments rated between BB+/Ba1 and B-/B3. Subject

to the limitations set forth below, the portfolio may also invest in non-U.S. dollar denominated bonds of issuers located outside of the United States, as well as convertible, preferred securities and equity securities.

1. The portfolio shall maintain at minimum a weighted average rating of B-. Subject to the ~~forgoing~~foregoing, the portfolio may hold fixed income instruments rated below B-/B3.
2. Effective duration of the portfolio shall remain within +/- five years of the assigned benchmark's effective duration.
3. Positions may be purchased long and sold short, and the use of leverage will be incorporated in ex-ante risk assessments and active risk/tracking error contributions. The portfolio may take short exposure by shorting individual securities, cash bonds, buying single name CDS, shorting the CDX index, shorting high-yield and equity ETFs that have been approved by Compliance and included on an approved ETF trading list (including put or call options thereon), as well as shorting the underlying equity of a leveraged issuer.
4. Instruments not included in the benchmark, but otherwise permitted in these portfolio guidelines, may not exceed 25% of the portfolio's market value on a long or short basis (i.e., long % + short %). For the avoidance of doubt, any instrument that is subsequently removed from the portfolio's benchmark due solely to the instrument's maturity falling below the benchmark's stated thresholds shall not be deemed to be out of benchmark for purposes of the 25% limitation described in this Guideline #4.
5. Maximum single issuer active concentration is limited to 5%, excluding Treasuries, Treasury futures and holdings of ETFs, of the portfolio's market value on a net basis.
6. Gross exposure to non-U.S. Dollar denominated instruments shall not exceed 10% of the portfolio's market value on a long or short basis (i.e., long % + short %).
7. Gross exposure to emerging market corporate debt is limited to (a) securities that are rated "B-/B3" or above and (b) issuers incorporated or organized in countries included in the JP Morgan Emerging Markets Diversified Index, and in aggregate shall not exceed 5% of the portfolio's market value on a net basis.
8. Exposure to any single industry sector shall remain within 20% of the assigned benchmark's industry sector weighting on a net basis.
9. Exposure to high-yield bank loans shall not exceed 10% of the portfolio's market value on a net basis.
10. Ex-ante tracking error shall not exceed 5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.

11. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, yield curve exposure, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) credit index swaps (e.g., CDX) and single-name CDS, including options on these instruments, and (g) options on equity securities, indices and ETFs for purposes of tail hedging.
12. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO. [The portfolio may create leverage through the use of derivatives, securities lending, and repurchase agreement transactions, as well as Centrally Arranged Leverage. Centrally Arranged Leverage in the aggregate across the Fixed Income Portfolios shall not exceed 15% of such portfolios' aggregate market value.](#)
13. The portfolio may invest in debt instruments and loans and may include senior financing, subordinated or mezzanine financing, and "bridge" financing. Debt instruments and loans may be syndicated or privately issued credit. Debt instruments and loans may be of public or private company issuers. Strategies may include, without limitation, specialty and alternative credit opportunities, distressed and opportunistic strategies, or dislocated credit opportunities. Debt instruments and loans may include credit opportunities alongside SWIB external managers. In the aggregate, exposure to special or alternative opportunity financings described in this guideline shall not exceed 5% of the portfolio.

J. Leveraged Loan Portfolio

The Leveraged Loan Portfolio is eligible to invest in any instruments included in the assigned benchmark — primarily U.S. dollar denominated publicly-traded and senior secured syndicated leveraged loans. Subject to the limitations set forth below, the portfolio may also invest in non-U.S. dollar denominated loans and/or bonds of issuers located outside of the United States, as well as collateralized loan obligations (CLOs), derivatives, convertible, preferred securities and equity securities.

1. No less than 75% of the portfolio's market value can be invested in single-name first-lien bank loans, total return swaps on first-lien bank loans and first-lien bank loan indices, and/or ETFs with a diversified portfolio of first-lien bank loans, in aggregate.
2. The portfolio shall maintain at minimum a weighted average rating of B. Subject to the foregoing, the portfolio may hold fixed income instruments rated below B-/B3 as well as unrated securities, provided the unrated securities have been assigned an internal SWIB rating by portfolio management staff using similar rating methodologies as the rating agencies.

3. Positions may be purchased long and sold short, and the use of leverage will be incorporated in ex-ante risk assessments and active risk/tracking error contributions. The portfolio may take short exposure by shorting individual securities, including cash bonds and equity securities, utilizing single name CDS and CDX index securities, and shorting ETFs that have been approved by Compliance and included on an approved ETF trading list (including put or call options thereon).
4. Excluding U.S. Treasuries, total return swaps and CDS on first-lien loans, and Compliance- approved ETFs with a diversified portfolio of first-lien bank loans, investments in instruments not included in the broad Morningstar LSTA US Leveraged Loan index, but otherwise permitted in these portfolio guidelines, may not exceed 25% of the portfolio's market value on a long or short basis (i.e., long % + short %).
5. Maximum single issuer active concentration is limited to 5%, excluding Treasuries, Treasury futures and holdings of ETFs, of the portfolio's market value on a net basis.
6. Gross exposure to non-U.S. Dollar denominated instruments shall not exceed 10% in the aggregate of the portfolio's market value on a long or short basis (i.e., long % + short %).
7. Aggregate exposure to second-lien loan instruments is limited to 15% of the portfolio's market value on a long or short basis (i.e., long % + short %), and maximum exposure to a single second-lien loan instrument is limited to 2.5% of the portfolio's market value on a long or short basis (i.e., long % + short %).
8. Ex-ante tracking error shall not exceed 5% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 5% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
9. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of duration, yield curve exposure, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded and over-the-counter interest rate instruments, including forwards, futures and options, (b) interest rate swaps and swaptions, (c) total return swaps (TRS) with index or underlying basket of permitted instruments, (d) options on permitted ETFs and indices, (e) other volatility derivatives (including options), (f) credit index swaps (e.g., CDX) and single-name CDS, including options on these instruments and (g) options on equity securities, indices and ETFs for purposes of tail hedging.
10. Gross exposure for the portfolio shall not exceed 300% of the portfolio's market value, and net exposure for the portfolio shall not exceed 200% of the portfolio's market value, in each case unless approved by the ED/CIO. [The portfolio may create leverage through the use of derivatives, securities lending, and repurchase agreement transactions, as well as Centrally](#)

Arranged Leverage. Centrally Arranged Leverage in the aggregate across the Fixed Income Portfolios shall not exceed 15% of such portfolios' aggregate market value.

11. Leveraged loans may include senior financing, subordinated or mezzanine financing, and "bridge" financing. Loans may be syndicated or private credit loans. Loans may be of public or private company issuers. Strategies may include, without limitation, specialty and alternative credit opportunities, distressed and opportunistic strategies, or dislocated credit opportunities. Loans may include credit opportunities alongside SWIB external managers. In the aggregate, exposure to special or alternative opportunity financings described in this guideline shall not exceed 5% of the portfolio.

K. TBA Strategy Portfolio

The TBA Strategy portfolio is invested primarily in Agency TBA mortgages, as well as Agency MBS pools. It may also invest in ABS, CMBS and other fixed income securities and certain derivatives as outlined below.

1. The portfolio's aggregate ex-ante tracking error will not exceed 25% as measured by SWIB's standard model used at any given time by SWIB's Risk Management Division. If market conditions (compared to active management actions) cause the portfolio's ex-ante tracking error to exceed this limit, then the portfolio will not be deemed to be out of compliance with these guidelines and this guideline will not be deemed to be violated; except that, if the portfolio's ex-ante tracking error exceeds 25% then the portfolio may not trade or take any other action which is predicted to increase the ex-ante tracking error of the portfolio.
2. Derivatives use is permitted as allowed by the Derivatives Use Policy for the purposes of yield curve, mortgage, credit, and volatility management. Derivatives use is permitted through the use of (a) exchange-traded interest rate instruments, including forwards, futures, and options, (b) interest rate swaps and swaptions, (c) volatility derivatives (including options), (d) CDX, and (e) MBS options.
3. The portfolio may invest long and short in any permitted security as described herein.
4. In the event of an Agency MBS trade failure, the head of strategy or designee will promptly notify Risk Management and Compliance.
5. Except for TBA and Agency pass-through MBS, and US Treasuries, no single issue may exceed 8% of the portfolio's market value. Other fixed income securities are allowed with an effective duration of five years or less and must be investment grade. The average rating of these securities will be "A" or better. Each tranche of a securitized product is considered a separate issue. The portfolio may also use repurchase agreements and reverse repurchase agreements for cash management.
6. Effective duration of the portfolio, determined on the gross value of the portfolio, shall be within 0.5 years of the portfolio's benchmark.
7. Gross notional exposure of the portfolio shall not exceed \$20 Billion and net notional exposure of the portfolio shall not exceed \$4 Billion, in each case without the approval

of the ED/CIO. The portfolio may create leverage through the use of derivatives, securities lending, and repurchase agreement transactions, as well as Centrally Arranged Leverage. Centrally Arranged Leverage in the aggregate across the Fixed Income Portfolios shall not exceed 15% of such portfolios' aggregate market value.

L. Short Term Credit Portfolio

The Short-Term Credit Portfolio is an investment vehicle of cash and short-term investments of the WRS. Its investment objectives are: 1) Safety of principal; 2) Return Objective; and 3) Liquidity.

Portfolio Allocation

(Percent of Portfolio at Par Value)

Treasuries, Agencies, and FDIC Insured Bank Deposits	0-100%
Repurchase Agreements	0-100%
Commercial Paper	0-100%
Corporate Notes	0-100%
Certificates of Deposit/Time Deposits	0-50%
Bankers' Acceptances	0-50%
Yankee/Euro Certificates of Deposit/Time Deposits (U.S. Dollars)	0-50%

Maturity Guidelines

(Maximum)

Consistent with the portfolio purpose and objectives, the portfolio weighted average maturity will not exceed one year (the weighted average maturity of floating rate securities is based on interest rate reset dates).

Repurchase Agreements	1 year
Reverse Repurchase Agreements	1 year
U.S. Treasuries and Agencies	5 years
Commercial Paper/Bankers' Acceptances	1 year
Corporate Notes – Fixed Rate	3.1 years
Corporate Notes – Floating Rate	5.1 years
Certificates of Deposit/Time Deposits	5 years
Yankee/Euro Certificates of Deposit/Time Deposits	5 years

Issuer Exposure

(Percent of Portfolio at Par Value)

The maximum exposure for each issuer/guarantor/counterparty shall be in the aggregate as follows:

U.S. Treasury Bills and U.S. Agency Discount Notes	No limit
Repurchase Agreements (Gov't/Agency Collateral)	25%
Repurchase Agreements (Other Collateral)	5%
Commercial Paper and Corporate Notes	5%
Certificates of Deposit/Time Deposits	5%
Bankers' Acceptances	5%
Yankee/Euro Certificates of Deposit/Time Deposits (U.S. Dollars)	5%
Wisconsin CD Program – individual bank (unless a higher limit from another category applies.)	\$20MM or 3% of bank assets, whichever is less
Bank Deposits	Up to the amount guaranteed by the FDIC or the amount allowable for a bank instrument, whichever is higher

CREDIT QUALITY

The minimum rating of an issuer/counterparty shall be the lowest in the event of a split rating and shall be as follows:

U.S. Treasury Bills and U.S. Agency Discount Notes	No minimum
Repurchase Agreements	BBB
Commercial Paper	A-2/P-2
Unrated Wisconsin Company Commercial Paper (maximum maturity of 90 days and percentage of the portfolio in unrated CP cannot exceed 15%)	Unrated
Corporate Notes, Bankers' Acceptances, Certificates of Deposit/Time Deposit, Bank Deposits and Yankee/Euro Certificates of Deposit/Time Deposits (U.S. Dollars) greater than 1 year	A

Corporate Notes, Bankers' Acceptances, Certificates of Deposit/
Time Deposit, Bank Deposits and Yankee/Euro Certificates of
Deposits (U.S. Dollars) less than 1 year
(the percentage of the portfolio in BBB cannot exceed 15%).

BBB

Wisconsin CD Program – individual bank

Unrated

M. General Guidelines specific for Private Markets and Funds Alpha Portfolios

1. The portfolio manager shall be responsible for notifying the ED/CIO of any referrals or significant contacts by or on behalf of SWIB Trustees regarding consideration of an investment opportunity.
2. The Private Markets & Funds Alpha (PMFA) staff shall report to the Trustees all portfolio commitments to non-public investments.
3. Each portfolio manager shall obtain written confirmation from legal counsel (which may be external legal counsel) that documentation has been satisfactorily completed prior to closing of any investment in his or her portfolio that involves negotiated SWIB documentation.
4. Each portfolio manager shall submit to the head of PMFA a written summary of any proposed investment. The head of PMFA will review all such investments to determine that a) the investment falls within the portfolio's investment guidelines, including limits on invested capital, b) the investment is consistent with the portfolio's established strategy, and c) the appropriate due diligence standards are being applied. No such investment may be closed without approval of the head of PMFA or ED/CIO depending upon the nature and amount of the investment as required in the relevant portfolio guidelines. The portfolio manager shall retain responsibility for each investment decision. External managers with delegated investment discretion operate under separate authority. For purposes of this paragraph, "investments" does not include the individual properties within a Real Estate Equity Portfolio separate account tranche, but does include the tranche that holds such properties.
5. Dollar limitations for commitments to funds or other investments do not apply to incidental and customary contractual reinvestment, indemnity, reserve or similar obligations incorporated into the terms of an investment, provided such obligations are not expected to be material.
6. Private equity and venture capital investments in markets designated as "developed" or "emerging" are investments in countries included in the MSCI World Index or the MSCI Emerging Market Index, respectively. Real estate investments in markets designated as "developed" or "emerging" are investments in properties in countries included in the EPRA/NAREIT Developed Index and the EPRA/NAREIT Emerging Market Index, respectively.

7. Funds or commingled investments shall be considered U.S., non-U.S., “developed” or “emerging” based on their primary strategy and not on a look-through basis to the underlying investments.
8. Exposure limits and credit quality exposure limits are to be applied at the time of purchase. The term “exposure” is defined as the net asset value (which includes co-investments) plus unfunded commitments. “Allocations” are calculated as the current net asset value of any existing investment(s) plus the intended subscription.
9. SWIB staff may determine to engage a consultant to review prospective investments, perform operational due diligence on prospective investments, or otherwise assist staff in the evaluation of investment opportunities and/or managers.

N. Private Debt Portfolio

The overall objective of the Private Debt Portfolio (the “Private Debt Portfolio” includes both the Wisconsin Private Debt Portfolio and the Non-Wisconsin Private Debt Portfolio) is to invest funds of the Core Fund in debt instruments consistent with SWIB’s fiduciary responsibilities that are primarily private loans negotiated by SWIB directly or as part of an investor group that includes banks or other institutional investors. Instruments can be fixed or floating rate. The two portfolios are invested as follows:

- Wisconsin Private Debt Portfolio – This portfolio’s investments will consist of loans or fixed income securities issued by companies or entities that are headquartered in Wisconsin, have existing operations in Wisconsin, or intend to apply the proceeds to new business operations in Wisconsin which contribute to the Wisconsin economy.
- Non-Wisconsin Private Debt Portfolio – This portfolio can invest in loans or fixed income securities issued by companies or entities located in or doing business in the United States.

The Private Debt Portfolio may also include securities sold to SWIB pursuant to Rule 144A or in the public fixed income markets. Investments may be made in fixed income instruments and in instruments with both fixed income and equity features.

1. Investments may carry a rating from a national rating agency, the National Association of Insurance Commissioners (NAIC) or SWIB. Notwithstanding the provisions of the General Guidelines above, the head of Private Debt may make investments that carry a “BBB” or better rating from a national rating agency or the NAIC, provided that if the investment carries only a SWIB rating, it shall be approved by the head of PMFA, regardless of size.
2. Investments may be made in below investment grade instruments provided that such investments do not in the aggregate constitute more than 25% of the Private Debt Portfolio’s par value. Any investment below investment grade requires approval from the head of PMFA.
3. The Private Debt Portfolio’s aggregate issuer limits shall be scaled by quality and a purchase may not cause the Private Debt Portfolio’s exposure to a borrower or issuer to exceed the following limits (at par value):

Rating	Maximum Position
U.S. Gov't/Agency	No Limit
"AA" or higher	\$100 MILLION
"A"	\$75 MILLION
"BBB"	\$50 MILLION
"BB" or less	\$25 MILLION

4. The Private Debt Portfolio shall maintain at minimum a weighted average rating of "BBB", where "AAA"=4, "AA"=3, "A"=2, "BBB"=1, and "BB" or less =0.
5. Other guideline limitations notwithstanding, the head of Private Debt or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

O. Venture Capital Portfolio

The SWIB Venture Capital Portfolio (the "Venture Capital Portfolio" includes both the Wisconsin Venture Capital Portfolio and the Non-Wisconsin Venture Capital Portfolio) consists of venture capital or venture capital-related investments and invests as follows:

- The Non-Wisconsin Venture Capital Portfolio shall make venture capital investments on a global basis in limited partnership or other fund vehicles, strategic partnerships, or in co-investments in venture-backed companies or publicly traded companies that were venture backed.
 - The Wisconsin Venture Capital Portfolio shall make venture capital investments in limited partnership or other fund vehicles or strategic partnerships that are either located in Wisconsin and/or which target Wisconsin as a primary market or as co-investments in venture-backed companies or publicly traded companies that were venture backed that are located or have operations in Wisconsin.
1. Any other guidelines notwithstanding, the Venture Capital Portfolio commitments are subject to the following approvals:

Approval By:	Head of PMFA	ED/CIO
• Venture Capital Funds	Up to \$65 million	More than \$65 million
• Venture Capital Co-Investments (excluding funds of one)	Up to \$25 million	More than \$25 million
SWIB ownership equal to or	ED/CIO, provided that notice shall be given to the ED/CIO if	

greater than 50% of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made)	ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%
--	---

2. No more than 45% of the Venture Capital Portfolio's exposure may be invested outside of the U.S., without the approval of the ED/CIO. No more than 20% of the Venture Capital Portfolio's exposure may be invested in emerging markets. No more than 5% of the Venture Capital Portfolio's exposure may be invested in co-investments located in emerging markets.
3. Venture capital investments may be made through funds, strategic partnerships, or co-investments. Venture capital co-investments (excluding funds of one) must be made in one of the following ways:
 - (1) alongside a fund with the same sponsor or manager as a fund in which SWIB is or has been an investor,
 - (2) alongside a fund with the same sponsor or manager as a fund on which SWIB is conducting due diligence and is actively evaluating for a prospective commitment, or
 - (3) as approved by the ED/CIO.
4. From time to time, SWIB may consider formation of fund investments where it may participate both as a general partner and as limited partner.
5. Co-investments in the Venture Capital Portfolio may not make up more than 15% of the Venture Capital Portfolio's exposure.
6. Neither the aggregate exposure to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 20% of the Venture Capital Portfolio's exposure without approval of the ED/CIO.
7. No single co-investment (excluding funds of one) shall exceed 10% of the Venture Capital Portfolio's exposure.
8. The Venture Capital Portfolio may make co-investments in public company securities through private placements, including PIPEs, or other offerings. Co-investments in public company securities shall not exceed 10% of the Venture Capital Portfolio's exposure. For purposes of this guideline, public company securities received via a distribution are not counted and are expected to be sold as soon as reasonably practicable.
9. Subject to the approval thresholds and the restrictions above, the head of Venture Capital or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

P. Private Equity Portfolio

The Private Equity Portfolio consists of private equity or private equity-related investments, made on a global basis, in limited partnership or other fund vehicles, strategic partnerships, and co-investments in operating or holding companies.

1. Any other guidelines notwithstanding, all portfolio commitments are subject to the following approvals:

	Head of PMFA	ED/CIO
• Funds or Strategic Partnerships	\$250 million or less	Over \$250 million
• Co-Investments	\$75 million or less	Over \$75 million
SWIB ownership equal to or greater than 50% of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%	

2. The Private Equity Portfolio shall not include investments in venture capital funds.
3. Investments may be made through funds, strategic partnerships, or co-investments. Co-investments must be made in one of the following ways:
 - (1) alongside a fund with the same sponsor or manager as a fund in which SWIB is or has been an investor,
 - (2) alongside a fund with the same sponsor or manager as a fund on which SWIB is conducting due diligence and is actively evaluating for a prospective commitment, or
 - (3) as approved by the ED/CIO.
4. Neither the aggregate exposure (including co-investments) to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 10% of the total Private Equity Portfolio's exposure without approval of the ED/CIO.
5. No more than 45% of the Private Equity Portfolio's exposure may be invested outside of the U.S., without the approval of the ED/CIO. No more than 20% of the Private Equity Portfolio may be invested in emerging markets.
6. The Private Equity Portfolio may make co-investments in public company securities through private placements, including PIPEs, or other offerings. Co-investments in public company securities shall not exceed 2% of the Private Equity Portfolio's exposure. For purposes of this guideline, public company securities received via a distribution are not counted and are expected to be sold as soon as reasonably practicable.

7. Other guideline limitations notwithstanding, the head of Private Equity or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

Q. Real Estate Equity Portfolio Guidelines

The Real Estate Equity Portfolio contains investments in a broad range of real estate and real estate-related assets, including equity and debt investments, either solely, or through investment vehicles and structures such as public or private Real Estate Investment Trusts (REITs), public or private real estate company securities, limited liability corporations, limited partnerships, joint ventures, separate accounts or co-investment vehicles. Investment guidelines and soft parameters for Real Estate shall be applied, on an invested basis, to the aggregate composition of the Real Estate Equity Portfolio (except that all REIT portfolios shall be included in the aggregate as Core holdings).

All portfolio commitments are subject to the following approvals:

	Head of PMFA	ED/CIO
Commingled Fund	\$250 million or less	Over \$250 million
Core - Separate Account*	\$300 million or less	Over \$300 million
Non-Core – Separate Account*	\$200 million or less	Over \$200 million

*With respect to a separate account tranche, approval is required for the tranche, and not for individual investments within the tranche.

1. Aggregate exposure (including co-investments) to any commingled fund manager or sponsor may not exceed 20% of the Real Estate Equity Portfolio's exposure without approval of the ED/CIO. This limit does not apply to real estate investments for which SWIB has sole discretion to select, retain, and terminate manager(s) and/or advisor(s) without cause.
2. Aggregate direct public REIT and real estate company stock holdings (excluding underlying commingled fund holdings and externally managed REIT Portfolios) may not exceed 15% of the Real Estate Equity Portfolio's exposure and portfolio investments in any one public REIT or company may not exceed 3% of the Real Estate Equity Portfolio's exposure. SWIB's direct ownership position in any public REIT or company may not exceed 20% of outstanding voting equity, without ED/CIO approval. Any externally managed REIT portfolio(s) will be managed under separate authority, with guidelines set out in the management agreement(s) between SWIB and the selected manager(s).
3. No more than 45% of the Real Estate Equity Portfolio's exposure may be invested outside the U.S., without the approval of the ED/CIO. No more than 20% of the Real Estate Equity Portfolio's exposure may be invested in emerging markets, and no more than 10% of the Real Estate Equity Portfolio's exposure may be invested in separate accounts invested in emerging markets.

4. Other guideline limitations notwithstanding, the head of Real Estate or other staff authorized by the head of PMFA may: modify or waive terms of investments in the portfolio, including without limitation mortgages and leases on real estate in the portfolio; enter into new mortgages and leases; execute deeds and bills of sale; make expenditures for maintenance and improvements; grant easements; hire consultants, service providers, real estate advisors and property managers; and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance investment value of SWIB's position in the investments.
5. Prior to funding a direct investment (including a property within a separate account tranche) where real property is a material component, the property shall be evaluated for the presence of environmental and code compliance issues. If environmental issues that require action by governmental authorities exist, then funding shall not occur until an adequate remediation program is in place. If code compliance issues exist, then an adequate plan to bring the property into compliance shall be in place.
6. SWIB may not initiate improvement or development of real property owned or controlled by SWIB without making provisions for compliance with applicable Federal, state and local codes and ordinances.

R. Current Return Portfolio

The Current Return Portfolio consists of current return or certain equity-related investments, made on a global basis, in limited partnership or other fund vehicles, strategic partnerships, and co-investments in operating or holding companies. Investments may be made in debt instruments and in instruments with both current pay and equity features.

1. Any other guidelines notwithstanding, all portfolio commitments are subject to the following approvals:

	Head of PMFA	ED/CIO
• Funds or Strategic Partnerships	\$250 million or less	Over \$250 million
• Co-Investments	\$75 million or less	Over \$75 million
SWIB ownership equal to or greater than 50% of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%	

2. Investments may be made through funds, strategic partnerships, or co-investments. Co-investments must be made in one of the following ways:
 - (1) alongside a fund with the same sponsor or manager as a fund in which SWIB is or has been an investor;

(2) alongside a fund with the same sponsor or manager as a fund on which SWIB is conducting due diligence and is actively evaluating for a prospective commitment; or
(3) as approved by the ED/CIO.

3. Neither the aggregate exposure (including co-investments) to any fund manager or sponsor, nor the aggregate amount of investments in any company, may exceed 25% of the Current Return Portfolio's exposure without approval of the ED/CIO.
4. No more than 45% of the Current Return Portfolio's exposure may be invested outside of the U.S., without the approval of the ED/CIO. No more than 20% of the Current Return Portfolio may be invested in emerging markets.
5. The Current Return Portfolio may make co-investments in public company securities through private placements or other offerings. Co-investments in public company securities shall not exceed 2% of the Current Return Portfolio's exposure. For purposes of this guideline, public company securities received via a distribution are not counted and are expected to be sold as soon as reasonably practicable.
6. Other guideline limitations notwithstanding, the head of Private Equity or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain or enhance the value of SWIB's position in the investments.

S. Hedge Fund Portfolio

The Hedge Fund Portfolio ("HF Portfolio") will be comprised primarily of direct investments in hedge funds and is intended to generate a low-beta, alpha-oriented return stream.

1. The HF Portfolio will be comprised of the following investment vehicles:
 - a. *Direct Investments or Fund-of-Funds*: SWIB intends for its portfolio to be comprised primarily of direct investments in hedge funds rather than fund-of-funds vehicles that use an intermediary investment advisor(s) to select and allocate to hedge funds through a commingled fund. SWIB may make investments in fund-of-fund vehicles, as may be deemed appropriate by Funds Alpha staff and otherwise approved hereunder.
 - b. *Hedge Funds or Separately Managed Accounts ("SMAs")*: Investments can be made in limited liability partnerships with other investors or, in some cases depending upon the manager and size of investment, in separately managed accounts. SWIB expects most investments will be in limited liability vehicles. SWIB may invest via SMAs if it is in the best interest of SWIB to do so.
2. Hedge Fund Investment Strategies:
 - a. *Relative Value* – strategies that seek to take advantage of price differentials by buying and selling different yet related securities. Relative value strategies include, but are not limited to, fixed income arbitrage, insurance linked,

quantitative strategies, merger arbitrage, convertible arbitrage, and volatility-related investments.

- b. *Credit* - long/short and event driven investment strategies to various fixed-income instruments including bank loans, corporate, government bonds, distressed debt, and securitized credit.
- c. *Equity Long/Short* – long and short investments in publicly traded stocks and related securities either on a discretionary or systematic basis.
- d. *Tactical Trading* – global investments in indexes, commodities, interest rates, and currencies and, in each case, their derivatives as a result of relative value or directional forecasts from a systematic or discretionary approach.
- e. *Multi-Strategy* – funds seek to maximize risk-adjusted returns by investing in a variety of underlying investment strategies. They often employ flexibility in terms of capital, aiming to allocate dynamically to the best opportunities and shifting resources to where they are most needed.
- f. *Specialty Finance* - broad collection of lending strategies which typically have private, customized structures with a front ended cash flow profile at the portfolio level, short duration, and asset backed collateral.
- g. *Special Opportunity Investments & Coinvests*– SWIB may invest a portion of its portfolio in special opportunity investments, which may include: interests in the equity or revenues of hedge fund managers, co-investments, or external manager “best ideas” opportunities.

The HF Portfolio has the following target weightings and ranges to the individual hedge fund strategies:

	<u>Target Allocation</u>	<u>Target Maximum</u>
Relative Value	20%	40%
Credit	10%	30%
Equity Long/Short	20%	30%
Tactical Trading	10%	30%
Multi-strategy	25%	50%
Specialty Finance	10%	15%
Special Opportunity Investments	<u>5%</u>	15%
	100%	

3. Approvals: HF Portfolio allocations are subject to the following approvals:

	Head of PMFA	ED/CIO
--	--------------	--------

• Core	Up to \$300 million aggregated	More than \$300 million
• Special Opp/ Co-invest	Up to \$75 million aggregated	More than \$75 million
SWIB ownership equal to or greater than 50% of an individual fund, calculated at the master fund level (excluding funds of one and a fund/vehicle through which a co-investment is made)	ED/CIO, provided that notice shall be given to the ED/CIO if ownership of an individual fund (excluding funds of one and a fund/vehicle through which a co-investment is made) is equal to or greater than 33 1/3%	

4. The aggregate exposure to any hedge fund manager or sponsor (including co-investments) may not exceed 15% of the total HF Portfolio's exposure without approval of the ED/CIO.
5. Other guideline limitations notwithstanding, the head of Funds Alpha or other staff authorized by the head of PMFA may modify or waive terms of investments in the portfolio and generally take any and all other actions that are necessary and reasonable to protect, maintain, or enhance the value of SWIB's position in the investments.
6. All redemptions, terminations or reductions of capital will be at the discretion of the Funds Alpha Manager and the head of PMFA.

T. Beta One Portfolio

The Beta One Portfolio is comprised primarily of direct investments in strategies of external managers that are intended to generate both (1) the total return (or beta of one) of a SWIB policy benchmark and (2) an excess return (or alpha) over the benchmark through active security selection. Tracking error measures divergence around the given benchmark. In comparison, SWIB's external hedge fund portfolio is designed to deliver only an excess return or alpha. This section does not govern passive external managers which the Asset and Risk Allocation Division oversees and monitors.

1. Investments in Beta One External Managers will be comprised of the following investment vehicles:
 - a. *Separately Managed Accounts ("SMAs")*: in which external managers direct positioning but the assets reside at SWIB's custodial bank.
 - b. *Commingled Investments or Fund Investments*: in which SWIB has a percentage ownership in limited liability partnerships or other structures alongside other investors or in a fund-of-one structure where SWIB is the sole investor. Assets reside at the manager's custodial bank.
2. Investment Strategies and Broad Guidelines for Beta One External Managers:
 - a. *Equities* – strategies will be comprised of various fundamental, quantitative and other approaches intended to produce an active return above the respective

benchmarks. Strategies will be invested in traditional long only portfolios, active extension formats (i.e. 130/30, 150/50) and other public equity securities approaches across various styles, geographies and market cap weights. A limited use of shorting (up to 80%) may be used in the active extension format in non-SMAs.

- b. *Fixed Income* – strategies will be comprised of various fundamental, quantitative, and other approaches intended to produce an active return above the respective benchmarks. Strategies will primarily be invested in portfolios across the credit quality spectrum, across geographies, including emerging and frontier market debt, across structures (e.g., asset-backed securities, corporate debentures, etc.) Individual manager guidelines may allow shorting of cash bonds. Derivatives may be used (long or short) for both hedging and investment purposes and will be set forth in the individual manager guidelines.
 - c. Notwithstanding any shorting permitted in (a) above, pursuant to SWIB’s policies, the investment guidelines for SMAs will prohibit the Beta One External Managers from shorting any equity securities and from purchasing equity securities in secondary offerings.
3. Any use of derivatives, leverage, and shorting allowed will be incorporated into the ex-ante risk assessments and active risk contributions.
 4. Approvals: Beta One External Manager allocations are subject to the following approvals:

Investment	Head of PMFA	ED/CIO
Beta One Fixed Income	Up to \$1.8 billion	More than \$1.8 billion
Beta One Equity	Up to \$1 billion	More than \$1 billion
Includes all Funds Alpha investments aggregated with the Manager, regardless of vehicle, strategy or portfolio.		

5. Other guideline limitations notwithstanding, the head of Funds Alpha or other staff authorized by the head of PMFA may modify, amend or waive terms of Beta One Manager investment management agreements and generally take any and all other actions that are necessary and reasonable to protect, maintain, or enhance the value of SWIB’s position in the investments.
6. All redemptions, terminations or reductions of capital will be at the discretion of the head of Funds Alpha and the head of PMFA in consultation with the head of ARA for policy benchmark exposure consideration.
7. Notwithstanding the above discretion regarding redemptions, terminations or reductions, if the Risk Management Division determines that certain risk attributes in the context of the total Core Fund or the aggregate Beta One Portfolio are undesirable

for the Core Fund, Variable Fund or the aggregate portfolio, then the head of Risk Management may recommend redemptions, terminations or reductions to portfolio exposures. With the ED/CIO's concurrence, the head of Funds Alpha will make the changes as recommended by the head of Risk Management.

U. Private Markets and Funds Alpha Overage Portfolios

Portfolios may be established at the asset class level for private equity, co-investment, real estate, venture capital, hedge fund, and private debt asset classes to provide for (i) excess exposure to certain investment ideas where the sizing of the investment requires it to be held, in part, outside of an individual internal portfolio or (ii) hedging transactions using public or private securities. In each case, a primary investment must be made by the relevant private markets or hedge fund portfolio with the excess exposure or hedging transaction being allocated to an overage portfolio. The relevant PMFA strategy head will be responsible for portfolio oversight and monitoring of the investment, including the securities in the overage portfolio.

These portfolios may also be used to express investment strategies and ideas that do not fit clearly in any of the private markets or Funds Alpha portfolios but are attractive from a risk/return perspective. In such cases, no primary investment will be made in the existing private markets portfolios, and the ED/CIO will designate a portfolio manager that will be responsible for portfolio oversight and monitoring.

These portfolios may invest in (1) any instrument approved for the relevant private markets asset class portfolios described elsewhere in these guidelines, and (2) any other public or private securities or derivatives approved for trading by SWIB solely for hedging purposes. Each investment idea expressed in the portfolios shall be approved by the ED/CIO with the recommendation of the head of PMFA. The ARA Division is responsible for reporting on any approved investment to the Investment Committee on a monthly basis. Other governance, monitoring, compliance or reporting for the investment may also be specified in the approval. Portfolios will not have a separate benchmark or risk target, but will be included within the benchmark and soft risk parameters for the applicable aggregated asset class, portfolio, or Core Fund, as applicable and as approved at the time of the investment. If the investment will use active risk assigned to exposure management, it will be noted in the investment approval.

VII. EXTERNAL MANAGEMENT

Portfolios may be managed internally by SWIB investment professionals or externally by money management firms. In making the decision on how the portfolios will be managed, SWIB compares the resources, expertise, diversification benefits, and cost of internal management versus external management. If the decision is made to manage the portfolios externally, SWIB will determine whether a separate account or commingled fund best suits SWIB's needs.

External active and passive managers operate under contractual investment guidelines approved by SWIB's investment management staff.

APPENDIX 1 - APPROVED EXCHANGES

Approved Exchanges for Derivatives Trading as of ~~March 29~~September 23, 2022~~2025~~*

Australian Securities Exchange (ASX)
BOX-~~Options~~ Exchange
CBOE Exchanges
~~Chicago Board of Trade~~
~~Chicago Mercantile Exchange~~

CME Group Exchanges
London Stock Exchange
Eurex ~~Exchange~~Exchanges
Euronext Exchanges
ICE Futures Exchanges
~~International Securities~~Japan Exchange Group
~~Montreal Exchange~~
Nasdaq Exchanges
~~New York Mercantile Exchange~~
NYSE Exchanges
~~Osaka Exchange~~
TMX (~~Toronto Stock Exchange~~)Group
~~Tokyo Stock Exchange~~

*Approved exchanges shall include any and all exchanges that may be acquired by, merged with or otherwise reorganized with or into, or any subset of, any of the above-listed exchanges subsequent to the date above provided that such exchange continues to clear through a Qualifying Central Counterparty (QCCP). This list may be updated for such organizational or name changes from time to time by Legal & Compliance without any additional action of the Investment Committee, and all additions or changes shall be deemed Approved Exchanges for purposes of the WRS Investment Committee Investment Guidelines effective as of the date of such acquisition, merger or reorganization. ~~On a quarterly basis~~Periodically, Compliance shall provide notice to the Investment Committee if there have been any such changes to the list.

The Multi-Strat and Exposure Management Portfolios are approved to trade on any of the above exchanges and any other exchange whose clearing house is a Qualifying Central Counterparty (QCCP) as defined by the Bank for International Settlement (BIS).

APPENDIX 2 - SOFT RISK PARAMETERS

SOFT RISK PARAMETERS – ASSET CLASS AND PORTFOLIO

PORTFOLIO ASSET CLASS CHARACTERISTIC	ASSET CLASS	DISCUSSION TRIGGER
Asset Class Exposure*	Core Fund	
	Global Equities	Target ± 4.6%
	EM Equities	Target ± 2.8%
	Small Cap	Target ± 4.9%
	EAFE Small Cap	Target ± 4.3%
	U.S. Inv Grade	Target ± 4.8%
	High Yield and Levered Loans	Target ± 5.1%
	EM Debt	Target ± 5.6%
	Variable Fund	
	U.S. Equity	Target ± 5.0%
	Int'l Equity	Target ± 5.0%
*Post-Corridor Treatment		
Maximum Small Cap Exposure	CTF Domestic Public Equities	2.75x Benchmark
	VTF Domestic Public Equities	2.75x Benchmark
Ex Ante Tracking Error	Public Equities	0.75% - 2.25%
	Public Fixed	0.4% - 1.2%
	Core Fund	0.6% - 1.8%
	Variable Fund	0.3% - 0.9%
Counterparty Exposure (internal and external separate account portfolios)	WRS (Core and Variable Funds)	5 bp exposure (net of collateral, if any) to a single counterparty
Duration	Public Fixed	+/- 1 year of Benchmark

ACTIVE/INDEXED EQUITIES

Minimum Number of Holdings

Small Cap

100 Long

Ex Ante Tracking Error

Passives (Core Fund and Variable Fund Consolidation):

MSCI US 10 bp annualized

MSCI ex US 20 bp annualized

MSCI US Small Cap 30 bp annualized

Small Cap 1.75% - 5.25%

Maximum EM Active Risk Exposure

Small Cap

Emerging Markets Tracking Error Contribution of 20%

Maximum Convertible Bond Issues

Small Cap

0

Maximum Private Placements

Small Cap

0

Single Name Concentration

Small Cap

Benchmark weight \pm 2%

Maximum ETF Exposure

Small Cap

15% of portfolio value

Maximum Company Ownership
(Excluding ETFs) (L/S)

Small Cap

3% of outstanding

Sum of Top Ten Holdings (L/S)
(Active Weight)

Small Cap

10% of portfolio value

P/E Ratio

Small Cap

50%-150% of Benchmark

Maximum Sector Exposure

Small Cap

Benchmark weight \pm 10%

Maximum Cash

Passives

1% in unequitized cash

Small Cap

5%

FIXED INCOME

Duration	IG Credit	+/- 1 year of assigned Benchmark
	MBS	+/- 1 year of assigned Benchmark
	Long Treasury	+/- 2 years of assigned Benchmark
	High Yield	+/- 2 years of assigned Benchmark
Maximum Corporate Industry Sector Exposure	IG Credit	Greater of 10% or 3 x Benchmark
Ex Ante Tracking Error	IG Credit	1.5%
	MBS	3.0%
	High Yield	3.0%
	Lev Loans	3.0%
	Long Treasury	1.5%
Maximum Equity Exposure	TBA Strategy	15%
	High Yield	5% of portfolio value
	Lev Loans	5% of portfolio value

[Maximum Centrally Arranged Leverage](#)

[Fixed Income Portfolios](#)

[9% of aggregate market value](#)

MULTI-STRAT

Ex ante volatility (tracking error) range	Multi-Strat	3% to 8%, measured with a trailing two-year risk sampling period
Ex-Ante Equity Beta		
Ex-Ante Spread Beta	Multi-Strat	Range of -0.3 to +0.3 with a target of zero over a market cycle. This is measured ex ante with a trailing two-year risk sampling period
Ex-Ante Rates Beta		
Ex-Ante FX Carry Beta		

PRIVATE MARKETS & FUNDS ALPHA

Maximum Co-Investments	Private Equity	30% of core Private Equity Portfolio for Private Equity Co-Investments
		30% of Current Return Portfolio for Current Return Co-Investments

Maximum Co-Investments alongside funds with the same sponsor or manager as a fund on which SWIB was conducting due diligence and actively evaluating for a prospective commitment at the time of co-investment ⁴	Private Equity	5% of core Private Equity Portfolio for Private Equity Co-Investments
		5% of Current Return Portfolio for Current Return Co-Investments
	Venture Capital	5% of Venture Capital Portfolio for Venture Capital Co-Investments
Maximum Venture Capital Exposure	Venture Capital	25% of sum of Private Equity, Current Return, Private Debt and Venture Capital
Maximum Development Risk (Direct Holdings Only)	Real Estate	10%
Maximum Single Property Type Exposure - Quarterly	Real Estate	50%
Minimum Core Holdings (Including REIT portfolios)	Real Estate	50%
Maximum Value Holdings	Real Estate	30%
Maximum Opportunistic Holdings	Real Estate	30%
Maximum Core Portfolio Leverage	Real Estate	50%
Maximum Core Fund/Deal Leverage (Must be non-recourse to SWIB)	Real Estate	65%
Maximum Real Estate Equity Portfolio Leverage	Real Estate	60%
Maximum Holdings with Leverage > 80%	Real Estate	10%
Maximum Debt Holdings	Real Estate	25%
Ex ante volatility (tracking error) Range	Hedge Fund	2.5% to 6.5%, measured with a trailing two-year risk sampling period
	Beta One Equity	0.8% to 2.0%
	Beta One Fixed Income	0.8% to 2.0%
Equity Delta to the S&P 500 Range	Hedge Fund	-0.3 to +0.3 (target of zero) over a market cycle measured

⁴ If SWIB subsequently commits to a limited partnership or other fund vehicle of the sponsor or manager, then such co-investment shall no longer be included for purposes of calculating this soft parameter.

		ex ante with a trailing two-year risk sampling period
Target Beta Range	Beta One Equity	0.8 to 1.2 (target of 1.0) (CTF + VTF)
	Beta One Fixed Income	0.8 to 1.2 (target of 1.0)
Maximum one-year annual Conditional Value at Risk (CVaR)	Hedge Fund	7% based on trailing two-year risk sampling period
Maximum Hedge Fund Active Risk Contribution	Hedge Fund	6.0 bps of Core Fund active risk
Maximum General Partner/Investment Manager Portfolio Concentration	Hedge Fund	12%
	Beta One	25% (CTF+VTF)

APPENDIX 3 – CTF AND VTF BENCHMARKS
State of Wisconsin Investment Board
Target State Benchmarks 2025¹

Core Trust Fund Benchmark²		
	Current Benchmark	
Public Equity	38% MSCI ACWI Investable Market Index (IMI) ex China + China All Shares Special Weight	<ul style="list-style-type: none"> - Current and previous benchmark asset classes are weighted by asset class strategic target weights - Current Benchmark updated 4/30/2012 to include Cash, which reflects leverage
Public Fixed Income	27% Fixed Blend of Eight Components ³	
Inflation Sensitive	19% Bloomberg U.S. Treasury Inflation-Linked Bond Index	
Private Equity/Debt	20% Roll-Up of Five Components ⁴	
Real Estate	8% NCREIF Open End Diversified Core Equity (ODCE)	
Cash	(-12%) 3 Month T-Bill Yield + 50bps	
Total	100%	

Variable Trust Fund Benchmark			
	Current Benchmark		
Domestic Equities	70% MSCI USA Investable Market Index		
International Equities	30% MSCI All Country World Index (ACWI) ex US Custom Net Index		
Total	100%		

Note: Roll-Up refers to the market-weighted aggregation of benchmark components or indices, based on SWIB's actual market exposures.

¹ Reflects target weights under the 2025 Asset Allocation implementation plan as of 12/31/2024.

² The major asset class weights are established through the annual asset allocation exercise. Private Equity/Debt weights float between 12% and 28% and Real Estate weights float between 4% and 12%. The Private Equity/Debt excess weights are taken from Public Equities and the Real Estate excess weights are taken 50% from Public Equities and 50% from Public Fixed Income.

³ Public Fixed Income Benchmark: Fixed Blend of Eight Components
24.00% Bloomberg U.S. Treasury Index
24.00% Bloomberg U.S. Credit Index
20.00% ICE BofA BB-B US High Yield Index
10.00% Morningstar LSTA U.S. Leveraged Loan 100 Index
8.00% Bloomberg Mortgage-Backed Securities Index
5.00% JPM EMBI Global Diversified
5.00% JPM GBI-EM Diversified
4.00% Bloomberg U.S. Treasury Long Index

⁴ Private Equity/Debt Benchmark: Roll-Up of Five Components
Component One: State Street Private Equity Index (SSPEI) – All Regions
Component Two: SSPEI Venture Capital – U.S. Region
Component Three: Private Equity Legacy (SW050300) Actual Portfolio Returns
Component Four: Bloomberg Duration-Adjusted Baa Corporate plus 20 basis points
Component Five: SSPEI Private Debt – All Regions

Effective 1/1/2010, the tax treatment of the MSCI benchmark updated to a custom net-of-tax benchmark based on SWIB-specific tax treatment.

STATE OF WISCONSIN INVESTMENT BOARD
Investment Committee Meeting–Open Session

Tuesday, August 26, 2025

Offices of the Investment Board
4703 Madison Yards Way, Madison, Wisconsin

Committee Members Present: Edwin Denson, Executive Director/Chief Investment Officer (Chair)
Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer
Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer
Stefano Cavaglia, Senior Portfolio Manager–Asset & Risk Allocation
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Eric Barber, Chief Legal Counsel (non-voting)
Hassan Chehime, Head of Risk Management (non-voting)
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer (non-voting)

Also in Attendance: J. Michael Collins, Trustee
Clyde Tinnen, Trustee
John Voelker, Trustee
Nathan Ballard, Senior Legal Counsel
Brandon Brickner, Head of Internal Audit
Rosa Brown, Quantitative Analyst–Asset & Risk Allocation
Kate Burkart-Paulson, Senior Legal Counsel
John Burkhartzmeyer, Senior Trader
Bridget Chen, Portfolio Manager–MBS
Christian Comito, Senior Portfolio Manager–MBS
Tunc Dayioglu, Senior Portfolio Manager–Funds Alpha
Jack Drew, Trader
Kliton Duri, Senior Portfolio Manager–High Yield and Leveraged Loans
Trey Edgerle, Compliance Analyst
Greg Fletcher, Performance Director
Tom Freeman, Director of Quantamental Research
Scott Freundlich, Portfolio Manager–High Yield and Leveraged Loans
Shannon Gannon, Communications Director
Max Garcia, Analyst–Funds Alpha
Jameson Greenfield, Chief Financial Officer
Thomas Gregg, PMFA Operations Manager
Dan Gyorog, Internal Auditor

Syed Haider, Quantitative Analyst–Multi-Asset Strategies
 Phil Johnson, Senior Portfolio Manager–High Yield and Leveraged
 Loans
 Salah Khalaf, Senior Portfolio Engineer–Private Markets & Funds Alpha
 Jason Kowalke, PMFA Operations Manager
 Jason Krueger, Compliance Analyst
 Alex Kubiak, Investment Operations Analyst
 Katie Kuryla, Senior Paralegal/Records Specialist
 Lisa Lange, Director of Compliance & Senior Legal Counsel
 Alex Li, Senior Analyst–Asset & Risk Allocation
 Shan Lo, Senior Portfolio Manager–Multi-Asset Strategies
 Jon Loboda, Performance Measurement Operations Manager
 Tony Lubarsky, Investment Operations Analyst
 Bill Luetzow, Legal Counsel
 Michael Mandarino, Senior Analyst–High Yield and Leveraged Loans
 Matt Marek, Portfolio Engineer–Asset & Risk Allocation
 Ed Martinez, PMFA Business Director
 David Meyer, Senior Trader
 Nick Mokha, Portfolio Manager–High Yield and Leveraged Loans
 Joy Mukherjee, Senior Portfolio Manager–U.S. Small Cap Strategy
 Sunil Nair, Operational, Financing & Counterparty Risk Director
 Hunter Olson, Analyst–High Yield and Leveraged Loans
 Cefe Quesada, Chief Technology Officer
 Anand Rakesh, Director of Risk Analytics & Financial Engineering
 Systems
 Vishnu Reddy, Senior Trader
 Zhihui Redlin, Legal Counsel
 Robby Richlen, Analyst–Funds Alpha
 Tom Robinson, Head of Corporate Governance
 Andrea Ruiz, Senior Portfolio Manager–Liquidity, Inflation & Rates
 Mgmt.
 Harsh Shah, Investment Operations Analyst
 Gabriel Souza, Investment Operations Analyst
 Mark Stockley, Senior Trader
 Lyle Tang, Quantitative Analyst
 Mark Taylor, Senior Portfolio Manager–Quantitative Research
 Rob Thornton, ARA Business Director
 Dawn Tuescher, Executive Administrative Assistant
 Ping Wong, Portfolio Manager–Liquidity, Inflation & Rates Mgmt.
 Sarah Zhao, Investment Operations Analyst
 Joe Nankof, NEPC
 (Some individuals may have attended only portions of the meeting.)

OPEN SESSION

With a quorum present, Edwin Denson, Chair of the Investment Committee, called the meeting to order at 1:00 p.m.

1. Approval of the Minutes

Mr. Denson asked if there were any comments on either the open or closed session minutes of the July 29, 2025 Investment Committee (“Committee”) meeting. Hearing no comments, Mr. Denson stated that the Committee could approve both the open and closed session minutes in open session.

Motion: A motion was made by Ms. Fink and seconded by Ms. Linn to approve both the open session and the closed session minutes of July 29, 2025, as presented. The motion passed unanimously.

2. October Board Workshop Preview

Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer, provided a summary of the upcoming October Board Workshop, which will include **(a)** a presentation from the Wisconsin Retirement System’s independent actuary in connection with the asset allocation review, including their stress testing analysis, **(b)** a preview of the asset allocation analysis and NEPC’s recommendations, made in consultation with the Asset and Risk Allocation (“ARA”) division, to be presented to the Board for approval at the December Board meeting, **(c)** external speaker presentations, including from Libby Cantrill, managing director and head of public policy at PIMCO, and **(d)** other updates from SWIB staff.

3. NEPC 2025 Benchmark Review and Recommendation

Joe Nankof, NEPC, the Board of Trustees’ benchmark consultant, presented the *Global Equity with Emerging Markets Portfolio Benchmark Analysis*, included on pages 10-22 in the meeting materials. He reminded the Committee that the Core Trust Fund’s (“CTF”) China equity strategy portion of the global equity benchmark was previously changed, effective January 1, 2025, to incorporate the MSCI China All Shares Index. NEPC is now recommending that the MSCI ACWI Index benchmark for the global equities with emerging markets strategy be correspondingly changed to substitute China All Shares for the standard China index, which he highlighted would reduce the risk of benchmark misfit at the CTF level.

Mr. Nankof reviewed the portfolio construction, holding analysis and risk/return characteristics of the existing and proposed benchmarks, and led the Committee’s discussion regarding the benchmark misfit risk. It was further highlighted that the benchmark change would apply to all external managers with a China equity component and noted that the Committee can approve provisional benchmarks, with review and approval from the Board of Trustees’ Benchmark and Performance Committee at its next regular meeting.

Motion: A motion was made by Ms. Fink and seconded by Mr. Shearer to approve, and to recommend to the Board of Trustees’ Benchmark and Performance Committee, the provisional benchmark, effective July 1, 2025, for the global equities with emerging markets strategy of the MSCI ACWI Index (with China All Shares), as presented and recommended by SWIB’s benchmark consultant, NEPC. The motion passed unanimously.

4. Global Public Market Strategies Division Update

Nick Stanton, Head of Multi-Asset Strategies, reported on performance from the Global Public Market Strategies division in the *Global Public Market Strategies Quarterly Update, Q2 2025*, included on pages 23-25 in the meeting materials. He commented that six of eight division strategies generated positive relative returns in the first half of the year, and reviewed the performance of the division strategies over the three- and five-year periods.

5. Q2 2025 Quarterly Updates

A. Multi-Strat

Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies, presented the *Multi-Strat Portfolio Review*, included on pages 26-29 in the meeting materials. He reported that the multi-strat portfolio outperformed its benchmark by 64 basis points (“bps”) in the second quarter, driven by performance from fundamental security selection and fundamental arbitrage strategies, and that the portfolio returned positive absolute and relative performance for the year-to-date, three- and five-year periods. Mr. Nicholson then: **(a)** discussed the estimated impact of the recently imposed tariffs on liquidity in the public markets, and **(b)** confirmed that the portfolio remained in compliance with its guidelines.

B. Fixed Income Strategies

Mike Shearer, Head of Fixed Income Strategies, presented the *Fixed Income Strategies Review*, included on pages 30-46 in the meeting materials. He commented that the fixed income portfolios had mixed performance in the second quarter, with the composite outperforming the benchmark by 19 bps and the mortgage-backed securities (“MBS”), investment-grade credit and to-be-announced (“TBA”) strategies performing well while the high yield and leveraged loans portfolios underperformed.

Mr. Shearer then reviewed the positioning of the strategies, noting that **(i)** overall the portfolios are neutral duration and positioned for yield curve steepening, **(ii)** most portfolios have decreased tracking error since the first quarter, and **(iii)** security selection is critical in the current macroeconomic environment. He also highlighted that the TBA strategy is now ramped up and fully operational.

With respect to the fixed income markets generally, Mr. Shearer commented that **(a)** market pricing of expected cumulative Federal Reserve interest rate cuts over the next twelve months continued to be volatile in the second quarter, **(b)** the U.S. Treasury yield curve steepened since the end of Q1 and into Q3, **(c)** the upgrade/downgrade credit ratings ratio was strong in investment-grade credit, with significantly more ratings upgrades than downgrades, while the same ratio in the high yield market was weak, **(d)** MBS nominal spreads have tightened in the last three months but remain inexpensively priced given the levels of implied rate volatility, and **(e)** higher-tier consumer credit remains strong. Lastly, he confirmed that the portfolios were in compliance with their guidelines in Q2 2025.

C. Small Cap Strategy

Joy Mukherjee, Senior Portfolio Manager–U.S. Small Cap Strategy, referred to the *U.S. Small Cap Strategy Review*, included on pages 47-54 in the meeting materials. He highlighted that the portfolio outperformed its benchmark by 219 bps in the first half of the year, and that absolute and relative performance over the three- and five-year periods were positive. Mr. Mukherjee then provided public equity market commentary, noting that (a) equity markets were generally up in Q2, with the overall performance narrative dominated by the “magnificent seven” group of high-performing technology stocks, and (b) after seeking the safety of large cap stocks in Q1, investors were more optimistic in Q2 and micro-cap stocks outperformed. Lastly, Mr. Mukherjee (i) provided sector commentary for the small cap portfolio, noting that industrials and healthcare were the top-performing sectors in the first half of the year, while the financials sector detracted, and (ii) confirmed that the portfolio remained in compliance with its guidelines.

D. LIRM

Andrea Ruiz, Senior Portfolio Manager–Liquidity, Inflation & Rates Mgmt., presented the *Investment Strategies: Liquidity, Inflation and Rates Management* (“LIRM”) quarterly update, included on pages 55-60 in the meeting materials. With respect to the market, she noted that (a) money market fund net assets continued to increase in the second quarter, (b) U.S. Treasury bills outstanding declined but are expected to rise sharply in Q3, and (c) the overnight reverse repurchase agreement balance remains low. Ms. Ruiz then reviewed performance for the State Investment Fund (“SIF”), noting that the SIF returned positive absolute and relative performance for the year-to-date, one-, three- and five-year periods, and confirmed that the portfolio remained in compliance with its guidelines.

6. Convene in Closed Session

Motion: A motion to go into closed session as authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes to consider confidential strategies for the investment of public funds, including (a) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (b) the review of specific proprietary investment strategies and investment instruments related to multi-strat, fixed income strategies, small cap equities, LIRM, and exposure management, and (c) discussion of the impact of recent events on portfolio positioning, was made by Mr. Stanton and seconded by Mr. Drummond.

Mr. Denson called for a roll call vote.

Denson-Aye	Fink-Aye	Mattina-Aye	Cavaglia-Aye
Drummond-Aye	Linn-Aye	Maung-Aye	Nicholson-Aye
Rector-Aye	Shearer-Aye	Stanton-Aye	Zhang-Aye

There being twelve ayes and no nays, Mr. Denson declared the motion passed. The Committee convened in closed session at 1:35 p.m. and reconvened in open session at 3:15 pm.

7. Announcement of Committee Actions Relating to Items Taken Up in Closed Session

Mr. Denson announced that, while in closed session, the Committee **(i)** reviewed active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(ii)** reviewed specific proprietary investment strategies and investment instruments related to multi-strat, fixed income strategies, small cap equities, LIRM, and exposure management, and **(iii)** discussed the impact of recent events on portfolio positioning.

8. Soft Risk Parameters

Hassan Chehime, Head of Risk Management, noted that the report *Soft Risk Parameters—Asset Class and Portfolio*, as of July 31, 2025, was included on pages 178-179 in the meeting materials for the Committee’s review. Mr. Chehime noted that there were no new discussion triggers this month and that one discussion trigger had been dropped relating to the small cap portfolio’s ex ante tracking error.

9. Future Meeting Topics

Mr. Denson noted that draft agendas for the September 23, 2025 and October 28, 2025 Committee meetings were included on pages 180-183 in the meeting materials for the Committee’s review.

10. Adjournment

Motion: A motion to adjourn the meeting was made by Mr. Drummond and seconded by Ms. Fink. The motion passed unanimously, and the meeting adjourned at 3:16 p.m.

Date of Committee Approval: 09/23/25

Signed: /s/ Eric Barber
Eric Barber, Secretary
Investment Committee

STATE OF WISCONSIN INVESTMENT BOARD
Investment Committee Meeting–Open Session

Tuesday, September 23, 2025

Offices of the Investment Board
4703 Madison Yards Way, Madison, Wisconsin

Committee Members Present: Edwin Denson, Executive Director/Chief Investment Officer (Chair)
Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer
Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Eric Barber, Chief Legal Counsel (non-voting)
Hassan Chehime, Head of Risk Management (non-voting)
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer (non-voting)

Also in Attendance: Clyde Tinnen, Trustee
John Voelker, Trustee
Nathan Ballard, Senior Legal Counsel
Chelsey Barczak, GPMS Business Director
Kevin Blank, Senior Analyst–Funds Alpha
Brandon Brickner, Head of Internal Audit
Rosa Brown, Quantitative Analyst–Asset & Risk Allocation
Kate Burkart-Paulson, Senior Legal Counsel
John Burkhartzmeyer, Senior Trader
Sara Chandler, Chief of Staff & Strategy
Bridget Chen, Portfolio Manager–MBS
Christian Comito, Senior Portfolio Manager–MBS
Kliton Duri, Senior Portfolio Manager–High Yield and Leveraged Loans
Trey Edgerle, Compliance Analyst
Greg Fletcher, Performance Director
Scott Freundlich, Portfolio Manager–High Yield and Leveraged Loans
Shannon Gannon, Communications Director
Max Garcia, Analyst–Funds Alpha
Jameson Greenfield, Chief Financial Officer
Thomas Gregg, PMFA Operations Manager
Dan Gyorog, Internal Auditor
Syed Haider, Quantitative Analyst–Multi-Asset Strategies
Alex Hansen, Investment Operations Analyst

Brian Heimsoth, Senior Portfolio Manager–Asset & Risk Allocation
Becca Hewison, Administrative Services Manager and Executive Assistant
Vince Janecky, Internal Auditor Data Analyst
Phil Johnson, Senior Portfolio Manager–High Yield and Leveraged Loans
Ryan Johnston, Senior Analyst–Funds Alpha
Salah Khalaf, Senior Portfolio Engineer–Private Markets & Funds Alpha
Jason Kowalke, PMFA Operations Manager
Dylan Krivoshein, Investment Operations Analyst
Katie Kuryla, Senior Paralegal/Records Specialist
Lisa Lange, Director of Compliance & Senior Legal Counsel
Alex Li, Quantitative Analyst–Asset & Risk Allocation
Jon Loboda, Performance Measurement Operations Manager
Jeff Lucas, Senior Portfolio Manager–Investment Grade Fixed Income
Bill Luetzow, Legal Counsel
Michael Mandarino, Senior Analyst–High Yield and Leveraged Loans
Matt Marek, Senior Analyst–Asset & Risk Allocation
Frank Mazzucco, Senior Legal Counsel
Nick Mokha, Portfolio Manager–High Yield and Leveraged Loans
Scott Nichols, Head of Trading
Hunter Olson, Analyst–High Yield and Leveraged Loans
Cefe Quesada, Chief Technology Officer
Anand Rakesh, Director of Risk Analytics & Financial Engineering Systems
Vishnu Reddy, Senior Trader
Robby Richlen, Analyst–Funds Alpha
Tom Robinson, Head of Corporate Governance
Joe Roth, Transition Management and Portfolio Support Manager
Andrea Ruiz, Senior Portfolio Manager–Liquidity, Inflation & Rates Mgmt.
Harsh Shah, Investment Operations Analyst
Cora Shi, Senior Analyst–Asset & Risk Allocation
Gabriel Souza, Investment Operations Analyst
Mark Stockley, Senior Trader
Rob Thornton, ARA Business Director
Leif Thybony, Senior Portfolio Manager–High Yield and Leveraged Loans
Ping Wong, Portfolio Manager–Liquidity, Inflation & Rates Mgmt.
Sarah Zhao, Investment Operations Analyst
Robert Goldthorpe, NEPC
(Some individuals may have attended only portions of the meeting.)

OPEN SESSION

With a quorum present, Edwin Denson, Chair of the Investment Committee, called the meeting to order at 1:00 p.m.

1. Approval of the Minutes

Mr. Denson asked if there were any comments on either the open or closed session minutes of the August 26, 2025 Investment Committee (“Committee”) meeting. Hearing no comments, Mr. Denson stated that the Committee could approve both the open and closed session minutes in open session.

Motion: A motion was made by Mr. Mattina and seconded by Mr. Nicholson to approve both the open session and the closed session minutes of August 26, 2025, as presented. The motion passed unanimously.

2. Amendments to Investment Committee WRS Investment Guidelines

Lisa Lange, Director of Compliance and Senior Legal Counsel, discussed the proposed amendments to the *SWIB Investment Committee Wisconsin Retirement System Investment Guidelines*, included on pages 11-55 in the meeting materials. She reported that the proposed changes revise the guidelines for each of the internally managed active public fixed income portfolios to limit their aggregate use of centrally arranged leverage from the Asset & Risk Allocation (“ARA”) division to 15% of the portfolios’ aggregate market value, with a corresponding new soft risk parameter set at 9%. Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer, answered questions regarding the historical use and cost of this leverage and additional available sources of leverage.

Ms. Lange also noted that the proposed changes (i) clarify the distinction between “emerging” and “developed” markets for public fixed income investments, and (ii) make non-substantive revisions to the list of approved exchanges to combine individual exchanges that fall within a broader exchange group.

Motion: A motion was made by Ms. Fink and seconded by Mr. Rector to approve the proposed amendments to the *SWIB Investment Committee WRS Investment Guidelines*, as presented in the Committee materials. The motion passed unanimously.

3. Transition Update (Q2 2025)

Joe Roth, Transition Management and Portfolio Support Manager, presented the *Transition Management Summary, Q2 2025*, included on page 56 in the meeting materials, and reviewed the two transition events during the second quarter. He noted that BlackRock managed the first transition, which effectuated an active to passive rebalance of international small cap assets and cost less than expected.

Mr. Roth then reviewed the second transition, which was managed by State Street and liquidated an external manager’s international equities allocation from the beta one equity portfolio in four tranches. He noted that overall aggregate performance was in line with expectations, with three of the four tranches completed within their implementation shortfall tolerance ranges despite elevated market volatility. Lastly, he highlighted the benefits realized in this transition from the implementation of new procedures regarding the approvals and documentation required for changes to transition management plans.

4. Convene in Closed Session

Motion: A motion to go into closed session as authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes to consider confidential strategies for the investment of public funds, including **(a)** the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(b)** the review of specific proprietary investment strategies and investment instruments related to asset and risk allocation, multi-asset, and exposure management, **(c)** the review of broker information, and **(d)** discussion of the impact of recent events on portfolio positioning, was made by Mr. Shearer and seconded by Mr. Stanton.

Mr. Denson called for a roll call vote.

Denson-Aye	Fink-Aye	Mattina-Aye	Drummond-Aye
Linn-Aye	Maung-Aye	Nicholson-Aye	Rector-Aye
Shearer-Aye	Stanton-Aye	Zhang-Aye	

There being eleven ayes and no nays, Mr. Denson declared the motion passed. The Committee convened in closed session at 1:26 p.m. and reconvened in open session at 3:36 p.m.

5. Announcement of Committee Actions Relating to Items Taken Up in Closed Session

Mr. Denson announced that, while in closed session, the Committee **(i)** reviewed active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(ii)** reviewed specific proprietary investment strategies and investment instruments related to asset and risk allocation, multi-asset, and exposure management, **(iii)** reviewed broker information, and **(iv)** discussed the impact of recent events on portfolio positioning.

6. Separately Managed Funds Update

Rob Thornton, ARA Business Director, and Bridget Chen, Portfolio Manager–MBS, presented the annual *Separately Managed Funds Update*, included on pages 230-244 in the meeting materials. Mr. Thornton noted that **(i)** the ARA division is responsible for oversight of the Separately Managed Funds (“SMFs”), with all periodic rebalancing performed in accordance with the corresponding SMF’s guidelines, and **(ii)** SWIB fixed income staff continue to perform active portfolio management for the majority of the State Life Insurance Fund (“SLIF”).

Mr. Thornton then reviewed the investment objectives, asset allocations and performance for each SMF, noting that **(a)** the Injured Patients & Families Compensation Fund includes a portion actively managed by an external manager as well as passive investments, **(b)** the UW System Long Term Fund’s public markets investments are held in BlackRock passive index funds and existing private markets investments will gradually roll off, **(c)** the UW System Cash Management Fund, with an asset allocation requested by the UW, is largely invested in BlackRock passive index funds with a smaller allocation to a floating rate income fund, and **(d)** the State Historical Society Trust Fund is invested in BlackRock passive index funds and had a slight overweight to equities in the past year. He highlighted that all funds had positive absolute performance for the trailing year and performed in line with or slightly outperformed their benchmarks for the same time period.

Ms. Chen then discussed the investment objectives and asset allocation for the SLIF, which is made up of investment-grade fixed income assets and is primarily managed internally by the fixed income team. She reviewed and answered questions regarding the performance of the credits in the SLIF in the last fiscal year.

7. Corporate Governance Update

Tom Robinson, Head of Corporate Governance, presented the *Corporate Governance Update*, included on pages 245-253 in the meeting materials. He reported that (a) SWIB's proxy voting support levels through Q2 2025 were similar to 2024 year-over-year, with proposals voted on pace to hit all-time highs, (b) directors and executive compensation proposals continue to receive strong market support, while shareholder proposal support continues to decline, (c) following the adoption of the universal proxy card rule, the number of settlements between boards and activist investors has increased, (d) a growing number of U.S. corporations are considering reincorporating in states other than Delaware due to regulatory and litigation concerns, as well as additional management and director protections recently offered by other states, and (e) the SEC may soon consider changes to executive compensation disclosure rules and thresholds for submitting shareholder proposals. Lastly, Mr. Robinson discussed key regulatory and legislative updates, including regarding proxy advisors, SEC rulemaking, and governance changes in certain non-U.S. jurisdictions.

8. QIR Certification

Lisa Lange, Director of Compliance and Senior Legal Counsel, presented a proposal that the Committee appoint Chase Nicholson as a Qualified Independent Representative ("QIR") for Broad-based Index Quantitative Investment Strategy ("QIS") Total Return Swaps (CFTC) and for Narrow Index or Single-Name QIS Total Return Swaps (SEC), respectively, for the asset classes of equities, fixed income, options, futures, currencies, commodities, volatility instruments or swaps, as set forth on pages 254-266 in the meeting materials. Ms. Lange noted that the appointments would be for all approved counterparties with whom SWIB has a master netting agreement for such instruments and that signed Internal QIR Certificates and Agreements for Mr. Nicholson documenting his relevant knowledge and experience were included in the meeting materials for the Committee's review. She also explained that Mr. Nicholson would be subject to quarterly and annual certifications regarding his QIR status as a condition of his employment.

Motion: A motion was made by Mr. Stanton and seconded by Mr. Shearer to approve that Chase Nicholson meets all of the QIR Criteria with respect to Broad-based Index QIS Total Return Swaps and Narrow Index or Single-Name QIS Total Return Swaps, respectively, for the asset classes of equities, fixed income, options, futures, currencies, commodities, volatility instruments or swaps, for all approved counterparties with whom SWIB has a master netting agreement for such instruments, from time to time, and he is approved to act and is hereby appointed as a QIR with respect to such counterparties. The motion passed unanimously.

9. Quarterly Performance Review (Q2 2025)

Mr. Denson noted that the *Investment Performance Report*, as of June 30, 2025, was included on pages 267-299 in the meeting materials for the Committee's information.

10. Soft Risk Parameters

Hassan Chehime, Head of Risk Management, noted that the report *Soft Risk Parameters—Asset Class and Portfolio*, as of August 29, 2025, was included on pages 300-301 in the meeting materials for the Committee's review. Mr. Chehime noted that there were no new discussion triggers this month and that no discussion triggers had been dropped.

11. Fair Value Measurement Review of WRS Investments

Mr. Denson noted that a report entitled *Fair Value Measurement Review of WRS Investments*, with an overview of the nature and liquidity of SWIB's assets, was included on pages 302-312 in the meeting materials for the Committee's review.

12. Research Task Force Report

Mr. Denson noted that a report entitled *Research Task Force Update*, with an overview of recent Research Task Force initiatives, was included on pages 313-319 in the meeting materials for the Committee's review.

13. Future Meeting Topics

Mr. Denson noted that draft agendas for the October 28, 2025 and November 25, 2025 Committee meetings were included on pages 320-323 in the meeting materials for the Committee's review.

14. Adjournment

Motion: A motion to adjourn the meeting was made by Ms. Fink and seconded by Mr. Nicholson. The motion passed unanimously, and the meeting adjourned at 4:08 p.m.

Date of Committee Approval: 10/28/25

Signed: /s/ Eric Barber
Eric Barber, Secretary
Investment Committee

STATE OF WISCONSIN INVESTMENT BOARD
Investment Committee Meeting–Open Session

Tuesday, October 28, 2025

Offices of the Investment Board
4703 Madison Yards Way, Madison, Wisconsin

Committee Members Present: Edwin Denson, Executive Director/Chief Investment Officer (Chair)
Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer
Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Eric Barber, Chief Legal Counsel (non-voting)
Hassan Chehime, Head of Risk Management (non-voting)
Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer (non-voting)

Also in Attendance:

Robert Scott, Trustee
John Voelker, Trustee
Nathan Ballard, Senior Legal Counsel
Brandon Brickner, Head of Internal Audit
Rosa Brown, Quantitative Analyst–Asset & Risk Allocation
Kate Burkart-Paulson, Senior Legal Counsel
John Burkhartzmeyer, Senior Trader
Sara Chandler, Chief of Staff & Strategy
Bridget Chen, Portfolio Manager–MBS
Christian Comito, Senior Portfolio Manager–MBS
Tunc Dayioglu, Senior Portfolio Manager–Funds Alpha
Jack Drew, Trader
Kliton Duri, Senior Portfolio Manager–High Yield and Leveraged Loans
Greg Fletcher, Performance Director
Tom Freeman, Director of Quantamental Research
Scott Freundlich, Portfolio Manager–High Yield and Leveraged Loans
Max Garcia, Analyst–Funds Alpha
Jameson Greenfield, Chief Financial Officer
Thomas Gregg, PMFA Operations Manager
Dan Gyorog, Internal Auditor
Syed Haider, Quantitative Analyst–Multi-Asset Strategies
Sean Hamner, Legal Counsel

Logan Hash, Investment Associate–Funds Alpha
Vince Janecky, Internal Auditor Data Analyst
Phil Johnson, Senior Portfolio Manager–High Yield and Leveraged
Loans
Ryan Johnston, Senior Analyst–Funds Alpha
Salah Khalaf, Senior Portfolio Engineer–Private Markets & Funds
Alpha
Jason Kowalke, PMFA Operations Manager
Dylan Krivoshein, Investment Operations Analyst
Jason Krueger, Compliance Analyst
Alex Kubiak, Investment Operations Analyst
Katie Kuryla, Senior Paralegal/Records Specialist
Lisa Lange, Director of Compliance & Senior Legal Counsel
Alex Li, Analyst–Asset & Risk Allocation
Shan Lo, Senior Portfolio Manager–Multi-Asset Strategies
Jon Loboda, Performance Measurement Operations Manager
Jeff Lucas, Senior Portfolio Manager–Investment Grade Fixed Income
Bill Luetzow, Legal Counsel
Michael Mandarino, Senior Analyst–High Yield and Leveraged Loans
Matt Marek, Senior Analyst–Asset & Risk Allocation
Frank Mazzucco, Senior Legal Counsel
Sunil Nair, Operational, Financing & Counterparty Risk Director
Scott Nichols, Head of Trading
Hunter Olson, Analyst–High Yield and Leveraged Loans
Scott Parrish–Head of Private Equity
Chris Prestigiacomo, Head of Private Debt & Venture Capital
Cefe Quesada, Chief Technology Officer
Anand Rakesh, Director of Risk Analytics & Financial Engineering
Systems
Vishnu Reddy, Senior Trader
Robby Richlen, Analyst–Funds Alpha
Jason Rothenberg, Head of Real Estate
Harsh Shah, Investment Operations Analyst
Cora Shi, Senior Analyst–Asset & Risk Allocation
Gabriel Souza, Investment Operations Analyst
Mike Stamm, Portfolio Manager–Financing & Collateral Management
Mark Stockley, Senior Trader
Mark Taylor, Senior Portfolio Manager–Quantitative Research
Rob Thornton, ARA Business Director
Leif Thybony, Senior Portfolio Manager–High Yield and Leveraged
Loans
Dawn Tuescher, Executive Administrative Assistant
Ping Wong, Portfolio Manager–Liquidity, Inflation & Rates Mgmt.
Sarah Zhao, Investment Operations Analyst
Joe Nankof, NEPC
(Some individuals may have attended only portions of the meeting.)

OPEN SESSION

With a quorum present, Edwin Denson, Chair of the Investment Committee, called the meeting to order at 1:00 p.m.

1. Approval of the Minutes

Mr. Denson asked if there were any comments on either the open or closed session minutes of the September 23, 2025 Investment Committee (“Committee”) meeting. Hearing no comments, Mr. Denson stated that the Committee could approve both the open and closed session minutes in open session.

Motion: A motion was made by Mr. Mattina and seconded by Mr. Drummond to approve both the open session and the closed session minutes of September 23, 2025, as presented. The motion passed unanimously.

2. Private Markets & Funds Alpha Division Update

Anne-Marie Fink, Private Markets & Funds Alpha–Chief Investment Officer, presented the *Private Markets & Funds Alpha Division Update*. She highlighted strong overall Private Markets & Funds Alpha (“PMFA”) division performance during the third quarter, while noting the variability of returns and diversification benefits across the different PMFA portfolios.

3. Q3 2025 Quarterly Updates

A. Funds Alpha

Derek Drummond, Head of Funds Alpha, presented the *Funds Alpha Q3 2025 Update*, included on pages 10-16 in the meeting materials. He highlighted that the hedge funds and beta one portfolios all generated positive excess value added (“EVA”) for the one-, three- and five-year time periods. With respect to third quarter performance, he noted that both the beta one fixed income and the hedge fund portfolios generated positive returns while the beta one equity portfolio gave back a portion of its year-to-date gains but remained positive for the year.

Mr. Drummond then provided an update on the market environment and portfolio positioning, commenting that (i) hedge fund managers maintain high gross leverage going into the end of the year, (ii) U.S. fixed income managers have maintained their risk-off positioning, while emerging market debt idiosyncratic risk remains elevated, (iii) credit markets are showing some signs of stress, and (iv) beta market performance has been thematically driven. Lastly, Mr. Drummond reviewed manager positioning and factor exposures in the beta one portfolios and confirmed that all portfolios were in compliance with their guidelines for Q3 2025.

B. Private Equity & Current Return

Scott Parrish, Head of Private Equity, presented the *Quarterly Activity Report – Private Equity & Current Return*, included on pages 17-42 in the meeting materials. He provided a private equity market update for Q3 2025, noting that (a) U.S. private equity fundraising

dollars and the number of funds both decreased year-over-year in a challenging fundraising environment, **(b)** purchase price and leverage multiples for 2025 remain steady relative to 2024, **(c)** U.S. private equity deal volume and value, as well as exit volume and value, all increased year-over-year, **(d)** the number of portfolio company exits was split evenly between corporate acquisitions and sponsor-to-sponsor transactions, with private equity-backed IPO activity beginning to increase, and **(e)** European fundraising dollars and the number of funds both decreased materially year-over-year.

Mr. Parrish then reported that, as of September 30, 2025, the market value of the private equity and current return portfolios, excluding the venture capital and private debt portfolios, was approximately \$23 billion and made up over 16% of the Core Trust Fund (“CTF”). He commented that distributed capital significantly exceeded capital calls year-to-date, with the private equity portfolio receiving its largest annual amount of distributed capital ever in 2025.

With respect to performance, Mr. Parrish highlighted that **(a)** as of June 30, 2025, the combined private equity and current return portfolios, inclusive of co-investments, achieved second quartile performance for vintage years 2014-2022, with first quartile performance for 2023 and 2024, and **(b)** the private equity and current return portfolios outperformed their benchmarks for the one-, three- and five-year time periods. He then discussed **(i)** the portfolios’ contributors and detractors for the third quarter by sub-asset class, **(ii)** the portfolios’ sub-asset class diversification, noting the large portion of the portfolio invested in the small- and middle-market space, and **(iii)** public versus private portfolio company exposure, noting that public company exposure remained low. Lastly, Mr. Parrish reviewed the commitments made in Q3 2025, discussed the portfolio pipeline for the fourth quarter, and confirmed that the portfolio remained in compliance with all investment guidelines.

C. Private Debt

Chris Prestigiacomo, Head of Private Debt & Venture Capital, presented the *Private Debt Portfolio Investment Committee Quarterly Report*, included on pages 43-54 in the meeting materials. He provided a private debt market update, noting that **(a)** fundraising is on pace for another year with more than \$200 billion raised, although with a declining number of funds as larger funds and more experienced managers are receiving most fund commitments, **(b)** direct lending and distressed debt remain the preferred sub-strategies within private debt, **(c)** average leveraged buyout purchase price multiples continued to decline in the third quarter, and **(d)** forecasters expect low default rates to rise given higher interest rates and the risk of an economic slowdown.

Mr. Prestigiacomo then reviewed the portfolio’s **(i)** characteristics, noting that average coupon, average life and duration were essentially flat, **(ii)** below investment grade (“BIG”) holdings, noting that two new BIG loans were added in the quarter, bringing BIG holdings up to 8% with several additional loans in the pipeline, **(iii)** sector mix, which remained slightly underweight industrial relative to the benchmark, and **(iv)** originations within and outside Wisconsin, noting that there were several Wisconsin opportunities under evaluation.

With respect to performance, Mr. Prestigiacomo stated that the portfolio outperformed its benchmark over the one- and five-year periods but underperformed for the three-year period. He attributed this to, in part, one loan creating some of the drag but showing improvement. He then reported that there were no problem credits or workouts in the portfolio, confirmed

that the portfolio remained in compliance with its guidelines, and discussed the pipeline under review.

D. Real Estate

Jason Rothenberg, Head of Real Estate, presented the *Quarterly Activity Report – Real Estate*, included on pages 55-67 in the meeting materials. He provided a real estate market overview, noting that **(a)** at a high level, macroeconomic uncertainty is continuing to adversely impact the overall real estate market, **(b)** only the multi-family sector experienced positive net absorption in the second quarter, while the industrial sector experienced its first negative absorption quarter since 2009, **(c)** the data/telecommunications and senior housing sub-sectors are showing positive net absorption momentum while office, industrial and self-storage are negative, and **(d)** net operating income (“NOI”) growth is strong in health care/senior housing but falling off in the industrial space.

Mr. Rothenberg then reviewed the real estate portfolio, noting that the portfolio’s market value of approximately \$11.9 billion, representing 8.5% of the CTF as of September 30, 2025, remained relatively flat. He commented that the real estate transaction market is starting to improve, and the team is optimistic that the portfolio will see additional distributions in the relatively near term. Mr. Rothenberg also reviewed the portfolio’s performance, **(i)** noting relative outperformance to the benchmark on the three-, five-, and ten-year periods despite negative relative performance for the one-year period, and **(ii)** with respect to sub-strategies, commenting on underperformance in the diversified space and the benchmark’s stronger performance in retail. Lastly, Mr. Rothenberg reviewed the commitment made in the third quarter, discussed the pipeline under review, and confirmed that the portfolio remained in compliance with its investment guidelines.

4. Convene in Closed Session

Motion: A motion to go into closed session as authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes to consider confidential strategies for the investment of public funds, including **(a)** the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(b)** the review of specific proprietary investment strategies and investment instruments related to funds alpha, private equity, venture capital, private debt, real estate, and exposure management, and **(c)** discussion of the impact of recent events on portfolio positioning, was made by Ms. Fink and seconded by Mr. Drummond.

Mr. Denson called for a roll call vote.

Denson-Aye	Fink-Aye	Mattina-Aye	Drummond-Aye
Linn-Aye	Maung-Aye	Nicholson-Aye	Rector-Aye
Shearer-Aye	Stanton-Aye	Zhang-Aye	

There being eleven ayes and no nays, Mr. Denson declared the motion passed. The Committee convened in closed session at 1:40 p.m. and reconvened in open session at 3:09 p.m.

5. Announcement of Committee Actions Relating to Items Taken Up in Closed Session

Mr. Denson announced that, while in closed session, the Committee **(i)** reviewed active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, **(ii)** reviewed specific proprietary investment strategies and investment instruments related to funds alpha, private equity, venture capital, private debt, real estate, and exposure management, and **(iii)** discussed the impact of recent events on portfolio positioning.

6. October Board Workshop Debrief

Todd Mattina, Head Economist & Asset and Risk Allocation Chief Investment Officer, provided a summary of the October Board Workshop. He noted that sessions included **(a)** an external speaker session with Libby Cantrill, managing director and head of public policy at PIMCO, who discussed the impact of shifting public policy on the market and the economy, **(b)** a presentation from the Wisconsin Retirement System's independent actuary in connection with the asset allocation review, including their stress testing analysis, **(c)** a preview and discussion of the asset allocation analysis and recommendations, made by NEPC in consultation with the Asset and Risk Allocation ("ARA") division, which will be presented to the Board for approval in December, and **(d)** management updates regarding strategic initiatives undertaken across the agency, including SWIB's multi-year plan and strategy.

7. Soft Risk Parameters

Hassan Chehime, Head of Risk Management, noted that the report *Soft Risk Parameters—Asset Class and Portfolio*, as of September 30, 2025, was included on pages 157-158 in the meeting materials for the Committee's review. Mr. Chehime noted that there was one new discussion trigger relating to the small cap portfolio's ex ante tracking error and that no discussion triggers had been dropped.

8. Future Meeting Topics

Mr. Denson noted that draft agendas for the November 25, 2025 and December 18, 2025 Committee meetings were included on pages 159-162 in the meeting materials for the Committee's review.

9. Adjournment

Motion: A motion to adjourn the meeting was made by Mr. Stanton and seconded by Mr. Mattina. The motion passed unanimously, and the meeting adjourned at 3:15 p.m.

Date of Committee Approval: 11/25/25

Signed: /s/ Eric Barber
Eric Barber, Secretary
Investment Committee

AGENDA / NOTICE

Name of Meeting: Staff Investment Committee Meeting
Date/Time: Tuesday, November 25, 2025 1:00 pm
Room: 7th Floor Conference Room - 7022
Address: 4703 Madison Yards Way, Madison, WI 53705

Est. Time Minutes	Action Item	Topic	Presenter
		OPEN SESSION	
	Motion	1. Approval of the Minutes – Open Session A. October 28, 2025	
5	Motion	2. Amendments to SWIB Investment Committee Charter	Eric Barber
10	Motion	3. 2026 Asset Allocation Recommendations	Todd Mattina Joe Nankof, NEPC
5	Motion	4. Annual Benchmark Presentation	Joe Nankof, NEPC
5		5. Global Public Market Strategies Division Update	Mike Shearer Nick Stanton
20		6. Q3 2025 Quarterly Updates A. Fixed Income B. Small Cap C. LIRM D. Multi-Strat	Mike Shearer Joy Mukherjee Andrea Ruiz Chase Nicholson
	Motion	CLOSED SESSION*	
	Motion	RECONVENE IN OPEN SESSION	
		7. Announcement of Committee Actions Relating to Items Taken Up in Closed Session	
		8. Soft Risk Parameters (No presentation unless requested)	

* A motion to go into closed session at this meeting is authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes (a) to consider confidential strategies for the investment of public funds, including (i) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (ii) the review of specific proprietary investment strategies and investment instruments related to fixed income strategies, small cap equities, LIRM, multi-strat, and exposure management, and (iii) discussion of the impact of recent events on portfolio positioning, and (b) to discuss and approve prior closed session minutes that discuss the same. The Committee may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the committee will subsequently reconvene in open session to cover remaining agenda items.

		9. Future Meeting Topics	
	Motion	10. Motion to Adjourn	
		<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>The meeting site is physically accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	

Future Meetings

12/18/25 – December Committee Mtg.
1/27/26 – January Committee Mtg.
2/24/26 – February Committee Mtg.
3/31/26 – March Committee Mtg.
4/28/26 – April Committee Mtg.

Voting Committee Members:

Edwin Denson (Chair), Executive Director/Chief Investment Officer
Anne-Marie Fink, Private Markets & Funds Alpha–CIO
Todd Mattina, Head Economist, Asset & Risk Allocation–CIO
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Non-voting Committee Members:

Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Eric Barber (Secretary), Chief Legal Counsel
Hassan Chehime, Head of Risk Management

AGENDA / NOTICE

Name of Meeting: Staff Investment Committee Meeting
Date/Time: Thursday, December 18, 2025 1:00 pm
Room: 7th Floor Conference Room - 7022
Address: 4703 Madison Yards Way, Madison, WI 53705

Est. Time Minutes	Action Item	Topic	Presenter
		OPEN SESSION	
	Motion	1. Approval of the Minutes – Open Session A. November 25, 2025	
5		2. Transition Update (Q3 2025)	Joe Roth
	Motion	CLOSED SESSION*	
	Motion	RECONVENE IN OPEN SESSION	
		3. Announcement of Committee Actions Relating to Items Taken Up in Closed Session	
		4. Quarterly Performance Review (Q3 2025) (No presentation unless requested)	
		5. Soft Risk Parameters (No presentation unless requested)	
		6. Research Task Force Report (No presentation unless requested)	
		7. Future Meeting Topics	
	Motion	8. Motion to Adjourn	
		<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>The meeting site is physically accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	

* A motion to go into closed session at this meeting is authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes (a) to consider confidential strategies for the investment of public funds, including (i) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (ii) the review of specific proprietary investment strategies and investment instruments related to asset and risk allocation and exposure management, (iii) the review of broker information, and (iv) discussion of the impact of recent events on portfolio positioning, and (b) to discuss and approve prior closed session minutes that discuss the same. The Committee may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the committee will subsequently reconvene in open session to cover remaining agenda items.

Future Meetings

1/27/26 – January Committee Mtg.
 2/24/26 – February Committee Mtg.
 3/31/26 – March Committee Mtg.
 4/28/26 – April Committee Mtg.
 5/26/26 – May Committee Mtg.
 6/23/26 – June Committee Mtg.

Voting Committee Members:

Edwin Denson (Chair), Executive Director/Chief Investment Officer
Anne-Marie Fink, Private Markets & Funds Alpha–CIO
Todd Mattina, Head Economist, Asset & Risk Allocation–CIO
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Non-voting Committee Members:

Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Eric Barber (Secretary), Chief Legal Counsel
Hassan Chehime, Head of Risk Management

AGENDA / NOTICE

Name of Meeting: Staff Investment Committee Meeting
Date/Time: Tuesday, January 27, 2026 1:00 pm
Room: 7th Floor Conference Room - 7022
Address: 4703 Madison Yards Way, Madison, WI 53705

Est. Time Minutes	Action Item	Topic	Presenter
		OPEN SESSION	
	Motion	1. Approval of the Minutes – Open Session A. December 18, 2025	
15	Motion	2. Amendments to Investment Committee WRS Investment Guidelines	Lisa Lange
5		3. Private Markets & Funds Alpha Division Update	Anne-Marie Fink
45		4. Q4 2025 Quarterly Updates A. Funds Alpha B. Private Equity & Current Return C. Private Debt D. Real Estate	Derek Drummond Scott Parrish Chris Prestigiacomo Jason Rothenberg
	Motion	CLOSED SESSION*	
	Motion	RECONVENE IN OPEN SESSION	
		5. Announcement of Committee Actions Relating to Items Taken Up in Closed Session	
		6. Soft Risk Parameters (No presentation unless requested)	
		7. Future Meeting Topics	
	Motion	8. Motion to Adjourn	
		<p><i>NOTES: Items may be taken in order other than listed.</i></p> <p><i>The meeting site is physically accessible. Upon prior request, reasonable accommodations will be provided.</i></p>	

* A motion to go into closed session at this meeting is authorized pursuant to sections 19.85(1)(e) and 19.36(5) of the Wisconsin Statutes (a) to consider confidential strategies for the investment of public funds, including (i) the review of active risk profiles and positioning of portfolio investments and the Core and Variable Trust Funds, (ii) the review of specific proprietary investment strategies and investment instruments related to funds alpha, private equity, venture capital, private debt, real estate, and exposure management, and (iii) discussion of the impact of recent events on portfolio positioning, and (b) to discuss and approve prior closed session minutes that discuss the same. The Committee may convene in additional closed sessions or announce additional closed session items at the meeting in accordance with the procedure outlined in the Attorney General's Opinion reported at 66 OAG 106 (1977). Whenever a closed session is held, the committee will subsequently reconvene in open session to cover remaining agenda items.

Future Meetings

2/24/26 – February Committee Mtg.
 3/31/26 – March Committee Mtg.
 4/28/26 – April Committee Mtg.
 5/26/26 – May Committee Mtg.
 6/23/26 – June Committee Mtg.
 7/28/26 – July Committee Mtg.
 8/25/26 – August Committee Mtg.
 9/22/26 – September Committee Mtg.
 10/27/26 – October Committee Mtg.
 11/24/26 – November Committee Mtg.
 12/22/26 – December Committee Mtg.

Voting Committee Members:

Edwin Denson (Chair), Executive Director/Chief Investment Officer
Anne-Marie Fink, Private Markets & Funds Alpha–CIO
Todd Mattina, Head Economist, Asset & Risk Allocation–CIO
Derek Drummond, Head of Funds Alpha
Diane Linn, Senior Portfolio Manager–Multi-Asset Strategies
Lin Maung, Senior Portfolio Manager–Private Equity
Chase Nicholson, Senior Portfolio Manager–Multi-Asset Strategies
Jason Rector, Senior Portfolio Manager–Funds Alpha
Mike Shearer, Head of Fixed Income Strategies
Nick Stanton, Head of Multi-Asset Strategies
Ivy Zhang, Senior Portfolio Manager–Asset & Risk Allocation

Non-voting Committee Members:

Rochelle Klaskin, Deputy Executive Director/Chief Operating Officer
Eric Barber (Secretary), Chief Legal Counsel
Hassan Chehime, Head of Risk Management

Board Meeting

Tab 6 – Quarterly Investment Update, Q3 2025

Public Markets Trading - Update

*Board Meeting
December 17, 2025*

Public Markets Trading - Update

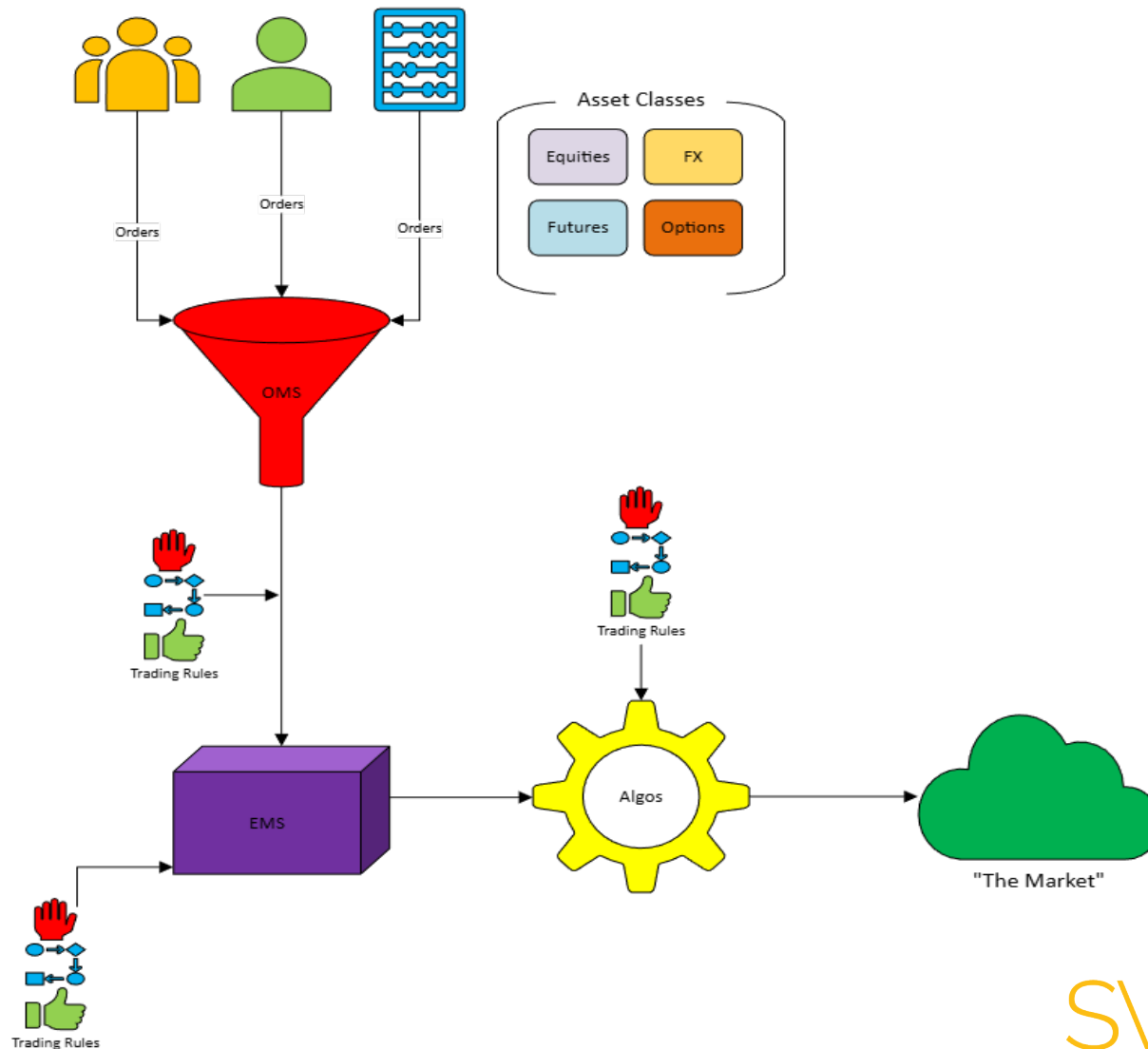
Key Insights

What does the Trading desk do?

- Executes trades for SWIB's portfolio managers
- Focus on reducing explicit costs → Lower Commissions
 - Equities 23% Lower
 - Futures 15% Lower
- Focus on reducing implicit costs → Less Market Impact
 - ~\$6mm
- How do we implement this? → Automation
 - Algo (Algorithm) Wheels for Equities & Futures
 - STP (Straight Through Processing) for Equities
 - STP (Straight Through Processing) for FX

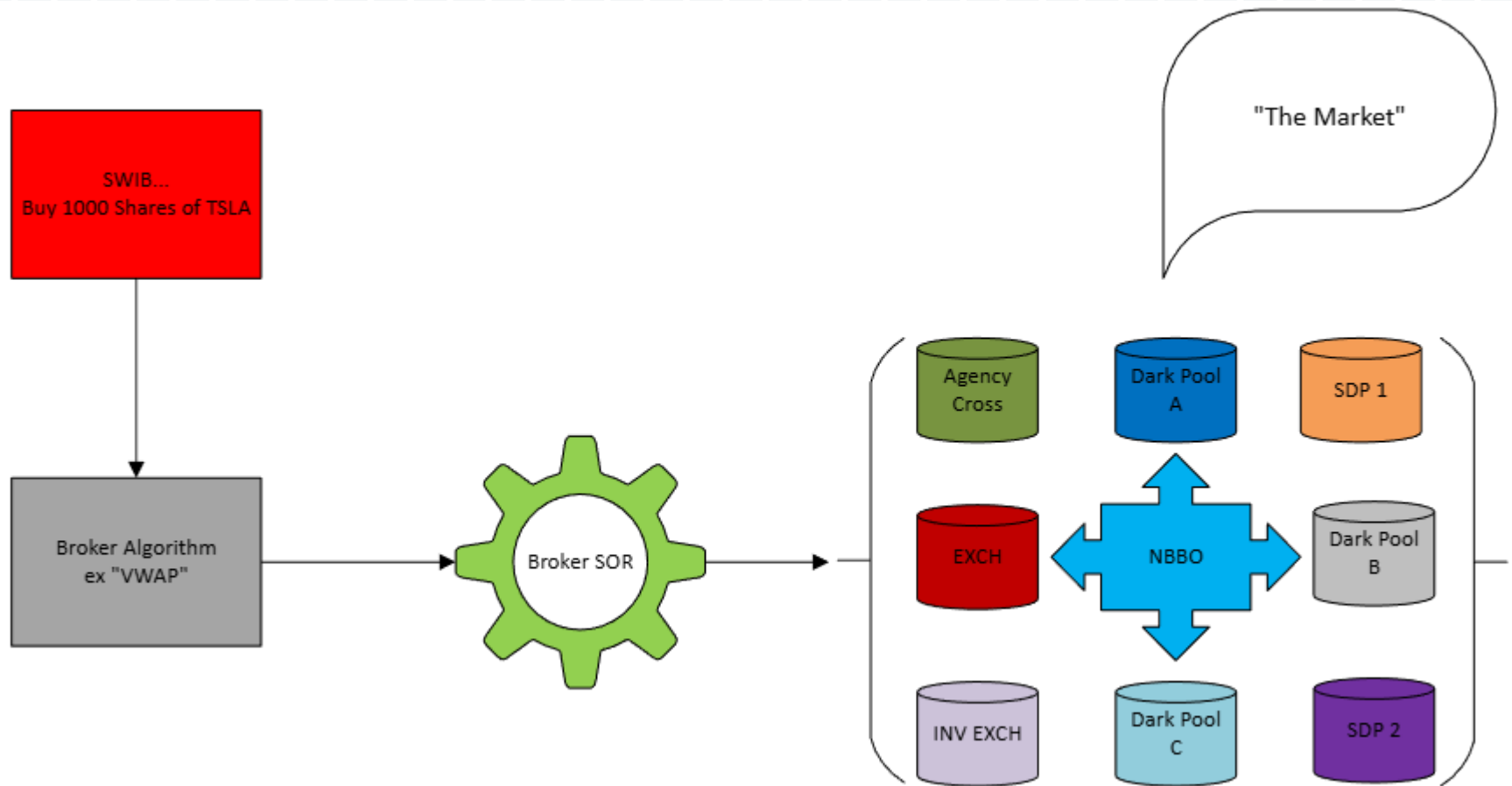
Public Markets Trading - Update

Trading Desk – Workflow and Automation



Public Markets Trading - Update

Equity Market Structure



Public Markets Trading - Update

Reduce Explicit Costs – Equities and Futures

<u>Equities</u> (Region)	2024 Commissions (Bps)	2025 Commissions (Bps)	Differential	Estimated Commission Savings
Americas	0.54	0.44	-18.1%	\$1.18 mm
EMEA	2.67	2.32	-13.2%	\$0.47 mm
APAC	3.09	2.12	-31.5%	\$0.62 mm
				\$2.28 mm

<u>Futures</u>	2024 Commissions (Bps)	2025 Commissions (Bps)	Differential	Estimated Commission Savings
	0.98	0.85	-13.7%	\$0.23 mm
				\$0.23 mm

Public Markets Trading - Update

Reduce Implicit Costs - Equities

Year	Notional Amount Traded (USD)	Estimated Slippage vs. Benchmark (bps)
2024	\$100.05 billion	0.92 bps
2025	\$83.33 billion	0.21 bps
	Estimated Savings	<u>\$6.06 mm</u>

Public Markets Trading - Update

Transaction Cost Analysis - Reporting





Quarterly Investment Update

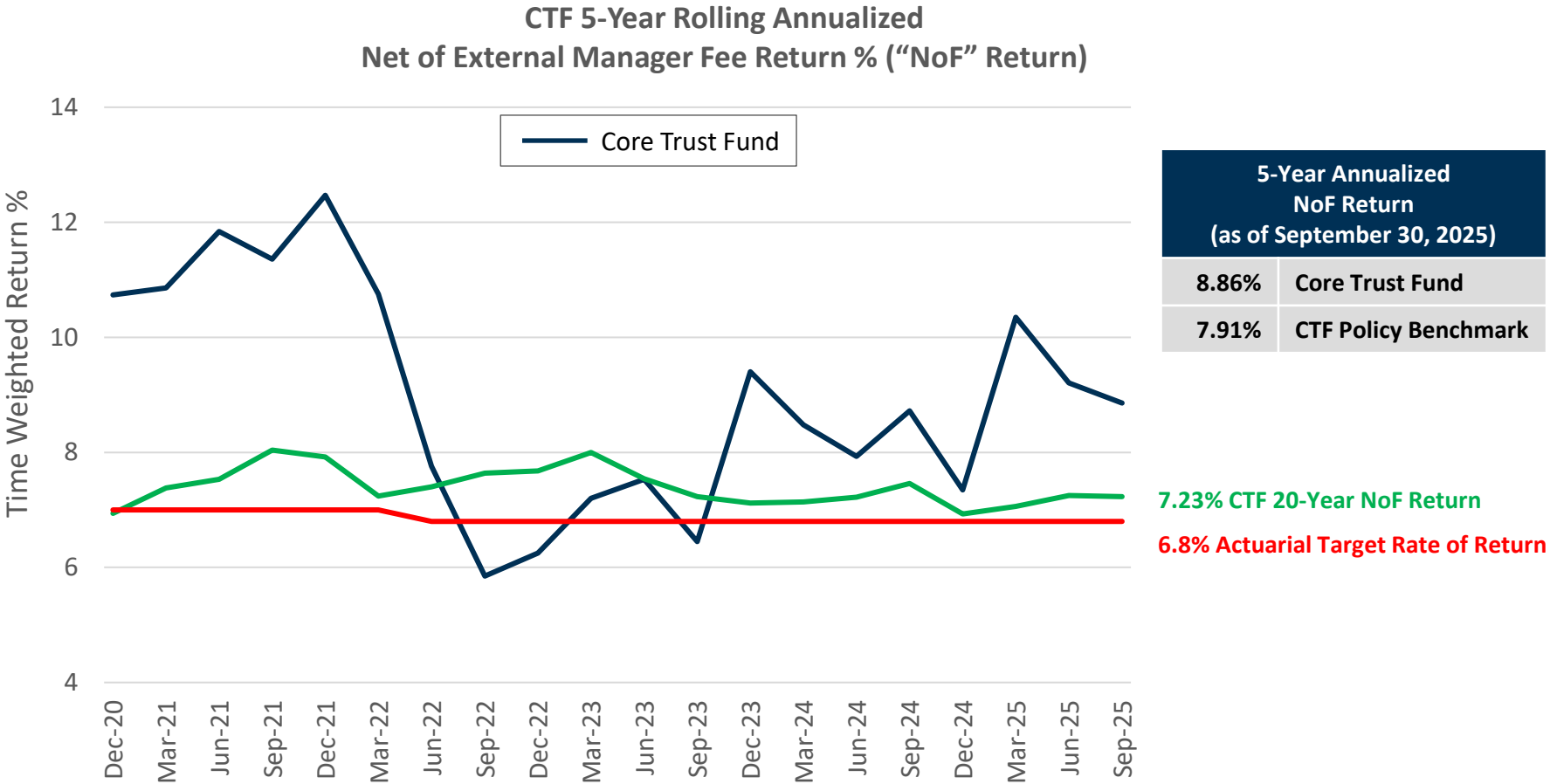
Board Meeting

December 17, 2025

Performance Trends & Outlook

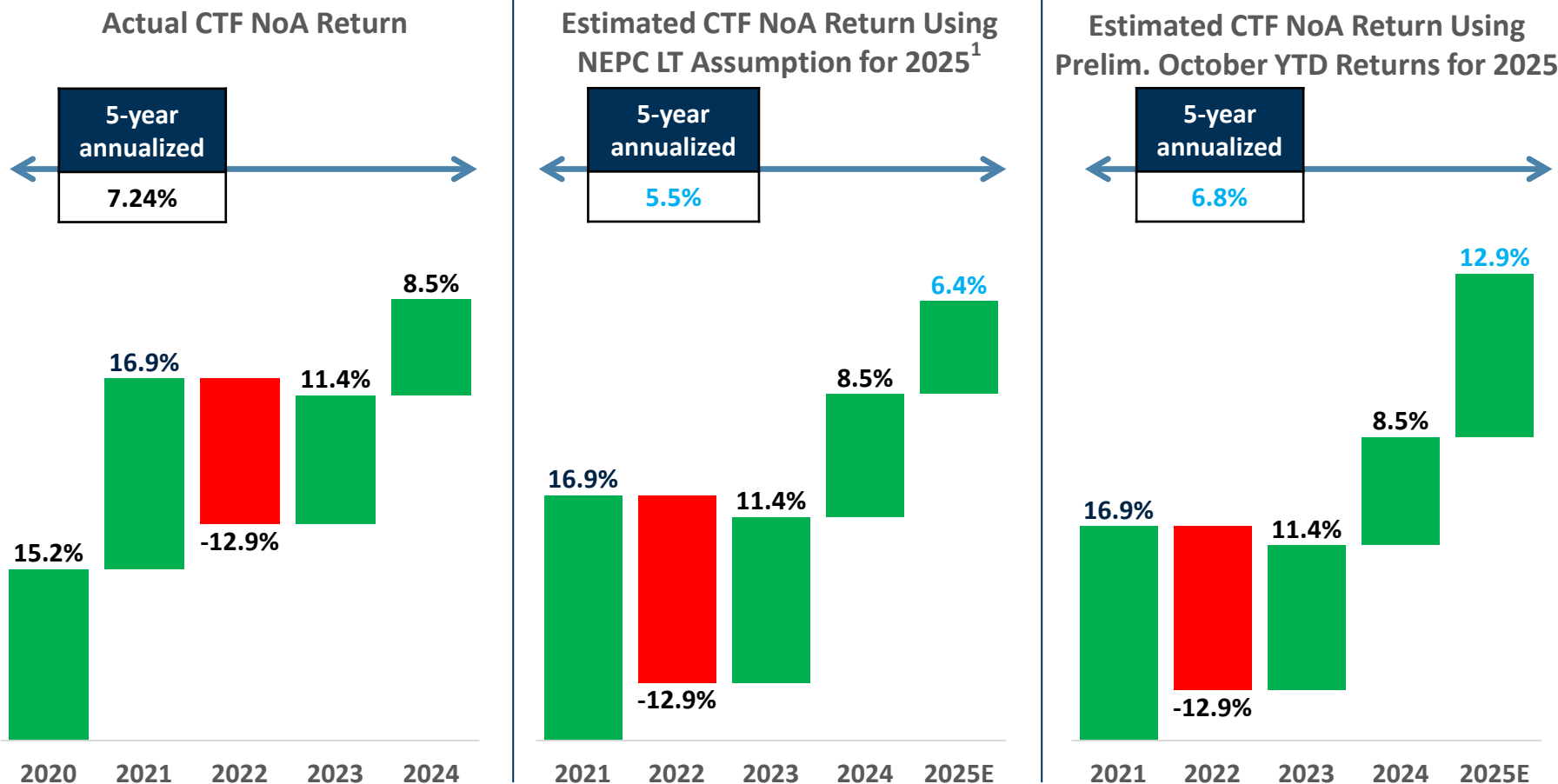
CTF 5-Year Rolling NoF Return Trend

Quarter-end Results Through September 30, 2025



CTF 5-Year NoA Return Estimate

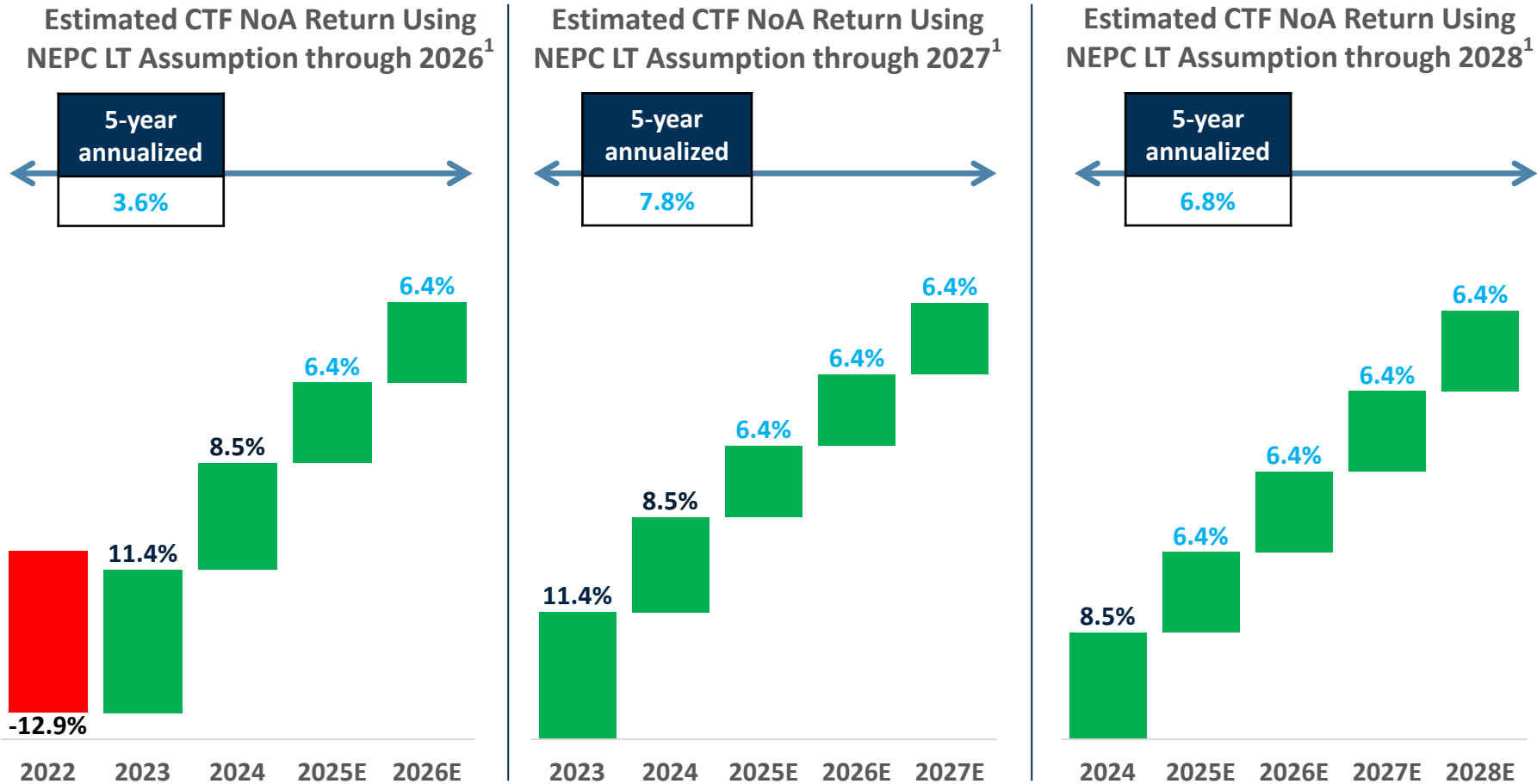
Calendar year and 5-year annualized returns



¹ 6.4% is NEPC's 10-year expected return for SWIB's 2025 policy portfolio and is used to estimate future year performance through 2028. SWIB's asset allocation process balances risk and expected return to set its asset allocation. The 10-year expected return does not always equal or exceed the WRS assumed rate of return, currently 6.8%. SWIB's actual results may be more or less than the NEPC 10-year expected return.

CTF 5-Year NoA Return Forward Estimate

Calendar year and 5-year annualized returns

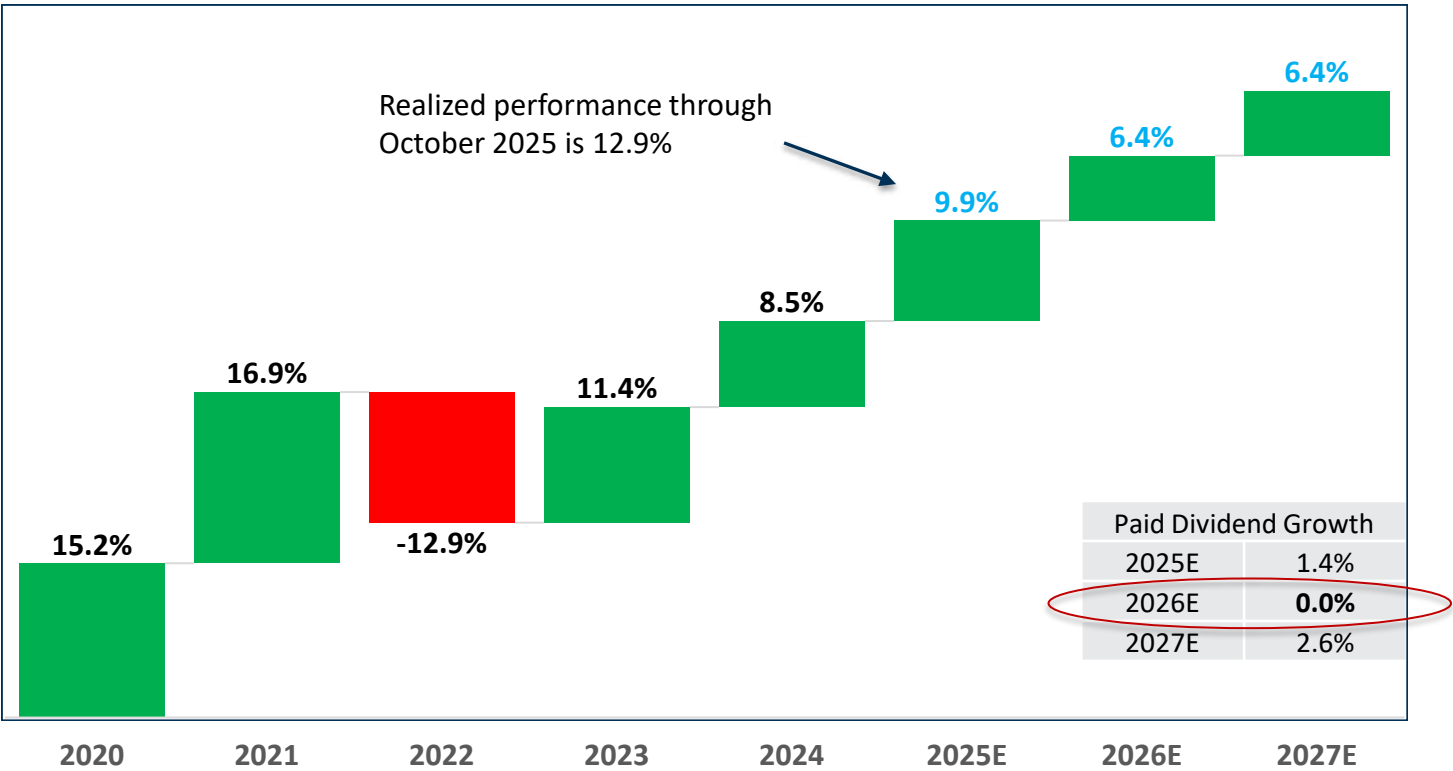


¹ 6.4% is NEPC's 10-year expected return for SWIB's 2025 policy portfolio and is used to estimate future year performance through 2028. SWIB's asset allocation process balances risk and expected return to set its asset allocation. The 10-year expected return does not always equal or exceed the WRS assumed rate of return, currently 6.8%. SWIB's actual results may be more or less than the NEPC 10-year expected return.

Return Required for No Dividend Cut

CTF NoF Return and Paid Dividend Growth

CTF needs to generate 9.9% return in 2025 to avoid a negative CTF dividend adjustment¹



¹ Based on SWIB calculations, calendar year return of 9.9% in 2025E is required to avoid a negative dividend adjustment. NEPC 10-year expected return assumption is used to estimate 2026 and 2027. Preliminary 2025 October YTD NoF investment return is 12.9%.

CTF Policy Benchmark & Other Indices

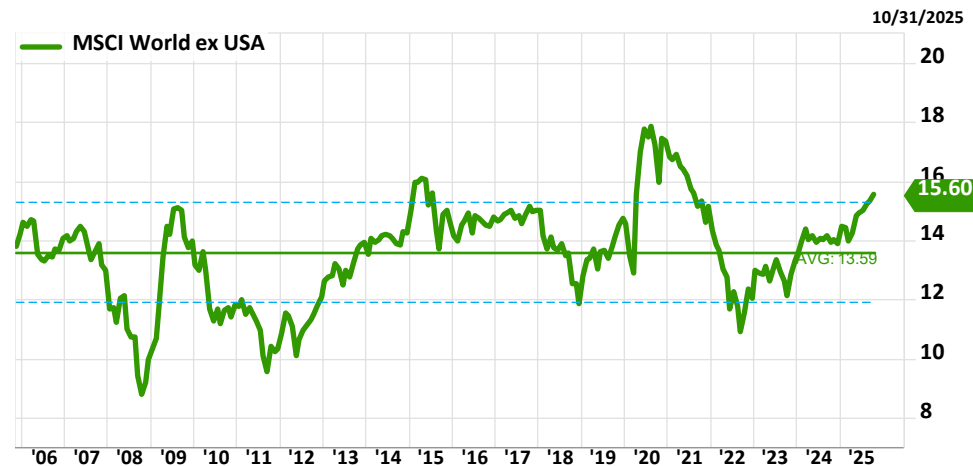
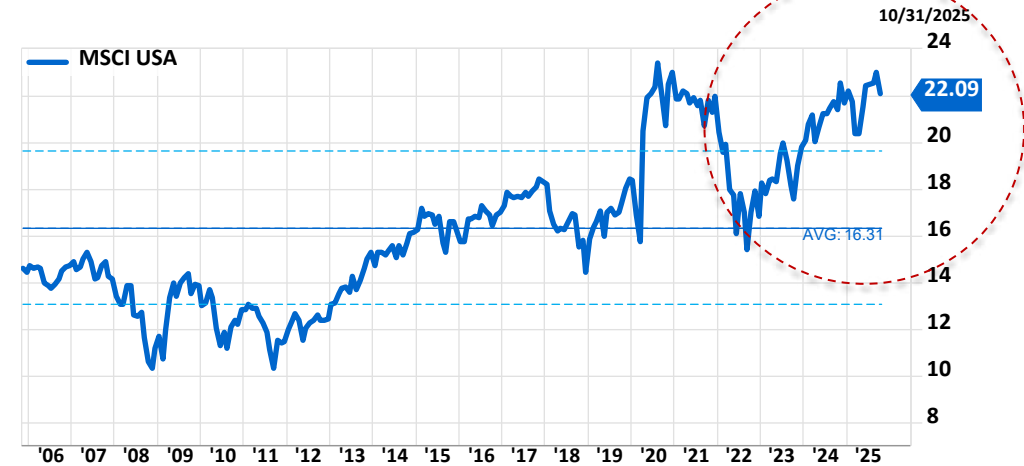
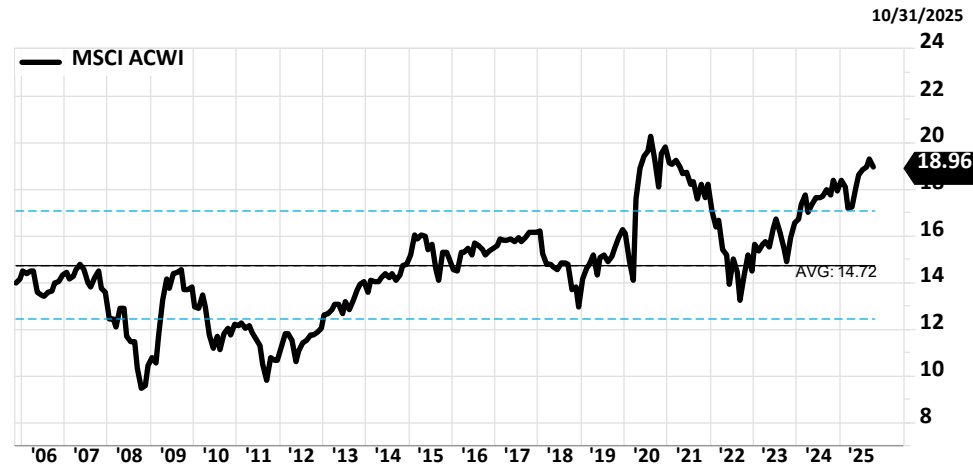
October 31, 2025: Total Rate of Return %, Annualized					
Index Name (Gross Return Basis, unless noted)	YTD	1yr	5yr	10yr	10yr volatility
CTF Policy Benchmark (Net)	12.3	12.7	8.4	8.0	8.6
MSCI USA	17.7	21.9	17.3	14.6	15.4
MSCI USA Small Cap	10.2	12.0	12.7	10.5	19.9
MSCI World ex US Equities (Net)	26.7	23.6	12.7	7.7	14.8
MSCI World ex US Equities (Net) (Local)	18.2	19.8	14.6	8.4	11.7
MSCI EAFE Small Cap	27.9	25.1	9.6	7.6	16.6
MSCI Emerging Markets ex China	32.6	26.8	13.6		
MSCI China	36.4	33.9	(1.2)	5.6	24.1
MSCI ACWI	21.5	23.2	15.1	11.9	14.5
MSCI ACWI (Local)	19.2	22.2	15.9	12.2	13.3
Bloomberg US Gov't / Credit	6.5	5.8	(0.4)	2.0	5.2
ICE BOFA High Yield BB/B	7.3	7.9	4.9	20.8	7.1
Bloomberg U.S. TIPs	7.2	6.1	1.6	3.0	5.0

Source: Factset, SWIB

Asset Class Review

Global Equities - Valuation

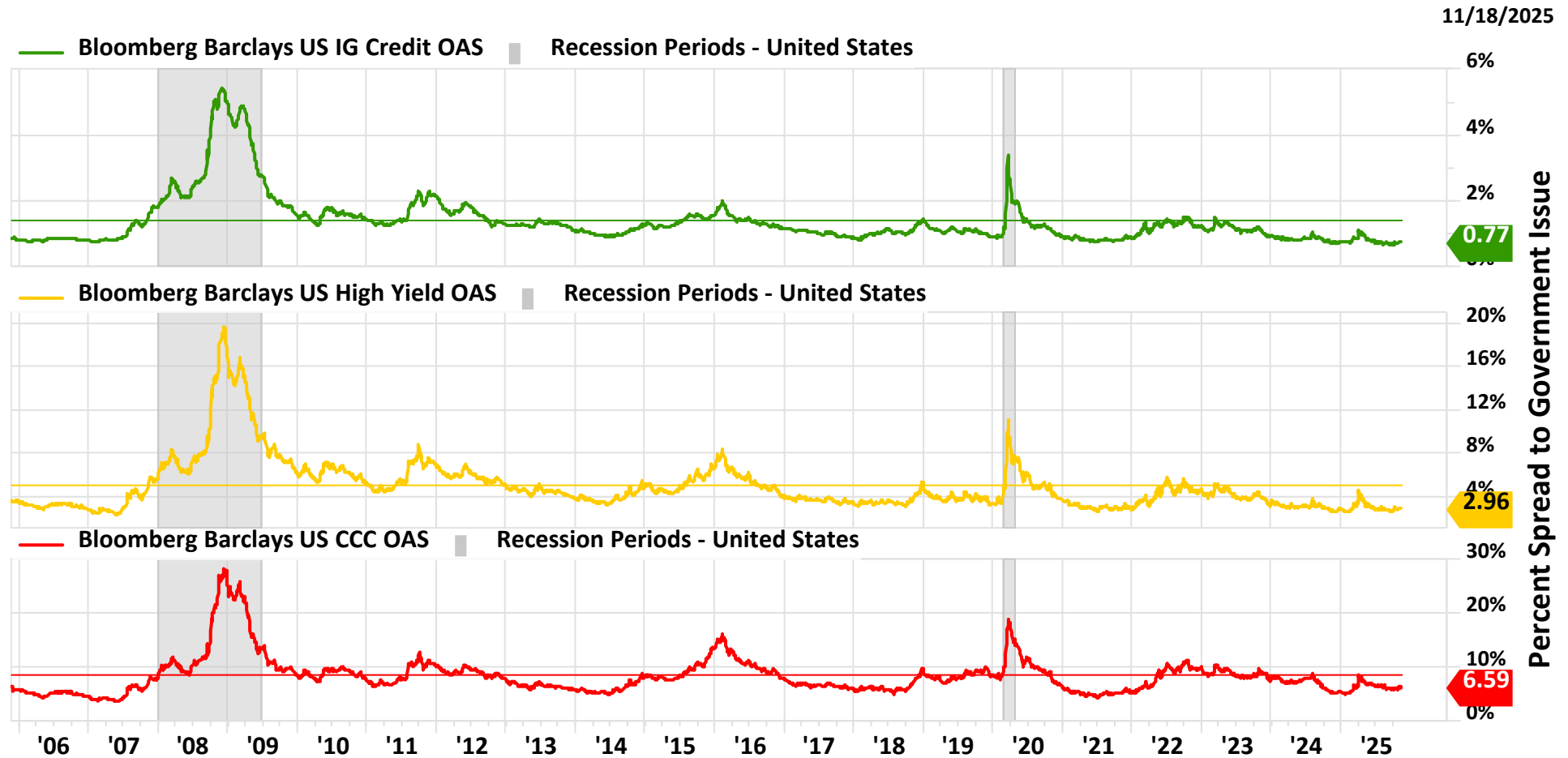
US P/E ratio is almost two standard deviations above its 20-year average



Source: FactSet Market Aggregates - Next Twelve Month P/E Ratio, monthly, 20-year Average with 1 Std. Dev. Bands

Credit Sectors

Spread levels are below the long run averages



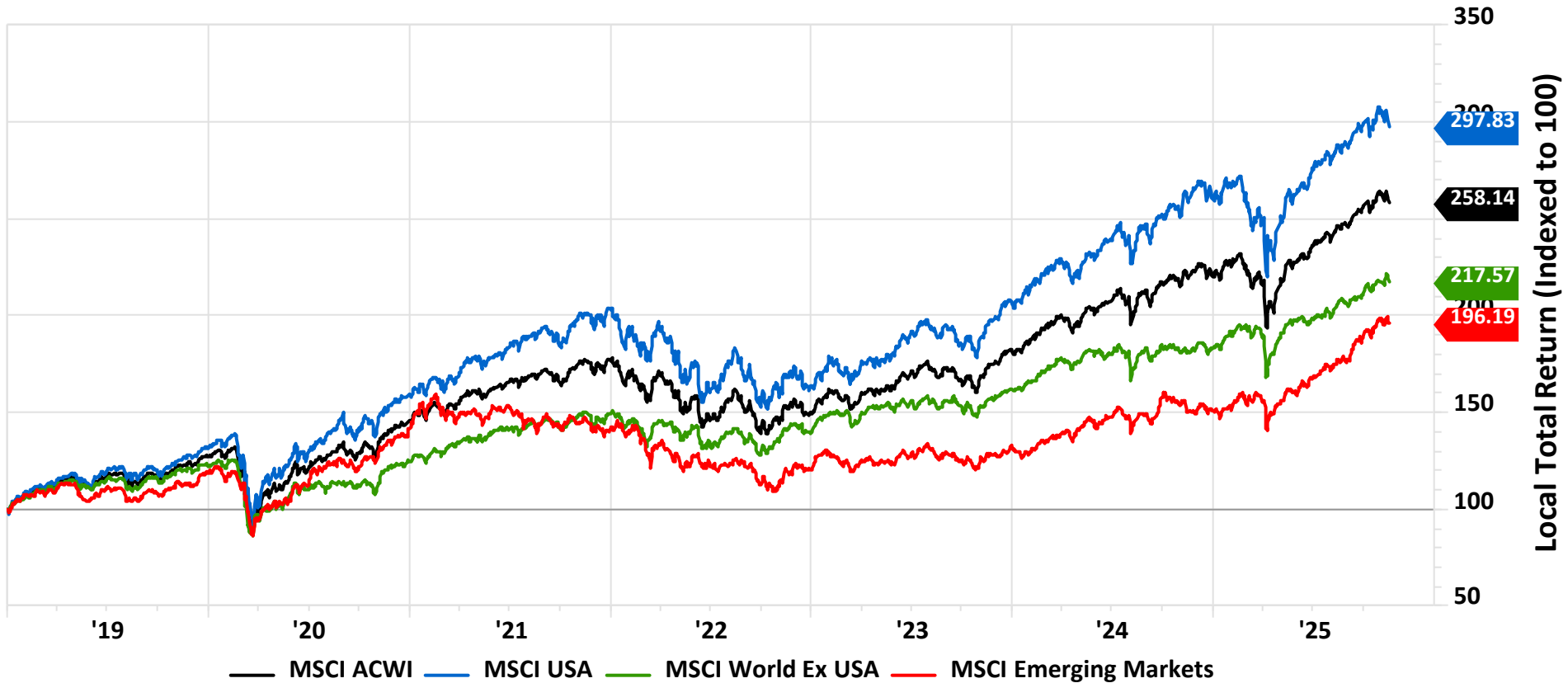
Source: FactSet

Global Equities - Performance

Both DM and EM equities have increased in the last few months

11/18/2025

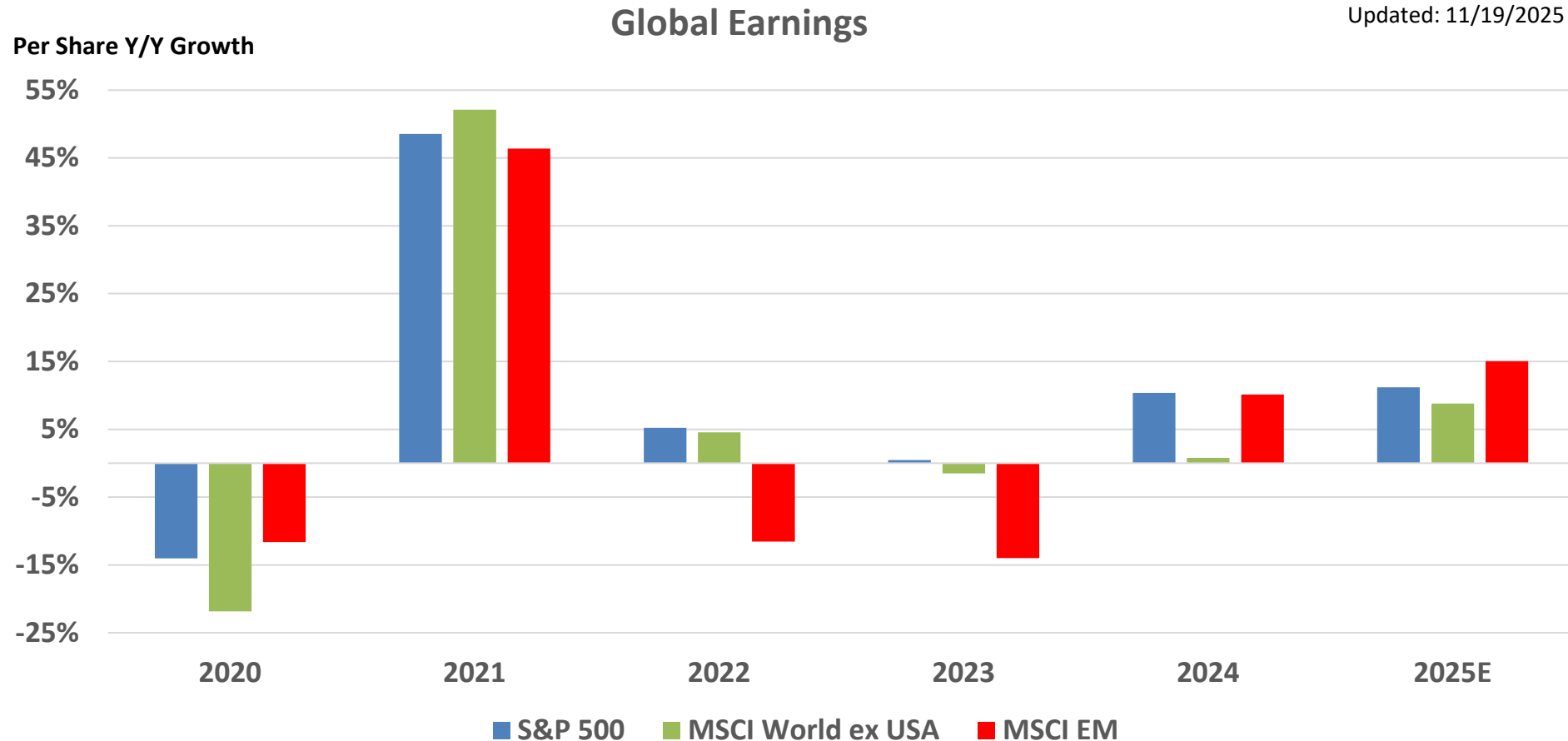
Local Equity Performance



Source: FactSet

Earnings Growth

Consistency in earnings growth globally this year, lead by EM



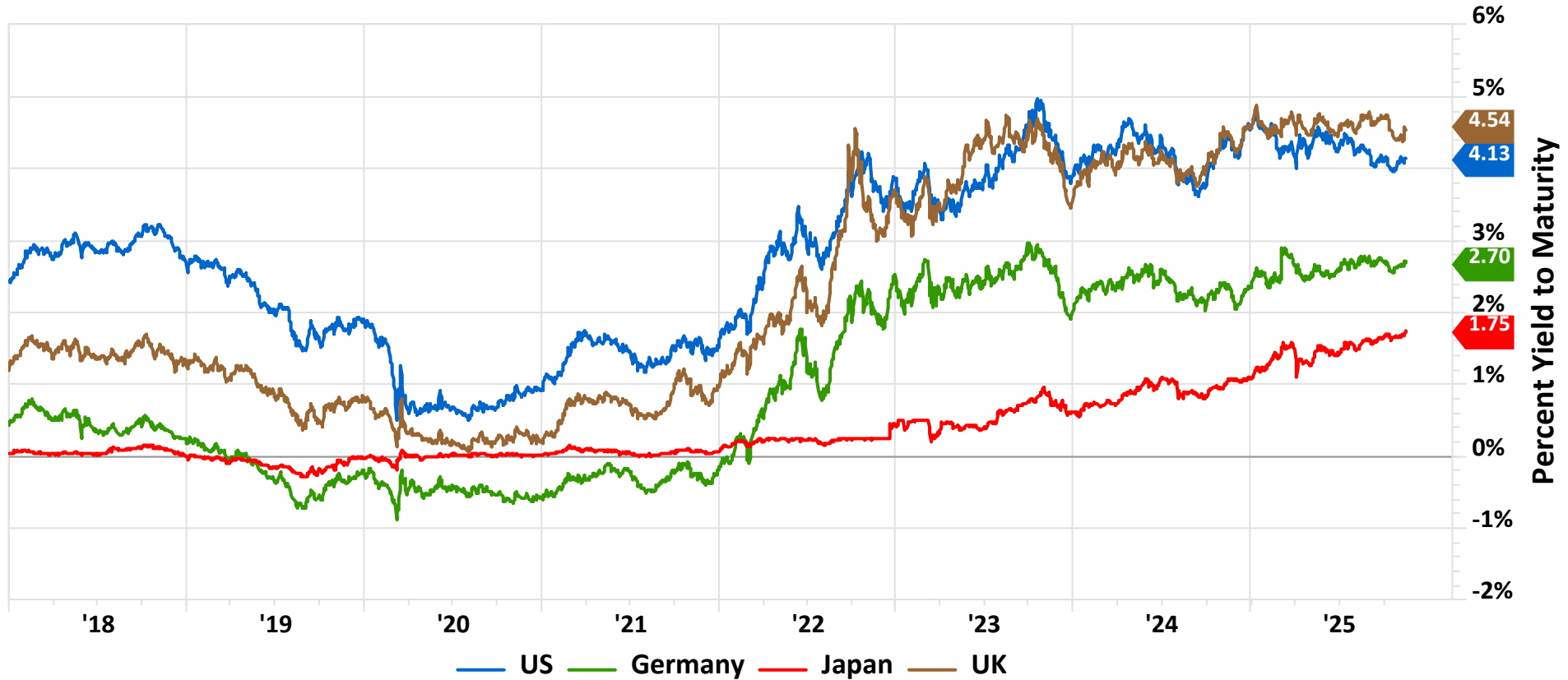
Source: Analyst Consensus; FactSet

Global Bonds

DM yields have been largely steady in recent weeks

11/18/2025

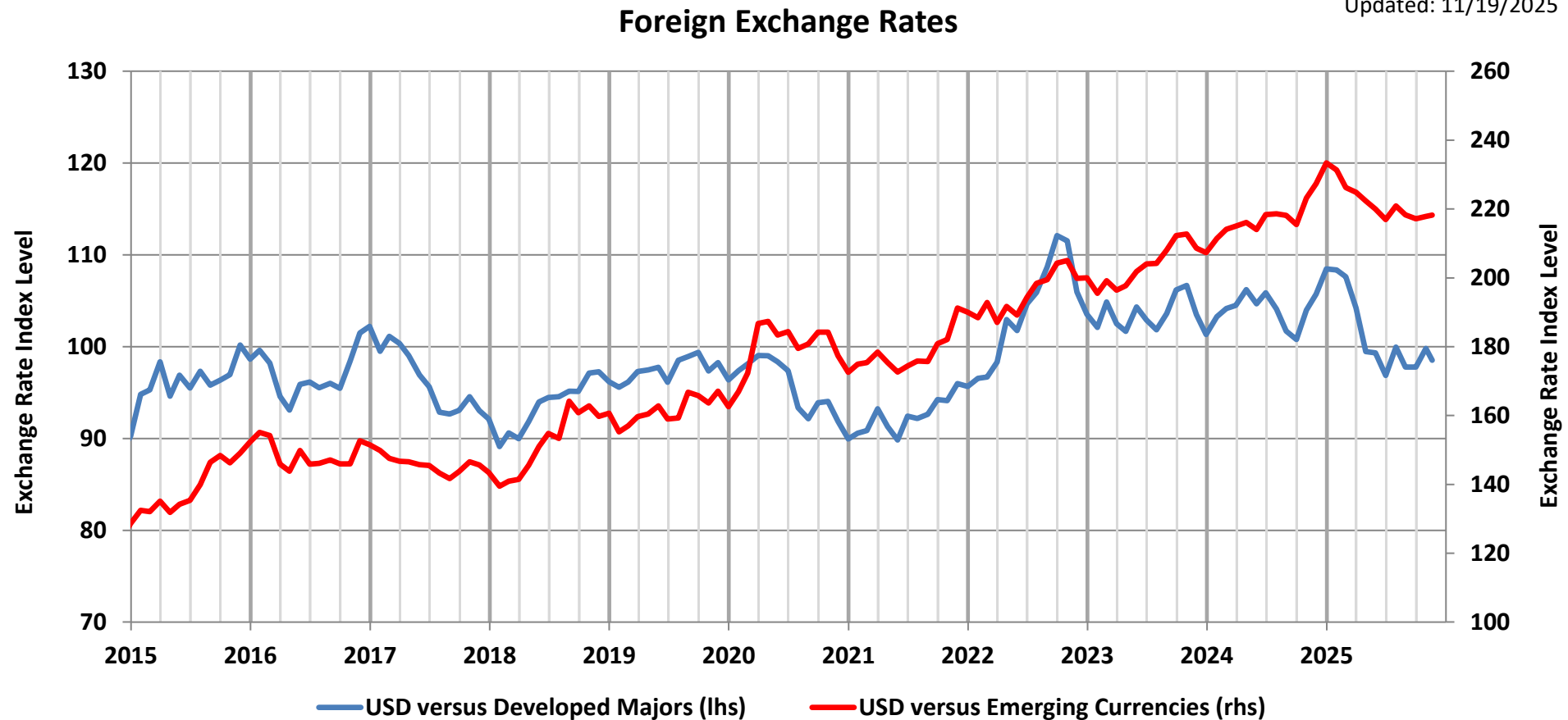
10-Year Government Bond Yields



Source: FactSet

Currency Performance

US Dollar stable during second half of this year



Source: Bloomberg, DXY Index, JPM Emerging Markets Currency Index (Inverted)

U.S. Inflation

Inflation expectations remain in a range below 2.5%

As of: 11/19/2025

US 5 Year Breakeven Inflation



Source: Bloomberg

Board Meeting

Tab 7 – Announcement of Matters Taken Up in Closed Session

Board Meeting

Tab 8 – In the Absence of Questions, the Following Reports will be filed without comment (for informational purposes):

- A. Quarterly Charges to Funds Reports, Q3 2025
- B. Private Markets and Funds Alpha Commitments, Q3 2025
- C. Board Contact Log

November 12, 2025

Senator Howard Marklein, Co-Chair
Joint Committee on Finance
P.O. Box 7882
Madison, WI 53707

Representative Mark Born, Co-Chair
Joint Committee on Finance
P.O. Box 8952
Madison, WI 53708

Senator Eric Wimberger, Co-Chair
Joint Legislative Audit Committee
P.O. Box 7882
Madison, WI 53707

Representative Robert Wittke, Co-Chair
Joint Legislative Audit Committee
P.O. Box 8953
Madison, WI 53708

Secretary Kathy Blumenfeld
Department of Administration
101 East Wilson Street
P.O. Box 7864
Madison, WI 53707

Dear Senator Marklein, Senator Wimberger, Representative Born, Representative Wittke and Secretary Blumenfeld:

State statutes require the State of Wisconsin Investment Board (SWIB) to report all expenses charged to the trust funds under management and the number of full-time equivalent positions created or abolished during the quarter¹. The information contained in this report is for the quarter ended September 30, 2025.

Total Cost of Management Summary	4Q 2024	1Q 2025	2Q 2025	3Q 2025	Trailing 4 Qtr Total	% of Total
Internal Operating Expenses						
Operating Budget Expenses	\$ 17,503,147	\$ 17,170,058	\$ 60,501,443	\$ 21,796,031	\$ 116,970,678	69.0%
Custodial, Investment Operations & Banking	2,278,712	926,620	1,663,283	1,529,906	6,398,521	3.8%
Legal	634,388	408,550	91,372	770,424	1,904,734	1.1%
Investment Research, Data & Consulting	10,165,448	9,515,341	9,676,291	10,217,743	39,574,823	23.3%
Total Internal Operating Expenses	\$ 30,581,695	\$ 28,020,569	\$ 71,932,390	\$ 34,314,103	\$ 164,848,756	97.2%
Total Securities Lending Agent Expenses	\$ 1,005,967	\$ 1,430,511	\$ 1,104,449	\$ 1,227,404	\$ 4,768,331	2.8%
Total SWIB Operating Costs	\$ 31,587,662	\$ 29,451,080	\$ 73,036,839	\$ 35,541,507	\$ 169,617,087	100.0%
Supplemental Info - External Investment Management Fees						
Real Estate	\$ 24,130,057	\$ 21,589,301	\$ 23,263,966	\$ 23,315,652	\$ 92,298,976	9.5%
Private Equity	58,061,425	47,392,129	55,162,651	51,936,175	212,552,381	21.9%
Venture Capital	9,291,005	8,226,788	10,553,219	9,873,604	37,944,615	3.9%
Current Return	9,603,396	6,792,512	8,756,046	8,858,242	34,010,195	3.5%
Hedge Funds	126,855,977	99,493,495	98,108,041	56,887,256	381,344,768	39.4%
Beta One & Other - External Funds	45,589,576	84,364,922	76,995,552	3,845,924	210,795,974	21.8%
Total External Investment Management Fees	\$ 273,531,436	\$ 267,859,146	\$ 272,839,475	\$ 154,716,853	\$ 968,946,909	100.0%
Grand Total Cost of Management	\$ 305,119,098	\$ 297,310,226	\$ 345,876,313	\$ 190,258,359	\$ 1,138,563,996	

¹Wisconsin Statutes Section 25.17 (13m): Investment-related costs and expenses charged to the WRS Trust Funds, State Investment Fund, State Life Insurance Fund, Historical Society Endowment Fund, Injured Patients and Families Compensation Fund and UW Trust Fund. Investment transaction expenses, such as trading commissions and interest expense, are included in investment returns, and therefore not included in this report.

SWIB operating costs are charged to the trust funds under management. Externally managed fund fees for commingled assets are netted against investment returns generated by SWIB's external fund holdings. It is important to consider costs in the context of value-added investment returns. For example, during the five years ended December 31, 2024, after consideration of all expenses, costs, and fees, SWIB generated approximately \$4.1 billion in additional profits beyond what would have been generated by the benchmark portfolio SWIB is measured against. These profits all go directly into the Wisconsin Retirement System for the benefit of its beneficiaries.

Attachment A provides a breakdown of the amount and percentage of assets managed under each type of dedicated and commingled account or partnership, and the change in the amount and percentage from the prior calendar quarter. As of September 30, 2025, SWIB's total authorized full-time equivalent positions are 298 as shown in the table below.

Assets Under Management & Positions		
	6/30/2025	9/30/2025
Internal Management	47.0%	47.5%
External Management	53.0%	52.5%
Total SWIB Positions	298	298

In addition, Attachment B provides details of the services provided to SWIB and their associated quarterly costs. For definitions of the expense categories presented in the Total Cost of Management Summary table, please refer to Attachment C.

As new investment strategies are implemented and markets continue to evolve, SWIB will continue evaluating the most efficient means to manage the trust fund assets. Please contact us if you have any questions or comments about this report.

Sincerely,



Edwin Denson
Executive Director/Chief Investment Officer

Attachments

cc: Members, Joint Committee on Finance
Members, Joint Committee on Audit
Robert Lang, Legislative Fiscal Bureau
Joe Chrisman, Legislative Audit Bureau

Total Assets Under Management	12/31/2024		3/31/2025		6/30/2025		9/30/2025			
Wisconsin Retirement System (WRS)	Amount (in millions) %		Amount (in millions) %		Amount (in millions) %		Amount (in millions) %			
	Internally Managed Assets		\$54,585	39.1%	\$52,649	37.6%	\$59,590	40.5%	\$63,104	41.4%
	Externally Managed Dedicated Assets		35,109	25.2%	35,484	25.4%	33,540	22.8%	35,057	23.0%
	Externally Managed Commingled Assets		49,765	35.7%	51,832	37.0%	54,102	36.7%	54,257	35.6%
	1. Passive Index		517	0.4%	522	0.4%	543	0.4%	773	0.5%
	2. Limited Partnerships		36,387	26.1%	37,430	26.7%	37,938	25.8%	36,718	24.1%
	3. Active Managed Commingled		12,861	9.2%	13,879	9.9%	15,622	10.6%	16,766	11.0%
	Total WRS Assets		\$139,460	100.0%	\$139,964	100.0%	\$147,232	100.0%	\$152,417	100.0%
	Other Funds									
State Investment Fund - Internally Managed		\$20,383		\$21,764		\$20,813		\$20,252		
Separately Managed Funds - Internally Managed		92		94		93		94		
Separately Managed Funds - Externally Managed		2,856		2,895		2,996		3,100		
Total Other Funds		\$23,331		\$24,753		\$23,903		\$23,446		
Total Assets Under Management		\$162,791		\$164,718		\$171,136		\$175,863		
Supplemental AUM Breakout										
Total Internal Assets Under Management		\$75,060	46.1%	\$74,507	45.2%	\$80,497	47.0%	\$83,450	47.5%	
Total External Assets Under Management		\$87,731	53.9%	\$90,211	54.8%	\$90,639	53.0%	\$92,413	52.5%	

STATE OF WISCONSIN INVESTMENT BOARD
Expenses for All Funds Under Management
Quarter Ending September 30, 2025

<u>EXPENSE CATEGORY</u>	<u>EXPENSES</u>
<u>Internal Expenses</u> ¹	
Staff Compensation	\$ 15,416,842
Fringe Benefits	2,891,446
Staff Travel	327,276
<u>Supplies, Services, and Facilities</u>	
2N TELEKOMUNIKACE a.s.	\$ 79
Advanced Systems Concepts	15,609
AE Business Solutions	8,823
Ahern Fire	300
Amazon.com	1,685
AT&T Landline	7,645
Atlassian.com	799
Barrons	49
Bloomberg BusinessWeek	1,357
Capital Data Inc.	54,246
Carahsoft Technology Corp	29,669
CDS MY Block 1 Office, LLC	835,309
Centurylink	54
CFA Society Madison	6,120
Charter Communications (Spectrum Business)	6,981
Ciphereus LLC	2,000
Cisco	175
CleanMark	24,660
Coffee Werks Machine Service and Sales	555
Complex Security Solutions Inc.	187
DbSchema Database Designer	150
Dell Marketing LP	57,137
Department of Administration (DOA)	46,909
Department of Employee Trust Funds (ETF)	62,607
Department of Workforce Development (DWD)	2,995
Depreciation Expense	1,040,929
Disa Global Solutions, Inc	2,133
DOA	136,206
Fed Ex	2,518
Forte	20,124
Gartner Inc	34,215
GoDaddy.com	400
Gordon Flesch	13,690
hireEZ	18,300
Hooper Corporation	310
IKM Building Solutions, Inc.	7,517
Info-Tech Research Group	40,671
InStockChairs.com	299
Jackson-Hirsh	108
JFTCO INC	500
KeyStone Peer Review Organization Inc	886
Lallas Shading Solutions	2,600
Legislative Audit Bureau (LAB)	63,250
LexisNexis	993
LinkedIn	17,205
Litera Corp	356
Macabacus.com	360

Madison Gas and Electric Company	\$	36,471
Mathworks		1,274
Milwaukee Journal Sentinel		603
mxttoolbox.com		297
NASRA		3,450
New York Times		2,415
Next Electric		25,210
OpenAI LLC		36,000
Packerland Rent-A-Mat, Inc.		447
Paycor, Inc		3,870
Pension Fund Data Exchange Ltd		1,500
Postmaster		81
Public Pension Financial Forum		300
ServerCentral, LLC		26,475
Shred-it		467
Slack.com		550
Software House Intl (SHI)		428,839
Staples Advantage		1,532
State Affairs Inc.		1,000
Target		39
The Economist		349
The Financial Times Limited		562
Thomson Reuters		11,490
US Bank		(7,204)
Verizon Wireless		3,384
WiscNet		9,920
Wisconsin Independent Network		1,350
Wisconsin State Journal		126
Total Supplies, Services, and Facilities	\$	3,160,467
Total Operating Budget Expenses	\$	21,796,031
<u>Custodial, Investment Operations & Banking</u>		
Albourne America LLC	\$	187,500
BNY Asset Servicing - Custody		749,131
BNY Asset Servicing - Investment Operations		400,412
Markit NA		3,116
S&P Global Limited (Markit Group Limited)		189,746
Total Custodial, Investment Operations & Banking	\$	1,529,906
<u>Legal</u>		
Chapman & Cutler LLP	\$	6,560
Cox Castle & Nicholson LLP		45,252
DLA Piper LLP (US)		173,890
Godfrey and Kahn SC		2,749
Legal Services Expense Accrual		302,840
Purrington Moody Weill LLP		16,354
Quarles & Brady		168,301
Reinhart Boerner Van Deuren SC		524
Sidley Austin (Domestic)		1,683
Vedder Price PC		52,272
Total Legal	\$	770,424
<u>Investment Research, Data & Consulting</u>		
12358433 Canada Inc.	\$	28,035
22V Research LLC		5,000
AE Business Solutions		80,164
Aksia LLC		350,074
Alembic Global Advisors		2,200
Alex Solutions		44,500

Ananth Seshadri	\$	50,000
Apex Systems, LLC		78,028
Arb Journal		23,500
Axonomy Limited		15,303
B Riley FBR Inc		6,000
BackStop Solutions Group		48,474
Bank of America Merrill Lynch		13,500
Barclays		30,000
Barrington Research Associates Inc		5,500
BCA Research Inc		30,375
Blackrock Financial Management Inc		84,079
Bloomberg Finance LP		1,561,666
BMO Capital Markets Corp		7,700
Bridge Consulting Partners Ltd		81,840
BTIG, LLC		6,500
Callan Associates Inc		6,250
Canoe Software Inc.		16,500
Capital Economics LTD		15,655
Carahsoft Technology Corp		31,213
CBJL Incorporated		103,320
CBOE Global Markets, Inc.		1,294
CBRE Inc.		6,300
CEM Benchmarking Inc		71,875
CFRA Research		18,750
Charles River System Inc		445,757
Ciphereus LLC		1,000
CJS Securities, Inc.		5,700
CL King & Associates		6,500
CLO Research Group		2,400
Compass Point Research & Trading, LLC		7,750
Consensus Economics Inc		41,040
CoStar Portfolio Strategy		24,171
Craig-Hallum Capital Group		6,600
Crane Data LLC		3,000
CUSIP Global Services		16,250
DA Davidson & Co		12,600
Dacheng Xiu		62,475
Data Axle		1,397
Deutsche Bank		11,055
DTCC EPN		3,600
DTCC ITP LLC		3,286
EFront Financial Solutions Inc		208,750
Elevation LLC		8,750
Empirical Research Partners LLC		38,200
EquiLend Holdings LLC		22,113
Ernst & Young LLP		30,875
Evercore Group LLC		8,000
eVestment Alliance LLC		79,458
Exane Inc		8,300
F.T. Specialist Inc		5,710
FactSet Research Systems Inc		678,876
FBN Securities, Inc.		9,000
Finaeon, Inc.		33,600
Finarch LLC		(5,216)
FIS Data Systems Inc.		61,069
Fitch Solutions Inc		20,672
FocusEconomics S.L.U		40,470
Furey Research Partners LLC		7,000
Gallagher		15,875
Green Street Advisor		32,887

Guggenheim Securities LLC	\$	4,500
Haver Analytics		25,181
Hawking LLC		5,352
ICE Data Pricing & Reference Data, LLC		173,765
IHS Markit KY3P LLC		22,340
In Focus Information LLC		1,600
InsiderScore LLC		22,050
Institutional Shareholder Services Inc		44,412
Intex Solutions, Inc.		30,600
Investment Research Expense Accrual		(179,450)
IPC Systems Inc		14,000
Jefferies Research Services LLC		28,500
JP Morgan		18,750
JPSB Consulting Limited		74,970
JW Michaels & Co		7,000
Keefe Bruyette & Woods (KBW)		27,500
KeyBanc Capital Markets Inc		5,000
KeyStone Consulting Inc		84,400
Knowledge Services		(931)
KPMG Limited		5,360
Lake Street Capital Markets, LLC		4,700
LexisNexis		4,344
Loop Capital Markets LLC		8,350
Makor Securities London LTD		6,000
Manalo Advisors Limited		3,750
Markit-EDM Limited		140,620
McLagan Partners Inc		57,000
Microsoft, Inc.		414,439
Moodys Analytics		97,800
MorningStar Inc		4,500
MSCI - Barra		75,000
MSCI Inc - Risk Metrics Solutions		282,833
MSCI, Inc.		130,351
My Data Outlet International, LLC		54,600
n-Tier Financial Services, LLC		6,225
Needham & Company LLC		9,300
NEPC LLC		106,667
Northcoast Research Partners, LLC		4,500
Northland Securities		6,500
NYSE Market Inc		5,674
Octus Intelligence, Inc.		76,667
OptionMetrics		13,500
Options Price Reporting Authority		1,418
Oxford Economics USA INC		17,939
Pacific Pension & Investment Institute		14,000
PEI Media Inc		106,308
Piper Sandler & Co		34,200
Pitchbook Data Inc		21,000
PremiaLab		57,000
Preyer		168,750
Quantum Research Consulting LLC		37,960
RavenPack International S.L.U.		21,250
Raymond James		5,500
Refinitiv		309,177
Renaissance Macro Research		7,000
RIMES Technologies Corporation		51,622
Robert W. Baird & Co.		33,850
Rosenblatt Securities Inc		4,100
Roth Capital Partners		6,700
Russell Investment Group		9,423

S&P Dow Jones Indices	\$	62,081
S&P Global Limited (Markit Group Limited)		91,121
S&P Global Market Intelligence		122,270
S&P Global Valuations Limited		73,825
Sanford C Bernstein & Co LLC		4,500
Seaport Global Holdings, LLC		9,080
SEI Investments		23,006
Sharp Decisions Inc		188,800
Sheffield Haworth Inc		75,000
Sidoti & Company LLC		7,350
Simcorp USA, Inc.		1,010,026
Simmons & Simmons		7,354
Smartkarma Innovations Pte Ltd		10,950
Snowflake Inc		40,000
Software House Intl		33,159
Spherion		10,671
State Street		25,000
Stephens Inc		23,650
Stepstone Group Real Estate		60,813
SWIFT SC		386
TechVest Global Solutions Inc.		165,638
Telsey Advisory Group		5,000
The Benchmark Company LLC		4,000
The Financial Times Limited		1,287
The Information		299
The Macro Institute		12,000
The Nasdaq Stock Market, LLC		3,400
Toronto Stock Exchange		13,465
TradeWeb		11,481
Trivariate Research LP		2,000
Tudor Pickering Holt & Co		3,000
Two Sigma Investor Solutions, LP		35,000
UFP Research SA		25,000
Unit4 Business Software Inc		84,991
Urban Land Institute		1,270
Verity LLC		84,789
Vertical Research Partners		4,250
Verus Advisory Inc		2,500
Virtu ITG Analytics LLC		28,667
Visible Alpha LLC		37,706
Wedbush		11,250
Wolfe Trahan		21,750
Wolverine Execution Services LLC		1,047
Workday, Inc.		86,374
WorldBridge Partners Inc		66,560
Worth Charting LLC		8,000
Total Investment Research, Data & Consulting	\$	10,217,743
<u>Securities Lending Agent Expenses</u>		
Securities Lending Agent Expenses	\$	1,227,404
Total Securities Lending Agent Expenses	\$	1,227,404
TOTAL QUARTERLY CHARGES TO FUNDS	\$	35,541,507

¹All costs reported are on an accrual basis except for internal expenses which are on a cash basis of accounting. Negative expense amounts are due to accrual adjustments and/or other miscellaneous adjustments.

Explanation of Expenses

Internal Operating Expenses

Internal operating expenses consist primarily of staff compensation and fringe benefits. SWIB employs a staff of professional investment and support staff to manage trust fund assets. Other internal operating expenses consist of office equipment, supplies, business travel, information technology equipment and services, and general services.

Custodial, Investment Operations & Banking

Wisconsin Certificate of Deposit Program: Under a contract with SWIB, Bankers' Bank administers the program under which the State Investment Fund (SIF) purchases certificates of deposit from Wisconsin-based banks and thrifts. Most administrative costs are paid by the participating banks. SWIB's expenses help underwrite other administrative costs, such as insurance that SWIB requires to be purchased. There are currently no investments in Bankers' Bank certificates of deposit and no fees were incurred.

BNY: Provides master custodial and administrative services (safekeeping of assets, income collection, valuations and accounting) for public and private domestic and foreign securities in the Wisconsin Retirement System (WRS), the SIF, and the other separately managed trust funds. In addition, SWIB receives performance measurement and analytical services through its contract with BNY, which serves as the official book of record for SWIB's accounting and performance measurement functions. BNY provides data and analytical tools used by SWIB for compliance and risk management. These include global collateral management, data management, and hosting services. Fees for these services are established by contract.

US Bank: The State of Wisconsin contracted with US Bank to be the state's working bank. The fees paid to US Bank by the SIF reflect bank service charges that are not directly applicable to the fund participants.

Legal

Under authority delegated by the Attorney General, pursuant to s. 25.18 (1) (a) Statutes, SWIB may employ legal counsel for any matters arising out of the scope of its investment authority. This includes legal services relating to bankruptcies, class actions, private markets transactions, fiduciary advice, securities law, investment litigation, and other similar matters.

Investment Research, Data & Consulting

Current law gives SWIB the authority to employ investment counsel in any matters arising out of the scope of its investment authority. Investment research and services provided include global market, industry, economic and company information, financial and performance analytics, news information, pricing and exchange data, credit ratings, financial modeling, economic forecasting, trading services, and a variety of Board consultations. These services enable SWIB to perform due diligence on current and future holdings and assist in monitoring investments.

Securities Lending Agent Expenses

Securities lending programs generally earn income through the reinvestment of cash collateral posted by borrowers and through the collection of fees for loans where non-cash collateral is posted. SWIB's securities lending income is shared with the agent to pay the costs associated with the administration of the program. Securities lending agent fees are reported as expenses.

External Investment Management Fees

Some external asset managers have been granted delegated authority to determine investment strategy and purchase securities in SWIB's name in accordance with approved investment guidelines. These investment vehicles are known as separately managed accounts (SMAs). Fees for managing SMAs are typically assessed as a percentage of the market value of assets under management and in some cases, fees are based on investment performance. These costs are actual expenses to SWIB that are, in accordance with accounting guidelines generally accepted in the U.S., recognized as expenses on the WRS Statement of Changes in Net Investment Position.

SWIB also invests in separate legal entities managed by external investment managers to gain exposure to select strategies including Public Markets, Private Markets¹, and Hedge Funds. These investment vehicles are known as "commingled" accounts. In exchange for their investment management services, the external managers charge a fee within the entity they manage. These fees generally do not require SWIB to remit payment. Fees are typically assessed as a percentage of the market value of assets under management, commitments, and in some cases are based on investment performance. While the fees charged to these external vehicles do not meet the statutory definition of a cost or expense to SWIB, they are included in SWIB's total cost of management reporting as a supplemental reporting item that falls outside the statutory requirements of this report.

¹ External Investment Management Fees for private markets, encompassing Private Equity, Venture Capital, Current Return and Real Estate asset classes, are reported on a net of fee basis rather than gross. Net fees reflect fee offsets, waivers, and deferrals.

Private Equity Commitments*

July 2025 – September 2025

<i>Investment</i>	<i>Commitment (millions)</i>
Activant IV (add-on)	\$10.0
CapitalSpring Investment Partners VII	\$100.0
Charlesbank Credit Fund IV	\$100.0
G2 Software Investment D1 AB	€6.6
Gemspring Growth Solutions II	\$75.0
Hg Genesis 11	€75.0
Hg Mercury 5	€50.0
JMI Equity Fund XII	\$100.0
M5 Software Investment D1 AB	€25.9
NGP Royalty Partners III	\$35.0
PSG Encore Warehouse (add-on)	\$8.7
Radian Capital Partners IV	\$32.5
Ridgemont Equity Partners V	\$75.0
T-X Badger Co-Invest LP	\$100.0

**Includes Current Return Portfolio and Co-Investments.*

Private Equity Commitments*

July 2025 – September 2025

<i>Investment</i>	<i>Commitment (millions)</i>
Financial Services Co-Investment	\$20.0
Consumer Co-Investment	\$23.5
Information Technology Co-Investment	€30.0
Industrials Co-Investment	\$20.0
Industrials Co-Investment	\$25.0
Consumer Co-Investment	\$25.0
Industrials Co-Investment	\$20.0
Energy Co-Investment	\$25.0
Financial Services Co-Investment	\$25.0

**Includes Current Return Portfolio and Co-Investments.*

Private Debt Investments/Commitments

July 1, 2025 to September 30, 2025 (Third Quarter)

<i>Investment</i>	<i>Investment/Commitment</i>
Telecommunications	\$5,800,000
Consumer Products	\$6,800,000
Energy	\$12,000,000
Total	\$24,600,000

Real Estate Commitments

July 2025 – September 2025

<i>Investment</i>	<i>Commitment (millions)</i>
WESCO VII	\$60
Total	\$60

Funds Alpha Commitments*

July 1 – September 30, 2025

Manager	Commitment (Millions)
PIMCO EMD Local	\$ 209
Benefit Street	\$ 400
Silver Point SOF	\$ 17
I-94	\$ 215
Total	\$ 841

**Includes Hedge Funds and Beta One*

Board Contact Log – December 2025 Board Meeting

DATE OF INBOUND COMMUNICATION	DATE COMMUNICATED TO THE BOARD	COMMUNICATION SOURCE	TOPIC	WRS PARTICIPANT*
September 5, 2025	December 9, 2025	Amanda Mendoza	Fossil fuel divestment and systematic climate risks	No
October 5, 2025	December 9, 2025	Daniel Zollner	Advocating increased allocation to stocks	No
October 15, 2025	December 9, 2025	Carol Drysdale	Vote against Musk's pay package	Yes
November 29, 2025	December 9, 2025	Judith Stadler	Insurance increases due to climate change	No

* Comment submitters indicate whether they are or are not WRS Participants when submitting the comment.

Board Meeting

Tab 9 – Future Items for Discussion

Proposed Motion: Move to adjourn

2026 Board Meeting and Agenda Plan

March 2026	
Audit & Finance	<p>Open Session</p> <ul style="list-style-type: none"> • Annual Charters Review • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • 2026 Internal Audit Plan Status • 2026 Internal Audit Goals • Compliance Overview • Financial Reporting • Administrative Reports <p>Executive Closed Session</p> <ul style="list-style-type: none"> • Evaluation of Head of Internal Audit • Head of Internal Audit Compensation Recommendation
Compensation & Workforce Development	<p>Open Session</p> <ul style="list-style-type: none"> • Annual Committee Charter Review • Comprehensive RPM Review Timeline • Strategic Results Scorecard Approval • Incentive Compensation Program Review and Division Scorecards Results • Incentive Compensation Award Recommendations • Talent Acquisition Update <p>Executive Closed Session</p> <ul style="list-style-type: none"> • Incentive Compensation Award Recommendations for Specific Individuals • Long Term Incentive Plan Awards • Deputy Executive Director/Chief Operating Officer Incentive Compensation Award Recommendation • ED/CIO Evaluation and Compensation
SPCG	<p>Open Session</p> <ul style="list-style-type: none"> • Real Estate Strategy Report and Market Outlook • Corporate Governance Program Update • June Investment Forum Preview • Innovation and Projects Update <p>Executive Closed Session</p> <ul style="list-style-type: none"> • ED/CIO Goals Review
Board Meeting	<p>Open Session</p> <ul style="list-style-type: none"> • Committee Reports • Election of Secretary and Assistant Secretary • Annual Committee Assignments • Proposed Meeting Dates for Next Year • Investment Performance and Market Updates; Callan Annual Report • Committee Open Session Business • Quarterly Investment Update • Q4 Direct Charges to Funds / PMFA Commitments / Board Contact Log <p>Closed Session</p> <ul style="list-style-type: none"> • Risk Management Update • Committee Closed Session Business • Operational, Financing & Counterparty Risk Overview <p>Executive Closed Session</p> <ul style="list-style-type: none"> • Incentive Compensation Award Recommendations for Specific Individuals

2026 Board Meeting and Agenda Plan

June 2026	
Audit & Finance	Open Session <ul style="list-style-type: none"> • WRS Audited Financial Statements • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • Annual Affirmations and Disclosures • 2026 Internal Audit Plan Status • Five-Year Audit Summary • Financial Reporting • Administrative Reports Executive Closed Session <ul style="list-style-type: none"> • LAB Review of Statements of Economic Interest
SPCG	Open Session <ul style="list-style-type: none"> • Hedge Fund Strategy Report and Market Outlook Executive Closed Session <ul style="list-style-type: none"> • ED/CIO Goals Review
INVESTMENT FORUM	
Board Meeting	Open Session <ul style="list-style-type: none"> • Committee Reports • Investment Performance and Market Updates; Callan Quarterly Report • Committee Open Session Business • Quarterly Investment Update • Q1 Direct Charges to Funds / PMFA Commitments / Board Contact Log Closed Session <ul style="list-style-type: none"> • Risk Management Update • Committee Closed Session Business
INVESTMENT FORUM	

2026 Board Meeting and Agenda Plan

September 2026	
Audit & Finance	Open Session <ul style="list-style-type: none"> • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • 2026 Internal Audit Plan Status and Plan Update • 2027 Internal Audit Plan Preview • Financial Reporting • Administrative Reports
Benchmark & Performance	Open Session <ul style="list-style-type: none"> • NEPC 2026 Benchmark Review and Recommendation
Compensation & Workforce Development	Open Session <ul style="list-style-type: none"> • Comprehensive RPM Review Preview • Talent Acquisition and Employee Engagement Update
SPCG	Open Session <ul style="list-style-type: none"> • Private Equity and Private Debt Strategy Reports and Market Outlook • Annual Corporate Governance Policy Review and Corporate Governance 2026 Proxy Voting Review • October Workshop Preview • Trustee Manual and Policies Review Closed Session <ul style="list-style-type: none"> • Co-Investment and Venture Capital Strategy Reports and Market Outlook • Data Management and Information Technology Update • Board/Staff Consultant Annual Reporting Executive Closed Session <ul style="list-style-type: none"> • Targeted Strategic Planning • ED/CIO Goals Review
Board Meeting	Open Session <ul style="list-style-type: none"> • Committee Reports • Investment Forum Recap • Biennial Ethics Training • Fiduciary & Public Records Training • Investment Performance and Market Updates; Callan Quarterly Report • Committee Open Session Business • Quarterly Investment Update • Q2 Direct Charges to Funds / PMFA Commitments / Board Contact Log Closed Session <ul style="list-style-type: none"> • Risk Management Update • Board/Staff Consultant Annual Reporting • Committee Closed Session Business Executive Closed Session <ul style="list-style-type: none"> • Board Self-Evaluation with Governance Consultant

OCTOBER BOARD WORKSHOP
<ul style="list-style-type: none"> • Outside Speakers • Asset Allocation review

2026 Board Meeting and Agenda Plan

December 2026	
Audit & Finance	Open Session <ul style="list-style-type: none"> • SIF Audited Financial Statements • Open Audit Issues Report(s) • Approval of Draft Audit Report(s) • 2026 Internal Audit Plan Status • Proposed 2026 Internal Audit Plan • Annual Presentation on Cost Benchmarking • Financial Reporting, including Budget and Position Request • Administrative Reports Executive Closed Session <ul style="list-style-type: none"> • LAB Review of Statements of Economic Interests
Benchmark & Performance	Open Session <ul style="list-style-type: none"> • Annual Committee Charter, Policies, and Benchmarking Philosophy Review • Benchmark Consultant Report and Annual Benchmark Review and Recommendation
Compensation & Workforce Development	Open Session <ul style="list-style-type: none"> • Comprehensive RPM Review • Compensation Philosophy Review • Compensation Consultant Report • Incentive Compensation Plan Changes for Next Performance Year • Incentive Compensation Projections • Talent Acquisition Update and People Metrics Executive Closed Session <ul style="list-style-type: none"> • Succession Planning
SPCG	Open Session <ul style="list-style-type: none"> • Annual Committee Charter Review • Beta One Strategy Report and Market Outlook Executive Closed Session <ul style="list-style-type: none"> • Targeted Strategic Planning • ED/CIO Goals Review
Board Meeting	Open Session <ul style="list-style-type: none"> • Committee Reports • Investment Performance and Market Updates; Callan Quarterly Report • Asset Allocation Recommendation • Quarterly Investment Update • Committee Open Session Business • Q3 Direct Charges to Funds / PMFA Commitments / Board Contact Log Closed Session <ul style="list-style-type: none"> • Asset Allocation Discussion • Annual Review of Expected Tail Loss Analysis • Risk Management Update • Committee Closed Session Business