



MINUTES

**Quarterly Meeting of the Investment Committee
of the Board of Trustees of the
State Universities Retirement System
Thursday, March 9, 2023, 9:00 a.m.
State Universities Retirement System
Via remote access due to ongoing COVID-19 concerns**

The meeting on March 9, 2023, was conducted via video conference pursuant to the Governor's COVID-19 Executive Order dated March 3, 2023, and subsection (e) of Section 7 of the Illinois Open Meetings Act. Chair John Atkinson of the SURS Board of Trustees determined that a full, in-person meeting was neither practical nor prudent due to the ongoing COVID-19 disaster concerns.

The following trustees were present: Mr. John Atkinson; Dr. Andriy Bodnaruk; Mr. Richard Figueroa; Ms. Jamie-Clare Flaherty; Dr. Fred Giertz; Mr. Scott Hendrie, chair; Mr. John Lyons; Dr. Steven Rock; Mr. Collin Van Meter; Mr. Antonio Vasquez; and Mr. Mitch Vogel.

Others present: Ms. Suzanne Mayer, Executive Director; Mr. Doug Wesley, Chief Investment Officer (CIO); Ms. Ellen Hung, Deputy CIO; Ms. Kim Pollitt, Mr. Joe Duncan and Mr. Shane Willoughby, Sr. Investment Officers; Mr. Brian Deloria and Mr. Alex Ramos, Investment Officers; Ms. Stephany Brinkman, Investment Analyst; Ms. Dallen Roman, Investment Intern; Ms. Bianca Green, General Counsel; Ms. Tara Myers, Chief Financial Officer; Ms. Heather Kimmons, Associate Legal Counsel; Ms. Jackie Hohn, Chief Internal Auditor; Ms. Nichole Hemming, Chief Human Resources Officer; Ms. Kristen Houch, Director of Legislative and Stakeholder Relations; Ms. Alicia Route, Legislative Analyst; Ms. Kelly Carson, Ms. Chelsea McCarty and Ms. Annette Ackerman, Executive Assistants; Mr. David Sancewich, Ms. Ghiané Jones and Mr. Colin Bebee, of Meketa; and Mr. Michael Calabrese of Foley.

Investment Committee roll call attendance was taken. Trustee Atkinson, present; Trustee Bodnaruk, absent; Trustee Figueroa, present; Trustee Flaherty, absent; Trustee Giertz, present; Trustee Hendrie, present; Trustee Lyons, present; Trustee Rock, present; Trustee Van Meter, present; Trustee Vasquez, present; and Trustee Vogel, present.

Trustee Bodnaruk joined the meeting via zoom at 9:01 a.m.

Trustee Van Meter physically joined the meeting at 9:05 a.m.

Trustee Flaherty joined the meeting via zoom at 9:06 a.m.

APPROVAL OF MINUTES

Trustee Hendrie presented the minutes from the Investment Committee meeting of February 2, 2023.

Trustee Vasquez made the following motion:

- That the minutes from the February 2, 2023 Investment Committee meeting be approved as presented.

Trustee Rock seconded the motion which passed via the following roll call vote:

Trustee Atkinson	-	aye
Trustee Bodnaruk	-	aye
Trustee Figueroa	-	aye
Trustee Flaherty	-	absent
Trustee Hendrie	-	aye
Trustee Giertz	-	aye
Trustee Lyons	-	aye
Trustee Rock	-	aye
Trustee Van Meter	-	absent
Trustee Vasquez	-	aye
Trustee Vogel	-	aye

APPROVAL OF CLOSED MINUTES

Trustee Hendrie presented the closed minutes from the Investment Committee meeting of February 2, 2023.

Trustee Vasquez made the following motion:

- That the closed minutes from the February 2, 2023 Investment Committee meeting be approved and remain closed.

Trustee Rock seconded the motion which passed via the following roll call vote:

Trustee Atkinson	-	aye
Trustee Bodnaruk	-	aye
Trustee Figueroa	-	aye
Trustee Flaherty	-	absent
Trustee Hendrie	-	aye
Trustee Giertz	-	aye
Trustee Lyons	-	aye
Trustee Rock	-	aye
Trustee Van Meter	-	aye

Trustee Vasquez - aye
Trustee Vogel - aye

CHAIRPERSON'S REPORT

Trustee Scott Hendrie did not have a formal chairperson report.

CIO REPORT

Mr. Doug Wesley provided an update regarding the real assets consultant RFP. Mr. Wesley stated that staff is currently reviewing the responses and semi-finalist interviews will be conducted in Champaign during the first week of April. The finalist interviews will be held during the June Investment Committee meeting. Mr. Wesley also discussed changes to SURS' outreach efforts to diverse firms. SURS investment staff has been working with SURS communications department to create a specific section on the SURS website where diverse firms can learn about SURS efforts, its investment partners, and schedule meetings with staff to introduce their firms. Ms. Stephany Brinkman showed the updated SURS website and answered questions from the trustees.

A copy of the staff memorandums titled "Investment Contracts Approved" and "Report from the February 2023 Investment Committee Meeting" are incorporated as part of these minutes as [Exhibit 1](#) and [Exhibit 2](#).

ANNUAL REVIEW OF DEFINED CONTRIBUTION PLANS (Educational Topic)

Mr. Brian Deloriea along with Mr. Jared Harlin and Ms. Marcia Peters of CAPTRUST and Mr. Howard Li, Mr. Andrew Stumacher, Ms. Amanda Dunne and Mr. Craig Schorr of Alliance Bernstein provided the annual review of the Retirement Savings Plan (RSP) and the Deferred Compensation Plan (DCP).

A copy of the presentations and memorandums are incorporated as part of these meeting minutes as the following exhibits:

- [Exhibit 3](#) – DC Review – SURS 2023
- [Exhibit 4](#) – SURS Due Diligence Review
- [Exhibit 5](#) – SURS Lifetime Income Strategy Review

The educational session lasted 1 hour 40 minutes and concluded at 10:55 a.m. at the end of the presentation.

REVIEW OF DEFINED CONTRIBUTION INVESTMENT POLICY STATEMENT

Mr. Deloriea provided a summary of the current Defined Contribution Investment Policy and stated that no policy changes are being proposed at this time.

A copy of the staff memorandum titled "DC IPS Memo March 2023" and presentation titled

“SURS Defined Contribution Investment Policy” are incorporated as part of these minutes as [Exhibit 6](#) and [Exhibit 7](#).

REVIEW OF FY 2023 CAPITAL MARKET ASSUMPTION (Educational Topic)

Mr. Colin Bebee of Meketa presented the Review of Capital Market Assumption educational training. The educational session lasted for forty-five minutes and concluded at 11:45 a.m. at the end of his presentation.

A copy of Meketa’s presentation titled “2023 Capital Markets Assumptions” and a copy of the memorandum titled “Total Portfolio Expected Return Update 2023 Assumption” are incorporated as part of these minutes as [Exhibit 8](#) and [Exhibit 9](#).

CLOSED SESSION

Trustee Rock moved that the Investment Committee go into closed session at 11:45 a.m. pursuant to §2(c)(7) of the Illinois Open Meetings Act to consider the sale or purchase of securities or investments or to consider investment contracts. Trustee Bodnaruk seconded the motion which passed via the following roll call vote:

Trustee Atkinson	-	aye
Trustee Bodnaruk	-	aye
Trustee Figueroa	-	aye
Trustee Flaherty	-	absent
Trustee Hendrie	-	aye
Trustee Giertz	-	aye
Trustee Lyons	-	aye
Trustee Rock	-	aye
Trustee Van Meter	-	aye
Trustee Vasquez	-	aye
Trustee Vogel	-	aye

RETURN TO OPEN SESSION

The Investment Committee returned to open session at 12:29 p.m.

Trustee Vasquez made the following motion:

- That based on the recommendation from SURS staff and Meketa, SURS terminate Investment Manager Lombard Odier in compliance with applicable notice requirements and that the liquidated assets be used for general portfolio rebalancing purposes.

Trustee Rock seconded the motion which passed via the following roll call vote:

Trustee Atkinson	-	aye
Trustee Bodnaruk	-	aye

Trustee Figueroa	-	aye
Trustee Flaherty	-	absent
Trustee Hendrie	-	aye
Trustee Giertz	-	aye
Trustee Lyons	-	aye
Trustee Rock	-	aye
Trustee Van Meter	-	aye
Trustee Vasquez	-	aye
Trustee Vogel	-	aye

QUARTERLY PERFORMANCE REVIEW

Ms. Ghiané Jones provided a brief update to the board regarding final total fund performance through December 31, 2022.

A copy of Meketa’s presentation titled “SURS Q4 2022 Board Report” is incorporated as part of these minutes as [Exhibit 10](#).

CORPORATE GOVERNANCE UPDATE

Ms. Ellen Hung presented an update regarding governance activity as of December 31, 2022 that included a quarterly report, Council of Institutional (CII) update and current proxy voting information.

A copy of the staff memorandum titled “Corporate Governance Update” is incorporated as part of these minutes as [Exhibit 11](#).

INFORMATIONAL ITEMS NOT REQUIRING COMMITTEE ACTION

1. [Exhibit 12](#) – March 2023 Diversity Outreach Memo Draft
2. [Exhibit 13](#) – Executive Summary Risk Memo 12.31.2022
3. [Exhibit 14](#) – Executive Summary Risk Report 12.31.2022
4. [Exhibit 15](#) – March 2023 Investment Compliance Memo
5. [Exhibit 16](#) – Consultants Compensation and Economic Opportunity Disclosures
6. [Exhibit 17](#) – SURS FY 2023 Private Equity and Private Credit Commitments
7. [Exhibit 18](#) – Supplemental Information

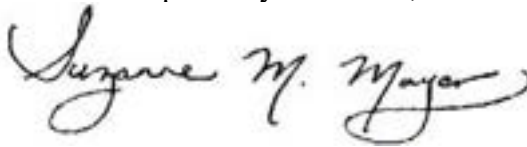
PUBLIC COMMENT

There were no public comments presented to the Investment Committee.

There was no further business brought before the committee and Trustee Atkinson moved that the meeting be adjourned. The motion was seconded by Trustee Vasquez which passed via the following roll call vote:

Trustee Atkinson	-	aye
Trustee Bodnaruk	-	aye
Trustee Figueroa	-	aye
Trustee Flaherty	-	absent
Trustee Hendrie	-	aye
Trustee Giertz	-	aye
Trustee Lyons	-	aye
Trustee Rock	-	aye
Trustee Van Meter	-	aye
Trustee Vasquez	-	aye
Trustee Vogel	-	aye

Respectfully submitted,

A handwritten signature in cursive script, reading "Suzanne M. Mayer". The signature is written in dark ink and is positioned above the printed name and title.

Ms. Suzanne M. Mayer
Executive Director and Secretary, Board of Trustees

SMM:kc



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www.surs.org

Investment Department

To: Suzanne Mayer
From: Douglas C. Wesley, CFA
Date: February 24, 2023
Subject: Investment Contracts Approved

The following investment agreements were approved by the Executive Director subsequent to the mailing for the February 2, 2023, Investment Committee meeting.

Defined Benefit Plan

William Blair

Subscription agreement and side letter were fully executed on January 31, 2023.

Mondrian

IMA amendment letter was fully executed on January 31, 2023.

Meketa

Investment consulting services agreement were fully executed on February 27, 2023.



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Investment Department

To: Investment Committee
 From: Douglas C. Wesley, CFA
 Date: February 24, 2023
 Subject: Report from the February 2, 2023 Investment Committee Meeting

Enclosed are the Minutes of the December 8, 2022, Investment Committee Meeting. The purpose of this memorandum is to provide a status report on the action items for Investments.

Six motions were approved during the Investment Committee Meeting. These included the approval of the minutes from the December 8, 2022 Investment Committee Meeting, and that the closed session minutes from the December 8, 2022 Investment Committee Meeting be approved and remain closed. The remaining motions approved by the Board of Trustees required further action by SURS staff. Open motions requiring further action by SURS Staff are listed below.

1. **That based on the recommendation of SURS staff, the Investment Committee approve CAPTRUST to be hired as the defined contribution consultant for a five-year term, subject to successful completion of contract negotiations.**

SURS staff is in the process of contract negotiations.

2. **That based on the recommendation of SURS staff and Callan, the Investment Committee approve a commitment of the lesser of \$50 million or 10 percent of total fund commitments to Brasa Real Estate Fund III and the lesser of \$40 million or 10 percent of total fund commitments to Long Wharf Real Estate Partners VII, subject to successful completion of contract negotiations.**

SURS staff is in the process of contract negotiations.

3. **That based on the recommendation of SURS staff and Fiduciary Counsel, the Investment Committee approve the delegation of the pending confidential investment decisions discussed in closed session to SURS Executive Committee, if necessary, subject to Callan's recommendation and the successful completion of applicable contract negotiations.**

SURS staff is waiting for more information.

4. **That based on the recommendation of SURS staff and Meketa, the Investment Committee approve a commitment of \$410 million to a Private Equity Co-Investment Vehicle managed by Aksia LLC, subject to successful completion of contract negotiations.**

SURS staff is in the process of contract negotiations.

Open item from December 8, 2022

- 5. Based on the recommendation from SURS staff and Meketa, the assets from the closure of the Mondrian/Macquarie Emerging Markets Fund be allocated 50/50 to the newly hired emerging markets managers, Nipun Capital, and William Blair.**

Assets from the closure of the Mondrian/Macquarie Emerging Markets Fund were allocated 50-50 to Nipun and William Blair after the contract amendment with Mondrian was fully executed on January 31, 2023.

- 6. That based upon the recommendation of SURS staff, the Investment Committee approve Meketa to be hired as the general investment consultant for a five-year term, subject to successful completion of contract negotiations.**

Investment consulting services agreement were fully executed on February 27, 2023.

Open item from October 20, 2022

- 7. That based on the recommendation of SURS staff and Meketa, SURS commit \$100 million to Fairview Lincoln Fund 1 (Series C), subject to successful completion of contract negotiations.**

SURS staff is in the process of contract negotiations.

Open item from September 15, 2022

- 8. That based upon the recommendations from SURS Staff and Meketa, SURS retain Nipun Capital and William Blair for Emerging Market equity mandates with a 50/50 allocation of assets between the two managers, subject to successful completion of contract negotiations with funding from the full liquidation of the State Street Emerging Markets Index Fund.**

Nipun was funded after subscription agreement and side letter were fully executed on November 29, 2022. William Blair was funded after subscription agreement and side letter were fully executed on January 31, 2023.

Open item from June 2, 2022

- 9. That based on the recommendation from SURS staff and Meketa, the Investment Committee approve the retention of Capstone Investment Advisors to serve as the back-up manager for the tail risk and long volatility mandates, subject to successful contract negotiations.**

SURS staff is in the process of contract negotiations.

Please advise if you have any questions prior to the March 9, 2023, Investment Committee meeting.



Defined Contribution Plans Annual Review March 2023



Fiscal Year 2023

Functional Asset Class Review Schedule

Meeting	Functional Asset Class	Strategies
September	Annual Review/Investment Plan	
October	Principal Protection & Inflation Sensitive	Principal Protection, TIPS
December	Non-Traditional Growth	Private Equity, Real Assets
February	Stabilized Growth	Options, Public and Private Credit
→ March	Defined Contribution	SURS DCP and RSP plans
April	Traditional Growth	Public Equity
June	Crisis Risk Offset	Long Duration, Trend Following, Alternative Risk Premia, Long Vol, and Tail Risk



SURS Defined Contribution (DC) Overview

- **SURS has two DC plans, the Retirement Savings Plan, and the Deferred Compensation Plan.**
- **The Retirement Savings Plan (RSP) is one of three retirement options that new members must choose from within the first six months of employment.**
 - Option for members since April 1, 1998
 - 401(a) plan type
 - Defined contribution plan where the member decides how their balance is invested
- **The Deferred Compensation Plan (DCP) provides eligible employees with supplemental retirement savings in individual participant accounts through employee contributions, optional employer contributions, and earnings.**
 - Option for members beginning March 2021
 - 457(b) plan type
 - Defined contribution plan where the member decides how their balance is invested



Accomplishments & Initiatives

- **Fiscal Year 2022 / 2023 to date Accomplishments:**
 - Completed defined contribution consultant RFP at the February Investment Committee meeting, retaining CAPTRUST as SURS' DC consultant with a 5-year contract (pending successful contract negotiations).
 - Replaced the underlying fund option for the SURS U.S. Small-Mid Cap Value Equity Fund, resulting in lower fees to the plan.
 - Continued growth in enrollments into the SURS Deferred Compensation Plan, with enrolled members in the DCP nearly doubling to over 2700 as of January 2023.
- **Fiscal Year 2023 Initiatives:**
 - Prepare for automatic enrollment of new members into the DCP, which is set to take effect in July 2023.
 - Continue to focus education efforts around the importance of supplemental savings through monthly DCP webinars, individual appointments, and targeted quarterly DCP promotional emails.



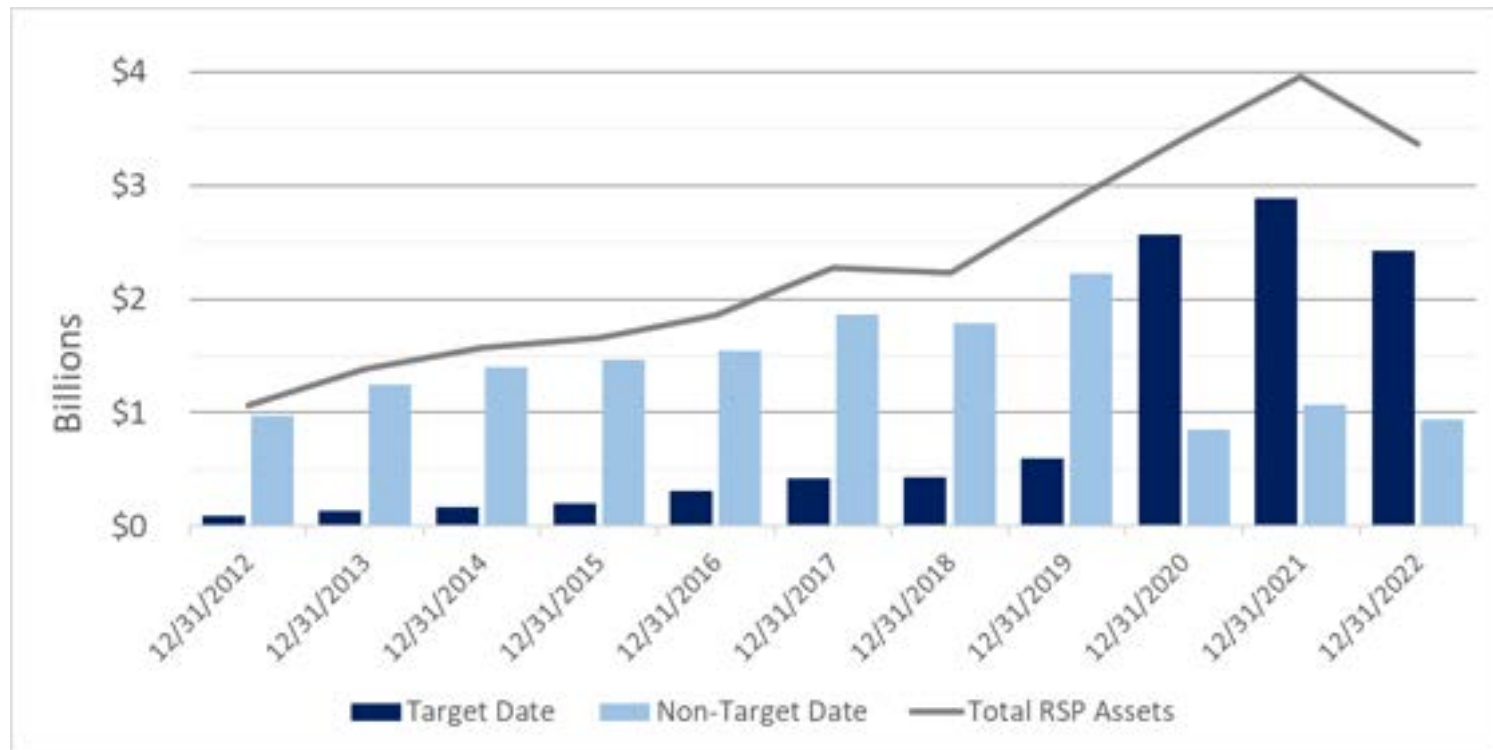
Retirement Savings Plan(RSP) Overview

- **As of December 31, 2022:**
 - Active participants: 14,102
 - Inactive participants: 9,065
 - Assets at Voya Financial: \$3,020.8 million
 - Assets at TIAA (closed to new contributions): \$340.9 million
 - Total RSP Assets (including disability and forfeiture reserves): \$3.5 billion
- **Number of available RSP options:**
 - As of December 31, 2022: 16 investments options, including one custom target date solution; 10 legacy TIAA investment options (closed to new investment).



Target Date Utilization Over Time

- Investments in the SURS Lifetime Income Strategy continue to represent a significant majority of RSP plan assets following the re-enrollment that occurred in fall 2020



- LIS Assets account for 72% of SURS' total RSP Assets and 80% of RSP asset with Voya.



RSP Top Holdings

RSP Top 10 Non-Target Date Investment Options by Assets as of 12/31/2022

Fund	Assets	% of RSP
SURS U.S. Large Cap Equity Index Fund	\$ 280,232,536	8.3%
TIAA Traditional Annuity*	\$ 146,158,570	4.3%
CREF Stock Account R3*	\$ 73,708,574	2.2%
SURS Fixed Account	\$ 58,217,801	1.7%
SURS U.S. Small-Mid Cap Equity Index Fund	\$ 46,923,246	1.4%
CREF Equity Index Account R3*	\$ 43,278,055	1.3%
SURS U.S. Core Bond Index Fund	\$ 36,951,549	1.1%
SURS U.S. Small-Mid Cap Growth Fund	\$ 31,372,340	0.9%
SURS Non-U.S. Equity Index Fund	\$ 25,790,451	0.8%
CREF Global Equities Account R3*	\$ 23,098,953	0.7%

- The S&P 500 index fund is the top non-TD investment option by assets.
- Four of the 10 largest non-LIS holdings are legacy TIAA options (closed to new member contributions).

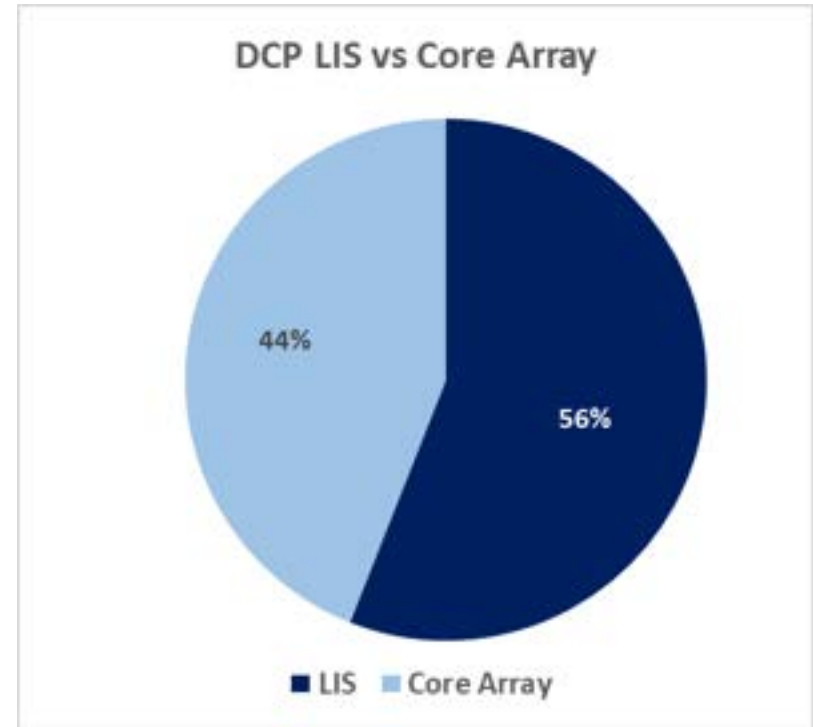
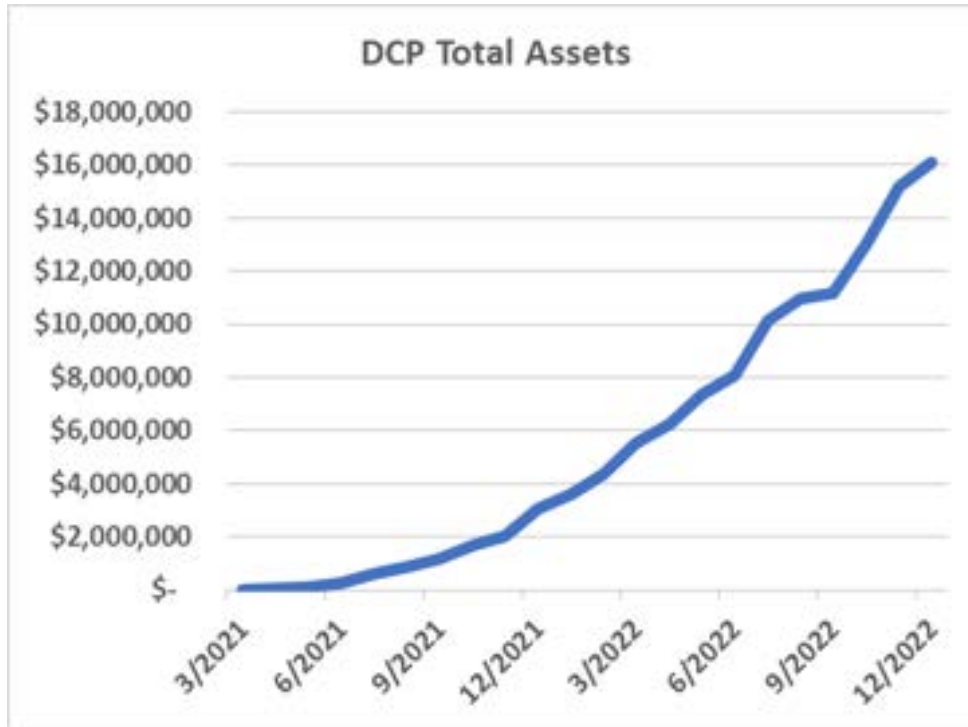


Deferred Compensation Plan(DCP) Overview

- The DCP has the same recordkeeper (Voya) and investment lineup (LIS plus Core Array) as the RSP
- Participation in the DCP is optional
- Subject to IRS 457(b) elective deferral limits of \$22,500/year for 2023 (up \$2,000 from 2022) not including catch-up. This limit includes contributions to other 457 plans that a member may be eligible to contribute to, such as the State of Illinois Deferred Compensation Plan.
- Member actions in the DCP have no effect on investments in the RSP as the plans are independent. This applies to short term trading restrictions, as well as LIS glide path settings.
- As of 1/17/2023, total enrolled members had nearly doubled from a year ago to 2,700 vs 1,500 in February 2022.



DCP Plan Assets / LIS Utilization



- DCP assets have grown from \$3.0 million as of 12/31/2021 to \$16.0 million as of 12/31/2022
- 56% of plan assets were invested in the Lifetime Income Strategy as of 12/31/2022, up from 52% 12 months ago.

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS
4TH QUARTER, 2022

DEFINED CONTRIBUTION

QUARTERLY REVIEW

CAPTRUST

40 Wall Street, 56th Floor
New York, NY 10005

Our mission is to enrich the lives of our clients, colleagues and communities through sound financial advice, integrity, and a commitment to service beyond expectation.



SURS Retirement Savings Plan
SURS Deferred Compensation Plan

4th Quarter, 2022 Quarterly Review

Executive Summary

Section 1

RETIREMENT INDUSTRY UPDATES

Section 2

MARKET COMMENTARY AND REVIEW

Section 3

PLAN INVESTMENT REVIEW

Section 4

INACTIVE PLAN REVIEW

Section 5

FUND FACT SHEETS

Appendix



EXECUTIVE SUMMARY | PROGRAM OVERVIEW

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

	RETIREMENT SAVINGS PLAN (RSP)	DEFERRED COMPENSATION PLAN (DCP)
Total Program Assets	\$3,361,726,403 (-15% YTD)	\$16,075,058 (+430% YTD)
Voya Assets	\$3,020,858,136	\$16,075,058
Frozen Assets - TIAA	\$340,868,267	N/A
Program Expense Overview		
Voya Recordkeeping Fee / Benchmark ¹	\$30 annual fee per participant (\$7.50/quarter) / \$40.74	
Investment Weighted Average Expense	0.37% (excluding the Voya Fixed Account) 0.11% (excluding the Secure Income Portfolio)	
Lifetime Income Strategy Overview		
Total LIS Participants	20,651	1,842
Total SIP Participants	6,033	260
Activated Participants (Quarter/Inception)	21 / 203	0 / 0
Avg Activated GLWB % (Quarter/Inception)	3.79% / 3.18%	0.00% / 0.00%
Investment Watchlist	<ul style="list-style-type: none"> Delaware Smid Cap Growth R6 (DFZRX) - Recommended for Additional Monitoring 	

¹Based on the 2019 NAGDCA Perspectives in Practice Survey Report for the average annual recordkeeping expense paid by participants in plans with assets over \$2.25B. Survey results include responses from 23 plans with assets over \$2.25B.



CAPTRUST and SURS partnered to complete the following items during 2022:

Fiduciary Process

- Maintained the due diligence process through quarterly reports which included a review of plan assets, investment monitoring and funds highlighted for review, industry updates, and market commentary.
- Conducted an annual review of the plans with the Investment Committee which included a review of completed and future initiatives, plan assets and contributions, and investment analysis.
- Reviewed the DC Investment Policy with the Investment Committee to ensure alignment with industry best practices related to fiduciary oversight of the investments.
- Held monthly calls with the RSP Manager, Benefits Staff, and internal Investment Staff to discuss plan operational and administrative issues, communication initiatives, and investment updates.

Investment Management

- Maintained fiduciary oversight of the plans' investment menus through quarterly reports and reviews of investment performance and approval of investment watchlist recommendations.
 - Replaced Janus Henderson Small-Mid Cap Value N with EARNEST Partners Smid Cap Value due to performance related concerns, per the guidelines of the Investment Policy.
 - Closely monitored the impacts to the plans related to investment manager's sell-off of underlying Russian holdings.
- Reviewed best practices regarding investment menu construction.
- Conducted a thorough review of the SMID value and SMID growth asset class offerings including fees, performance, and overall fit within the current investment menu structure.

Plan Design

- Began preliminary efforts related to the implementation of automatic enrollment in the DCP, effective July 1, 2023.

Vendor Management

- Held regular operations and special project update meetings with Voya.
- Reviewed quarterly Service Level Agreement (SLA) performance to receive payment for missed SLAs and tracked Voya's improvement on missed metrics.
- Reviewed the recordkeeper's proposal regarding offshoring of some operational processes. The request was denied by SURS to ensure the highest possible security of plan-related data.
- Thoroughly examined the recordkeeper's incident related to data security per SURS protocols and the provisions of the recordkeeping contract, including detailed documentation of the incident and resolution. No SURS information was wrongly disclosed.

Participant Engagement

- Reviewed and updated member communications related to investment changes and sent all required notices to members.

EXECUTIVE SUMMARY | 2023 FIDUCIARY CALENDAR

Period Ending 12.31.22 | Q4 22

Review Period	4Q 2022 (February/March)	1Q 2023 (May/June)	2Q 2023 (August/September)	3Q 2023 (November/December)
Standard Topics	<ul style="list-style-type: none"> Industry & Regulatory Trends Fiduciary Training Plan Assets/Allocation Market Update & Investment Analysis 	<ul style="list-style-type: none"> Industry & Regulatory Trends Fiduciary Training Plan Assets/Allocation Market Update & Investment Analysis 	<ul style="list-style-type: none"> Industry & Regulatory Trends Fiduciary Training Plan Assets/Allocation Market Update & Investment Analysis 	<ul style="list-style-type: none"> Industry & Regulatory Trends Fiduciary Training Plan Assets/Allocation Market Update & Investment Analysis
Additional Fiduciary and Educational Topics	<ul style="list-style-type: none"> Fiduciary Document Review <ul style="list-style-type: none"> Investment Policy Statement Committee Charter, as needed SURS Lifetime Income Strategy Education SURS Lifetime Income Strategy Assumptive Inputs Review and Implementation Annual Summary Report 	<ul style="list-style-type: none"> Investment Menu Review <ul style="list-style-type: none"> Investment Structure Review Investment Expense & Share Class Evaluation SURS Lifetime Income Strategy: Retirement Income Strategies Comparative Analysis 	<ul style="list-style-type: none"> Plan Fee Review <ul style="list-style-type: none"> Fee Allocation Philosophy Recordkeeper Fee Benchmarking Plan Expense Account Review SURS Lifetime Income Strategy Demographic Data Review 	<ul style="list-style-type: none"> Recordkeeper Due Diligence <ul style="list-style-type: none"> Plan and Participant Engagement Review Cybersecurity Review and Update Missing Participant Procedure Review Small Balance Cash-outs and RMDs Advisor Year End Disclosures and Certifications
Review Period	Every 1-3 Years (or as needed)		Ad Hoc	
Topics	<ul style="list-style-type: none"> Investment Menu Architecture <ul style="list-style-type: none"> Target Date Evaluation (SURS Lifetime Income Strategy) Capital Preservation / Income Solutions Review Comprehensive Fiduciary Training Review 3(38) Investment Manager or 3(21) Investment Advisor Models 		<ul style="list-style-type: none"> New Committee Member Onboarding and Fiduciary Training Recordkeeper RFI/RFP (every 5-7 years) Plan Design Benchmarking Plan Document/Design Changes 	



SECTION 1: RETIREMENT INDUSTRY UPDATES

Period Ending 12.31.22 | Q4 22

SECTION 1: RETIREMENT INDUSTRY UPDATES	
Industry Updates.....	



2023 PREDICTIONS: NEW OPPORTUNITIES, NEW IDEAS

The new year will be shaped by increased personalization and shifting employee and employer needs.

1

INVESTMENTS

- Conversations around environmental, social, and governance (ESG) investments will intensify as the industry attempts to standardize data and terminology and investors try to personalize ESG goals.
- In the wake of higher interest rates and market volatility, there will be a renewed focus on the appropriateness of fixed income, capital preservation options, and default investments within plans.
- The industry will continue to drive new qualified default investment alternative options (i.e., QDIA 2.0), including personalized target-date funds, managed accounts, and integration with retirement income products.

2

A NEW SOCIAL CONTRACT

- Employees will continue to demand more workplace flexibility and personalization. Retirement plans and financial wellness services will play a critical role. Support with budgeting, debt management, student loans, and withdrawal advice will be in high demand.
- Employees staying in plans longer will drive the evaluation of products and solutions designed to meet their decumulation needs, including managed accounts and retirement income solutions.

3

TO BE CONTINUED...

- Plan sponsors will continue to outsource retirement plan responsibilities through the utilization of 3(38) and 3(16) discretionary services.
- Recordkeeper consolidation will persist.
- Retirement plan fee litigation will continue.

SECURE ACT 2.0: WHAT TO KNOW

Congress reached a bipartisan, bicameral retirement bill called SECURE Act 2.0 of 2022 and President Biden signed it into law as part of the \$1.7 trillion government funding bill. With more than 90 provisions, the impact to the retirement industry is extensive. Much of the legislation is focused on increasing retirement savings and coverage.



REQUIRED PROVISIONS:

- Increase in the required minimum distribution (RMD) age to 73 for those who attain age 72 between January 1, 2023 and December 31, 2032 and age 75 for those who attain age 74 after December 31, 2032.
- Catch-up contribution limit increased to the greater of \$10,000 or 50% more than the regular catch-up amount for ages 60 to 63. Effective for taxable years beginning after December 31, 2024.*
- Catch-up contributions made after December 31, 2023 must be made as Roth contributions with an exception for employees earning \$145,000 or less (dollar amount is indexed).*
- Newly created Retirement Savings Lost and Found Database will collect information on missing, lost, or non-responsive participants and beneficiaries and assist savers in locating their benefits. The database must be created by 2025.
- Long-term, part-time required years of service reduced from three years to two, effective for plan years beginning after December 31, 2024. The requirement is also extended to ERISA 403(b) plans. The SECURE Act of 2019 required employers with 401(k) plans to permit employees with at least 500 hours of service in three consecutive years to participate in their plans.
- Saver's Credit modified to Saver's Match program. Taxpayers meeting gross income requirements with qualified retirement contributions can receive a government match contribution of up to \$2,000 to an eligible IRA or retirement plan, which does not count toward the annual plan contribution limit. This provision applies to taxable years beginning after December 31, 2026.
- RMDs removed for Roth money held in employer plans, effective for tax years beginning after December 31, 2023.
- Paper benefit statements must be provided at least once per year, effective for plan years beginning after December 31, 2025.

Plan amendments pursuant to SECURE 2.0 must be made on or before the last day of the first plan year beginning on January 1, 2025 (2027 for governmental plans).

*Mandatory for plans offering catch-up contributions

SECURE ACT 2.0: WHAT TO KNOW

Congress reached a bipartisan, bicameral retirement bill called SECURE Act 2.0 of 2022 and President Biden signed it into law as part of the \$1.7 trillion government funding bill. With more than 90 provisions, the impact to the retirement industry is expansive. Much of the legislation is focused on increasing retirement savings and coverage.



OPTIONAL PROVISIONS:

- Employers can allow matching contributions to be made as Roth contributions, effective immediately.
- Student loan repayments can be treated as elective deferrals for the purpose of matching contributions for plan years beginning after December 31, 2023.
- Employers can offer an emergency savings distribution option of \$1,000 per year that can be repaid to the plan. Effective for distributions made after December 31, 2023.
- Employers can offer an emergency savings account linked to a defined contribution plan for non-highly compensated employees. Participants can be automatically enrolled at up to 3% of salary for a total contribution amount of \$2,500. Participating employees may take tax- and penalty-free distributions at least once per calendar month. Effective for plan years beginning after December 31, 2024.
- Automatic small balance cash-out maximum increased from \$5,000 to \$7,000. Effective for distributions made after December 31, 2023.
- 403(b) plans can join a pooled employer plan (PEP), effective immediately.
- Employers may accept written certification by the employee for hardship distributions, effective immediately.
- De minimis financial incentives (not paid by plan assets) can be provided to employees to encourage retirement plan participation, effective immediately.

Plan amendments pursuant to SECURE 2.0 must be made on or before the last day of the first plan year beginning on January 1, 2025 (2027 for governmental plans).

FIDUCIARY UPDATE

Retirement plan fiduciaries should be mindful of recent compliance issues that may be relevant to their plans.



FLOAT INCOME

Float income is the earnings accrued by a service provider that handles plan assets while awaiting deposit or distribution.

- In most circumstances, float income is considered service provider compensation by the Department of Labor (DOL) and must be disclosed to the plan sponsor as part of the service provider's 408(b)(2) fee disclosure.
- For smaller plans, float income is negligible, particularly in a low interest rate environment. But in the mega-plan market (plan assets greater than \$1 billion), float income can be significant.
- Plan sponsors should understand their provider's float policy, particularly when float income is retained as part of its compensation.



DOL AUDIT ACTIVITY: CYBERSECURITY

Recent DOL retirement plan audit questionnaires included questions on cybersecurity. With no standardized audit guidelines, it is difficult to know if these questions will be part of future audits, but plan sponsors should prepare accordingly.

- The questions focus on any cybersecurity incidents that have occurred, as well as policies and procedures around issues like data privacy, business continuity and disaster recovery, asset and data management, risk assessment, network security and monitoring, service provider management, and training.
- Plan sponsors should review the DOL's cybersecurity guidance for tips and best practices.

NOW WHAT? IMPACTS OF THE ESG FINAL RULE

On November 22, the Department of Labor (DOL) released its final rule designed to clarify a path forward for retirement plan fiduciaries to incorporate environmental, social, and governance (ESG) factors into their investment selection and monitoring process. The DOL made it clear that fiduciaries may consider ESG factors when making investment decisions and exercising shareholder rights. However, there is no requirement to incorporate these considerations. Below are some key plan sponsor considerations.

DO WE NEED TO CONSIDER ADDING AN ESG FUND TO OUR PLAN?

The ruling does not require ESG factors to be considered as part of the investment selection or monitoring process.

The rule maintains the duties of prudence and loyalty that require plan fiduciaries to focus on relevant risk-return factors and act solely in the best interests of plan participants and beneficiaries.

If a fiduciary determines that an ESG factor is material to an investment's risk-return profile, then the addition of an investment that considers ESG factors could be reasonable.

DO WE NEED TO MONITOR AN ESG INVESTMENT DIFFERENTLY?

The ruling does not change the expectations for how fiduciaries should monitor their investments.

Most plans utilize an investment policy statement (IPS) to establish the criteria for their selection and monitoring processes. Applying those guidelines will create the basis of a prudent process.

Fiduciaries should understand how their selected investments do—or do not—consider ESG factors as part of their investment management strategy.

WHAT IF OUR PARTICIPANTS ARE ASKING FOR ESG OPTIONS?

The final rule amends ERISA section 404(a) to clarify that fiduciaries do not violate their duty of loyalty solely because they consider participant preferences.

The DOL acknowledged that aligning participant preferences with available investment options could be beneficial.

However, this does not allow plan fiduciaries to add investment options that would otherwise be imprudent simply because participants request them.

Proxy Voting and Shareholder Engagement: The final rule makes it clear that fiduciaries must act solely in accordance with the economic interests of the plan when deciding whether and how to exercise shareholder rights. Plan sponsors should review their proxy voting policies and the policies of any third parties to which they delegate proxy voting for consistency with the final rule.

SECTION 2: MARKET COMMENTARY AND REVIEW

Period Ending 12.31.22 | Q4 22

SECTION 2: MARKET COMMENTARY AND REVIEW

Market Commentary.....

Market Review.....

Asset Class Returns.....

Index Performance.....



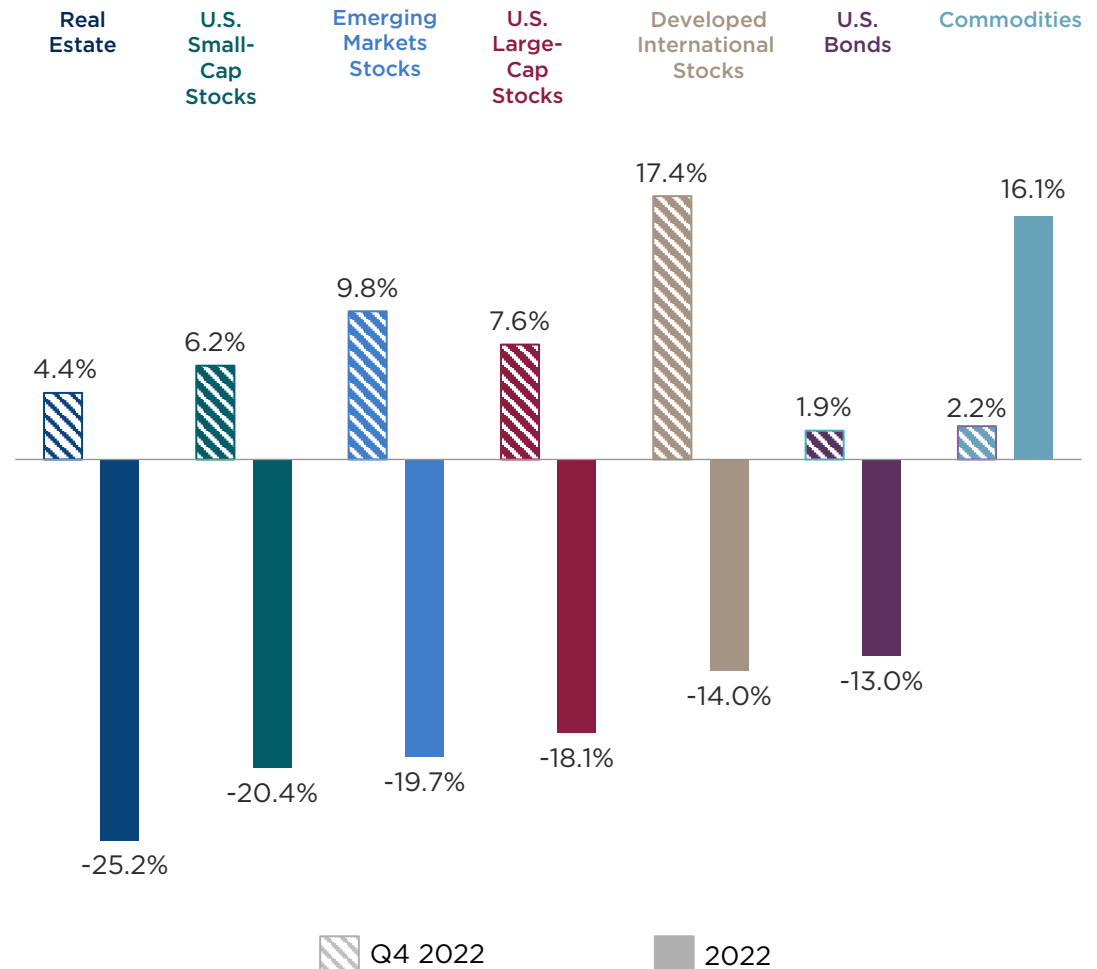
MARKET COMMENTARY

Period Ending 12.31.22 | Q4 22

A WELCOME REPRIEVE

Investors grew optimistic over the first half of the fourth quarter, anticipating the Federal Reserve was near the end of its tightening cycle. However, the excitement faded as Chairman Powell cautioned that conditions would need to remain restrictive for some time.

- Gains early in the quarter were more than enough to offset December declines, leading to positive quarterly results across nearly all asset classes.
- U.S. stock market gains were broad based. The energy sector remained at the top of the charts, posting a 25% quarterly return. On the flip side, the mega-cap growth darlings of the last decade lagged.
- Outside the U.S., investors benefited from both rising stock prices and a weakening U.S. dollar.
- Bond yields were volatile, seesawing based on every Fed whisper. Despite these swings, longer-term Treasury yields ended the quarter little changed, enabling bond markets to post a modest return for the quarter.
- Even with a year-end rally, public real estate lost approximately one-quarter of its value in 2022.
- Commodities were the sole bright spot for the year despite rising recession concerns.



Asset class returns are represented by the following indexes: Bloomberg U.S. Aggregate Bond Index (U.S. bonds), S&P 500 Index (U.S. large-cap stocks), Russell 2000® (U.S. small-cap stocks), MSCI EAFE Index (international developed market stocks), MSCI Emerging Market Index (emerging market stocks), Dow Jones U.S. Real Estate Index (real estate), and Bloomberg Commodity Index (commodities).



DIGGING DEEPER: STOCKS AND BONDS

Equities

	Q4 2022	YTD 2022	Last 12 Months
U.S. Stocks	7.5%	-18.1%	-18.1%
• Q4 Best Sector: Energy	22.7%	65.4%	65.4%
• Q4 Worst Sector: Consumer Discretionary	-10.2%	-37.0%	-37.0%
International Stocks	17.4%	-14.0%	-14.0%
Emerging Markets Stocks	9.8%	-19.7%	-19.7%

Fixed Income

	12.31.22	9.30.22	12.31.21
1-Year U.S. Treasury Yield	4.73%	4.05%	0.09%
10-Year U.S. Treasury Yield	3.88%	3.83%	1.52%
	QTD 2022	YTD 2022	Last 12 Months
10-Year U.S. Treasury Total Return	0.62%	-16.33%	-16.33%

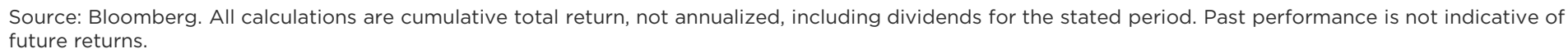
Equities – Relative Performance by Market Capitalization and Style

Q4 2022				YTD 2022				Last 12 Months			
	Value	Blend	Growth		Value	Blend	Growth		Value	Blend	Growth
Large	12.4%	7.5%	2.2%	Large	-7.5%	-18.1%	-29.1%	Large	-7.5%	-18.1%	-29.1%
Mid	10.5%	9.2%	6.9%	Mid	-12.0%	-17.3%	-26.7%	Mid	-12.0%	-17.3%	-26.7%
Small	8.4%	6.2%	4.1%	Small	-14.5%	-20.4%	-26.4%	Small	-14.5%	-20.4%	-26.4%

Sources: Bloomberg, U.S. Treasury. Asset class returns are represented by the following indexes: S&P 500 Index (U.S. stocks), MSCI EAFE Index (international developed market stocks), and MSCI Emerging Markets Index (emerging market stocks). Relative performance by market capitalization and style is based upon the Russell US Style Indexes except for large-cap blend, which is based upon the S&P 500 Index.



Returns by S&P 500 Sector



ASSET CLASS RETURNS

Period Ending 12.31.22 | Q4 22

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Mid-Cap Growth 46.29%	Small-Cap Growth 29.09%	Fixed Income 7.84%	Mid-Cap Value 18.51%	Small-Cap Growth 43.30%	Mid-Cap Value 14.75%	Large-Cap Growth 5.67%	Small-Cap Value 31.74%	Large-Cap Growth 30.21%	Cash 1.87%	Large-Cap Growth 36.39%	Large-Cap Growth 38.49%	Mid-Cap Value 28.34%	Cash 1.46%
Large-Cap Growth 37.21%	Mid-Cap Growth 26.38%	Large-Cap Growth 2.64%	Small-Cap Value 18.05%	Mid-Cap Growth 35.74%	Large-Cap Value 13.45%	Fixed Income 0.55%	Mid-Cap Value 20.00%	International Equities 25.62%	Fixed Income 0.01%	Mid-Cap Growth 35.47%	Mid-Cap Growth 35.59%	Small-Cap Value 28.27%	Large-Cap Value -7.54%
Small-Cap Growth 34.47%	Mid-Cap Value 24.75%	Large-Cap Value 0.39%	International Equities 17.90%	Small-Cap Value 34.52%	Large-Cap Growth 13.05%	Cash 0.05%	Large-Cap Value 17.34%	Mid-Cap Growth 25.27%	Large-Cap Growth -1.51%	Small-Cap Growth 28.48%	Small-Cap Growth 34.63%	Large-Cap Growth 27.60%	Mid-Cap Value -12.03%
Mid-Cap Value 34.21%	Small-Cap Value 24.50%	Cash 0.10%	Large-Cap Value 17.51%	Large-Cap Growth 33.48%	Mid-Cap Growth 11.90%	Mid-Cap Growth -0.20%	Small-Cap Growth 11.32%	Small-Cap Growth 22.17%	Mid-Cap Growth -4.75%	Mid-Cap Value 27.06%	International Equities 8.28%	Large-Cap Value 25.16%	Fixed Income -13.01%
International Equities 32.46%	Large-Cap Growth 16.71%	Mid-Cap Value -1.38%	Mid-Cap Growth 15.81%	Mid-Cap Value 33.46%	Fixed Income 5.97%	International Equities -0.39%	Mid-Cap Growth 7.33%	Large-Cap Value 13.66%	Large-Cap Value -8.27%	Large-Cap Value 26.54%	Fixed Income 7.51%	Mid-Cap Growth 12.73%	International Equities -14.01%
Small-Cap Value 20.58%	Large-Cap Value 15.51%	Mid-Cap Growth -1.65%	Large-Cap Growth 15.26%	Large-Cap Value 32.53%	Small-Cap Growth 5.60%	Small-Cap Growth -1.38%	Large-Cap Growth 7.08%	Mid-Cap Value 13.34%	Small-Cap Growth -9.31%	International Equities 22.66%	Mid-Cap Value 4.96%	International Equities 11.78%	Small-Cap Value -14.48%
Large-Cap Value 19.69%	International Equities 8.21%	Small-Cap Growth -2.91%	Small-Cap Growth 14.59%	International Equities 23.29%	Small-Cap Value 4.22%	Large-Cap Value -3.83%	Fixed Income 2.65%	Small-Cap Value 7.84%	Mid-Cap Value -12.29%	Small-Cap Value 22.39%	Small-Cap Value 4.63%	Small-Cap Growth 2.83%	Small-Cap Growth -26.36%
Fixed Income 5.24%	Fixed Income 5.89%	Small-Cap Value -5.50%	Fixed Income 4.22%	Cash 0.07%	Cash 0.03%	Mid-Cap Value -4.78%	International Equities 1.51%	Fixed Income 3.54%	Small-Cap Value -12.86%	Fixed Income 8.72%	Large-Cap Value 2.80%	Cash 0.05%	Mid-Cap Growth -26.72%
Cash 0.21%	Cash 0.13%	International Equities -11.73%	Cash 0.11%	Fixed Income -2.02%	International Equities -4.48%	Small-Cap Value -7.47%	Cash 0.33%	Cash 0.86%	International Equities -13.36%	Cash 2.28%	Cash 0.67%	Fixed Income -1.54%	Large-Cap Growth -29.14%

Small-Cap Value Stocks (Russell 2000 Value)
 Small-Cap Growth Stocks (Russell 2000 Growth)
 Large-Cap Growth Stocks (Russell 1000 Growth)

Large-Cap Value Stocks (Russell 1000 Value)
 Mid-Cap Growth Stocks (Russell Mid-Cap Growth)
 Mid-Cap Value Stocks (Russell Mid-Cap Value)

International Equities (MSCI EAFE)
 Fixed Income (Bloomberg U.S. Aggregate Bond)
 Cash (Merrill Lynch 3-Month Treasury Bill)

Source: Markov Processes, Inc.; Bloomberg, Mobius

The information contained in this report is from sources believed to be reliable but is not warranted by CAPTRUST to be accurate or complete.



ECONOMIC OUTLOOK

Though inflation has receded from its 40-year high witnessed earlier in 2022, the Federal Reserve remains committed to lowering inflation to its long-term target. This resolve threatens economic growth, and its impact can already be seen in the housing market. A robust labor market, while cushioning the economy, could prolong Fed tightening, causing investors to focus on the potential depth of an economic slowdown.

HEADWINDS

Learning as We Go

- It is difficult to forecast the market environment in 2023 when everyone, including the Fed, is learning as they go. Ongoing uncertainty about rate hikes is driving volatility.
- Because Fed policy acts with a lag, the economy has yet to feel the impact of 2022's 4.25% rate hikes. The Fed is also expected to shrink its balance sheet this year, with uncertain impact.



Rising Interest Rates

- The financial pain of surging interest rates will transition from the investor to the issuer as coupon payments reset higher.
- Nearly 20% of S&P 500 companies' debt matures in the next 24 months, and \$6 trillion of Treasury debt matures in 2023.

Housing Shock

- The doubling of mortgage rates has caused a collapse in residential real estate activity.
- The impact on home prices is unknown, but weakness is unlikely to result in a crisis as both consumers and banks remain in healthier financial positions.

TAILWINDS

Stronger Foundation

- With interest rates near zero for the last decade, investors have been forced to take more risk. With the reestablishment of a positive risk-free rate, investors can approach risk out of conviction.
- While near-term questions remain, this more fundamental approach toward risk-taking should provide a stronger foundation for investment outcomes.



Resilient Labor Market

- While the labor market's strength contributes to inflation pressures, it also protects economic activity in the face of the Fed's tightening programs.
- The Fed's focus is to return inflation to its 2% long-term target. However, lowering inflation below wage growth should be the minimal threshold, allowing positive real income improvement.

Pandemic Effects Reversing

- Subsiding supply-chain constraints, gas prices, COVID-related restrictions in China, and inflation could improve consumer sentiment and spending.

The wide range of future outcomes and an uncertain policy environment limits the ability to create a singular forecast with confidence. Investors should remain vigilant, diversified, and prepared for ongoing volatility.

2023 MARKET SCENARIOS

Investors should look forward with a healthy dose of humility as the range of potential outcomes for 2023 remains wider than normal. Below, we outline four different narratives that represent realistic paths for 2023, with each scenario leading to a different investment landscape.

POTENTIAL OUTCOME	OUTCOME #1 MISSION ACCOMPLISHED	OUTCOME #2 MILD RECESSION	OUTCOME #3 OVERSHOOTING TARGET	OUTCOME #4 STAGFLATION CRISIS
FED POLICY	The Fed achieves a soft landing, and the tightening cycle ends by mid-year	Inflation and a continued tight labor market force the Fed to keep rates higher for longer	The Fed is hesitant to reverse course too early, fearing a repeat of prior inflation-fighting policy errors	Despite aggressive measures, Fed tools prove insufficient to manage supply-side constraints
INFLATION	Inflation subsides as labor market excesses are withdrawn without significant impact to unemployment levels	Inflation is tamed but remains sticky, despite improvements in pandemic-distorted categories	Inflation recedes faster than expected as the Fed's tightening pace proves too aggressive	A warp-speed rate hike cycle slows global economies while rising debt levels and housing weakness weigh on consumer spending
CORPORATIONS	Corporations adeptly manage through the slowing environment	Corporations navigate the slowing environment without significant strain	Profits come under pressure as demand wanes, leading to job cuts and rising unemployment	Corporations are forced to cut jobs amid economic weakness while the Fed is unable to pivot due to inflation
FINANCIAL MARKETS	Markets are noisy early in the year but stabilize and move higher as valuations recover, signaling the start of a new bull market	Markets are choppy with a widening gap between winners and losers	Confused investors capitulate, sending markets lower as it becomes evident the Fed has made a different type of policy error	Markets reach new lows as the severity of an economic slowdown is debated



SECTION 3: PLAN INVESTMENT REVIEW

Period Ending 12.31.22 | Q4 22

SECTION 3: PLAN INVESTMENT REVIEW

Plan Assets.....

Investment Policy Monitor.....

Investment Review Select Commentary.....

Investment Performance Summary.....



PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 12.31.22 | Q4 22

Retirement Savings Plan

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2021	(%)	CURRENT	(%)
Money Market	Vanguard Federal Money Market Investor*	\$994,954	0.03%	\$1,286,589	0.04%
Stable Value	Voya Fixed Plus Account III	\$34,128,867	0.96%	\$58,217,801	1.93%
Inflation Protected Bond	Vanguard Inflation-Protected Secs I	\$18,913,799	0.53%	\$18,507,081	0.61%
Intermediate Core Bond	State Street U.S. Bond Index Securities Lending Series Fund Class XIV	\$44,226,698	1.24%	\$36,951,550	1.22%
Intermediate Core Bond	TIAA-CREF Core Impact Bond Instl	\$3,889,582	0.11%	\$3,799,626	0.13%
Multisector Bond	PIMCO Income Instl	\$12,177,798	0.34%	\$12,188,318	0.40%
High Yield	PGIM High Yield R6	\$8,989,501	0.25%	\$8,667,012	0.29%
Large Company Blend	BlackRock Equity Index F	\$319,733,689	8.97%	\$280,232,536	9.28%
Medium Company Value	Janus Henderson Small-Mid Cap Value N**	\$15,908,721	0.45%	\$15,944,469	0.53%
Medium Company Blend	BlackRock Extended Equity Market F	\$61,903,876	1.74%	\$46,923,246	1.55%
Medium Company Growth	Delaware Smid Cap Growth R6	\$53,467,359	1.50%	\$31,372,340	1.04%
Global Large Stock Blend	BlackRock MSCI ACWI ESG Focus Index Fund F	\$19,477,233	0.55%	\$15,600,645	0.52%
Foreign Large Value	Columbia Trust Overseas Value Fund Founders Class	\$5,842,738	0.16%	\$7,982,767	0.26%
Foreign Large Blend	State Street Global All Cap Equity Ex-U.S. Index Securities Lending Series Fund Class II	\$26,962,926	0.76%	\$25,790,452	0.85%
Foreign Large Growth	Vanguard International Growth Adm	\$29,274,559	0.82%	\$21,982,827	0.73%
Specialty-Real Estate	Vanguard Real Estate Index Institutional	\$24,040,469	0.67%	\$17,022,473	0.56%

*This fund is used as the investment for plan-level forfeiture and plan expense amounts. It is not available for participant-directed investment within the core investment array.

**This fund was replaced as of December 30, 2022, after market close. A balance still shows in this fund as of the end of Q4 2022 due to the movement of assets occurring on January 3, 2023.

CONTINUED...

Information provided by Record Keeper. For informational purposes. Not a substitute for official statements produced by the plan custodian. Information has been obtained from sources considered reliable, but its accuracy and completeness are not guaranteed. This report is not an illustration of investment performance, but rather a historical illustration of asset allocation.



PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 12.31.22 | Q4 22

Retirement Savings Plan

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2021	(%)	CURRENT	(%)
Target Date	SURS Lifetime Income Strategy Bond Portfolio	\$371,565,828	10.42%	\$276,298,303	9.15%
Target Date	SURS Lifetime Income Strategy Cash Portfolio	\$1,219,321	0.03%	\$2,140,556	0.07%
Target Date	SURS Lifetime Income Strategy Equity Portfolio	\$1,699,679,694	47.67%	\$1,313,611,613	43.48%
Target Date	SURS Lifetime Income Strategy Real Asset Portfolio	\$125,717,056	3.53%	\$90,965,272	3.01%
Target Date	SURS Lifetime Income Strategy Secure Income Portfolio	\$687,060,284	19.27%	\$735,372,663	24.34%
TOTALS		\$3,565,174,953	100%	\$3,020,858,136	100%

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PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 12.31.22 | Q4 22

SURS Deferred Compensation Plan

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2021	(%)	CURRENT	(%)
Stable Value	Voya Fixed Plus Account III	\$175,206	5.78%	\$873,390	5.43%
Inflation Protected Bond	Vanguard Inflation-Protected Secs I	\$33,271	1.10%	\$208,901	1.30%
Intermediate Core Bond	State Street U.S. Bond Index Securities Lending Series Fund Class XIV	\$37,638	1.24%	\$212,999	1.33%
Intermediate Core Bond	TIAA-CREF Core Impact Bond Instl	\$6,873	0.23%	\$34,493	0.21%
Multisector Bond	PIMCO Income Instl	\$53,416	1.76%	\$120,568	0.75%
High Yield	PGIM High Yield R6	\$51,623	1.70%	\$170,172	1.06%
Large Company Blend	BlackRock Equity Index F	\$549,611	18.13%	\$2,913,475	18.12%
Medium Company Value	Janus Henderson Small-Mid Cap Value N*	\$44,531	1.47%	\$249,630	1.55%
Medium Company Blend	BlackRock Extended Equity Market F	\$157,924	5.21%	\$531,772	3.31%
Medium Company Growth	Delaware Smid Cap Growth R6	\$89,727	2.96%	\$416,395	2.59%
Global Large Stock Blend	BlackRock MSCI ACWI ESG Focus Index Fund F	\$41,459	1.37%	\$232,212	1.44%
Foreign Large Value	Columbia Trust Overseas Value Fund Founders Class	\$24,511	0.81%	\$164,719	1.02%
Foreign Large Blend	State Street Global All Cap Equity Ex-U.S. Index Securities Lending Series Fund Class II	\$58,767	1.94%	\$341,673	2.13%
Foreign Large Growth	Vanguard International Growth Adm	\$63,233	2.09%	\$252,068	1.57%
Specialty-Real Estate	Vanguard Real Estate Index Institutional	\$55,088	1.82%	\$349,046	2.17%

*This fund was replaced as of December 30, 2022, after market close. A balance still shows in this fund as of the end of Q4 2022 due to the movement of assets occurring on January 3, 2023.

CONTINUED...

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PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 12.31.22 | Q4 22

SURS Deferred Compensation Plan

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2021	(%)	CURRENT	(%)
Target Date	SURS Lifetime Income Strategy Bond Portfolio	\$295,463	9.75%	\$1,573,541	9.79%
Target Date	SURS Lifetime Income Strategy Cash Portfolio	\$581	0.02%	\$28,408	0.18%
Target Date	SURS Lifetime Income Strategy Equity Portfolio	\$1,037,405	34.23%	\$6,074,904	37.79%
Target Date	SURS Lifetime Income Strategy Real Asset Portfolio	\$77,365	2.55%	\$406,883	2.53%
Target Date	SURS Lifetime Income Strategy Secure Income Portfolio	\$177,385	5.85%	\$919,808	5.72%
TOTALS		\$3,031,077	100%	\$16,075,058	100%

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INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

INVESTMENT	QUANTITATIVE								QUALITATIVE		TOTALS	
	Risk-Adjusted Performance		vs. Peers Performance		Style		Confidence		Fund Management	Fund Firm	Overall	Total Score
	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr				
Inflation Protected Bond Vanguard Inflation-Protected Secs I	▼	●	▼	●	●	●	▼	▼	●	●	●	84
Intermediate Core Bond TIAA-CREF Core Impact Bond Instl	●	●	▼	●	●	●	▼	●	●	●	●	88
High Yield PGIM High Yield R6	●	●	●	●	●	●	●	●	●	●	●	97
Medium Company Value EARNST Partners Smid Cap Value	●	●	●	●	●	●	●	●	●	●	●	100
Medium Company Growth Delaware Smid Cap Growth R6	▼	▼	▼	▼	●	●	▼	▼	●	●	●	66
Foreign Large Value Columbia Overseas Value Inst3*	●	●	●	●	●	●	●	●	●	●	●	97
Foreign Large Growth Vanguard International Growth Adm	●	●	●	●	▼	▼	●	●	●	●	●	97

*The mutual fund is shown here for comparative purposes due to the lack of historical data for the Columbia Trust Overseas Value Fund Founders Class CIT which was inceptioned on 10/30/20 and has an expense ratio of 0.30%.

LEGEND

●	IN GOOD STANDING	▼	MARKED FOR REVIEW	●	CONSIDER FOR TERMINATION
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The CAPTRUST Investment Policy Monitor ("Scorecard") is an illustration of our monitoring system and is designed to assist our clients in their efforts to provide fiduciary oversight to investment assets. It is not intended as a solicitation to buy any security. The scoring system measures quantitative areas as well as qualitative (or subjective) fields for actively managed investment options. Quantitative scoring areas include Risk Adjusted Performance (3 & 5 yr.); Performance vs. Relevant Peer Group; Style Attribution; and Confidence. Qualitative Scoring Areas measure the quality of the Management Team while also considering the stewardship of the investment option's parent company under Investment Family Items. Qualitative areas of analysis are subjective in nature. CAPTRUST typically requires at least 3 months of monitoring before including an investment in this report. Investments that have been added to our system less than 3 months prior to a report being generated may have a Fund Management assessment of '25' as a default, but will be updated, if necessary, after the first quarter of monitoring to more accurately reflect our system. Investments that are not mutual funds or have less than 3 years of performance history may not be scored. This material is for institutional investor use only and is not intended to be shared with individual investors.




INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 12.31.22 | Q4 22


State Universities Retirement System

CAPITAL PRESERVATION INVESTMENTS

INVESTMENT	Overall	Commentary
Vanguard Federal Money Market Investor*		This Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.
Voya Fixed Plus Account III		This Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.

*This fund is used as the investment for plan-level forfeiture amounts. It is not available for participant-directed investment within the core investment array.

INVESTMENTS IN DISTINCT ASSET CLASSES

INVESTMENT	Overall	Commentary
Multi-Sector Bond PIMCO Income Instl		This fund currently meets the guidelines set forth by CAPTRUST for distinct investments in the Investment Policy Statement. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, excess return, and risk-adjusted performance.

CONTINUED...

The CAPTRUST Financial Advisors Investment Scorecard is an illustration of our monitoring system and is designed to assist our clients in their efforts to provide fiduciary oversight to investment assets. It is not intended as a solicitation to buy any security. The scoring system measures quantitative areas as well as qualitative (or subjective) fields. Quantitative scoring areas for target date funds include Risk Adjusted Performance (3 & 5 yr.); Performance vs. Relevant Peer Group; and Glidepath. Qualitative Scoring Areas for target date funds measure the quality of the Management Team while also considering the stewardship of the investment option's parent company under Investment Family Items. Qualitative areas of analysis are subjective in nature. Qualitative Scoring for Target Date funds also includes a score for Portfolio Construction and Underlying Investment vehicles to express CAPTRUST's views on the manager or strategy. CAPTRUST typically requires at least 3 months of monitoring before including an investment in this report. Investments that have been added to our system less than 3 months prior to a report being generated may have a Fund Management assessment of '25' as a default, but will be updated, if necessary, after the first quarter of monitoring to more accurately reflect our system. Investments that are not mutual funds or have less than 3 years of performance history may not be scored. Capital Preservation options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics, depending on the type of capital preservation option being evaluated, and may include quantitative criteria such as: Crediting Rate/Yield, Market to Book Ratio, Average Crediting Quality, Insurer Quality/Diversification, Duration, and Sector Allocations, and/or qualitative criteria such as quality and experience of the Management Team and stewardship of the investment option's parent company. Passively Managed options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics and may include quantitative criteria such as: Tracking Error, Fees, and Performance versus relevant peer group, and/or qualitative criteria such as index replication strategy, securities lending practices, and fair value pricing methodology. Distinct investment options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics. This material is for institutional investor use only and is not intended to be shared with individual investors.









INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

PASSIVE INVESTMENTS

INVESTMENT	Overall	Commentary
State Street U.S. Bond Index Securities Lending Series Fund Class XIV		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
BlackRock Equity Index F		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
BlackRock Extended Equity Market F		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
BlackRock MSCI ACWI ESG Focus Index Fund F		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
State Street Global All Cap Equity Ex-U.S. Index Securities Lending Series Fund Class II		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.
Vanguard Real Estate Index Institutional		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.

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INVESTMENT REVIEW | INVESTMENT MONITOR

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

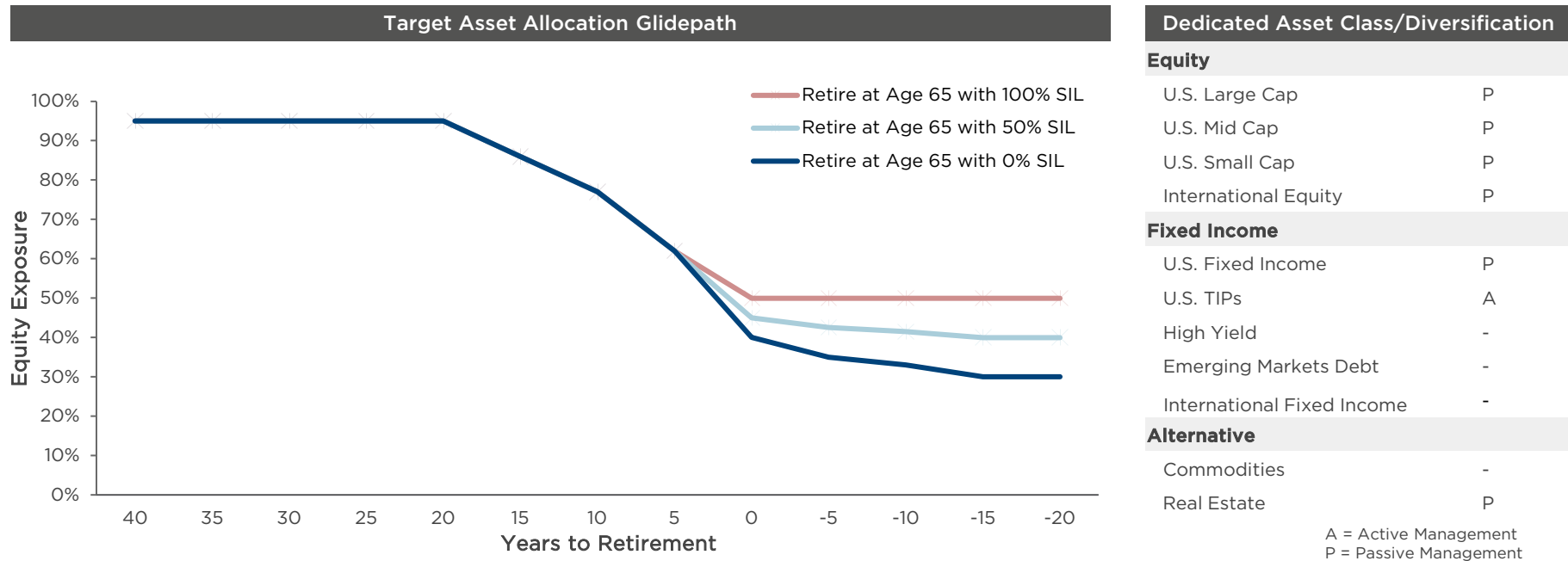
INVESTMENT STATUS

INVESTMENT	TICKER	STATUS	# OF QUARTERS	RATIONALE
Delaware Smid Cap Growth R6	DFZRX	Additional Monitoring	1	We recommend placing this fund on watch due to an unexpected shift in portfolio managers that may fundamentally shift the fund's investment management process. The unexpected nature of this shift is cause for concern. In December 2022, Portfolio Managers Kim Scott, Nathan Brown, and Brad Halverson took over the strategy from Portfolio Manager Alexander Ely. This SMID strategy's relative performance is heavily influenced by the performance of small caps. In years where smaller, growth orientated stocks outperform (such as 2020 when the fund returned 94%) this fund has significantly outperformed. The past two years, however, as small caps have lagged and growth along with it, the strategy has suffered. Underperformance in 2022 led management to doubt the long-term sustainability of this risk-on strategy, resulting in a portfolio manager shift. This new management team is expected to deviate from Ely's previous portfolio management approach, placing the strategy in uncharted territory. With a new portfolio team and continued underperformance, we believe that the strategy merits further consideration.



SURS LIFETIME INCOME STRATEGY

Period Ending 12.31.22 | Q4 22



Component Portfolio Name	Underlying Fund Name	Allocation
SURS Lifetime Income Strategy Equity Portfolio	State Universities Retirement System Extended Equity Market U/A	11%
	State Universities Retirement System Equity Index U/A	49%
	State Street Global All Cap ex-US Index SL CI II	40%
SURS Lifetime Income Strategy Bond Portfolio	State Street US Bond Index SL CI XIV	65%
	Vanguard Inflation-Protected Securities Institutional	35%
SURS Lifetime Income Strategy Real Asset Portfolio	Vanguard Real Estate Index Institutional	100%
SURS Lifetime Income Strategy Cash Portfolio	Vanguard Federal Money Market Investor	100%
SURS Lifetime Income Strategy Secure Income Portfolio	AB Balanced 50/50 Collective Trust	100%

Important Disclosures: This slide is intended solely for institutional use. The opinions expressed in this report are subject to change without notice. The statistics and data have been compiled from sources believed to be reliable but are not guaranteed to be accurate or complete. Any performance quoted represents past performance and does not guarantee future results.



SURS LIFETIME INCOME STRATEGY

Period Ending 12.31.22 | Q4 22

INVESTMENT NAME	TOTAL RETURN				
	4Q 2022	YTD 2022	1 Year	Since Inception*	
SURS Lifetime Income Strategy Equity Portfolio	10.20	(18.22)	(18.22)	3.78	
Custom Benchmark	9.98	(18.32)	(18.32)	3.70	
SURS Lifetime Income Strategy Real Asset Portfolio	4.31	(26.24)	(26.24)	4.66	
Custom Benchmark	4.14	(24.95)	(24.95)	5.31	
SURS Lifetime Income Strategy Bond Portfolio	1.72	(12.67)	(12.67)	(4.89)	
Custom Benchmark	1.94	(12.57)	(12.57)	(4.75)	
SURS Lifetime Income Strategy Cash Portfolio	0.90	1.50	1.50	0.59	
Custom Benchmark	0.87	1.50	1.50	0.67	
SURS Lifetime Income Strategy Secure Income Portfolio	5.98	(15.58)	(15.58)	(0.34)	
Custom Benchmark	6.34	(14.59)	(14.59)	(0.85)	
TOTAL EXPENSE RATIO (in basis points)					
	SURS LIS Equity Portfolio	SURS LIS Real Asset Portfolio	SURS LIS Bond Portfolio	SURS LIS Cash Portfolio	SURS LIS Secure Income Portfolio
Manager Fees	3.47	10.00	4.53	11.00	5.95
Asset Allocation / Implementation / Ongoing Services Fees	6.03	6.03	6.04	6.04	5.90
Custody Account Fee	0.11	0.11	0.11	0.11	0.11
Benefit Admin / Contract Allocation Fees	-	-	-	-	10.00
Insurance Fees	-	-	-	-	95.00
Total	9.62	16.15	10.68	17.15	116.96

*Inception date is 08/26/2020 except for the Secure Income Portfolio which has an inception date of 9/14/2020.

All portfolio performance calculations are net of fees and are expressed as percentages. Periods of more than one year are annualized. The benchmark for a Lifetime Income Strategy Component is a customized benchmark that has the same target asset allocation as the corresponding component strategy's target asset allocation and uses index returns to represent performance of the asset classes. The benchmark returns were calculated by weighting the monthly index returns of each asset class by the corresponding component strategy's monthly target allocation for each asset class.

The Equity Portfolio is benchmarked against a custom fixed-weight benchmark comprising: 49% S&P 500 Index, 11% Dow Jones US Completion Total Stock Market Index and 40% MSCI ACWI Ex USA IMI Index. The Real Asset Portfolio is benchmarked against the FTSE Nareit All Equity REITs Index. The Bond Portfolio is benchmarked against a custom fixed-weight benchmark comprising: 65% Bloomberg Barclays US Global Aggregate Index and 35% Bloomberg Barclays US TIPS Index. The Cash Portfolio is benchmarked against the FTSE 3 Month US T-Bill Index. The Secure Income Portfolio is benchmarked against a custom benchmark comprising: 25% S&P 500 Index, 8% Russell 2000 Index, 17% MSCI EAFE Index, 30% Bloomberg Barclays US Aggregate Bond Index, and 20% Bloomberg Barclays US TIPS Index.



SURS LIFETIME INCOME STRATEGY

Period Ending 12.31.22 | Q4 22

ACTIVITY SUMMARY – RSP / 401(a) Plan	
Asset Summary	4Q 2022
Total LIS Participants	20,651
Total SIP Participants	6,033
Participant Services	4Q 2022
Estimates – Call Center	678
Estimates – Web	1,014
SIL Changes	43
Retirement Age Changes	47
Benefit Statistics	4Q 2022 / Since Inception
Activated Participants	21 / 203
Avg Activated GLWB %	3.79% / 3.18%
Avg Activation Age	65.7 / 66.6

ACTIVITY SUMMARY – DCP / 457(b) Plan	
Asset Summary	4Q 2022
Total LIS Participants	1,842
Total SIP Participants	260
Participant Services	4Q 2022
Estimates – Call Center	20
Estimates – Web	151
SIL Changes	11
Retirement Age Changes	4
Benefit Statistics	4Q 2022 / Since Inception
Activated Participants	0
Avg Activated GLWB %	0.00%
Avg Activation Age	0

SIP (Secure Income Portfolio) is the insured portfolio used to fund the Guaranteed Income Withdrawal Amount. Assets in this portfolio are insured through multiple group-insurance contracts. Allocations among the group-insurance contracts are unique to each participant. If your Secure Income Level is greater than 0%, your assets will be gradually allocated to the Secure Income Portfolio, beginning approximately 15 years before you are scheduled to retire. SIL (Secure Income Level) is the target percentage of your SURS LIS account – between 0% and 100% – that you want allocated over time to the Secure Income Portfolio and used to fund your Guaranteed Income Withdrawal Amount. (The default Secure Income Level is 100%.) GLWB (Guaranteed Lifetime Withdrawal Benefit) is the amount you can withdraw monthly from the Secure Income Portfolio during retirement and the amount that participating insurers will pay you annually for the remainder of your lifetime (or for the remainder of your spouse's or civil union partner's lifetime, if applicable) if the Secure Income Portfolio account balance is exhausted because the Guaranteed Income Withdrawal Amount depleted your account. The amount is recalculated each year on your birthday.



SURS LIFETIME INCOME STRATEGY

Period Ending 12.31.22 | Q4 22

INSURANCE COMPANIES

- LIS uses group contracts to provide guaranteed income withdrawal benefit

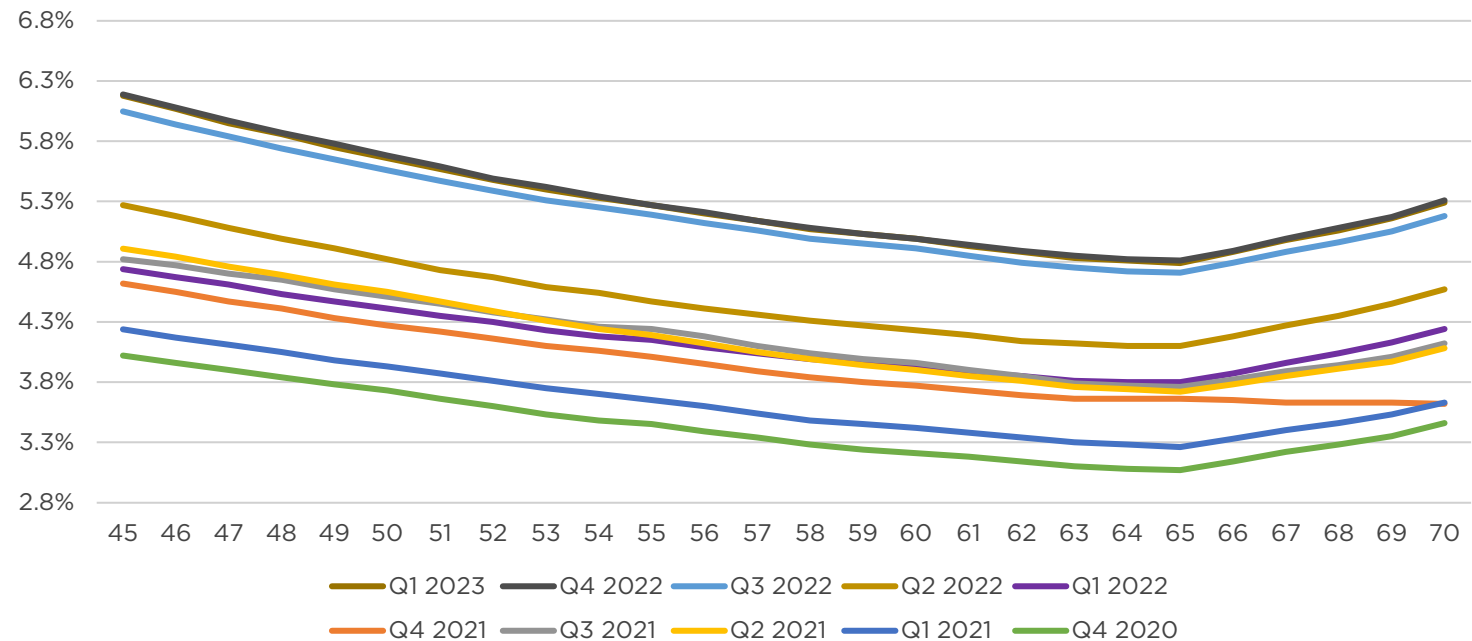
PARTICIPATING COMPANIES

- Jackson National Life Insurance
- Lincoln National Life Insurance Company
- Nationwide Life Insurance Company
- Prudential Retirement Insurance and Annuity Company (Empower Annuity Insurance Co.)

LIS RESTRICTIONS

- At least 90 days must pass between changing elections (secure income level and/or retirement age)
- If members transfer money out of SURS LIS, they cannot transfer funds into SURS LIS for 90 days
- New contributions and rollovers are not affected by the 90-day restriction

BLENDED RATES - ROLLING PERIODS*



FINANCIAL STRENGTH RATINGS AND OUTLOOK

	Jackson		Lincoln		Nationwide		Prudential	
S&P	A (6 th of 20)	Stable	A+ (5 th of 20)	Stable	A+ (5 th of 20)	Stable	AA- (4 th of 20)	Positive
Moody's	A2 (6 th of 21)	Negative	A1 (5 th of 21)	Negative	A1 (5 th of 21)	Stable	Aa3 (4 th of 21)	Stable
Fitch	A (6 th of 21)	Stable	A+ (5 th of 21)	Negative	-	-	AA (3 rd of 21)	Stable
AM Best	A (3 rd of 15)	Stable	A (3 rd of 15)	Stable	A+ (2 nd of 15)	Stable	A+ (2 nd of 15)	Stable

*Blended Rates include Deferred Retirement Bonus. Assumes a retirement age of 65.



PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

INVESTMENT NAME	Q4 '22	YTD '22	2021	2020	2019	2018	2017	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
MONEY MARKET											
Vanguard Federal Money Market Investor	0.88%	1.55%	0.01%	0.45%	2.14%	1.78%	0.81%	1.55%	0.67%	1.18%	0.71%
ICE BofA ML US Treasury Bill 3 Mon USD	0.84%	1.46%	0.05%	0.67%	2.28%	1.87%	0.86%	1.46%	0.72%	1.26%	0.76%
STABLE VALUE											
Voya Fixed Plus Account III	-	-	Crediting Rate as of 12.31.2022: 1.35%					-	-	-	-
ICE BofA ML US Treasury Bill 3 Mon USD	0.84%	1.46%	0.05%	0.67%	2.28%	1.87%	0.86%	1.46%	0.72%	1.26%	0.76%
Morningstar US Stable Value GR USD	0.55%	1.89%	1.74%	2.26%	2.52%	2.26%	1.95%	1.89%	1.96%	2.13%	1.97%
INFLATION PROTECTED BOND											
Vanguard Inflation-Protected Secs I	1.81%	-11.90%	5.72%	11.05%	8.18%	-1.40%	2.97%	-11.90%	1.13%	1.98%	1.04%
Bloomberg US Treasury US TIPS TR USD	2.04%	-11.85%	5.96%	10.99%	8.43%	-1.26%	3.01%	-11.85%	1.21%	2.11%	1.12%
Inflation Protected Bond Universe	1.97%	-11.69%	5.25%	9.70%	7.51%	-1.62%	2.59%	-11.69%	1.22%	1.89%	0.87%
INTERMEDIATE CORE BOND											
State Street U.S. Bond Index Securities Lending Series Fund Class XIV	1.67%	-13.13%	-1.62%	7.67%	8.74%	0.03%	3.55%	-13.13%	-2.73%	0.02%	1.05%
TIAA-CREF Core Impact Bond Instl	1.19%	-14.01%	-1.03%	7.45%	8.73%	0.33%	4.51%	-14.01%	-2.94%	-0.05%	1.57%
Bloomberg US Agg Bond TR USD	1.87%	-13.01%	-1.55%	7.51%	8.72%	0.01%	3.54%	-13.01%	-2.71%	0.02%	1.06%
Intermediate Core Bond Universe	1.64%	-13.45%	-1.56%	7.85%	8.42%	-0.43%	3.38%	-13.45%	-2.77%	-0.12%	0.93%
MULTISECTOR BOND											
PIMCO Income Instl	3.41%	-7.81%	2.61%	5.80%	8.05%	0.58%	8.60%	-7.81%	0.03%	1.69%	4.00%
Bloomberg US Agg Bond TR USD	1.87%	-13.01%	-1.55%	7.51%	8.72%	0.01%	3.54%	-13.01%	-2.71%	0.02%	1.06%
Multisector Bond Universe	2.88%	-10.72%	2.44%	6.32%	10.35%	-1.89%	6.42%	-10.72%	-0.84%	1.04%	2.30%

*ANNUALIZED

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PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

INVESTMENT NAME	Q4 '22	YTD '22	2021	2020	2019	2018	2017	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
HIGH YIELD											
PGIM High Yield R6	3.67%	-11.55%	6.47%	5.72%	16.26%	-1.18%	7.70%	-11.55%	-0.15%	2.72%	4.34%
Bloomberg US Corporate High Yield TR USD	4.17%	-11.19%	5.28%	7.11%	14.32%	-2.08%	7.50%	-11.19%	0.05%	2.31%	4.03%
High Yield Bond Universe	3.96%	-10.82%	4.87%	5.26%	13.50%	-2.94%	6.70%	-10.82%	-0.50%	1.67%	3.25%
LARGE COMPANY BLEND											
BlackRock Equity Index F	7.56%	-18.10%	28.74%	18.48%	31.55%	-4.34%	21.87%	-18.10%	7.70%	9.47%	12.61%
S&P 500 Index	7.56%	-18.11%	28.71%	18.40%	31.49%	-4.38%	21.83%	-18.11%	7.66%	9.42%	12.56%
Large Blend Universe	7.93%	-18.16%	26.68%	17.18%	29.77%	-5.65%	21.13%	-18.16%	7.09%	8.52%	11.57%
MEDIUM COMPANY VALUE											
EARNEST Partners Smid Cap Value	10.55%	-8.94%	25.57%	-	-	-	-	-8.94%	-	-	-
Russell Mid Cap Value	10.45%	-12.03%	28.34%	4.96%	27.06%	-12.29%	13.34%	-12.03%	5.82%	5.72%	10.11%
Mid Value Universe	11.94%	-8.17%	28.56%	2.77%	26.77%	-13.59%	13.47%	-8.17%	6.46%	5.83%	9.49%
MEDIUM COMPANY BLEND											
BlackRock Extended Equity Market F	5.17%	-26.36%	12.45%	32.16%	28.23%	-9.15%	18.26%	-26.36%	3.05%	4.98%	9.71%
Russell Mid Cap	9.18%	-17.32%	22.58%	17.10%	30.54%	-9.06%	18.52%	-17.32%	5.88%	7.10%	10.96%
Mid Blend Universe	9.25%	-15.19%	24.16%	12.93%	26.87%	-11.30%	15.82%	-15.19%	6.08%	6.19%	9.91%
MEDIUM COMPANY GROWTH											
Delaware Smid Cap Growth R6	-2.29%	-45.28%	-8.12%	94.51%	35.77%	0.44%	35.61%	-45.28%	-0.74%	5.93%	10.39%
Russell Mid Cap Growth	6.90%	-26.72%	12.73%	35.59%	35.47%	-4.75%	25.27%	-26.72%	3.85%	7.64%	11.41%
Mid Growth Universe	5.32%	-28.34%	11.92%	35.93%	33.40%	-5.53%	24.83%	-28.34%	3.85%	7.27%	10.62%

*ANNUALIZED

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PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 12.31.22 | Q4 22

State Universities Retirement System

INVESTMENT NAME	Q4 '22	YTD '22	2021	2020	2019	2018	2017	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
GLOBAL LARGE STOCK BLEND											
BlackRock MSCI ACWI ESG Focus Index Fund F	9.89%	-19.13%	18.22%	19.00%	26.87%	-	-	-19.13%	4.39%	-	-
MSCI ACWI NR USD	9.88%	-17.96%	19.04%	16.82%	27.30%	-8.93%	24.62%	-17.96%	4.49%	5.75%	8.54%
Global Large Stock Blend	11.02%	-17.43%	18.08%	14.15%	26.06%	-9.99%	23.10%	-17.43%	3.75%	5.02%	8.00%
FOREIGN LARGE VALUE											
Columbia Overseas Value Inst3	18.66%	-5.88%	10.97%	-0.06%	22.61%	-16.38%	30.24%	-5.88%	1.44%	1.36%	5.39%
Columbia Trust Overseas Value Founders Class	18.80%	-5.01%	11.05%	-	-	-	-	-5.01%	-	-	-
MSCI EAFE	17.40%	-14.01%	11.78%	8.28%	22.66%	-13.36%	25.62%	-14.01%	1.34%	2.03%	5.16%
Foreign Large Value Universe	18.71%	-10.36%	11.78%	2.65%	18.23%	-16.50%	22.90%	-10.36%	0.86%	0.39%	3.66%
FOREIGN LARGE BLEND											
State Street Global All Cap Equity Ex-U.S. Index Securities Lending Series Fund Class II	14.70%	-16.29%	8.74%	11.36%	22.04%	-14.57%	28.18%	-16.29%	0.45%	1.11%	4.18%
MSCI EAFE	17.40%	-14.01%	11.78%	8.28%	22.66%	-13.36%	25.62%	-14.01%	1.34%	2.03%	5.16%
Foreign Large Blend Universe	16.86%	-15.92%	10.07%	9.73%	22.04%	-15.23%	25.51%	-15.92%	0.60%	1.18%	4.23%
FOREIGN LARGE GROWTH											
Vanguard International Growth Adm	12.62%	-30.79%	-0.74%	59.74%	31.48%	-12.58%	43.16%	-30.79%	3.14%	4.75%	7.84%
MSCI EAFE	17.40%	-14.01%	11.78%	8.28%	22.66%	-13.36%	25.62%	-14.01%	1.34%	2.03%	5.16%
Foreign Large Growth Universe	13.78%	-25.05%	8.66%	22.29%	27.95%	-14.46%	30.94%	-25.05%	0.13%	1.80%	4.93%
SPECIALTY-REAL ESTATE											
Vanguard Real Estate Index Institutional	4.36%	-26.17%	40.41%	-4.67%	29.02%	-5.93%	4.93%	-26.17%	-0.39%	3.71%	6.45%
Dow Jones US Select REIT	4.76%	-25.96%	45.91%	-11.20%	23.10%	-4.22%	3.76%	-25.96%	-1.37%	2.50%	5.74%
Specialty-Real Estate Universe	3.87%	-26.33%	41.45%	-4.43%	27.87%	-5.92%	5.37%	-26.33%	-0.04%	3.72%	6.24%

*ANNUALIZED

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This summary is intended for "Institutional (Plan Sponsor) Use Only" and only includes historical performance of the funds currently in the plan's fund lineup as compared to the peer group (universe) maintained/developed by CAPTRUST (using Morningstar open-end mutual fund data), which may include other investment types such as collective investment trusts. Fund and peer group returns are shown net of investment management fees, unless otherwise indicated, but gross of CAPTRUST advisory fees. The plan's overall performance will be reduced by CAPTRUST's advisory fees and other plan level fees not contemplated in this summary. Therefore, each participant's account performance will differ substantially. Past performance is not indicative of future results. Information from sources believed to be reliable, but not warranted by CAPTRUST to be accurate or complete.



SECTION 4: INACTIVE PLAN REVIEW

Period Ending 12.31.22 | Q4 22

SECTION 4: INACTIVE PLAN REVIEW

Plan Assets.....

Investment Monitor.....

Investment Performance Summary.....



PLAN INVESTMENT REVIEW | ASSET SUMMARY

Period Ending 12.31.22 | Q4 22

SURS Self Managed Plan - Frozen

		— MARKET VALUE —			
FUND OPTION	CURRENT INVESTMENT NAME	12.31.2021	(%)	CURRENT	(%)
Money Market	CREF Money Market R3	\$6,505,022	1.65%	\$6,705,935	1.97%
Stable Value	TIAA Traditional - Retirement Choice	\$150,137,499	37.97%	\$146,158,562	42.88%
Inflation Protected Bond	CREF Inflation-Linked Bond R3	\$8,943,061	2.26%	\$7,670,786	2.25%
Intermediate Core Bond	CREF Core Bond R3	\$19,578,924	4.95%	\$15,823,414	4.64%
Global Allocation	CREF Social Choice R3	\$25,366,767	6.42%	\$20,712,173	6.08%
Allocation--85%+ Equity	CREF Stock R3	\$94,291,741	23.85%	\$73,708,574	21.62%
Specialty-Private Real Estate	TIAA Real Estate Account	\$3,508,629	0.89%	\$3,458,066	1.01%
Large Company Blend	CREF Equity Index R3	\$56,837,103	14.37%	\$43,278,055	12.70%
Large Company Growth	CREF Growth R3	\$355,606	0.09%	\$253,749	0.07%
Global Large Stock Blend	CREF Global Equities R3	\$29,902,647	7.56%	\$23,098,953	6.78%
TOTALS		\$395,426,999	100%	\$340,868,267	100%

Information provided by Record Keeper. For informational purposes. Not a substitute for official statements produced by the plan custodian. Information has been obtained from sources considered reliable, but its accuracy and completeness are not guaranteed. This report is not an illustration of investment performance, but rather a historical illustration of asset allocation.



INVESTMENT REVIEW | INVESTMENT POLICY MONITOR

Period Ending 12.31.22 | Q4 22

SURS Self Managed Plan - Frozen

INVESTMENT	QUANTITATIVE								QUALITATIVE		TOTALS	
	Risk-Adjusted Performance		vs. Peers Performance		Style		Confidence		Fund Management	Fund Firm	Overall	Total Score
	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr	3 Yr	5 Yr				
Inflation Protected Bond CREF Inflation-Linked Bond R3	●	●	●	●	●	●	●	●	●	●	●	100
Intermediate Core Bond CREF Bond Market R3	●	●	●	●	●	●	●	●	●	●	●	97
Global Allocation CREF Social Choice R3	●	●	●	●	●	●	●	●	●	●	●	97
Large Company Growth CREF Growth R3	▼	▼	▼	▼	●	●	▼	▼	●	●	▼	73
Global Large Stock Blend CREF Global Equities R3	●	●	●	●	●	●	●	●	●	●	●	92

LEGEND

●	IN GOOD STANDING	▼	MARKED FOR REVIEW	●	CONSIDER FOR TERMINATION
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The CAPTRUST Investment Policy Monitor ("Scorecard") is an illustration of our monitoring system and is designed to assist our clients in their efforts to provide fiduciary oversight to investment assets. It is not intended as a solicitation to buy any security. The scoring system measures quantitative areas as well as qualitative (or subjective) fields for actively managed investment options. Quantitative scoring areas include Risk Adjusted Performance (3 & 5 yr.); Performance vs. Relevant Peer Group; Style Attribution; and Confidence. Qualitative Scoring Areas measure the quality of the Management Team while also considering the stewardship of the investment option's parent company under Investment Family Items. Qualitative areas of analysis are subjective in nature. CAPTRUST typically requires at least 3 months of monitoring before including an investment in this report. Investments that have been added to our system less than 3 months prior to a report being generated may have a Fund Management assessment of '25' as a default, but will be updated, if necessary, after the first quarter of monitoring to more accurately reflect our system. Investments that are not mutual funds or have less than 3 years of performance history may not be scored. This material is for institutional investor use only and is not intended to be shared with individual investors.





INVESTMENT REVIEW | INVESTMENT POLICY MONITOR


Period Ending 12.31.22 | Q4 22

SURS Self Managed Plan - Frozen



CAPITAL PRESERVATION INVESTMENTS

INVESTMENT	Overall	Commentary
CREF Money Market R3		This Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.
TIAA Traditional - Retirement Choice		This Capital Preservation option is in good standing per the guidelines as established by the Investment Policy Statement.

PASSIVE INVESTMENTS

INVESTMENT	Overall	Commentary
CREF Equity Index R3		This fund currently meets the guidelines set forth by CAPTRUST for passively managed investments. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, tracking error, and cost.

INVESTMENTS IN DISTINCT ASSET CLASSES

INVESTMENT	Overall	Commentary
CREF Stock R3		This fund currently meets the guidelines set forth by CAPTRUST for distinct investments in the Investment Policy Statement. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, excess return, and risk-adjusted performance.
TIAA Real Estate Account		This fund currently meets the guidelines set forth by CAPTRUST for distinct investments in the Investment Policy Statement. This assessment is based on both quantitative and qualitative data. Examples of quantitative and qualitative items considered include, but are not limited to, quality of management, excess return, and risk-adjusted performance.

The CAPTRUST Financial Advisors Investment Scorecard is an illustration of our monitoring system and is designed to assist our clients in their efforts to provide fiduciary oversight to investment assets. It is not intended as a solicitation to buy any security. The scoring system measures quantitative areas as well as qualitative (or subjective) fields. Quantitative scoring areas for target date funds include Risk Adjusted Performance (3 & 5 yr.); Performance vs. Relevant Peer Group; and Glidepath. Qualitative Scoring Areas for target date funds measure the quality of the Management Team while also considering the stewardship of the investment option's parent company under Investment Family Items. Qualitative areas of analysis are subjective in nature. Qualitative Scoring for Target Date funds also includes a score for Portfolio Construction and Underlying Investment vehicles to express CAPTRUST's views on the manager or strategy. CAPTRUST typically requires at least 3 months of monitoring before including an investment in this report. Investments that have been added to our system less than 3 months prior to a report being generated may have a Fund Management assessment of '25' as a default, but will be updated, if necessary, after the first quarter of monitoring to more accurately reflect our system. Investments that are not mutual funds or have less than 3 years of performance history may not be scored. Capital Preservation options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics, depending on the type of capital preservation option being evaluated, and may include quantitative criteria such as: Crediting Rate/Yield, Market to Book Ratio, Average Crediting Quality, Insurer Quality/Diversification, Duration, and Sector Allocations, and/or qualitative criteria such as quality and experience of the Management Team and stewardship of the investment option's parent company. Passively Managed options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics and may include quantitative criteria such as: Tracking Error, Fees, and Performance versus relevant peer group, and/or qualitative criteria such as index replication strategy, securities lending practices, and fair value pricing methodology. Distinct investment options are evaluated using a comprehensive scoring methodology proprietary to the Investment Consultant. This methodology incorporates both qualitative and quantitative metrics. This material is for institutional investor use only and is not intended to be shared with individual investors.



PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 12.31.22 | Q4 22

SURS Self Managed Plan - Frozen

INVESTMENT NAME	Q4 '22	YTD '22	2021	2020	2019	2018	2017	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
MONEY MARKET											
CREF Money Market R3	0.81%	1.24%	0.00%	0.38%	2.02%	1.46%	0.50%	1.24%	0.54%	1.02%	0.57%
ICE BofA ML US Treasury Bill 3 Mon USD	0.84%	1.46%	0.05%	0.67%	2.28%	1.87%	0.86%	1.46%	0.72%	1.26%	0.76%
STABLE VALUE											
TIAA Traditional - Retirement Choice	-	-	Crediting Rate as of 12.31.2022 – 6.50% (RC); 5.75% (RCP)					-	-	-	-
ICE BofA ML US Treasury Bill 3 Mon USD	0.84%	1.46%	0.05%	0.67%	2.28%	1.87%	0.86%	1.46%	0.72%	1.26%	0.76%
Morningstar US Stable Value GR USD	0.55%	1.89%	1.74%	2.26%	2.52%	2.26%	1.95%	1.89%	1.96%	2.13%	1.97%
INFLATION PROTECTED BOND											
CREF Inflation-Linked Bond R3	1.50%	-6.34%	5.28%	8.03%	6.53%	-0.49%	1.85%	-6.34%	2.13%	2.46%	1.03%
Bloomberg US Treasury US TIPS TR USD	2.04%	-11.85%	5.96%	10.99%	8.43%	-1.26%	3.01%	-11.85%	1.21%	2.11%	1.12%
Inflation Protected Bond Universe	1.97%	-11.69%	5.25%	9.70%	7.51%	-1.62%	2.59%	-11.69%	1.22%	1.89%	0.87%
INTERMEDIATE CORE BOND											
CREF Bond Market R3	1.79%	-13.14%	-1.23%	7.92%	9.03%	-0.19%	4.12%	-13.14%	-2.54%	0.15%	1.21%
Bloomberg US Agg Bond TR USD	1.87%	-13.01%	-1.55%	7.51%	8.72%	0.01%	3.54%	-13.01%	-2.71%	0.02%	1.06%
Intermediate Core Bond Universe	1.64%	-13.45%	-1.56%	7.85%	8.42%	-0.43%	3.38%	-13.45%	-2.77%	-0.12%	0.93%
GLOBAL ALLOCATION											
CREF Social Choice R3	7.47%	-15.47%	12.64%	13.52%	20.80%	-4.29%	14.27%	-15.47%	2.63%	4.56%	6.60%
60% MSCI World 40% Bloomberg Agg Index	6.64%	-16.02%	10.20%	13.49%	19.41%	-5.52%	15.41%	-16.02%	1.65%	3.45%	5.39%
Global Allocation Universe	7.96%	-13.46%	10.75%	7.25%	17.22%	-7.55%	14.24%	-13.46%	1.17%	2.48%	4.62%

*ANNUALIZED

CONTINUED...

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PLAN INVESTMENT REVIEW | PERFORMANCE SUMMARY

Period Ending 12.31.22 | Q4 22

SURS Self Managed Plan - Frozen

INVESTMENT NAME	Q4 '22	YTD '22	2021	2020	2019	2018	2017	1 YEAR*	3 YEAR*	5 YEAR*	10 YEAR*
ALLOCATION--85%+ EQUITY											
CREF Stock R3	10.17%	-18.45%	18.92%	17.91%	27.45%	-9.65%	23.43%	-18.45%	4.57%	5.65%	9.12%
85% S&P 500, 15% Bloomberg Agg	6.77%	-17.20%	23.77%	17.14%	27.97%	-3.58%	18.92%	-17.20%	6.28%	8.17%	10.91%
Allocation--85%+ Equity Universe	8.67%	-19.21%	18.50%	16.69%	25.81%	-9.30%	21.06%	-19.21%	3.64%	4.95%	8.33%
SPECIALTY-PRIVATE REAL ESTATE											
TIAA Real Estate Account	-3.49%	8.19%	17.87%	-0.84%	5.51%	4.79%	4.37%	8.19%	8.14%	6.93%	7.41%
NCREIF Property Index	-3.50%	5.53%	17.70%	1.60%	6.42%	6.72%	6.96%	5.53%	8.06%	7.46%	8.82%
NCREIF ODCE Index	-4.97%	7.46%	22.18%	1.18%	5.34%	8.35%	7.61%	7.46%	9.93%	8.68%	10.09%
LARGE COMPANY BLEND											
CREF Equity Index R3	7.16%	-19.25%	25.52%	20.63%	30.73%	-5.37%	20.84%	-19.25%	6.93%	8.63%	11.88%
S&P 500 Index	7.56%	-18.11%	28.71%	18.40%	31.49%	-4.38%	21.83%	-18.11%	7.66%	9.42%	12.56%
Large Blend Universe	7.93%	-18.16%	26.68%	17.18%	29.77%	-5.65%	21.13%	-18.16%	7.09%	8.52%	11.57%
LARGE COMPANY GROWTH											
CREF Growth R3	3.68%	-32.34%	20.43%	40.76%	31.66%	-2.46%	31.83%	-32.34%	4.68%	8.05%	12.56%
Russell 1000 Growth	2.20%	-29.14%	27.60%	38.49%	36.39%	-1.51%	30.21%	-29.14%	7.79%	10.96%	14.10%
Large Growth Universe	2.99%	-30.87%	21.97%	34.85%	32.81%	-1.63%	28.66%	-30.87%	4.96%	8.36%	11.90%
GLOBAL LARGE STOCK BLEND											
CREF Global Equities R3	10.73%	-18.49%	15.65%	22.75%	28.28%	-12.36%	24.81%	-18.49%	4.99%	5.40%	8.47%
MSCI ACWI NR USD	9.88%	-17.96%	19.04%	16.82%	27.30%	-8.93%	24.62%	-17.96%	4.49%	5.75%	8.54%
Global Large Stock Blend	11.02%	-17.43%	18.08%	14.15%	26.06%	-9.99%	23.10%	-17.43%	3.75%	5.02%	8.00%

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SECTION 5: FUND FACT SHEETS

Period Ending 12.31.22 | **Q4 22**

SECTION 5: FUND FACT SHEETS	
Fund Fact Sheets.....	



VOYA FIXED ACCOUNT

Period Ending 12.31.22 | Q4 22

INDUSTRY ANALYSIS

Inflation eased in the fourth quarter, but concerns endure as levels remain high, with some industry professionals indicating the potential of a mild recession in the upcoming year. The Federal Reserve increased the overnight lending rate twice in the fourth quarter. With an increase of 50 basis-points in its final hike of the year, down from the previous four of 75 basis-points to a final target range between 4.25% - 4.50%. Guaranteed contract providers continue to operate as expected, with increases to guaranteed crediting rates overall year-to-date. Following the Fed's seven rate increases in 2022 and plans to continue its tightening policy in the near term, we can expect guaranteed products to continue increasing crediting rates. When determining the guaranteed rate for a fund, insurance companies use forward-looking projections of the interest rate environment. Rising interest rates present negative pressure on current general account underlying portfolios in the short-term, as the value of current portfolio holdings decline, but give insurer's comfort that higher yields will support the ability to offer higher guaranteed rates future quarters.

CAPTRUST ANALYSIS

The Voya Fixed Account is a Voya Retirement Insurance and Annuity Company (VRIAC) group fixed unallocated annuity contract. The product is a "general account" product meaning participant assets are commingled within the insurance general account at Voya. All guarantees are ultimately backed by the financial strength and claims-paying ability of VRIAC.

The rate is declared monthly with interest credited on a daily basis at an annual effective rate. The product credits interest under a portfolio interest crediting method in which all deposits receive the same return regardless of date of initial deposit. This product is only available to existing clients.

CREDITING RATE

Current Crediting Rate: 1.35%

INVESTMENT DETAILS

Crediting Rate Details:

Existing money is credited monthly. The guaranteed minimum interest rate will not change for the life of the contract.

Competing Options:

Competing options are allowed, but they are subject to equity wash provisions.

Minimum Rate:

The minimum rate is 1.00% for existing allocations.

LIQUIDITY PROVISIONS

Plan Sponsor

Subject to the plans deferred sales charge.

Participant

Benefit Responsive. Non-benefit withdrawals may be subject to an annual transfer limit not to be less than 10%.

*Important Disclosures: This slide is intended solely for institutional use. The opinions expressed in this report are subject to change without notice. The statistics and data have been compiled from sources believed to be reliable but are not guaranteed to be accurate or complete. Any performance quoted represents past performance and does not guarantee future results. Bloomberg Index averages are derived from Morningstar. This material is not a solicitation or an offer to buy any security or to participate in any investment strategy. Any such solicitation must be made by prospectus only. For more information or to obtain a prospectus, please contact your financial advisor at 800.216.0645. CAPTRUST Financial Advisors.



VOYA RETIREMENT INSURANCE AND ANNUITY CO (VRIAC)

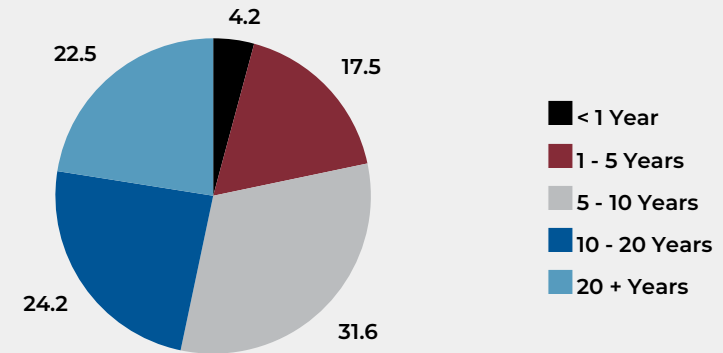
Period Ending 12.31.22 | Q4 22

AGENCY RATINGS*

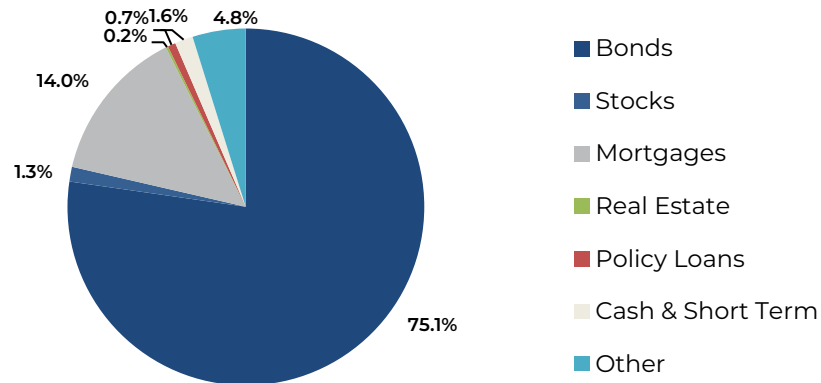
A.M. Best (15 ratings)	NR
Standard & Poors (20)	A+ (5)
Moody's (21)	A2 (6)
Fitch (21)	A (6)
Weiss (16)	B (5)
Comdex Ranking (Percentile Rank)	81

Comdex Ranking: Insurers are assigned a percentile rank, per agency, based on their ratings relative to peers. Percentiles are then averaged to arrive at one Comdex Ranking; over 1,100 companies are currently ranked.

MATURITY BREAKDOWN

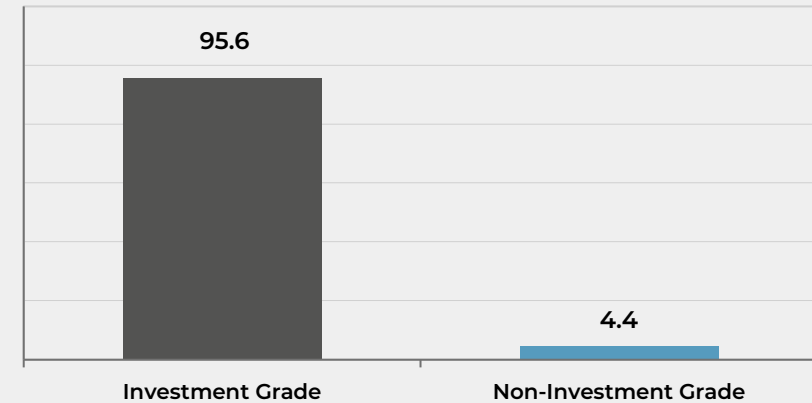


GENERAL ACCOUNT INVESTMENTS



Total Surplus & Asset Valuation Reserve (as % of GA Assets): 7.2%

BOND QUALITY (%)



Source: Vital Signs *Agency ratings as of most recent quarter-end; all other data as of most recent year end.

Performance Disclosure: The performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate thus an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than return data quoted herein. For performance data current to the most recent month-end, please call 800. 216.0645. Agency ratings are sourced from Bloomberg. Index averages are derived from Morningstar. The opinions expressed in this report are subject to change without notice. This material is not a solicitation or an offer to buy any security or to participate in any investment strategy and is not guaranteed as to accuracy. Any such solicitation must be made by prospectus only. To obtain a prospectus, please contact your financial advisor. CAPTRUST Financial Advisors. Member FINRA/SIPC.

VANGUARD FEDERAL MONEY MARKET INVESTOR

Period Ending 12.31.22 | Q4 22

INDUSTRY ANALYSIS

In 2022, the Federal Reserve increased the overnight lending rate a total of seven times to a final target range set between 4.25% - 4.50%, subsequently increasing short-term interest rates and causing a slight inversion at the front-end of the yield curve. Money market fund yields have increased in the fourth quarter and are up significantly relative this time last year. Yields are expected to continue to closely track short-term interest rates as the Federal Reserve contemplates further action. Inflation levels eased in the fourth quarter but remain at relatively high levels. The Fed responded with two hikes to the overnight lending rate, the final hike of 50 basis-points, down from the previous four increases of 75 basis-points. In December 2021, the SEC proposed amendments, currently still under regulatory review, that would improve the resilience of money market funds through increased transparency and liquidity requirements for money market funds, aiming to provide funds a more substantial liquidity buffer in the event of rapid redemptions.

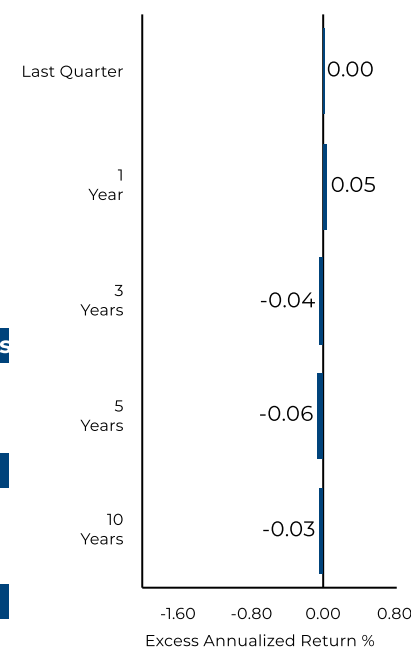
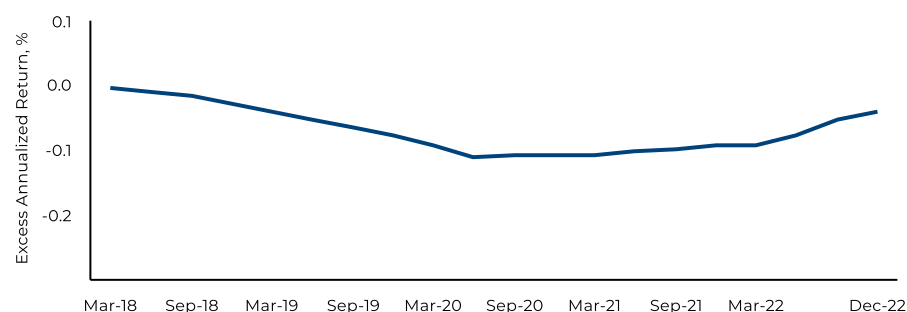
	Last Quarter	1	3	5	10 Years
Vanguard Federal Money Market Investor	0.88	1.55	0.67	1.18	0.71
FTSE 3 Month T-Bill	0.87	1.50	0.71	1.25	0.74

	2021	2020	2019	2018	2017
Vanguard Federal Money Market Investor	0.01	0.45	2.14	1.78	0.81
FTSE 3 Month T-Bill	0.05	0.58	2.25	1.86	0.84

KEY MEASURES / 5 YEAR

Vanguard Federal Money Market Investor	0.31
FTSE 3 Month T-Bill	0.31

Rolling 3 Year Annualized Excess Return (Mar-18 - Dec-22)

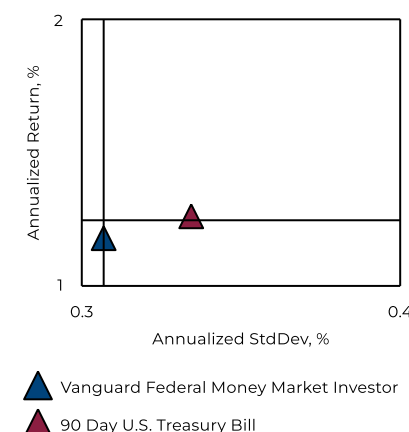


Vanguard Federal Money Market Investor

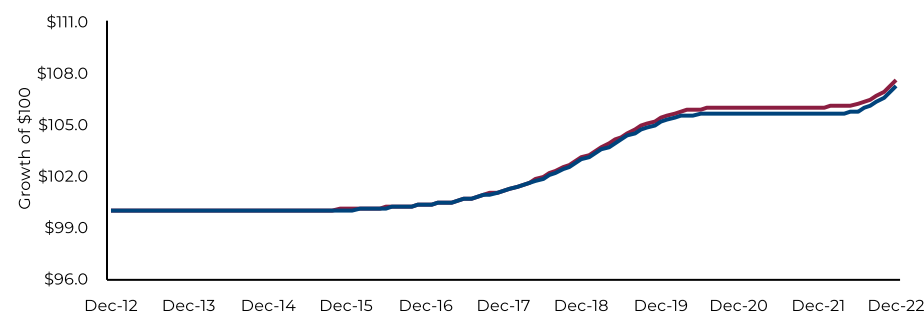
INVESTMENT PROFILE

Ticker	VMFXX
Fund Inception Date	1981
Prospectus Expense Ratio	0.11 %
SEC Yield	-

Performance vs Risk - 5 Year



Cumulative Performance (Jan 2013 - Dec 2022)



For use with CAPTRUST clients only. Performance summarized here represents past performance and does not guarantee future results. Data has been obtained from Morningstar and is not guaranteed to be accurate or complete. Money Market [mutual] fund investing involves risk. For a prospectus with a complete description of the risks associated with investing in this fund, please call CAPTRUST at (800)216-0645. For a detailed description of the risks associated with investing by asset class, please visit

<https://www.captrust.com/important-disclosures/>.



VANGUARD INFLATION-PROTECTED SECS I

Period Ending 12.31.22 | Q4 22

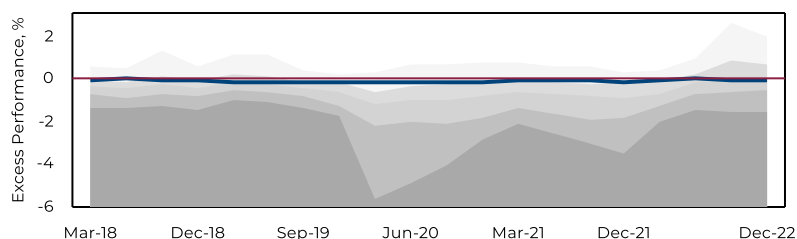
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
Vanguard Inflation-Protected Secs I	1.81	-11.90	1.13	1.98	1.04	5.72	11.05	8.18	-1.40	2.97
Blmbg. U.S. TIPS	2.04	-11.85	1.21	2.11	1.12	5.96	10.99	8.43	-1.26	3.01
Inflation-Protected Bond Median	1.98	-11.69	1.22	1.89	0.87	5.25	9.70	7.51	-1.62	2.59
Rank (%)	68	57	53	45	37	32	26	30	43	30
Population	193	193	188	185	173	197	198	214	222	239

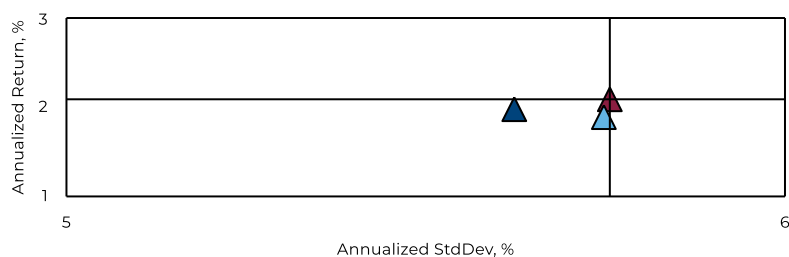
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
Vanguard Inflation-Protected Secs I	0.15	-0.07	0.97	0.99	96.55	97.34	-0.26
Blmbg. U.S. TIPS	0.17	0.00	1.00	1.00	100.00	100.00	-
Inflation-Protected Bond Median	0.14	-0.11	0.97	0.92	92.60	95.99	-0.15

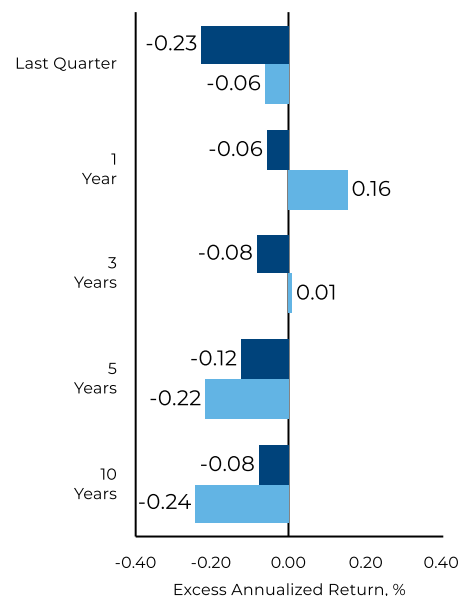
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ Vanguard Inflation-Protected Secs I ▲ Inflation-Protected Bond Median
▲ Blmbg. U.S. TIPS



INVESTMENT PROFILE

Ticker	VIPIX
Portfolio Manager	Madziyire,J
Portfolio Assets	\$12,216 Million
PM Tenure	1 Year 1 Month
Net Expense(%)	0.07 %
Fund Inception	2003
Category Expense Median	0.56
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	33.09 %
Number of Holdings	58
Turnover	24.00 %
Avg. Effective Duration	6.67 Years
SEC Yield	1.75 %

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STATE ST US BND INDX SL CL XIV

Period Ending 12.31.22 | Q4 22

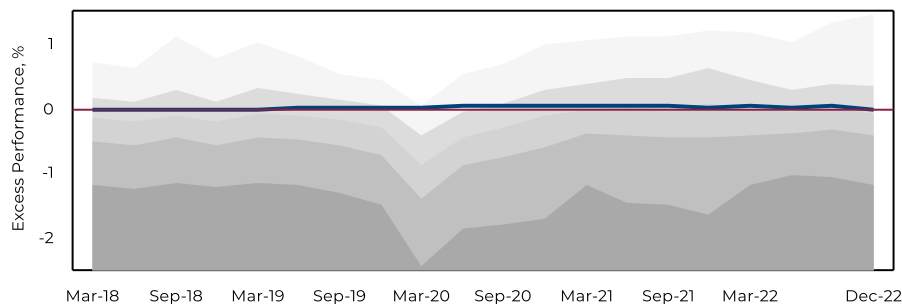
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
State St US Bnd Indx SL Cl XIV	1.67	-13.13	-2.73	0.02	1.05	-1.62	7.67	8.74	0.03	3.55
Blmbg. U.S. Aggregate Index	1.87	-13.01	-2.71	0.02	1.06	-1.55	7.51	8.72	0.01	3.54
Intermediate Core Bond Median	1.63	-13.45	-2.77	-0.12	0.93	-1.56	7.85	8.42	-0.43	3.38
Rank (%)	46	32	47	35	37	52	57	33	26	41
Population	437	428	412	393	359	430	432	450	451	505

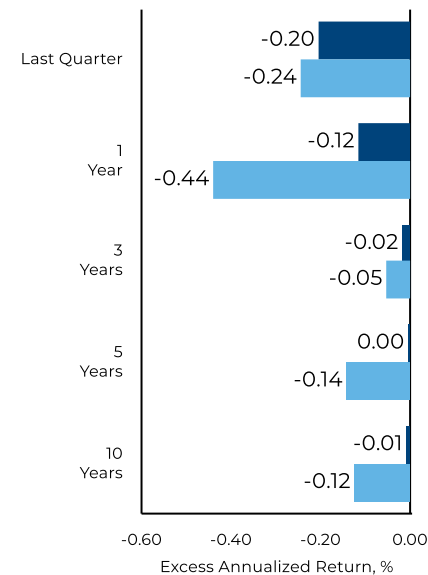
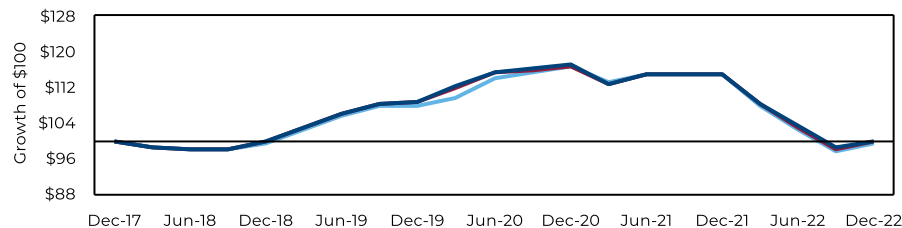
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
State St US Bnd Indx SL Cl XIV	-0.22	0.00	1.00	1.00	100.64	100.72	-0.04
Blmbg. U.S. Aggregate Index	-0.22	0.00	1.00	1.00	100.00	100.00	-
Intermediate Core Bond Median	-0.24	-0.14	1.00	0.95	100.44	103.03	-0.12

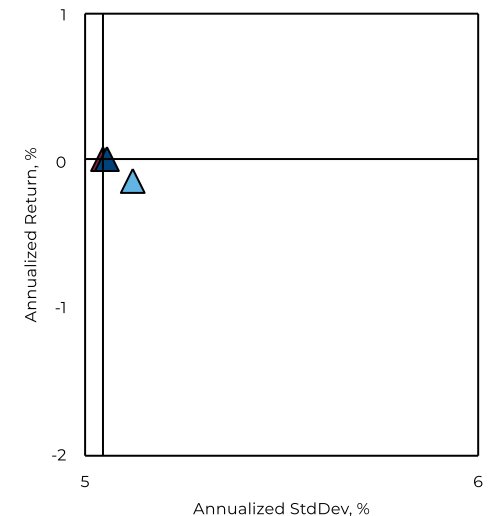
Rolling 3 Year Annualized Excess Return



5 Year Cumulative Performance



Performance vs Risk 5 Year



State St US Bnd Indx SL Cl XIV
Intermediate Core Bond Median

State St US Bnd Indx SL Cl XIV
Intermediate Core Bond Median
Blmbg. U.S. Aggregate Index

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TIAA-CREF CORE IMPACT BOND INSTL

Period Ending 12.31.22 | Q4 22

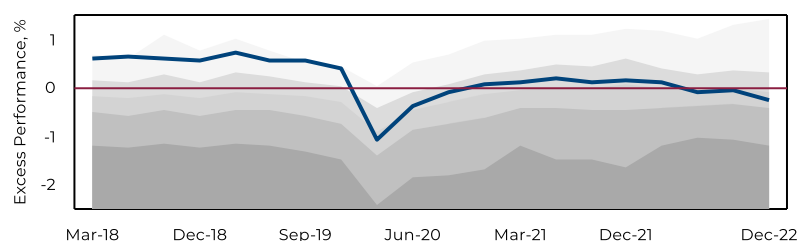
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
TIAA-CREF Core Impact Bond Instl	1.19	-14.01	-2.94	-0.05	1.57	-1.03	7.45	8.73	0.33	4.51
Blmbg. U.S. Aggregate Index	1.87	-13.01	-2.71	0.02	1.06	-1.55	7.51	8.72	0.01	3.54
Intermediate Core Bond Median	1.63	-13.45	-2.77	-0.12	0.93	-1.56	7.85	8.42	-0.43	3.38
Rank (%)	84	72	64	41	6	24	65	33	13	8
Population	437	428	412	393	359	430	432	450	451	505

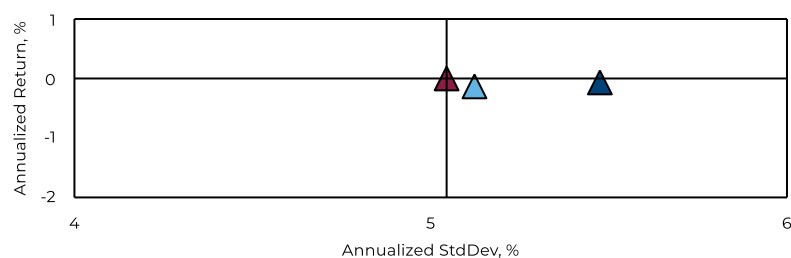
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
TIAA-CREF Core Impact Bond Instl	-0.21	-0.05	1.02	0.88	106.56	107.48	-0.03
Blmbg. U.S. Aggregate Index	-0.22	0.00	1.00	1.00	100.00	100.00	-
Intermediate Core Bond Median	-0.24	-0.14	1.00	0.95	100.44	103.03	-0.12

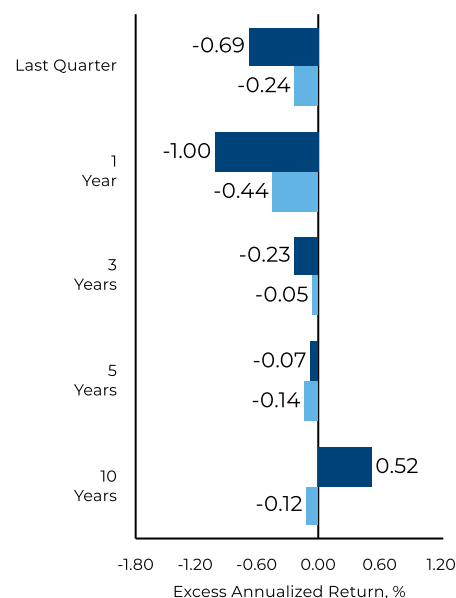
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ TIAA-CREF Core Impact Bond Instl ▲ Intermediate Core Bond Median
▲ Blmbg. U.S. Aggregate Index



■ TIAA-CREF Core Impact Bond Instl
■ Intermediate Core Bond Median

INVESTMENT PROFILE

Ticker	TSBIX
Portfolio Manager	Higgins,J/Liberatore, S/Zarzycki,J
Portfolio Assets	\$3,840 Million
PM Tenure	
Net Expense(%)	0.38 %
Fund Inception	2012
Category Expense Median	0.55
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	16.62 %
Number of Holdings	1020
Turnover	255.00 %
Avg. Effective Duration	6.06 Years
SEC Yield	4.34 %

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PIMCO INCOME INSTL

Period Ending 12.31.22 | Q4 22

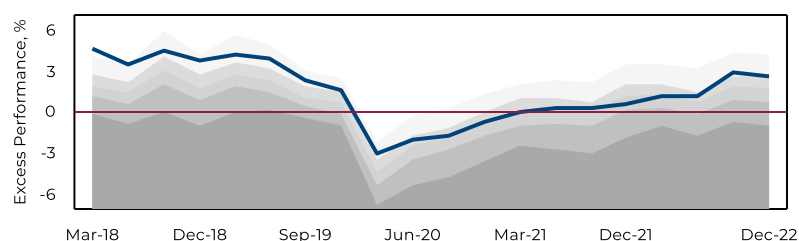
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
PIMCO Income Instl	3.41	-7.81	0.03	1.69	4.00	2.61	5.80	8.05	0.58	8.60
Blmbg. U.S. Aggregate Index	1.87	-13.01	-2.71	0.02	1.06	-1.55	7.51	8.72	0.01	3.54
Multisector Bond Median	2.88	-10.71	-0.84	1.04	2.30	2.44	6.32	10.35	-1.89	6.42
Rank (%)	34	19	24	17	1	44	56	79	14	17
Population	342	333	313	270	192	337	335	312	336	331

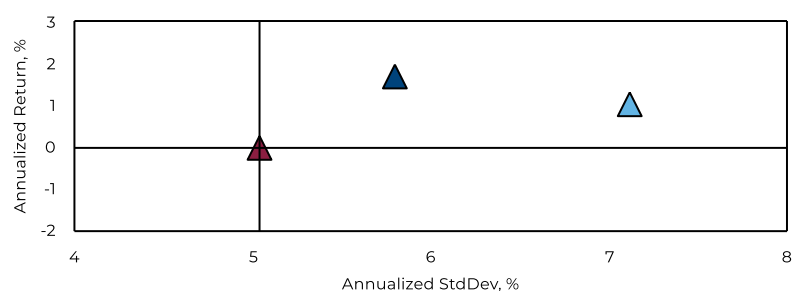
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
PIMCO Income Instl	0.10	1.77	0.66	0.33	84.58	57.66	0.34
Blmbg. U.S. Aggregate Index	-0.22	0.00	1.00	1.00	100.00	100.00	-
Multisector Bond Median	0.01	1.22	0.77	0.30	92.41	78.68	0.19

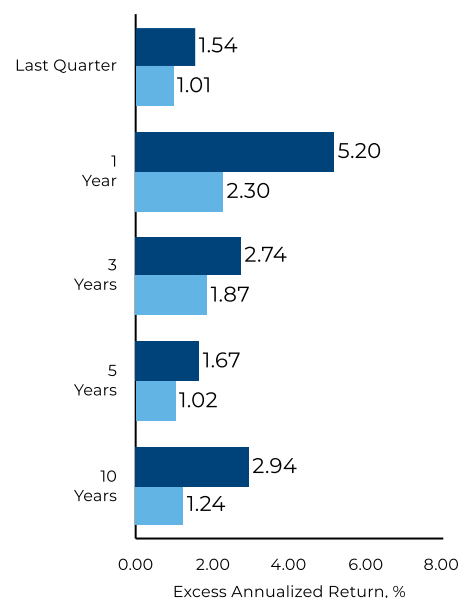
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ PIMCO Income Instl ▲ Multisector Bond Median ▲ Blmbg. U.S. Aggregate Index



INVESTMENT PROFILE

Ticker	PIMIX
Portfolio Manager	Anderson, J/Ivascyn, D/Murata, A
Portfolio Assets	\$64,362 Million
PM Tenure	
Net Expense(%)	0.51 %
Fund Inception	2007
Category Expense Median	0.90
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	11.07 %
Number of Holdings	8046
Turnover	319.00 %
Avg. Effective Duration	3.22 Years
SEC Yield	4.83 %

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PGIM HIGH YIELD R6

Period Ending 12.31.22 | Q4 22

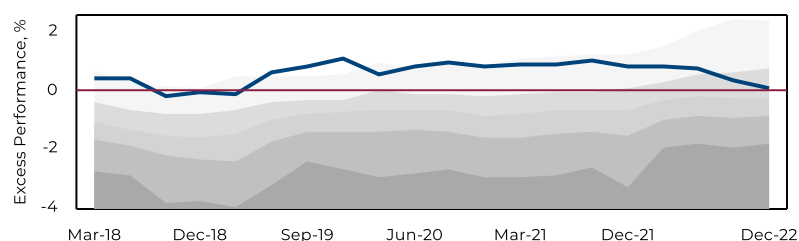
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
PGIM High Yield R6	3.67	-11.55	-0.15	2.72	4.34	6.47	5.72	16.26	-1.18	7.70
ICE BofA US High Yield, Cash Pay Index	4.07	-11.14	-0.21	2.13	3.94	5.28	6.21	14.40	-2.26	7.48
High Yield Bond Median	3.96	-10.84	-0.50	1.66	3.24	4.87	5.26	13.50	-2.94	6.70
Rank (%)	73	69	40	12	7	17	40	5	13	21
Population	630	629	605	597	527	646	659	693	711	748

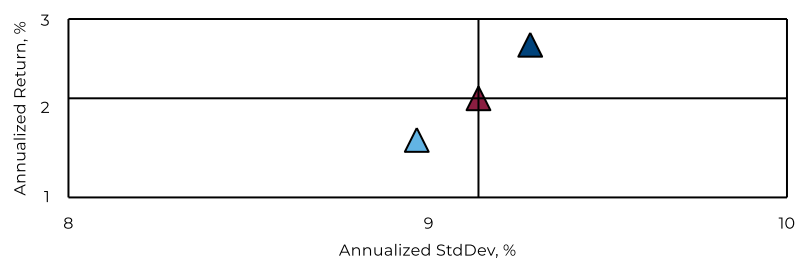
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
PGIM High Yield R6	0.20	0.58	1.01	0.99	102.87	97.02	0.56
ICE BofA US High Yield, Cash Pay Index	0.14	0.00	1.00	1.00	100.00	100.00	-
High Yield Bond Median	0.09	-0.37	0.97	0.98	94.68	97.90	-0.27

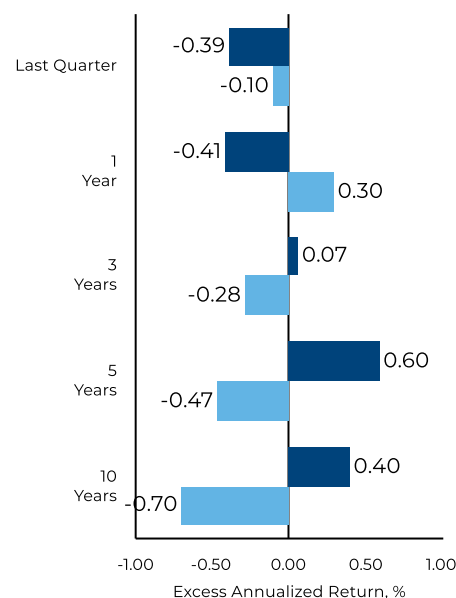
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ PGIM High Yield R6
▲ ICE BofA US High Yield, Cash Pay Index
▲ High Yield Bond Median



INVESTMENT PROFILE

Ticker	PHYQX
Portfolio Manager	Team Managed
Portfolio Assets	\$7,827 Million
PM Tenure	
Net Expense(%)	0.38 %
Fund Inception	2011
Category Expense Median	0.83
Subadvisor	PGIM Limited

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	18.20 %
Number of Holdings	722
Turnover	38.00 %
Avg. Effective Duration	4.43 Years
SEC Yield	11.06 %

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BLACKROCK EQUITY INDEX F

Period Ending 12.31.22 | Q4 22

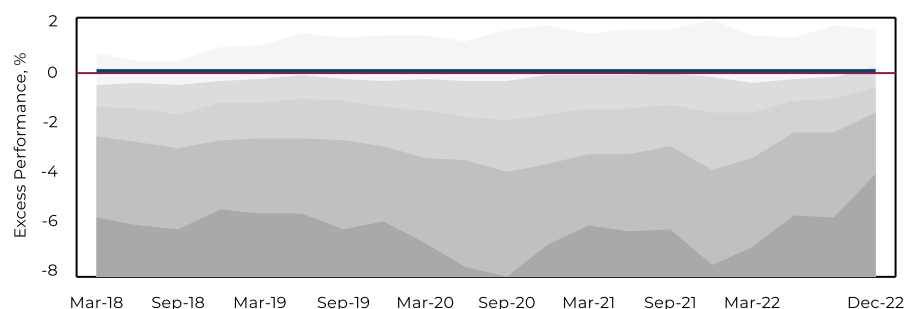
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
BlackRock Equity Index F	7.56	-18.10	7.70	9.47	12.61	28.74	18.48	31.55	-4.34	21.87
S&P 500 Index	7.56	-18.11	7.66	9.42	12.56	28.71	18.40	31.49	-4.38	21.83
Large Blend Median	7.93	-18.15	7.10	8.52	11.57	26.68	17.18	29.77	-5.65	21.13
Rank (%)	58	49	30	18	10	20	34	21	22	32
Population	1,203	1,174	1,131	1,091	971	1,188	1,220	1,264	1,297	1,357

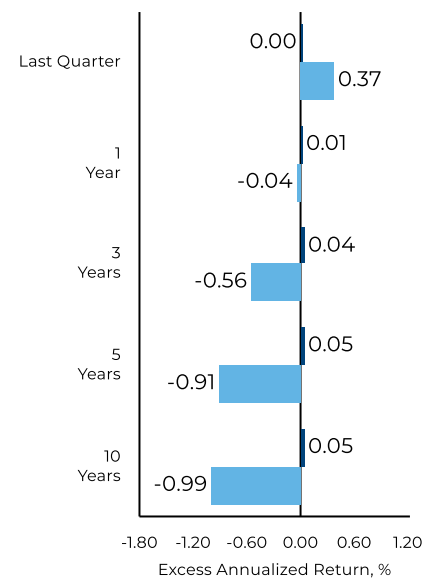
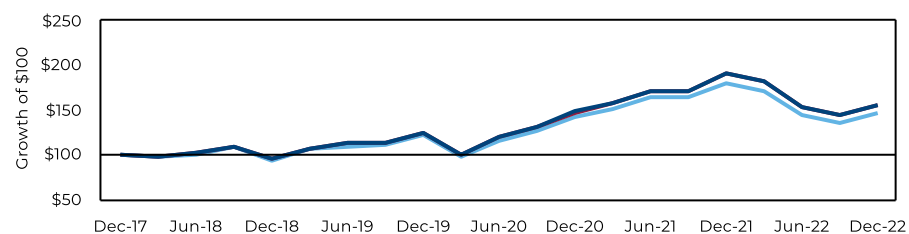
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
BlackRock Equity Index F	0.51	0.04	1.00	1.00	100.09	99.95	1.75
S&P 500 Index	0.51	0.00	1.00	1.00	100.00	100.00	-
Large Blend Median	0.47	-0.67	1.00	0.98	97.24	100.15	-0.38

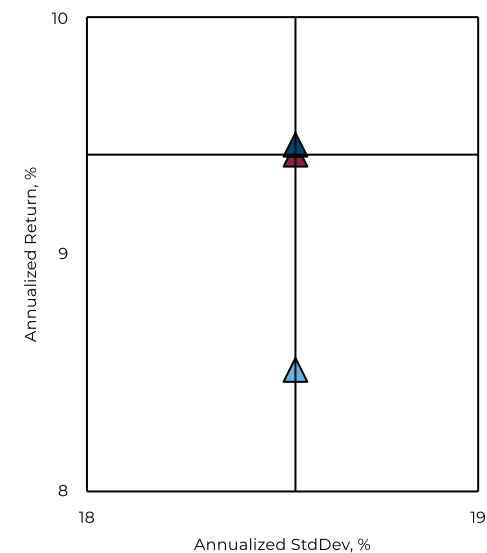
Rolling 3 Year Annualized Excess Return



5 Year Cumulative Performance



Performance vs Risk 5 Year



BlackRock Equity Index F
Large Blend Median

BlackRock Equity Index F
S&P 500 Index
Large Blend Median

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BLACKROCK EXTENDED EQUITY MARKET F

Period Ending 12.31.22 | Q4 22

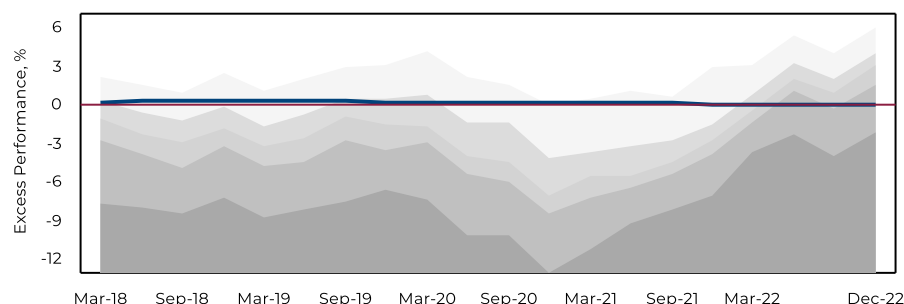
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
BlackRock Extended Equity Market F	5.17	-26.36	3.05	4.98	9.71	12.45	32.16	28.23	-9.15	18.26
Dow Jones U.S. Completion Total Stock Market Indx	5.07	-26.54	2.94	4.76	9.49	12.35	32.16	27.94	-9.57	18.12
Mid-Cap Blend Median	9.25	-15.19	6.08	6.19	9.91	24.16	12.93	26.87	-11.30	15.82
Rank (%)	95	98	88	74	54	97	2	41	26	28
Population	357	351	341	325	265	352	364	386	401	411

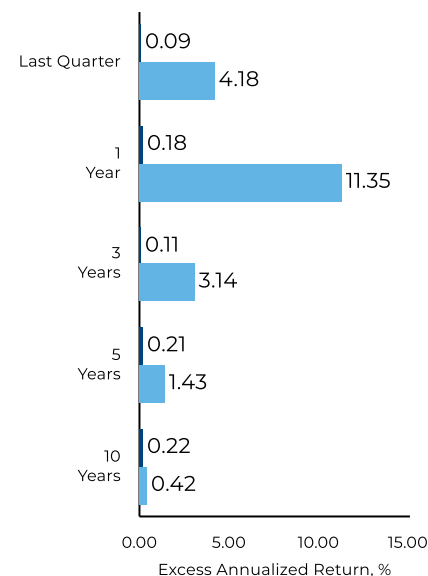
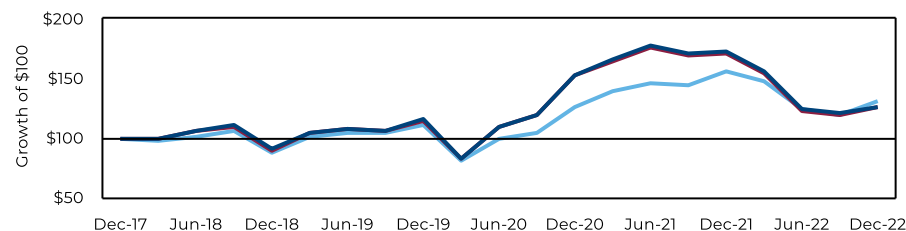
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
BlackRock Extended Equity Market F	0.27	0.20	1.00	1.00	100.46	99.83	1.70
Dow Jones U.S. Completion Total Stock Market Indx	0.26	0.00	1.00	1.00	100.00	100.00	-
Mid-Cap Blend Median	0.33	1.89	0.84	0.90	85.91	81.27	0.11

Rolling 3 Year Annualized Excess Return

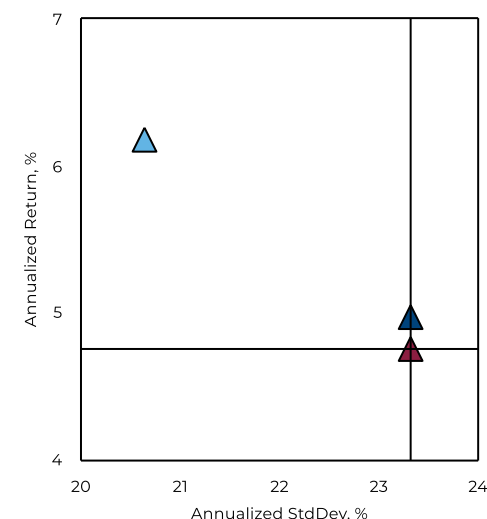


5 Year Cumulative Performance



BlackRock Extended Equity Market F
Mid-Cap Blend Median

Performance vs Risk 5 Year



BlackRock Extended Equity Market F
Mid-Cap Blend Median
Dow Jones U.S. Completion Total Stock Market Indx

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DELAWARE SMID CAP GROWTH R6

Period Ending 12.31.22 | Q4 22

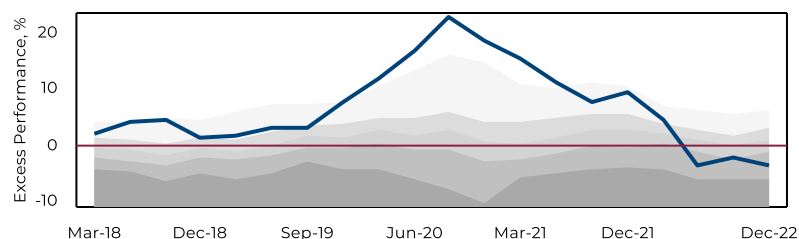
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
Delaware Smid Cap Growth R6	-2.29	-45.28	-0.74	5.93	10.39	-8.12	94.51	35.77	0.44	35.61
Russell 2500 Growth Index	4.72	-26.21	2.88	5.97	10.62	5.04	40.47	32.65	-7.47	24.46
Mid-Cap Growth Median	5.32	-28.34	3.85	7.27	10.62	11.92	35.93	33.40	-5.53	24.83
Rank (%)	97	97	87	71	57	97	4	33	11	4
Population	551	551	528	511	484	566	575	588	599	621

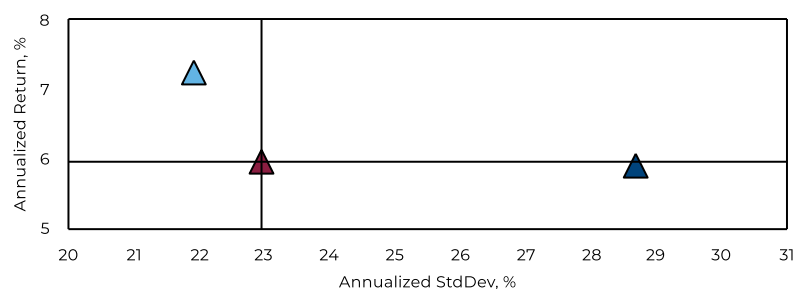
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
Delaware Smid Cap Growth R6	0.30	0.13	1.16	0.85	118.32	118.72	0.13
Russell 2500 Growth Index	0.31	0.00	1.00	1.00	100.00	100.00	-
Mid-Cap Growth Median	0.38	1.76	0.92	0.92	93.73	88.55	0.14

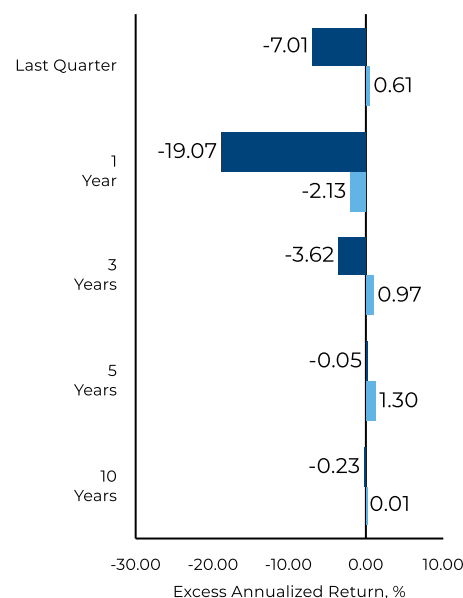
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ Delaware Smid Cap Growth R6 ▲ Mid-Cap Growth Median ▲ Russell 2500 Growth Index



INVESTMENT PROFILE

Ticker	DFZRX
Portfolio Manager	Brown,N/Halverson, B/Scott,K
Portfolio Assets	\$92 Million
PM Tenure	
Net Expense(%)	0.71 %
Fund Inception	2016
Category Expense Median	1.03
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	51.93 %
Number of Holdings	33
Turnover	81.00 %
Avg. Market Cap	\$9,075 Million
Dividend Yield	0.01 %

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BLACKROCK MSCI ACWI ESG FOCUS INDEX F

Period Ending 12.31.22 | Q4 22

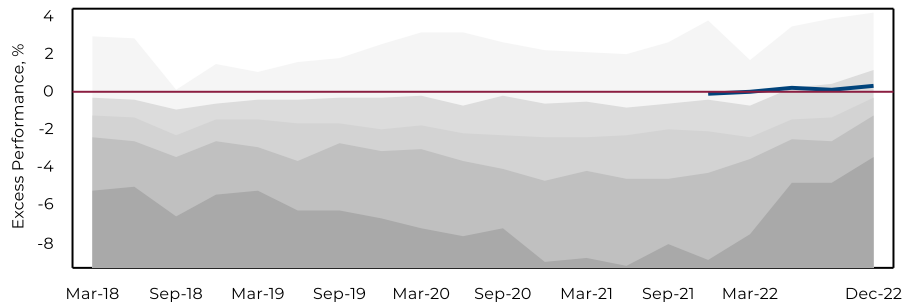
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
BlackRock MSCI ACWI ESG Focus Index F	9.89	-19.13	4.39	-	-	18.22	18.99	26.87	-	-
MSCI AC World ESG Focus Index (Net)	9.45	-19.54	4.11	5.60	8.50	18.31	18.55	27.44	-8.69	24.57
Global Large-Stock Blend Median	11.05	-17.43	3.82	5.02	8.00	18.08	14.15	26.06	-9.99	23.10
Rank (%)	76	76	38	-	-	48	16	39	-	-
Population	342	335	321	301	228	351	347	337	327	312

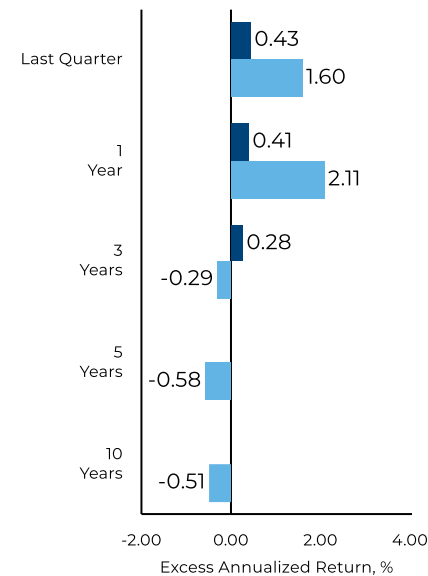
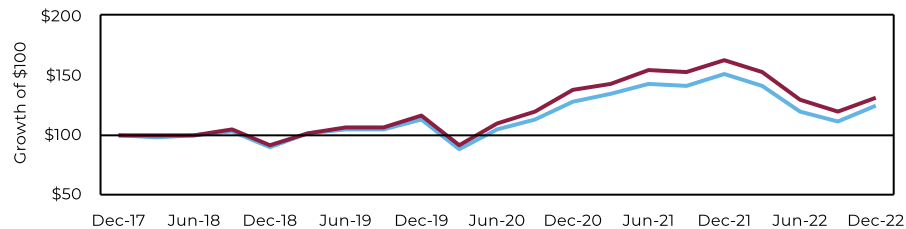
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
BlackRock MSCI ACWI ESG Focus Index F	-	-	-	-	-	-	-
MSCI AC World ESG Focus Index (Net)	0.33	0.00	1.00	1.00	100.00	100.00	-
Global Large-Stock Blend Median	0.30	-0.30	0.98	0.96	94.82	97.78	-0.16

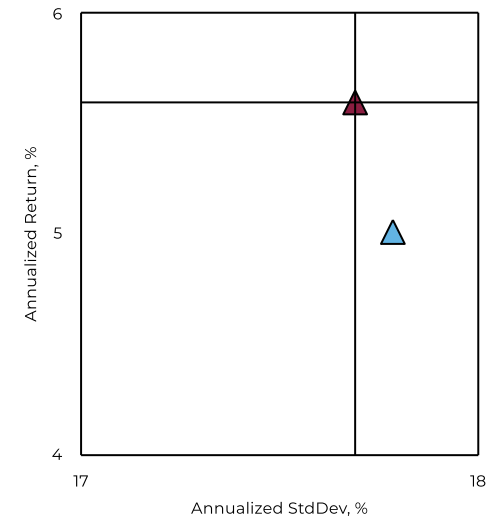
Rolling 3 Year Annualized Excess Return



5 Year Cumulative Performance



Performance vs Risk 5 Year



BlackRock MSCI ACWI ESG Focus Index F

Global Large-Stock Blend Median

BlackRock MSCI ACWI ESG Focus Index F

Global Large-Stock Blend Median

MSCI AC World ESG Focus Index (Net)

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COLUMBIA OVERSEAS VALUE INST3

Period Ending 12.31.22 | Q4 22

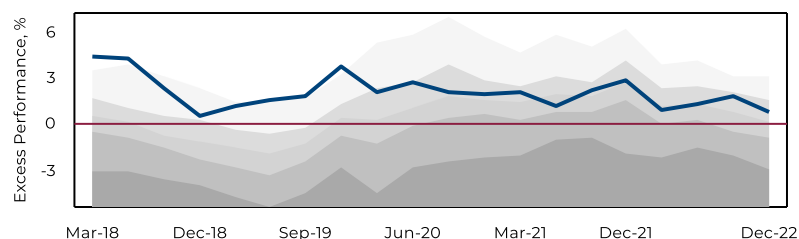
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
Columbia Overseas Value Inst3	18.66	-5.88	1.44	1.36	5.39	10.97	-0.06	22.61	-16.38	30.24
MSCI EAFE Value Index (Net)	19.64	-5.58	0.65	0.17	3.51	10.89	-2.63	16.09	-14.78	21.44
Foreign Large Value Median	18.71	-10.36	0.86	0.39	3.66	11.78	2.65	18.23	-16.50	22.90
Rank (%)	51	17	39	20	5	58	73	13	49	1
Population	326	321	293	278	243	322	336	349	344	365

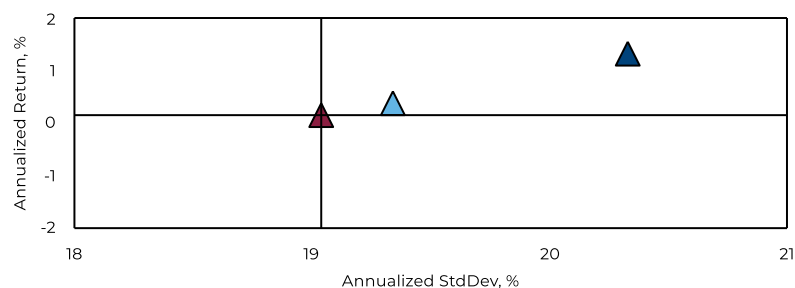
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
Columbia Overseas Value Inst3	0.11	1.37	1.05	0.96	109.50	104.23	0.35
MSCI EAFE Value Index (Net)	0.04	0.00	1.00	1.00	100.00	100.00	-
Foreign Large Value Median	0.05	0.28	0.99	0.93	100.17	98.79	0.05

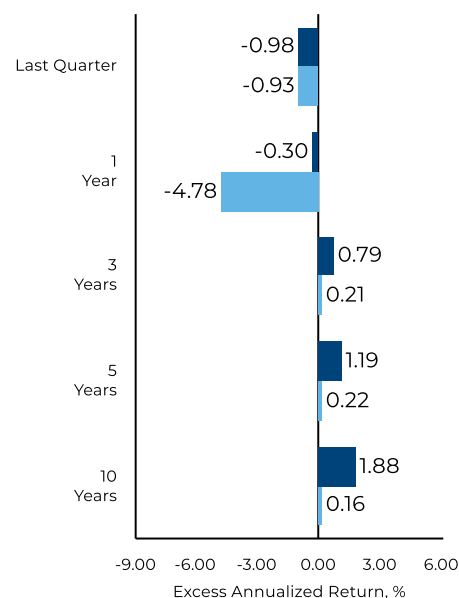
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ Columbia Overseas Value Inst3 ▲ Foreign Large Value Median ▲ MSCI EAFE Value Index (Net)



INVESTMENT PROFILE

Ticker	COSYX
Portfolio Manager	Copper,F/Nomoto,D
Portfolio Assets	\$675 Million
PM Tenure	
Net Expense(%)	0.77 %
Fund Inception	2015
Category Expense Median	0.95
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	26.71 %
Number of Holdings	125
Turnover	43.00 %
Avg. Market Cap	\$19,754 Million
Dividend Yield	5.09 %

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COLUMBIA TRUST OVERSEAS VALUE

Period Ending 12.31.22 | Q4 22

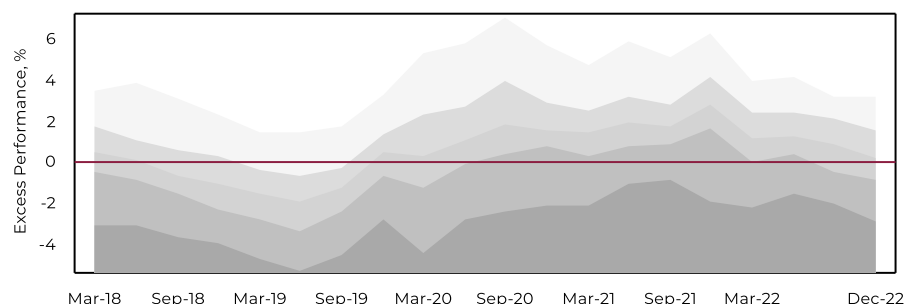
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
Columbia Trust Overseas Value	18.80	-5.01	-	-	-	11.05	-	-	-	-
MSCI EAFE Value Index (Net)	19.64	-5.58	0.65	0.17	3.51	10.89	-2.63	16.09	-14.78	21.44
Foreign Large Value Median	18.71	-10.36	0.86	0.39	3.66	11.78	2.65	18.23	-16.50	22.90
Rank (%)	49	11	-	-	-	56	-	-	-	-
Population	326	321	293	278	243	322	336	349	344	365

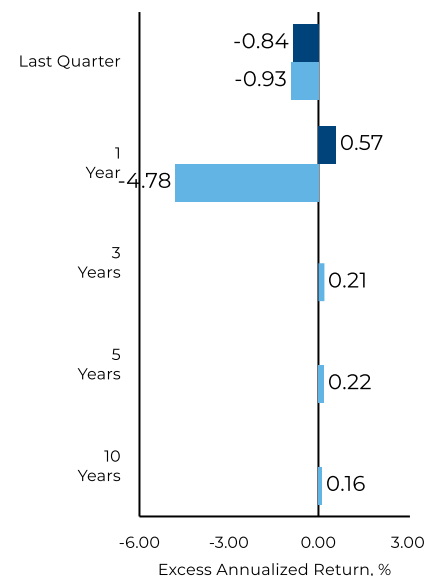
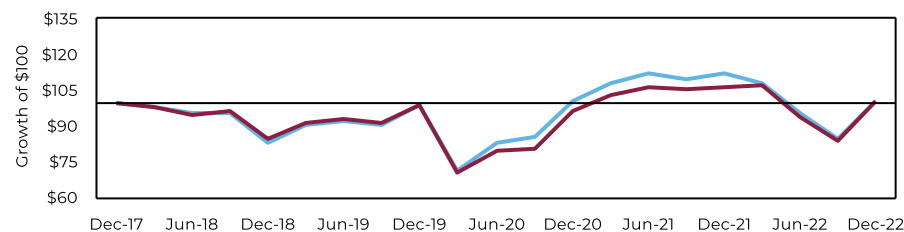
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
Columbia Trust Overseas Value	-	-	-	-	-	-	-
MSCI EAFE Value Index (Net)	0.04	0.00	1.00	1.00	100.00	100.00	-
Foreign Large Value Median	0.05	0.28	0.99	0.93	100.17	98.79	0.05

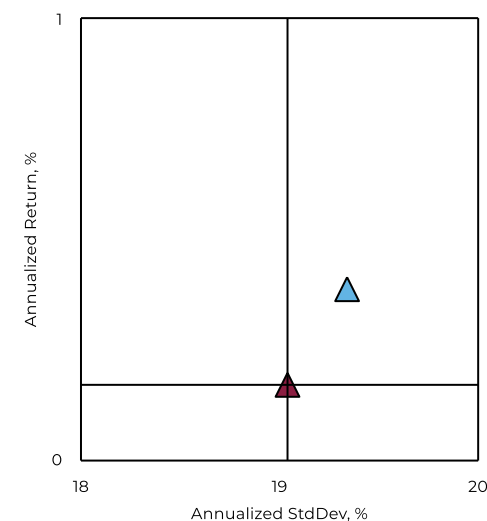
Rolling 3 Year Annualized Excess Return



5 Year Cumulative Performance



Performance vs Risk 5 Year



■ Columbia Trust Overseas Value
■ Foreign Large Value Median

▲ Columbia Trust Overseas Value
▲ Foreign Large Value Median
▲ MSCI EAFE Value Index (Net)

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<https://www.captrust.com/important-disclosures/>.



STATE ST GBL ALLCP EQ EX-US IDX SL CL II

Period Ending 12.31.22 | Q4 22

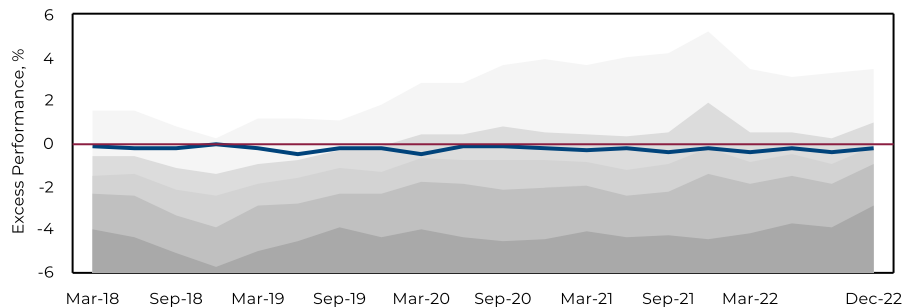
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
State St Gbl AllCp Eq ex-US Idx SL Cl II	14.70	-16.29	0.45	1.11	4.18	8.74	11.36	22.04	-14.57	28.18
MSCI AC World ex USA IMI	14.23	-16.15	0.65	1.32	4.46	8.99	11.59	22.24	-14.35	28.38
Foreign Large Blend Median	16.86	-15.92	0.60	1.18	4.23	10.07	9.73	22.04	-15.23	25.51
Rank (%)	80	56	54	53	52	63	40	50	41	22
Population	694	678	661	620	526	711	747	755	751	796

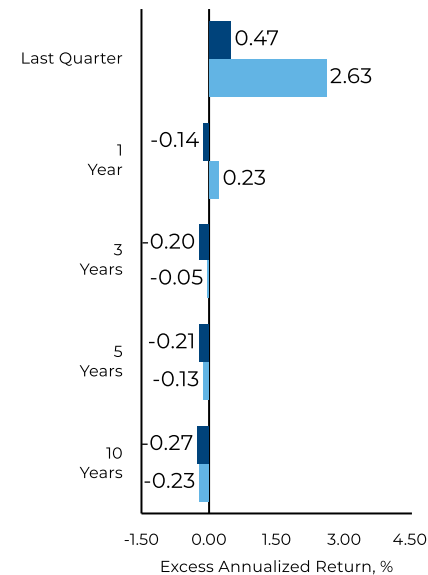
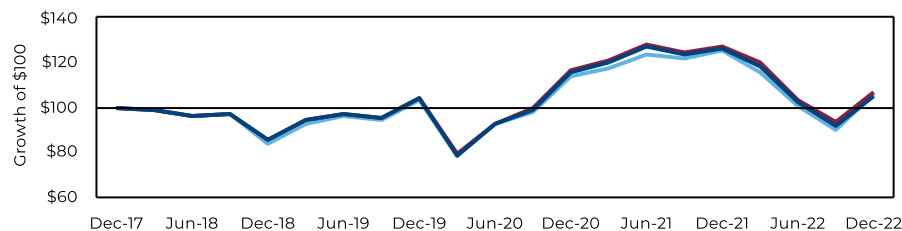
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
State St Gbl AllCp Eq ex-US Idx SL Cl II	0.08	-0.19	1.02	0.99	101.99	102.84	-0.08
MSCI AC World ex USA IMI	0.09	0.00	1.00	1.00	100.00	100.00	-
Foreign Large Blend Median	0.09	-0.05	1.01	0.95	102.27	103.07	-0.01

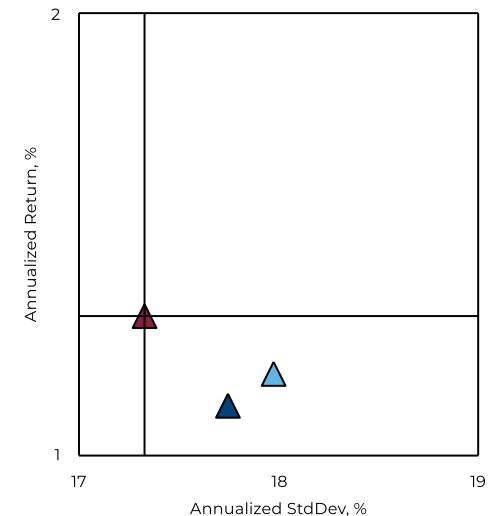
Rolling 3 Year Annualized Excess Return



5 Year Cumulative Performance



Performance vs Risk 5 Year



State St Gbl AllCp Eq ex-US Idx SL Cl II
Foreign Large Blend Median

State St Gbl AllCp Eq ex-US Idx SL Cl II
Foreign Large Blend Median
MSCI AC World ex USA IMI

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VANGUARD INTERNATIONAL GROWTH ADM

Period Ending 12.31.22 | Q4 22

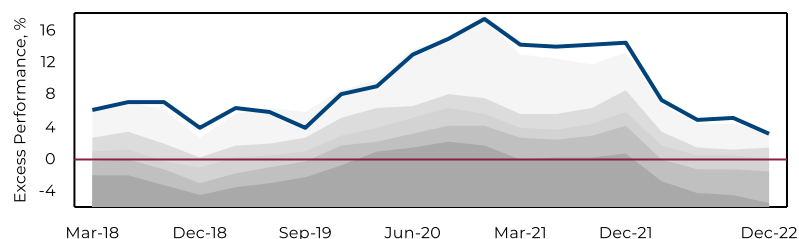
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
Vanguard International Growth Adm	12.62	-30.79	3.14	4.75	7.84	-0.74	59.74	31.48	-12.58	43.16
MSCI AC World ex USA (Net)	14.28	-16.00	0.07	0.88	3.80	7.82	10.65	21.51	-14.20	27.19
Foreign Large Growth Median	13.78	-25.05	0.13	1.80	4.93	8.66	22.29	27.95	-14.46	30.94
Rank (%)	71	82	8	9	5	89	2	22	34	7
Population	430	426	395	380	323	434	425	430	443	456

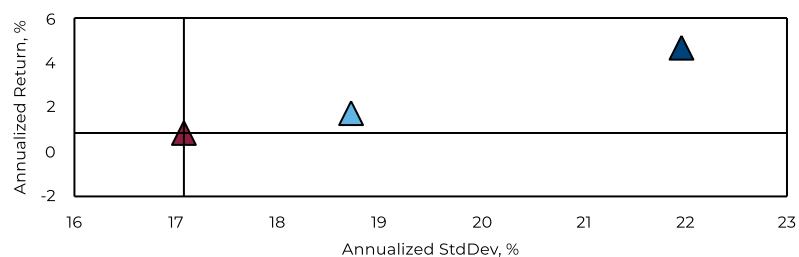
KEY MEASURES/5 YEAR

	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
Vanguard International Growth Adm	0.26	4.41	1.16	0.81	127.96	109.50	0.47
MSCI AC World ex USA (Net)	0.06	0.00	1.00	1.00	100.00	100.00	-
Foreign Large Growth Median	0.12	1.20	1.02	0.86	107.95	102.28	0.18

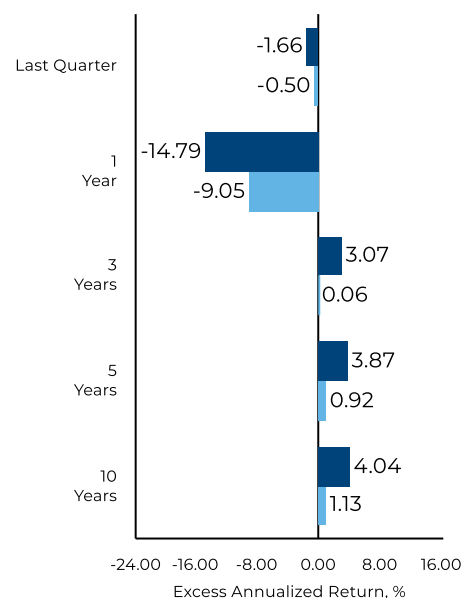
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



▲ Vanguard International Growth Adm ▲ Foreign Large Growth Median
▲ MSCI AC World ex USA (Net)



INVESTMENT PROFILE

Ticker	VWILX
Portfolio Manager	Team Managed
Portfolio Assets	\$32,549 Million
PM Tenure	13 Years
Net Expense(%)	0.32 %
Fund Inception	2001
Category Expense Median	0.99
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	33.04 %
Number of Holdings	165
Turnover	15.00 %
Avg. Market Cap	\$48,088 Million
Dividend Yield	1.84 %

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VANGUARD REAL ESTATE INDEX INSTITUTIONAL

Period Ending 12.31.22 | Q4 22

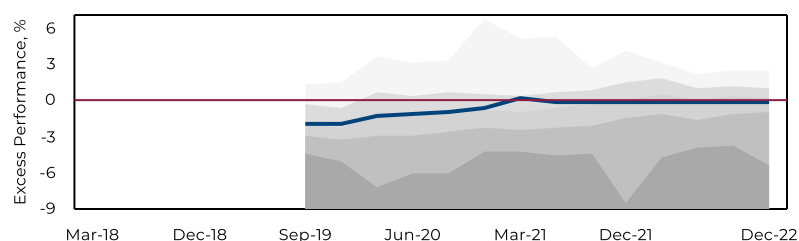
TRAILING AND CALENDAR RETURNS

	Last Quarter	1 Year	3 Years	5 Years	10 Years	2021	2020	2019	2018	2017
Vanguard Real Estate Index Institutional	4.36	-26.17	-0.39	3.71	6.45	40.41	-4.67	29.02	-5.93	4.93
MSCI U.S. IMI Real Estate 25/50 Index	4.35	-26.12	-0.29	4.06	-	40.56	-4.55	29.03	-4.59	9.05
Real Estate Median	3.87	-26.33	-0.04	3.72	6.24	41.45	-4.43	27.87	-5.92	5.37
Rank (%)	24	47	61	53	39	64	53	37	51	60
Population	221	221	217	212	189	229	233	251	249	264

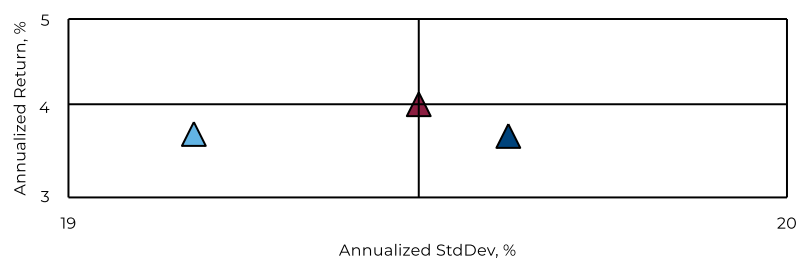
KEY MEASURES/5 YEAR




	Sharpe Ratio	Alpha	Beta	R-Squared	Up Capture	Down Capture	Information Ratio
Vanguard Real Estate Index Institutional	0.22	-0.35	1.01	1.00	100.45	101.92	-0.41
MSCI U.S. IMI Real Estate 25/50 Index	0.24	0.00	1.00	1.00	100.00	100.00	-
Real Estate Median	0.22	-0.17	0.97	0.98	97.51	98.99	-0.11

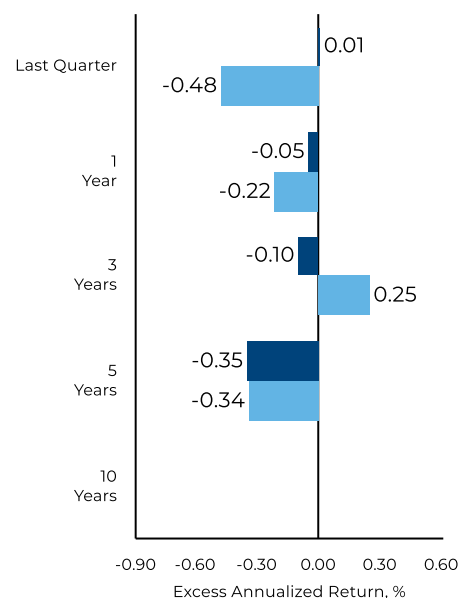
Rolling 3 Year Annualized Excess Return



Performance vs Risk 5 Year



 Vanguard Real Estate Index Institutional
  Real Estate Median
  MSCI U.S. IMI Real Estate 25/50 Index



INVESTMENT PROFILE

Ticker	VGSNX
Portfolio Manager	Nejman,W/O'Reilly,G
Portfolio Assets	\$9,908 Million
PM Tenure	
Net Expense(%)	0.10 %
Fund Inception	2003
Category Expense Median	1.00
Subadvisor	-

HOLDINGS OVERVIEW

% Assets in Top 10 Holdings	46.90 %
Number of Holdings	171
Turnover	7.00 %
Avg. Market Cap	\$21,106 Million
Dividend Yield	3.67 %

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APPENDIX	
Glossary of Terms.....	
Evaluation Methodology.....	



GLOSSARY

Period Ending 12.31.22 | Q4 22

ALPHA

Alpha measures a manager's rate of return in excess of that which can be explained by its systematic risk, or Beta. It is a result of regressing a manager's returns against those of a benchmark index. A positive alpha implies that a manager has added value relative to its benchmark on a risk-adjusted basis.

BATTING AVERAGE

Batting Average, an indicator of consistency, measures the percentage of time an active manager outperformed the benchmark.

BETA

Beta measures a manager's sensitivity to systematic, or market risk. Beta is a result of the analysis regressing a manager's returns against those of a benchmark Index. A manager with a Beta of 1 should move perfectly with a benchmark. A Beta of less than 1 implies that a manager's returns are less volatile than the market's (i.e., selected benchmarks). A Beta of greater than 1 implies that a manager exhibits greater volatility than the market (i.e., selected benchmark).

CAPTURE RATIO

Up Market Capture is the average return of a manager relative to a benchmark index using only periods where the benchmark return was positive. Down Market Capture is the average return of a manager relative to a benchmark index using only periods where the benchmark return was negative. An Up Market Capture of greater than 100% and a Down Market Capture of less than 100% is considered desirable.

INFORMATION RATIO

The Information Ratio measures a manager's excess return over the passive index divided by the volatility of that excess return, or Tracking Error. To obtain a higher Information Ratio, which is preferable, a manager must demonstrate the ability to generate returns above its benchmark while avoiding large performance swings relative to that same benchmark.

PERCENTILE RANK

Percentile Rankings are based on a manager's performance relative to all other available funds in its universe. Percentiles range from 1, being the best, to 100 being the worst. A ranking in the 50th percentile or above demonstrates that the manager has performed better on a relative basis than at least 50% of its peers.

RISK-ADJUSTED PERFORMANCE

Risk-adjusted Performance, or RAP, measures the level of return that an investment option would generate given a level of risk equivalent to the benchmark index.

R-SQUARED

R-squared measures the portion of a manager's movements that are explained by movements in a benchmark index. R-squared values range from 0 to 100. An R-squared of 100 means that all movements of a manager are completely explained by movements in the index. This measurement is identified as the coefficient of determination from a regression equation. A high R-squared value supports the validity of the Alpha and Beta measures, and it can be used as a measure of style consistency.

SHARPE RATIO

Sharpe ratio measures a manager's return per unit of risk, or standard deviation. It is the ratio of a manager's excess return above the risk-free rate divided by a manager's standard deviation. A higher sharpe ratio implies greater manager efficiency.

STANDARD DEVIATION

Standard Deviation is a measure of the extent to which observations in a series vary from the arithmetic mean of the series. This measure of volatility or risk allows the estimation of a range of values for a manager's returns. The wider the range, the more uncertainty, and, therefore, the riskier a manager is assumed to be.


TRACKING ERROR

Tracking Error is the standard deviation of the portfolio's residual (i.e. excess) returns. The lower the tracking error, the closer the portfolio returns have been to its risk index. Aggressively managed portfolios would be expected to have higher tracking errors than portfolios with a more conservative investment style.

TREYNOR RATIO

The Treynor Ratio is a measure of reward per unit of risk. With Treynor, the numerator (i.e. reward) is defined as the annualized excess return of the portfolio versus the risk-free rate. The denominator (i.e. risk) is defined as the portfolio beta. The result is a measure of excess return per unit of portfolio systematic risk. As with Sharpe and Sortino, the Treynor Ratio only has value when it is used as the basis of comparison between portfolios. The higher the Treynor Ratio, the better.



	QUANTITATIVE EVALUATION ITEMS	QUALITATIVE EVALUATION ITEMS
 MARKED FOR REVIEW <p>The following categories of the Investment Policy Monitor appear “Marked For Review” when:</p> <p>CAPTRUST’s Investment Policy Monitoring Methodology</p> <p>The Investment Policy Monitoring Methodology document describes the systems and procedures CAPTRUST uses to monitor and evaluate the investment vehicles in your plan/account on a quarterly basis.</p> <p>Our current Investment Policy Monitoring Methodology document can be accessed through the following link:</p> <p>captrust.com/investmentmonitoring</p>	<p>3/5 Year Risk- adjusted Performance</p> <p>The investment option’s 3 or 5 Year Annualized Risk Adjusted Performance falls below the 50th percentile of the peer group.</p> <p>3/5 Year Performance vs. Peers</p> <p>The investment option’s 3 or 5 Year Annualized Peer Relative Performance falls below the 50th percentile of the peer group.</p> <p>3/5 Year Style</p> <p>The investment option’s 3 or 5 Year R-Squared measure falls below the absolute threshold set per asset class.</p> <p>3/5 Year Confidence</p> <p>The investment option’s 3 or 5 Year Confidence Rating falls below the 50th percentile of the peer group.</p> <p>Glidepath Assessment</p> <p>% of Equity Exposure: The combined percentage of an investment option’s equity exposure ranks in the top 20th percentile or bottom 20th percentile of the peer group.</p> <p>Regression to the Benchmark: The investment option’s sensitivity to market risk - as measured by beta relative to a Global Equity Index - is above 0.89.</p>	<p>Fund Management</p> <p>A significant disruption to the investment option’s management team has been discovered.</p> <p>Fund Family</p> <p>A significant disruption to the investment option’s parent company has been discovered.</p> <p>Portfolio Construction</p> <p>The investment option’s combined Portfolio Construction score is 6 or below out of a possible 15 points.</p> <p>Underlying Investment Vehicles</p> <p>The investment option’s combined Underlying Investment Vehicles score is 6 or below out of a possible 15 points.</p>

March 9, 2023

Lifetime Income Strategy Education Session



Howard Li, Senior Research Analyst, Multi-Asset Solutions, AllianceBernstein

Andrew Stumacher, Managing Director—Custom Defined Contribution Solutions, AllianceBernstein

Amanda Dunne, Director—North America Client Group, AllianceBernstein

Craig T. Schorr, CFA, CAIA, CFP® Managing Director—North America Client Group, AllianceBernstein

Jared Hardin, Financial Advisor—CAPTRUST

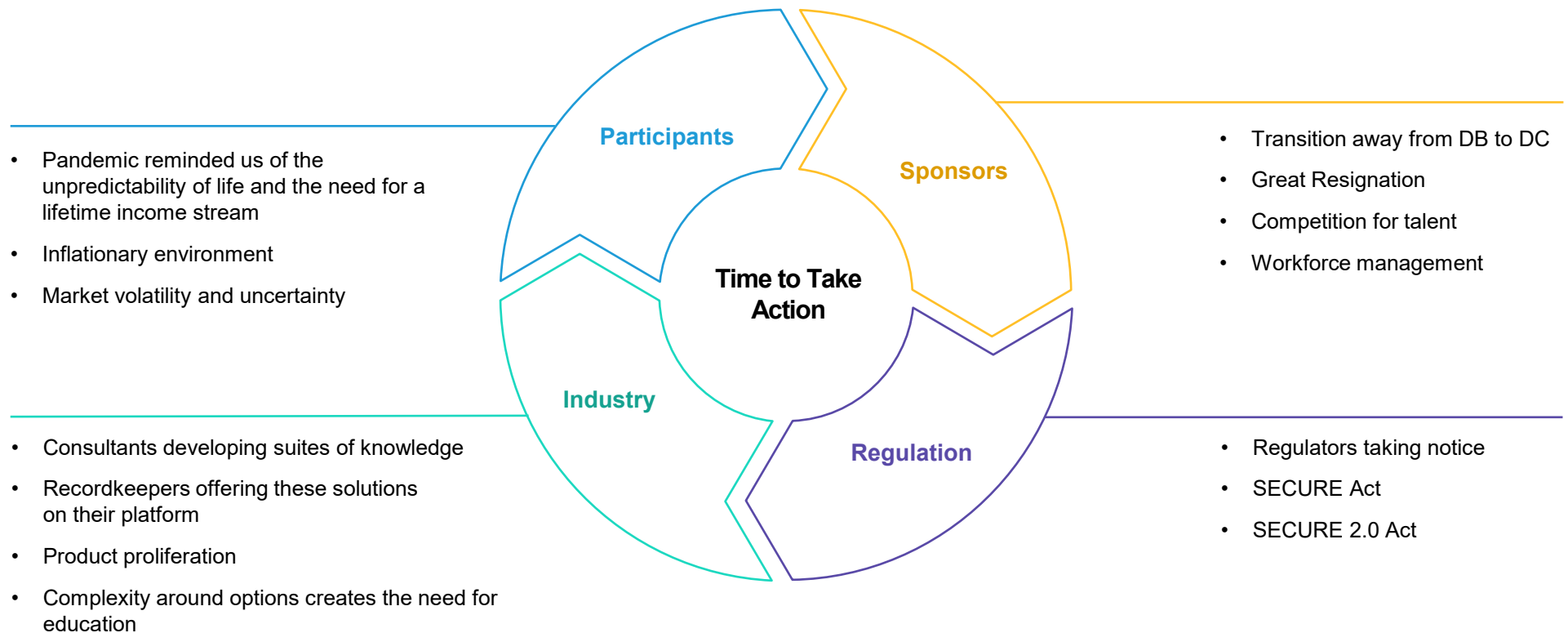
Marcia Peters, Senior Financial Advisor—CAPTRUST

Discussion Agenda

- I. Lifetime Income Strategy Design
- II. SURS Customization
- III. Member Results
- IV. What's Ahead

Lifetime Income Strategy Design

Growing Momentum Behind Retirement Income Solutions



Benefits of Lifetime Income for SURS Plan Members

Needs of SURS 401(a) and 457(b) Plan Members

- + An investment solution that focuses on income replacement rather than wealth accumulation
- + Design flexibility that allows members to take advantage of the lifetime retiree health benefits for the 401(a) plan
- + A solution for members who do not want to be 'hands-on' or self-manage' their accounts
- + Access to their account balance at the date of retirement
- + Reduction of rollovers out of the plan

Key Benefits of AB Lifetime Income Strategy

- + Hands-off default solution leads to higher usage
- + Compatible with health insurance benefits
- + Members always retain control of assets even at retirement (liquid and portable)
- + Beneficiaries receive remaining account balance at death
- + Multi-insurer design allows for more competitive pricing and stability
- + Account balance retains potential for growth
- + Design flexibility, customization, and ongoing enhancements serve various member needs now and in the future

Leveraging 10 Years of Experience for Large Defined Contribution Plans

Highlights



\$8.9B

Lifetime Income
Strategy assets*



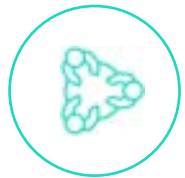
\$3.7B

Secured income benefits*



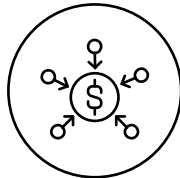
125,000

Participants served



8

Live with **eight** plans across
five client relationships



5

Backed by up to **five**
insurers, including Equitable,
Jackson, Lincoln Financial,
Nationwide, and Prudential



3

Offered on **three** recordkeeping
platforms and growing to five by
end of 2023

*As of December 31, 2022

Investments in the Lifetime Income Strategy are not guaranteed against loss of principal—account values may be more or less than the amount invested, including at retirement date. Investing in the Lifetime Income Strategy does not guarantee sufficient retirement income. Investing in the Lifetime Income Strategy only guarantees the longevity of income in retirement, not that the income will be sufficient.

Key Features of Retirement Income Strategies

	Non-Guaranteed Drawdown Options*	Single Premium Immediate Annuity (SPIA)	Deferred Annuities (DIA, QLAC)	Guaranteed Lifetime Withdrawal Benefit (GLWB)
Income Certainty		✓	✓	✓
Liquidity in Retirement	✓			✓
Growth Potential	✓			✓
Keep Balance Upon Death	✓	Optional	Optional	✓
Insurance Cost/Premium	N/A	100% upfront asset surrender	100% upfront asset surrender	Max 1% per year on insured balance 0% once remaining balance is depleted
Investment Exposure	Stock/Bond	Bonds	Bonds	Stock/Bond

*Refers to managed payout funds, managed accounts, self-directed drawdown of target date funds and systematic withdrawal programs. While each of these functions differently and provides varying levels of success and personalization, the features are essentially the same.

AB Lifetime Income Strategy: Automating Lifetime Income for Members



Save (Age 20–50)

- Age-based custom asset allocation
- Adjustable guaranteed income feature
- Ability to run projected retirement income
- Glide path automatically purchases guaranteed income



Plan (Age 50–65)

- Guaranteed income is built through investment in the AB Secure Income Portfolio (SIP)
- Buying guaranteed income while still working provides guidepost for members
- The Secure Income Portfolio's value will fluctuate with the markets, but income can only go up



Retire (Age 65+)

- Members decide when to start retirement income
- Account balance is always accessible
- Account balance and income may grow over time but income can't go down
- Any remaining balance will go to beneficiaries upon death

Investments in the Lifetime Income Strategy are not guaranteed against loss of principal—account values may be more or less than the amount invested, including at retirement date. Investing in the Lifetime Income Strategy does not guarantee sufficient retirement income. Investing in the Lifetime Income Strategy only guarantees the longevity of income in retirement, not that the income will be sufficient. Guarantees are based on the financial strength and claims-paying ability of each insurance company.

The AB Secure Income Portfolio Design

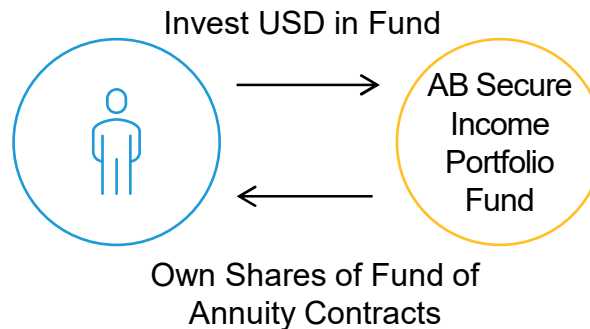
What is the AB Secure Income Portfolio?

The AB Secure Income Portfolio delivers **guaranteed income** to the participant while providing both **liquidity and growth potential**.



What are the key features?

- Daily valued and liquid
- Wrapper of multiple GLWB insurance contracts
- 50/50 passively managed investment exposure
- A fund traded directly with AB



- Ownership of a liquid asset that can grow
- Ownership of secure retirement income



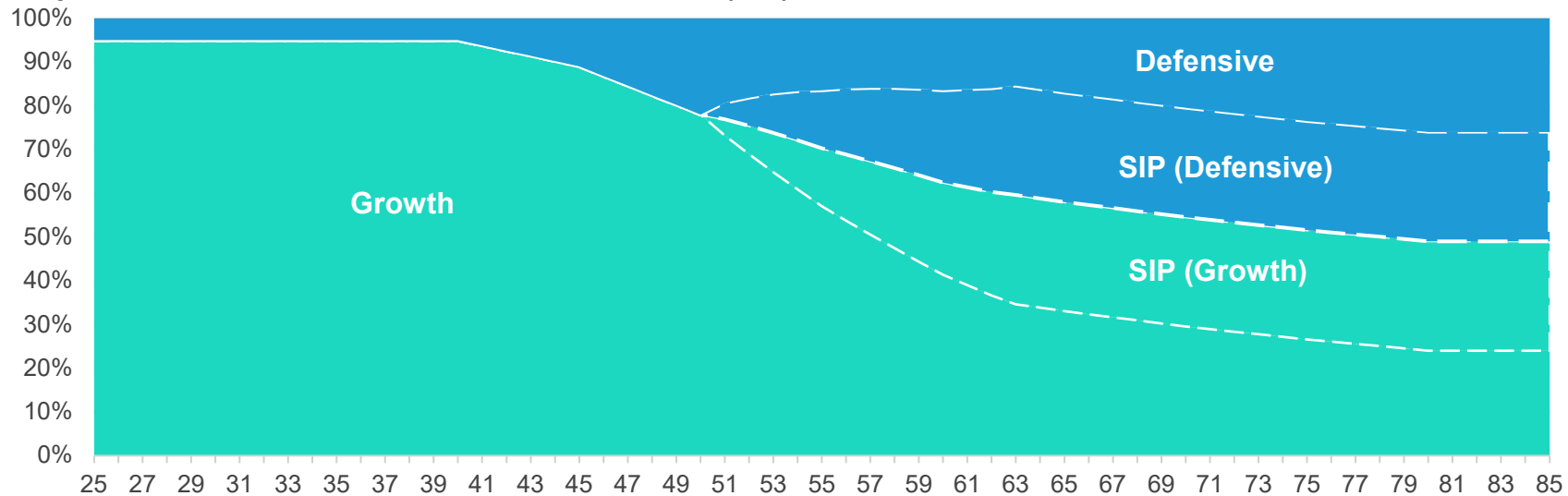
What's included in the Portfolio?

- Multiple insurance contracts
- Competitive insurer rates process
- AB is a 3(38) fiduciary for insurer selection and insurer allocation process

Investments in the Lifetime Income Strategy are not guaranteed against loss of principal—account values may be more or less than the amount invested, including at retirement date. Investing in the Lifetime Income Strategy does not guarantee sufficient retirement income. Investing in the Lifetime Income Strategy only guarantees the longevity of income in retirement, not that the income will be sufficient. Guarantees are based on the financial strength and claims-paying ability of each insurance company.

Default Glide Path with a Secure Income Portfolio Allocation

Sample Default Glide Path with 50% Secure Income (SIP)

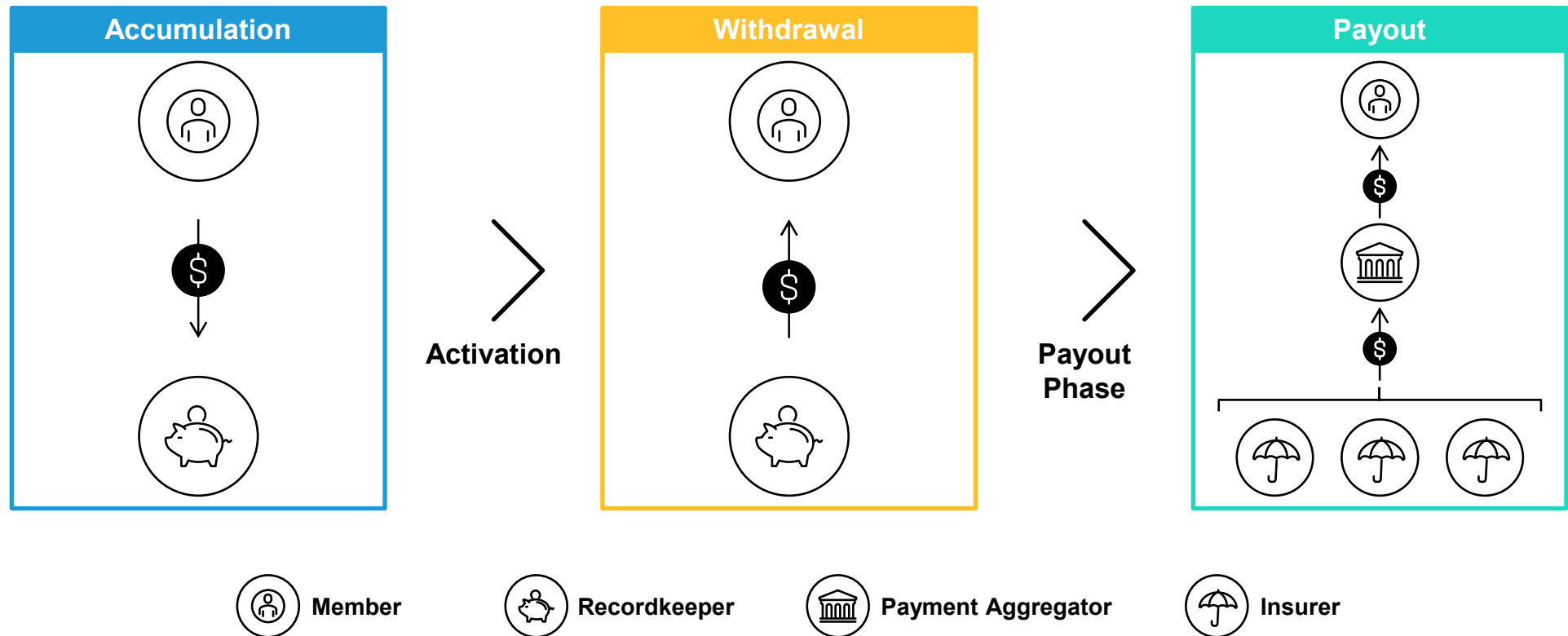


- Secure Income Portfolio allocation within the default allows for a balance of growth potential and downside protection
- Keeps income-producing assets invested in equities
- Maintains higher overall growth exposure than a typical target-date fund

For illustrative purposes only

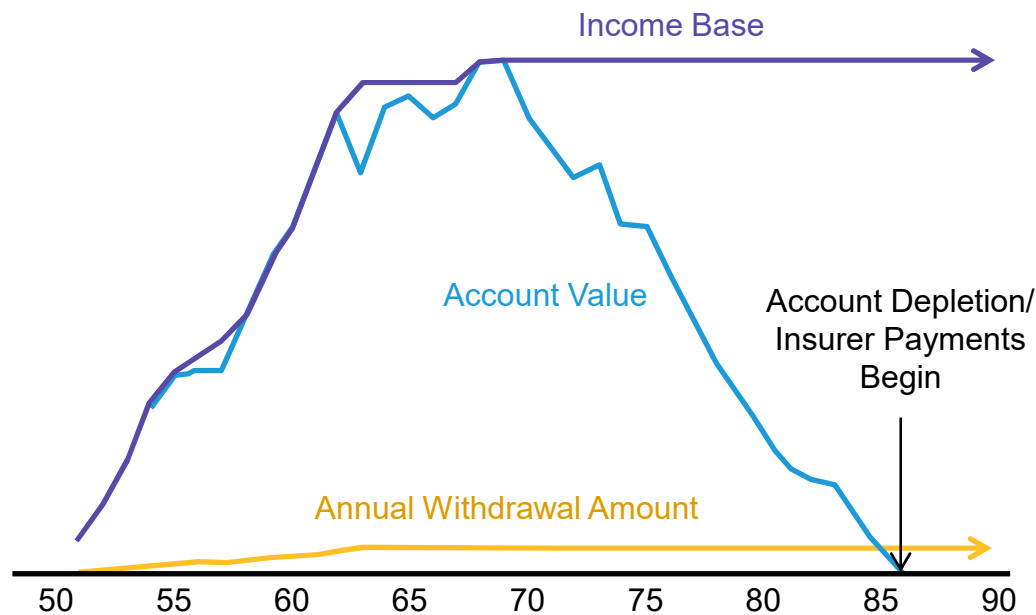
Transitioning Members from Savings to Income

AB orchestrates a smooth process for members throughout their journeys



- Only touchpoint for members is at Activation (i.e., when do you want to start receiving income?)

Creating an Income Base Highwater Mark to Protect Members' Income



Account Value

- Current market value of holdings
- Always accessible without surrender fees
- Balance paid to beneficiaries upon death
- Will increase if net performance > withdrawal percent

Annual Withdrawal Amount

- A dollar value equal to a percent of Income Base that can be withdrawn annually from account value
- Can increase if Income Base increases on member's birthday
- Insurers pay benefit if account value runs out

Income Base

- Determines annual withdrawal amount
- Increases with every contribution or transfer
- Will not decrease due to market performance
- Can increase if Account Value is higher than current Income Base on member's birthday

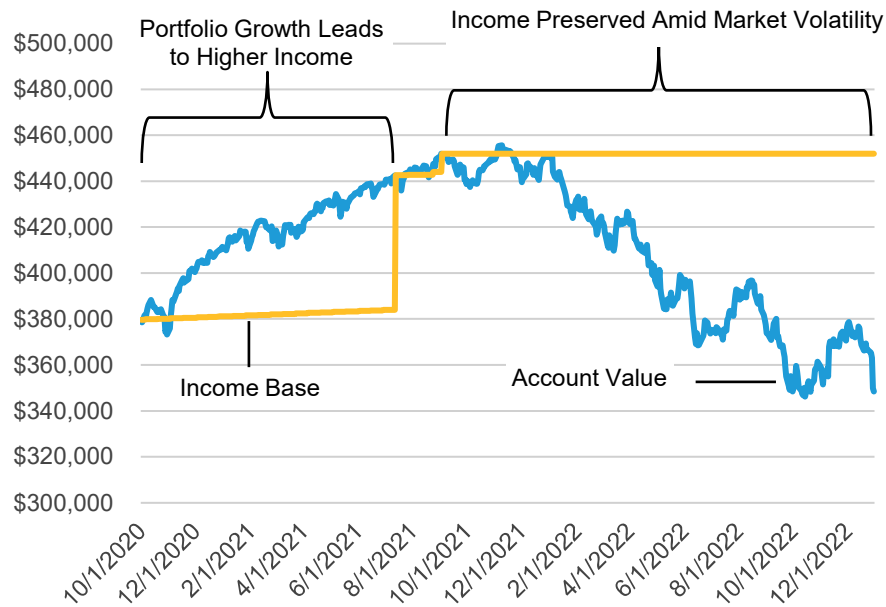
The Income Base Eliminates Market Risk While the Insurance Protects Against Longevity Risk

Illustration is hypothetical example to demonstrate features of a lifetime income strategy

Benefits of the Lifetime Income Strategy for the Retiree Since Inception

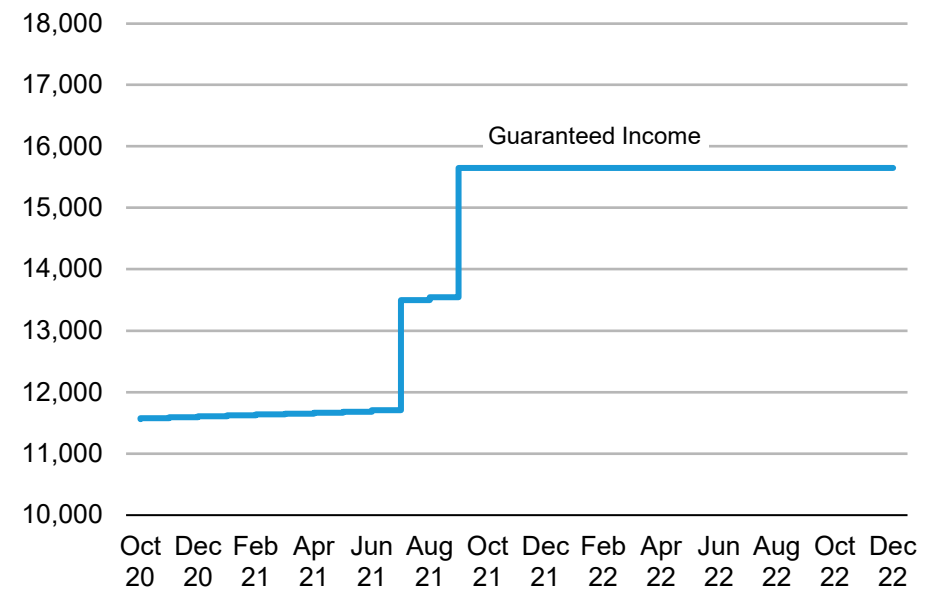
Account Value and Income Base

US Dollars



Guaranteed Income

US Dollars



- LIS allows members to participate during periods of market growth such as 2021 and boost both their account balances and lifetime income amounts
- It also protects members in periods such as 2022 where volatile markets reduced account balances but do not impact their lifetime income amounts

Guaranteed Income in Action: Two Examples

		Year 1 (Age 66)	Year 2 (Age 67)	Year 3 (Age 68)	Year 20 (Age 85)
Portfolio Performance Increases Account Value and Withdrawal Amount	Beginning Account Value	\$100,000	\$104,500	\$106,224	\$119,560
	Income Base (High Water Mark)	\$100,000	\$104,500	\$106,224	\$127,430
	Withdrawal Amount (5.0%)	(5,000)	(5,225)	(5,311)	(6,372)
	Portfolio Return (Net)	10.0%	7.0%	5.0%	
	Account Gain (Loss)	9,500	6,949	5,046	
	Ending Account Value	\$104,500	\$106,224	\$105,959	
Portfolio Performance Results in Account Depletion	Beginning Account Value	\$100,000	\$102,600	\$90,647	\$0
	Income Base (High Water Mark)	\$100,000	\$102,600	\$102,600	\$102,600
	Withdrawal Amount (5.0%)	(5,000)	(5,130)	(5,130)	(5,130)
	Portfolio Return (Net)	8.0%	(7.0%)	2.0%	
	Account Gain (Loss)	7,600	(6,823)	1,710	
	Ending Account Value	\$102,600	\$90,647	\$87,227	

For illustrative purposes only.

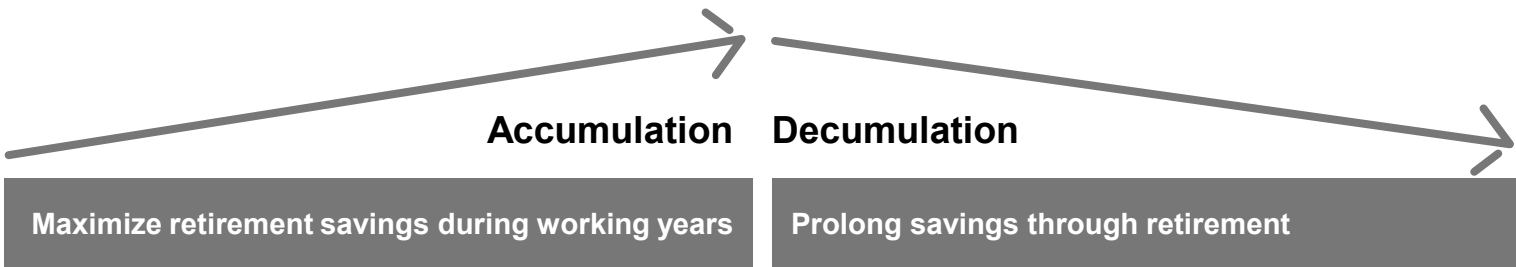
The examples shown do not represent the performance of any AllianceBernstein product.

SURS Customization

AB Target-Date Investment Philosophy

- Glide paths must **balance the major risks** facing members: growth risk, inflation risk, market risk and longevity risk
- Capital market forecasts must **capture the importance of current conditions** and the sequencing of returns to guard against the long-run risks members face
- **Customization enhances outcomes** by incorporating member demographics and plan sponsor philosophy relating to investment alternatives and risk
- Diversifying asset class exposures utilized **should vary by age** in order to best reduce risks specific to that age cohort
- Incorporating **insurance hedges longevity and market risks while permitting increased growth exposure**

Glide Path Design Reflects Needs at Different Life Stages



	Accumulation		Decumulation	
	Maximize retirement savings during working years		Prolong savings through retirement	
	Young Savers (25–45)	Midlife Savers (45–65)	New Retiree (65–80)	Senior Retiree (80+)
Saving Profile	+ Modest savings	+ Substantial savings	+ Highest savings	+ Possible savings depletion
Investment Risks	+ Growth risk	+ Growth risk + Market risk	+ Market risk + Inflation risk + Longevity risk	+ Inflation risk + Longevity risk + Market risk
Investment Objective	+ Maximize savings growth	+ Seek strong growth & reduce volatility over time	+ Well-diversified growth & avoid sharp market decline	+ Preserve purchasing power & minimize risk of loss
Investment Solution	+ Equities	+ High income bonds, REITs	+ Core Bonds, TIPs	+ Short duration bonds/cash
Insured Solution				+ Guaranteed Lifetime Withdrawal Benefits (GLWBs)

AB Capital Market Assumptions Summary

- Capital market forecasts have evolved since the initial design of SURS glidepath
 - Higher expected returns from both stocks and bonds with a narrower equity risk premium
- We plan to evaluate the impact of our market forecasts on SURS glide path in the second half of the year

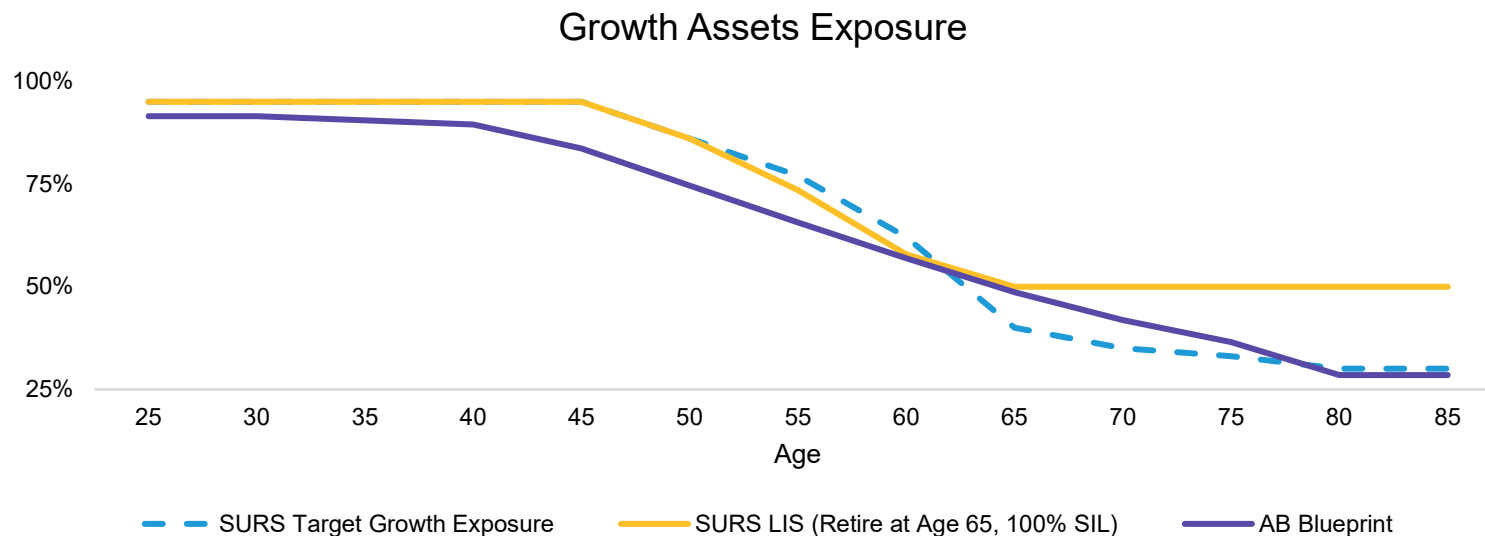
Asset Class	2019:Q2 (initial design)	2022:Q4 (current)
Global Stocks	6.8%	7.3%
Core Bonds	3.1%	4.6%
Inflation	2.8%	2.6%

SURS Demographic Analysis Informs Glide Path Customization

Key Drivers	Illinois SURS Demographics	Impact On Custom Glide Path Design
Retirement Age	Average retirement age 65 similar to population <ul style="list-style-type: none"> • Most retire between age 60-70 • Less than 3% retire before age 55 	No impact on default glide path for retirement age 65 Higher/lower growth exposure in accumulation phase of the custom glidepath for later/earlier target retirement age
Wage Level and Growth	Similar to population	No impact
Deferrals	Higher than population average <ul style="list-style-type: none"> • Modestly higher employee contribution • Robust employer contribution 	Higher growth exposure in accumulation phase
Employment Risk	Lower than population	Higher growth exposure in accumulation phase
Account balance	Under-saved for retirement as for population	Higher growth exposure in accumulation phase
Other Retirement Income	Lower than population	Lower growth exposure in decumulation phase without LIS
Guaranteed Income	With LIS, higher than population	Higher growth exposure in decumulation phase with LIS

SURS Unique Demographics Produce Distinctive Glide Path

- + Custom glide path to feature higher growth exposure in accumulation phase due to
 - Higher contribution rates and lower employment risk
 - Under-saving for retirement
- + Custom glide path to feature lower growth exposure post retirement due to
 - Lack of social security income
 - Declining risk capacity and appetite with aging
- + With insurance, LIS increases growth exposure post retirement



SURS Glide Path Composition

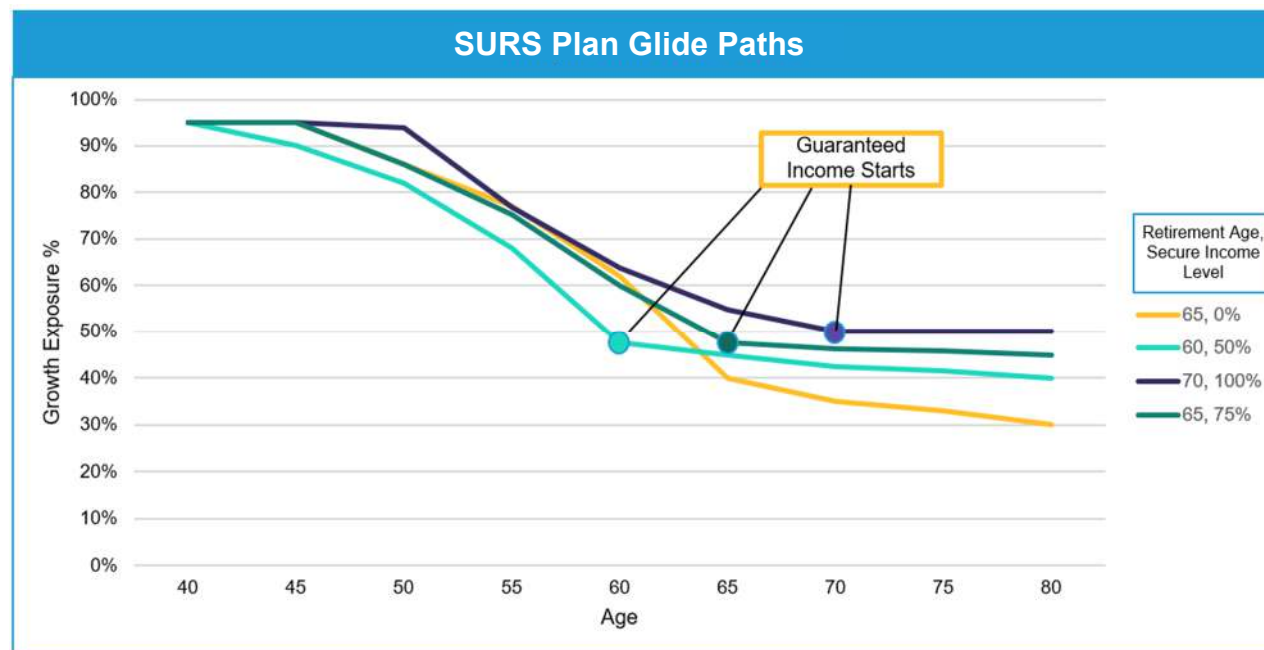
Underlying Investments

Component Portfolio Name	Underlying Fund Name	Allocation (%)
SURS Lifetime Income Strategy Equity Portfolio	State Universities Retirement System Equity Index U/A	49%
	State Universities Retirement System Extended Equity Market U/A	11%
	State Street Global All Cap ex-US Index SL CI II	40%
SURS Lifetime Income Strategy Bond Portfolio	State Street US Bond Index SL CI XIV	65%
	Vanguard Inflation-Protected Securities Institutional	35%
SURS Lifetime Income Strategy Real Asset Portfolio	Vanguard Real Estate Index Institutional	100%
SURS Lifetime Income Strategy Cash Portfolio	Vanguard Federal Money Market Investor	100%
SURS Lifetime Income Strategy Secure Income Portfolio	AB Balanced 50/50 Collective Trust	100%

- AB designed the Component Portfolios as building blocks for the glide paths
- CAPTRUST recommended the Underlying Funds within each Component Portfolio

Member Glide Paths Reflect Personalization

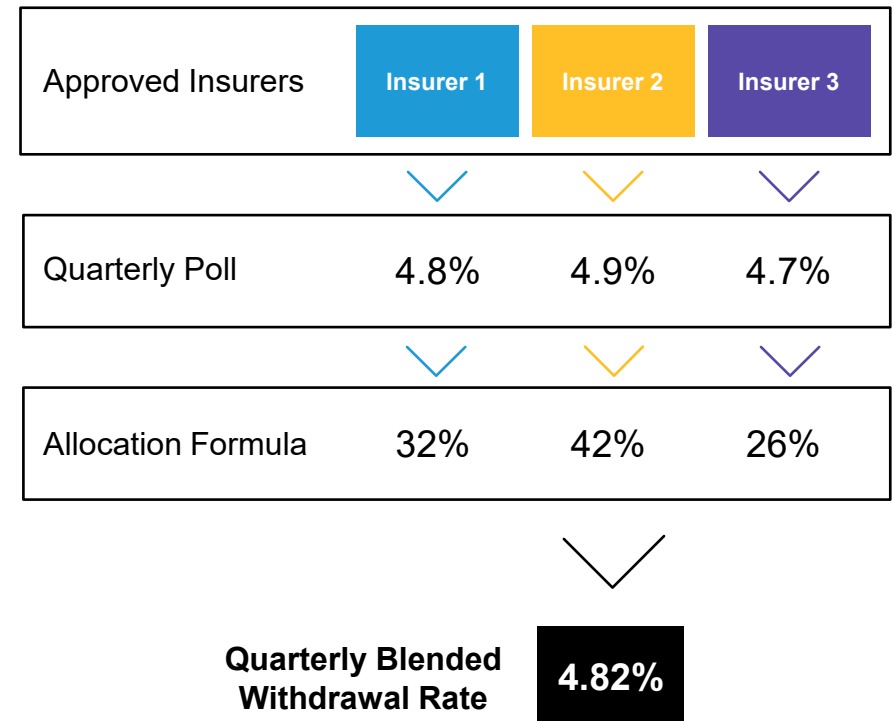
- Members can personalize their asset allocation and income experience through two levers:
 - Target Retirement Age: Ages 50 to 70
 - Secure Income Level %: 0% (non-guaranteed) to 100% (fully guaranteed)
- Resulting glide paths are optimized based on these settings
- Members choose when to begin withdrawing guaranteed income



Selecting and Allocating to Insurers with a Multiple Insurer Design

How withdrawal rates are determined

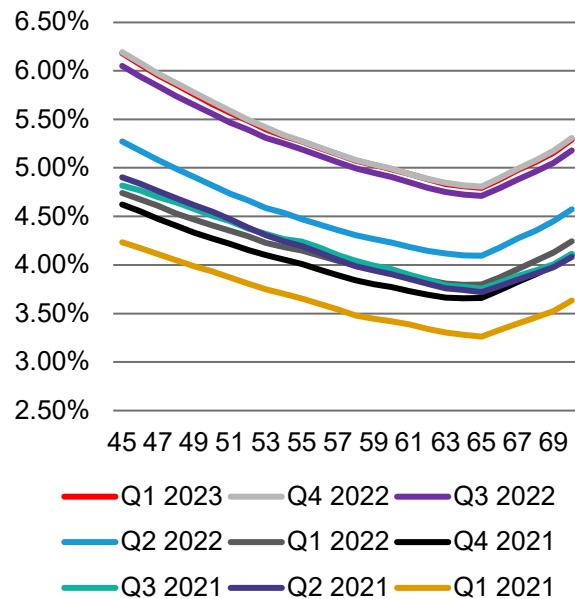
- All participating insurers bid quarterly for new contributions and monthly for transfers
- AB allocates flows based on the submitted rates and targeted overall levels of diversification
- Rewards more competitive bids but all insurers who exceed threshold rate will get an allocation
- Rates are provided by age, anchored around normal retirement age, and increase for younger and older ages
- Previous bids and allocations are independent from new contributions and can't be changed
- A typical participant will have exposure to rates in 60 different quarters
- AB tracks participant benefits and rates by insurer in proprietary shadow recordkeeping system



For illustrative purposes only.

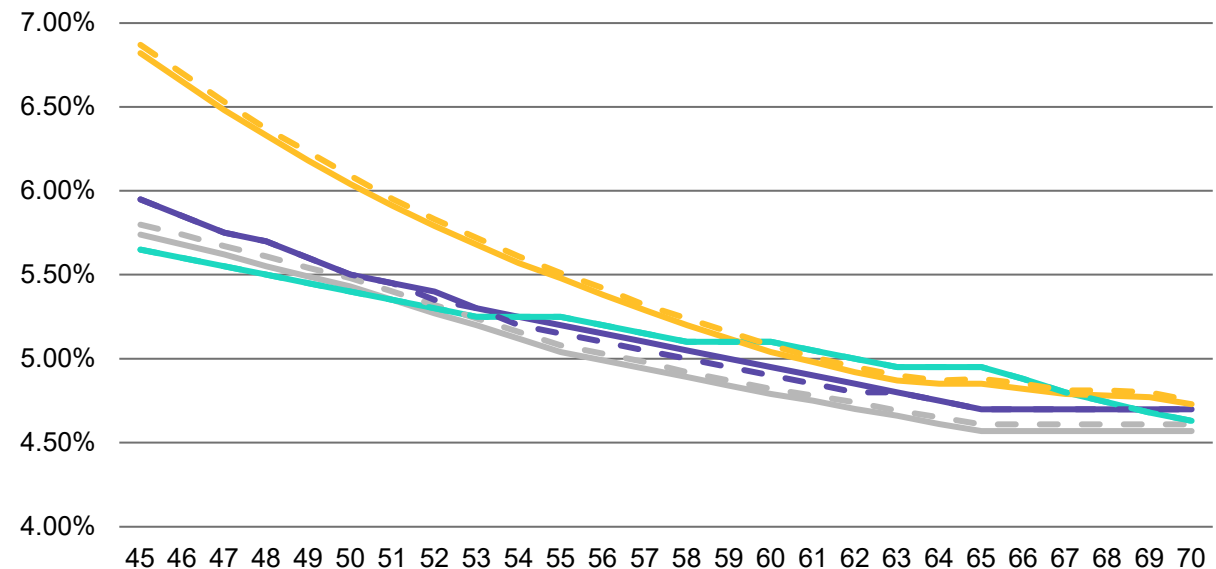
Higher Insurer Rates Recently with Strong Diversification

Blended Rates by Age



- Guaranteed withdrawal rates are up 2.1% on average since inception
- Higher interest rates and increased competition are contributing to stronger current withdrawal rates

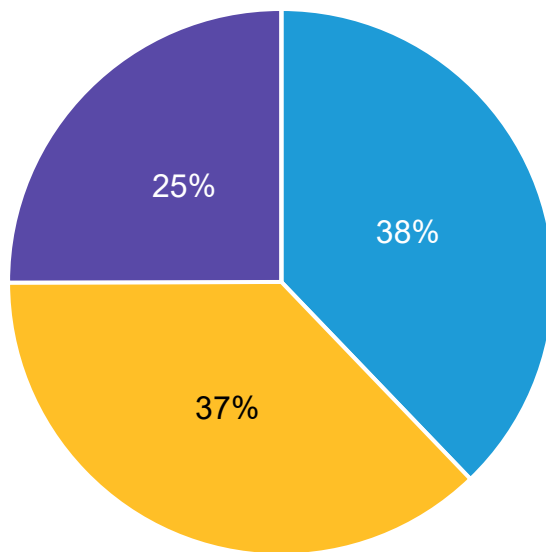
Insurer Rates By Age (Q1 2023 vs Q4 2022)



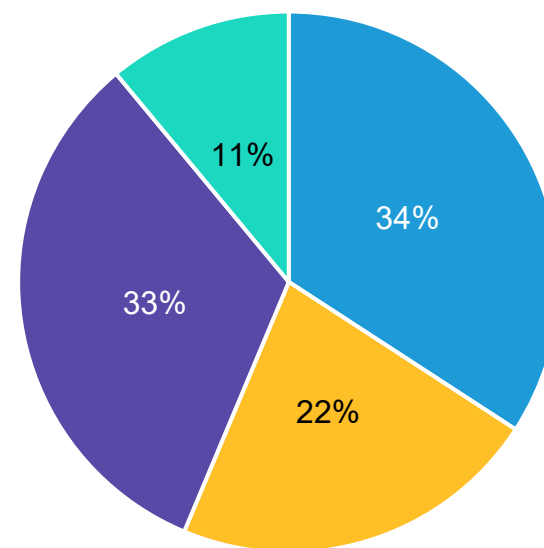
- AB added a new insurer in Fall 2021 to increase competition and capacity and boost overall rates by providing pressure on other providers to increase rates to maintain their allocations
- Insurer allocation process results in higher blended rates than a straight average allocation process would have been
- Impact is more pronounced in periods of higher variation among carrier submissions which tends to be in times of annuity market distress—exactly when higher income is needed the most!

SURS Insurer Diversification

At Inception (9/15/2020)



End of Q4 2022 (12/23/2022)



- SURS went live with three participating insurers in October 2020—Lincoln, Nationwide and Prudential (now Empower)
- Jackson National was added in late 2021 and additional insurers will continue to be considered and added in the future

Member Results

Activity Summary

SURS Retirement Savings Plan / 401(a) Plan

Asset Summary		4Q 2022
Total LIS participants		20,651
Total SIP participants		6,033
Total SIP balance		\$734,659,284
Transactions		4Q 2022
Transfers In		\$6,296,922
Transfers Out		\$31,313,152
Contributions		\$40,423,429
Participant Servicing		4Q 2022
Estimates-Call Center		678
Estimates-Web		1,014
SIL Changes		43
Retirement Age Changes		47
Benefit Statistics		4Q 2022
Activated Participants		21
Average Activated GLWB %		3.79%
Average Activation Age		65.7
Benefit Statistics		Since Inception
Activated Participants		203
Average Activated GLWB %		3.18%
Average Activation Age		66.5

As of December 31, 2022

SIP (Secure Income Portfolio) is the insured portfolio used to fund the Guaranteed Income Withdrawal Amount. Assets in this portfolio are insured through multiple group-insurance contracts. Allocations among the group-insurance contracts are unique to each participant. If your Secure Income Level is greater than 0%, your assets will be gradually allocated to the Secure Income Portfolio, beginning approximately 15 years before you are scheduled to retire. SIL (Secure Income Level) is the target percentage of your SURS LIS account – between 0% and 100% - that you want allocated over time to the Secure Income Portfolio and used to fund your Guaranteed Income Withdrawal Amount. (The default Secure Income Level is 100%). GLWB (Guaranteed Lifetime Withdrawal Benefit) is the amount you can withdraw monthly from the Secure Income Portfolio during retirement and the amount that participating insurers will pay you annually for the remainder of your lifetime (or for the remainder of your spouse's or civil union partner's lifetime, if applicable) if the Secure Income Portfolio account balance is exhausted because the Guaranteed Income Withdrawal Amount depleted your account. The amount is recalculated each year on your birthday.

Activity Summary

SURS Deferred Compensation Plan / 457(b) Plan

Asset Summary		4Q 2022
Total LIS participants		1,842
Total SIP participants		260
Total SIP balance		\$917,088
Transactions		4Q 2022
Transfers In		\$15,324
Transfers Out		\$70,578
Contributions		\$2,452,863
Participant Servicing		4Q 2022
Estimates-Call Center		20
Estimates-Web		151
SIL Changes		11
Retirement Age Changes		4
Benefit Statistics		4Q 2022
Activated Participants		0
Average Activated GLWB %		0.00%
Average Activation Age		0.0
Benefit Statistics		Since Inception
Activated Participants		0
Average Activated GLWB %		0.00%
Average Activation Age		0.0

As of December 31, 2022

SIP (Secure Income Portfolio) is the insured portfolio used to fund the Guaranteed Income Withdrawal Amount. Assets in this portfolio are insured through multiple group-insurance contracts. Allocations among the group-insurance contracts are unique to each participant. If your Secure Income Level is greater than 0%, your assets will be gradually allocated to the Secure Income Portfolio, beginning approximately 15 years before you are scheduled to retire. SIL (Secure Income Level) is the target percentage of your SURS LIS account – between 0% and 100% - that you want allocated over time to the Secure Income Portfolio and used to fund your Guaranteed Income Withdrawal Amount. (The default Secure Income Level is 100%). GLWB (Guaranteed Lifetime Withdrawal Benefit) is the amount you can withdraw monthly from the Secure Income Portfolio during retirement and the amount that participating insurers will pay you annually for the remainder of your lifetime (or for the remainder of your spouse's or civil union partner's lifetime, if applicable) if the Secure Income Portfolio account balance is exhausted because the Guaranteed Income Withdrawal Amount depleted your account. The amount is recalculated each year on your birthday.

SURS Members Showing Substantial Engagement with LIS

- Engagement activity is correlated with better member investment behaviors such as higher savings and stronger retention rates of assets in plan
- SURS members are personalizing LIS to their unique needs
 - 858 secure income level changes since inception
 - 1,044 retirement age changes since inception

Member Engagement Since Inception (Sep 2020)

Description	Number
Unique Web Visitors	4,341
Benefit Estimates (member run)	25,279
Benefit Estimates (call center run)	7,258
Benefit Estimates (e-mail requests)	1,588
Call Center (inbound calls)	1,096

*Through December 31, 2022

Lifetime Income Estimator Assumptions

- Payroll contributions increase by 3.25% each year
- Return assumptions:
 - Stock assets experience a return of 5.95% (**Updated to 7.25%**)
 - Bond assets experience a return of 1.72% (**Updated to 4.63%**)
- Rate of inflation will be 2.23% over time (**Updated to 2.58%**)
- The Secure Income Withdrawal Rate used for payroll contributions and quarterly rebalances into the Secure Income Portfolio varies by age:
 - Past to Present—Uses the members Average Secure Income Withdrawal Rate to date
 - Current Age—Uses the current Contribution Rate for the member's current age
 - Future Ages—Uses an **Age-Based Rate Assumption matrix (updated)** for each future year's contribution until retirement age
- Assumes Activation will occur at your Retirement Age on file and as a single-life form of withdrawal

Power of the Default: Members are Staying Invested for Income

Members with Secure Income	Liquidations*	Population Size*	Retainment Rate
All	1,214	7,234	83%
At least 1 year	497	5,897	92%
At least 2 years	63	4,883	99%

- SURS members have continued to accrue guaranteed income steadily despite market volatility
- Only 1% of members who have secured money for more than 2 years have liquidated their LIS portfolio
- Results are consistent with other plans who have recently adopted LIS and substantially better than longer-tenured plans

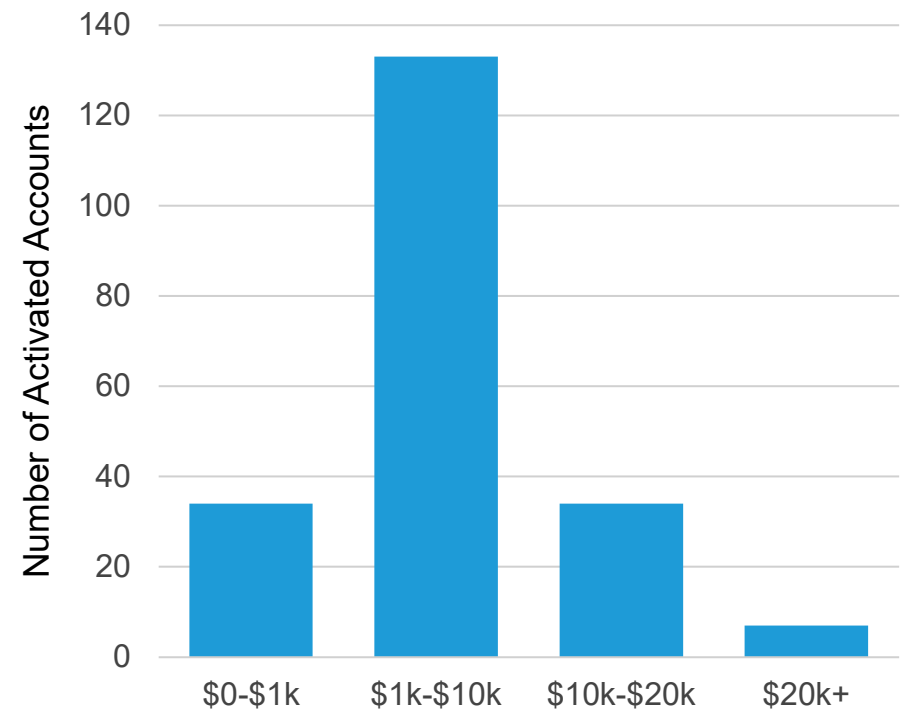
*As of December 30, 2022

Only includes members in the SURS Retirement Savings Plan

Activated Members are Enjoying Guaranteed Income and Growth

- Average age at activation = 65.9
- Average activation rate = 3.20%
- Average activation amount = \$5,697
- 208 activations since inception, including 120 joint activations with spouse/partner
- 25% of members have received at least 1 income increase after activation

Annual Guaranteed Income for Activated Members



As of February 16, 2023
Only includes members in the SURS Retirement Savings Plan

Performance Summary

State Universities Retirement System of Illinois

	Periods Ended December 31, 2022						Inception Date
	4Q 2022	YTD 2022	One Year	Three Year	Five Year	Since Inception	
SURS Lifetime Income Strategy Equity Portfolio	10.20	(18.22)	(18.22)	—	—	3.78	08/26/2020
Custom Benchmark	9.98	(18.32)	(18.32)	—	—	3.70	
Relative Return	0.22	0.10	0.10	—	—	0.08	
SURS Lifetime Income Strategy Real Asset Portfolio	4.31	(26.24)	(26.24)	—	—	4.67	08/26/2020
Custom Benchmark	4.14	(24.95)	(24.95)	—	—	5.31	
Relative Return	0.17	(1.29)	(1.29)	—	—	(0.64)	
SURS Lifetime Income Strategy Bond Portfolio	1.72	(12.67)	(12.67)	—	—	(4.89)	08/26/2020
Custom Benchmark	1.94	(12.57)	(12.57)	—	—	(4.75)	
Relative Return	(0.22)	(0.10)	(0.10)	—	—	(0.14)	
SURS Lifetime Income Strategy Secure Income Portfolio	5.98	(15.58)	(15.58)	—	—	(0.34)	09/14/2020
Custom Benchmark	6.34	(14.59)	(14.59)	—	—	0.85	
Relative Return	(0.36)	(0.99)	(0.99)	—	—	(1.19)	

All portfolio performance calculations are net of fees and are expressed as percentages. Periods of more than one year are annualized. Numbers may not sum due to rounding.

The benchmark for a Lifetime Income Strategy Component is a customized benchmark that has the same target asset allocation as the corresponding component strategy's target asset allocation and uses index returns to represent performance of the asset classes. The benchmark returns were calculated by weighting the monthly index returns of each asset class by the corresponding component strategy's monthly target allocation for each asset class.

The Equity Portfolio is benchmarked against a custom fixed-weight benchmark comprising: 49% S&P 500 Index, 11% Dow Jones US Completion Total Stock Market Index and 40% MSCI ACWI Ex USA IMI Index. The Real Asset Portfolio is benchmarked against the FTSE Nareit All Equity REITs Index. The Bond Portfolio is benchmarked against a custom fixed-weight benchmark comprising: 65% Bloomberg US Global Aggregate Index and 35% Bloomberg US TIPS Index. The Secure Income Portfolio is benchmarked against a custom benchmark comprising: 25% S&P 500 Index, 8% Russell 2000 Index, 17% MSCI EAFE Index, 30% Bloomberg US Aggregate Bond Index, and 20% Bloomberg US TIPS Index. The Cash Portfolio is benchmarked against the FTSE 3 Month US T-Bill Index.

Source: Bloomberg, Dow Jones, FTSE, MSCI, Russell Investments, S&P and AB

Performance Summary

State Universities Retirement System of Illinois

	Periods Ended December 31, 2022						Inception Date
	4Q 2022	YTD 2022	One Year	Three Year	Five Year	Since Inception	
SURS Lifetime Income Strategy Cash Portfolio	0.90	1.50	1.50	—	—	0.59	08/26/2020
Custom Benchmark	0.87	1.50	1.50	—	—	0.67	
<i>Relative Return</i>	<i>0.03</i>	<i>0.00</i>	<i>0.00</i>	—	—	<i>(0.08)</i>	

All portfolio performance calculations are net of fees and are expressed as percentages. Periods of more than one year are annualized. Numbers may not sum due to rounding.

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Source: Bloomberg, Dow Jones, FTSE, MSCI, Russell Investments, S&P and AB

Underlying Component Performance

State Universities Retirement System of Illinois

	Periods Ended December 31, 2022					
	4Q 2022	YTD 2022	One Year	Three Year	Five Year	Since Inception*
<u>SURS Lifetime Income Strategy Equity Portfolio</u>						
State Universities Retirement System Equity Index U/A†	7.56	(18.10)	(18.10)	—	—	5.94
S&P 500 Index	7.56	(18.11)	(18.11)	—	—	5.92
Relative Return	0.00	0.01	0.01	—	—	0.02
State Universities Retirement System Extended Equity Market U/A†	5.17	(26.36)	(26.36)	—	—	1.57
Dow Jones U.S. Completion Index	5.07	(26.54)	(26.54)	—	—	1.42
Relative Return	0.10	0.18	0.18	—	—	0.15
State Street Global All Cap Equity Ex-US Index Securities Lending Series Fund Class II	14.70	(16.29)	(16.29)	—	—	1.47
MSCI AC World ex USA IMI	14.15	(16.58)	(16.58)	—	—	1.30
Relative Return	0.55	0.29	0.29	—	—	0.17
<u>SURS Lifetime Income Strategy Real Asset Portfolio</u>						
Vanguard Real Estate Index Institutional Shares	4.36	(26.17)	(26.17)	—	—	4.74
FTSE NAREIT All Equity REITs Index	4.14	(24.95)	(24.95)	—	—	5.31
Relative Return	0.22	(1.22)	(1.22)	—	—	(0.57)

† Managed by BlackRock

*Inception date is 08/26/2020 unless noted otherwise

Periods of more than one year are annualized. Numbers may not sum due to rounding. Returns expressed in percentages.

Performance for the underlying components was provided by the fund managers or Lipper. All component performance calculations are presented net of fees, except the Secure Income Portfolio underlying components which are gross of investment management fees and net of operating expenses.

Source: BlackRock, Bloomberg, Dow Jones, FTSE, Lipper, MSCI, Russell Investments, S&P, State Street and AB

Underlying Component Performance

State Universities Retirement System of Illinois

	Periods Ended December 31, 2022					
	4Q 2022	YTD 2022	One Year	Three Year	Five Year	Since Inception*
<u>SURS Lifetime Income Strategy Bond Portfolio</u>						
State Street US Bond Index Securities Lending Series Fund Class XIV	1.67	(13.13)	(13.13)	—	—	(6.24)
Bloomberg US Aggregate Index	1.87	(13.01)	(13.01)	—	—	(6.15)
<i>Relative Return</i>	(0.20)	(0.12)	(0.12)	—	—	(0.09)
Vanguard Inflation Protected Securities Fund Institutional Shares	1.81	(11.90)	(11.90)	—	—	(2.31)
Bloomberg US TIPS Index	2.04	(11.85)	(11.85)	—	—	(2.16)
<i>Relative Return</i>	(0.23)	(0.05)	(0.05)	—	—	(0.15)
<u>SURS Lifetime Income Strategy Secure Income Portfolio</u>						
State Street S&P 500 Index Non-Lending Series Fund Class A	7.56	(18.12)	(18.12)	—	—	—
S&P 500 Index	7.56	(18.11)	(18.11)	—	—	—
<i>Relative Return</i>	0.00	(0.01)	(0.01)	—	—	—
State Street Russell Small Cap Index Non-Lending Series Fund Class A	6.24	(20.40)	(20.40)	—	—	—
Russell 2000 Index	6.23	(20.44)	(20.44)	—	—	—
<i>Relative Return</i>	0.01	0.04	0.04	—	—	—

*Inception date is 08/26/2020 unless noted otherwise

Periods of more than one year are annualized. Numbers may not sum due to rounding. Returns expressed in percentages.

Performance for the underlying components was provided by the fund managers or Lipper. All component performance calculations are presented net of fees, except the Secure Income Portfolio underlying components which are gross of investment management fees and net of operating expenses.

Source: BlackRock, Bloomberg, Dow Jones, FTSE, Lipper, MSCI, Russell Investments, S&P, State Street and AB

Underlying Component Performance

State Universities Retirement System of Illinois

	Periods Ended December 31, 2022					
	4Q 2022	YTD 2022	One Year	Three Year	Five Year	Since Inception*
State Street International Index Non-Lending Series Fund Class A	18.16	(14.16)	(14.16)	—	—	—
MSCI EAFE Index	17.34	(14.45)	(14.45)	—	—	—
Relative Return	0.82	0.29	0.29	—	—	—
State Street US Bond Index Non-Lending Series Fund Class A	1.67	(13.13)	(13.13)	—	—	—
Bloomberg US Aggregate Index	1.87	(13.01)	(13.01)	—	—	—
Relative Return	(0.20)	(0.12)	(0.12)	—	—	—
State Street US Inflation Protected Bond Index Non-Lending Series Fund Class A	1.86	(11.98)	(11.98)	—	—	—
Bloomberg US TIPS Index	2.04	(11.85)	(11.85)	—	—	—
Relative Return	(0.18)	(0.13)	(0.13)	—	—	—
<u>SURS Lifetime Income Strategy Cash Portfolio</u>						
Vanguard Federal Money Market Fund	0.88	1.55	1.55	—	—	0.67
FTSE 3-Month T-bill Index	0.87	1.50	1.50	—	—	0.67
Relative Return	0.01	0.05	0.05	—	—	0.00

*Inception date is 08/26/2020 unless noted otherwise

Periods of more than one year are annualized. Numbers may not sum due to rounding. Returns expressed in percentages.

Performance for the underlying components was provided by the fund managers or Lipper. All component performance calculations are presented net of fees, except the Secure Income Portfolio underlying components which are gross of investment management fees and net of operating expenses.

Source: BlackRock, Bloomberg, Dow Jones, FTSE, Lipper, MSCI, Russell Investments, S&P, State Street and AB

Total Expense Ratio

State Universities Retirement System of Illinois

	SURS Lifetime Income Strategy Cash Portfolio	SURS Lifetime Income Strategy Equity Portfolio	SURS Lifetime Income Strategy Real Asset Portfolio	SURS Lifetime Income Strategy Bond Portfolio	SURS Lifetime Income Strategy Secure Income Portfolio
Manager Fees	11.00	3.47	10.00	4.53	5.95
Asset Allocation, Implementation & Ongoing Services Fees	6.04	6.03	6.03	6.04	5.90
Custody Account Fee	0.11	0.11	0.11	0.11	0.11
Benefit Administration & Contract Allocation Fees	—	—	—	—	10.00
Insurance Fees	—	—	—	—	95.00
Total	17.15	9.62	16.15	10.68	116.96

As of December 31, 2022

Expense ratios are represented in basis points. Numbers may not sum due to rounding. The fees above only reflect those accrued by AB. If you have a third party responsible for accruing administrative or other fees, these are not reflected in the above. The fees above are subject to change.

Any expenses related to outside managers, including operating expenses, are reflected in the Manager Fees. Outside manager fees are based on the most recent information provided to AB by the Plan Sponsor or outside manager.

Source: AB

Next Steps

What's Ahead in 2023

- Review AB Retirement Income Research Framework with the SURS team and apply framework to SURS retirement income options for comparison of benefits
- Update LIS income estimator methodology and assumptions as appropriate
- Perform impact analysis of new market conditions on SURS glide path

Appendix

Extensive Track Record of CRS/LIS* Implementations

Industry	Plan Assets** (USD Millions)	CRS/LIS Assets (USD Millions)	Participants	Underlying Components	Record Keeper
Conglomerate	\$57,000	\$15,229	230,000	All Passive	Alight
State Government	\$13,018	\$11,913	296,612	Active/Passive	Voya
Aerospace/Defense Products & Services	\$47,344	\$7,306	134,492	Active/Passive	Empower
State Government	\$25,827	\$6,528	259,087	Active/Passive	Voya
Pharmaceuticals	\$9,706	\$6,438	36,634	Active/Passive	Fidelity
Drug Manufacturers	\$12,386	\$5,066	37,752	Active/Passive	Fidelity
Grocery Stores	\$5,178	\$3,466	63,802	Active/Passive	Fidelity
State University System	\$4,100	\$2,427	25,119	All Passive	Voya
State Government	\$11,400	\$1,955	268,000	Active/Passive	Empower
Airlines	\$12,672	\$1,930	14,553	Active/Passive	Charles Schwab
Communications Equipment	\$8,510	\$1,340	29,559	Active/Passive	Alight
State Municipal Employee System	\$2,322	\$1,278	36,771	All Passive	Alerus
State Government	\$2,720	\$1,114	69,837	Active/Passive	ICMA
Electric Utility	\$5,268	\$882	16,930	Active/Passive	Conduent
Life Insurance	\$2,207	\$747	16,077	Active/Passive	Fidelity
Asset Management	\$1,340	\$561	5,447	Active/Passive	Voya
Diversified Computer Systems	\$1,162	\$471	4,537	Active/Passive	Fidelity
Manufacturing and Technology	\$789	\$334	4,195	Active/Passive	Fidelity
Trucks & Other Vehicles	\$284	\$284	3,677	Active/Passive	Kravitz
Building Products & Equipment	\$411	\$265	12,063	All Passive	Alight
Restaurants	\$828	\$234	18,492	All Passive	Voya
Legal	\$356	\$128	1,862	Active/Passive	Fidelity
Special Industrial Machinery	\$181	\$126	4,261	All Passive	Alight
Food - Major Diversified	\$335	\$39	3,477	Active/Passive	Alight
	\$225,344	\$70,061	1,593,236		

*CRS/LIS denotes Customized Retirement Strategies and Lifetime Income Strategy.

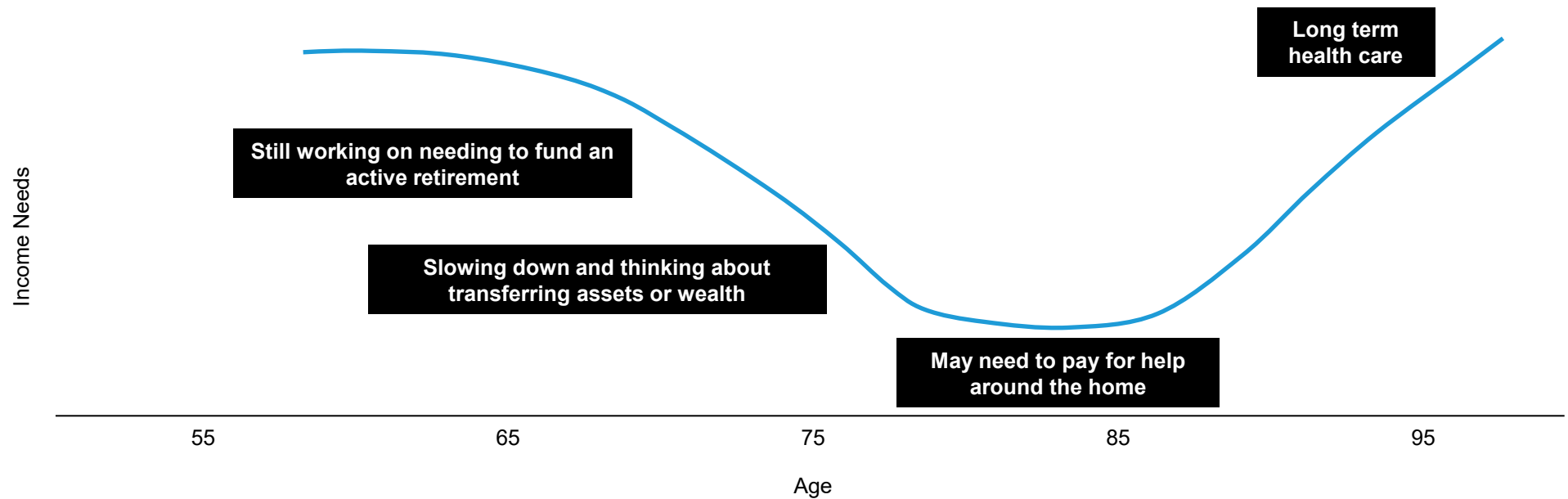
Clients and target-date/LIS assets are as of December 31, 2022.

**DC Plan Asset and Participant Data measurement dates vary based on the information available in BrightScope, Money Market Directory and EFAST2. Plan Assets represent DC or hybrid plans with a DC component.

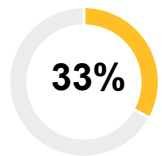
Source: BrightScope, Money Market Directory, EFAST2 (for DC Plan Asset and Participant Data) and AB

Participants Told Us That They Highly Value Growth and Liquidity

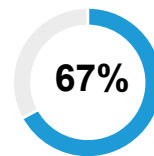
The Retirement Smile



Which Would Participants Rather Have?



\$50k in guaranteed annual income, but your **money would not grow with the stock market** and you **would not have access to the principal of your account**



\$40k in guaranteed annual income and your money **could grow with the stock market** and you **would be able to access the money in your account**

For illustrative purposes only.

Sources: David Blanchett, "Exploring the Retirement Consumption Puzzle," *Journal of Financial Planning*, 2014 and AB Inside the Minds of Plan Participants, 2021

Explicit Fees Don't Account for All Lifetime Income Costs

Critical to take a total-cost approach that looks at all aspects of the “iceberg”

Explicit Fees

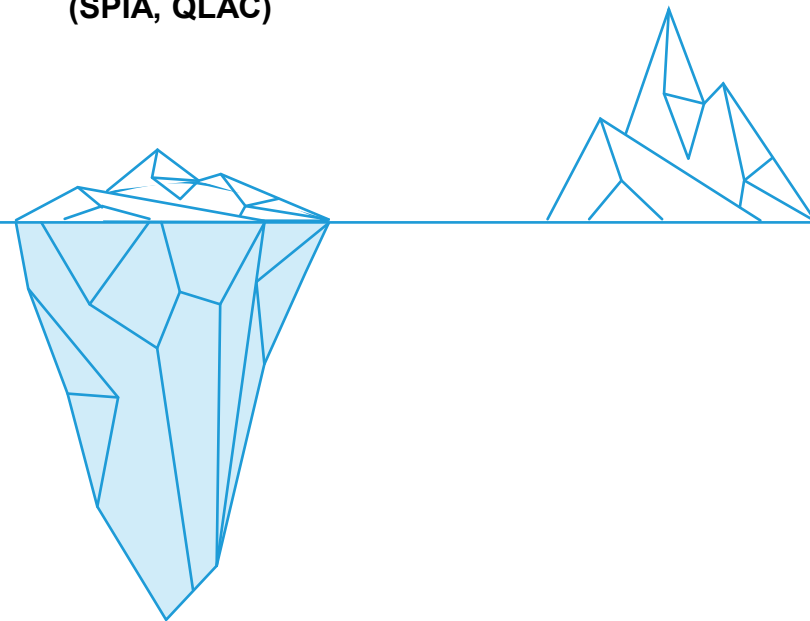
- Insurance premium
- Disclosed charges
- Sales commission/distribution charges

Implicit Costs


- Foregone growth potential from assets
- Mortality risk
- Fiduciary risk from lack of transparency and irrevocability of transactions

**Fixed Annuities
(SPIA, QLAC)**

GLWB



AM Best Ratings and Outlooks—Stable Outlook for all Insurers

	Jackson	Lincoln	Nationwide	Prudential
2022	A	A+	A+	A+
2021	A	A+	A+	A+
2020	A	A+	A+	A+
2019	A+	A+	A+	A+
2018	A+	A+	A+	A+
2017	A+	A+	A+	A+
2016	A+	A+	A+	A+
2015	A+	A+	A+	A+
2014		A+	A+	A+
2013		A+	A+	A+
2012		A+	A+	A+
2011		A+	A+	A+
Outlook	Stable	Stable	Stable 	Stable
Effective Date	5/25/2022	5/25/2022	5/25/2022	5/25/2022

Best's Financial Strength Rating (FSR) Scale

Rating Categories	Rating Symbols	Rating Notches*	Category Definitions
Superior	A+	A++	Assigned to insurance companies that have, in our opinion, a superior ability to meet their ongoing insurance obligations.
Excellent	A	A-	Assigned to insurance companies that have, in our opinion, an excellent ability to meet their ongoing insurance obligations.
Good	B+	B++	Assigned to insurance companies that have, in our opinion, a good ability to meet their ongoing insurance obligations.
Fair	B	B-	Assigned to insurance companies that have, in our opinion, a fair ability to meet their ongoing insurance obligations. Financial strength is vulnerable to adverse changes in underwriting and economic conditions.

Providing Portability Options for Members to Maintain Income Benefits



- + Members who terminate employment can:
 - + Leave assets in existing plan
 - + Roll over benefit to IRAs with each insurer to maintain accrued guaranteed income
 - + Leave plan and rollover account value to new plan or IRA and forfeit benefit
 - + Roll over benefit to new plan if LIS or Secure Income Portfolio is available



- + Plan sponsors who wish to change service providers
 - + AB will work with new recordkeeper to continue offering the benefit
 - + Solution is operational on multiple recordkeeping platforms today
 - + AB can continue to account for accrued income benefits during a transition

The SECURE Act passed at the end of 2019 includes additional provisions for portability of in-plan lifetime income options. Section 109 protects participants and plan sponsors by allowing a DC plan's discontinuation of a lifetime income option to be a distributable event. This would allow participants to rollover benefits to IRAs or distribute the lifetime income investment directly to the participant without penalty.

Lifetime Income Strategy Member Web Experience

Quick access to:

- Current **Account Balances**
- **LIS Account Settings** percentage of LIS account that will be converted into secure income by retirement age

Graph illustrating the annual income a member could receive at retirement:

- **Projected Income** based on current LIS settings
- **Potential Income** if member is maximizing future income (when all Plan assets are in the LIS account and 100% of LIS account is secured)

Learn more:

- Watch videos that cover:
 - What is the Lifetime Income Strategy?
 - What Does It Mean to Secure Income?
 - You Are About to Retire and Activate

The screenshot displays the Lifetime Income Strategy (LIS) member web experience. At the top, there is a dark blue header with the Plan Sponsor Logo and Color Palette on the left, the title "Lifetime Income Strategy (LIS)" in the center, and the user name "John Doe" with a "LOGOUT" button on the right. Below the header is a navigation bar with links: Home, My Account, Income Estimator, Resources, and Contact Us.

The main content area is divided into several sections:

- Welcome, John Doe**: A greeting message.
- Account Summary** | As of Jan 27, 2021: A table showing account balances.

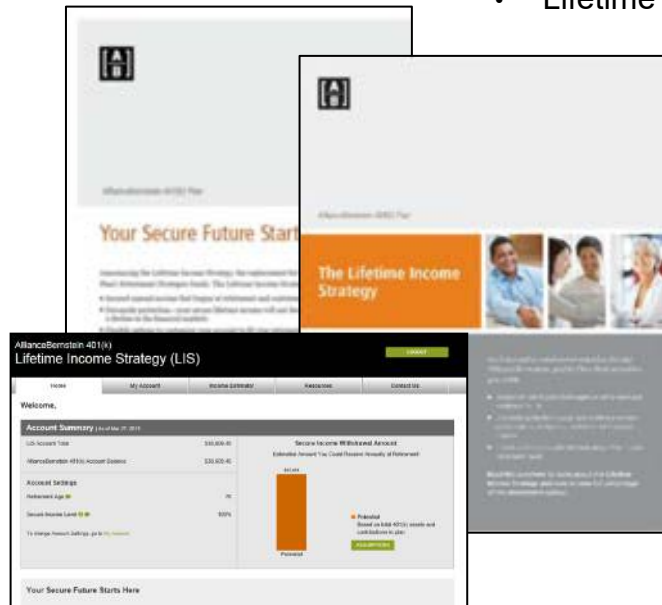
Account Type	Balance
LIS Account Total	\$508,265.85
Plan Account Total	\$1,096,345.72
- Account Settings**: A section showing retirement details.

Setting	Value
Retirement Age	65
Secure Income Level	100%
- Secure Income Withdrawal Amount**: A section titled "Estimated Amount You Could Receive Annually at Retirement". It features a bar chart comparing "Projected" income (\$23,755) and "Potential" income (\$45,745). To the right, there are input fields for "Annual Contributions" (including employer match) with a value of \$0. Below the chart, there are two sections: "Projected" (Based on total LIS assets, Secure Income Level (on file), Retirement Age (on file) and Annual Contribution (on file)) and "Potential" (Based on total Plan (LIS and Plan), a 100% Secure Income Level, Retirement Age (on file) and Annual Contribution (on file)).
- Your Secure Future Starts Here**: A section with three video thumbnails:
 - "What is the Lifetime Income Strategy?" with a green background and icons of a piggy bank, a coin, and a dollar sign.
 - "What Does it Mean to Secure Income?" with a green background and a piggy bank icon.
 - "You Are About to Retire and Activate" with a purple background and a sun icon.

DC Industry Recognition for Participant Communications



- 2015, 2018, 2019, 2020, 2021 *Pensions & Investments* Eddy Award winner
- Selected for clear and concise communication in the area of ongoing investment education
- Received content recognition for:
 - “What is the Lifetime Income Strategy” video
 - “What Is a Target-Date Fund?” video
 - Lifetime Income Strategy communications



The Eddy Award is *Pensions & Investments* magazine’s annual employee communications award for plan sponsors and service providers.

Age-Based Rate Assumption Matrix (Updated in 2023)

		Purchase Age																					
		45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	
Current Age	25	6.55%	6.48%	6.41%	6.35%	6.28%	6.21%	6.15%	6.08%	6.02%	5.95%	5.89%	5.83%	5.77%	5.71%	5.65%	5.59%	5.53%	5.47%	5.41%	5.35%	5.30%	
	26	6.58%	6.51%	6.43%	6.36%	6.28%	6.21%	6.14%	6.07%	6.01%	5.94%	5.87%	5.81%	5.75%	5.69%	5.63%	5.57%	5.51%	5.46%	5.40%	5.35%	5.30%	
	27	6.64%	6.55%	6.46%	6.38%	6.30%	6.22%	6.14%	6.07%	5.99%	5.93%	5.86%	5.79%	5.73%	5.67%	5.61%	5.55%	5.50%	5.45%	5.40%	5.35%	5.31%	
	28	6.71%	6.61%	6.51%	6.41%	6.32%	6.23%	6.15%	6.06%	5.99%	5.91%	5.84%	5.77%	5.71%	5.65%	5.59%	5.54%	5.49%	5.44%	5.40%	5.36%	5.32%	
	29	6.78%	6.67%	6.56%	6.45%	6.35%	6.25%	6.16%	6.07%	5.98%	5.90%	5.83%	5.76%	5.69%	5.63%	5.57%	5.52%	5.47%	5.43%	5.39%	5.36%	5.33%	
	30	6.85%	6.73%	6.60%	6.49%	6.38%	6.27%	6.17%	6.07%	5.98%	5.90%	5.82%	5.75%	5.68%	5.62%	5.56%	5.51%	5.46%	5.42%	5.39%	5.36%	5.33%	
	31	6.91%	6.78%	6.65%	6.52%	6.41%	6.29%	6.19%	6.09%	5.99%	5.90%	5.82%	5.74%	5.67%	5.61%	5.55%	5.50%	5.45%	5.41%	5.37%	5.34%	5.32%	
	32	6.96%	6.82%	6.69%	6.56%	6.43%	6.32%	6.21%	6.10%	6.00%	5.91%	5.83%	5.75%	5.67%	5.61%	5.54%	5.49%	5.44%	5.40%	5.36%	5.33%	5.31%	
	33	6.99%	6.85%	6.72%	6.59%	6.46%	6.34%	6.23%	6.12%	6.02%	5.93%	5.84%	5.76%	5.68%	5.61%	5.55%	5.49%	5.43%	5.39%	5.35%	5.31%	5.28%	
	34	7.03%	6.89%	6.75%	6.62%	6.49%	6.37%	6.26%	6.15%	6.05%	5.95%	5.86%	5.77%	5.69%	5.62%	5.55%	5.49%	5.43%	5.38%	5.33%	5.29%	5.26%	
	35	7.05%	6.91%	6.77%	6.64%	6.52%	6.40%	6.28%	6.17%	6.07%	5.97%	5.88%	5.79%	5.71%	5.63%	5.56%	5.49%	5.43%	5.37%	5.32%	5.27%	5.23%	
	36	7.04%	6.90%	6.78%	6.65%	6.54%	6.42%	6.31%	6.20%	6.10%	6.00%	5.91%	5.82%	5.73%	5.65%	5.57%	5.50%	5.43%	5.37%	5.30%	5.25%	5.19%	
	37	7.00%	6.89%	6.77%	6.66%	6.55%	6.44%	6.34%	6.23%	6.13%	6.04%	5.94%	5.85%	5.76%	5.68%	5.59%	5.51%	5.44%	5.36%	5.29%	5.22%	5.15%	
	38	6.94%	6.84%	6.74%	6.65%	6.55%	6.45%	6.36%	6.26%	6.17%	6.07%	5.98%	5.89%	5.80%	5.71%	5.62%	5.53%	5.44%	5.36%	5.27%	5.19%	5.10%	
	39	6.87%	6.79%	6.70%	6.62%	6.54%	6.45%	6.37%	6.28%	6.19%	6.11%	6.02%	5.93%	5.84%	5.74%	5.65%	5.55%	5.46%	5.36%	5.27%	5.17%	5.07%	
	40	6.77%	6.71%	6.65%	6.58%	6.52%	6.45%	6.37%	6.30%	6.22%	6.13%	6.05%	5.96%	5.87%	5.78%	5.68%	5.58%	5.48%	5.38%	5.27%	5.16%	5.04%	
	41	6.68%	6.64%	6.59%	6.54%	6.49%	6.43%	6.37%	6.30%	6.23%	6.16%	6.08%	5.99%	5.90%	5.81%	5.71%	5.61%	5.50%	5.39%	5.28%	5.16%	5.03%	
	42	6.56%	6.54%	6.52%	6.49%	6.45%	6.41%	6.36%	6.30%	6.24%	6.17%	6.10%	6.02%	5.93%	5.84%	5.74%	5.64%	5.53%	5.41%	5.29%	5.16%	5.02%	
	43	6.45%	6.44%	6.44%	6.42%	6.40%	6.37%	6.33%	6.29%	6.23%	6.18%	6.11%	6.04%	5.95%	5.87%	5.77%	5.67%	5.56%	5.44%	5.31%	5.18%	5.04%	
	44	6.30%	6.32%	6.33%	6.33%	6.33%	6.31%	6.29%	6.26%	6.22%	6.17%	6.11%	6.05%	5.97%	5.89%	5.80%	5.70%	5.59%	5.47%	5.35%	5.21%	5.07%	
	45	6.16%		6.19%	6.22%	6.24%	6.24%	6.24%	6.23%	6.21%	6.18%	6.14%	6.10%	6.04%	5.98%	5.90%	5.82%	5.73%	5.63%	5.51%	5.40%	5.27%	5.13%
	46			6.07%	6.11%	6.14%	6.16%	6.17%	6.17%	6.16%	6.14%	6.11%	6.07%	6.03%	5.97%	5.90%	5.83%	5.74%	5.65%	5.55%	5.43%	5.31%	5.18%
	47				5.99%	6.03%	6.06%	6.08%	6.09%	6.09%	6.08%	6.06%	6.04%	6.00%	5.95%	5.90%	5.83%	5.76%	5.67%	5.58%	5.47%	5.36%	5.23%
	48					5.90%	5.94%	5.98%	6.00%	6.01%	6.01%	6.01%	5.99%	5.96%	5.93%	5.88%	5.82%	5.76%	5.68%	5.60%	5.50%	5.40%	5.28%
	49						5.82%	5.86%	5.90%	5.92%	5.94%	5.94%	5.93%	5.92%	5.89%	5.85%	5.81%	5.75%	5.69%	5.61%	5.52%	5.42%	5.32%
	50							5.74%	5.78%	5.82%	5.85%	5.86%	5.87%	5.86%	5.85%	5.82%	5.78%	5.74%	5.68%	5.61%	5.54%	5.45%	5.35%
	51								5.66%	5.70%	5.74%	5.77%	5.79%	5.79%	5.79%	5.78%	5.75%	5.71%	5.67%	5.61%	5.54%	5.46%	5.37%
	52									5.58%	5.63%	5.67%	5.70%	5.72%	5.72%	5.72%	5.71%	5.68%	5.65%	5.60%	5.54%	5.47%	5.39%
	53										5.50%	5.55%	5.59%	5.62%	5.65%	5.65%	5.65%	5.64%	5.62%	5.58%	5.53%	5.48%	5.41%
	54											5.43%	5.48%	5.52%	5.55%	5.57%	5.58%	5.58%	5.57%	5.55%	5.52%	5.48%	5.43%
	55												5.35%	5.41%	5.45%	5.48%	5.51%	5.52%	5.52%	5.51%	5.49%	5.46%	5.42%
	56													5.28%	5.34%	5.38%	5.42%	5.45%	5.46%	5.46%	5.45%	5.43%	5.40%
57														5.20%	5.27%	5.32%	5.36%	5.39%	5.40%	5.40%	5.39%	5.37%	
58															5.13%	5.21%	5.26%	5.31%	5.34%	5.35%	5.35%	5.33%	
59																5.07%	5.15%	5.21%	5.26%	5.29%	5.30%	5.30%	
60																	5.01%	5.10%	5.17%	5.22%	5.25%	5.26%	
61																		4.96%	5.05%	5.12%	5.18%	5.22%	
62																			4.92%	5.01%	5.09%	5.16%	
63																				4.89%	4.97%	5.10%	
64																					4.89%	4.98%	
65																						4.90%	

AB Overview

Committed to Delivering Better Investment Outcomes for Our Clients

Diverse perspectives lead to differentiated insights and innovative solutions



Fostering Diverse Perspectives

Our culture engages people with different backgrounds, viewpoints and ways of thinking, bringing out the best in our firm—and for our clients.



Embracing Innovation

We challenge convention by applying new information sources and disruptive technology to advance our capabilities and the ways we serve clients.



Generating Differentiated Insights

We integrate diverse perspectives and broad expertise, collaborating across disciplines and ESG investing. This helps us break down silos and deliver investment clarity.



Commitment to Responsible Investment

We pursue responsibility—from how we work and act to the solutions we deliver to clients

Serving Clients with Our Global Reach and Integrated Network

50+

years of experience in investment management

\$646 Billion

in solutions for investors ranging from individuals to the world's largest institutions

51 Cities

An on-the-ground presence across 26 countries and jurisdictions

371

Investment professionals

Since 2011

PRI signatory

ESG: environmental, social and governance; PRI: Principles for Responsible Investment.
As of December 31, 2022. Source: AB

Disclosures

Important Fund Disclosure Information

Past performance does not guarantee future results. The investment return and principal value of an investment in the Trust will fluctuate as the prices of the individual securities in which the Trust invests fluctuate, so that the Units, when redeemed, may be worth more or less than their original cost. Performance information is as of the date shown; because of ongoing market volatility, the Trust's performance may have been subject to substantial fluctuations since that date and may be greater or lesser than shown.

The Trust is a Collective Trust formed by the Trustee. The Trust is not a mutual fund and units of the Collective Trust are not deposits of AllianceBernstein Trust Company, LLC or AllianceBernstein Investments. The Units are securities which have not been registered under the 1933 Act and exempted from investment company registration under the Investment Act of 1940. Therefore, Participating Plans and their Participants will not be entitled to the protections under these Acts. AllianceBernstein L.P. is the Trust Advisor and provides investment management services. AllianceBernstein Trust Company, LLC is the Trust's Trustee and provides customized securities processing services. Effective April 2, 2007, AllianceBernstein Trust Company, LLC was appointed successor trustee to the Trusts.

The Trust serves as a pooled investment vehicle for (i) pension and profit-sharing trusts of employers that are qualified under section 401(a) of the Internal Revenue Code of 1986, (ii) governmental plans described in Code Section 414(d) (the "Eligible Plans"). An Eligible Plan becomes a participating plan and unitholder of the Trust (a "Participating Plan") upon the execution and acceptance of an adoption agreement in the form prescribed by the Trustee (the "Adoption Agreement") and delivery of assets to the Trustee. AllianceBernstein Trust Company ("ABTC" or the "Trustee") formed the Series Trust pursuant to a Declaration of Trust dated October 1, 2015 (as may be amended from time to time, the "Declaration") and is the Trustee of the Series Trust. AllianceBernstein L.P. serves as the investment advisor "AllianceBernstein" or the "Investment Advisor") to the Trust. Decisions as to which securities will be bought or sold for the Trust will be made by the Trustee, although the Trustee intends to rely on the investment recommendations of AllianceBernstein as a general manner.

The Units are securities which have not been registered under the 1933 Act, or the securities laws of any state and are being offered and sold in reliance on an exemption from the registration requirements of such act and such laws. The Units have not been approved or disapproved by the Securities and Exchange Commission, any state securities commission or other regulatory authority, nor have any of the foregoing authorities passed upon or endorsed the merits of this offering or the accuracy or adequacy of this document. Any representation to the contrary is unlawful. Neither the Series Trust nor the Trust will be registered as an investment company under the Investment Act of 1940, as amended (the "1940 Act"), pursuant to the exemption from the registration requirement of the 1940 Act contained in section 3(c)(11), therefore the protections available to investors under these acts are not available. Management of the Trust, however, is generally subject to the fiduciary duty and prohibited transaction rules under the Employee Retirement Income Securities Act of 1974 ("ERISA"). Commingled funds are not required to file a prospectus or registration statement with the SEC and, accordingly, neither is available.

Important Fund Disclosure Information

Simulated or hypothetical performance results have certain inherent limitations. Unlike the results shown in an actual performance record, these results do not represent actual trading. Results include estimates of trading costs and market impact; however, because these trades have not actually been executed, results may have under- or overcompensated for these costs. Simulated or hypothetical trading programs in general are also subject to the fact that they are designed with the benefit of hindsight. No representation is being made that any account will or is likely to achieve returns or a volatility profile similar to those being shown

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Investment Department

To: Investment Committee
From: Mr. Brian DeLoria
Date: February 24, 2023
Re: SURS' Defined Contribution Investment Policy Statement Review

Summary & Recommendation

SURS' Defined Contribution Investment Policy (DC IPS) is reviewed annually at the March Investment Committee meeting, or more frequently, when appropriate. The DC IPS outlines the purpose of SURS' DC plans, specifies the responsibilities of various plan stakeholders (including the Board, SURS Staff, plan participants, and external partners), and summarizes the criteria used for investment option selection and monitoring.

The policy was last updated in March 2021. Significant changes at that time included changing the names of the plans, updating some sections to align more closely with the Defined Benefit IPS, and expanding the section on investment option monitoring.

In addition, the format of the IPS was revised in September 2022, to match SURS standard policy template. This involved minor changes to the order of the document, some formatting changes, and the addition of a section at the beginning of the document summarizing historical revisions and updates to the policy document. The current version of the policy follows this memo and is posted on the SURS website, along with the DB IPS and the SURS Procurement Policy.

SURS Staff and DC Consultant, CAPTRUST, have reviewed the Defined Contribution Investment Policy ahead of this meeting and **are not proposing any changes to the policy at this time**. The IPS will be reviewed next at the March 2024 Investment Committee meeting unless a need to do so arises before that time.



OFFICIAL POLICY

Defined Contribution Investment Policy

Policy Register Part: VI – Investments		Policy Number: 6.2
Approval Authority: Board of Trustees		Originating Department: Investments Responsible Executive Staff Member: Chief Investment Officer
Version:	Effective Date:	Description of Changes and Link(s) to Earlier Version(s):
1	July 2002	N/A – Original
2	September 21, 2007	<p>Sections were added for Investment Options and Manager Selection, Participant Education and Communication, and Coordination with the Plan Document</p> <p>The following sections were updated or revised: Specifications of Responsibilities, Investment Objectives, and Investment Monitoring.</p>

3	September 12, 2008	<p>Investment Objectives section expanded to include an objective to provide cost-efficient investment options</p> <p>Lifecycle category added to the types of investment options listed in the Investment Options and manager Selection section.</p>
4	April 23, 2009	Replaced the terms "recordkeeper" and "investment manager" with the term "Providers" in several places throughout the document.
5	September 3, 2010	Expanded Specifications of Responsibilities section, defining roles for the Board of Trustees, Investment Committee, Executive Director, Assistant Deputy Director of SMP, Internal Investment Staff, External Investment Consultant, Provider, Participants, and General Counsel's office.
6	September 16, 2011	<p>Added Statement of Purpose for the Self-Managed Plan.</p> <p>Added selection of default investment option(s) to responsibilities of the Board of Trustees.</p> <p>Added mutual fund proxy voting to responsibility of participants.</p> <p>Edited the Investment Option and Provider Monitoring section to include an annual review of investment options fees.</p>
7	October 25, 2012	Edited Provider responsibilities to specify that the providers will be responsible for providing information to participants regarding SMP investment options offered by their firm.
8	September 13, 2013	Minor changes made to wording .

9	September 19, 2014	Removed the Balanced investment option category from the list of required investment option categories in the Investment Option Provider Selection section.
10	September 11, 2015	Added a section to the document that includes SURS' Quiet Period Policy language.
11	December 9, 2016	<p>Added responsibilities for Lead Administrator and External Council and revised responsibilities for Internal Investment Staff to the Specification of Responsibilities section.</p> <p>Added language to the Investment Option and Provider Selection, Investment Option and Provider Monitoring, and Investment Option/Provider Termination sections to make them more consistent with guidelines in the Defined Benefit Investment Policy.</p>

12	January 30, 2020	<p>Changed name of the document to Defined Contribution Investment Policy to reflect that it will soon cover two DC plans.</p> <p>Added language across the document to incorporate the new Supplemental Plan.</p> <p>Clarified terminology regarding recordkeeper v. provider.</p> <p>Added language to clarify that Board members who are DC participants will not be excluded from voting on votes on DC plan matters.</p> <p>Added language regarding lifetime income allowing participants to qualify for retiree healthcare, if eligible.</p> <p>Revised Investment Option Selection section to reflect investment categories currently offered in the plan, as well as industry best practices.</p> <p>Removed Quiet Period Policy section (now included in SURS Procurement Policies)</p> <p>Revised language in the Investment Option Monitoring section.</p>
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13	March 11, 2021	<p>Updated names of plans throughout document to reflect the name change to Retirement Savings Plan (formerly Self-Managed Plan), and Deferred Compensation Plan (a new plan, but referred to as Supplemental Plan in the prior investment policy).</p> <p>In Specification of Responsibilities section, revised role of Recordkeeper and added roles for Auditors and Consultants.</p> <p>Revised names of investment option categories to align with internal SURS naming conventions.</p> <p>Expanded Investment Option Monitoring section to include monitoring criteria used to evaluate investment options.</p> <p>Reworded Investment Option Termination section in favor of more flexible language.</p> <p>Removed Participant Education and Communication section due to being redundant (covered in Specification of Responsibilities section).</p>
14	August 31, 2022	Formatted to template

1. Policy Statement

- A. The purpose of the State Universities Retirement System ("SURS") Retirement Savings Plan ("RSP") is to provide eligible employees with long-term accumulation of retirement savings in individual participant accounts through employee contributions and employer contributions as well as earnings. The purpose of the Deferred Compensation Plan ("DCP") is to provide eligible employees with supplemental retirement savings in individual participant accounts through employee contributions, optional employer contributions and earnings.
- B. This Policy establishes the standards for the investment and management of the assets of the RSP and DCP. SURS Board of Trustees may modify this Policy, in whole or in part, at any time. The Board may provide supplemental guidelines for each investment option included in the plan.

- C. It is the intention of the Board of Trustees that assets of the RSP and DCP shall be maintained in compliance with all applicable state and federal laws. Practices in this regard include, but are not limited to, the following:

1. Investment alternatives shall be selected with the care, skill and diligence that would be applied by a prudent professional investor, acting in a like capacity and knowledgeable in the investment of retirement funds (Prudent Person Standard);
2. All transactions undertaken on behalf of the RSP and DCP shall be for the sole interest of participants and beneficiaries (Exclusive Benefit); and,
3. Participants will be provided the opportunity to obtain sufficient information to make informed decisions with regard to the investment alternatives available under the RSP and DCP.

2. Departments and/or Staff Positions Required to Comply with Policy:

The Executive Director, RSP Manager and Benefits Staff, the Office of General Counsel and all internal Investment staff are required to read and comply with this policy.

3. Directives

Is Policy Internal Only?	Does Policy Include any Reporting Requirements for Stoplight Report?	Citation to Statutory Mandates, if applicable
	See Policy No. 6.1, Defined Benefit Investment Policy, Section 3, Directives, for this Policy's Stoplight Report Reporting Requirements	Statutory Mandates applicable to DC Plan are identified in the DB Policy with the following statement: <i>"*Also applies to DC Policy"</i>

4. Definitions

N/A

5. The Policy

A. Specification of Responsibilities

1. Board of Trustees

- a. The Board of Trustees is responsible for the selection, retention, monitoring, and termination of the investment options, including the default investment option(s), the recordkeeper of the RSP and the DCP, and the external investment consultant, and for establishing and maintaining this Policy. The Board and/or the Investment Committee takes action after considering recommendations made by Staff or consultants.
- b. Trustees shall carry out their functions solely in the interest of the members and benefit recipients and for the exclusive purpose of providing benefits and defraying reasonable expenses incurred in performing such duties, as required by law. The Trustees shall act in accordance with the provisions of state statute and with the care, skill, prudence and diligence in light of the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims, by diversifying the available RSP and DCP investment options of SURS so as to minimize the risk of large participant losses, unless in light of such circumstances it is clearly prudent not to do so.
- c. All members of the Board of Trustees shall be indemnified and held harmless by SURS for any reasonable cost or expense incurred as a result of any actual or threatened litigation or administrative proceeding arising out of the performance of the Board member's duties in accordance with 40 ILCS 5/1-107. No member of the Board of Trustees may participate in deliberations or vote on any matter before the Board which will, or is likely to, result in direct, measurable gain to the Board member, to the Board member's immediate family members, or to that Board member's employer. Notwithstanding the foregoing, if a member of the Board of Trustees or such Board member's immediate family member is a participant in the RSP and/or DCP, the Board member would not be excluded from participating in deliberations or vote on any matter before the Board that would result in direct benefit to the Board member or the Board member's immediate family member solely by virtue of such person's participation in the RSP or DCP, provided that such person would benefit in a fashion equal to any other participant in the Plans.

2. Investment Committee

The Investment Committee (the Committee) shall be comprised of all of the members of the Board, and shall be empowered to act as the Board with respect to the broad range of issues covered by this policy, including, but not limited to, the following:

- a. the selection, retention, monitoring, and termination of the investment options;
- b. the selection, retention, monitoring, and termination of the annuity providers;
- c. the selection, retention, monitoring, and termination of the recordkeeper; and,
- d. the establishment and maintenance of this Policy.

3. Executive Director

- a. The Executive Director, in connection with such person's duties regarding this investment policy, shall be responsible for the following, among other things:
 - (1) execution of agreements, amendments or other contracts with Board-approved providers, with a report provided to the Committee at the next regularly scheduled meeting;
 - (2) monitoring of the performance of approved investment options;
 - (3) communicating with the Board, its Officers and Committee Chair(s); and,
 - (4) studying, recommending and implementing policy and operational procedures that will enhance the defined contribution program.
- b. Employees of SURS shall be indemnified and held harmless by SURS for actions within the scope of their employment, pursuant to 40 ILCS 5/1-107 and 108. This indemnification extends to former employees for actions within the scope of their employment at the time of employment.
- c. In fulfilling these investment responsibilities, the Executive Director relies heavily on the following internal staff and the consultant.

4. RSP Manager and Benefits Staff

- a. The RSP Manager and benefits staff report directly to the Chief Benefits Officer ("CBO") who in turn reports to the Executive Director. The CBO, RSP Manager and benefits staff are responsible for administration, education and communication related to the RSP and DCP.
- b. Responsibilities delegated to the RSP Manager and benefits staff may include, but are not limited to, the following topics:
 - (1) oversight of the RSP and DCP;
 - (2) acting as a liaison between SURS and the recordkeeper;
 - (3) acting as a liaison between SURS and the annuity provider;
 - (4) completing daily administrative duties;
 - (5) recommending revisions to recordkeeper agreements with concurrence from the General Counsel required,
 - (6) providing plan education, communication and customer-service related functions, and,
 - (7) conducting administrative due diligence.

5. General Counsel's Office

The role of the General Counsel's office is to oversee internal and external legal services provided to SURS in connection with this investment policy and to ensure compliance with all applicable legal requirements.

6. Internal Investment Staff

- a. The internal Investment Staff reports directly to the Chief Investment Officer ("CIO") who in turn reports to the Executive Director. The internal Investment Staff provides internal investment management and/or consulting services to the Board and Executive Director. In the course of the CIO's normal functions, the CIO will work directly with the Board, Investment Committee and its Chair(s). The frequency and content of reports to the Board are based on the requirements of the Defined Contribution Policy Statement as well as the directives from the Board and/or its Investment Committee.

- b. The primary functions delegated by the Board to internal Investment Staff include, but are not limited to, the following topics:
 - (1) implementing the decisions of the Board regarding hiring and termination of the recordkeeper and investment options,
 - (2) oversight of the RSP and DCP investment programs, including conducting due diligence and providing recommendations in the selection and termination of the recordkeeper and investment options,
 - (3) providing technical advice in the selection and monitoring of the recordkeeper and investment options,
 - (4) recommending revisions to recordkeeper agreements with concurrence from the General Counsel required,
 - (5) reviewing and drafting recommendations to the Defined Contribution Investment Policy regularly,
 - (6) monitoring compliance with Board-approved policies for investment options,
 - (7) monitoring performance and asset allocation reports,
 - (8) responding to inquiries from various parties concerning the RSP and DCP investment options in accordance with SURS communication policies,
 - (9) completing other administrative duties related to the RSP and DCP investment program, and
 - (10) serving as a liaison to the defined contribution community.
- c. SURS Staff will collaborate, as necessary, with the process of providing recommendations in the selection of investment options and providers for, and monitoring and operations of, the DCP. SURS Staff has the responsibility to implement the Board decisions through negotiation, execution and enforcement of the recordkeeper agreement. All recordkeeper agreements and amendments thereto must be executed by the Executive Director or the Executive Director's designee.
- d. Staff also works closely with the consultant. Recommendations to the Investment Committee will generally be developed jointly by the Staff and the consultant with advice to the Chair(s).

7. External Investment Consultant(s)

- a. The Board shall generally have under contract an investment advisor who is a paid, professional consultant and who is qualified to provide the Board with investment advice by academic and professional training and experience and is considered an expert in the field of investment and finance. The consultant's relationship with the Board shall be that of a fiduciary under 40 ILCS 5/1-101.2.
- b. The consultant is hired by and reports directly to the Board of Trustees. The consultant's duty is to work with the Board, Investment Committee and its Chair(s), and Staff, in the management of the RSP and DCP investment process. This includes regular meetings with the Board to provide an independent perspective on the RSP's and DCP's goals, structure, performance, recordkeeper, and annuity provider. In the course of the consultant's normal functions, the consultant will work directly with the Staff to review performance and make recommendations to the Board as appropriate. The consultant will assist Staff and the Committee with recordkeeper, annuity provider, and investment option selection and discuss the impact of material changes taking place within any current provider's organization. The consultant may also provide fiduciary education to inform the Board and Staff regarding significant trends in the defined contribution industry.

8. Recordkeeper

A recordkeeper will be selected to offer investment options recommended by SURS Staff and External Investment Consultant and approved by the Board of Trustees to fulfill the investment objectives of the RSP and DCP. The recordkeeper's responsibilities, as outlined in the contract for services, may include, but are not limited to, the following topics:

- a. ability to record keep a broad platform of possible investment options;
- b. maintaining and updating individual account balances as well as information regarding plan contributions, withdrawals and distributions;
- c. safekeeping of securities;
- d. settlement of trade;
- e. collection of income;

- f. reporting of investment results on a regular basis;
- g. administrative reporting; and,
- h. providing information to participants regarding RSP and DCP investment options.

9. External Counsel

External counsel may be retained to provide legal services in connection with the review and negotiation of agreements where specialized experience is required or where General Counsel resources are unavailable.

10. Auditors and Consultants

SURS may retain providers who conduct fiduciary or conflict-of-interest auditing and/or monitoring services where specialized experience is required to audit and/or monitor fiduciary duties, data confidentiality, cross-selling, prohibited transactions, and other activities where conflict-of-interest issues may arise regarding any provider that services the RSP and/or the DCP.

11. Participants

Participants are responsible for the allocation of their assets among the investment options of the RSP and DCP. Participants and beneficiaries alone bear the risks and reap the rewards of investment results from the options and asset allocations that they select.

B. Investment Objectives

The objective of the Board of Trustees is to offer a sufficient range of investment options to allow participants to diversify their assets in the RSP and DCP and construct portfolios that reasonably span the risk/return spectrum. The overriding consideration with respect to all decisions is that they shall be made solely in the best interest of participants and beneficiaries. The RSP and DCP investment options will be selected to:

- 1. Maximize return within reasonable and prudent levels of risk;
- 2. Provide returns comparable to those of similar investment options;

3. Provide exposure to a diversified range of investment opportunities in various asset classes;
4. Provide cost-efficient investment options as measured by the expense ratio; and,
5. Provide lifetime income option(s) that would allow participants to qualify for retiree healthcare, if eligible.

C. Investment Option Selection

1. The RSP and DCP investment options should allow participants to construct portfolios consistent with their unique individual circumstances, goals, time horizons and tolerance for risk. In that regard, the RSP and DCP programs may offer investment options including, but not limited to, each of the following categories:
 - a. Lifetime Income;
 - b. Target Date Funds/Asset Allocation Funds;
 - c. Stability of Principal;
 - d. Core and Diversifying Fixed Income;
 - e. U.S. Equity;
 - f. Non-U.S. Equity;
 - g. Global Equity;
 - h. Real Estate; and,
 - i. Environmental, Social, Governance ("ESG" Funds)

Within these categories, the types of options may include active or passive investment options, low- to high-risk options and specialized styles of investment management. The Committee may utilize mutual funds, collective investment funds, and/or various investment vehicles for the investment options. The Committee may also consider the use of custom investment options and/or white-label funds. Investment options may vary over time based on participant needs and options offered in the marketplace. The number of investment options available should be managed to provide sufficient choice without overwhelming members with too many options. SURS prohibits any form of payment from any provider or provider of investment products in consideration of its inclusion in the RSP or DCP.

2. Selection of Investment Option(s)

In selecting investment options for the Plan(s), the Committee shall take into account some or all of the following criteria, as the Committee deems appropriate:

- a. Performance should be reasonable when compared to the median return for an appropriate, style-specific benchmark and/or peer group over a specified time period;
- b. Risk measures, including risk-adjusted return, should be reasonable when compared to the risk measures for an appropriate, style-specific benchmark and/or peer group over a specified time period;
- c. The investment option should demonstrate adherence to the stated investment objective; and
- d. Fees should be competitive compared to similar investments.

3. Selection of Target Date Funds

Understanding that target date suites vary widely, the following steps may be used as general guidelines in the selection process:

- a. Consider what the primary objective is in relation to risk management - whether 1) minimizing equity market risk just before retirement is desired because of market volatility; 2) minimizing interest rate risk just before retirement associated with securing lifetime income; or 3) maximizing return, is more important due to longevity risk.
- b. Consider participant demographics in order to help define overall risk tolerance. Factors that may be considered are average age of population, average age at which population retires, overall investment knowledge, current plan usage of target date, hybrid funds, or asset allocation suites, and participant behavior at retirement,
- c. Review asset class diversification,
- d. Review fees and expenses in comparison to averages and as related to overall plan cost, and
- e. Compare performance relative to other target date funds with similar objectives.

4. Selection of Fixed Interest/Stable Value Options

In selecting any fixed interest/stable value option, the Committee may take into account some or all of the following criteria, as the Committee deems appropriate in its sole discretion (should the Committee choose to offer such an option):

- a. Financial strength ratings of the guarantor provided by the major ratings agencies;
- b. Interest rate history and minimum guaranteed contract rate;
- c. Contract liquidity provisions;
- d. Current and historical market to book value ratio (stable value funds only); and,
- e. Comparison between fixed interest accounts (i.e., those backed by general assets) and stable value accounts (i.e., those backed by separate account).

5. Selection of the Default Investment Options

The Committee is authorized to designate the RSP and DCP default investment options (i.e., the options into which contributions will be directed on behalf of participants who fail to make affirmative investment elections). In so doing, the Committee will apply the general selection and monitoring principles described in this investment policy.

D. Investment Option Monitoring

- 1. The investment options will be reviewed, net of all fees, and compared to reasonable benchmarks on a regular basis. While frequent change is neither expected nor desirable, the process of monitoring investment performance relative to specified guidelines is necessary and ongoing.
- 2. A review of each investment option shall be conducted regularly. A review of any available fee reductions will also be conducted periodically. If the Staff or consultant have significant concerns about a provider, the Staff or consultant will communicate to the Investment Committee and a course of action may be determined and initiated. Unusual, notable or extraordinary events should be communicated by the provider immediately to the Staff, consultant and representatives of the Board of Trustees. Examples of such events may include portfolio manager or team departure, violation of investment guidelines, material litigation against the firm, or material changes in firm ownership structure, or announcements thereof.

3. If overall satisfaction with the investment option is acceptable, no action is required. If areas of dissatisfaction exist, the investment provider and the Board Trustees may take steps to remedy the deficiency depending on the resulting area of underperformance. If over a reasonable period, the investment provider is unable to resolve the issue, termination may result.
4. Monitoring of the Investment Option(s)

The Committee shall monitor the investment options as circumstances warrant. As part of its monitoring process, the Committee may consider the following:

Criteria	Measure	Goal(s)
Performance	<ul style="list-style-type: none"> ▪ 3-year record ▪ 5-year record 	<ul style="list-style-type: none"> ▪ reasonable vs. peer group and/or benchmark
Risk	<ul style="list-style-type: none"> ▪ 3- or 5-year standard deviation 	<ul style="list-style-type: none"> ▪ reasonable vs. peer group and/or benchmark
Risk-adjusted performance	<ul style="list-style-type: none"> ▪ 3- or 5-year Sharpe ratio 	<ul style="list-style-type: none"> ▪ reasonable vs. peer group and/or benchmark
Expense ratios	<ul style="list-style-type: none"> ▪ Total expenses 	<ul style="list-style-type: none"> ▪ Consistent with peer group median
Investment objective/style	<ul style="list-style-type: none"> ▪ Style purity 	<ul style="list-style-type: none"> ▪ Option should maintain reasonable correlation to appropriate benchmark as evidenced by R-squared

5. The Committee may, from time to time as warranted, modify these criteria and goals, or may consider other criteria and goals, all within the Committee's sole discretion as it deems appropriate.
6. Monitoring of Target Date Funds

The monitoring process may include, but is not limited to, the following steps:

- a. Review any significant changes (investment strategy, underlying assumptions or management changes) in the target date offering,
- b. Review the glide path to ensure the strategy chosen remains appropriate for participants and the manager is adhering to the investment process and performance objective,
- c. Review performance relative to custom benchmark, category averages, and other benchmarks,
- d. Review the underlying holdings of the target date offering, and

- e. Review qualitative factors (key personnel making asset allocation and investment decisions, manager's available resources and parent organization).

7. Monitoring of Fixed Interest/Stable Value Option

The Committee shall monitor any fixed interest/stable value option as frequently as circumstances warrant. As part of its monitoring process, the Committee may take into account some or all of the following criteria, as the Committee deems appropriate in its sole discretion:

- a. Financial strength ratings of the guarantor provided by the major ratings agencies;
- b. Current interest rates;
- c. Interest rate history and minimum guaranteed contract rate;
- d. Contract liquidity provisions; and,
- e. Current market to book value ratio (stable value funds only).

8. Monitoring of the Default Investment Options

The Committee will apply the general monitoring principles described in this investment policy.

E. Investment Option Termination

- 1. An investment option/provider should be considered for termination when the Staff and Board of Trustees has lost confidence in the investment option's/provider's ability to:
 - a. Achieve performance and risk objectives as outlined in the fund's prospectus;
 - b. Comply with investment guidelines;
 - c. Comply with reporting requirements; or,
 - d. Maintain a stable organization and retain key relevant investment professionals.
- 2. If the investment option/provider has consistently failed to adhere to one or more of the above conditions, it is reasonable to presume a lack of adherence going forward. Failure to remedy the circumstances of

unsatisfactory performance by the investment option/provider, within a reasonable time, shall be grounds for termination.

3. Before deciding to remove or substitute an investment option, however, and in light of its fiduciary responsibilities, the Committee may consider the following:
 - a. The investment option's long-term investment performance on a rolling basis;
 - b. Recent changes, such as investment option restructurings or management changes designed to correct deficiencies;
 - c. The appropriateness or relevance of an investment option's stated peer group, since funds may be misclassified or poorly classified;
 - d. The investment option's adherence to a stated investment style, whether or not that investment style has been in or out of favor;
 - e. Unusual market circumstances or volatility;
 - f. Prospectus investment constraints, such as socially responsible mandates; and
 - g. The degree to which the investment option has reduced or controlled risk, which might constrain the investment option's ability to outperform other options.
4. It is the Board's intention to assure all interested parties that decisions made in carrying out these actions occur in an environment of full disclosure characterized by objective evaluation practices and proper documentation. The overriding consideration with respect to all decisions is that they shall be made solely in the best interest of RSP and DCP participants and beneficiaries and consistent with other legal requirements.
5. Prior to the termination decision, the primary and other relevant considerations shall be identified and described. An evaluation covering the quantitative and qualitative issues to be considered may be developed for each case and the relative importance of each evaluation area may be determined. Documentation regarding any such action may include, but is not limited to, the following items:
 - a. A full description of the reason for the action, including the specific elements, serving as the basis for the evaluation and identification of the relevant issues from the perspective of SURS;
 - b. The assumptions made in the evaluation, if any; and,

- c. The results considered and/or qualitative issues upon which the action was based.
- 6. An investment option/provider to be terminated shall be removed using one of the following approaches:
 - a. Remove and replace (map assets) with an alternative investment option/provider.
 - b. Freeze the assets managed by the terminated investment option/provider and direct new assets to a replacement or current investment option/provider.
 - c. Remove the investment option/provider and do not provide a replacement investment option/provider.
- 7. Any change to the investment options or provider lineup will be communicated to RSP and DCP participants as soon as practical upon approval by the Board of Trustees.

F. Coordination with the Plan Document


Notwithstanding the foregoing, if any term or condition of this investment policy conflicts with any term or condition in the plan document, the terms and conditions of the plan document shall control.

6. Exhibits

Attached hereto and incorporated herein are the following Exhibits:

N/A

7. Approval

Name	Suzanne Mayer
Title	Executive Director
Signature	 <small>Suzanne Mayer (Sep 27, 2022 1:38 CDT)</small>
Date	Sep 27, 2022

**THIS POLICY WAS APPROVED BY THE SURS BOARD OF TRUSTEES
on MARCH 11, 2022.**

State Universities Retirement System

March 9, 2023

2023 Capital Markets
Assumptions

Introduction



Setting Capital Market Assumptions (“CMAs”)

- CMAs are the inputs needed to calculate a portfolio’s expected return, volatility, and relationships (i.e., correlations) to the broader markets.
 - CMAs are also used in mean-variance optimization, simulation-based optimization, and every other technique for finding “optimal” portfolios.
- Consultants (including Meketa) generally set them once per year.
 - Our results are published in January based on December 31 data.
- This involves setting long-term expectations for a variety of asset class/strategy attributes:
 - Returns
 - Standard Deviations
 - Correlations
- Our process relies on both quantitative and qualitative methodologies.



Asset Class/Strategy Definitions

- We identify asset classes and strategies that are potentially appropriate for long-term allocations by our clients.
- Several considerations influence this process:
 - Unique return behavior,
 - Observable historical track record,
 - A robust market,
 - And client requests.
- We then make forecasts for each asset class/strategy.
 - We created assumptions for 104 “asset classes” in 2023.

Market Update



2023 CMAs - SURS

Market Update

2023 vs. 2022 Summary

- 2022 was a difficult year, with losses experienced for most asset classes as interest rates increased, spreads widened, and most risk assets declined in value.
 - However, there is a notable silver lining to this story – increased return assumptions.
- Bond yields increased by the largest amount since the 1990s, driving up future returns for fixed income assets.
- Despite lower growth projections globally, the price decline experienced by equities and many other risk assets has improved their forward-looking returns.
- The net result is the largest increase in return assumptions in our 20+ year history of creating CMAs.
- While our 10-year CMAs continue to be lower than many of our 20-year CMAs, this is no longer true across the board, especially in fixed income.

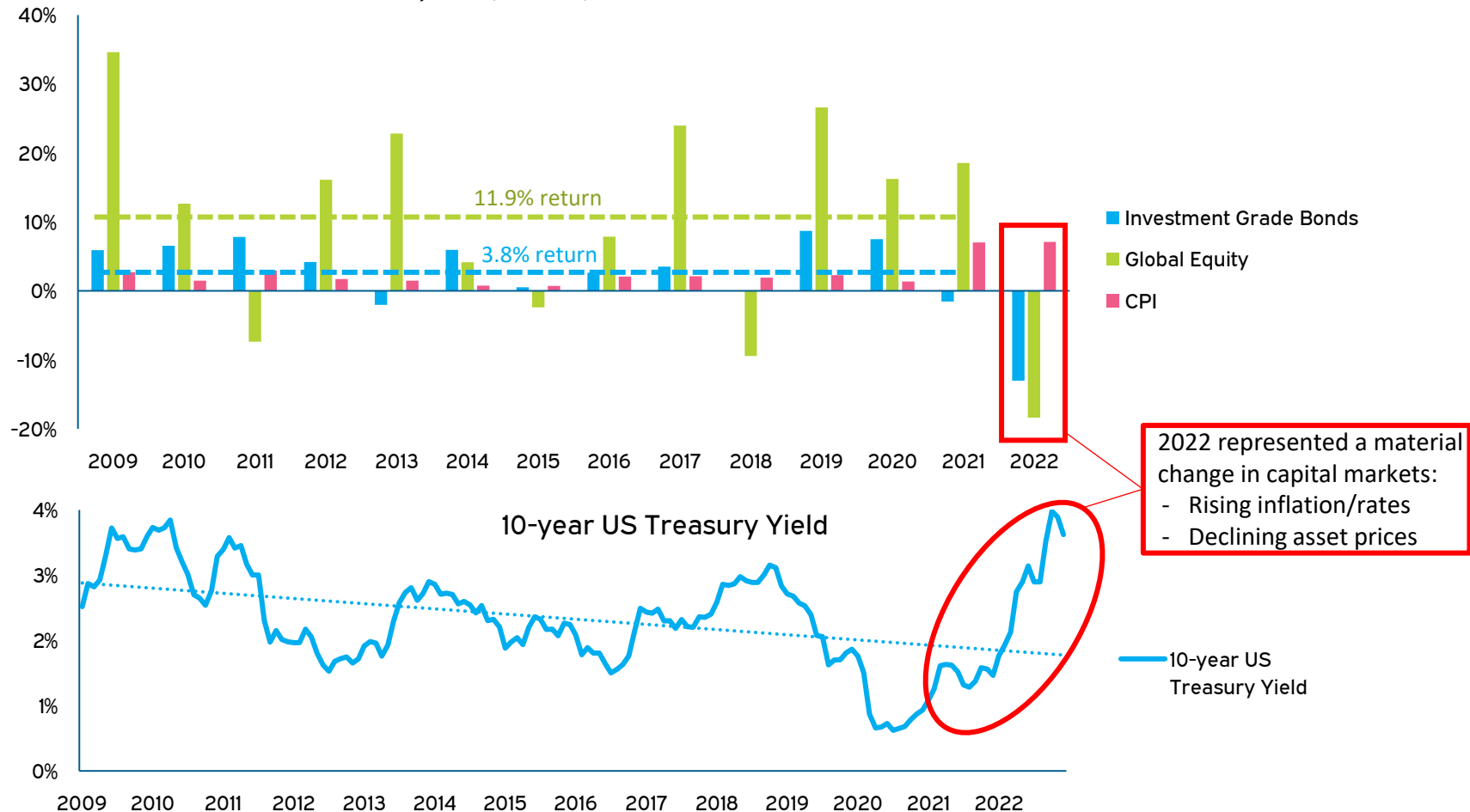


2023 CMAs - SURS

Market Update

Looking Back - A Decade+ of Tailwinds

Equities, Bonds, and Inflation | 2009-2022



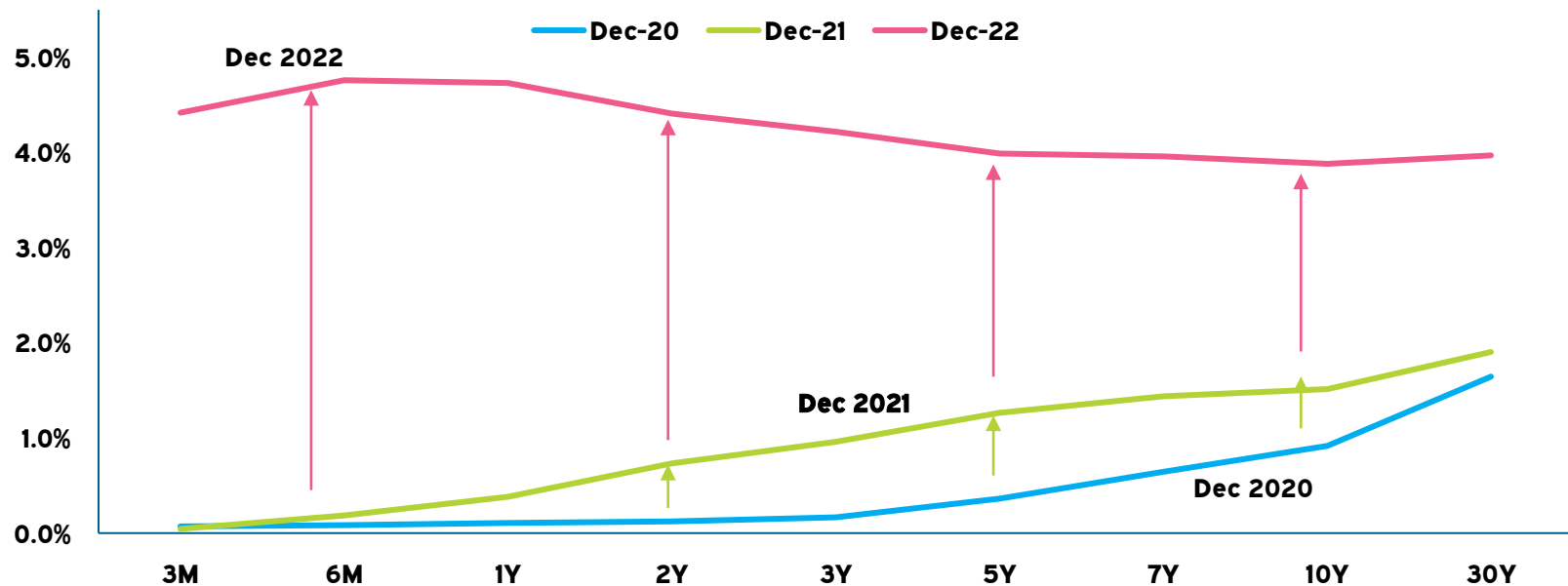
Source: Bloomberg, MPI Stylus.



Rising Interest Rates

- The US Treasury yield curve steepened during 2021, as concerns about inflation battled with the demand for safe-haven assets (e.g., Treasuries) and Federal Reserve policies designed to maintain low rates (e.g., the quantitative easing program).
- Coinciding with elevated and sustained inflation, rates continued to increase in 2022.

US Yield Curve



Source: Bloomberg. Data is as of December 31, 2022.

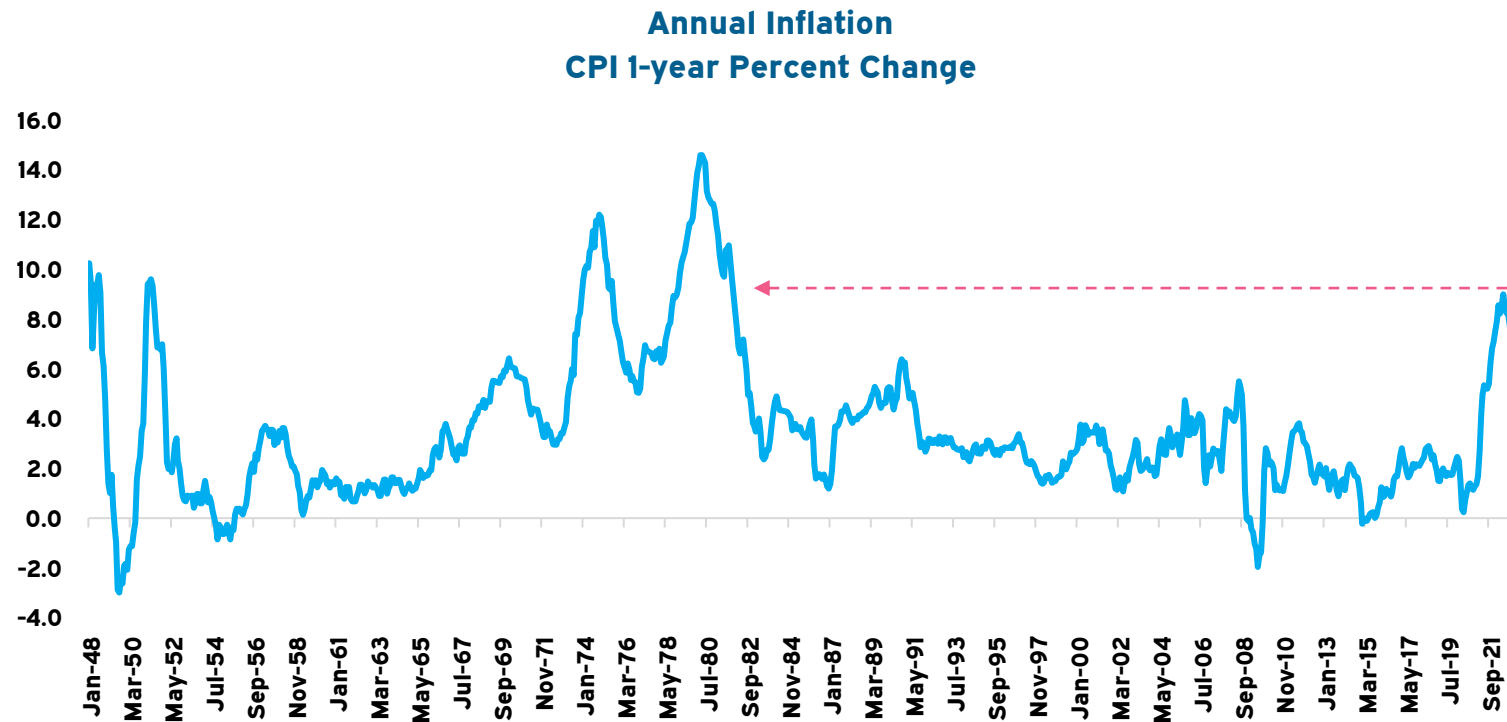


2023 CMAs - SURS

Market Update

Impact of High Inflation

- Interest rates are facing inflationary headwinds not seen since the early 1980s.
- This has impacted investor and Fed behavior and consequently impacted the correlation of US Treasuries and public equity.



Source: FRED.



2023 CMAs - SURS

Market Update

Rising Rates = Higher Yields

→ Rising interest rates (and wider credit spreads in 2022) have resulted in higher yields across every major sector of the global bond market.

Index	Yield to Worst 12/31/22 (%)	Yield to Worst 12/31/21 (%)	Yield to Worst 12/31/20 (%)
Fed Funds Rate	4.3	0.1	0.1
10-year Treasury	3.9	1.5	0.9
Bloomberg Aggregate	4.7	1.8	1.1
Bloomberg Corporate	5.4	2.3	1.7
Bloomberg Securitized	4.7	2.0	1.3
Bloomberg Global Aggregate	3.7	1.3	0.8
Bloomberg EM Local Currency Government	4.4	3.8	3.2
Bloomberg EM Hard Currency Aggregate	7.3	4.0	3.2
Bloomberg US Corporate High Yield	9.0	4.2	4.2

Source: Bloomberg.



Lower Prices for US Equities

- US stocks had a rough year in 2022, with the S&P 500 index experiencing an 18.1% loss.
- Valuations remain elevated relative to their long-term history but are much closer to their average of the past 30 years.

US Equity Cyclically Adjusted P/E



Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is as of December 31, 2022.



Lower Prices in Non-US Equities, too

- EAFE equities declined 14.5% in USD terms in 2022, though the loss was only 7.0% in local currency.
- EAFE valuations are now relatively close to their historical average.

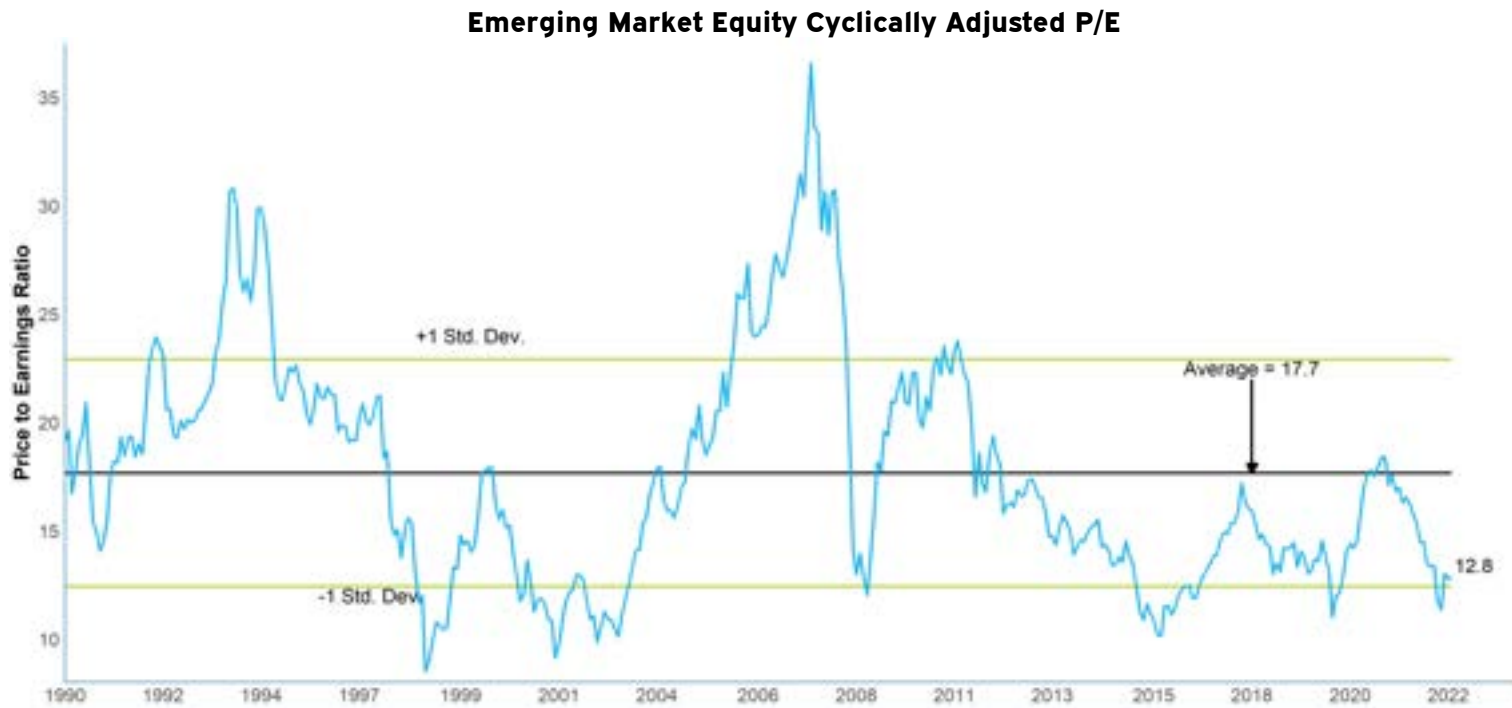


Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of December 31, 2022.



And Lower Prices in Emerging Market Equities

- Driven by a substantial downturn in Chinese equities (-21.9%), emerging market equities finished the year down 20.1%.
- As a result, valuations are well below their long-term average.

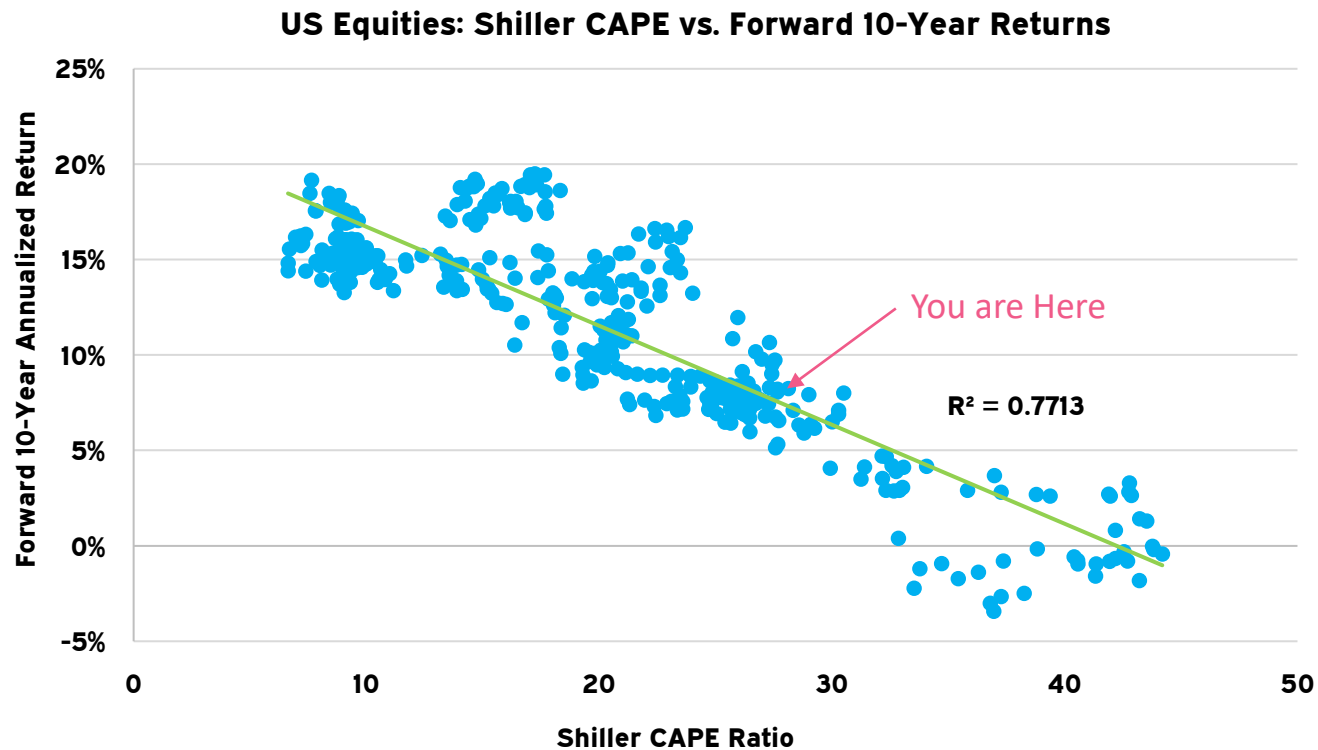


Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of December 31, 2022.



Impact of Equity Prices on Returns

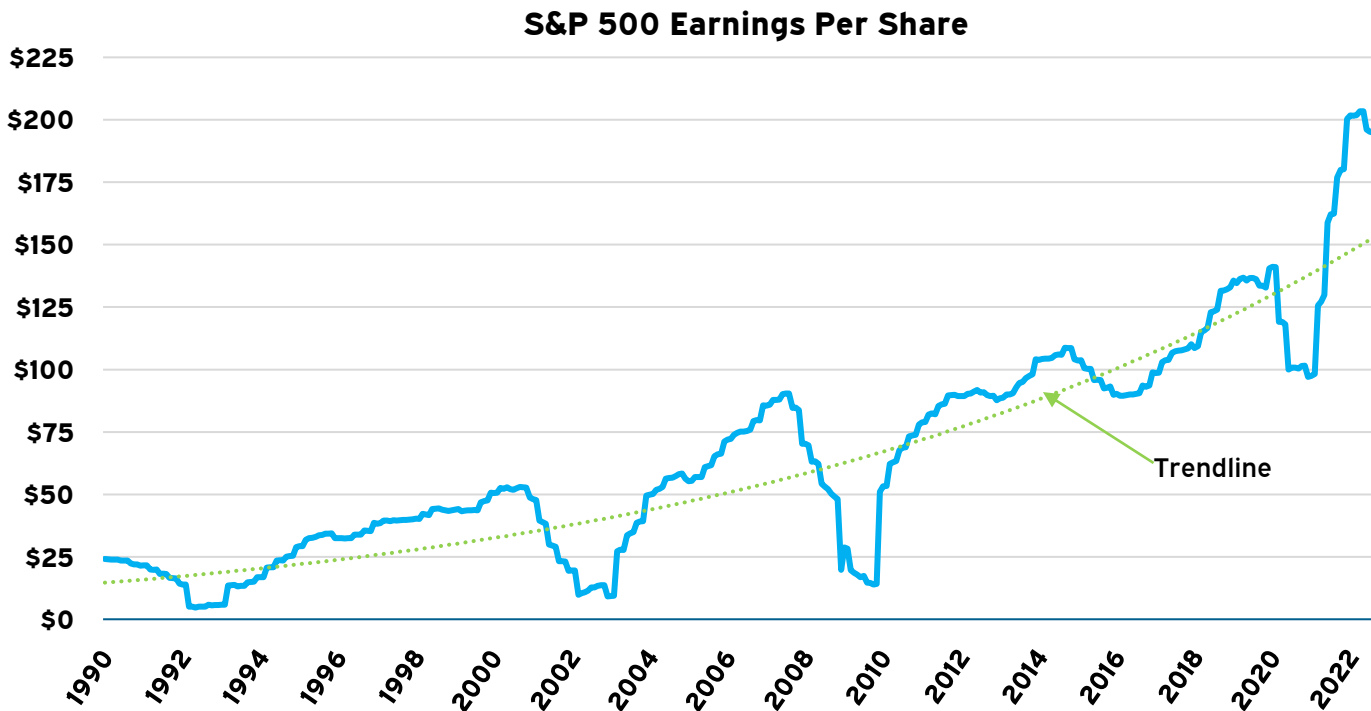
- Relative prices have been indicative of future equity returns.
- Higher prices have led to lower future returns, and vice versa.



Source: Robert Shiller, Yale University, and Meketa Investment Group. Data is based on monthly returns and Cyclically Adjusted P/E ratio on S&P 500 Index for the period from January 1980 through December 2022.

**2023 CMAs - SURS****Market Update****Earnings Growth**

- S&P 500 earnings continued to grow in the first half of 2022, setting a new record.
- EPS peaked at over \$200 but finished the year below where it started.



Source: S&P 500 Index data from Bloomberg. Represents trailing 12-month "as reported" earnings per share. Data is as of December 31, 2022.



The Link between Economic Growth and Expected Returns

→ We have long assumed that long-term earnings growth is linked to economic growth.

- However, one can exceed the other (and vice versa):

	US Nominal GDP Growth Per Annum	US Corporate Earnings Growth Per Annum	S&P 500 EPS Per Annum
Since 1990	4.7%	6.9%	6.5%
Since 2010	4.5%	5.3%	10.9%

→ Corporate profits can comprise a higher or lower share of the GDP pie.

- In the US, corporate profits have grown faster than the rest of the economy.

→ Net issuance vs buybacks affects EPS.

- In the US, net shareholder buybacks have resulted in EPS growing faster than earnings.

→ Intervention by the state & structural inefficiencies also affect earnings growth.

- The degree to which maximizing shareholder wealth is a primary motivation varies by market.
- Corruption, graft, nepotism, lack of property rights or clear rule of law, can all affect the link between economic growth and earnings growth.

Source: Federal Reserve Economic Data, S&P. Corporate earnings defined as Corporate Profits After Tax (without IVA and CCAAdj). Data is as of September 30, 2022.

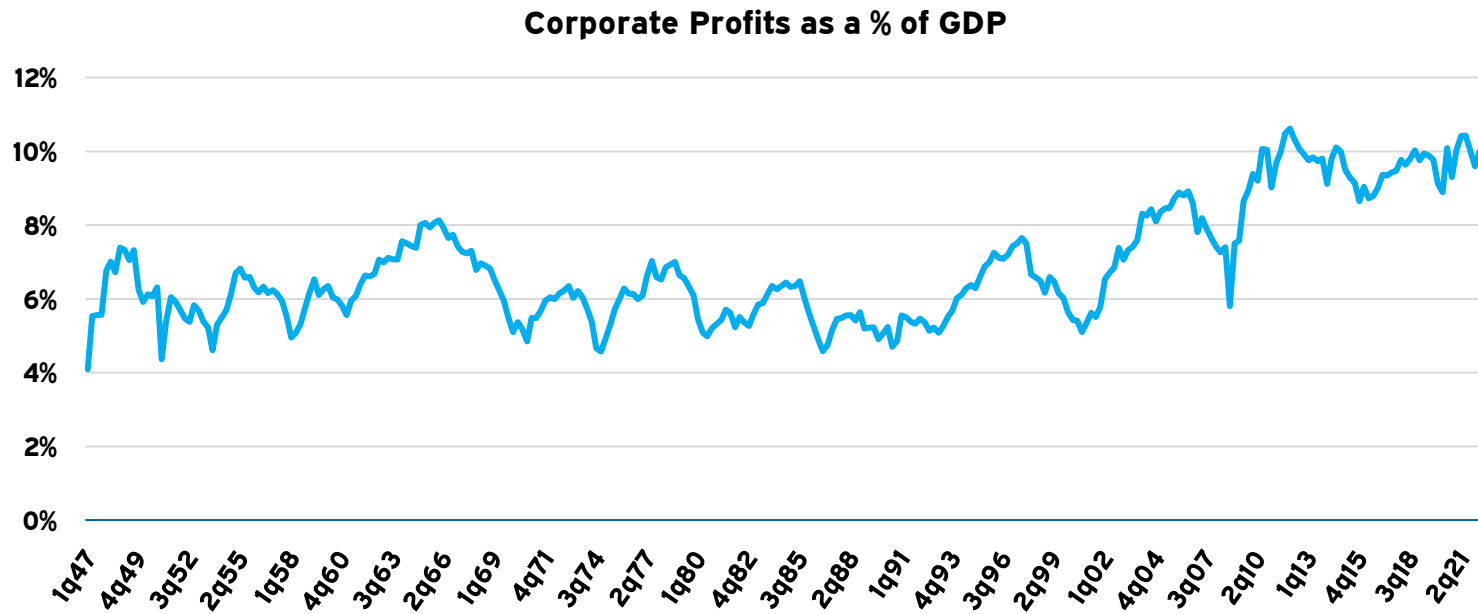


2023 CMAs - SURS

Market Update

Profitability

- The strong post-2000 growth in earnings is linked in part to profits consuming a greater proportion of the economic pie.
 - Since 2000, corporate profits averaged 8.7% of GDP vs 6.1% prior to that.
- Justifying higher future earnings growth implies that profits will continue to comprise a higher percentage of GDP.



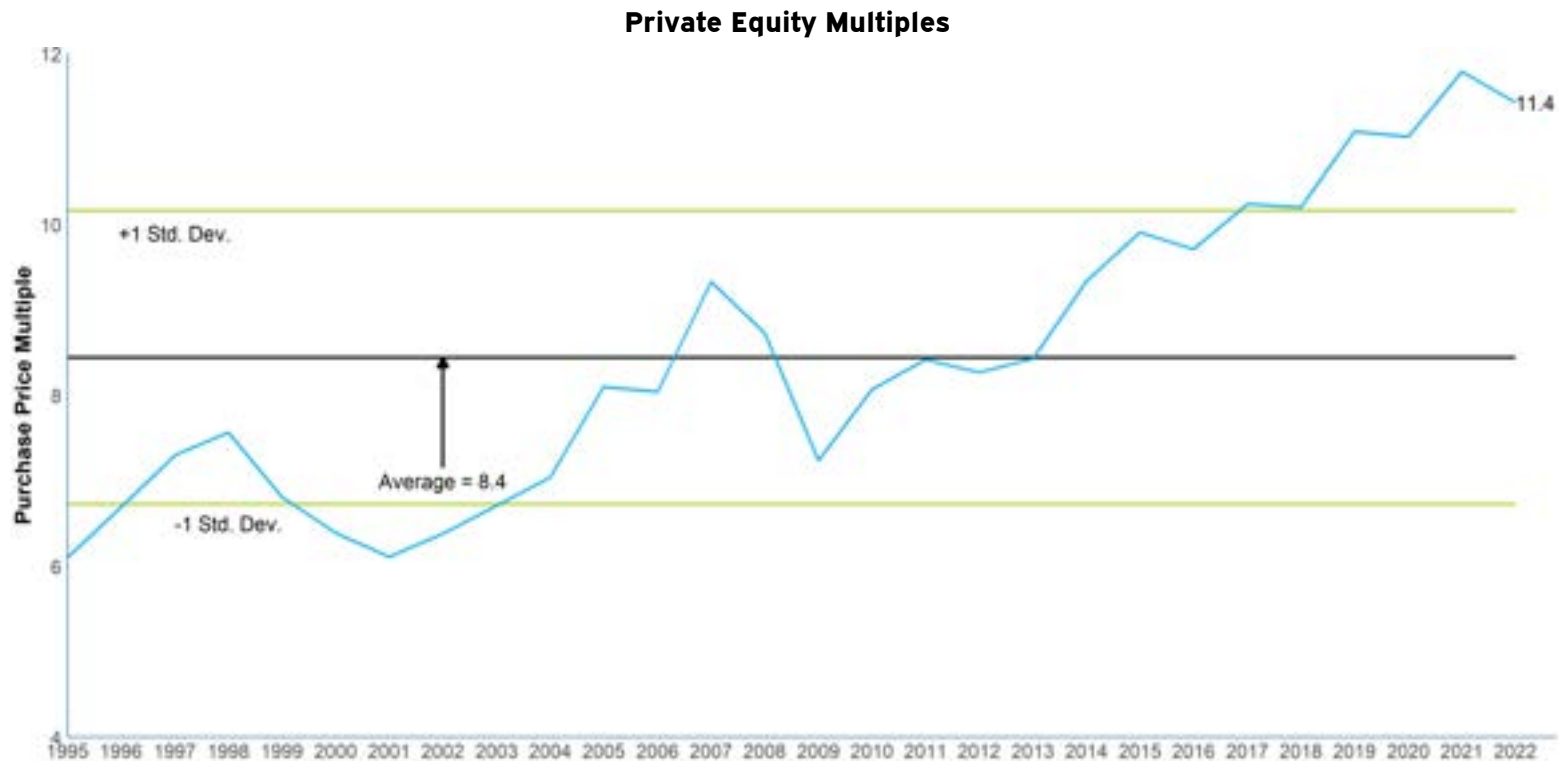
Source: Meketa analysis of FRED data. Series uses Seasonally Adjusted Annual Rate for Nominal GDP and Corporate Profits After Tax with Inventory Valuation Adjustment (IVA) and Capital Consumption Adjustment (CCAdj).



Higher Prices in Private Equity, too

→ EBITDA multiples are a close proxy to a P-E ratio for private equity.

- The downturn in public market valuations was not experienced to the same extent in private equity prices.



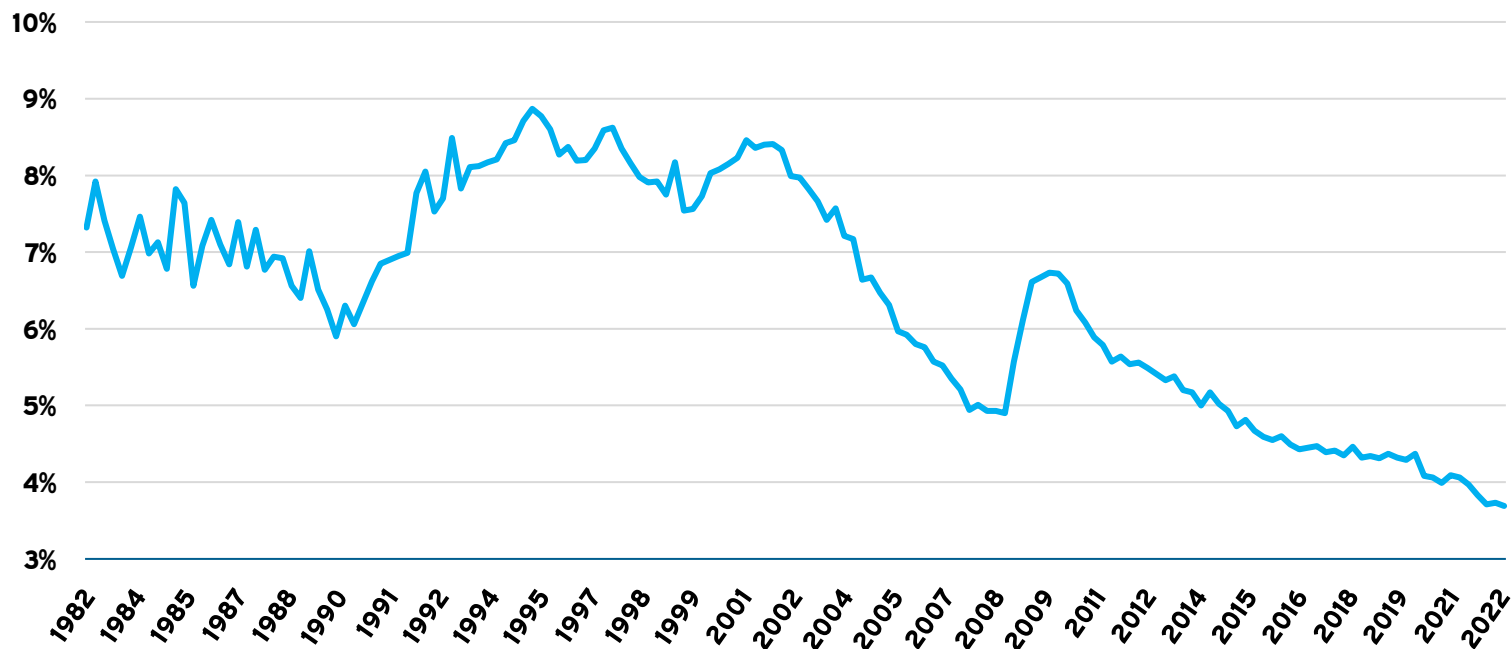
Source: S&P LCD Average EBITDA Multiples Paid in All LBOs. Annual figures, except for 2022 (YTD), as of October 31, 2022.



Little Change for Real Estate

- Real estate cap rates are similar to an earnings yield (the inverse of the P-E ratio) for equities.
 - Cap rates are indicative of future returns.
- Cap rates declined in 2022, continuing their long-term downward trend.

Core Real Estate Cap Rates



Source: NCREIF NPI value-weighted cap rates. As of September 30, 2022.



Summary and Primary Implications for CMAs

→ Higher interest rates

- Higher expected returns for yield-oriented asset classes (e.g., Treasuries, Credit, etc.).
- Higher expected returns for asset classes that hold cash as collateral (e.g., ARP).

→ More attractive valuations for public equity markets

- Depending on growth projections, cheaper valuations imply higher expected returns.

→ Little change in private markets

- Due to illiquid pricing mechanisms (e.g., appraisals, lack of mark-to-market, etc.), CMAs for private markets experienced less change and/or declined due to higher borrowing costs.

→ Overall SURS Implication

- Higher expected return for current and long-term policy portfolio.

Overview of Process



Developing Expected Returns

- Market practitioners generally make use of three methods for developing long-term expected returns:
 - Historical average returns
 - Financial/economic theory (e.g., higher risk = higher returns, capital structures, etc.)
 - Current measures (e.g., starting valuations relative to history)
- In addition to the above, practitioners also incorporate general projections for macroeconomic metrics such as GDP and inflation, among others.
- Meketa's methods are in-line with industry standards and represent a mixture of the three mechanisms.
 - Historical average returns play the smallest role in our assumptions.



2023 CMAs - SURS

Our Process

2022 Peer Survey

- Annually, Horizon Actuarial Services, LLC publishes a survey of capital market assumptions that they collect from various investment advisors.¹
- The Horizon survey is a useful tool to determine whether a consultant's expectations for returns (and risk) are reasonable.

Asset Class	Horizon 10-Year Average (%)	Meketa 10-Year (%)	Horizon 20-Year Average (%)	Meketa 20-Year (%)
Cash Equivalents	1.5	1.1	2.0	1.7
TIPS	2.0	1.6	2.6	2.4
US Core Bonds	2.6	1.7	3.5	2.4
US High Yield Bonds	4.0	3.3	5.0	4.4
Emerging Market Debt	4.6	4.3	5.3	4.4
Private Debt	6.9	6.7	7.1	7.3
US Equity (large cap)	5.9	5.4	6.5	6.8
Developed Non-US Equity	6.5	6.7	7.1	7.5
Emerging Non-US Equity	7.3	8.1	7.9	8.4
Private Equity	9.2	8.9	9.8	10.0
Real Estate	5.4	6.4	6.0	7.4
Infrastructure	6.4	7.1	6.9	7.7
Commodities	3.7	4.3	4.2	4.6
Hedge Funds	4.8	3.4	5.5	4.4
Inflation	2.5	2.6	2.4	2.2

¹ The 10-year horizon included all 40 respondents, and the 20-year horizon included 24 respondents. Figures are based on Meketa's 2022 CMAs.



Building 10-year Forecasts

→ Our first step is to develop 10-year forecasts based on fundamental models.

- Each model is based on the most important factors that drive returns for that asset class:

Asset Class Category	Major Factors
Equities	Dividend Yield, GDP Growth, Valuation
Bonds	Yield to Worst, Default Rate, Recovery Rate
Commodities	Collateral Yield, Roll Yield, Inflation
Infrastructure	Public IS Valuation, Income, Growth
Natural Resources	Price per Acre, Income, Public Market Valuation
Real Estate	Cap Rate, Yield, Growth
Private Equity	EBITDA Multiple, Debt Multiple, Public VC Valuation
Hedge Funds and Other	Leverage, Alternative Betas

→ The common components are income, growth, and valuation.

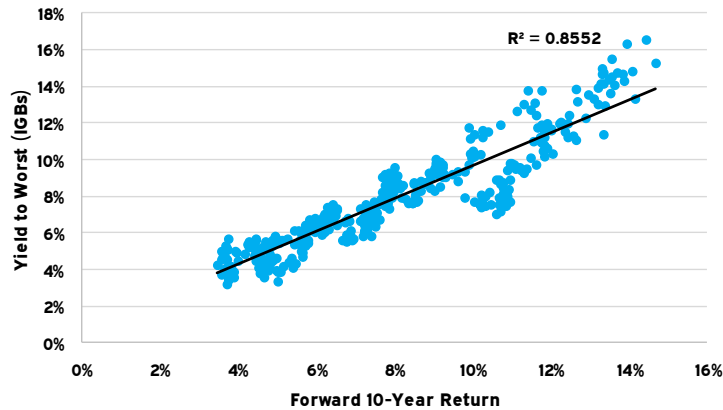


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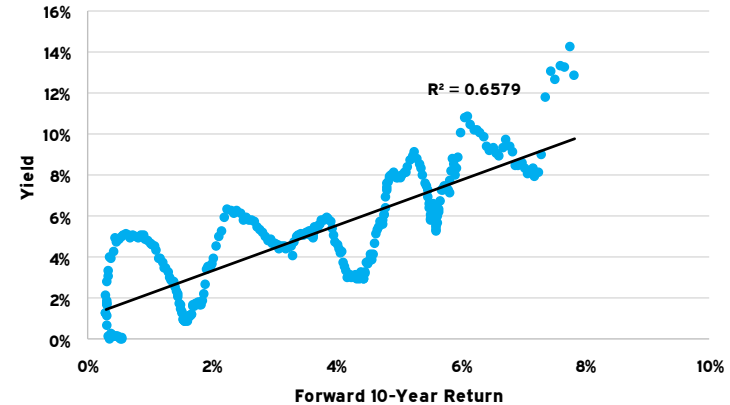
Our Process

Some factors are naturally more predictive than others

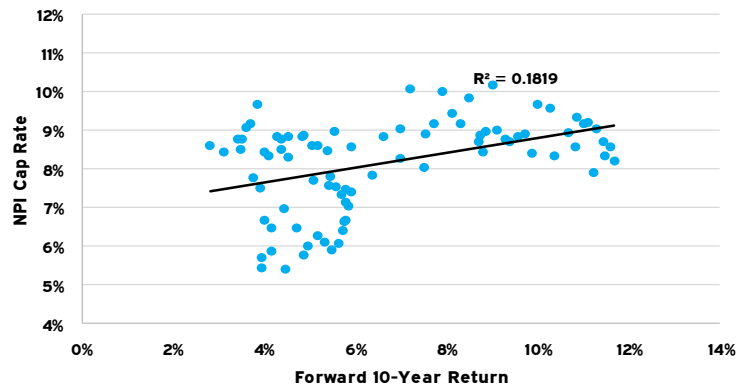
Investment Grade Bonds
Yield to Worst vs. Forward 10-Year Returns



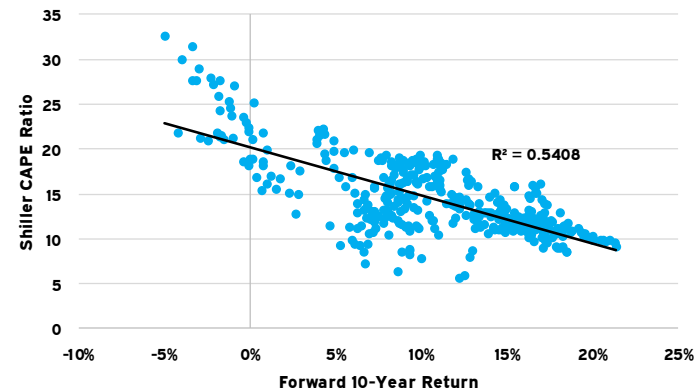
Cash (90-day T-Bill)
Yield vs. Forward 10-Year Returns



Core Real Estate
Cap Rates vs. Forward 10-Year Returns



US Equities
Shiller CAPE vs. Forward 10-Year Returns





CMA Development Example: Public Equities

→ We use a fundamental model for equities that combines income and capital appreciation:

$$E(R) = \text{Dividend Yield} + \text{Price Return} + \text{Currency Effect}$$

$$\text{Price Return} = \text{Earnings Growth} + \text{Multiple Effect}$$

→ Meketa evaluates historical data to develop expectations for dividend yield, earnings growth, multiple effect, and currency effect.

→ Earnings growth is a function of real GDP growth, inflation, and exposure to foreign revenue sources.

→ We use three approaches to calculate the multiple effect.

- The models assume reversion to the mean or fair value.

→ We arrive at our preliminary 10-year assumption (in local currency)

$$\text{US Equity } E(R) = 1.8\% + [(1 + 5.4\%) \times (1 + 0.6\%) - 1] = 7.8\%$$

→ For non-US equities, we add the expected currency effect vs. the US Dollar to the local expected return.



CMA Development Example: Bonds

- The short version for most investment grade bond models is: $E(R)$ = current YTW.
- The longer version accounts for the expected term structure in the future.
 - If the average duration is roughly five years, we calculate the expected yield in five years.
 - The net effect tends to be minimal, since higher income in years 5 to 10 is offset by price declines in years 1 to 5.
- For corporate bonds, we assume the spread vs. Treasuries will revert most of the way back to their mean since 1990.
- For cash, we use an average of the current rate and the rate suggested by the Taylor Rule (inputs are current & potential GDP, current & desired inflation).
- For TIPS, we add the real yield for the TIPS index to the expected inflation rate used in the equities models.
- As with equities, we also make currency adjustments when necessary.
 - This currently provides a tailwind to foreign and EM local currency debt.



2023 CMAs - SURS

Our Process

CMA Development Example: Bonds (con't)

→ For anything with credit risk, we also take into account the expected default & recovery rates.

	Inv. Grade Corporate (%)	LT Corporate (%)	Foreign Debt (%)	EM Debt (major) (%)	EM Debt (local) (%)	High Yield (%)	Bank Loans (%)
Default Rate	0.08	0.08	0.09	1.27	0.21	3.00	3.00
Loss Rate	50	50	50	50	50	50	40

→ As a guide, we use Moody's historical global default & recovery data for each bucket as it is currently rated.

- Example: EM Debt (local currency)

Rating	Weighting (%)	Default Rate (%)	Weighted Default (%)
Aaa	13.4	0.06	0.01
Aa	61.4	0.09	0.06
Baa	17.5	0.27	0.05
Ba	6.9	1.06	0.07
B	0.7	3.40	0.02
Total Weighted Average Default Rate:			0.21



CMA Development Example: Private Equity

- For Buyouts, we start with public equity expected returns.
- We add a premium or discount based on the pricing of buyouts relative to stocks.
 - EBITDA multiples provide an indication of pricing.¹
- We add a premia for control (e.g., for greater operational efficiencies) and leverage.
 - We assume leverage of 1.4x - 1.6x.
- We subtract borrowing costs and fees.
 - We assume borrowing costs are consistent with the yield on syndicated loans.
- We also look at how valuations (through September 30) compared to price changes for public markets.

¹ Source: Cambridge Associates, S&P LCD.



CMA Development Example: Private Equity (cont.)

- For Venture Capital, we create a public market proxy that we can compare through time.
 - The composite is composed of: traditional technology, biotech, pharmaceuticals, life sciences, IT services, internet, and clean tech & environmental stocks.
 - The weighting to each sector varies through time.
 - The data is an imperfect proxy and the correlation with future returns is not high.
 - Still, this proxy provides some indication of pricing relative to small cap stocks.
- We also look at how VC valuations (through September 30) compared to price changes for public markets.



CMA Development Example: Private Credit

- For direct lending and asset-based lending (formerly specialty finance), we use a building blocks approach that is based on income and loss thereof.
- For income, we make an estimate based on our private credit team's assessment of what the current average coupon rate is.
 - We add an upfront fee (paid by the borrower) or original issue discount if applicable.
 - This usually ranges between 1% and 3%.
 - We incorporate default & recovery rates.
 - We use a default rate and recovery rate roughly the same as for bank loans.
 - These are subjective, as no long-term data exists on private credit defaults.
 - We add leverage (more applicable in direct lending) and subtract the cost of borrowing.
 - We add an equity kicker (more applicable in asset-based lending), adjusted for defaults.
 - Managers expect 2.5% to 5% return from warrants, co-invests, or other equity structures.
 - We subtract management fees and carried interest.



CMA Development Example: Private Credit (continued)

- For Special Situations Lending, we use a combination of models for capital solutions and more traditional distressed debt.
- The capital solutions model resembles that for direct lending, but with higher equity kickers, coupons, and default rates.
 - The distressed debt model resembles that for public high yield bonds and is based on data for the Bloomberg US CCC and Ca-D indices.
 - It uses a much high default rate than high yield bonds (the historical rate is roughly 30%).
 - We subtract management fees and carried interest.
- For aggregate private credit, we take a weighted average based on a mix of the broad opportunity set and a typical client allocation to private debt.

Component	Weight (%)	E(R) (%)
Direct Lending	50	8.5
Asset Based Lending	20	9.4
Special Situations	30	10.8
Private Debt Composite		9.4



CMA Development Example: Real Estate

→ For Core Real Estate, we used two models.

- The first model adds a premium to the Cap Rate.¹
 - Core RE has historically returned approximately 1.2% more than its cap rate at the start of the period over the subsequent ten years.
- The second model combines income with capital appreciation potential.
 - The income for core RE has historically been the cap rate minus 2-3% (for Cap Ex).
 - We assume income (NOI) grows at the rate of inflation.
 - We assume there is some measure of fair value for cap rates relative to bond yields.
 - We make a price adjustment based on the forward yield curve.
- We adjust for leverage, borrowing costs, and fees.

¹ Source: NCREIF.



CMA Development Example: Real Estate (cont.)

- For Non-Core Real Estate, we start with a historical premiums versus core RE.
 - This includes the effect of greater control, development, buying at distress, etc.
- We add a non-US component (e.g., premium for lower cap rates) and a currency effect.
 - We assume 20% to 40% of non-core commitments will be ex-US (majority in Europe).
- We lever the portfolio and then subtract the cost of borrowing.
 - Value-added leverage ranges 50-70% while opportunistic ranges 60-80%.
 - The cost of debt is higher for value added than core, and higher still for opportunistic.
- Finally, we subtracted management fees and carried interest.



CMA Development Example: Infrastructure

- For private infrastructure, our model combines income and capital appreciation.
- For income, we used our best estimate of expected yield.
 - Assume a range of 4-6% for core and 2-4% for non-core.
- We assume asset prices keep up with inflation and/or GDP growth.
 - We use inflation for core IS and GDP for non-core, since the latter is more economically sensitive.
- We then make a qualitative judgment based on our infrastructure team's assessment of current market pricing.
 - There is a paucity of publicly available data on pricing for private infrastructure.
- We add a control premium for non-core IS (as these more closely resemble buyouts).
- We lever the portfolios and then subtract the cost of borrowing.
 - Core levered at 1.8:1, non-core at 1.7:1
 - Cost of debt for non-core is similar to buyouts, while the cost for core is slightly lower.
- Finally, we add any currency effect and subtract management fees and carry.



The Other Inputs: Standard Deviation and Correlation

→ Standard deviation:

- We review the trailing fifteen-year standard deviation, as well as skewness.
- Historical standard deviation serves as the base for our assumptions.
- If there is a negative skew, we increased the volatility assumption based on the size of the historical skewness.

Asset Class	Historical Standard Deviation (%)	Skewness	Assumption (%)
Bank Loans	7.4	-2.6	10.0
FI/L-S Credit	6.5	-2.5	9.0

- We also adjust for private market asset classes with “smoothed” return streams.

→ Correlation:

- We use trailing fifteen-year correlations as our guide.
- Again, we make adjustments for “smoothed” return streams.

→ Most of our adjustments are conservative in nature (i.e., they increase the standard deviation and correlation).



Moving from 10-Year to 20-Year Forecasts

- Our next step is to combine our 10-year forecasts with projections for years 11-20 for each asset class.
- We use a risk premia approach to forecast 10-year returns in ten years (i.e., years 11-20).
 - We start with an assumption (market informed, such as the 10-year forward rate) for what the risk free rate will be in ten years,
 - We then add a risk premia for each asset class.
 - We use historical risk premia as a guide, but many asset classes will differ from this, especially if they have a shorter history.
 - We seek consistency with finance theory (i.e., riskier assets will have a higher risk premia assumption).
- Essentially, we assume mean-reversion over the first ten years (where appropriate), and consistency with CAPM thereafter.
- The final step is to make any qualitative adjustments.
 - The Investment Policy Committee reviews the output and may make adjustments.



2023 Expected Returns and Changes from Prior Years



2023 CMAs - SURS

Comparing the Results from 2023 to 2022

20-year Geometric Expected Returns Rate Sensitive

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Cash Equivalents	2.9	1.7	1.2	Higher yields
Short-term Investment Grade Bonds	3.5	1.9	1.6	Higher yields
Investment Grade Bonds	4.7	2.4	2.3	Higher yields
Intermediate Government Bonds	3.7	1.9	1.8	Higher yields
Long-term Government Bonds	5.0	2.8	2.2	Higher yields
Mortgage Backed Securities	4.6	2.5	2.1	Higher yields
Investment Grade Corporate Bonds	5.4	3.0	2.4	Higher yields
Long-term Corporate Bonds	5.7	3.7	2.0	Higher yields
Short-term TIPS	3.6	1.9	1.7	Higher yields
TIPS	4.5	2.4	2.1	Higher yields
Long-term TIPS	5.2	3.2	2.0	Higher yields
Global ILBs	4.7	2.3	2.4	Higher yields
Foreign Bonds	4.0	2.3	1.7	Higher yields
<i>US Inflation</i>	<i>2.6</i>	<i>2.2</i>	<i>0.4</i>	<i>Higher long-term economist and market projections</i>



2023 CMAs - SURS

Comparing the Results from 2023 to 2022

20-year Geometric Expected Returns Credit

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
High Yield Bonds	7.3	4.4	2.9	Higher yields
Higher Quality High Yield	6.7	4.2	2.5	Higher yields
Bank Loans	7.0	4.0	3.0	Higher yields
Collateralized Loan Obligations (CLOs)	7.2	4.2	3.0	Higher yields
Convertible Bonds	6.4	3.9	2.5	Higher yields
Emerging Market Bonds (major)	6.4	4.2	2.2	Higher yields
Emerging Market Bonds (local)	6.0	4.6	1.4	Higher yields
Private Debt	9.0	7.3	1.7	Higher yields
Direct Lending	8.3	7.1	1.2	Higher yields
Asset Based Lending	9.0	7.3	1.7	Higher yields
Special Situations Lending	10.2	NA		New



2023 CMAs - SURS

Comparing the Results from 2023 to 2022

20-year Geometric Expected Returns Equities

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
US Equity	8.7	6.8	1.9	Lower valuations and higher risk-free rate
US Small Cap	9.3	7.4	1.9	Lower valuations and higher risk-free rate
Developed Non-US Equity	9.8	7.5	2.3	Lower valuations and higher risk-free rate
Dev. Non-US Small Cap	10.1	7.4	2.7	Lower valuations and higher risk-free rate
Emerging Market Equity	10.0	8.4	1.6	Lower valuations and higher risk-free rate
Emerging Market Small Cap	10.0	8.2	1.8	Lower valuations and higher risk-free rate
Emerging Market ex-China	10.3	NA		New
China Equity	9.3	NA		New
Frontier Market Equity	10.7	8.7	2.0	Lower valuations and higher risk-free rate
Global Equity	9.2	7.2	2.0	Lower valuations and higher risk-free rate
Low Volatility Equity	8.3	6.5	1.8	Lower valuations and higher risk-free rate
Private Equity	11.0	10.0	1.0	Lower valuations and higher risk-free rate
Buyouts	10.7	9.8	0.9	Lower valuations and higher risk-free rate
Growth Equity	11.2	10.1	1.1	Lower valuations and higher risk-free rate
Venture Capital	11.6	10.3	1.3	Lower valuations and higher risk-free rate



2023 CMAs - SURS

Comparing the Results from 2023 to 2022

20-year Geometric Expected Returns Real Estate & Infrastructure

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Real Estate	7.8	7.4	0.4	Higher REIT yields, risk-free rate, and borrowing costs
US REITs	8.0	7.1	0.9	Higher REIT yields and risk-free rate
Core Private Real Estate	6.5	6.1	0.4	Higher borrowing costs and risk-free rate
Value-Added Real Estate	8.3	8.1	0.2	Higher borrowing costs and risk-free rate
Opportunistic Real Estate	9.6	9.6	0.0	Higher borrowing costs and risk-free rate
Infrastructure	8.3	7.7	0.6	Higher borrowing costs offset by higher risk-free rate
Infrastructure (Public)	8.8	7.4	1.4	Lower valuations and higher risk-free rate
Infrastructure (Core Private)	7.8	7.3	0.5	Higher borrowing costs and risk-free rate
Infrastructure (Non-Core Private)	9.5	9.3	0.2	Higher borrowing costs and risk-free rate



2023 CMAs - SURS

Comparing the Results from 2023 to 2022

20-year Geometric Expected Returns Natural Resources & Commodities

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Natural Resources (Public)	7.7	7.3	0.4	strong earnings rebound but questions about the future
Natural Resources (Private)	8.5	8.3	0.2	higher prices offset by higher real income
Energy	8.9	9.0	-0.1	more expensive
Mining	8.5	8.2	0.3	more expensive offset by and higher future rates
Timberland	6.8	6.3	0.5	slightly higher real income and higher future rates
Farmland	7.2	6.6	0.6	slightly higher real income and higher future rates
Sustainability	9.3	8.8	0.5	higher future rates
Gold Mining	8.2	7.9	0.3	mining slightly more expensive
Gold (Metal)	2.8	2.3	0.5	higher inflation expectations
Commodities	4.6	3.7	0.9	higher cash yield and inflation expectations



2023 CMAs - SURS

Comparing the Results from 2023 to 2022

20-year Geometric Expected Returns Alternative Strategies (Other)

	2023 E(R) (%)	2022 E(R) (%)	Δ From 2022 (%)	Notes
Hedge Funds	6.1	4.4	1.7	Higher yields and risk-free rate
Long-Short	5.6	4.1	1.5	Lower equity prices & higher cash yield
Event Driven	7.7	5.2	2.5	Higher yields and risk-free rate
Global Macro	5.7	5.0	0.7	Higher cash yield and risk-free rate
CTA – Trend Following	4.8	4.8	0.0	Lower beta assumption
Fixed Income/L-S Credit	6.5	3.8	2.7	Higher yields and risk-free rate
Relative Value/Arbitrage	6.7	5.1	1.6	Higher cash yield and risk-free rate
Long Vol	1.1	NA		<i>New</i>
Insurance Linked Strategies	6.2	5.0	1.2	Lower expected default rates
Alternative Risk Premia	5.6	4.6	1.0	Higher cash yield and risk-free rate
Risk Parity (10% vol)	7.7	5.2	2.5	Higher yields and risk-free rate

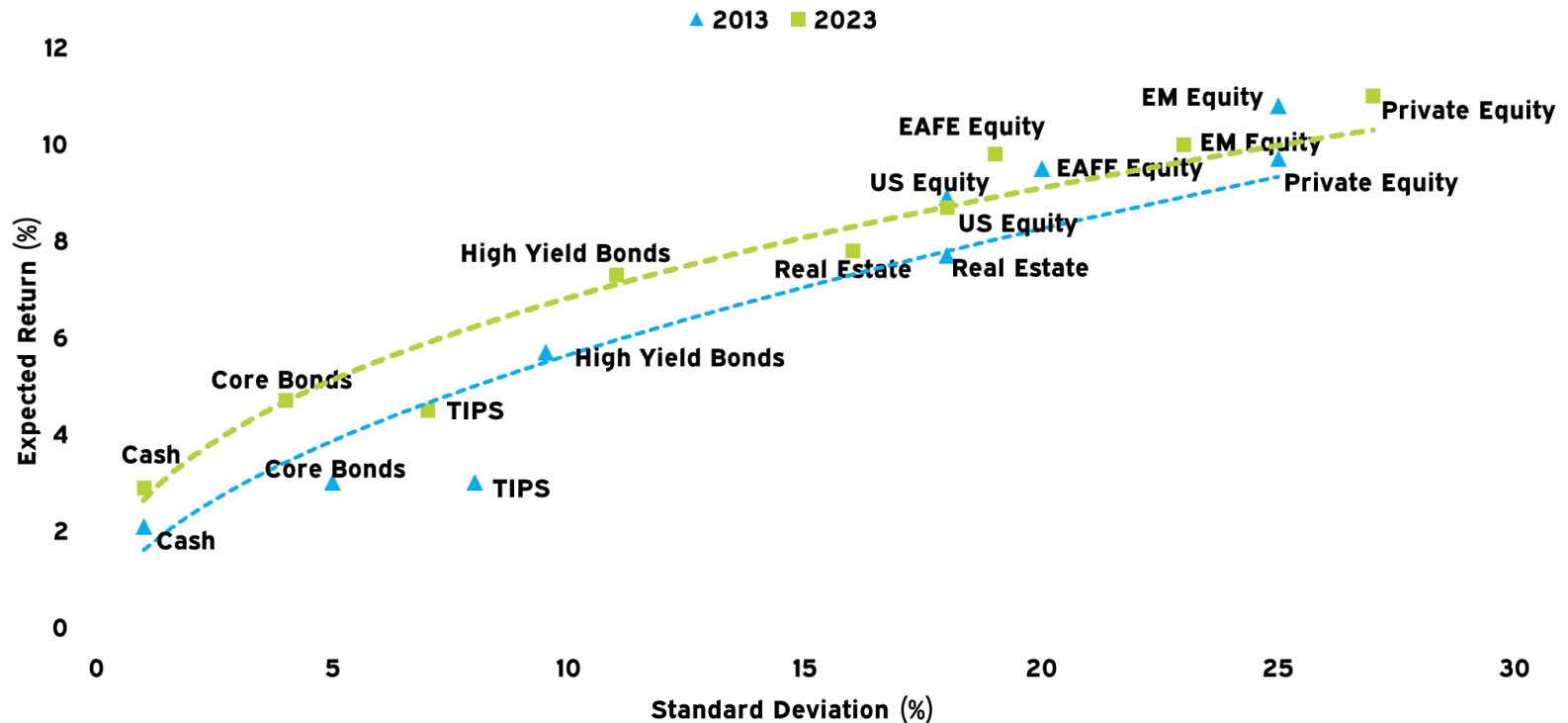


2023 CMAs - SURS

2023 vs. 2013

The Big Picture: Higher Return for the ~Same Risk¹

- The relationship between long-term return expectations and the level of risk accepted is not static.
- We anticipate many investors can take on less risk than they have over the past decade if they want to achieve their target returns.



¹ Expected return and standard deviation are based upon Meketa Investment Group's 2013 and 2023 20-year capital market assumptions.



FAQs and History

FAQs for 2023

- How do these CMAs compare to prior years' assumptions?
- To help evaluate this, we created a weighted average of expected returns for the asset classes that comprise a typical Meketa client portfolio.¹
- The value of the expected return for the portfolio is not a precise expected return (i.e., it has not been run via MVO), but the magnitude of the change is what is relevant.
- In short, the average of 20-year expected returns is 170 basis points higher than last January.
 - This is the largest change in our 20+ year history of creating CMAs.

Year	Weighted Average Expected Return (%)	Change from Prior Year (%)
2023	8.2	+1.7
2022	6.5	+0.4
2021	6.1	-0.7
2020	6.8	-0.6
2019	7.4	+0.7
2018	6.7	-0.2

¹ The weights are as follows: 10% investment grade bonds, 3% LT government bonds, 4% TIPS, 3% high yield, 2% bank loans, 3% EM debt, 3% private debt, 25% US equity, 12% EAFE equity, 8% EM equity, 10% private equity, 10% real estate, 2% natural resources, 3% infrastructure, 2% hedge funds.

FAQs for 2023 (continued)

What is driving the changes from last year?

- The changes relative to last year are being driven by what happened in the market.
- The sharp increase in interest rates across the yield curve affected many asset classes, as did lower valuations for many riskier asset classes.
 - Higher borrowing costs and wider spreads also had an impact.
- Higher expected rates also provide a tailwind in our 20-year projections, as the bridge from 10 to 20 years is made via a risk premia being added to a (higher) future risk-free rate.
 - The risk-free rate jumped from 2.78% to 4.17%

How do Meketa's CMAs compare to peers?

- We believe our CMAs are in the same ballpark as our peers.
- We generally cite the survey conducted each year by Horizon Actuarial Services for making peer comparisons, as it is the most comprehensive survey of CMAs of which we are aware.
 - However, this survey is usually not published until July or August.
- It is important to distinguish between intermediate term assumptions (e.g., 7-10 years) and long-term assumptions (e.g., 20-30 years) when making these comparisons.

FAQs for 2023 (continued)**Did volatility expectations change?**

- Not systematically. There were changes in a few individual asset classes, but these tended to be small and netted out to no upward or downward trend.
- Our methodology includes a 15-year look back, which includes the volatile years of 2022, 2020, and 2008.

Did Meketa make any qualitative adjustments?

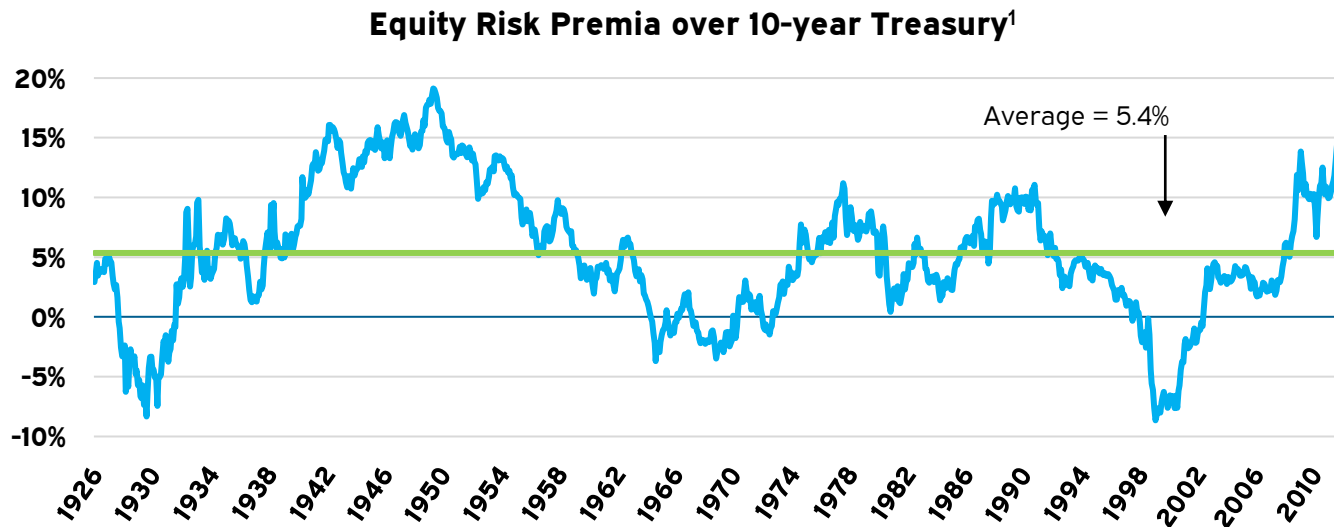
- As usual, we made some qualitative adjustments to the CMAs.
- We decreased Frontier Markets equity, as high dividend yields and inflation are unlikely to persist at current levels.
- We made modest increases to non-core private real estate and infrastructure, as the current situation of borrowing costs exceeding cap rates/income is unlikely to persist indefinitely.
- We decreased public natural resources, as earnings and valuations for this sector are exceptionally volatile and the current situation may not reflect the long-term reality.
- We increased MLPs, as earnings and valuations for this sector are exceptionally volatile and the current situation may not reflect the long-term reality.

FAQs for 2023 (continued)

Is Meketa comfortable with the equity risk premium implied by the CMAs?

→ Yes. We assume a 5.5% risk premium for US equities over 10-year Treasuries.

→ Historically, the risk premium for the S&P 500 over the yield for the 10-year has averaged 5.4%.



¹ Represents the ten-year risk premium for the S&P 500 index over the 10-year Treasury yield at the start of the period.

FAQs for 2023 (continued)**Is Meketa assuming that interest rates will go up?**

- We use the market's projections for future rates, based on what was priced in at the time of our analysis.
- For example, the market is projecting that the ten-year Treasury will be yielding approximately 4.2% in ten years, versus 3.8% as of 12/31/22.
- By contrast, the FOMC is expecting the Fed Funds Rate to fall to ~3% by 2025, implying a return to a more normally shaped yield curve.

Is the yield curve you imply steeper than recent history?

- Our 20-year model implies a spread between cash and the 10-year Treasury of 150 bp.
- This is a much steeper yield curve than currently exists, but it is consistent with history.
 - The yield on the 10-year Treasury has averaged 150 bp over that for T-bills since 1934.

FAQs for 2023 (cont.)

How does Meketa arrive at its inflation assumption? Is it based on a combination of breakeven rates and other data?

- Most of our economic projections come from the IMF's World Economic Outlook. Their inflation projections are in the table below.
- They are projecting elevated inflation for the US in 2023, followed benign levels thereafter.
- We combine the five-year average for the US with the 5-year-5 inflation swap (i.e., what the market is projecting 5-year inflation will be five years from now), which is 2.6%, to arrive at our 10-year number of 2.5%.

Inflation Estimates

	2023	2024	2025	2026	2027	5-Year Average	5-yr-5 Inflation Swap	10-year Inflation Estimate
US	3.5	2.2	2.0	2.0	2.0	2.4	2.6	2.5
Euro Area	6.8	3.0	2.3	2.0	2.0	3.2	2.4	2.8
UK	9.0	3.7	1.8	2.0	2.0	3.7	3.6	2.4
Japan	1.4	1.0	1.0	1.0	1.0	1.1	0.8	0.7

Sources: IMF World Economic Outlook, October 2022; Bloomberg.

FAQs for 2023 (continued)

If 20-year US inflation is expected to be 2.6%, and the real yield on 20-year TIPS is 1.5%, shouldn't the expected return for long TIPS be closer to 4.1% than 4.7%?

- Arguably, it is only our 10-year inflation number that matters, as it flows through the models for several asset classes, while the 20-year inflation forecast does not. This includes our TIPS models. Hence it is possible for there to be a disconnect for the 20-year horizon.
- It is not uncommon to see modest disconnects between economists' projections, the swap market, and the breakeven inflation rate (BEI).

Why do US Equities imply a positive mean reversion when adjusting for rates?

- US equities have a lower implied discount rate. This increases the present value of future earnings. And current pricing is much closer to historical averages than it was a year ago.

FAQs for 2023 (continued)**Why did the spread for private equity over public equity shrink?**

- Valuations moved down more quickly and to a greater extent for public equities (e.g., PE ratios) than they did for private equity (e.g., EBITDA multiples).
- Of note, the private equity data (as always) is through 9/30.
 - It is possible that buyout multiples will “catch up” with public equity valuations in 2023, but this has not been the case historically.

How does Meketa look at valuations for venture capital?

- Venture capital tends to be focused on a smaller part of the broad economy, concentrating mostly on a few sectors such as technology and healthcare.
- To get a feel for how VC is currently priced, we create a proxy composed of public market indices that focus on these sectors.
- The proxy is currently composed of: NASDAQ; Pharma, Biotech & Life Sciences; IT Services; and Clean Tech/Environment. The composition and weightings have changed over time.
- That said, we take our VC model with a large grain of salt, as there is very little data available.

FAQs for 2023 (continued)**What effect do we expect net buybacks to have, if any?**

- We believe US companies will continue to be net buyers of their shares over the next decade, but to a lesser extent than they have for the past decade. This will be a net tailwind.
- We expect other markets to be net issuers of shares (i.e., this will be dilutive to shareholder wealth). This is most pronounced in emerging markets, due to their anticipated growth.

Do we still expect US earnings to grow faster than the broad economy?

- Yes, until/unless there is a structural shift, perhaps due to political events, US companies are likely to earn a greater share of economic growth than they have over the post-WWII era.

What about the political climate in China and the direction taken by the CCP?

- While the possibility of greater state intervention was always possible, the CCP has made abundant use of their power to influence/harm certain sectors or companies in 2021 and 2022.
- As a result, we are placing a greater discount on Chinese (and hence, emerging market) growth translating to EPS growth and thus to shareholder wealth.

FAQs for 2023 (continued)

Why do we believe US companies will be net buyers of their stock for an extended period, and why does that matter?

- There are several reasons why we can/should believe US companies will be net buyers of their stock for an extended period (e.g., the next ten years), and why that may change.
- First, it would be a continuation of a nearly two-decade trend that CFOs have decided it is in their interest to prioritize buybacks over dividends or other uses of cash.
 - This could obviously change, but the catalyst for this is not obvious nor apparently on the horizon.
- The second factor is if labor finally starts clawing back a larger portion of GDP.
 - This clearly could happen, but despite an incredibly tight labor market, it is not happening (at least not yet). Rather, companies have had success passing on their higher labor costs to their customers and hence maintaining their profitability.
- This matters in our models because it impacts what portion of GDP growth translates to EPS growth.
 - If companies are more profitable and they are buying back shares, this will be much more beneficial to EPS than if companies are less profitable and are diluting their shares (e.g., via new issuance).

FAQs for 2023 (continued)

For public NR, earnings look much stronger than they have in some time and valuations appear low. Why is our expected return not higher?

- Public NR is probably the asset/sector where there is the greatest dispersion in thinking/forecasting about the future, due to the energy transition.
- NR stock have always been cyclical, and they are enjoying their best relative performance in a long time. We mute our expectations due to the cyclicity of the sector.

Do we consider inflation when building expected returns for real assets like real estate, infrastructure, and natural resources?

- Yes, inflation is a component for the vast majority of these assets, and their growth is generally linked to inflation in our models.

How are you accounting for the distinctly non-linear return profile of Long Vol?

- We assume that the payoff of a long vol strategy is significantly and positively skewed during periods of poor equity market returns.
 - In particular, we analyze the historical distribution of returns during periods when equity markets increase or decrease by 10%.
- However, the average return in most years is driven by the effective “insurance premium” investors pay for this strategy.

FAQs for 2023 (continued)

Why do longer duration fixed income assets have a higher 20-year versus 10-year expected return, while the reverse is the case for shorter duration bonds?

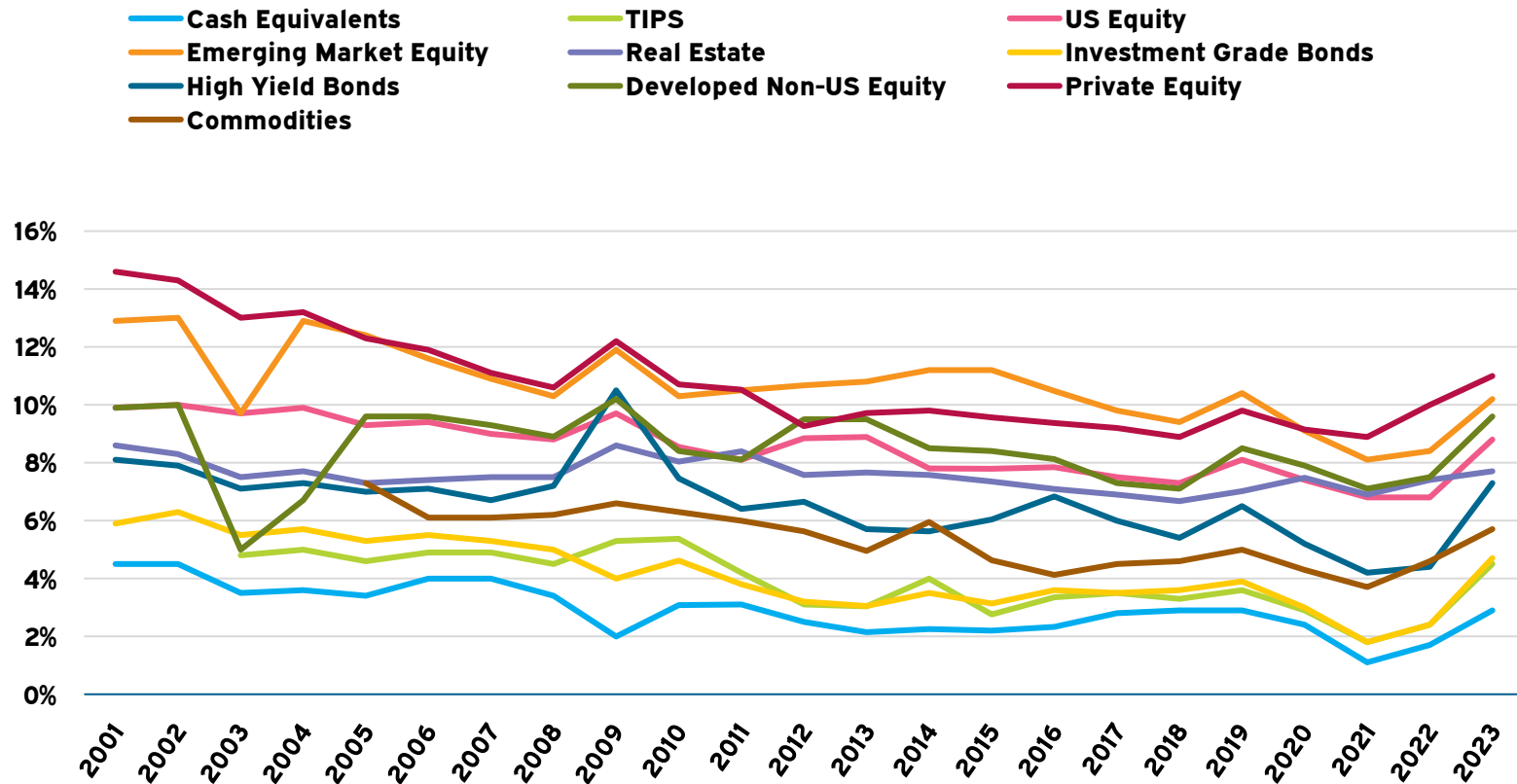
- The majority of asset classes have a higher return assumption for the 20-year period due to the increase in the risk-free rate (recall that we use a risk premia approach for years 11-20).
- This tends not to be the case for our shorter duration fixed income assets due to the return to a more normally shape yield curve over the next ten years that is implied by the model.
 - That is, the higher risk premia we use for longer duration bonds implies a more normal term structure to the yield curve in years 11-20.

Why did the 10-year expected returns for private real estate decline while it went up for REITs?

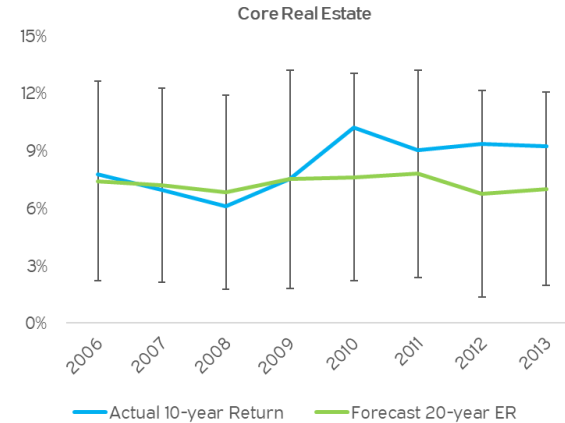
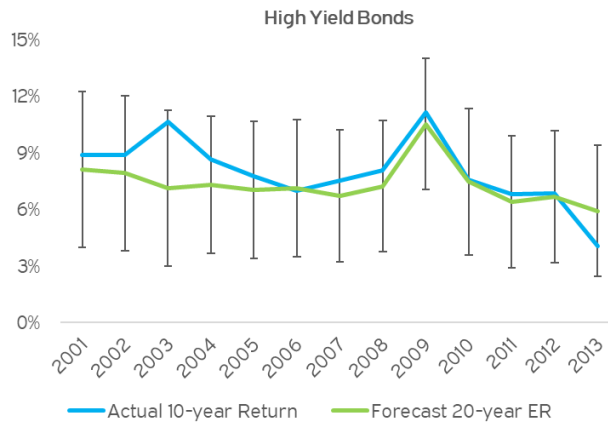
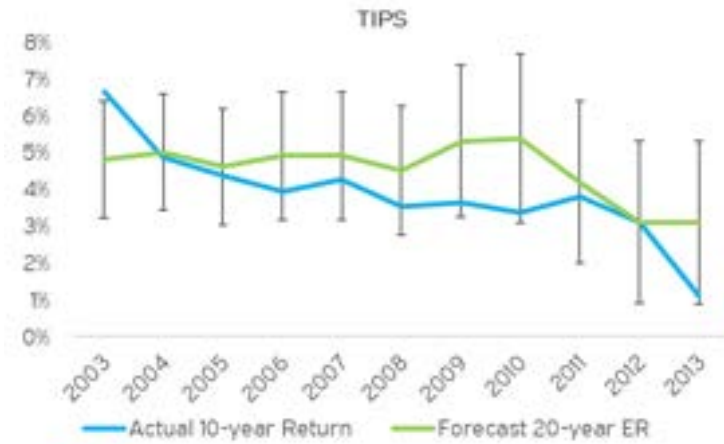
- Cap rates and REIT yields have moved in opposite directions over the past year, such that REIT yields are now higher than (value-weighted) cap rates.
- Cap rates are also well below the (new, higher) cost of borrowing, so leverage is barely helpful for core, and potentially harmful (in our model) for non-core where the cost of debt is even higher.

2023 Capital Markets Assumptions

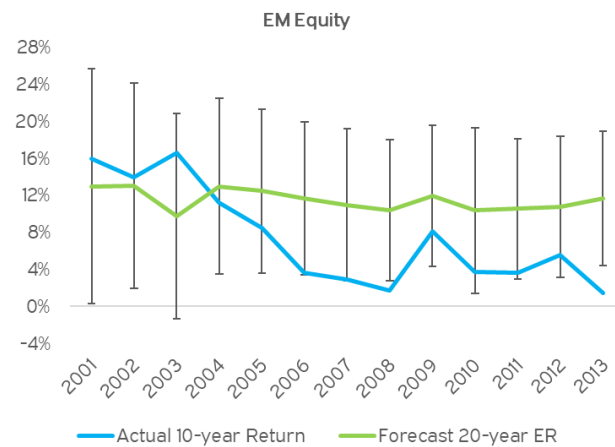
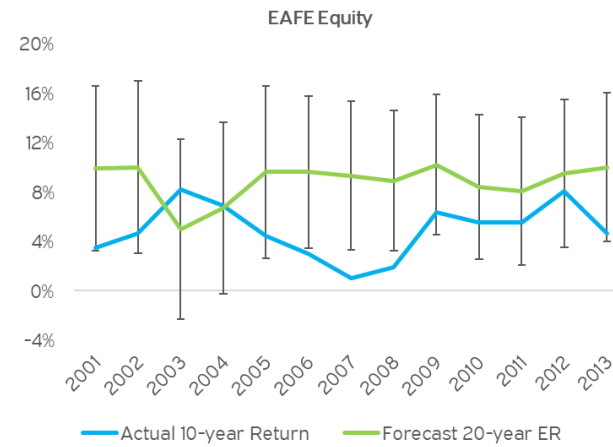
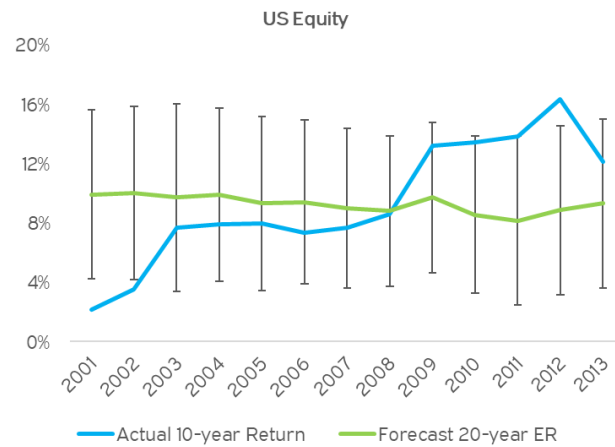
Our 20-year CMAs since 2000



Our Track Record



Our Track Record (continued)





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MEMORANDUM

TO: Board of Trustees, State Universities Retirement System of Illinois ("SURS")
FROM: Meketa Investment Group, Inc. ("Meketa")
CC: Doug Wesley, CFA – Chief Investment Officer
 Ellen Hung, CFA – Deputy Chief Investment Officer
DATE: March 9, 2023
RE: Total Portfolio Expected Return Update – 2023 Assumptions

Summary

At least once per year, Meketa generates forward-looking capital market assumptions ("CMAs") to provide clients with our best estimates of long-term returns, volatilities, and correlations across a wide range of asset classes/strategies. These CMAs are then used in complex asset-liabilities studies as well as in more straight-forward asset allocation reviews. Additionally, one of the primary uses of these updated CMAs is to allow clients to review the expected return and volatility of their current and long-term policy target portfolios. Through this exercise, clients are able to obtain a general understanding of the positioning of their policy portfolio and whether it is still aligned with their long-term objectives.

Based on Meketa's 2023 Capital Market Assumptions, the SURS Total Portfolio is well structured to perform modestly above its 6.50% actuarial objective over the long-term.

Discussion

In June 2021, SURS completed the comprehensive 2020/2021 Asset-Liability Study that culminated in a new long-term policy portfolio. This new long-term policy portfolio was an extension of the major decisions and portfolio alterations that were approved by the Board as a result of the 2018 Asset-Liability Study. A related, but technically separate, decision by the Board was the lowering of the assumed investment return (for actuarial purposes) from 6.75% to 6.50% as of 6/30/21.

The 2020/2021 Asset-Liability Study utilized CMAs that were developed in 2021. Utilizing those CMAs and a simulation methodology, the long-term expected return of the selected policy portfolio was approximately 6.7% (over a 20+ year horizon). Furthermore, SURS Staff and Meketa developed an Evolving Policy Plan in order to guide the policy portfolio from its current allocations (as of June 2021) to the new long-term policy targets. The Evolving Policy Plan maintains multiple interim allocation targets that will be utilized over the course of several years before the new long-term policy targets are expected to be reached at the beginning of the 2026 fiscal year. As part of the Evolving Policy Plan, new targets took effect 1/1/2023 and are considered the "Current Policy" for the purposes of this memo.

At the beginning of each year, Meketa develops capital market assumptions for a wide range of asset classes/strategies (in 2023 this equated to 104 different asset classes/strategies). These assumptions



March 9, 2023

are developed using a multitude of quantitative and qualitative inputs, and this development process is updated each year with additional data sets and more refined approaches/models. Meketa develops assumptions for both 10-year (i.e., intermediate) and 20-year (i.e., long-term) timeframes. For the purposes of this memorandum, Meketa mapped the 10-year and 20-year assumptions to both the current and long-term policy targets in order to generate expected return and volatility metrics for the respective portfolios.¹ The current and long-term policy targets that were used can be found on the following page. The expected return and volatility metrics for the current and long-term policy targets are also presented. The underlying assumptions (i.e., expected returns, volatilities, and correlations) that were used are presented on pages 5 and 6 of this document.²

¹ This exercise utilized standard mean-variance calculations which slightly differ from the simulation approaches used in SURS A/L studies.

² Please also refer to the accompanying presentation deck discussing Meketa's 2023 Capital Market Assumptions.



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Policy Targets and Expected Return/Risk

Classes/Strategies	Current Policy Targets (%)	Long-term Policy Targets (%)
BROAD GROWTH	68	68
Traditional Growth	37	35
Public Equity	37	35
Stabilized Growth	17	17
Core Real Assets	8	8
Options Strategies	2	2
Liquid Credit	5.5	2
Private Credit	1.5	5
Non-Traditional Growth	14	16
Private Equity	11	11
Non-Core Real Assets	3	5
INFLATION SENSITIVE	5	5
PRINCIPAL PROTECTION	8	8
CRISIS RISK OFFSET	19	19
Long U.S. Treasuries	2	2
Systematic Trend Following	10	10
Alternative Risk Premia	5	5
Long Volatility	1.7	1.7
Tail Risk	0.3	0.3
<i>Total</i>	<i>100</i>	<i>100</i>
Expected Return (10-year)*	7.2	7.4
Expected Return (20-year)*	7.9	8.0
Annual Volatility	10.9	11.0

*Expected returns consist of passive management in liquid markets classes and median net performance in illiquid markets classes.

The Tail Risk Hedging program is accounted for comparing simulation output with and without the program and reconciling differences with mean-variance analysis output.



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As detailed in the table on the prior page, the SURS investment portfolio is positioned to generate an expected return of 7.2%-8.0% depending on the policy target portfolio and investment horizon. Relative to the actuarial assumed investment return of 6.5%, this implies that SURS has approximately a 55%-65% chance of exceeding the actuarial rate over the next ten years. Furthermore, if accounting for the last fiscal year return (-1.4% net for FY 2022), this implies that SURS would require an approximate 7.3% annualized return for the next ten years to make up for that fiscal year (ignoring prior fiscal year returns). When examining the portfolio from holistic perspective, Meketa and SURS Staff believe that the portfolio remains prudently constructed to achieve and/or modestly exceed the actuarial rate without assuming unnecessary risk. Depending on dialogue between the SURS Board, SURS Staff, and Meketa during the March 2023 Investment Committee meeting, SURS Staff and Meketa may return at a subsequent meeting with modest recommended modifications to the Current and/or Long-term Policy Targets. It is important to note that the expected return of the portfolio and the actuarial assumed investment return do not need to be equal at all times, however, they should be similar to one another and directionally track over time.



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Underlying Return/Volatility Assumptions*

Composite/Asset Class /Strategy	2023 Expected Return: 10-Year Geometric (%)	2023 Expected Return: 20-Year Geometric (%)	2023 Annual Volatility (%)
Traditional Growth			
Public Equity	8.8	9.2	18.0
Stabilized Growth			
Core Real Estate	4.3	6.5	12.0
Core Infrastructure	6.4	7.8	14.0
Options Strategies	6.7	7.2	13.0
Investment Grade Credit	5.6	5.4	7.0
Bank Loans	7.6	7.0	10.0
High Yield Credit	8.0	7.3	11.0
EMD – Hard	6.7	6.4	12.0
EMD – Local	6.4	6.0	12.0
Private Credit	9.4	9.0	15.0
Non-Traditional Growth			
Private Equity	9.7	11.0	27.0
Value Add Real Estate	6.5	8.3	20.0
Opportunistic Real Estate	7.6	9.6	26.0
Non-Core Infrastructure	7.4	9.5	22.0
Inflation Sensitive			
TIPs	4.3	4.5	7.0
Principal Protection			
Intermediate Govt Bonds	3.7	3.7	3.0
Crisis Risk Offset**			
Long U.S. Treasuries	4.3	5.0	12.0
Systematic Trend Following	3.9	4.8	15.0
Alternative Risk Premia	5.5	5.6	8.0
Long Volatility	1.0	1.1	9.0

* Expected returns consist of passive management in liquid markets classes and median net performance in illiquid markets classes.

** The Tail Risk Hedging program is accounted for comparing simulation output with and without the program and reconciling differences with mean-variance analysis output.



March 9, 2023

Correlation Assumptions

	Public Equity	Core RE	Core Infra	Options Strategies	IG Credit	Bank Loans	HY Bonds	EMD - Hard	EMD - Local	Private Debt	Private Equity	VA RE	Opp RE	Non-Core Infra	TIPs	Int. Govt Bonds	LT Govt Bonds	Trend Following	ARP
Core RE	0.35	1.00																	
Core Infra	0.65	0.65	1.00																
Options Strategies	0.86	0.35	0.50	1.00															
IG Credit	0.49	0.45	0.45	0.39	1.00														
Bank Loans	0.65	0.45	0.50	0.68	0.45	1.00													
HY Bonds	0.79	0.45	0.60	0.75	0.65	0.85	1.00												
EMD - Hard	0.69	0.25	0.50	0.62	0.80	0.64	0.81	1.00											
EMD - Local	0.75	0.20	0.60	0.57	0.62	0.47	0.69	0.80	1.00										
Private Debt	0.70	0.35	0.40	0.60	0.60	0.80	0.85	0.55	0.65	1.00									
Private Equity	0.80	0.40	0.45	0.70	0.20	0.65	0.70	0.45	0.50	0.80	1.00								
VA RE	0.45	0.90	0.55	0.45	0.45	0.45	0.50	0.25	0.25	0.40	0.45	1.00							
Opp RE	0.55	0.85	0.50	0.50	0.40	0.50	0.55	0.30	0.35	0.45	0.50	0.90	1.00						
Non-Core Infra	0.70	0.55	0.95	0.55	0.45	0.50	0.65	0.55	0.65	0.45	0.60	0.60	0.60	1.00					
TIPs	0.31	0.10	0.30	0.31	0.69	0.27	0.46	0.65	0.54	0.10	0.05	0.10	0.05	0.30	1.00				
Int. Govt Bonds	-0.25	0.10	0.15	-0.30	0.39	-0.43	-0.22	0.14	0.12	0.00	-0.10	0.05	0.00	0.15	0.57	1.00			
LT Govt Bonds	-0.23	0.10	0.15	-0.24	0.49	-0.33	-0.17	0.16	0.05	-0.20	-0.10	0.00	-0.05	0.15	0.54	0.82	1.00		
Trend Following	0.04	0.00	0.00	-0.02	0.07	-0.17	-0.10	-0.08	-0.02	0.00	0.00	0.00	0.00	0.00	0.12	0.16	0.17	1.00	
ARP	0.12	-0.02	-0.01	0.09	0.28	0.11	0.14	0.17	0.13	0.15	0.10	0.03	0.09	0.11	0.22	0.14	0.19	0.37	1.00
Long Volatility	-0.50	-0.10	-0.15	-0.49	-0.22	-0.52	-0.39	-0.25	-0.27	-0.40	-0.40	-0.10	-0.10	-0.15	0.01	0.35	0.32	0.23	-0.06



Illinois State Universities Retirement System

March 9, 2023

Fourth Quarter 2022
Board Report



Illinois State Universities Retirement System

Agenda

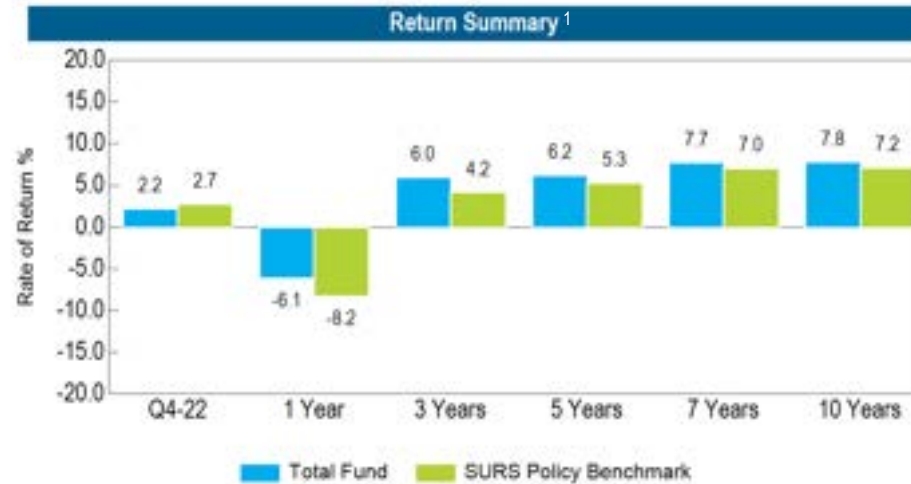
1. Performance Summary
2. Economic and Market Update
3. Total Fund
4. Private Markets Performance
5. US Equity
6. Non US Equity
7. Global Equity
8. Inflation Sensitive
9. Public Credit
10. Principal Protection
11. Crisis Risk Offset
12. Appendix

Performance Summary



Illinois State Universities Retirement System

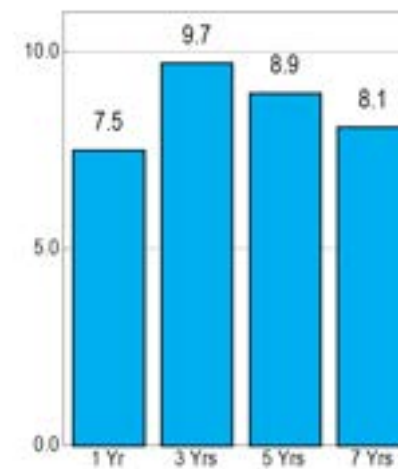
Total Fund | As of December 31, 2022



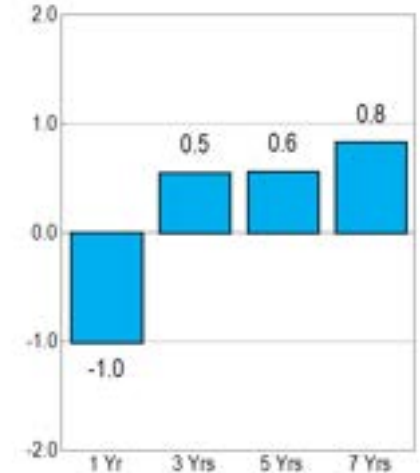
	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Total Fund	2.2	-6.1	6.0	6.2	7.7	7.8
<i>SURS Policy Benchmark</i>	<i>2.7</i>	<i>-8.2</i>	<i>4.2</i>	<i>5.3</i>	<i>7.0</i>	<i>7.2</i>
Excess Return	-0.5	2.1	1.8	0.9	0.7	0.6
<i>InvMetrics Public DB > \$1B Gross Rank²</i>	<i>99</i>	<i>6</i>	<i>24</i>	<i>28</i>	<i>35</i>	<i>39</i>
<i>InvMetrics Public DB > \$1B Gross Median</i>	<i>5.3</i>	<i>-11.1</i>	<i>4.9</i>	<i>5.8</i>	<i>7.5</i>	<i>7.6</i>



Annualized Standard Deviation
Total Fund



Sharpe Ratio
Total Fund



¹ Returns are gross of fees.

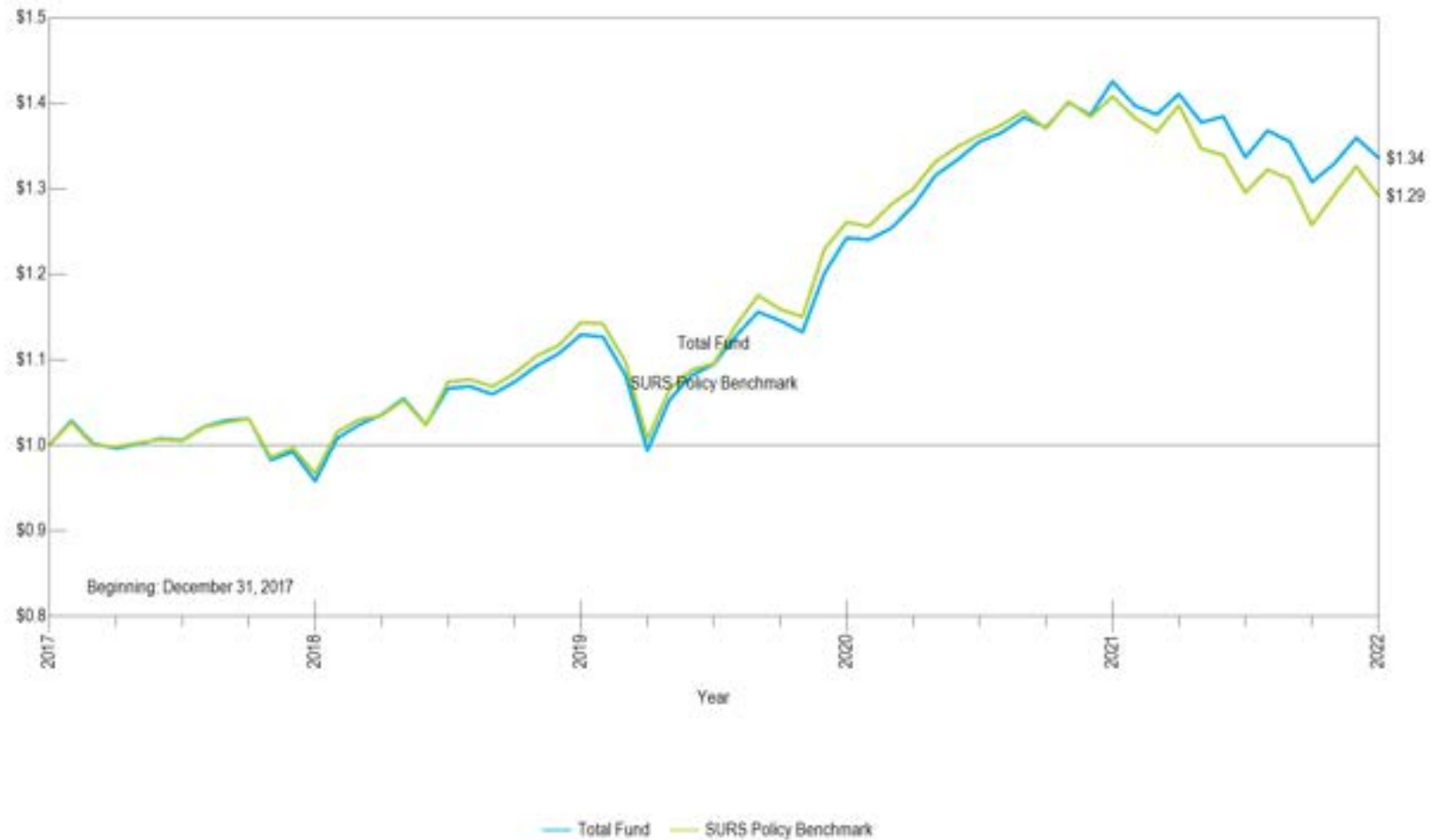
² Investment Metrics (IM) Median [Gross of Fees] - Public Fund >\$1 Billion Universe includes BNY Mellon Total Public Fund Greater than \$1Billion Universe and IM client data.



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

Growth of a Dollar
5 Years Ending December 31, 2022



Economic and Market Update
Data as of December 31, 2022

Commentary

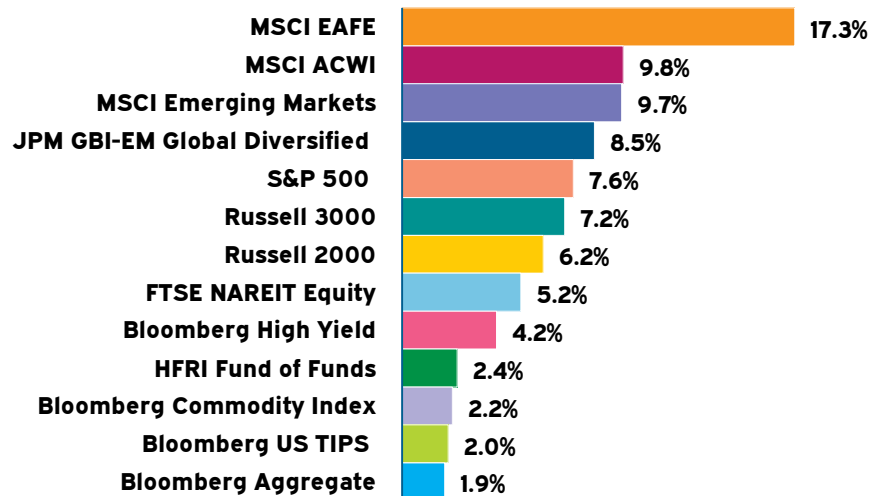
- Ending a very tough year, most asset classes posted gains in the fourth quarter on signs that policy tightening would slow given cooling inflation.
- Chairman Powell's testimony in November reiterated previous messaging on persistent and high inflation and the need for an extended period of monetary tightening weighing on assets in December. Markets remained focused though on signs that inflation is falling and that the size of future Fed rate hikes could be lower.
 - US equity markets sold off (-5.9%) in December but returned 7.2% in the fourth quarter as investors balanced the Fed's caution with improving inflation data.
 - In developed equity markets outside the US, sentiment deteriorated somewhat in December, but they posted a strong fourth quarter return of 17.3% driven by a falling US dollar and results in Europe where inflation started to slow.
 - Emerging market equities declined in December too (-1.4%) but less than the US and also had a strong fourth quarter (+9.7%). A weaker US dollar, declining inflation globally, and signs of China reopening its economy all contributed to the results.
 - Bonds experienced one of the worst years on record given inflation levels and the rapid rise in interest rates. Optimism over declining inflation and a slower pace of policy tightening benefited bonds overall in the fourth quarter though.
- Looking to 2023, the path of inflation and monetary policy, slowing growth globally, China reopening its economy, and the war in Ukraine will all be key.



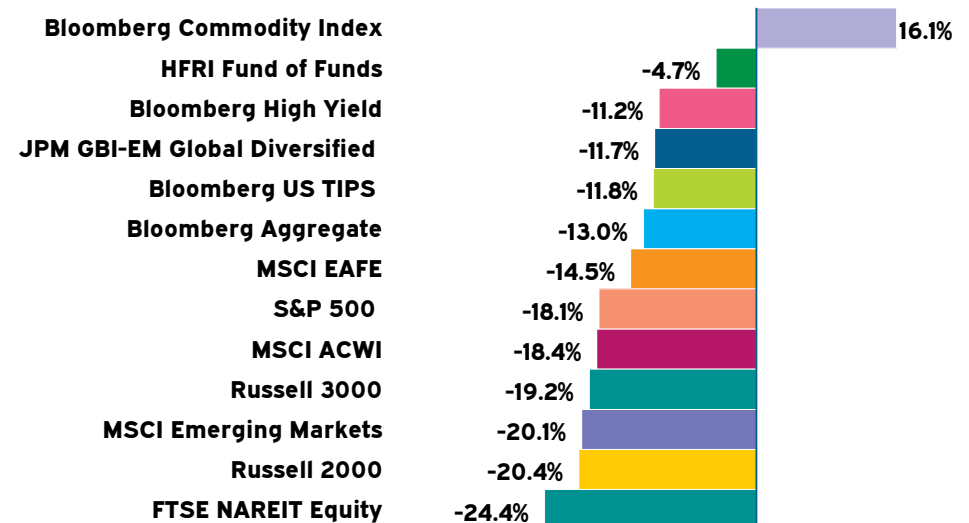
Economic and Market Update

Index Returns¹

Fourth Quarter



2022



- After broad declines in Q3 driven by expectations for further policy tightening, most major asset classes were up in the fourth quarter on hopes of inflation and policy tightening peaking.
- Outside of commodities, all other public market asset classes declined in 2022. It was the first time since the 1960s that both stocks and bonds declined together in a calendar year.

¹ Source: Bloomberg and FactSet. Data is as of December 31, 2022.

Domestic Equity Returns¹

Domestic Equity	December (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-5.8	7.6	-18.1	7.7	9.4	12.6
Russell 3000	-5.9	7.2	-19.2	7.1	8.8	12.1
Russell 1000	-5.8	7.2	-19.1	7.3	9.1	12.4
Russell 1000 Growth	-7.7	2.2	-29.1	7.8	11.0	14.1
Russell 1000 Value	-4.0	12.4	-7.5	6.0	6.7	10.3
Russell MidCap	-5.4	9.2	-17.3	5.9	7.1	11.0
Russell MidCap Growth	-6.0	6.9	-26.7	3.9	7.6	11.4
Russell MidCap Value	-5.1	10.5	-12.0	5.8	5.7	10.1
Russell 2000	-6.5	6.2	-20.4	3.1	4.1	9.0
Russell 2000 Growth	-6.4	4.1	-26.4	0.6	3.5	9.2
Russell 2000 Value	-6.6	8.4	-14.5	4.7	4.1	8.5

US Equities: Russell 3000 Index declined 5.9% for December but gained 7.2% for the quarter. Historic inflation and rapidly rising interest rates led to significant declines (-19.2%) for the full year.

- US stocks fell broadly in December on the Federal Reserve signaling its continued resolve to raise rates but gained overall for the quarter on hopes that interest rates could be peaking soon given slowing inflation.
- All sectors declined during December, led by consumer discretionary and technology with defensive sectors declining less. For the quarter though, most sectors were up led by energy and industrials.
- In a continuation on the overall trend in 2022 value stocks outperformed growth stocks in the fourth quarter given higher interest rates and slowing growth.

¹ Source: Bloomberg. Data is as of December 31, 2022.

Foreign Equity Returns¹

Foreign Equity	December (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	-0.7	14.3	-16.0	0.1	0.9	3.8
MSCI EAFE	0.1	17.3	-14.5	0.9	1.5	4.7
MSCI EAFE (Local Currency)	-3.0	8.7	-7.0	3.6	3.8	7.6
MSCI EAFE Small Cap	1.1	15.8	-21.4	-0.9	0.0	6.2
MSCI Emerging Markets	-1.4	9.7	-20.1	-2.7	-1.4	1.4
MSCI Emerging Markets (Local Currency)	-2.0	6.6	-15.5	0.1	1.3	4.6
MSCI China	5.2	13.5	-21.9	-7.5	-4.5	2.4

Developed international equities (MSCI EAFE) rose 0.1% in December and an impressive 17.3% in the fourth quarter. Emerging markets (MSCI EM) fell -1.4% in December but gained 9.7% for the quarter. Inflation and rising rates also weighed on international equities last year, as well as a strong US dollar for most of the year.

- International developed market equities, specifically Europe, held up better relative to the rest of the world in December with the MSCI EAFE up 0.1%. In the fourth quarter, they returned a significant 17.3% due in part to the recent weakness in the US dollar (they returned only 8.7% in local terms) leading to lower declines for the year.
- In December emerging markets outperformed the US but trailed developed market equities as China's rally was not enough to offset weakness elsewhere (e.g., India -5.5%). For the quarter, a weakening US dollar and China reopening led to strong results (+9.7%), but emerging markets remained the weakest for 2022 due to China.
- Like the US, value outpaced growth globally in 2022.

¹ Source: Bloomberg. Data is as of December 31, 2022.

Fixed Income Returns¹

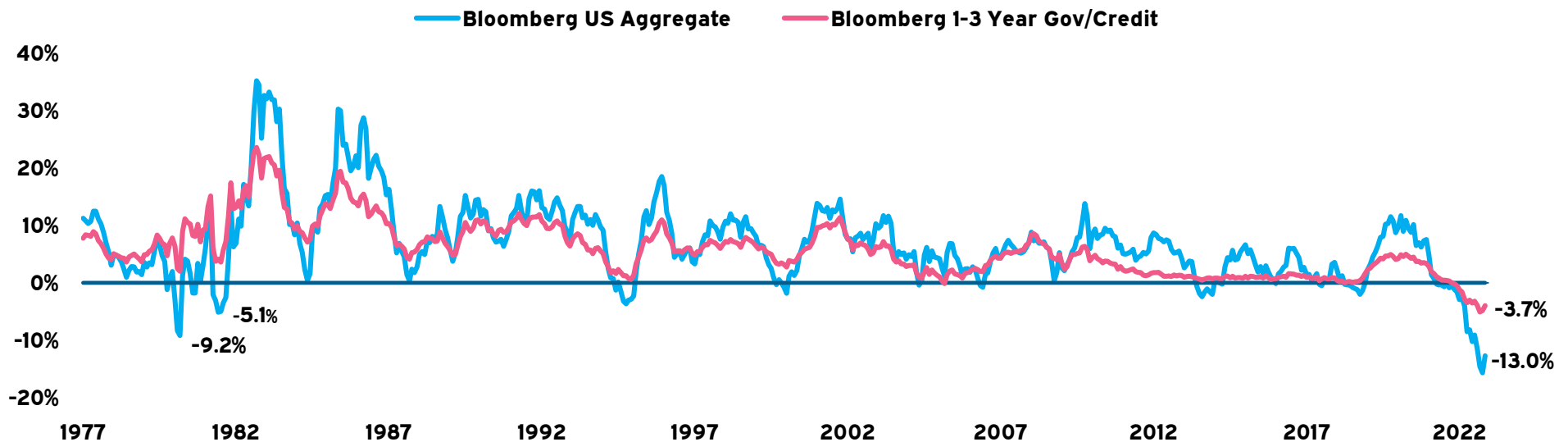
Fixed Income	December (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-0.3	2.2	-13.0	-2.5	0.2	1.3	5.1	6.2
Bloomberg Aggregate	-0.5	1.9	-13.0	-2.7	0.0	1.1	4.7	6.4
Bloomberg US TIPS	-1.0	2.0	-11.8	1.2	2.1	1.1	4.4	6.7
Bloomberg High Yield	-0.6	4.2	-11.2	0.0	2.3	4.0	9.0	4.4
JPM GBI-EM Global Diversified (USD)	2.2	8.5	-11.7	-6.1	-2.5	-2.0	5.8	4.9

Fixed Income: The Bloomberg Universal fell -0.3% in December but rose 2.2% for the fourth quarter. Last year was one of the worst on record, with the broad bond market declining 13%.

- The Federal Reserve reconfirming its commitment to tighten policy in the face of high inflation weighed on US fixed income in December. For the quarter though the broad US bond market (Bloomberg Aggregate) was up 1.9% on hopes that inflation would continue to decline and corresponding expectations for the slowing of policy rate hikes.
- TIPS produced similar results to the broad US bond market for the quarter but outperformed for the year given their inflation adjustment.
- Riskier bonds outperformed for the quarter due to improving risk sentiment with emerging market bonds performing particularly well.

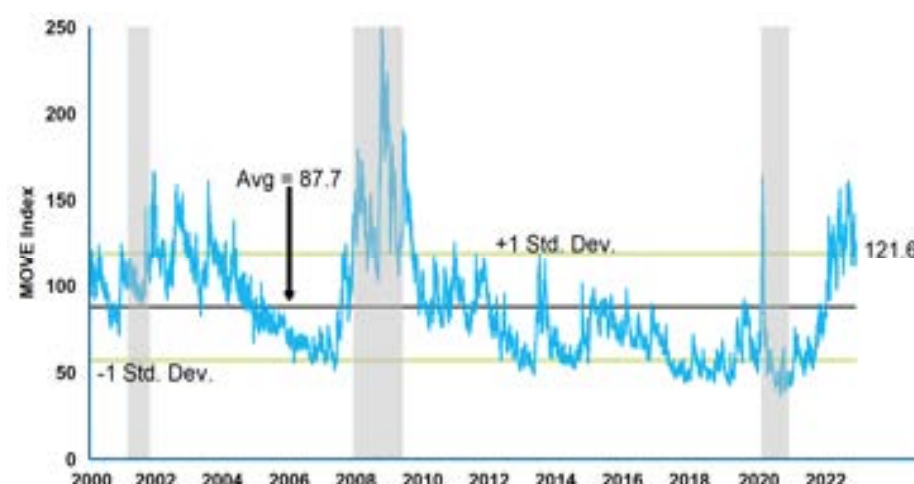
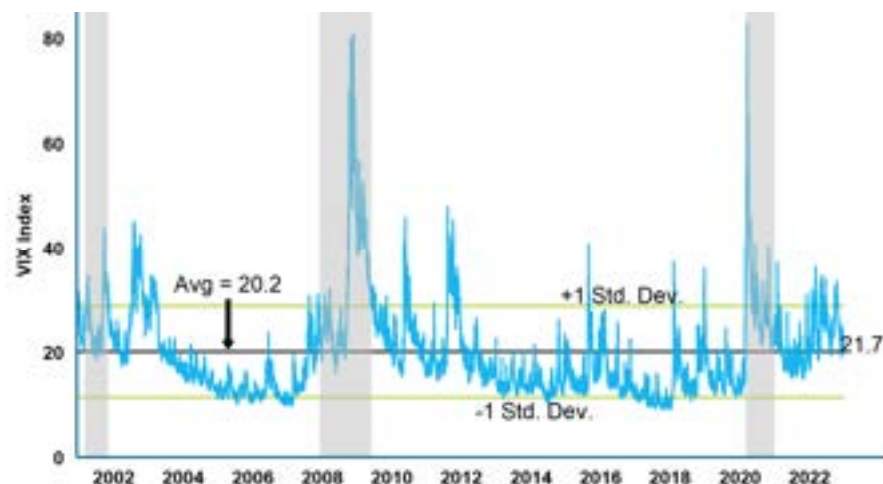
¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of December 31, 2022. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

Fixed Income Rolling One-year Returns¹



- Last year was one of the worst return periods for the US bond market given the historic inflation levels and the corresponding rapid rise in interest rates.
- The broad bond market (Bloomberg US Aggregate) declined 13% in 2022 making it one of the worst periods on record.
- Short-term bond declines were far smaller (-3.7%) last year, but also were one of the worst on record.

¹ Source: Bloomberg. Data is as of December 31, 2022.

Equity and Fixed Income Volatility¹

- Volatility in equities (VIX) finished the year down from its highs and near its long run average as investors anticipated the potential end of Fed rate hikes this year.
- Fixed income (MOVE) remained elevated and well above its long-run average at year-end due to the uncertain path of US interest rates as the Federal Reserve continues its hawkish stance on inflation.

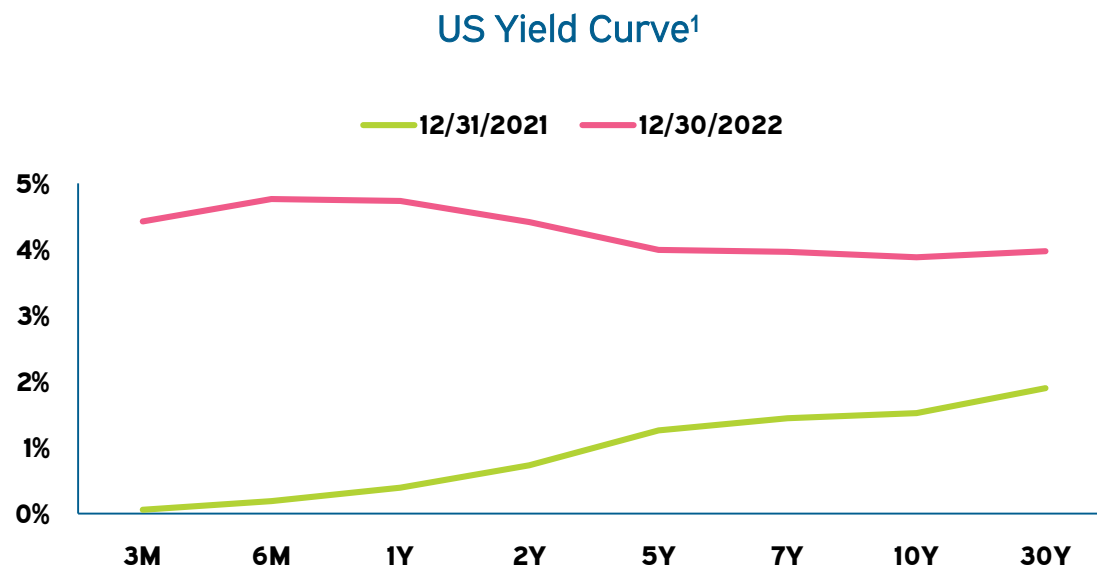
¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of December 2022. The average line indicated is the average of the VIX and MOVE values between January 2000 and the recent month-end respectively.

Equity Cyclically Adjusted P/E Ratios¹



- After December's sell-off, US equity price-to-earnings ratio finished the year near its long-term (21st century) average.
- International developed market valuations rose but remain below their own long-term average, with those for emerging markets the lowest and well under the long-term average.
- Price declines have been the main driver of recent multiple compression as earnings have remained resilient. Concerns remain over whether earnings strength will continue in the face of slowing growth.

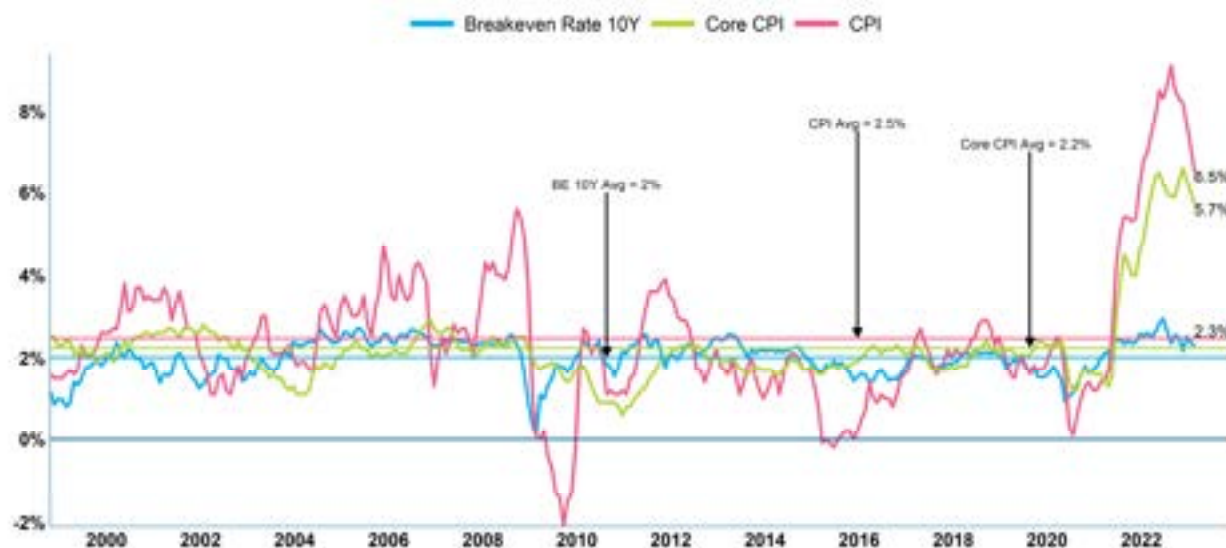
¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of December 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.



- In December, policy-sensitive interest rates at the front-end of the curve continued to rise with the two-year Treasury yield increasing from 4.3% to 4.4%. Longer dated ten-year Treasury yields also increased (3.6% to 3.9%). For the year, the yield curve rose dramatically across maturities and moved from steep to inverted.
- The Fed remains strongly committed to fighting inflation, as it increased rates another 50 basis points to a range of 4.0% to 4.5% at its December meeting. This brought the total number of increases for 2022 to seven.
- The yield spread between two-year and ten-year Treasuries narrowed somewhat to -0.54% after finishing November at -0.70%. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Historically, inversions in the yield curve have often preceded recessions.

¹ Source: Bloomberg. Data is as of December 31, 2022.

Ten-Year Breakeven Inflation and CPI¹



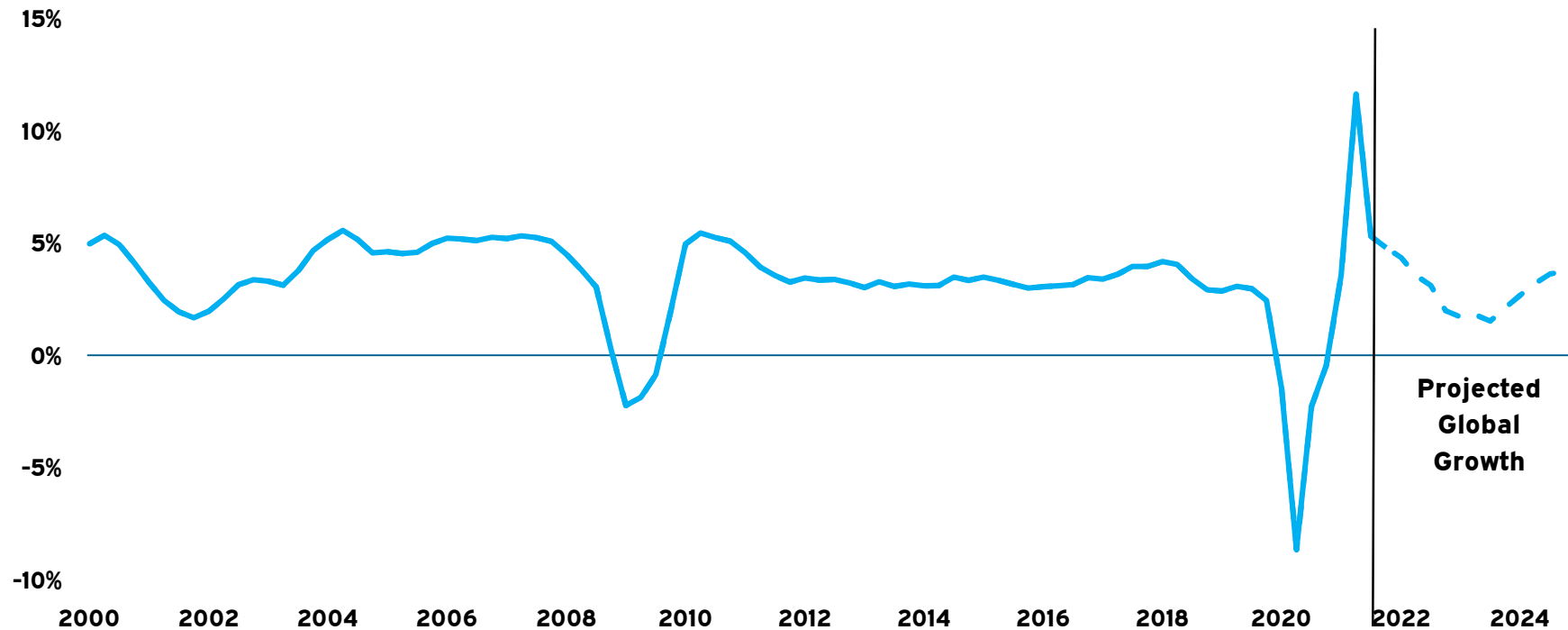
- In December inflation continued to decline (6.5% versus 7.1%) matching expectations and providing support for the Fed to slow the pace of policy tightening. Energy prices fell again for the month but remain up 7.3% from a year prior, while food prices fell slightly, and stickier service prices continued to increase.
- Core inflation – excluding food and energy – also continued to decline in December (5.7% versus 6.0%) and matched estimates.
- Inflation expectations (breakevens) declined slightly for the month (2.3% versus 2.4%) and remain well below current inflation levels as investors anticipate a significant moderation in inflation.

¹ Source: Bloomberg. Data is as of December 2022. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

Credit Spreads vs. US Treasury Bonds¹

- High yield spreads (the added yield above a comparable maturity Treasury) finished December at 4.7% (the same as the end of November) remaining below their long-run average.
- Investment grade spreads also held steady at 1.3% as attractive yields and strong balance sheets continued to attract investors, while emerging market spreads rose (4.5% versus 3.6%) due to concerns regarding slower growth and lower commodity prices.

¹ Sources: Bloomberg. Data is as of December 31, 2022. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

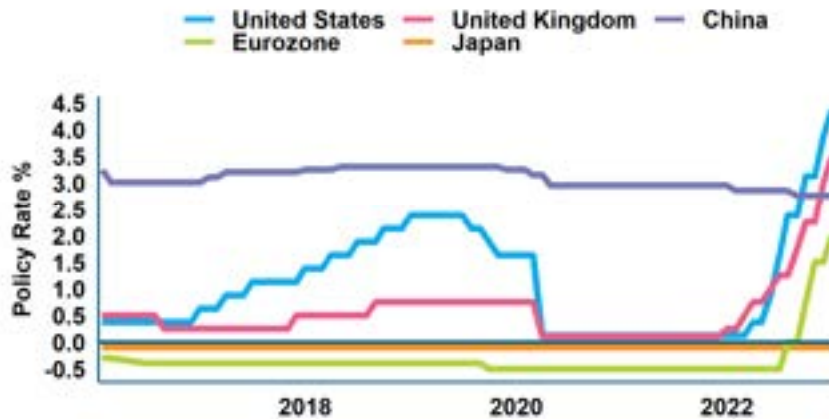
Global Real Gross Domestic Product (GDP) Growth¹

- Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

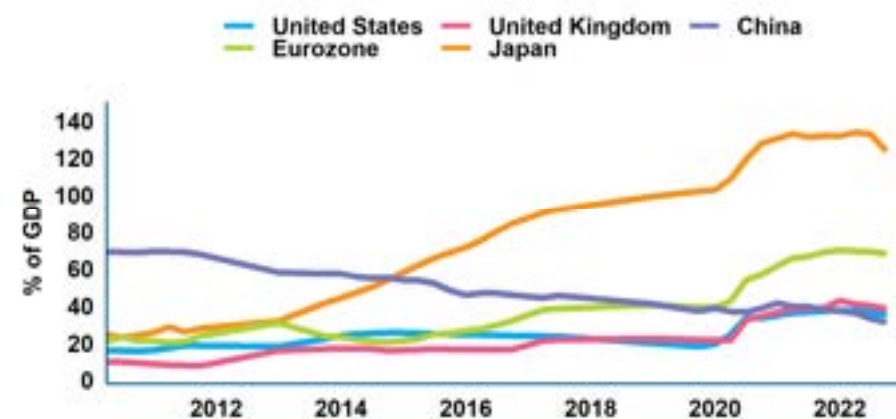
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated December 2022.

Central Bank Response¹

Policy Rates



Balance Sheet as % of GDP



- In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking a more aggressive approach.
- In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.
- The one notable central bank outlier is China, where the central bank has lowered rates and reserve requirements in response to slowing growth.
- The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

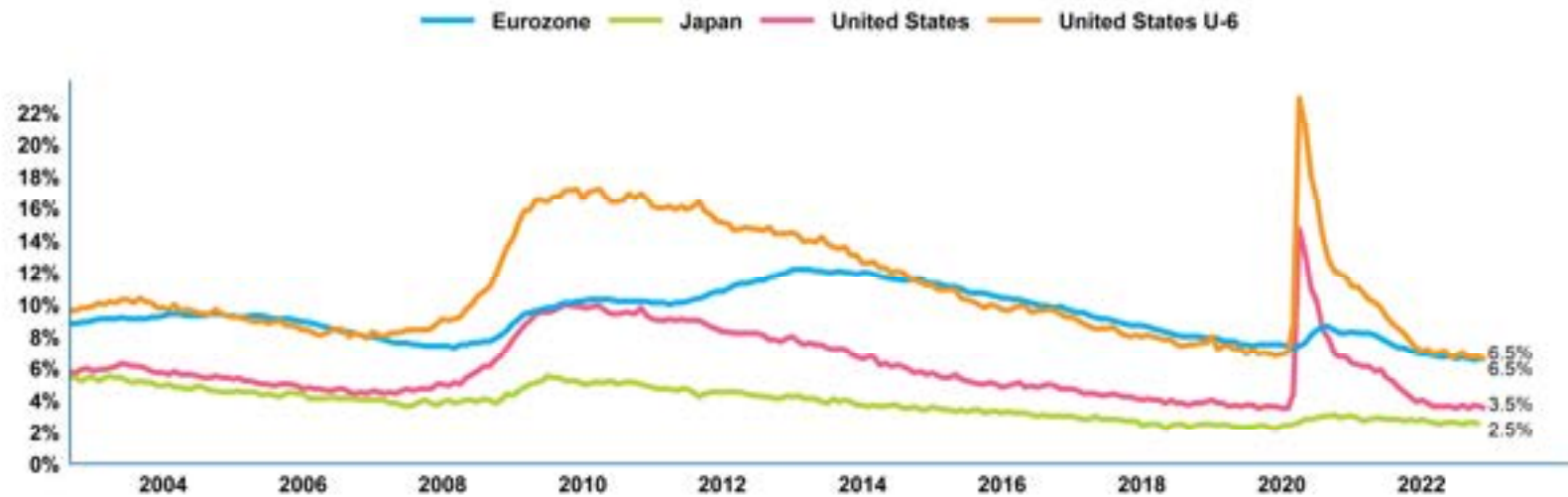
¹ Source: Bloomberg. Policy rate data is as of December 31, 2022. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2022.

Inflation (CPI Trailing Twelve Months)¹



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- Inflation pressures are slowly declining in the US, but they remain elevated, while in Europe they have reached historic levels due to skyrocketing energy prices and a weak euro.
- Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

¹ Source: Bloomberg. Data is as of December 2022. The most recent Japanese inflation data is as of November 2022.

Unemployment¹

- As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.
- Despite slowing growth and high inflation, the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, has remained in a tight 3.5%-3.7% range for most of the year.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

¹ Source: Bloomberg. Data is as December 31, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of November 30, 2022.

US Dollar versus Broad Currencies¹



- Overall, the US dollar continued to weaken from its recent peak in December as declining inflation supported the case for the Federal Reserve to slow its tightening.
- The dollar finished the year much higher than it started though due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows.
- As we look to 2023, the track of inflation across economies and the corresponding monetary policy will likely be key drivers of currency moves.

¹ Source: Bloomberg. Data as of December 31, 2022.

Summary

Key Trends:

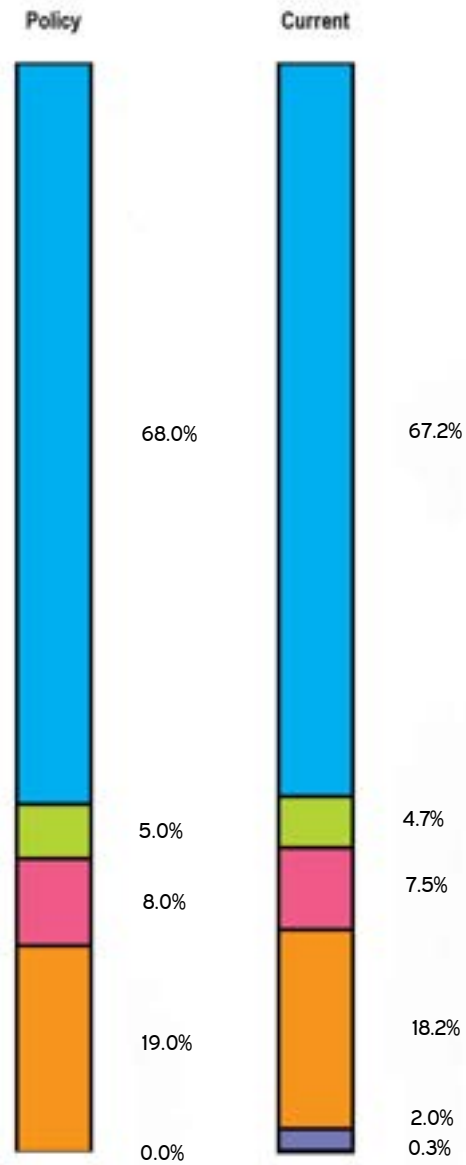
- The impacts of record high inflation will remain key, with market volatility likely to stay high.
- Monetary policy could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors in both directions remains.
- Growth will continue to slow globally next year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.
- In the US the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices could weigh on consumer spending.
- Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key going forward will be whether earnings can remain resilient if growth continues to slow.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.

Total Fund



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

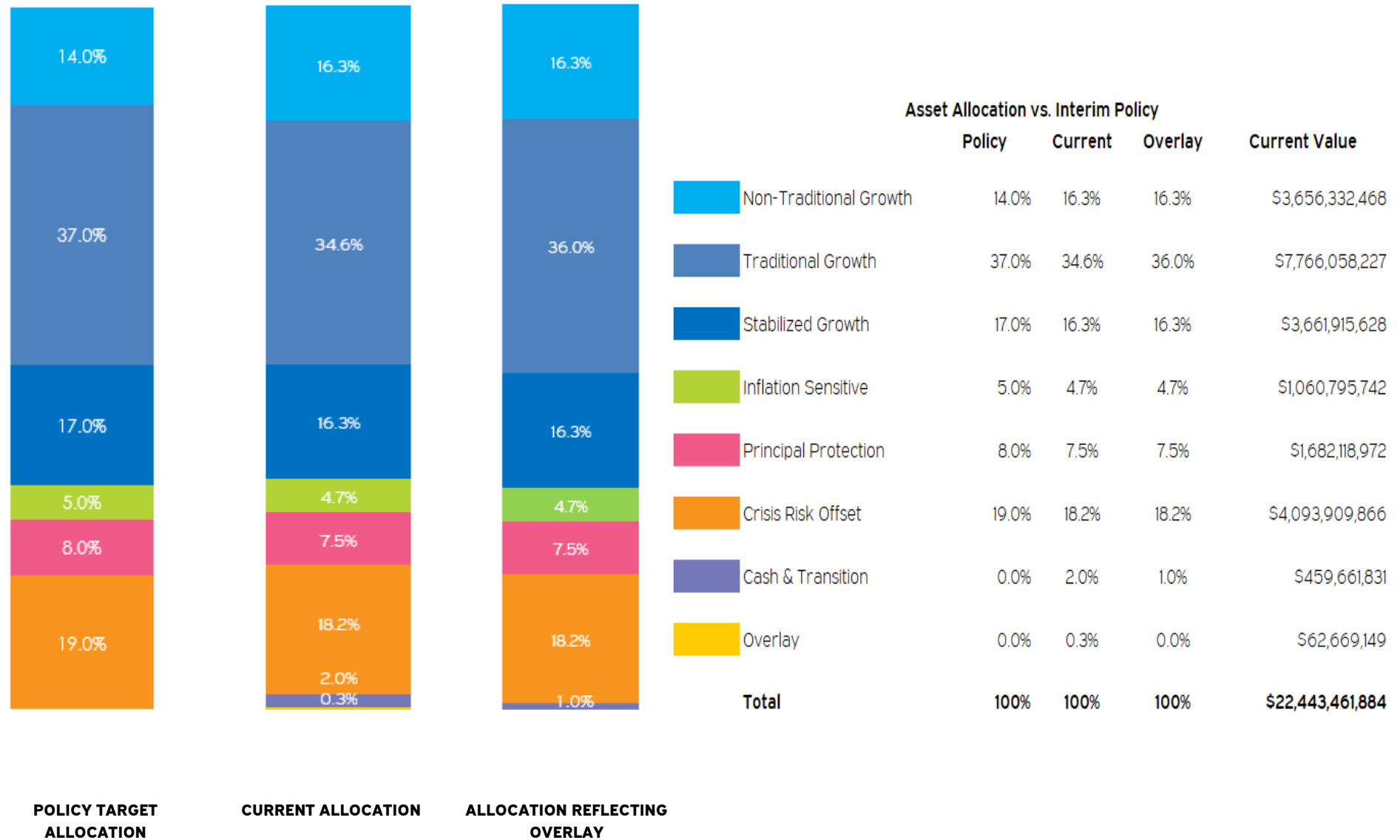


Allocation vs. Interim Policy						
	Current Balance	Current Allocation	Policy	Difference	Difference	
Broad Growth	\$15,084,306,323	67.2%	68.0%	-\$177,247,758	-0.8%	
Inflation Sensitive	\$1,060,795,742	4.7%	5.0%	-\$61,377,352	-0.3%	
Principal Protection	\$1,682,118,972	7.5%	8.0%	-\$113,357,978	-0.5%	
CRO	\$4,093,909,866	18.2%	19.0%	-\$170,347,892	-0.8%	
Cash & Transition	\$459,661,831	2.0%	0.0%	\$459,661,831	2.0%	
Overlay	\$62,669,149	0.3%	0.0%	\$62,669,149	0.3%	
Total	\$22,443,461,883	100.0%	100.0%			



Illinois State Universities Retirement System

Actual vs. Interim Policy | As of December 31, 2022





Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

Attribution Summary							
3 Months Ending December 31, 2022							
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Traditional Growth	10.6%	9.8%	0.8%	0.3%	-0.4%	0.0%	-0.1%
Stabilized Growth	1.6%	3.2%	-1.6%	-0.3%	0.0%	0.0%	-0.3%
Non Traditional Growth	-2.2%	-4.4%	2.2%	0.3%	-0.2%	0.0%	0.1%
Inflation Sensitive	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Principal Protection	1.6%	1.5%	0.1%	0.0%	0.0%	0.0%	0.0%
Crisis Risk Offset	-7.6%	-5.5%	-2.0%	-0.4%	-0.2%	0.0%	-0.6%
Total	2.0%	2.9%	-0.9%	-0.1%	-0.8%	0.0%	-0.9%

1 Year Ending December 31, 2022							
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Traditional Growth	-16.5%	-18.4%	1.9%	0.8%	-0.1%	0.0%	0.6%
Stabilized Growth	-3.7%	-2.6%	-1.1%	-0.2%	0.0%	0.0%	-0.2%
Non Traditional Growth	3.6%	-11.8%	15.5%	1.9%	-0.2%	0.4%	2.1%
Inflation Sensitive	-11.8%	-11.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Principal Protection	-8.6%	-9.6%	1.0%	0.1%	0.0%	0.0%	0.1%
Crisis Risk Offset	8.0%	12.9%	-4.9%	-0.7%	-0.3%	0.0%	-1.0%
Total	-6.4%	-8.0%	1.6%	1.9%	-0.7%	0.4%	1.6%



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

Trailing Asset Class Net Performance

	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Total Fund	22,443,461,883	100.0	2.2	-6.3	-6.3	5.8	6.0	7.5
<i>SURS Policy Benchmark</i>			2.7	-8.2	-8.2	4.2	5.3	7.2
Total Fund ex Overlay	22,380,792,734	99.7	2.0	-6.4	-6.4	5.7	5.8	7.5
<i>SURS Policy Benchmark</i>			2.7	-8.2	-8.2	4.2	5.3	7.2
Broad Growth	15,084,306,323	67.2	5.1	-9.4	-9.4	6.2	6.5	8.6
Traditional Growth	7,766,058,227	34.6	10.6	-16.5	-16.5	4.8	5.8	8.9
<i>SURS Traditional Growth Blend</i>			9.8	-18.4	-18.4	3.9	5.3	8.2
US Equity	1,729,362,929	7.7	7.3	-18.1	-18.1	7.2	8.3	11.8
<i>Dow Jones U.S. Total Stock Market</i>			7.2	-19.5	-19.5	6.9	8.7	12.0
Passive Large US Equity	1,618,789,299	7.2	7.1	-17.9	-17.9	7.5	9.0	12.3
<i>Dow Jones U.S. Total Stock Market</i>			7.2	-19.5	-19.5	6.9	8.7	12.0
Mid Cap	110,573,625	0.5	10.0	-17.0	-17.0	6.9	6.9	--
<i>Russell MidCap</i>			9.2	-17.3	-17.3	5.9	7.1	--
Non US Equity	1,352,801,440	6.0	13.8	-16.7	-16.7	-0.3	0.5	4.1
<i>SURS Non US Equity Blend</i>			14.1	-16.6	-16.6	0.2	1.0	3.9
Active Non-US Equity	1,046,730,576	4.7	14.1	-16.2	-16.2	0.2	0.6	5.2
<i>MSCI EAFE</i>			17.3	-14.5	-14.5	0.9	1.5	4.7
Passive Non-US Equity	306,070,863	1.4	12.8	-18.3	-18.3	-1.9	-0.3	3.3
<i>MSCI ACWI ex USA</i>			14.3	-16.0	-16.0	0.1	0.9	3.8
Global Equity	4,683,893,858	20.9	11.0	-15.8	-15.8	6.4	7.8	10.0
<i>SURS Global Equity Blend</i>			9.8	-18.4	-18.4	3.9	5.2	8.0
Global Equity - Active	2,528,113,758	11.3	11.3	-14.6	-14.6	--	--	--
Global Equity - Passive	2,155,780,100	9.6	10.5	-17.0	-17.0	--	--	--



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Stabilized Growth	3,661,915,628	16.3	1.6	-3.7	-3.7	3.1	--	--
<i>SURS Stabilized Growth Blend</i>			3.2	-2.6	-2.6	2.7	--	--
Option Strategies	433,823,896	1.9	6.5	-10.2	-10.2	4.2	--	--
<i>SURS Options Strategies Blend</i>			7.0	-8.0	-8.0	4.0	--	--
Stabilized Real Assets	1,602,248,243	7.1	-3.1	13.2	13.2	11.3	8.4	--
<i>SURS Stabilized Real Assets Blend</i>			0.5	20.5	20.5	11.3	9.2	--
Core	989,949,391	4.4	-4.3	11.4	11.4	10.9	8.1	--
<i>NCREIF ODCE Net 1 Qtr Lag</i>			1.7	22.7	22.7	11.9	9.6	--
Core Plus	574,264,537	2.6	-1.1	16.8	16.8	12.2	--	--
<i>SURS Real Estate Blend</i>			0.3	21.0	21.0	11.4	--	--
Core Infrastructure	38,034,315	0.2	-0.1	0.8	0.8	--	--	--
<i>FTSE Dev Core Infra 50/50</i>			9.5	-5.0	-5.0	--	--	--
Public Credit	1,204,182,918	5.4	6.1	-10.4	-10.4	-1.5	--	--
<i>SURS Credit Fixed Income Blend</i>			4.7	-11.3	-11.3	-2.2	--	--
Diversified Credit	854,302,419	3.8	5.9	-10.5	-10.5	-1.0	1.2	--
<i>SURS Credit ex EMD Blend</i>			5.2	-11.1	-11.1	-1.1	1.3	--
Bivium Credit	349,880,499	1.6	5.7	-12.1	-12.1	--	--	--
<i>Bivium Credit Blend</i>			5.0	-14.0	-14.0	--	--	--
Private Credit	418,892,805	1.9	0.2	3.8	3.8	--	--	--
<i>SURS Private Credit Blend</i>			4.2	-5.1	-5.1	--	--	--
Non Traditional Growth	3,656,332,468	16.3	-2.2	3.6	3.6	19.2	15.6	--
<i>SURS Non Traditional Growth Blend</i>			-4.4	-11.8	-11.8	7.0	8.9	--
Non-Core Real Assets	754,201,693	3.4	1.3	14.4	14.4	9.1	8.4	--
<i>SURS Non Core Real Assets Blend</i>			0.9	20.5	20.5	12.3	10.4	--
Non-Core Real Estate	504,419,969	2.2	0.9	15.4	15.4	8.0	8.1	--
<i>NCREIF ODCE Net Lagged + 1.5%</i>			0.7	22.8	22.8	13.1	10.9	--
Non-Core Real Estate Debt	72,977,760	0.3	1.1	5.5	5.5	6.0	7.3	--
<i>NCREIF ODCE Net Lagged + 1.5%</i>			0.7	22.8	22.8	13.1	10.9	--



Illinois State Universities Retirement System

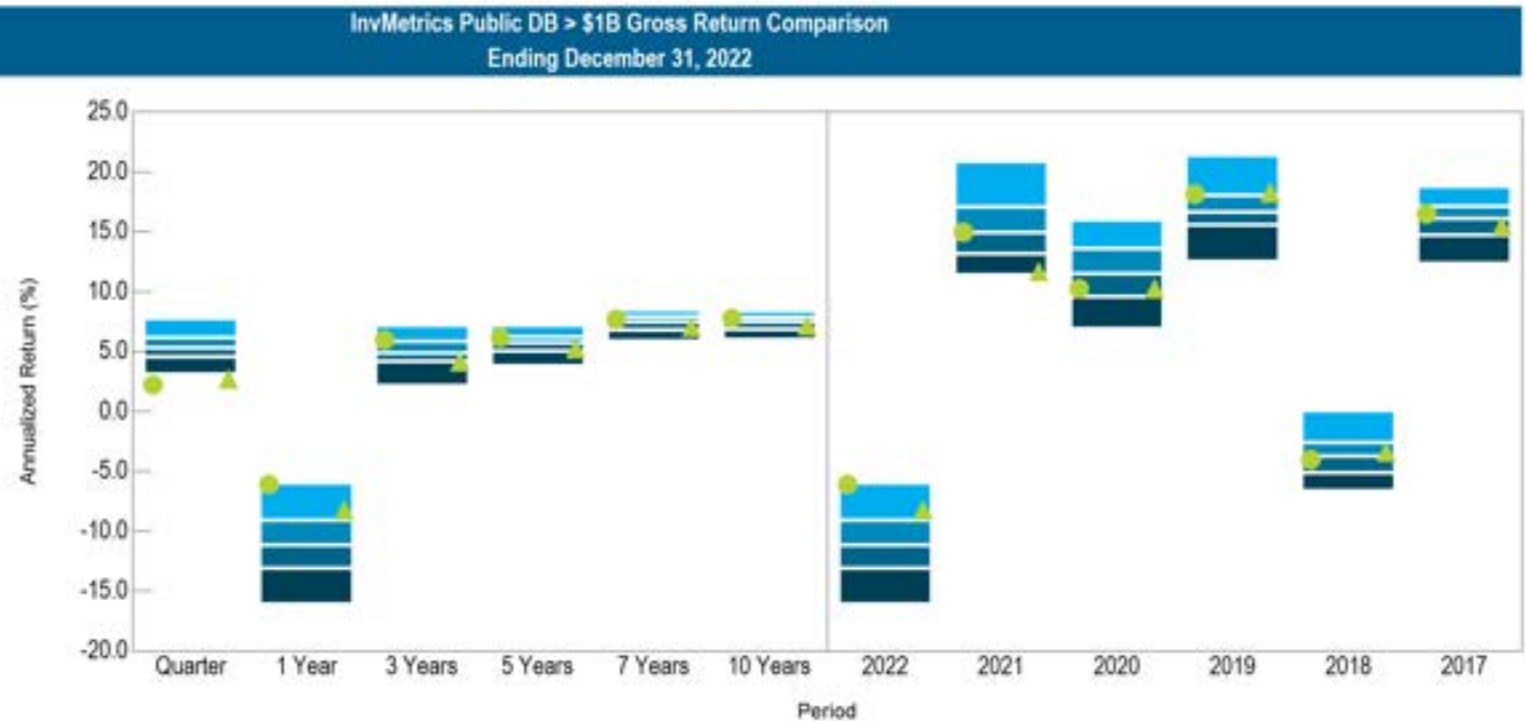
Total Fund | As of December 31, 2022

	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Non-Core Infrastructure	130,340,891	0.6	2.8	16.5	16.5	15.6	11.4	9.3
<i>CPI+5% 1 Qtr Lagged</i>			<i>1.4</i>	<i>13.6</i>	<i>13.6</i>	<i>10.2</i>	<i>8.9</i>	<i>7.6</i>
Non-Core Farmland	46,463,073	0.2	0.5	8.4	8.4	--	--	--
<i>NCREIF Farmland 1 Qtr Lag</i>			<i>2.0</i>	<i>10.2</i>	<i>10.2</i>	--	--	--
Private Equity- Fund of Funds	2,121,434,814	9.5	-3.9	-0.7	-0.7	21.5	17.5	14.1
<i>SURS PE Blend</i>			<i>-5.9</i>	<i>-19.2</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>12.9</i>
Private Equity- Direct (Aksia)	780,695,962	3.5	-0.4	10.2	10.2	9.8	--	--
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>			<i>-5.9</i>	<i>-19.2</i>	<i>-19.2</i>	<i>5.7</i>	--	--
Inflation Sensitive	1,060,795,742	4.7	2.0	-11.8	-11.8	1.1	1.4	--
<i>SURS Inflation Sensitive Blend</i>			<i>2.0</i>	<i>-11.8</i>	<i>-11.8</i>	<i>1.2</i>	<i>1.0</i>	--
TIPS	1,060,795,742	4.7	2.0	-11.8	-11.8	1.1	2.0	1.0
<i>Bloomberg US TIPS TR</i>			<i>2.0</i>	<i>-11.8</i>	<i>-11.8</i>	<i>1.2</i>	<i>2.1</i>	<i>1.1</i>
Principal Protection	1,682,118,972	7.5	1.6	-8.6	-8.6	-2.0	0.4	--
<i>BC US Int Ag x Credit Blend</i>			<i>1.5</i>	<i>-9.6</i>	<i>-9.6</i>	<i>-2.2</i>	<i>0.4</i>	--
Crisis Risk Offset	4,093,909,866	18.2	-7.6	8.0	8.0	4.7	--	--
<i>SURS CRO Blend</i>			<i>-5.5</i>	<i>12.9</i>	<i>12.9</i>	<i>7.3</i>	--	--
Long Duration	416,446,554	1.9	-0.6	-29.0	-29.0	-7.6	--	--
<i>BBgBarc US Govt Long TR</i>			<i>-0.6</i>	<i>-29.2</i>	<i>-29.2</i>	<i>-7.4</i>	--	--
Systematic Trend Following	2,144,903,018	9.6	-10.3	27.5	27.5	12.0	--	--
<i>CS Mgd Futures 15% Vol</i>			<i>-10.7</i>	<i>34.7</i>	<i>34.7</i>	<i>15.0</i>	--	--
Alternative Risk Premia	1,130,376,213	5.0	-2.5	3.9	3.9	0.2	--	--
<i>90 Day T-Bill + 2%</i>			<i>1.5</i>	<i>4.1</i>	<i>4.1</i>	<i>2.9</i>	--	--
Long Volatility	370,673,667	1.7	-2.4	--	--	--	--	--
<i>CBOE Eurekahedge Long Volatility Index</i>			<i>-4.0</i>	--	--	--	--	--
Tail Risk	31,510,415	0.1						
Cash Composite	459,661,831	2.0						
Total Overlay	62,669,149	0.3						



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022



	Return (Rank)											
5th Percentile	7.7	-6.0	7.2	7.2	8.4	8.4	-6.0	20.9	16.0	21.4	0.0	18.8
25th Percentile	6.2	-9.0	5.9	6.2	7.9	7.9	-9.0	17.1	13.6	18.1	-2.6	17.2
Median ¹	5.3	-11.1	4.9	5.8	7.5	7.6	-11.1	14.9	11.5	16.7	-3.7	16.2
75th Percentile	4.6	-13.1	4.2	5.1	6.8	6.9	-13.1	13.2	9.6	15.6	-5.1	14.8
95th Percentile	3.1	-16.1	2.2	3.8	5.9	6.0	-16.1	11.4	6.9	12.5	-6.6	12.4
# of Portfolios	75	75	73	73	73	68	75	84	94	81	71	98
● Total Fund	2.2 (99)	-6.1 (6)	6.0 (24)	6.2 (28)	7.7 (35)	7.8 (39)	-6.1 (6)	15.0 (50)	10.2 (70)	18.1 (24)	-4.0 (60)	16.5 (42)
▲ SURS Policy Benchmark	2.7 (98)	-8.2 (20)	4.2 (77)	5.3 (65)	7.0 (71)	7.2 (70)	-8.2 (20)	11.7 (92)	10.3 (69)	18.3 (22)	-3.4 (40)	15.5 (68)

¹ Investment Metrics (IM) Median [Gross of Fees] - Public Fund >\$1 Billion Universe includes BNY Mellon Total Public Fund Greater than \$1Billion Universe and IM client data.



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

	Risk-Adjusted Return of SURS vs. Peers				
	Fiscal YTD	1 Year	3 Years	5 Years	10 Years
Total Fund	0.0	-6.3	5.8	6.0	7.5
Risk-Adjusted Median ¹	0.6	-7.4	3.9	4.9	6.8
Excess Return	-0.6	1.2	1.9	1.1	0.7

→ On a risk-adjusted basis, the SURS Total Portfolio has outperformed the Median Public Fund in all trailing time periods, except for the Fiscal YTD period. The pursuit of a more efficient (i.e., higher return per unit of risk) portfolio has been an explicit consideration of the SURS Board over the last two asset-liability studies, in particular.

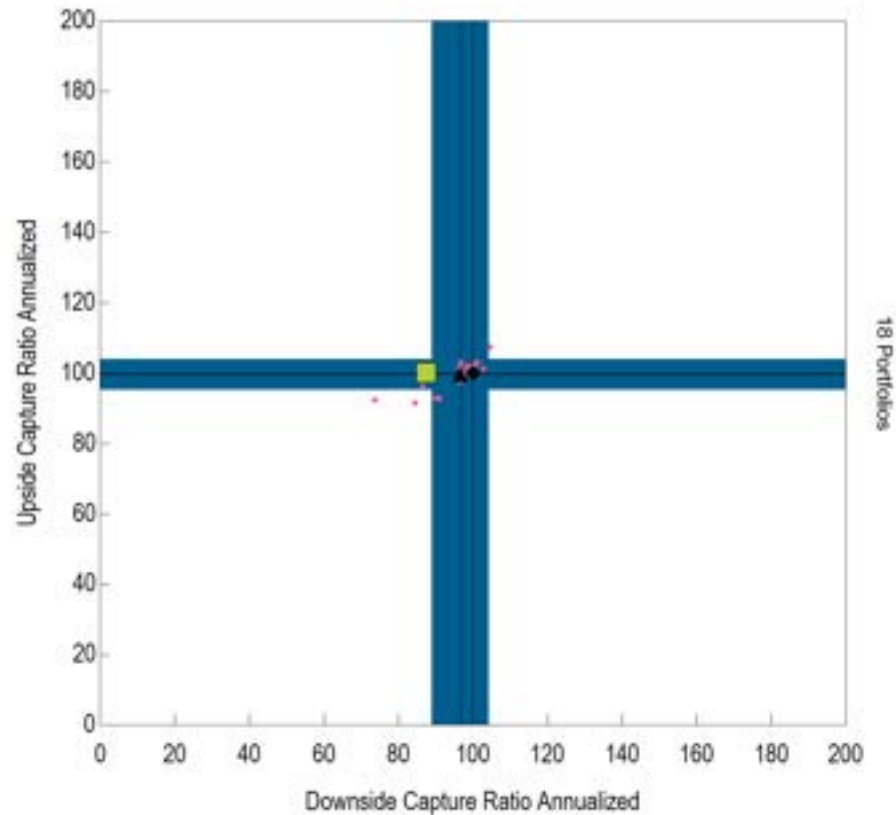
¹ Risk-adjusted median normalizes the median fund to the SURS exhibited volatility. Calculated as: risk-adjusted median = unadjusted median return * (SURS volatility/peer volatility).



Illinois State Universities Retirement System

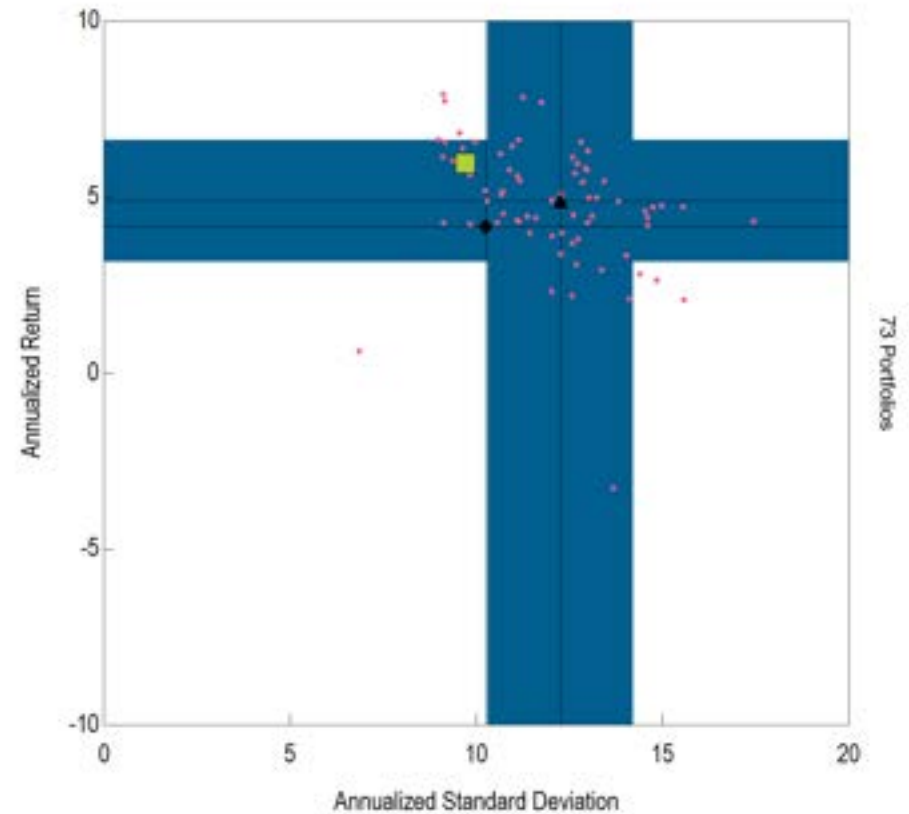
Total Fund | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
3 Years Ending December 31, 2022



- Total Fund
- SURS Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2022

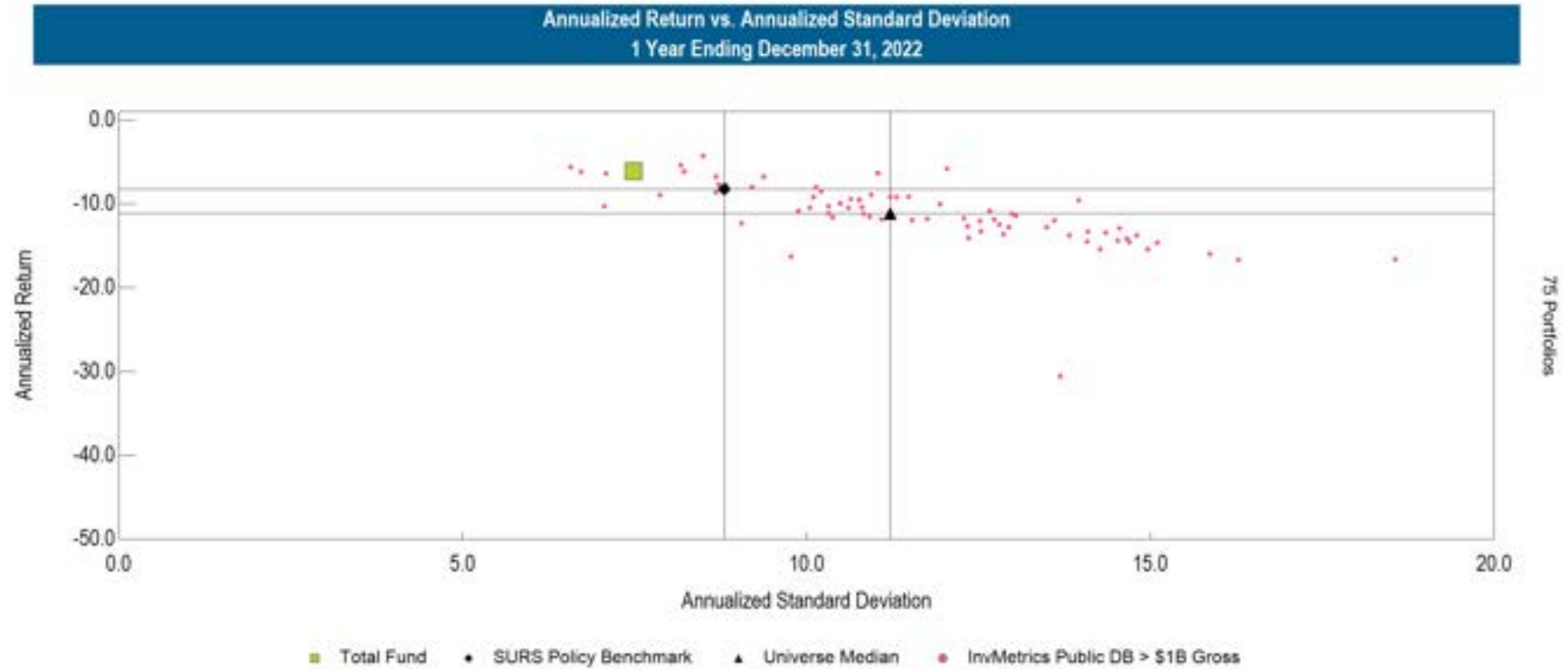


- Total Fund
- SURS Policy Benchmark
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB > \$1B Gross



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

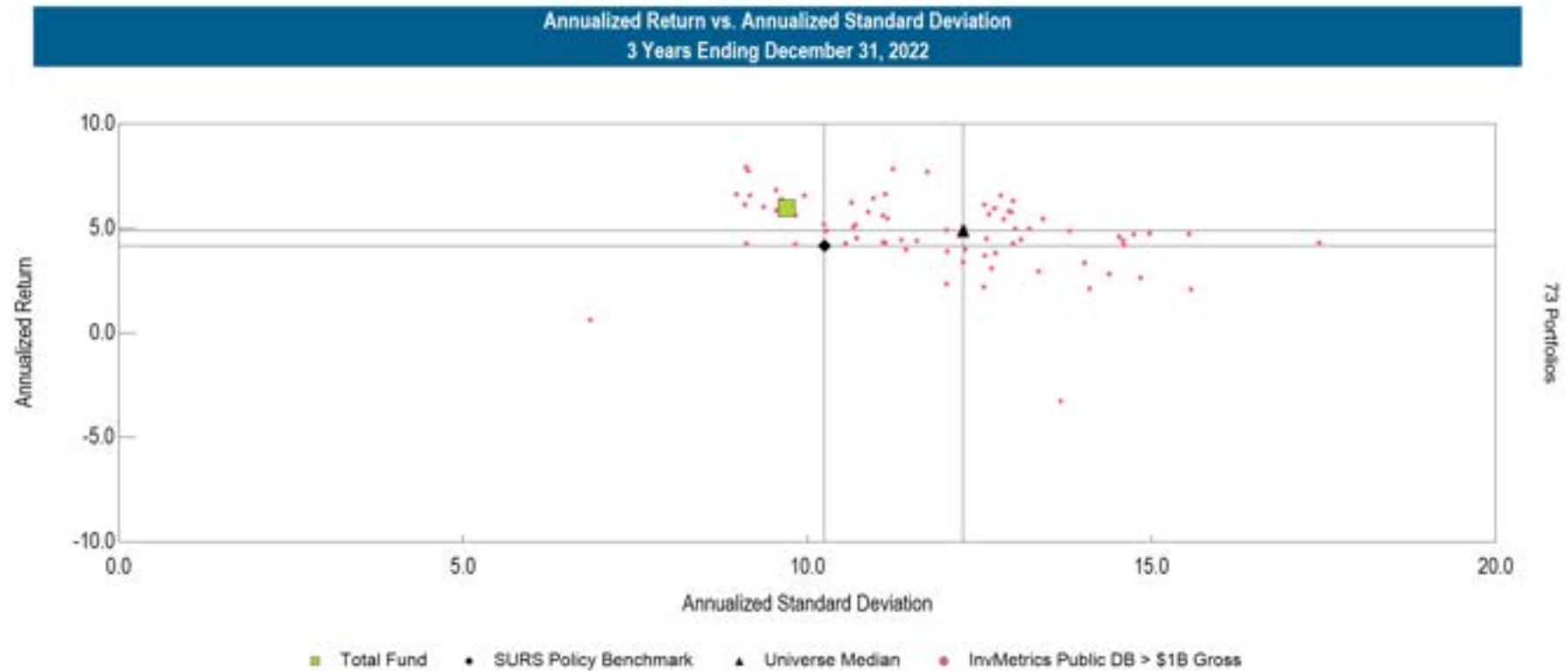


	Annualized Return	Annualized Return Rank	Annualized Standard Deviation	Annualized Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank
Total Fund	-6.1%	6	7.5%	5	-1.0	30	0.9	22
SURS Policy Benchmark	-8.2%	20	8.8%	15	-1.1	63	--	--
InvMetrics Public DB > \$1B Gross Median	-11.1%	--	11.2%	--	-1.1	--	0.5	--



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022

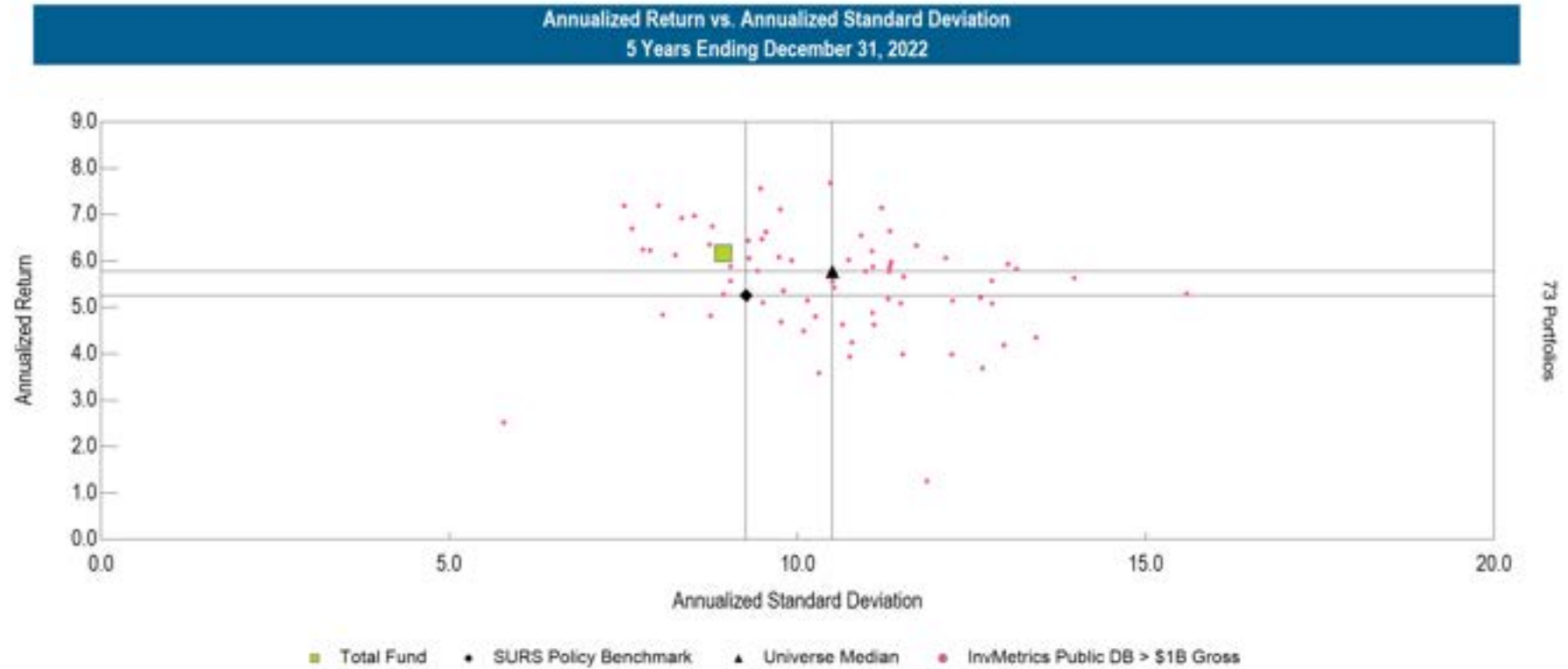


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank
Total Fund	6.0%	24	9.7%	15	0.5	16	0.9	6
SURS Policy Benchmark	4.2%	77	10.2%	20	0.3	53	--	--
InvMetrics Public DB > \$1B Gross Median	4.9%	--	12.3%	--	0.4	--	0.3	--



Illinois State Universities Retirement System

Total Fund | As of December 31, 2022



	Annualized Return	Annualized Return Rank	Annualized Standard Deviation	Annualized Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank
Total Fund	6.2%	28	8.9%	20	0.6	21	0.5	18
SURS Policy Benchmark	5.3%	65	9.3%	24	0.4	42	--	--
InvMetrics Public DB > \$1B Gross Median	5.8%	--	10.5%	--	0.4	--	0.2	--

Private Markets Performance



Illinois State Universities Retirement System

Private Markets Performance¹ | As of September 30, 2022

	Composite Level IRRs				
	1-Year (%)	3-Year (%)	5-Year (%)	10-Year (%)	Since Inception (%)
Real Assets ^{1, 2}	18.9	11.8	9.8	10.0	8.0
Private Equity	-1.0	22.9	19.0	14.6	20.3

	Capital Commitment (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple
Real Assets ²	3,063,262,705	2,375,427,412	1,362,768,407	2,198,324,393	1.5
Private Equity	5,332,101,902	4,199,319,937	4,589,344,435	2,817,118,663	1.8

¹ Information provided by Northern Trust.

² Real Assets Composite includes Real Estate, Core, and Non-Core Infrastructure.

US Equity

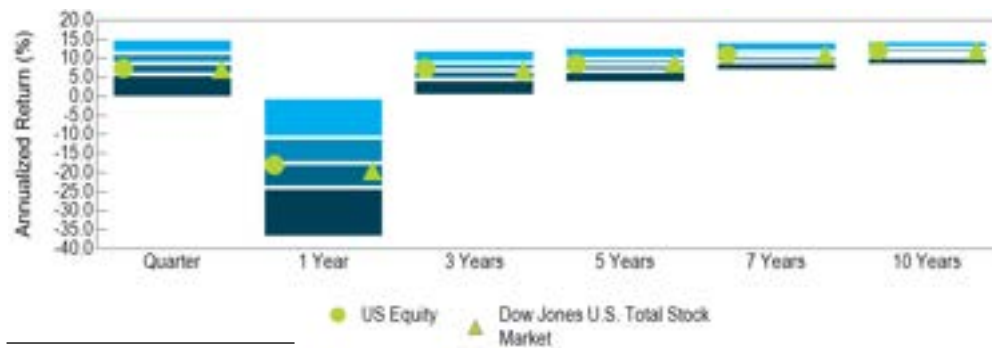


Illinois State Universities Retirement System

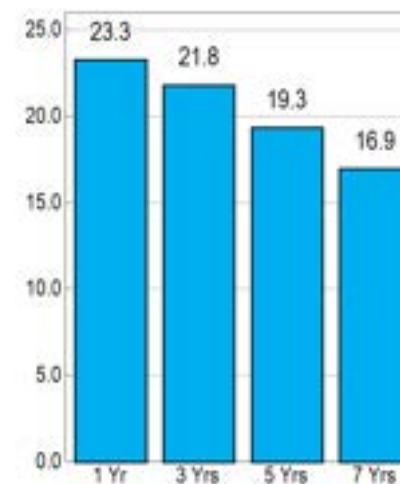
US Equity | As of December 31, 2022



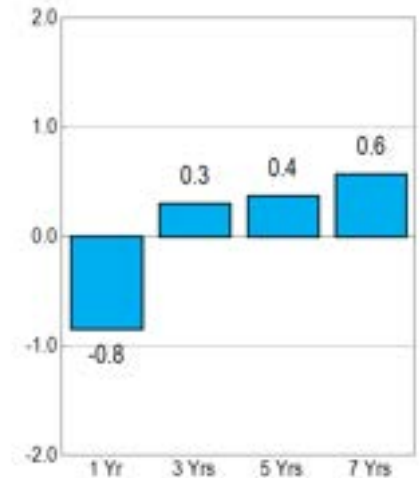
	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
US Equity	7.3	-18.0	7.3	8.5	10.8	12.0
<i>Dow Jones U.S. Total Stock Market</i>	<i>7.2</i>	<i>-19.5</i>	<i>6.9</i>	<i>8.7</i>	<i>10.9</i>	<i>12.0</i>
Excess Return	0.1	1.5	0.4	-0.2	-0.1	0.0
eV US All Cap Equity Gross Rank	63	53	45	49	45	39
eV US All Cap Equity Gross Median	8.7	-17.4	6.9	8.4	10.6	11.4



Annualized Standard Deviation
US Equity



Sharpe Ratio
US Equity



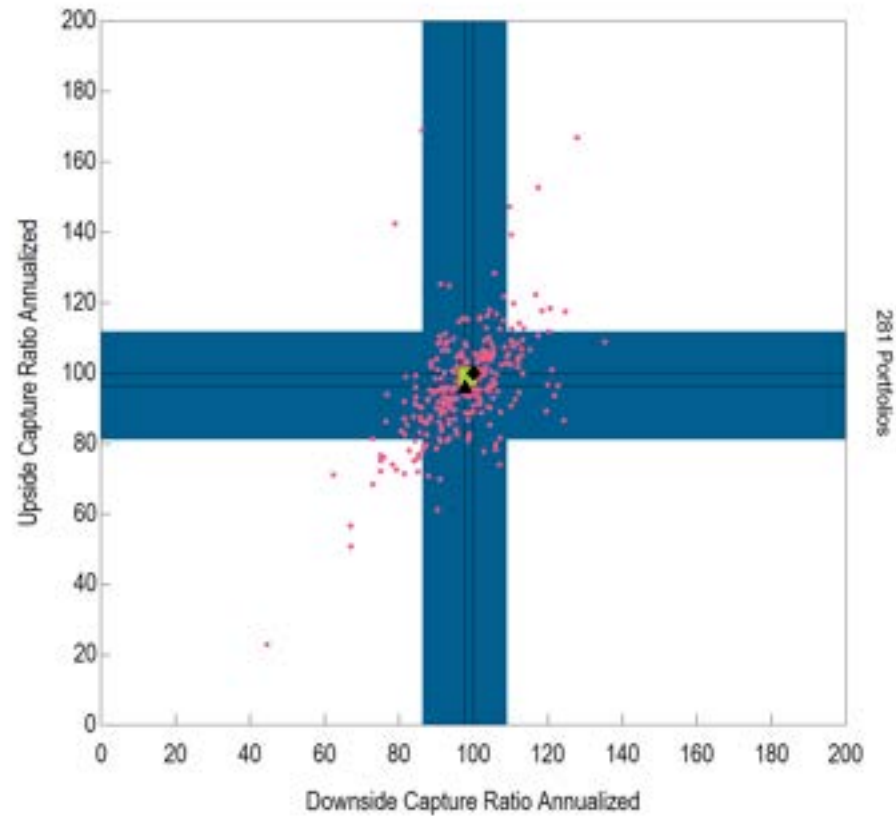
¹ Returns are gross of fees



Illinois State Universities Retirement System

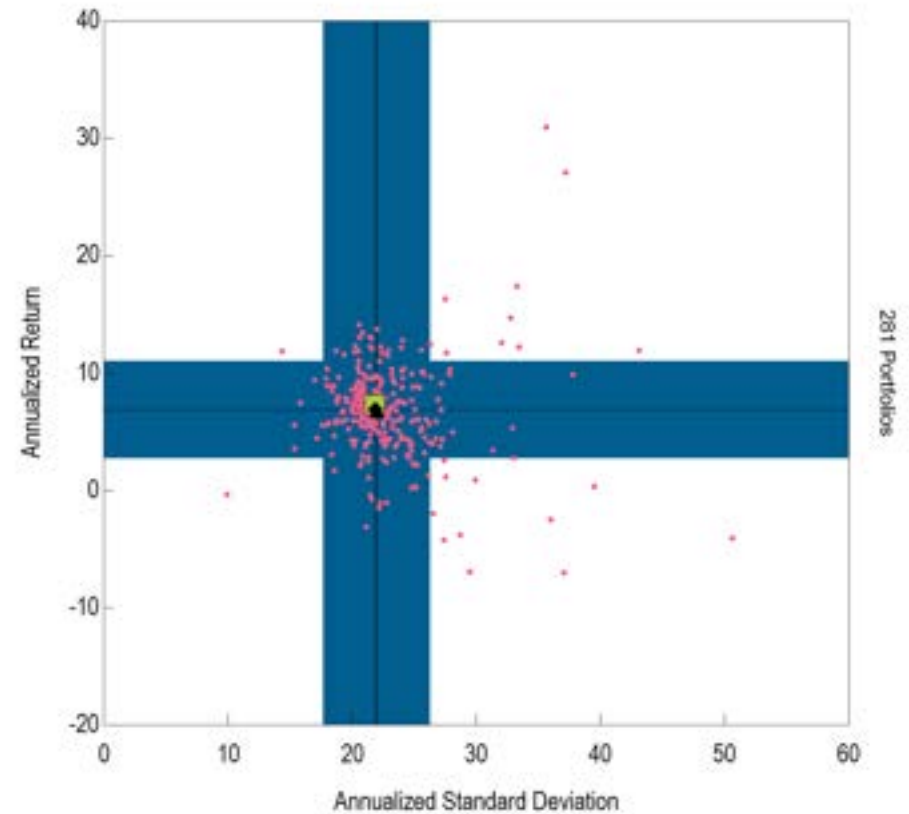
US Equity | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
3 Years Ending December 31, 2022



- US Equity
- Dow Jones U.S. Total Stock Market
- ▲ Universe Median
- 68% Confidence Interval
- eV US All Cap Equity Gross

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2022



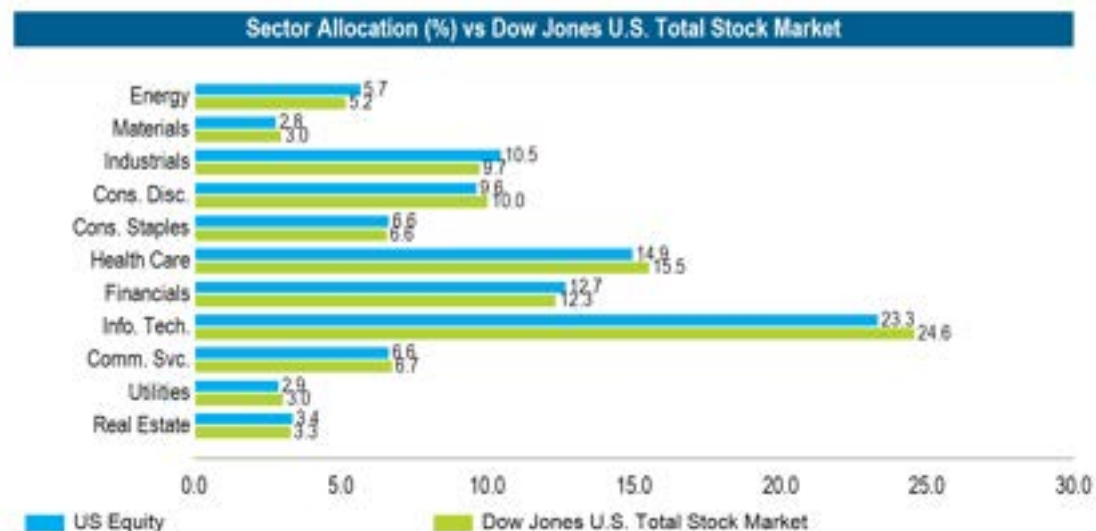
- US Equity
- Dow Jones U.S. Total Stock Market
- ▲ Universe Median
- 68% Confidence Interval
- eV US All Cap Equity Gross



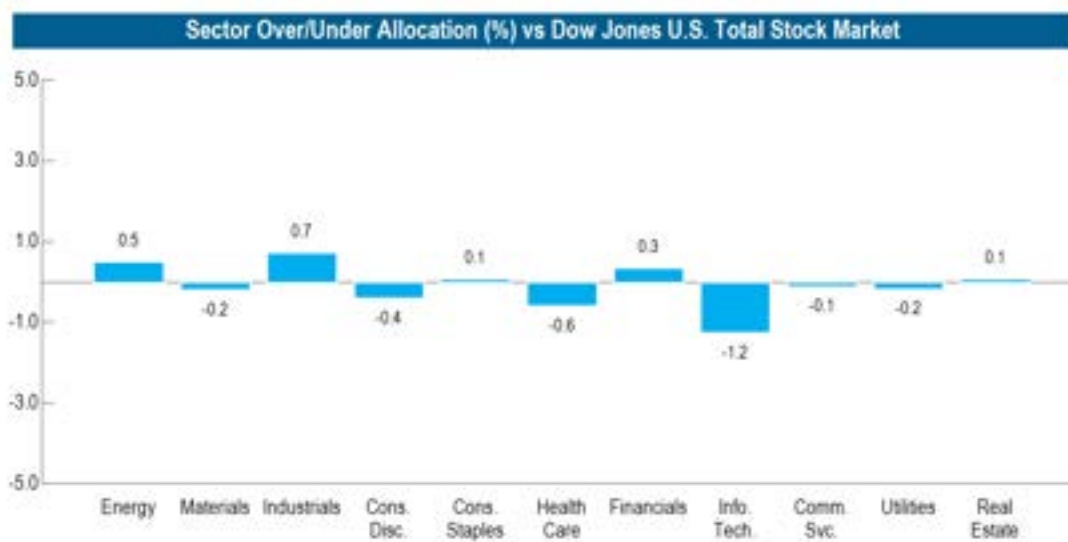
Illinois State Universities Retirement System

US Equity | As of December 31, 2022

Characteristics		Dow Jones U.S. Total Stock Market
	Portfolio	
Number of Holdings	3,040	4,251
Weighted Avg. Market Cap. (\$B)	346.0	357.2
Median Market Cap. (\$B)	2.3	1.0
Price To Earnings	17.9	18.3
Price To Book	3.4	3.6
Price To Sales	2.1	2.2
Return on Equity (%)	23.2	22.4
Yield (%)	1.7	1.7
Beta	1.0	1.0
R-Squared	1.0	1.0



Top Holdings	
APPLE INC	5.2%
MICROSOFT CORP	4.4%
AMAZON.COM INC	1.9%
ALPHABET INC	1.3%
UNITEDHEALTH GROUP INC	1.2%
ALPHABET INC	1.2%
JOHNSON & JOHNSON	1.2%
EXXON MOBIL CORP	1.2%
BERKSHIRE HATHAWAY INC	1.0%
JPMORGAN CHASE & CO	1.0%





Illinois State Universities Retirement System

US Equity | As of December 31, 2022

Top Contributors

	End Weight	Return	Contribution
EXXON MOBIL CORP	1.16	27.35	0.32
JPMORGAN CHASE & CO	0.99	29.49	0.29
CHEVRON CORP	0.88	25.90	0.23
MERCK & CO INC	0.70	29.67	0.21
PROCTER & GAMBLE CO (THE)	0.91	20.91	0.19
NVIDIA CORPORATION	0.87	20.42	0.18
MASTERCARD INC	0.76	22.49	0.17
BOEING CO	0.29	57.33	0.16
BERKSHIRE HATHAWAY INC	1.00	15.68	0.16
ABBVIE INC	0.72	21.60	0.16

Market Capitalization As of December 31, 2022



Bottom Contributors

	End Weight	Return	Contribution
AMAZON.COM INC	1.86	-25.66	-0.48
TESLA INC	0.81	-53.56	-0.43
APPLE INC	5.24	-5.83	-0.31
ALPHABET INC	1.33	-7.76	-0.10
ALPHABET INC	1.20	-7.72	-0.09
META PLATFORMS INC	0.68	-11.31	-0.08
PAYPAL HOLDINGS INC	0.21	-17.25	-0.04
WALT DISNEY CO (THE)	0.40	-7.90	-0.03
SALESFORCE INC	0.33	-7.82	-0.03
REGAL REXNORD CORPORATION	0.18	-14.27	-0.03

Non US Equity

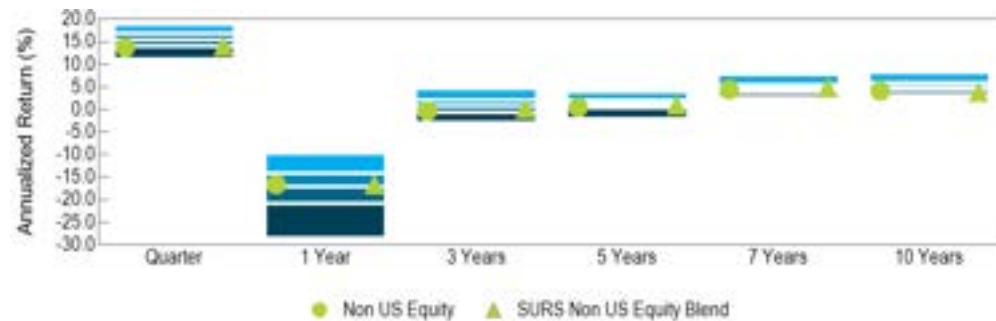


Illinois State Universities Retirement System

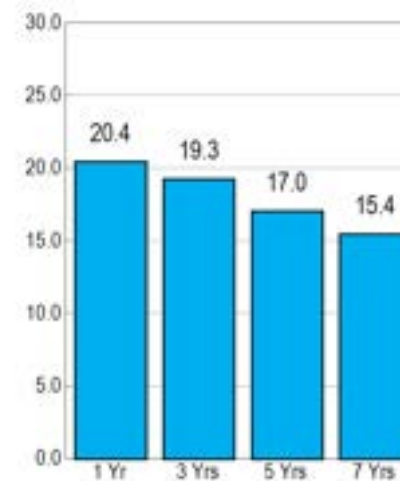
Non US Equity | As of December 31, 2022



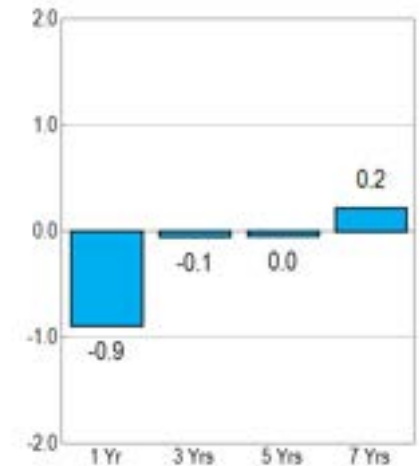
	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Non US Equity	13.8	-16.5	-0.2	0.7	4.6	4.3
<i>SURS Non US Equity Blend</i>	<i>14.1</i>	<i>-16.6</i>	<i>0.2</i>	<i>1.0</i>	<i>4.9</i>	<i>3.9</i>
Excess Return	-0.3	0.1	-0.4	-0.3	-0.3	0.4
<i>eV Non-US Diversified Core Eq Net Rank</i>	<i>79</i>	<i>43</i>	<i>68</i>	<i>68</i>	<i>54</i>	<i>76</i>
<i>eV Non-US Diversified Core Eq Net Median</i>	<i>15.6</i>	<i>-17.1</i>	<i>0.8</i>	<i>1.3</i>	<i>4.7</i>	<i>5.0</i>



Annualized Standard Deviation
Non US Equity



Sharpe Ratio
Non US Equity



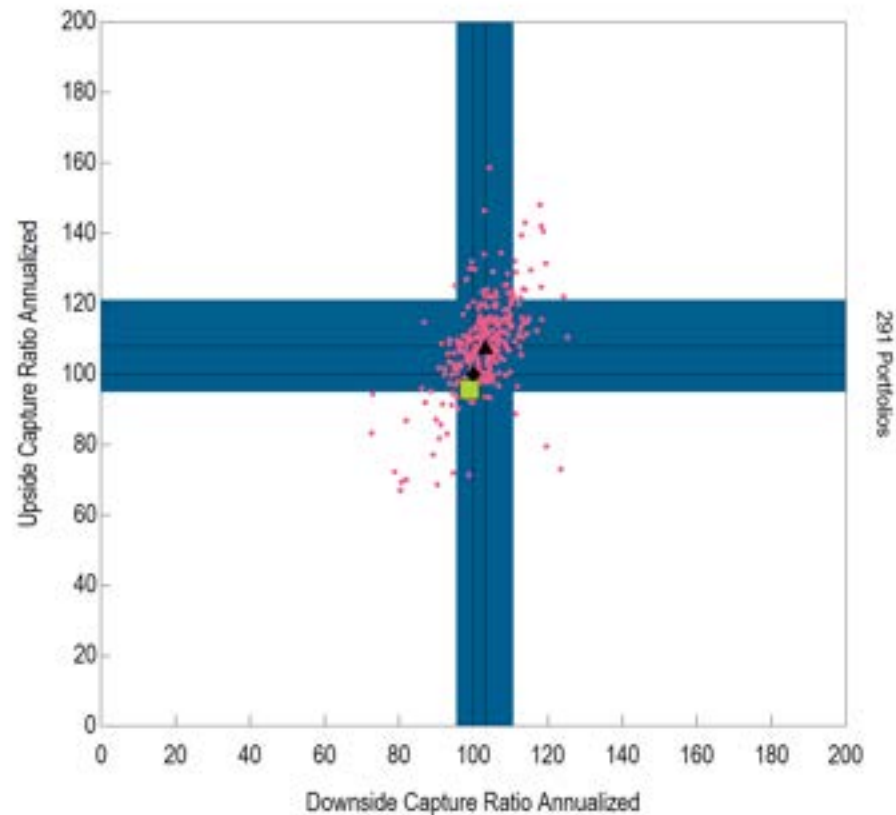
¹ Returns are gross of fees



Illinois State Universities Retirement System

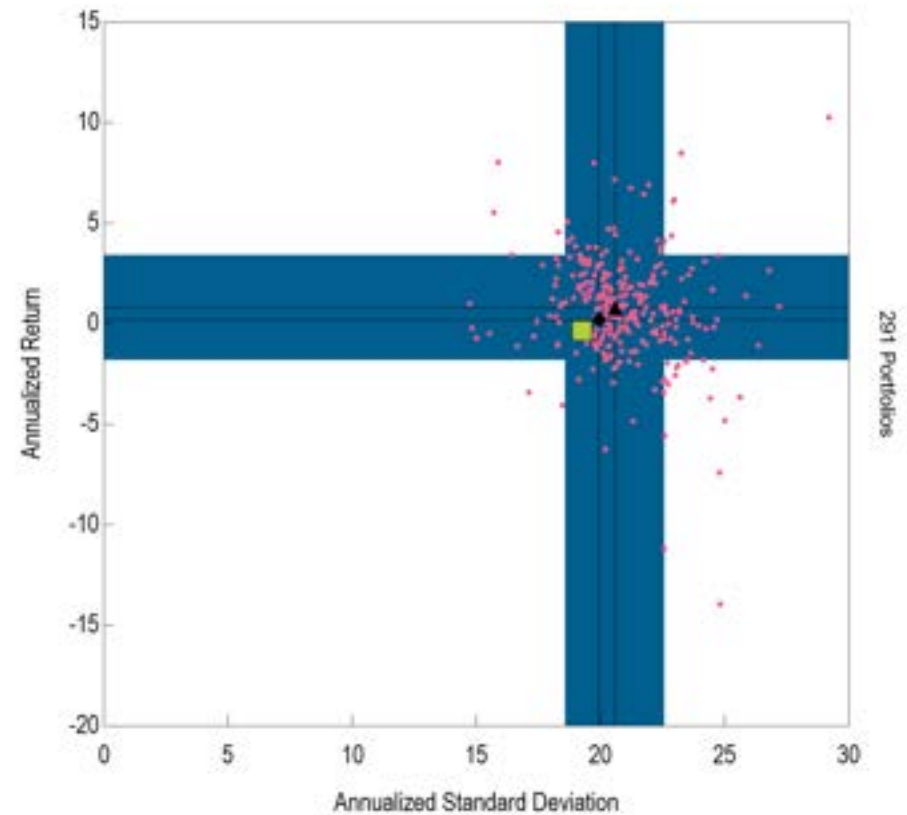
Non US Equity | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
3 Years Ending December 31, 2022



- Non US Equity
- SURS Non US Equity Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV Non-US Diversified Core Eq Net

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2022



- Non US Equity
- SURS Non US Equity Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV Non-US Diversified Core Eq Net



Illinois State Universities Retirement System

Non US Equity | As of December 31, 2022

Characteristics		MSCI ACWI ex USA IMI
	Portfolio	
Number of Holdings	2,289	6,585
Weighted Avg. Market Cap. (\$B)	64.0	69.8
Median Market Cap. (\$B)	7.8	1.6
Price To Earnings	11.0	12.6
Price To Book	2.4	2.4
Price To Sales	1.0	1.2
Return on Equity (%)	18.1	14.6
Yield (%)	3.8	3.4
Beta	1.0	1.0
R-Squared	1.0	1.0



Top Holdings	
NOVO NORDISK 'B'	1.5%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.2%
NOVARTIS AG	1.1%
ROCHE HOLDING AG	1.0%
BHP GROUP LTD	1.0%
SHELL PLC	0.9%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	0.9%
NESTLE SA, CHAM UND VEVEY	0.9%
LOREAL SA	0.9%
DEUTSCHE TELEKOM AG	0.8%





Illinois State Universities Retirement System

Non US Equity | As of December 31, 2022

Top Contributors

	End Weight	Return	Contribution
NOVO NORDISK 'B'	1.52	34.34	0.52
LVMH MOET HENNESSY	1.21	22.25	0.27
LOUIS VUITTON SE			
DOGUS OTOMOTIV SERVIS	0.25	104.88	0.26
VE TIC			
BHP GROUP LTD	0.95	24.97	0.24
MARUBENI CORP	0.68	31.09	0.21
MITSUI & CO LTD	0.55	36.85	0.20
ASML HOLDING NV	0.72	27.02	0.20
NOVARTIS AG	1.07	17.47	0.19
3I GROUP PLC	0.47	35.06	0.17
CENTRICA PLC	0.32	49.48	0.16

Bottom Contributors

	End Weight	Return	Contribution
ROCHE HOLDING AG	1.03	-4.67	-0.05
PICC PROPERTY AND CASUALTY COMPANY LIMITED	0.55	-8.35	-0.05
BANCO BRADESCO SA BRAD	0.15	-23.67	-0.03
NORTHLAND POWER INC	0.46	-6.15	-0.03
ASHOK LEYLAND LTD	0.30	-7.63	-0.02
TIANQI LITHIUM CORP HK09696	0.11	-17.99	-0.02
FERTIGLOBE PLC COMMON STOCK AED	0.09	-21.72	-0.02
DAQO NEW ENERGY CORP	0.07	-27.26	-0.02
TELEKOMUNIKASI INDONESIA	0.09	-17.55	-0.02
DEXERIALS CORP	0.11	-13.91	-0.01

Market Capitalization As of December 31, 2022



Global Equity



Illinois State Universities Retirement System

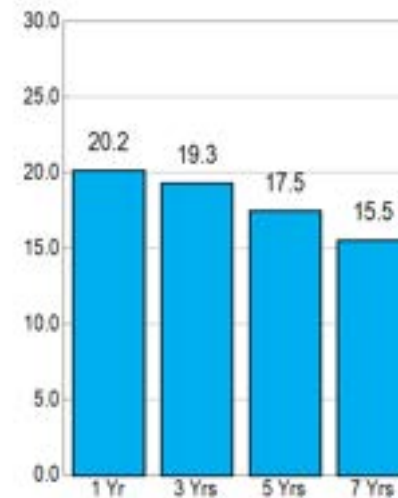
Global Equity | As of December 31, 2022



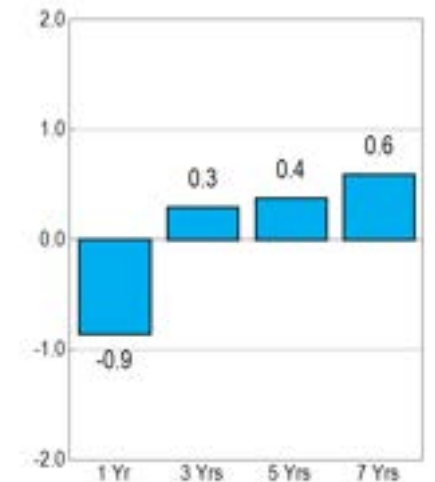
	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Global Equity	11.0	-15.5	6.7	8.1	10.6	10.5
<i>SURS Global Equity Blend</i>	9.8	-18.4	3.9	5.2	8.1	8.0
Excess Return	1.2	2.9	2.8	2.9	2.5	2.5
<i>eV Global All Cap Equity Gross Rank</i>	52	43	27	20	20	24
<i>eV Global All Cap Equity Gross Median</i>	11.0	-17.4	5.2	6.2	8.9	9.3



Annualized Standard Deviation
Global Equity



Sharpe Ratio
Global Equity



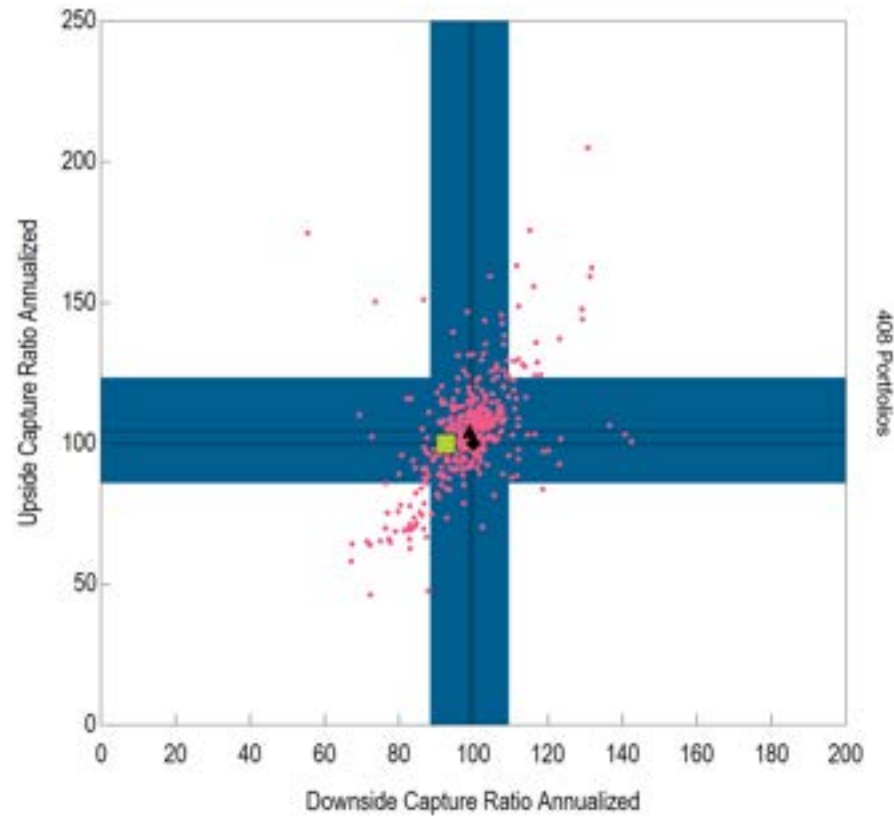
¹ Returns are gross of fees



Illinois State Universities Retirement System

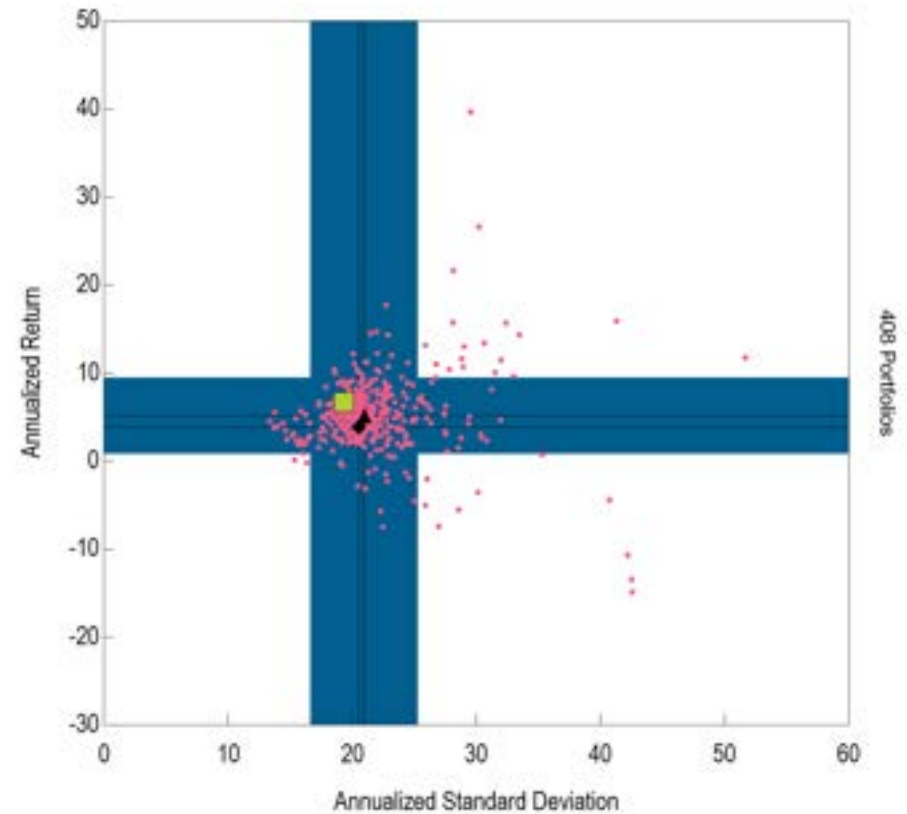
Global Equity | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
3 Years Ending December 31, 2022



- Global Equity
- SURS Global Equity Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV Global All Cap Equity Gross

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2022



- Global Equity
- SURS Global Equity Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV Global All Cap Equity Gross



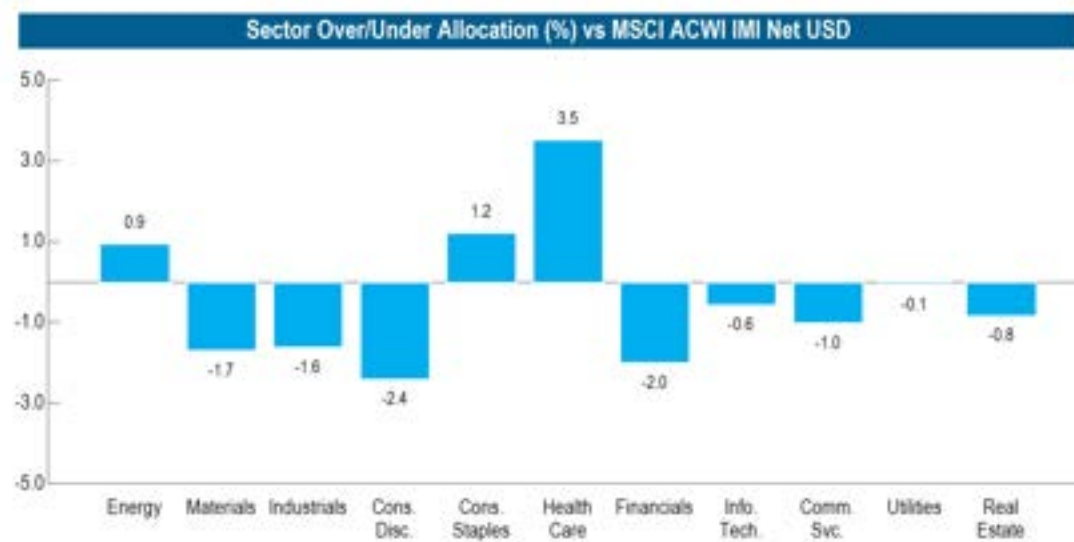
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Global Equity | As of December 31, 2022

Characteristics	Portfolio	MSCI ACWI IMI Net USD
Number of Holdings	1,680	9,146
Weighted Avg. Market Cap. (\$B)	239.8	243.4
Median Market Cap. (\$B)	19.1	1.9
Price To Earnings	16.6	15.5
Price To Book	3.1	3.0
Price To Sales	1.8	1.7
Return on Equity (%)	23.7	19.4
Yield (%)	2.1	2.4
Beta	0.9	1.0
R-Squared	1.0	1.0



Top Holdings	
MICROSOFT CORP	2.9%
APPLE INC	2.3%
MACQUARIE POOLED TRUST EMERGING MARKETS PORTFOLIO	1.3%
UNITEDHEALTH GROUP INC	1.3%
AMAZON.COM INC	1.2%
EXXON MOBIL CORP	1.1%
JOHNSON & JOHNSON	1.1%
VISA INC	0.9%
NT COLLECTIVE SHORT TERM INVT FD	0.9%
ALPHABET INC	0.8%





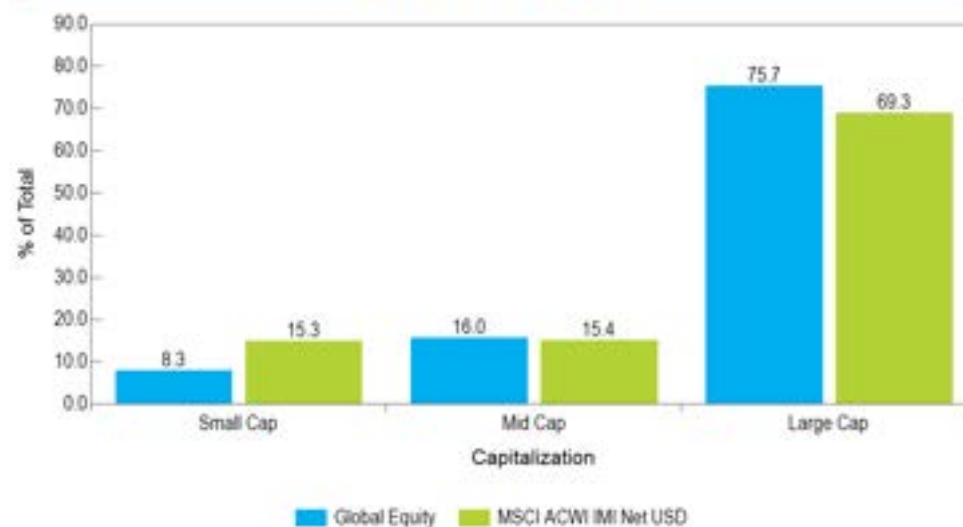
Illinois State Universities Retirement System

Global Equity | As of December 31, 2022

Top Contributors

	End Weight	Return	Contribution
EXXON MOBIL CORP	1.10	27.35	0.30
SCHLUMBERGER LTD	0.48	49.43	0.24
BURLINGTON STORES INC	0.22	81.21	0.18
MACQUARIE POOLED TRUST	1.26	12.59	0.16
EMERGING MARKETS PORTFOLIO			
VISA INC	0.92	17.22	0.16
PHILIP MORRIS INTERNATIONAL INC	0.67	23.47	0.16
MASTERCARD INC	0.68	22.49	0.15
JPMORGAN CHASE & CO	0.46	29.49	0.13
ABBVIE INC	0.61	21.60	0.13
GILEAD SCIENCES INC	0.31	40.31	0.12

Market Capitalization As of December 31, 2022



Bottom Contributors

	End Weight	Return	Contribution
AMAZON.COM INC	1.15	-25.66	-0.30
TESLA INC	0.31	-53.56	-0.17
APPLE INC	2.31	-5.83	-0.13
META PLATFORMS INC	0.64	-11.31	-0.07
ALPHABET INC	0.80	-7.76	-0.06
ALPHABET INC	0.56	-7.72	-0.04
PINNACLE FINANCIAL PARTNERS INC	0.28	-9.25	-0.03
PAYPAL HOLDINGS INC	0.14	-17.25	-0.02
WALT DISNEY CO (THE)	0.26	-7.90	-0.02
PALO ALTO NETWORKS INC	0.14	-14.81	-0.02

Inflation Sensitive

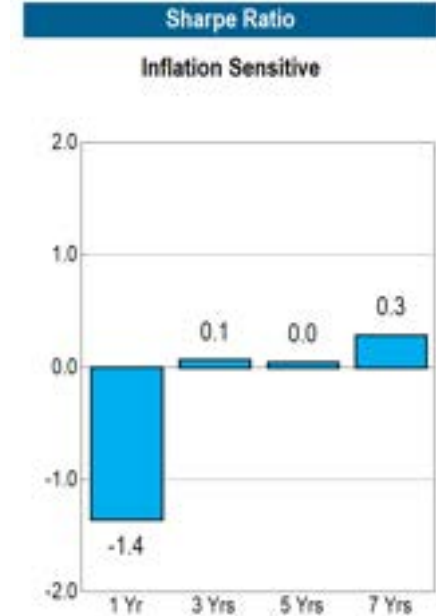
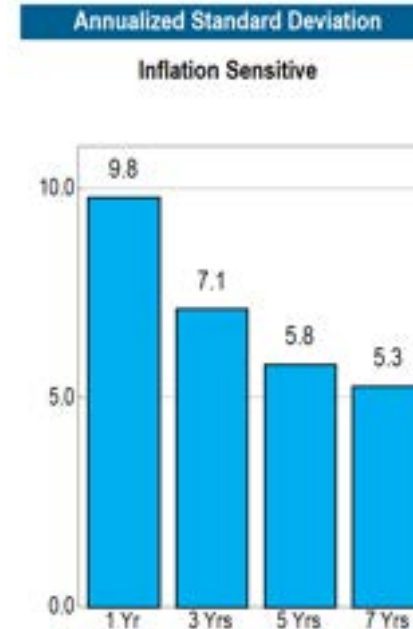
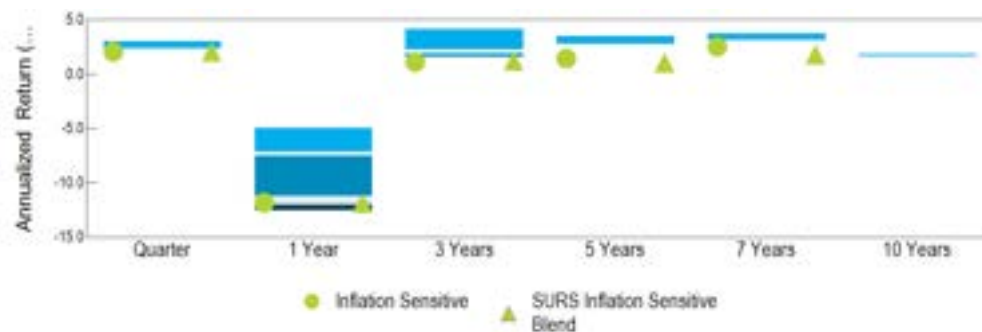


Illinois State Universities Retirement System

Inflation Sensitive | As of December 31, 2022



	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Inflation Sensitive	2.0	-11.8	1.1	1.4	2.5	--
<i>SURS Inflation Sensitive Blend</i>	<i>2.0</i>	<i>-11.8</i>	<i>1.2</i>	<i>1.0</i>	<i>1.8</i>	<i>--</i>
Excess Return	0.0	0.0	-0.1	0.4	0.7	--
eV US TIPS / Inflation Fixed Inc Gross Rank	53	79	90	99	91	--
eV US TIPS / Inflation Fixed Inc Gross Median	2.1	-11.3	1.5	2.4	2.7	1.3



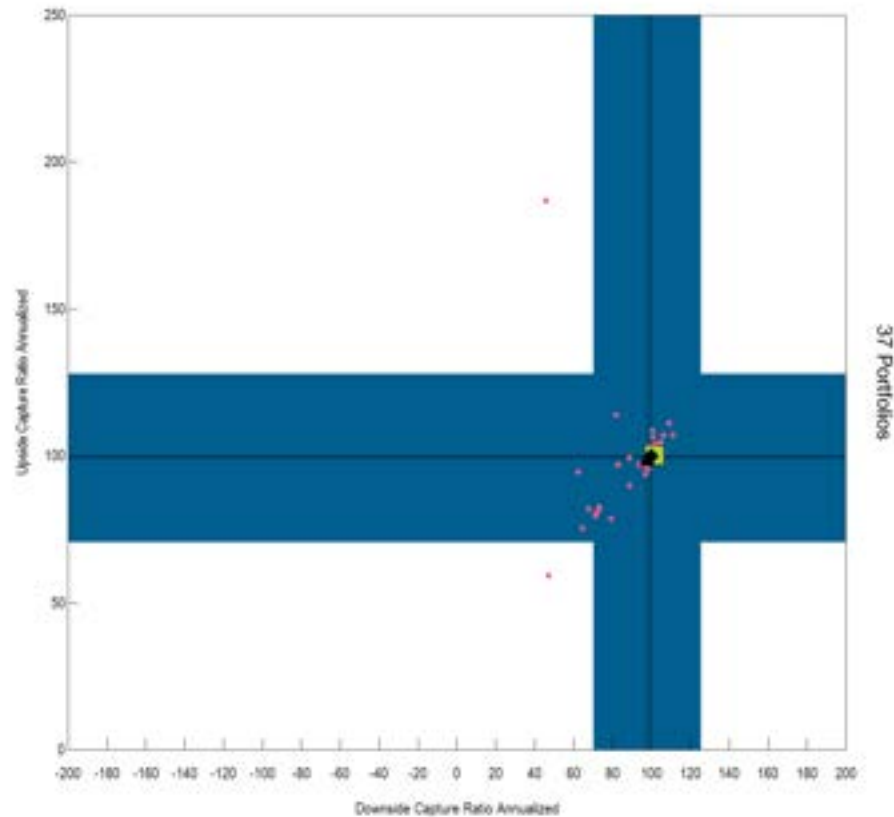
¹ Returns are gross of fees



Illinois State Universities Retirement System

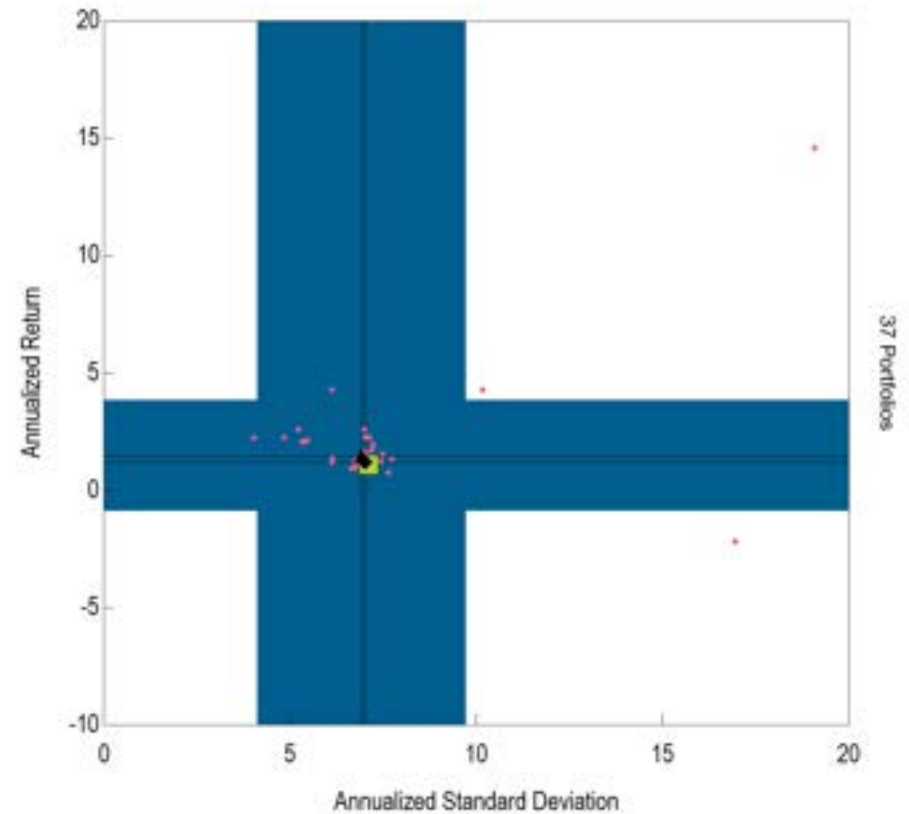
Inflation Sensitive | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
3 Years Ending December 31, 2022



- Inflation Sensitive
- SURS Inflation Sensitive Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV US TiPS / Inflation Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2022



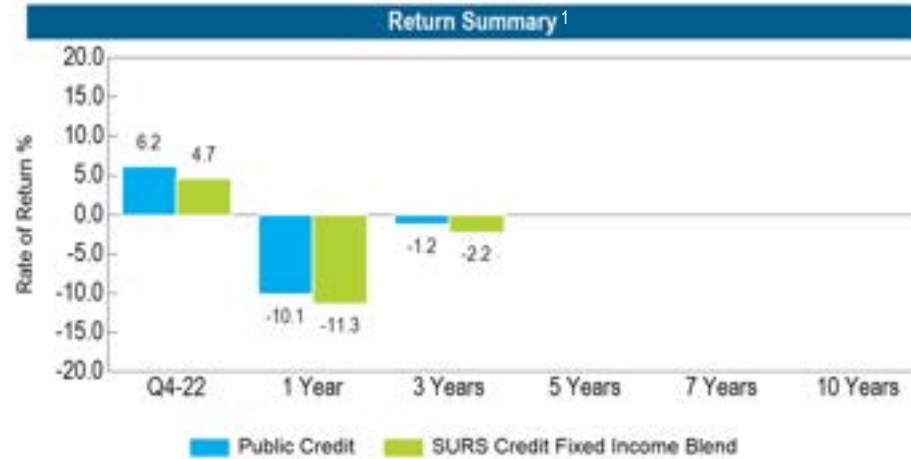
- Inflation Sensitive
- SURS Inflation Sensitive Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV US TiPS / Inflation Fixed Inc Gross

Public Credit



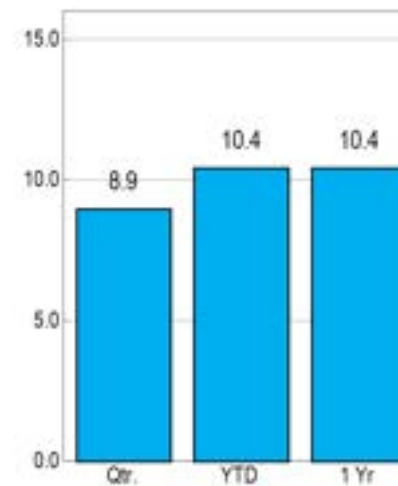
Illinois State Universities Retirement System

Public Credit | As of December 31, 2022

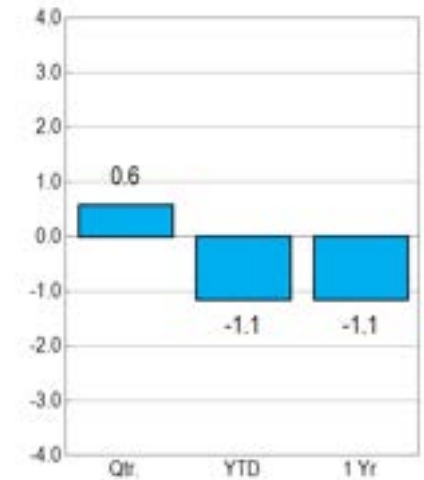


	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Public Credit	6.2	-10.1	-1.2	--	--	--
<i>SURS Credit Fixed Income Blend</i>	<i>4.7</i>	<i>-11.3</i>	<i>-2.2</i>	--	--	--
Excess Return	1.5	1.2	1.0			

Annualized Standard Deviation
Public Credit



Sharpe Ratio
Public Credit



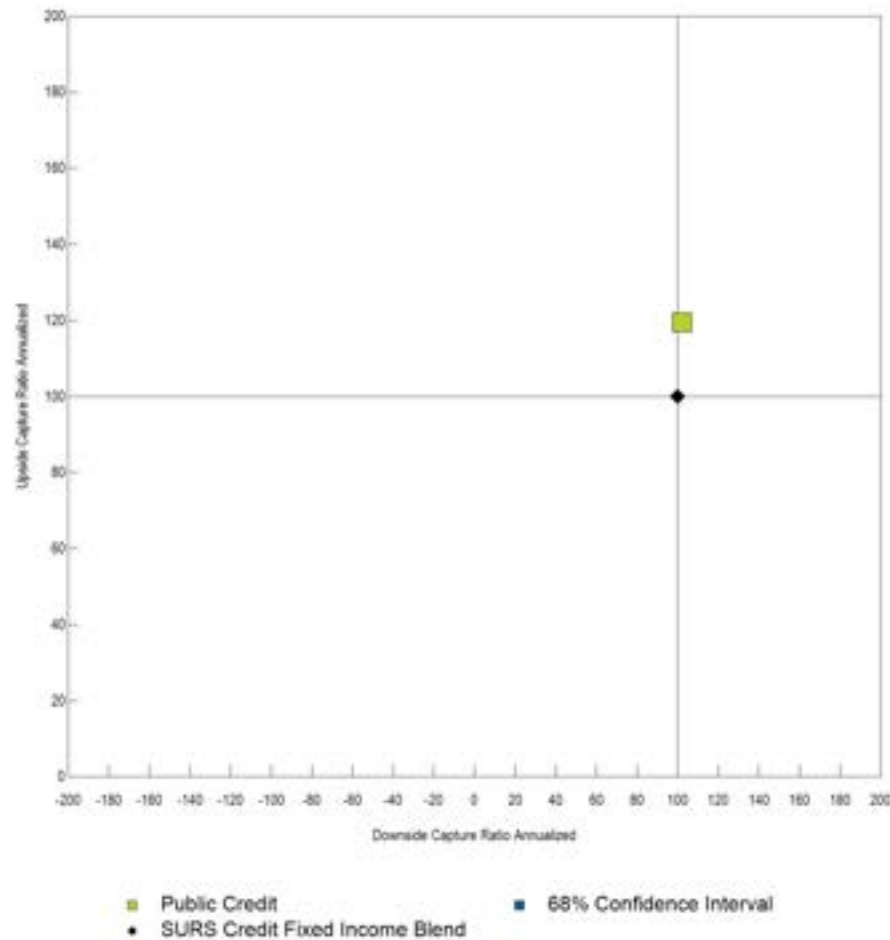
¹ Returns are gross of fees



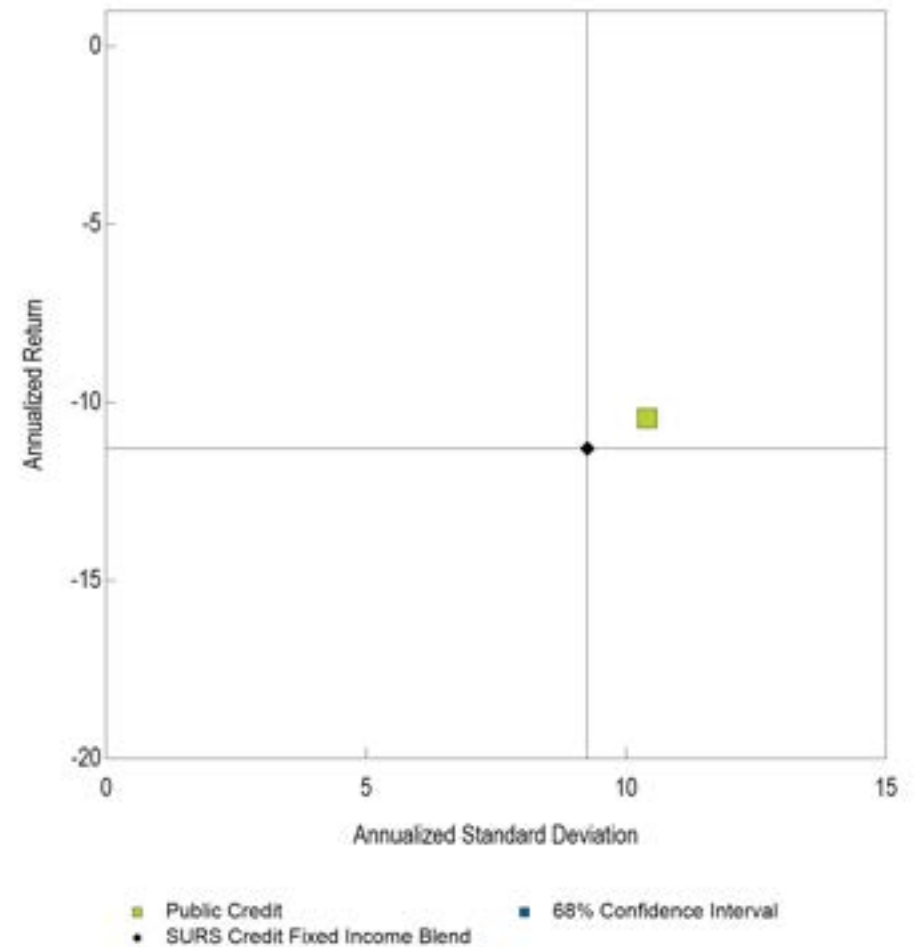
Illinois State Universities Retirement System

Public Credit | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
1 Year Ending December 31, 2022



Annualized Return vs. Annualized Standard Deviation
1 Year Ending December 31, 2022





Illinois State Universities Retirement System

Public Credit | As of December 31, 2022

Credit Fixed Income Fixed Income Characteristics	
	Portfolio Q4-22
Fixed Income Characteristics	
Yield to Maturity	8.85
Average Duration	9.63
Average Quality	BB
US Sector Allocation	
UST/Agency	1.33
Corporate	47.55
MBS	3.05
ABS	0.25
Foreign	28.61
Muni	0.60
Yankee	0.44
Other	14.91
Cash	3.26
Credit Quality Allocation	
AAA	5.79
AA	1.82
A	6.40
BBB	21.79
BB and Below	46.56
Not Rated	15.27
Cash	2.37



Top Holdings	
NT COLLECTIVE GOVT SHORT TERM INVT FD	12.88%
Federal Home Loan Banks 0% DISC NTS 04/01/2023 USD	2.94%
UST 0% NTS 31/05/23 USDBB-2023	1.72%
CASH - USD	1.61%
Indonesia (Republic of) 6.625% SNR 17/02/2037 USD	1.12%
MISCELLANEOUS SECURITIES	1.07%
Petroleos Mexicanos 5.95% NTS 28/01/2031 USD	0.96%
Ivory Coast Republic 5.75%-VAR SNR 31/12/32 USD	0.84%
UST BDS USD	0.82%
LOUISIANA LOC GOVT ENVIRONMENTAL FACS & CMNTY DEV AUTH SYS RESTORATION TAXABLE-LA UTILS RESTORATION	0.74%

Principal Protection

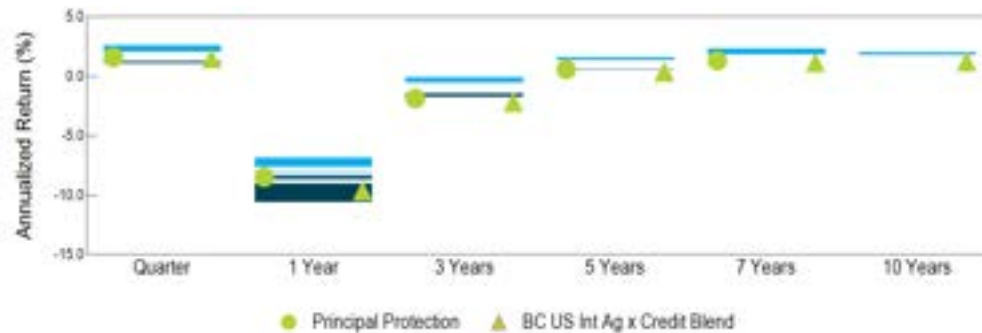


Illinois State Universities Retirement System

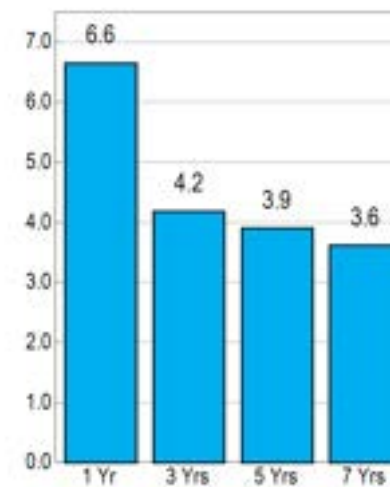
Principal Protection | As of December 31, 2022



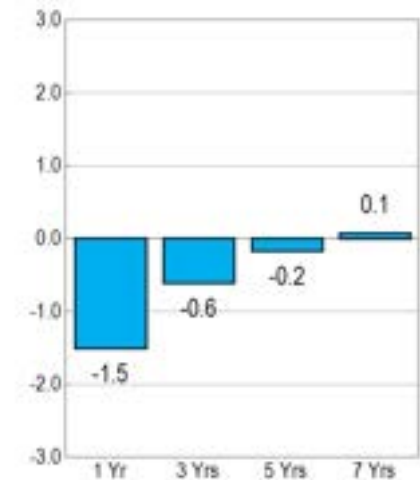
	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)
Principal Protection	1.6	-8.5	-1.9	0.6	1.3	--
<i>BC US Int Ag x Credit Blend</i>	<i>1.5</i>	<i>-9.6</i>	<i>-2.2</i>	<i>0.4</i>	<i>1.2</i>	--
Excess Return	0.1	1.1	0.3	0.2	0.1	
<i>eV US Interm Duration Fixed Inc Gross Rank</i>	<i>58</i>	<i>67</i>	<i>96</i>	<i>93</i>	<i>68</i>	--
<i>eV US Interm Duration Fixed Inc Gross Median</i>	<i>1.7</i>	<i>-8.1</i>	<i>-0.9</i>	<i>1.0</i>	<i>1.4</i>	<i>1.5</i>



Annualized Standard Deviation
Principal Protection



Sharpe Ratio
Principal Protection

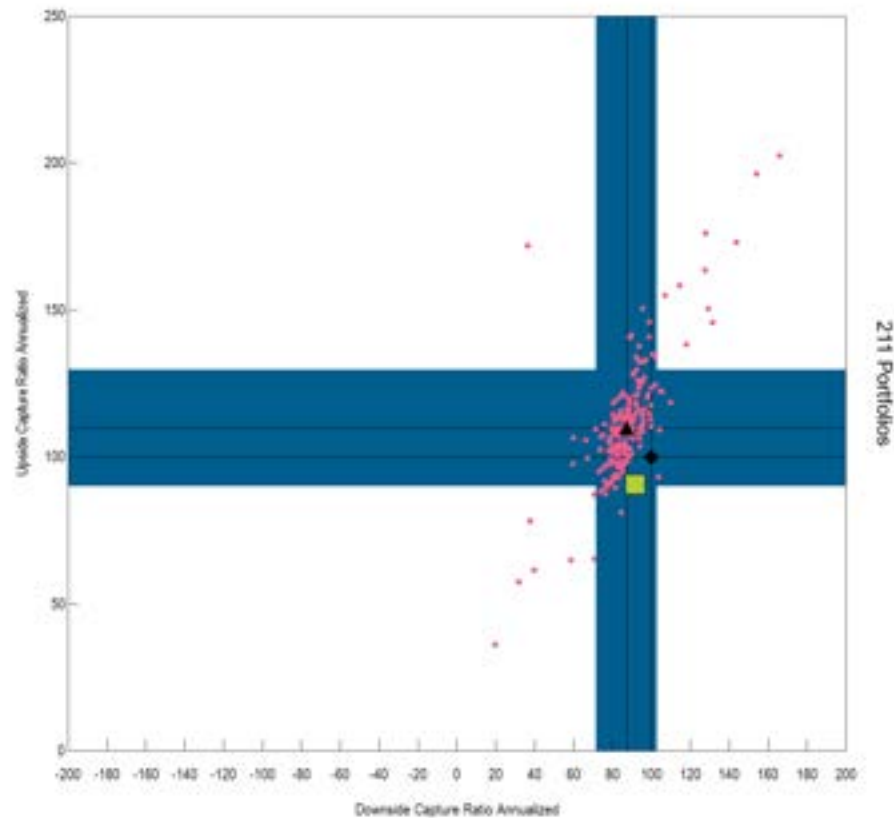




Illinois State Universities Retirement System

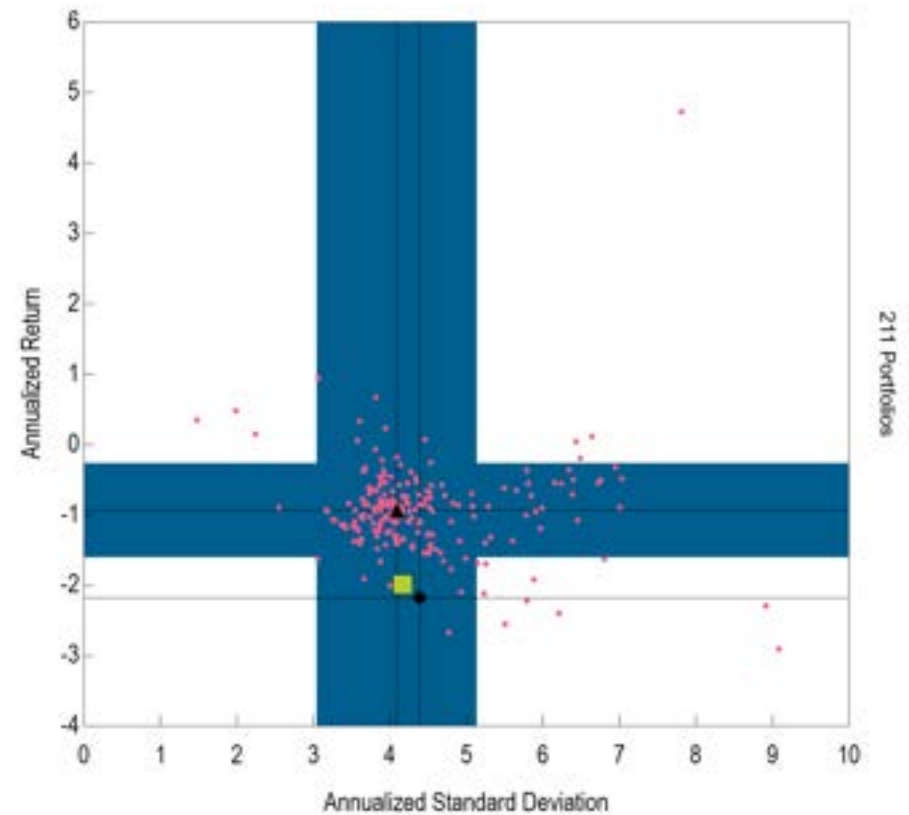
Principal Protection | As of December 31, 2022

Upside Capture Ratio Annualized vs. Downside Capture Ratio Annualized
3 Years Ending December 31, 2022



- Principal Protection
- BC US Int Ag x Credit Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV US Interm Duration Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation
3 Years Ending December 31, 2022



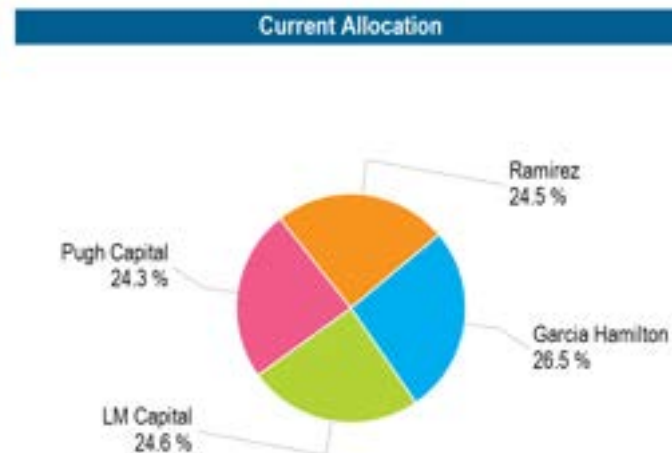
- Principal Protection
- BC US Int Ag x Credit Blend
- ▲ Universe Median
- 68% Confidence Interval
- eV US Interm Duration Fixed Inc Gross



Illinois State Universities Retirement System

Principal Protection | As of December 31, 2022

Principal Protection Fixed Income Characteristics	
	Portfolio Q4-22
Fixed Income Characteristics	
Yield to Maturity	4.60
Average Duration	4.90
Average Quality	AAA
US Sector Allocation	
UST/Agency	41.14
Corporate	3.56
MBS	43.52
ABS	3.76
Muni	5.90
Other	1.33
Cash	0.78
Credit Quality Allocation	
AAA	70.43
AA	24.26
A	2.85
BBB	1.69
Cash	0.78



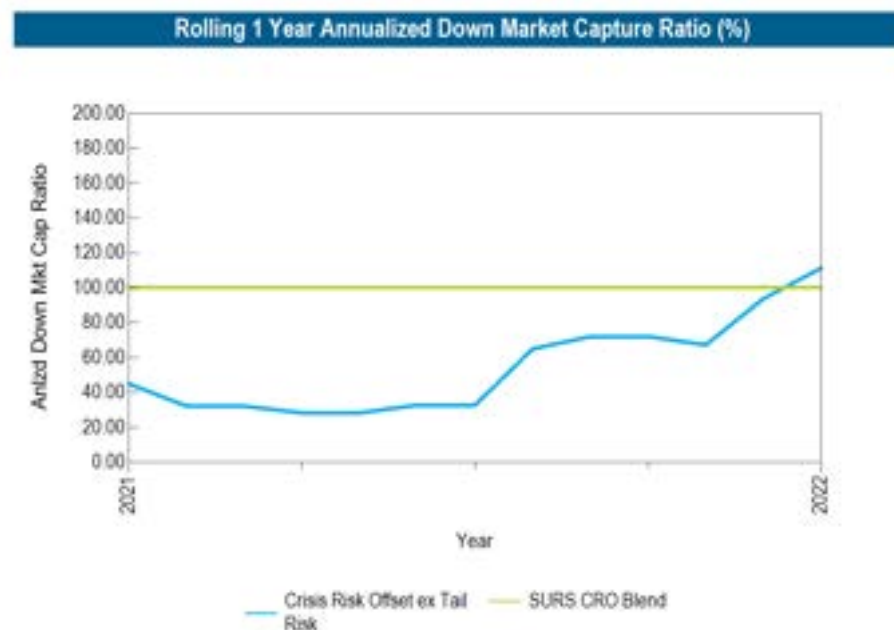
Top Holdings	
UST 0% NTS 15/05/31 USDC-2031	3.58%
UST 0% NTS 15/02/32 USDB-2032	3.03%
UST 0% NTS 31/07/29 USDN-2029	2.80%
UST 1.75% NTS 31/12/24 USD1000	2.76%
UST 0% NTS 15/05/25 USDAN-2025	2.44%
UST 0% NTS 15/08/31 USDE-2031	1.95%
UST 2.75% SNR 15/02/2024 USD100	1.58%
UST 6.25% BDS 15/05/30 USD1000	1.50%
FHLMC 2.500 2051-10-01 USD	1.50%
UST 3.75% SNR 15/08/2041 USD100	1.46%

Crisis Risk Offset



Illinois State Universities Retirement System

Crisis Risk Offset ex Tail Risk | As of December 31, 2022



	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Crisis Risk Offset ex Tail Risk	-6.6	9.2	5.1	--
MSCI ACWI IMI	9.8	-18.4	3.9	--
S&P 500	7.6	-18.1	7.7	--
Bloomberg Intermediate Agg ex Credit	4.2	-15.8	-12.8	--
Bloomberg Aggregate	1.9	-13.0	-2.7	--
Bloomberg Commodities	2.2	16.1	12.7	--



Illinois State Universities Retirement System

Crisis Risk Offset ex Tail Risk | As of December 31, 2022

RISK RETURN STATISTICS		
December 01, 2019 Through December 31, 2022		
	Crisis Risk Offset ex Tail Risk	SURS CRO Blend
RETURN SUMMARY STATISTICS		
Number of Periods	37	37
Maximum Return	4.89	6.05
Minimum Return	-5.15	-2.68
Annualized Return	4.43	6.66
Total Return	14.31	22.00
Annualized Excess Return Over Risk Free	3.76	5.99
Annualized Excess Return	-2.23	0.00
RISK SUMMARY STATISTICS		
Beta	0.85	1.00
Upside Deviation	4.95	5.82
Downside Deviation	4.51	2.53
RISK/RETURN SUMMARY STATISTICS		
Annualized Standard Deviation	7.40	7.50
Alpha	-0.09	0.00
Sharpe Ratio	0.51	0.80
Excess Return Over Market / Risk	-0.30	0.00
Tracking Error	3.88	0.00
Information Ratio	-0.57	--
CORRELATION STATISTICS		
R-Squared	0.75	1.00
Correlation	0.86	1.00
Market Proxy: SURS CRO Blend		
Risk-Free Proxy: 91 Day T-Bills		

Appendix

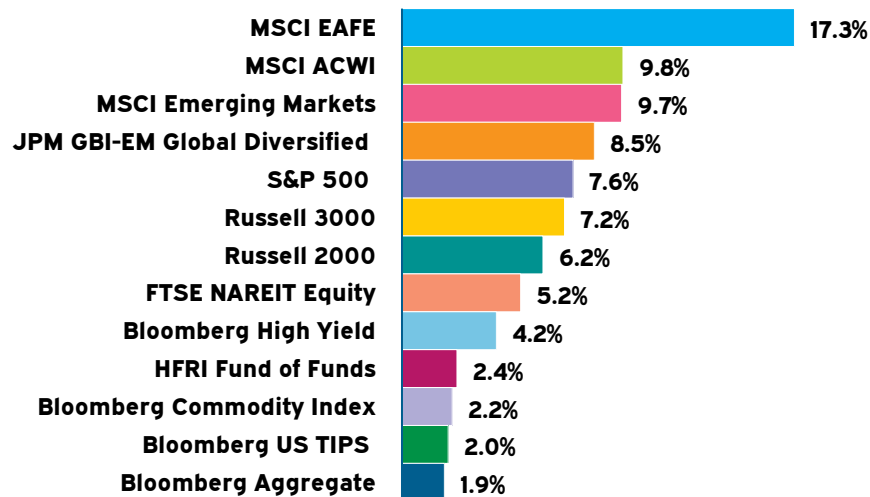
Economic and Market Update
Data as of January 31, 2023

Commentary

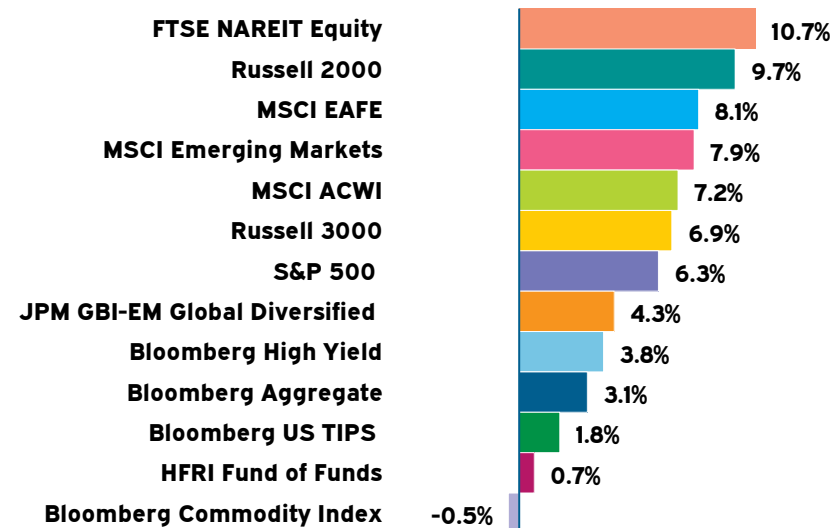
- After a very tough first three quarters of 2022, most asset classes posted gains in the fourth quarter and in January of 2023 on signs that policy tightening would slow, given cooling inflation.
- Chairman Powell's February press conference reiterated previous messaging on high and persistent inflation and the need for an extended period of high interest rates. However, he acknowledged that disinflationary forces were visible in some sectors of the economy but said they were not yet broad-based. Markets focused though on signs that inflation is falling and that the size of future Fed rate hikes could be lower.
 - US equity markets rallied in January 2023 with the Russell 3000 index up 6.9% and growth-oriented areas performing best.
 - Developed equity markets outside the US also had a strong January (+8.1%), as investor sentiment turned bullish. The weakening US dollar, falling inflation, and an improved economic outlook have all been supportive. In February the ECB signaled further rate hikes, but headline inflation has fallen more quickly than expected as energy costs and mild weather helped lift investor sentiment.
 - Emerging market equities enjoyed a very strong start to the year, returning 7.9% and outperforming the US. A weaker US dollar, declining inflation globally, and signs of China reopening its economy all contributed to the positive results.
 - In 2022, bonds experienced one of the worst years on record given inflation levels and the rapid rise in interest rates. Optimism over declining inflation and a slower pace of policy tightening benefited bonds in the fourth quarter, though, and supported positive fixed income returns in January 2023.
- This year, the path of inflation and monetary policy, slowing global growth, China reopening its economy, and the war in Ukraine will be key.

Index Returns¹

Fourth Quarter 2022



YTD 2023



- After broad declines in Q3 driven by expectations for further policy tightening, most major asset classes were up in the fourth quarter, a trend that has continued into 2023, on hopes of inflation and policy tightening peaking.
- Outside of commodities, all other public market asset classes declined in 2022. It was the first time since the 1960s that both stocks and bonds declined together in a calendar year.

¹ Source: Bloomberg and FactSet. Data is as of January 31, 2023.

Domestic Equity Returns¹

Domestic Equity	January (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	6.3	7.6	-8.2	9.9	9.5	12.7
Russell 3000	6.9	7.2	-8.2	9.5	9.1	12.3
Russell 1000	6.7	7.2	-8.5	9.6	9.4	12.5
Russell 1000 Growth	8.3	2.2	-16.0	9.9	11.2	14.5
Russell 1000 Value	5.2	12.4	-0.4	8.5	6.9	10.1
Russell MidCap	8.3	9.2	-3.3	9.0	8.0	11.1
Russell MidCap Growth	8.7	6.9	-8.5	6.5	8.3	11.7
Russell MidCap Value	8.1	10.5	-0.7	9.3	6.9	10.2
Russell 2000	9.7	6.2	-3.4	7.5	5.5	9.4
Russell 2000 Growth	9.9	4.1	-6.5	4.3	4.7	9.5
Russell 2000 Value	9.5	8.4	-0.5	9.9	5.8	8.8

US Equities: Russell 3000 Index rose 6.9% in January after gaining 7.2% for the fourth quarter. Historic inflation and rapidly rising interest rates led to significant declines (-19.2%) in 2022.

- US stocks rose sharply in January as investors expressed optimism that the Federal Reserve will moderate its rate hike schedule as inflation continues to decrease.
- Small cap stocks outperformed large cap stocks in January while growth stocks outperformed value stocks across the market capitalization spectrum.
- Consumer discretionary and communication services were the leading sectors in the Russell 3000 in January. Their resurgence marks a reversal from 2022 when they were the largest detractors amid fears of inflation and a potential recession.

¹ Source: Bloomberg. Data is as of January 31, 2023.

Foreign Equity Returns¹

Foreign Equity	January (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
MSCI ACWI ex. US	8.1	14.3	-5.7	3.6	1.4	4.2
MSCI EAFE	8.1	17.3	-2.8	4.2	2.1	4.9
MSCI EAFE (Local Currency)	6.3	8.7	2.6	6.2	4.8	7.6
MSCI EAFE Small Cap	7.5	15.8	-8.9	2.5	0.4	6.4
MSCI Emerging Markets	7.9	9.7	-12.1	1.4	-1.5	2.1
MSCI Emerging Markets (Local Currency)	6.5	6.6	-8.4	3.4	1.2	5.1
MSCI China	11.8	13.5	-10.1	-2.4	-4.7	3.2

Developed international equities (MSCI EAFE) rose 8.1% in January after an impressive 17.3% gain in the fourth quarter. Emerging markets (MSCI EM) rallied 7.9% in January after returning 9.7% for the fourth quarter in 2022.

- International developed market equities had a solid start to the year, continuing their strong performance in Q4 helped by declining inflation, hope of avoiding a recession, and a weaker US dollar. Economically sensitive sectors like information technology and consumer discretionary helped growth outperform value stocks. China's reopening boosted the consumer discretionary sector (luxury goods, travel, and leisure).
- Emerging market equities started strongly, this year, too with optimism over developments in China, falling inflation, and a weaker dollar all contributing.
- In China, the ending of their zero COVID policy, continued monetary policy support, as well as support for the real estate sector, were all key.

¹ Source: Bloomberg. Data is as of January 31, 2023.

Fixed Income Returns¹

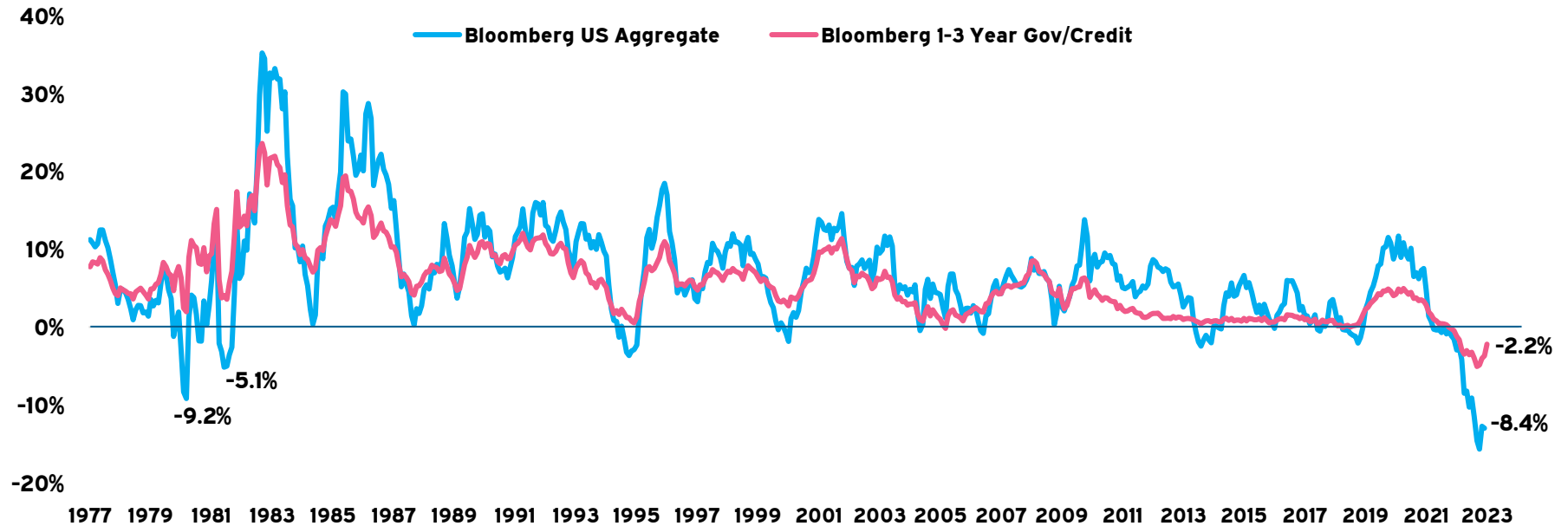
Fixed Income	January (%)	Q4 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	3.1	2.2	-8.3	-2.1	1.0	1.7	4.7	6.3
Bloomberg Aggregate	3.1	1.9	-8.4	-2.3	0.9	1.4	4.3	6.5
Bloomberg US TIPS	1.8	2.0	-8.4	1.1	2.7	1.4	4.0	7.0
Bloomberg High Yield	3.8	4.2	-5.2	1.3	3.0	4.3	8.1	4.4
JPM GBI-EM Global Diversified (USD)	4.3	8.5	-7.9	-4.4	-2.5	-1.7	7.0	5.0

Fixed Income: The Bloomberg Universal rose 3.1% in January 2023 after posting a 2.2% gain for the fourth quarter of 2022. Last year was one of the worst on record, with the broad bond market declining 13%.

- Improvements in global inflation risks and generally positive economic updates drove rates lower on the expectation that policy might be easing later in the year and recession risks could be less than feared.
- TIPS trailed the broad US bond market (Bloomberg Aggregate) for the month on declining inflation fears.
- Riskier high yield bonds outperformed in January due to improving risk sentiment.

¹ Source: Bloomberg. JPM GBI-EM data is from InvestorForce. Data is as of January 31, 2023. The yield and duration data from Bloomberg is defined as the index's yield to worst and modified duration respectively.

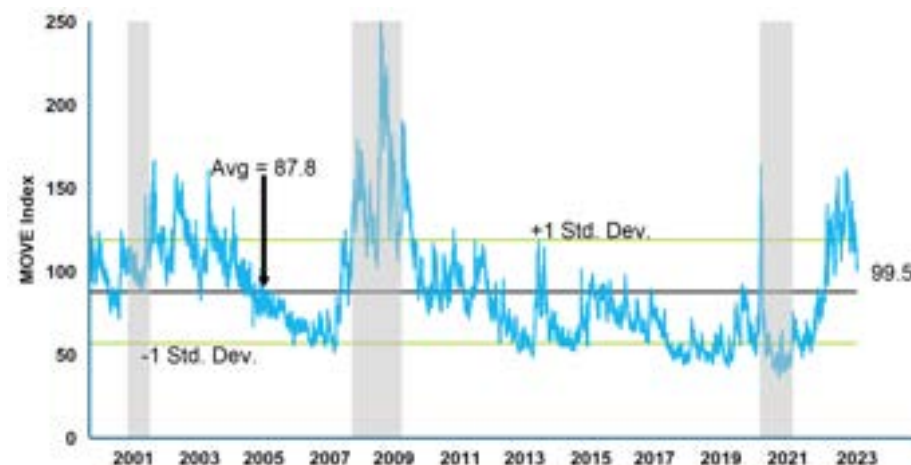
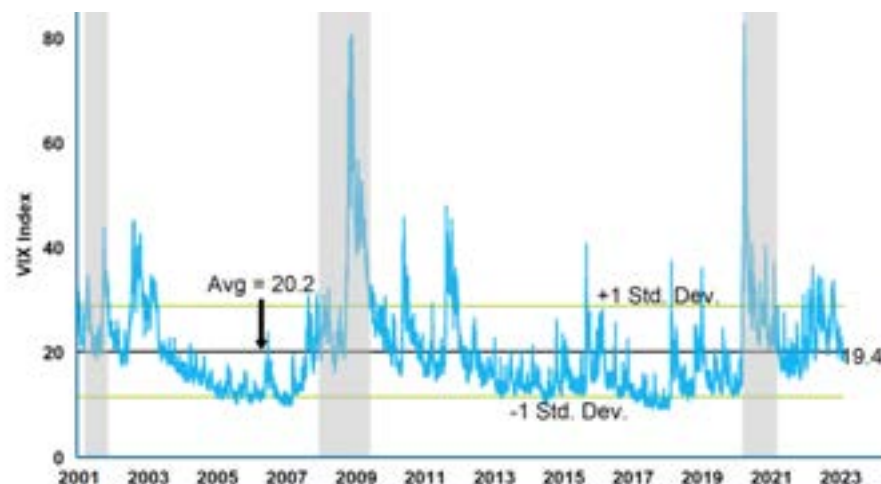
Fixed Income Rolling One-year Returns¹



- Last year was one of the worst return periods for the US bond market given the historic inflation levels and the corresponding rapid rise in interest rates.
- The broad bond market (Bloomberg US Aggregate) declined 13% in 2022 making it one of the worst periods on record. Short-term bonds declined less (-3.7%) but also experienced one of the worst years on record.
- With global inflation falling and the economic outlook improving, fixed income returns turned positive at the end of 2022 and in January 2023.

¹ Source: Bloomberg. Data is as of January 31, 2023.

Equity and Fixed Income Volatility¹



- Volatility in equities (VIX) finished the year down from its highs and continued to decline in January to below the long run average as investors anticipated the potential end of Fed rate hikes this year.
- Fixed income volatility (MOVE) remained elevated and well above its long-run average at year-end due to the uncertain path of US interest rates as the Federal Reserve continues its hawkish stance on inflation. In January, implied rate volatility eased with a softening of that rate uncertainty.

¹ Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of January 2023. The average line indicated is the average of the VIX and MOVE values between January 2000 and January 2023.

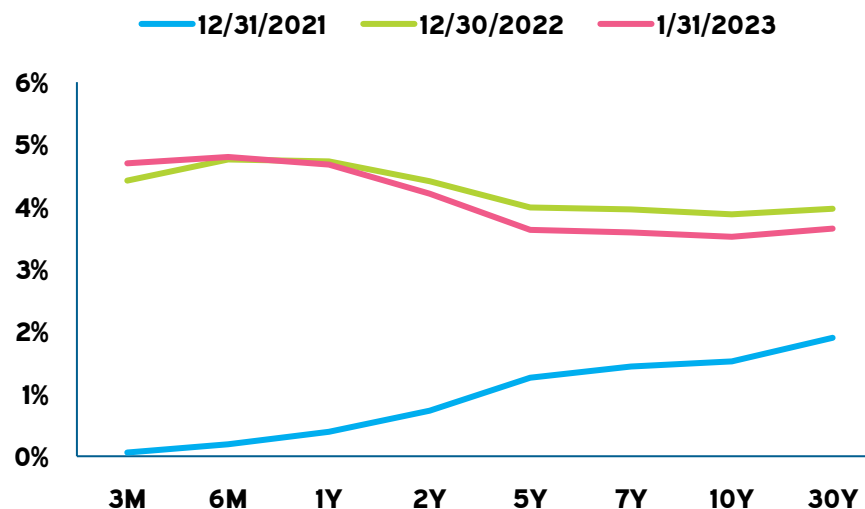
Equity Cyclically Adjusted P/E Ratios¹



- With January's strong recovery, the US equity price-to-earnings ratio is slightly above its long-run (21st century) average.
- International developed market valuations rose but remain below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years. Data is as of December 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

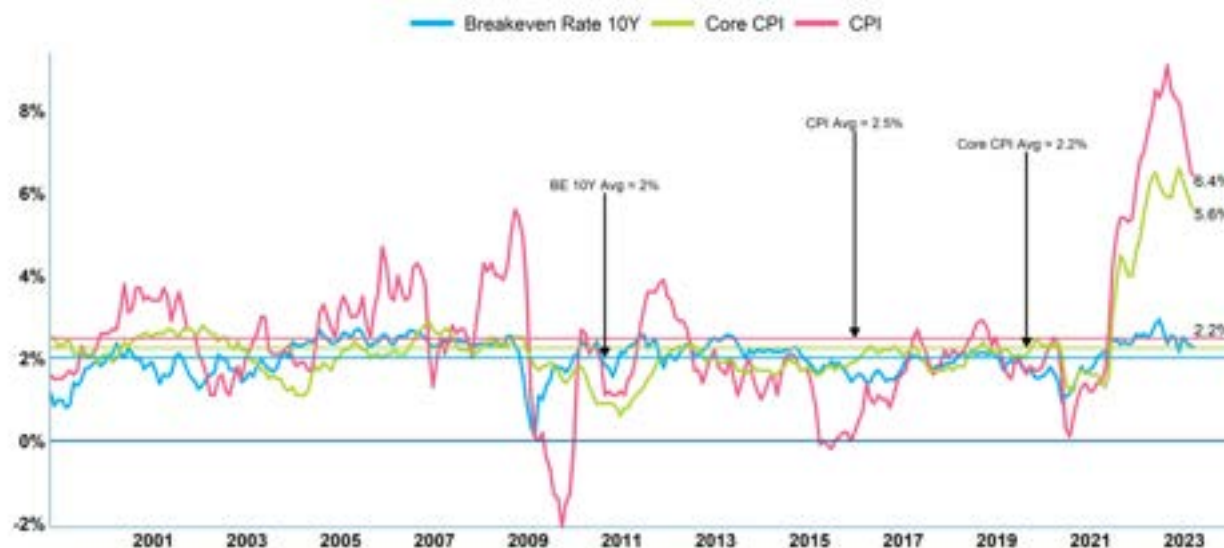
US Yield Curve¹



- In January, policy-sensitive interest rates at the front-end of the curve continued to decline, with the two-year Treasury yield falling from 4.4% to 4.2%. Longer dated ten-year Treasury yields also fell (3.9% to 3.5%). In 2022, the yield curve rose dramatically across maturities and moved from steep to inverted.
- The Fed remains committed to fighting inflation, as it increased rates another 25 basis points to a range of 4.5% to 4.75% at its February meeting.
- The yield spread between two-year and ten-year Treasuries widened to -0.69% in January 2023 after finishing December 2022 at -0.55%. The more closely watched measure by the Fed of three-month and ten-year Treasuries also remained inverted. Inversions in the yield curve have often preceded recessions.

¹ Source: Bloomberg. Data is as of January 31, 2023.

Ten-Year Breakeven Inflation and CPI¹



- The January reading of year over year inflation fell slightly (6.4% versus 6.5%) but came in above expectations, supporting further tightening by the Fed. Prices increased 0.5% from a month prior with shelter being the largest contributor. Energy and food prices rose too.
- Core inflation – excluding food and energy – also continued to decline year over year (5.6% versus 5.7%) but also came in above estimates.
- Inflation expectations (breakevens) largely were unchanged from the prior month and remain well below current inflation levels as investors anticipate a significant moderation in inflation.

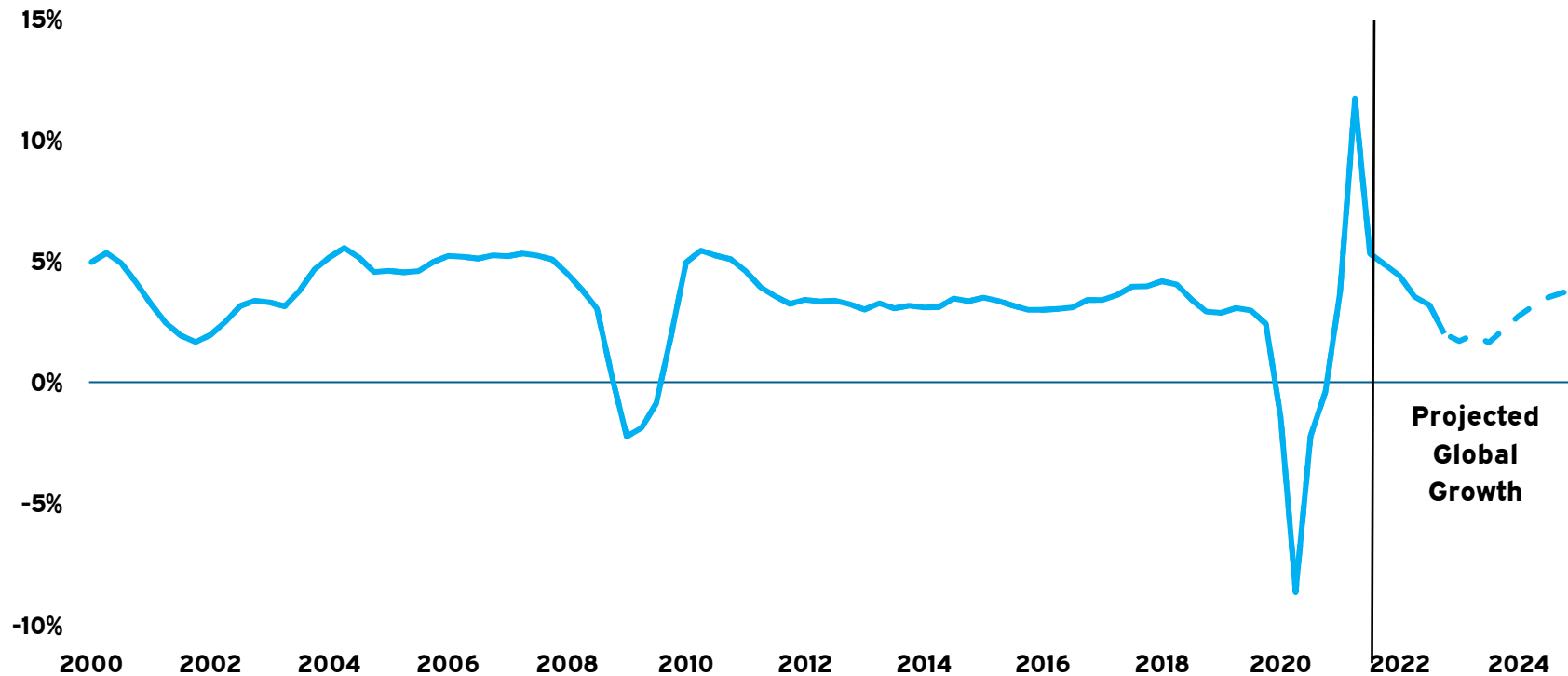
¹ Source: Bloomberg. Data is as of January 2023. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

Credit Spreads vs. US Treasury Bonds¹



- Spreads (the added yield above a comparable maturity Treasury) largely fell in January as credit markets outperformed government bonds on improved risk sentiment given signs of slowing inflation.
- High yield spreads fell from 4.7% to 4.2% in January while investment grade spreads declined to 1.2% from 1.3%. Emerging market spreads fell the most (3.3% versus 4.5%) due to China's reopening and falling inflation.

¹ Sources: Bloomberg. Data is as of January 31, 2023. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

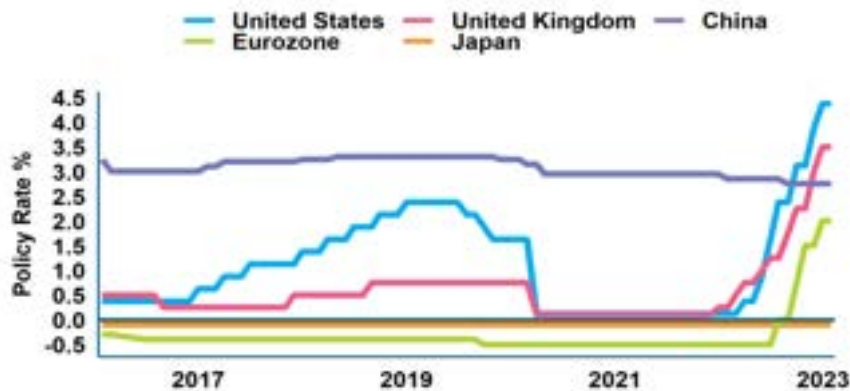
Global Real Gross Domestic Product (GDP) Growth¹


- Global economies are expected to slow in 2023 compared to 2022, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

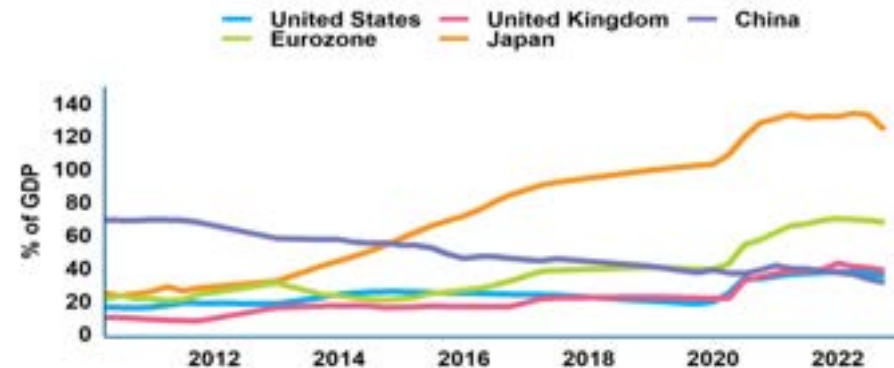
¹ Source: Oxford Economics (World GDP, US\$ prices & PPP exchange rate, real, % change YoY). Updated January 2023.

Central Bank Response¹

Policy Rates



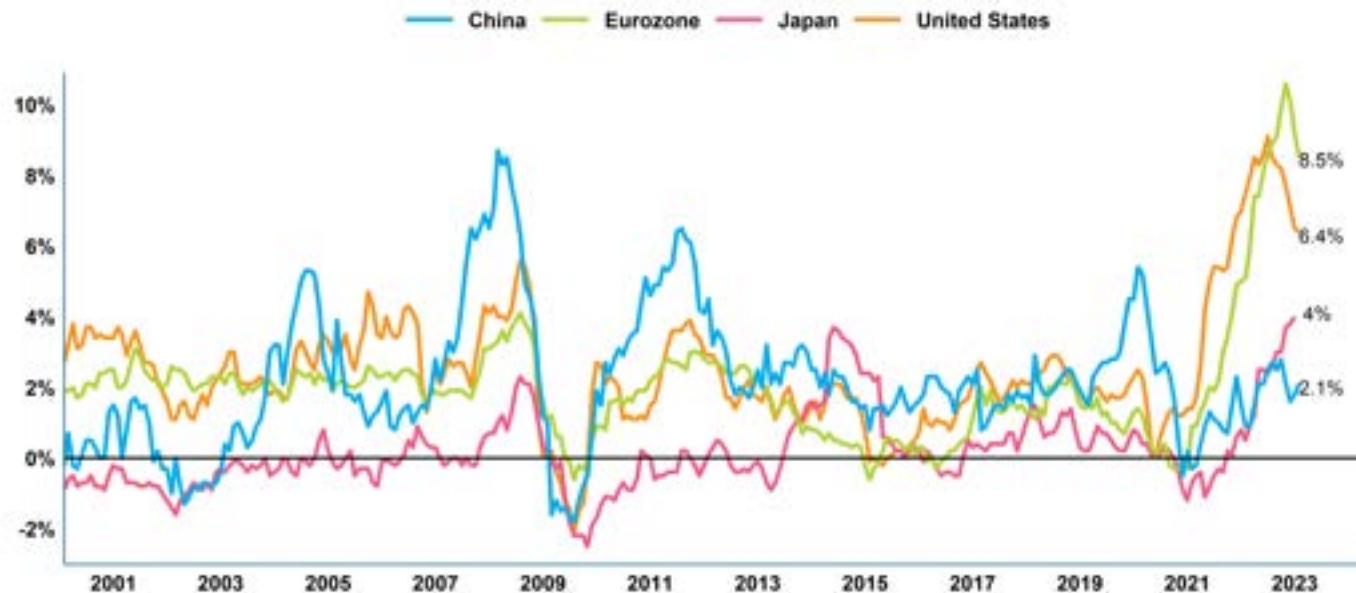
Balance Sheet as % of GDP



- In 2022 many central banks aggressively reduced pandemic-era policy support in the face of high inflation with the US taking the most aggressive approach. However, global inflation has begun to moderate, and markets anticipate a slowing in the rate of policy tightening in the future.
- In December, the Bank of Japan relaxed its target yield for the 10-year bond which may mark an incremental step toward policy normalization after eight years of quantitative easing.
- China's central bank is expected to maintain its accommodative monetary stance to support consumer demand and investment as well as offer liquidity to the troubled real estate sector.
- The risk remains for a policy error, particularly overtightening, as record inflation and aggressive tightening to date could heavily weigh on global growth. The Federal Reserve's policy rate path could diverge from others this year given their strong early start to tightening.

¹ Source: Bloomberg. Policy rate data is as of January 31, 2023. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of December 31, 2022.

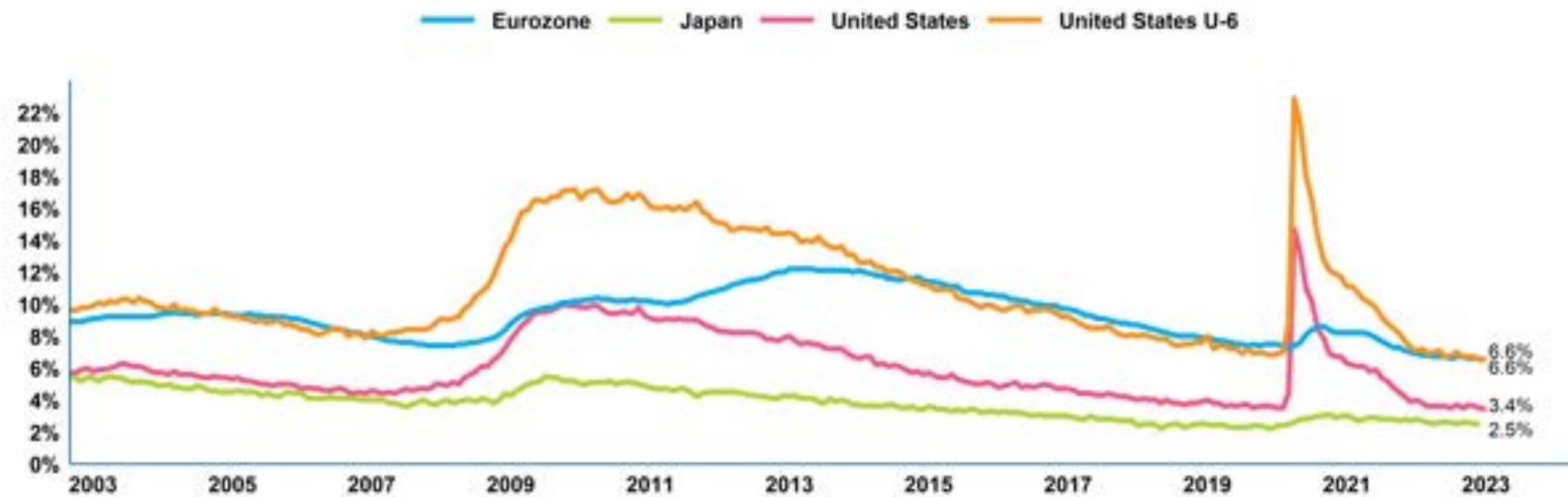
Inflation (CPI Trailing Twelve Months)¹



- Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.
- Inflation pressures are slowly declining in the US as supply issues ease, but they remain elevated, while in Europe they have also started to fall but remain at historic levels due to skyrocketing energy prices and a weak euro.
- Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher commodity prices driven by the war in Ukraine have been key global drivers of inflation.

¹ Source: Bloomberg. Data is as of January 2023. The most recent Japanese inflation data is as of December 2022.

Unemployment¹



- As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.
- Despite slowing growth and high inflation, the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, recently reached 3.4%, a level not seen in over 50 years.
- The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to higher unemployment.

¹ Source: Bloomberg. Data is as January 31, 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of December 31, 2022.

US Dollar versus Broad Currencies¹



- Overall, the US dollar continued to weaken in January from its recent peak as declining inflation supported the case for the Federal Reserve to slow its tightening.
- The dollar finished the year much higher than it started, due to the increased pace of policy tightening, stronger relative growth, and safe-haven flows.
- This year, the track of inflation across economies and the corresponding monetary policies will likely be key drivers of currency moves.

¹ Source: Bloomberg. Data as of January 31, 2023.

Summary

Key Trends:

- The impacts of record high inflation will remain key, with market volatility likely to stay high.
- Global monetary policies could diverge in 2023 with the Fed pausing and others continuing to tighten. The risk of policy errors in both directions remains.
- Growth will continue to slow globally this year, with many economies likely falling into recessions. Inflation, monetary policy, and the war will all be key.
- In the US the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices could weigh on consumer spending.
- Valuations have significantly declined in the US to around long-term averages, largely driven by price declines. The key going forward will be whether earnings can remain resilient if growth continues to slow.
- Outside the US, equity valuations remain lower in both emerging and developed markets, but risks remain, including potential continued strength in the US dollar, higher inflation particularly weighing on Europe, and China's rushed exit from COVID-19 restrictions and on-going weakness in the real estate sector.



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www.surs.org

Investment Department

To: Investment Committee
 From: Investment Staff
 Date: February 24, 2023
 Re: Corporate Governance Update

Below please find a status update of governance activity since our December meeting.

Proxy Voting

- **Quarterly Report**

This summary report offers quarterly analysis of the top agenda items voted against management, top agenda items voted against Glass Lewis standard policy, shareholder proposal trends, and ballot and proposal statistics reports. The “SURS 4Q 2022 Voting Analysis,” is attached to this memo as Exhibit A.

For reference, agenda items voted against Glass Lewis standard policy pertain to topics where SURS’ adopted guidelines offer a more restrictive directive.

- **Election of Directions:** SURS voted in favor of female representation on companies’ boards as well as, to limit nominees who sit on more than two public company boards while being and executive of a public company and for directors sitting on more than five boards who are not executives of a public company.
- **Ratification of Auditor:** SURS voted against the ratification of an auditor when the auditor’s tenure has not changed for 20 years or more.
- **Advisory on Executive Compensation:** SURS voted against compensation plans that do not align pay with performance and do not link compensation to sustainability metrics.

There were 38 shareholder proposals (SHP) during the quarter:

- **SHP Regarding Election of Board Members(s) During a Contested Election – Dissident Nominee:** SURS generally supports a dissident nominee that plans to enhance and protect shareholder value.
- **SHP Regarding Misc. Social Issue:** SURS voted in support of proposals aimed at increasing a company’s disclosure or social issues.
- **SHP Regarding Reviewing Political Spending or Lobbying:** SURS voted in favor of increased disclosure of a company’s political or lobbying expenditures, including disclosure of how companies’ political contributions align with corporate values.

- **2023 Proxy Voting Guidelines**

2023 Public Pension Plan, and U.S. Proxy Voting Guidelines have been released by Glass Lewis and have been published on the SURS website. Various changes have been introduced as part of the 2023 guidelines.

1. Changes to the **Public Pension Guidelines** cover the following topics:

- Board Gender Diversity
- Environmental and Social Risk Oversight
- Climate Risk
- Stakeholder Considerations
- Say on Climate

2. Changes to the **U.S. Proxy Voting Guidelines** cover the following topics:

- Board Diversity
 - Gender Diversity
 - Underrepresented Community Diversity
 - State Laws on Diversity
 - Disclosure of Director Diversity Skills
- Board Oversight of Environmental and Social Issues
- Director Commitments
- Cyber Risk Oversight
- Board Accountability for Climate-related Issues
- Officer Exculpation
- Long-Term Incentives

Clarifying amendments to the existing policies:

- Board Responsiveness
- Compensation Committee Performance
- Company Responsiveness (for Say-on-Pay Analysis)
- One-Time Awards
- Grants of Front-Loaded Awards
- Pay for Performance
- Short- and Long-Term Incentives
- Recoupment Provisions

3. Changes to the **International Proxy Voting Guidelines** cover the following topics:

- Board Accountability for Climate-related Issues
- Cyber Risk Oversight
- Board Responsiveness
- Board Diversity
- Multi-Class Share Structures

Council of Institutional Investors (CII)

The 2023 CII's Spring Conference is set to take place in-person on March 6th-8th in Washington D.C. The conference agenda is attached to this memo as Exhibit B. Trustee Mitch Vogel, Trustee Fred Giertz, and Ms. Ellen Hung are scheduled to attend the conference. Ms. Hung will provide an update to the Board of Trustees at the June meeting.

Ahead of the Spring meeting, as a member of CII, SURS has been asked to submit votes on various items. Materials to be considered and biographical information for candidates to the CII Board of Directors can be found as Exhibits C and Exhibit D, respectively. Vote recommendations provided by SURS staff are attached to this memo as Exhibit E.

Agenda highlights include:

March 6, 2023

What's Next for Activism: Perspectives from Starboard
View from the Boardroom: Director Panel
Gary Gensler, Chair of the SEC, Speaks

March 7, 2023

What's Next for Global Markets
The Future of China as an Investible Market
Washington Update – Key SEC rules and Climate Legislation
Tools for Funds to Advance DEI at External Money Managers
Matt Levine on the Markets
The Future of Work
Member-Hosted Meeting: Investment Risks in Tech – Engaging with Companies to Create Long-Term Value
Member-Hosted Meeting: Best Practices for ESG Investor Relations and Stewardship Teams
Member-Hosted Meeting: Making the Investment Case for Good Labor Practices
Member-Hosted Meeting: Assessing the Credibility of Published Targets on the Path to Net-Zero
Member-Hosted Meeting: Digital Rights and Big Tech in the U.S. Fiduciary Context
Member-Hosted Meeting: CEO Compensation in 2023
Member-Hosted Meeting: Transparency and Data Quality – Energy Transition in the Auto Sector
Member-Hosted Meeting: Evaluating General Obligation Bonds through an ESG Lens
Member-Hosted Meeting: Protecting Diversified Portfolios through Systems-Level Stewardship

March 8, 2023

International Governance Committee – Trends in Global Governance
Shareholder Advocacy Committee – Can We Take Politics Out of ESG?
CII Member Lightning Round
Proxy Voter Group Meeting



TO: State Universities Retirement System (SURS)
FROM: Lucas Swertloff, Manager, Custom Policy
DATE: January 24, 2023
RE: Review of Vote Activity Report for Fourth Quarter 2022

The Voting Activity Report for the Fourth Quarter 2022 summarizes Glass Lewis' votes for the State Universities Retirement System of Illinois (SURS), of which we highlighted and analyzed the most frequent occurrences of votes against management, votes against Glass Lewis and shareholder proposal trends.



Top Three Agenda Items Against Management – 4Q2022

Votes against management account for 307 of the 1,996 proposals, or 15.39% of the votes. The top categories of votes against management are:

- **Election of Directors** – Votes on the election of directors account for 172 of the 307 votes against management, or about 56.03% of the votes against management, and 8.62% of the total votes.

The top three reasons for votes against management are:

Insufficient female representation on the board of directors accounts for 40 of the votes against management. The Public Pension policy on this issue is to vote against the male members of the nominating committee in instances where the board is comprised of fewer than 30% female directors for large-cap companies, or against the nominating committee when there is not at least one woman on the board at mid- and small-cap companies.

Nominee is the CEO of a for-profit company and serves on more than two public company boards accounts for 27 of the votes against management. The Public Pension policy on this issue is to vote against a director who serves as an executive of a public company and who serves on more than two total boards.

The Company has a multi-class share structure with unequal voting rights accounts for 16 votes against management. The Public Pension Policy views multi-class share structures as not in the best interests of shareholders and instead is in favor of one vote per share. The Public Pension Policy will generally vote in favor of proposals to eliminate multi-class share structures. Similarly, the Public Pension Policy will typically vote against proposals to adopt a new class of common stock.

- **Ratification of Auditor** – Votes on the ratification of auditor account for 42 of the 307 votes against management, or about 13.69% of the votes against management, and 2.11% of the total votes.

The top reason for votes against management is:

The auditor's tenure is excessive accounts for 40 of the votes against management. The Public Pension policy on this issue is to vote against auditor ratification proposals in instances where a company's auditor has not been changed for 20 or more years.

- **Advisory Vote on Executive Compensation** – Votes on the advisory vote on executive compensation account for 31 of the 307 votes against management, or about 10.10% of the votes against management, and 1.56% of the total votes.

The top three reasons for votes against management are:

Concerning pay practices accounts for 12 of the votes against management. The Public Pension policy on this issue is to follow the Glass Lewis standard approach.

Pay and performance disconnect accounts for 9 of the votes against management. The Public Pension policy on this issue is to follow the Glass Lewis standard approach.



The Company has pay for performance issues and does not link any long-term incentive grant to sustainability metrics accounts for 8 of the votes against management. The Public Pension policy on this issue is vote against when the compensation plan does not align pay with performance and does not link compensation to sustainability metrics.

Top Three Agenda Items Against Glass Lewis – 4Q2022

Votes against the Glass Lewis standard policy account for 127 of the 1,996 proposals, or about 6.37% of the votes. The top categories for votes against the Glass Lewis standard policy are:

- **Election of Directors** – Votes on the election of directors account for 62 of the 127 votes against Glass Lewis or about 48.82% of the votes against Glass Lewis and 3.11% of the total votes.

The top three reasons for votes against Glass Lewis are:

Insufficient female representation on the board of directors accounts for 25 of the votes against Glass Lewis. The Public Pension policy on this issue is to vote against the male members of the nominating committee in instances where the board is comprised of fewer than 30% female directors for large-cap companies, or against the nominating committee when there is not at least one woman on the board at mid- and small-cap companies.

The nominee is the CEO of a for-profit company and serves on more than two public company boards accounts for 21 of the votes against Glass Lewis. The Public Pension policy on this issue is to vote against directors serving on more than two total boards for a director who serves as an executive of a public company.

Nominee sits on more than two public company boards while being an executive of a public company or the nominee sits on more than five public company boards accounts for 17 of the votes against Glass Lewis. The Public Pension policy on this issue is to vote against a director if they are an executive and sit on greater than two public company boards or if they are not an executive and sit on greater than five public company boards.

- **Ratification of Auditor** – Votes on the ratification of auditor account for 39 of the 127 votes against Glass Lewis or about 30.70% of the votes against Glass Lewis, and 1.96% of the total votes.

The top reason for votes against Glass Lewis is:

The auditor's tenure is excessive accounts for all 39 votes against Glass Lewis. The Public Pension policy on this issue is to vote against auditor ratification proposals in instances where a company's auditor has not been changed for 20 or more years.

- **Advisory Vote on Executive Compensation** – Votes on the advisory vote on executive compensation account for 8 of the 127 votes against Glass Lewis or about 6.30% of the votes against Glass Lewis, and 0.40% of the total votes.

The top reason for votes against Glass Lewis is:

The Company has pay for performance issues and does not link any long-term incentive grant to sustainability metrics accounts for all 8 votes against Glass Lewis. The Public Pension policy on



this issue is vote against when the compensation plan does not align pay with performance and does not link compensation to sustainability metrics.

Shareholder Proposals - 4Q2022

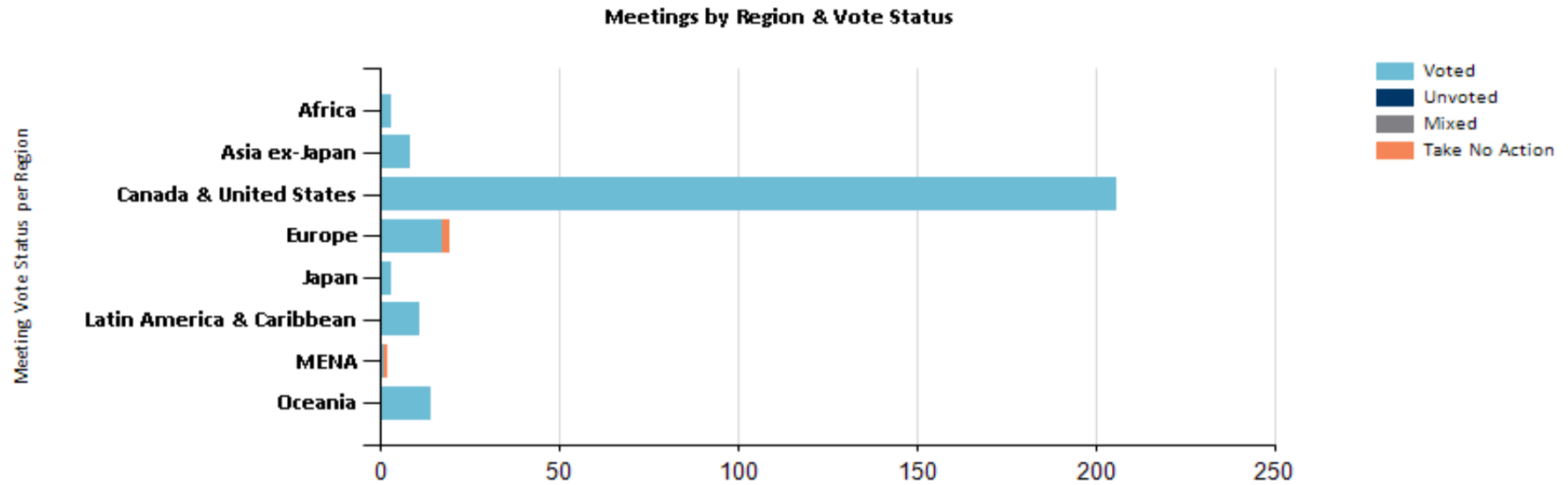
During quarter four there were 38 shareholder proposals (SHPs), accounting for 1.90% of the total proposals. Governance proposals were the most common, accounting for 18 of the 38 SHPs or 47.37% of the SHPs. Overall, SURS voted SHPs against management 21 times, while SURS voted SHPs against Glass Lewis 11 times.

The three most common SHPs are:

- **SHP Regarding Election of Board Member(s) During a Contested Election – Dissident Nominee** – accounts for 8 of the SHPs or 21.05%. The public pension policy follows the Glass Lewis standard policy on this issue.
- **SHP Regarding Misc. Social Issue** – accounts for 4 of the SHPs or 10.53%. The Public Pension policy will support all social proposals aimed at increasing a company's disclosure or social issues. However, the policy will not support resolutions requesting that companies take specific actions or adopt specific policies.
- **SHP Regarding Reviewing Political Spending or Lobbying** – accounts for 3 of the SHPs or 7.90%. The Public pension policy supports increased disclosure of a company's political or lobbying expenditures, including disclosure of how companies' political contributions align with its corporate values.

Meeting Statistics Report

From 10/1/2022 to 12/31/2022

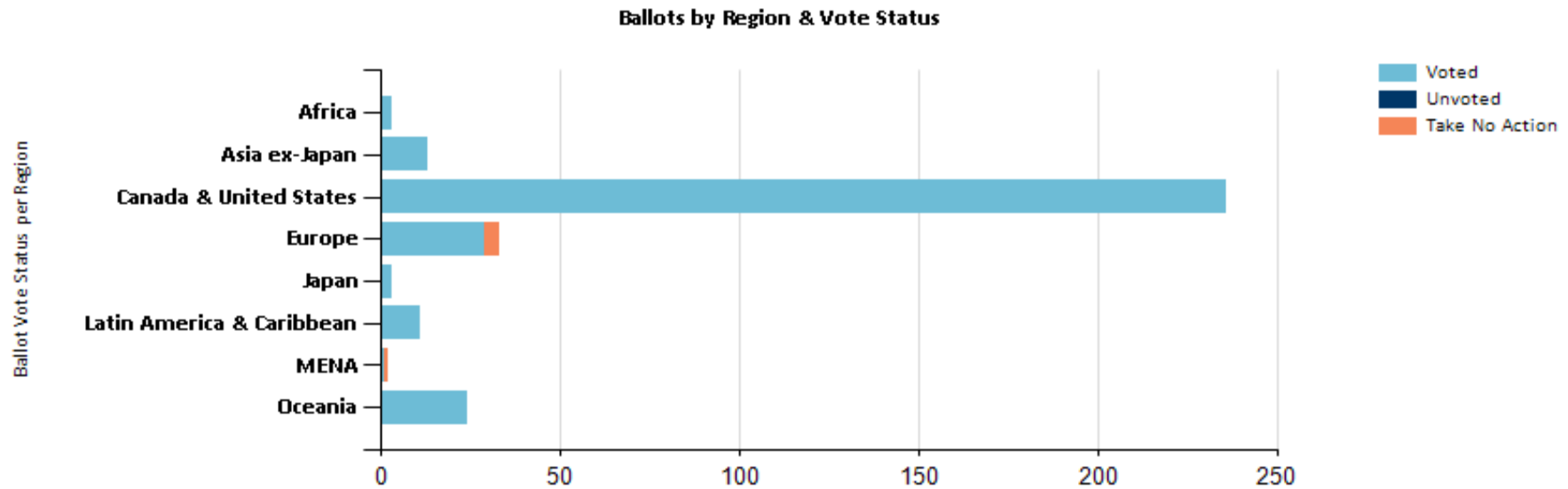


Region	Country Of Origin	Voted	Unvoted	Mixed	Take No Action	Total
Total for all Regions		263	0	0	3	266
Africa		3	0	0	0	3
	South Africa	3	0	0	0	3
Asia ex-Japan		8	0	0	0	8
	China	5	0	0	0	5
	Hong Kong	1	0	0	0	1
	India	1	0	0	0	1
	Korea, Republic of	1	0	0	0	1
Canada & United States		206	0	0	0	206
	Canada	1	0	0	0	1
	United States	205	0	0	0	205
Europe		17	0	0	2	19
	Belgium	2	0	0	0	2

	Denmark	1	0	0	0	1
	France	2	0	0	0	2
	Greece	1	0	0	0	1
	Ireland	1	0	0	0	1
	Italy	1	0	0	0	1
	Jersey	1	0	0	0	1
	Norway	0	0	0	1	1
	Spain	1	0	0	0	1
	Switzerland	0	0	0	1	1
	United Kingdom	7	0	0	0	7
Japan		3	0	0	0	3
	Japan	3	0	0	0	3
Latin America & Caribbean		11	0	0	0	11
	Bermuda	3	0	0	0	3
	Brazil	4	0	0	0	4
	Cayman Islands	1	0	0	0	1
	Mexico	3	0	0	0	3
MENA		1	0	0	1	2
	Egypt	0	0	0	1	1
	Israel	1	0	0	0	1
Oceania		14	0	0	0	14
	Australia	14	0	0	0	14

Ballot Statistics Report

From 10/1/2022 to 12/31/2022



Region	Country Of Origin	Voted	Unvoted	Take No Action	Total
Total for all Regions		320	0	5	325
Africa		3	0	0	3
	South Africa	3	0	0	3
Asia ex-Japan		13	0	0	13
	China	6	0	0	6
	Hong Kong	1	0	0	1
	India	2	0	0	2
	Korea, Republic of	4	0	0	4
Canada & United States		236	0	0	236
	Canada	1	0	0	1
	United States	235	0	0	235
Europe		29	0	4	33
	Belgium	3	0	0	3
	Denmark	2	0	0	2
	France	5	0	0	5
	Greece	1	0	0	1

	Ireland	1	0	0	1
	Italy	1	0	0	1
	Jersey	2	0	0	2
	Norway	0	0	2	2
	Spain	1	0	0	1
	Switzerland	0	0	2	2
	United Kingdom	13	0	0	13
Japan		3	0	0	3
	Japan	3	0	0	3
Latin America & Caribbean		11	0	0	11
	Bermuda	3	0	0	3
	Brazil	4	0	0	4
	Cayman Islands	1	0	0	1
	Mexico	3	0	0	3
MENA		1	0	1	2
	Egypt	0	0	1	1
	Israel	1	0	0	1
Oceania		24	0	0	24
	Australia	24	0	0	24

Proposal Statistics Report

From 10/1/2022 to 12/31/2022

	Mgmt Proposals	SHP Proposals	Total Proposals
For	1627	16	1643
Against	287	13	300
Abstain	5	4	9
1 Year	7	0	7
2 Years	0	0	0
3 Years	0	0	0
Mixed	0	0	0
Take No Action	16	1	17
Unvoted	0	0	0
Totals	1942	34	1976

Management Proposals – Votes Cast

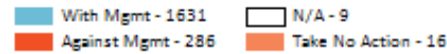


Shareholder Proposals – Votes Cast

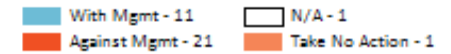


	Mgmt Proposals	SHP Proposals	Total Proposals
With Management	1631	11	1642
Against Management	286	21	307
N/A	9	1	10
Mixed	0	0	0
Take No Action	16	1	17
Unvoted	0	0	0
Totals	1942	34	1976

Management Proposals – Votes versus Management

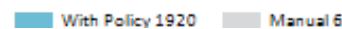
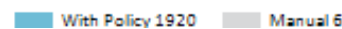


Shareholder Proposals – Votes versus Management



	Mgmt Proposals	SHP Proposals	Total Proposals
With Policy	1920	29	1949

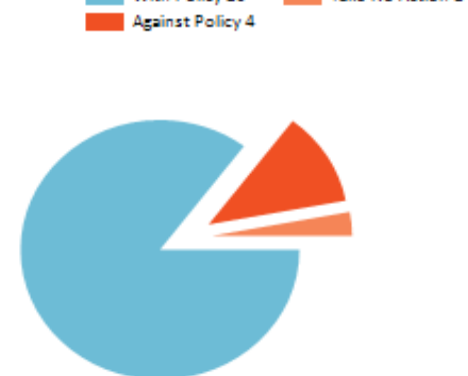
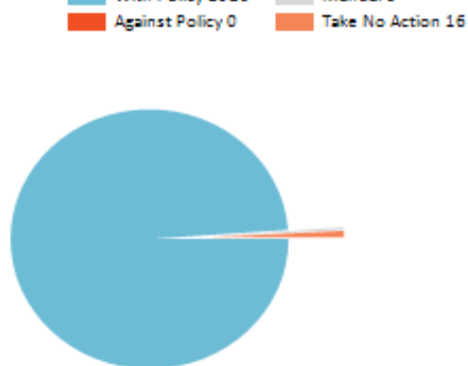
Management Proposals - Votes versus Policy



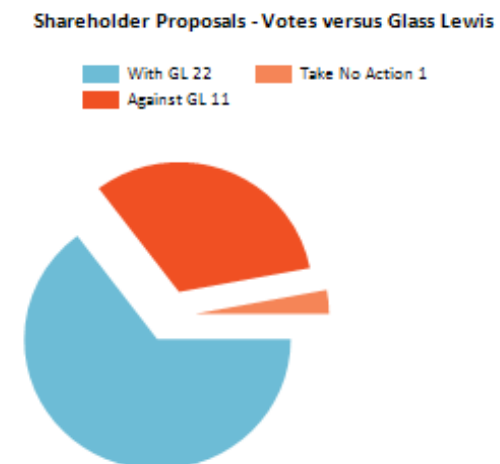
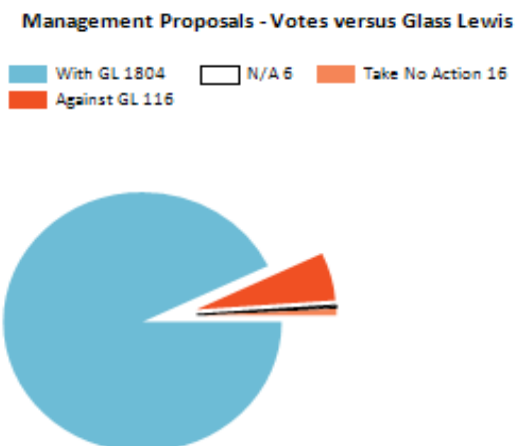
Shareholder Proposals - Votes versus Policy



Against Policy	0	4	4
Manual	6	0	6
N/A	0	0	0
Mixed	0	0	0
Take No Action	16	1	17
Unvoted	0	0	0
Totals	1942	34	1976



	Mgmt Proposals	SHP Proposals	Total Proposals
With Glass Lewis	1804	22	1826
Against Glass Lewis	116	11	127
N/A	6	0	6
Mixed	0	0	0
Take No Action	16	1	17
Unvoted	0	0	0
Totals	1942	34	1976



Agenda

Administrative Meetings: Many of the morning sessions on Monday, March 6, are administrative meetings and meetings of CII's member constituency groups. If you are a guest or a non-member, please consider arriving for the sessions beginning at 2:15 PM.

Press: Members of the press are allowed to attend all sessions not marked private or closed on March 6 and 7.

All sessions on March 8 are closed to press.

March 6, 2023

Member Lounge Sponsored by EY

9:00 AM-5:30 PM

Registration Open

9:00 AM-6:00 PM

Policies Committee Meeting

9:15 AM-10:15 AM

U. S. Asset Owner Member Constituency Meetings

10:30 AM-11:30 AM

U.S. Asset Owners' Business Meeting

11:45 AM-12:30 PM

Associate Member Constituency Meeting

11:45 AM-12:30 PM

Lunch

12:45 PM-1:45 PM

Board of Directors and Advisory Council Lunch (Private)

12:45 PM-1:45 PM

New Member & First-Time Attendee Icebreaker

2:15 PM-3:00 PM

Welcome Remarks

3:15 PM-3:30 PM

Plenary 1: What's Next for Activism: Perspectives from Starboard

3:30 PM-4:15 PM

Plenary 2: View from the Boardroom – Director Panel

4:15 PM-5:15 PM

Plenary 3: Fireside Chat with Gary Gensler

5:15 PM-5:45 PM

Cocktail Reception

5:45 PM-7:00 PM

Trustee Dinner

6:45 PM-8:30 PM

March 7, 2023

Networking Breakfast	8:00 AM-9:00 AM
Public Pension Fund CIO Breakfast (Private Event, Invitation Required)	8:00 AM-9:00 AM
Registration Open	8:00 AM-5:30 PM
Member Lounge Sponsored by EY	9:00 AM-5:30 PM
Day 2 Kick-off	9:00 AM-9:05 AM
Plenary 4: What's Next for Global Markets	9:05 AM-9:50 AM
Plenary 5: The Future of China as an Investible Market	9:50 AM-10:50 AM
Breakout 1: Washington Update – Key SEC rules and Climate Legislation	11:05 AM-12:05 PM
Breakout 2: How Funds Can Advance DEI at External Money Managers	11:05 AM-12:05 PM
Lunch and Plenary 6: Fireside Chat with Matt Levine	12:15 PM-1:30 PM
ICEV Meeting (Investor Coalition for Equal Votes)	1:30 PM-2:00 PM
Coffee Break	1:30 PM-2:00 PM
Plenary 7: The Future of Work	2:00 PM-2:20 PM
Plenary 8: Update on ISSB's Sustainability-Related Disclosure Standards	2:20 PM-2:40 PM
Member-Hosted Meeting: Investment Risks in Tech — Engaging with Companies to Create Long-Term Value	3:00 PM-3:45 PM
Member-Hosted Meeting: Best Practices for ESG Investor Relations and Stewardship Teams	3:00 PM-3:45 PM
Member-Hosted Meeting: Making the Investment Case for Good Labor Practices	3:00 PM-3:45 PM
Member-Hosted Meeting: Assessing the Credibility of Published Targets on the Path to Net-Zero	4:00 PM-4:45 PM

Member-Hosted Meeting: Digital Rights and Big Tech in the U.S. Fiduciary Context	4:00 PM-4:45 PM
Member-Hosted Meeting: CEO Compensation in 2023	4:00 PM-4:45 PM
Member-Hosted Meeting: Transparency and Data Quality — Energy Transition in the Automotive Sector	5:00 PM-5:45 PM
Member-Hosted Meeting: Evaluating General Obligation Bonds through an ESG Lens	5:00 PM-5:45 PM
Member-Hosted Meeting: Protecting Diversified Portfolios through Systems-Level Stewardship	5:00 PM-5:45 PM
Cocktail Reception	5:45 PM-7:00 PM
March 8, 2023	
CII Board of Directors Meeting	8:00 AM-9:00 AM
Breakfast	9:00 AM-9:30 AM
Member Lounge Sponsored by EY	9:00 AM-11:45 PM
Registration Open	9:00 AM-11:00 AM
Plenary 9: International Governance Committee - Proxy Advisory Firms: Does Monitored Oversight Work?	9:30 AM-10:15 AM
Plenary 10: Shareholder Advocacy Committee - Can We Take Politics Out of ESG?	10:15 AM-11:00 AM
Plenary 11: CII Member Lightning Round	11:00 AM-11:45 AM
Networking Lunch	11:45 AM-12:45 PM
Proxy Voter Group Meeting (Private Event, RSVP Required)	11:45 AM-1:30 PM

U.S. ASSET OWNER MEMBERS' BUSINESS MEETING

Monday, March 6, 2023
11:45 AM – 12:30 PM ET

In-person: Salamander Hotel, Gallery A

Zoom Info for remote attendance (audio only):

<https://us02web.zoom.us/j/82988879764?pwd=Y3F4UFZheE9xc3hHOW9adlNhY2dLZz09>

Meeting ID: 829 8887 9764

Passcode: 219823

Business Meeting Agenda

1. Board Chair Report (Scott Zdrazil)
2. Staff Report (Amy Borrus and Melissa Fader)
[Appendix 1, page 4](#)
3. Financial Report (Katy Hoffman, board treasurer)
[Appendix 2, page 8](#)
4. Policies Committee Report and Ballot Item (Ron Baker, chair)
[Report in Appendix 3, page 12](#), and ballot item in [Appendix 4, page 13](#)
5. Shareholder Advocacy Committee Report
[Appendix 5, page 15](#)
6. International Governance Committee Report
[Appendix 6, page 16](#)
7. U.S. Asset Owners Advisory Council Report & Request for Nominations for members to serve for 2022-2023 (Amy Borrus for Chair Tom Lee)
[Appendix 7, page 17](#)
8. Corporate Governance Advisory Council Report (Amy Borrus, staff liaison)
[Appendix 8, page 19](#)
9. Markets Advisory Council Report (Jeff Mahoney, staff liaison)
[Appendix 9, page 21](#)
10. Constituency Reports and Introduction of Board Members for 2023-2024
(Constituency Co-Chairs Peggy Foran, Aisha Mastagni and Tom McIntyre)

Comments from the Membership

Any member wishing to present information is invited to address the membership.

Future CII Conferences

September 10-13, 2023: Long Beach, CA, The Westin Long Beach

March 4-6, 2024: Washington, D.C., Salamander Hotel

September 9-11, 2024: Brooklyn, NY, New York Marriott at the Brooklyn Bridge

March 10-13, 2025: Washington, D.C., Salamander Hotel

September 8-10, 2025: San Francisco, Westin San Francisco

APPENDIX 1 **Staff Update on Membership and Dues Restructuring**

Membership Renewals

We are currently at 92% of the \$3,051,262 membership renewal budget for 2023, with \$2,794,037 received and another \$240,792 anticipated. Membership renewal season officially ends February 14, 2023, and we project we will meet our budget goals.

There are 17 dropped members to date:

USAO Members:

- | | |
|--|---|
| <ul style="list-style-type: none"> • American Homes 4 Rent • Assurant • Change Healthcare (acquired by UnitedHealth Group) • The Hartford Financial Group • Intel | <ul style="list-style-type: none"> • FTSE Russell • Hermes EOS (merged with Federated) • Levi & Korsinsky • Maritime Super (Australian pension fund) • Ninety One • My Logic • The Investment Integration Project • USS Investment Management (UK pension fund) |
|--|---|

Associate Members:

- 57 Stars
- ACRES Capital
- Cartica Management (closing)
- Deminor Recovery Services

New Members

We are currently at 96% of the new member budget of \$207,000, with \$198,637 coming from 21 new members:

USAO Members

- | | |
|--|---|
| <ul style="list-style-type: none"> • Orange County Employees Retirement System • Employees' Retirement System of Texas • Apple • Discover • Primerica | <ul style="list-style-type: none"> • Mellon Investments • PGIM • Starboard Value |
|--|---|

Non-US Asset Owners

- Saudi Aramco

Service Providers

- Environmental Defense Fund
- Faegre Drinker
- JUST Capital
- Kirby McInerny
- Mediant
- Tumelo
- United 4 Respect

Asset Managers

- Angelo Gordon
- BMO Asset Management
- CIBC US
- Fidelity Investments
- Jupiter Asset Management

Six-Year Membership Trends

Member Type	2018	2019	2020	2021	2022	2023*
US Asset Owners						
Public Funds	54	57	55	56	54	57
Labor Funds	27	25	23	22	21	21
Corporate Funds	52	58	54	58	58	56
Others (Foundation/Endowment)	5	6	6	7	7	7
Total US Asset Owners	138	146	138	143	140	141
Associate Members						
Asset Managers	58	63	61	65	70	73
Non-US Asset Owners	9	11	13	13	13	12
Service Providers**	85	80	79	86	93	93
Total Associate Members	152	154	153	164	176	178
Total Membership Organizations	290	300	291	307	316	319

*2023 current figures, not final.

** Includes law firms, proxy advisors, NGO's and other non-profits.

Update on Plans for Simplifying CII's Dues Structure for U.S. Asset Owner Members

The CII Board of Directors has approved a new dues structure for U.S. Asset Owner (voting) members that will simplify how dues are calculated and communicated and bring CII's approach to dues in line with other associations.

Background

CII's current structure for calculating annual membership dues for U.S. Asset Owner (voting) members dates to the 1990's. The methodology is based on annual assets under management (AUM) in employee defined benefit and defined contribution plans with a formula applied to calculate the annual cost. This approach allowed the membership dues to ebb and flow with market performance and included a floor and ceiling to anchor the system and provide some stability. The formula for calculating dues was \$1.20 per every \$1 million in retirement plan assets. Through 2019, U.S. Asset Owner members had one membership option and paid annual dues for membership with conference attendance fees included at no additional cost.

In 2019, the board and the voting membership approved lowering the cost and formula for calculating annual dues for voting members, as well as offering an additional cheaper tier of membership that separates conference attendance fees. The new formula for the “bundled” or all-inclusive membership dropped from \$1.20 per \$1 million AUM to \$.95 per \$1 million AUM and the new “unbundled” membership type was created and chargeable at \$.65 per \$1 million in AUM, with conference fees paid separately.

Issues

The current formula-based method for calculating annual dues is problematic for members and staff:

- The formula is difficult to explain to current and prospective members.
- Because the current structure requires total AUM in employee retirement plans, applied to a formula, current and prospective members cannot easily refer to their membership costs on our website.
- Most membership associations have simple flat-rate dues structures.
- The current model leads to an inequitable distribution of members paying fixed amounts: 83 of the 141 current voting members are either at the floor or ceiling and pay the same dues every year, while organizations in the middle pay varying amounts based on their annual assets under management.
- This approach leads to volatility for renewing members and CII budget projections.

Approved Revisions

The CII board has approved a new flat-rate model with membership dues tiers based on asset bands. This aligns the billing protocol for USAO's with the current model for our asset managers. The asset bands are designed with large enough gaps to alleviate members moving up and down in bands except when retirement plan assets change significantly. Every three years, CII staff will survey members after the spring conference for their total retirement plan assets as of 03/31 to ensure that members are in the appropriate bands before preparing renewal invoices in October.

Adopting this flat-rate dues model will achieve the following goals:

- Simplify the dues structure and the billing process and make it easier for members and prospective new members to understand how dues are calculated.
- Reduce year-over-year dues volatility for members. Most will typically remain in the same dues bands unless their AUM changes significantly in a three-year period.
- Align CII's dues approach with that of other membership associations.
- Reduce volatility and uncertainty for CII budget projections.

- Allow membership costs to be posted on the website and in other marketing materials.
- Allow equitable inflation increases to be applied to all members when approved by the board.

Staff spent a tremendous amount of time testing various asset bands and dues tiers to minimize the potential impact to members during the implementation of the new structure. Some members will see increases and some will see decreases to their dues as we transition to the new structure. CII staff will phase in these changes over a two-year period to minimize impact in any one budget year. We value your input. If you have any questions on the new structure or how it may impact your fund, please contact Melissa Fader, director of operations and membership at Melissa@cii.org or 202.261.7096.

APPENDIX 2
Financial Report
Operating Income and Expenses:
2022 Budget and Preliminary Unaudited Results and 2023 Budget

	2022 Budget	2022 Preliminary Unaudited Results	Variance of 2022 Projected from 2022 Budget	2023 Budget
INCOME				
Membership Dues				
Renewing Members (all)	\$2,917,675	\$2,900,087	99%	\$3,051,262
<i>Renewing U.S. Asset Owner (Voting) Members</i>	\$1,793,350	\$1,779,462	99%	\$1,818,289
<i>Renewing Associate Members</i>	\$1,124,325	\$1,120,625	100%	\$1,232,973
New Members (all categories)	\$125,000	\$209,502	168%	\$207,000
<i>New U.S. Asset Owner (Voting) Members</i>	\$40,000	\$65,490	164%	\$83,000
<i>New Associate Members</i>	\$85,000	\$144,012	169%	\$124,000
Total Membership Dues	\$3,042,675	\$3,109,589	102%	\$3,258,262
Other Income				
Interest and dividend income	\$55,000	\$64,293	117%	\$70,000
Conference sponsorship/fees/etc.	\$605,450	\$791,290	131%	\$697,000
<i>Sponsorships</i>	\$188,000	\$249,852	133%	\$249,000
<i>Member-hosted meeting fees</i>	\$30,000	\$49,500	165%	\$48,000
<i>Attendance fees</i>	\$387,450	\$490,672	127%	\$400,000
<i>Other conference income</i>		\$1,266		
Corporate Governance Bootcamp	\$95,000	\$133,959	141%	\$66,000
Miscellaneous				
Total Other Income	\$755,450	\$989,542	131%	\$833,000
Total Income (Before Unrealized G/L)	\$3,798,125	\$4,099,131	108%	\$4,091,262
OPERATING EXPENSES				
Conferences/Meetings	\$710,000	\$825,691	116%	\$805,000
Communication	\$60,000	\$42,500	71%	\$25,000
Corporate Governance Bootcamp	\$50,000	\$55,670	111%	\$60,000
Depreciation	\$22,000	\$22,000	100%	\$28,000
Dues and Subscriptions	\$90,000	\$95,755	106%	\$85,000
Financial Fees	\$40,000	\$61,000	153%	\$50,000
Insurance/Life/Health	\$304,723	\$320,000	105%	\$355,100
Legal Fees	\$70,000	\$8,600	12%	\$70,000
Maintenance	\$2,500	\$1,600	64%	\$2,500
Marketing Overall	\$20,000	\$18,000	90%	\$10,000
Meals and Entertainment	\$10,000	\$7,500	75%	\$10,000

Office Equipment and Furniture	\$8,000	\$15,275	191%	\$12,000
Office Supplies	\$11,000	\$5,000	45%	\$8,000
Postage and Delivery	\$2,000	\$500	25%	\$1,000
Professional Services	\$130,000	\$115,000	88%	\$117,000
Rent	\$169,781	\$154,420	91%	\$176,000
Retirement Plans	\$653,338	\$555,000	85%	\$515,000
Salaries/Payroll Taxes	\$1,889,125	\$1,981,975	105%	\$1,998,500
Travel	\$40,000	\$25,200	63%	\$40,000
Contributions				
Total Operating Expenses	\$4,282,467	\$4,310,686	101%	\$4,368,100
Operating Gain/Loss (Before Investments, Pension Plan Changes, Special Items)	\$(484,342)	(\$211,555)	44%	\$(276,838)

Note: The audit will be conducted in March and April 2023. Audited financial statements will be available for members on CII's website by the end of April.

The projection shows CII incurred an operating loss of almost \$212,000 based on a current review as of mid-January. This is less than half of the budgeted loss of \$484,342.

Revenues

- Revenues were strong across the board and \$300,000 more than budgeted. Total revenues were just under \$4.1 million (108% of budget).
- Membership dues revenues totaled \$3,109,589, 102% of budget. Renewals ended the year slightly under budget at \$2,900,087, while new member dues revenues for both U.S Asset Owners and Associate Members were surprisingly robust, totaling \$209,502, which is 168% of budget.
- Non-dues revenue streams were also higher than budgeted amounts. Conference revenues ended the year at 131% of budget, as sponsorship, attendance fees and member-hosted meeting fees were exceptionally strong. It is worth noting that 2022 was the first year since 2019 that CII hosted two in-person conferences. Also gratifying: the \$134,000 that we took in for the in-person Corporate Governance Bootcamp, a two-and-a-half-day event hosted by our partner, NYU Law's Institute for Corporate Governance and Finance. We had budgeted conservatively for Bootcamp due to concerns about employer travel curbs. But demand was so great that we had no trouble hitting the registration maximum.

Expenses

- Overall, operating expenses ended the year marginally above budget at \$4,310,686. Category by category, performance was mixed, including for the largest categories discussed below.
- Conferences/meetings expense totaled just under \$825,700, 116% of budget (note that August in-person board meeting expense represents \$11,500 of the total). Audiovisual costs were higher due to the hybrid nature of the spring conference, which was not repeated for fall. Inflation boosted expenses generally. Still, the spring conference generated a net loss of only \$36,480 while the fall conference netted \$13,690.
- Insurance expense was 105% of budget, at \$320,000.
- Rising interest rates helped check retirement expenses (staff defined benefit plan).
- Payroll expense rose despite turnover that kept some positions vacant for short periods. In view of competitive pressures, we filled some positions at higher salaries. Total payroll was \$1,981,975, or 105% of budget.

Below the operating line, volatile and generally lower financial market trends battered our investments in equities, bonds, CDs, and Treasuries. We expect unrealized losses from investments to total \$476,000.

CII's balance sheet is strong (see next page), with ample reserves and no debt. Total assets as of December 31, 2022, were \$7.9 million before adjustments to be made during the audit. The unaudited CII balance sheet for Dec. 31, 2022, appears below (in U.S.\$).

ASSETS		LIABILITIES AND EQUITY	
Current Assets		Liabilities	
Bank Accounts	4,294,114	Current Liabilities	
		Accounts Payable	9,131
Other Current Assets		Credit Cards	8,554
Prepaid Expense	86,953		
Equity Funds	1,314,721	Other Current Liabilities	
Escrow Funds	12,876	Accrued Pension Liability	225,817
Interest Receivable	1,296	Accrued Salaries	72,891
Treasury Bills	1,212,187	Accrued Vacation	134,370
Vanguard Bond	501,183	Deferred LH Improvement Allowance	591
Vanguard Int'l Bond	215,398	Deferred Rent	9,052
Total Other Current Assets	3,344,614	Deferred Revenue	2,559,270
Total Current Assets	7,638,728	Total Other Current Liabilities	3,001,990
		Total Current Liabilities	3,019,676
Fixed Assets		Total Liabilities	3,019,676
Furniture & Equipment	197,753		
Accumulated Depreciation	(180,455)	Equity	
Leasehold Improvements	9,925	Board Designated for Reserve	3,877,634
Total Fixed Assets	27,223	Unrestricted Net Assets-General	1,682,106
		Net Income	(648,977)
Other Assets		Total Equity	4,910,763
Technology	20,298		
CD's	244,190		
Total Other Assets	264,488		
TOTAL ASSETS	7,930,439	TOTAL LIABILITIES AND EQUITY	7,930,439

2023

Looking ahead it is too early to project 2023 financial performance. Membership renewal revenues have been brisk and we continue to welcome new members. As of February 13, total renewal revenues (for U.S. Asset Owners and Associate Members) were \$2,794,037, or 92% of the budgeted amount. New member revenues were \$198,637, or 96% of budget.

Conference attendance and revenues are also robust. As of February 13, we had 393 registered attendees and \$199,620 in attendance fees, with \$127,000 more in sponsorships and \$48,000 in other event income. Still, inflation continues to be vexing. Staff is carefully reviewing expenses to see where we can prune responsibly.

APPENDIX 3

Policies Committee Report

The [Policies Committee](#), comprised of the non-officer members of CII's board, reviews and recommends updates to CII's official positions on corporate governance and other matters of importance to institutional investors. These positions serve as a foundation for CII's advocacy work with policymakers and market participants.

Colorado Public Employees' Retirement Association Executive Director Ron Baker serves as the chair of the committee. Since Mr. Baker will step off the CII board this spring due to CII's five-year term limit, the board will appoint a new Policies Committee chair at the first board meeting following the spring conference. The committee expresses its deep appreciation for Mr. Baker's leadership.

At the 2023 spring conference, U.S. Asset Owner members will vote on a proposed revision to CII's corporate governance policies to encourage company disclosure of the identity of proponents of shareholder resolutions.

Since the fall, the committee has focused on a quandary faced by any shareowner who loans shares: Most shareholder meeting record dates pass before the proxy statement becomes available, making it difficult to know when recalling shares is worthwhile. At its last three meetings, the committee hosted several speakers, including academics, practitioners and a former SEC Director of Corporation Finance to better understand whether and how shareowners could make more informed decisions about when to recall loaned shares.

Looking forward, the committee will consider the reasonableness of a wave of recent corporate bylaw amendments establishing qualification and procedural requirements that extend beyond the requirements established under the universal proxy rule for shareholders to nominate candidates for election to corporate boards. The committee may also revisit the topic of private company transparency as legal and regulatory developments continue to unfold.

The committee welcomes U.S. Asset Owner members' input on topics that are important to them, whether through participation in comment periods posted to CII's Comment Opportunity Tracker, involvement in the U.S. Asset Owners Advisory Council, or informal outreach to the chair and/or CII staff.

APPENDIX 4

Policies Ballot Item:

Approve amendment of Section 4.3 of CII Corporate Governance Policies Regarding Disclosure of Ballot Items

The board recommends approval of the following amendment to CII Corporate Governance Policies.

Starting at its July 12, 2022, meeting, the Policies Committee discussed a policy change to call on companies to disclose the identity of proponents of shareowner resolutions. The committee discussed the issue on multiple occasions and reviewed statistics on the prevalence of proponent disclosure before agreeing, with one abstention, at its September 21 meeting to a proposed amendment that was sent to all CII members for a four-week comment period (September 29 to October 28).

Feedback from members was highly supportive of the change. Staff received no comments that opposed the amendment.

If members approve the amendment, CII staff will consider a rule petition or other engagement with the SEC to require disclosure of shareowner proponents in proxy statements.

Proposal

To amend Section 4.3, Record Date and Ballot Item Disclosure, as follows:

4.3 ~~Record Date and~~ Disclosure of Ballot Items Disclosure:

4.3a Clarity and Completeness: Each ballot item should clearly identify and describe the subject matter and pertinent information, including the identity of the proponent or lead filer, in the proxy statement so shareowners can engage and make informed decisions.

4.3b Record Date and Timing: To promote the ability of shareowners to make informed decisions regarding whether to recall loaned shares: (1) shareowner meeting record dates should be disclosed as far in advance of the record date as possible, and (2) proxy statements should be disclosed before the record date passes whenever possible.

Background and Intent

Shareowner proposals have increased in recent years, in both number and scope of topics. Many CII members file proposals and engage companies, as well as other

investors, in support of their efforts. While the SEC does not require companies to disclose the proponent (or proponents) in the proxy statement, it does require companies to provide the information upon request.

Most but not all companies disclose the identity of proponents in the proxy. Although investors may request the information, often there is no stated mechanism or contact information such as an email address or phone number for making such a request. Some shareowners have found the information difficult to obtain quickly enough to incorporate it into their voting decisions.

To enhance the transparency of ballot issues, the board recommends amending CII's Corporate Governance Policies to ask companies to furnish this information for all proposals; each ballot item should be clearly identified and described, including the identification of the proponent or lead filer.

Some investors prefer to judge each proposal on its merits and do not factor the identity of the proponent into their decision making. Some companies and investors believe that providing the identity of the proponent may encourage more proposals to be filed and, in some cases, believe that these proposals are being made to advance the standing or agenda (or both) of the proponent rather than to improve the governance and performance of the subject company.

However, many investors do consider the proponent's identity when deciding how to vote on the proposal and believe that voting by proxy should allow them to know the identity of the proponent just as they would if they attended the meeting and witnessed the proper presentation of the proposal.

Some members have also said that the identity of the proponent gives them better insight into the intent of the proponent, while others have requested it for engagement purposes. On some occasions, CII members report being misidentified as the proponent of a proposal they did not submit, or not correctly identified as the proponent of a proposal they did submit. This has led to misdirected inquiries and requests for engagement.

APPENDIX 5

Shareholder Advocacy Committee Report

The [Shareholder Advocacy Committee](#) is a conduit for members to discuss and recommend activities that promote effective corporate governance, increase participation in the advocacy of corporate governance and enhance the value of CII membership. The committee fosters member dialogue through in-person and electronic meetings and email communication.

In the past several months, the committee hosted the following events:

- January 11, 2023, proxy season preview webinar featuring 14 member representatives sharing their plans for the 2023 proxy season; with 160 members who were logged in to participate.
- September 23, 2022, plenary session during CII's fall conference, which examined research indicating that corporate engagement is an effective means for long-term shareholders to address climate-related risks. The panel discussed these findings, as well as other strategies deployed to address the risks of climate change, including policy advocacy, proxy voting, screening and divestment.
- July 11, 2022, proxy season preview webinar during which 15 CII members shared their accomplishments on topics ranging from civil rights audits to lobbying disclosure, and discussed their plans for the 2023 season.

At the committee's March 8 plenary session during the conference, a panel moderated by ValueEdge Advisors Vice Chair Nell Minow will discuss the pushback against ESG in investing. Afterward, a roster of CII members will discuss their 2023 proxy season initiatives in the committee's popular 'lightning round.'

APPENDIX 6

International Governance Committee Report

The [International Governance Committee](#) supports efforts to expand CII's geographic scope by educating members and coordinating globally on non-U.S. corporate governance issues. The committee brings CII members global perspectives on areas such as investor-company engagement, shareholder rights, governance codes, exchange listing standards, executive compensation and other market-specific dynamics. Michael Herskovich, global head of stewardship at BNP Paribas Asset Management, chairs the committee.

The committee's spring 2023 plenary session will explore European proxy advisor regulation. Speakers include Konstantinos Sergakis, chair of the Best Practice Principles (BPP) Oversight Committee, the governing body that reviews and monitors the Best Practice Principles and public reporting by proxy advisory firm signatories, Valerio Novembre, Senior Policy Officer at ESMA and Amundi Head of Proxy Voting Edouard Dubois.

The committee's fall plenary session focused on investment and governance trends in emerging markets. Speakers were Teresa Barger, co-founder and CEO of Cartica Management; Brian Christiansen, senior portfolio manager and director of stewardship at Sands Capital; and Julia Hermann, multi-asset portfolio strategist at New York Life Investments.

Recent international developments followed by the committee and covered in CII's *Alert* newsletter include: GOP opposition to potential restrictions on outbound investment flows to China; proposed changes to the G20/OECD Corporate Governance Principles; investor pressure for multinational corporations to disclose their tax payments in accordance with GRI tax transparency standards; the PCAOB's work to gain access to audits of Chinese companies; and a proxy fight by Oasis Management Company at Fujitec, a Japanese elevator manufacturing company.

Consistent with the committee's charter, the CII board will name a new committee chair following the spring 2023 meeting, as Mr. Herskovich is serving his third consecutive term on the committee. The committee appreciate his service, and thanks Tracy Stewart for acting as the committee's CII staff liaison until her December 2022 departure. CII Research Analyst Emmanuel Tamrat will assume the staff liaison role under the guidance of Deputy Director Glenn Davis.

APPENDIX 7

U.S. Asset Owners Advisory Council Report

The [U.S. Asset Owners Advisory Council](#) advises the CII board and staff on issues, trends, proposed policy development, topics and speakers for CII events and membership benefits and services. CII's board of directors appoints up to 20 members, with a mix of representation from the following constituencies:

- Corporate Fund Asset Owner Members
- Labor Fund Asset Owner Members
- Public Fund Asset Owner Members
- Other Asset Owner Members

Members are appointed for one-year terms, generally in the spring, with a limit of three consecutive one-year terms. Thomas Lee, executive director & CEO of the New York State Teachers' Retirement System, chairs the U.S. Asset Owners Advisory Council. Amy Borrus and Allie Kunc support the work of the U.S. Asset Owners Advisory Council.

The members of the 2022-2023 U.S. Asset Owners Advisory Council are:

Public Funds

Tracy Harris, District of Columbia Retirement Board

Thomas Lee, New York State Teachers' Retirement System, (chair)

Gianna McCarthy, New York State Common Retirement System

John Mule, Minnesota State Board of Investment

Andrew Palmer, Maryland State Retirement and Pension System

Leola Ross, Seattle City Employees' Retirement System

Jeffrey Warshauer, State of New Jersey Division of Investment

Corporate Funds

Joseph Bolling, Equifax

Kevin Coleman, Huntington Bancshares

Labor Funds

Jennifer Dodenhoff, International Brotherhood of Electrical Workers

Jeffrey Dokho, UAW Staff Retirement Income Plan

Edgar Hernandez, Service Employees International Union Pension Fund

Jim Kane, National Education Association

Brandon Rees, AFL-CIO

Other U.S. Asset Owner Member Funds

Laura Campos, Nathan Cummings Foundation

Chloe Moss, Casey Family Programs

Wendy Pulling, University of California Office of the CIO

Advisory Council activities since the last U.S. Asset Owner Members' business meeting

At the advisory council's December meeting, guest speakers Carol Nolan Drake, a special advisor to the International Corporate Governance Network (ICGN) and George Dallas, ICGN's policy director, briefed members on the EU's Corporate Sustainability Reporting Directive. After, several advisory council members discussed their individual engagements and initiatives. Amy Borrus summarized the Policies Committee proposed amendment to CII corporate governance policies calling on companies to clearly identify, in the proxy statement the proponent or lead filer of a shareholder proposal. Ms. Borrus also summarized CII advocacy and programs. Chair Tom Lee invited members to suggest topics and speakers for CII webinars, podcasts and conferences, and members offered several ideas.

The U.S. Asset Owners Advisory Council will meet next on March 2.

APPENDIX 8

Corporate Governance Advisory Council Report

CII's [Corporate Governance Advisory Council](#) (CGAC) provides insight and advice to the CII board and staff on key developments in corporate governance and CII activities that promote effective corporate governance. The council also advises both on ways to enhance the value of CII membership.

All the members of the Corporate Governance Advisory Council are representatives of non-U.S. asset owner Associate Members or asset manager Associate Members. In January, the CII board appointed members of the Corporate Governance Advisory Council for 2023, and named Peter Reali, global head of stewardship, responsible investment, at Nuveen as chair of the advisory council. Amy Borrus is staff liaison. The new Corporate Governance Advisory Council will hold its first meeting on March 1.

The members of the CGAC for 2023 are:

Peter Reali, Nuveen (chair)

Mack Abbot, Starboard Value
 Ed Apsey, CIBC US
 Ariel Babcock, Fidelity Investments
 Alex Celesius, Voya Investment Management
 Jacqueline Condron, Mellon Investments
 Emily DeMasi, EOS at Federated Hermes
 Jessica Figueroa, Lord, Abbett
 Nancy Florek, Putnam Investments
 John Galloway, The Vanguard Group
 Timothy Goodman, Schroders
 Kellie Huennekens, Capital Group
 Christopher Jenkins, Sands Capital
 Brittni Levinson, ValueAct Capital
 Paula Luff, DSC Meridian Capital
 Caitlin McSherry, Neuberger Berman
 Ryan Nowicki, State Street Global Advisors
 John Roe, BlackRock
 Britt Sahi, Charles Schwab Investment Management
 Brian Schorr, Trian Fund Management
 David Shammai, Allianz Global Investors
 Andrew Shapiro, Lawndale Capital Management
 Piers Hugh Smith, Franklin Templeton

Geoffrey Sorbello, Elliott Management
Eugenia Unanyants-Jackson, PGIM
Jake Walko, Thornburg Investment Management
Catherine Winner, Goldman Sachs Asset Management

CGAC activities since the last U.S. Asset Owner Members' business meeting

The 2022 Corporate Governance Advisory Council held its fourth-quarter meeting on December 2. At the meeting, members discussed the proliferation of advance-notice bylaws at U.S. public companies, partly in response to the new requirement for universal proxy cards when there is competition for board seats. They also discussed “anti-ESG” proposals, pass-through voting and charter amendments to exculpate officers from breaches of the duty of care under August 2022 amendments to the Delaware General Corporation Law (previously, the DGCL offered limited personal liability for directors only).

APPENDIX 9

Markets Advisory Council Report

CII's [Markets Advisory Council](#) (MAC) provides insight and advice to the CII board and staff on legal, financial reporting and investment market trends, topics and potential speakers for CII meetings and webinars/podcasts. It also recommends current and future CII activities that promote CII's mission and enhance the value of CII membership.

In January, the CII board appointed members of the Markets Advisory Council for 2023, and reappointed Stephen Deane, senior director, capital markets policy for the Americas, at CFA Institute, as chair. Jeff Mahoney and Allie Kunc are CII staff liaisons to the MAC. The newly constituted MAC will hold its first meeting this summer.

The members of the MAC for 2023 are:

David Abel, ISAF Management Company
 Rick Alexander, The Shareholder Commons
 Claudia Allen, KPMG
 Leeann Arthur, Deloitte
 Sydney Carlock, Teneo
 Anne Chapman, Joele Frank
 Darren Check, Kessler Topaz Meltzer & Check
 Eileen Cohen, H/Advisors Abernathy
 Mauro Cunha, Vale
Stephen Deane, CFA Institute (chair)
 Matt Diguisepppe, PwC
 Jessie Giles, Majority Action
 Alexandra Higgins, Okapi Partners
 Jim Kroll, Aon
 Sheila Lewis, Segal Marco Advisors
 Robert Main, Sustainable Governance Partners
 Bob Marese, MacKenzie Partners
 Michael McCreesh, Battea Class Action Services
 Fassil Michael, Institutional Shareholder Services
 Sherri Rossoff, RockCreek
 Delilah Rothenberg, Predistribution Initiative
 Eric Shostal, Glass Lewis
 Jamie Smith, EY
 Daniel Summerfield, Pomerantz
 Harlan Tufford, MSCI

Gabrielle Wolf, Innisfree M&A
Robert Zivnuska, PJT Camberview
Nick Zuiker, Reinhart Boerner van Deuren

MAC activities since the last U.S. Asset Owners' business meeting

The MAC has met twice since the last meeting of the U.S. Asset Owners' business meeting. On November 30, 2022, the MAC meeting included a member discussion on "Officer Exculpation Under DGCL 102(b)(7)." The discussion was led by an expert panel of speakers that included:

- Rick Alexander, CEO & Board Member, The Shareholder Commons (MAC member)
- Mark Lebovitch, Partner, Bernstein Litowitz Berger & Grossmann
- Richard Blake, Partner, Wilson Sonsini Goodrich & Rosati
- Marc Goldstein, Head of U.S. Research, ISS
- Brianna Castro, Senior Director of U.S. Research, Glass Lewis

On February 2, 2023, the MAC meeting included a member discussion on "Equity Market Structure Modernization." The discussion was led by an expert panel of speakers that included:

- John Ramsay, Chief Market Policy Officer, IEX Trading (MAC member)
- Tyler Gellasch, President and CEO, Healthy Markets Association
- Brett Kitt, Associate Vice President and Principal Associate General Counsel, Nasdaq
- Shelley Eleby, Managing Director, Electronic Trading, Clearpool

The November 30 and February 2 MAC discussions were recorded and made available to CII members via CII's website.

2023 Public Fund Nominees for CII's Board of Directors

Name	Title	Organization (CII Member)	Statement of Interest Highlights
Patti Gazda	Corporate Governance Officer	Ohio Public Employees Retirement System	Current CII Board member. Actively engage in issues, industry organizations, SEC, state legislature. Active member of Human Capital Coalition, Midwest Investors Diversity Initiative, and the Investor Coalition for Equal Votes.
Yumi Narita	Executive Director of Corporate Governance	NYC Pension Funds	Current CII Board member Develops and implements active ownership programs for public equities, including engaging portfolio companies on their ESG disclosure practices, updating proxy voting strategies, and advocating for regulatory reforms to strengthen investor rights.
Katy Hoffman	Chief of Staff	Teacher Retirement System of Texas	Current CII Board member. Supports collective views to promote strong shareholder rights and sensible legislation. Broad career in investment management.
Mitchell Vogel	Trustee	State Universities Retirement System (SURS)	Current CII Board member. Supports proposals that require greater transparency and shareholder protections. Has served on SURS board for 18 years. Currently, only public fund trustee on the CII Board.
Aeisha Mastagni	Portfolio Manager, Sustainable Investment & Stewardship Strategies.	California State Teachers' Retirement System (CalSTRS)	Current CII Board member. Leads the Sustainable Investment & Stewardship Strategies team, which seeks to transform financial markets and focus on long-term value creating that fully integrates sustainability considerations

Michael McCauley	Senior Officer, Investment Programs & Governance	Florida State Board of Administration	Current CII Board member. Promotes governance reforms that bring a global focus to CII initiatives. Advocates for maintaining and strengthening shareowner rights.
Simiso Nzima	Managing Investment Director, Global Equity	California Public Employee's Retirement System (CalPERS)	Current CII Board member. Extensive investment management and corporate governance experience. Advocates to protect and advance investors' interests.
Tracy Harris	Trustee	District of Columbia Retirement Board	Advocates to promote and protect the rights of shareholders and enhance disclosure to ensure proper governance. Has experience serving on both public and private boards and has served on the U.S. Asset Owners Advisory Council



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Investment Department

To: Investment Committee
 Date: February 24, 2023
 Re: CII General Members 2023 Spring Conference Proxy

The CII Policies Committee presents this item for General Member consideration:

Business Meeting Action Item:

1. Approve update to Section 4.3 of CII Corporate Governance Policies Regarding Disclosure of Ballot Items

From CII's proposal:

- Amend to call on companies to disclose the identity of proponents of shareholder resolutions:
Clarity and Completeness: Each ballot item should clearly identify and describe the subject matter and pertinent information, including the identity of the proponent or lead filer, in the proxy statement so shareowners can engage and make informed decisions.

Analysis: Most but not all companies disclose the identity of proponents in the proxy. Although investors may request the information, often there is no stated mechanism or contact information such as an email address or phone number for making such a request. Some shareowners have found the information difficult to obtain quickly enough to incorporate it into their voting decisions.

To enhance the transparency of ballot issues, the board recommends amending CII's Corporate Governance Policies to ask companies to furnish this information for all proposals; each ballot item should be clearly identified and described, including the identification of the proponent or lead filer.

Recommendation: SURS staff recommends voting **FOR** the approval of the update to Section 4.3 of CII Corporate Governance Policies regarding disclosure of ballot items.

Board of Director Candidates:

As a member of CII, SURS may vote for up to nine candidates. Upon review of biographical information, SURS staff recommends supporting the following candidates for the CII Board of Directors:

- Patti Gazda
- Yumi Narita
- Katy Hoffman

- Mitchell Vogel
- Aeisha Mastagni
- Michael McCauley
- Simiso Nzima
- Tracy Harris

Please refer to Exhibit D for highlights of all candidates.



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Investment Department

To: Investment Committee
From: Investment Staff
Date: February 24, 2023
Re: MWDBE Manager Outreach Portal

Background

For the past four years, SURS Investment Staff has hosted an annual event, Diverse Managers Week, to provide an opportunity for diversely owned investment manager firms with greater than 51% ownership by minorities, women, or people with a disability to present to the SURS investment team, its consultants, and investment partners.

In the four years of the Diverse Manager Week event, SURS staff met with approximately 100 investment firms. The managers represented the different asset classes that SURS considers including public and private markets. At the time of each firms' meetings, the strategies represented the span of the due diligence process from an introductory meeting, a SURS consultants' final stages of due diligence, to already invested private market funds looking for additional commitments. Approximately, eleven firms received first time allocations after presenting at a SURS event.

Subsequently, this event has generated a very large amount of interest from MWDBE firms, leading to many managers left on waiting lists for the following year.

Diverse Manager Outreach Portal

As a response, SURS Investment staff, with the help of SURS Communications staff, has launched a Diverse Manager Outreach Portal on the SURS website. The goal of this portal is to broaden MWDBE exposure through more frequent meetings with MWDBE firms throughout the year.

On the portal, MWDBE firms have the ability to book meetings with SURS staff according to asset class. Staff is currently conducting meetings on a monthly or quarterly basis, depending on demand and availability. The launch occurred on February 22, 2023, with multiple booking appointments within 24 hours of going live. Investment consultants and partners have been informed of the expanded number of meetings and will be invited to participate accordingly.

SURS staff plans on keeping a centralized log of manager meetings across the asset classes and will keep updated notes on the firms.

In place of the annual Diverse Manager Week August timeslot, SURS staff plans to provide a forum/webinar for the benefit of an audience of MWDBE investment managers utilizing guest speakers from current SURS consultants and/or investment partners. Plans are still in development and an agenda will be forthcoming.



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Investment Department

To: Investment Committee
 From: Investment Staff
 Date: February 24, 2023
 Re: Summary Risk Report

Attached is the Summary Risk Report for the quarter ending December 31, 2022. Highlights for the quarter include:

- Appropriation Summary – FY 2023 state appropriations received were approximately \$1.06 billion, or 100% of the anticipated \$1.06 billion FYTD appropriations due, as of December 31, 2022. The total FY 2023 appropriation is \$2,118,567,000. The actuarial benefit payment projection for FY 2023 is \$3,139,190,000. The total FY 2022 appropriation was paid in full as of June 27, 2022.
- Cash Account Summary – Ending cash on hand was approximately \$458.6 million as of December 31, 2022. The large cash position was needed to fund capital calls due in early January. Net private partnership cash flows during the quarter were negative and approximately \$393 million.
- SURS Risk Exposures – 91% of Total Risk comes from the Non-Traditional Growth, Traditional Growth, and Stabilized Growth classes as of December 31, 2022.
- Total portfolio risk increased from 12.72% to 13.30%.
 - Benchmark Risk increased from 10.78 % to 11.33%.
 - Active Risk decreased slightly from 3.00% to 2.90%.
- Liquidity – Assets in Principal Protection, TIPS, CRO, Overlay, Cash, and Transition, the most liquid categories, amount for 32.8% of assets. Assets in these classes would allow the fund to cover 2.1 years of benefits assuming no contributions to the System or 7.9 years assuming contributions from the state and members. SURS projected annual net cash outflows are between \$827 million and \$991 million over the next 5 years.
- Risk Environment & Sentiment:
 - Market risk levels are high for Equity Volatility, Fixed Income Volatility, and Systemic Risk
 - U.S Equity and Private Equity Valuations remain high, as do Real Estate vs Treasury Spreads
 - Market sentiment towards economic growth is negative for the third consecutive quarter
- Operational Risk Summary: Shows a snapshot of key contracts and procedures to be reviewed periodically. No issues to report.



Summary Risk Report

Quarter Ending December 31, 2022



Appropriation Summary

<u>Month</u>	<u>Amount Due</u>	<u>Amount Received</u>	<u>(Under)/Over</u>	<u>% Received</u>
July	\$176,547,250	\$176,547,250	-	100%
August	\$176,547,250	\$176,547,250	-	100%
September	\$176,547,250	\$176,547,250	-	100%
October	\$246,547,250	\$176,547,250	\$70,000,000	140%
November	\$106,547,250	\$176,547,250	(\$70,000,000)	60%
December	\$176,547,250	\$176,547,250	-	100%
January				
February				
March				
April				
May				
June				
FYTD	\$1,059,283,500	\$1,059,283,500	-	100%

Total appropriation for FY 2023 is \$2,118,567,000

Actuarial benefit payments projection for FY 2023: \$3,114,392,000

A supplemental amount of \$38,759,300 was received in July from the Pension Stabilization Fund and is not included in the table above.



Cash Account Summary

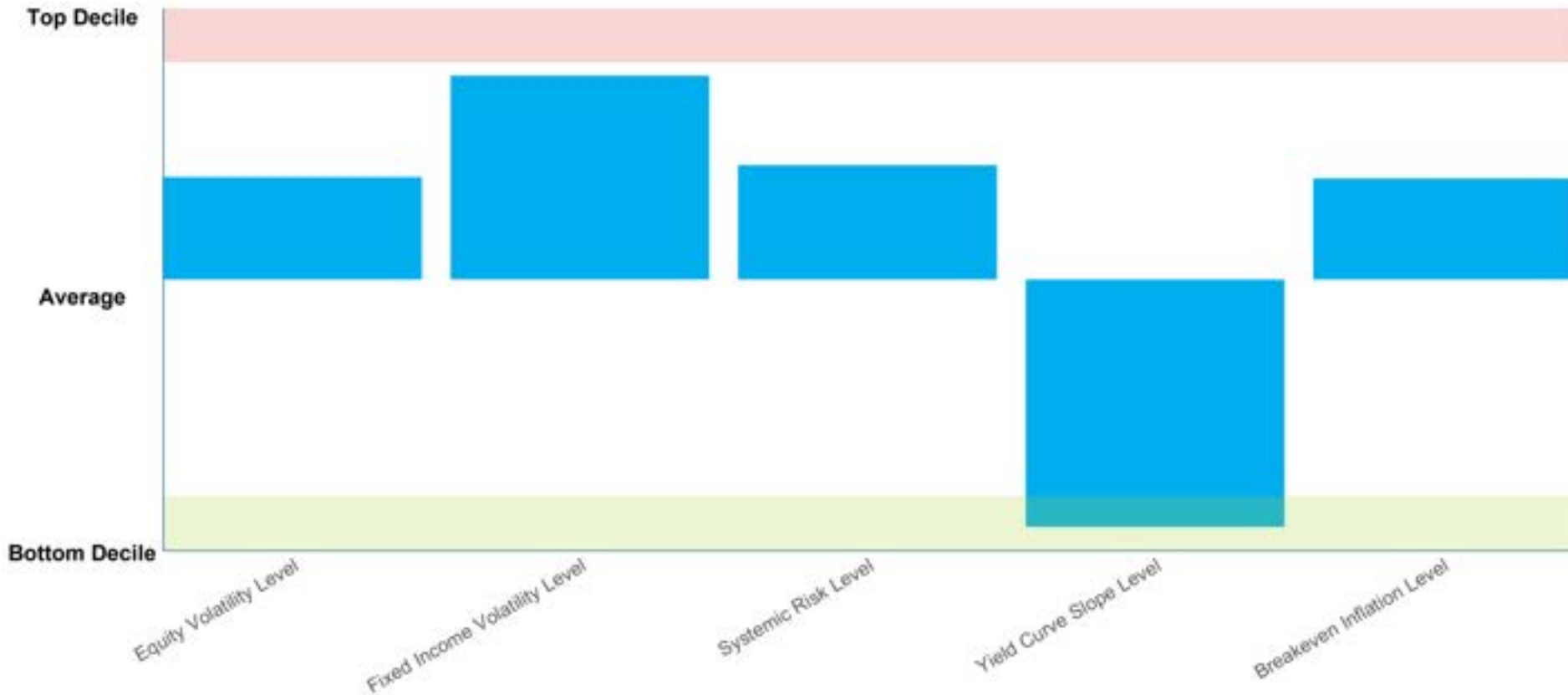
January 1, 2022 – December 31, 2022				
	Jan 1 – Mar 31	Apr 1 – Jun 30	Jul 1 – Sep 30	Oct 1 – Dec 31
Beginning Balance	\$129,653,589	\$402,610,004	\$386,001,963	\$101,904,304
Cash In:				
Partnership Distributions	161,126,077	140,160,145	79,941,958	57,470,494
Transfers	<u>931,044,033</u>	<u>242,549,670</u>	<u>708,674,256</u>	<u>833,915,910</u>
Total Cash In:	1,092,170,110	382,709,815	788,616,214	891,386,404
Cash Out:				
Partnership Capital Calls	(815,671,708)	(223,003,649)	(345,448,990)	(450,599,381)
Transfers	(205,000,532)	(60,000,000)	(378,003,851)	(79,115,414)
Net Contributions (Contributions less Benefit Payments)	<u>(201,458,544)</u>	<u>(116,314,206)</u>	<u>(349,261,032)</u>	<u>(5,013,088)</u>
Total Cash Out:	(819,213,696)	(399,317,855)	(1,072,713,873)	(534,727,883)
Ending Balance	\$402,610,004	\$386,001,963	\$101,904,304	\$458,562,824

Net private partnership cash flows were negative \$393 million for the quarter

Net contributions (contributions less benefit payments) were negative \$5 million for the quarter



Today's Risk Environment – Risk & Valuation



Market Risk Levels: Current level of each indicator compared to its history.

Increase from last quarter in Systemic Risk Level and Breakeven Inflation Level.

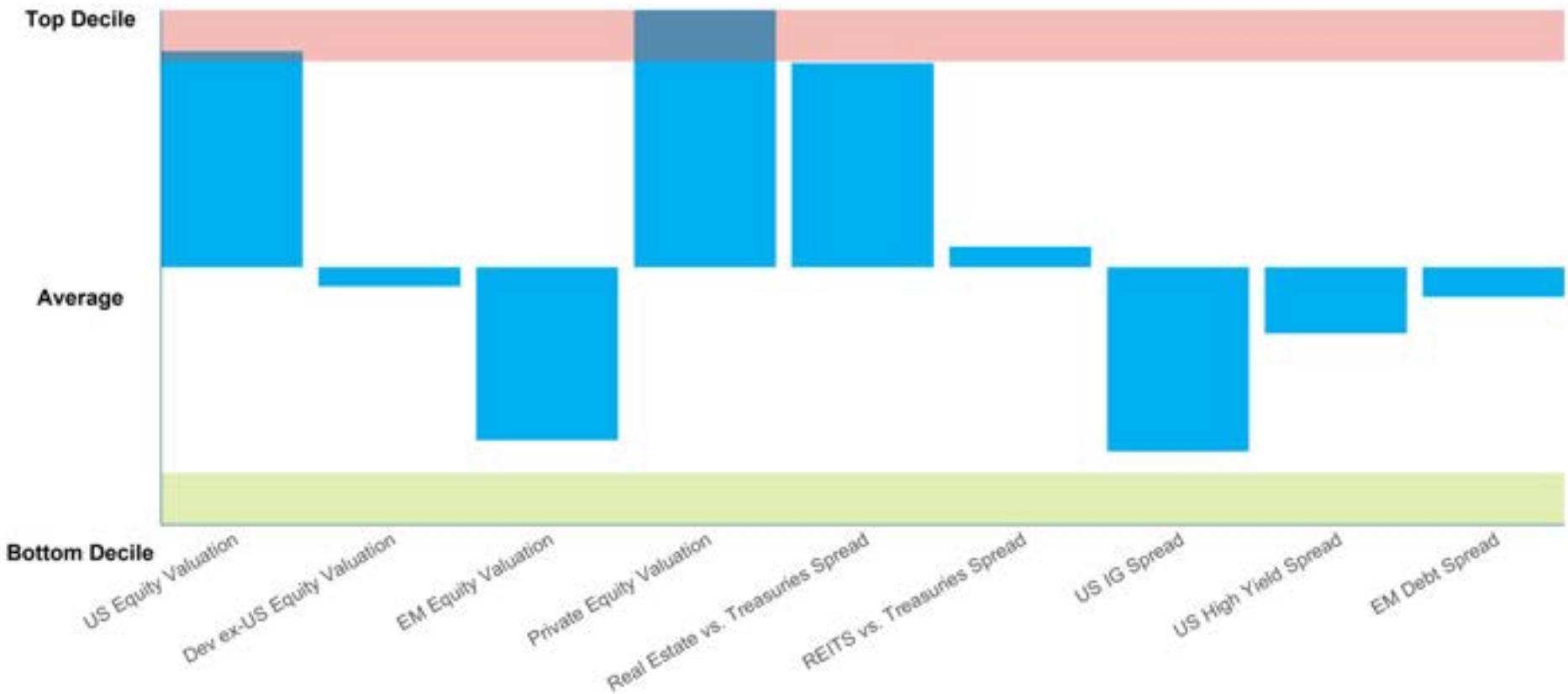
Decrease from last quarter in Equity Volatility Level and Fixed Income Volatility Level.

Yield Curve Slope Level indicator remains in the bottom decile based on historical information.

Data as of December 31, 2022



Today's Risk Environment – Risk & Valuation



Market Valuations: Current state of valuation metrics per asset class relative to their own history.

U.S. Equity Valuation, Private Equity Valuation, and Real Estate vs Treasuries Spread are very high. Other valuations remain attractive.

Data as of December 31, 2022



Today's Risk Environment – Sentiment/Concern

Market
Sentiment
Indicator
(Last
three
years)



Red indicator
indicates that
market's
sentiment towards
growth risk is
negative

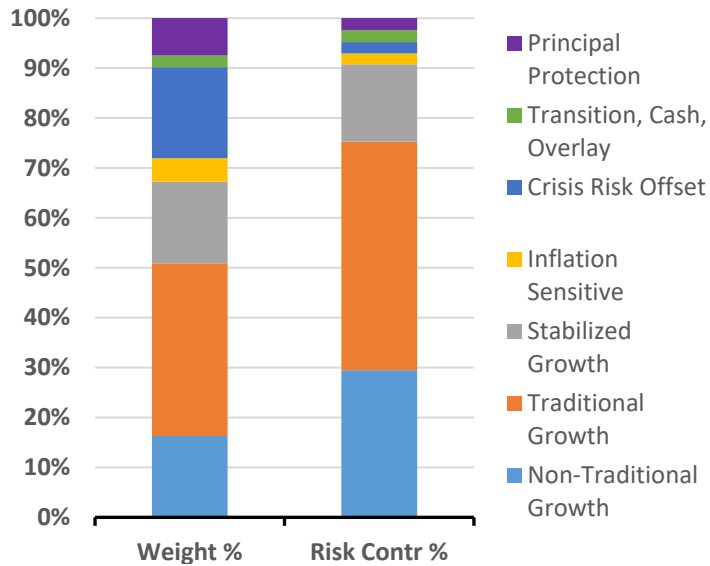
Market
Sentiment
Indicator
(All
History)



Market's
sentiment
towards growth
risk is negative



SURS Risk Exposures

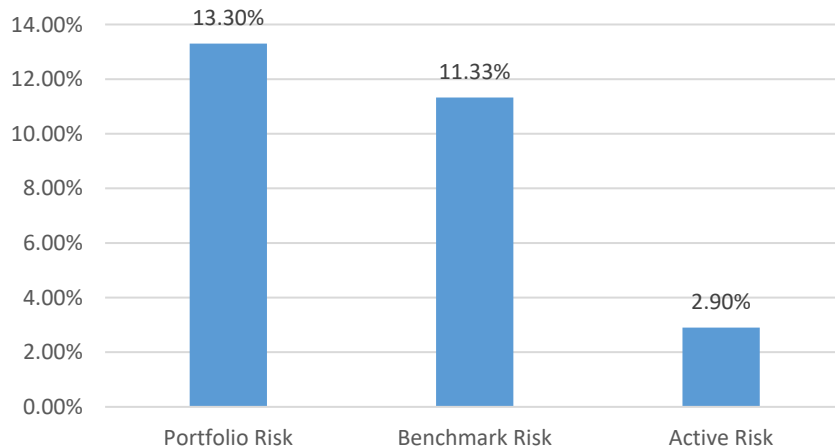


Total Portfolio Risk comes primarily from the Traditional Growth and Non-Traditional Growth asset classes.

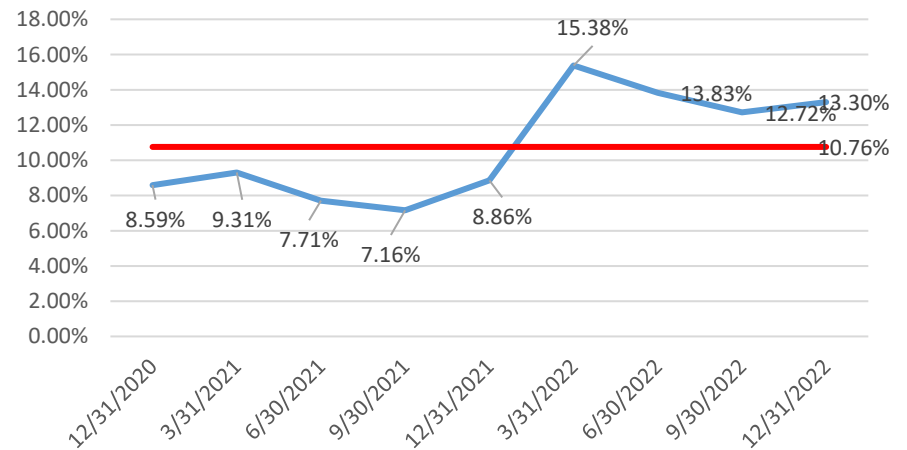
Portfolio Risk and Benchmark Risk decreased slightly in the quarter.

Portfolio Risk increased from 12.72% to 13.30% over the past quarter, higher than the 10.76% average over time

Plan Level Risk Overview



Portfolio Risk Over Time





Scenario Analysis

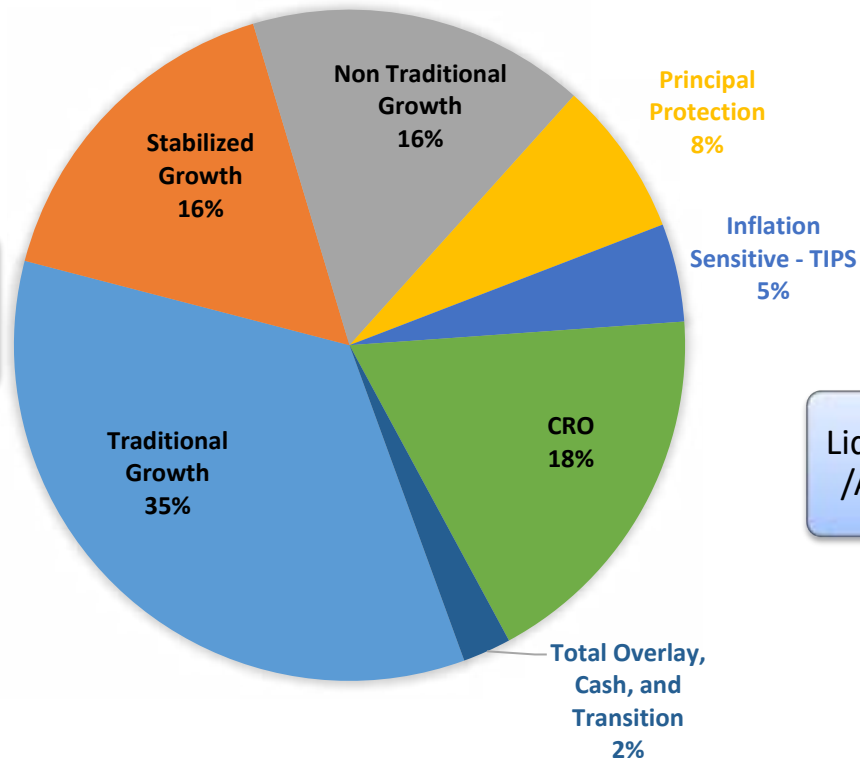
Scenario	Description	% Loss/Gain
Credit '07	Credit & liquidity crisis stemming from a severe slowdown in the housing market causing significant widening of credit spreads and increased implied volatility.	(10.26%)
Crash '08	Credit & liquidity crisis and equity market crash set off by Lehman Brothers bankruptcy. Significant credit spreads widening caused by massive deleveraging.	(20.51%)
FOMC Policy Paths-Hike Cycle Force US into Recession	Description: Credit & liquidity crisis stemming from a severe slowdown in the housing market causing significant widening of credit spreads and increased implied volatility. Shocks for DxS Factors are percentages of spread.	(11.88%)
Equity Volatility Increase	1% probability VIX Up movement	(6.79%)
Stock Market Drop Global	1% probability movement of MSCI World Market Down	(6.55%)

Current portfolio stress tested using historical scenarios.



Liquidity Profile

SURS TOTAL PORTFOLIO



Prefer Not to Liquidate

Liquid/Stable /Accessible

7.9 years of net cash outflows
2.1 years of benefits

Liquid/Stable group consists of Principal Protection, Inflation Sensitive – TIPS, CRO and Total Overlay which constitute for 32.8% of SURS portfolio.

SURS Projected Annual Net Contributions: -\$827M to -\$991M over next 5 years



Operational Risk Summary

Operational Risk	Target Review Cycle	Last Reviewed	Comments
Asset Allocation	3-5 Years	June 2021	
Investment Beliefs	3-5 Years	January 2020	
Investment Policy	Annual	September 2022	
Investment Procurement Policy	Annual	September 2022	
Private Real Assets Pacing and Strategic Plan	Annual	December 2022	
Private Equity Pacing and Strategic Plan	Annual	December 2022	
Private Credit Pacing and Strategic Plan	Annual	February 2023	
Capital Market Assumptions Review	Annual	March 2022	
Custodial Review	Annual	August 2022	
Securities Lending Review	Annual	March 2022	
Proxy Voting Guidelines	Annual	January 2022	2022 U.S., Public Pension and International Guidelines published on SURS website



Operational Risk Summary

Relationships with Contract Terms	Contracted To	Comments
Northern Trust - Custodian	December 2026	
Meketa - General Consultant	March 1, 2028	
CAPTRUST - DC Specialty	March 31, 2023	Search concluded at Feb 2023 Investment Committee Meeting with Captrust being retained for another 5 year term, pending successful contract negotiations.
Callan - Real Assets Specialty	September 29, 2023	Search Scheduled to conclude in June 2023
Meketa – Private Credit	December 10, 2025	Private Credit Advisor
Aksia TorreyCove	September 1, 2024	Private Equity Advisor
Glass Lewis - Proxy Voting Services	October 1, 2024	
ISBI, TRS, SURS Agreement - Quarterly Restricted Securities	October 31, 2022	ISBI negotiated an annual contract with MSCI to provide the quarterly restricted securities list to October 2022. An agreement with Glass Lewis is still in place to provide the expatriated companies list. Costs for these services are shared equally between SURS, ISBI and TRS.



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Investment Department

To: Investment Committee
 From: Ms. Tracy Bennett
 Date: February 24, 2023
 Re: Investment Compliance Update

Below please find an update on compliance activities since December 8, 2022.

Annual Compliance Requirement:

Per 40ILCS 5/1-109.1, Section 1-113.22 & 1-113.23, SURS has collected the required disclosures for compensation and economic opportunities – MWDBE from our consultants, Callan, CAPTRUST, and Meketa. These disclosures are enclosed in the March Board meeting materials for review.

Russian Divestments Legislation for Illinois Pension Funds (Public Act 102-1108):

SURS Investment team informed our managers and consultants in December 2022, that Governor Pritzker had signed (December 21, 2022) House Bill 1293 into law (Public Act 102-1108). We proactively informed them that this bill contains various sanctions against Russia, including a prohibition on certain investments by Illinois state retirement systems and other public entities. We instructed them as soon as practicable, to divest from direct holdings of Russian or Belarusian sovereign debt or government-backed securities. The Illinois Investment Policy Board (IIPB) will develop a list of these restricted companies within 6 months, which are companies that are domiciled or have their principal place of business in Russia or Belarus, and companies that are subject to Russian Harmful Foreign Activities Sanctions. As defined in the statute, this does not apply to the retirement system's indirect holdings or private market funds.

The IIPB Restricted Securities list currently lists companies that boycott Israel, Iran restricted securities, and Expatriated companies. SURS, on behalf of the IIPB, is currently working with MSCI data services to create the Russian divestment list that should be available mid-year 2023.

Status on Unilever divestments:

In January 2022, Strategic Global Advisors (SGA) was notified by SURS that they had a restricted securities in Unilever PLC and that they had a year to divest in those holdings. SGA recently informed us that these holdings were sold and settled on January 17, 2023. The managers had previously received notice from SURS early January 2022, that Unilever had been marked for divestment by the IIPB and would soon be added to the SURS Restricted list under companies that boycott Israel.

STATE UNIVERSITIES RETIREMENT SYSTEM

**Consultant Compensation and Economic Opportunity Disclosures
2022**

(Disclosures Pursuant to Illinois Pension Code Section 1-113.22 & 1-113.23)

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Consultant	Page
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Meketa Investment Group, Inc	5
CAPTRUST (CapFinancial Partners, LLC)	7

Disclosures Pursuant to Illinois Pension Code Section 1-113.22 & 1-113.23

Beginning January 1, 2018, Sections 1-113.22 & 1-113.23 of the Illinois Pension Code requires the following disclosures from a consultant prior to the awarding of a contract:

Name of Firm:

_____ Callan _____

1. The total number of searches for investment services made by the consultant in the prior calendar year; (*If none, state "none"*)

Number of Searches
222

2. The total number of searches for investment services made by the consultant in the prior calendar year that included (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; (*If none, state "none"*)

Classification	Number of Searches
Minority	43
Women	30
Person with a Disability	0

3. The total number of searches for investment services made by the consultant in the prior calendar year in which the consultant recommended for selection (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; (*If none, state "none"*)

Contract	Recommended for Selection
Minority	17
Women	8
Person with a Disability	0

4. The total number of searches for investment services made by the consultant in the prior calendar year that resulted in the selection of (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; (*If none, state "none"*)

Contract	Selected
Minority	7
Women	4
Person with a Disability	0

5. The total dollar amount of investment made in the previous calendar year with (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability that

was selected after a search for investment services performed by the consultant. *(If none, state "none")*

Contract	Total \$ of Investment Made
Minority	\$125mm
Women	\$685mm
Person with a Disability	\$0mm

6. All compensation and economic opportunity received in the last 24 months from investment advisors retained by the board of a retirement system, board of a pension fund, or investment board. *"Compensation" means any money, thing of value, or economic benefit conferred on, or received by, a consultant in return for services rendered, or to be rendered, by himself, herself, or another. "Economic opportunity" means any purchase, sale, lease, contract, option, or other transaction or arrangement involving property or services wherein a consultant may gain an economic benefit. (If none, state "none")*

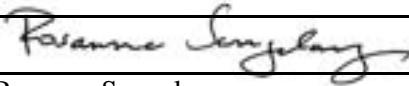
Total Compensation & Economic Opportunity

7. Any compensation or economic opportunity received in the last 24 months from an investment advisor that is recommended for selection by the consultant. *"Compensation" means any money, thing of value, or economic benefit conferred on, or received by, a consultant in return for services rendered, or to be rendered, by himself, herself, or another. "Economic opportunity" means any purchase, sale, lease, contract, option, or other transaction or arrangement involving property or services wherein a consultant may gain an economic benefit. (If none, state "none")*

Total Compensation & Economic Opportunity

Supplemental Diversity Information (Optional):

If desired, please include additional information on your firm's efforts to supplement the information provided above. Please feel free to attach or include any policies or documentation to support these efforts.

INVESTMENT ADVISOR / CONSULTANT/ PRIVATE MARKET FUND:
Company Name: Callan
Signature: 
Printed Name Rosanna Sangalang
Title: SVP, Compliance & HR
Dated: 12/15/2022

Callan LLC

Illinois Pension Code Section 1-113.23(b)

The information contained herein is designated as *Confidential* and should be viewed only by the recipient.

Illinois State Universities Retirement System Managers*	2022 Manager Client Services		No 2022 Services	Total Fees for 2022
	Educational	Analytics		Services
BlackRock	X			\$ 62,250.00
Franklin Templeton Institutional	X	X		\$ 70,000.00
Heitman	X			\$ 60,000.00
J.P. Morgan	X	X		\$ 81,000.00
Macquarie Investment Management	X			\$ 65,400.00
UBS	X			\$ 53,750.00

* This list identifies those Institutional Consulting Group investment manager clients that pay Callan fees for educational, software, database, or reporting products and services. Due to the complex corporate and organizational ownership structures of many investment management firms, parent and affiliate firm relationships are not indicated on our list.

Disclosures Pursuant to Illinois Pension Code Section 1-113.22 & 1-113.23

Beginning January 1, 2018, Sections 1-113.22 & 1-113.23 of the Illinois Pension Code requires the following disclosures from a consultant prior to the awarding of a contract:

Name of Firm:

Meketa Investment Group

1. The total number of searches for investment services made by the consultant in the prior calendar year; *(If none, state "none")*

Number of Searches
492

2. The total number of searches for investment services made by the consultant in the prior calendar year that included (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; *(If none, state "none")*

Classification	Number of Searches
Minority	32
Women	8
Person with a Disability	None

3. The total number of searches for investment services made by the consultant in the prior calendar year in which the consultant recommended for selection (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; *(If none, state "none")*

Contract	Recommended for Selection
Minority	29
Women	8
Person with a Disability	None

4. The total number of searches for investment services made by the consultant in the prior calendar year that resulted in the selection of (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; *(If none, state "none")*

Contract	Selected
Minority	19
Women	6
Person with a Disability	None

5. The total dollar amount of investment made in the previous calendar year with (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability that was selected after a search for investment services performed by the consultant. *(If none, state "none")*

Contract	Total \$ of Investment Made
Minority	\$1,084 (B)
Women	\$599(MM)
Person with a Disability	None

6. All compensation and economic opportunity received in the last 24 months from investment advisors retained by the board of a retirement system, board of a pension fund, or investment board. *"Compensation" means any money, thing of value, or economic benefit conferred on, or received by, a consultant in return for services rendered, or to be rendered, by himself, herself, or another. "Economic opportunity" means any purchase, sale, lease, contract, option, or other transaction or arrangement involving property or services wherein a consultant may gain an economic benefit. (If none, state "none")*


Total Compensation & Economic Opportunity
None

7. Any compensation or economic opportunity received in the last 24 months from an investment advisor that is recommended for selection by the consultant. *"Compensation" means any money, thing of value, or economic benefit conferred on, or received by, a consultant in return for services rendered, or to be rendered, by himself, herself, or another. "Economic opportunity" means any purchase, sale, lease, contract, option, or other transaction or arrangement involving property or services wherein a consultant may gain an economic benefit. (If none, state "none")*

Total Compensation & Economic Opportunity
None

Supplemental Diversity Information (Optional):

If desired, please include additional information on your firm's efforts to supplement the information provided above. Please feel free to attach or include any policies or documentation to support these efforts.

INVESTMENT ADVISOR / CONSULTANT/ PRIVATE MARKET FUND:
Company Name: Meketa Investment Group
Signature: 
Printed Name: David Sancewich
Title: Managing Principal
Dated: 12/12/22

Disclosures Pursuant to Illinois Pension Code Section 1-113.22 & 1-113.23

Beginning January 1, 2018, Sections 1-113.22 & 1-113.23 of the Illinois Pension Code requires the following disclosures from a consultant prior to the awarding of a contract:

Name of Firm:

CAPFinancial Partners, LLC (CAPTRUST)

1. The total number of searches for investment services made by the consultant in the prior calendar year; *(If none, state "none")*

Number of Searches
none

2. The total number of searches for investment services made by the consultant in the prior calendar year that included (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; *(If none, state "none")*

Classification	Number of Searches
Minority	none
Women	none
Person with a Disability	none

3. The total number of searches for investment services made by the consultant in the prior calendar year in which the consultant recommended for selection (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; *(If none, state "none")*

Contract	Recommended for Selection
Minority	none
Women	none
Person with a Disability	none

4. The total number of searches for investment services made by the consultant in the prior calendar year that resulted in the selection of (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability; *(If none, state "none")*

Contract	Selected
Minority	none
Women	none
Person with a Disability	none

5. The total dollar amount of investment made in the previous calendar year with (i) a minority owned business, (ii) a women-owned business, or (iii) a business owned by a person with a disability that was selected after a search for investment services performed by the consultant. *(If none, state "none")*

Contract	Total \$ of Investment Made
Minority	none
Women	none
Person with a Disability	none

6. All compensation and economic opportunity received in the last 24 months from investment advisors retained by the board of a retirement system, board of a pension fund, or investment board. *"Compensation" means any money, thing of value, or economic benefit conferred on, or received by, a consultant in return for services rendered, or to be rendered, by himself, herself, or another. "Economic opportunity" means any purchase, sale, lease, contract, option, or other transaction or arrangement involving property or services wherein a consultant may gain an economic benefit. (If none, state "none")*

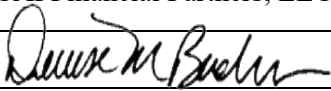
Total Compensation & Economic Opportunity
none

7. Any compensation or economic opportunity received in the last 24 months from an investment advisor that is recommended for selection by the consultant. *"Compensation" means any money, thing of value, or economic benefit conferred on, or received by, a consultant in return for services rendered, or to be rendered, by himself, herself, or another. "Economic opportunity" means any purchase, sale, lease, contract, option, or other transaction or arrangement involving property or services wherein a consultant may gain an economic benefit. (If none, state "none")*

Total Compensation & Economic Opportunity
none

Supplemental Diversity Information (Optional):

If desired, please include additional information on your firm's efforts to supplement the information provided above. Please feel free to attach or include any policies or documentation to support these efforts.

INVESTMENT ADVISOR / CONSULTANT/ PRIVATE MARKET FUND:	
Company Name:	CAPFinancial Partners, LLC (CAPTRUST)
Signature:	
Printed Name	Denise M. Buchanan
Title:	Chief Compliance Officer
Dated:	12/8/2022

SURS FY 2023 Private Equity & Private Credit Commitment Activity

Date Closed	Fund	Vintage Year	Strategy	Sub-Strategy	Geography	Commitment (USD)
Private Equity Commitments						
10/05/2022	Base10 Advancement Initiative II*	2023	Growth Equity	Generalist	North America	\$ 25,000,000
12/30/2022	GGV Capital IX LP	2023	Venture Capital	Multi-stage VC	Global - Diversified	\$ 32,000,000
12/30/2022	GGV Capital IX Plus LP	2023	Venture Capital	Multi-stage VC	Global - Diversified	\$ 8,000,000
FY 2023 Private Equity Commitments						
						\$ 65,000,000

Private Credit Commitments						
7/1/2022	Silver Rock Tactical Allocation Fund - Vintage 2022*	2022	Private Debt	Special Situations	North America	\$ 200,000,000
9/30/2022	Ares Pathfinder Core Fund	2022	Private Debt	Specialty Lending	North America	\$ 50,000,000
12/29/2022	Silver Point Specialty Credit Fund III	2023	Private Debt	Direct Lending	North America	\$ 100,000,000
FY 2023 Private Credit Commitments						
						\$ 350,000,000

*MWDBE-owned firm



Illinois State Universities Retirement System

March 9, 2023

Fourth Quarter 2022
Supplement to the Board Report



Illinois State Universities Retirement System

Agenda

1. Performance Results
2. Private Markets
3. Capital Markets Outlook & Risk Metrics
4. Appendix

Performance Results



Illinois State Universities Retirement System

US Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
US Equity	1,729,362,929	7.3	-18.1	7.2	8.3	10.7	11.8	10.9	Oct-80
<i>Dow Jones U.S. Total Stock Market</i>		<u>7.2</u>	<u>-19.5</u>	<u>6.9</u>	<u>8.7</u>	<u>10.9</u>	<u>12.0</u>	--	<u>Oct-80</u>
Excess Return		0.1	1.4	0.3	-0.4	-0.2	-0.2		
Passive Large US Equity	1,618,789,299	7.1	-17.9	7.5	9.0	11.2	12.3	11.0	Oct-80
<i>Dow Jones U.S. Total Stock Market</i>		<u>7.2</u>	<u>-19.5</u>	<u>6.9</u>	<u>8.7</u>	<u>10.9</u>	<u>12.0</u>	--	<u>Oct-80</u>
Excess Return		-0.1	1.6	0.6	0.3	0.3	0.3		
Rhumblin	1,618,789,299	7.1	-18.9	7.5	9.1	11.3	12.3	8.9	Feb-05
<i>Rhumblin Equity Index</i>		<u>7.1</u>	<u>-19.0</u>	<u>7.4</u>	<u>9.0</u>	<u>11.3</u>	<u>12.3</u>	<u>8.9</u>	<u>Feb-05</u>
Excess Return		0.0	0.1	0.1	0.1	0.0	0.0	0.0	
Mid Cap	110,573,625	10.0	-17.0	6.9	6.9	8.8	--	8.4	Dec-13
<i>Russell MidCap</i>		<u>9.2</u>	<u>-17.3</u>	<u>5.9</u>	<u>7.1</u>	<u>9.6</u>	--	<u>8.9</u>	<u>Dec-13</u>
Excess Return		0.8	0.3	1.0	-0.2	-0.8		-0.5	
Channing Capital Management- SMID	110,573,625	10.0	-17.0	3.5	1.8	--	--	1.8	Feb-18
<i>Russell 2500 Value</i>		<u>9.2</u>	<u>-13.1</u>	<u>5.2</u>	<u>4.8</u>	--	--	<u>4.6</u>	<u>Feb-18</u>
Excess Return		0.8	-3.9	-1.7	-3.0			-2.8	



Illinois State Universities Retirement System

Non US Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Non US Equity	1,352,801,440	13.8	-16.7	-0.3	0.5	4.4	4.1	5.7	May-86
<i>SURS Non US Equity Blend</i>		<i>14.1</i>	<i>-16.6</i>	<i>0.2</i>	<i>1.0</i>	<i>4.9</i>	<i>3.9</i>	--	<i>May-86</i>
Excess Return		-0.3	-0.1	-0.5	-0.5	-0.5	0.2		
Active Non-US Equity	1,046,730,576	14.1	-16.2	0.2	0.6	4.1	5.2	--	Jul-92
<i>MSCI EAFE</i>		<i>17.3</i>	<i>-14.5</i>	<i>0.9</i>	<i>1.5</i>	<i>4.5</i>	<i>4.7</i>	--	<i>Jul-92</i>
Excess Return		-3.2	-1.7	-0.7	-0.9	-0.4	0.5		
Strategic Global Advisors	310,898,353	15.4	-16.3	-0.8	-0.3	3.0	5.1	4.6	Sep-08
<i>MSCI EAFE</i>		<i>17.3</i>	<i>-14.5</i>	<i>0.9</i>	<i>1.5</i>	<i>4.5</i>	<i>4.7</i>	<i>3.3</i>	<i>Sep-08</i>
Excess Return		-1.9	-1.8	-1.7	-1.8	-1.5	0.4	1.3	
Ativo	263,662,375	12.3	-20.5	-2.9	-0.6	2.3	3.4	2.8	Aug-08
<i>MSCI ACWI ex US</i>		<i>14.3</i>	<i>-16.0</i>	<i>0.1</i>	<i>0.9</i>	<i>4.8</i>	<i>3.8</i>	<i>2.6</i>	<i>Aug-08</i>
Excess Return		-2.0	-4.5	-3.0	-1.5	-2.5	-0.4	0.2	
GlobeFlex Capital	329,213,453	14.2	-11.8	2.8	1.1	5.5	5.6	6.6	Dec-11
<i>MSCI ACWI ex USA</i>		<i>14.3</i>	<i>-16.0</i>	<i>0.1</i>	<i>0.9</i>	<i>4.8</i>	<i>3.8</i>	<i>4.8</i>	<i>Dec-11</i>
Excess Return		-0.1	4.2	2.7	0.2	0.7	1.8	1.8	
Solstein Capital	87,809,550	14.0	-17.2	2.8	3.2	--	--	3.9	Nov-17
<i>MSCI EAFE</i>		<i>17.3</i>	<i>-14.5</i>	<i>0.9</i>	<i>1.5</i>	--	--	<i>2.0</i>	<i>Nov-17</i>
Excess Return		-3.3	-2.7	1.9	1.7			1.9	
Nipun Emerging Markets	54,517,804	--	--	--	--	--	--	-0.9	Dec-22
<i>MSCI Emerging Markets</i>		--	--	--	--	--	--	<i>-1.4</i>	<i>Dec-22</i>
Excess Return								0.5	
Xponance Non US Equity	629,042	14.7	-17.5	--	--	--	--	8.2	May-20
<i>MSCI EAFE</i>		<i>17.3</i>	<i>-14.5</i>	--	--	--	--	<i>8.7</i>	<i>May-20</i>
Excess Return		-2.6	-3.0					-0.5	



Illinois State Universities Retirement System

Non US Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Passive Non-US Equity	306,070,863	12.8	-18.3	-1.9	-0.3	4.3	3.3	--	Apr-86
<i>MSCI ACWI ex USA</i>		<i>14.3</i>	<i>-16.0</i>	<i>0.1</i>	<i>0.9</i>	<i>4.8</i>	<i>3.8</i>	--	<i>Apr-86</i>
Excess Return		-1.5	-2.3	-2.0	-1.2	-0.5	-0.5		
NTAM ACWI Ex-US IMI	252,554,337	15.1	-16.1	--	--	--	--	3.9	Aug-20
<i>MSCI ACWI ex USA IMI</i>		<i>14.1</i>	<i>-16.6</i>	--	--	--	--	<i>3.4</i>	<i>Aug-20</i>
Excess Return		1.0	0.5					0.5	
State Street MSCI EM	53,053,405	10.3	-20.1	--	--	--	--	-20.3	Nov-21
<i>MSCI Emerging Markets</i>		<i>9.7</i>	<i>-20.1</i>	--	--	--	--	<i>-19.1</i>	<i>Nov-21</i>
Excess Return		0.6	0.0					-1.2	



Illinois State Universities Retirement System

Global Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Global Equity	4,683,893,858	11.0	-15.8	6.4	7.8	10.2	10.0	7.6	May-02
<i>SURS Global Equity Blend</i>		<i>9.8</i>	<i>-18.4</i>	<i>3.9</i>	<i>5.2</i>	<i>8.1</i>	<i>8.0</i>	<i>6.6</i>	<i>May-02</i>
Excess Return		1.2	2.6	2.5	2.6	2.1	2.0	1.0	
Global Equity - Active	2,528,113,758	11.3	-14.6	--	--	--	--	6.7	Nov-20
Wellington	519,734,419	9.4	-18.5	4.9	6.3	8.7	9.7	7.6	May-02
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	<i>4.0</i>	<i>5.2</i>	<i>8.1</i>	<i>8.0</i>	<i>6.8</i>	<i>May-02</i>
Excess Return		-0.4	-0.1	0.9	1.1	0.6	1.7	0.8	
Mondrian	532,446,312	13.8	-8.3	3.5	5.0	8.0	7.4	7.8	Dec-11
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	<i>4.0</i>	<i>5.2</i>	<i>8.1</i>	<i>8.0</i>	<i>8.6</i>	<i>Dec-11</i>
Excess Return		4.0	10.1	-0.5	-0.2	-0.1	-0.6	-0.8	
T. Rowe Price Global	314,215,965	8.5	-27.5	6.8	9.4	12.1	13.2	12.6	Nov-08
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	<i>4.0</i>	<i>5.2</i>	<i>8.1</i>	<i>8.0</i>	<i>9.0</i>	<i>Nov-08</i>
Excess Return		-1.3	-9.1	2.8	4.2	4.0	5.2	3.6	
Ariel Investments	223,543,602	10.9	-4.4	--	--	--	--	7.8	Aug-20
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>5.6</i>	<i>Aug-20</i>
Excess Return		1.1	14.0					2.2	
Earnest Global	251,210,462	12.5	-13.7	--	--	--	--	10.7	Aug-20
<i>MSCI ACWI IMI Net USD</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>5.8</i>	<i>Aug-20</i>
Excess Return		2.7	4.7					4.9	
GQG Partners	273,820,934	13.3	-3.7	--	--	--	--	7.1	Aug-20
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>5.6</i>	<i>Aug-20</i>
Excess Return		3.5	14.7					1.5	
Strategic Global Advisors	158,497,923	10.7	-17.3	--	--	--	--	7.3	Aug-20
<i>MSCI World</i>		<i>9.8</i>	<i>-18.1</i>	--	--	--	--	<i>6.7</i>	<i>Aug-20</i>
Excess Return		0.9	0.8					0.6	



Illinois State Universities Retirement System

Global Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Xponance Global Equity	254,644,140	11.8	-21.5	--	--	--	--	-4.6	Jan-21
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>-1.6</i>	<i>Jan-21</i>
Excess Return		2.0	-3.1					-3.0	
Xponance - Arga Inv ACWI	25,461,648	19.7	-8.2	--	--	--	--	4.4	Jan-21
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>-1.6</i>	<i>Jan-21</i>
Excess Return		9.9	10.2					6.0	
Xponance - Channing	12,717,596	11.1	-21.6	--	--	--	--	-5.6	Jan-21
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>-1.6</i>	<i>Jan-21</i>
Excess Return		1.3	-3.2					-4.0	
Xponance - Frontier GL	12,632,795	10.2	-26.2	--	--	--	--	-7.4	Jan-21
<i>MSCI ACWI</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>-1.6</i>	<i>Jan-21</i>
Excess Return		0.4	-7.8					-5.8	
Xponance - Fithian	30,852,571	12.2	--	--	--	--	--	-16.6	Mar-22
<i>MSCI ACWI</i>		<i>9.8</i>	--	--	--	--	--	<i>-11.9</i>	<i>Mar-22</i>
Excess Return		2.4						-4.7	
Xponance - Foresight	46,161,477	12.2	--	--	--	--	--	-6.2	Mar-22
<i>MSCI ACWI</i>		<i>9.8</i>	--	--	--	--	--	<i>-11.9</i>	<i>Mar-22</i>
Excess Return		2.4						5.7	
Xponance - Martin	31,188,465	8.6	--	--	--	--	--	-14.4	Mar-22
<i>MSCI ACWI</i>		<i>9.8</i>	--	--	--	--	--	<i>-11.9</i>	<i>Mar-22</i>
Excess Return		-1.2						-2.5	



Illinois State Universities Retirement System

Global Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Xponance - Maytech	29,998,069	0.5	--	--	--	--	--	-27.9	Mar-22
<i>MSCI ACWI</i>		<i>9.8</i>	--	--	--	--	--	<i>-11.9</i>	<i>Mar-22</i>
Excess Return		-9.3						-16.0	
Xponance - Centerstone	31,254,608	--	--	--	--	--	--	0.2	Dec-22
<i>MSCI ACWI</i>		--	--	--	--	--	--	<i>-3.9</i>	<i>Dec-22</i>
Excess Return								4.1	
Xponance - Promethos	34,371,378	--	--	--	--	--	--	-0.3	Dec-22
<i>MSCI ACWI</i>		--	--	--	--	--	--	<i>-3.9</i>	<i>Dec-22</i>
Excess Return								3.6	
Global Equity - Passive	2,155,780,100	10.5	-17.0	--	--	--	--	7.3	Aug-20
BTC Global Alpha Tilts	2,155,780,100	10.5	-17.0	--	--	--	--	7.3	Aug-20
<i>MSCI ACWI IMI Net USD</i>		<i>9.8</i>	<i>-18.4</i>	--	--	--	--	<i>5.8</i>	<i>Aug-20</i>
Excess Return		0.7	1.4					1.5	



Illinois State Universities Retirement System

Option Strategies (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Option Strategies	433,823,896	6.5	-10.2	4.2	--	--	--	5.0	Apr-18
<i>SURS Options Strategies Blend</i>		<u>7.0</u>	<u>-8.0</u>	<u>4.0</u>	--	--	--	<u>4.6</u>	<i>Apr-18</i>
Excess Return		-0.5	-2.2	0.2				0.4	
Neuberger Berman S&P 500	292,815,768	6.5	-10.2	5.6	--	--	--	6.3	Apr-18
<i>CBOE S&P 500 PutWrite Index USD</i>		<u>6.9</u>	<u>-7.7</u>	<u>4.7</u>	--	--	--	<u>5.0</u>	<i>Apr-18</i>
Excess Return		-0.4	-2.5	0.9				1.3	
Gladius - Options	141,008,128	6.6	-9.3	1.8	--	--	--	2.4	Jun-18
<i>SURS Gladius Benchmark</i>		<u>7.2</u>	<u>-8.9</u>	<u>3.1</u>	--	--	--	<u>3.2</u>	<i>Jun-18</i>
Excess Return		-0.6	-0.4	-1.3				-0.8	



Illinois State Universities Retirement System

Stabilized Real Assets (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Stabilized Real Assets	1,602,248,243	-3.1	13.2	11.3	8.4	7.9	--	9.0	Jun-13
<i>SURS Stabilized Real Assets Blend</i>		<u>0.5</u>	<u>20.5</u>	<u>11.3</u>	<u>9.2</u>	<u>8.8</u>	<u>--</u>	<u>9.9</u>	<u>Jun-13</u>
Excess Return		-3.6	-7.3	0.0	-0.8	-0.9		-0.9	
Core	989,949,391	-4.3	11.4	10.9	8.1	7.7	--	8.6	Jul-13
<i>NCREIF ODCE Net 1 Qtr Lag</i>		<u>1.7</u>	<u>22.7</u>	<u>11.9</u>	<u>9.6</u>	<u>9.1</u>	<u>--</u>	<u>10.1</u>	<u>Jul-13</u>
Excess Return		-6.0	-11.3	-1.0	-1.5	-1.4		-1.5	
UBS Trumbull Property Fund	101,138,405	-5.4	5.3	5.0	3.7	4.3	6.4	5.0	Jun-06
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>11.4</u>	<u>9.3</u>	<u>8.9</u>	<u>9.9</u>	<u>6.8</u>	<u>Jun-06</u>
Excess Return		-5.7	-15.7	-6.4	-5.6	-4.6	-3.5	-1.8	
JP Morgan Strategic	288,966,201	-5.2	3.8	7.8	6.8	6.8	--	7.9	Jul-14
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>11.4</u>	<u>9.3</u>	<u>8.9</u>	<u>--</u>	<u>9.6</u>	<u>Jul-14</u>
Excess Return		-5.5	-17.2	-3.6	-2.5	-2.1		-1.7	
Heitman Hart Fund	300,172,857	-4.9	9.8	10.5	7.8	7.8	--	8.8	Aug-14
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>11.4</u>	<u>9.3</u>	<u>8.9</u>	<u>--</u>	<u>9.6</u>	<u>Aug-14</u>
Excess Return		-5.2	-11.2	-0.9	-1.5	-1.1		-0.8	
Prologis Target US Logis	188,218,883	-0.4	34.8	--	--	--	--	33.9	Nov-20
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>15.9</u>	<u>Nov-20</u>
Excess Return		-0.7	13.8					18.0	
Clarion Lion Properties Fund, LP	111,418,279	-5.2	--	--	--	--	--	-4.8	Aug-22
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>3.3</u>	<u>Aug-22</u>
Excess Return		-5.5						-8.1	



Illinois State Universities Retirement System

Stabilized Real Assets (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Core Plus	574,264,537	-1.1	16.8	12.2	--	--	--	9.4	Oct-18
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>11.4</u>	--	--	--	<u>9.5</u>	<i>Oct-18</i>
Excess Return		-1.4	-4.2	0.8				-0.1	
Blackstone Property Partners	272,034,711	-0.9	16.6	10.0	--	--	--	8.4	Mar-19
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>11.4</u>	--	--	--	<u>9.8</u>	<i>Mar-19</i>
Excess Return		-1.2	-4.4	-1.4				-1.4	
Carlyle Property Investors	262,245,188	-2.2	17.6	16.5	--	--	--	12.4	Oct-18
<i>SURS Real Estate Blend</i>		<u>0.3</u>	<u>21.0</u>	<u>11.4</u>	--	--	--	<u>9.5</u>	<i>Oct-18</i>
Excess Return		-2.5	-3.4	5.1				2.9	
GI Partners ETS FUND	39,984,638	5.6	--	--	--	--	--	5.6	May-22
Core Infrastructure	38,034,315	-0.1	0.8	--	--	--	--	-8.4	Feb-21
<i>FTSE Dev Core Infra 50/50</i>		<u>9.5</u>	<u>-5.0</u>	--	--	--	--	<u>6.4</u>	<i>Feb-21</i>
Excess Return		-9.6	5.8					-14.8	
Blackrock GL Renewable	38,034,315	-0.1	0.8	--	--	--	--	-8.4	Feb-21
<i>FTSE Dev Core Infra 50/50</i>		<u>9.5</u>	<u>-5.0</u>	--	--	--	--	<u>6.4</u>	<i>Feb-21</i>
Excess Return		-9.6	5.8					-14.8	



Illinois State Universities Retirement System

Public Credit (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Public Credit	1,204,182,918	6.1	-10.4	-1.5	--	--	--	-0.5	Sep-19
<i>SURS Credit Fixed Income Blend</i>		<u>4.7</u>	<u>-11.3</u>	<u>-2.2</u>	--	--	--	<u>-1.1</u>	<i>Sep-19</i>
Excess Return		1.4	0.9	0.7				0.6	
Diversified Credit	854,302,419	5.9	-10.5	-1.0	1.2	2.0	--	1.9	Jun-13
<i>SURS Credit ex EMD Blend</i>		<u>5.2</u>	<u>-11.1</u>	<u>-1.1</u>	<u>1.3</u>	<u>1.8</u>	--	<u>1.9</u>	<i>Jun-13</i>
Excess Return		0.7	0.6	0.1	-0.1	0.2		0.0	
PIMCO Global Credit	266,923,760	5.5	-10.1	-1.1	--	--	--	-0.5	Oct-19
<i>SURS Credit ex EMD Blend</i>		<u>5.2</u>	<u>-11.1</u>	<u>-1.1</u>	--	--	--	<u>-0.5</u>	<i>Oct-19</i>
Excess Return		0.3	1.0	0.0				0.0	
Neuberger Berman	587,364,088	6.1	-10.8	-0.7	--	--	--	-0.1	Oct-19
<i>SURS Credit ex EMD Blend</i>		<u>5.2</u>	<u>-11.1</u>	<u>-1.1</u>	--	--	--	<u>-0.5</u>	<i>Oct-19</i>
Excess Return		0.9	0.3	0.4				0.4	
Bivium Credit	349,880,499	5.7	-12.1	--	--	--	--	3.5	Apr-20
<i>Bivium Credit Blend</i>		<u>5.0</u>	<u>-14.0</u>	--	--	--	--	<u>0.3</u>	<i>Apr-20</i>
Excess Return		0.7	1.9					3.2	
BiviumEMD - LM Capital Group	67,369,302	5.7	-7.4	-0.1	1.7	3.9	--	2.9	Apr-15
<i>JP Morgan Corporate EMBI Broad TR USD</i>		<u>4.6</u>	<u>-13.8</u>	<u>-2.8</u>	<u>0.5</u>	<u>3.0</u>	--	<u>2.5</u>	<i>Apr-15</i>
Excess Return		1.1	6.4	2.7	1.2	0.9		0.4	
BiviumEMD - GIA Partners LLC	59,766,158	7.0	-12.3	-1.4	1.2	4.3	--	3.1	Apr-15
<i>JP Morgan Corporate EMBI Broad TR USD</i>		<u>4.6</u>	<u>-13.8</u>	<u>-2.8</u>	<u>0.5</u>	<u>3.0</u>	--	<u>2.5</u>	<i>Apr-15</i>
Excess Return		2.4	1.5	1.4	0.7	1.3		0.6	
Bivium - RVX Asset Mgmt	58,315,458	6.0	-12.2	-1.9	--	--	--	-1.9	Jan-20
<i>JP Morgan Corporate EMBI Broad TR USD</i>		<u>4.6</u>	<u>-13.8</u>	<u>-2.8</u>	--	--	--	<u>-2.8</u>	<i>Jan-20</i>
Excess Return		1.4	1.6	0.9				0.9	



Illinois State Universities Retirement System

Public Credit (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Bivium - New Century Advisors	47,325,166	5.4	-16.9	-3.2	--	--	--	-2.8	Nov-19
<i>BBgBC Global Corp Agg Blend</i>		<u>5.4</u>	<u>-16.7</u>	<u>-3.7</u>	--	--	--	<u>-3.2</u>	<u>Nov-19</u>
Excess Return		0.0	-0.2	0.5				0.4	
Bivium - Integrity	38,299,594	2.8	-15.2	-2.4	--	--	--	-2.3	Nov-19
<i>Bloomberg US Corporate Inv Grade TR</i>		<u>3.6</u>	<u>-15.8</u>	<u>-2.9</u>	--	--	--	<u>-2.6</u>	<u>Nov-19</u>
Excess Return		-0.8	0.6	0.5				0.3	
Bivium - GIA Partners, LLC	78,654,225	6.3	-11.3	0.0	--	--	--	0.4	Nov-19
<i>ICE/BAML GI HY Const Hedge Blend</i>		<u>5.2</u>	<u>-11.4</u>	<u>-0.9</u>	--	--	--	<u>-0.3</u>	<u>Nov-19</u>
Excess Return		1.1	0.1	0.9				0.7	
Bivium Cash	409	0.8	1.3	--	--	--	--	--	Sep-19
<i>91 Day T-Bills</i>		<u>0.8</u>	<u>1.5</u>	--	--	--	--	--	<u>Sep-19</u>
Excess Return		0.0	-0.2						
Bivium Fixed Income Transition	5	0.0	0.0	10.5	--	--	--	--	Oct-19
<i>Bivium Credit Blend</i>		<u>5.0</u>	<u>-14.0</u>	<u>-2.6</u>	--	--	--	--	<u>Oct-19</u>
Excess Return		-5.0	14.0	13.1					



Illinois State Universities Retirement System

Private Credit (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Credit	418,892,805	0.2	3.8	--	--	--	--	9.8	Jul-20
<i>SURS Private Credit Blend</i>		<u>4.2</u>	<u>-5.1</u>	--	--	--	--	<u>3.8</u>	<u>Jul-20</u>
Excess Return		-4.0	8.9					6.0	
PIMCO Disco III	16,719,940	-1.2	-3.2	--	--	--	--	7.9	Jul-20
<i>SURS Private Credit Blend</i>		<u>4.2</u>	<u>-5.1</u>	--	--	--	--	<u>3.8</u>	<u>Jul-20</u>
Excess Return		-5.4	1.9					4.1	
Silver Rock Tactical Allocation Fund, L.P.	141,132,277	-0.2	-1.4	--	--	--	--	3.7	Feb-21
<i>SURS Private Credit Blend</i>		<u>4.2</u>	<u>-5.1</u>	--	--	--	--	<u>-0.5</u>	<u>Feb-21</u>
Excess Return		-4.4	3.7					4.2	
Crayhill Principal Strategies Fund II	24,028,511	0.3	75.9	--	--	--	--	44.3	Jun-21
<i>SURS Private Credit Blend</i>		<u>4.2</u>	<u>-5.1</u>	--	--	--	--	<u>-2.0</u>	<u>Jun-21</u>
Excess Return		-3.9	81.0					46.3	
NB Private Debt Fund IV	87,754,921	1.6	12.3	--	--	--	--	9.7	Oct-21
<i>SURS Private Credit Blend</i>		<u>4.2</u>	<u>-5.1</u>	--	--	--	--	<u>-3.8</u>	<u>Oct-21</u>
Excess Return		-2.6	17.4					13.5	
Turning Rock Fund II	22,978,587	1.8	--	--	--	--	--	3.4	Feb-22
<i>SURS Private Credit Blend</i>		<u>4.2</u>	--	--	--	--	--	<u>-4.2</u>	<u>Feb-22</u>
Excess Return		-2.4						7.6	
Fortress Lending Fund III	30,008,313	-0.9	--	--	--	--	--	-4.9	Mar-22
<i>SURS Private Credit Blend</i>		<u>4.2</u>	--	--	--	--	--	<u>-3.0</u>	<u>Mar-22</u>
Excess Return		-5.1						-1.9	



Illinois State Universities Retirement System

Private Credit (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Ares Pathfinder Core Fund	53,392,861	0.2	--	--	--	--	--	0.2	Jul-22
<i>SURS Private Credit Blend</i>		<i>4.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>4.7</i>	<i>Jul-22</i>
Excess Return		-4.0						-4.5	
Silver Rock Tactical Allocation Fund 2022	42,877,395	-1.4	--	--	--	--	--	0.2	Aug-22
<i>SURS Private Credit Blend</i>		<i>4.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>1.0</i>	<i>Aug-22</i>
Excess Return		-5.6						-0.8	



Illinois State Universities Retirement System

Non-Core Real Estate (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Non-Core Real Estate	504,419,969	0.9	15.4	8.0	8.1	8.9	--	9.1	Sep-15
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>10.5</i>	<i>--</i>	<i>10.8</i>	<i>Sep-15</i>
Excess Return		0.2	-7.4	-5.1	-2.8	-1.6		-1.7	
Blackstone Re Part Asia	5,327,484	-3.3	--	--	--	--	--	-3.3	Jul-22
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>5.6</i>	<i>Jul-22</i>
Excess Return		-4.0						-8.9	
Blackstone RE EU VI	36,808,970	4.7	5.9	8.0	--	--	--	8.0	Nov-19
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>12.7</i>	<i>Nov-19</i>
Excess Return		4.0	-16.9	-5.1				-4.7	
Blue Vista RE Partners IV	14,620,266	-7.9	15.4	18.4	15.5	--	--	10.9	May-16
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>--</i>	<i>--</i>	<i>10.4</i>	<i>May-16</i>
Excess Return		-8.6	-7.4	5.3	4.6			0.5	
Brasa Real Estate Fund II	19,034,777	12.8	--	--	--	--	--	4.1	Mar-22
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>16.6</i>	<i>Mar-22</i>
Excess Return		12.1						-12.5	
Brookfield Fund III	31,594,398	0.3	12.9	9.5	--	--	--	7.2	Apr-19
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>11.6</i>	<i>Apr-19</i>
Excess Return		-0.4	-9.9	-3.6				-4.4	
Brookfield Strategy RE Partners IV	16,212,700	12.2	--	--	--	--	--	3.9	Aug-22
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>4.0</i>	<i>Aug-22</i>
Excess Return		11.5						-0.1	
Brookfield Strategy RE Partners II	32,621,453	2.3	31.4	18.8	15.6	--	--	13.9	Mar-16
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>--</i>	<i>--</i>	<i>10.4</i>	<i>Mar-16</i>
Excess Return		1.6	8.6	5.7	4.7			3.5	
Cabot Industrial Value VI	47,672,073	-0.9	24.7	--	--	--	--	23.9	Sep-20
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>16.2</i>	<i>Sep-20</i>
Excess Return		-1.6	1.9					7.7	



Illinois State Universities Retirement System

Non-Core Real Estate (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
CHC RE Fund VIII	1,273,852	-1.2	52.9	45.6	--	--	--	33.0	Oct-18
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>11.2</i>	<i>Oct-18</i>
Excess Return		-1.9	30.1	32.5				21.8	
CHC Realty Partners IX	40,028,143	1.3	27.7	--	--	--	--	27.9	Oct-21
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>24.2</i>	<i>Oct-21</i>
Excess Return		0.6	4.9					3.7	
Dune Fund III	65,442,333	0.7	4.0	0.2	2.8	5.6	--	6.0	Jul-13
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>10.5</i>	<i>--</i>	<i>11.6</i>	<i>Jul-13</i>
Excess Return		0.0	-18.8	-12.9	-8.1	-4.9		-5.6	
Dune Fund II	6,069,827	-5.3	1.5	3.3	4.5	6.2	10.2	6.8	Apr-09
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>10.5</i>	<i>11.6</i>	<i>8.7</i>	<i>Apr-09</i>
Excess Return		-6.0	-21.3	-9.8	-6.4	-4.3	-1.4	-1.9	
Dune Fund IV	26,263,538	7.4	25.6	0.0	--	--	--	0.0	Aug-19
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>12.1</i>	<i>Aug-19</i>
Excess Return		6.7	2.8	-13.1				-12.1	
Franklin Templeton MDP RE 2015	53,734,697	0.0	17.7	0.8	2.0	-1.2	--	-2.1	Sep-15
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>10.5</i>	<i>--</i>	<i>10.8</i>	<i>Sep-15</i>
Excess Return		-0.7	-5.1	-12.3	-8.9	-11.7		-12.9	
Long Wharf RE Partners VI	27,652,016	0.3	19.5	30.5	--	--	--	23.4	Sep-19
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>12.3</i>	<i>Sep-19</i>
Excess Return		-0.4	-3.3	17.4				11.1	
Longpoint Realty Partners	37,564,584	2.3	13.7	--	--	--	--	12.6	Dec-21
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>23.3</i>	<i>Dec-21</i>
Excess Return		1.6	-9.1					-10.7	



Illinois State Universities Retirement System

Non-Core Real Estate (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Mesirow MFIRE II	13,749,929	-1.6	-2.8	-0.1	1.8	3.5	5.6	3.6	Apr-12
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>10.5</i>	<i>11.6</i>	<i>11.6</i>	<i>Apr-12</i>
Excess Return		-2.3	-25.6	-13.2	-9.1	-7.0	-6.0	-8.0	
New Cap Partners Fund III	508,031								
Westbrook Real Estate Fund XI	23,912,130	-4.0	21.1	--	--	--	--	14.0	Dec-20
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>18.3</i>	<i>Dec-20</i>
Excess Return		-4.7	-1.7					-4.3	



Illinois State Universities Retirement System

Non-Core Real Assets (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Non-Core Real Estate Debt	72,977,760	1.1	5.5	6.0	7.3	--	--	7.1	Dec-17
<i>NCREIF ODCE Net Lagged + 1.5%</i>		<i>0.7</i>	<i>22.8</i>	<i>13.1</i>	<i>10.9</i>	<i>--</i>	<i>--</i>	<i>10.9</i>	<i>Dec-17</i>
Excess Return		0.4	-17.3	-7.1	-3.6			-3.8	
Basis Investment Group Fund I	20,478,666								
Oaktree RE Debt Fund II	10,314,449								
Basis Investment Group Fund II	16,360,535								
Torchlight Debt Fund VII	25,824,110								

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Non-Core Farmland	46,463,073	0.5	8.4	--	--	--	--	-1.9	Nov-20
<i>NCREIF Farmland 1 Qtr Lag</i>		<i>2.0</i>	<i>10.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>7.7</i>	<i>Nov-20</i>
Excess Return		-1.5	-1.8					-9.6	
Homestead Capital	46,463,073	0.5	8.4	--	--	--	--	-1.9	Nov-20
<i>NCREIF Farmland 1 Qtr Lag</i>		<i>2.0</i>	<i>10.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>7.7</i>	<i>Nov-20</i>
Excess Return		-1.5	-1.8					-9.6	



Illinois State Universities Retirement System

Infrastructure (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Non-Core Infrastructure	130,340,891	2.8	16.5	15.6	11.4	9.2	9.3	10.4	Jan-10
<i>CPI+5% 1 Qtr Lagged</i>		<i>1.4</i>	<i>13.6</i>	<i>10.2</i>	<i>8.9</i>	<i>8.4</i>	<i>7.6</i>	<i>7.6</i>	<i>Jan-10</i>
Excess Return		1.4	2.9	5.4	2.5	0.8	1.7	2.8	
Alinda Capital Partners	7,296,989								
Macquarie Inf Partners Fnd III	44,791,153	7.0	26.9	23.4	19.0	16.5	--	12.2	Oct-14
<i>CPI+5% 1 Qtr Lagged</i>		<i>1.4</i>	<i>13.6</i>	<i>10.2</i>	<i>8.9</i>	<i>8.4</i>	<i>--</i>	<i>7.8</i>	<i>Oct-14</i>
Excess Return		5.6	13.3	13.2	10.1	8.1		4.4	
Macquarie Infra Partners IV	59,906,900								
Ember Infrastructure Partners	6,876,788	-7.0	-8.0	--	--	--	--	-16.4	Sep-21
<i>CPI-U + 5%</i>		<i>1.2</i>	<i>11.7</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>11.6</i>	<i>Sep-21</i>
Excess Return		-8.2	-19.7					-28.0	
Pantheon Global Infra Fund IV	11,469,060	14.7	--	--	--	--	--	1.7	Mar-22
<i>CPI+5% 1 Qtr Lagged</i>		<i>1.4</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>11.2</i>	<i>Mar-22</i>
Excess Return		13.3						-9.5	



Illinois State Universities Retirement System

Private Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity- Fund of Funds	2,121,434,814	-3.1	1.2	22.3	18.0	15.9	14.3	15.3	Jul-90
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>12.9</i>	<i>12.7</i>	<i>Jul-90</i>
Excess Return		2.8	20.4	16.6	9.4	4.1	1.4	2.6	
Pantheon Ventures	8,218,561								
Pantheon 2014 Global Fund	129,470,764	0.1	3.1	20.0	16.6	13.8	--	11.1	Feb-15
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>--</i>	<i>10.3</i>	<i>Feb-15</i>
Excess Return		6.0	22.3	14.3	8.0	2.0		0.8	
Pantheon Europe VI	8,472,693								
Pantheon Europe VII	22,277,461	12.1	-11.8	18.4	15.8	16.8	11.9	11.9	Jan-13
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>12.9</i>	<i>12.9</i>	<i>Jan-13</i>
Excess Return		18.0	7.4	12.7	7.2	5.0	-1.0	-1.0	
Pantheon USA IX	70,227,472	0.0	-3.9	29.2	24.6	20.9	17.4	17.4	Jan-13
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>12.9</i>	<i>12.9</i>	<i>Jan-13</i>
Excess Return		5.9	15.3	23.5	16.0	9.1	4.5	4.5	
Pantheon USA VIII	33,087,185								
Fairview Capital	111,126,160	0.0	22.0	25.4	20.6	16.1	--	8.1	Apr-14
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>--</i>	<i>10.8</i>	<i>Apr-14</i>
Excess Return		5.9	41.2	19.7	12.0	4.3		-2.7	
Fairview Lincoln Fund Series B	27,503,415	0.0	2.4	--	--	--	--	11.6	Mar-21
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-2.4</i>	<i>Mar-21</i>
Excess Return		5.9	21.6					14.0	
M2-EM PE Fund	117,330,343	0.0	3.4	30.9	21.1	--	--	15.0	Oct-16
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>--</i>	<i>--</i>	<i>11.2</i>	<i>Oct-16</i>
Excess Return		5.9	22.6	25.2	12.5			3.8	
Adams Street 2008	38,144,306								
Adams Street 2009	55,466,008								



Illinois State Universities Retirement System

Private Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Adams Street 2012	72,682,612	-12.7	-13.1	20.6	17.7	15.3	12.2	10.6	Apr-12
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>12.9</i>	<i>13.8</i>	<i>Apr-12</i>
Excess Return		-6.8	6.1	14.9	9.1	3.5	-0.7	-3.2	
Adams Street 2013	114,621,043	-12.4	-12.1	19.7	18.0	15.4	--	11.1	Mar-13
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>--</i>	<i>13.2</i>	<i>Mar-13</i>
Excess Return		-6.5	7.1	14.0	9.4	3.6		-2.1	
Adams Street 2014	126,805,614	-11.2	-9.0	21.3	19.5	16.5	--	14.0	May-14
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>--</i>	<i>11.3</i>	<i>May-14</i>
Excess Return		-5.3	10.2	15.6	10.9	4.7		2.7	
Adams Street 2015 Global Fund	170,550,462	-11.4	-8.7	24.6	22.0	28.7	--	27.1	Sep-15
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>--</i>	<i>10.1</i>	<i>Sep-15</i>
Excess Return		-5.5	10.5	18.9	13.4	16.9		17.0	
Adams Street 2016 Global Fund	183,576,973	-7.5	-1.5	25.2	20.2	--	--	23.2	Dec-16
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>--</i>	<i>--</i>	<i>10.7</i>	<i>Dec-16</i>
Excess Return		-1.6	17.7	19.5	11.6			12.5	
Adams Street 2017 Global Fund	120,383,812								
Adams Street 2018 Global	99,438,134								
Adams Street Secondary Fund 5	6,383,751	-3.7	-3.3	8.0	7.2	8.2	5.5	5.4	Oct-12
<i>SURS PE Blend</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	<i>8.6</i>	<i>11.8</i>	<i>12.9</i>	<i>13.3</i>	<i>Oct-12</i>
Excess Return		2.2	15.9	2.3	-1.4	-3.6	-7.4	-7.9	
Pantheon Multi-Strategy 2017	85,580,396								
Mesirow Private Equity	278,885,566								
Mesirow Co-Inv	77,961,035								
Pantheon Access 2018	154,208,851								



Illinois State Universities Retirement System

Private Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity- Direct (Aksia)	780,695,962	-0.4	10.2	9.8	--	--	--	--	Oct-19
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	--	--	--	--	<i>Oct-19</i>
Excess Return		5.5	29.4	4.1					
Cortec Group Fund VII	42,046,046	0.3	45.7	22.4	--	--	--	21.8	Dec-19
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	--	--	--	<i>6.3</i>	<i>Dec-19</i>
Excess Return		6.2	64.9	16.7				15.5	
Oceansound Partners Fund	23,939,198	4.0	8.7	--	--	--	--	7.8	Feb-20
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	--	--	--	--	<i>4.9</i>	<i>Feb-20</i>
Excess Return		9.9	27.9					2.9	
Harvest Partners VIII	85,866,960	1.0	6.8	18.1	--	--	--	16.0	Dec-19
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	--	--	--	<i>6.3</i>	<i>Dec-19</i>
Excess Return		6.9	26.0	12.4				9.7	
Bregal Sagemount III	35,382,497	1.4	17.7	-26.0	--	--	--	-25.4	Dec-19
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>5.7</i>	--	--	--	<i>6.3</i>	<i>Dec-19</i>
Excess Return		7.3	36.9	-31.7				-31.7	
Reverence Capital II (TC)	64,502,199	6.1	27.9	--	--	--	--	30.6	Mar-20
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	--	--	--	--	<i>4.0</i>	<i>Mar-20</i>
Excess Return		12.0	47.1					26.6	
Clearlake Capital Partners VI	42,188,048	-2.7	15.1	--	--	--	--	22.2	May-20
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	--	--	--	--	<i>3.3</i>	<i>May-20</i>
Excess Return		3.2	34.3					18.9	
HG Capital Genesis 9 (TC)	9,938,676								
HG Capital Saturn Fund 2	24,615,193								
HG Capital Saturn Fund 3	89,179								
Rubicon Tech Partners 3	32,087,536	-1.8	0.4	--	--	--	--	0.4	Jul-20
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	--	--	--	--	<i>13.9</i>	<i>Jul-20</i>
Excess Return		4.1	19.6					-13.5	



Illinois State Universities Retirement System

Private Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Torrey Cove Co-Investment Fund	164,677,571	0.8	23.1	--	--	--	--	17.5	Sep-20
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>7.7</i>	<i>Sep-20</i>
Excess Return		6.7	42.3					9.8	
MBK Partners Fund V (TC)	14,048,076	-14.4	-20.5	--	--	--	--	7.1	Mar-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-2.4</i>	<i>Mar-21</i>
Excess Return		-8.5	-1.3					9.5	
Altaris Health PTR V	13,517,552	4.6	14.2	--	--	--	--	1.9	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		10.5	33.4					7.1	
Avance Inv Partners	6,527,951	4.0	7.8	--	--	--	--	5.1	Jul-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-9.4</i>	<i>Jul-21</i>
Excess Return		9.9	27.0					14.5	
Base 10 Adv Initiative FD	20,049,636	-4.1	-2.8	--	--	--	--	-1.9	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		1.8	16.4					3.3	
GGV Capital VIII	13,377,326	4.4	23.2	--	--	--	--	-2.6	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		10.3	42.4					2.6	
GGV Discovery III	5,898,167	11.8	28.7	--	--	--	--	23.9	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		17.7	47.9					29.1	
Oak HC-FT Partners V-A	2,184,248								
Oak HC-FT Partners IV	21,345,123	-0.3	13.1	--	--	--	--	-1.3	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		5.6	32.3					3.9	



Illinois State Universities Retirement System

Private Equity (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Stellex Capital Partners II	15,218,023	-2.5	27.3	--	--	--	--	-7.2	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		3.4	46.5					-2.0	
Thoma Bravo Fund XIV	43,383,304	-9.2	-12.7	--	--	--	--	-8.7	Apr-21
<i>MSCI ACWI IMI +2% 1 Qtr Lag</i>		<i>-5.9</i>	<i>-19.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-5.2</i>	<i>Apr-21</i>
Excess Return		-3.3	6.5					-3.5	
GGV Capital VIII Plus	2,614,693								
One Rock Capital III	23,287,187								
Nautic Partners X	6,417,398								
Orchid Asia VIII	3,427,230								
One Equity Partners VIII	13,231,135								
Base 10 Partners III (TC)	2,977,019								
Clearlake Capital Partners VII	20,144,726								
Thoma Bravo Fund XV	12,762,532								
Inflexion Buyout Fund VI	618,022								
Bregal Sagemount IV	795,682								
Harvest Partners IX	6,247,286								
HG Capital Genesis 10	40,138								
Advent Int'l GPE X	1								
Rubicon Tech Partners IV Fund	2,851,597								
Great Hill Equity Partners VIII	1,177,446								
Thoma Bravo Discover Fund IV-A	3,221,360								



Illinois State Universities Retirement System

Inflation Sensitive (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Inflation Sensitive	1,060,795,742	2.0	-11.8	1.1	1.4	2.4	--	1.8	Jul-13
<i>SURS Inflation Sensitive Blend</i>		<i>2.0</i>	<i>-11.8</i>	<i>1.2</i>	<i>1.0</i>	<i>1.8</i>	<i>--</i>	<i>1.4</i>	<i>Jul-13</i>
Excess Return		0.0	0.0	-0.1	0.4	0.6		0.4	
TIPS	1,060,795,742	2.0	-11.8	1.1	2.0	2.6	1.0	3.8	Jan-04
<i>Bloomberg US TIPS TR</i>		<i>2.0</i>	<i>-11.8</i>	<i>1.2</i>	<i>2.1</i>	<i>2.6</i>	<i>1.1</i>	<i>3.6</i>	<i>Jan-04</i>
Excess Return		0.0	0.0	-0.1	-0.1	0.0	-0.1	0.2	
Rhumblin TIPS	1,060,795,742	2.0	-11.8	1.1	2.0	--	--	2.0	Jun-17
<i>Bloomberg US TIPS TR</i>		<i>2.0</i>	<i>-11.8</i>	<i>1.2</i>	<i>2.1</i>	<i>--</i>	<i>--</i>	<i>2.1</i>	<i>Jun-17</i>
Excess Return		0.0	0.0	-0.1	-0.1			-0.1	



Illinois State Universities Retirement System

Principal Protection (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Principal Protection	1,682,118,972	1.6	-8.6	-2.0	0.4	1.2	--	1.4	Jun-13
<i>BC US Int Ag x Credit Blend</i>		<i>1.5</i>	<i>-9.6</i>	<i>-2.2</i>	<i>0.4</i>	<i>1.2</i>	<i>--</i>	<i>1.4</i>	<i>Jun-13</i>
Excess Return		0.1	1.0	0.2	0.0	0.0		0.0	
Garcia Hamilton	445,471,472	2.2	-6.9	-1.6	--	--	--	-1.6	Sep-19
<i>BC US Int Ag x Credit Blend</i>		<i>1.5</i>	<i>-9.6</i>	<i>-2.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-2.0</i>	<i>Sep-19</i>
Excess Return		0.7	2.7	0.6				0.4	
Pugh Capital	409,340,514	1.4	-9.6	-2.3	--	--	--	-2.1	Sep-19
<i>BC US Int Ag x Credit Blend</i>		<i>1.5</i>	<i>-9.6</i>	<i>-2.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-2.0</i>	<i>Sep-19</i>
Excess Return		-0.1	0.0	-0.1				-0.1	
LM Capital	414,414,013	1.5	-8.7	-2.0	--	--	--	-1.8	Sep-19
<i>BC US Int Ag x Credit Blend</i>		<i>1.5</i>	<i>-9.6</i>	<i>-2.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-2.0</i>	<i>Sep-19</i>
Excess Return		0.0	0.9	0.2				0.2	
Ramirez	412,892,974	1.2	-9.4	-2.0	--	--	--	-2.1	Sep-19
<i>BC US Int Ag x Credit Blend</i>		<i>1.5</i>	<i>-9.6</i>	<i>-2.2</i>	<i>--</i>	<i>--</i>	<i>--</i>	<i>-2.0</i>	<i>Sep-19</i>
Excess Return		-0.3	0.2	0.2				-0.1	



Illinois State Universities Retirement System

Crisis Risk Offset (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Crisis Risk Offset	4,093,909,866	-7.6	8.0	4.7	--	--	--	4.0	Dec-19
<i>SURS CRO Blend</i>		<i>-5.5</i>	<i>12.9</i>	<i>7.3</i>	--	--	--	<i>6.7</i>	<i>Dec-19</i>
Excess Return		-2.1	-4.9	-2.6				-2.7	
Long Duration	416,446,554	-0.6	-29.0	-7.6	--	--	--	-7.6	Jan-20
<i>BBgBarc US Govt Long TR</i>		<i>-0.6</i>	<i>-29.2</i>	<i>-7.4</i>	--	--	--	<i>-7.4</i>	<i>Jan-20</i>
Excess Return		0.0	0.2	-0.2				-0.2	
Rhumblin Long Duration	416,446,554	-0.6	-29.0	-7.6	--	--	--	-7.6	Jan-20
<i>BBgBarc US Govt Long TR</i>		<i>-0.6</i>	<i>-29.2</i>	<i>-7.4</i>	--	--	--	<i>-7.4</i>	<i>Jan-20</i>
Excess Return		0.0	0.2	-0.2				-0.2	
Systematic Trend Following	2,144,903,018	-10.3	27.5	12.0	--	--	--	11.1	Dec-19
<i>CS Mgd Futures 15% Vol</i>		<i>-10.7</i>	<i>34.7</i>	<i>15.0</i>	--	--	--	<i>14.2</i>	<i>Dec-19</i>
Excess Return		0.4	-7.2	-3.0				-3.1	
Credit Suisse Asset Mgmt	577,259,971	-9.7	36.5	17.8	--	--	--	17.8	Jan-20
<i>CS Mgd Futures 15% Vol</i>		<i>-10.7</i>	<i>34.7</i>	<i>15.0</i>	--	--	--	<i>15.0</i>	<i>Jan-20</i>
Excess Return		1.0	1.8	2.8				2.8	
Campbell & Company	527,236,173	-11.7	36.4	13.7	--	--	--	12.4	Nov-19
<i>CS Mgd Futures 15% Vol</i>		<i>-10.7</i>	<i>34.7</i>	<i>15.0</i>	--	--	--	<i>13.4</i>	<i>Nov-19</i>
Excess Return		-1.0	1.7	-1.3				-1.0	
Aspect Capital	564,875,098	-6.0	38.4	14.0	--	--	--	12.7	Nov-19
<i>CS Mgd Futures 15% Vol</i>		<i>-10.7</i>	<i>34.7</i>	<i>15.0</i>	--	--	--	<i>13.4</i>	<i>Nov-19</i>
Excess Return		4.7	3.7	-1.0				-0.7	
Longtail Alpha	475,531,775	-14.1	-0.8	1.8	--	--	--	1.8	Jan-20
<i>CS Mgd Futures 15% Vol</i>		<i>-10.7</i>	<i>34.7</i>	<i>15.0</i>	--	--	--	<i>15.0</i>	<i>Jan-20</i>
Excess Return		-3.4	-35.5	-13.2				-13.2	



Illinois State Universities Retirement System

Crisis Risk Offset (Net-of-Fees) | As of December 31, 2022

	Market Value (\$)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Alternative Risk Premia	1,130,376,213	-2.5	3.9	0.2	--	--	--	0.5	Dec-19
90 Day T-Bill + 2%		1.5	4.1	2.9	--	--	--	2.9	Dec-19
Excess Return		-4.0	-0.2	-2.7				-2.4	
PIMCO Commodity Alpha Fund	158,329,620	7.1	5.4	10.6	8.8	--	--	10.4	Jun-16
PIMCO Commodity Alpha Fund Benchmark		1.5	4.1	-1.7	-1.9	--	--	-0.8	Jun-16
Excess Return		5.6	1.3	12.3	10.7			11.2	
Versor	321,006,778	-2.4	4.1	-6.7	--	--	--	-6.6	Dec-19
90 Day T-Bill + 2%		1.5	4.1	2.9	--	--	--	2.9	Dec-19
Excess Return		-3.9	0.0	-9.6				-9.5	
Lombard Odier	308,311,490	-4.1	-5.9	-5.8	--	--	--	-5.7	Dec-19
90 Day T-Bill + 2%		1.5	4.1	2.9	--	--	--	2.9	Dec-19
Excess Return		-5.6	-10.0	-8.7				-8.6	
PIMCO Alternative Risk	342,728,325	-5.2	11.9	--	--	--	--	7.3	May-20
90 Day T-Bill + 2%		1.5	4.1	--	--	--	--	2.8	May-20
Excess Return		-6.7	7.8					4.5	
Long Volatility	370,673,667	-2.4	--	--	--	--	--	-1.9	Jul-22
CBOE Eurekahedge Long Volatility Index		-4.0	--	--	--	--	--	-1.9	Jul-22
Excess Return		1.6						0.0	
One River	370,673,667	-2.4	--	--	--	--	--	-1.9	Jul-22
CBOE Eurekahedge Long Volatility Index		-4.0	--	--	--	--	--	-1.9	Jul-22
Excess Return		1.6						0.0	
Tail Risk	31,510,415								
LongTail Tail Risk	31,510,415								



Illinois State Universities Retirement System

Overlay Performance Detail¹ | As of December 31, 2022

Asset Class	Overlay Exposure (\$)
Traditional Growth	384,116,131
Non-Traditional Growth	0
Principal Protection	0
Stabilized Growth	0
Inflation Sensitive	0
Crisis Risk Offset	0
Net Exposure	384,116,131

Overlay Performance	Incremental Gain/Loss (\$)(Gross)	Return as a % of Total Fund (Gross)
Quarter	46,647,036	0.21
Since Inception ²	157,255,337	0.10

Index	QTD	YTD	1 Year
S&P 500	7.56%	-18.11%	-18.11%
MSCI EAFE	17.34%	-14.45%	-14.45%
Bloomberg Agg.	1.87%	-13.01%	-13.01%
Bloomberg Commodity Index	2.22%	16.09%	16.09%

¹ Data on this page provided by PARAMETRIC

² Inception Date: September 2014

Private Markets



Illinois State Universities Retirement System

Infrastructure & Real Estate Internal Rates of Return Trailing Periods¹ | As of September 30, 2022

Infrastructure Investments ¹			
Investment Name	3 YR	5 YR	Since Inception
Mature			
Alinda Infrastructure II, L.P.	-7.26%	-9.18%	0.28%
Macquarie Infrastructure Partners II	32.04%	12.43%	8.97%
Maturing (5-9 Years)			
Macquarie Infrastructure Partners III	22.06%	18.42%	15.96%
Macquarie Infrastructure Partners IV	13.98%	--	12.87%

Real Estate Investments				
Investment Name	3 YR	5 YR	10YR	Since Inception
Liquidated				
RREEF America REIT II	--	--	8.34%	2.97%
Mature (10+ Years)				
Dune Real Estate Fund II	-2.68%	2.25%	13.68%	14.34%
UBS Trumbull Property Fund	6.84%	5.61%	7.81%	6.65%
RREEF America REIT III	0.00%	0.00%	16.25%	-3.78%
Franklin Templeton EMREFF	-22.69%	-0.96%	15.75%	12.62%
Maturing (5-9 Years)				
Dune Real Estate Fund III	-2.44%	1.74%	--	6.30%
Franklin Templeton Private Real Estate Fund	-22.23%	9.4%	22.75%	20.38%
Heitman America Real Estate Trust, L.P.	11.96%	9.35%	--	9.75%
JP Morgan Strategic Property Fund	10.48%	8.27%	--	8.88%
MFIRE Global Partnership Fund II, L.P.	-0.55%	1.70%	7.25%	6.69%
Franklin Templeton MDP RE 2015, L.P.	5.87%	6.03%	--	5.20%
Blue Vista Real Estate Partners IV	15.14%	13.70%	--	12.54%
Brookfield Real Estate Partners II	17.09%	14.43%	--	14.03%
Crow Holdings Realty Partners VII	7.02%	12.08%	--	10.99%
Immature (Less than 5 Years)				
Crow Holdings VIII	26.88%	--	--	23.73%
Brookfield Strategic Real Estate Partners III	13.56%	--	--	12.59%
Carlyle Property Investors	17.49%	--	--	15.14%
BIG Real Estate Fund I	9.59%	--	--	9.46%
Oaktree Real Estate Debt Fund II	4.69%	--	--	6.34%

¹ Performance data provided by Northern Trust.



Illinois State Universities Retirement System

Real Estate Tracking Schedule¹ | As of September 30, 2022

Investment Name	Vintage Year	Capital Commitment (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple	ITD IRR (%)
Liquidated							
RREEF America REIT II	2005	160,106,290	160,106,291	188,512,381	--	1.2	3.0
Mature (10+ Years)							
RREEF America REIT III	2006	30,719,155	30,719,155	21,959,033	262,763	0.7	-3.8
UBS Trumbull Property Fund	2006	220,000,000	246,783,045	363,160,284	107,029,055	1.9	6.7
Dune Real Estate Fund II	2009	40,000,000	46,650,688	73,152,806	6,069,827	1.7	14.3
Franklin Templeton EMREFF	2011	75,000,000	67,423,459	95,431,548	2,870,680	1.5	12.6
Maturing (5-9 Years)							
Franklin Templeton Private Real Estate Fund	2012	50,000,000	45,075,523	65,491,952	1,587,473	1.5	20.4
MFIRE Global Partnership Fund II, L.P.	2012	60,000,000	39,300,000	40,778,439	16,340,381	1.5	6.7
Dune Real Estate Fund III	2013	100,000,000	102,132,261	73,674,738	65,470,851	1.4	6.3
Heitman America Real Estate Trust, L.P.	2014	150,000,000	162,340,648	13,145,891	315,764,739	2.0	9.8
JP Morgan Strategic Property Fund	2014	150,000,000	150,000,000	2,590	304,691,571	2.0	8.9
Franklin Templeton MDP RE 2015, L.P.	2015	90,000,000	77,722,773	32,288,925	58,668,298	1.2	5.2
Blue Vista Real Estate Partners IV	2016	35,000,000	35,000,000	41,026,721	14,620,266	1.6	12.5
Brookfield Strategic Real Estate Partners II	2016	35,000,000	24,614,958	14,900,252	34,785,000	2.0	14.0
Crow Holdings Realty Partners VII	2016	35,000,000	34,939,345	46,305,220	1,336,884	1.4	11.0
Immature (Less than 5 Years)							
Oaktree Real Estate Debt Fund II	2017	30,000,000	19,922,393	12,899,161	10,451,022	1.2	6.3
BIG Real Estate Fund I	2018	30,000,000	23,653,354	8,585,595	22,248,962	1.3	9.5
Carlyle Property Investors, L.P.	2018	100,000,000	124,067,638	14,638,361	180,345,818	1.6	15.1
Crow Holdings VIII	2018	20,000,000	19,236,005	27,045,943	2,920,545	1.6	23.7
Blackstone Property Partners L.P.	2019	200,000,000	200,084,987	84,987	272,034,711	1.4	9.8
Blackstone Real Estate Partners Europe VI	2019	73,473,750	38,479,436	16,307,437	32,149,937	1.3	15.0
Brookfield Strategic Real Estate Partners III	2019	35,000,000	23,643,704	--	31,875,335	1.4	12.6
Dune Real Estate Fund IV	2019	50,000,000	22,456,862	--	25,232,771	1.1	5.6
Long Wharf Real Estate VI	2019	40,000,000	33,364,523	15,064,420	26,567,587	1.3	28.2
Cabot Industrial Fund VI	2020	50,000,000	36,581,970	--	47,672,073	1.3	34.0
Prologis Targeted US Logistics Holdings, L.P.	2020	100,000,000	100,000,000	11,088	188,707,758	1.9	38.3
Westbrook Realty Management XI	2020	75,000,000	31,493,416	10,108,832	25,094,293	1.1	16.1
Big Real Estate Fund II, L.P.	2021	48,800,000	19,991,711	2,644,530	17,505,307	1.0	1.2

¹ Performance data provided by Northern Trust



Illinois State Universities Retirement System

Real Estate Tracking Schedule¹ | As of September 30, 2022

Investment Name	Vintage Year	Capital Commitment (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple	ITD IRR (%)
Immature (Less than 5 Years)							
Brasa Real Estate Fund II, L.P.1	2021	40,000,000	20,413,012	1,696	16,990,787	0.8	-19.1
Crow Holdings Realty Partners IX, L.P.	2021	50,000,000	42,777,880	13,554,665	40,312,611	1.3	36.2
Longpoint Realty Fund II, L.P.	2021	50,000,000	27,500,000	373,413	30,064,584	1.1	16.9
Newport Capital Partners Fund III, L.P.	2021	6,055,556	10,901,045	11,026,548	508,031	1.1	17.3
Torchlight Debt Fund VII, L.P.	2021	50,000,000	25,000,000	--	25,824,110	1.0	4.6
Blackstone Real Estate Partners Asia III	2022	50,000,000	5,197,970	--	4,552,718	0.9	-12.4
Brookfield Strategic Real Estate Partners IV	2022	75,000,000	12,323,989	--	13,451,621	1.1	9.2
CF Clarion Lion Properties Fund	2022	10,000,000	10,018,142	-33,335	9,963,994	1.0	-0.9
GI Partners ETS Fund, L.P.	2022	75,000,000	38,699,023	--	39,984,638	1.0	7.2

¹ Performance data provided by Northern Trust



Illinois State Universities Retirement System

Infrastructure Tracking Schedule¹ | As of September 30, 2022

Investment Name	Vintage Year	Commitment Amount (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple	IRR (%)
Liquidated							
<i>None</i>							
Mature (10+ Years)							
Alinda Infrastructure II, L.P.	2009	40,000,000	42,317,898	35,174,504	7,872,878	1.0	0.3
Macquarie Infrastructure Partners II	2010	40,000,000	48,206,475	77,212,146	233,873	1.6	9.0
Maturing (5-9 Years)							
Macquarie Infrastructure Partners III	2014	50,000,000	44,300,470	39,749,423	50,233,291	2.0	16.0
Immature (Less than 5 Years)							
Macquarie Infrastructure Partners IV	2018	50,000,000	46,134,243	6,986,729	59,906,900	1.5	12.9
Global Renewable Power III	2021	100,000,000	27,530,248	203,279	26,757,488	1.0	-2.0
Ember Infrastructure	2021	34,107,954	8,206,759	--	6,876,788	0.8	-18.2
PGIF IV Feeder, L.P.	2022	100,000,000	10,247,199	--	11,217,983	1.1	18.8

¹ Information provided by Northern Trust.



Illinois State Universities Retirement System

Private Equity Tracking Schedule – Grouped by Manager¹ | As of September 30, 2022

Investment Name	Vintage Year	Capital Commitment (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple	ITD IRR (%)
Liquidated							
Adams Street Venture Partnership Acq. Fund II LP	1990	10,000,000	10,000,000	20,658,228	-	2.1	28.1
Muller & Monroe - ILPEFF	2005	25,000,000	21,006,042	18,387,253	-	0.9	-2.5
Muller & Monroe - MPEFF	2003	25,000,000	24,199,726	36,082,976	-	1.5	8.3
Private Opportunity Fund	2004	25,000,000	25,000,000	25,050,000	-	1.0	0.0
Mature (10+ Years)							
Adams Street 2007 Global Opportunities Portfolio	2007	100,000,000	91,713,646	146,958,473	3,163,945	1.6	8.1
Adams Street 2008 Global Offering	2008	100,000,000	92,903,014	169,319,320	40,484,351	2.3	14.5
Adams Street 2009 Global Offering	2009	100,000,000	91,572,000	147,213,731	57,878,985	2.2	14.4
Adams Street 2012 Global Fund LP	2012	80,000,000	72,430,078	80,688,832	73,797,640	2.1	14.7
Adams Street Global Opportunities Secondary Fund	2009	25,000,000	22,125,000	36,920,455	279,187	1.7	11.6
Adams Street Global Secondary Fund 5 LP	2012	20,000,000	15,422,938	15,133,955	5,692,833	1.4	6.6
Adams Street Separate Account	1990	901,378,251	885,278,742	1,688,135,402	2,654,271	1.9	28.2
Brinson Non-US Partnership Fund - 1998	1998	79,405,010	76,288,292	129,999,388	2,171,666	1.7	11.6
Pantheon Europe Fund III LP	2004	87,608,642	83,724,747	151,127,511	1,176,921	1.8	14.6
Pantheon Europe Fund VI LP	2008	39,185,632	37,359,377	57,524,895	7,766,405	1.8	10.0
Pantheon Europe Fund VII LP	2011	36,770,768	33,342,612	42,758,994	20,208,412	1.9	12.8
Pantheon Global Secondary Fund II Ltd	2004	25,000,000	23,750,000	27,354,925	365,258	3.5	1.2
Pantheon USA Fund IX LP	2013	85,444,334	77,284,334	121,634,998	69,350,028	2.5	17.6
Pantheon Separate Account (SURS) LP	2002	599,121,922	570,838,807	954,335,413	8,992,250	1.7	10.2
Pantheon USA Fund VIII LP	2007	103,188,193	95,882,674	173,494,503	34,491,285	2.2	13.0
Progress Venture Capital	1995	19,899,949	19,900,608	17,344,285	275,413	0.9	-2.3
Maturing (5-9 Years)							
Adams Street 2013 Global Fund LP	2013	100,000,000	90,996,160	81,835,927	117,158,942	2.2	15.5
Adams Street 2014 Global Fund LP	2014	100,000,000	92,180,699	75,416,649	129,999,360	2.2	17.6
Adams Street 2015 Global Fund LP	2015	125,000,000	109,419,554	75,641,536	172,979,034	2.3	25.8
Adams Street 2016 Global Fund LP	2016	150,000,000	123,461,936	53,823,162	183,576,973	1.9	22.9
Fairview Capital Lincoln Fund I LP	2014	175,000,000	89,972,599	35,550,123	136,996,236	2.0	17.8
Muller & Monroe - EPEFF	2016	100,000,000	92,250,402	63,578,123	120,025,914	2.0	24.7
Pantheon Multi-Strat 2014 LP	2014	125,000,000	102,889,358	50,500,000	130,293,672	1.8	16.2



Illinois State Universities Retirement System

Private Equity Tracking Schedule – Grouped by Manager¹ | As of September 30, 2022

Investment Name	Vintage Year	Capital Commitment (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple	ITD IRR (%)
Immature (Less than 5 Years)							
Adams Street 2017 Global Fund LP	2017	90,000,000	71,890,233	20,372,431	118,021,866	1.9	26.0
Adams Street 2018 Global Fund LP	2018	90,000,000	56,921,764	9,343,530	90,486,340	1.8	29.5
Altaris Health Partners V	2021	25,000,000	11,919,963	--	13,080,037	1.1	13.0
Avance Investment Partners, LP	2022	25,000,000	6,853,131	105,926	6,857,479	1.0	1.8
Base10 Advancement Initiative I	2021	25,000,000	21,147,469	255,699	20,049,636	1.0	-3.6
Base10 Partners III	2022	20,000,000	2,784,490	--	2,375,945	0.9	-14.7
Bregal Sagemount III-B, LP	2020	50,000,000	32,118,622	40,323	35,382,497	1.1	9.4
Bregal Sagemount IV-B, LP	2022	25,000,000	1,183,807	--	915,548	0.8	-22.7
Clearlake Capital Partners VI	2020	30,000,000	29,162,392	1,319,087	42,188,048	1.5	34.3
Clearlake Capital Partners VII LP	2022	50,000,000	17,241,297	1,217	16,951,983	1.0	-2.0
Cortec Group Fund VII LP	2019	35,000,000	22,866,654	4,584	34,097,807	1.5	25.6
GGV Capital VIII	2022	21,600,000	10,584,000	--	12,405,326	1.2	17.7
GGV Capital VIII Plus	2022	5,400,000	2,403,000	--	2,533,693	1.1	6.2
GGV Discovery III	2021	9,000,000	3,915,000	--	5,718,167	1.5	44.7
Harvest Partners IX, LP	2022	50,000,000	3,921,232	--	2,944,259	0.8	-24.9
Harvest Partners VIII, LP	2019	70,000,000	64,743,472	6,131,217	85,866,960	1.4	22.8
Hg Genesis 9A	2021	15,172,501	6,714,052	--	7,097,786	1.1	5.8
Hg Saturn 2A	2020	37,500,000	18,994,025	1,228,733	23,607,540	1.3	24.7
Inflexion Buyout Fund VI	2022	21,860,100	351,391	--	573,529	1.6	63.2
MBK Partners Fund V	2021	50,000,000	15,345,283	--	14,048,076	1.0	-9.6
Nautic Partners X, LP	2022	25,000,000	6,524,327	--	6,417,398	1.0	-3.2
Oak Hc/FT Partners IV	2021	25,000,000	19,228,532	--	21,104,543	1.1	11.0
Oak Hc/FT Partners V	2022	40,000,000	1,177,436	--	2,022,113	1.7	71.7
OceanSound Partners	2020	25,000,000	13,762,050	403,224	19,149,850	1.4	16.7
One Equity Partners VIII, LP	2022	25,000,000	9,625,159	12,553	11,128,843	1.2	21.8
One Rock Capital Partners III, LP	2021	35,000,000	19,842,300	49,744	23,287,187	1.2	23.2
Orchid Asia VIII, LP	2022	30,000,000	2,957,436	--	1,933,674	0.7	-34.6

¹ Information provided by Northern Trust. Nominal IRR reported for funds with less than 1 year of data.



Illinois State Universities Retirement System

Private Equity Tracking Schedule – Grouped by Manager¹ | As of September 30, 2022

Investment Name	Vintage Year	Capital Commitment (\$)	Draw Down (\$)	Distributed (\$)	Market Value (\$)	TVPI Multiple	ITD IRR (%)
Immature (Less than 5 Years)							
Mesirow Financial Private Equity Special Fund B, LP	2018	280,000,000	191,560,000	--	267,797,566	1.4	19.6
Mesirow Financial Private Equity Fund VII-B LP	2017	40,000,000	39,747,031	28,663,902	78,601,035	2.7	40.3
Pantheon Multi-Strat 2017 LP	2017	90,000,000	62,173,643	14,240,518	83,731,349	1.6	23.0
Pantheon Multi-Strat 2018 LP	2018	180,000,000	102,694,011	1,800,000	137,972,454	1.4	20.3
Reverence Capital Partners Opportunities Fund III	2020	50,000,000	39,542,349	3,349,305	65,819,916	1.8	35.9
Rubicon Technology Partners III LP	2020	32,500,000	23,648,788	--	26,388,751	1.1	8.0
Stellex Capital Partners II	2021	25,000,000	8,432,502	61,202	9,472,714	1.1	13.8
Thoma Bravo Fund XIV	2021	50,000,000	47,072,109	--	41,357,802	0.9	-11.0
Thoma Bravo Fund XV LP	2022	25,000,000	7,647,507	--	7,549,458	1.0	-1.6
Torreycove Co-Investment Fund I LP	2020	200,000,000	131,252,736	5,492,184	158,453,447	1.3	24.4
Total		5,332,101,902	4,199,319,937	4,589,344,435	2,817,118,663	1.8	20.3

¹ Information provided by Northern Trust. Nominal IRR reported for funds with less than 1 year of data.

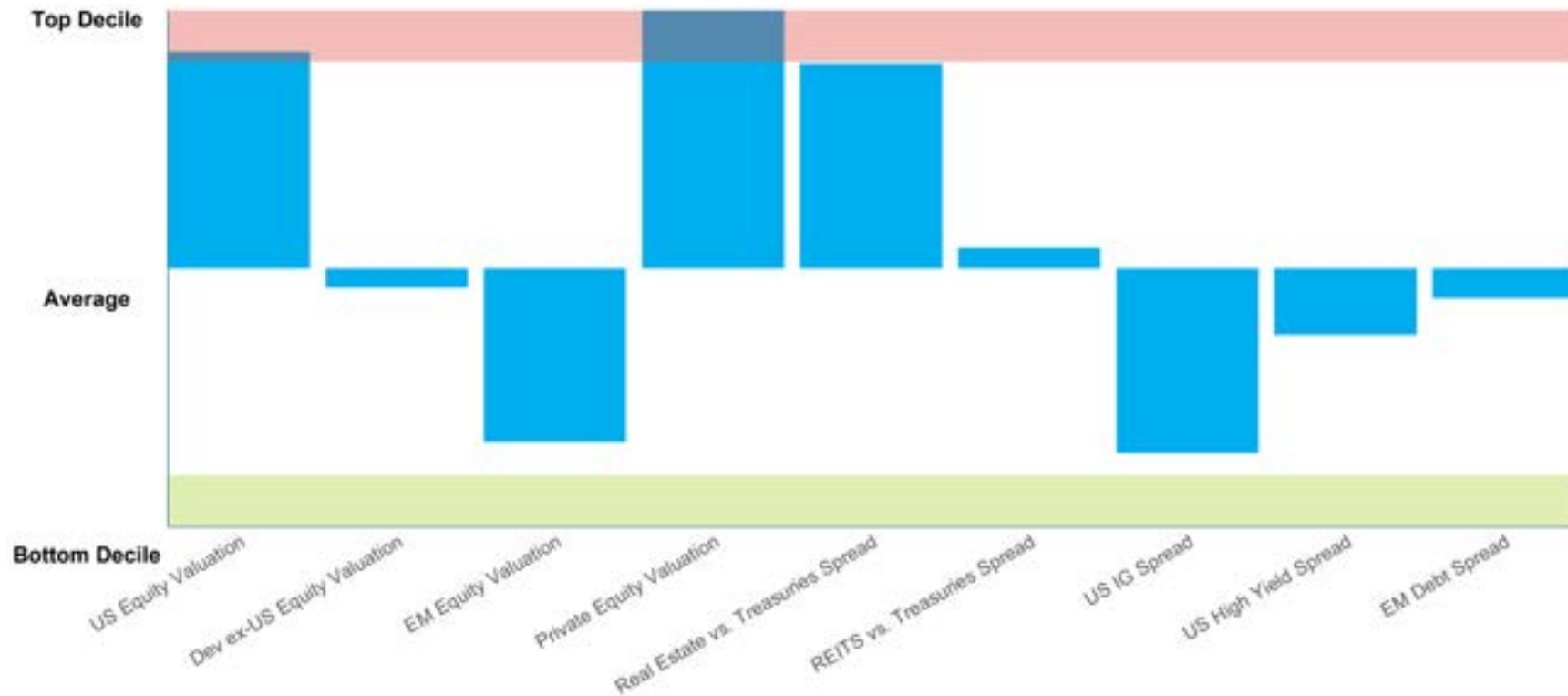
Capital Markets Outlook & Risk Metrics

As of December 31, 2022

Capital Markets Outlook

- Major equity and bond markets finished 2022 in negative territory, marking one of the worst years for investors since the early 1980s. However, many markets showed some resiliency with positive performance in the second half of the year.
- China's relaxation of its Zero COVID policy helped support equity market rallies on the hopes of a re-opening boom after a long period of underperformance.
- US equity markets lagged Non-US equity markets in December as the ECB's gradualist approach to interest rate hikes helped support better than expected economic growth.
- With the notable support from China's equity rally and a weaker US dollar, emerging markets outperformed US stocks.
- Value stocks took the lead in December, proving more resilient than growth stocks both in and outside of the US.
- In spite of slowing inflation, major fixed income markets sold off in December and finished the year in double digit negative territory.
- Short-term rates continued to climb due to the Fed's 50 bp rate hike in December, leading to a steep inversion of the yield curve.
- Natural resource stocks and commodities sold off in December but retained solid positive returns for the full year.

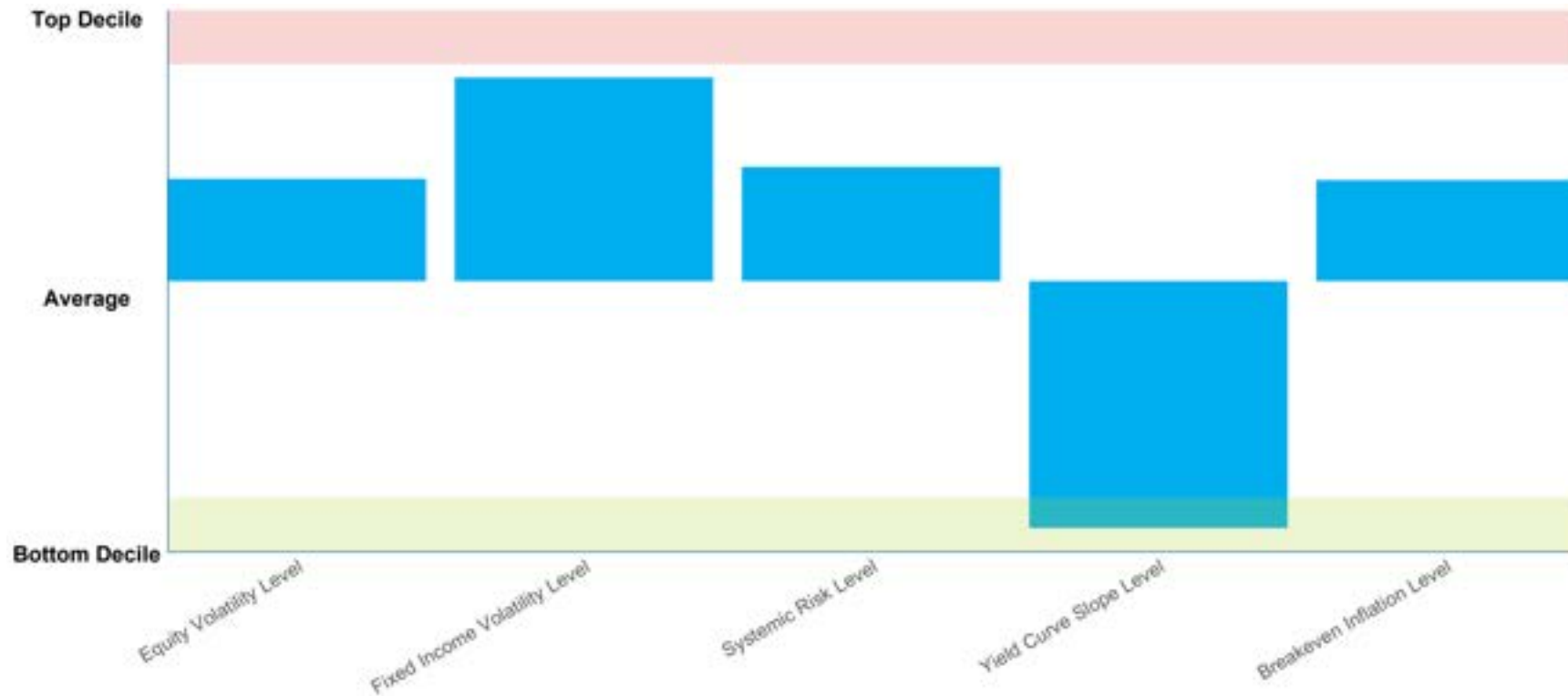
Risk Overview/Dashboard (1)
(As of December 31, 2022)¹



→ Dashboard (1) summarizes the current state of the different valuation metrics per asset class relative to their own history.

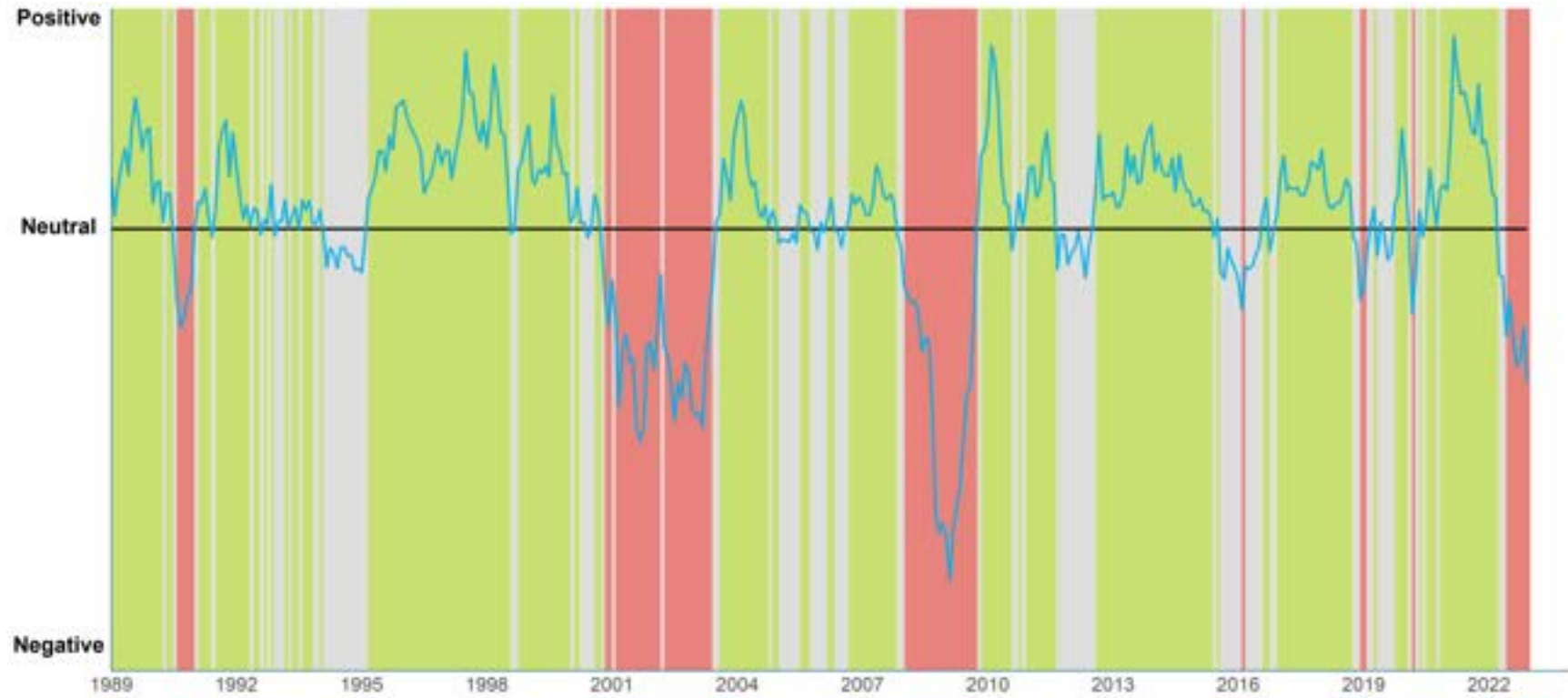
¹ With the exception of Private Equity Valuation, that is YTD as of December 31, 2021.

Risk Overview/Dashboard (2) (As of December 31, 2022)



→ Dashboard (2) shows how the current level of each indicator compares to its respective history.

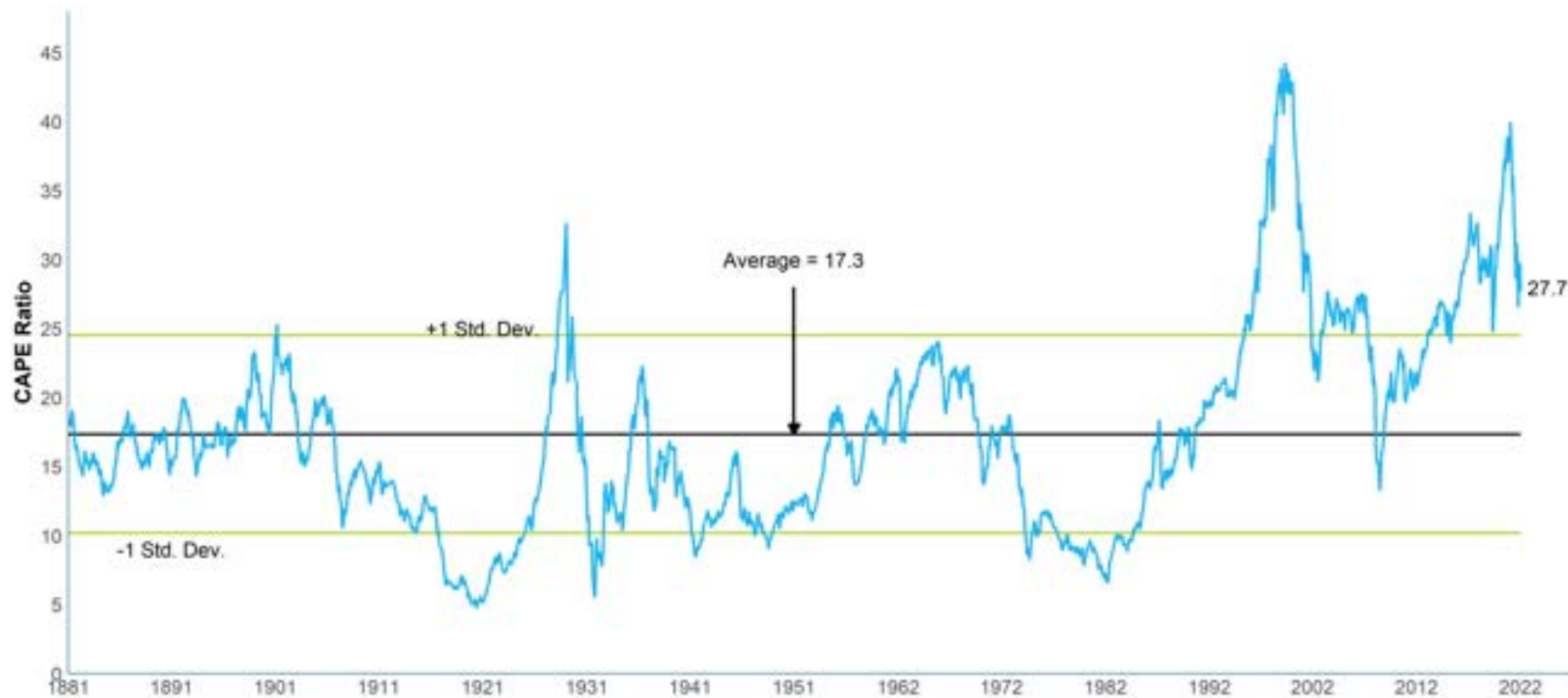
Market Sentiment Indicator (All History)
(As of December 31, 2022)



Market Sentiment Indicator (Last Three Years)
(As of December 31, 2022)



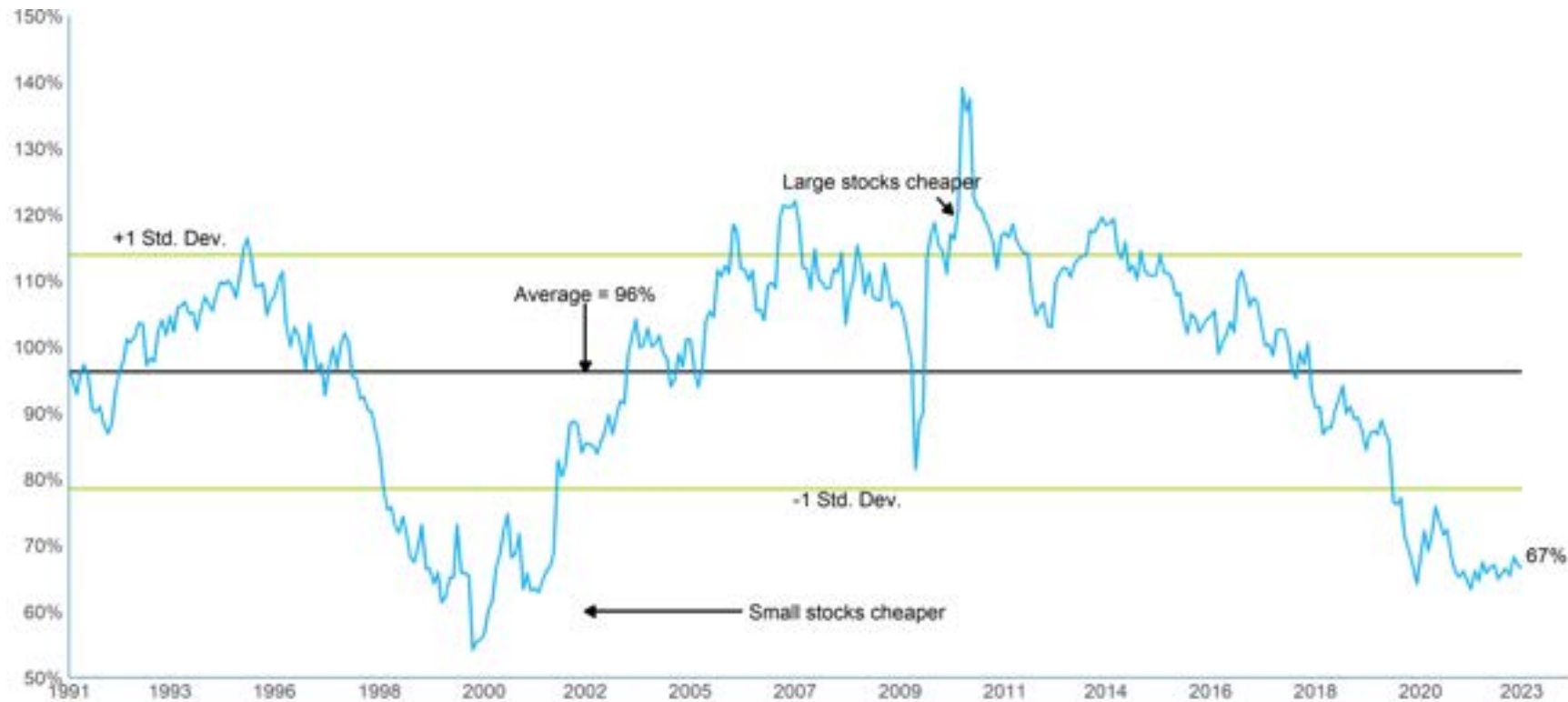
US Equity Cyclically Adjusted P/E¹ (As of December 31, 2022)



→ This chart details one valuation metric for US equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group.

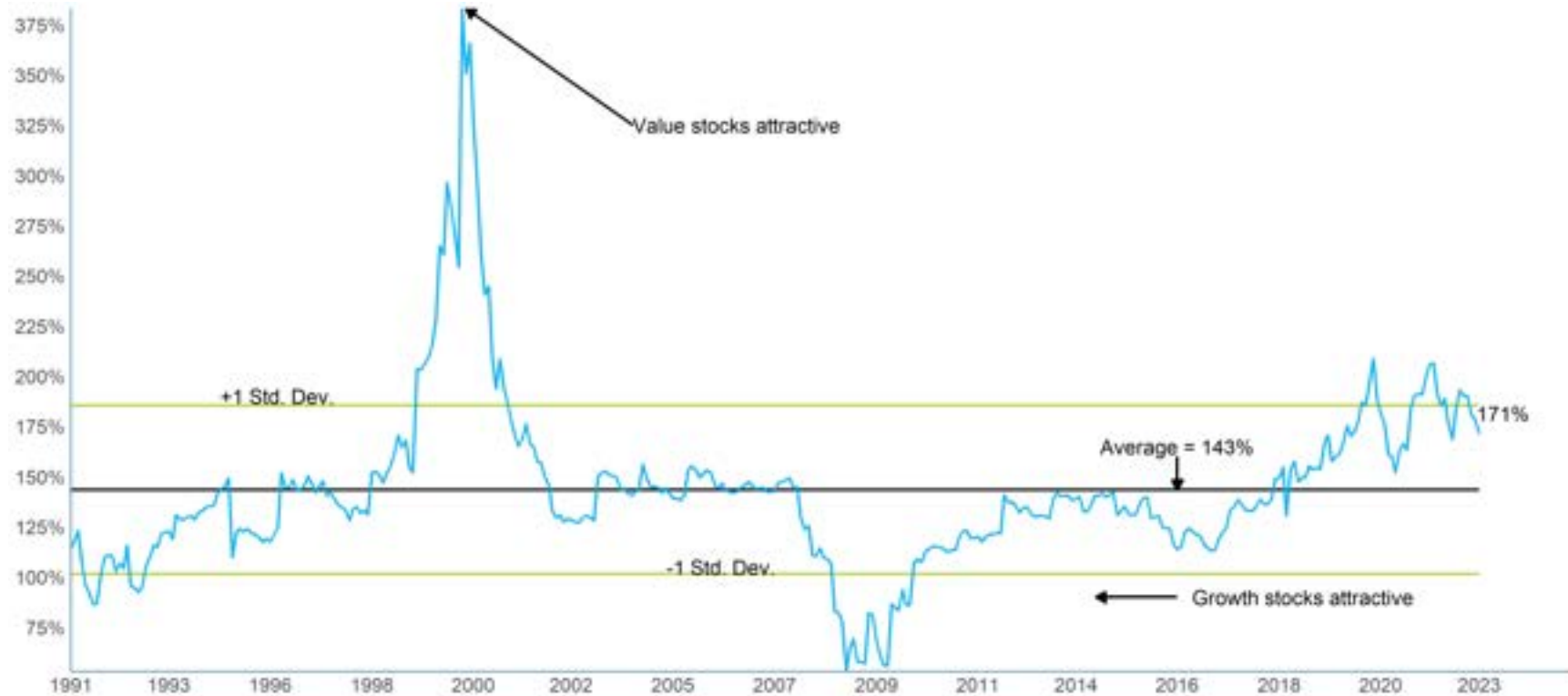
Small Cap P/E vs. Large Cap P/E¹ (As of December 31, 2022)



→ This chart compares the relative attractiveness of small cap US equities vs. large cap US equities on a valuation basis. A higher (lower) figure indicates that large cap (small cap) is more attractive.

¹ Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month "as reported" earnings.

Growth P/E vs. Value P/E¹ (As of December 31, 2022)



→ This chart compares the relative attractiveness of US growth equities vs. US value equities on a valuation basis. A higher (lower) figure indicates that value (growth) is more attractive.

¹ Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month "as reported" earnings.

Developed International Equity Cyclically Adjusted P/E¹
(As of December 31, 2022)



→ This chart details one valuation metric for developed international equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ Developed International Equity (MSCI EAFE Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.

Emerging Market Equity Cyclically Adjusted P/E¹ (As of December 31, 2022)



→ This chart details one valuation metric for emerging markets equities. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.

Private Equity Multiples¹ (As of December 31, 2022)²



→ This chart details one valuation metric for the private equity market. A higher (lower) figure indicates more expensive (cheaper) valuation relative to history.

¹ Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.

² Annual Data, as of December 31, 2021

Core Real Estate Spread vs. Ten-Year Treasury¹
 (As of December 31, 2022)



→ This chart details one valuation metric for the private core real estate market. A higher (lower) figure indicates cheaper (more expensive) valuation.

¹ Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

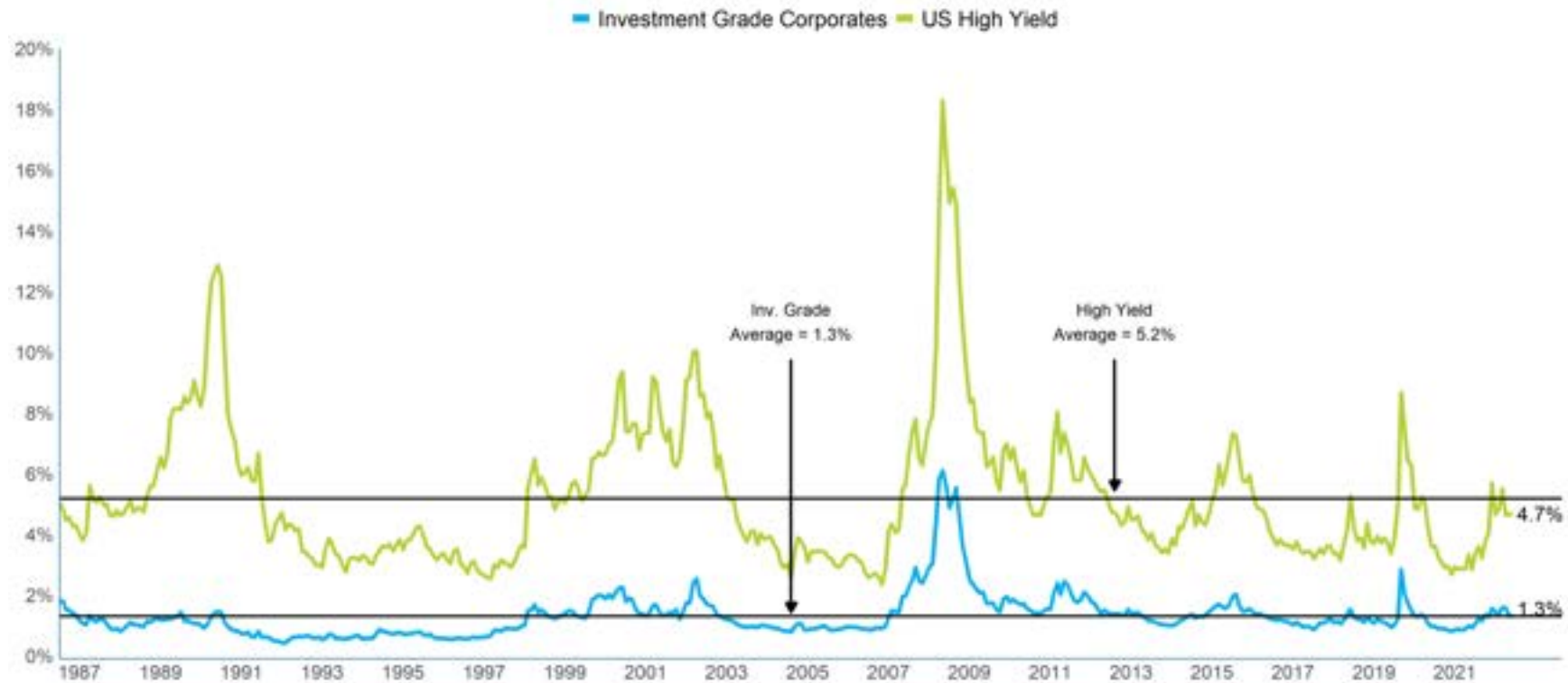
REITs Dividend Yield Spread vs. Ten-Year Treasury¹ (As of December 31, 2022)



→ This chart details one valuation metric for the public REITs market. A higher (lower) figure indicates cheaper (more expensive) valuation.

¹ REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, US Treasury. REITs are proxied by the yield for the NAREIT Equity Index.

Credit Spreads¹ (As of December 31, 2022)



→ This chart details one valuation metric for the US credit markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

¹ Credit Spreads – Source: Bloomberg. High Yield is proxied by the Bloomberg High Yield Index and Investment Grade Corporates are proxied by the Bloomberg US Corporate Investment Grade Index. Spread is calculated as the difference between the Yield to Worst of the respective index and the 10-Year US Treasury yield.

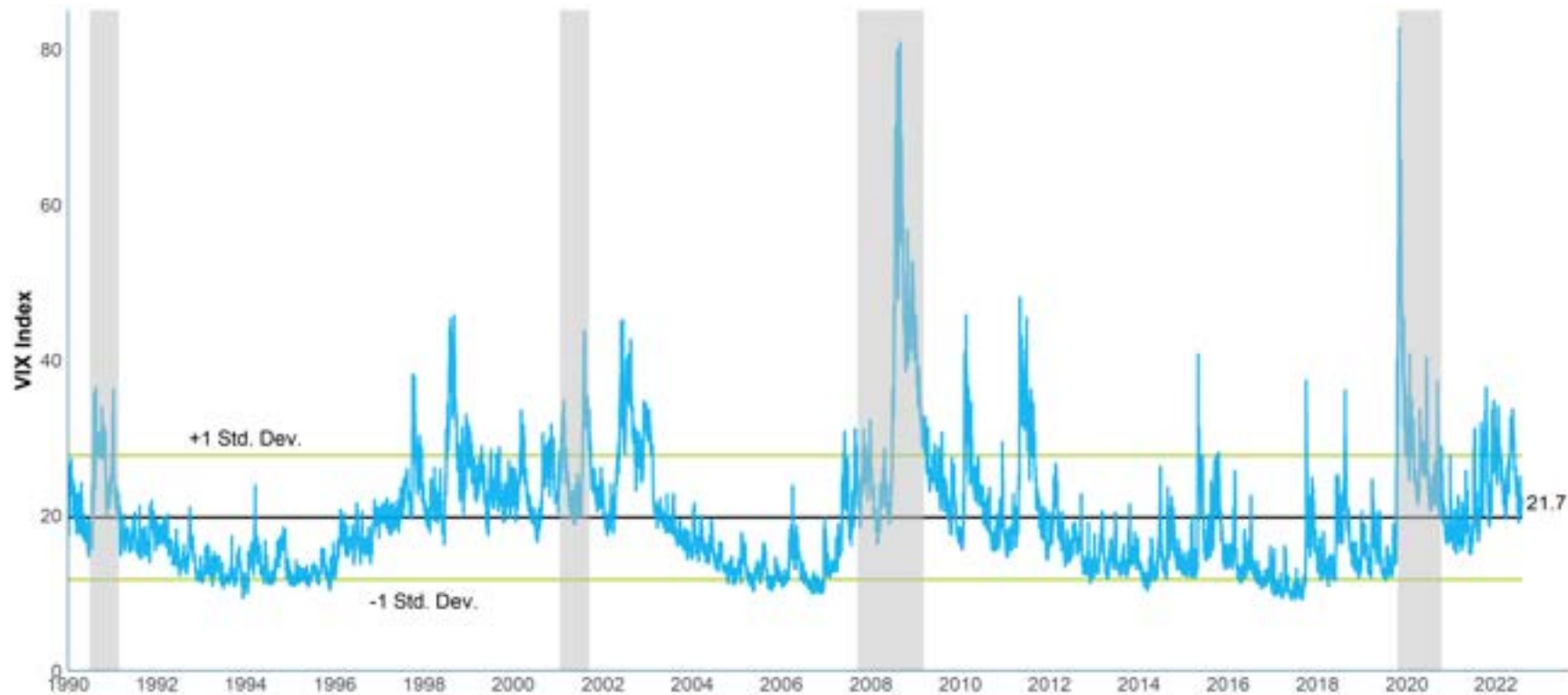
Emerging Market Debt Spreads¹ (As of December 31, 2022)



→ This chart details one valuation metric for the EM debt markets. A higher (lower) figure indicates cheaper (more expensive) valuation relative to history.

¹ EM Spreads – Source: Bloomberg. Option Adjusted Spread (OAS) for the Bloomberg EM USD Aggregate Index.

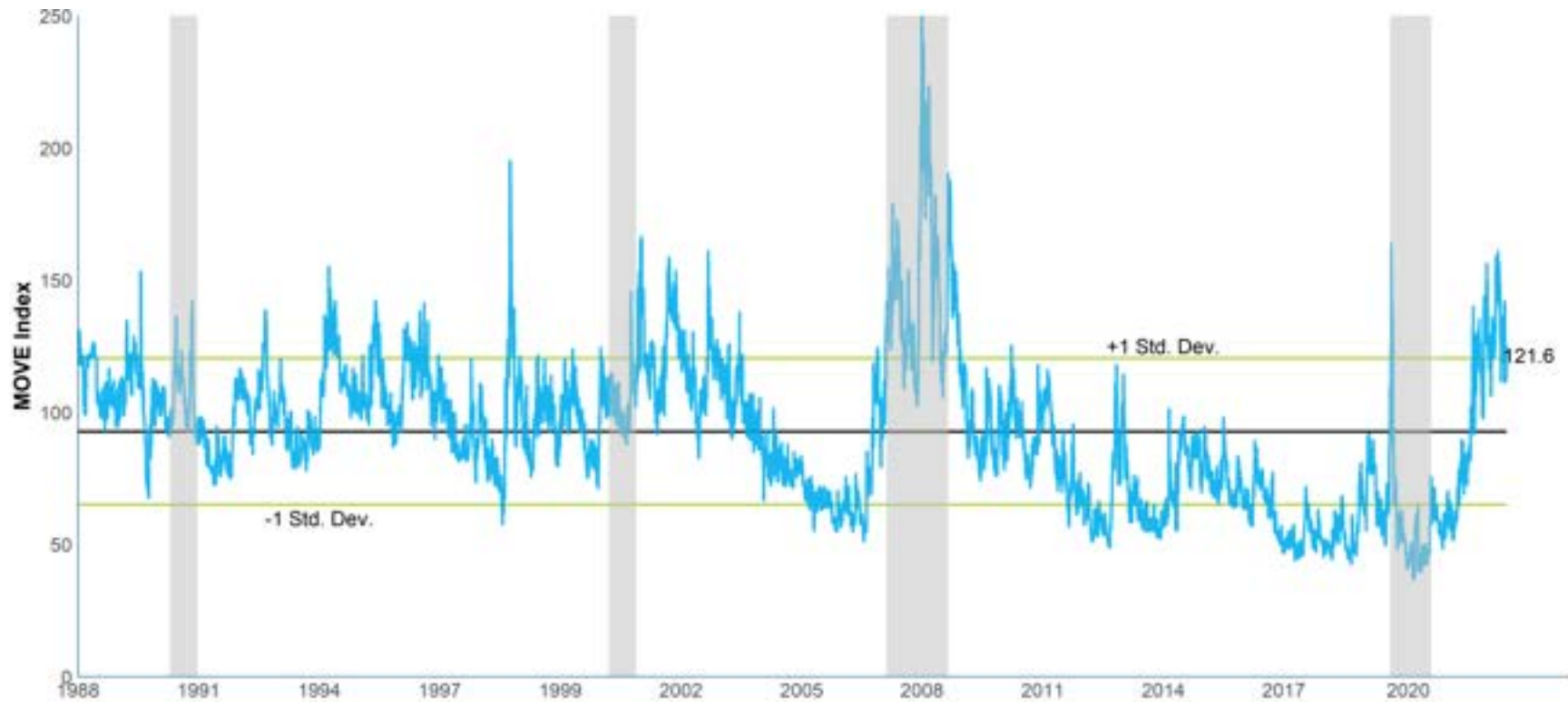
Equity Volatility¹
(As of December 31, 2022)



→ This chart details historical implied equity market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

¹ Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.

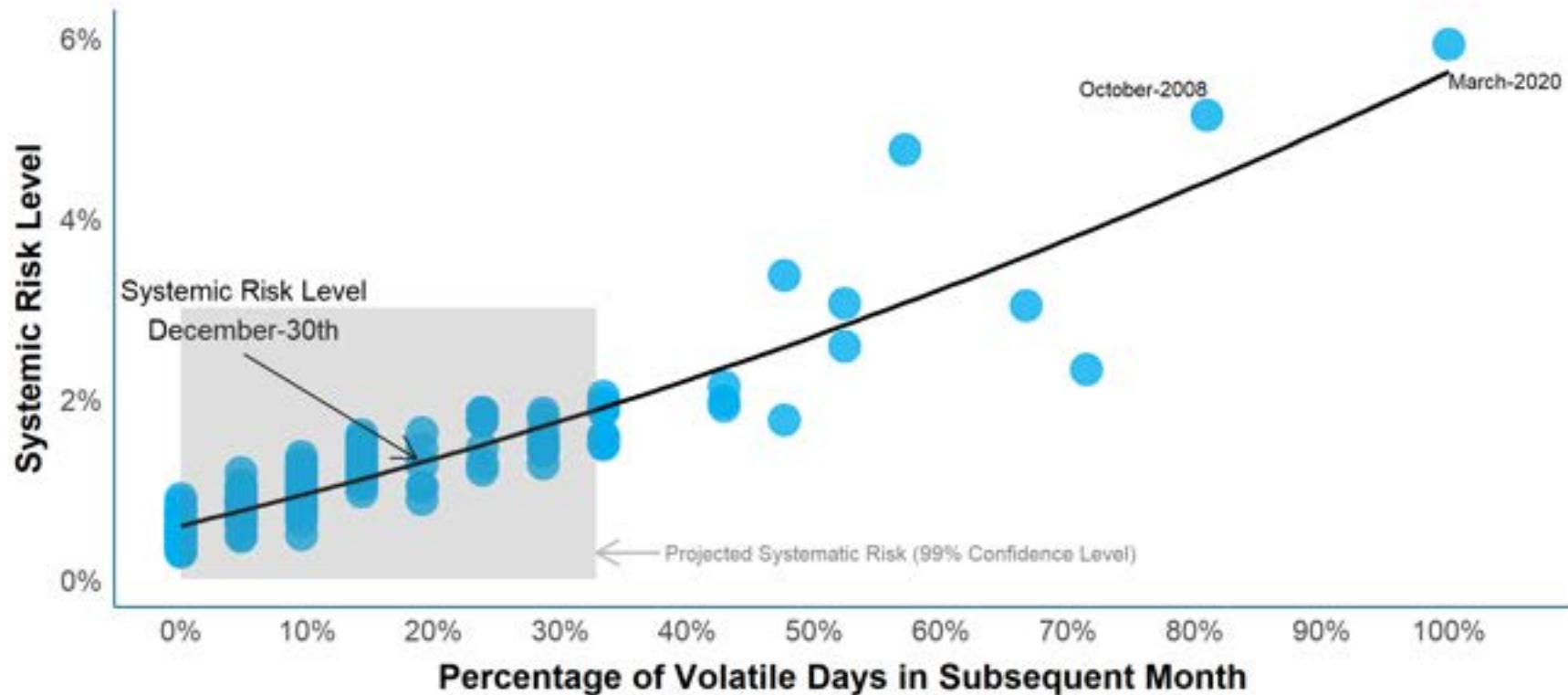
Fixed Income Volatility¹
(As of December 31, 2022)



→ This chart details historical implied fixed income market volatility. This metric tends to increase during times of stress/fear and while declining during more benign periods.

¹ Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Fixed Income Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.

Systemic Risk and Volatile Market Days¹ (As of December 31, 2022)



→ Systemic Risk is a measure of 'System-wide' risk, which indicates herding type behavior.

¹ Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.

Yield Curve Slope (Ten Minus Two)¹
(As of December 31, 2022)



→ This chart details the historical difference in yields between ten-year and two-year US Treasury bonds/notes. A higher (lower) figure indicates a steeper (flatter) yield curve slope.

¹ Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.

Ten-Year Breakeven Inflation¹ (As of December 31, 2022)



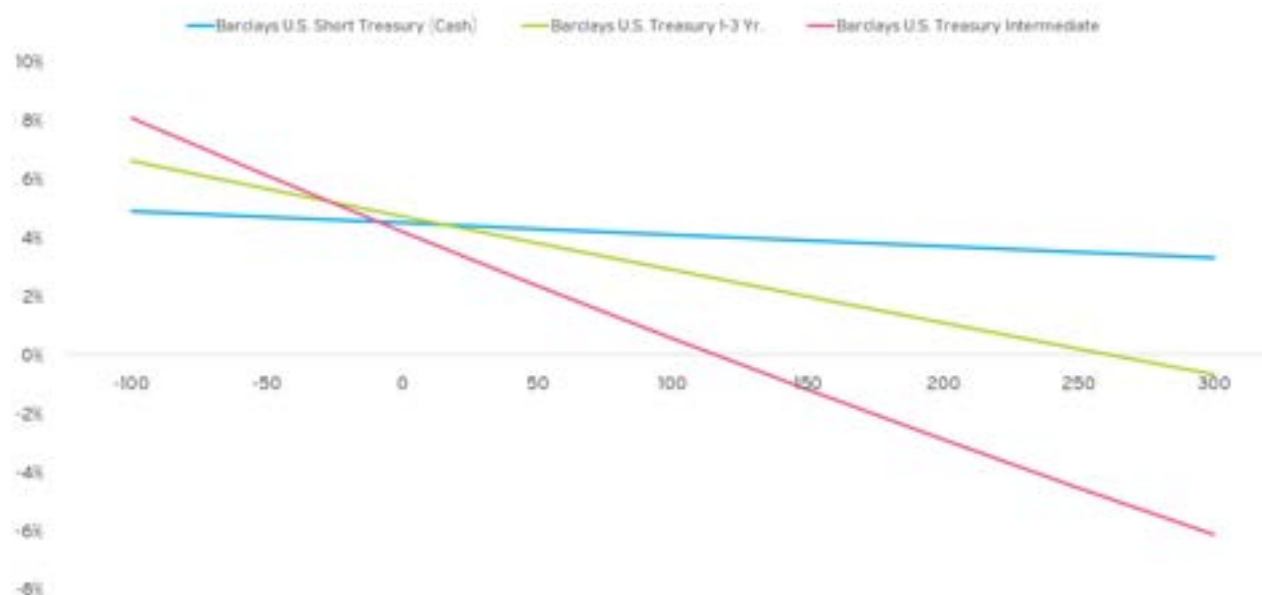
→ This chart details the difference between nominal and inflation-adjusted US Treasury bonds. A higher (lower) figure indicates higher (lower) inflation expectations.

¹ Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).



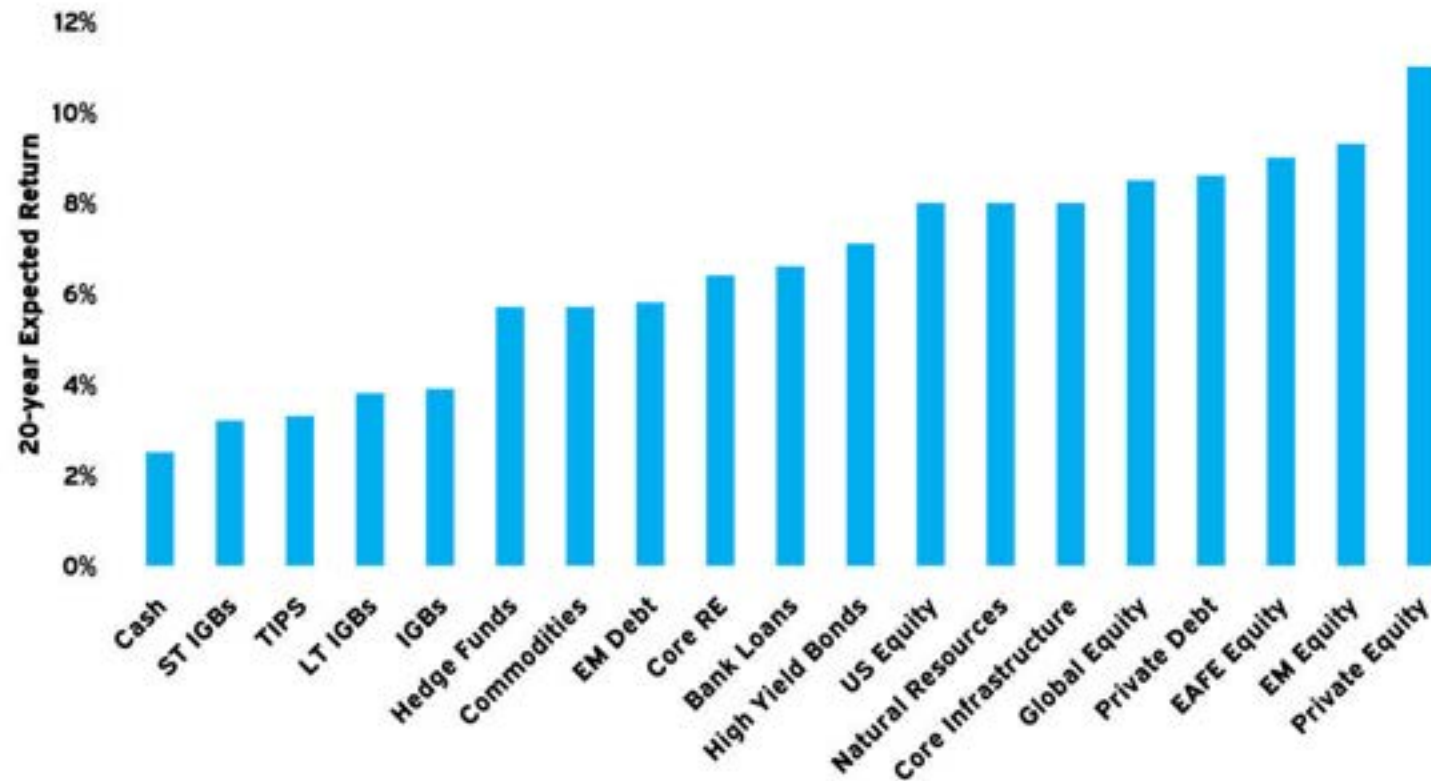
Capital Markets Outlook & Risk Metrics

Total Return Given Changes in Interest Rates (bps)¹ (As of December 31, 2022)



	Total Return for Given Changes in Interest Rates (bps)									Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW
Barclays US Short Treasury (Cash)	4.9%	4.7%	4.5%	4.3%	4.1%	3.9%	3.7%	3.5%	3.3%	0.40	4.50%
Barclays US Treasury 1-3 Yr.	6.6%	5.7%	4.7%	3.8%	2.9%	2.0%	1.1%	0.2%	-0.7%	1.86	4.72%
Barclays US Treasury Intermediate	8.1%	6.1%	4.2%	2.3%	0.5%	-1.2%	-2.9%	-4.5%	-6.1%	3.76	4.20%
Barclays US Treasury Long	22.0%	12.6%	4.1%	-3.6%	-10.4%	-16.4%	-21.5%	-25.7%	-29.1%	16.19	4.08%

¹ Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Source: Bloomberg, and Meketa Investment Group.

Long-Term Outlook – 20-Year Annualized Expected Returns¹

→ This chart details Meketa's long-term forward-looking expectations for total returns across asset classes.

¹ Source: Meketa Investment Group's 2022 Intra-year Asset Study

Appendix

Data Sources and Explanations¹

- US Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) – Source: Russell Investments. Earnings figures represent 12-month “as reported” earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E – Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month “as reported” earnings.
- Developed International Equity (MSCI EAFE) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs.
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, US Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction-based indices from Real Capital Analytics and Meketa Investment Group.

¹ All Data as of December 31, 2022, unless otherwise noted.

Appendix

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- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for US equity markets.
- Fixed Income Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by MOVE Index, a Measure of implied option volatility for US Treasury markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.
- Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.

¹ All Data as of December 31, 2022, unless otherwise noted.

Appendix

Data Sources and Explanations¹

- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year US Treasury Yield and 2-Year US Treasury Yield.
- Ten-Year Breakeven Inflation – Source: US Treasury and Federal Reserve. Inflation is measured by the Consumer Price Index (CPI-U NSA).

¹ All Data as of December 31, 2022, unless otherwise noted.

Meketa Market Sentiment Indicator

Explanation, Construction and Q&A



Capital Markets Outlook & Risk Metrics

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa's Risk Metrics.

→ Meketa's Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market correction take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation-based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

What is the Meketa Market Sentiment Indicator (MIG-MSI)?

→ The MIG-MSI is a measure meant to gauge the market's sentiment regarding economic growth risk. Growth risk cuts across most financial assets and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

How do I read the Meketa Market Sentiment Indicator graph?

- Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.
- Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

- The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:
- Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months).
 - Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration US Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight).
 - Both measures are converted to Z-scores and then combined to get an “apples to apples” comparison without the need of re-scaling.
- The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure¹. The color reading on the graph is determined as follows:
- If both stock return momentum and bond spread momentum are positive = GREEN (positive).
 - If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive).
 - If both stock return momentum and bond spread momentum are negative = RED (negative).

¹ Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.
 “Time Series Momentum” Moskowitz, Ooi, Pedersen, August 2010. <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>

What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?

→ There is strong evidence that time series momentum is significant and persistent. Across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.



Capital Markets Outlook & Risk Metrics

Disclaimer Information

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Appendix



Illinois State Universities Retirement System

SURS Legacy Accounts | As of December 31, 2022

Manager ¹	Market Value
Adams Street 2007	\$1,708,430
Adams St. Global Op.	\$279,187
Adams Street Non-US	\$2,061,962
Adams Street Partners One Line	\$2,375,142
Applied Research	\$5,532
BlackRock International Index	\$463,121
Crow Holdings Realty Partners VII	\$1,280,471
Franklin Templeton EMREFF	\$2,870,680
Franklin Templeton FTPREF	\$177,617
Macquarie	\$1
Matarin Small Cap Core	\$5
Muller and Monroe MPEFF	\$1
Newport Monarch	\$2,767,765
Pantheon Europe III	\$1,316,030
Pantheon Global	\$333
Pantheon Global II	\$365,258
Pantheon One Line Asset	\$118,371
PIMCO Total Return	\$14,571
Progress- Venture Capital	\$807,483
RREEF Funds	\$34,766
Sanctioned Asset (SUR58)	\$63,583
Sanctioned Asset (SUR75)	\$86,600
Xponance- Non-US Equity Funds	\$629,042
Total	\$17,425,951

¹ Includes legacy managers with less than \$2.9 million market value and closing accounts.



Glossary Of Terms

Alpha - The premium an investment earns above a set standard. This is usually measured in terms of a common index (i.e., how the stock performs independent of the market). An Alpha is usually generated by regressing a security's excess return on the market's excess return.

Annualized Performance - The annual rate of return that when compounded t times generates the same t-period holding return as actually occurred from period 1 to period t.

Attribution - a means to ascribe values to specific categories based on underlying characteristics.

Batting Average - Percentage of periods a portfolio outperforms a given index.

Beta - The measure of an asset's risk in relation to the Market (for example, the S&P 500) or to an alternative benchmark or factors. Roughly speaking, a security with a Beta of 1.5 will have moved, on average, 1.5 times the market return.

Bottom-up - A management style that de-emphasizes the significance of economic and market cycles, focusing instead on the analysis of individual stocks.

Breakeven Inflation - The difference between the yield of a nominal bond and an Inflation-linked bond of like maturity. It represents the amount of annualized inflation expected over the life of a bond by the marketplace, but it can also be thought of as the amount of annualized inflation required for being indifferent to holding the nominal or the ILB. If actual inflation turns out to be higher (lower) than the breakeven rate, the ILB will have a higher (lower) return than a nominal of like maturity. The market shortcut is to subtract the real yield from the nominal yield: Breakeven Inflation = Nominal Yield - Real Yield.

Breakeven Inflation Curve - The difference between nominal and real yields of like maturities at every available point along the yield curve.

Credit Quality - A measure of a bond issuer's ability to repay interest and principal in a timely manner.

Current Yield - Annual income (interest or dividends) divided by the current price of the security.

Dividend Yield - Annualized dividend rate divided by last closing price.



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Down Market Capture Ratio - Is the portion of the market's performance that was captured by the manager using only periods where the market return is negative. A down market capture of less than 100% is considered desirable.

Duration - A measure of the price sensitivity of a fixed-income security to a change in interest rates. Calculation is based on the weighted average of the present value for all cash flows.

Earnings Growth Rate - rate of change in earnings over the latest 5-year period as expressed in an annual percentage.

Excess Standard Deviation (annualized) - The annualized standard deviation of the difference between the performance of a portfolio and its benchmark. Also referred to as tracking error.

Fair Value Pricing - Is a daily price adjustment made to the value of a security to more accurately reflect the true market value of a security. A fund will use fair value pricing if the value of a security is materially affected by events occurring before the fund's pricing time but after the close of the primary markets or exchanges on which the security is traded. It is an industry-wide practice required by the Securities and Exchange Commission.

Growth Stocks - Common stock of a company that has an opportunity to invest money and earn more than the opportunity cost of capital.

Inflation-linked Bonds (ILBs) - A bond whose principal is increased (decreased) in proportion to the amount of inflation (deflation) from the date of issue to the date of maturity, and whose coupons are paid on the inflation-adjusted principal. At maturity, the inflation-adjusted principal is redeemed. The mechanics of an ILB imply that its cash flows and principal at maturity are unknown and are determined by the path of inflation over its life.

Information Ratio - The ratio of annualized expected residual return to residual risk. A central measurement for active management, value added is proportional to the square of the information ratio.

Market Capitalization - Is calculated as the product of price and shares outstanding.

Median Market Capitalization - The midpoint of market capitalization (market price multiplied by the number of shares outstanding) of the stocks in a portfolio. Half the stocks in the portfolio will have higher market capitalizations; half will have lower.



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Nominal Yield - The interest rate stated on the face of a bond, which represents the percentage of interest to be paid by the issuer on the face value of the bond. (Also known as the coupon rate.)

Price/Book (P/B) Ratio - The price per share of a stock divided by its book value (i.e. net worth) per share. For a portfolio, the ratio is the weighted average price/book ratio of the stocks it holds.

Price/Earnings (P/E) Ratio - The share price of a stock divided by its per-share earnings over the past year. For a portfolio, the weighted average P/E ratio of the stocks in the portfolio. P/E is a good indicator of market expectations about a company's prospects; the higher the P/E, the greater the expectations for a company's future growth.

R-Squared - Square of the correlation coefficient. The proportion of the variability in one series that can be explained by the variability of one or more other series a regression model. A measure of the quality of fit. 100% R-square means perfect predictability.

Real Yield - Return from an investment adjusted for the effects of inflation.

Semi Standard Deviation (Downside) - Is a measure of risk using only the variance of returns below a target rate, such as the benchmark.

Sharpe Ratio - A measure of a portfolio's excess return relative to the total variability of the portfolio. The higher the portfolio's Sharpe Ratio, the better the portfolio's returns have been relative to the risk it has taken on.

Standard Deviation - The square root of the variance. A measure of dispersion of a set of data from its mean.

Style Analysis - A returns-based analysis using a multi-factor attribution model. The model calculates a product's average exposure to particular investment styles over time (i.e., the product's normal style benchmark).

Top-down - Investment style that begins with an assessment of the overall economic environment and makes a general asset allocation decision regarding various sectors of the financial markets and various industries.

Tracking Error - The standard deviation of the difference between the performance of a portfolio and an appropriate benchmark.

Turnover - For mutual funds, a measure of trading activity during the previous year, expressed as a percentage of the average total assets of the fund. A turnover rate of 25% means that the value of trades represented one-fourth of the assets of the fund.



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Up Market Capture Ratio - Is the portion of the market's performance that was captured by the manager using only periods where the market return is positive. An up market capture of greater than 100% is considered desirable.

Unrealized Gain/Loss - The increased or decreased market value of an asset that is still being held compared with its cost of acquisition.

Value Stocks - Stocks with low price/book ratios or price/earnings ratios. Historically, value stocks have enjoyed higher average returns than growth stocks (stocks with high price/book or P/E ratios) in a variety of countries.

Weighted Average Life (WAL) - The average number of years for which each dollar of unpaid principal on a loan or mortgage remains outstanding. Once calculated, WAL tells how many years it will take to pay half of the outstanding principal. The time weightings are based on the principal paydowns - the higher the dollar amount, the more weight that corresponding time period will have. For example, if the majority of the repayment amount is in 10 years the WAL will be closer to 10 years. Let's say there's an outstanding bond with five years of \$1,000 annual payments. The weighted average life would be three years, assuming payment is made at the end of each year. This indicates that after three years over half of the payments will be made.

Yield Curve - A representation on a chart of the [yields](#) on [bonds](#) with identical [credit ratings](#) but different [maturities](#). On the yield curve, the maturities are represented on the x-axis, and the yield is represented on the y-axis. That is, if the yield curve trends upward, it indicates that [interest rates](#) for long-term [debt securities](#) are higher than short-term debt securities; this is called a [normal yield curve](#). A [negative yield curve](#) indicates that interest rates for short-term debt securities are higher, and a [flat yield curve](#) indicates that they are roughly the same. Yield curves are most commonly plotted with [U.S. Treasuries](#) with different maturities; this is used to predict future trends in [interest rates](#).

Yield Curve Management - Any investment strategy that seeks to profit from changes in the yield curve of US Treasury securities. For example, one may buy a bond at a certain interest rate expecting prevailing interest rates to decline. If and when they do, the price of the bond one holds will increase, allowing one to sell the bond for a profit.

Yield to Maturity - The rate of return an investor would receive if the securities held by a portfolio were held to their maturity dates.



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Appendix

Risk Metrics Description – Rationale for Selection and Calculation Methodology

US Equity Markets:

Metric: $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the S\&P 500 Index}$

To represent the price of US equity markets, we have chosen the S&P 500 index. This index has the longest published history of price, is well known, and also has reliable, long-term, published quarterly earnings. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the S&P 500 index). Equity markets are very volatile. Prices fluctuate significantly during normal times and extremely during periods of market stress or euphoria. Therefore, developing a measure of earnings power (E) which is stable is vitally important, if the measure is to provide insight. While equity prices can and do double, or get cut in half, real earnings power does not change nearly as much. Therefore, we have selected a well-known measure of real, stable earnings power developed by Yale Professor Robert Shiller known as the Shiller E-10. The calculation of E-10 is simply the average real annual earnings over the past 10 years. Over 10 years, the earnings shenanigans and boom and bust levels of earnings tend to even out (and often times get restated). Therefore, this earnings statistic gives a reasonably stable, slow-to-change estimate of average real earnings power for the index. Professor Shiller's data and calculation of the E-10 are available on his website at <http://www.econ.yale.edu/~shiller/data.htm>. We have used his data as the base for our calculations. Details of the theoretical justification behind the measure can be found in his book *Irrational Exuberance* [Princeton University Press 2000, Broadway Books 2001, 2nd ed., 2005].



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Developed Equity Markets Excluding the US:

Metric: $P/E \text{ ratio} = \text{Price} / \text{"Normalized" earnings for the MSCI EAFE Index}$

To represent the price of non-US developed equity markets, we have chosen the MSCI EAFE index. This index has the longest published history of price for non-US developed equities. The price= P of the P/E ratio is the current price of the market index (the average daily price of the most recent full month for the MSCI EAFE index). The price level of this index is available starting in December 1969. Again, for the reasons described above, we elected to use the Shiller E-10 as our measure of earnings (E). Since 12/1972, a monthly price earnings ratio is available from MSCI. Using this quoted ratio, we have backed out the implied trailing-twelve month earnings of the EAFE index for each month from 12/1972 to the present. These annualized earnings are then inflation adjusted using CPI-U to represent real earnings in US dollar terms for each time period. The Shiller E-10 for the EAFE index (10 year average real earnings) is calculated in the same manner as detailed above.

However, we do not believe that the pricing and earnings history of the EAFE markets are long enough to be a reliable representation of pricing history for developed market equities outside of the US. Therefore, in constructing the Long-Term Average Historical P/E for developed ex-US equities for comparison purposes, we have elected to use the US equity market as a developed market proxy, from 1881 to 1982. This lowers the Long-Term Average Historical P/E considerably. We believe this methodology provides a more realistic historical comparison for a market with a relatively short history.

Emerging Market Equity Markets:

Metric: Ratio of Emerging Market P/E Ratio to Developed Market P/E Ratio

To represent the Emerging Markets P/E Ratio, we have chosen the MSCI Emerging Market Free Index, which has P/E data back to January 1995 on Bloomberg. To represent the Developed Markets PE Ratio, we have chosen the MSCI World Index, which also has data back to January 1995 on Bloomberg. Although there are issues with published, single time period P/E ratios, in which the denominator effect can cause large movements, we feel that the information contained in such movements will alert investors to market activity that they will want to interpret.



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Appendix

US Private Equity Markets:

Metrics: S&P LCD Average EBITDA Multiples Paid in LBOs and US Quarterly Deal Volume

The Average Purchase Price to EBITDA multiples paid in LBOs is published quarterly by S&P in their LCD study. This is the total price paid (both equity and debt) over the trailing-twelve month EBITDA (earnings before interest, taxes, depreciation and amortization) as calculated by S&P LCD. This is the relevant, high-level pricing metric that private equity managers use in assessing deals. Data is published monthly.

US quarterly deal volume for private equity is the total deal volume in \$ billions (both equity and debt) reported in the quarter by Thomson Reuters Buyouts. This metric gives a measure of the level of activity in the market. Data is published quarterly.

US Private Real Estate Markets:

Metrics: US Cap Rates, Cap Rate Spreads, and Transactions as a % of Market Value

Real estate cap rates are a measure of the price paid in the market to acquire properties versus their annualized income generation before financing costs (NOI=net operating income). The data, published by NCREIF, describes completed and leased properties (core) on an unleveraged basis. We chose to use current value cap rates. These are capitalization rates from properties that were revalued during the quarter. This data relies on estimates of value and therefore tends to be lagging (estimated prices are slower to rise and slower to fall than transaction prices). The data is published quarterly.

Spreads between the cap rate (described above) and the 10-year nominal Treasury yield, indicate a measure of the cost of properties versus a current measure of the cost of financing.

Transactions as a % of Market Value Trailing Four Quarters is a measure of property turnover activity in the NCREIF Universe. This quarterly metric is a measure of activity in the market.



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Credit Markets Fixed Income:

Metric: Spreads

The absolute level of spreads over treasuries and spread trends (widening / narrowing) are good indicators of credit risk in the fixed income markets. Spreads incorporate estimates of future default, but can also be driven by technical dislocations in the fixed income markets. Abnormally narrow spreads (relative to historical levels) indicate higher levels of valuation risk, wide spreads indicate lower levels of valuation risk and / or elevated default fears. Investment grade bond spreads are represented by the Bloomberg Barclays Capital US Corporate Investment Grade Index Intermediate Component. The high yield corporate bond spreads are represented by the Bloomberg Barclays Capital US Corporate High Yield Index.

Measure of Equity Market Fear / Uncertainty

Metric: VIX – Measure of implied option volatility for US equity markets

The VIX is a key measure of near-term volatility conveyed by implied volatility of S&P 500 index option prices. VIX increases with uncertainty and fear. Stocks and the VIX are negatively correlated. Volatility tends to spike when equity markets fall.

Measure of Monetary Policy

Metric: Yield Curve Slope

We calculate the yield curve slope as the 10 year treasury yield minus the 1 year treasury yield. When the yield curve slope is zero or negative, this is a signal to pay attention. A negative yield curve slope signals lower rates in the future, caused by a contraction in economic activity. Recessions are typically preceded by an inverted (negatively sloped) yield curve. A very steep yield curve (2 or greater) indicates a large difference between shorter-term interest rates (the 1 year rate) and longer-term rates (the 10 year rate). This can signal expansion in economic activity in the future, or merely higher future interest rates.



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Appendix

Measures of US Inflation Expectations

Metrics: Breakeven Inflation and Inflation Adjusted Commodity Prices

Inflation is a very important indicator impacting all assets and financial instruments. Breakeven inflation is calculated as the 10 year nominal treasury yield minus the 10 year real yield on US TIPS (treasury inflation protected securities). Abnormally low long-term inflation expectations are indicative of deflationary fears. A rapid rise in breakeven inflation indicates an acceleration in inflationary expectations as market participants sell nominal treasuries and buy TIPS. If breakeven inflation continues to rise quarter over quarter, this is a signal of inflationary worries rising, which may cause Fed action and / or dollar decline.

Commodity price movement (above the rate of inflation) is an indication of anticipated inflation caused by real global economic activity putting pressure on resource prices. We calculate this metric by adjusted in the Dow Jones UBS Commodity Index (formerly Dow Jones AIG Commodity Index) by US CPI-U. While rising commodity prices will not necessarily translate to higher US inflation, higher US inflation will likely show up in higher commodity prices, particularly if world economic activity is robust.

These two measures of anticipated inflation can, and often are, conflicting.

Measures of US Treasury Bond Interest Rate Risk

Metrics: 10-Year Treasury Forward-Looking Real Yield and 10-Year Treasury Duration

The expected annualized real yield of the 10 year US Treasury Bond is a measure of valuation risk for US Treasuries. A low real yield means investors will accept a low rate of expected return for the certainty of receiving their nominal cash flows. MEKETA estimates the expected annualized real yield by subtracting an estimate of expected 10 year inflation (produced by the Survey of Professional Forecasters as collected by the Federal Reserve Bank of Philadelphia), from the 10 year Treasury constant maturity interest rate.

Duration for the 10-Year Treasury Bond is calculated based on the current yield and a price of 100. This is a measure of expected percentage movements in the price of the bond based on small movements in percentage yield. We make no attempt to account for convexity.



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Definition of “extreme” metric readings

A metric reading is defined as “extreme” if the metric reading is in the top or bottom decile of its historical readings. These “extreme” reading should cause the reader to pay attention. These metrics have reverted toward their mean values in the past.



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State Universities Retirement System of Illinois

SURS - Private Equity

Portfolio Report

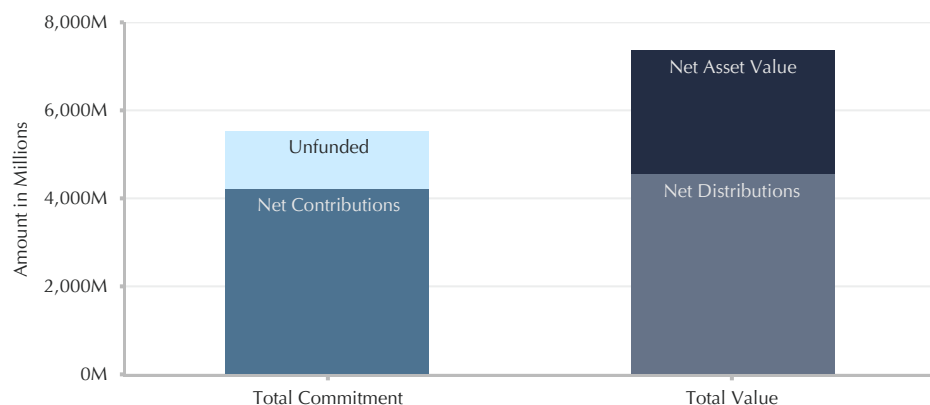
As Of September 2022

Report created: February 2023

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Summary



Portfolio Summary

Total Pension Assets	\$21.9 bn as of 09/30/2022				
GP Relationships	32				
Holdings	75				
# of Closed Investments within the quarter*	1				
# of Underlying Active Investments	1009				
% of Public Companies	1.6%				
Total Commitment Amount	\$5.5 bn				
Net Contributions	\$4.2 bn				
Net Distributions	\$4.6 bn				
Net Asset Value	\$2.8 bn				
Weighted Average Age	15.2Y				
Unfunded Commitment	\$1.3 bn				
Minimum Annual Pacing	375.0 mm				
Maximum Annual Pacing	525.0 mm				
Portfolio Allocation	12.8%				
Minimum Target Allocation	11.0%				
Maximum Target Allocation	11.0%				
1Y IRR	-0.7%	2Y IRR	24.6%	3Y IRR	22.7%
5Y IRR	18.9%	7Y IRR	16.4%	10Y IRR	14.5%
ITD IRR**	19.2%	ITD TVPI**	1.7x		

* Jul-2022 - Sep-2022

** Jul-1990 - Sep-2022

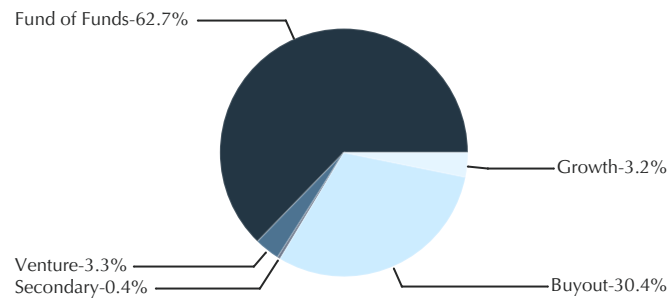
Position Analytics data based on GP provided information as of Sep-2022

IRR not meaningful for investments held less than 36 months

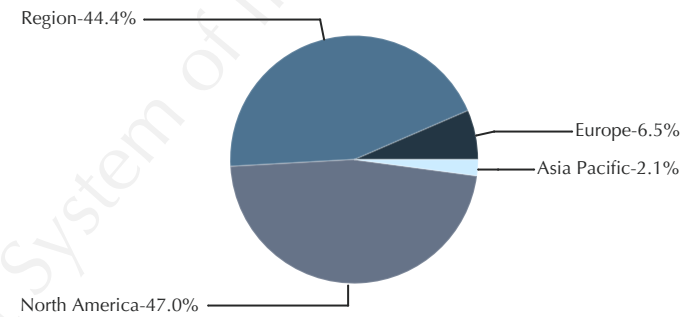
Weighted Average Age (WAA) is based on contributions

WAA is calculated as the sum of the individual contributions divided by the overall contribution and then multiplied by the age

Unfunded + NAV by Sector



Unfunded + NAV by Region



Position Analytics data based on GP provided information as of Sep-2022

IRR not meaningful for investments held less than 36 months

Weighted Average Age (WAA) is based on contributions

WAA is calculated as the sum of the individual contributions divided by the overall contribution and then multiplied by the age

SURS - Private Equity

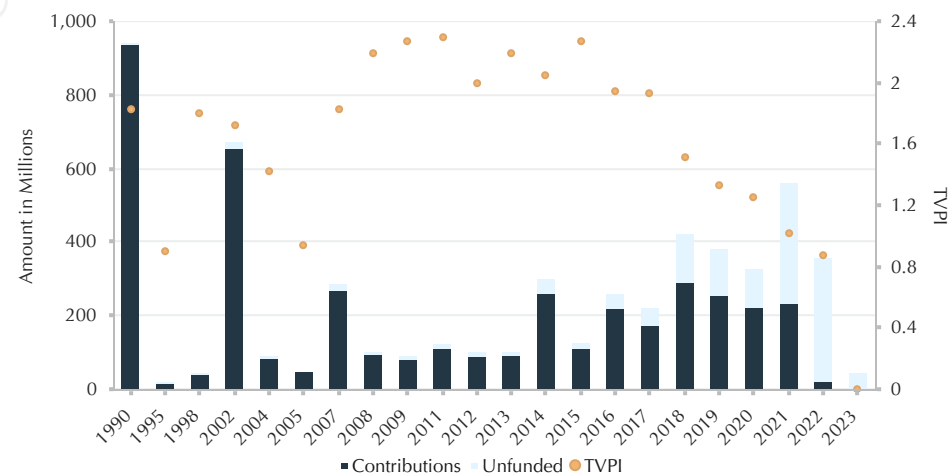
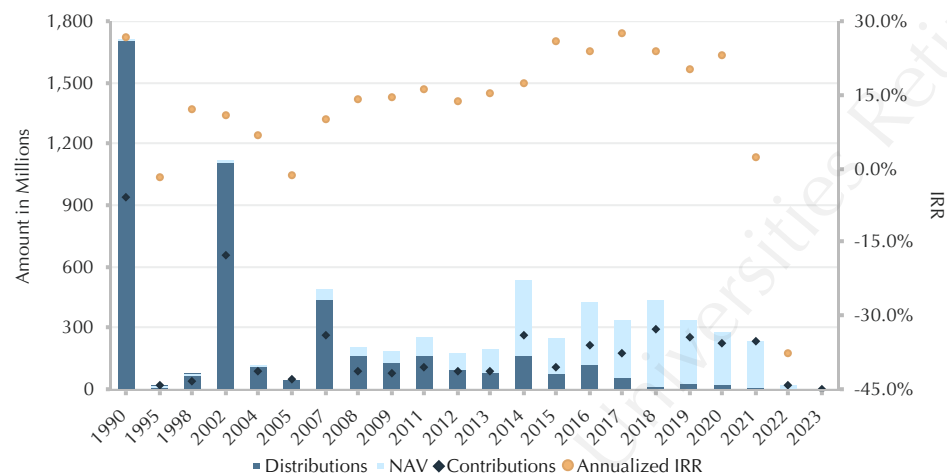
Portfolio Overview

Sector Portfolio Summary

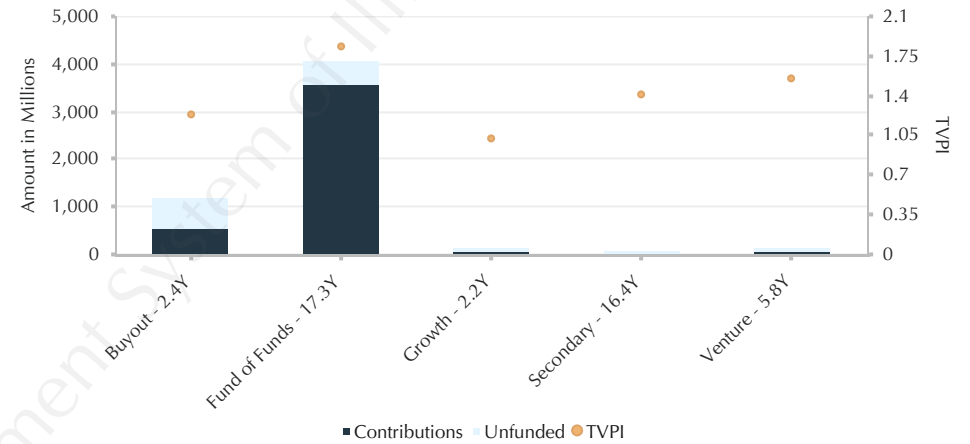
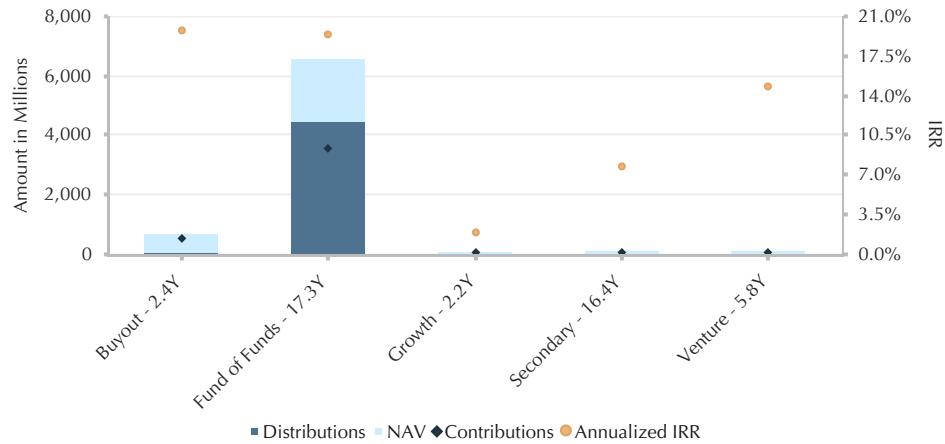
	# Of Funds	Weighted Average Age	NAV (\$mm)	Total Commitment (\$mm)	Unfunded Commitment (\$mm)	Unfunded + NAV (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Annualized IRR	TVPI
Buyout	29	2.4	612.7	1,158.7	641.5	1,254.2	545.0	56.9	n.m. ¹	1.2x
Fund of Funds	31	17.3	2,085.8	4,029.8	498.7	2,584.6	3,570.0	4,453.1	19.5%	1.8x
Growth	4	2.2	58.3	130.0	72.6	130.9	57.5	0.4	n.m. ¹	1.0x
Secondary	3	16.4	6.3	70.0	8.7	15.0	61.3	80.1	7.7%	1.4x
Venture	8	5.8	54.0	141.0	81.4	135.4	59.7	38.9	14.8%	1.6x
SURS - Private Equity	75	15.2	2,817.2	5,529.5	1,302.9	4,120.1	4,293.6	4,629.4	19.2%	1.7x

¹ IRR not meaningful for investments held less than 36 months

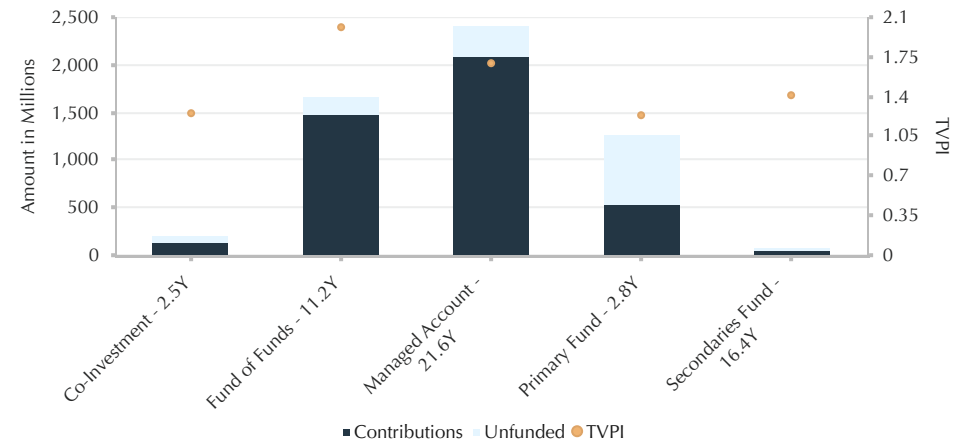
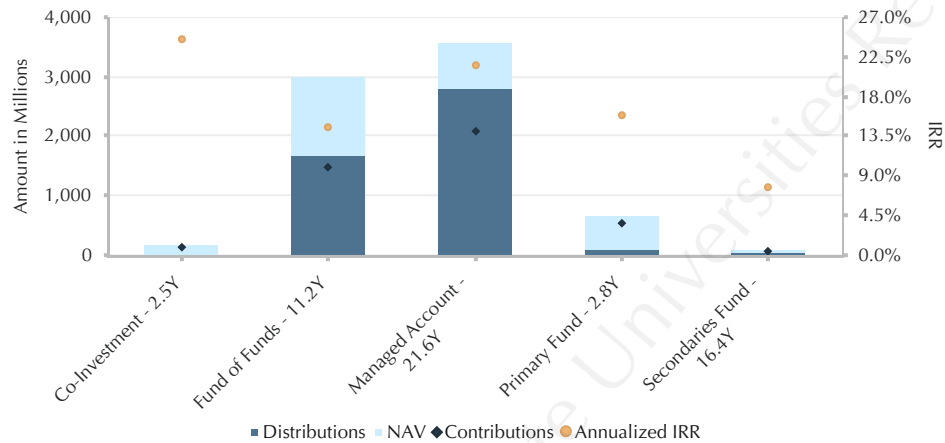
Performance Review by Vintage Year



Performance Review by Sector



Performance Review by Structure



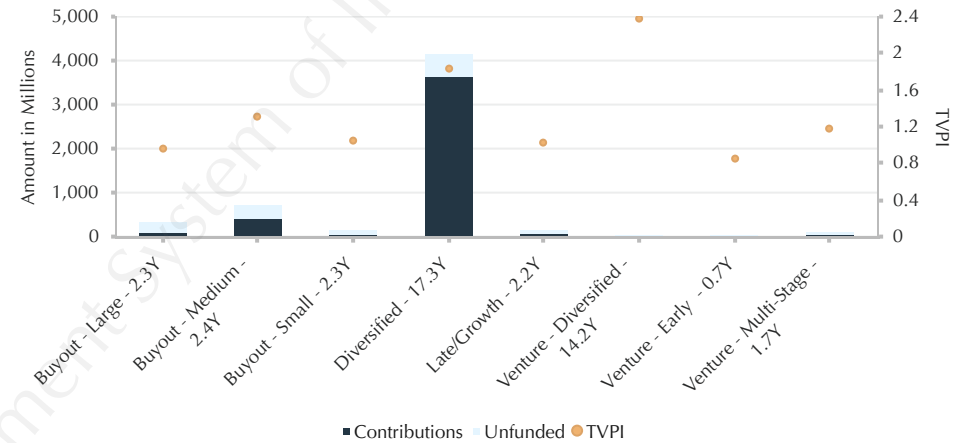
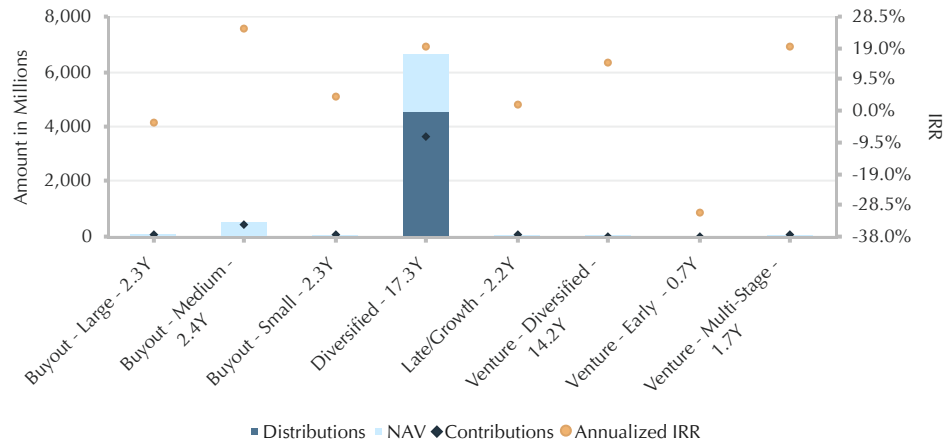
Weighted Average Age (WAA) is based on contributions

WAA is calculated as the sum of the individual contributions divided by the overall contribution and then multiplied by the age

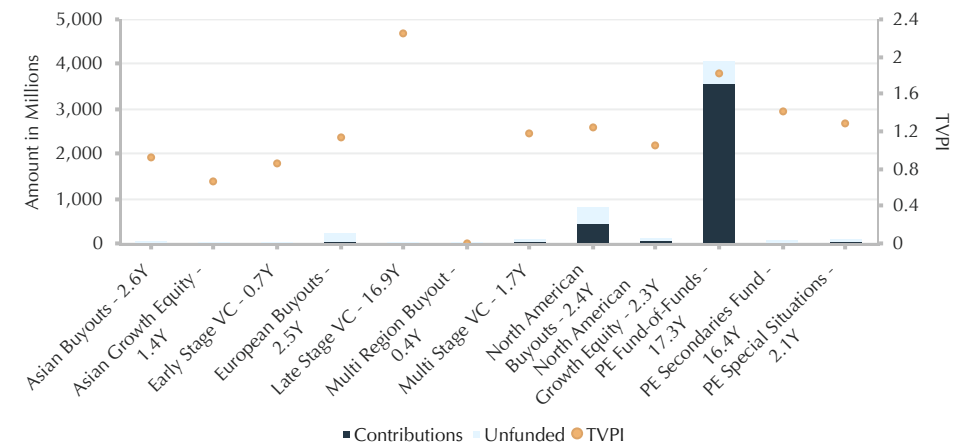
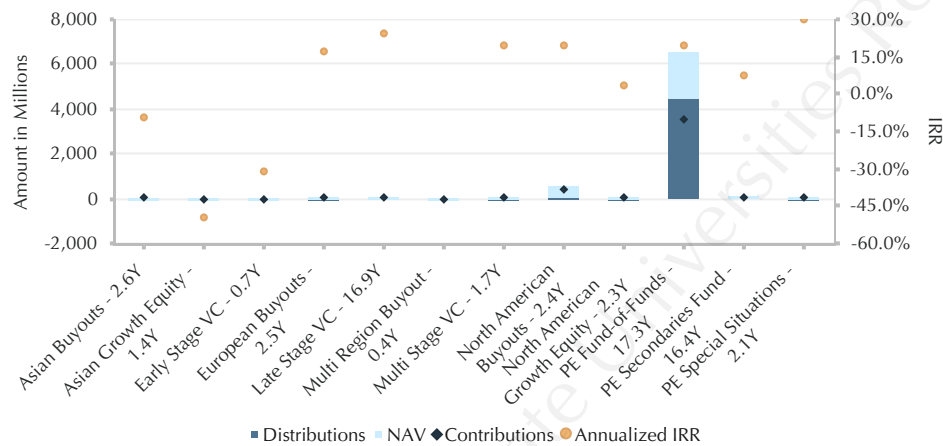
SURS - Private Equity

Performance Review

Performance Review by Strategy



Performance Review by Sub-Strategy



Weighted Average Age (WAA) is based on contributions

WAA is calculated as the sum of the individual contributions divided by the overall contribution and then multiplied by the age

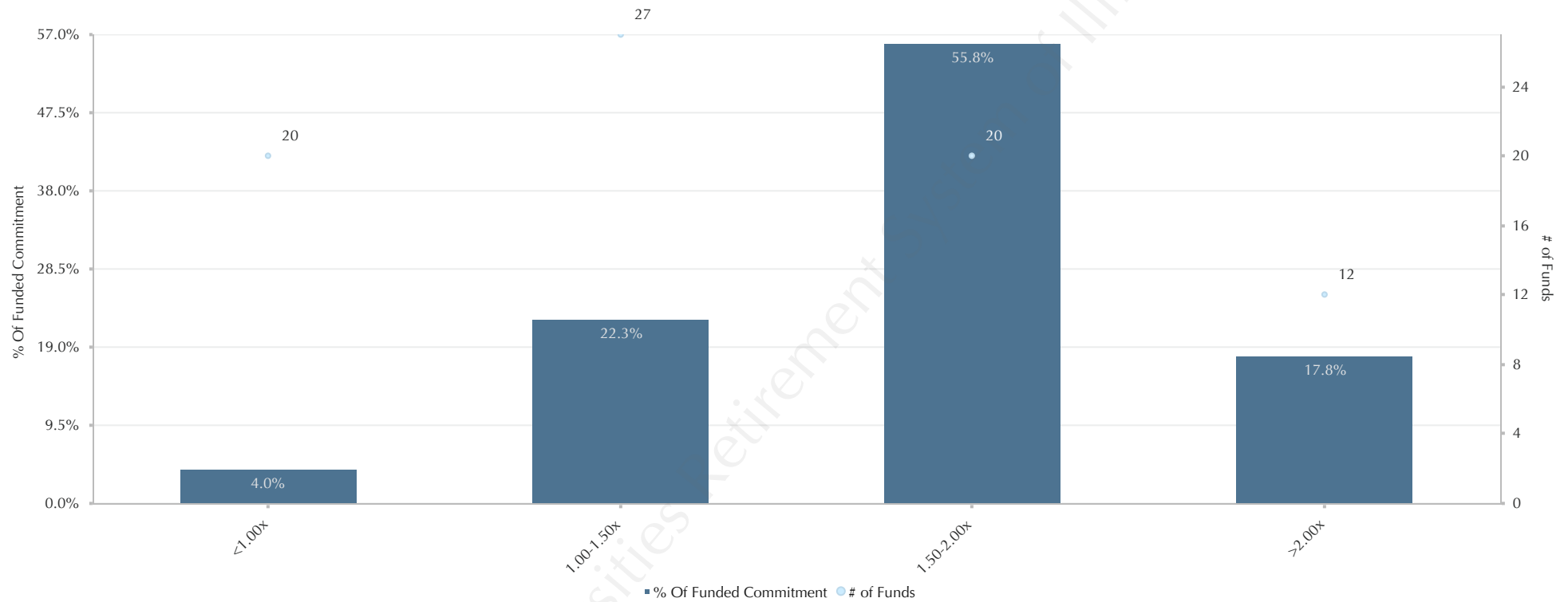
Reporting Period: As Of Sep-2022

[View this portfolio online](#)

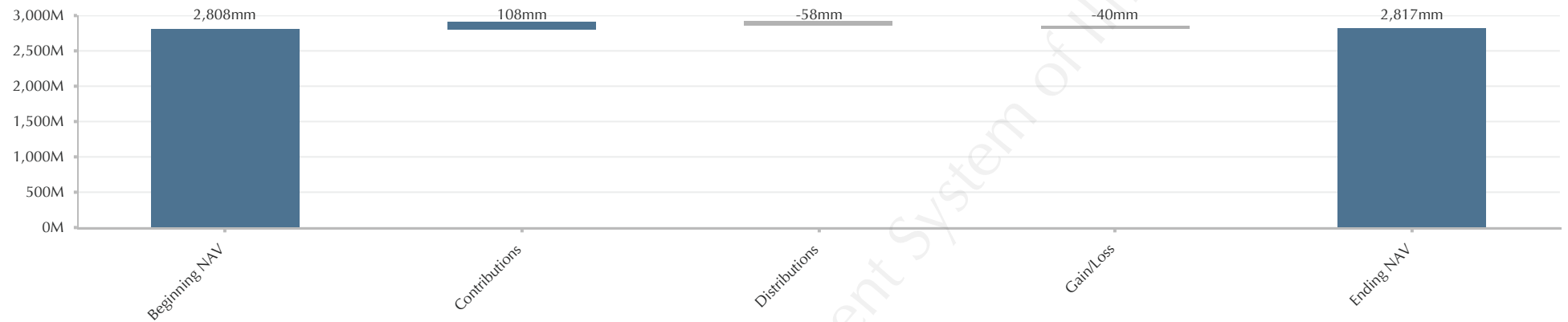
Performance Statistics

As Of Sep-2022	Sep-2021	Dec-2021	Mar-2022	Jun-2022	Sep-2022	% Change (YTD)	% Change (Quarter)	% Change (Annual)	Sep-2022 Active	Sep-2022 Liquidated
Committed Capital	5,138.9	5,138.9	5,343.9	5,529.5	5,529.5	7.6%	-	7.6%	5,444.5	85.0
Unfunded Commitment	1,414.5	1,207.2	1,362.1	1,419.3	1,302.9	7.9%	-8.2%	-7.9%	1,302.9	0.00
Net Contributed Capital	3,742.3	3,949.3	3,998.6	4,121.6	4,228.0	7.1%	2.6%	13.0%	4,143.0	85.0
Net Distributed Capital	4,183.1	4,354.1	4,424.8	4,508.3	4,564.4	4.8%	1.2%	9.1%	4,464.5	99.9
Recallable Capital	42.8	51.1	60.6	63.1	65.0	27.1%	2.9%	51.8%	65.0	0.0
Net Asset Value	2,738.8	2,946.1	2,888.6	2,807.9	2,817.2	-4.4%	0.3%	2.9%	2,817.2	0.0
Net Gain/Loss	3,172.7	3,347.9	3,312.9	3,193.3	3,153.0	-5.8%	-1.3%	-0.6%	3,133.9	19.0
Total Value	6,921.9	7,300.2	7,313.4	7,316.2	7,381.6	1.1%	0.9%	6.6%	7,281.7	99.9
Unfunded + NAV (mm)	4,153.3	4,153.3	4,250.7	4,227.2	4,120.1	-0.8%	-2.5%	-0.8%	4,120.1	0.00
DPI	1.1x	1.1x	1.1x	1.1x	1.1x	0.0x	0.0x	0.0x	1.1x	1.2x
Total Value to Paid-In (TVPI)	1.8x	1.8x	1.8x	1.8x	1.7x	-0.1x	0.0x	-0.1x	1.7x	1.2x
Net Internal Rate of Return (IRR)	19.7%	19.8%	19.6%	19.4%	19.2%	-0.5%	-0.2%	-0.5%	19.6%	6.9%

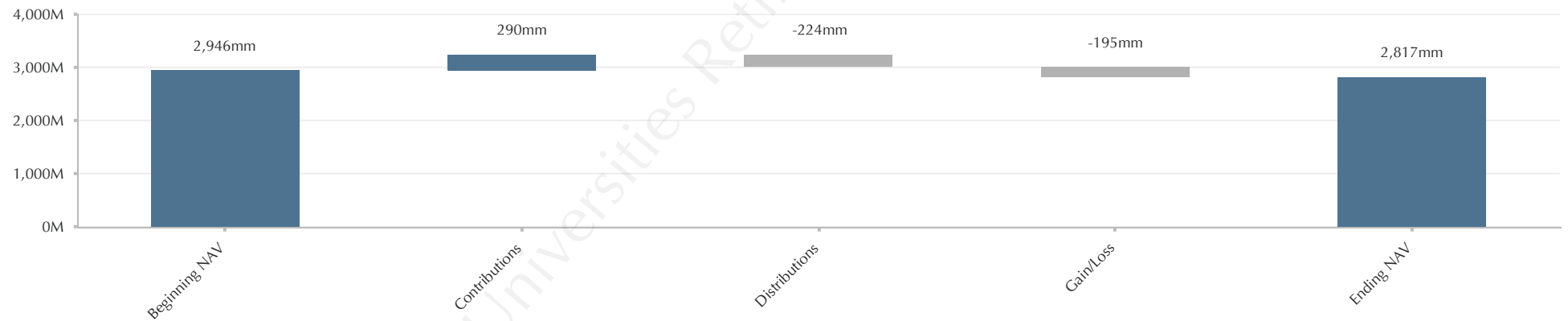
TVPI Distribution



Quarterly Valuation Bridge (Jul-2022 to Sep-2022)



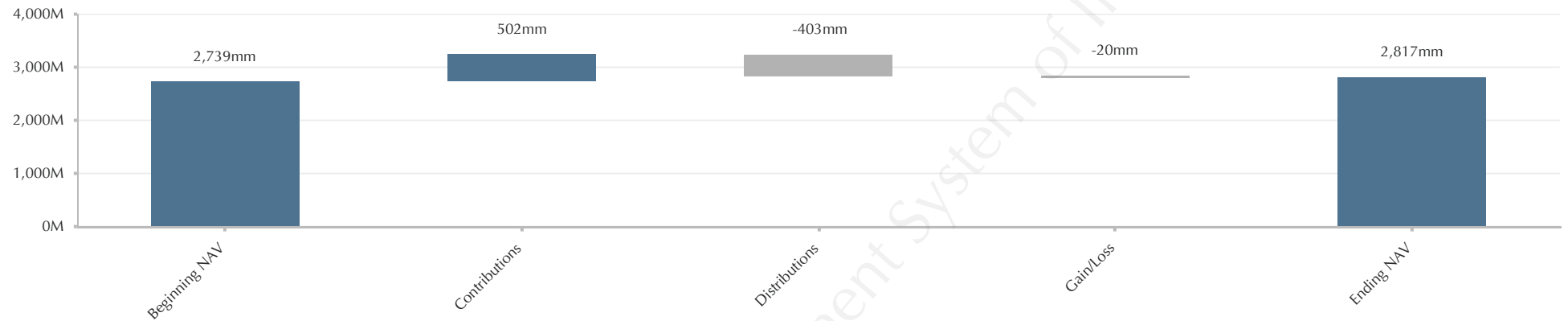
YTD Valuation Bridge (Jan-2022 to Sep-2022)



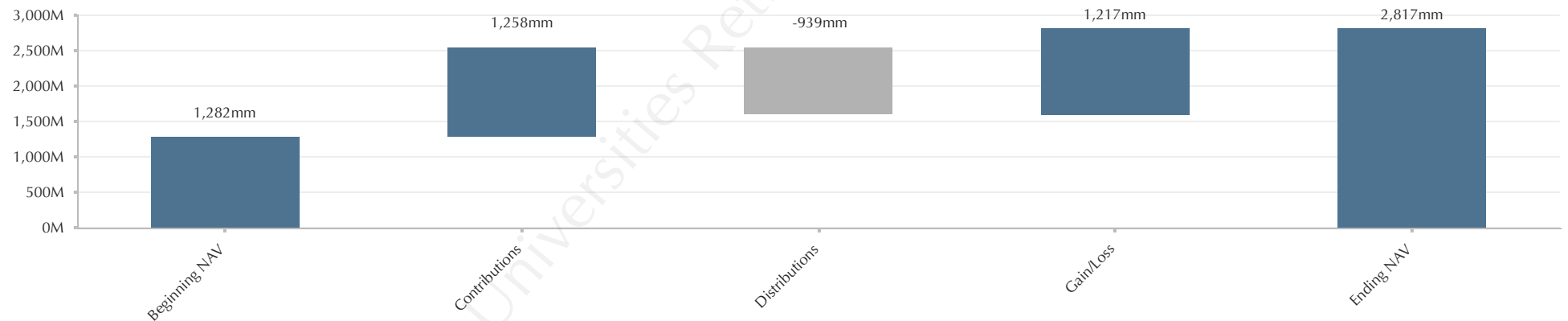
SURS - Private Equity

Capital Account Change

Last 12 Months Valuation Bridge (Oct-2021 to Sep-2022)



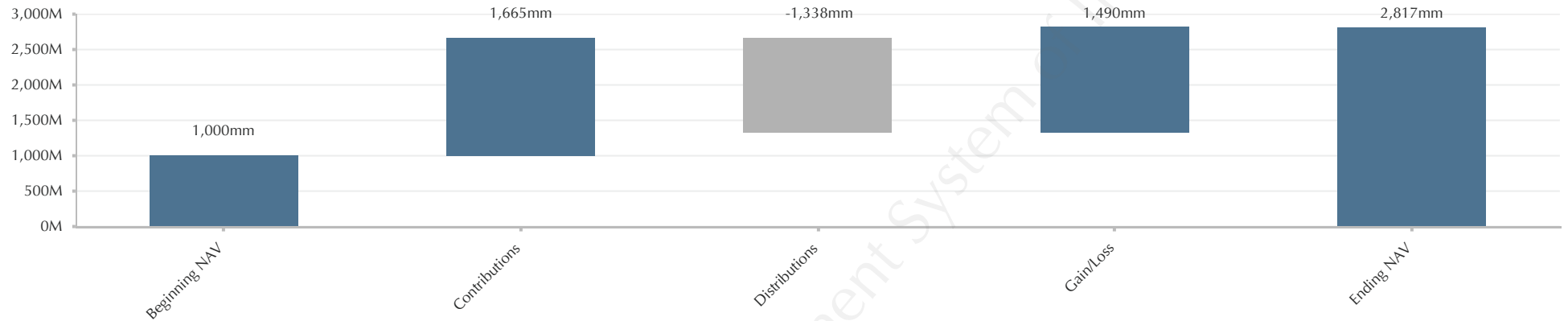
Last 3 Years Valuation Bridge (Oct-2019 to Sep-2022)



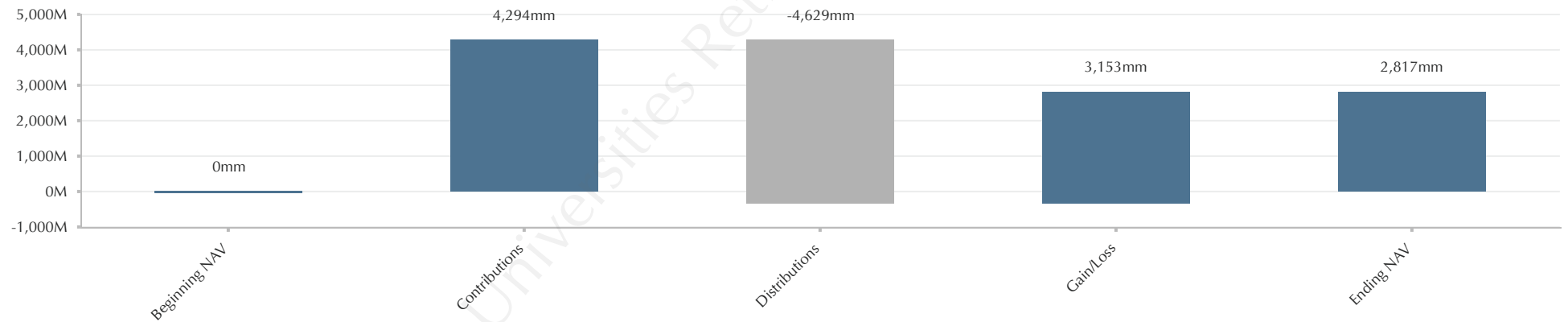
SURS - Private Equity

Capital Account Change

Last 5 Years Valuation Bridge (Oct-2017 to Sep-2022)



LTD Valuation Bridge (Jul-1990 to Sep-2022)



SURS - Private Equity

Portfolio Summary

	NAV Weight	Total Commitment (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Unfunded Commitment (\$mm)	Total Exposure (\$mm)	Gain/Loss (\$mm)	NAV (\$mm)	Net IRR	TVPI
Sector										
Buyout	21.7%	1,158.7	545.0	56.9	641.5	1,254.2	124.6	612.7	n.m. ¹	1.2x
Fund of Funds	74.0%	4,029.8	3,570.0	4,453.1	498.7	2,584.6	2,968.9	2,085.8	19.5%	1.8x
Growth	2.1%	130.0	57.5	0.4	72.6	130.9	1.2	58.3	n.m. ¹	1.0x
Secondary	0.2%	70.0	61.3	80.1	8.7	15.0	25.1	6.3	7.7%	1.4x
Venture	1.9%	141.0	59.7	38.9	81.4	135.4	33.2	54.0	14.8%	1.6x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x
Strategy										
Buyout - Large	2.7%	335.5	92.1	11.7	244.4	321.7	-3.1	77.3	n.m. ¹	1.0x
Buyout - Medium	17.6%	683.2	411.7	42.9	296.0	790.5	125.6	494.5	n.m. ¹	1.3x
Buyout - Small	1.5%	140.0	41.2	2.4	101.1	142.0	2.1	40.9	n.m. ¹	1.1x
Diversified	74.3%	4,099.8	3,631.3	4,533.2	507.4	2,599.6	2,994.0	2,092.2	19.3%	1.8x
Late/Growth	2.1%	130.0	57.5	0.4	72.6	130.9	1.2	58.3	n.m. ¹	1.0x
Venture - Diversified	0.3%	20.0	19.6	38.8	0.4	8.3	27.1	7.9	14.7%	2.4x
Venture - Early	0.1%	20.0	2.8	0.0	17.2	19.6	-0.4	2.4	n.m. ¹	0.9x
Venture - Multi-Stage	1.6%	101.0	37.4	0.1	63.7	107.5	6.5	43.8	n.m. ¹	1.2x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x

SURS - Private Equity

Portfolio Summary

SubStrategy	NAV Weight	Total Commitment (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Unfunded Commitment (\$mm)	Total Exposure (\$mm)	Gain/Loss (\$mm)	NAV (\$mm)	Net IRR	TVPI
Asian Buyouts	0.5%	50.0	16.0	0.6	34.7	48.7	-1.3	14.0	n.m. ¹	0.9x
Asian Growth Equity	0.1%	30.0	3.0	0.0	27.0	29.0	-1.0	1.9	n.m. ¹	0.7x
Early Stage VC	0.1%	20.0	2.8	0.0	17.2	19.6	-0.4	2.4	n.m. ¹	0.9x
European Buyouts	1.1%	223.7	38.4	13.4	183.1	213.2	5.0	30.1	n.m. ¹	1.1x
Late Stage VC	0.3%	30.0	29.6	58.5	0.4	8.3	36.8	7.9	24.6%	2.2x
Multi Region Buyout	0.0%	25.0	0.0	0.0	25.0	24.9	-0.1	-0.1	n.m.	0.0x
Multi Stage VC	1.6%	101.0	37.4	0.1	63.7	107.5	6.5	43.8	n.m. ¹	1.2x
North American Buyouts	18.1%	780.0	443.1	40.4	365.2	874.7	107.0	509.6	n.m. ¹	1.2x
North American Growth Equity	2.0%	100.0	54.6	0.4	45.6	101.9	2.2	56.3	n.m. ¹	1.0x
PE Fund-of-Funds	74.0%	4,019.8	3,560.0	4,433.4	498.7	2,584.6	2,959.2	2,085.8	19.2%	1.8x
PE Secondaries Fund	0.2%	70.0	61.3	80.1	8.7	15.0	25.1	6.3	7.7%	1.4x
PE Special Situations	2.1%	80.0	47.6	2.5	33.6	92.7	14.1	59.1	n.m. ¹	1.3x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x

SURS - Private Equity

Portfolio Summary

Vintage	NAV Weight	Total Commitment (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Unfunded Commitment (\$mm)	Total Exposure (\$mm)	Gain/Loss (\$mm)	NAV (\$mm)	Net IRR	TVPI
2023	-	50.0	0.0	0.0	44.6	44.6	0.0	0.0	n.m.	0.0x
2022	0.6%	365.1	19.9	0.00	336.6	354.1	-2.4	17.5	n.m. ¹	0.9x
2021	8.1%	551.0	232.0	7.7	326.4	555.2	4.5	228.8	n.m. ¹	1.0x
2020	9.1%	313.7	223.1	21.4	103.5	360.1	54.8	256.6	n.m. ¹	1.2x
2019	11.1%	360.0	253.9	25.6	125.7	438.2	84.1	312.5	20.3%	1.3x
2018	15.1%	420.0	289.1	13.9	132.9	557.0	148.9	424.1	24.0%	1.5x
2017	10.0%	220.0	173.8	54.1	46.4	327.6	161.5	281.3	27.7%	1.9x
2016	10.8%	250.0	218.5	120.1	38.1	342.9	206.5	304.8	23.8%	1.9x
2015	6.1%	125.0	109.4	75.6	15.6	188.6	139.2	173.0	25.8%	2.3x
2014	13.2%	300.0	260.8	161.5	39.2	410.4	271.9	371.2	17.4%	2.0x
2013	4.2%	100.0	91.0	81.8	9.0	126.2	108.0	117.2	15.5%	2.2x
2012	2.8%	100.0	87.8	95.8	12.2	91.6	87.5	79.5	13.6%	2.0x
2011	3.2%	124.6	110.6	164.3	11.3	101.3	143.7	90.0	16.3%	2.3x
2009	1.9%	90.0	81.8	130.6	8.2	62.7	103.3	54.5	14.6%	2.3x
2008	1.4%	100.0	92.9	163.7	7.1	46.5	110.2	39.3	14.2%	2.2x
2007	1.8%	280.4	266.1	435.9	18.3	68.4	219.9	50.1	10.0%	1.8x
2005	-	50.0	46.5	43.9	0.0	0.0	-2.6	0.0	-1.2%	0.9x
2004	0.1%	90.0	84.0	117.3	6.0	8.5	35.7	2.5	6.9%	1.4x
2002	0.4%	664.1	652.9	1,110.8	18.7	28.9	468.1	10.2	10.8%	1.7x
1998	0.0%	39.4	42.5	76.4	0.5	0.8	34.3	0.4	12.2%	1.8x
1995	0.0%	20.0	19.8	17.2	0.00	0.7	-1.9	0.7	-1.7%	0.9x
1990	0.1%	916.2	937.2	1,711.6	2.6	5.7	777.6	3.2	26.8%	1.8x

Reporting Period: Jul-1990 - Sep-2022

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SURS - Private Equity

Portfolio Summary

	NAV Weight	Total Commitment (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Unfunded Commitment (\$mm)	Total Exposure (\$mm)	Gain/Loss (\$mm)	NAV (\$mm)	Net IRR	TVPI
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x
Structure										
Co-Investment	5.6%	200.0	131.3	5.5	68.7	227.2	32.7	158.5	n.m. ¹	1.2x
Fund of Funds	46.7%	1,629.4	1,479.6	1,666.3	180.0	1,496.3	1,502.9	1,316.2	14.5%	2.0x
Managed Account	27.3%	2,400.3	2,090.4	2,786.8	318.7	1,088.3	1,466.0	769.6	21.6%	1.7x
Primary Fund	20.1%	1,229.7	531.1	90.7	726.8	1,293.3	126.2	566.6	15.9%	1.2x
Secondaries Fund	0.2%	70.0	61.3	80.1	8.7	15.0	25.1	6.3	7.7%	1.4x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x
Region										
Asia Pacific	0.9%	90.0	28.1	10.1	62.5	86.9	6.4	24.4	6.8%	1.2x
Europe	2.6%	400.4	219.5	303.9	194.5	267.6	157.4	73.1	13.4%	1.7x
Multi-Region	51.4%	1,680.4	1,310.7	869.9	381.1	1,829.0	1,007.0	1,447.8	13.4%	1.8x
North America	45.1%	3,358.6	2,735.3	3,445.6	664.8	1,936.6	1,982.1	1,271.8	21.2%	1.7x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x

SURS - Private Equity

Portfolio Summary

CommitmentYear	NAV Weight	Total Commitment (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Unfunded Commitment (\$mm)	Total Exposure (\$mm)	Gain/Loss (\$mm)	NAV (\$mm)	Net IRR	TVPI
1990	0.1%	916.2	937.2	1,711.6	2.6	5.7	777.6	3.2	26.8%	1.8x
1995	0.0%	20.0	19.8	17.2	0.00	0.7	-1.9	0.7	-1.7%	0.9x
1998	0.0%	39.4	42.5	76.4	0.5	0.8	34.3	0.4	12.2%	1.8x
2001	-	25.0	25.0	25.1	0.0	0.0	0.05	0.0	0.0%	1.0x
2002	0.4%	664.1	652.9	1,110.8	18.7	28.9	468.1	10.2	10.8%	1.7x
2004	0.1%	115.0	105.5	136.1	6.0	8.5	33.1	2.5	5.3%	1.3x
2007	1.6%	270.4	256.4	413.8	18.0	63.6	203.0	45.6	9.7%	1.8x
2008	1.4%	100.0	92.8	169.2	7.2	47.7	116.9	40.5	14.5%	2.3x
2009	2.1%	100.0	91.6	147.2	8.4	66.3	113.5	57.9	14.4%	2.2x
2012	6.0%	224.6	198.5	260.2	23.4	192.9	231.2	169.5	15.2%	2.2x
2013	4.2%	100.0	91.0	81.8	9.0	126.2	108.0	117.2	15.5%	2.2x
2014	13.2%	300.0	260.8	161.5	39.2	410.4	271.9	371.2	17.4%	2.0x
2015	6.1%	125.0	109.4	75.6	15.6	188.6	139.2	173.0	25.8%	2.3x
2016	10.8%	250.0	218.5	120.1	38.1	342.9	206.5	304.8	23.8%	1.9x
2017	19.5%	500.0	365.4	54.1	134.8	683.9	237.8	549.1	24.6%	1.7x
2018	3.2%	90.0	56.8	9.3	33.2	123.7	43.0	90.5	29.4%	1.8x
2019	12.6%	390.0	284.3	28.1	126.6	481.2	98.5	354.7	21.5%	1.3x
2020	14.3%	554.7	357.1	27.6	215.4	617.4	72.4	402.0	n.m. ¹	1.2x
2021	3.7%	354.5	104.8	2.8	247.7	350.6	0.8	102.9	n.m. ¹	1.0x
2022	0.8%	390.5	23.4	0.8	358.4	380.1	-1.0	21.6	n.m. ¹	1.0x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x

SURS - Private Equity

Portfolio Summary

AssetClass	NAV Weight	Total Commitment (\$mm)	Contributions (\$mm)	Distributions (\$mm)	Unfunded Commitment (\$mm)	Total Exposure (\$mm)	Gain/Loss (\$mm)	NAV (\$mm)	Net IRR	TVPI
Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x
SURS - Private Equity	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x

¹ IRR not meaningful for investments held less than 36 months

* Total figures take into account all current and closed portfolio positions as at Sep-2022

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
2023											
PAI Partners VIII-1 SCSp	USD	-	50.0	0.0	0.0	44.6	44.6	0.0	0.0 ¹	n.m.	0.0x
Total 2023	USD	-	50.0	0.0	0.0	44.6	44.6	0.0	0.0	n.m.	0.0x
2022											
Advent International GPE X	USD	0.0%	25.0	0.0	0.0	25.0	24.9	-0.1	-0.1	n.m.	0.0x
Base10 Partners III	USD	0.1%	20.0	2.8	0.0	17.2	19.6	-0.4	2.4	n.m. ²	0.9x
Bregal Sagemount IV-B	USD	0.0%	25.0	1.2	0.0	23.8	24.7	-0.3	0.9	n.m. ²	0.8x
Great Hill Equity Partners VIII-Pref	USD	-0.1%	25.0	0.0	0.0	25.0	23.6	-1.4	-1.4	n.m.	0.0x
Hg Saturn 3 A	USD	0.0%	35.0	0.2	0.0	34.8	34.7	-0.3	-0.09	n.m.	-0.5x
HgCapital Genesis 10 A	USD	0.0%	13.0	0.05	0.0	11.7	11.8	-0.01	0.04	n.m. ²	0.8x
Inflexion Buyout Fund VI	USD	0.0%	24.5	0.4	0.0	19.8	20.3	0.2	0.6	n.m. ²	1.6x
Nautic Partners X	USD	0.2%	25.0	6.5	0.0	18.5	24.9	-0.1	6.4	n.m. ²	1.0x
Nordic Capital XI Beta	USD	-	50.1	0.0	0.0	47.2	47.2	0.0	0.0 ¹	n.m.	0.0x
Oak HC-FT Partners V	USD	0.1%	40.0	1.2	0.0	38.8	40.8	0.8	2.0	n.m. ²	1.7x
Rubicon Technology Partners IV	USD	0.0%	32.5	0.0	0.0	32.5	32.1	-0.4	-0.4	n.m.	0.0x
Thoma Bravo Discover Fund IV	USD	0.0%	25.0	0.0	0.0	25.0	24.6	-0.4	-0.4	n.m.	0.0x
Thoma Bravo Fund XV	USD	0.3%	25.0	7.6	0.00	17.4	24.9	-0.10	7.5	n.m. ²	1.0x
Total 2022	USD	0.6%	365.1	19.9	0.00	336.6	354.1	-2.4	17.5	n.m.²	0.9x

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
2021											
Altaris Health Partners V	USD	0.5%	25.0	11.9	0.0	13.1	26.0	1.0	13.0	n.m. ²	1.1x
Avance Investment Partners	USD	0.2%	25.0	9.2	2.4	18.2	25.1	0.1	6.9	n.m. ²	1.0x
Base10 Advancement Initiative I	USD	0.7%	25.0	21.1	0.3	3.9	23.9	-0.8	20.0	n.m. ²	1.0x
Clearlake Capital Partners VII	USD	0.6%	50.0	17.2	0.00	32.8	49.7	-0.3	17.0	n.m. ²	1.0x
GGV Capital VIII	USD	0.4%	21.6	10.6	0.0	11.0	23.4	1.8	12.4	n.m. ²	1.2x
GGV Capital VIII Plus	USD	0.1%	5.4	2.4	0.0	3.0	5.5	0.1	2.5	n.m. ²	1.1x
GGV Discovery III	USD	0.2%	9.0	3.9	0.0	5.1	10.8	1.8	5.7	n.m. ²	1.5x
Harvest Partners IX	USD	0.1%	50.0	3.9	0.0	46.1	49.0	-1.0	2.9	n.m. ²	0.8x
Lincoln Fund I (Series B)	USD	0.9%	100.0	24.2	0.0	75.8	101.8	1.8	26.1	n.m. ²	1.1x
MBK Partners Fund V	USD	0.5%	50.0	16.0	0.6	34.7	48.7	-1.3	14.0	n.m. ²	0.9x
Oak HC-FT Partners IV	USD	0.7%	25.0	19.3	0.1	5.8	26.9	1.9	21.1	n.m. ²	1.1x
One Equity Partners VIII	USD	0.4%	25.0	10.4	0.8	15.4	26.6	1.5	11.1	n.m. ²	1.1x
One Rock Capital Partners III	USD	0.8%	35.0	23.4	3.6	15.2	38.4	3.5	23.3	n.m. ²	1.1x
Orchid Asia VIII	USD	0.1%	30.0	3.0	0.0	27.0	29.0	-1.0	1.9	n.m. ²	0.7x
Stellex Capital Partners II	USD	0.3%	25.0	8.4	0.00	16.6	26.0	1.0	9.5	n.m. ²	1.1x
Thoma Bravo Fund XIV	USD	1.5%	50.0	47.1	0.00	2.9	44.3	-5.7	41.4	n.m. ²	0.9x
Total 2021	USD	8.1%	551.0	232.0	7.7	326.4	555.2	4.5	228.8	n.m.²	1.0x

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
2020											
Clearlake Capital Partners VI	USD	1.5%	30.0	30.4	2.5	0.8	43.0	14.3	42.2	n.m. ²	1.5x
Hg Genesis 9	USD	0.3%	13.7	9.0	2.3	6.6	13.7	0.4	7.1	n.m. ²	1.0x
HgCapital Saturn Fund 2	USD	0.8%	37.5	28.8	11.1	18.5	40.9	4.7	22.4	n.m. ²	1.2x
Rubicon Technology Partners III	USD	0.9%	32.5	23.6	0.0	8.9	35.2	2.7	26.4	n.m. ²	1.1x
SURS TorreyCove Co-Investment Fund I	USD	5.6%	200.0	131.3	5.5	68.7	227.2	32.7	158.5	n.m. ²	1.2x
Total 2020	USD	9.1%	313.7	223.1	21.4	103.5	360.1	54.8	256.6	n.m.²	1.2x
2019											
Bregal Sagemount III-B	USD	1.3%	50.0	32.2	0.1	17.9	53.3	3.3	35.4	n.m. ²	1.1x
Cortec Group Fund VII	USD	1.2%	35.0	25.4	2.6	12.1	46.2	11.2	34.1	n.m. ²	1.4x
Harvest Partners VIII	USD	3.0%	70.0	72.9	14.1	7.7	93.5	27.1	85.9	n.m. ²	1.4x
OceanSound Partners Fund	USD	0.7%	25.0	20.7	7.0	10.7	29.9	5.4	19.1	n.m. ²	1.3x
Pantheon Access (US) - SURS 2018	USD	4.9%	180.0	102.7	1.8	77.3	215.3	37.1	138.0	20.3%	1.4x
Total 2019	USD	11.1%	360.0	253.9	25.6	125.7	438.2	84.1	312.5	20.3%	1.3x
2018											
Adams Street 2018 Global Fund	USD	3.2%	90.0	56.8	9.3	33.2	123.7	43.0	90.5	29.4%	1.8x
Mesirow Financial Private Equity Special Fund B	USD	9.5%	280.0	191.6	0.0	88.4	356.2	76.2	267.8	19.5%	1.4x
Reverence Capital Partners Opportunities Fund II	USD	2.3%	50.0	40.7	4.5	11.3	77.1	29.6	65.8	n.m. ²	1.7x
Total 2018	USD	15.1%	420.0	289.1	13.9	132.9	557.0	148.9	424.1	24.0%	1.5x

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
2017											
Adams Street 2017 Global Fund	USD	4.2%	90.0	71.9	20.4	18.1	137.0	67.4	118.9	26.2%	1.9x
Mesirow Financial Private Equity Fund VII-B	USD	2.8%	40.0	39.7	28.7	0.4	79.0	67.5	78.6	40.1%	2.7x
Pantheon Access (US) - SURS 2017	USD	3.0%	90.0	62.2	5.0	27.8	111.6	26.6	83.7	16.6%	1.4x
Total 2017	USD	10.0%	220.0	173.8	54.1	46.4	327.6	161.5	281.3	27.7%	1.9x
2016											
Adams Street 2016 Global Fund	USD	6.6%	150.0	123.5	53.8	26.5	211.4	115.2	184.8	23.1%	1.9x
M2 - SURS Emerging Private Equity Fund-of-Funds	USD	4.3%	100.0	95.0	66.3	11.6	131.6	91.4	120.0	24.7%	2.0x
Total 2016	USD	10.8%	250.0	218.5	120.1	38.1	342.9	206.5	304.8	23.8%	1.9x
2015											
Adams Street 2015 Global Fund	USD	6.1%	125.0	109.4	75.6	15.6	188.6	139.2	173.0	25.8%	2.3x
Total 2015	USD	6.1%	125.0	109.4	75.6	15.6	188.6	139.2	173.0	25.8%	2.3x
2014											
Adams Street 2014 Global Fund	USD	4.6%	100.0	92.2	75.4	7.8	137.8	113.3	130.0	17.6%	2.2x
Lincoln Fund I (Series A)	USD	3.9%	75.0	65.7	35.6	9.3	120.2	80.7	110.9	18.2%	2.2x
Pantheon Multi-Strategy Program 2014 (US) - SURS 2014	USD	4.6%	125.0	102.9	50.5	22.1	152.4	77.9	130.3	16.2%	1.8x
Total 2014	USD	13.2%	300.0	260.8	161.5	39.2	410.4	271.9	371.2	17.4%	2.0x
2013											
Adams Street 2013 Global Fund	USD	4.2%	100.0	91.0	81.8	9.0	126.2	108.0	117.2	15.5%	2.2x
Total 2013	USD	4.2%	100.0	91.0	81.8	9.0	126.2	108.0	117.2	15.5%	2.2x

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
2012											
Adams Street 2012 Global Fund	USD	2.6%	80.0	72.4	80.7	7.6	81.4	82.1	73.8	14.7%	2.1x
Adams Street Global Secondary Fund 5	USD	0.2%	20.0	15.4	15.1	4.6	10.3	5.4	5.7	6.6%	1.4x
Total 2012	USD	2.8%	100.0	87.8	95.8	12.2	91.6	87.5	79.5	13.6%	2.0x
2011											
Pantheon Europe Fund VII	USD	0.7%	39.6	33.3	42.7	3.1	23.8	30.0	20.6	12.9%	1.9x
Pantheon USA Fund IX	USD	2.5%	85.0	77.3	121.6	8.2	77.5	113.7	69.4	17.6%	2.5x
Total 2011	USD	3.2%	124.6	110.6	164.3	11.3	101.3	143.7	90.0	16.3%	2.3x
2009											
Adams Street Partnership Fund - 2009 Non-U.S. Developed Markets Fund	USD	0.5%	30.0	26.7	39.2	3.3	16.6	25.8	13.2	13.2%	2.0x
Adams Street Partnership Fund - 2009 Non-U.S. Emerging Markets Fund	USD	0.3%	10.0	9.2	9.5	0.8	9.2	8.7	8.4	9.5%	1.9x
Adams Street Partnership Fund - 2009 U.S. Fund	USD	1.2%	50.0	45.9	81.9	4.1	36.9	68.8	32.8	16.2%	2.5x
Total 2009	USD	1.9%	90.0	81.8	130.6	8.2	62.7	103.3	54.5	14.6%	2.3x
2008											
Adams Street 2009 Direct Fund	USD	0.1%	10.0	9.8	16.7	0.2	3.6	10.2	3.4	13.3%	2.0x
Adams Street Partnership Fund - 2008 Non-U.S. Fund	USD	0.6%	40.0	36.5	54.1	3.5	20.5	34.7	17.1	11.3%	1.9x
Adams Street Partnership Fund - 2008 U.S. Fund	USD	0.7%	50.0	46.5	92.9	3.5	22.4	65.3	18.9	16.4%	2.4x
Total 2008	USD	1.4%	100.0	92.9	163.7	7.1	46.5	110.2	39.3	14.2%	2.2x

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
2007											
Adams Street 2007 Global Opportunities Portfolio	USD	0.1%	100.0	99.1	147.0	8.7	11.9	51.0	3.2	6.9%	1.5x
Adams Street 2008 Direct Fund	USD	0.2%	10.0	9.7	22.1	0.3	4.8	16.9	4.5	15.5%	2.7x
Pantheon Europe Fund VI	USD	0.3%	42.1	37.4	57.5	1.6	9.5	28.0	7.9	10.0%	1.8x
Pantheon USA Fund VIII	USD	1.2%	103.3	95.4	173.1	7.7	42.2	112.1	34.5	13.0%	2.2x
Liquidated Holdings (1)	USD	-	25.0	24.4	36.3	0.00	0.00	11.9		8.3%	1.5x
Total 2007	USD	1.8%	280.4	266.1	435.9	18.3	68.4	219.9	50.1	10.0%	1.8x
2005											
Liquidated Holdings (2)	USD	-	50.0	46.5	43.9	0.0	0.0	-2.6		-1.2%	0.9x
Total 2005	USD	-	50.0	46.5	43.9	0.0	0.0	-2.6	0.0	-1.2%	0.9x
2004											
Adams Street Global Opportunities Secondary Fund	USD	0.0%	25.0	22.1	36.8	2.9	3.2	15.0	0.3	11.5%	1.7x
Adams Street Partnership Fund - 2004 Non-U.S. Fund	USD	0.1%	40.0	38.1	52.3	1.9	3.7	16.0	1.8	5.9%	1.4x
Pantheon Global Secondary Fund II	USD	0.0%	25.0	23.8	28.1	1.3	1.6	4.7	0.4 ³	4.3%	1.2x
Total 2004	USD	0.1%	90.0	84.0	117.3	6.0	8.5	35.7	2.5	6.9%	1.4x
2002											
Pantheon Europe Fund III	USD	0.0%	65.0	83.7	151.1	3.3	4.5	68.6	1.2	14.6%	1.8x
Pantheon USA Primary Investments	USD	0.3%	599.1	569.2	959.7	15.4	24.4	399.5	9.0	10.3%	1.7x
Total 2002	USD	0.4%	664.1	652.9	1,110.8	18.7	28.9	468.1	10.2	10.8%	1.7x

SURS - Private Equity

Portfolio Summary by Vintage Year

	Currency	NAV Weight	Total Commitment (mm)	Contributions (mm)	Distributions (mm)	Unfunded Commitment (mm)	Total Exposure (mm)	Gain/Loss (mm)	NAV (mm)	Net IRR	TVPI
1998											
Brinson Non-U.S. Partnership Fund Trust Program	USD	0.0%	39.4	42.5	76.4	0.5	0.8	34.3	0.4	12.2%	1.8x
Total 1998	USD	0.0%	39.4	42.5	76.4	0.5	0.8	34.3	0.4	12.2%	1.8x
1995											
Progress Alternative Investment Program	USD	0.0%	20.0	19.8	17.2	0.00	0.7	-1.9	0.7	-1.7%	0.9x
Total 1995	USD	0.0%	20.0	19.8	17.2	0.00	0.7	-1.9	0.7	-1.7%	0.9x
1990											
Adams Street SMA (1990-2007) - SURS	USD	0.1%	906.2	927.2	1,691.9	2.6	5.7	767.9	3.2	27.0%	1.8x
Liquidated Holdings (1)	USD	-	10.0	10.0	19.7	0.0	0.0	9.7		25.3%	2.0x
Total 1990	USD	0.1%	916.2	937.2	1,711.6	2.6	5.7	777.6	3.2	26.8%	1.8x
SURS - Private Equity	USD	100.0%	5,529.5	4,293.6	4,629.4	1,302.9	4,120.1	3,153.0	2,817.2	19.2%	1.7x

¹ Adjusted for additional contributions and distributions since last valuation, which is prior to the report date.

² IRR not meaningful for investments held less than 36 months

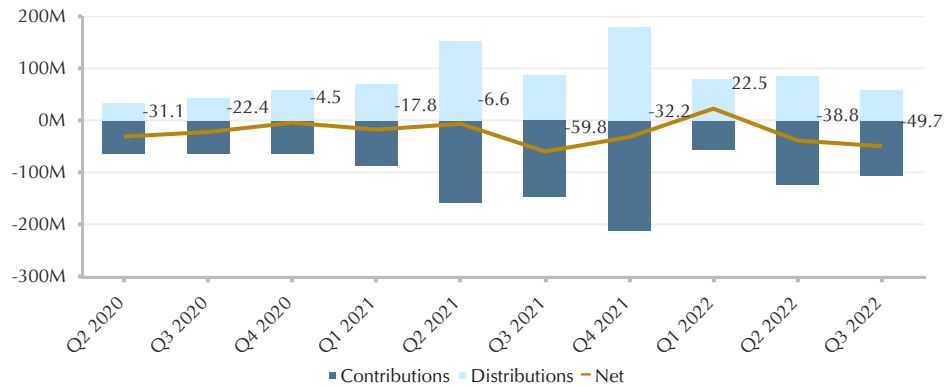
³ NAV is not up-to-date: Pantheon Global Secondary Fund II as of Dec-2021

* Total figures take into account all current and closed portfolio positions as at Sep-2022

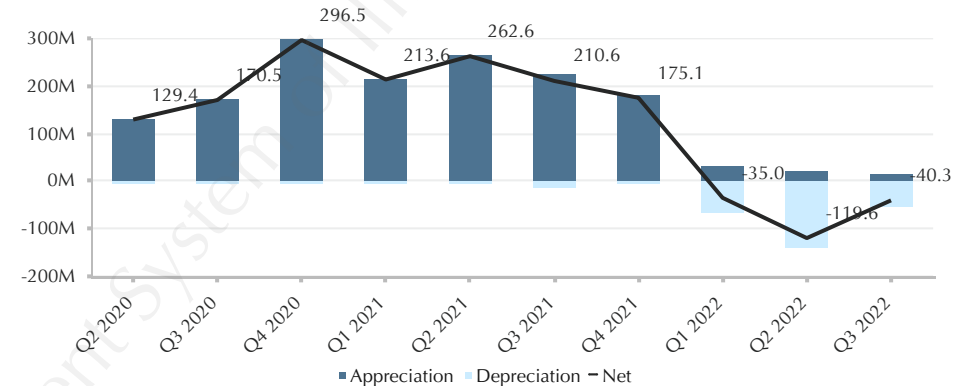
SURS - Private Equity

Period Chart Analysis

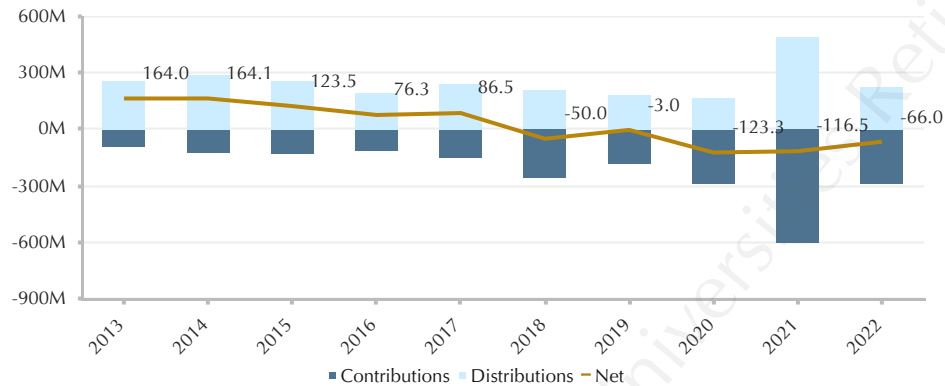
Cash Flows Quarterly



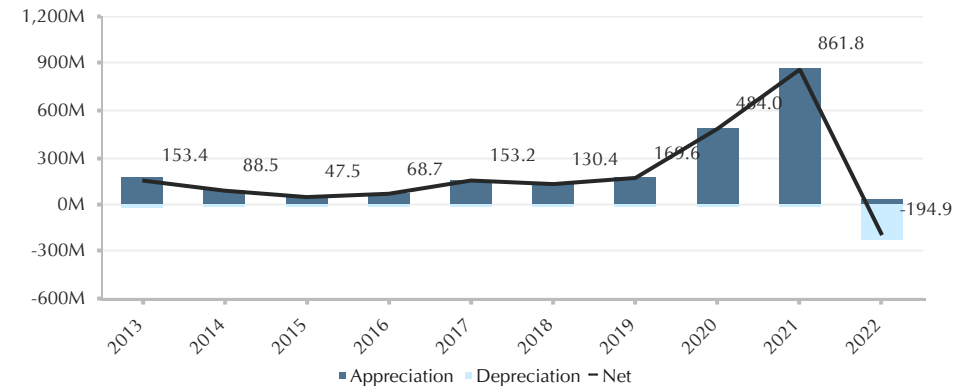
Appreciation/Depreciation Quarterly



Cash Flows Yearly



Appreciation/Depreciation Yearly



SURS - Private Equity

Movement By Sector - QTD

	Gain		Loss		Net Gain/Loss		Distributions		Contributions		NAV (mm)
	Total Millions	# Of Funds	Total Millions	# Of Funds	Net Millions	% Of Total Net	Total Millions	%	Total Millions	%	
Buyout	3.6	10	-16.7	17	-13.1	32.4%	1.9	3.4%	69.2	64.3%	612.7
Fund of Funds	7.5	5	-35.7	27	-28.1	69.8%	53.0	91.4%	32.1	29.8%	2,085.8
Growth	0.5	1	-1.3	3	-0.8	1.9%	0.3	0.4%	1.2	1.1%	58.3
Secondary	0.0	0	-0.2	2	-0.2	0.5%	0.5	0.8%	0.0	-	6.3
Venture	2.2	5	-0.3	3	1.9	-4.6%	2.3	4.0%	5.2	4.8%	54.0
Total	13.8	21	-54.1	52	-40.3	100.0%	58.0	100.0%	107.6	100.0%	2,817.2

Above reporting references both active and closed funds

SURS - Private Equity

Movement By Sector - LTM

	Gain		Loss		Net Gain/Loss		Distributions		Contributions		NAV (mm)
	Total Millions	# Of Funds	Total Millions	# Of Funds	Net Millions	% Of Total Net	Total Millions	%	Total Millions	%	
Buyout	52.4	13	-23.1	14	29.3	-148.3%	34.8	8.6%	264.3	52.7%	612.7
Fund of Funds	46.8	13	-99.4	19	-52.6	266.0%	359.6	89.1%	181.9	36.3%	2,085.8
Growth	4.7	1	-1.8	3	2.9	-14.8%	0.3	0.1%	31.5	6.3%	58.3
Secondary	0.0	0	-0.5	3	-0.5	2.5%	5.3	1.3%	0.0	-	6.3
Venture	5.2	5	-4.2	3	1.1	-5.4%	3.5	0.9%	24.1	4.8%	54.0
Total	109.2	32	-128.9	42	-19.8	100.0%	403.5	100.0%	501.7	100.0%	2,817.2

Above reporting references both active and closed funds

Reporting Period: Oct-2021 - Sep-2022

[View this portfolio online](#)

SURS - Private Equity

Top QTD Contributors/Detractors

Top Contributors

	Vintage	% Funded Commitment	Total Commitment Amount (\$mm)	Gain (\$K)	NAV (\$mm)	QTD IRR*	ITD IRR*
Mesirow Financial Private Equity Fund VII-	2017	98.9%	40.0	6,317	78.6	8.7%	40.1%
Oak HC-FT Partners V	2022	2.9%	40.0	845	2.0	n.m.*	n.m.*
OceanSound Partners Fund	2019	57.1%	25.0	743	19.1	n.m.*	n.m.*
Pantheon Access (US) - SURS 2017	2017	69.1%	90.0	626	83.7	0.8%	16.6%
GGV Discovery III	2021	43.5%	9.0	620	5.7	n.m.*	n.m.*
Gain	-	-	204.0	9,151	189.2	5.1%	28.0%
Gain (Remaining)	-	-	814.8	4,671	426.5	1.1%	11.0%
Total Gain	-	-	1,018.8	13,822	615.7	2.3%	12.0%

* IRR calculated at portfolio currency. IRR not meaningful for investments held less than 36 months

† IRR not meaningful for investments held less than 36 months

Top Detractors

	Vintage	% Funded Commitment	Total Commitment Amount (\$mm)	Loss (\$K)	NAV (\$mm)	QTD IRR*	ITD IRR*
Adams Street 2015 Global Fund	2015	87.5%	125.0	-5,290	173.0	-2.9%	25.8%
Adams Street 2013 Global Fund	2013	91.0%	100.0	-5,090	117.2	-4.0%	15.5%
Adams Street 2014 Global Fund	2014	92.2%	100.0	-4,713	130.0	-3.4%	17.6%
Thoma Bravo Fund XIV	2021	94.1%	50.0	-4,196	41.4	n.m.*	n.m.*
HgCapital Saturn Fund 2	2020	50.7%	37.5	-3,433	22.4	n.m.*	n.m.*
Loss	-	-	412.5	-22,721	483.9	-4.4%	18.3%
Loss (Remaining)	-	-	4,098.2	-31,423	1,717.5	-1.8%	20.5%
Total Loss	-	-	4,510.7	-54,145	2,201.5	-2.4%	20.4%
* IRR calculated at portfolio currency. IRR not meaningful for investments held less than 36 months							
† IRR not meaningful for investments held less than 36 months							
Total Portfolio(75)	-	76.5%	5,529.5	-40,323	2,817.2	-1.4%	19.2%

SURS - Private Equity

Top LTM Contributors/Detractors

Top Contributors

	Vintage	% Funded Commitment	Total Commitment Amount (\$mm)	Gain (\$K)	NAV (\$mm)	1Y IRR*	ITD IRR*
Reverence Capital Partners Opportunities F	2018	77.5%	50.0	14,756	65.8	n.m.*	n.m.*
SURS TorreyCove Co-Investment Fund I	2020	65.6%	200.0	14,733	158.5	n.m.*	n.m.*
Mesirow Financial Private Equity Special F	2018	68.4%	280.0	10,056	267.8	4.3%	19.5%
Mesirow Financial Private Equity Fund VII-	2017	98.9%	40.0	9,766	78.6	14.2%	40.1%
Lincoln Fund I (Series A)	2014	87.6%	75.0	5,138	110.9	4.5%	18.2%
Gain	-	-	645.0	54,450	681.6	9.4%	23.0%
Gain (Remaining)	-	-	1,462.4	54,732	1,035.5	5.9%	11.9%
Total Gain	-	-	2,107.4	109,181	1,717.0	7.2%	13.3%

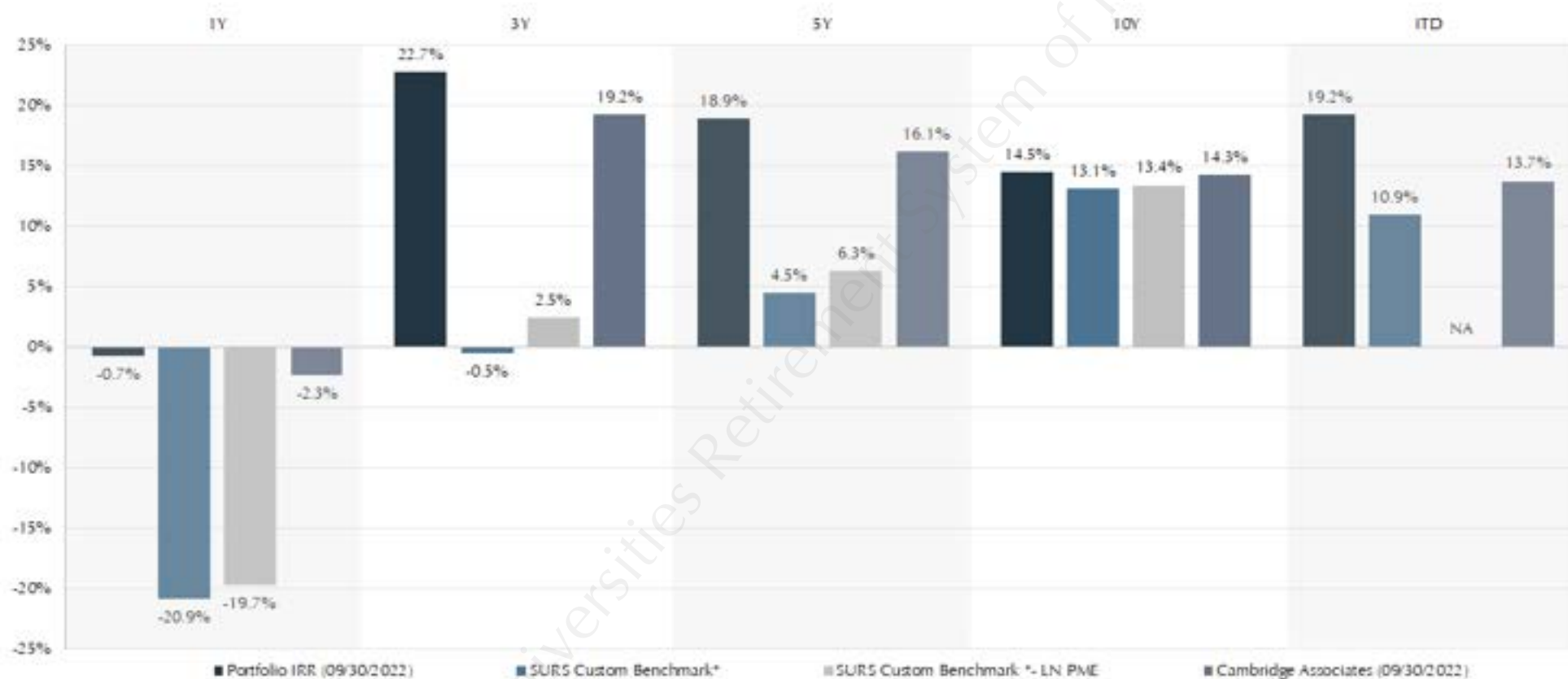
* IRR calculated at portfolio currency. IRR not meaningful for investments held less than 36 months

† IRR not meaningful for investments held less than 36 months

Top Detractors

	Vintage	% Funded Commitment	Total Commitment Amount (\$mm)	Loss (\$K)	NAV (\$mm)	1Y IRR*	ITD IRR*
Adams Street 2015 Global Fund	2015	87.5%	125.0	-15,966	173.0	-7.9%	25.8%
Adams Street 2013 Global Fund	2013	91.0%	100.0	-15,770	117.2	-10.8%	15.5%
Adams Street 2014 Global Fund	2014	92.2%	100.0	-12,653	130.0	-8.2%	17.6%
Adams Street 2012 Global Fund	2012	90.5%	80.0	-10,857	73.8	-11.5%	14.7%
HgCapital Saturn Fund 2	2020	50.7%	37.5	-8,104	22.4	n.m.*	n.m.*
Loss	-	-	442.5	-63,351	516.4	-10.2%	17.8%
Loss (Remaining)	-	-	2,979.5	-65,594	583.8	-10.0%	21.0%
Total Loss	-	-	3,422.0	-128,944	1,100.2	-10.0%	20.8%
* IRR calculated at portfolio currency. IRR not meaningful for investments held less than 36 months							
† IRR not meaningful for investments held less than 36 months							
Total Portfolio(75)	-	76.5%	5,529.5	-19,763	2,817.2	-0.7%	19.2%

Portfolio IRR vs Benchmarks



Custom Benchmark is the Wilshire 5000 + 3% (1Q lag) through December 2019 and ACWI IMI + 2% from 2020 on forward.

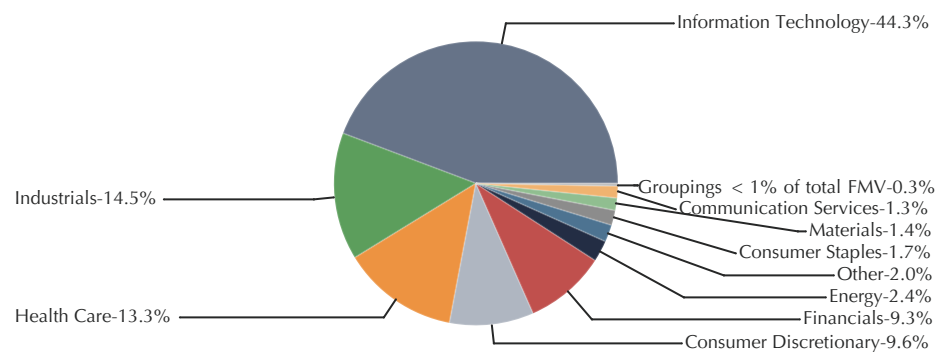
LN PME is a dollar-weighted Long-Nickels calculation of monthly changes in the Custom Benchmark. SURS Private Equity portfolio was activated in July 1990; therefore, inception to date PME was not calculated.

Cambridge Associates IRR reflects all Private Equity funds data excluding Real Estate, Timber and Infrastructure.

SURS - Private Equity

Portfolio Composition - Sector

Sector Exposure by FMV

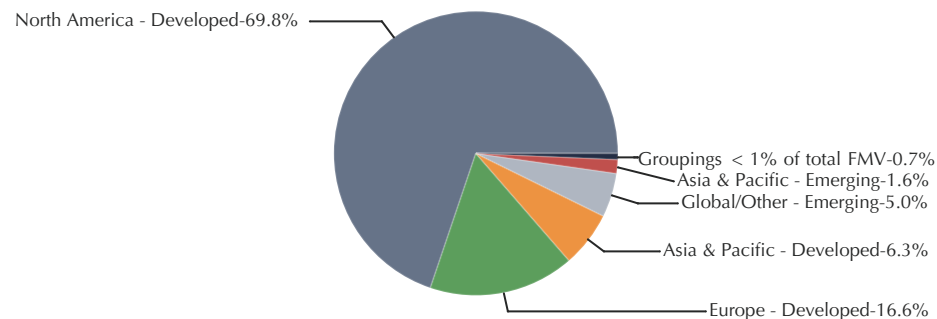


	Total Invested Capital	% of Total	Fair Market Value	% of Total
Information Technology	324,130,395	48.8%	1,284,570,909	44.3%
Industrials	73,470,884	11.1%	420,655,325	14.5%
Health Care	96,976,457	14.6%	384,795,753	13.3%
Consumer Discretionary	62,378,768	9.4%	278,417,275	9.6%
Financials	71,131,925	10.7%	269,017,988	9.3%
Energy	0	-	70,106,602	2.4%
Other	4,779,283	0.7%	56,754,603	2.0%
Consumer Staples	13,505,953	2.0%	49,332,529	1.7%
Materials	11,041,083	1.7%	40,866,389	1.4%
Communication Services	2,065,995	0.3%	38,898,097	1.3%
Groupings < 1% of total FMV	4,516,870	0.7%	8,573,639	0.3%

Total Invested Capital represents all investments made since inception and includes any recycled capital.

Position Analytics data based on GP provided information as of Sep-2022

Region Exposure by FMV

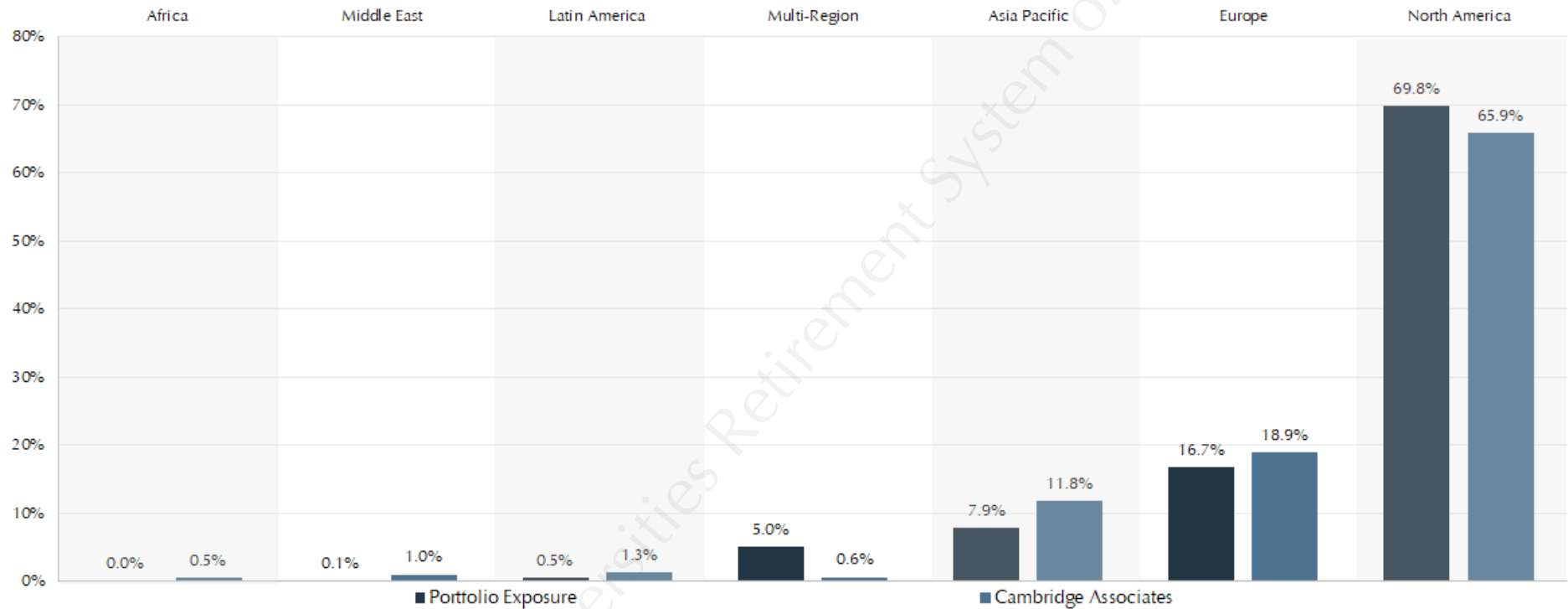


	Total Invested Capital	% of Total	Fair Market Value	% of Total
North America - Developed	550,968,373	83.0%	2,025,849,477	69.8%
Europe - Developed	74,761,556	11.3%	481,037,351	16.6%
Asia & Pacific - Developed	7,016,685	1.1%	184,120,294	6.3%
Global/Other - Emerging	1,593,740	0.2%	145,447,114	5.0%
Asia & Pacific - Emerging	21,889,889	3.3%	45,647,820	1.6%
Groupings < 1% of total FMV	7,767,371	1.2%	19,887,054	0.7%

Total Invested Capital represents all investments made since inception and includes any recycled capital.

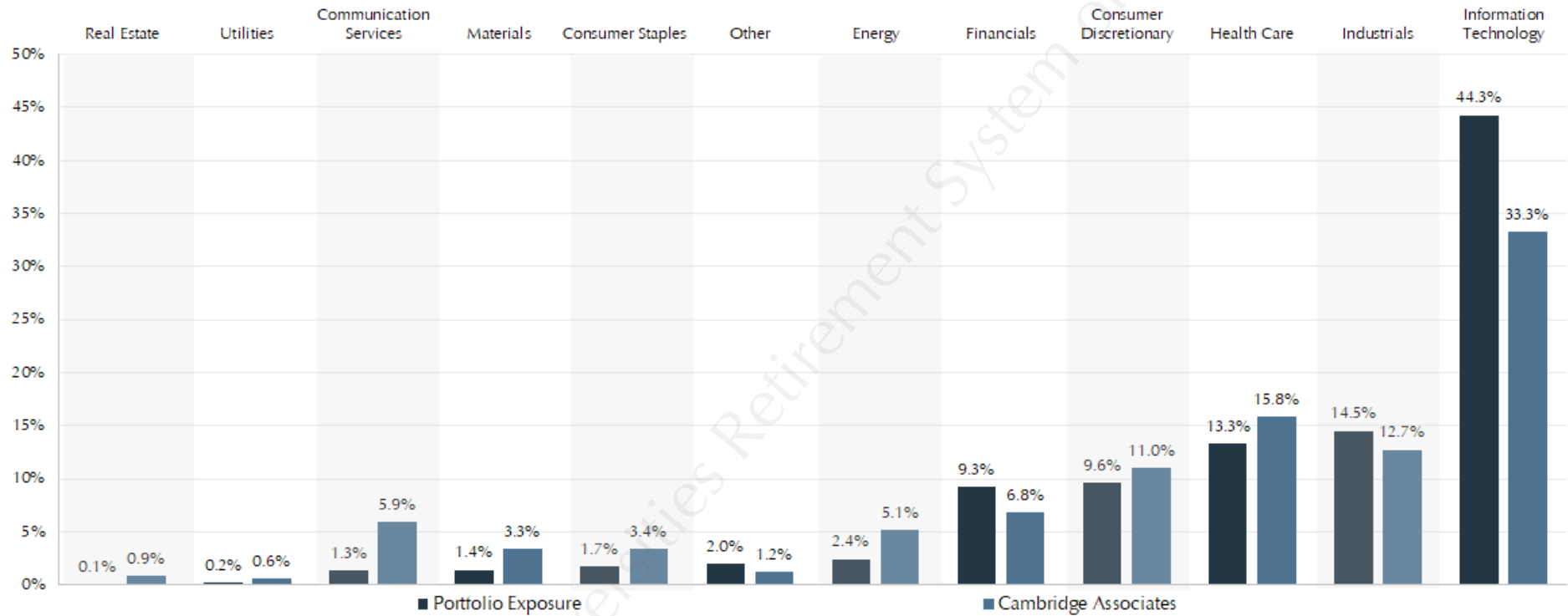
Company headquarters represents location provided by the manager most recently or at initial investment date.
Position Analytics data based on GP provided information as of Sep-2022

Portfolio Exposure vs Cambridge Benchmark – Geography



Portfolio Exposure based on Fair Market Value of the portfolio's underlying companies
 Position Analytics data based on General Partner provided information as of Sep-2022

Portfolio Exposure vs Cambridge Benchmark – Industry



Portfolio Exposure based on Fair Market Value of the portfolio's underlying companies
 Position Analytics data based on General Partner provided information as of Sep-2022

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Callan

September 30, 2022

**State Universities Retirement
System of Illinois
Real Estate**

**Investment Measurement Service
Quarterly Review**

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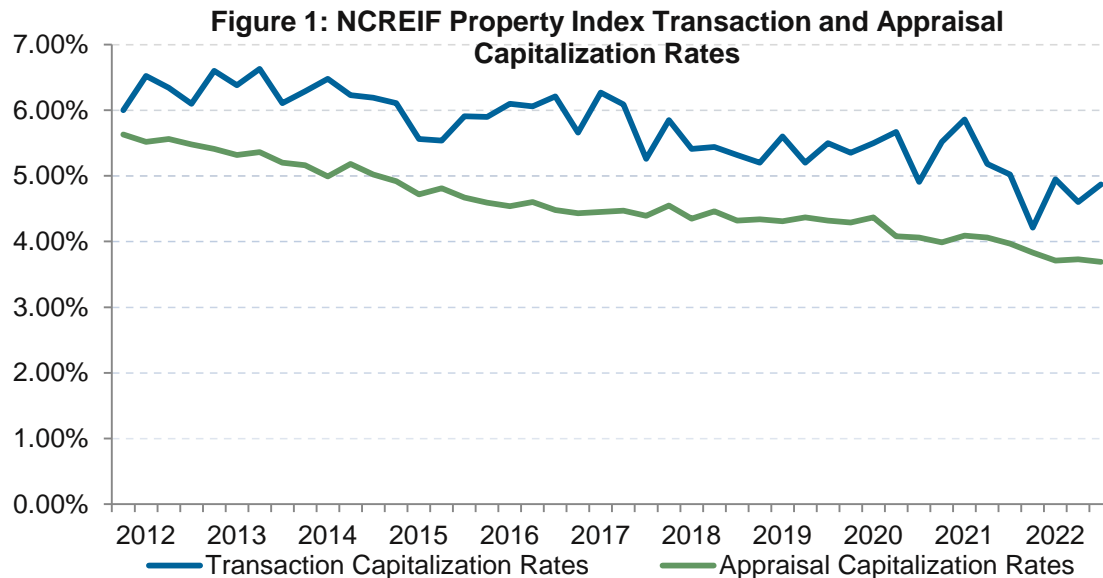
Callan Research/Education

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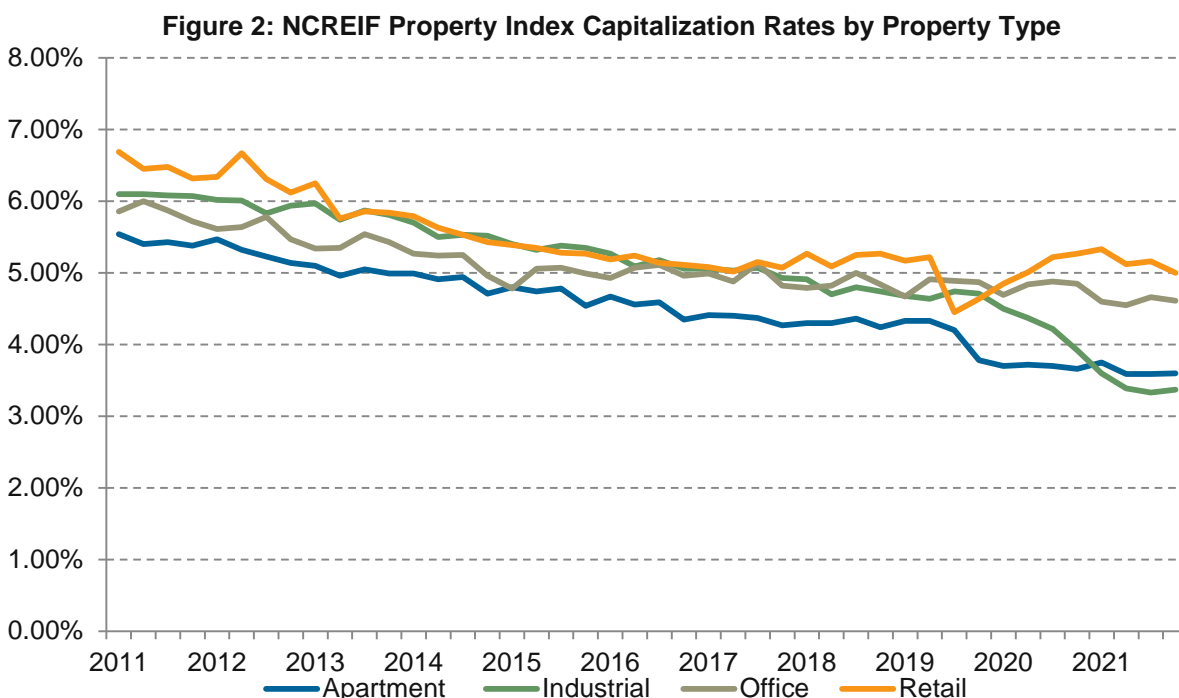
Commercial Real Estate Market Snapshot

Third Quarter 2022

The NCREIF Property Index, a measure of U.S. institutional real estate assets, rose 0.6% during 3Q22. The income return was 0.9% while the appreciation return was -0.4%. Hotels, which represent a small portion of the index, led property sector performance with a gain of 2.7%. Office finished last with a loss of 0.7%. Regionally, the South led with a 1.1% gain, while the Midwest was the worst performer but still rose 0.2%. The NCREIF Open-End Diversified Core Equity Index, representing equity ownership positions in U.S. core real estate, rose 0.5% during 3Q, with an income return of 0.8% and an appreciation return of -0.3%.



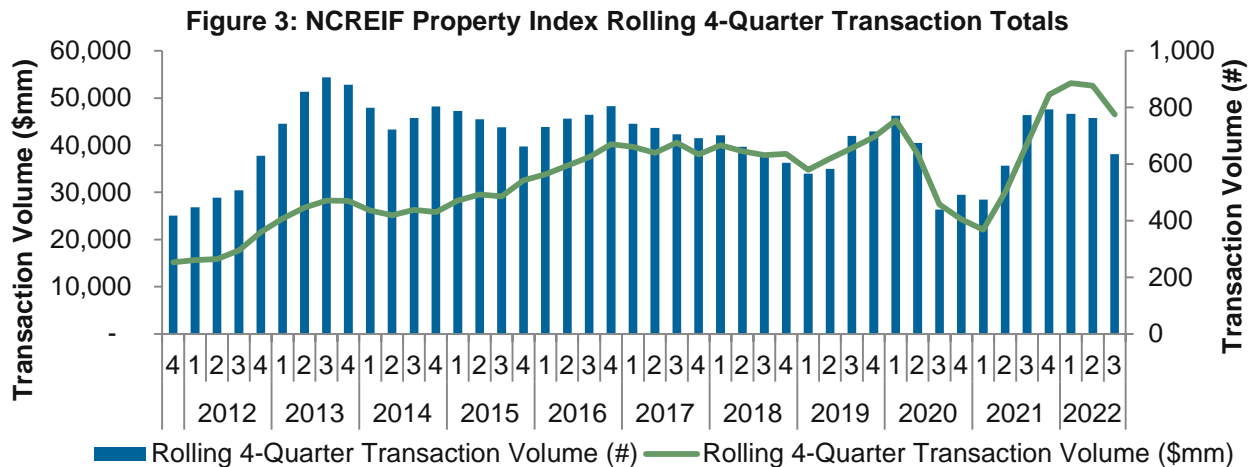
As seen in Figure 1, appraisal capitalization rates declined slightly to 3.7% during 3Q, and capitalization rates measured in active trades rose from 4.6% to 4.9%. At quarter end, the 10-year average appraisal capitalization rate was 4.5% and the 10-year average transaction capitalization rate was 5.7%. The spread between the two measures, which reflects pricing expectations between buyers and holders of real estate, increased slightly to 118 basis points.



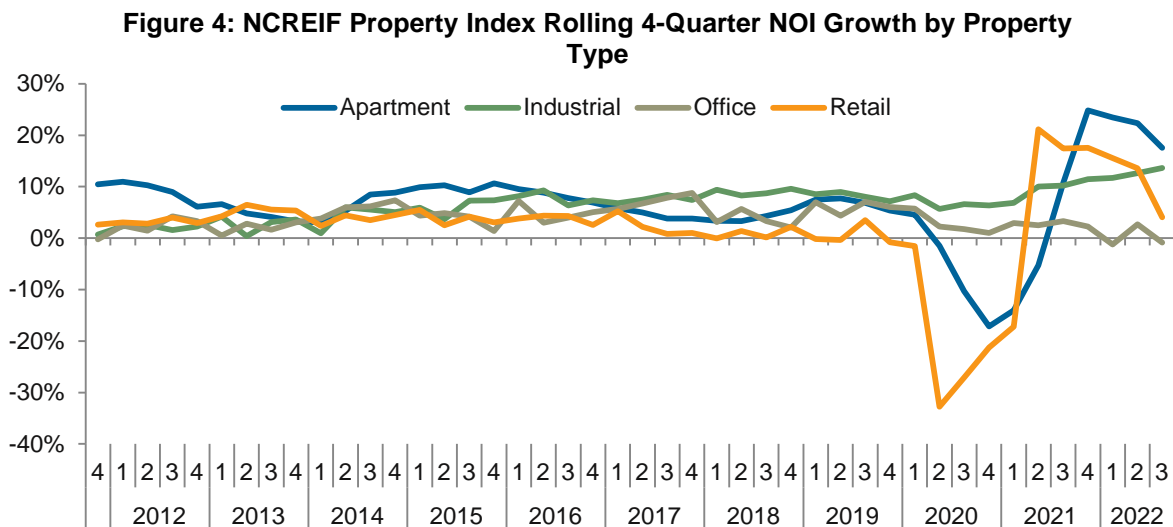
Market-weighted capitalization rates by property type increased slightly for Apartment (3.6%) and Industrial (3.4%). However, market-weighted capitalization rates declined for Office (4.6%) and Retail (5.0%).

Commercial Real Estate Market Snapshot

Third Quarter 2022



As shown in Figure 3, rolling four-quarter transaction volume totaled \$46.5 billion across 635 transactions. NCREIF recorded 100 transactions during 3Q, representing \$6.6 billion of value, compared to \$9.2 billion in 2Q. The average transaction size was \$66.1 million, compared to \$67.4 million in 2Q.



Rolling four-quarter net operating income growth was mixed during the quarter. Rolling four-quarter NOI growth decreased in Apartment (17.6%), Office (-0.8%), and Retail (4.1%), while NOI growth in Industrial (13.6%) continued its upward trajectory.

Summary Analysis

Investment Manager Asset Allocation

The table below contrasts the distribution of assets across the Fund's investment managers as of September 30, 2022, with the distribution as of June 30, 2022. The change in asset distribution is broken down into the dollar change due to Net New Investment and the dollar change due to Investment Return.

Asset Distribution Across Investment Managers

	September 30, 2022				June 30, 2022	
	Market Value	Weight	Net New Inv.	Inv. Return	Market Value	Weight
Total Private Real Estate	\$2,012,651,927	91.94%	\$67,089,834	\$8,460,219	\$1,937,101,874	91.97%
Total Core Funds	\$1,435,488,419	65.57%	\$33,892,440	\$2,725,113	\$1,398,870,866	66.42%
BlackRock Global Renewable Power III	26,757,488	1.22%	2,431,830	523,998	23,801,660	1.13%
Blackstone Property Partners	272,034,711	12.43%	(685,085)	(1,809,785)	274,529,581	13.03%
Carlyle Property Investors	170,554,494	7.79%	35,964	2,280,324	168,238,206	7.99%
Clarion Partners Lion Properties Fund	9,963,994	0.46%	9,918,787	45,207	-	-
GI Partners ETS Fund	39,984,638	1.83%	23,996,124	28,867	15,959,647	0.76%
Heitman America Real Estate Trust (HART)	315,764,739	14.42%	(570,014)	5,396,423	310,938,330	14.76%
JP Morgan Strategic Property Fund (SPF)	304,691,542	13.92%	(581,453)	(3,919,926)	309,192,921	14.68%
Prologis US Logistics Fund (USLF)	188,707,758	8.62%	(494,294)	161,588	189,040,464	8.98%
UBS Trumbull Property Fund (TPF)	107,029,055	4.89%	(159,420)	18,417	107,170,057	5.09%
Total Non-Core Funds	\$577,163,508	26.36%	\$33,197,394	\$5,735,106	\$538,231,008	25.56%
Basis Real Estate Debt Fund I	22,248,962	1.02%	(1,247,129)	600,119	22,895,972	1.09%
Basis Real Estate Debt Fund II	17,505,307	0.80%	7,282,728	311,621	9,910,958	0.47%
Blackstone BREP Europe VI (1)	32,167,331	1.47%	3,640,307	(2,748,298)	31,275,322	1.48%
Blackstone BREP Asia III	4,552,718	0.21%	5,197,970	(645,252)	-	-
Blue Vista Real Estate IV (2)	14,620,266	0.67%	(878,724)	(1,205,114)	16,704,104	0.79%
Brasa II	16,990,787	0.78%	(965,718)	1,039,801	16,916,705	0.80%
Brookfield Strategic Real Estate II	34,785,000	1.59%	(1,188,000)	91,000	35,882,000	1.70%
Brookfield Strategic Real Estate III	31,875,335	1.46%	64,476	1,142,528	30,668,331	1.46%
Brookfield Strategic RE IV	13,451,621	0.61%	12,068,784	1,303,536	79,301	0.00%
Cabot Industrial Value VI (CIVF)	47,672,073	2.18%	1,986,500	(238,277)	45,923,850	2.18%
Crow Holdings Realty VII	1,336,884	0.06%	(431,268)	(317,267)	2,085,419	0.10%
Crow Holdings Realty VIII	2,920,545	0.13%	(1,921,472)	(10,768)	4,852,785	0.23%
Crow Holdings Realty IX	40,312,611	1.84%	(4,950,585)	724,957	44,538,239	2.11%
Dune Real Estate Partners II	6,069,827	0.28%	(10,821)	(330,375)	6,411,023	0.30%
Dune Real Estate Partners III	65,470,851	2.99%	(205,140)	619,770	65,056,221	3.09%
Dune Real Estate IV	25,232,771	1.15%	(178,369)	1,951,220	23,459,920	1.11%
Franklin Templeton FTPREF	1,587,473	0.07%	(26,451)	100,534	1,513,390	0.07%
Franklin Templeton EMREFF	2,870,680	0.13%	(338,991)	(1,183,008)	4,392,679	0.21%
Franklin Templeton MDP RE 2015	58,668,298	2.68%	(291,543)	1,144,399	57,815,442	2.75%
Longpoint Realty Fund II	30,064,584	1.37%	4,462,751	532,760	25,069,073	1.19%
Long Wharf VI	26,567,587	1.21%	3,345,298	1,093,701	22,128,587	1.05%
Newport Capital Partners Fund III	508,031	0.02%	(38,078)	220,117	325,992	0.02%
Oaktree Real Estate Debt Fund II	10,451,022	0.48%	(171,781)	95,447	10,527,356	0.50%
StepSt Glb Partner RE II (fka MFIRE) (3)	16,449,929	0.75%	0	0	16,449,929	0.78%
Torchlight Debt VII	25,824,110	1.18%	9,825,000	449,966	15,549,144	0.74%
Westbrook XI	26,958,905	1.23%	(1,832,351)	991,990	27,799,266	1.32%
Farmland	\$41,524,267	1.90%	\$2,558,357	\$344,102	\$38,621,808	1.83%
Homestead USA Farmland Fund III	41,524,267	1.90%	2,558,357	344,102	38,621,808	1.83%
Total Private Infrastructure	\$134,977,939	6.17%	\$1,239,213	\$3,321,010	\$130,417,716	6.19%
Alinda Infrastructure Fund II	7,872,878	0.36%	(1,347)	(459,774)	8,333,999	0.40%
Ember Infrastructure I	6,876,788	0.31%	(149,226)	35,404	6,990,610	0.33%
Macquarie Infrastructure Partners II	233,873	0.01%	0	(884)	234,757	0.01%
Macquarie Infrastructure Partners III	50,233,291	2.29%	(1,101,760)	3,410,547	47,924,504	2.28%
Macquarie Infrastructure Partners IV	59,906,900	2.74%	1,459,108	335,717	58,112,076	2.76%
Pantheon Glb Infrast Secondaries IV	9,854,209	0.45%	1,032,439	0	8,821,770	0.42%
Total Fund (4)	\$2,189,154,133	100.0%	\$70,887,404	\$12,125,331	\$2,106,141,398	100.0%

(1) Reported in Euro's by manager and then converted to US \$.

(2) Year end figure is based on estimate. YE audit takes 120 days.

(3) Current market values are those of the prior quarter, adjusted for capital calls and distributions of current quarter.

(4) Values shown are minus accrued incentive fee.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 30, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended September 30, 2022

	Last Quarter	Last Year	Last 3 Years
Total Core Funds	(0.03%)	22.09%	12.64%
NCREIF NFI-ODCE Val Wt Nt	0.31%	20.96%	11.38%
Blackrock Global Renewable Power III	1.27%	4.58%	-
Blackstone Property Partners	(0.91%)	16.65%	9.99%
Carlyle Property Investors	1.15%	23.12%	17.57%
GI Partners ETS Fund	(0.45%)	-	-
Heitman America Real Estate Trust (HART)	1.55%	25.86%	11.97%
JP Morgan Strategic Property Fund (SPF)	(1.46%)	18.17%	10.49%
Prologis US Logistics Fund (USLF)	(0.17%)	35.04%	-
UBS Trumbull Property Fund (TPF)	(0.13%)	16.68%	6.90%
Total Non-Core Funds	0.55%	14.80%	7.77%
NCREIF ODCE + 1.5%	0.68%	22.47%	12.89%
Basis Real Estate Debt Fund I	2.23%	8.22%	9.19%
Basis Real Estate Debt Fund II	1.21%	0.69%	-
Blackstone BREP Europe VI (3)	(9.66%)	(4.98%)	3.37%
Blackstone BREP Asia III	(15.90%)	-	-
Blue Vista Real Estate IV **	(7.48%)	10.14%	15.21%
Brasa II	5.58%	-	-
Brookfield Strategic Real Estate II	0.02%	26.69%	16.78%
Brookfield Strategic RE III	3.60%	16.56%	11.68%
Brookfield Strategic RE IV	15.79%	15.79%	-
Cabot Industrial Value VI (CIVF)	(0.91%)	37.36%	-
Crow Holdings Realty VII	(18.76%)	(22.03%)	(1.33%)
Crow Holdings Realty VIII	(0.46%)	24.85%	27.42%
Crow Holdings Realty IX	1.39%	25.27%	-
Dune Real Estate Partners II	(5.32%)	(1.05%)	(1.89%)
Dune Real Estate Partners III	0.69%	4.19%	(1.61%)
Dune Real Estate Partners IV	7.56%	29.88%	3.10%
Franklin Templeton FTPREF	4.90%	13.02%	(15.00%)
Franklin Templeton EMREFF	(27.41%)	(35.72%)	(23.09%)
Franklin Templeton MDP RE 2015	1.72%	20.42%	5.10%
Longpoint Realty Fund II	2.69%	9.94%	-
Long Wharf VI	4.18%	37.81%	29.28%
Newport Capital Partners Fund III	58.92%	77.64%	-
Oaktree Real Estate Debt Fund II	0.58%	1.75%	(0.59%)
StepSt Partner RE II (fka MFIRE) (2)	0.00%	(0.76%)	(0.25%)
Torchlight Debt VII	1.44%	7.08%	-
Westbrook XI	2.97%	34.38%	11.63%
Total Private Real Estate	0.13%	19.92%	11.18%
Homestead USA Farmland Fund III	0.30%	11.40%	-
NCREIF Farmland Index	1.98%	11.49%	6.91%
Total Private Infrastructure	2.20%	17.70%	15.59%
CPI + 5%	1.00%	13.47%	10.27%
FTSE Dev Core Inf 50/50 N	(10.26%)	(7.11%)	(0.51%)
Alinda Infrastructure Fund II	(5.53%)	(6.99%)	(7.33%)
Ember Infrastructure I	(1.63%)	(13.62%)	-
Macquarie Infrastructure Partners III	6.97%	26.01%	22.66%
Macquarie Infrastructure Partners IV	0.28%	18.13%	13.94%
Pantheon Glb Infrast Secondaries IV	0.00%	-	-
Total Real Assets	0.26%	19.64%	11.60%
Total Real Assets Benchmark*(1)	0.48%	20.82%	11.76%

* Current Quarter Target = 66.0% NCREIF NFI-ODCE Val Wt Nt, 26.0% NCREIF NFI-ODCE Val Wt Nt+1.5%, 6.0% CPI-W+5.0% and 2.0% NCREIF Farmland Index.

(1) The quarterly Total Real Asset Benchmark returns are calculated by weighting the benchmark return for each asset class.

(2) Current market values are those of the prior quarter, adjusted for capital calls and distributions of current quarter.

All returns are shown net of fees.

(3) Reported in Euro's by manager and then converted to US \$.

** Year end figure is based on estimate. YE audit takes 120 days.

Investment Manager Returns

The table below details the rates of return for the Fund's investment managers over various time periods ended September 30, 2022. Negative returns are shown in red, positive returns in black. Returns for one year or greater are annualized. The first set of returns for each asset class represents the composite returns for all the fund's accounts for that asset class.

Returns for Periods Ended September 30, 2022

	Last 5 Years	Last 10 Years	Since Inception	
Total Core Funds	9.52%	9.31%	5.88%	(4/05)
NCREIF NFI-ODCE Val Wt Nt	9.26%	9.91%	7.38%	(4/05)
Blackrock Global Renewable Power III	-	-	0.48%	(4/21)
Blackstone Property Partners	-	-	9.35%	(4/19)
Carlyle Property Investors	-	-	15.00%	(10/18)
GI Partners ETS Fund	-	-	(0.45%)	(7/22)
Heitman America Real Estate Trust (HART)	9.35%	-	9.69%	(7/14)
JP Morgan Strategic Property Fund (SPF)	8.27%	-	8.70%	(4/14)
Prologis US Logistics Fund (USLF)	-	-	37.55%	(10/20)
UBS Trumbull Property Fund (TPF)	5.01%	6.78%	5.52%	(7/06)
Total Non-Core Funds	8.14%	11.76%	8.75%	(4/09)
NCREIF ODCE + 1.5%	10.77%	11.42%	9.89%	(4/09)
Basis Real Estate Debt Fund I	12.77%	-	12.77%	(10/17)
Basis Real Estate Debt Fund II	-	-	0.03%	(4/21)
Blackstone BREP Europe VI (3)	-	-	3.37%	(10/19)
Blackstone BREP Asia III	-	-	(15.90%)	(4/22)
Blue Vista Real Estate IV **	13.75%	-	3.44%	(10/15)
Brasa II	-	-	1.18%	(1/22)
Brookfield Strategic Real Estate II	13.69%	-	13.90%	(1/16)
Brookfield Strategic RE III	-	-	9.04%	(1/18)
Brookfield Strategic RE IV	-	-	12.45%	(7/21)
Cabot Industrial Value VI (CIVF)	-	-	20.70%	(7/20)
Crow Holdings Realty VII	3.56%	-	5.74%	(10/15)
Crow Holdings Realty VIII	-	-	23.21%	(7/18)
Crow Holdings Realty IX	-	-	16.21%	(4/21)
Dune Real Estate Partners II	1.33%	8.12%	6.53%	(1/09)
Dune Real Estate Partners III	1.82%	-	4.97%	(4/13)
Dune Real Estate Partners IV	1.85%	-	1.85%	(10/17)
Franklin Templeton FTPREF	(1.62%)	9.83%	8.91%	(4/12)
Franklin Templeton EMREFF	(11.29%)	2.27%	1.10%	(7/11)
Franklin Templeton MDP RE 2015	4.79%	-	3.10%	(7/15)
Longpoint Realty Fund II	-	-	4.30%	(7/20)
Long Wharf VI	-	-	20.86%	(7/19)
Newport Capital Partners Fund III	-	-	62.02%	(7/21)
Oaktree Real Estate Debt Fund II	4.52%	-	4.52%	(10/17)
StepSt Partner RE II (fka MFIRE) (2)	1.22%	5.59%	5.25%	(4/12)
Torchlight Debt VII	-	-	2.96%	(4/21)
Westbrook XI	-	-	10.69%	(7/19)
Total Private Real Estate	9.17%	9.91%	6.17%	(4/05)
Homestead USA Farmland Fund III	-	-	11.67%	(1/21)
NCREIF Farmland Index	6.58%	9.60%	8.76%	(1/21)
Total Private Infrastructure	11.31%	8.59%	8.46%	(10/09)
CPI + 5%	8.91%	7.50%	7.52%	(10/09)
FTSE Dev Core Inf 50/50 N	3.04%	6.67%	7.83%	(10/09)
Alinda Infrastructure Fund II	(8.29%)	(2.76%)	(1.29%)	(10/09)
Ember Infrastructure I	-	-	(18.65%)	(7/21)
Macquarie Infrastructure Partners III	18.40%	-	13.02%	(1/15)
Macquarie Infrastructure Partners IV	-	-	7.92%	(4/18)
Pantheon Glb Infrast Secondaries IV	-	-	0.00%	(7/22)
Total Real Assets	9.64%	9.59%	5.91%	(4/05)
Total Real Assets Benchmark*(1)	9.85%	9.38%	6.98%	(4/05)

* Current Quarter Target = 66.0% NCREIF NFI-ODCE Val Wt Nt, 26.0% NCREIF NFI-ODCE Val Wt Nt+1.5%, 6.0% CPI-W+5.0% and 2.0% NCREIF Farmland Index.

(1) The quarterly Total Real Asset Benchmark returns are calculated by weighting the benchmark return for each asset class.

(2) Current market values are those of the prior quarter, adjusted for capital calls and distributions of current quarter.

All returns are shown net of fees.

(3) Reported in Euro's by manager and then converted to US \$.

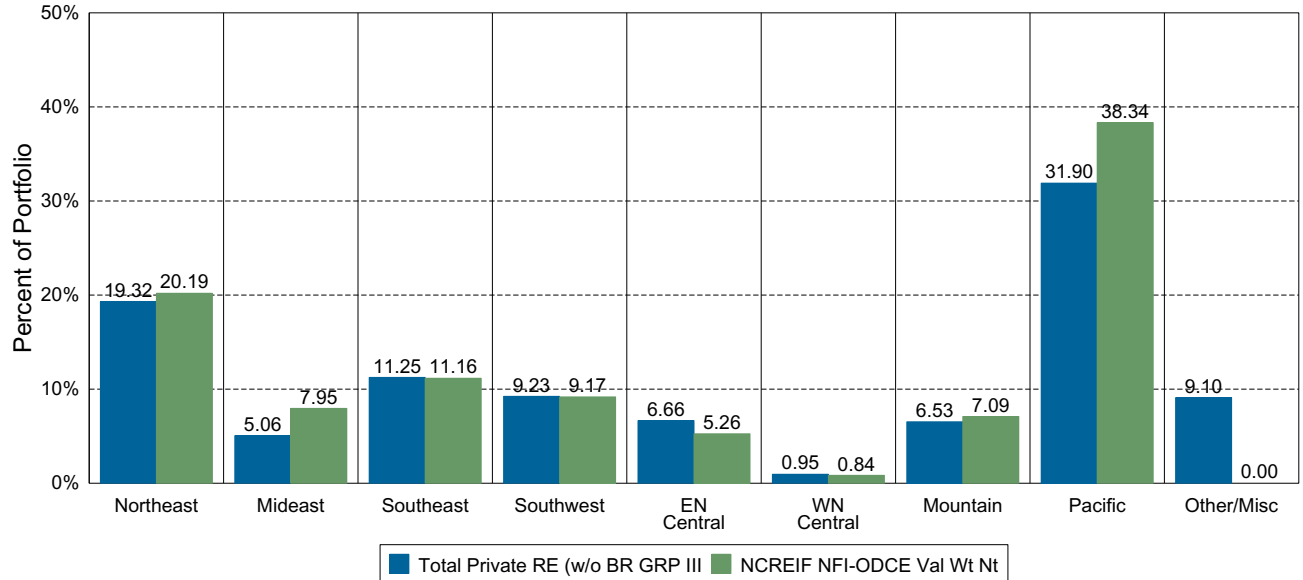
** Year end figure is based on estimate. YE audit takes 120 days.

Total Private RE (w/o BR GRP III) Diversification Analysis as of September 30, 2022

Diversification Analysis

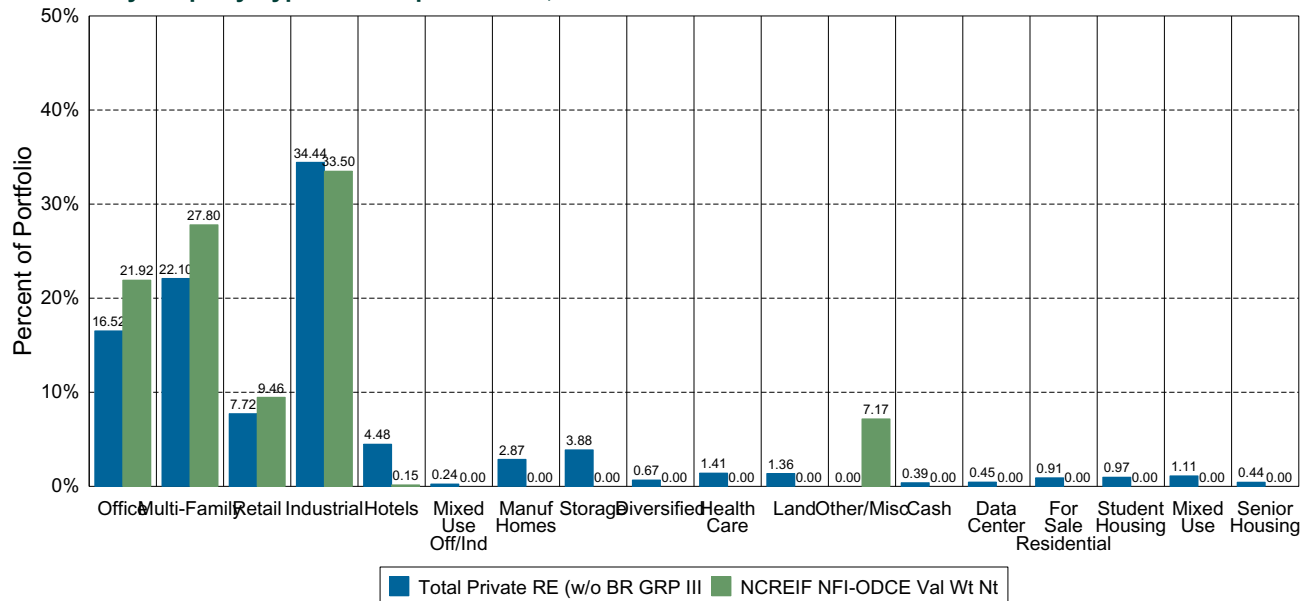
The following charts provide information on the diversification of the portfolio with regards to both Geographic Region and Property Type. Similar information is provided on the relevant market index for comparison.

Diversification by Geographic Region as of September 30, 2022



Total Private RE (w/o BR GRP III)	19.32%	5.06%	11.25%	9.23%	6.66%	0.95%	6.53%	31.90%	9.10%
NCREIF NFI-ODCE Val Wt Nt	20.19%	7.95%	11.16%	9.17%	5.26%	0.84%	7.09%	38.34%	0.00%

Diversification by Property Type as of September 30, 2022



Total Private RE (w/o BR GRP III)	16.52%	22.10%	7.72%	34.44%	4.48%	0.24%	2.87%	3.88%	0.67%	1.41%	1.36%	0.00%	0.39%	0.45%	0.91%	0.97%	1.11%	0.44%
NCREIF NFI-ODCE Val Wt Nt	21.92%	27.80%	9.46%	33.50%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Total Private Real Estate Real Estate Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Dist. of Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
06/2005	0	42,173,431	0	0	(0)	123,467	0	0	42,049,963
09/2005	42,049,963	34,412,979	0	0	2,932,432	852,473	0	0	78,542,902
12/2005	78,542,902	48,535,080	0	0	(2,207,961)	1,217,584	0	0	123,652,438
03/2006	123,652,438	1,679,008	0	0	7,754,988	1,679,008	0	0	131,407,426
06/2006	131,407,426	154,313,912	17,260	0	62,225	1,829,427	0	0	283,971,396
09/2006	283,971,396	6,538,259	1,719,275	0	(379,023)	1,882,915	0	0	289,966,992
12/2006	289,966,992	7,421,001	1,708,539	334,414	6,091,615	1,887,109	0	0	302,966,624
03/2007	302,966,624	6,918,111	1,675,293	348,138	13,086,106	3,690,165	0	2,458,173	318,149,659
06/2007	318,149,659	1,842,480	1,807,242	359,826	14,785,736	1,842,480	0	0	334,382,812
09/2007	334,382,812	2,265,946	1,724,761	380,988	10,156,598	1,826,121	0	0	346,323,006
12/2007	346,323,006	1,956,882	1,690,561	388,418	6,336,475	5,689,851	0	0	350,228,655
03/2008	350,228,655	1,988,386	1,674,352	663,376	1,569,797	1,988,386	0	0	352,809,428
06/2008	352,809,428	8,831,700	1,822,454	128,447	(17,340,577)	2,918,708	0	0	343,075,849
09/2008	343,075,849	3,142,415	1,822,648	376,323	(2,083,408)	3,142,415	0	0	342,438,766
12/2008	342,438,766	3,143,110	1,881,551	286,163	(45,400,090)	3,143,110	0	0	298,634,064
03/2009	298,634,064	3,043,682	1,823,223	273,693	(44,893,159)	4,264,862	0	0	254,069,254
06/2009	254,069,254	3,600,000	1,840,942	592,300	(23,368,122)	1,989,933	0	0	233,559,843
09/2009	233,559,843	0	1,703,642	575,906	(12,246,283)	2,003,491	0	0	220,437,804
12/2009	220,437,804	0	1,788,774	566,083	(10,965,797)	1,965,752	0	0	208,728,946
03/2010	208,728,946	25,000,000	2,015,326	210,612	734,572	2,061,158	0	0	234,207,074
06/2010	234,207,074	27,040,000	3,097,524	239,447	5,875,693	2,456,070	0	0	267,524,774
09/2010	267,524,774	25,000,000	2,907,443	294,552	19,471,475	2,727,021	0	0	311,882,119
12/2010	311,882,119	26,840,000	3,525,226	487,973	8,701,428	3,289,692	0	0	347,171,108
03/2011	347,171,108	6,169,856	3,049,562	672,479	8,721,683	3,328,279	0	0	361,111,450
06/2011	361,111,450	4,373,333	3,139,247	663,418	14,060,049	4,205,243	0	0	377,815,419
09/2011	377,815,419	2,222,095	2,938,893	679,965	15,992,933	3,423,940	0	0	394,865,435
12/2011	394,865,435	16,655,942	2,952,521	703,273	(6,843,995)	3,396,014	0	0	403,530,615
03/2012	403,530,615	5,777,016	3,237,093	712,989	10,670,378	3,528,506	0	0	418,973,609
06/2012	418,973,609	12,851,428	3,070,176	811,541	6,466,680	6,007,837	0	544,391	433,998,123
09/2012	433,998,123	12,453,309	3,465,912	821,801	8,311,113	5,430,310	0	1,560,625	450,415,721
12/2012	450,415,721	21,304,116	2,985,126	836,210	7,740,575	5,848,715	0	1,311,525	474,449,087
03/2013	474,449,087	8,924,696	3,361,755	842,722	9,867,263	4,936,044	0	5,912,217	484,911,819
06/2013	484,911,819	13,690,142	3,408,964	813,391	9,856,009	130,555,101	0	35,883	380,462,559
09/2013	380,462,559	28,876,958	3,159,030	1,277,279	6,839,123	12,324,318	0	1,719,937	404,016,136
12/2013	404,016,136	62,878,607	3,041,081	1,020,951	7,460,729	4,845,993	0	250,445	471,279,164
03/2014	471,279,164	8,361,763	3,496,147	1,123,862	18,364,484	13,093,727	0	1,444,640	485,839,330
06/2014	485,839,330	168,387,475	4,383,107	1,207,697	10,271,773	10,045,299	2,417	20,362,045	637,264,227
09/2014	637,264,227	101,636,642	6,181,480	1,409,298	13,167,818	11,957,185	0	449,945	744,433,739
12/2014	744,433,739	77,116,484	6,866,500	1,267,082	15,668,216	9,096,964	0	22,718,143	811,002,750
03/2015	811,002,750	21,635,146	7,674,697	1,760,301	20,980,550	15,152,959	0	2,674,991	841,704,892
06/2015	841,704,892	22,866,436	7,861,829	1,820,086	22,507,085	12,887,424	0	1,339,019	878,893,713
09/2015	878,893,713	11,216,301	7,918,911	1,780,676	22,613,392	20,089,832	0	827,939	897,943,868
12/2015	897,943,868	20,871,212	7,874,144	2,481,710	21,862,704	13,671,377	0	388,596	932,010,245
03/2016	932,010,245	20,295,944	8,143,230	1,988,116	13,286,274	16,368,188	0	225,653	955,153,736
06/2016	955,153,736	31,896,620	8,292,447	2,190,974	13,707,723	10,963,886	0	183,426	995,712,241
09/2016	995,712,241	14,378,035	8,174,346	2,185,457	15,342,583	24,149,725	0	86,935	1,007,185,087
12/2016	1,007,185,087	27,586,682	8,235,734	2,364,750	15,926,218	28,938,749	0	1,810,102	1,025,820,120

Total Private Real Estate Real Estate Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
03/2017	1,025,820,120	11,467,605	8,016,983	2,109,415	6,876,693	11,830,339	0	329,195	1,037,912,453
06/2017	1,037,912,453	18,021,595	8,891,970	2,168,112	11,363,646	22,346,158	0	655,280	1,051,020,114
09/2017	1,051,020,114	15,302,424	8,886,731	2,100,113	12,667,629	8,101,029	0	31,875	1,077,643,881
12/2017	1,077,643,881	17,510,963	9,161,490	2,130,216	19,482,853	19,827,764	0	665,618	1,101,175,590
03/2018	1,101,175,590	33,732,281	9,803,113	2,442,601	13,309,923	16,417,883	930,000	678,961	1,137,551,462
06/2018	1,137,551,462	22,164,160	9,952,779	2,632,871	10,651,214	9,158,610	135,685,504	162,915	1,032,679,716
09/2018	1,032,679,716	28,558,458	9,640,728	2,696,531	10,205,147	13,635,013	64,763,357	3,584,690	996,404,457
12/2018	996,404,457	20,147,456	9,929,615	2,533,802	11,192,031	7,728,893	73,649,942	2,727,413	951,033,509
03/2019	951,033,509	133,117,644	13,792,179	2,593,684	2,441,843	10,093,011	39,731,922	0	1,047,966,557
06/2019	1,047,966,557	206,422,697	10,768,865	2,615,134	(2,815,011)	11,490,391	21,807,071	2,518,787	1,223,911,726
09/2019	1,223,911,726	26,737,418	10,550,915	3,992,533	3,046,783	13,565,961	23,690,852	620,309	1,222,377,188
12/2019	1,222,377,188	19,441,272	12,989,793	3,298,225	276,299	10,011,050	11,871,388	1,980,829	1,227,923,060
03/2020	1,227,923,060	30,094,014	9,862,632	3,273,348	(25,880,195)	10,909,231	17,644,036	1,437,607	1,209,853,520
06/2020	1,209,853,520	20,755,150	7,623,396	3,492,505	(43,120,490)	7,121,328	1,923,758	167,748	1,182,406,237
09/2020	1,182,406,237	21,920,519	8,488,065	4,074,138	4,048,435	8,566,129	7,202,553	983,605	1,196,036,831
12/2020	1,196,036,831	120,614,002	10,407,925	4,402,765	21,776,007	10,379,146	5,891,878	0	1,328,160,976
03/2021	1,328,160,976	40,899,080	10,321,504	5,582,092	29,121,967	15,947,023	15,354,059	0	1,371,620,353
06/2021	1,371,620,353	47,072,652	14,771,997	5,840,394	60,724,304	14,552,671	19,194,335	2,007,955	1,452,593,952
09/2021	1,452,593,952	49,754,843	15,179,732	5,976,957	100,292,821	18,806,319	15,353,164	1,141,075	1,576,543,833
12/2021	1,576,543,833	83,289,038	13,832,213	6,082,374	107,846,155	32,393,777	35,002,390	0	1,715,555,306
03/2022	1,715,555,306	74,059,704	13,201,261	6,639,777	126,317,930	17,102,414	5,722,495	3,561,349	1,896,108,166
06/2022	1,896,108,166	54,640,844	11,905,588	6,262,984	56,406,633	32,699,220	35,345,382	7,952,127	1,936,801,519
09/2022	1,936,801,519	105,079,152	11,572,019	6,359,813	(2,603,794)	16,115,366	13,677,513	2,046,462	2,012,649,743
		0 2,358,915,595	408,709,459	127,243,072	775,144,904	767,515,537	544,444,016	99,558,429	2,012,649,743

Returns

Net Portfolio Cumulative IRR = 7.63%

Ratios

Capital Account = \$2,012,649,743

Total Value = \$3,424,167,724

Committed Capital = \$3,172,133,128

Paid In Capital = \$2,358,915,595

Remaining Commitment = \$912,775,962

PIC Multiple (Paid In Capital/Committed Capital) = 74.36%

Total Economic Exposure (Capital Account + Remaining Commitment) = \$2,925,425,705

TVPI Investment Multiple (Total Value/Paid In Capital) = 1.45x

DPI Realization Multiple (Distributions/Paid In Capital) = 0.60x

RVPI Residual Multiple (Capital Account/Paid In Capital) = 0.85x

Working on updating historical cashflows on several managers to include detail cashflows.

Callan data feed at inception of relationship did not include fee amounts and income amounts.

Managers that still need updating: Brookfield II, Crow VII & VIII, Franklin EMREFF, MDP RE 2015, & FTPREF, Macquarie II & III.

Capital commitments reflects the sum of: (i) aggregate capital contributions translated to U.S.

Dollars as of the date of each capital contribution transaction; and (ii) reported uncalled capital commitments translated to U.S. Dollars as of quarter end date.

State Universities Retirement System of Illinois Manager Detail as of September 30, 2022

The following table summarizes changes in each manager's aggregated cash flows and valuation information as of September 30, 2022.

Manager	Vintage Year	Capital Commitments (\$000s)	Paid-In Capital (\$000s)	Uncalled Capital (\$000s)	% Paid-In	Distributed Capital (\$000s)	Net Asset Value (\$000s)	DPI	RVPI	TVPI	Net IRR
Stabilized Growth Funds											
UBS Trumbull Property Fund (TPF)	2006	\$282,855	282,855	-0	100.00%	398,989	107,029	1.41x	0.38x	1.79x	6.62%
Heitman America Real Estate Trust (HART)	2014	\$204,255	204,255	-0	100.00%	54,255	315,765	0.27x	1.55x	1.81x	9.70%
JP Morgan Strategic Property Fund (SPF)	2014	\$150,000	150,000	0	100.00%	2	304,692	0.00x	2.03x	2.03x	8.88%
Carlyle Property Investors	2018	\$118,412	118,412	0	100.00%	19,772	170,554	0.17x	1.44x	1.61x	15.52%
Blackstone Property Partners	2019	\$215,718	215,718	0	100.00%	15,718	272,035	0.07x	1.26x	1.33x	9.80%
Prologis US Logistics Fund (USLF)	2020	\$106,798	106,798	0	100.00%	7,287	188,708	0.07x	1.77x	1.84x	38.45%
BlackRock Global Renewable Power III	2020	\$100,000	31,691	72,553	31.69%	4,515	26,757	0.14x	0.84x	0.99x	(1.52%)
GI Partners ETS Fund	2022	\$75,000	37,861	37,139	50.48%	0	39,985	0.00x	1.06x	1.06x	14.54%
IFM Glb Infrast Fund (GIF)	2022	\$100,000	0	100,000	0.00%	0	0	-	-	-	0.00%
Clarion Partners Lion Properties Fund	2022	\$225,000	10,018	214,982	4.45%	81	9,964	0.01x	0.99x	1.00x	0.42%
Non-Traditional Growth Funds											
Mature (10+ years)											
Dune Real Estate Partners II	2008	\$40,000	40,458	0	101.15%	66,998	6,070	1.66x	0.15x	1.81x	14.36%
Macquarie Infrastructure Partners II	2008	\$40,000	48,268	-2,006	120.67%	75,457	234	1.56x	0.00x	1.57x	8.38%
Alinda Infrastructure Fund II	2009	\$40,000	53,084	1,500	132.71%	46,219	7,873	0.87x	0.15x	1.02x	0.40%
Franklin Templeton FTPREF	2010	\$50,000	57,915	5,155	115.83%	78,433	1,587	1.35x	0.03x	1.38x	20.59%
Franklin Templeton EMREFF	2012	\$75,000	80,038	7,244	106.72%	106,812	2,871	1.33x	0.04x	1.37x	12.04%
StepSt Partner RE II (fka MFIRE) (2)	2012	\$60,000	39,413	20,587	65.69%	40,963	16,450	1.04x	0.42x	1.46x	6.77%
Dune Real Estate Partners III	2013	\$100,000	142,791	-3,750	142.79%	112,303	65,471	0.79x	0.46x	1.24x	5.82%
Maturing (5-9 years)											
Crow Holdings Realty VII	2014	\$35,000	32,850	2,150	93.86%	44,079	1,337	1.34x	0.04x	1.38x	11.13%
Blue Vista Real Estate IV **	2015	\$35,000	35,000	-0	100.00%	41,360	14,620	1.18x	0.42x	1.60x	12.75%
Brookfield Strategic Real Estate II	2015	\$35,000	40,246	-307	114.99%	28,681	34,783	0.71x	0.86x	1.58x	13.03%
Franklin Templeton MDP RE 2015	2015	\$90,000	78,319	11,681	87.02%	32,700	58,668	0.42x	0.75x	1.17x	5.11%
Macquarie Infrastructure Partners III	2015	\$50,000	52,303	-1,029	104.61%	47,031	50,233	0.90x	0.96x	1.86x	15.48%
Crow Holdings Realty VIII	2017	\$20,000	17,483	2,517	87.41%	25,462	2,921	1.46x	0.17x	1.62x	24.07%
Oaktree Real Estate Debt Fund II	2017	\$30,000	22,590	8,848	75.30%	15,660	10,451	0.69x	0.46x	1.16x	6.50%
Basis Real Estate Debt Fund I	2016	\$30,000	42,588	-2,475	141.96%	29,529	22,249	0.69x	0.52x	1.22x	13.00%
Brookfield Strategic Real Estate III	2017	\$35,000	30,735	4,265	87.81%	7,110	31,875	0.23x	1.04x	1.27x	12.61%

** Year end figures is based on estimate. YE audit takes 120.

(2) Current EMV are those of the prior quarter, adjusted for capital calls and distributions of current quarter.

State Universities Retirement System of Illinois Manager Detail as of September 30, 2022

The following table summarizes changes in each manager's aggregated cash flows and valuation information as of September 30, 2022.

Manager	Vintage Year	Capital Commitments (\$000s)	Paid-In Capital (\$000s)	Uncalled Capital (\$000s)	% Paid-In	Distributed Capital (\$000s)	Net Asset Value (\$000s)	DPI	RVPI	TVPI	Net IRR
Immature (Less than 5 years)											
Dune Real Estate IV	2018	\$50,000	23,223	26,777	46.45%	758	25,233	0.03x	1.09x	1.12x	5.53%
Macquarie Infrastructure Partners IV	2018	\$50,000	52,921	-2,921	105.84%	13,359	59,907	0.25x	1.13x	1.38x	12.50%
Homestead USA Farmland Fund III	2019	\$60,000	39,608	20,415	66.01%	1,103	41,524	0.03x	1.05x	1.08x	6.66%
Long Wharf VI	2019	\$40,000	33,364	6,636	83.41%	15,064	26,568	0.45x	0.80x	1.25x	28.16%
Blackstone BREP Europe VI (3)	2020	\$81,967	44,812	37,155	54.67%	23,039	32,167	0.51x	0.72x	1.23x	15.65%
Cabot Industrial Value VI (CIVF)	2019	\$50,000	36,956	13,044	73.91%	375	47,672	0.01x	1.29x	1.30x	33.33%
Crow Holdings Realty IX	2020	\$50,000	40,520	9,480	81.04%	11,727	40,313	0.29x	0.99x	1.28x	39.72%
Longpoint Realty Fund II	2021	\$50,000	27,500	22,500	55.00%	373	30,065	0.01x	1.09x	1.11x	21.08%
Westbrook XI	2020	\$75,000	33,626	41,374	44.83%	13,358	26,959	0.40x	0.80x	1.20x	29.21%
Torchlight Debt VII	2020	\$50,000	25,031	24,969	50.06%	31	25,824	0.00x	1.03x	1.03x	4.56%
Brookfield Strategic Real Estate IV	2022	\$75,000	12,324	62,676	16.43%	0	13,452	0.00x	1.09x	1.09x	89.48%
Ember Infrastructure I	2021	\$50,000	8,293	41,707	16.59%	31	6,877	0.00x	0.83x	0.83x	(19.06%)
Basis Real Estate Debt Fund II	2021	\$50,000	29,725	27,122	59.45%	12,131	17,505	0.41x	0.59x	1.00x	(0.64%)
Newport Capital Partners Fund III	2021	\$30,000	3,574	30,000	11.91%	3,664	508	1.03x	0.14x	1.17x	22.73%
Pantheon Glb Infrast Secondaries IV	2021	\$100,000	9,563	90,437	9.56%	0	9,854	0.00x	1.03x	1.03x	10.16%
Blackstone BREP Asia III	2022	\$50,000	5,379	44,621	10.76%	0	4,553	0.00x	0.85x	0.85x	(33.02%)
Brasa II	2021	\$40,000	17,719	23,374	44.30%	1,093	16,991	0.06x	0.96x	1.02x	2.75%
Crow Holdings Realty X	2022	\$50,000	0	50,000	0.00%	0	0	-	-	-	0.00%
Cabot Industrial Value VII (CIVF)	2022	\$50,000	0	50,000	0.00%	0	0	-	-	-	0.00%
Torchlight Debt VIII	2022	\$50,000	0	50,000	0.00%	0	0	-	-	-	0.00%
Total Real Assets (3)	2005	\$3,682,504	2,622,956	1,181,251	71.23%	1,594,719	2,189,152	0.61x	0.83x	1.44x	7.67%

(2) Current EMV are those of the prior quarter, adjusted for capital calls and distributions of current quarter.

(3) Capital commitments reflects the sum of: (i) aggregate capital contributions translated to U.S.

Dollars as of the date of each capital contribution transaction; and (ii) reported uncalled capital

commitments translated to U.S. Dollars as of quarter end date. ** Year end figures is based on estimate. YE audit takes 120.

State Universities Retirement System of Illinois

Real Estate Portfolio Snapshot - Subreturn Breakdown

As of September 30, 2022

Subreturn Breakdown	Last Quarter			Last Year			Last 3 Years			Last 5 Years		
	INC	APP	TNET	INC	APP	TNET	INC	APP	TNET	INC	APP	TNET
Total Core Funds	0.40%	(0.43%)	(0.03%)	1.98%	19.83%	22.09%	2.32%	10.14%	12.64%	2.69%	6.70%	9.52%
BlackRock Glb Renewable Power III	(0.77%)	2.04%	1.27%	(3.84%)	8.67%	4.58%	-	-	-	-	-	-
Blackstone Property Partners	(0.06%)	(0.85%)	(0.91%)	(0.27%)	16.96%	16.65%	0.16%	9.82%	9.99%	-	-	-
Carlyle Property Investors	0.34%	0.81%	1.15%	2.51%	20.25%	23.12%	2.94%	14.02%	17.57%	-	-	-
GI Partners ETS Fund	0.02%	(0.47%)	(0.45%)	2.79%	12.82%	-	-	-	-	-	-	-
Heitman America Real Estate Trust	0.68%	0.88%	1.55%	3.10%	22.26%	25.86%	3.45%	8.30%	11.97%	3.57%	5.63%	9.35%
JP Morgan Strategic Property Fund	0.51%	(1.97%)	(1.46%)	2.47%	15.43%	18.17%	2.69%	7.65%	10.49%	2.82%	5.34%	8.27%
Prologis US Logistics Fund (USLF)	0.50%	(0.67%)	(0.17%)	2.24%	32.29%	35.04%	-	-	-	-	-	-
UBS Trumbull Property Fund (TPF)	0.70%	(0.83%)	(0.13%)	3.13%	13.25%	16.68%	3.30%	3.52%	6.90%	3.35%	1.62%	5.01%
Total Non-Core Funds	(0.03%)	0.58%	0.55%	0.03%	14.77%	14.80%	0.40%	7.35%	7.77%	1.08%	7.00%	8.14%
Basis Real Estate Debt Fund I	2.79%	(0.57%)	2.23%	12.25%	(3.69%)	8.22%	12.31%	(2.86%)	9.19%	-	-	12.77%
Basis Real Estate Debt Fund II	2.57%	(1.36%)	1.21%	5.74%	(4.91%)	0.69%	-	-	-	-	-	-
Blackstone BREP Europe VI	(0.93%)	(8.73%)	(9.66%)	(2.92%)	(2.05%)	(4.98%)	(10.39%)	15.19%	3.37%	-	-	-
Blackstone BREP Asia III	(6.93%)	(8.97%)	(15.90%)	-	-	-	-	-	-	-	-	-
Blue Vista Real Estate IV	(0.06%)	(7.42%)	(7.48%)	2.13%	8.05%	10.14%	2.25%	12.80%	15.21%	2.31%	11.27%	13.75%
Brasa II	(0.94%)	6.51%	5.58%	(3.48%)	4.80%	-	-	-	-	-	-	-
Brookfield Strategic Real Estate II	(0.06%)	0.08%	0.02%	(2.78%)	29.60%	26.69%	2.37%	13.62%	16.78%	3.11%	9.98%	13.69%
Brookfield Strategic RE III	1.75%	1.85%	3.60%	(0.96%)	17.48%	16.56%	(2.07%)	13.84%	11.68%	-	-	-
Brookfield Strategic RE IV	(4.21%)	20.00%	15.79%	(423.34%)	1193.63%	15.79%	-	-	-	-	-	-
Cabot Industrial Value VI (CIVF)	0.48%	(1.39%)	(0.91%)	(0.66%)	37.95%	37.36%	-	-	-	-	-	-
Crow Holdings Realty VII	0.25%	(19.01%)	(18.76%)	3.64%	(24.87%)	(22.03%)	2.81%	(4.04%)	(1.33%)	2.40%	1.15%	3.56%
Crow Holdings Realty VIII	0.43%	(0.88%)	(0.46%)	4.47%	19.82%	24.85%	2.70%	24.30%	27.42%	-	-	-
Crow Holdings Realty IX	0.21%	1.18%	1.39%	0.27%	24.93%	25.27%	-	-	-	-	-	-
Dune Real Estate Partners II	(0.31%)	(5.01%)	(5.32%)	(0.90%)	(0.13%)	(1.05%)	(1.01%)	(0.88%)	(1.89%)	(0.91%)	2.26%	1.33%
Dune Real Estate Partners III	(0.19%)	0.88%	0.69%	(0.13%)	4.33%	4.19%	(0.81%)	(0.80%)	(1.61%)	-	-	1.82%
Dune RE IV	(0.93%)	8.49%	7.56%	(4.00%)	34.84%	29.88%	(7.70%)	11.55%	3.10%	-	-	1.85%
Franklin Templeton FTPREF	(6.01%)	10.90%	4.90%	17.67%	(5.74%)	13.02%	26.64%	(47.02%)	(15.00%)	23.45%	(30.93%)	(1.62%)
Franklin Templeton EMREFF	0.04%	(27.45%)	(27.41%)	6.44%	(39.92%)	(35.72%)	4.83%	(26.82%)	(23.09%)	7.23%	(17.48%)	(11.29%)
Franklin Templeton MDP RE 2015	(0.24%)	1.96%	1.72%	2.29%	17.78%	20.42%	1.95%	3.19%	5.10%	3.24%	1.56%	4.79%
Longpoint Realty Fund II	(1.27%)	3.96%	2.69%	(17.63%)	33.41%	9.94%	-	-	-	-	-	-
Long Wharf VI	(0.12%)	4.30%	4.18%	(0.67%)	38.67%	37.81%	(4.77%)	35.46%	29.28%	-	-	-
Newport Capital Partners Fund III	(2.13%)	61.05%	58.92%	(2.12%)	80.15%	77.64%	-	-	-	-	-	-
Oaktree Real Estate Debt Fund II	1.62%	(1.04%)	0.58%	6.60%	(4.62%)	1.75%	7.19%	(7.42%)	(0.59%)	8.98%	(4.19%)	4.52%
Torchlight Debt VII	0.45%	0.99%	1.44%	3.53%	3.43%	7.08%	-	-	-	-	-	-
StepSt Partner RE II (fka MFIRE) (2)	0.00%	0.00%	0.00%	(0.80%)	0.04%	(0.76%)	(0.96%)	0.72%	(0.25%)	(1.03%)	2.27%	1.22%
Westbrook XI	(0.83%)	3.80%	2.97%	(3.74%)	39.14%	34.38%	-	-	11.63%	-	-	-
Total Private Real Estate	0.28%	(0.15%)	0.13%	1.41%	18.32%	19.92%	1.76%	9.29%	11.18%	2.23%	6.82%	9.17%
Total Non-C w/ Infrastructure	0.04%	0.83%	0.86%	0.39%	14.89%	15.33%	0.42%	9.36%	9.80%	0.83%	8.11%	9.00%
Farmland												
Homestead USA Farmland Fund III	(0.68%)	0.98%	0.30%	(1.20%)	12.77%	11.40%	-	-	-	-	-	-
Total Private Infrastructure	0.33%	1.87%	2.20%	2.04%	15.43%	17.70%	0.72%	14.79%	15.59%	0.13%	11.17%	11.31%
Alinda Infrastructure Fund II	0.45%	(5.98%)	(5.53%)	0.82%	(7.78%)	(6.99%)	0.13%	(7.47%)	(7.33%)	0.29%	(8.58%)	(8.29%)
Ember Infrastructure I	(1.63%)	0.00%	(1.63%)	(10.59%)	(3.29%)	(13.62%)	-	-	-	-	-	-
Macquarie Infrastructure Partners III	1.40%	5.57%	6.97%	8.12%	16.67%	26.01%	2.33%	19.89%	22.66%	1.26%	16.92%	18.40%
Macquarie Infrastructure Partners IV	(0.26%)	0.54%	0.28%	(1.14%)	19.43%	18.13%	0.26%	13.59%	13.94%	-	-	-
Pantheon Glb Infrast Secondaries IV	0.00%	0.00%	0.00%	(2.16%)	(59.03%)	-	-	-	-	-	-	-
Total Real Assets	0.26%	(0.00%)	0.26%	1.40%	18.06%	19.64%	1.60%	9.89%	11.60%	2.00%	7.53%	9.64%

State Universities Retirement System of Illinois

Real Estate Portfolio Snapshot - Subreturn Breakdown

As of September 30, 2022

Subreturn Breakdown	Last 10 Years			NET IRR	TVPI
	INC	APP	TNET		
Total Core Funds	3.24%	5.93%	9.31%	6.98%	1.56x
BlackRock Glb Renewable Power III	-	-	-	(1.52%)	0.99x
Blackstone Property Partners	-	-	-	9.80%	1.33x
Carlyle Property Investors	-	-	-	15.52%	1.61x
Clarion Partners Lion Properties Fund	-	-	-	0.42%	1.00x
GI Partners ETS Fund	-	-	-	14.54%	1.06x
Heitman America Real Estate Trust	-	-	-	9.70%	1.81x
JP Morgan Strategic Property Fund	-	-	-	8.88%	2.03x
Prologis US Logistics Fund (USLF)	-	-	-	38.45%	1.84x
UBS Trumbull Property Fund (TPF)	3.67%	3.03%	6.78%	6.62%	1.79x
Total Non-Core Funds	(0.06%)	11.81%	11.76%	10.91%	1.30x
Basis Real Estate Debt Fund I	-	-	-	13.00%	1.22x
Basis Real Estate Debt Fund II	-	-	-	(0.64%)	1.00x
Blackstone BREP Europe VI	-	-	-	15.65%	1.23x
Blackstone BREP Asia III	-	-	-	(33.02%)	0.85x
Blue Vista Real Estate IV	-	-	-	12.75%	1.60x
Brasa II	-	-	-	2.75%	1.02x
Brookfield Strategic Real Estate II	-	-	-	13.03%	1.58x
Brookfield Strategic RE III	-	-	-	12.61%	1.27x
Brookfield Strategic RE IV	-	-	-	89.48%	1.09x
Cabot Industrial Value VI (CIVF)	-	-	-	33.33%	1.30x
Crow Holdings Realty VII	-	-	-	11.13%	1.38x
Crow Holdings Realty VIII	-	-	-	24.07%	1.62x
Crow Holdings Realty IX	-	-	-	39.72%	1.28x
Dune Real Estate Partners II	(0.54%)	8.70%	8.12%	14.36%	1.81x
Dune Real Estate Partners III	-	-	-	5.82%	1.24x
Dune RE IV	-	-	-	5.53%	1.12x
Franklin Templeton FTPREF	11.11%	(7.97%)	9.83%	20.59%	1.38x
Franklin Templeton EMREFF	3.55%	(1.37%)	2.27%	12.04%	1.37x
Franklin Templeton MDP RE 2015	-	-	-	5.11%	1.17x
Longpoint Realty Fund II	-	-	-	21.08%	1.11x
Long Wharf VI	-	-	-	28.16%	1.25x
Newport Capital Partners Fund III	-	-	-	22.73%	1.17x
Oaktree Real Estate Debt Fund II	-	-	-	6.50%	1.16x
Torchlight Debt VII	-	-	-	4.56%	1.03x
StepSt Partner RE II (fka MFIRE) (2)	(1.68%)	7.35%	5.59%	6.77%	1.46x
Westbrook XI	-	-	-	29.21%	1.20x
Total Private Real Estate	2.36%	7.42%	9.91%	7.63%	1.45x
Total Non-C w/ Infrastructure	(0.06%)	10.65%	10.58%	10.02%	1.32x
Farmland					
Homestead USA Farmland Fund III	-	-	-	6.66%	1.08x
Total Private Infrastructure	(0.15%)	8.76%	8.59%	8.17%	1.41x
Alinda Infrastructure Fund II	0.17%	(2.93%)	(2.76%)	0.40%	1.02x
Ember Infrastructure I	-	-	-	(19.06%)	0.83x
Macquarie Infrastructure Partners III	-	-	-	15.48%	1.86x
Macquarie Infrastructure Partners IV	-	-	-	12.50%	1.38x
Pantheon Glb Infrast Secondaries IV	-	-	-	10.16%	1.03x
Total Real Assets	2.09%	7.39%	9.59%	7.67%	1.44x

State Universities Retirement System of Illinois

Real Estate Portfolio Snapshot - Quarterly Cashflows

As of September 30, 2022

Quarterly Cash Flow Activity (\$)	Beginning Market Value	Capital Contribution	Accounting Income	Mgmt. Fees	Appreciation	Distributions	Ending Market Value	LTV
BR Glb Renewable (GRP) III	\$23,801,660	\$3,783,031	\$-2,820	\$194,550	\$526,818	\$1,156,651	\$26,757,488	3.78%
Blackstone Property Partners	\$274,529,581	\$1,732,219	\$516,433	\$685,085	\$-2,326,218	\$1,732,219	\$272,034,711	45.00%
Carlyle Property Investors	\$168,238,206	\$1,726,138	\$910,993	\$329,997	\$1,369,331	\$1,360,177	\$170,554,494	50.00%
Clarion Partners Lion Properties Fund	\$0	\$10,018,142	\$47,878	\$18,142	\$-2,671	\$81,213	\$9,963,994	20.37%
GI Partners ETS Fund	\$15,959,647	\$24,116,439	\$126,617	\$120,315	\$-97,750	\$0	\$39,984,638	44.70%
Heitman (HART)	\$310,938,330	\$1,972,872	\$2,669,845	\$570,014	\$2,726,578	\$1,972,872	\$315,764,739	21.38%
JP Morgan (SPF)	\$309,192,921	\$0	\$2,160,589	\$581,453	\$-6,080,515	\$0	\$304,691,542	25.56%
Prologis US Logistics Fund (USLF)	\$189,040,464	\$972,686	\$1,431,082	\$488,875	\$-1,269,494	\$978,104	\$188,707,758	12.30%
UBS (TPF)	\$107,170,057	\$690,049	\$905,073	\$159,420	\$-886,655	\$690,049	\$107,029,055	17.90%
Total Core Funds	\$1,398,870,866	\$45,011,576	\$8,765,689	\$3,147,851	\$-6,040,575	\$7,971,285	\$1,435,488,419	
Basis Real Estate Debt Fund I	\$22,895,972	\$0	\$728,491	\$90,745	\$-128,372	\$1,156,384	\$22,248,962	42.00%
Basis Real Estate Debt Fund II	\$9,910,958	\$7,440,262	\$484,108	\$157,534	\$-172,487	\$0	\$17,505,307	-
Blackstone BREP Europe VI	\$31,275,322	\$3,992,381	\$4,051	\$285,758	\$-2,752,349	\$66,316	\$32,167,331	69.00%
Blackstone BREP Asia III	\$0	\$5,379,220	\$-169,088	\$181,250	\$-476,164	\$0	\$4,552,718	-
Blue Vista Real Estate IV	\$16,704,104	\$0	\$35,511	\$44,196	\$-1,240,625	\$0	\$14,620,266	63.90%
Brasa II	\$16,916,705	\$232,085	\$-51,503	\$104,712	\$1,091,304	\$1,093,090	\$16,990,787	30.40%
Brookfield Strategic Real Estate II	\$35,880,363	\$802,487	\$68,605	\$32,765	\$-26,082	\$1,640,888	\$34,782,816	55.00%
Brookfield Strategic RE III	\$30,668,331	\$2,395,327	\$611,555	\$369,234	\$788,738	\$1,532,994	\$31,875,335	51.00%
Brookfield Strategic RE IV	\$79,301	\$12,323,989	\$-30,594	\$255,205	\$1,334,130	\$0	\$13,451,621	30.00%
Cabot Industrial Value VI	\$45,923,850	\$2,174,000	\$415,367	\$187,500	\$-653,644	\$0	\$47,672,073	43.10%
Crow Holdings Realty VII	\$2,085,419	\$15,810	\$22,173	\$15,810	\$-339,440	\$0	\$1,336,884	64.98%
Crow Holdings Realty VIII	\$4,852,785	\$0	\$32,157	\$11,341	\$-42,925	\$0	\$2,920,545	60.60%
Crow Holdings Realty IX	\$44,538,239	\$0	\$203,146	\$109,222	\$521,811	\$0	\$40,312,611	40.00%
Dune Real Estate Partners II	\$6,411,023	\$0	\$-8,847	\$10,821	\$-321,528	\$0	\$6,069,827	-
Dune Real Estate Partners III	\$65,056,221	\$0	\$47,050	\$170,950	\$572,720	\$0	\$65,470,851	-
Dune Real Estate Partners IV	\$23,459,920	\$0	\$-39,426	\$178,369	\$1,990,646	\$0	\$25,232,771	49.00%
Franklin Templeton FTPREF	\$1,513,390	\$0	\$-64,465	\$26,451	\$164,999	\$0	\$1,587,473	46.00%
Franklin Templeton EMREFF	\$4,392,679	\$148,465	\$24,578	\$19,899	\$-1,207,586	\$346,280	\$2,870,680	66.00%
Franklin Templeton MDP RE 2015	\$57,815,442	\$42,856	\$11,422	\$147,405	\$1,132,977	\$-149,025	\$58,668,298	57.00%
Longpoint Realty Fund II	\$24,770,355	\$5,000,000	\$-150,813	\$163,836	\$982,291	\$373,413	\$30,064,584	52.00%
Long Wharf VI	\$22,128,587	\$6,905,847	\$125,025	\$151,233	\$968,676	\$1,917,939	\$26,567,587	44.10%
Newport Capital Partners Fund III	\$325,992	\$0	\$-12,457	\$28,078	\$232,574	\$10,000	\$508,031	59.90%
Oaktree Real Estate Debt Fund II	\$10,527,356	\$0	\$203,758	\$35,208	\$-108,311	\$136,573	\$10,451,022	63.90%
StepSt Partner RE II (fka MFIRE)	\$16,449,929	\$0	\$0	\$0	\$0	\$0	\$16,449,929	32.00%
Torchlight Debt VII	\$15,549,144	\$10,000,000	\$261,333	\$175,000	\$188,633	\$0	\$25,824,110	42.39%
Westbrook XI	\$27,799,266	\$3,214,846	\$55,194	\$259,439	\$936,796	\$2,065,691	\$26,958,905	40.10%
Total Non-Core Funds	\$537,930,653	\$60,067,576	\$2,806,330	\$3,211,962	\$3,436,782	\$10,190,543	\$577,161,324	
Homestead USA Farmland Fund III	\$38,621,808	\$2,783,357	\$-40,387	\$225,000	\$384,489	\$0	\$41,524,267	30.00%
Farmland	\$38,621,808	\$2,783,357	\$-40,387	\$225,000	\$384,489	\$0	\$41,524,267	
Alinda Infrastructure Fund II	\$8,333,999	\$0	\$38,523	\$1,347	\$-498,297	\$0	\$7,872,878	45.00%
Macquarie Infrastructure II	\$234,757	\$0	\$-1,105	\$0	\$221	\$0	\$233,873	-
Macquarie Infrastructure III	\$47,924,504	\$49,666	\$785,102	\$125,739	\$2,625,446	\$0	\$50,233,291	39.00%
Macquarie Infrastructure IV	\$58,112,076	\$1,633,663	\$23,231	\$174,556	\$312,486	\$0	\$59,906,900	35.00%
Ember Infrastructure I	\$6,990,610	\$0	\$35,404	\$149,226	\$0	\$0	\$6,876,788	0.00%
Pantheon Glb Infrast Secondaries IV	\$8,821,770	\$1,032,439	\$0	\$0	\$0	\$0	\$9,854,209	39.00%
Total Private Infrastructure	\$130,417,716	\$2,715,768	\$881,155	\$450,868	\$2,439,855	\$0	\$134,977,939	
Total Portfolio	\$2,105,841,043	\$110,578,277	\$12,412,787	\$7,035,680	\$220,550	\$18,161,828	\$2,189,151,949	

Total Core Fund

Period Ended September 30, 2022

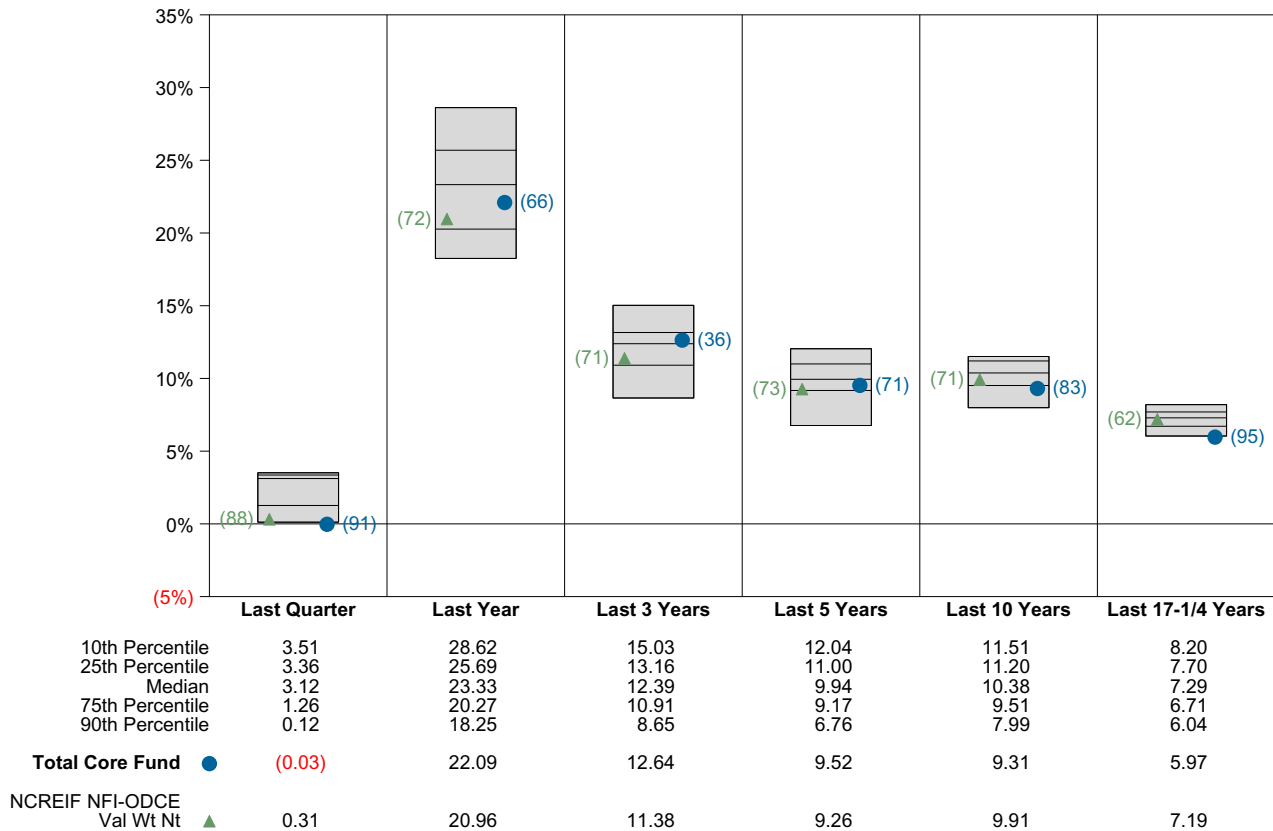
Quarterly Summary and Highlights

- Total Core Fund's portfolio posted a (0.03)% return for the quarter placing it in the 91 percentile of the Callan Real Estate ODCE group for the quarter and in the 66 percentile for the last year.
- Total Core Fund's portfolio underperformed the NCREIF NFI-ODCE Val Wt Nt by 0.34% for the quarter and outperformed the NCREIF NFI-ODCE Val Wt Nt for the year by 1.14%.

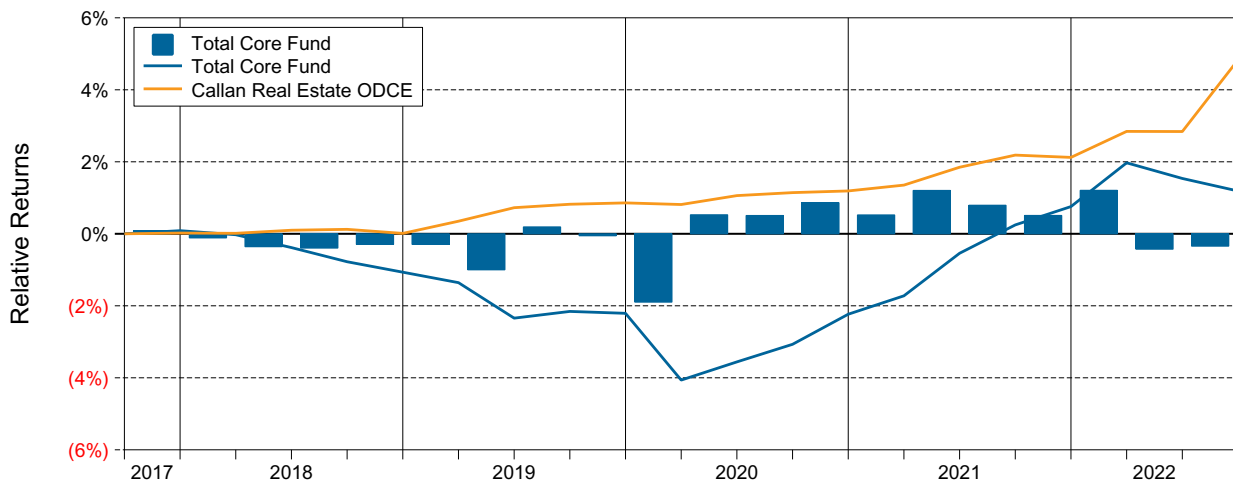
Quarterly Asset Growth

Beginning Market Value	\$1,398,870,866
Net New Investment	\$37,040,291
Investment Gains/(Losses)	\$-422,738
Ending Market Value	\$1,435,488,419

Performance vs Callan Real Estate ODCE



Cumulative and Quarterly Relative Returns vs NCREIF NFI-ODCE Val Wt Nt

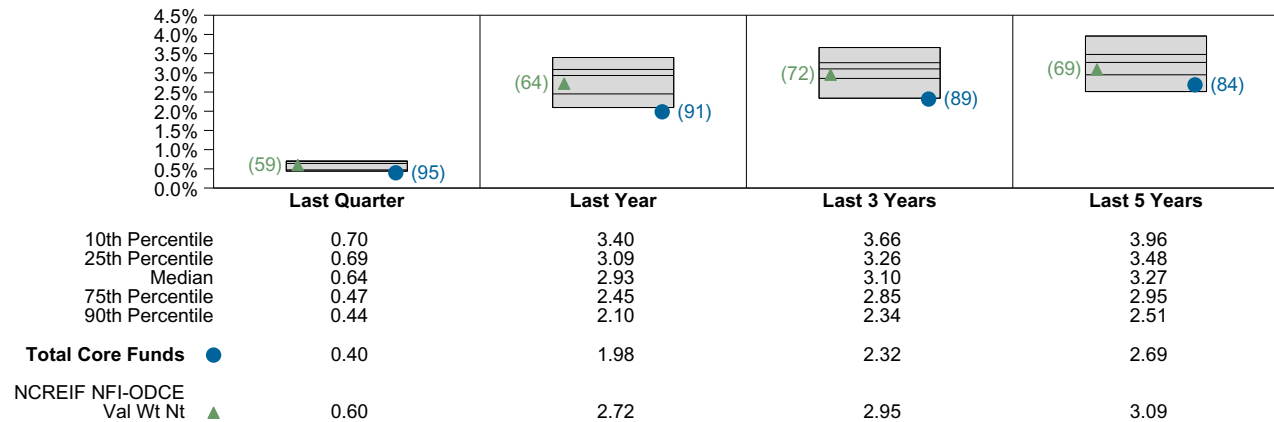


Total Core Funds Return Analysis

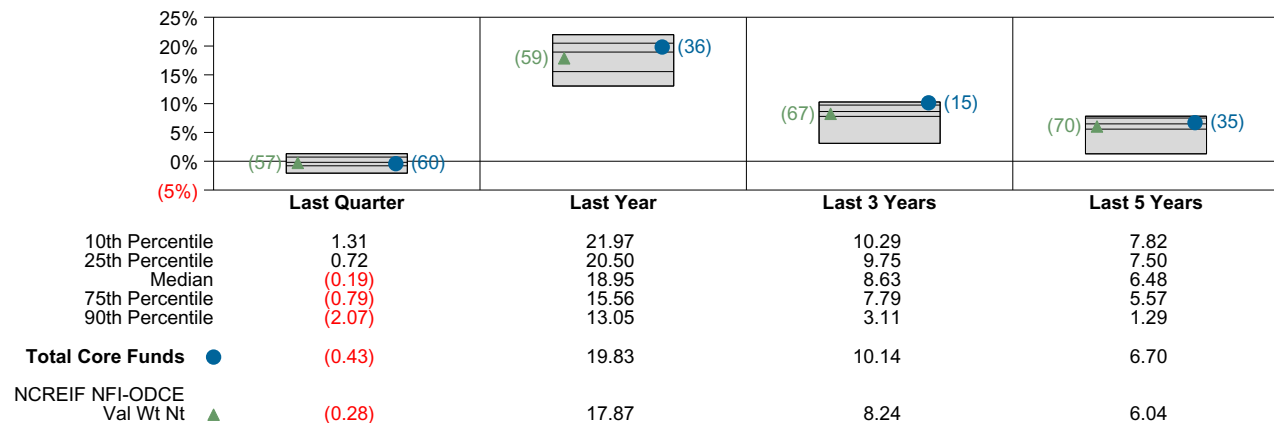
Return Analysis

The graphs below give a detailed analysis of the portfolio's return by decomposing it into component subreturns. The first chart shows the portfolio's income return ranked against the income returns of the appropriate peer group. The second chart performs the same comparison using appreciation returns. The bottom graph illustrates the historical composition of total return on an income versus appreciation basis.

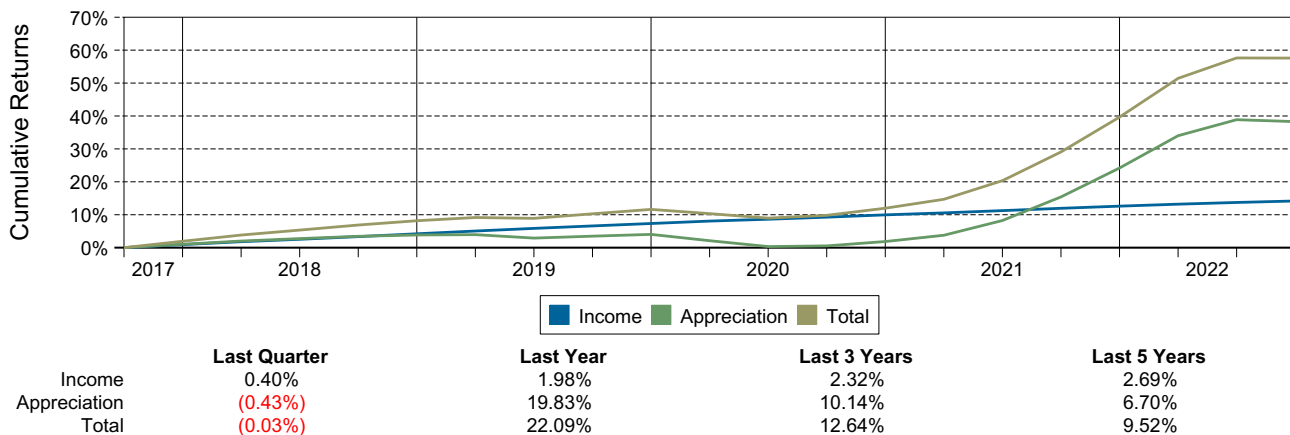
Income Rankings vs Callan Real Estate ODCE Periods ended September 30, 2022



Appreciation Rankings vs Callan Real Estate ODCE Periods ended September 30, 2022



Cumulative Return Composition by Income/Appreciation

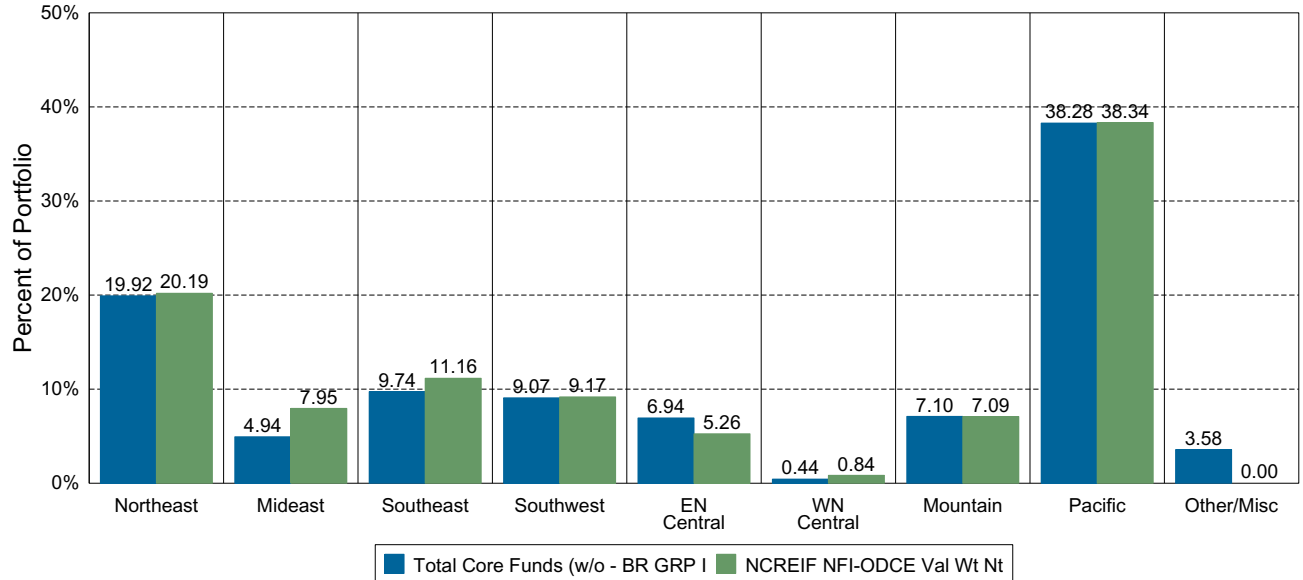


Total Core Funds (w/o - BR GRP III) Diversification Analysis as of September 30, 2022

Diversification Analysis

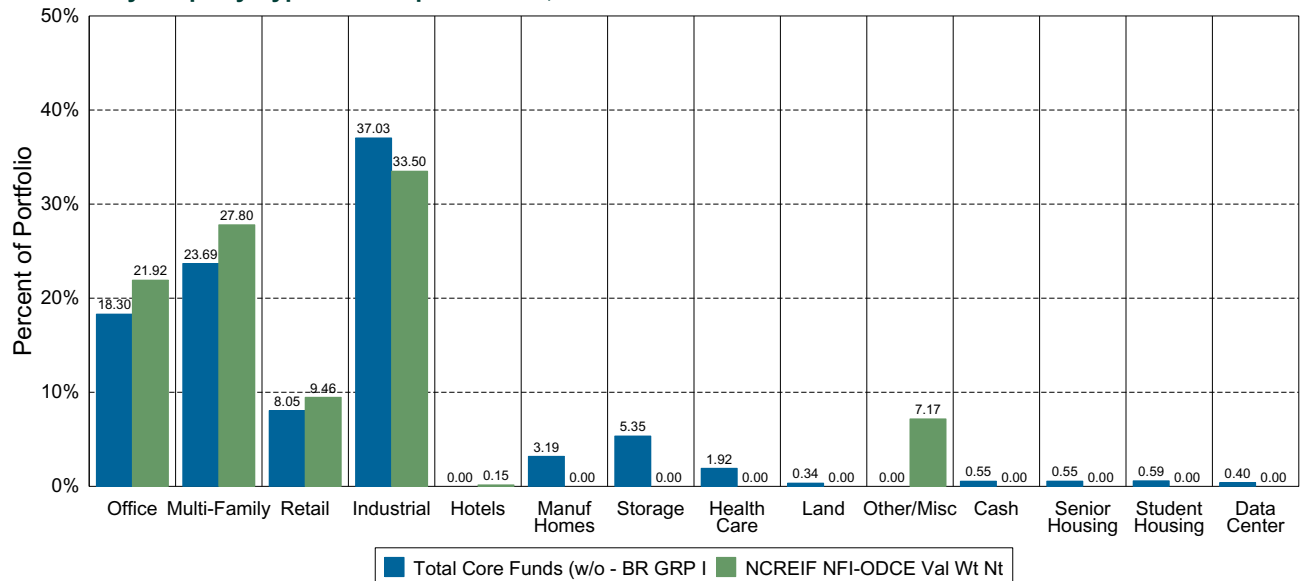
The following charts provide information on the diversification of the portfolio with regards to both Geographic Region and Property Type. Similar information is provided on the relevant market index for comparison.

Diversification by Geographic Region as of September 30, 2022



Total Core Funds (w/o - BR GRP III)	19.92%	4.94%	9.74%	9.07%	6.94%	0.44%	7.10%	38.28%	3.58%
NCREIF NFI-ODCE Val Wt Nt	20.19%	7.95%	11.16%	9.17%	5.26%	0.84%	7.09%	38.34%	0.00%

Diversification by Property Type as of September 30, 2022



Total Core Funds (w/o - BR GRP III)	18.30%	23.69%	8.05%	37.03%	0.00%	3.19%	5.35%	1.92%	0.34%	0.00%	0.55%	0.55%	0.59%	0.40%
NCREIF NFI-ODCE Val Wt Nt	21.92%	27.80%	9.46%	33.50%	0.15%	0.00%	0.00%	0.00%	0.00%	7.17%	0.00%	0.00%	0.00%	0.00%

**Total Core Funds
Real Estate Portfolio
Quarterly Changes in Market Value**

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Dist. of Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
06/2005	0	42,173,431	0	0	(0)	123,467	0	0	42,049,963
09/2005	42,049,963	34,412,979	0	0	2,932,432	852,473	0	0	78,542,902
12/2005	78,542,902	48,535,080	0	0	(2,207,961)	1,217,584	0	0	123,652,438
03/2006	123,652,438	1,679,008	0	0	7,754,988	1,679,008	0	0	131,407,426
06/2006	131,407,426	154,313,912	17,260	0	62,225	1,829,427	0	0	283,971,396
09/2006	283,971,396	6,538,259	1,719,275	0	(379,023)	1,882,915	0	0	289,966,992
12/2006	289,966,992	7,421,001	1,708,539	334,414	6,091,615	1,887,109	0	0	302,966,624
03/2007	302,966,624	6,918,111	1,675,293	348,138	13,086,106	3,690,165	0	2,458,173	318,149,659
06/2007	318,149,659	1,842,480	1,807,242	359,826	14,785,736	1,842,480	0	0	334,382,812
09/2007	334,382,812	2,265,946	1,724,761	380,988	10,156,598	1,826,121	0	0	346,323,006
12/2007	346,323,006	1,956,882	1,690,561	388,418	6,336,475	5,689,851	0	0	350,228,655
03/2008	350,228,655	1,988,386	1,674,352	663,376	1,569,797	1,988,386	0	0	352,809,428
06/2008	352,809,428	8,831,700	1,822,454	128,447	(17,340,577)	2,918,708	0	0	343,075,849
09/2008	343,075,849	3,142,415	1,822,648	376,323	(2,083,408)	3,142,415	0	0	342,438,766
12/2008	342,438,766	3,143,110	1,881,551	286,163	(45,400,090)	3,143,110	0	0	298,634,064
03/2009	298,634,064	3,043,682	1,823,223	273,693	(44,893,159)	4,264,862	0	0	254,069,254
06/2009	254,069,254	0	1,993,364	245,510	(23,744,888)	1,989,933	0	0	230,082,288
09/2009	230,082,288	0	1,856,064	229,116	(12,623,050)	2,003,491	0	0	217,082,695
12/2009	217,082,695	0	1,941,196	219,293	(10,579,600)	1,965,752	0	0	206,259,246
03/2010	206,259,246	25,000,000	2,015,326	210,612	734,572	2,061,158	0	0	231,737,374
06/2010	231,737,374	25,000,000	3,097,524	239,447	5,875,693	2,456,070	0	0	263,015,074
09/2010	263,015,074	25,000,000	2,907,443	294,552	19,481,662	2,727,021	0	0	307,382,606
12/2010	307,382,606	25,000,000	3,508,214	352,327	8,301,755	3,289,692	0	0	340,550,556
03/2011	340,550,556	729,856	3,075,967	536,833	8,039,725	3,328,279	0	0	348,530,991
06/2011	348,530,991	373,333	3,164,967	532,587	13,112,189	3,312,655	0	0	361,336,239
09/2011	361,336,239	0	2,826,761	548,964	8,061,155	3,423,940	0	0	368,251,251
12/2011	368,251,251	2,742,886	2,951,718	573,696	326,262	3,370,782	0	0	370,327,638
03/2012	370,327,638	0	3,151,595	584,466	10,096,537	3,371,343	0	0	379,619,962
06/2012	379,619,962	0	3,284,552	593,560	5,820,257	3,614,621	0	0	384,516,590
09/2012	384,516,590	0	3,281,072	602,425	7,045,754	3,538,911	0	0	390,702,080
12/2012	390,702,080	0	3,203,843	617,047	5,101,569	3,618,228	0	0	394,772,217
03/2013	394,772,217	1,877,167	3,134,604	623,802	4,126,592	3,511,370	0	0	399,775,408
06/2013	399,775,408	2,020,815	3,306,339	620,069	2,839,703	126,297,490	0	0	281,024,706
09/2013	281,024,706	2,021,583	3,486,244	640,041	4,041,332	2,021,583	0	0	287,912,241
12/2013	287,912,241	2,019,211	3,327,480	662,689	2,876,014	2,019,211	0	0	293,453,046
03/2014	293,453,046	2,026,127	3,498,662	675,676	4,092,666	3,108,944	0	0	299,285,881
06/2014	299,285,881	152,141,703	4,332,981	673,661	6,068,365	5,473,448	2,417	0	455,679,403
09/2014	455,679,403	84,701,781	6,614,316	876,265	9,483,935	2,558,418	0	0	553,044,752
12/2014	553,044,752	70,384,249	7,193,542	1,046,808	8,474,091	4,609,954	0	0	633,439,872
03/2015	633,439,872	3,519,884	7,666,902	1,388,073	13,754,118	4,602,702	0	0	652,390,002
06/2015	652,390,002	3,717,568	7,928,194	1,412,134	15,151,776	6,632,846	0	0	671,142,561
09/2015	671,142,561	3,867,915	8,024,405	1,460,732	14,216,218	6,783,192	0	0	689,007,175
12/2015	689,007,175	4,272,921	8,040,970	1,514,522	14,635,278	5,272,445	0	0	709,169,378
03/2016	709,169,378	4,167,510	8,208,628	1,549,352	6,593,212	4,750,566	0	0	721,838,810
06/2016	721,838,810	4,335,126	8,472,874	1,572,576	5,759,930	4,335,126	0	0	734,499,038
09/2016	734,499,038	4,434,732	8,241,544	1,601,396	5,820,143	5,684,137	0	0	745,709,924
12/2016	745,709,924	4,710,518	8,183,833	1,636,823	6,081,369	4,710,518	0	0	758,338,303

Total Core Funds Real Estate Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
03/2017	758,338,303	4,510,381	8,202,553	1,650,585	2,387,989	4,510,381	0	0	767,278,261
06/2017	767,278,261	4,717,467	8,561,851	1,575,382	1,672,771	4,717,467	0	0	775,937,501
09/2017	775,937,501	4,811,873	8,668,062	1,517,962	4,301,622	4,811,873	0	0	787,389,223
12/2017	787,389,223	4,884,337	8,737,135	1,548,066	8,037,307	5,140,413	0	0	802,359,524
03/2018	802,359,524	5,077,191	8,571,446	1,504,409	7,825,050	5,077,191	0	0	817,251,610
06/2018	817,251,610	1,549,715	7,467,734	1,596,780	5,913,199	4,879,789	119,628,173	0	706,077,517
09/2018	706,077,517	1,775,347	6,915,587	1,365,857	4,780,026	4,114,053	50,284,018	0	663,784,548
12/2018	663,784,548	6,947,898	6,338,602	1,313,594	2,391,377	3,735,032	63,423,650	0	610,990,149
03/2019	610,990,149	113,654,176	6,846,065	1,423,701	623,660	4,342,627	34,576,819	0	691,770,903
06/2019	691,770,903	186,146,039	6,736,636	1,420,271	(6,944,894)	4,106,202	7,168,475	0	865,013,736
09/2019	865,013,736	4,158,572	7,923,305	1,892,184	4,841,562	5,174,187	10,884,652	0	863,986,152
12/2019	863,986,152	3,933,949	7,829,458	1,892,887	4,499,919	4,918,291	7,853,492	0	865,584,807
03/2020	865,584,807	4,168,567	7,771,540	1,839,350	(15,901,831)	5,117,692	5,425,695	0	849,240,346
06/2020	849,240,346	3,989,577	6,171,756	1,809,652	(14,857,456)	4,689,952	0	0	838,044,620
09/2020	838,044,620	3,218,928	6,672,844	1,837,097	1,702,352	3,881,575	0	0	843,920,072
12/2020	843,920,072	105,111,015	8,036,584	2,037,822	12,382,967	5,698,577	0	0	961,714,239
03/2021	961,714,239	14,313,574	8,280,655	3,000,546	18,139,004	5,548,240	0	0	993,898,686
06/2021	993,898,686	10,013,547	8,463,402	2,307,488	42,933,308	5,759,845	0	2,007,955	1,045,233,656
09/2021	1,045,233,656	5,952,143	9,097,047	2,432,976	69,286,716	6,028,209	0	0	1,121,108,377
12/2021	1,121,108,377	12,048,110	9,173,401	2,624,972	85,960,962	6,279,645	0	0	1,219,386,232
03/2022	1,219,386,232	10,019,442	9,313,885	2,808,874	96,683,476	6,958,964	0	0	1,325,635,197
06/2022	1,325,635,197	26,451,741	9,327,206	3,160,547	48,834,343	6,933,806	0	1,283,269	1,398,870,866
09/2022	1,398,870,866	45,011,576	8,765,689	3,147,851	(6,040,575)	7,017,913	0	953,372	1,435,488,419
		0 1,364,736,431	345,160,724	73,583,690	498,988,942	393,863,829	299,247,391	6,702,769	1,435,488,419

Returns

Net Portfolio Cumulative IRR = 6.98%

Ratios

Capital Account = \$1,435,488,419

Total Value = \$2,135,302,407

Committed Capital = \$1,685,166,573

Paid In Capital = \$1,364,736,431

Remaining Commitment = \$327,132,910

PIC Multiple (Paid In Capital/Committed Capital) = 80.99%

Total Economic Exposure (Capital Account + Remaining Commitment) = \$1,762,621,329

TVPI Investment Multiple (Total Value/Paid In Capital) = 1.56x

DPI Realization Multiple (Distributions/Paid In Capital) = 0.51x

RVPI Residual Multiple (Capital Account/Paid In Capital) = 1.05x

Total Non-Core Fund Period Ended September 30, 2022

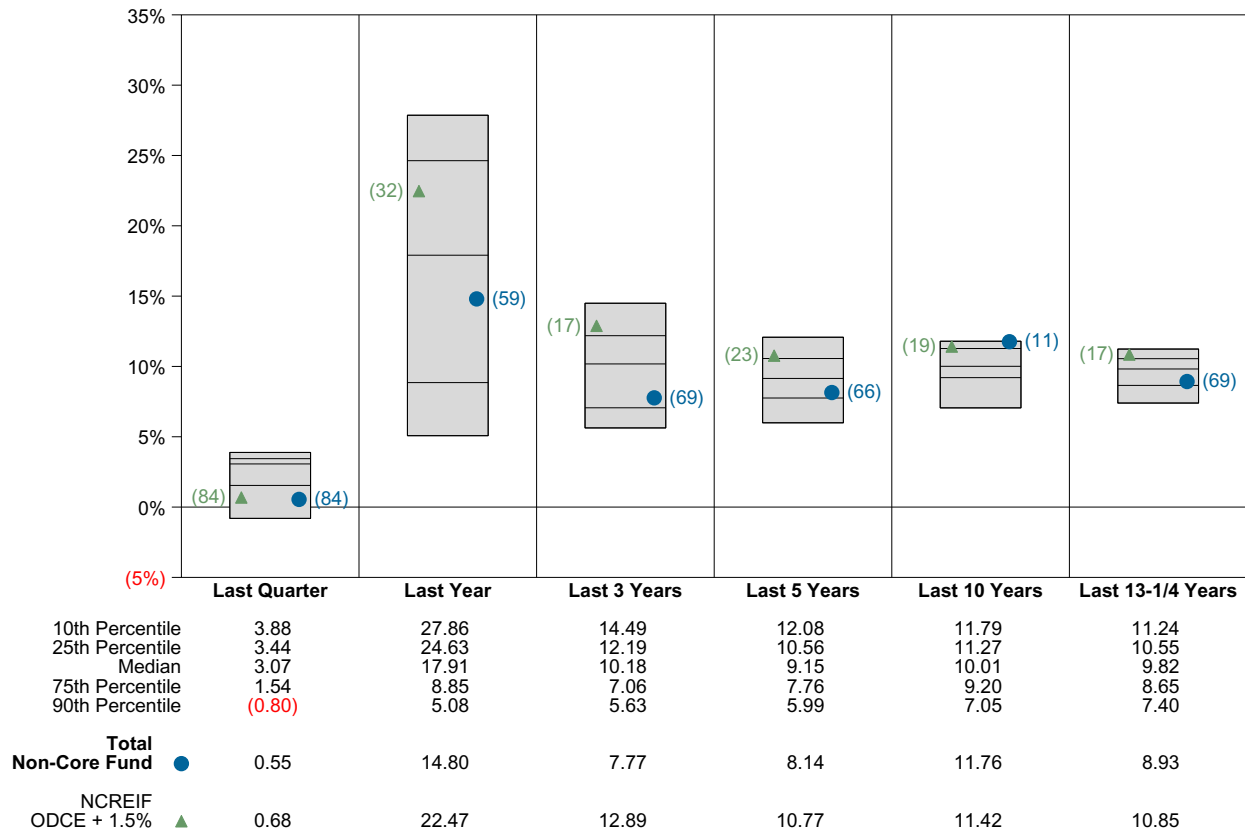
Quarterly Summary and Highlights

- Total Non-Core Fund's portfolio posted a 0.55% return for the quarter placing it in the 84 percentile of the Callan Total Domestic Real Estate DB group for the quarter and in the 59 percentile for the last year.
- Total Non-Core Fund's portfolio underperformed the NCREIF ODCE + 1.5% by 0.14% for the quarter and underperformed the NCREIF ODCE + 1.5% for the year by 7.67%.

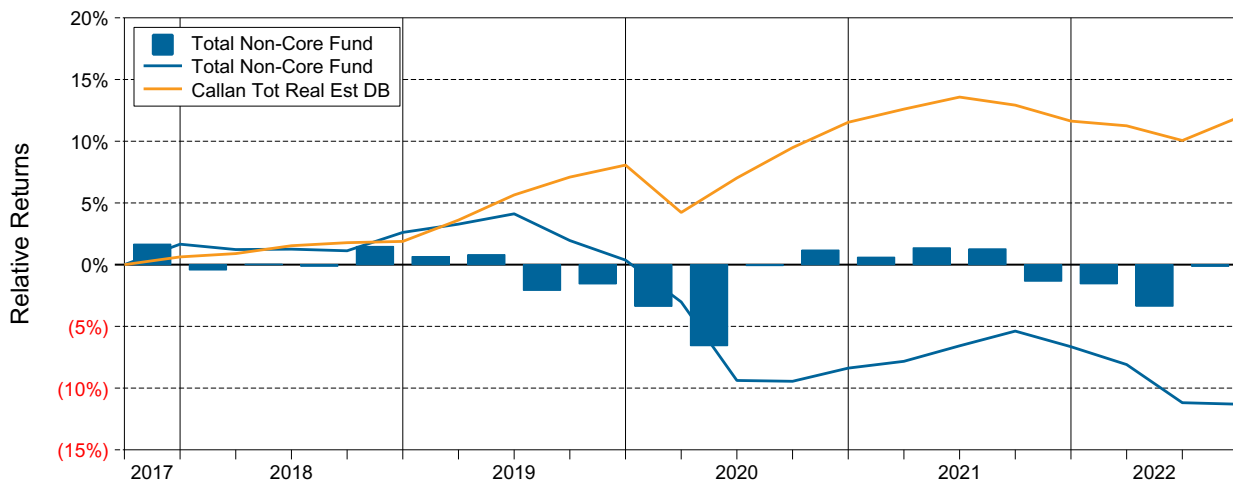
Quarterly Asset Growth

Beginning Market Value	\$538,231,008
Net New Investment	\$36,203,826
Investment Gains/(Losses)	\$2,728,674
Ending Market Value	\$577,163,508

Performance vs Callan Total Domestic Real Estate DB



Cumulative and Quarterly Relative Returns vs NCREIF ODCE + 1.5%

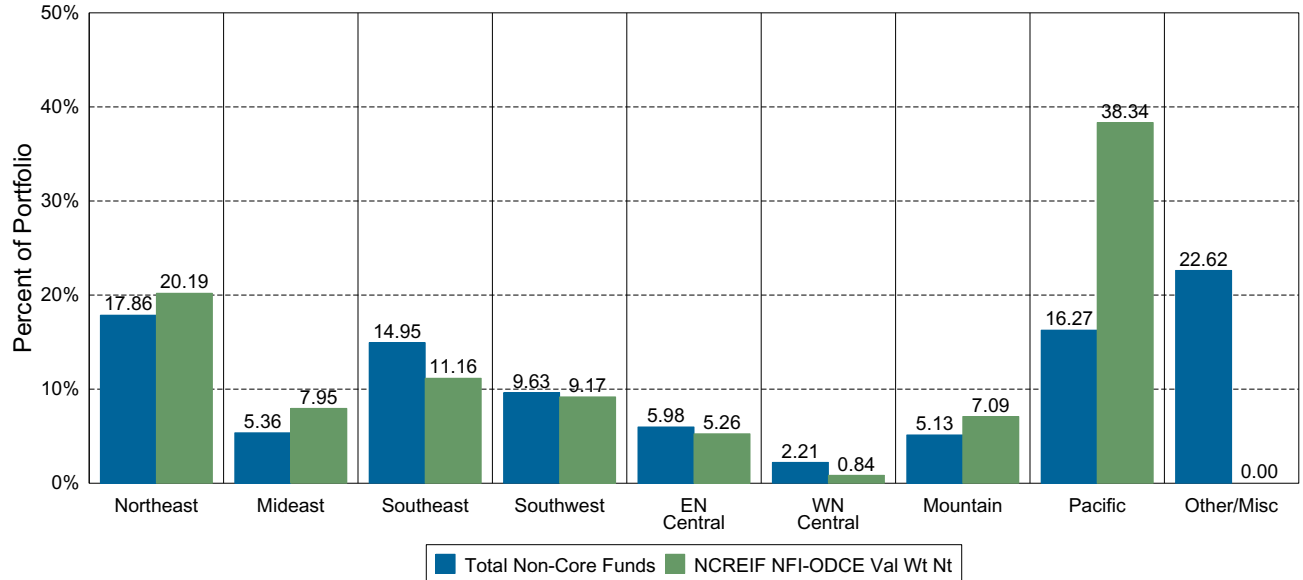


Total Non-Core Funds Diversification Analysis as of September 30, 2022

Diversification Analysis

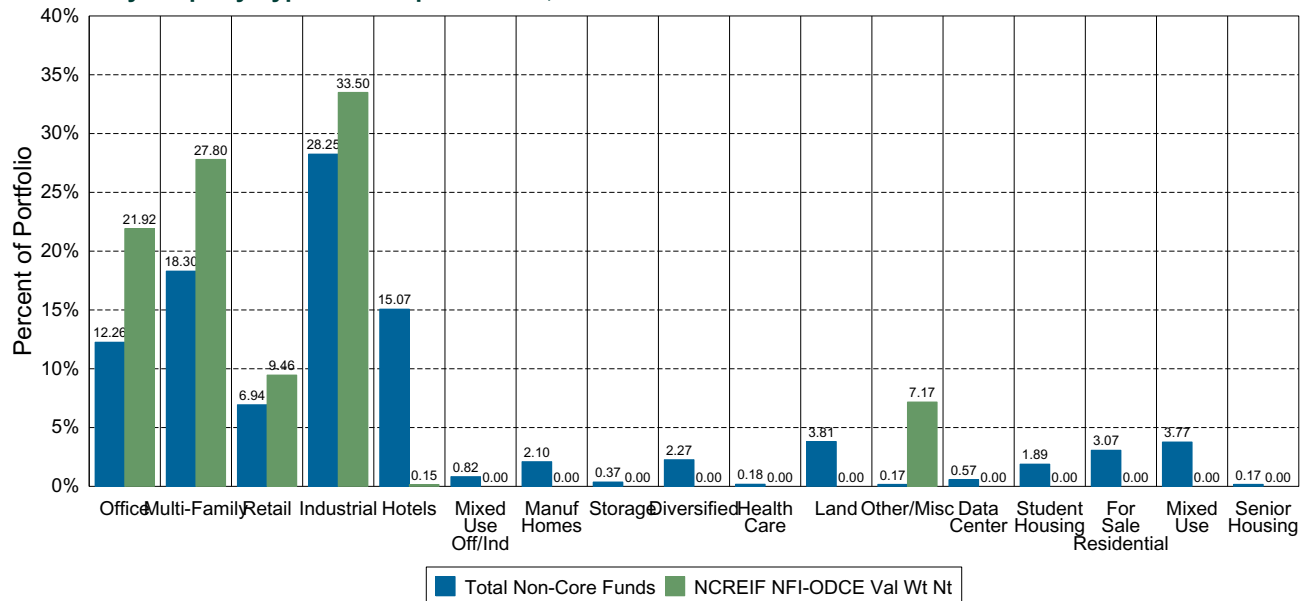
The following charts provide information on the diversification of the portfolio with regards to both Geographic Region and Property Type. Similar information is provided on the relevant market index for comparison.

Diversification by Geographic Region as of September 30, 2022



Total Non-Core Funds	17.86%	5.36%	14.95%	9.63%	5.98%	2.21%	5.13%	16.27%	22.62%
NCREIF NFI-ODCE Val Wt Nt	20.19%	7.95%	11.16%	9.17%	5.26%	0.84%	7.09%	38.34%	0.00%

Diversification by Property Type as of September 30, 2022



Total Non-Core Funds	12.26%	18.30%	6.94%	28.25%	15.07%	0.82%	2.10%	0.37%	2.27%	0.18%	3.81%	0.17%	0.57%	1.89%	3.07%	3.77%	0.17%
NCREIF NFI-ODCE Val Wt Nt	21.92%	27.80%	9.46%	33.50%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.17%	0.00%	0.00%	0.00%	0.00%	0.00%

**Total Non-Core Funds
Real Estate Portfolio
Quarterly Changes in Market Value**

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Dist. of Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
06/2009	0	3,600,000	(152,422)	346,790	376,767	0	0	0	3,477,555
09/2009	3,477,555	0	(152,422)	346,790	376,767	0	0	0	3,355,109
12/2009	3,355,109	0	(152,422)	346,790	(386,197)	0	0	0	2,469,700
03/2010	2,469,700	0	0	0	0	0	0	0	2,469,700
06/2010	2,469,700	2,040,000	0	0	0	0	0	0	4,509,700
09/2010	4,509,700	0	0	0	(10,187)	0	0	0	4,499,513
12/2010	4,499,513	1,840,000	17,012	135,646	399,673	0	0	0	6,620,552
03/2011	6,620,552	5,440,000	(26,405)	135,646	681,958	0	0	0	12,580,459
06/2011	12,580,459	4,000,000	(25,720)	130,831	947,860	892,588	0	0	16,479,180
09/2011	16,479,180	2,222,095	112,132	131,001	7,931,778	0	0	0	26,614,184
12/2011	26,614,184	13,913,056	803	129,577	(7,170,257)	25,232	0	0	33,202,977
03/2012	33,202,977	5,777,016	85,498	128,523	573,841	157,163	0	0	39,353,647
06/2012	39,353,647	12,851,428	(214,376)	217,981	646,423	2,393,217	0	544,391	49,481,533
09/2012	49,481,533	12,453,309	184,840	219,376	1,265,359	1,891,400	0	1,560,625	59,713,641
12/2012	59,713,641	21,304,116	(218,717)	219,163	2,639,006	2,230,488	0	1,311,525	79,676,870
03/2013	79,676,870	7,047,529	227,151	218,920	5,740,672	1,424,674	0	5,912,217	85,136,411
06/2013	85,136,411	11,669,328	102,625	193,322	7,016,306	4,257,611	0	35,883	99,437,853
09/2013	99,437,853	26,855,375	(327,214)	637,238	2,797,791	10,302,735	0	1,719,937	116,103,895
12/2013	116,103,895	60,859,397	(286,399)	358,262	4,584,715	2,826,783	0	250,445	177,826,118
03/2014	177,826,118	6,335,636	(2,515)	448,186	14,271,818	9,984,783	0	1,444,640	186,553,449
06/2014	186,553,449	16,245,772	50,126	534,036	4,203,408	4,571,851	0	20,362,045	181,584,824
09/2014	181,584,824	16,934,861	(432,836)	533,033	3,683,883	9,398,767	0	449,945	191,388,987
12/2014	191,388,987	6,732,235	(327,042)	220,274	7,194,125	4,487,010	0	22,718,143	177,562,878
03/2015	177,562,878	18,115,262	7,795	372,228	7,226,431	10,550,257	0	2,674,991	189,314,890
06/2015	189,314,890	19,148,867	(66,365)	407,952	7,355,309	6,254,578	0	1,339,019	207,751,152
09/2015	207,751,152	7,348,386	(105,494)	319,945	8,397,174	13,306,640	0	827,939	208,936,693
12/2015	208,936,693	16,598,291	(166,826)	967,189	7,227,426	8,398,932	0	388,596	222,840,867
03/2016	222,840,867	16,128,434	(65,398)	438,764	6,693,062	11,617,622	0	225,653	233,314,926
06/2016	233,314,926	27,561,495	(180,427)	618,398	7,947,793	6,628,760	0	183,426	261,213,203
09/2016	261,213,203	9,943,302	(67,198)	584,061	9,522,440	18,465,588	0	86,935	261,475,163
12/2016	261,475,163	22,876,164	51,901	727,927	9,844,850	24,228,231	0	1,810,102	267,481,817
03/2017	267,481,817	6,957,225	(185,570)	458,830	4,488,704	7,319,959	0	329,195	270,634,192
06/2017	270,634,192	13,304,128	330,119	592,730	9,690,874	17,628,691	0	655,280	275,082,613
09/2017	275,082,613	10,490,552	218,669	582,151	8,366,006	3,289,156	0	31,875	290,254,658
12/2017	290,254,658	12,626,626	424,355	582,150	11,445,546	14,687,351	0	665,618	298,816,066
03/2018	298,816,066	28,655,090	1,231,667	938,192	5,484,873	11,340,691	930,000	678,961	320,299,852
06/2018	320,299,852	20,614,445	2,485,045	1,036,091	4,738,015	4,278,821	16,057,331	162,915	326,602,199
09/2018	326,602,199	26,783,111	2,725,141	1,330,674	5,425,121	9,520,960	14,479,339	3,584,690	332,619,909
12/2018	332,619,909	13,199,558	3,591,013	1,220,208	8,800,654	3,993,860	10,226,293	2,727,413	340,043,360
03/2019	340,043,360	19,463,468	6,946,114	1,169,984	1,818,183	5,750,384	5,155,104	0	356,195,654
06/2019	356,195,654	20,276,659	4,032,229	1,194,863	4,129,883	7,384,189	14,638,596	2,518,787	358,897,990
09/2019	358,897,990	22,578,846	2,627,610	2,100,348	(1,794,779)	8,391,774	12,806,200	620,309	358,391,036
12/2019	358,391,036	15,507,323	5,160,335	1,405,338	(4,223,619)	5,092,759	4,017,896	1,980,829	362,338,252
03/2020	362,338,252	25,925,447	2,091,093	1,433,998	(9,978,364)	5,791,539	12,218,341	1,437,607	360,613,174
06/2020	360,613,174	16,765,573	1,451,639	1,682,853	(28,263,034)	2,431,376	1,923,758	167,748	344,361,617
09/2020	344,361,617	18,701,590	1,815,221	2,237,042	2,346,083	4,684,554	7,202,553	983,605	352,116,759
12/2020	352,116,759	15,502,987	2,371,341	2,364,943	9,393,040	4,680,569	5,891,878	0	366,446,737

Total Non-Core Funds Real Estate Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Dist. of Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
03/2021	366,446,737	26,585,506	2,040,849	2,581,546	10,982,963	10,398,783	15,354,059	0	377,721,667
06/2021	377,721,667	37,059,106	6,308,595	3,532,906	17,790,996	8,792,825	19,194,335	0	407,360,296
09/2021	407,360,296	43,802,700	6,082,685	3,543,981	31,006,105	12,778,109	15,353,164	1,141,075	455,435,456
12/2021	455,435,456	71,240,929	4,658,812	3,457,402	21,885,193	26,114,132	35,002,390	0	496,169,074
03/2022	496,169,074	64,040,262	3,887,375	3,830,903	29,634,455	10,143,450	5,722,495	3,561,349	570,472,969
06/2022	570,472,969	28,189,103	2,578,382	3,102,437	7,572,290	25,765,414	35,345,382	6,668,858	537,930,653
09/2022	537,930,653	60,067,576	2,806,330	3,211,962	3,436,782	9,097,452	13,677,513	1,093,090	577,161,324
	0	994,179,163	63,548,735	53,659,382	276,155,962	373,651,708	245,196,625	92,855,660	577,161,324

Returns

Net Portfolio Cumulative IRR = 10.91%

Ratios

Capital Account = \$577,161,324

Total Value = \$1,288,865,317

Committed Capital = \$1,426,966,555

Paid In Capital = \$994,179,163

Remaining Commitment = \$525,643,052

PIC Multiple (Paid In Capital/Committed Capital) = 69.67%

Total Economic Exposure (Capital Account + Remaining Commitment) = \$1,102,804,376

TVPI Investment Multiple (Total Value/Paid In Capital) = 1.30x

DPI Realization Multiple (Distributions/Paid In Capital) = 0.72x

RVPI Residual Multiple (Capital Account/Paid In Capital) = 0.58x

Working on updating historical cashflows on several managers to include detail cashflows.

Callan data feed at inception of relationship did not include fee amounts and income amounts.

Managers that still need updating: Brookfield II, Crow VII & VIII, Franklin EMREFF, MDP RE 2015 & FTPREF, Macquarie II & III.

Capital commitments reflects the sum of: (i) aggregate capital contributions translated to U.S.

Dollars as of the date of each capital contribution transaction; and (ii) reported uncalled capital commitments translated to U.S. Dollars as of quarter end date.

Farmland

Period Ended September 30, 2022

Investment Philosophy

Homestead Capital USA Farmland Fund III, LP plans to acquire and manage a portfolio of diversified U.S. farmland and will focus on pursuing investments in high-quality row and permanent cropland in the Mountain West, Pacific, Midwest and Delta regions. The Fund has a differentiated "private equity" approach to its farmland investment strategy because it primarily focuses on acquiring farms across the U.S. where meaningful value can be created. The Fund intends to create value through a variety of strategies including capital improvements, operational efficiencies, management and operating changes, crop rotations, conversion to higher and better uses, development of strategic partnerships and platforms, and valuation arbitrage. The Fund will implement a bottom-up investment approach utilizing a team of farm managers on the ground in each region. The bottom-up approach will be paired with a top-down overlay in an effort to ensure proper diversification and an appropriate risk and reward profile at the portfolio level.

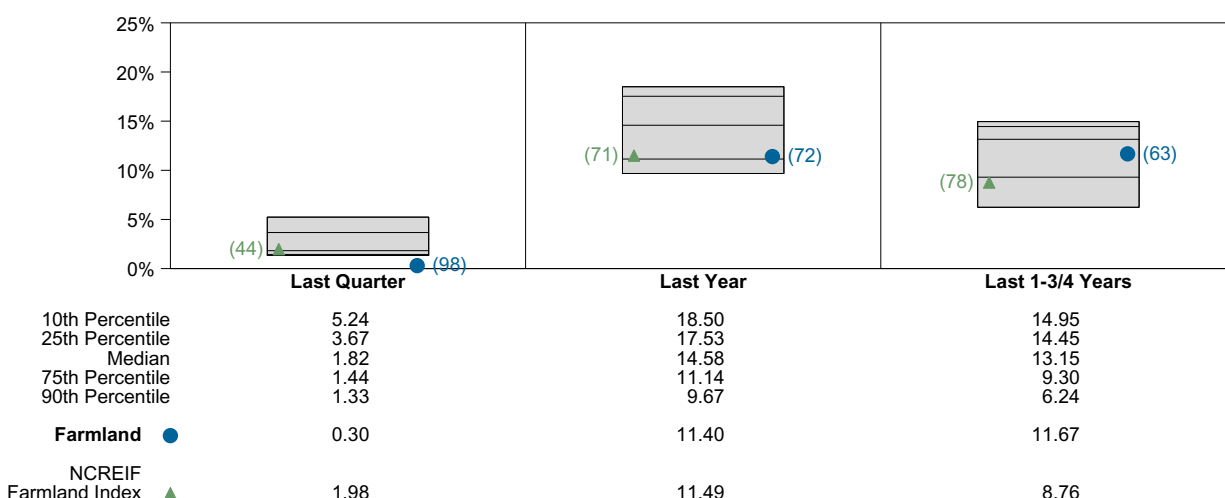
Quarterly Summary and Highlights

- Farmland's portfolio posted a 0.30% return for the quarter placing it in the 98 percentile of the Callan Real Estate Agriculture Funds group for the quarter and in the 72 percentile for the last year.
- Farmland's portfolio underperformed the NCREIF Farmland Index by 1.68% for the quarter and underperformed the NCREIF Farmland Index for the year by 0.10%.

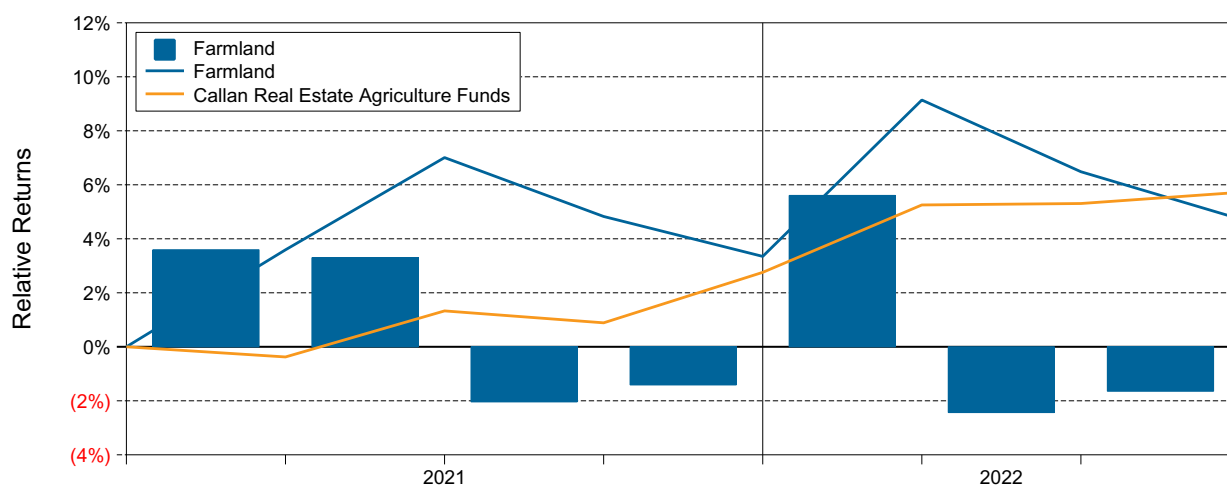
Quarterly Asset Growth

Beginning Market Value	\$38,621,808
Net New Investment	\$2,783,357
Investment Gains/(Losses)	\$119,102
Ending Market Value	\$41,524,267

Performance vs Callan Real Estate Agriculture Funds



Cumulative and Quarterly Relative Returns vs NCREIF Farmland Index

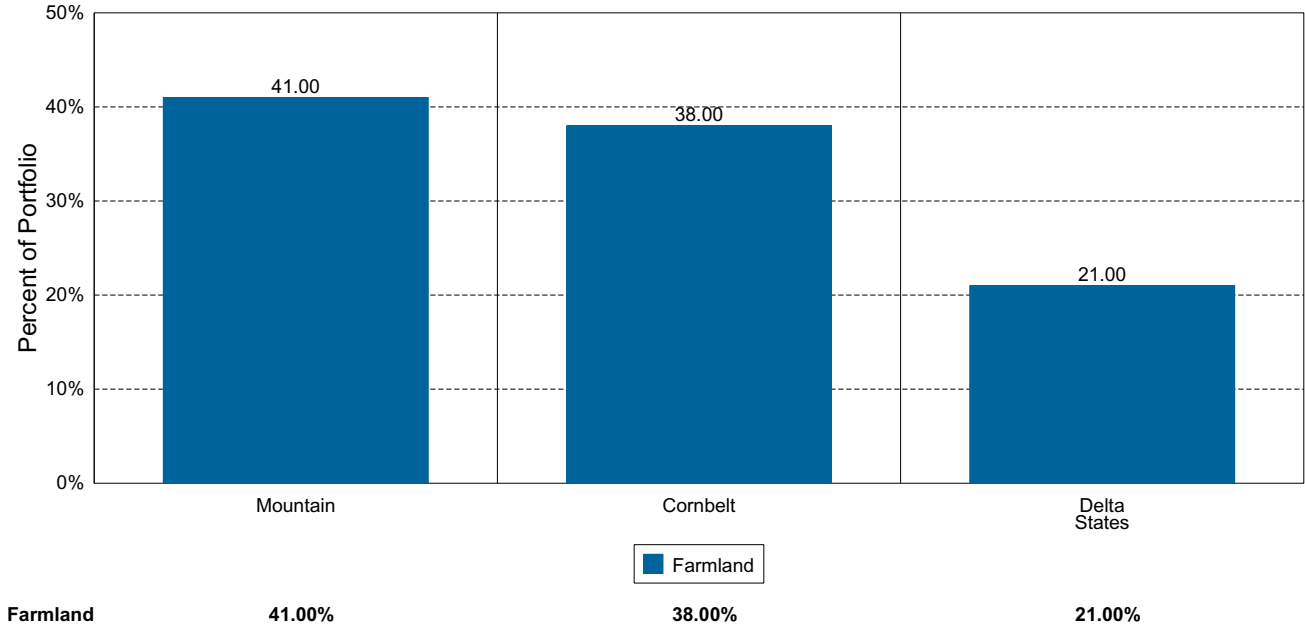


Farmland
Diversification Analysis as of September 30, 2022

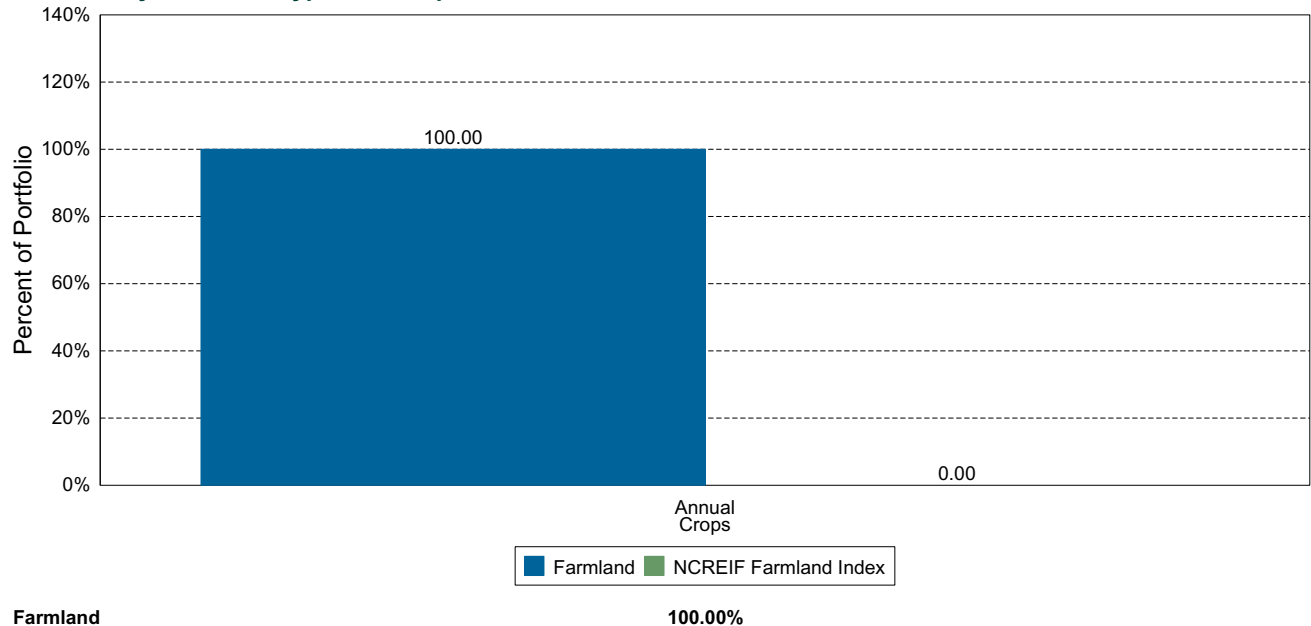
Diversification Analysis

The following charts provide information on the diversification of the portfolio with regards to both Geographic Region and Farmland Type. Similar information is provided on the relevant market index for comparison.

Diversification by Geographic Region as of September 30, 2022



Diversification by Farmland Type as of September 30, 2022



Farmland Real Estate Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
12/2020	0	12,658,888	157,999	1,526,906	(76,196)	173,154	220,183	23,770	10,796,678
03/2021	10,796,678	1,186,700	(10,200)	208,432	715,874	0	0	0	12,480,620
06/2021	12,480,620	3,377,979	152,390	222,455	739,401	171,141	0	0	16,356,794
09/2021	16,356,794	2,785,988	(16,698)	214,347	138,648	0	0	0	19,050,385
12/2021	19,050,385	11,334,417	86,414	215,619	696,054	114,866	0	0	30,836,785
03/2022	30,836,785	5,480,956	375,825	187,563	2,464,765	400,268	0	0	38,570,500
06/2022	38,570,500	0	(18,876)	207,177	277,361	0	0	0	38,621,808
09/2022	38,621,808	2,783,357	(40,387)	225,000	384,489	0	0	0	41,524,267
	0	39,608,285	686,467	3,007,499	5,340,396	859,429	220,183	23,770	41,524,267

Returns

Net Portfolio Cumulative IRR = 6.66%

Ratios

Capital Account = \$41,524,267

Total Value = \$42,627,649

Committed Capital = \$60,000,000

Paid In Capital = \$39,608,285

Remaining Commitment = \$20,415,485

PIC Multiple (Paid In Capital/Committed Capital) = 66.01%

Total Economic Exposure (Capital Account + Remaining Commitment) = \$61,939,752

TVPI Investment Multiple (Total Value/Paid In Capital) = 1.08x

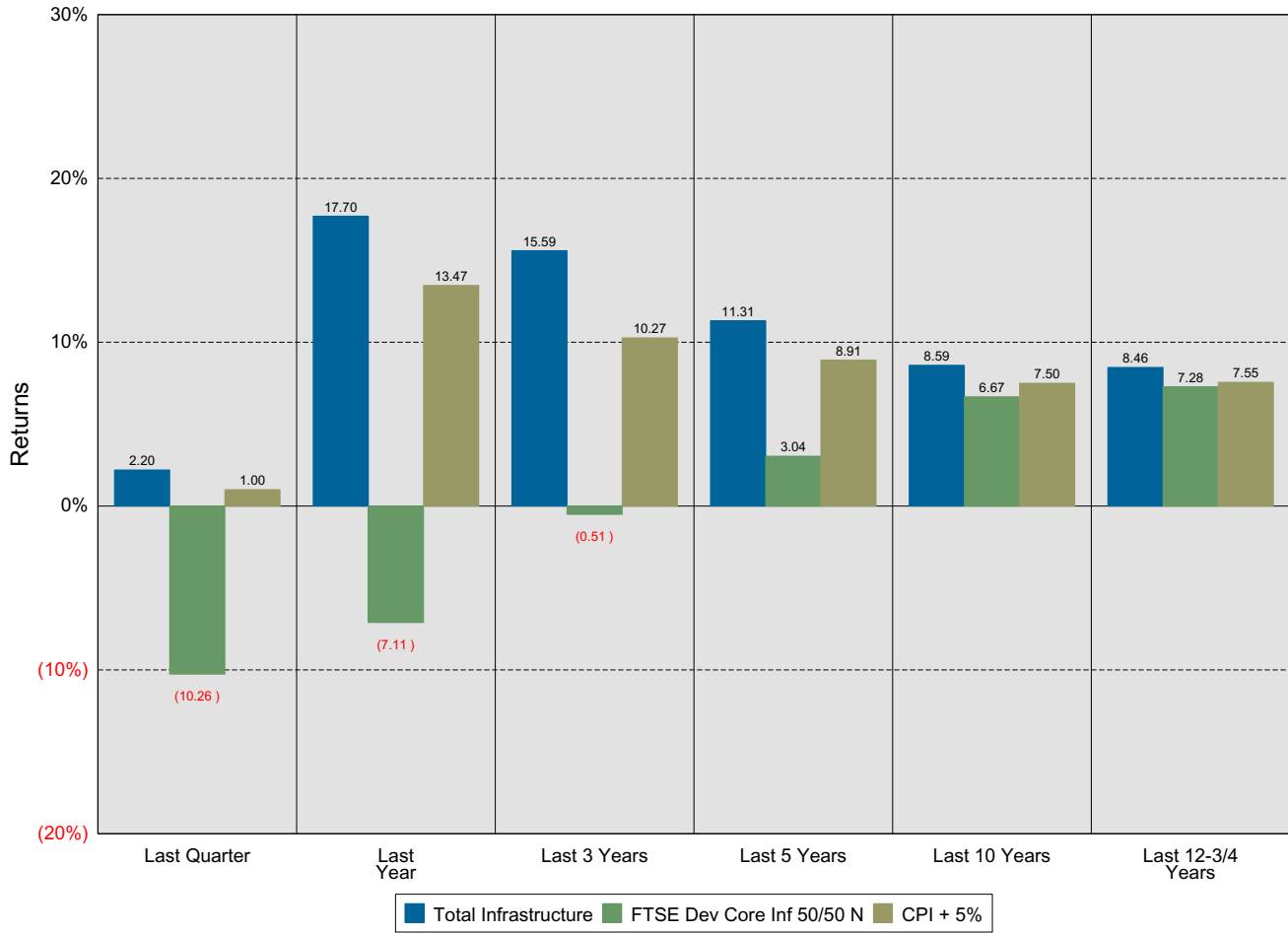
DPI Realization Multiple (Distributions/Paid In Capital) = 0.03x

RVPI Residual Multiple (Capital Account/Paid In Capital) = 1.05x

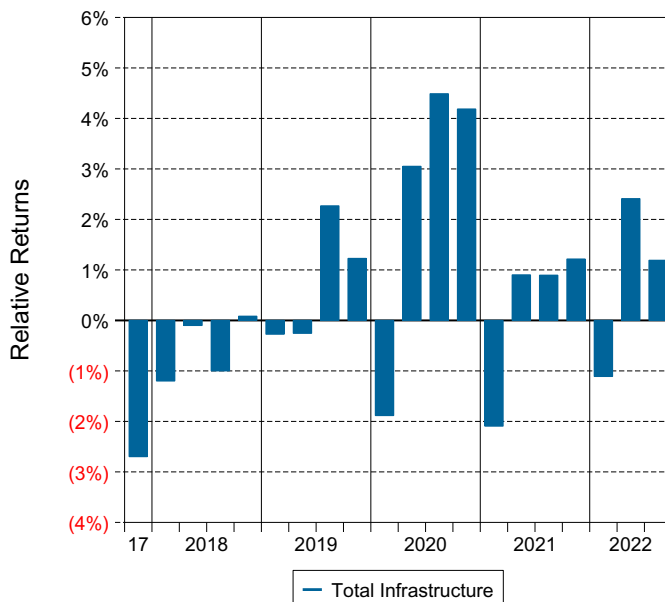
Total Infrastructure Period Ended September 30, 2022

Quarterly Summary and Highlights

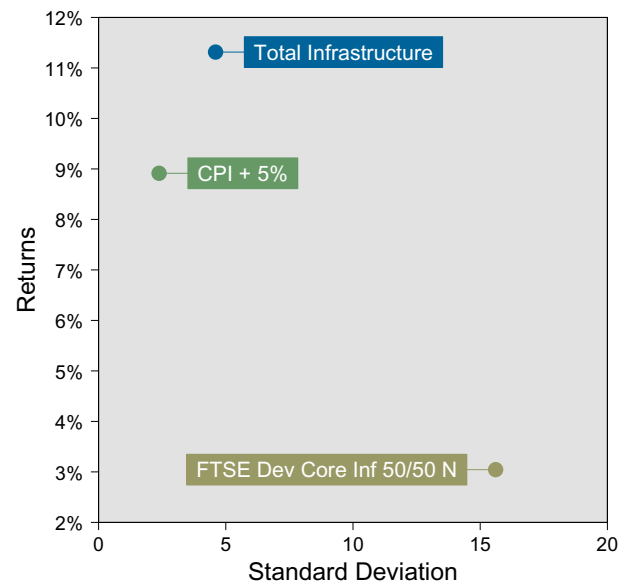
- Total Infrastructure's portfolio outperformed the CPI + 5% by 1.20% for the quarter and outperformed the CPI + 5% for the year by 4.23%.



Relative Return vs CPI + 5%



Annualized Five Year Risk vs Return

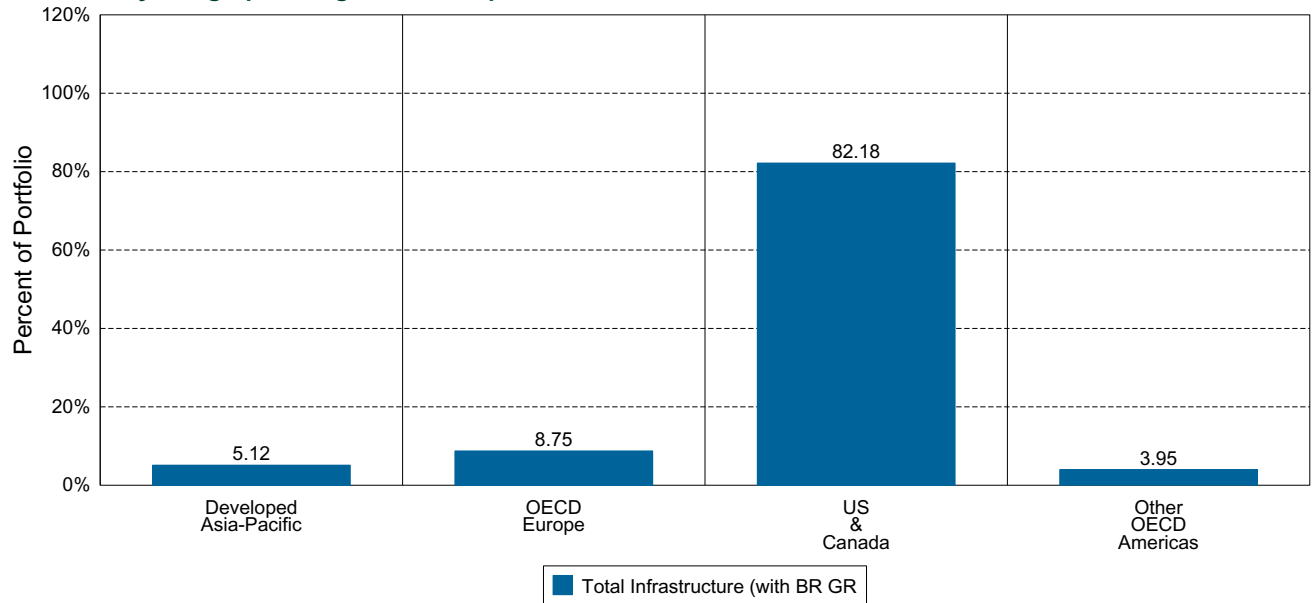


Total Infrastructure (with BR GRP III) Diversification Analysis as of September 30, 2022

Diversification Analysis

The following charts provide information on the diversification of the portfolio with regards to both Geographic Region and Infrastructure Type. Similar information is provided on the relevant market index for comparison.

Diversification by Geographic Region as of September 30, 2022



Total Infrastructure (with BR GRP III)

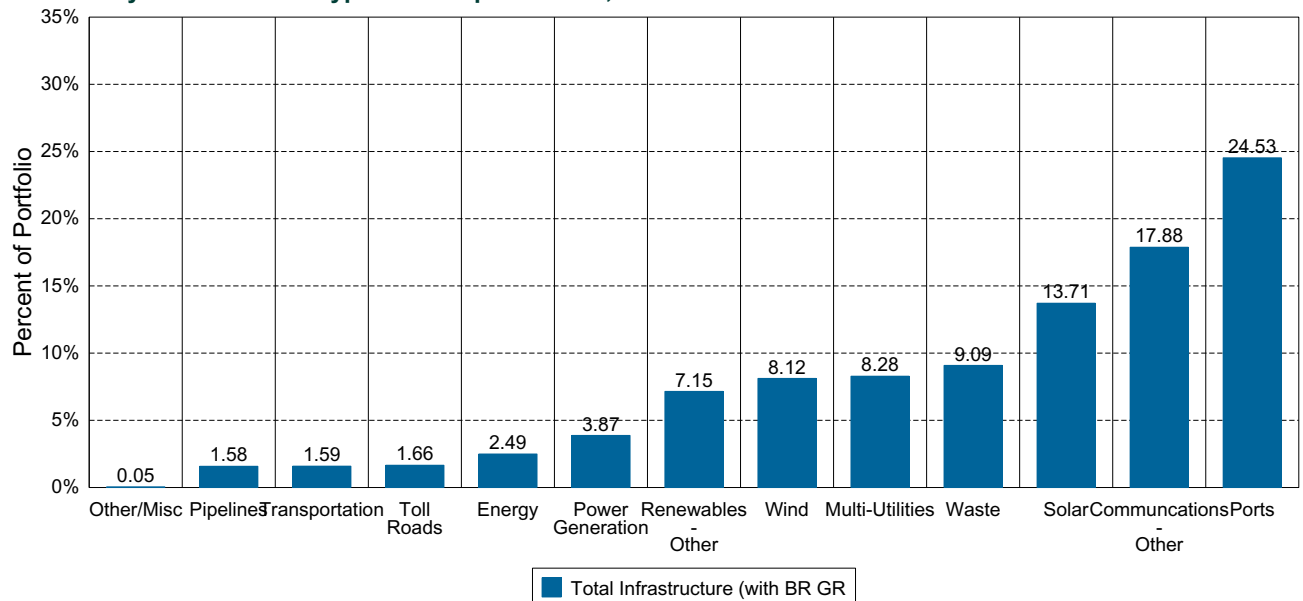
5.12%

8.75%

82.18%

3.95%

Diversification by Infrastructure Type as of September 30, 2022



Total Infrastructure (with BR GRP III)

0.05%

1.58%

1.59%

1.66%

2.49%

3.87%

7.15%

8.12%

8.28%

9.09%

13.71%

17.88%

24.53%

Total Infrastructure Infrastructure Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Dist. of Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
12/2009	0	7,848,586	78,175	1,035,616	1,113,909	458,762	0	16,597	7,529,695
03/2010	7,529,695	604,661	2,420	350,000	305,337	0	0	585,224	7,506,889
06/2010	7,506,889	22,373,970	100,792	2,215,084	704,795	0	0	277,003	28,194,359
09/2010	28,194,359	673,974	168,948	161,710	2,260,461	0	0	644,134	30,491,898
12/2010	30,491,898	4,032,951	32,558	161,710	1,186,244	0	0	0	35,581,941
03/2011	35,581,941	3,632,210	145,903	164,100	770,475	0	0	229,698	39,736,731
06/2011	39,736,731	3,161,617	146,130	164,100	934,848	0	0	345,169	43,470,057
09/2011	43,470,057	5,011,352	161,229	132,058	1,237,961	0	0	149,002	49,599,539
12/2011	49,599,539	8,891,407	(42,712)	132,058	1,020,407	0	0	469,436	58,867,147
03/2012	58,867,147	6,731,784	159,082	115,311	478,344	0	0	0	66,121,046
06/2012	66,121,046	47,824	280,821	115,311	1,273,290	0	0	211,978	67,395,692
09/2012	67,395,692	420,388	86,608	173,950	1,640,428	0	0	680,410	68,688,756
12/2012	68,688,756	4,588,704	46,818	170,673	3,330,945	0	0	702,613	75,781,937
03/2013	75,781,937	2,752,906	156,175	312,126	1,265,278	0	0	3,492,782	76,151,388
06/2013	76,151,388	832,318	103,778	319,475	(35,314)	777,982	0	481,746	75,472,967
09/2013	75,472,967	3,105,050	(10,413)	272,070	2,155,584	501,392	0	1,866,413	78,083,313
12/2013	78,083,313	4,420,671	106,410	195,348	(296,065)	22,295,109	0	309,940	59,513,932
03/2014	59,513,932	8,585,708	185,692	166,570	3,186,654	1,489,341	0	2,896,277	66,919,798
06/2014	66,919,798	740,153	126,600	137,238	2,450,569	775,008	0	527,844	68,797,029
09/2014	68,797,029	778,185	17,847	238,275	(800,247)	56,231	0	267,296	68,231,012
12/2014	68,231,012	2,312,635	(195,503)	764,548	826,326	184,720	0	1,046,792	69,178,411
03/2015	69,178,411	8,134,342	94,546	381,562	1,837,269	85,533	0	485,777	78,291,696
06/2015	78,291,696	1,276,086	11,054	340,700	1,558,044	34,806	0	1,253,253	79,508,121
09/2015	79,508,121	458,868	443,191	354,681	1,788,364	427,677	0	431,192	80,984,994
12/2015	80,984,994	1,439,368	435,839	352,106	1,668,634	473,310	0	1,241,461	82,461,958
03/2016	82,461,958	4,006,958	270,850	353,464	1,146,414	149,385	0	212,193	87,171,138
06/2016	87,171,138	10,885,041	750,789	359,408	1,088,386	137,959	0	586,453	98,811,534
09/2016	98,811,534	7,111,855	221,669	425,145	365,192	175,491	0	865,857	105,043,757
12/2016	105,043,757	11,448,295	548,069	414,798	(3,089,524)	1,666,632	64,272	304,620	111,500,276
03/2017	111,500,276	1,853,672	472,995	400,300	6,754,926	1,381,714	0	581,377	118,218,478
06/2017	118,218,478	399,048	755,664	402,809	(1,857,523)	7,967,095	0	260,931	108,884,831
09/2017	108,884,831	213,489	338,024	387,816	926,380	2,679,673	0	161,822	107,133,414
12/2017	107,133,414	454,311	775,254	380,978	(2,160,339)	1,775,100	0	141,874	103,904,688
03/2018	103,904,688	307,740	149,259	751,823	1,448,049	134,276	0	201,398	104,722,238
06/2018	104,722,238	4,992,602	(135,177)	469,301	2,881,352	12,440,017	5,040,451	0	94,511,247
09/2018	94,511,247	2,289,864	117,514	388,630	615,817	409,948	0	0	96,735,863
12/2018	96,735,863	6,472,515	87,866	422,957	939,865	930,019	139,450	0	102,743,683
03/2019	102,743,683	10,733,092	423,561	408,556	2,277,961	719,459	1,519,068	0	113,531,215
06/2019	113,531,215	5,584,716	44,826	380,840	2,127,179	700,080	17,412,920	58,226	102,735,870
09/2019	102,735,870	10,769,066	294,824	423,008	4,057,204	1,704,669	2,226,460	0	113,502,827
12/2019	113,502,827	15,535,595	(279,484)	395,393	3,629,217	3,349,613	11,442,770	127,673	117,072,705
03/2020	117,072,705	1,693,654	253,449	366,811	(274,087)	71,357	138,791	0	118,168,762
06/2020	118,168,762	93,795	12,605	367,804	5,305,358	93,795	0	0	123,118,921
09/2020	123,118,921	2,425,028	146,289	369,830	8,795,977	206,452	368,001	0	133,541,932
12/2020	133,541,932	408,317	28,457	348,985	6,887,031	15,200,971	14,737,219	0	110,578,563
03/2021	110,578,563	711,013	389,784	311,556	900,818	5,155,812	2,319,555	6,606	104,786,648
06/2021	104,786,648	1,585,576	2,229,130	304,619	3,018,540	40,690	8,975,817	0	102,298,769

Total Infrastructure Infrastructure Portfolio Quarterly Changes in Market Value

	Beg. of Period Market	+ Capital Contri- butions	+ Accounting Income	- Mgmt. Fees	+ Appre- ciation	- Dist. of Income & Real. Gains	- Return of Capital	- Dist. of Recallable Capital	= End of Period Market
09/2021	102,298,769	5,653,567	360,628	765,451	3,573,710	290,390	1,327,832	0	109,503,000
12/2021	109,503,000	1,498,761	(12,281)	876,556	4,987,011	4,062,388	0	0	111,037,547
03/2022	111,037,547	3,634,984	231,741	528,397	4,053,460	973,514	0	0	117,455,822
06/2022	117,455,822	8,097,642	3,314,300	547,218	5,358,611	30,921	3,230,520	0	130,417,716
09/2022	130,417,716	2,715,768	881,155	450,868	2,439,855	0	1,025,687	0	134,977,939
	0	224,431,681	15,513,748	20,929,697	98,059,377	90,007,291	69,968,812	22,121,067	134,977,939

Returns

Net Portfolio Cumulative IRR = 8.17%

Ratios

Capital Account = \$134,977,939

Total Value = \$317,075,109

Committed Capital = \$180,000,000

Paid In Capital = \$224,431,681

Remaining Commitment = \$(22,310,614)

PIC Multiple (Paid In Capital/Committed Capital) = 124.68%

Total Economic Exposure (Capital Account + Remaining Commitment) = \$112,667,325

TVPI Investment Multiple (Total Value/Paid In Capital) = 1.41x

DPI Realization Multiple (Distributions/Paid In Capital) = 0.81x

RVPI Residual Multiple (Capital Account/Paid In Capital) = 0.60x

Definitions

Definitions

Style Groups

Total Domestic Real Estate Database: The Total Domestic Real Estate Funds Database consists of both open and closed-end commingled funds managed by real estate firms that report to the Callan Database and invest in private domestic real estate.

Open-End Core Commingled RE: The Open-End Real Estate Database consists of all open end real estate funds that report to the Callan Database.

Real Estate REIT: The Real Estate REIT Database consists of products investing in domestic equity real estate through portfolios consisting primarily of equity Real Estate Investment Trusts (REIT). The Database is comprised of returns for both separate account composites and commingled vehicles as reported to Callan by the managers of those products.

*The above groups are based on time-weighted returns.

Vintage Year Database Groups: The Vintage Year Groups are comprised of closed end funds that report to the database. The groups are based on IRRs derived from cash flows submitted to the Callan Database by the managers of those funds. A fund is placed in a vintage year based on the year the initial drawdown of capital was made for the fund.

Indices

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

The NFI-ODCE Value-Weight Index is a time-weighted return Index with an inception date of 12/31/1977. The Index is comprised of 33 open-end commingled funds, in which 24 are still actively investing. Inclusion within the Index requires (a) minimum of 80% of net fund assets invested in the multifamily, retail, industrial, office, or hotel property type, (b) maximum of 20% of net fund assets invested in real estate debt or private/public company equity, (c) at least 80% of net assets invested in properties with a minimum occupancy of 60%, (d) no more than 70% of real estate net assets invested in a single property type or region, (e) maximum of 40% leverage, and (f) at least 95% of net real estate assets invested within the U.S. market.

NCREIF Region Map



Notes

Information in the report is based on qualitative and quantitative data submitted to Callan directly by the client's real estate investment managers. It is not based on custodian data nor has it been reconciled to custodian data.

Quarterly Highlights

The Callan Institute provides research to update clients on the latest industry trends and carefully structured educational programs to enhance the knowledge of industry professionals. Visit www.callan.com/research-library to see all of our publications, and www.callan.com/blog to view our blog. For more information contact Barb Gerraty at 415-274-3093 / institute@callan.com.

New Research from Callan's Experts

Research Cafe: Preliminary Mid-Year Capital Markets

Assumptions | In this coffee break session, our experts, Jay Kloepfer and Adam Lozinski, describe our preliminary 2023-2032 Capital Markets Assumptions, discuss the process and rationale behind the adjustments of these long-term projections, and explain the potential implications for strategic recommendations.

Is Financial Wellness the Right Prescription for Your DC Plan?

Jana Steele discusses what financial wellness is and how it can be incorporated effectively into a defined contribution (DC) plan.

Blog Highlights

Do Active Core Plus Fixed Income Managers Add Value With Sector Rotation?

| To help answer this question, we used benchmark indices and risk-adjusted them to disentangle an active manager's contribution to performance from a strategic overweight to credit vs. the contribution added by true sector rotation. This provides a quantitative framework for evaluating potential performance, which can be balanced against other considerations, including fees and expenses, complexity, and desired risk and performance patterns.

Bubbles Bursting Everywhere | The S&P 500 posted its worst six-month return in over 50 years to start the year. Inflation is surging, hitting 40-year highs in the United States. At the same time, interest rates are rising, and, to top it off, a recession may be on the horizon. For institutional investors, navigating these treacherous cross-currents requires an understanding of just how we arrived at this point.

The Fading Unicorn: How Volatility, Inflation, and Rate Hikes Impact Venture Capital

| With Fed rate hikes, skyrocketing prices, and a Nasdaq selloff, venture capital (VC) limited partners have no shortage of worries. The unicorn stampede of the past decade has begun to fade, with many technology companies drastically declining

in value in the public markets. By understanding venture capital's relationship with interest rates, inflation, and the public markets, institutional investors can better navigate the effect on their portfolios in 2022 and beyond.

Target Date Funds and the Ever-Evolving Glidepath | In 2021 and the first half of 2022, multiple target date fund (TDF) providers announced changes to their strategic TDF glidepaths. The timing of these changes was unique, as capital markets adjusted to a post-pandemic world and a vastly different global outlook.

Quarterly Periodicals

Private Equity Update, 2Q22 | A high-level summary of private equity activity in the quarter through all the investment stages

Active vs. Passive Charts, 2Q22 | A comparison of active managers alongside relevant benchmarks over the long term

Market Pulse, 2Q22 | A quarterly market reference guide covering trends in the U.S. economy, developments for institutional investors, and the latest data on the capital markets

Capital Markets Review, 2Q22 | Analysis and a broad overview of the economy and public and private markets activity each quarter across a wide range of asset classes

Hedge Fund Update, 2Q22 | Commentary on developments for hedge funds and multi-asset class (MAC) strategies

Real Assets Update, 2Q22 | A summary of market activity for real assets and private real estate during the quarter

Private Credit Update, 2Q22 | A review of performance and fund-raising activity for private credit during the quarter

Events

A complete list of all upcoming events can be found on our website: callan.com/events-education.

Please mark your calendar and look forward to upcoming invitations:

2023 Capital Markets Projections Webinar

Jan. 18, 2023 – Virtual

2023 National Conference

April 2-4, 2023 – Scottsdale, AZ

For more information about events, please contact Barb Gerraty: 415-274-3093 / gerraty@callan.com

Education: By the Numbers

50+

Unique pieces of research the Institute generates each year

525

Attendees (on average) of the Institute's annual National Conference

3,700

Total attendees of the "Callan College" since 1994

Education

Founded in 1994, the "Callan College" offers educational sessions for industry professionals involved in the investment decision-making process.

Introduction to Investments

March 1-2 – Chicago

May 23-25 – Virtual

This program familiarizes institutional investor trustees and staff and asset management advisers with basic investment theory, terminology, and practices. Our virtual session is held over three days with virtual modules of 2.5-3 hours, while the in-person session lasts one-and-a-half days. This course is designed for individuals with less than two years of experience with asset-management oversight and/or support responsibilities. Virtual tuition is \$950 per person and includes instruction and digital materials. In-person tuition is \$2,350 per person and includes instruction, all materials, breakfast and lunch on each day, and dinner on the first evening with the instructors.

Additional information including registration can be found at: callan.com/events-education



"Research is the foundation of all we do at Callan, and sharing our best thinking with the investment community is our way of helping to foster dialogue to raise the bar across the industry."

Greg Allen, CEO and Chief Research Officer



Illinois State Universities Retirement System

January 11, 2023

Third Quarter 2022
Private Credit Report

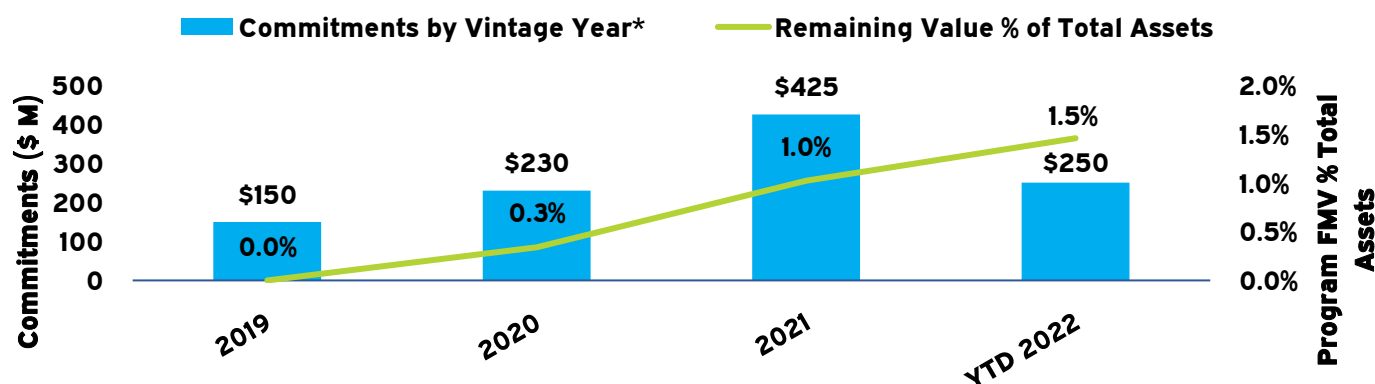


Illinois State Universities Retirement System Private Credit Program

Overview | As of September 30, 2022

Introduction

Illinois State Universities Retirement System (“SURS”) has set a target allocation of 5% of plan net asset value to private credit fund investments within the Stabilized Growth Class. SURS’ private credit program targets a mix of strategies, both yield-oriented and opportunistic, with an emphasis on yield-oriented. The first commitment was approved in June of 2020. As of the end of Q3 2022, nine private credit fund commitments totaling \$1.1 billion have been made to the Program.



*Defined by the date of initial investment.

Program Status

No. of Investments	9
Committed (\$ M)	1,055.0
Contributed (\$ M)	420.3
Distributed (\$ M)	128.9
Remaining Value (\$ M)	323.8

Performance Since Inception¹

	Program	PME ²
DPI	0.31x	---
TVPI	1.08x	---
IRR	9.7%	-1.9%

¹ The initial capital call was made on July 9, 2020.

² 50% BB Global High Yield + 50% S&P LSTA Global Leveraged Loan +1%

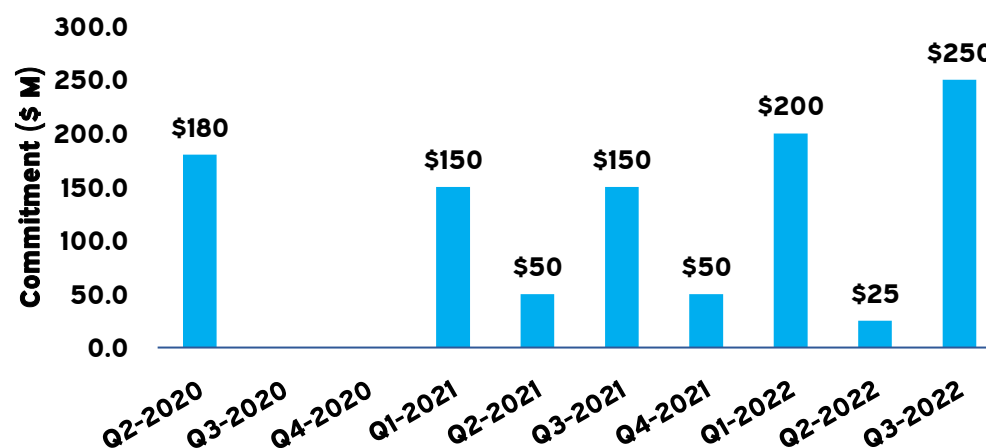


Illinois State Universities Retirement System Private Credit Program

Recent Activity | As of September 30, 2022

Commitments

Recent Quarterly Commitment Closings



Commitments This Quarter

Fund	Strategy	Region	Amount (M)
Ares Pathfinder Core	Specialty Lending	North America	50.00
Silver Rock Tactical Allocation Fund - Vintage 2022	Special Situations	North America	200.00



Illinois State Universities Retirement System Private Credit Program

Performance Analysis | As of September 30, 2022

Aggregate Commitment Activity to Date

Fund	Strategy	Amount (\$M)	Date
PIMCO Distressed Senior Credit Opportunities III	Multi-Strategy	180.00 ¹	Q2 2020
Silver Rock Tactical Allocation Fund – Vintage 2019	Special Situations	150.00	Q1 2021
Crayhill Principal Strategies Fund II	Specialty Lending	50.00	Q2 2021
Neuberger Berman Private Debt Fund IV	Direct Lending	175.00 ²	Q3 2021
Silver Rock Tactical Allocation Fund Share Class B	Special Situations	50.00	Q4 2021
Turning Rock Fund II	Special Situations	50.00	Q1 2022
Fortress Lending Fund III	Multi-Strategy	50.00	Q1 2022
Ares Pathfinder Core Fund	Specialty Lending	150.00 ³	Q1 2022
Silver Rock Tactical Allocation Fund – Vintage 2022	Special Situations	200.00	Q3 2022

Commitments made subsequent to quarter end included:

- approved a \$100 million commitment to Silver Point Specialty Credit Fund III
 - a non-traditional middle-market direct lending fund

¹ 20% of the commitment was released as of September 30, 2021.

² Increased commitment by \$25 million in Q2 2022.

³ Increased commitment by \$50 million in Q3 2022.

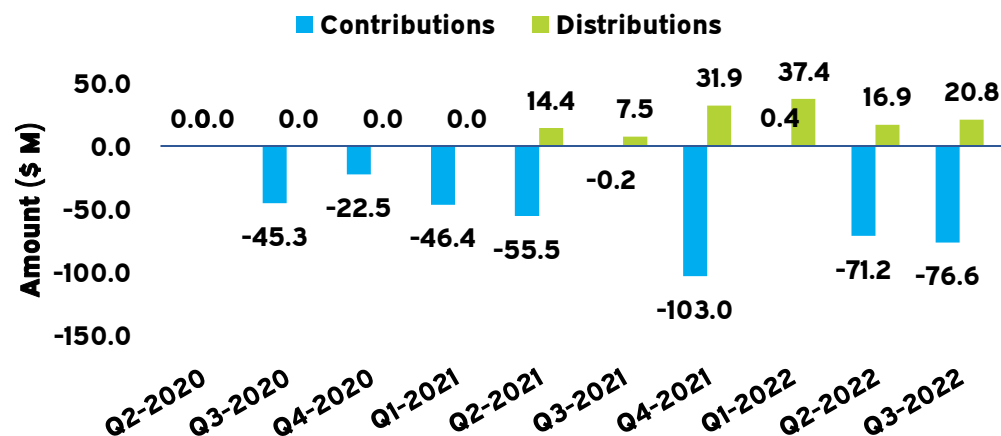


Illinois State Universities Retirement System Private Credit Program

Performance Analysis | As of September 30, 2022

Cash Flows

Recent Quarterly Cash Flows



Largest Contributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$M)
Silver Rock Tactical	2019	Special Situations	North America	32.39
NB Debt Fund IV	2021	Direct Lending	North America	27.50
Turning Rock Fund II	2021	Special Situations	North America	7.38

Largest Distributions This Quarter

Fund	Vintage	Strategy	Region	Amount (\$M)
PIMCO DISCO III	2020	Multi-Strategy	North America	16.75
Crayhill Fund II	2020	Specialty Lending	Global: Developed	2.53
NB Debt Fund IV	2021	Direct Lending	North America	1.51



Illinois State Universities Retirement System Private Credit Program

Performance Analysis | As of September 30, 2022

By Strategy

Group	Number	Committed (\$ M)	Contributed (\$ M)	Unfunded (\$ M)	Distributed (\$ M)	Remaining Value (\$ M)	Exposure (\$ M)	DPI (X)	TVPI (X)	IRR (%)
Direct Lending	1	175.0	87.5	87.7	4.9	90.5	178.3	0.06	1.09	NM
Multi-Strategy	2	230.0	110.3	210.0	90.0	35.7	245.8	0.82	1.14	12.6
Special Situations	4	450.0	189.5	279.4	18.9	175.0	454.4	0.10	1.02	NM
Specialty Lending	2	200.0	33.0	175.1	15.1	22.5	197.7	0.46	1.14	NM
Total	9	1,055.0	420.3	752.3	128.9	323.8	1,076.1	0.31	1.08	9.7

By Vintage

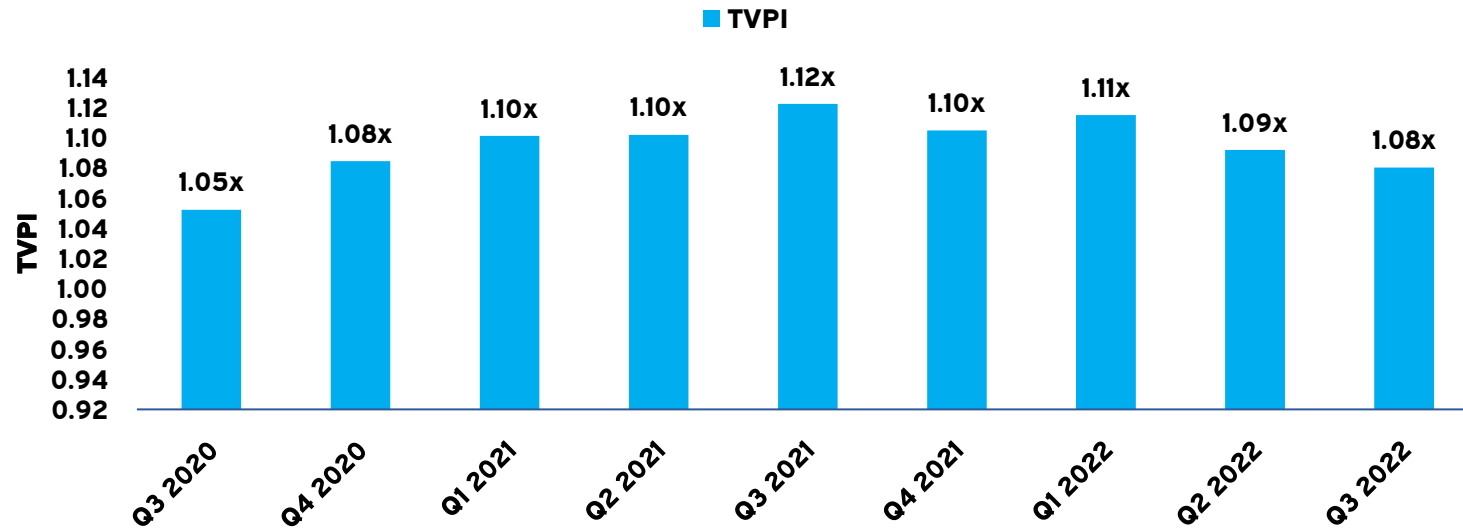
Group	Number	Committed (\$ M)	Contributed (\$ M)	Unfunded (\$ M)	Distributed (\$ M)	Remaining Value (\$ M)	Exposure (\$ M)	DPI (X)	TVPI (X)	IRR (%)
Open-end	1	150.0	4.1	145.9	0.0	4.2	150.1	0.00	1.02	NM
2019	1	150.0	149.5	12.1	11.5	141.4	153.5	0.08	1.02	NM
2020	2	230.0	119.2	209.3	105.1	35.1	244.3	0.88	1.18	15.7
2021	3	275.0	127.5	155.1	12.2	124.1	279.2	0.10	1.07	NM
2022	2	250.0	20.0	230.0	0.0	19.0	249.0	0.00	0.95	NM
Total	9	1,055.0	420.3	752.3	128.9	323.8	1,076.1	0.31	1.08	9.7



Illinois State Universities Retirement System Private Credit Program

Performance Analysis | As of September 30, 2022

Since Inception Performance Over Time



Horizon IRRs

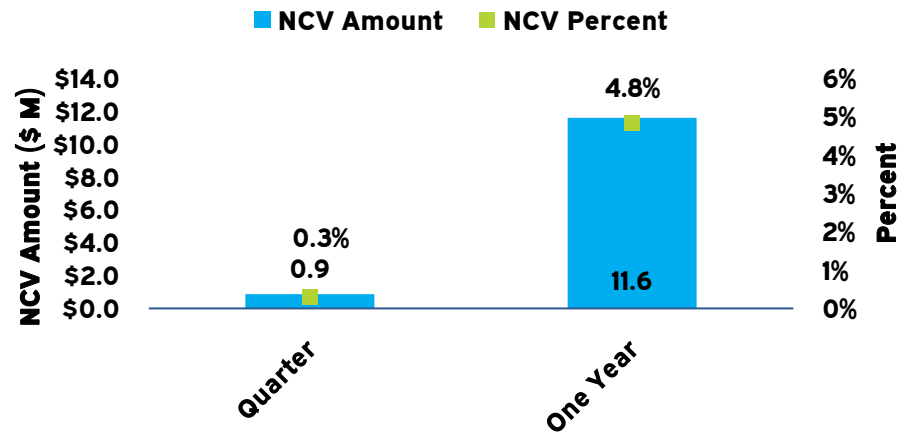
	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Aggregate Portfolio	5.1	NM	NM	NM	9.7



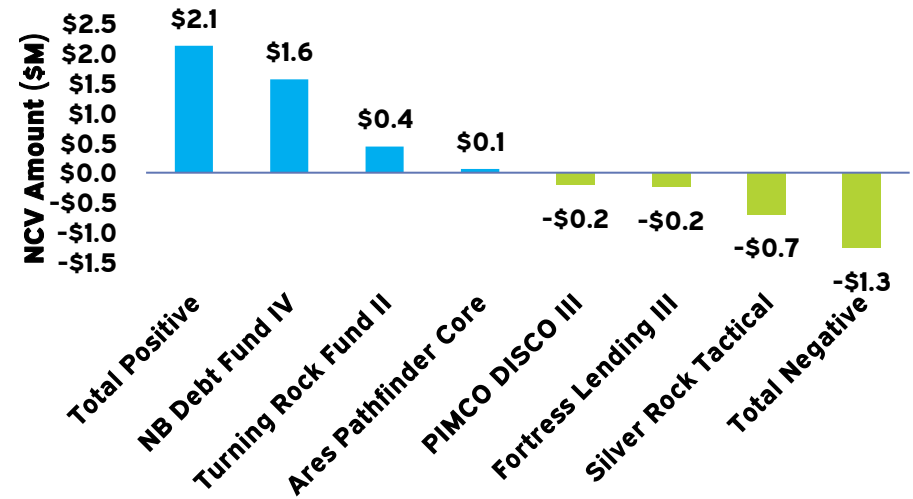
Illinois State Universities Retirement System Private Credit Program

Performance Analysis | As of September 30, 2022

Periodic NCV



1 Quarter Drivers Of NCV





Illinois State Universities Retirement System Private Credit Program

Performance Analysis | As of September 30, 2022

Fund Performance: Sorted By Vintage And Strategy

By Investment	Vintage	Strategy	Committed (\$ M)	Contributed (\$ M)	Unfunded (\$ M)	Distributed (\$ M)	Remaining Value (\$ M)	TVPI (X)	IRR (%)
Ares Pathfinder Core	Open-end	Specialty Lending	150.0	4.1	145.9	0.0	4.2	1.02	NM
Silver Rock Tactical	2019	Special Situations	150.0	149.5	12.1	11.5	141.4	1.02	NM
PIMCO DISCO III	2020	Multi-Strategy	180.0	90.3	180.0	90.0	16.7	1.18	14.1
Crayhill Fund II	2020	Specialty Lending	50.0	28.9	29.3	15.1	18.3	1.16	NM
NB Debt Fund IV	2021	Direct Lending	175.0	87.5	87.7	4.9	90.5	1.09	NM
Silver Rock Colinvest	2021	Special Situations	50.0	15.6	39.5	5.1	10.6	1.01	NM
Turning Rock Fund II	2021	Special Situations	50.0	24.4	27.8	2.2	23.0	1.03	NM
Fortress Lending III	2022	Multi-Strategy	50.0	20.0	30.0	0.0	19.0	0.95	NM
Silver Rock Tac 2022	2022	Special Situations	200.0	0.0	200.0	0.0	0.0	NM	NM
Total			1,055.0	420.3	752.3	128.9	323.8	1.08	9.7

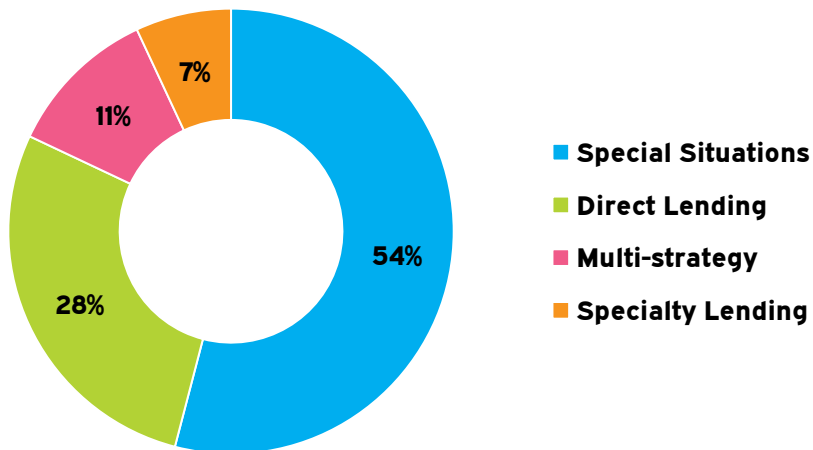


Illinois State Universities Retirement System Private Credit Program

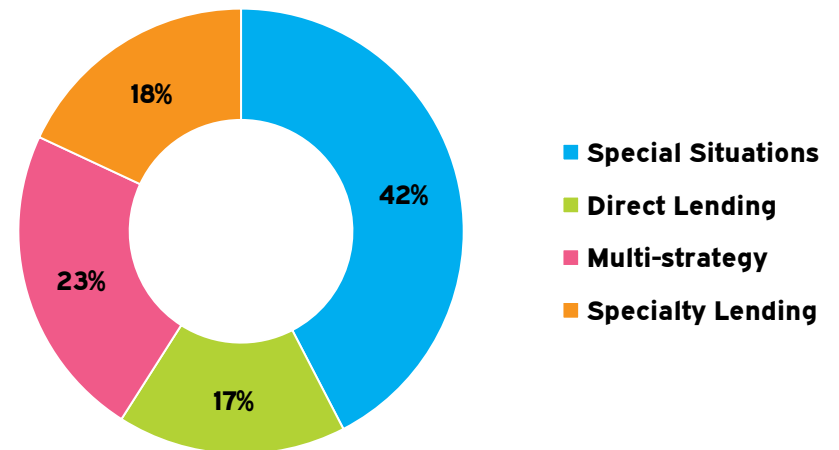
Fund Diversification | As of September 30, 2022

By Strategy

Percent of FMV



Percent of Exposure¹



¹ Represents sum of investor's Unfunded and Remaining Value.

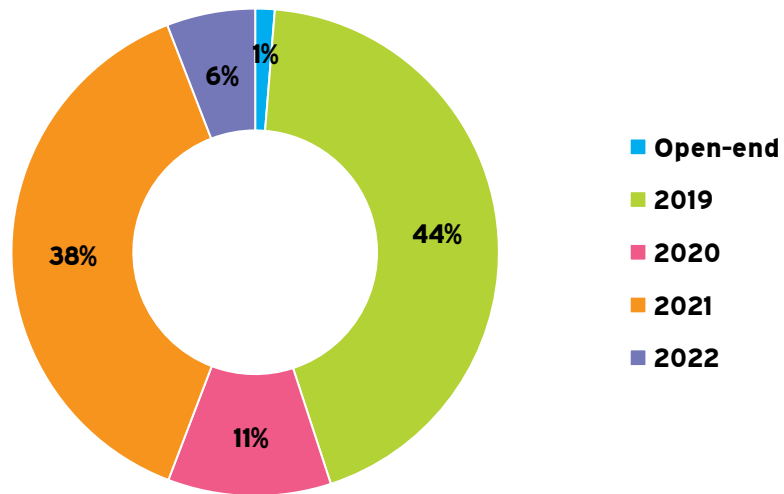


Illinois State Universities Retirement System Private Credit Program

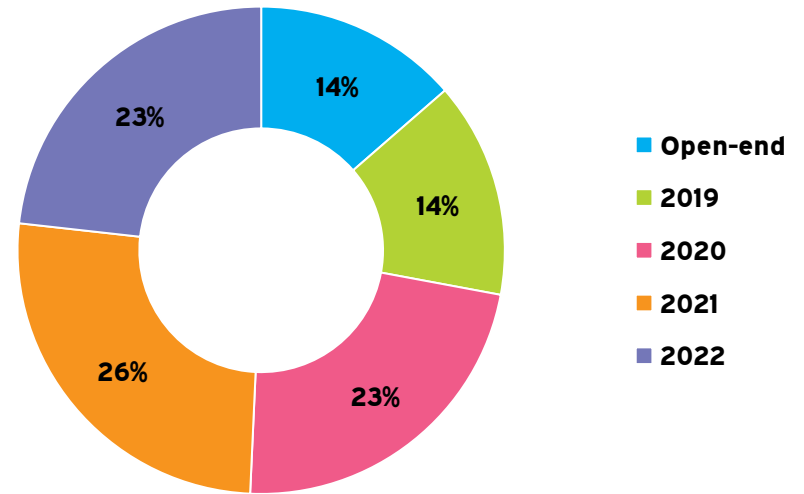
Fund Diversification | As of September 30, 2022

By Vintage

Percent of FMV



Percent of Exposure



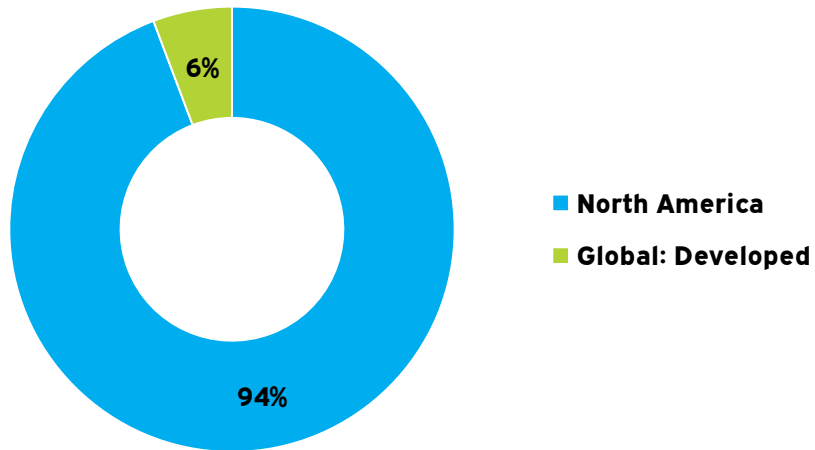


Illinois State Universities Retirement System Private Credit Program

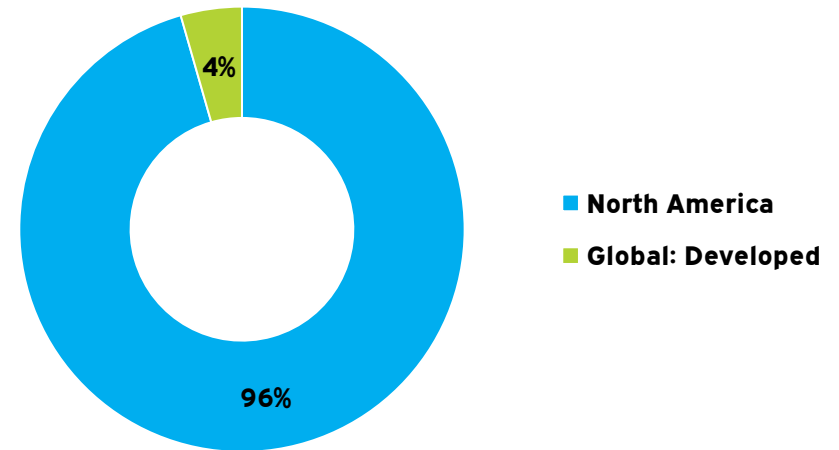
Fund Diversification | As of September 30, 2022

By Geographic Focus¹

Percent of FMV



Percent of Exposure



¹ Geography defined at the partnership level.



Illinois State Universities Retirement System Private Credit Program

Endnotes | As of September 30, 2022

Below are details on specific terminology and calculation methodologies used throughout this report:

Committed	The original commitment amount made to a given fund. Some funds may be denominated in non-USD currencies, and such commitment amounts represent the sum of fund contributions translated to USD at their daily conversion rates plus the unfunded balance translated at the rate as of the date of this report.
Contributed	The amount of capital called by a fund manager against the commitment amount. Contributions may be used for new or follow-on investments, fees, and expenses, as outlined in each fund's limited partnership agreement. Some capital distributions from funds may reduce contributed capital balances. Some funds may be denominated in non-USD currencies, and such aggregate contributions represent the sum of each fund contribution translated to USD at its daily conversion rate.
Distributed	The amount of capital returned from a fund manager for returns of invested capital, profits, interest, and other investment related income. Some distributions may be subject to re-investment, as outlined in each fund's limited partnership agreement. Some funds may be denominated in non-USD currencies, and such aggregate distributions represent the sum of each fund distribution translated to USD at its daily conversion rate.
DPI	Acronym for "Distributed-to-Paid-In", which is a performance measurement for Private Market investments. The performance calculation equals Distributed divided by Contributed. DPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.
Exposure	Represents the sum of the investor's Unfunded and Remaining Value.
IRR	Acronym for "Internal Rate of Return", which is a performance measurement for Private Market investments. IRRs are calculated by Meketa based on daily cash flows and Remaining Values as of the date of this report. IRRs for funds and groupings of funds are net of all fund fees and expenses as reported by fund managers to Meketa.
NCV	Acronym for "Net Change in Value", which is a performance measurement for Private Market investments. The performance calculation equals the appreciation or depreciation over a time period neutralized for the impact of cash flows that occurred during the time period.
NM	Acronym for "Not Meaningful", which indicates that a performance calculation is based on data over too short a timeframe to yet be meaningful or not yet possible due to inadequate data. Meketa begins reporting IRR calculations for investments once they have reached more than two years since first capital call. NM is also used within this report in uncommon cases where the manager has reported a negative Remaining Value for an investment.



Illinois State Universities Retirement System Private Credit Program

Endnotes | As of September 30, 2022

Public Market Equivalent (“PME”)

A calculation methodology that seeks to compare the performance of a portfolio of private market investments with public market indices. The figures presented in this report are based on the PME+ framework, which represents a net IRR value based on the actual timing and size of the private market program’s daily cash flows and the daily appreciation or depreciation of an equivalent public market index. Meketa utilizes the following indices for private market program PME+ calculations:

Infrastructure: Dow Jones Brookfield Global Infrastructure Index

Natural Resources: S&P Global Natural Resources Index

Private Debt: Barclays Capital U.S. Corporate High Yield Bond Index

Private Equity: MSCI ACWI Investable Market Index

Real Assets (excluding Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index and S&P Global Natural Resources Index

Real Assets (including Real Estate): Equal blend of Dow Jones Brookfield Global Infrastructure Index, S&P Global Natural Resources Index, and Dow Jones U.S. Select Real Estate Securities Index

Real Estate: Dow Jones U.S. Select Real Estate Securities Index

Remaining Value

The investor’s value as reported by a fund manager on the investor’s capital account statement. All investor values in this report are as of the date of this report, unless otherwise noted. Some funds may be denominated in non-USD currencies, and such remaining values represent the fund’s local currency value translated to USD at the rate as of the date of this report.

TVPI

Acronym for “Total Value-to-Paid-In”, which is a performance measurement for Private Market investments. The performance calculations represents Distributed plus Remaining Value, then divided by Contributed. TVPIs for funds and groupings of funds are net of all fund fees and expenses as reported to by fund managers to Meketa.

Unfunded

The remaining balance of capital that a fund manager has yet to call against a commitment amount. Meketa updates unfunded balances for funds to reflect all information provided by fund managers provided in their cash flow notices. Some funds may be denominated in non-USD currencies, and such unfunded balances represent the fund’s local currency unfunded balance translated to USD at the rate as of the date of this report.



Illinois State Universities Retirement System Private Credit Program

Disclaimer | As of September 30, 2022

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If we manage your assets on a discretionary basis, please contact us if there are any changes in your financial situation or investment objectives, or if you want to impose any reasonable restrictions on our management of your account or reasonably modify existing restrictions.

In general, the valuation numbers presented in this report are prepared by the custodian bank for listed securities, and by the fund manager or appropriate General Partner in the case of unlisted securities. The data used in the market comparison sections of this report are sourced from various databases. These data are continuously updated and are subject to change.

This report does not contain all the information necessary to fully evaluate the potential risks of any of the investments described herein. Because of inherent uncertainties involved in the valuations of investments that are not publicly traded, any estimated fair values shown in this report may differ significantly from the values that would have been used had a ready market for the underlying securities existed, and the differences could be material.

This document may contain certain forward-looking statements, forecasts, estimates, projections, and opinions ("Forward Statements"). No representation is made or will be made that any Forward Statements will be achieved or will prove to be correct. A number of factors, in addition to any risk factors stated in this material, could cause actual future results to vary materially from the Forward Statements. No representation is given that the assumptions disclosed in this document upon which Forward Statements may be based are reasonable. There can be no assurance that the investment strategy or objective of any fund or investment will be achieved, or that the client will receive a return of the amount invested.

In some cases Meketa Investment Group assists the client in handling capital calls or asset transfers among investment managers. In these cases we do not make any representations as to the managers' use of the funds, but do confirm that the capital called or transferred is within the amounts authorized by the client.

Because there is no readily accessible market for private markets assets (companies and partnerships), the values placed on private markets assets are calculated by General Partners using conservative and industry standard pricing procedures. Annually, an independent auditor reviews the pricing procedures employed by the General Partner of each partnership.

The values of companies and partnerships are audited at year-end, and are not audited at other quarter-end periods. While financial information may be audited, there is some discretion as to the method employed to price private companies and, therefore, private markets partnerships. At all times, Meketa Investment Group expects General Partners to utilize conservative and industry standard pricing procedures, and requires the General Partners to disclose those procedures in their reports. However, because of the inherent uncertainty of valuation, these estimated values may differ from the values that would be used if a ready market for the investments existed, and the differences could be significant.