Annual Comprehensive Financial Report

for the fiscal year ended June 30, 2022

Making a Positive Impact on Missouri Communities

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE RETIREMENT SYSTEMS OF MISSOURI

Annual Comprehensive Financial Report

for the fiscal year ended June 30, 2022

Dearld Snider
Executive Director

PO Box 268
3210 W. Truman Blvd.
Jefferson City, MO
65102-0268
(573) 634-5290 or
(800) 392-6848

www.psrs-peers.org

Prepared by PSRS/PEERS Staff

Making a Positive Impact on Missouri Communities

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PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

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PSRS/PEERS benefits have a positive financial impact for our members and their families. The peace of mind of having lifetime monthly benefits helps our members plan for and enjoy a more financially secure retirement. These benefits are often a substantial part of our members' post-retirement income.

In fact, PSRS/PEERS benefits have a positive impact on all Missourians, even if they are not members of the Retirement Systems.

Introductory Section

Mission Statement, Goals, Focus Areas

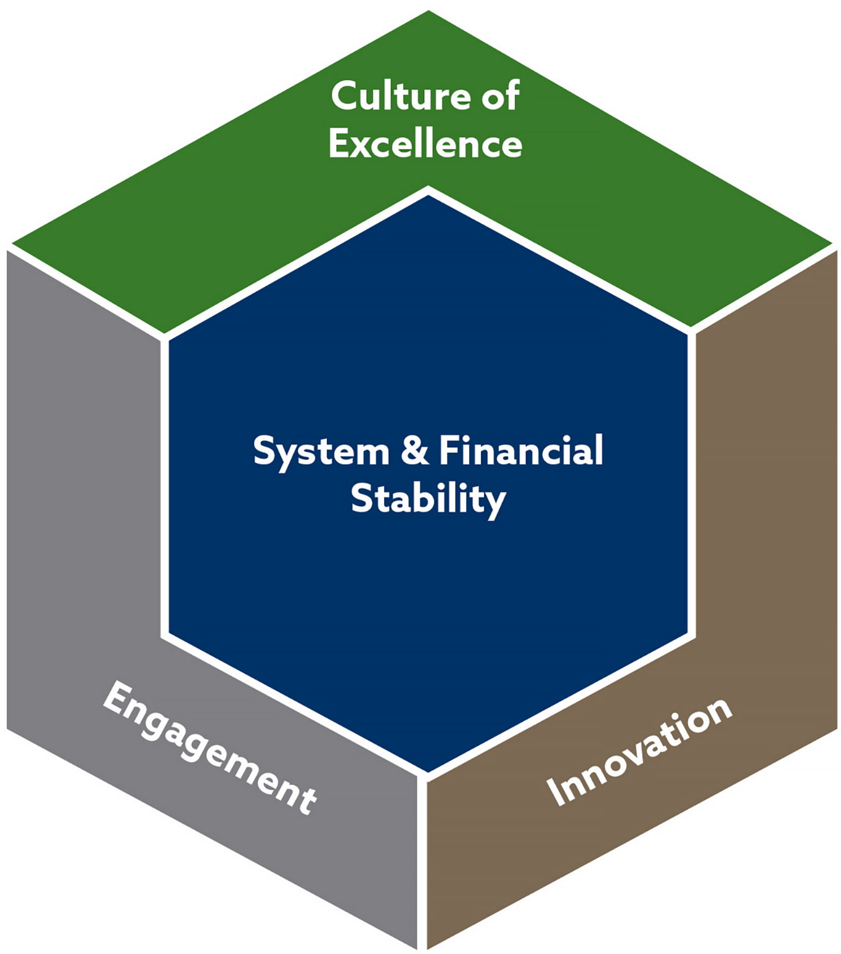
MISSION STATEMENT

To provide financial security and peace of mind for Missouri's public education community.

GOALS

To provide retirement security to Missouri's educators and education employees after a full career of service.	To help school districts attract and retain the best and brightest educators and employees for Missouri's school children.	To manage the Systems in a prudent and cost-efficient manner while continuing to provide exceptional service to our members.

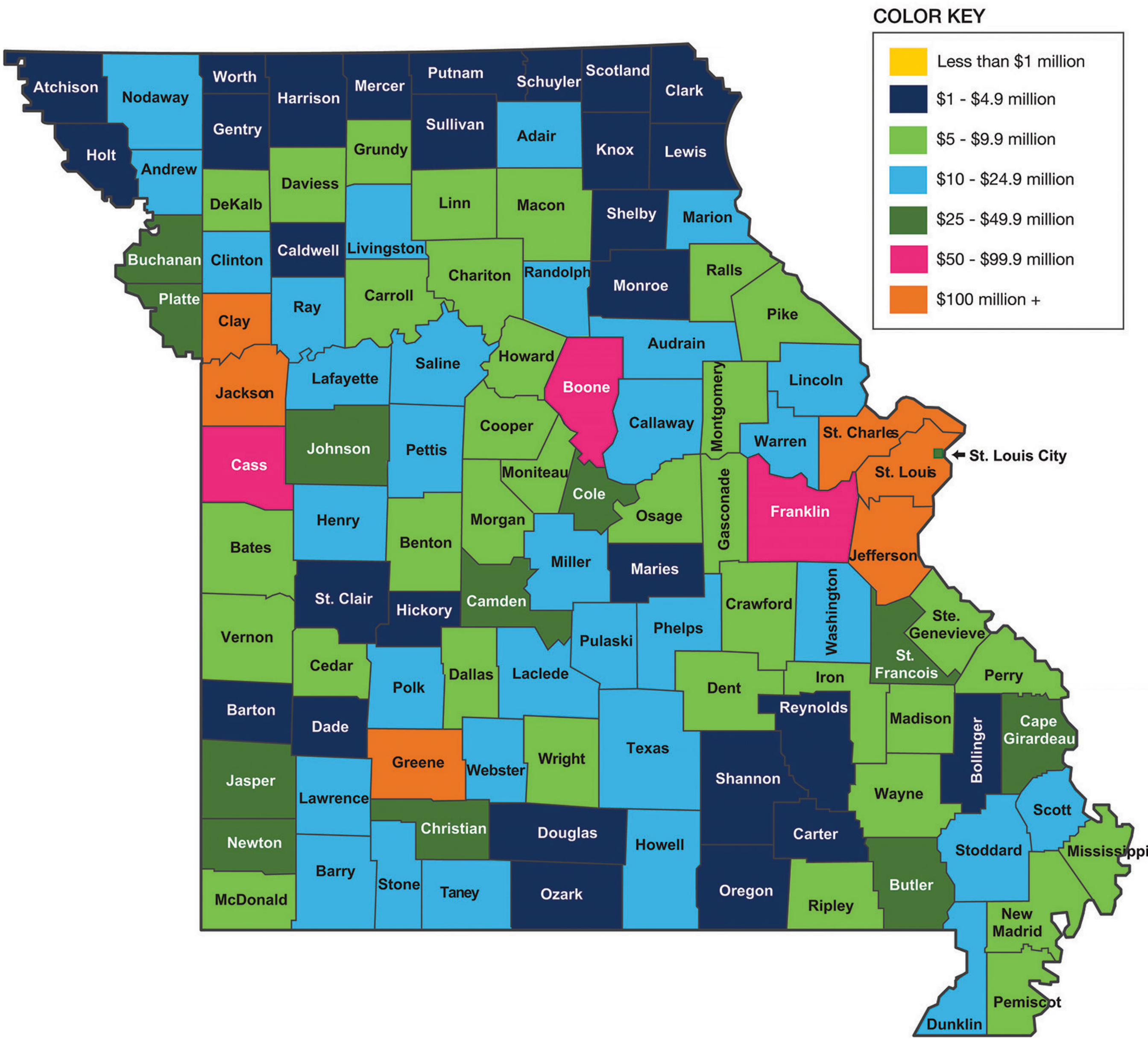
FOCUS AREAS



PSRS/PEERS Benefits: Making a Positive Impact on Missouri Communities

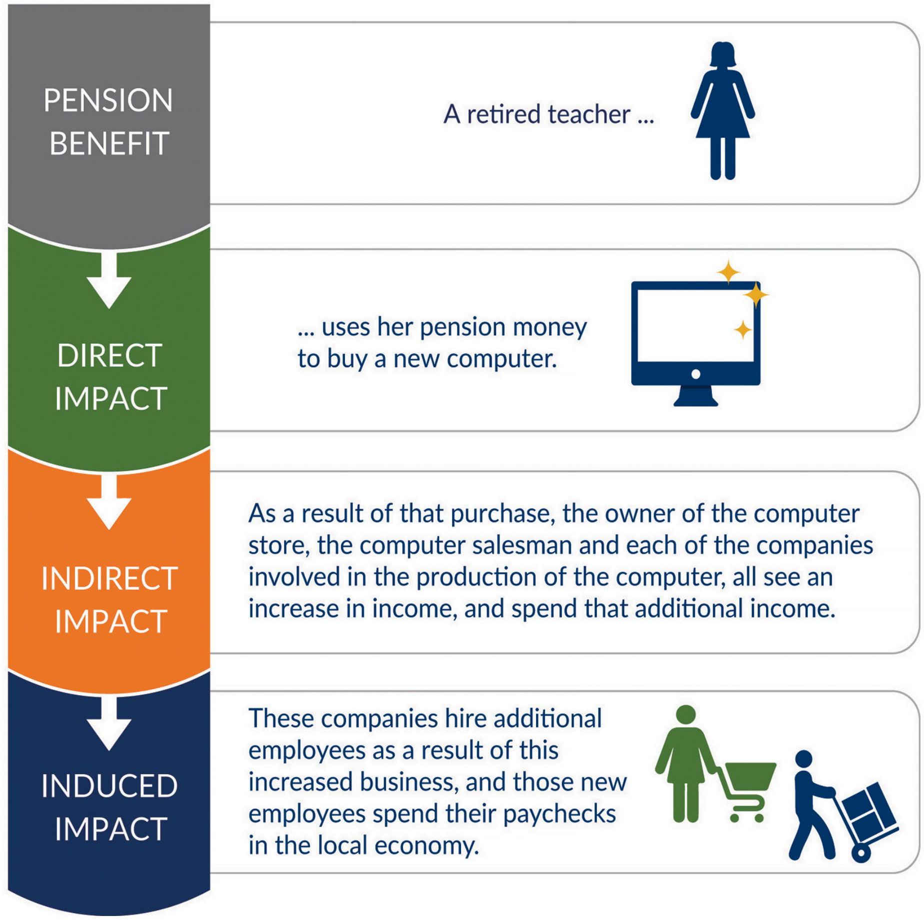
The benefits distributed by PSRS/PEERS make a sizable contribution to Missouri's economy and help Missouri public schools attract and retain quality teachers and education employees.

As of June 30, 2022, over 103,000 individuals received benefits from PSRS/PEERS. Total benefits paid for the one-year period ended June 30, 2022 were approximately $3.4 billion. Of this amount, approximately $3.0 billion, or 88%, was distributed among Missouri's 114 counties, positively impacting the state's economy.



The Multiplier Effect

It's easy to understand how the benefits paid by PSRS/PEERS help retirees enjoy a more financially secure retirement. But these benefits also have a much larger, positive economic impact on the communities where benefit recipients live. Because of the stable and predictable nature of these benefits, pension spending provides a steady source of economic activity, even during times of economic downturn, high inflation and low employment.



The nature of this multiplier effect[1] means that PSRS/PEERS benefits ultimately contribute much more to the total economic output in the state than the dollar amount of benefits paid.

Big Impact in Small Towns

The positive economic impact of PSRS/PEERS benefits is evident in communities of all sizes. But pension benefits can provide a greater portion of overall economic activity in rural areas and smaller communities where other steady sources of income may be harder to find. Retirees who spend their pension income in their towns on housing, food, medicine and clothing, are a stable source of economic activity in smaller communities. While cities may receive a larger amount of pension dollars in absolute terms, research shows that rural areas and small towns receive greater relative economic impact from the flow of pension benefit dollars.[2]

Stable Income in Any Type of Economy

Reliable retirement income also has a stabilizing effect on local economies during economic downturns and extended periods of high inflation. PSRS/PEERS retirees have a significant and stable source of lifetime retirement income, with cost-of-living adjustments to help preserve their spending power – no matter what the economic conditions. By contrast, retirees may be reluctant to spend out of their 401(k)-type accounts if their savings are negatively impacted by market downturns.

[1] Ilana Boivie and Dan Doonan, "Pensionomics 2021: Measuring the Economic Impact of DB Pension Expenditures," National Institute on Retirement Security, January 2021.
[2] Tyler Bond, Nathan Chobo and Dan Doonan, "Fortifying Main Street: The Economic Benefit of Public Pension Dollars in Rural America," National Institute on Retirement Security, July 2022.

Board of Trustees

As of June 30, 2022

The PSRS/PEERS Board of Trustees is charged by law with the administration of PSRS/PEERS. Trustees are committed to providing services to the members and beneficiaries professionally, promptly, courteously and efficiently. The Board meets regularly six times a year, with special meetings called as necessary.

It is the fiduciary responsibility of those charged with the administration of PSRS and PEERS to:

- Effectively collect contributions,
- Prudently invest the assets to obtain optimum returns,
- Equitably provide benefits,
- Impartially and in accordance with applicable law administer the benefit programs, and
- Set contribution rates that are adequate to fund promised benefits.

The seven-member Board consists of three elected PSRS active members; one elected PEERS active member; and three governor-appointed trustees, one of whom must be a PSRS or PEERS retiree. Trustees serve four-year terms and serve without compensation.

Jason Steliga, Chair
Elected PSRS Trustee

Beth Knes, Vice Chair
Appointed Trustee

Dr. Eric Park
Appointed Trustee

Sharon Kissinger
Appointed Trustee

Dr. Kyle Collins
Elected PSRS Trustee

Dr. Melinda Moss
Elected PSRS Trustee

NOTE: As of June 30, 2022, the elected PEERS Trustee position was vacant.

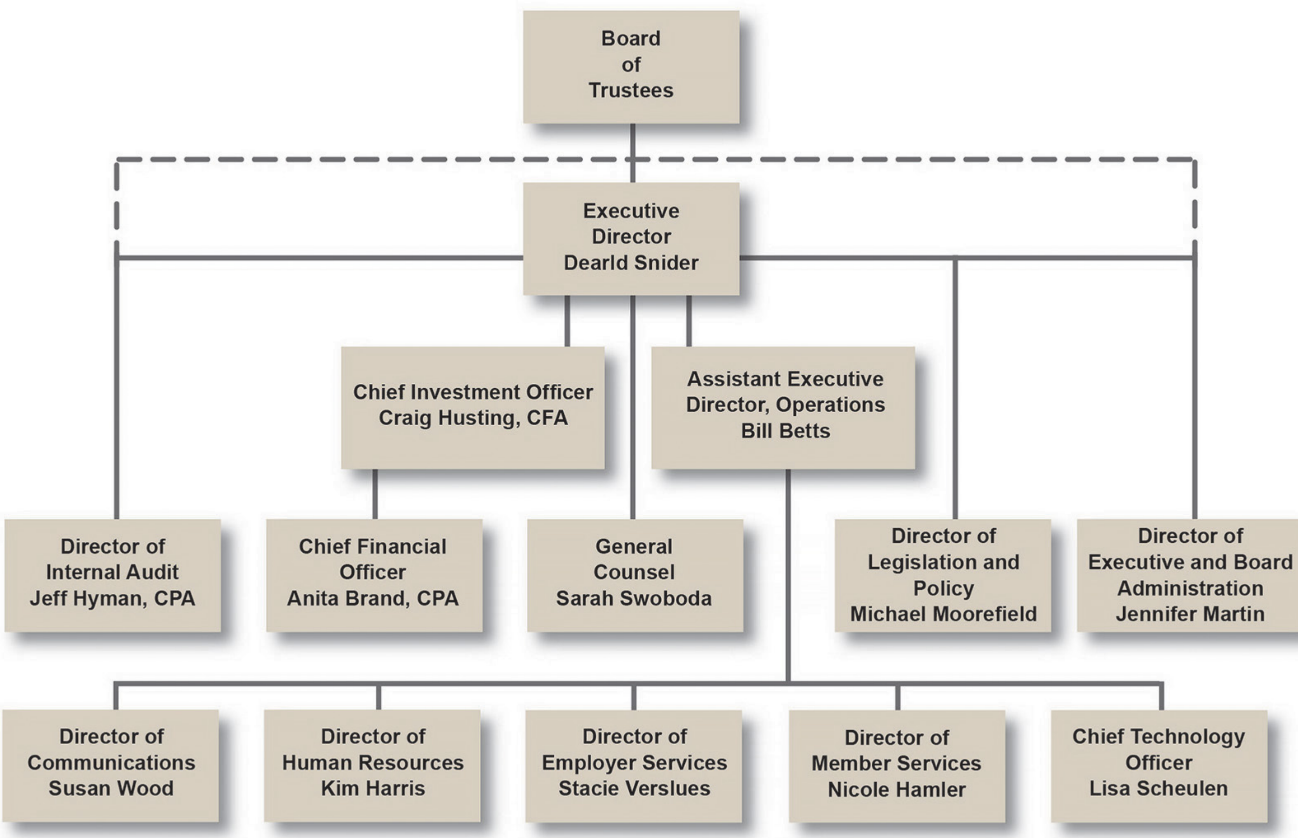
Administrative Organization

As of June 30, 2022

Dearld Snider
Executive Director

Craig Husting, CFA
Chief Investment Officer

Bill Betts
Assistant Executive Director, Operations



Transmittal Letter

PSRS/PEERS
PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

November 28, 2022

To the Board of Trustees and Members of the Retirement Systems:

On behalf of all management and staff, it is our pleasure to present the ***Annual Comprehensive Financial Report (ACFR)*** of the Public School Retirement System of Missouri (PSRS) and the Public Education Employee Retirement System of Missouri (PEERS) for the fiscal year ended June 30, 2022.

The benefits provided by the Systems have a direct positive impact on our members and their families. The peace of mind of having lifetime monthly benefits helps our members plan for and enjoy a more financially secure retirement after dedicating a full career to Missouri school children. The Systems take great pride ***in making a positive impact on our members and their families but also the positive impact on all Missouri communities.*** It's easy to understand how the benefits paid by PSRS/PEERS help retirees enjoy a more financially secure retirement. But these benefits also have a much larger, positive economic impact on the communities where benefit recipients live. Because of the stable and predictable nature of these benefits, pension spending provides a steady source of economic activity, even during times of economic downturn, high inflation, and low employment. The financial strength and stability of the Systems combined with a strong governance structure provide financial security to all members.

In addition to providing information to our Board of Trustees and members concerning the financial condition of the Systems, this report also meets our reporting requirements under Sections 169.020.(4).16 and 169.450(4).11 of the Revised Statues of Missouri (RSMo). Printed copies are available to the public upon request and the complete report is also posted on our website, **www.psrs-peers.org.**

This letter provides a brief overview of the contents of the ACFR. We encourage you to read the Management's Discussion and Analysis on pages 19 to 25 for a more detailed analysis of our financial position for the fiscal year.

Report Contents and Structure

Responsibility for the preparation, accuracy, and completeness of this report, including all disclosures, rests with the management staff of PSRS/PEERS. The Systems' financial statements are prepared in accordance with U.S. generally accepted accounting principles (GAAP) within the guidelines established by the Governmental Accounting Standards Board (GASB). To the best of our knowledge, the enclosed data is accurate in all material respects and fairly presents our financial position and operating results.

The management of the Systems is responsible for internal accounting controls, which are designed to provide reasonable but not absolute assurance that the financial statements are free of any material misstatements and assets are safeguarded. The cost of internal controls should not exceed the benefits to be derived. The Systems employ two internal auditors who perform operational reviews to ensure that the internal controls are functioning effectively. We believe the internal controls in place are adequate to meet the purpose for which they were intended.

Our independent external auditors, selected by the Board of Trustees, have conducted an audit of the basic financial statements in accordance with U.S. generally accepted auditing standards. This audit and the financial statements and related footnotes are presented on pages 17 to 58 of this report.

Location 3210 W. Truman Blvd. / Jefferson City, MO 65109 **Mail** P.O. Box 268 / Jefferson City, MO 65102 **Website** www.psrs-peers.org
Phone (573) 634-5290 **Toll Free** (800) 392-6848 **FAX** (573) 634-7934 **Email** psrspeers@psrspeers.org

Overview of the Retirement Systems

The Public School Retirement System of Missouri (PSRS), a cost-sharing multiple employer retirement system, was established in 1945 (and became operative on July 1, 1946) by the Missouri legislature to provide certificated public school employees and their families with a significant and stable source of retirement income, disability, and survivor benefits. The majority of PSRS members do not contribute to Social Security.

The Non-Teacher School Employee Retirement System of Missouri (NTRS), also a cost-sharing multiple employer retirement system, was established in 1965 by the Missouri legislature to build a plan similar to PSRS, but for non-certificated public school personnel. The name of the non-teacher system was changed to the Public Education Employee Retirement System of Missouri (PEERS) in August 2005 to more positively represent the members of the System. Members of PEERS contribute to Social Security.

PSRS and PEERS are governed jointly by a seven-member Board of Trustees, composed of three elected active PSRS members, one elected active PEERS member and three members appointed by the governor.

Unlike most public pension systems, the members of PSRS and PEERS and their employers share equally in funding the contributions to the Retirement Systems. The contribution rates in total approximate the contribution rates of similar public plans. However, this funding mechanism has kept the employer contributions lower and the employee contributions higher than many similar public plans.

The combined Systems serve approximately 298,000 total members in 534 school districts and other employers. As of June 30, 2022, over 103,000 individuals received retirement benefits from the Systems. Total annual benefits paid were approximately $3.4 billion for the year ended June 30, 2022. At June 30, 2022, PSRS/PEERS had a net position of approximately $53.8 billion, making it larger than all other public retirement systems in the state of Missouri combined.

Funding Status and Valuation Results

The Board of Trustees evaluates a large amount of information each year including, but not limited to, the annual actuarial valuations prepared by the Systems' external actuaries, PricewaterhouseCoopers, LLP. Annually, the Board of Trustees reviews the sensitivities to changes in cost-of-living adjustment (COLA) assumptions, inflation projections, and investment returns. The Systems completed comprehensive experience studies in May 2021. All economic and demographic assumptions were reviewed and certain assumptions were updated, where appropriate, based on the results of the studies and effective with the June 30, 2021 valuations. For the June 30, 2022 valuations, the long-term inflation assumption was again reviewed due to the current high inflationary environment. The Board of Trustees, external actuaries, and staff reviewed capital market forecasts of both short- and long-term inflation from various sources. A large amount of data was considered including the abnormal volatility of recently observed inflation and the unprecedented efforts by the Federal Reserve Open Market Committee to reduce inflation. Based on this information, the current long-term inflation assumption and the related COLA assumption were not adjusted. We will continue to monitor data sources and the effectiveness of the Fed's actions in reducing inflation in determining whether the long-term inflation assumption or COLA assumption should be updated before the next experience studies.

Based on the results of the actuarial valuations, inflation analysis, and sensitivity analysis, the Board of Trustees did not make any amendments to the Systems' Actuarial Funding Policies during the current year. The Board of Trustees last revised the Actuarial Funding Policies for the Systems at their June 8, 2021 Board meeting. The revisions incorporated the recommendations from the 2021 actuarial experience studies and are in alignment with the Board of Trustees funding goals. The purpose of the policies is to record the funding objectives and policies set by the Board of Trustees for the Systems. The Board established the policies to ensure the systematic funding of future benefit payments for the Systems' current and future members. The policies include the Board's Principles of Funding and Risk Factors that must be considered. The policies govern the methods used by the actuarial consultants in performing the actuarial valuations which are the basis for the determination of the annual contribution rates charged to employers and members.

Transmittal Letter, continued

The Board of Trustees funding goals are: 1. Provide for the security and financial stability of the Systems, including maintaining at least an 80% pre-funded ratio, continuing to amortize the unfunded liability until PSRS/PEERS is 100% pre-funded, and allowing for a reasonable assumed rate of return given capital market estimates, 2. Maintain the contribution rates of both Systems at or below current levels, and 3. Provide a consistent Cost-of-Living Adjustment (COLA) for PSRS/PEERS benefit recipients to maintain their purchasing power, noting COLAs should be dependable and affordable without harming the financial stability of the Systems. The Board of Trustees funding goals are in direct alignment with the Systems mission, goals, and strategic plan.

The Systems' funding objective continues to be to achieve a funded ratio of 100% over a closed 30-year period. For this purpose, funded ratio is defined as the actuarial value of assets divided by the actuarial accrued liability determined under the entry age normal cost method and the actuarial assumptions adopted by the Board of Trustees. As of June 30, 2022, PSRS was 85.2% pre-funded, while PEERS was 87.3% pre-funded. The funding status of PSRS was unchanged from the June 30, 2021 funded percentage of 85.2% and decreased for PEERS from 87.7%. The liabilities increased more than expected due to the January 1, 2023 COLA being 5.00% compared to the 2.00% COLA assumed, but the actuarial value of assets also increased by more than the 7.3% expected return because investment gains over the preceding five years exceed the losses. Over time, the annual gains/losses are expected to be offsetting. Additional information on actuarial assumptions and funding can be found in the Actuarial Section of this report. Based upon the June 30, 2022 valuations and overall financial projections, the Board of Trustees set the fiscal year 2024 contribution rates equivalent to the fiscal year 2023 level for both members and employers.

Investment Activities

Fiscal year 2022 investment markets experienced a historically negative year for traditional assets classes (stocks and bonds). Elevated inflation levels throughout the world, rising interest rates, geo-political events and a slowing economy led to the negative returns. The fiscal year marked the first period in over 40 years where both stocks and bonds declined in a similar fashion. The Systems' diversification into non-traditional assets (private equity, private credit, private real estate, and hedge funds) supported the fiscal year 2022 total fund performance of -2.8% (-3.1% net of all investment expenses and fees). The total plan return, net of all investment expenses and fees, exceeded the policy benchmark return of -10.3% by 750 basis points. The significant excess return (alpha) was a direct result of effective implementation through both security selection and portfolio construction. The Systems portfolio added value of $4.0 billion in excess of the policy benchmark. The Systems' investment portfolio is well-diversified and structured to provide downside protection in volatile markets. The total fund return fell short of the long-term investment goal (actuarially assumed return) of 7.3% as a result of extreme volatility in the market. Over long periods of time, the Systems continue to produce investment returns that meet or exceed the Systems' objective. The annualized investment return for the Systems is 8.0% (7.9% net of all investment expenses and fees) over the last 30 years.

The Systems' investment returns for fiscal year 2022 and for the three-year, five-year, and 10-year time periods exceeded 70% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion. Additionally, the Systems generated the consistently higher returns while taking substantially less risk than most comparable public funds over all time periods.

The Systems conducted an Asset/Liability Study during the current fiscal year, resulting in a 5% increase in the Private Equity allocation and a corresponding decrease in the allocation to U.S. Treasury Bonds.

Additional detailed information regarding the Systems' investments, including asset allocation, policies, and strategies, can be found in the Investment Section of this report.

Other Key Initiatives During Fiscal Year 2022

The Systems completed a multi-year building expansion and renovation project. The Board of Trustees approved the building expansion and renovation project at their December 2018 meeting to ensure the Systems continue to deliver a high level of service to all current and future members.

Legislative Changes During Fiscal Year 2022

Governor Parson signed legislation (CCS#2 HCS SS SCS SBs 681 & 682) impacting the Systems on July 1, 2022. The legislation temporarily suspends the hours and compensation limitations for retired members working in substitute teaching positions on a part-time or temporary basis through June 30, 2025. The Systems' external actuaries have emphasized the importance of such legislation to be temporary and that any permanent increase or removal of such limits would likely come with a significant fiscal cost to the Systems.

Awards

Public Pension Coordinating Council (PPCC), Public Pension Standards Award

PSRS and PEERS each received the Public Pension Standards Awards in 2022 in recognition of meeting professional standards for plan administration and plan funding as set forth in the Public Pension Standards of the PPCC. These awards are presented by the PPCC, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS), and the National Council on Teacher Retirement (NCTR).

Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to PSRS and PEERS for the ***Annual Comprehensive Financial Report*** for the fiscal year ended June 30, 2021. The Certificate of Achievement is a prestigious national award recognizing excellence in the preparation of state and local government financial reports. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized ***Annual Comprehensive Financial Report.*** This report must satisfy both generally accepted accounting principles, applicable legal requirements and GFOA standards. A Certificate of Achievement is valid for a period of one year only. We believe our current ***Annual Comprehensive Financial Report*** continues to meet the Certificate of Achievement program requirements and we are submitting it to GFOA to determine eligibility for another certificate.

Professional Services

Certain professional services are provided to the Systems by retained consultants. The required opinion letters from two of those consultants, PricewaterhouseCoopers, LLC, actuaries, and Williams Keepers LLC, independent certified public accountants, are contained elsewhere in this report.

General investment consulting services have been provided by Russell Investments.

Acknowledgements

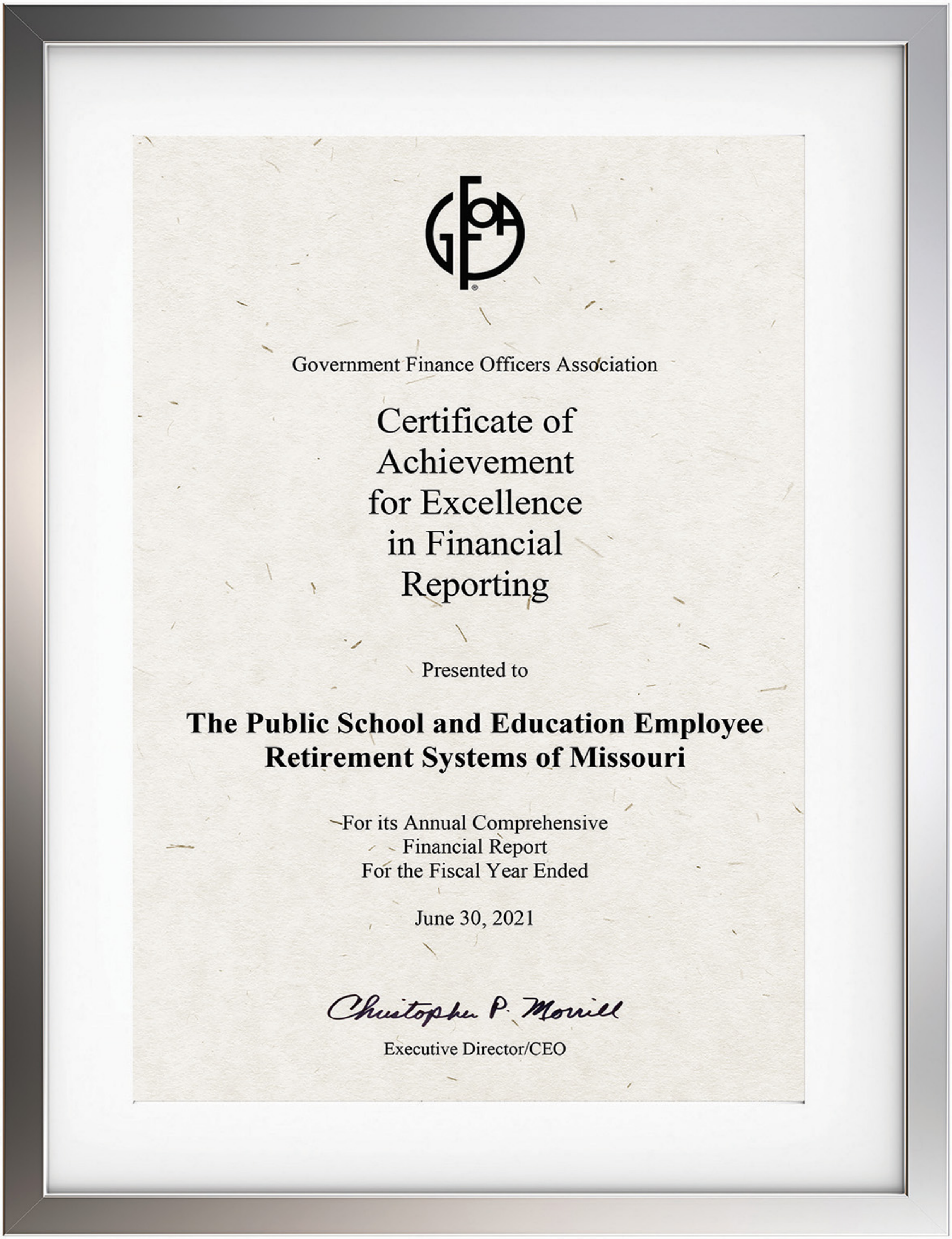
We would like to express our thanks and gratitude to the Board of Trustees, staff and consultants who have worked diligently to produce this report and to ensure the continued successful operation of the Systems.

Respectfully submitted,

Dearld Snider
Executive Director

Anita Brand, CPA
Chief Financial Officer

Certificate of Achievement for Excellence in Financial Reporting



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

The Public School and Education Employee Retirement Systems of Missouri

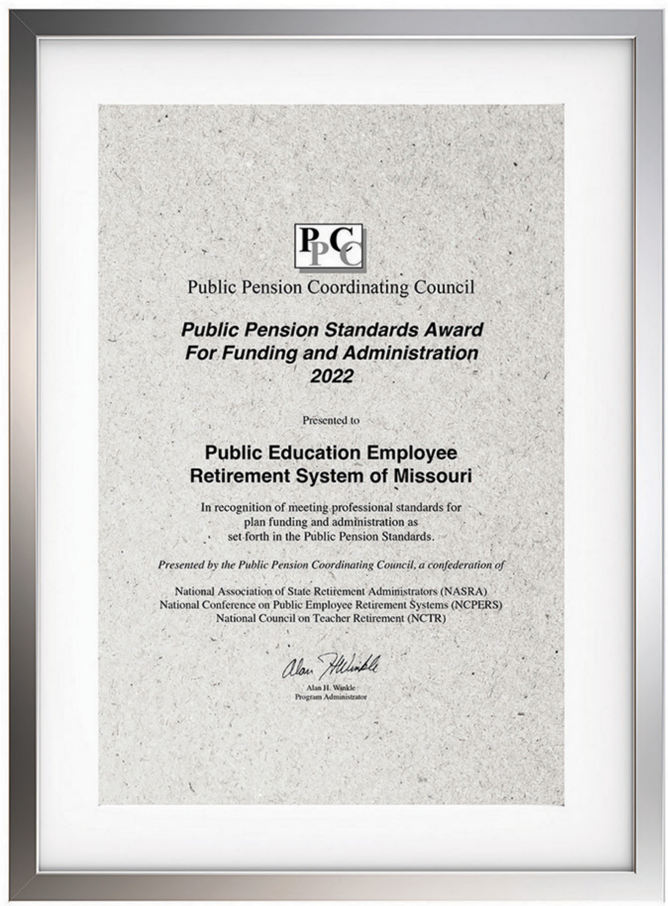
For its Annual Comprehensive Financial Report For the Fiscal Year Ended

June 30, 2021

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council Public Pension Standards Awards



Professional Services

As of June 30, 2022

Actuaries

PricewaterhouseCoopers, LLP
Cindy Fraterrigo, FSA, EA, MAAA
Brandon Robertson, ASA, EA, MAAA
Chicago, Illinois
New York, NY

Auditors

Williams Keepers, LLC
Nick Mestres, CPA
Columbia, Missouri

Technology Consultants

Arctic Wolf Networks
Steven Thiel
Eden Prairie, MN

ConvergeOne, Inc.
Joseph Cook
St. Louis, MO

ConvergePoint Inc.
Steven Moore
Katy, TX

Critical River
Vinod Dua
Pleaston, CA

DAS
Taylor Lambert
Palm Beach Gardens, FL

Dell EMC
Robert Millard
Jefferson City, MO

The Entertainer
Cole Boessen
Jefferson City, MO

Gartner Inc.
Jamie Combs
Stamford, CT

Huber & Associates, Inc
Kent Hillman
Jefferson City, MO

Microsoft Unitized Support Microsoft Corporation
Paul Bonrud, Sr.
Redmond, WA

Network Technology Partners
Bill Streck
Ellisville, MO

SHI International
Rick Wolters
Somerset, NJ

Stanley Convergent Security Solutions
Jeremiah Johnston
Jefferson City, MO

Ring Central
Daniel Adelman
Belmont, CA

Tyler Technologies
Brendan D. Travis, CISM
South Portland, ME

Insurance Consultants

Charlesworth & Associates
Bob Charlesworth
Overland Park, Kansas

The Insurance Group
Jason Swindle
Columbia, Missouri

Legal Counsel

Chapman and Cutler, LLP
Kelley Bender
Chicago, Illinois

Groom Law Group
David Levine
Washington, D.C.

Pillsbury, Winthrop, Shaw, Pittman, LLP
Semma Arzapalo
Los Angeles, California

Thompson Coburn, LLP
Lawrence C. Friedman
St. Louis, Missouri

Legislative Consultant

Statehouse Strategies, LLC
James "Jim" Moody
Jefferson City, Missouri

Medical Advisor

Managed Medical Review Organization
Jen Mongeau
Novi, Michigan

Investment Management, Custodial and Consulting fees can be found in the Schedule of Investment Expenses on page 109. Schedules of broker commissions can be found on page 107. Additional information on Investment Managers can also be found in the Investment Section of this report.

FINANCIAL SECTION

During the past two years, Missourians, and all Americans, have experienced unusually high inflation. During difficult economic times such as this, the stable and predictable retirement benefits provided by PSRS/PEERS give our members and their families financial peace of mind. Because they have the advantage of a dependable income stream, they can continue to purchase needed goods and services, supporting local businesses and fueling local economies.

Financial Section

Independent Auditors' Report

WILLIAMS KEEPERS LLC
CERTIFIED PUBLIC ACCOUNTANTS & CONSULTANTS

2005 West Broadway, Suite 100, Columbia, MO 65203
OFFICE (573) 442-6171 FAX (573) 777-7800
3220 West Edgewood, Suite E, Jefferson City, MO 65109
OFFICE (573) 635-6196 FAX (573) 644-7240
www.williamskeepers.com

The Board of Trustees of the
Public School and Public Education Employee
Retirement Systems of Missouri

Opinions
We have audited the accompanying statements of fiduciary net position of the Public School and Public Education Employee Retirement Systems of Missouri (the Systems), as of June 30, 2022, and the related statements of changes in fiduciary net position for the year then ended, and the related notes to the financial statements, which collectively comprise the Systems' basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Public School and Public Education Employee Retirement Systems of Missouri as of June 30, 2022, and the changes in fiduciary net position for the year then ended, in accordance with U.S. generally accepted accounting principles.

Basis for Opinions
We conducted our audit in accordance with U.S. generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditors' Responsibilities of the Audit of the Financial Statements section of our report. We are required to be independent of the Systems and to meet our ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Systems' ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements
Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.

Independent Auditors' Report, continued

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Systems' internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Systems' ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis on pages 19-25, schedules related to the defined benefit plans (schedules of changes in the employers' net pension liability, employers' net pension liability, employer contributions, investment returns, and notes to schedules) on pages 50-55, and schedules related to the defined benefit OPEB plan (schedule of changes in the net OPEB liability and related ratios) on page 56 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context.

We have applied certain limited procedures to the required supplementary information in accordance with U.S. generally accepted auditing standards, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Public School and Public Education Employee Retirement Systems of Missouri basic financial statements. The introductory, investment, actuarial and statistical sections and the schedules of administrative expenses, schedules of professional services, and schedules of investment expenses presented on pages 57 through 58 are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The additional information on pages 57 through 58 is the responsibility of management and was derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with U.S. generally accepted auditing standards. In our opinion, the additional information presented on pages 57 through 58 is fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Williams-Keepers LLC

Columbia, Missouri
November 28, 2022

Management's Discussion and Analysis

Introduction

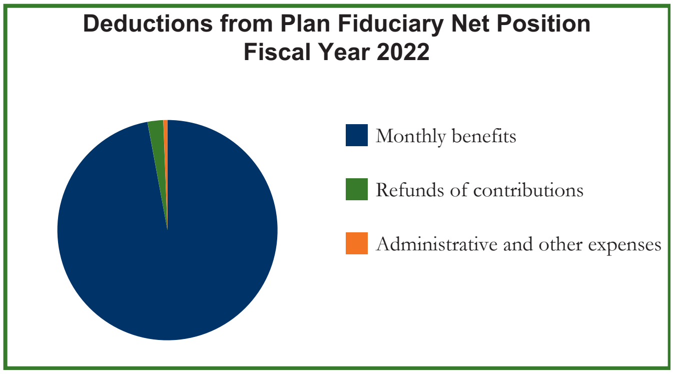
This discussion and analysis of the financial position of the Public School Retirement System of Missouri (PSRS) and the Public Education Employee Retirement System of Missouri (PEERS), collectively referred to as the Systems, provides an overview of the Systems' financial activities for the fiscal year ended June 30, 2022. We encourage you to consider the information presented here in conjunction with the *Transmittal Letter* included in the *Introductory Section* and the financial statements and other information presented in the *Financial Section* of this *Annual Comprehensive Financial Report* (ACFR).

Financial Highlights

The following highlights are explained in more detail for each System later in this discussion.

- The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience for the Systems, derived from experience studies conducted every fifth year. The most recent comprehensive experience studies were completed during fiscal year 2021. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the studies and effective with the June 30, 2021 valuation. The significant actuarial assumptions are detailed in the notes to the financial statements and the notes to the schedules of required supplementary information. The next experience studies are scheduled to occur during fiscal year 2026.
- As of June 30, 2022, PSRS' fiduciary net position as a percentage of the total pension liability decreased to 86.0% from 95.8% for the prior year. PSRS' net pension liability approximated $7.7 billion as of June 30, 2022. As of June 30, 2022, PEERS' fiduciary net position as a percentage of the total pension liability decreased to 87.9% from 98.4% for the prior year. PEERS' net pension liability approximated $845.1 million as of June 30, 2022. The net pension liability is calculated utilizing the fair value of assets in accordance with Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans,* for accounting presentation purposes.
- The pre-funded status of the Systems is measured as the ratio of assets available for benefits to a benefit liability measure for the Systems. While there are several such measures that could be appropriately used, the benefit liability measure that ties most closely to the Systems' funding policies is the actuarial accrued liability (AAL) computed in accordance with assumptions and methods approved by the Board of Trustees. The pre-funded ratio uses the actuarial value of assets (AVA), a smoothed asset value that recognizes 20% of the total investment gain or loss on the AVA for each of the preceding five years. This is the significant difference between accounting measurements in accordance with GASB Statement No. 67 and funding calculations. As of June 30, 2022, the pre-funded ratios for funding purposes were 85.2% for PSRS and 87.3% for PEERS.
- Fiscal year 2022 investment markets experienced a historically negative year for traditional assets classes (stocks and bonds). Elevated inflation levels throughout the world, rising interest rates and a slowing economy led to the negative returns. The Systems' diversification into non-traditional assets supported the fiscal year 2022 total fund performance of -2.8% (-3.1% net of all investment expenses and fees). The total plan return, net of all investment expenses and fees, exceeded the policy benchmark return of -10.3%. The significant excess return (alpha) was a direct result of effective implementation through both security selection and portfolio construction. The total fund return fell short of the long-term investment goal (actuarially assumed return) of 7.3% as a result of extreme volatility in the market. Over long periods of time, the Systems continue to produce investment returns that meet or exceed the Systems' objective. The annualized investment return for the Systems is 8.0% (7.9% net of all investment expenses and fees) over the last 30 years.
- The Systems' investment returns for fiscal year 2022 and for the three-year, five-year and ten-year time periods exceeded 70% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion. Additionally, the Systems generated the consistently higher returns while taking substantially less risk than the policy benchmark (as measured by standard deviation) and less risk than most comparable public funds over all time periods.

- The Systems conducted an Asset/Liability Study during the current fiscal year, resulting in a 5% increase in the private equity allocation and a corresponding decrease in the allocation to U.S. Treasury Bonds.
- Cost-sharing, defined-benefit retirement systems such as the Systems have a long-term perspective on financial activities. The Systems' primary responsibility is to assure that sufficient funds will be available to provide retirement, disability and survivor benefits to current and future members. Condensed Statements of Fiduciary Net Position and Statements of Changes in Fiduciary Net Position are provided for each System on the following pages.
- Pension benefits are funded through a combination of member and employer contributions and investment income. Approximately, 63% of every dollar used to pay retirees is generated from investment earnings (based on a twenty-five year average for fiscal years 1998-2022).
- Expenses are incurred for the sole purpose for which the Systems were created: the payment of benefits to the Systems' membership and their beneficiaries. Included in the deductions from fiduciary net position were monthly benefit payments, refunds of contributions due to member terminations or deaths and administrative and other expenses. The pie chart depicts the combined Systems' deductions from Plan Fiduciary Net Position for the year ended June 30, 2022.



- The combined net position of the Systems decreased by $3.2 billion. The net position of PSRS decreased by $2.9 billion while the net position of PEERS decreased by $299.6 million.
- Total revenues for fiscal year 2022 were comprised of contribution revenue of $1.85 billion and investment losses of $1.64 billion, compared to contribution revenue of $1.79 billion and investment gains of $12.72 billion for fiscal year 2021.
- Expenses increased 6.0% over the prior year from $3.3 billion to $3.5 billion. Retirement benefits increased by $187.4 million and member refunds increased by $6.3 million from the prior year, while administrative expenses increased by $1.2 million during the same time period.

Overview of the Financial Statements

The ACFR reflects the activities of the Systems as reported in Statements of Fiduciary Net Position and the Statements of Changes in Fiduciary Net Position (the Systems' financial statements). The Systems' financial statements, notes to the financial statements, and required supplementary information were prepared in conformity with GASB Statement No. 67, *Financial Reporting for Pension Plans*, as amended. This discussion and analysis are intended to serve as an introduction to the financial section of the ACFR. The financial section of the ACFR consists of the basic financial statements comprised of the Statements of Fiduciary Net Position and the Statements of Changes in Fiduciary Net Position, the notes to the basic financial statements, required supplementary information and other supplementary information.

The Statements of Fiduciary Net Position present information on the Systems' assets, deferred outflows, liabilities, deferred inflows and resulting net position, where assets plus deferred outflows less liabilities and deferred inflows is reported as net position. The net position of the Systems reflects the resources available to pay benefits to members when due. Over time, increases and decreases in net position measure whether the Systems' financial position is improving or deteriorating.

The Statements of Changes in Fiduciary Net Position present information detailing the changes in net position that occurred during the current fiscal year. All changes in net position are reported on an accrual basis. This means that the revenue or expense is recognized as soon as the underlying event giving rise to the change occurs, regardless of when the actual cash is received or paid. Thus, revenues and expenses are reported in this statement for some items that will not result in cash flows until future fiscal periods. For example, contributions due from an employer, even though not yet paid by year end, will be reflected as revenue. Earned vacation accruals will be reflected as an expense, even though they have not been paid to employees.

The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes can be found on pages 28 through 49.

The report also contains required supplementary information in addition to the basic financial statements themselves. The required supplementary information consists of the following schedules and related notes:

- The Schedules of Changes in the Employers' Net Pension Liability include historical trend information about the annual changes of the net pension liability, including assumption changes and variances of assumed experience.
- The Schedules of Employers' Net Pension Liability include historical trend information about whether each System's net position is increasing or decreasing over time relative to the total pension liability. The schedules provide a long-term, ongoing perspective of the accumulation of assets to pay benefits when due.
- The Schedules of Employer Contributions present historical trend information about the actuarially determined contributions of employers and the actual contributions made by employers.
- The Schedules of Investment Returns present historical annual money-weighted rate of returns.
- The Schedules of Changes in the Net OPEB Liability and Related Ratios include historical trend information about the defined benefit other post-employment benefit (OPEB) plan from a long-term, ongoing perspective.
- The Notes to the Schedules of Required Supplementary Information provide additional information that is essential to a full understanding of the data provided in the schedules.

Other supplementary schedules are also included. The Schedules of Administrative Expenses present the overall cost of administering the Systems. The Schedules of Professional Services further detail this category of administrative expense. The Schedules of Investment Expenses show the costs associated with investing the assets of the Systems. These expenses are shown as a reduction of revenue on the Statements of Changes in Fiduciary Net Position.

Financial Analysis of the Public School Retirement System of Missouri (PSRS)

PSRS is a mandatory cost-sharing multiple employer retirement system for full-time certificated employees and certain part-time employees of participating employers. PSRS members were required to contribute 14.5% of their annual covered salary during fiscal year 2022. The employer was required to match that amount. Most PSRS members do not contribute to Social Security, except for employees hired after 1986 who contribute to Medicare only. In some instances, positions may be determined not to be exempt from Social Security contributions. PSRS members required to contribute to Social Security are required to contribute two-thirds of the approved PSRS contribution rate and their employer is required to match the contribution. The members' benefits are further calculated at two-thirds the normal benefit amount.

Public School Retirement System of Missouri
Fiduciary Net Position (000's)

	2022	2021	Change
Cash & investments	$ 47,877,512	$ 51,032,956	$ (3,155,444)
Receivables	1,158,271	6,098,699	(4,940,428)
Other	33,218	33,086	132
Total assets	**49,069,001**	**57,164,741**	**(8,095,740)**
Deferred outflows of resources	**134**	**159**	**(25)**
Total liabilities	**1,397,103**	**6,544,243**	**(5,147,140)**
Deferred inflows of resources	**977**	**137**	**840**
Fiduciary net position	**$ 47,671,055**	**$ 50,620,520**	**$ (2,949,465)**

Assets

Total assets of PSRS as of June 30, 2022 were $49.1 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets decreased by $8.1 billion from the prior year due to investment losses and a significant reduction in investment sale receivables. The reduction in investment sale receivables was offset by a similar reduction in investment purchase payables discussed below.

Liabilities

Total liabilities as of June 30, 2022, were $1.4 billion and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities decreased by $5.1 billion from the prior year. The decrease was due to a significant decrease in investment purchases payable, which was offset by a decrease in investment sale receivables.

Deferred Outflows and Inflows of Resources

Deferred inflows and outflows are a result of the System's Post-Employment Healthcare Plan and are presented in accordance with GASB Statement No. 75.

Net Position

PSRS assets exceeded liabilities on June 30, 2022, by $47.7 billion. This was a decrease of $2.9 billion from the 2021 net position. The reduction was primarily due to a reduction in investment earnings due to the adverse market conditions previously discussed. Investment losses totaled $1.45 billion for the year. In addition, benefit payments and other expenses exceeded contribution revenue by $1.5 billion, as expected in a mature defined benefit plan.

Public School Retirement System of Missouri
Changes in Fiduciary Net Position (000's)

	2022	2021	Change
Additions			
Member contributions	$ 807,546	$ 779,834	$ 27,712
Employer contributions	764,348	745,638	18,710
Investment income (loss)	(1,451,317)	11,291,593	(12,742,910)
Other	54	128	(74)
Total additions	**120,631**	**12,817,193**	**(12,696,562)**
Deductions			
Monthly benefits	3,002,841	2,844,612	158,229
Refunds of contributions	55,575	51,548	4,027
Administrative expenses	11,666	10,763	903
Other	14	55	(41)
Total deductions	**3,070,096**	**2,906,978**	**163,118**
Changes in fiduciary net position	**$ (2,949,465)**	**$ 9,910,215**	**$(12,859,680)**

Revenues – Additions to Fiduciary Net Position

The reserves needed to finance retirement benefits are accumulated through the collection of employer and employee contributions and through investment earnings. Total contribution revenue for the year increased by $46.4 million to $1.6 billion. This was a 3.0% increase over the prior year. Retirement contributions were calculated at 14.5% of retirement salary for each member during fiscal year 2022. The employer matched this amount. Contribution rates were unchanged from the prior year. An increased retirement salary base and the addition of new members resulted in the increase in contributions.

The net investment loss was $1.45 billion as compared to a net investment gain of $11.3 billion in 2021. The current year losses are reflective of a -3.1% net return on the Systems' diversified investment portfolio, compared to net investment gains of 28.5% in the prior year. The fiscal year 2021 investment performance was one of the strongest absolute and relative fiscal year returns the Systems have achieved. As discussed previously, fiscal year 2022 provided significant challenges for investors, but the Systems continue to provide strong relative returns and downside protection. All investment related expenses, such as fees paid to investment managers, are reflected as a reduction in revenue and are accounted for in this net figure. The *Investment Section* of this report contains additional information regarding the investment portfolio and related activity.

Expenses – Deductions from Fiduciary Net Position

The primary expenses of PSRS include the payment of pension benefits to members and beneficiaries, refunds of contributions to former members, and the cost of administering the System. Total expenses for fiscal year 2022 were $3.1 billion, an increase of 5.6% over fiscal year 2021.

Benefit expenses increased by $158.2 million to $3.0 billion. This was a result of an overall increase of 1,596 monthly benefit recipients from the prior year-end and eligible benefit recipients receiving a 5.0% cost-of-living increase on January 1, 2022. There were no changes to the benefit formula during 2022. Refunds of contributions increased by $4.0 million during the current year to a total of $55.6 million.

Administrative expenses increased by $0.9 million to $11.7 million due to increases in furniture and fixtures and depreciation with the completion of the building expansion and renovation project, providing credit monitoring services to our membership during the current fiscal year, an increase in legal expenses and a new medical disability review partnership. These increases were partially offset by a reduction in recruiting expenses, actuarial cost studies and computer consulting expenses. The cost of administrative items was charged

60% to PSRS and 40% to PEERS unless the expense was determined to be of direct benefit to only one System. In such instance, the allocation of expense was 100% to the benefited System. As always, we will continue to look for ways to streamline costs when prudent.

Financial Analysis of the Public Education Employee Retirement System of Missouri (PEERS)

PEERS is a mandatory cost-sharing multiple employer retirement system for non-certificated employees and certain part-time certificated employees of participating employers. PEERS members were required to contribute 6.86% of their annual covered salary during 2022. The employer was required to match that amount. PEERS members also contribute to Social Security.

Public Education Employee Retirement System of Missouri
Fiduciary Net Position (000's)

	2022	2021	Change
Cash & investments	$ 6,187,659	$ 6,511,616	$ (323,957)
Receivables	141,943	778,225	(636,282)
Other	7	7	—
Total assets	**6,329,609**	**7,289,848**	**(960,239)**
Deferred outflows of resources	**89**	**106**	**(17)**
Total liabilities	**175,457**	**836,701**	**(661,244)**
Deferred inflows of resources	**651**	**91**	**560**
Fiduciary net position	**$ 6,153,590**	**$ 6,453,162**	**$ (299,572)**

Assets

Total assets of PEERS as of June 30, 2022 were $6.3 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets decreased by $1.0 billion from the prior year due to investment losses and a significant reduction in investment sale receivables. The reduction in investment sale receivables was offset by a similar reduction in investment purchase payables discussed below.

Liabilities

Total liabilities as of June 30, 2022 were $175.5 million and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities decreased by $661.2 million. The decrease was due to a significant decrease in investment purchases payable, which was offset by a decrease in investment sale receivables.

Deferred Outflows and Inflows of Resources

Deferred inflows and outflows are a result of the System's Post-Employment Healthcare Plan and are presented in accordance with GASB Statement No. 75.

Net Position

PEERS assets exceeded liabilities on June 30, 2022 by $6.2 billion. This was a decrease of $299.6 million from the 2021 net position. This reduction was primarily due to a decrease in investment earnings due to the adverse market conditions previously discussed. Investment losses totaled $189.3 million for the year offset by benefit payments and other expenses which exceeded contribution revenue by $110.3 million.

Public Education Employee Retirement System of Missouri
Changes in Fiduciary Net Position (000's)

	2022	2021	Change
Additions			
Member contributions	$ 144,215	$ 134,324	$ 9,891
Employer contributions	135,181	126,877	8,304
Investment income (loss)	(189,301)	1,431,017	(1,620,318)
Total additions	**90,095**	**1,692,218**	**(1,602,123)**
Deductions			
Monthly benefits	358,627	329,422	29,205
Refunds of contributions	23,334	21,099	2,235
Administrative expenses	7,706	7,379	327
Total deductions	**389,667**	**357,900**	**31,767**
Changes in fiduciary net position	**$ (299,572)**	**$ 1,334,318**	**$ (1,633,890)**

Revenues – Additions to Fiduciary Net Position

The reserves needed to finance retirement benefits are accumulated through the collection of employer and employee contributions and through investment earnings. Total contribution revenue for the year increased by $18.2 million to $279.4 million. This was a 7.0% increase over the prior year. Retirement contributions were calculated at 6.86% of retirement salary for each member during fiscal year 2022. The employer matched this amount. Contribution rates were unchanged from the prior year. The increase in total contributions is attributable to a higher retirement salary base and the addition of new members.

The net investment loss was $189.3 million as compared to a net investment gain of $1.4 billion in 2021. The current year losses are reflective of a -3.1% net return on the Systems' diversified investment portfolio, as compared to net gains of 28.5% in the prior year. The fiscal year 2021 investment performance was one of the strongest absolute and relative fiscal year returns the Systems have achieved. As discussed previously, fiscal year 2022 provided significant challenges for investors, but the Systems continue to provide strong relative returns and downside protection. All investment related expenses, such as fees paid to investment managers, are reflected as a reduction in revenue and are accounted for in this net figure. The *Investment Section* of this report contains additional information regarding the investment portfolio and related activity.

Expenses – Deductions from Fiduciary Net Position

The primary expenses of PEERS include the payment of pension benefits to members and beneficiaries, refunds of contributions to former members, and the cost of administering the System. Total expenses for fiscal year 2022 were $389.7 million, an increase of 8.9% over fiscal year 2021.

Benefit expenses increased by $29.2 million to $358.6 million. This was a result of an overall increase of 1,527 monthly benefit recipients from the prior year-end and eligible benefit recipients receiving a 5.0% cost-of-living increase on January 1, 2022. There were no changes to the benefit formula during 2022. Refunds of contributions increased by $2.2 million from the prior year.

Administrative expenses increased by $0.3 million due to increases in furniture and fixtures and depreciation with the completion of the building expansion and renovation project, providing credit monitoring services to our membership during the current fiscal year, an increase in legal expenses and a new medical disability review partnership. These increases were partially offset by a reduction in recruiting expenses, actuarial cost studies and computer consulting expenses. The cost of administrative items was charged 60% to PSRS and 40% to PEERS during the fiscal year unless the expense was determined to be of direct benefit to only one System. In such instance, the allocation of expense was 100% to the benefited System. As always, we will continue to look for ways to streamline costs when prudent.

Summary

The Board of Trustees revised the Actuarial Funding Policies at their June 8, 2021 Board meeting based on results of actuarial experience studies conducted during fiscal year 2021. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the studies and the revisions were effective with the June 30, 2021 valuations. No assumption changes occurred during fiscal year 2022.

The Systems' funding objective continues to be to achieve a funded ratio of 100% over a closed 30-year period. For this purpose, funded ratio is defined as the actuarial value of assets divided by the actuarial accrued liability determined under the entry age normal cost method and the actuarial assumptions adopted by the Board. The actuarial value of assets recognizes investments gains or losses over a period of five years to manage market volatility. Detailed information regarding the Systems' actuarial assumptions is included in the *Actuarial Section* of this report.

The actuarial assumed rate of return was 8.0% from 1980 through fiscal year 2016. The Board of Trustees first reduced the actuarial assumed rate of return to 7.75%, effective with the June 30, 2016 actuarial valuations and fiscal year 2017 investment performance measurement. The Board of Trustees has continually considered the funded status of the Systems, expectations of capital markets and other factors. Based on these considerations the Board of Trustees has reduced the risk profile of the plans with further reductions of the actuarial assumed rate of return as of June 30, 2017 (7.6%) and June 30, 2018 (7.5%). As part of the fiscal year 2021 actuarial experiences studies, the Board of Trustees further reduced the risk profile by adopting a new actuarial assumed rate of return of 7.3%. The long-term investment objective of 7.3% was effective with the June 30, 2021 actuarial valuations and fiscal year 2022 investment performance measurement.

The Systems earned an investment return of -2.8% (-3.1% net of all investment expenses and fees), exceeding the policy benchmark return of -10.3% by 750 basis points. The Systems' investment portfolio is well-diversified and structured to provide downside protection during volatile investment markets. Traditional asset classes produced historically negative returns in fiscal year 2022, however, the Systems allocation to non-traditional assets provided support to the overall investment portfolio. The Systems' portfolio added value of $4.0 billion in excess of the policy benchmark. Due to the long-term nature of defined benefit pension plans, it is important to look at the financial performance of the Systems over a period of years and not just at this single point in time. Over long periods of time, the Systems continue to produce investment returns that meet or exceed the Systems' objectives. The annualized investment return for the Systems over the last 30 years is 7.9%, net of all fees and expenses.

Detailed information regarding the Systems' investment portfolio is included in the *Investment Section* of this report.

The economic factors of primary significance to the Systems is the investment rate of return earned in global capital markets and the overall impact of inflation on cost-of-living adjustments. Legislative, demographic, and actuarial assumption changes can also have a significant impact on the funded status of the Systems. All these factors are incorporated into the annual actuarial valuations, which determine the contribution rates at which participating employers must contribute in order to appropriately fund benefits.

The fiscal year 2024 contribution rates remain unchanged from the fiscal year 2023 rates and were approved by the Board of Trustees at their October 24, 2022 meeting. The fiscal year 2024 contribution rate for PSRS remains 29.0%. The fiscal year 2024 contribution rate for PEERS remains 13.72%. The fiscal year 2024 contribution rates are in compliance with the PSRS/PEERS Board of Trustees' Funding Policies and represent the continued stability of contribution rates for employers and members.

The Board of Trustees, management and staff continually strive to improve the financial position of the Systems through a prudent investment program and long-term strategic planning.

Requests for Information

This financial report is designed to provide the Board of Trustees, our members, and other users of our financial report with a general overview of the Systems' finances and to demonstrate the Systems' accountability for the money it receives. If you have any questions about this report or need additional financial information, contact the Public School and Education Employee Retirement Systems of Missouri (PSRS/PEERS), P.O. Box 268, Jefferson City, MO 65102.

Public School Retirement System of Missouri
Public Education Employee Retirement System of Missouri
Statements of Fiduciary Net Position

as of June 30, 2022
with comparative totals for June 30, 2021

	PSRS	PEERS	Combined Totals June 30, 2022	Combined Totals June 30, 2021
ASSETS				
Cash	$ 479,257,304	$ 71,729,605	$ 550,986,909	$ 512,819,640
Receivables				
Contributions	221,027,533	29,087,348	250,114,881	241,421,644
Accrued interest and dividends	82,048,120	10,589,432	92,637,552	90,043,663
Investment sales	853,918,470	102,266,616	956,185,086	6,544,666,733
Receivable from PEERS for allocated expenses	1,267,330	—	1,267,330	783,932
Other	9,118	2	9,120	7,236
Total receivables	1,158,270,571	141,943,398	1,300,213,969	6,876,923,208
Investments, at fair value				
U.S. Treasuries and TIPS	7,666,758,397	989,710,837	8,656,469,234	9,129,708,134
U.S. public equities	10,802,581,939	1,392,907,858	12,195,489,797	14,161,659,507
Non-U.S. public equities	6,933,495,845	894,747,779	7,828,243,624	9,255,924,949
Short-term investments	504,234,309	65,092,183	569,326,492	2,451,005,202
Public debt	1,239,321,846	159,985,611	1,399,307,457	2,087,757,376
Private equity	8,734,211,140	1,127,508,267	9,861,719,407	9,224,576,540
Private credit	1,984,110,139	256,131,106	2,240,241,245	1,443,417,131
Private real estate	5,198,699,485	671,104,728	5,869,804,213	4,480,914,177
Hedged assets	4,134,888,409	532,928,805	4,667,817,214	4,555,540,768
Total investments	47,198,301,509	6,090,117,174	53,288,418,683	56,790,503,784
Invested securities lending collateral	199,953,203	25,812,194	225,765,397	241,248,374
Prepaid expenses	192,743	7,370	200,113	68,426
Capital assets, net of accumulated depreciation	33,025,996	—	33,025,996	33,024,577
Total assets	49,069,001,326	6,329,609,741	55,398,611,067	64,454,588,009
DEFERRED OUTFLOW OF RESOURCES				
Outflows related to other post-employment benefit obligations	133,738	89,159	222,897	265,067
LIABILITIES				
Accounts payable	25,389,197	3,189,221	28,578,418	25,086,661
Interest payable	76,274	9,842	86,116	795,878
Securities lending collateral	199,968,918	25,814,222	225,783,140	241,229,413
Investment purchases	1,167,624,626	142,648,920	1,310,273,546	7,105,250,509
Payable to PSRS for allocated expenses	—	1,267,330	1,267,330	783,932
Accrued medical claims	88,200	58,800	147,000	186,000
Net OPEB liability	1,798,183	1,198,788	2,996,971	4,394,228
Compensated absences	2,157,796	1,269,661	3,427,457	3,217,749
Total liabilities	1,397,103,194	175,456,784	1,572,559,978	7,380,944,370
DEFERRED INFLOW OF RESOURCES				
Inflows related to other post-employment benefit obligations	977,378	651,585	1,628,963	227,671
NET POSITION - RESTRICTED FOR PENSIONS	$ 47,671,054,492	$ 6,153,590,531	$ 53,824,645,023	$ 57,073,681,035

See accompanying Notes to the Financial Statements.

Public School Retirement System of Missouri
Public Education Employee Retirement System of Missouri
Statements of Changes in Fiduciary Net Position

for the year ended June 30, 2022
with comparative totals for the year ended June 30, 2021

	PSRS	PEERS	Combined Totals Year Ended June 30, 2022	Combined Totals Year Ended June 30, 2021
ADDITIONS				
Contributions				
Employer	$ 764,348,407	$ 135,180,782	$ 899,529,189	$ 872,515,500
Member	807,545,968	144,214,603	951,760,571	914,158,382
Total contributions	1,571,894,375	279,395,385	1,851,289,760	1,786,673,882
Investment income (loss)				
From investing activities:				
Net (depreciation) appreciation in fair value of investments	(1,082,520,262)	(145,509,811)	(1,228,030,073)	13,660,708,690
Interest from investments	178,686,784	22,924,475	201,611,259	204,379,290
Interest from bank deposits	9,829	1,357	11,186	9,064
Dividends	211,506,999	27,148,813	238,655,812	208,726,159
Total investment income (loss)	(692,316,650)	(95,435,166)	(787,751,816)	14,073,823,203
Less investment expenses	759,810,159	93,969,497	853,779,656	1,353,460,056
Net income (loss) from investing activities	(1,452,126,809)	(189,404,663)	(1,641,531,472)	12,720,363,147
From security lending activities:				
Security lending gross income	679,134	87,030	766,164	799,949
Net (depreciation) appreciation in fair value of security lending collateral	(32,539)	(4,167)	(36,706)	(23,688)
Less security lending activity expenses:				
Agent fees	322,988	41,695	364,683	643,114
Broker rebates (received) paid	(485,947)	(62,731)	(548,678)	(2,113,995)
Total security lending expenses	(162,959)	(21,036)	(183,995)	(1,470,881)
Net income from security lending activities	809,554	103,899	913,453	2,247,142
Total net investment income (loss)	(1,451,317,255)	(189,300,764)	(1,640,618,019)	12,722,610,289
Other income				
Miscellaneous income	53,588	531	54,119	127,677
Total other income	53,588	531	54,119	127,677
Total additions	120,630,708	90,095,152	210,725,860	14,509,411,848
DEDUCTIONS				
Monthly benefits	3,002,841,020	358,626,871	3,361,467,891	3,174,034,267
Refunds of contributions	55,575,158	23,333,630	78,908,788	72,646,388
Administrative expenses	11,665,583	7,706,071	19,371,654	18,142,287
Other expenses	13,539	—	13,539	55,912
Total deductions	3,070,095,300	389,666,572	3,459,761,872	3,264,878,854
Net (decrease) increase in net position	(2,949,464,592)	(299,571,420)	(3,249,036,012)	11,244,532,994
NET POSITION - RESTRICTED FOR PENSIONS				
Beginning of year	50,620,519,084	6,453,161,951	57,073,681,035	45,829,148,041
End of year	$ 47,671,054,492	$ 6,153,590,531	$ 53,824,645,023	$ 57,073,681,035

See accompanying Notes to the Financial Statements.

Notes to the Financial Statements

Note 1 - Plan Descriptions

The Board of Trustees of the Public School Retirement System of Missouri administers two separate retirement systems, the Public School Retirement System of Missouri (PSRS) and the Public Education Employee Retirement System of Missouri (PEERS). The Board of Trustees consists of seven members, three of whom are elected PSRS active members, one elected active member of PEERS and three persons appointed by the governor, one of whom must be a retired member of either PSRS or PEERS.

The funds of the two Systems are managed simultaneously. Investments of the Systems are combined in a commingled investment pool as allowed by state statute. Each System owns an equity position in the pool and receives proportionate investment income from the pool in accordance with their respective ownership percentage. Each System's allocated share of each type of investment in the pool is shown on the Statements of Fiduciary Net Position. Investment gains and losses are reported in the Statements of Changes in Fiduciary Net Position. Each System's assets may be used only for the payment of benefits to the members of the separate System in accordance with the statutes governing that System as well as expenses required to administer the System.

The Public School Retirement System of Missouri (PSRS)

PSRS is a mandatory cost-sharing multiple employer retirement system for all full-time certificated employees and certain part-time certificated employees of all public school districts in Missouri (except the school districts of St. Louis and Kansas City), and all public community colleges. The System also includes certificated employees of PSRS, Missouri State Teachers' Association, Missouri State High School Activities Association, and certain employees of the state of Missouri who elected to remain covered by PSRS under legislation enacted in 1986, 1987 and 1989. The majority of PSRS members are exempt from Social Security contributions. In some instances, positions may be determined not to be exempt from Social Security contributions. Any PSRS member who is required to contribute to Social Security comes under the requirements of Section 169.070 (9) RSMo, known as the "2/3's statute." PSRS members required to contribute to Social Security are required to contribute two-thirds of the approved PSRS contribution rate and their employer is required to match the contribution. The members' benefits are further calculated at two-thirds the normal benefit amount.

PSRS was established as an independent trust fund by the Missouri General Assembly effective August 1, 1945. Statutes governing the System are found in Sections 169.010-169.141 and Sections 169.560-169.595 RSMo. It is a defined benefit plan providing service retirement, death and disability benefits to its members. Members are vested for service retirement benefits after accruing five years of service. Individuals who (a) are at least age 60 and have a minimum of five years of service, (b) have 30 years of service, or (c) qualify for benefits under the "Rule of 80" (service and age total at least 80) are entitled to a monthly benefit for life, which is calculated using a 2.5% benefit factor. Actuarially age-reduced benefits are available for members with five to 24.9 years of service at age 55 or with 25 years of service (if not yet age 55). Members who are younger than age 55 and who do not qualify under the "Rule of 80" but have between 25 and 29.9 years of service may retire with a lesser benefit factor. Members that are three years beyond normal retirement can elect to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time partial lump sum (PLSO) payment at retirement equal to 12, 24, or 36 times the Single Life benefit amount. Annual cost-of-living adjustments (COLAs) are provided for eligible service and disability retirees and for surviving beneficiaries receiving payments under optional benefit plans, up to a lifetime maximum of 80% of the original benefit amount.

For a more detailed summary of benefits for the members of PSRS, refer to the *Summary Plan Description* in the *Actuarial Section* of this report.

Contributions – PSRS members were required to contribute 14.5% of their annual covered salary during fiscal year 2022. Employers were required to match the contributions made by employees. The contribution rate is set each year by the Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions set in Section 169.030 RSMo. The annual statutory increase in the total contribution rate may not exceed 1% of pay. Administrative costs are financed through investment earnings. Contributions for employees of the State of Missouri were made by the state in accordance with the actuarially determined contribution rate needed to fund current costs and prior service costs of state employees as authorized in Section 104.342.8 RSMo.

Members – The number of PSRS members and benefit recipients served by the System at June 30, 2022:

Retirees and beneficiaries receiving benefits			67,676
Inactive members entitled to, but not yet receiving benefits			10,045
Active members:	Vested	61,299	
	Non-vested	17,674	
Total active members			78,973
Other inactive members and terminated accounts			9,375
Total			166,069

Employers – PSRS had 533 contributing employers during fiscal year 2022.

The Public Education Employee Retirement System of Missouri (PEERS)

PEERS is a mandatory cost-sharing multiple employer retirement system for all public school district employees (except the school districts of St. Louis and Kansas City), employees of the Missouri Association of School Administrators, and public community college employees (except the Community College of St. Louis). Employees of covered districts who work 20 or more hours per week on a regular basis and who are not contributing members of the Public School Retirement System of Missouri (PSRS) must contribute to PEERS. Employees of PSRS who do not hold Missouri educator certificates also contribute to PEERS.

PEERS was established as a trust fund by the Missouri General Assembly effective October 13, 1965. Statutes governing the System are found in Sections 169.600 - 169.715 and Sections 169.560-169.595 RSMo. The statutes place responsibility for the operation of PEERS on the Board of Trustees of the Public School Retirement System of Missouri.

PEERS is a defined benefit plan providing service retirement and disability benefits to its members. Members are vested for service retirement benefits after accruing five years of service. Individuals who (a) are at least age 60 and have a minimum of five years of service, (b) have 30 years of service, or (c) qualify for benefits under the "Rule of 80" (service and age total at least 80) are entitled to a monthly benefit for life, which is calculated using a 1.61% benefit factor. Members qualifying for "Rule of 80" or "30-and-out" are entitled to an additional temporary 0.8% benefit multiplier until reaching minimum Social Security age (currently age 62). Actuarially age-reduced retirement benefits are available with five years of service at age 55. Members who are younger than age 55 and who do not qualify under the "Rule of 80" but have between 25 and 29.9 years of service may retire with a lesser benefit factor. Members that are three years beyond normal retirement can elect to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time partial lump sum (PLSO) payment at retirement equal to 12, 24, or 36 times the Single Life benefit amount. Annual cost-of-living adjustments (COLAs) up to a lifetime maximum of 80% of the original benefit amount are provided for eligible service and disability retirees and for surviving beneficiaries receiving payments under optional benefit plans.

For a more detailed summary of benefits for the members of PEERS, refer to the *Summary Plan Description* in the *Actuarial Section* of this report.

Contributions – PEERS members were required to contribute 6.86% of their annual covered salary during fiscal year 2022. Employers were required to match the contributions made by their employees. The contribution rate is set each year by the Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions in Section 169.620 RSMo. The annual statutory increase in the total contribution rate may not exceed 0.5% of pay. Administrative costs proportional to its membership size are reimbursed by PEERS to the Public School Retirement System of Missouri (PSRS) and are financed through investment earnings.

Members – The number of PEERS members and benefit recipients served by the System at June 30, 2022:

Retirees and beneficiaries receiving benefits			36,198
Inactive members entitled to, but not yet receiving benefits			7,764
Active members:	Vested	26,292	
	Non-vested	23,887	
Total active members			50,179
Other inactive members and terminated accounts			37,356
Total			131,497

Employers – PEERS had 530 contributing employers during fiscal year 2022.

Note 2 – Summary of Significant Accounting Policies

Basis of Accounting

For financial reporting purposes, the Systems adhere to accounting principles generally accepted in the United States of America. The Systems apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

The Systems' financial statements, notes to the financial statements, and required supplementary information were prepared in conformity with GASB Statement No. 67, *Financial Reporting for Pension Plans*, as amended. GASB Statement No. 67 addresses accounting and financial reporting requirements for pension plans. Significant requirements include an actuarial calculation of total and net pension liability. It also includes comprehensive footnote disclosures regarding the pension liability, the sensitivity of the net pension liability to the discount rate and extensive investment activity disclosures. The total pension liability, determined in accordance with GASB Statement No. 67 is presented in Note 5 - *Net Pension Liability of Employers.*

The financial statements of both Systems were prepared using the accrual basis of accounting. For both Systems, member and employer contributions are recognized when due, pursuant to formal commitments and statutory requirements. Benefits and refunds are recognized when due and payable in accordance with the statutes governing the Systems. Expenses are recognized when the liability is incurred, regardless of when payment is made. Administrative expenses are funded through investment earnings.

Cash

Cash includes cash on hand and demand deposits, and short-term investments with original maturities of three months or less from the date of acquisition.

Receivables

Receivables consist primarily of contributions owed and yet to be remitted by employers, pending investment trades and interest and dividends payable to the Systems as of the end of each fiscal year.

Method Used to Value Investments

Investments are reported at fair value. The fair value of investments is based on published market prices and quotations from major investment brokers at current exchange rates, as available. Many factors are considered in arriving at fair value. Fixed income securities not traded on a national or international exchange are based on equivalent values of comparable securities with similar yield and risk.

The value of private equity, private credit and real estate investments that do not have an established market is determined based upon the most current net asset values and activities through year end. When values are not readily available, alternative investments are valued based on a good faith determination by the General Partner. The estimated fair value of these investments may differ significantly from values that would have been updated had a ready market existed. The estimated fair values can be significantly affected by uncertainty and volatility in financial markets. Consequently, fair value estimates in such instances may be subject to wide variations.

GASB Statement No. 72 addresses accounting and reporting issues related to fair value measurements. The Statement requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. Comprehensive footnote disclosure regarding this Statement is presented in Note 4 - *Deposits, Investments and Securities Lending Program.*

Capital Assets

The building and other capital assets are owned by PSRS and are stated at cost less depreciation accumulated since acquisition. The stated value does not purport to represent replacement or realized value. Costs of major additions and improvements are capitalized. Expenditures for maintenance and repairs are charged to operations as incurred. Depreciation is calculated using the straight-line method, with estimated lives ranging from three to 40 years in the following major classes: computers and software, three years; vehicles, five years; equipment, five years; building and land improvements, 15 years; pension administration system, 20 years; building, 40 years.

PSRS allocates depreciation expense to PEERS for the use of capital assets.

Adoption of New Accounting Pronouncements

The Systems have assessed GASB Statement No. 87, *Leases,* and determined the Systems had no material leases that would require further analysis.

The Systems have adopted GASB Statement No. 93, *Replacement of Interbank Offered Rates* effective with the June 30, 2022 financial statements.

Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of net position restricted for pension benefits at June 30, 2022. Actual results could differ from those estimates.

Total Columns

The financial statements include total column information for the prior year. Such information does not include sufficient detail to constitute a presentation in conformity with U.S. generally accepted accounting principles. Accordingly, such information should be read in conjunction with both Systems' financial statements for the year ended June 30, 2021, from which the information was derived.

Note 3 – Designations of Net Position – Restricted for Pensions

The Systems designate the net position – restricted for pensions for the following specific purposes:

Public School Retirement System of Missouri

		2022
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$	8,680,007,491
Designated for the Payment of Benefits to Present Retirees – Transfers from Member Reserves at retirement and an actuarially determined transfer from Operating Reserves to fund the System's obligation for benefit payments and cost-of-living adjustments to current retirees and beneficiary recipients.		34,541,913,755
Designated for Operating Expenses/Benefits to Future Retirees (Operating Reserves) – Accumulation of employer contributions and investment income used to fund future benefit payments, interest on member accounts and administration and maintenance expenses of the System.		4,449,133,246
Net Position – Restricted For Pensions	$	47,671,054,492

Public Education Employee Retirement System of Missouri

		2022
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$	1,113,282,458
Designated for the Payment of Benefits to Present Retirees – Transfers from Member Reserves at retirement and an actuarially determined transfer from Operating Reserves to fund the System's obligation for benefit payments and cost-of-living adjustments to current retirees and beneficiary recipients.		3,755,740,516
Designated for Operating Expenses/Benefits to Future Retirees (Operating Reserves) – Accumulation of employer contributions and investment income used to fund future benefit payments, interest on member accounts and administration and maintenance expenses of the System.		1,284,567,557
Net Position – Restricted For Pensions	$	6,153,590,531

Note 4 – Deposits, Investments and Securities Lending Program

Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, the Systems will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. The custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the Systems would not be able to recover the value of investment or collateral securities that are in the possession of an outside party. To mitigate custodial credit risk, the Systems require that all deposits be 100% collateralized with securities held in the Systems' name and held by a third-party agent.

Deposits

Cash balances include short-term securities and deposits held by the custodial bank and operating balances held by the depository banks.

At June 30, 2022, the PSRS carrying amount of deposits at the depository bank was $15,945,028 and the bank balance was $6,922,951. Of the bank balance, $250,000 was covered by federal depository insurance. In addition, the deposits were collateralized with U.S. agency securities held by a third-party institution in the System's name, totaling $9,902,476. An additional $13,447,307 was held in overnight repurchase agreements with a book value of $13,447,307. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $13,447,307.

At June 30, 2022, the PEERS carrying amount of deposits at the depository bank was $1,187,696 and the bank balance was $567,594. Of the bank balance, $250,000 was covered by federal depository insurance. In addition, the deposits were collateralized with U.S. agency securities held by a third-party institution in the System's name, totaling $1,245,348. An additional $2,097,557 was held in overnight repurchase agreements with a book value of $2,097,557. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $2,097,557.

Investment Policy and Asset Allocation

Funds for both Systems that are in excess of a safe operating balance are invested under policies and procedures established by the Board of Trustees. Chapter 169.040 RSMo. authorizes any investment which a prudent person acting in a like capacity and familiar with similar matters would use in the conduct of an enterprise of a like character and with like aims. Any person with fiduciary responsibility with respect to the Systems is covered by this "prudent person" rule.

The Board of Trustees of PSRS and PEERS approved the commingling of assets for purposes of investment as allowed by state statute. In order to implement this change, PSRS and PEERS adopted the Missouri Education Pension Trust Agreement. The Missouri Education Pension Trust (MEPT) is managed by the PSRS and PEERS Board of Trustees and Investment Staff. Effective July 1, 2013, the invested assets of the Systems were pooled and invested in MEPT. All assets held by MEPT are for the exclusive benefit of PSRS and PEERS. Each of the Systems has equity in MEPT based on funds contributed and earnings allocated. Earnings of MEPT are allocated based on the average daily balances of each of the respective Systems. Individual investments in MEPT are not specifically identified to the respective Systems. For financial statement presentation, MEPT assets, liabilities, revenues, and expenses have been allocated to and presented in each respective system in the basic financial statements as required by investment pools. Due to the fact all invested assets are invested in MEPT, the rate of return for each of the Systems is approximately the same.

The Systems' policy in regard to the allocation of invested assets is established and may be amended by the Board of Trustees. System assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided by the Systems. The Board of Trustees approved the use of total plan leverage in fiscal year 2020. Leverage may be utilized (through futures, swaps, or other derivative instruments) to efficiently implement portfolio rebalancing and/or to apply modest leverage to total plan assets. The total direct leverage at the fund level shall not exceed 10% of the portfolio.

Based on the results of the 2022 Asset Allocation/ Liability Study, the Board of Trustees amended the following long-term asset allocation targets: Safe Assets decreased 5% and Private Risk Assets increased 5%. Within Private Risk Assets, Private Equity increased from 16% to 21%, while within Safe Assets, U.S. Treasuries decreased from 20% to 15%.

Implementation of the amended long-term targets will be achieved over time through a disciplined investment approach. The policy benchmarks will change over time as the Systems make meaningful progress towards the new long-term targets. The following table illustrates the Systems' Board of Trustees approved asset allocation as of June 30, 2022.

Investment Type	Long-term Target	Policy Ranges
Public Risk Asset Programs		
U.S. Public Equity	23.0%	15% - 45%
Public Credit	0.0%	0% - 15%
Hedged Assets	6.0%	0% - 25%
Non-U.S. Public Equity	16.0%	8% - 28%
Total Public Risk Assets	**45.0%**	**35% - 70%**
Safe Assets		
U.S. Treasuries	15.0%	0% - 40%
U.S. TIPS	0.0%	0% - 30%
Cash & Cash Equivalents	0.0%	0% - 10%
Total Safe Assets	**15.0%**	**10% - 40%**
Private Risk Asset Programs		
Private Equity	21.0%	4% - 25%
Private Real Estate	11.0%	4% - 15%
Private Credit	8.0%	0% - 12%
Total Private Risk Assets	**40.0%**	**10% - 45%**
Total Fund	**100.0%**	

The Systems categorize their fair value measurements within the fair value hierarchy established by U.S. generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements). The Systems have classified the fair value measurements on the following page in accordance with the Board approved asset allocation discussed above. The classifications will not directly reconcile to total investments per the Statements of Fiduciary Net Position due to the considerations of cash holdings, other liabilities and accruals.

Level 1 - Unadjusted quoted prices for identical instruments in active markets.

Level 2 - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3 - Valuations derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The Systems' assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The tables on the following page show the fair value leveling of the investments for the Systems.

Short-term securities generally include investments in money market-type securities reported at cost which approximates market or fair value.

Equities within all assets classes that are classified in Level 1 are valued using prices quoted in active markets for those securities. Equity and equity derivative securities classified in Level 2 are securities whose values are derived daily from associated traded securities. Equity securities classified in Level 3 are valued with last trade data having limited trading volume.

Fixed income securities and derivatives within all assets classes that are classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities relationship to benchmark quoted prices. Such securities include U.S. Treasuries, corporate and agency bonds, bank loans, and mortgage backed securities. Level 2 fixed income securities have non-proprietary information that was readily available to market participants, from multiple independent sources, which are known to be actively involved in the market.

Investments and Derivatives Measured at Fair Value

Investments by fair value level	Total at 6/30/2022	Fair Value Measurements Level 1	Level 2	Level 3
U.S. Treasuries and TIPS				
U.S. Treasuries	$ 8,656,469,234	$ —	$ 8,656,469,234	$ —
Total U.S. Treasuries and TIPS	8,656,469,234	—	8,656,469,234	—
U.S. public equities				
Equities	5,510,996,348	5,510,996,348	—	—
U.S. Treasuries	443,376,187	—	443,376,187	—
Total U.S. public equities	5,954,372,535	5,510,996,348	443,376,187	—
Non-U.S. public equities				
Equities	4,616,908,983	4,614,563,106	—	2,345,877
Total Non-U.S. public equities	4,616,908,983	4,614,563,106	—	2,345,877
Short term investments				
Short term investment fund	1,020,830,845	—	1,020,830,845	—
Total Short term investments	1,020,830,845	—	1,020,830,845	—
Public debt				
Corporate Bonds	1,322,123,857	—	1,322,123,857	—
Sovereign Debt	11,368,117	—	11,368,117	—
U.S. Treasuries	38,609,175	—	38,609,175	—
Equities	75,814	—	—	75,814
Municipal Bonds	27,477,703	—	27,477,703	—
Total Public debt	1,399,654,666	—	1,399,578,852	75,814
Hedged assets				
U.S. Treasuries	220,847,747	—	220,847,747	—
Equities	161,354,473	161,354,473	—	—
Corporate Bonds	111,641,912	—	111,641,912	—
Sovereign Debt	3,003,306	—	3,003,306	—
Total Hedged assets	496,847,438	161,354,473	335,492,965	—
Private equity				
Equities	232,186	232,186	—	—
Total Private equity	232,186	232,186	—	—
Total investments by fair value level	**$ 22,145,315,887**	**$ 10,287,146,113**	**$ 11,855,748,083**	**$ 2,421,691**
Total investments measured at the NAV *(See detailed schedule on the following page)*	**31,396,241,426**			
Total Investments measured at fair value	**$ 53,541,557,313**			
Investment derivative instruments:	**6/30/2022**	**Level 1**	**Level 2**	**Level 3**
Equity total return swaps	$ (155,688,212)	$ —	$ (155,688,212)	$ —
Foreign currency forwards	(4,378,692)	—	(4,378,692)	—
Total investment derivative instruments	**$ (160,066,904)**	**$ —**	**$ (160,066,904)**	**$ —**
	6/30/2022	**Level 1**	**Level 2**	**Level 3**
Total invested securities lending collateral	**$ 225,765,397**	**$ —**	**$ 225,765,397**	**$ —**

Investments Measured at the NAV	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Public Equity Investments				
Passive U.S. Equity Funds	$ 4,403,878,842	$ —	Daily	1 day
Active U.S. Equity Funds	350,748,839	66,666,667	Quarterly	45 days
Passive Non-U.S. Equity Funds	763,154,903	—	Daily	2 days
Active Non-U.S. Equity Funds	2,419,084,407	—	Monthly	15 - 60 days
Total Public Equity Investments	7,936,866,991	66,666,667		
Hedged Assets Investments				
Asset Allocation/Global Macro	803,907,329	—	Monthly	5 days
Distressed Debt/Credit	829,830,605	—	Quarterly, semi-annual	65 - 90 days
Diversified Beta	256,143,848	—	Quarterly	30 days
Equity Focused	1,282,138,595	—	Monthly, quarterly	5 - 60 days
Multi-Strategy	2,315,821,379	—	Monthly, quarterly	4 - 120 days
Total Hedged Assets Investments	5,487,841,756	—		
Private Risk Investments				
Private Equity	9,861,487,221	3,739,405,799	Not eligible	N/A
Private Credit	2,240,241,245	1,947,852,421	Not eligible	N/A
Private Real Estate - closed end funds	1,669,913,525	1,987,510,051	Not eligible	N/A
Private Real Estate - open end funds	4,199,890,688	22,552,989	Quarterly	15 - 180 days
Total Private Risk Investments	17,971,532,679	7,697,321,260		
Total investments measured at the NAV	$ 31,396,241,426	$ 7,763,987,927		

The fair values of investments in certain public equity, hedged assets, and private risk assets are based on the investments' net asset value (NAV) per share (or its equivalent) and are presented in the above table. Investments that are measured at fair value using the net asset value (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

Public Equity Investments

The public equity investments include two passive U.S. equity funds, one active U.S. equity fund, three passive non-U.S. equity funds and four active non-U.S. equity funds. The passive equity funds provide for basic market exposure with daily liquidity. The active U.S. equity funds provide active industry specific strategies within U.S. markets while the active non-U.S. equity funds provide active investment strategies in the global equity and emerging markets.

Hedged Assets

The hedged assets investment strategy provides diversification and reduced volatility to the total portfolio. The purpose of this program is to enhance the overall risk/return profile through the inclusion of specialized investment strategies that typically generate returns in a different fashion (i.e., absent a high correlation to equities or bonds).

Asset Allocation/Global Macro includes an investment in a fund with the strategy of taking long and short positions based on top-down macroeconomic analysis (i.e., interest rates, foreign exchange rates, and commodity prices). Global strategies involve long and short positions in securities of diverse geographical regions such as developed and emerging markets.

Distressed Debt/Credit includes investments in two funds which seek returns by capitalizing on opportunities in financially distressed companies' debt and credit securities.

Diversified Beta includes investments in three funds with a risk parity approach which focuses on the allocation of risk across the portfolio.

Equity Focused includes investments in seven funds with the strategy of taking long positions in attractive equity securities and potentially short positions in unattractive equity securities.

Multi-Strategy includes investments in eight funds which represent a broad style of investing that seeks diverse sources of alpha generation and positive absolute returns by employing a variety of investment strategies. Strategies utilized may include, but are not limited to, convertible bond arbitrage, equity long/short, statistical arbitrage, and merger arbitrage.

Private Risk Assets

Private risk investments are typically very long-term in nature, not publicly traded and relatively illiquid. Investments are made in limited partnerships where redemptions are restricted over the life of the partnership. During the life of the partnerships, distributions are received as underlying portfolio investments are realized.

Private Equity investments provide financing for start-up companies, private middle market companies, firms in financial distress and public and non-public firms seeking buyout financing. Private equity investments can be classified into three basic sub-asset class categories: Venture Capital, Buyouts, and Debt-Related.

Private Credit investments are comprised primarily of debt-related investments that provide a current yield along with equity participation (usually warrants). Primary strategies are distressed debt, bankruptcy restructurings, mezzanine debt, bank loans, and other credit-drive or debt-related strategies.

Real Estate investments are intended to provide exposure to a diversified portfolio of institutional quality private real estate investments that will provide meaningful, consistent returns, and act as a hedge against inflation and a diversifier to the overall investment portfolio. The real estate portfolio includes closed-end funds where distributions from each investment will be received as the underlying investments are liquidated and open-end funds which offer redemption options.

Rate of Return

For the year ended June 30, 2022, the money-weighted rate of return, net of all investment expenses and fees, was -3.0%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. Time-weighted returns (geometric return) for the year ended June 30, 2022 net of all investment expenses and fees, was -3.1%.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Systems' investment in a single issue. To mitigate this risk, the Systems' investment policy prohibits investing more than 5% of the total investment portfolio into any single financial institution or issuer, excluding U.S. government securities. At June 30, 2022, the Systems did not have more than 5% of total investments in a single issue except for U.S. government securities.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Systems' investment policy restricts duration as a means of managing its exposure to fair value losses arising from increased interest rates. In addition, each manager must follow guidelines established relative to the duration of its benchmark. The portfolios are continually monitored to ensure compliance with these guidelines. The following table is inclusive of collateral pledged for securities lending collateral. The maturities of all debt securities are presented below:

Security Type	Fair Value at 6/30/2022	<1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
U.S. Treasuries	$ 9,389,298,827	$ 1,433,009,600	$ 3,645,766,398	$ 2,443,102,491	$ 1,867,420,338
Agencies	5,000,000	5,000,000	—	—	—
Corporate bonds	1,433,765,770	80,316,883	753,298,439	460,265,413	139,885,035
Repurchase agreements	104,785,974	104,785,974	—	—	—
Certificate of deposit	85,982,938	85,982,938	—	—	—
Derivatives	(59,794)	(59,794)	—	—	—
Municipals	27,477,702	—	7,749,882	6,063,241	13,664,579
Bank deposits	1,020,830,845	1,020,830,845	—	—	—
Sovereign Debt	14,371,423	5,094,818	—	6,638,088	2,638,517
Commingled Funds (see note)					
Blackrock Fed Fund	2,296	2,296	—	—	—
Bridgewater STIF II	12,872,834	12,872,834	—	—	—
Bridgewater US IL Bond Fund	5,239,463	—	—	5,239,463	—
Bridgewater International Bond Fund	6,758,567	—	—	—	6,758,567
Currency	14,138,137	14,138,137	—	—	—
Total	$ 12,120,464,982	$ 2,761,974,531	$ 4,406,814,719	$ 2,921,308,696	$ 2,030,367,036
Percentage of Total Fixed Income	**100%**	**23%**	**36%**	**24%**	**17%**

Note: Commingled Funds are presented at the weighted average maturity. These funds do not have a single maturity date; however, the underlying securities have maturity dates. To more accurately reflect the interest rate risk of the Systems, these weighted averages are displayed.

The following table includes the debt maturities for the Systems' operating deposits and repurchase agreements collateral.

Security Type	Fair Value at June 30, 2022	<1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	over 10 years to maturity
PSRS - Agencies	$ 23,349,783	$ —	$ —	$ —	$ 23,349,783
PEERS - Agencies	$ 3,342,905	$ —	$ —	$ —	$ 3,342,905

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Systems do not have a single investment policy designating the minimum allowable credit rating; however, each manager must follow guidelines established specifically for its managed portfolio. The portfolios are continually monitored to ensure compliance with these guidelines. The following table is inclusive of collateral pledged for securities lending collateral. The Systems' debt investments by credit rating category as of June 30, 2022 are presented in the following table.

Security Type	Fair Value at June 30, 2022	%	FDIC Insured	AAA	AA	A	BBB	BB	B	CCC	Not Rated
U.S. Treasuries	$ 9,389,298,827	77%	$ —	$9,389,298,827	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Agencies	5,000,000	0%	—	—	—	5,000,000	—	—	—	—	—
Corporate bonds	1,433,765,770	12%	—	—	52,578,195	461,323,562	808,069,858	62,460,857	44,286,245	3,094,089	1,952,964
Repurchase agreements	104,785,974	1%	—	—	—	104,785,974	—	—	—	—	—
Certificates of deposit	85,982,938	1%	—	—	36,995,054	48,987,884	—	—	—	—	—
Derivatives	(59,794)	0%	—	—	(59,794)	—	—	—	—	—	—
Municipals	27,477,702	0%	—	6,063,241	211,436	21,203,025	—	—	—	—	—
Bank Deposits	1,020,830,845	9%	1,020,830,845	—	—	—	—	—	—	—	—
Sovereign Debt	14,371,423	0%	—	—	5,094,818	7,947,764	1,328,841	—	—	—	—
Commingled Funds (see note)											
Blackrock Fed Fund	2,296	0%	—	—	2,296	—	—	—	—	—	—
Bridgewater STIF II	12,872,834	0%	—	—	12,872,834	—	—	—	—	—	—
Bridgewater US IL Bond Fund	5,239,463	0%	—	—	5,239,463	—	—	—	—	—	—
Bridgewater International Bond Fund	6,758,567	0%	—	—	6,758,567	—	—	—	—	—	—
Currency	14,138,137	0%	—	—	—	—	—	—	—	—	14,138,137
Total	$12,120,464,982	100%	$1,020,830,845	$9,395,362,068	$119,692,869	$649,248,209	$809,398,699	$62,460,857	$44,286,245	$3,094,089	$16,091,101
Percentage of Total Fixed Income	**100%**		**8%**	**78%**	**0%**	**6%**	**7%**	**1%**	**0%**	**0%**	**0%**

Note: Commingled Funds are presented at the weighted average credit quality. These funds do not carry a rating in and of themselves; however, the underlying securities are all rated. To more accurately reflect the credit risk of the Systems, these weighted averages are displayed. Obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not required to be disclosed; however, we feel it shows a more true picture of our fixed income holdings.

All collateral pledged in support of the Systems' operating deposits and repurchase agreements was held in agency securities with a quality rating of AAA.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Systems do not have a single investment policy designating the allowable exposure to foreign currency; however, each manager must follow guidelines established specifically for its managed portfolio. The portfolios are continually monitored to ensure compliance with these guidelines. The Systems' exposure to foreign currency risk as of June 30, 2022 is presented in the following table.

Currency	Equity	Currency/ Short Term	Total
Australian Dollar	$ 83,782,674	$ (3,352,870)	$ 80,429,804
Brazilian Real	38,380,852	289,399	38,670,251
Canadian Dollar	197,114,819	329,224	197,444,043
Chilean Peso	1,279,273	28,423	1,307,696
Colombian Peso	592,588	22,566	615,154
Czech Koruna	7,449,812	25,124	7,474,936
Danish Krone	117,933,241	112,054	118,045,295
Egyptian Pound	7,076,993	305,821	7,382,814
Euro Currency	1,588,553,709	21,901,321	1,610,455,030
Hong Kong Dollar	385,917,144	(2,472,371)	383,444,773
Hungarian Forint	5,184,151	30,392	5,214,543
Indian Rupee	118,551,093	5,628,581	124,179,674
Indonesian Rupiah	17,218,556	107,976	17,326,532
Israeli Shekel	20,114,880	263,008	20,377,888
Japanese Yen	493,963,100	(70,217)	493,892,883
Malaysian Ringgit	20,225,400	69,774	20,295,174
Mexican Peso	5,896,882	5,740	5,902,622
New Taiwan Dollar	142,461,772	363,387	142,825,159
New Turkish Lira	11,295,169	63,419	11,358,588
New Zealand Dollar	5,471,055	(61,465)	5,409,590
Norwegian Krone	31,327,982	(514,444)	30,813,538
Pakistan Rupee	3,343,161	(10,269)	3,332,892
Peruvian Nuevo Sol	136,185	12,726	148,911
Philippine Peso	7,993,937	175,066	8,169,003
Polish Zloty	10,097,767	(90,928)	10,006,839
Pound Sterling	368,026,362	3,028,217	371,054,579
Qatari Rial	15,797,890	30,159	15,828,049
Russian Ruble	—	134,932	134,932
Singapore Dollar	56,362,445	557,881	56,920,326
South African Rand	31,604,978	156,453	31,761,431
South Korean Won	118,265,177	50,354	118,315,531
Swedish Krona	36,507,499	(535,869)	35,971,630
Swiss Franc	400,585,374	(125,355)	400,460,019
Thailand Baht	27,888,332	—	27,888,332
UAE Dirham	13,364,287	25,364	13,389,651
Yuan Renminbi	100,635,714	486,190	101,121,904
Total	**$ 4,490,400,253**	**$ 26,969,763**	**$ 4,517,370,016**

Derivatives

Derivatives are generally defined as investment instruments whose cash flows or fair values are derived from the value of some other asset or index. The Systems are parties to derivatives which have off-balance sheet risk. These derivative instruments are used in the normal course of business to generate earnings and reduce exposure to fluctuations in market conditions. The Systems are exposed to various types of credit, market, and legal risk related to these investments. Investment staff monitors these types of investments with extreme care and is not aware of any undue risks at this time. All derivatives are considered investments. Derivatives are reported at fair value on the Statements of Fiduciary Net Position based on quoted market prices when available. In the instances that quoted market prices are unavailable, pricing is obtained via independent pricing sources.

The fair value balances and notional amounts of derivative instruments outstanding as of June 30, 2022, classified by type are as follows:

	Fair Value at June 30, 2022		
Investment Derivatives	**Classification**	**Amount**	**Notional**
Swaps			
Total return swaps - equity	Investments, at fair value	$ (155,688,212)	$ 1,749,762,775
Total swaps		**(155,688,212)**	**1,749,762,775**
Futures			
Equity futures long	Investments, at fair value	—	437,504,041
Equity futures short	Investments, at fair value	—	100,539,357
Interest rate futures short	Investments, at fair value	—	80,334,625
Interest rate futures long	Investments, at fair value	—	112,327,031
Commodity futures long	Investments, at fair value	—	9,759,420
Total futures		**—**	**740,464,474**
Foreign currency forwards net receivable/payable	Investment Sales and Purchases	(4,378,692)	—
Total Investment Derivatives		**$ (160,066,904)**	**$ 2,490,227,249**

Swaps - The Systems' investment managers may enter into various swaps including interest rate swaps, credit default swaps, currency swaps and equity and total return swaps. Swaps represent an agreement between two parties to exchange sequences of cash flows over a period in the future. In the most common type of interest rate swap arrangement, one party agrees to pay fixed interest payments on designated dates to a counterparty who, in turn, agrees to make return interest payments that float with some reference rate. A credit default swap is a contract whereby the credit risk associated with an investment is transferred by entering into an agreement with another party, who in exchange for periodic fees, agrees to make payments in the event of a default or other predetermined credit event. A currency swap is a foreign exchange transaction that involves trading principal and interest in one currency for the same in another currency. A total return swap is a contract in which one party makes payments based on a set rate, either fixed or variable, while the other party makes payments based on the return of the underlying asset. The underlying asset is typically an index, bond, etc. Gains and losses on swaps are determined based on fair values and are recorded in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. Net losses on swaps of $153.3 million were recognized for the fiscal year ended June 30, 2022.

Futures - Futures represent commitments to purchase (asset) or sell (liability) securities at a future date and at a specified price. Futures contracts are traded on organized exchanges (exchange traded) thereby minimizing the Systems' credit risk. The net change in the value of futures contracts is settled daily in cash with the exchanges. Net gains or losses resulting from the daily settlements are included in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. The Systems recognized net losses on futures contracts of $0.8 million during the fiscal year ended June 30, 2022.

Options - Options represent or give buyers the right, but not the obligation, to buy (call) or sell (put) an asset at a preset price over a specified period. The option's price is usually a small percentage of the underlying asset's value. As a writer of financial options, the Systems' investment managers receive a premium at the outset of the agreement and bear the risk of an unfavorable change in the price of the financial instrument underlying the option. As a purchaser of financial options, the Systems' investment managers pay a premium at the outset of the agreement and the counterparty bears the risk of an unfavorable change in the price of the financial instrument underlying the option. Net gains or losses resulting from such obligations are included in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. The Systems had no option activity during the fiscal year ended June 30, 2022.

Currency forwards - Currency forwards represent forward foreign exchange contracts that are entered into in order to hedge the exposure to changes in foreign currency rate on the foreign currency dominated portfolio holdings. A forward foreign exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. The gain or loss arising from the difference between the original contracts and the closing of such contracts is included in net appreciation (depreciation) in fair value of investments on the Systems' Statements of Changes in Fiduciary Net Position. The Systems recognized net losses on such contracts of $22.7 million during the fiscal year ended June 30, 2022.

Derivative Risk - Derivatives that are exchange traded are not subject to credit risk. No derivatives held are subject to custodial credit risk.

At June 30, 2022 the counterparties' credit ratings for currency forwards, and swaps are subject to credit risk as shown below:

The Systems are exposed to interest rate risk on their interest rate swaps. As the variable portion of the swaps move in the market, the Systems' exposure increases and decreases. The Systems are exposed to termination risk. The Systems' investment managers or their counterparties may terminate a derivative if either party fails to perform under the terms of the contract.

The Systems' derivatives are governed by ISDA Master Agreements between the Systems and the Counterparties. These agreements set forth collateral requirements and applicable netting arrangements. Foreign currency risks are reflected on page 39.

The Systems could be exposed to risk if the counterparties to the contracts are unable to meet the terms of the contracts. The Systems' investment managers seek to control this risk through counterparty credit evaluations and approvals, counterparty credit limits, and exposure monitoring procedures. The Systems anticipate that the counterparties will be able to satisfy their obligations under the contracts.

The derivative financial instruments discussed involve, to varying degrees, elements of market risk to the extent of future market movements in excess of the amounts recognized in the Statements of Fiduciary Net Position. Market risk arises from the potential unfavorable change in the value of the underlying instruments. The contract or notional amounts of these instruments reflect the extent of the Systems' involvement in each class of financial instrument; however, these amounts do not represent the exposure to market loss. Additional derivatives may be held in limited partnerships and commingled funds that are not reflected below.

Derivative Counterparty Credit Ratings

Quality Rating	Swaps	Forwards	Total
A	$ (155,688,212)	$ (4,378,692)	$ (160,066,904)
Total subject to credit risk	**$ (155,688,212)**	**$ (4,378,692)**	**$ (160,066,904)**

Security Lending Activity

Under the "prudent person" authority of the governing statutes and in accordance with the policies set by the Board of Trustees, the Systems lend securities to broker-dealers and banks pursuant to a form of loan agreement. The Systems' custodial bank is authorized to act as the Systems' agent to lend available securities to approved broker-dealers and banks subject to the receipt of acceptable collateral.

During the fiscal year, the Systems' custodial bank lent, on behalf of the Systems, securities to participating broker-dealers. The broker-dealers must provide collateral in the form of cash. The Systems did not impose restrictions during the fiscal year on the amount of loans that the custodial bank made on their behalf. Borrowers were required to deliver collateral for each loan equal to: (1) in the case of loaned securities denominated in U.S. dollars or whose primary trading market was located in the United States, or sovereign debt issued by foreign governments, 102% of the fair value of the loaned securities and (2) in the case of loaned securities not denominated in U.S. dollars or whose primary trading market was not located in the United States, 105% of the fair value of the loaned securities.

Pursuant to the lending agreement, the custodial bank has an obligation to provide a form of indemnification to the Systems in the event of default by a borrower. There were no violations of the contractual provisions nor were there any borrower or lending agent default losses during the fiscal year.

The fair value of securities on loan as of June 30, 2022 was $217,124,455. On June 30, 2022 the Systems had no credit risk exposure to borrowers as the cash and securities collateral amounts received exceeded amounts on loan. Loans are generally terminable on demand. However, with the prior approval of the Systems, loans may be made on the basis of a specified termination date, with or without providing for the right of the Systems to terminate or substitute equivalent securities. As of June 30, 2022, there were no term loans.

Cash collateral is invested in separately managed accounts in accordance with the investment guidelines approved by the Systems. The primary investment objective is the preservation of principal. As of June 30, 2022, the cost basis of the invested cash collateral totaled $225,783,140 and the estimated fair value totaled $225,765,397.

The Systems' recognized net depreciation of $36,706 for the year ended June 30, 2022 on the invested collateral account. Such is reported as net appreciation (depreciation) in fair value of security lending collateral on the Statements of Changes in Fiduciary Net Position.

The weighted average duration of invested collateral as of June 30, 2022 was 3 days and an average final maturity of approximately 44 days. Because the loans were terminable at will, their duration did not match the duration of the investments made with cash collateral.

Subsequent to fiscal year end, the Systems decided to cease securities lending activity. The program is expected to be fully eliminated by the spring of 2023. The Systems retain the ability to engage in securities lending activity in the future.

Note 5 – Net Pension Liability of Employers

The components of the net pension liability of the Systems' employers at June 30, 2022 are as follows:

	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position-Restricted for Pensions (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Payroll (c)	Employers' NPL as a % of Covered Payroll ((a-b)/c)
PSRS	$ 55,405,259,756	$ 47,671,054,492	$ 7,734,205,264	86.0%	$ 5,140,286,466	150.5%
PEERS	$ 6,998,708,341	$ 6,153,590,531	$ 845,117,810	87.9%	$ 1,864,704,185	45.3%

Actuarial Assumptions – Actuarial valuations of the Systems involve estimates of the reported amount and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience for the Systems, derived from experience studies conducted every fifth year. The most recent comprehensive experience studies were completed in May 2021. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the studies and were effective with the June 30, 2021 valuations. The next experience studies are scheduled to be completed prior to the June 30, 2026 valuations.

The Schedules of Employer's Net Pension Liability presents multi-year trend information about whether the plan net positions are increasing or decreasing over time relative to the total pension liability. These schedules are presented in the required supplementary information following the notes to the financial statements. The total pension liability was determined by an actuarial valuation as of June 30, 2022. A summary of the significant actuarial assumptions as of June 30, 2022 are shown on the following page.

Sensitivity of Net Pension Liability

The sensitivity of the net pension liability of employers to changes in the discount rate is presented below. The net pension liability of employers calculated using the discount rate of 7.3% is presented as well as what the employers' net pension liability would be using a discount rate that is 1.0% lower (6.3%) or 1.0% higher (8.3%) than the current rate.

		1% Decrease (6.3%)	Current Rate (7.3%)	1% Increase (8.3%)
PSRS	Net Pension Liability	$ 14,695,436,930	$ 7,734,205,264	$ 1,697,992,704
PEERS	Net Pension Liability	$ 1,694,864,986	$ 845,117,810	$ 135,877,618

Measurement Date	June 30, 2022
Valuation Date	June 30, 2022
Actuarial Cost Method	Entry Age Normal
Investment Rate of Return	7.30%
Inflation	2.00%
Total Payroll Growth	
PSRS	2.25% per annum, consisting of 2.00% inflation, 0.125% additional inflation due to the inclusion of health care costs in pension earnings, and 0.125% of real wage growth.
PEERS	2.50% per annum, consisting of 2.00% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, and 0.25% of real wage growth.
Individual Salary Growth	
PSRS	2.625% - 8.875%, depending on service and including 2.00% inflation, 0.125% additional inflation due to the inclusion of health care costs in pension earnings, 0.125% of real wage growth for productivity, and real wage growth for merit.
PEERS	3.25% - 9.75%, depending on service and including 2.00% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, 0.25% of real wage growth for productivity, and real wage growth for merit.

Cost-of-Living Increases

Given that the actual increase in the CPI-U index from June 2021 to June 2022 was 9.06%, the Board approved an actual cost-of-living adjustment ("COLA") as of January 1, 2023 of 5.00%, in accordance with the Board's funding policy and Missouri statutes, compared to an assumed COLA of 2.00%. Future COLAs assumed in the valuation are 2.00% as of January 1, 2024 and 1.35% each January 1, thereafter. This COLA assumption is based on the 20-year stochastic analysis of inflation performed in the 2021 experience study, short-term expectation of COLA at the time of the experience study, and application of the Board's funding policy to those expectations. The assumption was re-evaluated for the current valuations in light of the current inflationary environment, short- and long-term inflation assumptions reflected in the capital market forecasts from various investment advisors and analysts, and volatility of capital market assumptions in recent years. Based on this information, no change was made to the COLA assumption for the June 30, 2022 valuations. Additional information is included in the *Actuarial Section* of this report.

The COLA is compounded annually, beginning on the second January after retirement for PSRS and capped at an 80% lifetime increase.

The COLA is compounded annually, beginning on the fourth January after retirement for PEERS and capped at an 80% lifetime increase.

Mortality Assumption

Actives:

PSRS

Experience-adjusted Pub-2010 Teachers Mortality Table for Employees projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

PEERS

Experience-adjusted Pub-2010 General (Below-Median Income) Mortality Table for Employees projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

Non-Disabled Retirees, Beneficiaries and Survivors:

PSRS

Mortality rates for non-disabled retirees and beneficiaries are based on the Pub-2010 Teachers Mortality Table for Healthy Retirees and the Pub-2010 Teachers Mortality Table for Contingent Survivors, respectively. The tables are projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the experience-based adjustment factors shown in the tables below at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

	Males	Females
Non-Disabled	1.10	1.04
Contingent Survivor	1.18	1.07

PEERS

Mortality rates for non-disabled retirees and beneficiaries are based on the Pub-2010 General (Below-Median Income) Mortality Table for Healthy Retirees and the Pub-2010 General (Below-Median Income) Mortality Table for Contingent Survivors, respectively. The tables are projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the experience-based adjustment factors shown in the tables below at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

	Males	Females
Non-Disabled	1.13	0.94
Contingent Survivor	1.01	1.07

Measurement Date	June 30, 2022
Valuation Date	June 30, 2022
Mortality Assumption - continued	
Disabled Retirees	
PSRS	Experience-adjusted Pub-2010 Teacher Disability Mortality Table, projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.
PEERS	Experience-adjusted Pub-2010 General Disability Mortality Table projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

Long-Term Expected Rate of Return

The long-term expected rate of return on investments was determined in accordance with Actuarial Standard of Practice (ASOP) No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations.* ASOP No. 27 provides guidance on the selection of an appropriate assumed rate of return. The long-term expected rate of return on the Systems' investments was determined using a building-block method in which best-estimate ranges of expected future real rates of returns (expected returns, net of investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return and the assumed asset allocation for each major asset class as of June 30, 2022 are summarized below.

Asset Class	Target Asset Allocation	Long-Term Expected Real Return Arithmetic Basis
U.S. Public Equity	23.0 %	4.81 %
Public Credit	0.0 %	0.80 %
Hedged Assets	6.0 %	2.39 %
Non-U.S. Public Equity	16.0 %	6.88 %
U.S. Treasuries	15.0 %	-0.02 %
U.S. TIPS	0.0 %	0.29 %
Private Credit	8.0 %	5.61 %
Private Equity	21.0 %	10.90 %
Private Real Estate	11.0 %	7.47 %

The long-term expected rate of return used to measure the total pension liability was 7.3% as of June 30, 2022 and is consistent with the long-term expected geometric return on plan investments. The projection of cash flows used to determine the discount rate assumed that employer contributions would be made at the actuarially calculated rate computed in accordance with assumptions and methods stated in the funding policy adopted by the Board of Trustees, which requires payment of the normal cost and amortization of the unfunded actuarially accrued liability in level percent of employee payroll installments over 30 years utilizing a closed period, layered approach. Based on this assumption, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

Note 6 – Retirement Plans

Section 401(a) Defined Benefit Plan

All full-time System employees holding valid Missouri educator certificates are covered by PSRS. All other eligible employees are members of PEERS. Both Systems provide retirement and disability benefits, annual cost-of-living adjustments and death benefits to plan members and beneficiaries. Chapter 169 RSMo contains the statutory provisions of both Systems.

PSRS members were required to contribute 14.5% of their annual covered salary during fiscal years 2022, 2021, and 2020. PSRS, as the employer, was required to match that amount. The contribution rate is set each year by the Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions set in Section 169.030 RSMo. Employer contributions to PSRS totaled $129,254 for the 2022 fiscal year, $107,209 for the 2021 fiscal year and $94,103 for the 2020 fiscal year. The amounts for these years are equal to the required contributions. PEERS members were required to contribute 6.86% of their annual covered salary during fiscal years 2022, 2021 and 2020. PSRS, as the employer, was required to match that amount. The contribution rate is set each year by the Board of Trustees upon the recommendation of the independent actuary within the contribution restrictions in Section 169.620 RSMo. Employer contributions to PEERS totaled $900,225 for the 2022 fiscal year, $866,145 for the 2021 fiscal year, and $829,231 for the 2020 fiscal year. The amounts for these years are equal to the required contributions.

PSRS and PEERS, as the administrators for the defined benefit pension plans, are also participating employers of the Systems. The administrative expenses of the Systems are included in the deductions to the Systems' fiduciary net position. While the employer contributions of the other participating employers are funded from outside revenue sources, the employer contributions of PSRS and PEERS are funded from sources already recognized as revenues - earnings on plan investments. Attempting to allocate a portion of the net pension liability to PSRS and PEERS would result in an allocation of the net pension liability to the other participating employers.

Accordingly, PSRS and PEERS will exclude its contributions from the employer proportionate share calculation for the reporting of a net pension liability, by assigning itself a proportionate share of 0%.

Section 457 Deferred Compensation Plans

A voluntary Section 457 deferred compensation plan is administered to provide additional retirement benefits for employees. The plan provides for employer-matching contributions up to a set maximum. The total contributions are subject to the limitations established in IRC Section 457. The Board of Trustees has authority to establish the employer contribution levels. For most employees, the System will match $50 plus 0.52% of salary per month. For certain employees, the System will make employer-paid contributions equal to annual limitations established in IRC Section 457, if eligible. This is governed by individual employment contracts as approved by the Board of Trustees.

All employees immediately vest in the employer-matching and employer-paid contributions. Employer-matching contributions totaled $129,717 and employer-paid contributions totaled $66,500 for the 2022 fiscal year. Employee contributions totaled $619,524 for the 2022 fiscal year. Employer-matching contributions totaled $127,544 and employer-paid contributions totaled $68,250 for the 2021 fiscal year. Employee contributions totaled $511,560 for the 2021 fiscal year.

Maintenance of individual member accounts and custody of assets have been contracted to a third-party administrator and investment custodian. Total contributions are sent directly to the third-party administrator by the employer. Employees can self-direct investments of their contributions and their respective share of matching contributions in a number of investment options. Because the System does not hold the plan's assets and does not have significant administrative responsibilities, the plan's assets and changes in net position are not reported in the Systems' financial statements.

The Systems established an unfunded Section 457(f) non-qualified deferred compensation plan for certain employees. The plan is subject to Internal Revenue Code section 457(f), and to the extent applicable, Internal Revenue Code section 409A. Employees approved for participation in the plan by the Systems' Board of Trustees may acquire a vested interest in a deferred compensation award which is credited to the account of the member under terms approved by the Board of Trustees. The value of the member's account shall be subject to a risk of forfeiture based on the applicable vesting schedule determined for the member. As of June 30, 2022, employees had a vested interest under the plan of $445,495 and disbursements of $140,013 were made from the plan for the year then ended.

Section 401(a) Defined Contribution Plan

The Systems established a 401(a) defined contribution plan for certain employees. The employees are approved for participation in the plan by the Systems' Board of Trustees. The plan is a tax qualified plan under Section 401(a) of the Internal Revenue Code and all contributions by or on behalf of employees are tax deferred until time of withdrawal. All employees immediately vest in employer-paid contributions. Employer-paid contributions totaled $174,000 for the 2022 fiscal year.

Maintenance of individual member accounts and custody of assets have been contracted to a third-party administrator and investment custodian. Total contributions are sent directly to the third-party administrator by the employer. Employees can self-direct investments of their contributions in a number of investment options. Because the System does not hold the plan's assets and does not have significant administrative responsibilities, the plan's assets and changes in net position are not reported in the Systems' financial statements.

Note 7 – Other Post-Employment Benefit Plans

Post-Employment Staff Retiree Healthcare Plan

Plan Description, Funding Policy and Benefits Provided **–** The Public School Retirement System of Missouri Staff Retiree Healthcare Program (SRHP) is a single-employer defined benefit other post-employment benefit (OPEB) plan administered by PSRS. SRHP is administered as required by RSMo 169.590. SRHP provides a healthcare premium implicit rate subsidy to eligible staff retirees and their dependents provided they pay 100% of the blended healthcare premium. The blended healthcare premium is based on all active and retired employees. Retiree healthcare benefits are funded on a pay-as-you-go basis, with premiums determined annually. Therefore, no formal trust has been established for the SRHP. The PSRS/PEERS Board of Trustees determines the funding of benefits and any benefit amendments. There is no continuing obligation to provide benefits beyond each calendar year. SRHP does not issue a stand-alone public financial report.

Employees covered by benefit terms:

Retirees and spouses of retirees receiving benefits	13
Active employees	147
Total	160

OPEB Liability **–** The components of the net OPEB Liability of the SRHP as of June 30, 2022 are as follows:

Total OPEB Liability - Beginning of the year	$	4,394,228
Service Costs		195,978
Interest Costs		71,403
Experiences (gains) losses		(145,912)
Assumption changes		(1,492,405)
Plan amendments		—
Benefit payments		(26,321)
Total OPEB Liability - End of year	$	2,996,971
OPEB Plan Fiduciary Net Position	$	—
Net OPEB Liability	$	2,996,971

OPEB Expense **–** The components of the OPEB expense for the year ended June 30, 2022 are as follows:

Service Costs	$	195,978
Plan Amendments		—
Interest Costs		71,403
Recognition of deferred (inflows) outflows of resources related to:		
Liability experiences (gains) losses		9,937
Assumption changes (gains) losses		(204,792)
Total Recognition of deferred (inflows) outflows of resources		(194,855)
Total collective OPEB expense recognized	$	72,526

Actuarial Method and Assumptions **–** The total OPEB liability was determined by an actuarial valuation as of June 30, 2022. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial assumptions and methods used in the valuation are based on prior plan experience and industry trends. The nature of the plan design and overall plan size does not allow for full scale periodic experience studies; therefore, such a study has not been conducted. Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and healthcare cost trends. Amounts determined regarding the total OPEB liability and expense are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

In the June 30, 2022 actuarial valuation, the following actuarial assumptions and methods were used:

Post-Employment Health Plan

Measurement date	June 30, 2022
Valuation date	June 30, 2022
Actuarial cost method	Entry Age Normal
Actuarial value of assets	No Assets (pay-as-you-go)
Amortization method	Level Percent Open
Discount rate	1.56% per year effective June 30, 2021 3.72% per year effective June 30, 2022
Wage inflation	2.50% per year
Healthcare trend rate	6.00% for fiscal year 2023, decreasing by one-quarter percentage point per year down to 4.75% in 2028, decreasing to 4.60% in 2029, and decreasing to an ultimate rate of 4.50% in 2030 and thereafter.
Mortality	
Active members	Based on Experience-adjusted Pub-2010 Mortality Tables with generational projections using the MP-2020 Improvement Scale.
Disabled and Non-disabled retirees and beneficiaries	Based on Experience-adjusted Pub-2010 Mortality Tables with generational projections using the MP-2020 Improvement Scale.

***Discount Rate* -** GASB Statement No. 75 requires plans not administered through a trust to utilize the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The Systems utilized the US. General Obligation AA Municipal Bond Yield Curve for 20 years for the June 30, 2022 and 2021 valuations. The June 30, 2022 rate was 3.72% and the June 30, 2021 rate utilized was 1.56%. The movement in the yield on the 20 Year US. General Obligation AA Municipal Bond is considered an assumption change for reporting purposes.

***Deferred Inflows and Outflows of Resources* -** As of June 30, 2022, the Systems reported deferred outflows of resources and deferred inflows of resources from the following sources related to the SRHP:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Balance of Deferred Outflows and Inflows Due to:		
Differences between expected and actual experience	$ 222,897	$ —
Changes of assumptions	—	1,628,963
Total	$ 222,897	$ 1,628,963

Amounts reported as collective deferred (inflows) /outflows of resources are to be recognized in pension expense as follows:

Year Ending June 30:		
	2023	$ 194,855
	2024	194,855
	2025	194,855
	2026	194,855
	2027	183,128
	Thereafter	443,518
		$ 1,406,066

Sensitivity of the net OPEB liability to changes in the discount rate and health care cost trend rate – The following table presents the sensitivity of the net OPEB liability to changes in the discount rate. The net OPEB liability calculated using the discount rate of 3.72% is presented as well as what the net OPEB liability would be using a discount rate that is 1.0% lower (2.72%) or 1.0% higher (4.72%) than the current rate.

Discount Rate Sensitivity			
	1% Decrease (2.72%)	Current Rate (3.72%)	1% Increase (4.72%)
Net OPEB Liability	$ 3,342,636	$ 2,996,971	$ 2,687,941

The following table presents the sensitivity of the net OPEB liability to changes in the healthcare trend rate. The net OPEB liability calculated using the healthcare trend rate of 6.0% is presented as well as what the net OPEB liability would be using a healthcare trend rate that is 1.0% lower (5.0%) or 1.0% higher (7.0%) than the current rate.

Trend Rate Sensitivity			
	1% Decrease (5.0%)	Current Rate (6.0%)	1% Increase (7.0%)
Net OPEB Liability	$ 2,623,539	$ 2,996,971	$ 3,438,244

PSRS maintains a Post-Employment Health Plan ("PEHP") for employees. Upon termination, an employee will receive payment at the rate of one day of pay for each two days of accrued sick leave up to 100 days of accrued sick leave (50 days paid). Any days above 100 will be forfeited. All payments under the PEHP in excess of $1,000 will be transferred into a PEHP account which can be used to pay health insurance premiums for the employee or dependent at any time in the future. If an employee is retiring, the payments can be transferred back to PSRS on a monthly basis to cover the cost of health insurance for the retiree. The amount paid into the PEHP was $92,018 for ten employees during 2022.

Note 8 – Risk Management

The Systems are exposed to various risks of loss related to natural disasters, errors and omissions, loss of assets, torts, etc. The Systems have chosen to cover such losses through the purchase of commercial insurance. There have been no material insurance claims filed or paid during the past three years.

The Systems have a disaster recovery plan that provides for continued computer operations at a remote location should the retirement office be unavailable for normal operations.

Note 9 – Commitments and Contingencies

Commitments to the future purchase of investments at June 30, 2022 totaled $1,310,273,546.

Total unfunded capital commitments to private real estate, private equity and other alternative investments totaled approximately $7.8 billion as of June 30, 2022. The unfunded commitments are not recorded in the Statements of Fiduciary Net Position.

Certain legal proceedings are pending with PSRS and PEERS arising from normal activities. Although unable to predict the outcome of these matters, the Systems believe the final outcome of these actions will not have a material adverse effect on the Systems' financial statements.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri
Required Supplementary Information
Schedules of Changes in the Employers' Net Pension Liability

Public School Retirement System of Missouri

Year ended:		June 30, 2022		June 30, 2021		June 30, 2020		June 30, 2019
Total pension liability								
Service cost	$	859,683,772	$	859,537,572	$	845,283,640	$	830,084,321
Interest cost		3,811,621,348		3,682,226,376		3,559,151,521		3,466,455,926
Difference between actual and expected experience		958,073,983		957,100,081		75,988,120		(314,439,382)
Assumption changes		—		590,572,160		—		—
Plan amendments		—		—		—		—
Benefit payments		(3,058,416,178)		(2,896,159,765)		(2,813,232,110)		(2,710,273,502)
Net change in total pension liability		2,570,962,925		3,193,276,424		1,667,191,171		1,271,827,363
Total pension liability - beginning of year	$	52,834,296,831	$	49,641,020,407	$	47,973,829,236	$	46,702,001,873
Total pension liability - end of year (a)	$	55,405,259,756	$	52,834,296,831	$	49,641,020,407	$	47,973,829,236
Plan Fiduciary Net Position								
Employer contributions	$	764,348,407	$	745,638,245	$	724,995,473	$	712,545,096
Member contributions		807,545,968		779,834,058		757,916,937		747,402,726
Net investment return		(1,451,263,667)		11,291,720,999		1,457,518,290		2,595,865,535
Benefit payments, including refunds of member contributions		(3,058,416,178)		(2,896,159,765)		(2,813,232,110)		(2,710,273,502)
Administrative and other expenses		(11,679,122)		(10,818,620)		(10,653,288)		(11,326,398)
Net change in plan fiduciary net position		(2,949,464,592)		9,910,214,917		116,545,302		1,334,213,457
Plan fiduciary net position - beginning of year	$	50,620,519,084	$	40,710,304,167	$	40,593,758,865	$	39,259,545,408
Plan fiduciary net position - end of year (b)	$	47,671,054,492	$	50,620,519,084	$	40,710,304,167	$	40,593,758,865
Net pension liability - end of year (a-b)	$	7,734,205,264	$	2,213,777,747	$	8,930,716,240	$	7,380,070,371

Public Education Employee Retirement System of Missouri

Year Ended:		June 30, 2022		June 30, 2021		June 30, 2020		June 30, 2019
Total pension liability								
Service cost	$	181,174,916	$	181,297,752	$	173,676,697	$	170,543,513
Interest cost		478,838,864		457,694,318		436,863,559		417,341,777
Difference between actual and expected experience		159,800,719		98,736,815		(286,057)		(10,635,802)
Assumption changes		—		84,245,144		—		—
Plan amendments		—		—		—		—
Benefit payments		(381,960,501)		(350,520,890)		(330,337,694)		(310,242,399)
Net change in total pension liability		437,853,998		471,453,139		279,916,505		267,007,089
Total pension liability - beginning of year	$	6,560,854,343	$	6,089,401,204	$	5,809,484,699	$	5,542,477,610
Total pension liability - end of year (a)	$	6,998,708,341	$	6,560,854,343	$	6,089,401,204	$	5,809,484,699
Plan Fiduciary Net Position								
Employer contributions	$	135,180,782	$	126,877,255	$	124,544,728	$	120,042,046
Member contributions		144,214,603		134,324,324		131,335,977		126,609,105
Net investment return		(189,300,233)		1,431,016,967		181,855,037		319,773,260
Benefit payments, including refunds of member contributions		(381,960,501)		(350,520,890)		(330,337,694)		(310,242,399)
Administrative and other expenses		(7,706,071)		(7,379,579)		(7,077,789)		(7,423,689)
Net change in plan fiduciary net position		(299,571,420)		1,334,318,077		100,320,259		248,758,323
Plan fiduciary net position - beginning of year	$	6,453,161,951	$	5,118,843,874	$	5,018,523,615	$	4,769,765,292
Plan fiduciary net position - end of year (b)	$	6,153,590,531	$	6,453,161,951	$	5,118,843,874	$	5,018,523,615
Net pension liability - end of year (a-b)	$	845,117,810	$	107,692,392	$	970,557,330	$	790,961,084

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
$ 792,276,388	$ 740,176,751	$ 842,548,463	$ 836,085,151	$ 849,712,130
3,346,220,624	3,198,060,384	3,263,288,365	3,019,050,250	2,885,182,982
137,516,335	60,942,067	(641,098,601)	598,417,056	226,591,816
531,202,248	1,279,805,826	100,247,551	—	—
—	—	—	—	—
(2,606,985,013)	(2,521,832,399)	(2,430,906,732)	(2,326,196,773)	(2,236,468,407)
2,200,230,582	2,757,152,629	1,134,079,046	2,127,355,684	1,725,018,521
$ 44,501,771,291	$ 41,744,618,662	$ 40,610,539,616	$ 38,483,183,932	$ 36,758,165,411
$ 46,702,001,873	$ 44,501,771,291	$ 41,744,618,662	$ 40,610,539,616	$ 38,483,183,932
$ 696,970,398	$ 684,857,718	$ 670,794,045	$ 656,924,899	$ 643,989,869
726,996,161	719,625,373	704,785,734	689,187,215	679,390,918
3,173,735,918	4,104,123,251	533,180,245	1,447,169,205	4,927,198,588
(2,606,985,013)	(2,521,832,399)	(2,430,906,732)	(2,326,196,773)	(2,236,468,407)
(11,418,119)	(10,497,712)	(11,562,965)	(10,013,601)	(8,919,201)
1,979,299,345	2,976,276,231	(533,709,673)	457,070,945	4,005,191,767
$ 37,280,246,063	$ 34,303,969,832	$ 34,837,679,505	$ 34,380,608,560	$ 30,375,416,793
$ 39,259,545,408	$ 37,280,246,063	$ 34,303,969,832	$ 34,837,679,505	$ 34,380,608,560
$ 7,442,456,465	$ 7,221,525,228	$ 7,440,648,830	$ 5,772,860,111	$ 4,102,575,372

June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
$ 161,028,014	$ 150,975,958	$ 161,391,660	$ 156,599,641	$ 159,672,364
397,675,858	374,497,203	372,184,628	333,780,285	315,131,402
117,686	3,076,923	(51,257,557)	45,518,402	(14,308,876)
61,921,295	140,420,925	65,420,724	—	—
—	—	—	—	—
(287,634,108)	(269,268,101)	(250,390,477)	(235,070,181)	(216,624,810)
333,108,745	399,702,908	297,348,978	300,828,147	243,870,080
$ 5,209,368,865	$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832	$ 3,967,618,752
$ 5,542,477,610	$ 5,209,368,865	$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832
$ 115,103,143	$ 111,239,585	$ 106,717,021	$ 103,624,310	$ 100,699,735
121,467,850	118,446,790	114,257,497	110,443,660	106,420,656
381,523,965	485,046,867	60,317,387	163,719,526	544,154,941
(287,634,108)	(269,268,101)	(250,390,478)	(235,070,010)	(216,624,810)
(7,113,566)	(6,377,808)	(6,981,573)	(5,629,551)	(4,840,432)
323,347,284	439,087,333	23,919,854	137,087,935	529,810,090
$ 4,446,418,008	$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886	$ 3,316,512,796
$ 4,769,765,292	$ 4,446,418,008	$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886
$ 772,712,318	$ 762,950,857	$ 802,335,282	$ 528,906,158	$ 365,165,946

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Employers' Net Pension Liability

Public School Retirement System of Missouri

Year Ended	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position - Restricted for Pensions (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Payroll (c)	Employers' NPL as a % of Covered Payroll ((a-b)/c)
6/30/14	$ 38,483,183,932	$ 34,380,608,560	$ 4,102,575,372	89.3%	$ 4,425,567,630	92.7%
6/30/15	40,610,539,616	34,837,679,505	5,772,860,111	85.8%	4,508,241,581	128.1%
6/30/16	41,744,618,662	34,303,969,832	7,440,648,830	82.2%	4,556,137,282	163.3%
6/30/17	44,501,771,291	37,280,246,063	7,221,525,228	83.8%	4,655,169,121	155.1%
6/30/18	46,702,001,873	39,259,545,408	7,442,456,465	84.1%	4,759,665,456	156.4%
6/30/19	47,973,829,236	40,593,758,865	7,380,070,371	84.6%	4,844,248,703	152.3%
6/30/20	49,641,020,407	40,710,304,167	8,930,716,240	82.0%	4,919,286,103	181.5%
6/30/21	52,834,296,831	50,620,519,084	2,213,777,747	95.8%	5,039,838,429	43.9%
6/30/22	55,405,259,756	47,671,054,492	7,734,205,264	86.0%	5,140,286,466	150.5%

Public Education Employee Retirement System of Missouri

Year Ended	Total Pension Liability (TPL) (a)	Plan Fiduciary Net Position - Restricted for Pensions (b)	Net Pension Liability (NPL) (a - b)	Plan Fiduciary Net Position as a % of TPL (b/a)	Covered Payroll (c)	Employers' NPL as a % of Covered Payroll ((a-b)/c)
6/30/14	$ 4,211,488,832	$ 3,846,322,886	$ 365,165,946	91.3%	$ 1,442,700,979	25.3%
6/30/15	4,512,316,979	3,983,410,821	528,906,158	88.3%	1,469,771,528	36.0%
6/30/16	4,809,665,957	4,007,330,675	802,335,282	83.3%	1,519,081,146	52.8%
6/30/17	5,209,368,865	4,446,418,008	762,950,857	85.4%	1,558,183,433	49.0%
6/30/18	5,542,477,610	4,769,765,292	772,712,318	86.1%	1,636,007,948	47.2%
6/30/19	5,809,484,699	5,018,523,615	790,961,084	86.4%	1,665,654,047	47.5%
6/30/20	6,089,401,204	5,118,843,874	970,557,330	84.1%	1,732,243,294	56.0%
6/30/21	6,560,854,343	6,453,161,951	107,692,392	98.4%	1,758,535,339	6.1%
6/30/22	6,998,708,341	6,153,590,531	845,117,810	87.9%	1,864,704,185	45.3%

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Employer Contributions

Public School Retirement System of Missouri

Year Ended June 30	Actuarially Determined Contribution	Actual Employer Contributions	Contribution Excess/ (Deficiency)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2013	$ 507,232,268	$ 634,040,335	$ 126,808,067	$ 4,372,691,966	14.50%
2014	608,459,393	643,989,869	35,530,476	4,441,309,441	14.50%
2015	666,438,984	656,924,899	(9,514,085)	4,530,516,545	14.50%
2016	643,155,536	669,953,683	26,798,147	4,620,370,228	14.50%
2017	642,821,624	684,857,718	42,036,094	4,723,156,676	14.50%
2018	533,062,186	696,970,397	163,908,211	4,806,692,393	14.50%
2019	628,513,916	712,545,096	84,031,180	4,914,104,110	14.50%
2020	679,495,757	724,995,473	45,499,716	4,999,968,779	14.50%
2021	702,442,650	745,638,245	43,195,595	5,142,332,724	14.50%
2022	756,968,491	764,348,407	7,379,916	5,271,368,324	14.50%

Public Education Employee Retirement System of Missouri

Year Ended June 30	Actuarially Determined Contribution	Actual Employer Contributions	Contribution Excess/ (Deficiency)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2013	$ 87,013,816	$ 97,059,313	$ 10,045,497	$ 1,414,858,790	6.86%
2014	98,497,846	100,699,735	2,201,889	1,467,926,166	6.86%
2015	105,739,092	103,624,310	(2,114,782)	1,510,558,455	6.86%
2016	104,011,593	106,654,638	2,643,045	1,554,732,332	6.86%
2017	108,807,233	111,239,585	2,432,352	1,621,568,294	6.86%
2018	97,653,104	115,103,143	17,450,039	1,677,888,382	6.86%
2019	113,567,475	120,042,046	6,474,571	1,749,884,052	6.86%
2020	119,461,270	124,544,728	5,083,458	1,815,520,816	6.86%
2021	123,733,066	126,877,255	3,144,189	1,849,522,668	6.86%
2022	134,786,669	135,180,782	394,113	1,970,565,335	6.86%

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Required Supplementary Information

Schedules of Investment Returns

Year ended June 30:	2022	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of all investment fees and expenses	-3.0%	28.4%	3.7%	6.9%	8.7%	12.3%	1.6%	4.3%	16.7%
Time-weighted rate of return, net of all investment fees and expenses	-3.1%	28.5%	3.7%	6.9%	8.7%	12.3%	1.6%	4.3%	16.7%

Note: This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Notes to the Schedules of Required Supplementary Information

The information presented in the required supplementary schedule was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Changes of assumptions	During fiscal year 2021, comprehensive experience studies were conducted. All economic and demographic assumptions were reviewed and updated where appropriate based on the results of the studies and were effective with the June 30, 2021 valuations. As part of the studies, the payroll growth, salary increases and mortality rates were adjusted to more closely reflect actual experience. The investment rate of return was reduced from 7.5% to 7.3% and the inflation rate was adjusted to 2.0% from 2.25%. The adjustment in inflation also resulted in an adjustment to the COLA assumptions. No changes in assumptions have occurred from June 30, 2021 to the June 30, 2022 valuations. Additional information is included in the *Actuarial Section* of this report.
Actuarial Methods and Assumptions:	The actuarially determined contribution rates in the schedule of employers' contributions are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in the schedule.
Actuarial Cost Method	Entry Age Normal Level Percent of Payroll
Amortization Method	Closed, level percent for 30 years
Remaining amortization period	
PSRS	20.0 years
PEERS	20.4 years
Asset valuation method	5-year smoothing of actual returns above or below expected returns
Measurement Date	June 30, 2022
Valuation Date	June 30, 2022
Investment Rate of Return	7.30%
Inflation	2.00%
Total Payroll Growth	
PSRS	2.25% per annum, consisting of 2.00% inflation, 0.125% additional inflation due to the inclusion of health care costs in pension earnings, and 0.125% of real wage growth.
PEERS	2.50% per annum, consisting of 2.00% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, and 0.25% of real wage growth.
Individual Salary Growth	
PSRS	2.625% - 8.875%, depending on service and including 2.00% inflation, 0.125% additional inflation due to the inclusion of health care costs in pension earnings, 0.125% of real wage growth for productivity, and real wage growth for merit.
PEERS	3.25% - 9.75%, depending on service and including 2.00% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, 0.25% of real wage growth for productivity, and real wage growth for merit.
Cost-of-Living Increases	Given that the actual increase in the CPI-U index from June 2021 to June 2022 was 9.06%, the Board approved an actual cost-of-living adjustment ("COLA") as of January 1, 2023 of 5.00%, in accordance with the Board's funding policy and Missouri statutes, compared to an assumed COLA of 2.00%. Future COLAs assumed in the valuation are 2.00% as of January 1, 2024 and 1.35% each January 1, thereafter. This COLA assumption is based on the 20-year stochastic analysis of inflation performed in the 2021 experience study, short-term expectation of COLA at the time of the experience study, and application of the Board's funding policy to those expectations. The assumption was re-evaluated for the current valuations in light of the current inflationary environment, short- and long-term inflation assumptions reflected in the capital market forecasts from various investment advisors and analysts, and volatility of capital market assumptions in recent years. Based on this information, no change was made to the COLA assumption for the June 30, 2022 valuations. Additional information is included in the Actuarial Section of this report. The COLA is compounded annually, beginning on the second January after retirement for PSRS and capped at an 80% lifetime increase. The COLA is compounded annually, beginning on the fourth January after retirement for PEERS and capped at an 80% lifetime increase.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Notes to the Schedules of Required Supplementary Information - Continued

Measurement Date June 30, 2022

Valuation Date June 30, 2022

Mortality Assumption

Actives:

PSRS — Experience-adjusted Pub-2010 Teachers Mortality Table for Employees projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

PEERS — Experience-adjusted Pub-2010 General (Below-Median Income) Mortality Table for Employees projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

Non-Disabled Retirees, Beneficiaries and Survivors:

PSRS — Mortality rates for non-disabled retirees and beneficiaries are based on the Pub-2010 Teachers Mortality Table for Healthy Retirees and the Pub-2010 Teachers Mortality Table for Contingent Survivors, respectively. The tables are projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the experience-based adjustment factors shown in the tables below at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

	Males	Females
Non-Disabled	1.10	1.04
Contingent	1.18	1.07

PEERS — Mortality rates for non-disabled retirees and beneficiaries are based on the Pub-2010 General (Below-Median Income) Mortality Table for Healthy Retirees and the Pub-2010 General (Below-Median Income) Mortality Table for Contingent Survivors, respectively. The tables are projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the experience-based adjustment factors shown in the tables below at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

	Males	Females
Non-Disabled	1.13	0.94
Contingent	1.01	1.07

Disabled Retirees

PSRS — Experience-adjusted Pub-2010 Teacher Disability Mortality Table, projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

PEERS — Experience-adjusted Pub-2010 General Disability Mortality Table projected from 2010 to 2018 using the MP-2020 improvement scale and multiplied by the healthy retiree experience-based adjustment factors at all ages for both males and females, with generational improvement after 2018 using the MP-2020 improvement scale.

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Required Supplementary Information

Staff Retiree Health Plan – Defined Benefit OPEB Plan

Schedule of Changes in the Net OPEB Liability and Related Ratios

Year ended:	June 30, 2022	June 30, 2021	June 30, 2020	June 30, 2019	June 30, 2018
Total OPEB Liability - beginning of the year	$ 4,394,228	$ 4,129,740	$ 3,885,983	$ 3,788,863	$ 2,050,100
Remeasurement of June 30, 2017 OPEB liability	—	—	—	—	1,479,740
Service cost	195,978	185,640	163,813	151,794	152,625
Interest cost	71,403	77,125	98,507	132,375	116,484
Experience (gains) losses	(145,912)	45,526	12,551	74,147	110,476
Assumption changes	(1,492,405)	65,334	60,354	(259,346)	(104,653)
Plan amendments	—	—	—	—	—
Benefit payments	(26,321)	(109,137)	(91,468)	(1,850)	(15,909)
Net change in total OPEB liability	$ 2,996,971	$ 4,394,228	$ 4,129,740	$ 3,885,983	$ 3,788,863
OPEB Plan Fiduciary Net Position	$ —	$ —	$ —	$ —	$ —
Net OPEB Liability - end of the year	$ 2,996,971	$ 4,394,228	$ 4,129,740	$ 3,885,983	$ 3,788,863
Covered-Employee Payroll	$ 15,447,108	$ 12,938,669	$ 12,645,475	$ 12,025,626	$ 10,742,062
Employer's Net OPEB Liability as a Percentage of Covered Payroll	19.4%	34.0%	32.7%	32.3%	35.3%

Notes to the Schedule of Required Supplementary Information

The plan is funded on a pay-as-you-go basis and is not administered by a formal trust. There were no plan assets as of the date of the most recent valuation. Since there is no invested plan assets held in trust to the finance the OPEB obligation, the discount rate is the long-term expected rate of return on the U.S. General Obligation AA Municipal Bond Yield Curve.

This schedule is intended to show information for ten years. Additional years will be displayed as they become available.

Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri

Schedules of Administrative Expenses

for the year ended June 30, 2022

	PSRS	PEERS	Combined Totals
Personnel services	$ 7,004,589	$ 4,789,771	$ 11,794,360
Professional services			
Actuarial services	264,426	214,259	478,685
Legal services	399,999	59,806	459,805
Financial audit services	55,200	36,800	92,000
Other consultants	62,271	41,514	103,785
Technology consulting	183,401	122,267	305,668
Legislative consulting	40,500	27,000	67,500
Insurance consulting	7,200	4,800	12,000
Total professional services	1,012,997	506,446	1,519,443
Communications			
Information and publicity	218,563	177,307	395,870
Postage	301,079	228,839	529,918
Member education	12,780	8,520	21,300
Telephone	45,635	30,429	76,064
Total communications	578,057	445,095	1,023,152
Miscellaneous			
Building and utilities	112,747	75,165	187,912
Insurance	84,877	56,585	141,462
Office	1,104,109	729,134	1,833,243
Staff development	40,451	26,019	66,470
Miscellaneous	690,292	446,039	1,136,331
Total miscellaneous	2,032,476	1,332,942	3,365,418
Depreciation expense	1,037,464	631,817	1,669,281
Total administrative expenses	$ 11,665,583	$ 7,706,071	$ 19,371,654

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Schedules of Professional Services

for the year ended June 30, 2022

	PSRS	PEERS	Combined Totals
Actuarial services	$ 264,426	$ 214,259	$ 478,685
Legal expenses	399,999	59,806	459,805
Financial audit services	55,200	36,800	92,000
Other consulting	62,271	41,514	103,785
Technology consulting	183,401	122,267	305,668
Legislative consulting	40,500	27,000	67,500
Insurance consulting	7,200	4,800	12,000
Total professional services	$ 1,012,997	$ 506,446	$ 1,519,443

Public School Retirement System of Missouri and
Public Education Employee Retirement System of Missouri

Schedules of Investment Expenses

for the year ended June 30, 2022

	PSRS	PEERS	Combined Totals
Investment management expenses			
U.S. Treasuries and TIPS	$ 4,780,315	$ 590,827	$ 5,371,142
U.S. public equities	52,807,998	6,526,833	59,334,831
Non-U.S. public equities	37,934,408	4,688,521	42,622,929
Public debt	1,438,723	177,820	1,616,543
Private equity	332,460,996	41,090,684	373,551,680
Private credit	34,476,792	4,261,177	38,737,969
Private real estate	185,377,592	22,911,838	208,289,430
Hedged assets	97,466,118	12,046,373	109,512,491
Total investment management expenses	746,742,942	92,294,073	839,037,015
Investment consultant fees	4,757,438	587,997	5,345,435
Custodial bank fees	1,083,138	133,871	1,217,009
Investment staff expenses	7,266,394	958,650	8,225,044
Commission recapture income	(39,753)	(5,094)	(44,847)
Total investment expenses	$ 759,810,159	$ 93,969,497	$ 853,779,656
Security lending expenses			
Agent fees	$ 322,988	$ 41,695	$ 364,683
Broker rebates	(485,947)	(62,731)	(548,678)
Total security lending expenses	$ (162,959)	$ (21,036)	$ (183,995)

During economic downturns and times of high inflation, investment markets may experience long periods of volatility. Both national and local economies are strained, and businesses of all sizes may struggle. During such times, local spending of pension income on things like housing, food, medicine and clothing have an important stabilizing effect as this spending ripples through communities to positively impact the entire state's economy.

Investment Section

Letter from Russell Investments

Russell Investments

November 15, 2022

To the Members of the Board:

Fiscal year 2022 was eventful between post-global pandemic economic re-opening, a war in Ukraine and historic levels of inflation. This resulted in increased market volatility. In the second half of the fiscal year alone, financial markets set many records, none of them positive; equities experienced the worst first half of a year since 1970, while bonds experienced the worst first half of a year performance in more than a century.

Today, investors remain worried about high inflation, slowing growth and the potential for an aggressive Fed to cause a recession. The path of inflation and rates will continue to meaningfully impact the behavior of capital markets and consumers over the coming fiscal year.

For fiscal year ended June 30, 2022, the Systems' earned an investment return of -3.1%, net of all fees and expenses, and ranked in the top quartile of U.S. Public Plan peers with assets greater than $1 billion[1]. The FY22 investment return substantially outperformed the policy benchmark return of -10.3% for the second year in a row. PSRS/PEERS's investment return was supported by diversification into alternative asset classes and superior alpha (excess return) from almost every asset class. Unsurprisingly, given the market environment, Public Equity beta and Public Bond beta had a negative impact on trailing 1-year total returns.

Early in 2022, Russell Investments conducted an asset/liability study for the Systems. The study was a collective effort by Staff and Russell Investments. The asset allocation study considered future contributions, funded ratios, liabilities, and negative cash flows. Additional key considerations included the fact that:

1. Every basis point earned through implementation of the Investment Policy reduces the need for future contribution, and
2. Achieving a return with lower volatility adds real value to the Systems (i.e., path matters!)

As a result of the study a modest change to the asset allocation was recommended and accepted by the Board. The recommendation was for a 5% increase in the Private Equity allocation and a 5% decrease in the Safe Assets allocation. The recommendation was designed to take advantage of the Systems' unique, extremely well-established, and capable private markets team, who have a long-term and proven record of adding value to the Systems. The recommendation was also made based on the expectation that the new asset allocation would enhance expected return within risk parameters deemed appropriate by the Board.

The resulting new asset allocation targets adopted at the April 2022 board meeting were:

- 45% Public Risk Assets,
- 15% Safe Assets, and
- 40% Private Risk Assets.

We expect the new asset allocation, once the new targets are reached, to serve the Systems' members very well over the long-term.

Lastly, we at Russell have enjoyed reengaging with Missouri PSRS/PEERS, and as always are looking forward to the coming year.

Michael Hall
Managing Director

[1] *Source: Investment Metrics, LLC*

1301 2nd Avenue
18th Floor
Seattle, WA 98101

Tel 206-505-7877
Fax 206-505-3495
Toll-free 800-426-7969

russellinvestments.com
Seattle / New York / Toronto / London / Paris / Amsterdam / Dubai / Sydney / Melbourne / Auckland / Seoul / Tokyo / Shanghai / Beijing

Letter from the Chief Investment Officer

PSRS/PEERS
PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

November 30, 2022

To the Members of the Systems:

On behalf of the PSRS and PEERS Board of Trustees and the internal Investment Staff, I present the following report on the Systems' investments for the fiscal year ended June 30, 2022.

Elevated inflation levels throughout the world, rising interest rates and a slowing economy led to historically negative returns for both stocks and bonds in fiscal year 2022. Global stocks declined almost 16% for the year while bonds declined almost 9%. The Systems' diversification into non-traditional assets supported the fiscal year 2022 total fund performance as the PSRS and PEERS investment return was -2.8% (or -3.1% net of all fees and expenses).

Key Points within this year's Financial Report

As you review the financial information in this report for the fiscal year ended June 30, 2022, it is important to be aware of the following points:

- The PSRS and PEERS investment return for fiscal year 2022, and for every time period for the last ten years, exceeded 70% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion,
- The Systems have generated the investment returns while taking less risk (as measured by standard deviation) than the policy benchmark and less risk than two-thirds of comparable public funds over all time periods,
- The PSRS and PEERS internal Investment Staff and external investment managers added value above the policy benchmark[1] of over $4.0 billion in fiscal year 2022, net of all fees and expenses. This outperformance was due to portfolio construction by internal Investment Staff as well as active management on the part of external managers,
- The PSRS and PEERS investment returns for the last 10-year time period exceeded the return of a passive portfolio of 60% global stocks and 40% bonds by 2.8% per year, resulting in added value above a traditional portfolio of $12.9 billion,
- The investment returns reported throughout this publication are mostly net of investment fees and expenses. The investment return net of all fees and expenses was -3.1% for PSRS and PEERS,
- Investment performance throughout this report is calculated using a time-weighted rate of return based on market values, and
- The total invested assets of both PSRS and PEERS were $53.5 billion on June 30, 2022, making the combined entity larger than all other public retirement plans in the State of Missouri combined, and the 46th largest defined benefit plan in the United States.

[1]*The plan policy benchmark is a standard to measure investment performance and indicates the return of the PSRS/PEERS asset allocation if passive market rates of return were achieved.*

Fiscal Year 2022 Year in Review

The internal Investment Staff, under the direction of the PSRS and PEERS Board of Trustees, has adopted a disciplined and diversified investment portfolio that includes allocations to multiple asset classes. Over time, each specific asset class within the PSRS/PEERS' investment portfolio performs a valuable function.

Traditional asset classes produced historically negative returns in fiscal year 2022, marking the first period in over 40 years where both stocks and bonds declined in a similar fashion. U.S. stocks returned -13.9% for the fiscal year ended June 30, 2022 (as measured by the Russell 3000 Index), non-U.S. developed stocks moved -17.8% lower (as measured by the MSCI EAFE Index), and emerging market stocks declined -25.3% (as measured by the MSCI Emerging Markets Index). Interest rates increased dramatically for the year as the yield on the 10-year Treasury note moved from 1.45% at the beginning of the fiscal year to 3.01% on June 30, 2022. This increase in yield contributed to negative absolute returns for bonds as the Bloomberg U.S. Treasury Index declined -8.9% in fiscal year 2022.

The PSRS and PEERS non-traditional asset classes (private equity, private credit, private real estate and hedged assets) provided strong support to the overall investment return in fiscal year 2022. The Real Estate portfolio represented 11.0% of the total fund assets at fiscal year-end and generated a 29.7% return. Real estate experienced historically good performance in the post COVID-19 (highly inflationary) environment. Increased demand across all real estate sectors coupled with low interest rates drove the strong performance. The Private Equity portfolio was 18.4% of the total fund assets at fiscal year-end and generated a 14.4% return. The Private Credit portfolio was a much smaller portion of total fund assets (4.2%) but also produced a strong absolute return of 11.2% for the year. Finally, the Hedged Asset program produced a slightly negative return (-0.2%) in fiscal year 2022 but offered substantial diversification benefits to the traditional stock and bond investments. The Hedged Asset program fulfilled its objective by providing lower volatility (risk) to the overall portfolio in a down market.

The PSRS and PEERS investment return of -2.8% exceeded the return of the policy benchmark[2] by 7.5%. The significant excess return (alpha) was a direct result of effective implementation through both security selection and portfolio construction. For example, the Systems' Hedged Assets portfolio[3], Non-U.S. Equity portfolio[4] and Private Equity portfolio[5] outperformed their assigned benchmarks by 12.5%, 4.3% and 29.4%, respectively, in fiscal year 2022. From a tactical standpoint, the internal Investment Staff maintained an overweight to cash throughout the year due to rising interest rates. The allocation to cash was additive to performance in a year when bond returns were negative.

Asset/Liability Study

The Systems' external investment consultant (Russell) typically conducts an Asset Liability Study every two to five years for the Systems. Russell conducted the most recent Study in early 2022. An overview of the asset allocation process and a Liquidity Study were presented to the Board of Trustees in February. The recommendations of the Asset Liability Study were presented to the Board and adopted in April. The objective of the Study was to determine the appropriate asset allocation for PSRS and PEERS given the specific liabilities of the Systems.

Through the Asset Liability Study, Russell worked closely with the PSRS and PEERS Investment Staff to develop a number of potential asset allocation scenarios to present to the Board of Trustees. The most effective way to compound wealth is to limit both the volatility and the downside (risk of loss) in a portfolio. As such, both Staff and Russell were comfortable with the current level of risk in the Systems' portfolio and thus recommended asset allocation scenarios with similar levels of total portfolio risk.

[2] *The plan policy benchmark is a standard to measure investment performance and indicates the return of the PSRS/PEERS asset allocation if passive market rates of return were achieved.*
[3] *Benchmark: 50% Bloomberg U.S. Intermediate Credit Index, 25% MSCI ACWI ex U.S. net Index and 25% Russell 3000 Index*
[4] *Benchmark: MSCI ACWI ex U.S. net Index*
[5] *Benchmark: 75% Russell 3000 Index and 25% MSCI ACWI ex U.S. net Index*

Letter from the Chief Investment Officer, continued

A substantial advantage for participants in defined benefit pension plans is the long-term investment horizon. The Systems have embraced this philosophy with both Staff and Russell collectively recommending asset allocation alternatives to the Board that increased the Systems' allocation to longer-dated (private) risk assets. Both a return premium and a diversification benefit are afforded to those investors willing to accept the illiquidity risk within private assets. To that end, increasing private assets in the PSRS/PEERS' total portfolio is expected to result in higher returns with only a modest increase in risk.

The Board of Trustees ultimately adopted a new asset allocation that will increase the allocation to private equity by 5% with a commensurate decrease in the allocation to U.S. Treasury bonds. The Systems began building private investment portfolios (including private equity, private credit and private real estate) in 2003 in order to generate long-term returns superior to the public markets, to take advantage of market inefficiencies, and to increase diversification. The nature of private investing requires a process of portfolio construction that takes years to develop. This is particularly true for a plan with the substantial assets of PSRS and PEERS. Over the years, the Systems have continued to build on this successful investment platform that serves as an alternative to traditional public markets. It is anticipated that the most recent increase in the target allocation for private assets could take a couple of years to implement.

Fiscal Year 2023

As I write this annual letter in late November 2022, we are five months into fiscal year 2023. Volatility has returned to the financial markets and is now at the highest level since the Financial Crisis of 2008-2009. Interest rates continue to move higher and most stock markets retested lows in mid-October. The economy (and the investment markets) remains somewhat fragile due to the continuation of high inflation, Federal Reserve intervention, tight labor markets, supply chain issues, fiscal issues in the United Kingdom and geo-political events. Therefore, as an institutional investor in an uncertain environment, PSRS and PEERS will continue to maintain a balanced asset allocation with a long-term view. We will remain focused on prudently investing in opportunities that will protect the Systems' capital and produce attractive returns over the longer term.

Conclusion

Under the support and guidance of the Board of Trustees, I am confident that the investment program at PSRS and PEERS will continue to meet the long-term investment objectives of the Systems within appropriate levels of risk. Most importantly, I believe the portfolio is well positioned to ensure that our 298,000 retirees, active teachers and school employees will receive the financial security they have earned through their hard work and dedication.

Respectfully,

Craig A. Husting, CFA
Chief Investment Officer

Investment Policy Summary

The Board of Trustees of the Public School Retirement System of Missouri and Public Education Employee Retirement System of Missouri (PSRS and PEERS, also referred to as the Systems) is charged with the responsibility of investing the assets of the Systems in a manner consistent with the fiduciary standards set forth in the 'prudent person' rule. To that end, the Board has adopted the following principles to guide all investment-related decisions:

1. Act in the exclusive interest of the members of the Systems,
2. Maximize total return within prudent risk parameters, and
3. Preserve the long-term purchasing power of the Systems.

The investment portfolios of PSRS and PEERS represent all contributions to the plans, from members and their employers, as well as all net earnings on these assets. These funds are held in support of both current and future liabilities. In total, approximately 63% of every dollar used to pay retirees is generated from investment earnings[1].

The Board of Trustees of PSRS and PEERS approved the commingling of assets for purposes of investment as allowed by state statute in January 2013. In order to implement this change, PSRS and PEERS adopted the Missouri Education Pension Trust Agreement (MEPT), which is managed by the PSRS and PEERS Board of Trustees and Investment Staff. Effective July 1, 2013, the invested assets of the Systems were pooled and invested in MEPT. All assets held by MEPT are for the exclusive benefit of PSRS and PEERS. Each of the Systems has equity in MEPT based on funds contributed and earnings allocated. Earnings of MEPT are allocated based on the average daily balances of each of the respective Systems. Individual investments in MEPT are not specifically identified to the respective Systems. Due to the fact all invested assets are invested in MEPT, the rate of return for each of the Systems is approximately the same. Therefore, the following discussions focus on MEPT in total and not the individual Systems.

[1] *Based on a twenty-five year average for fiscal years 1998-2022.*

Roles and Responsibilities

Board of Trustees

It is the responsibility of the Board of Trustees (Board) to establish and maintain policies and objectives for all aspects of the Systems' investment program including the determination of long-term policies for risk tolerance and asset allocation.

In keeping with its obligation to serve as the governing fiduciary, any changes to the investment policy or investment implementation manuals require the Board's approval.

As one of the largest public pension funds in the United States, the Systems' operational requirements are complex. In order to properly administer the Systems and carry out investment strategies, the Board relies heavily on both internal staff and external service providers. Due to the number of parties involved, their roles as fiduciaries are clearly identified to ensure distinct lines of responsibility and proper controls exist, while providing increased operational efficiency and elimination of duplication of effort.

Executive Director

The Executive Director (Director) is appointed by, and serves at the pleasure of the Board. The Director is responsible for planning, organizing and administering all operations of the Systems under the broad policy guidance and direction of the Board. The Director, with the assistance of the investment staff, monitors the performance of the investment portfolio; ensures that funds are invested in accordance with Board policies; and ensures that proper internal controls are developed to safeguard the assets of the Systems. In fulfilling these responsibilities, the Director relies heavily on the Chief Investment Officer and external asset consultants.

Chief Investment Officer

The Chief Investment Officer (CIO) serves at the pleasure of the Director yet has a direct link to the Board on investment-related issues. The CIO's primary access to the Board includes, but is not limited to, submission of investment reports, information, or communications required by the investment policy and any other information or opinions specifically requested by the Board with regard to the investment program. The CIO is the individual primarily responsible for providing direction for the investment program. It is the CIO's responsibility to work with the Director, the general consultant, specialty consultants, and other external service providers, with the assistance of the internal staff, in advising the Board on policies related to the investment program. The CIO has responsibilities related to hiring and terminating service providers.

Critical functions of the CIO include recommendations for implementation decisions related to the investment plan and for the strategic allocation of the portfolio within broad ranges approved by the Board.

External Asset Consultants

The Systems employ Russell Investments (Russell) as a general consultant and Albourne America, LLC (Albourne), Pathway Capital Management (Pathway) and The Townsend Group (Townsend) as specialty consultants. The Systems conducted a general consultant search during the year resulting in the selection of Russell. Verus was the previous consultant from 2018 to December 2021. Russell is an independent resource available to collaborate with the Board and staff on the investment process. This typically includes regular meetings with the Board to provide an independent perspective on the Systems' goals, structure, performance and external service providers. Additionally, Russell may be involved with the strategic allocation shifts for the portfolio.

The specialty consultants work on specific programs within the overall investment program. Albourne is utilized for the Private Credit, Private Equity, Hedged Assets and Alpha Overlay programs. Pathway is a consultant for the Private Equity and Private Credit programs and Townsend consults on the Private Real Estate program.

External Investment Managers

The Systems employ external investment managers. The external money managers may be structured as public or private entities in the form of a partnership, limited liability company, trust, separately managed account, commingled account, or some other form of operational structure in which assets may be held by an external custodian selected and monitored by the external manager.

Managers are given explicit written directions detailing their particular assignments or they follow the investment program outlined in their offering documents or Limited Partnership Agreements, and will construct and manage investment portfolios that are consistent with the investment philosophy and disciplines for which they were hired. Discretion is delegated to the managers to carry out investment actions as directed by the Systems.

Master Custodian

JP Morgan Chase Bank, NA (JP Morgan) serves as the master custodian for the Systems. The master custodian holds most cash and securities for the Systems, except in cases where investment in a partnership, commingled account, or unique asset class makes it impossible to do so. The Systems thoroughly evaluate the structure of all investments and their custody arrangements. JP Morgan is responsible for providing the official book of record for investment performance reporting and accounting, and serves as an additional layer of risk control in safekeeping the Systems' assets.

Investment Objective

Based on the long-term investment returns available from a well-diversified, prudently invested portfolio, the Board has adopted an objective to achieve a **total nominal investment return of 7.3% with a real rate of return of at least 5.3% per annum over time**.[2] The Board of Trustees revised the long-term investment return objective to 7.3% effective for fiscal year 2022 investment performance. The investment objective was previously 8.0% effective from 1980 through fiscal year 2016, 7.75% effective for fiscal year 2017, 7.6% effective for fiscal year 2018 and 7.5% effective for fiscal year 2019 through fiscal year 2021.

In order to achieve the investment objective, the Systems have developed a portfolio that is prudently invested across a broad array of assets that reflects the long-term nature of the Systems' pension obligations. The principles of diversification, risk control and competitive rates of return provide the framework for selecting an asset allocation that is expected, over longer periods of time and in the aggregate, to give the Systems the most competitive long-term return within a prudent level of risk.

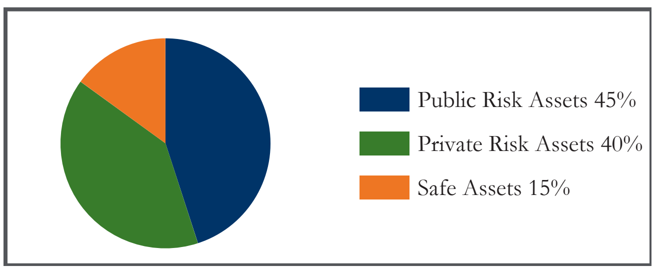
[2] *The real rate of return is the rate by which the long-term total return exceeds the long-term inflation rate. The Board of Trustees shall employ an actuarial consultant for purposes of determining the inflation rate to be used in calculating the pension obligations. The assumed inflation rate as of June 30, 2022 was 2.0% per annum.*

Understanding Risk

Selection of an appropriate asset allocation is one of the most important decisions made by a retirement plan. Within that asset allocation, it is important to not only consider the expected investment return, but also to understand the risks. The importance of risk consideration for institutional investors is critical to long-term success. To that end, the Systems employ an effective and intuitive risk-based approach to setting and reporting the asset allocation decision. The Systems developed a risk-based asset allocation to clearly define the prudent risks taken within its investment portfolios. The Systems consider a variety of risks including, but not limited to, liquidity risk, volatility, tail risk (the possibility that an investment will move much more than expected) and the ability to meet the Systems' assumed rate of return when structuring the portfolio.

This analysis results in an asset allocation to Public Risk Assets, Safe Assets and Private Risk Assets. The target risk-based asset allocation is illustrated in the pie chart below. The Board of Trustees recently increased the Private Risk Assets target by 5% to 40% and proportionately decreased the Safe Assets target to 15%. These changes are discussed further in the following Asset Allocation section. Within each risk allocation, the Systems' investment portfolio includes long-term commitments to specific asset programs.

Target Risk Based Asset Allocation



Asset Allocation

The asset allocation decision is generally regarded as the most important decision in the investment management process since it is crucial to achieving the long-term objectives established by the Board. In that light, it is the Board's responsibility to determine the appropriate policy asset allocation based upon several criteria with input and guidance from internal staff and Russell. These criteria are as follows:

1. The expected rate of return for each asset classification;
2. The expected risk of each asset classification (expressed as the standard deviation of the rate of return);
3. The correlation of returns between asset types;
4. The investment objectives and risk constraints of the Systems (including, but not limited to, liquidity needs and the expected time horizon);
5. The funded ratio and cash flow requirements for PSRS and PEERS; and
6. The impact of the Systems' return volatility on the contribution rate.

2022 Asset Allocation/Liability Study

The internal staff completed an asset allocation/liability study during fiscal year 2022 with the assistance of the Systems' external investment consultant, Russell. The key goal of the asset liability study is the development of an asset allocation that maximizes the likelihood that the investment portfolio assets will, over the long-term planning horizon, fund plan benefits within appropriate risk parameters. The asset/liability study was presented at the April 2022 Board of Trustees meeting and as a result, the Board of Trustees amended the following long-term asset allocation targets: Private Risk Assets increased by 5% to 40% and Safe Assets decreased by 5% to 15%. Within Safe Assets, U.S. Treasuries decreased from 20% to 15% and within Private Risk Assets, Private Equity increased from 16% to 21%.

The allocation to each investment program considers both the risk tolerance of the Systems and the long-term return objective. The new long-term target asset allocation is expected to maintain similar levels of total portfolio risk while allowing for more efficient investment returns. However, given the nature of investing in Private Risk Assets, it is expected to take several years to implement through a disciplined investment approach. The policy benchmarks will change over time as the Systems make meaningful progress to the new long-term targets.

The following chart details the long-term target and interim target asset allocations for fiscal year 2022. The interim policy allocations have been established to reflect the continued funding of Private Risk Assets and the progress towards the Systems' long-term asset allocation objective. For performance measurement purposes, the interim policy will serve as the basis for establishing the total plan policy benchmark until the on-going process of funding Private Risk investments is meaningfully complete.

Target Asset Allocation and Policy Ranges

	Fiscal Year 2022	As Amended in 2022	
Investment Type	**Interim Target**	**Long-Term Target**	**Policy Ranges**
Public Risk Asset Programs			
U.S. Public Equity	24.00%	23.00%	15% - 45%
Public Credit	5.00%	0.00%	0% - 15%
Hedged Assets	6.00%	6.00%	0% - 25%
Non-U.S. Public Equity	16.00%	16.00%	8% - 28%
Total Public Risk Assets	**51.00%**	**45.00%**	**35% 70%**
Safe Assets Programs			
U.S. Treasuries	18.00%	15.00%	0% - 40%
U.S. TIPS	0.00%	0.00%	0% - 30%
Cash & Cash Equivalents	0.00%	0.00%	0% - 10%
Total Safe Assets	**18.00%**	**15.00%**	**10% 40%**
Private Risk Asset Programs			
Private Equity	18.00%	21.00%	4% - 25%
Private Real Estate	10.00%	11.00%	4% - 15%
Private Credit	3.00%	8.00%	0% - 12%
Total Private Risk Assets	**31.00%**	**40.00%**	**10% 45%**
Total Fund	**100.0%**	**100.0%**	

The Board recognizes the cyclical nature of the investment markets and it has allowed the internal staff to capitalize upon opportunities by changing the allocation of each asset class or sub-asset class within broad strategic bands or policy ranges (as indicated in the previous table). The flexibility given to the internal staff in establishing the strategic mix provides opportunities for the Systems to take advantage of changing market conditions. To ensure appropriate controls, the Director, CIO and Russell must unanimously agree upon all material strategic changes prior to implementation.

Total Plan Leverage

The Board of Trustees approved the use of total plan leverage in fiscal year 2020. Leverage may be utilized (through futures, swaps, or other derivative instruments) to efficiently implement portfolio rebalancing and/or to apply modest leverage to total plan assets. The total direct leverage at the fund level shall not exceed 10% of the portfolio.

Performance Objectives and Monitoring Process

Generating a total nominal rate of return net of expenses of at least 7.3% and a real rate of return net of expenses of at least 5.3% per annum is an important consideration in the asset allocation decision and the primary performance objective for the Systems over long periods of time. The need for a long-term focus is necessary to preclude the temptation to overreact to events in the financial markets that have no relevance to long-term asset/liability management of the Systems. The resulting dilemma is the conflicting requirement to evaluate investment policy implementation over shorter time periods while maintaining a long-term focus on meeting the return objectives. In order to determine if the Systems' short-term and long-term objectives are being achieved, the Board evaluates performance relative to policy and strategic benchmarks. The policy benchmarks allow the Systems to be judged by performance relative to a defined set of broad market indices (i.e., the Systems' long-term asset allocation objective). The strategic benchmarks allow the Board to consider the additional value generated from the latitude given to the internal staff to alter the asset class or sub-asset class allocations.

Policy Decisions

The value added through policy decisions is measured by the difference between the policy benchmark return and the actuarial required rate of return objective (defined as Real Return Objective + Inflation). A policy benchmark return greater than the actuarial required rate of return reflects value added. A policy benchmark return less than the actuarial required rate of return reflects losses or shortfalls in performance in funding the liabilities of the Systems. These policy decisions are measured over long periods of time.

Strategy Decisions

Strategy decisions are asset class or sub-asset class allocation choices made by the internal staff to deviate from the policy benchmark weights, with approval from the Director and Russell that the proposed material deviation is in compliance with the Board's investment policy. The value added through the decisions to overweight and/or underweight these sub-asset classes is measured by the difference between the strategic benchmark return and the policy benchmark return. This difference captures the value added by internal staff through asset class or sub-asset class strategic decisions relative to the Board's broad policy allocation decisions. A strategic benchmark return greater than the policy benchmark return reflects value added through the allocation decisions. A strategic benchmark return less than the policy benchmark return reflects losses to the fund's performance based upon strategy decisions.

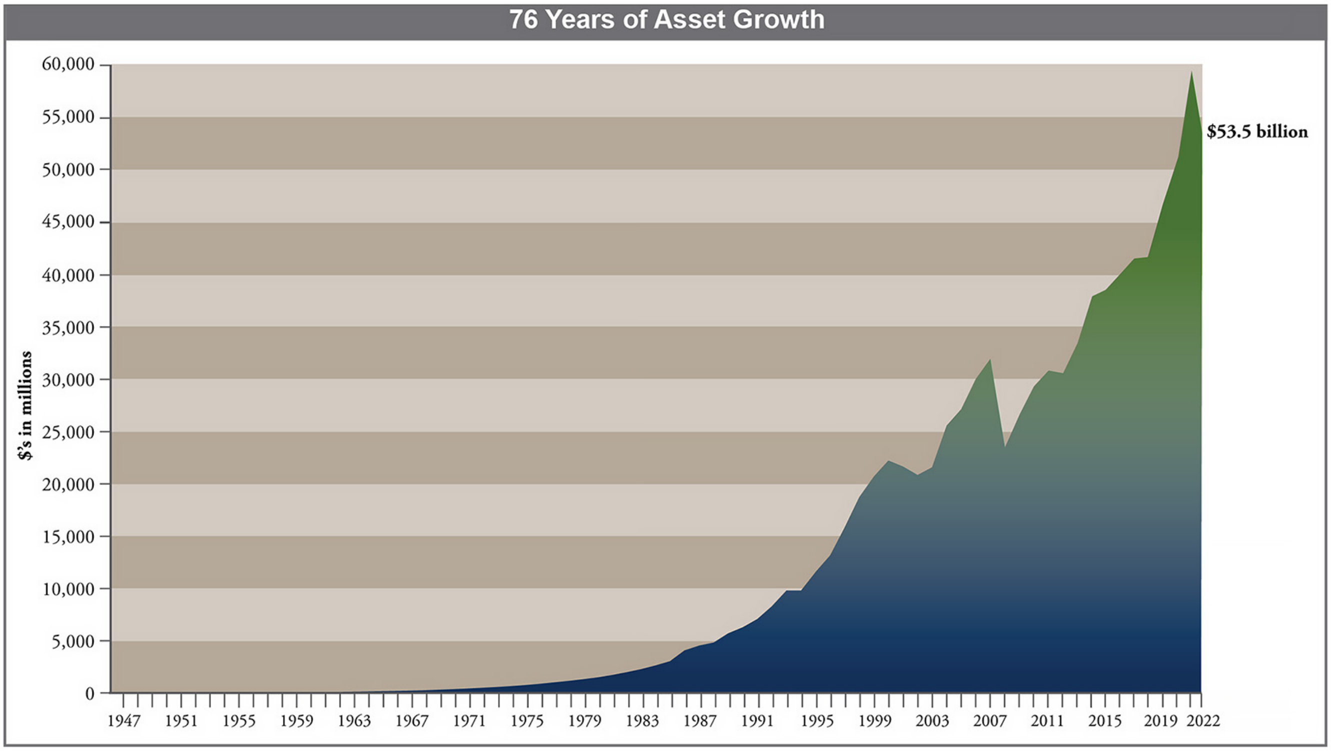
Implementation Decisions

Implementation decisions are manager selection choices made by the internal staff with the approval of the Director and a consultant(s). The value added through these manager selection decisions is measured by the difference between the actual portfolio return and the strategic benchmark return. An actual portfolio return greater than the strategic benchmark return reflects value added through these manager selection decisions. An actual portfolio return less than the strategic benchmark return reflects losses to the fund's performance based upon implementation decisions.

Risk Controls

The Board recognizes that even though the Systems' investments are subject to short-term volatility, it is critical that a long-term investment focus be maintained. Given the importance of the broad asset allocation decision to the Systems' long-term investment success, internal staff is required to conduct an asset allocation/liability study at least every five years to examine the appropriate long-term investment strategies for the Systems. As previously discussed in the asset allocation section, an asset/liability study was conducted this year. In addition, the CIO must annually evaluate the asset allocation mix and any strategic allocation of the portfolio and provide a report to the Board on the results of that evaluation. This ongoing review of the asset allocation process helps to ensure the asset allocation is being monitored and modified as needed to meet the financial obligations of the Systems.

Total Fund Review



The Systems' total invested assets were $53.5 billion as of June 30, 2022. The graph above illustrates the long-term growth in assets since the inception of PSRS in 1946 and PEERS in 1965.

Investment Performance[3]

The Systems earned an investment return of -2.8% for fiscal year 2022 (-3.1% net of all investment expenses and fees), exceeding the policy benchmark return of -10.3% by 750 basis points. This significant outperformance represents approximately $4.0 billion in added value above the policy benchmark return for the year, net of all fees and expenses.

As illustrated in the following table, it was a historically volatile year with both public equity and fixed income markets producing negative returns. However the Systems diversification into Private Risk Assets and Hedged Assets strongly contributed to the Systems' total return for the year. Within Private Risk Assets, the Private Real Estate program produced an exceptional return of 29.7% and the Private Equity program also did very well by increasing 14.4%. Within Public Risk Assets, the Hedged Assets program provided significant downside protection to the public equity and fixed income markets.

Total Fund Performance

Investment Program	Total Return	Weighted Contribution
U.S. Public Equity	-14.1%	-3.7%
Public Credit	-8.7%	-0.3%
Hedged Assets	-0.2%	0.0%
Non-U.S. Public Equity	-15.1%	-2.5%
Public Risk Assets	**11.8%**	**6.5%**
U.S. Treasuries	-9.6%	-1.3%
U.S. TIPS	-2.0%	0.0%
Cash & Cash Equivalents	-0.8%	0.0%
Safe Assets	**8.2%**	**1.3%**
Private Equity	14.4%	2.3%
Private Real Estate	29.7%	2.4%
Private Credit	11.2%	0.3%
Private Risk Assets	**18.9%**	**5.0%**
TOTAL RETURN	**-2.8%**	**-2.8%**

[3] *Investment returns were prepared using a time-weighted rate of return based on market values.*

Investment Performance Relative to Benchmarks*	Fiscal Year	3-Year	5-Year	10-Year
Public Risk Assets Program				
U.S. Public Equity	**-14.1 %**	**8.6 %**	**9.4 %**	**12.0 %**
Russell 3000 Index	-13.9 %	9.8 %	10.6 %	12.6 %
Public Credit	**-8.7 %**	**0.3 %**	**1.9 %**	**2.4 %**
Bloomberg U.S. Intermediate Credit Index	-9.0 %	-0.1 %	1.4 %	2.2 %
Hedged Assets	**-0.2 %**	**5.1 %**	**5.1 %**	**6.0 %**
Hedged Assets Benchmark	-12.7 %	3.0 %	4.2 %	5.6 %
Benchmark consists of:				
50.0 % Bloomberg U.S. Intermediate Credit Index				
25.0 % MSCI ACWI ex-USA net Index				
25.0 % Russell 3000 Index				
Non-U.S. Public Equity	**-15.1 %**	**5.1 %**	**5.6 %**	**7.7 %**
MSCI ACWI ex-USA net Index	-19.4 %	1.4 %	2.5 %	4.7 %
Total Public Risk Assets	**-11.8 %**	**6.5 %**	**7.0 %**	**8.8 %**
Public Risk Assets Policy Benchmark	-15.1 %	5.2 %	6.3 %	7.9 %
Benchmark consists of:				
50.0 % Russell 3000 Index				
34.3 % MSCI ACWI ex-USA net Index				
15.7 % Bloomberg U.S. Intermediate Credit Index				
Safe Assets Program				
Total Safe Assets	**-8.2 %**	**-0.7 %**	**0.8 %**	**0.8 %**
Bloomberg U.S. Treasury Index	-8.9 %	-1.2 %	0.6 %	0.8 %
Private Risk Assets Program				
Private Equity	**14.4 %**	**26.4 %**	**22.7 %**	**19.1 %**
Private Equity Benchmark	-15.0 %	8.2 %	9.7 %	12.1 %
Benchmark consists of:				
75.0 % Russell 3000 Index				
25.0 % MSCI ACWI ex-USA net Index				
Private Real Estate	**29.7 %**	**14.4 %**	**11.7 %**	**11.8 %**
NFI-ODCE Index	28.3 %	11.7 %	9.6 %	10.0 %
Private Credit	**11.2 %**	**10.0 %**	**9.6 %**	**8.6 %**
ICE BofAML U.S. High Yield Master II Index	-12.7 %	— %	2.0 %	4.4 %
Total Private Risk Assets	**18.9 %**	**20.7 %**	**17.5 %**	**15.4 %**
Private Risk Assets Policy Benchmark	-1.9 %	8.4 %	8.8 %	10.6 %
Benchmark consists of:				
43.5 % Russell 3000 Index				
32.3 % NFI-ODCE Index				
14.5 % MSCI ACWI ex-USA net Index				
9.7 % ICE BofAML U.S. High Yield Master II Index				
TOTAL FUND				
Total Fund	**-2.8 %**	**9.1 %**	**8.6 %**	**9.1 %**
Total Fund Policy Benchmark	-10.3 %	5.0 %	5.9 %	7.2 %
Benchmark consists of:				
39.0% Russell 3000 Index				
22.0% MSCI ACWI ex-USA net Index				
18.0% Bloomberg U.S. Treasury Index				
10.0% NFI-ODCE Index				
8.0% Bloomberg U.S. Intermediate Credit Index				
3.0% ICE BofAML U.S. High Yield Master II Index				
Actuarial Required Rate of Return **	7.3 %	7.4 %	7.5 %	7.7 %
TUCS Universe Median	6.3 %	6.9 %	7.4 %	8.4 %

* *Investment returns were prepared using a time-weighted rate of return based on market values.*
** *The extended time periods reflect the blended returns of the historical actuarial required rates of return, as previously discussed in the Investment Objective section.*

Investment Performance Relative to Benchmarks

The Board has established a long-term objective (actuarial required rate of return) to achieve a total investment return of at least 7.3% per year and a real rate of return of at least 5.3% per year. The fiscal year 2022 total plan return of -2.8% fell short of the long-term objective of 7.3%. However, over long periods of time, PSRS and PEERS continue to produce investment returns that meet or exceed the Systems' objective. The annualized investment return for the Systems is 8.0% (7.9% net of all investment expenses and fees) over the last 30 years. As discussed in the Investment Objective section, the long-term objective was amended to 7.3% effective for fiscal year 2022 performance. The reduction in the long-term objective is based on capital market expectations and the belief that expected investment returns going forward will be lower than historical norms.

In order to determine if the Systems' short-term and long-term objectives are being achieved, the Board utilizes three benchmarks by which the Systems' progress may be judged: (1) performance relative to a **policy benchmark** (defined set of broad market indices that reflects the Systems' long-term asset allocation, or market beta), (2) performance relative to a **strategic benchmark** which indicates value added by the internal staff, and, to a lesser extent, (3) performance relative to other public pension systems and their investment managers as a reference point of oversight.

The internal staff presents to the Board a detailed attribution of the total fund performance at the end of each fiscal year. Value is added over and above expected market returns if the strategic benchmark exceeds the policy benchmark (i.e., the internal staff made positive strategic decisions) and/or if the actual total fund return exceeds the strategic benchmark (i.e., positive implementation decisions). The Statistical Performance section on the following page shows that for all reported time periods the total fund return exceeded the strategic benchmark, and the strategic benchmark exceeded the policy benchmark over all extended time periods. These excess returns demonstrate the significant added value by internal staff through both strategic asset allocation decisions and implementation decisions.

The fiscal year 2022 return of -2.8% (-3.1% net of all investment expenses and fees) was low on an absolute basis but strong on a relative basis, substantially exceeding the policy benchmark return of -10.3% by 750 basis points. The Systems' earned 750 basis points in excess return during a period of weak markets in fiscal year 2022 and earned 580 basis points in excess return over the policy benchmark return of 22.9% last fiscal year during a period of strong markets. Performing well in both strong and weak markets signifies the Systems' well structured and diversified investment portfolio's ability to deliver higher returns and lower risk than the policy benchmark. Additionally, the total fund return has exceeded the policy benchmark in seven of the last ten fiscal years, an indication that internal staff and active investment management have added value to the Systems. Over the past ten years, the total fund return has exceeded the policy benchmark by 190 basis points, on an annualized basis, resulting in over $8.1 billion in excess performance (net of all investment expenses and fees) to the Systems.

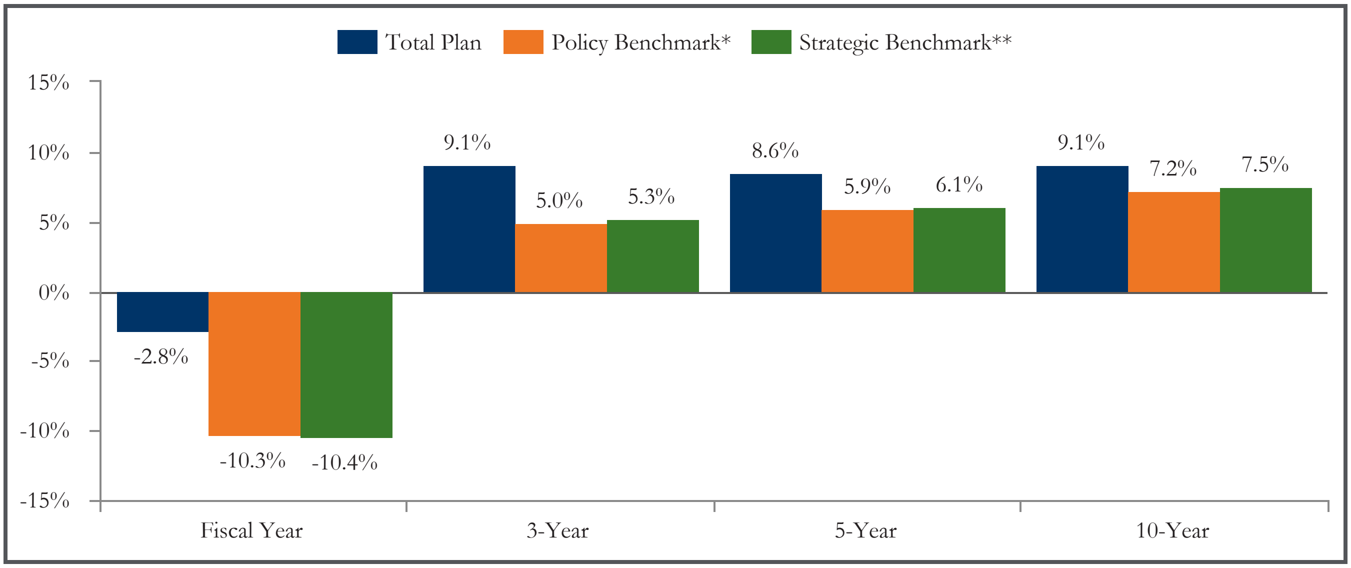
The Systems utilize the Trust Universe Comparison Services (TUCS) to compare the total return and risk levels of the Systems relative to other public pension funds with assets in excess of $1 billion. As the chart on page 71 indicates, the total fund return has exceeded the median return of other large public funds over all reported time periods. The Systems' investment return has exceeded 70% of the peer group for every time period for the last ten years while taking less risk than two-thirds of comparable funds during this time.

Statistical Performance

One of the primary investment objectives of the Systems is to achieve returns similar to the market but at lower risk or volatility levels. To that end, internal staff monitors a number of quantitative risk statistics related to the total investment portfolio as well as individual composites. The following table indicates that the Systems have taken less risk than the policy benchmark (as measured by standard deviation) over all time periods while achieving higher returns, thereby indicating strong risk-adjusted performance.

Beta measures the volatility, or systematic risk, of a security or portfolio in comparison to the market as a whole. If a portfolio has a beta of 1.0, it indicates that the portfolio moves in unison with the market. The Systems' portfolios have a beta of less than 1.0 relative to the policy benchmark, indicating less market volatility. The Systems' beta relative to the MSCI All Country World Index (MSCI ACWI net Index) is approximately 0.50. This signifies that the Systems' portfolio moves up or down approximately half as much as the world stock index.

Total Plan Performance



Total Plan Statistical Performance

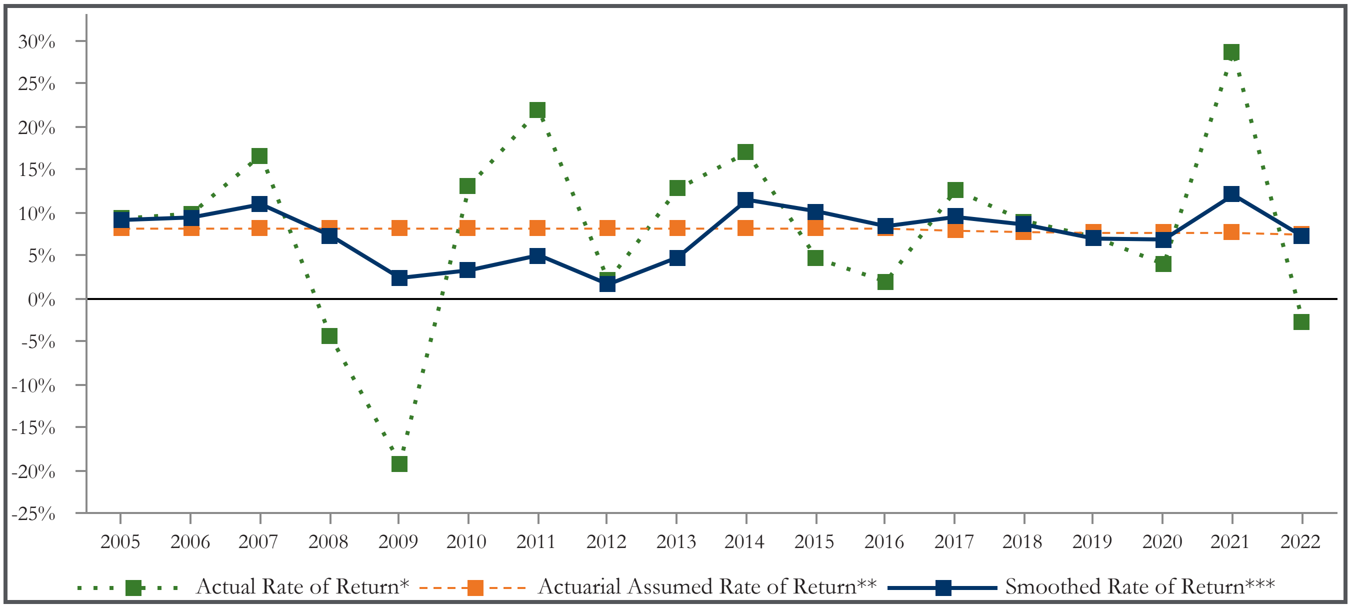
Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Total Plan Return	-2.8%	9.1%	8.6%	9.1%
Annualized Policy Benchmark Return*	-10.3%	5.0%	5.9%	7.2%
Annualized Strategic Benchmark Return**	-10.4%	5.3%	6.1%	7.5%
Excess Return	7.5%	4.1%	2.7%	1.9%
Annualized Standard Deviation of Composite	7.6%	8.7%	7.8%	6.5%
Annualized Standard Deviation of Policy Benchmark*	10.1%	11.1%	9.8%	8.0%
Beta to Policy Benchmark*	0.74	0.77	0.78	0.80
Beta to MSCI ACWI net Index	0.48	0.47	0.47	0.47

* *As of June 30, 2022: 39% Russell 3000 Index, 22% MSCI ACWI ex-USA net Index, 18% Bloomberg U.S. Treasury Index, 10% NFI-ODCE, 8% Bloomberg U.S. Intermediate Credit Index and 3% ICE BofAML U.S. High Yield Master II Index.*

** *As of June 30, 2022: 40.1% Russell 3000 Index, 22.5% MSCI ACWI ex-USA net Index, 14.5% Bloomberg U.S. Treasury Index, 10.3% NFI-ODCE, 7.3% Bloomberg U.S. Intermediate Credit Index, 3.9% ICE BofAML U.S. High Yield Master II Index and 1.7% Merrill Lynch 3- Month U.S. Treasury Bill Index. The Total Plan Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month.*

The following chart shows the relationship between market value returns (actual rate of return), the actuarially assumed rate of return and the utilization of an actuarial asset valuation method of smoothed assets. To reduce volatility in employer and employee contribution rates, a common actuarial practice of "asset smoothing" is utilized. The application of this practice results in full recognition of returns at the actuarial assumed rate and recognizes any annual excess or deficiency relative to the assumed rate over a period of five years.

Investment Rates of Return



* *The Actual Rate of Return (market return) consists of all investment gains and losses (net of investment expenses) on the fair market value of assets each year.*

** *The Actuarial Assumed Rate of Return is the assumed rate of return on the actuarial value of assets and is used in establishing contribution rates and pension obligations, including the net pension liability.*

*** *Investment earnings in excess or deficient of the assumed rate of return are smoothed over a 5-year period for actuarial funding purposes. Twenty percent of the excess or deficiency is recognized annually for a 5-year period. This calculation results in the Smoothed Rate of Return.*

Asset Allocation: Actual Versus Target

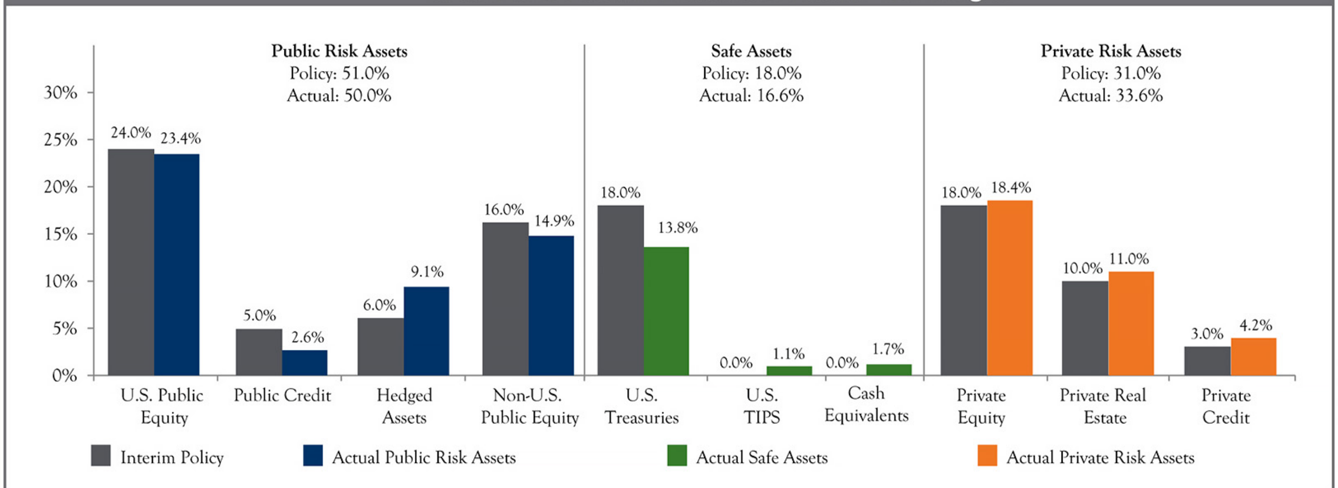
The long-term target asset allocation is expected to take several years to implement given the nature of investing in Private Risk Assets. As discussed in the Investment Policy Summary: Asset Allocation section, the interim policy allocations have been established to reflect meaningful progress towards the new long-term targets and for policy benchmark weights.

The June 30, 2022 interim policy allocation was 51% Public Risk Assets, 18% Safe Assets and 31% Private Risk Assets. In fiscal year 2022 the interim asset class targets were updated to reflect the progress made in funding the Private Risk programs. Private Equity increased from 14% to 18%, Real Estate increased from 9% to 10% and Private Credit increased from 2% to 3% while U.S. Public Equity decreased from 25% to 24%, Public Credit decreased from 8% to 5% and U.S. Treasuries decreased from 20% to 18%. These sub-asset class target allocation updates resulted in a 6% increase in Private Risk Assets from 25% to 31%, a 4% decrease in Public Risk Assets from 55% to 51% and a 2% decrease to Safe Assets from 20% to 18%.

As illustrated in the chart below, internal staff utilized the flexibility built into the investment policy to strategically overweight or underweight certain asset classes throughout the year. Strategic decisions within the Public Risk Assets program included an overweight to Hedged Assets and an underweight to Non-U.S. Public Equity which provided meaningful returns to the Systems in fiscal year 2022.

The Board of Trustees recently approved the use of total plan leverage to efficiently implement portfolio rebalancing, as discussed in the Investment Policy Summary: Asset Allocation section. In fiscal year 2022, the Systems utilized the total plan leverage by rebalancing into U.S. Public Equities during the recent market decline. The Total Plan leverage as of June 30, 2022 is 0.4%.

Total Fund Asset Allocation: Actual* vs. Target



* *Total Plan assets include 0.2% invested in an operating cash account that is not reflected in the chart above.*

Public Risk Assets Summary

As of June 30, 2022, Public Risk Assets had a fair value of approximately $26.6 billion, representing 49.6% of total plan assets.

Investment Program Description

The Board of Trustees has adopted an asset allocation policy that includes a significant allocation to Public Risk Assets. The four programs within the Public Risk Assets composite are U.S. Public Equity, Public Credit, Hedged Assets and Non-U.S. Public Equity. Each program within the Public Risk allocation is a separate multi-manager composite that is treated generally as a single portfolio. Each program serves a specific and distinct role within the overall Public Risk composite and also within the overall total plan allocation. Over time, the Public Risk composite and its sub-components serve as an effective and efficient vehicle to supply the underlying beta exposure to a portfolio of global risk assets required by the Systems' asset allocation policy, while providing the opportunity to achieve excess returns above that of a passive benchmark through the prudent combination of passive investment vehicles and a wide range of active investment strategies.

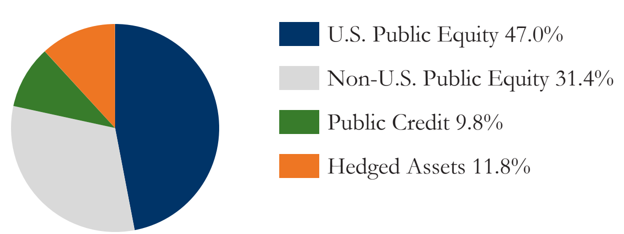
Structure

The Systems' allocation to Public Risk Assets at the end the fiscal year 2022 was 49.6% based on fair value. The Systems' utilized total plan leverage within the Public Risk Assets composite to efficiently implement portfolio rebalancing into U.S. Public Equities during the recent market decline. As of June 30, 2022, the total plan leverage was 0.4% resulting in an actual asset allocation based on market exposure of 50.0% to Public Risk Assets and 23.4% to U.S. Public Equities.

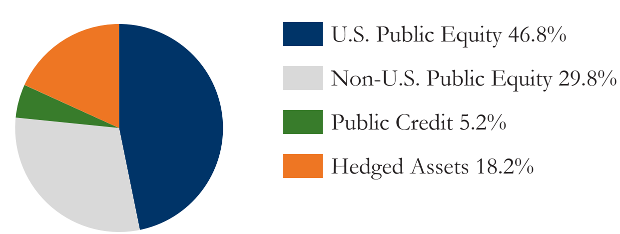
As of June 30, 2022, the Systems' Public Risk allocation based on market exposure was 46.8% in the U.S. Public Equity program, 29.8% in the Non-U.S. Public Equity program, 5.2% in the Public Credit program and 18.2% in the Hedged Assets program. Each of these programs is discussed in more detail on the following pages.

Public Risk Assets Allocation

Public Risk: Interim Target Allocation



Public Risk: Actual Allocation



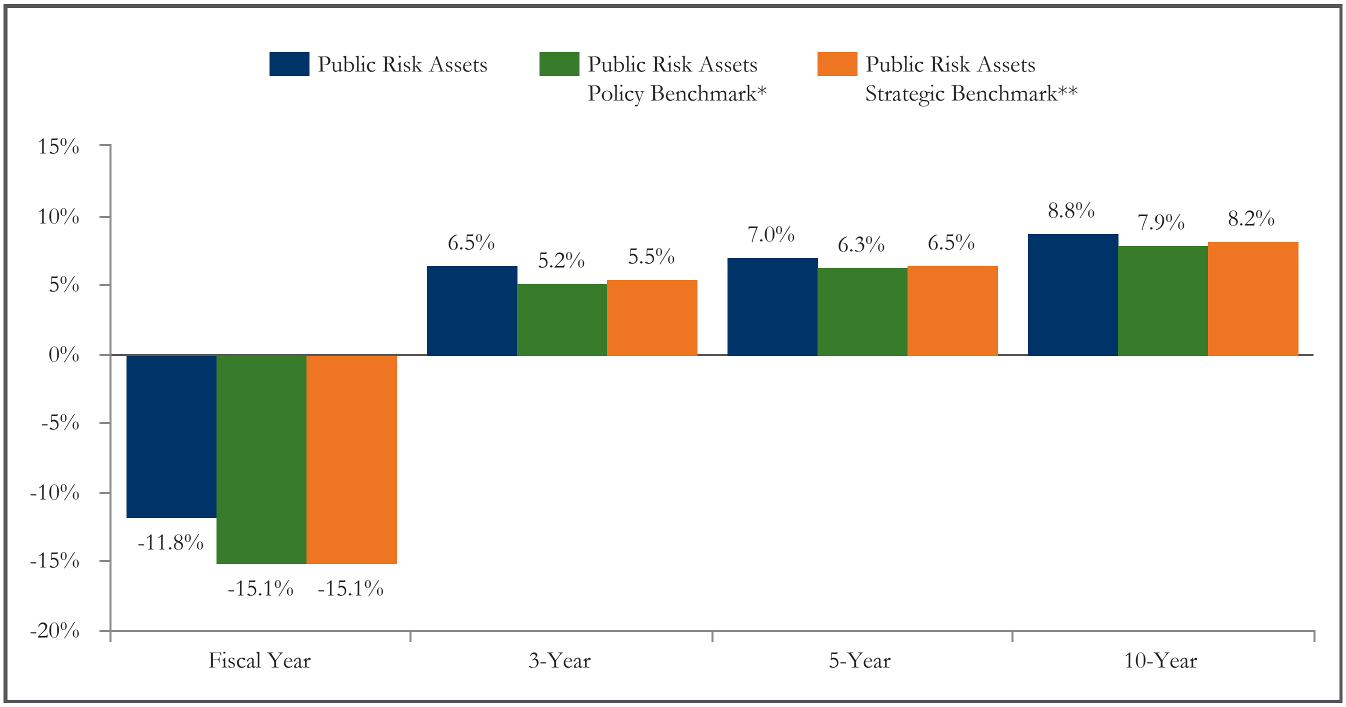
Market Overview

Fiscal year 2022 was a very difficult investment environment. Both public equity and public credit markets saw steep declines due to high inflation, rising interest rates, economic weakness, and geopolitical conflicts. The Russell 3000 Index (broad measure of the U.S. stock market) declined 13.9% and the MSCI ACWI ex-USA Index (broad measure of the international stock markets) fell 19.4% for the fiscal year. Corporate credit markets also experienced significant declines with the Bloomberg U.S. Intermediate Credit Index down 9.0%.

Performance

The Systems' Public Risk portfolio produced a total return of -11.8%, outperforming the policy benchmark by 330 basis points. As shown in the table and graph below, the Systems' Public Risk composite has performed well over long periods of time, providing meaningful absolute returns and 90 basis points of annualized excess return over the last ten years. The positive performance of the portfolio relative to the policy benchmark indicates value added by the internal staff through both strategic asset allocation decisions and manager selection decisions.

Public Risk Assets Performance



Public Risk Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Return	-11.8%	6.5%	7.0%	8.8%
Annualized Policy Benchmark Return*	-15.1%	5.2%	6.3%	7.9%
Annualized Strategic Benchmark Return**	-15.1%	5.5%	6.5%	8.2%
Excess Return	3.3%	1.3%	0.7%	0.9%
Annualized Standard Deviation of Composite	12.1%	15.1%	13.3%	10.7%
Annualized Standard Deviation of Policy Benchmark*	13.1%	15.3%	13.5%	10.9%
Beta to Policy Benchmark*	0.92	0.99	0.98	0.98
Beta to MSCI ACWI net Index	0.78	0.83	0.81	0.79

* *The Public Risk Assets Policy Benchmark is composed as follows: 50.0% Russell 3000 Index, 34.3% MSCI ACWI ex-USA net Index and 15.7% Bloomberg U.S. Intermediate Credit Index.*

** *The Public Risk Assets Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month.*

U.S. Public Equity Program Summary

As of June 30, 2022, the U.S. Public Equity program had a fair value of approximately $12.3 billion, representing 23.0% of total plan assets.

Investment Program Description

U.S. Public Equity is comprised of the Large-Cap, Small-Cap and Alpha Overlay programs which seek to provide long-term capital appreciation and dividend income in excess of inflation through the investment in domestic equity securities. Returns above a purely passive investment benchmark are targeted through the use of a wide variety of active investment strategies that may employ exposure to both equity securities and other types of investments. The primary ***beta*** exposure is achieved through investments in passive investment vehicles (including derivatives), traditional long-only active domestic equity management, and active long/short approaches. ***Alpha*** (or, excess returns above a passive alternative) is expected to be achieved through traditional long-only active domestic equity management, active long/short approaches and alpha overlay strategies (described in greater detail at the end of this section).

Structure

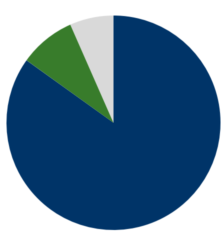
As of June 30, 2022, 36.4% of the U.S. Public Equity composite was passively managed. The remainder of the portfolio was actively managed and diversified across a broad array of capitalization ranges and investment styles, including the Small-Cap and the Alpha Overlay programs. Both programs represent multi-manager pools of assets managed within the overall U.S. Public Equity structure. The Small-Cap program encompasses small capitalization assets. The Alpha Overlay composite focuses on the separation of returns into alpha and beta, and encompasses alternative equity mandates including hedge fund portfolios.

Exposure to the various segments of the domestic equity market (i.e., growth-oriented, value-oriented, and core) and to the approved investment strategy types are achieved through the identification, selection and on-going management of investment advisors qualified to serve as fiduciaries to the Systems.

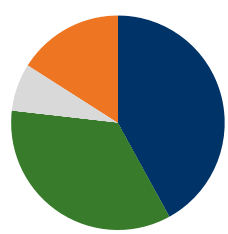
The pie charts below depict the U.S. Public Equity portfolio by presenting the current style structure of the portfolio as well as the allocation by composite and market sector.

U.S. Public Equity Allocations: Style and Composite

Style Allocation
June 30, 2022



Composite Allocation
June 30, 2022



Market Overview

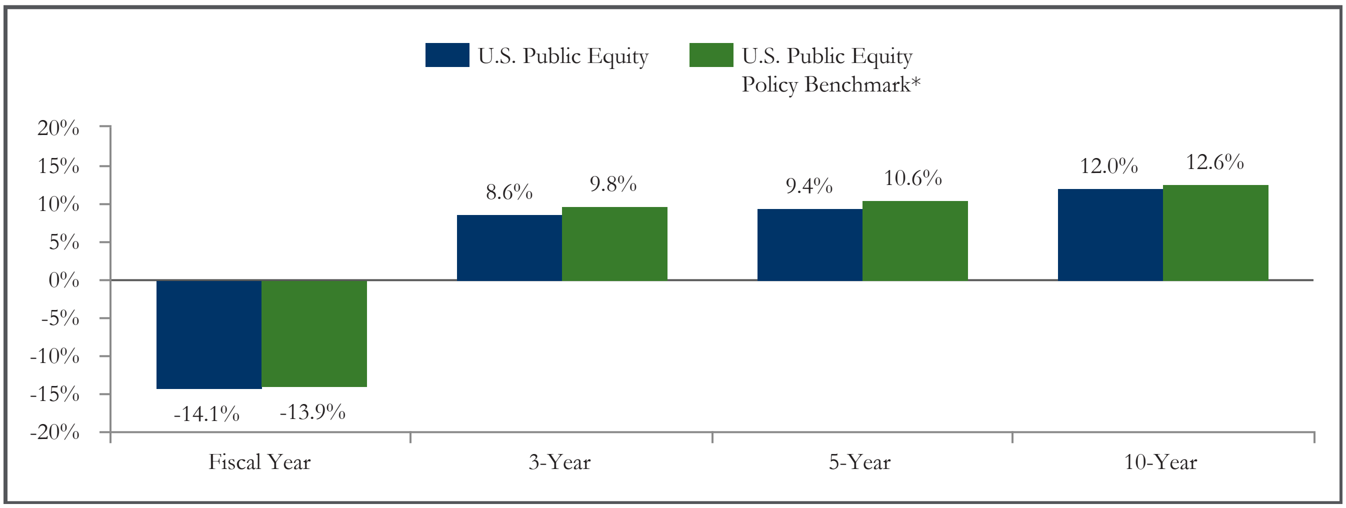
The U.S. equity market experienced increased volatility during the year resulting in negative returns across market capitalizations and styles. For the year, large-cap stocks outperformed small-cap stocks while value styles outperformed growth styles. The comprehensive measure of the U.S. stock market (Russell 3000 Index) declined 13.9% while large-cap stocks (Russell 1000 Index) decreased 13.0% outperforming small-cap stocks (Russell 2000 Index) which declined 25.2% for the year. Large-cap value stocks (Russell 1000 Value Index) outperformed large-cap growth stocks (Russell 1000 Growth Index) with a return of -6.8% compared to -18.8% while small-cap value stocks (Russell 2000 Value Index) outperformed small-cap growth stocks (Russell 2000 Growth Index) with a return of -16.3% compared to -33.4%.

Performance

The total return for the U.S. Public Equity program was -14.1% compared to the benchmark return of -13.9% for the fiscal year ended June 30, 2022. Within the U.S. Public Equity program, the Large-Cap program returned -14.4%, Alpha Overlay returned -12.1% and the Small-Cap program returned -15.3% for the year.

As indicated in the table and graph, the U.S. Public Equity portfolio has produced strong absolute returns over the extended time periods reported. Over long periods of time, the Systems' U.S. Public Equity portfolio is designed to deliver approximately 50-100 basis points of excess return through a combination of active and passive investment strategies.

U.S. Public Equity Performance



U.S. Public Equity Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
U.S. Public Equity Return	-14.1%	8.6%	9.4%	12.0%
Annualized Policy Benchmark Return*	-13.9%	9.8%	10.6%	12.6%
Excess Return	-0.2%	-1.2%	-1.2%	-0.6%

* *The U.S. Public Equity Policy Benchmark is the Russell 3000 Index.*

Statistics

The following table displays the statistical characteristics of the Systems' U.S. Public Equity program as of June 30, 2022 with comparisons to the portfolio's policy benchmark. In addition, the top ten U.S. Public Equity holdings as of June 30, 2022 are shown in the table following the characteristics.

U.S. Public Equity Characteristics

Characteristics	June 30, 2022 Systems' U.S. Public Equity Program*	June 30, 2022 Russell 3000 Index
Number of Securities	1,811	3,011
Dividend Yield	1.7%	1.7%
Price-to-Earnings Ratio	17.9	17.4
Avg. Market Capitalization	$328.4 bil	$411.3 bil
Price-to-Book Ratio	3.4	3.5

* *Includes only actively managed separate accounts.*

A complete list of portfolio holdings is available upon request.

U.S. Public Equity Top 10 Holdings

Top 10 Largest Holdings* June 30, 2022	Fair Value	% of Total U.S. Public Equity
Microsoft Corp.	$ 137,267,930	1.1%
Alphabet Inc.	119,292,008	1.0%
UnitedHealth Group Inc.	97,164,414	0.8%
Johnson & Johnson	78,243,035	0.6%
Apple Inc.	73,424,929	0.6%
The Coca-Cola Co.	64,237,086	0.5%
Visa Inc.	58,945,322	0.5%
Amazon.com Inc.	56,994,092	0.5%
CVS Health Corp.	52,435,831	0.4%
Tesla Inc.	41,267,851	0.3%
TOTAL	**$ 779,272,498**	**6.3%**

Investment Advisors

As of June 30, 2022, the Systems had contracts with 17 external investment advisors who managed 20 portfolios that comprised 84.0% of the U.S. Public Equity portfolio. The remaining 16.0% of the portfolio was in the Alpha Overlay program described in the next section. The Systems repositioned the Small-Cap program during the year by terminating a mandate with Russell Investments and two mandates with Chartwell Investment Partners.

U.S. Public Equity Investment Advisors

Investment Advisor	Investment Style		Fair Value As of June 30, 2022	% of Total Plan Fair Value
Allspring Global Investments	Quantitative Low Volatility	$	849,650,371	1.6%
AQR Capital Management	Quantitative 140/40 Core		772,012,908	1.4%
Blackrock	Passive Russell 1000 Index		4,206,125,413	7.9%
Coatue Long Only Partners	Concentrated Technology		350,748,839	0.7%
Coho Partners	Concentrated High Quality		296,309,171	0.6%
Eagle Capital Management	Concentrated Core		241,456,031	0.4%
Grantham, Mayo, Van Otterloo & Co.	Concentrated High Quality		687,206,443	1.3%
Lazard Asset Management	Concentrated All-Cap		146,326,041	0.3%
Martingale Asset Management	Quantitative Low Volatility		489,521,198	0.9%
NISA Investment Advisors	Passive S&P 500 Index		66,936,686	0.1 %
Russell Investments	Completion Portfolio		291,292,406	0.5%
Select Equity Group	Concentrated High Quality		132,398,511	0.2%
Westwood Management	Concentrated Value		579,071,319	1.1%
Zevenbergen Capital	Concentrated All-Cap Growth		327,042,460	0.6%
Large-Cap Subtotal			**9,436,097,797**	**17.6%**
AQR Capital Management	Quantitative Core		126,474,308	0.2%
Blackrock	Passive Russell 2000 Index		197,753,429	0.4%
Greenhouse Funds	Concentrated Core		109,842,477	0.2%
Martingale Asset Management	Quantitative Low Volatility		136,309,433	0.3%
RK Capital Management	Diversified Core		152,531,080	0.3%
Systematic Financial Management	Diversified Value		160,274,827	0.3%
Small-Cap Subtotal			**883,185,554**	**1.7%**
Total		**$**	**10,319,283,351**	**19.3%**

Alpha Overlay Program Summary

As of June 30, 2022, the Alpha Overlay program had a fair value of approximately $2.0 billion, representing 3.7% of total plan assets.

Investment Program Description

The Alpha Overlay portfolio resides within the U.S. Large-Cap Equity program. The Alpha Overlay portfolio has been constructed to assist in meeting the long-term goals established for the overall U.S. Large-Cap Equity allocation. Specifically, Alpha Overlay provides broad exposure to large-cap U.S. stocks using S&P 500 total return swaps, while the returns of a select portfolio of hedge fund strategies provide the opportunity to earn excess returns above the passive S&P 500 Index. By combining the market exposure obtained through the S&P 500 total return swaps with the diversified exposures to investment strategies focused on alpha generation, the combined portfolio is constructed and managed to produce a return stream with volatility and beta characteristics similar to the passive S&P 500 Index, while generating excess returns (or alpha) of approximately 200-250 basis points over longer periods of time.

Structure

As of June 30, 2022, 25.3% of the Alpha Overlay composite assets were passively managed by NISA Investment Advisors using S&P 500 total return swaps to attain equitization. An additional 68.6% of the portfolio was actively managed across a diversified range of multi-strategy and market neutral hedge fund mandates. The remaining 6.1% of the portfolio was actively managed by Zevenbergen Capital in a long-only mandate. The chart below displays the specific investment advisor exposure within the composite as of June 30, 2022.

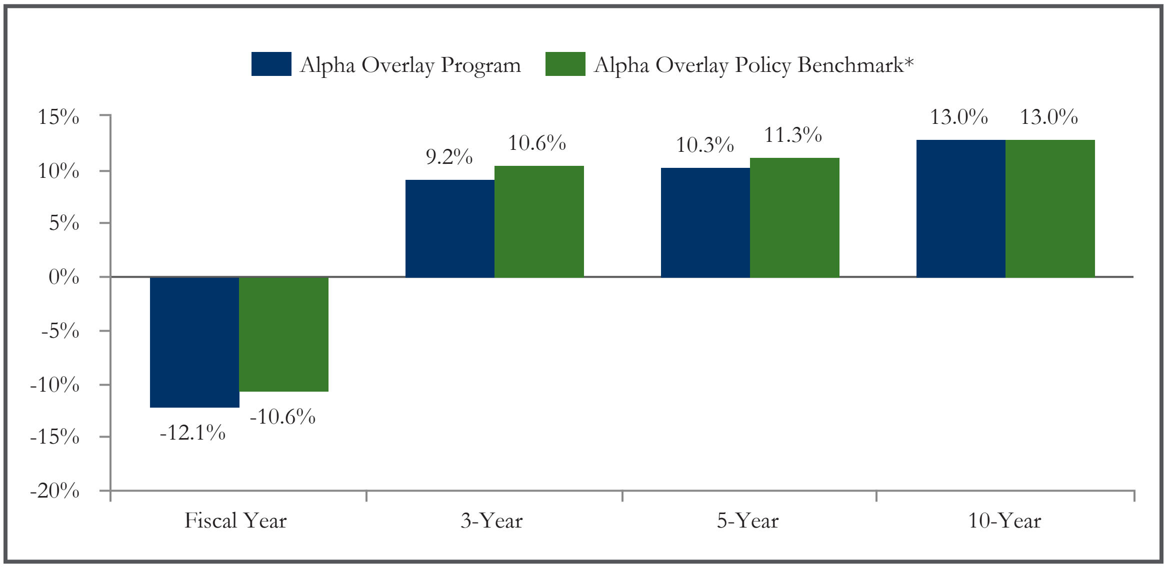
Alpha Overlay Investment Advisors

Investment Advisor	Investment Style	Fair Value As of June 30, 2022	% of Total Plan Fair Value
Allspring Global Investments	Relative Value	$ 19,074,713	0.0%
AQR Absolute Return Fund	Relative Value	90,151,624	0.2%
Bridgewater Pure Alpha II	Asset Allocation/Global Macro	160,781,468	0.3%
Davidson Kempner Institutional Partners	Event Driven	229,083,512	0.5%
HBK Capital Management	Relative Value	117,832,699	0.2%
NISA Investment Advisors	S&P 500 Exposure	496,358,343	0.9%
Renaissance Institutional Equities Fund	Low Volatility Equity	253,369,757	0.5%
Rock Springs Capital Fund	Long-Biased Equity	42,364,423	0.1%
Sculptor Domestic Partners	Multi-Strategy	203,574,200	0.4%
Stark Investments Limited Partners	Equity Long/Short	1,202,541	0.0%
UBS O'Connor Multi-Strategy Alpha	Relative Value	230,519,233	0.4%
Zevenbergen Capital	Active All-Cap Growth	119,781,014	0.2%
Total		**$ 1,964,093,527**	**3.7%**

Performance

The fiscal year 2022 return for the Alpha Overlay program was -12.1%, underperforming the benchmark return of -10.6% by 150 basis points. As shown in the table and graph below, the Alpha Overlay composite has produced significant long-term absolute returns while maintaining a risk profile (standard deviation and beta) lower than the benchmark.

Alpha Overlay Performance



Alpha Overlay Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Alpha Overlay Return	-12.1%	9.2%	10.3%	13.0%
Annualized Policy Benchmark Return*	-10.6%	10.6%	11.3%	13.0%
Excess Return	-1.5%	-1.4%	-1.0%	—%
Annualized Standard Deviation of Composite	15.6%	18.5%	16.1%	13.0%
Annualized Standard Deviation of Policy Benchmark*	17.9%	18.6%	17.0%	13.7%
Beta to Benchmark*	0.85	0.97	0.93	0.92

* *The Alpha Overlay Policy Benchmark is the S&P 500 Index.*

Non-U.S. Public Equity Program Summary

As of June 30, 2022, the Non-U.S. Public Equity program had a fair value of approximately $8.0 billion, representing 14.9% of total plan assets.

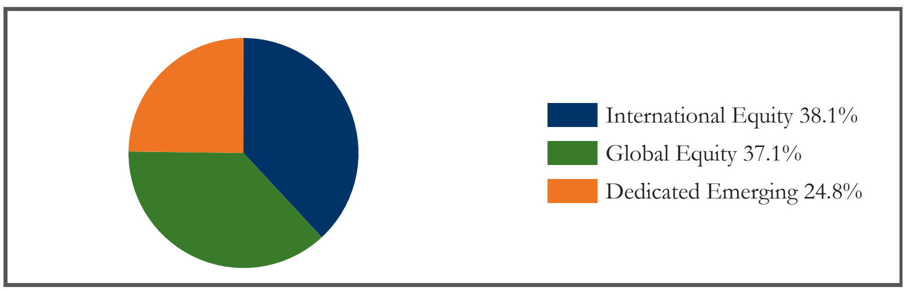
Investment Program Description

The Non-U.S. Public Equity program provides long-term capital appreciation and dividend income in excess of inflation through exposure to public equity securities on a global basis. Specific investment strategies approved for the Non-U.S. Public Equity program include passive investment vehicles, traditional long-only active equity management and active long/short approaches. Exposure to the various segments of the global equity market (i.e., U.S., developed non-U.S., emerging, growth-oriented, value-oriented, and core) and to the approved investment strategy types are achieved through the identification, selection and on-going management of investment advisors qualified to serve as fiduciaries to the Systems. The Non-U.S. Public Equity portfolios provide an element of diversification relative to the domestic equity portfolios. Currency is an aspect of international investing that can impact the performance and volatility of the asset class over the short-term. However, over the long-term, the effect from currency is expected to be neutral.

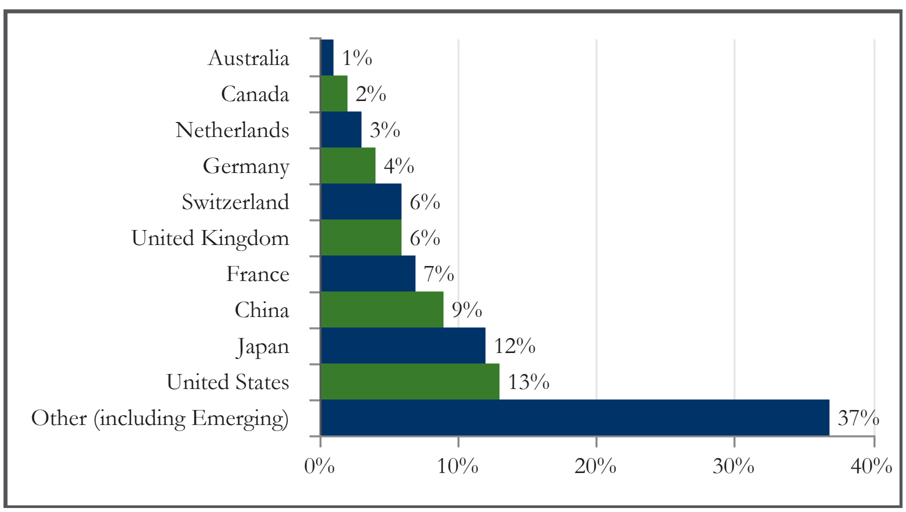
Structure

As of June 30, 2022, 9.5% of the Non-U.S. Public Equity composite was passively managed. The remainder of the portfolio was actively managed and diversified across capitalization ranges, styles and a number of developed and emerging market countries. The pie chart below indicates broad exposure by investment mandate within the composite while the bar graph displays the specific country exposure.

Non U.S. Public Equity Allocation



Non U.S. Public Equity Country Allocation



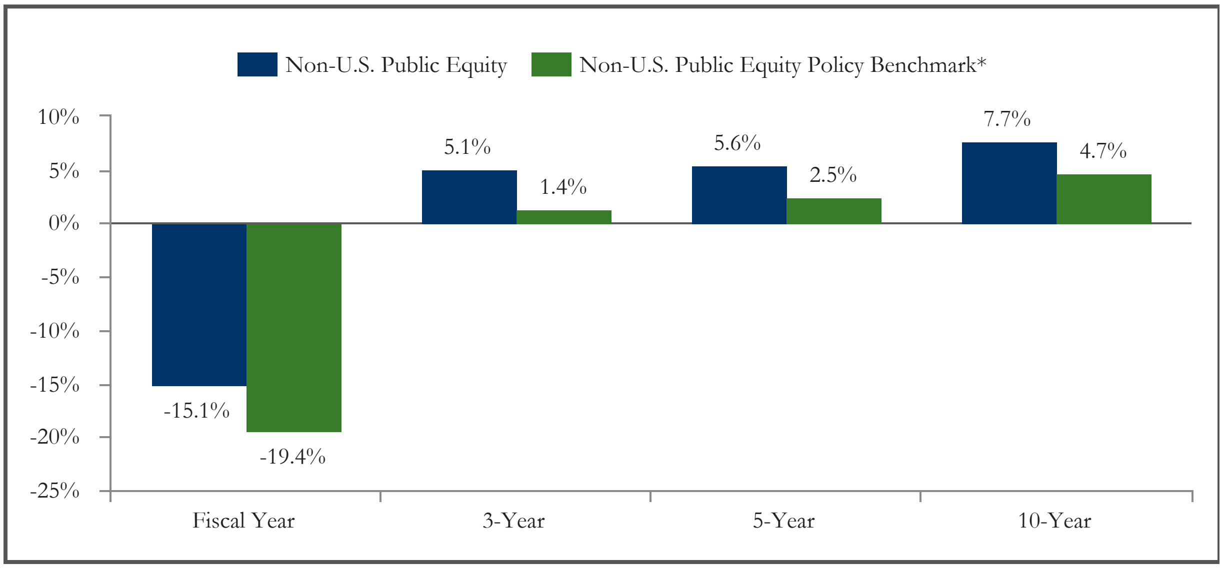
Market Overview

Global equity markets encountered extreme volatility during the year, similar to the U.S. equity markets, with all major equity indices producing negative returns. After most major indexes set record highs within calendar year 2021, stocks sold off sharply in the first half of calendar year 2022. For the fiscal year ended June 30, 2022 developed market global stocks (MSCI World net Index) declined 14.3% outperforming emerging markets (MSCI EM net Index) which decreased 25.3% and developed international markets (MSCI EAFE net Index) which declined 17.8%, while the broad measure of the non-U.S. equity markets (MSCI ACWI ex-USA Index) decreased 19.4%.

Performance

The Non-U.S. Public Equity program has continued to produce excellent relative returns and strong long-term absolute returns. The program generated a total return of -15.1% for fiscal year 2022, outperforming the policy benchmark of -19.4% by 430 basis points. As shown in the table and graph below, the Systems' Non-U.S. Public Equity composite has substantially outperformed the benchmark over all time periods. Over long periods of time, the Systems' Non-U.S. Public Equity program is designed to deliver approximately 100-150 basis points of excess returns through a combination of active and passive investment strategies. The Non-U.S. Public Equity program's returns have exceeded these expectations.

Non U.S. Public Equity Performance



Non U.S. Public Equity Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Non-U.S. Public Equity Return	-15.1%	5.1%	5.6%	7.7%
Annualized Policy Benchmark Return*	-19.4%	1.4%	2.5%	4.7%
Excess Return	4.3%	3.7%	3.1%	3.0%

* *The Non-U.S. Public Equity Benchmark is the MSCI ACWI ex-USA net Index.*

Statistics

The following table displays the top ten Non-U.S. Public Equity holdings as of June 30, 2022.

Non U.S. Public Equity Top 10 Holdings		
Top 10 Largest Holdings* June 30, 2022	**Fair Value**	**% of Total Non-U.S. Public Equity**
Roche Holding AG	$ 80,867,146	1.0%
Nestle SA	77,007,269	1.0%
Novo Nordisk	60,609,315	0.8%
AIA Group Ltd.	58,846,445	0.7%
LVMH SE	51,887,573	0.7%
Air Liquide SA	47,954,962	0.6%
Taiwan Semiconductor Manufacturing Co. Ltd.	47,778,461	0.6%
Schneider Electric SE	47,684,175	0.6%
Canadian National Railway Co.	42,730,182	0.5%
Capgemini SE	42,435,530	0.5%
Total	**$ 557,801,058**	**7.0%**

* *Includes only actively managed separate accounts.*

A complete list of portfolio holdings is available upon request.

Investment Advisors

As of June 30, 2022, the Systems had contracts with 13 external investment advisors who managed 19 portfolios within the Non-U.S. Public Equity portfolio. In fiscal year 2022 the Systems terminated a mandate with Arrowstreet Capital.

Non U.S. Public Equity Investment Advisors			
Investment Advisor	**Investment Style**	**Fair Value As of June 30, 2022**	**% of Total Plan Fair Value**
Acadian Asset Management	Quantitative Emerging Markets Low Volatility	$ 412,249,054	0.8%
Acadian Asset Management	Quantitative International Small Cap	144,163,037	0.3%
ABS Investment Management	Local Emerging Markets	274,675,527	0.5%
AllianceBernstein L.P.	Global Low Volatility	544,213,198	1.0%
Allspring Global Investments	Quantitative Global Low Volatility	498,171,510	0.9%
AQR Capital Management	Quantitative International Core	550,451,792	1.0%
Arrowstreet Capital	Quantitative Emerging Markets	392,752,768	0.7%
Arrowstreet Capital	Quantitative Global	1,534,543	—%
Arrowstreet Capital	Quantitative Global Long/Short	1,573,437,664	2.9%
Blackrock	Passive EAFE Index	347,072,851	0.7%
Blackrock	Passive Emerging Markets Index	65,385,080	0.1%
Blackrock	Passive World Index	350,696,972	0.7%
Coronation Asset Management Limited	Global Emerging Markets	242,249,310	0.5%
Invesco Advisers	Quantitative International Low Volatility	220,299,710	0.4%
MFS Investment Management	Diversified International Core	982,391,734	1.8%
MFS Investment Management	Concentrated International Core	399,303,781	0.7%
Neon Capital Management	Emerging Markets Small Cap	129,916,256	0.2%
Rock Creek Group	Local Emerging Markets	467,038,211	0.9%
Walter Scott & Partners	Core International	407,211,824	0.8%
Total		**$ 8,003,214,822**	**14.9%**

Public Credit Program Summary

As of June 30, 2022, the Public Credit program had a fair value of approximately $1.4 billion, representing 2.6% of total plan assets.

Investment Program Description

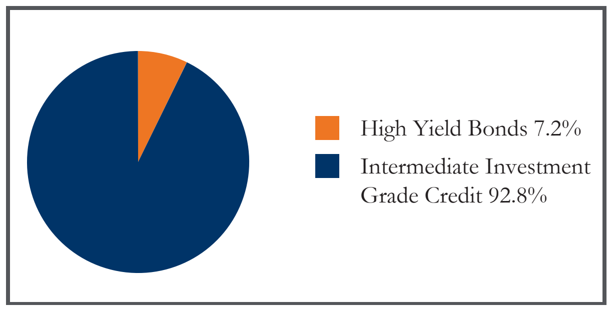
The Public Credit program is designed to provide a source of income and capital appreciation for the Systems while creating substantial diversification to the total plan with a low correlation to other asset classes. Most securities in this program exhibit high liquidity. Specific investments can include investment grade corporate securities, below investment grade debt instruments, distressed debt securities, convertible bonds, bank loans, agencies, mortgage-backed securities, asset-backed securities, and interest rate sensitive securities (including those issued or guaranteed by the United States government or its agencies). Investments in this program may include debt of both U.S. and non-U.S. issuers.

The performance objective for the Public Credit program is to exceed the returns of the investment grade credit markets through the use of a wide variety of active management approaches while incurring a level of risk that is generally consistent with the policy benchmark.

Structure

As of June 30, 2022, the Public Credit composite was actively managed and consisted primarily of investments in high-quality corporate bonds coupled with a more modest allocation to high yield bonds. The following pie chart presents the strategy allocation of the Systems' Public Credit assets as of June 30, 2022.

Public Credit Allocation



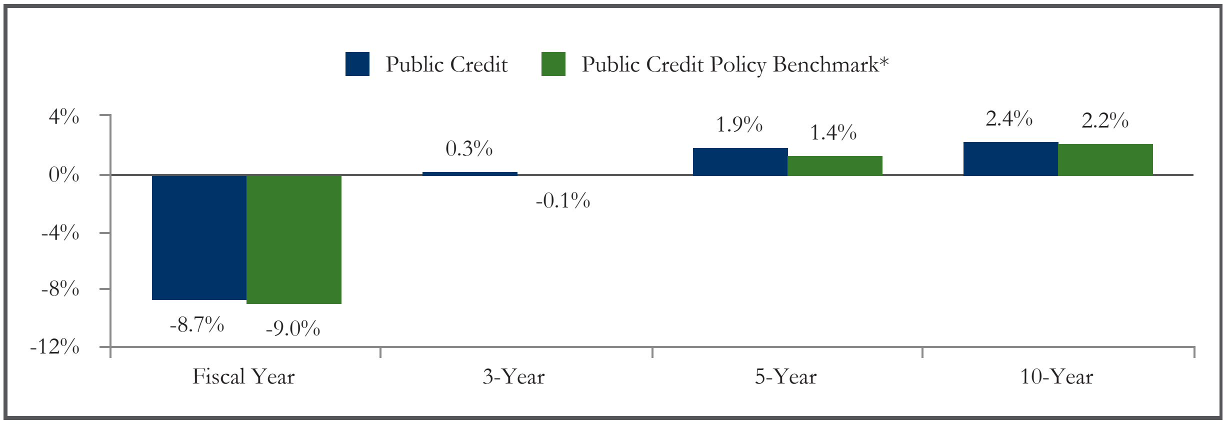
Market Overview

Credit markets experienced broad-based declines during the year as a result of the aggressive tightening of monetary policy in response to high inflation. The yield on the 10-year Treasury increased to 3.0% on June 30, 2022 from 1.5% on June 30, 2021. During the year, Treasuries outperformed investment grade credit and high yield bonds. The comprehensive measure of the U.S. Treasury market (Bloomberg U.S. Treasury Index) decreased 8.9% and a broader measure of the U.S. bond market (Bloomberg U.S. Aggregate Index) decreased by 10.3% for the year. Investment grade credit corporate bonds (Bloomberg U.S. Intermediate Credit Index) decreased 9.0% and high yield, or lower quality bonds (ICE BofAML U.S. High Yield Master II Index), declined 12.7% for the year.

Performance

The Public Credit program generated a fiscal year return of -8.7% outperforming the benchmark return of -9.0% by 30 basis points. As indicated in the table and graph on the next page, the Public Credit portfolio has produced modest absolute and relative returns in all reported time periods. Over long periods of time, the Systems' Public Credit program is designed to deliver approximately 50-100 basis points of excess return through a combination of active and passive strategies.

Public Credit Performance



Public Credit Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Public Credit Return	-8.7%	0.3%	1.9%	2.4%
Annualized Policy Benchmark Return*	-9.0%	-0.1%	1.4%	2.2%
Excess Return	0.3%	0.4%	0.5%	0.2%

* *The Public Credit Policy Benchmark is the Bloomberg U.S. Intermediate Credit Index.*

Statistics

The following table displays the top ten Public Credit holdings as of June 30, 2022.

Public Credit Top 10 Holdings

Top 10 Largest Holdings* June 30, 2022	Fair Value	% of Total Public Credit
Morgan Stanley, Floating, 07/20/2027	$ 30,099,670	2.1%
AT&T Inc., 0.00%, 11/27/2022	27,348,467	1.9%
United States Treasury Note, 2.875%, 05/15/2032	24,061,231	1.7%
DNB Bank, Floating, 03/28/2025	21,675,322	1.5%
7-Eleven Inc., 0.80%, 02/10/2024	18,423,185	1.3%
Citigroup Inc., Floating, 04/08/2026	17,805,252	1.3%
Pinnacle West Capital Corp., 1.30%, 06/15/2025	17,507,643	1.3%
Transcontinental Gas Pipe Line Co., 7.85%, 02/01/2026	17,399,398	1.3%
Bank of America Corp., Floating, 03/11/2027	15,394,524	1.1%
Bank of America Corp., Floating, 04/02/2026	14,539,566	1.0%
Total	**$ 204,254,258**	**14.5%**

* *A complete list of portfolio holdings is available upon request.*

Investment Advisors

As of June 30, 2022, the Systems had contracts with three external investment advisors who managed three portfolios in the Public Credit program. During the year, the Systems continued to wind down the Oaktree Bank Loans portfolio.

Public Credit Investment Advisors

Investment Advisor	Investment Style	Fair Value As of June 30, 2022	% of Total Plan Fair Value
NISA Investment Advisors	Corporate Credit	$ 1,310,911,005	2.4%
Oaktree Bank Loans	Senior Bank Loans	126,344	0.0%
Pacific Investment Management Co.	High Yield	102,255,695	0.2%
Total		**$ 1,413,293,044**	**2.6%**

Hedged Assets Program Summary

As of June 30, 2022, the Hedged Assets program had a fair value of approximately $4.9 billion, representing 9.1% of total plan assets.

Investment Program Description

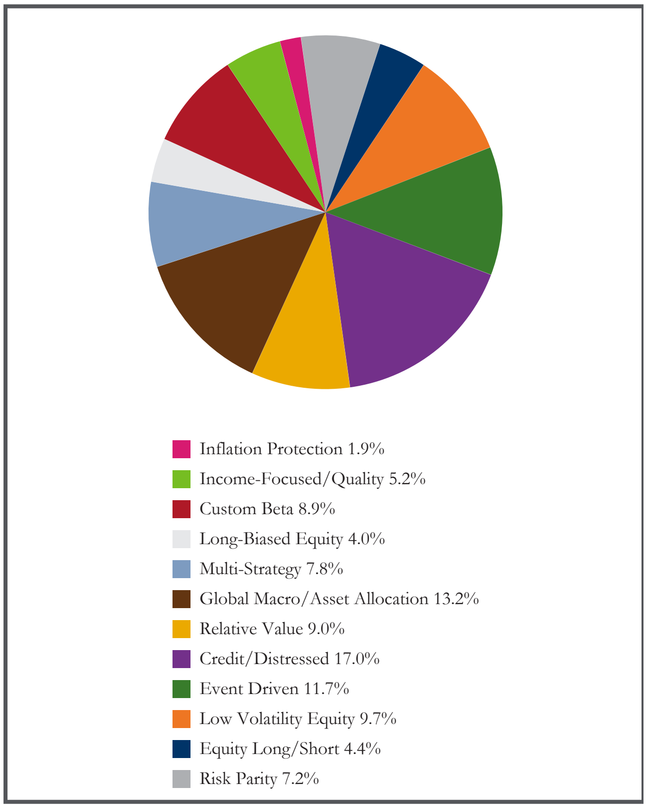
The Hedged Assets program's objective is to provide diversification to the total portfolio and reduce volatility within the Public Risk composite. The purpose of this program is to enhance the overall risk/return profile of the Public Risk composite through the inclusion of specialized investment strategies that typically generate returns in a different fashion (i.e., absent a high correlation to equities or bonds). These strategies may utilize leverage as allowed within their governing documents. The returns from these strategies have historically had a low-to-moderate correlation with the traditional equity markets, thus providing diversification benefits in addition to portfolio return enhancement. These strategies seek to control risks and maintain a focus on absolute returns. The inherent nature of these vehicles to serve as a "hedge" provides for the expectation that the program will lag the equity market during times when equities are performing above the long-term averages. However, when equities are performing below the long-term averages, the program would be expected to outperform the equity market. In addition, managers within this asset class have historically possessed significantly lower volatility relative to traditional equity managers.

Structure

The Systems have retained Albourne America, LLC (Albourne) as its hedged asset consultant. Albourne is an independent global advisory firm with a significant focus on hedge funds. The Systems utilize direct investments into hedge funds as opposed to incorporating fund-of-funds. The Systems' internal staff believes the benefits of direct investments, including lower fees, customized portfolio exposures, direct access to manager knowledge, and higher levels of transparency outweighed the benefit of quicker implementation offered by fund-of-funds.

The following chart indicates the strategy diversification of the Hedged Assets program as of June 30, 2022. The Systems manage the Hedged Assets portfolio to a blended benchmark of 25% Russell 3000 Index, 25% MSCI ACWI ex-USA net Index, and 50% Bloomberg U.S. Intermediate Credit Index.

Hedged Assets Diversification

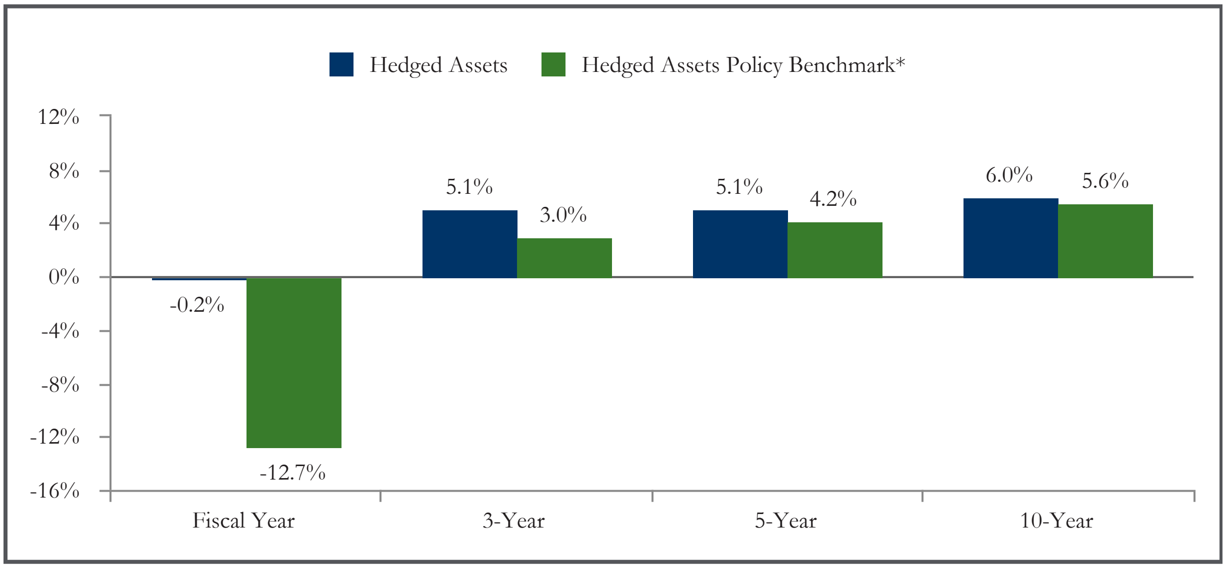


Performance

The total annualized return on the Systems' Hedged Assets portfolio was -0.2%, compared to the benchmark return of -12.7% for the fiscal year ended June 30, 2022. The Hedged Assets program did an exceptional job of providing diversification and serving as a hedge to the significant volatility experienced in the equity and fixed income markets resulting in 1,250 basis points of excess return for the year.

Over the past ten years, the Hedged Assets program has also outperformed its policy benchmark of 5.6%. The performance relative to the policy benchmark is substantial however, given the significant performance of equities over this time period. The Russell 3000 Index was up an annualized 12.6% over the past ten years and the MSCI ACWI net Index was up an annualized 8.8%. As discussed previously, the hedging characteristics of the Hedged Assets program provide for the expectation that its performance will lag equity markets and/or its policy benchmark during periods of higher-than-normal equity returns. The Hedged Assets program is expected to outperform in more normal and down markets. As the table indicates, the longer-term performance was accomplished by assuming less than one-half of the volatility of the MSCI All Country World Index and achieving a beta of less than 0.40 to the index, signifying that the Systems' portfolio moves up or down less than half as much as the world stock index.

Hedged Assets Performance



Hedged Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Hedged Assets Return	-0.2%	5.1%	5.1%	6.0%
Annualized Policy Benchmark Return*	-12.7%	3.0%	4.2%	5.6%
Excess Return	12.5%	2.1%	0.9%	0.4%
Annualized Standard Deviation of Composite	4.9%	8.4%	7.0%	5.8%
Annualized Standard Deviation of Policy Benchmark*	8.7%	10.8%	9.4%	7.7%
Annualized Standard Deviation of MSCI ACWI net Index	15.5 %	18.0 %	16.2 %	13.4 %
Beta to Policy Benchmark*	0.39	0.67	0.64	0.65
Beta to MSCI ACWI net Index	0.24	0.40	0.37	0.37

* *The Hedged Assets Policy Benchmark is composed as follows: 50% Bloomberg U.S. Intermediate Credit Index, 25% MSCI ACWI ex-USA net Index and 25% Russell 3000 Index.*

Investment Advisors

As of June 30, 2022, the Systems had contracts with 16 external investment advisors who managed 23 portfolios. During the fiscal year one investment mandate was terminated while an investment mandate with the Empyrean Capital Fund was added to the program.

Hedged Assets Investment Advisors			
Investment Advisor	Investment Style	Fair Value As of June 30, 2022	% of Total Plan Fair Value
AQR Absolute Return Fund	Relative Value	$ 167,424,443	0.3%
AQR Adaptive Multi-Strategy	Risk Parity	202,012,410	0.4%
AQR Diversified Beta Fund	Risk Parity	43,322,602	0.1%
AQR Real Asset Fund	Inflation Protection	55,589,843	0.1%
Bridgewater All Weather	Risk Parity	107,087,516	0.2%
Bridgewater Inflation Pool	Inflation Protection	38,338,581	0.1%
Bridgewater Pure Alpha II	Asset Allocation/Global Macro	643,125,861	1.2%
Davidson Kempner Institutional Partners	Event Driven	343,625,269	0.6%
Davidson Kempner Distressed Opportunities Fund	Distressed Debt/Credit	260,754,865	0.4%
Empyrean Capital Fund	Event Driven	227,830,770	0.4%
GoldenTree Partners	Distressed Debt/Credit	569,075,740	1.1%
HBK Capital Management	Relative Value	117,832,699	0.2%
Hillhouse China Value Fund	Long-Biased Equity	167,423,302	0.3%
Maverick Fund USA	Equity Long/Short	92,440,045	0.2%
NISA Investment Advisors	Custom Beta	432,638,984	0.8%
Renaissance Institutional Equities Fund	Low Volatility Equity	470,543,834	0.9%
Rock Springs Capital Fund	Long-Biased Equity	28,242,949	0.1%
Stark Investments Limited Partners	Equity Long/Short	2,233,290	0.0%
Sculptor Domestic Partners	Multi-Strategy	378,066,372	0.7%
Sculptor Europe Domestic Partners	Multi-Strategy	611,239	0.0%
Southpoint Capital Advisors	Equity Long/Short	117,230,938	0.2%
UBS O'Connor Multi-Strategy Alpha	Relative Value	153,679,475	0.3%
Westwood Management	Income Focused/Quality	251,672,989	0.5%
Total		**$ 4,870,804,016**	**9.1%**

Safe Assets Summary

As of June 30, 2022, Safe Assets had a fair value of approximately $8.9 billion, representing 16.6% of total plan assets.

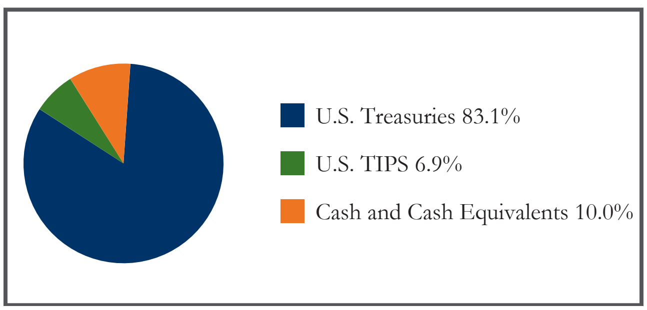
Investment Program Description

The Safe Assets program is intended to act as a source of safety and income for the Systems. The program is designed to create substantial diversification to the total fund and reduce volatility through low correlation to other asset classes. Specifically, the Safe Assets portfolio should provide asset protection at the total fund level in periods of economic stress.

Structure

As of June 30, 2022, NISA Investment Advisors was the only external investment manager within the Safe Assets program. Additionally, the Safe Assets program includes an FDIC insured interest-bearing account with a competitive yield at J.P. Morgan. The assets held within the program exhibit high liquidity and safety. The pie chart below depicts the Safe Assets program by showing the composite allocations as of June 30, 2022.

Safe Assets Allocation



The Systems' allocation to Safe Assets decreased from 17.3% as of June 30, 2021 to 16.6% as of June 30, 2022.

Market Overview

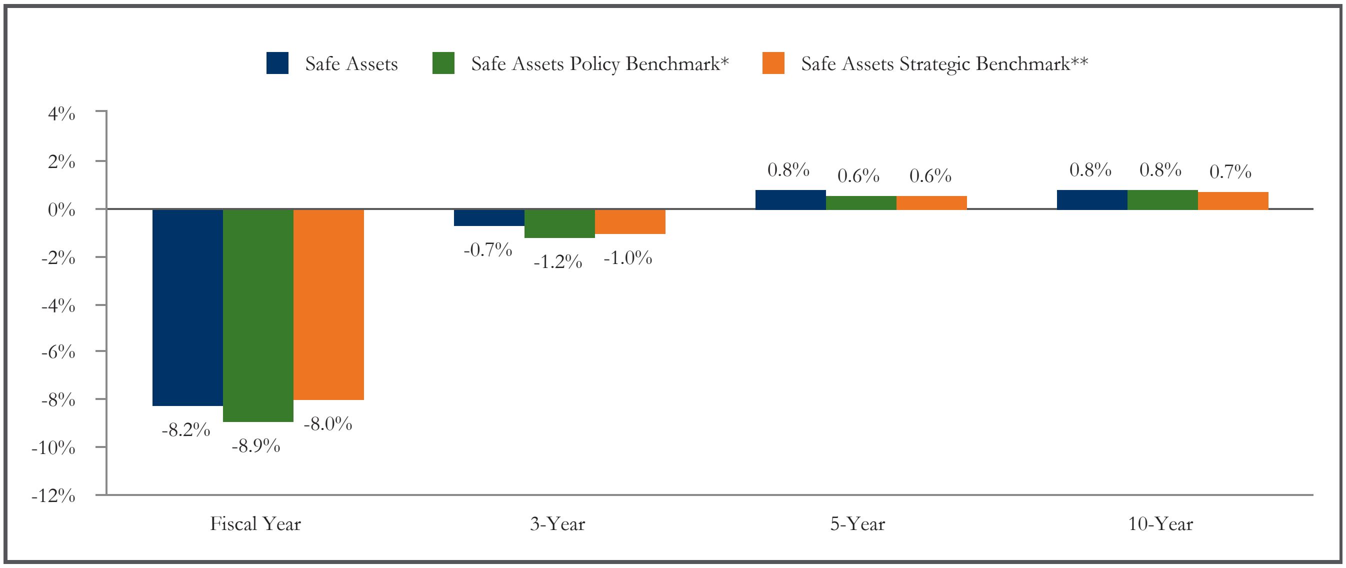
Treasury markets saw substantial declines during fiscal year 2022 as the yield on the 10-year Treasury increased to 3.0% on June 30, 2022, up from 1.5% on June 30, 2021. Treasury yields ended the year higher across the yield curve as the Federal Reserve took aggressive policy action by rapidly raising interest rates in response to multi-decade high inflation readings. The comprehensive measure of the U.S. Treasuries market (Bloomberg U.S. Treasuries Index) declined by 8.9% while the TIPS market (Bloomberg U.S. TIPS 1-10 year) was down 2% for the year.

Performance

The total return for the Safe Assets portfolio was -8.2% compared to the benchmark return of -8.9% for the fiscal year ended June 30, 2022. The Systems' opportunistic allocation to U.S. TIPS and shorter duration cash and cash equivalents contributed to the 70 basis points of excess return achieved during the year.

The absolute return of the Safe Assets portfolio is relatively modest over longer time periods. However, the Safe Assets portfolio is designed to provide asset protection at the total fund level in periods of economic stress and ultimate liquidity to the Systems. An allocation to Safe Assets allows the Systems to accept market risk in other portions of the total fund portfolio.

Safe Assets Performance



Safe Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Safe Assets Return	-8.2%	-0.7%	0.8%	0.8%
Annualized Policy Benchmark Return*	-8.9%	-1.2%	0.6%	0.8%
Annualized Strategic Benchmark Return**	-8.0%	-1.0%	0.6%	0.7%
Excess Return	0.7%	0.5 %	0.2%	—%
Annualized Standard Deviation of Composite	4.6%	4.6%	4.0%	3.3%
Annualized Standard Deviation of Policy Benchmark*	4.8%	4.7%	4.1%	3.5%
Beta to Policy Benchmark*	0.96	0.98	0.95	0.94
Beta to MSCI ACWI net Index	0.12	-0.01	-0.02	-0.02

* *Effective July 1, 2020 the Safe Assets Policy Benchmark is the Bloomberg U.S. Treasury Index. The 80.0% Bloomberg U.S. Treasury Index and 20.0% Bloomberg TIPS 1-10 Yrs. Index is used in prior periods.*

** *The Safe Assets Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month.*

The Systems have specifically taken less risk compared to the policy benchmark due to the inclusion of the cash and cash equivalents portfolios. Additionally, the Safe Assets program had a beta slightly less than 1.0 relative to the policy benchmark indicating less market volatility. Most importantly, the Safe Assets portfolio exhibits a beta of approximately zero relative to the MSCI All Country World Index (MSCI ACWI net Index) indicating no correlation to risk assets. These statistics support one of the primary objectives of Safe Assets: diversification from other risk assets in the total fund.

Statistics

The following table displays the statistical characteristics of the Systems' Safe Assets program as of June 30, 2022 with comparisons shown to the Bloomberg U.S. Treasury Index. Additionally, the top ten Safe Assets holdings as of June 30, 2022 are shown in the table below the characteristics.

Safe Assets Characteristics		
Characteristics	**June 30, 2022 Systems' Safe Assets Program**	**June 30, 2022 Bloomberg U.S. Treasury Index**
Number of Securities	129	273
Average Coupon	1.6%	1.7%
Yield to Maturity	2.9%	3.1%
Average Maturity (Years)	8.3	8.2
Duration (Years)	6.3	6.4

Safe Assets Top 10 Holdings			
Top 10 Largest Holdings* June 30, 2022		**Fair Value**	**% of Total Safe Assets**
United States Treasury Note, 0.75%, 03/31/2026	$	261,306,581	2.9%
United States Treasury Note, 2.625%, 02/15/2029		230,317,709	2.6%
United States Treasury Note, 2.875%, 08/15/2028		223,764,227	2.5%
United States Treasury Note, 2.75%, 07/31/2023		223,531,096	2.5%
United States Treasury Note, 1.5%, 11/30/2024		214,094,075	2.4%
United States Treasury Note, 0.125%, 08/15/2023		209,652,192	2.4%
United States Treasury Note, 0.25%, 08/31/2025		209,513,313	2.3%
United States Treasury Note, 1.5%, 11/30/2028		201,527,384	2.3%
United States Treasury Note, 1.625%, 05/15/2026		201,451,592	2.3%
United States Treasury Note, 0.5%, 08/31/2027		199,258,595	2.2%
Total	**$**	**2,174,416,764**	**24.4%**

* *A complete list of portfolio holdings is available upon request.*

Investment Advisors

NISA Investment Advisors was the only external investment advisor within the Safe Assets program, managing three portfolios as of June 30, 2022. The Safe Assets program also includes an interest-bearing cash account with the Systems' master custodian J.P. Morgan.

Safe Assets Investment Advisors				
Investment Advisor	**Investment Style**		**Fair Value As of June 30, 2022**	**% of Total Plan Fair Value**
NISA Investment Advisors	U.S. Treasuries	$	7,390,179,625	13.8%
NISA Investment Advisors	U.S. TIPS		615,965,350	1.1%
NISA Investment Advisors	Cash Equivalents		736,349,432	1.4%
J.P. Morgan	Interest Bearing Cash Account		156,163,260	0.3%
Total		**$**	**8,898,657,667**	**16.6%**

Private Risk Assets Summary

As of June 30, 2022, Private Risk Assets had a fair value of approximately $18.0 billion, representing 33.6% of total plan assets.

Investment Program Description

The allocation to Private Risk investments is viewed as a separate asset class for inclusion in the Systems' overall investment portfolios. The process of building the Systems' Private Risk program and fully funding the target allocation is expected to occur over a period of several years. Additional new investments will be necessary beyond the funding period in order to maintain the long-term target allocation. The three programs within the Private Risk Assets composite are Private Equity, Private Real Estate and Private Credit. Each program within the Private Risk allocation is a separate multi-manager composite that is treated generally as a single portfolio. Each program serves a specific and distinct role within the overall Private Risk composite and also within the overall total plan allocation. Over time, the Private Risk composite serves as a long-term vehicle to supply the underlying beta exposure to a portfolio of private assets.

Investments in Private Risk Assets differ substantially from the Systems' public markets asset classes (Public Risk Assets and Safe Assets) in part because they are typically very long-term in nature, not publicly traded, relatively illiquid and offer the potential for substantially higher returns (along with a commensurate level of risk). The illiquid nature of Private Risk Assets can result from the form of the asset or security itself, or it can be a function of the investment structure being utilized (e.g., a limited partnership).

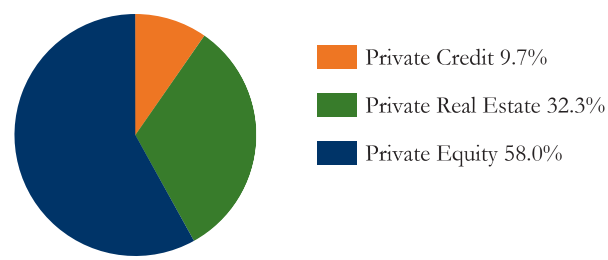
Due to the fact that Private Risk Assets are not publicly traded, pricing and performance measurements prior to the realization of gains are less reliable than in the traditional publicly traded asset classes. The Systems continually monitor the valuation policies and procedures utilized for such investments.

Structure

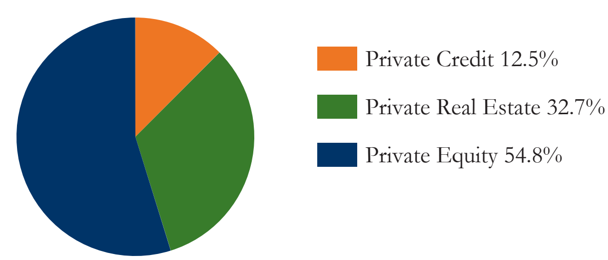
As of June 30, 2022, 54.8% of Private Risk Assets were invested in the Private Equity program, 32.7% in the Private Real Estate program and 12.5% in the Private Credit program. Each of these programs is discussed in more detail on the following pages.

Private Risk Assets Allocation

Private Risk: Interim Target Allocation



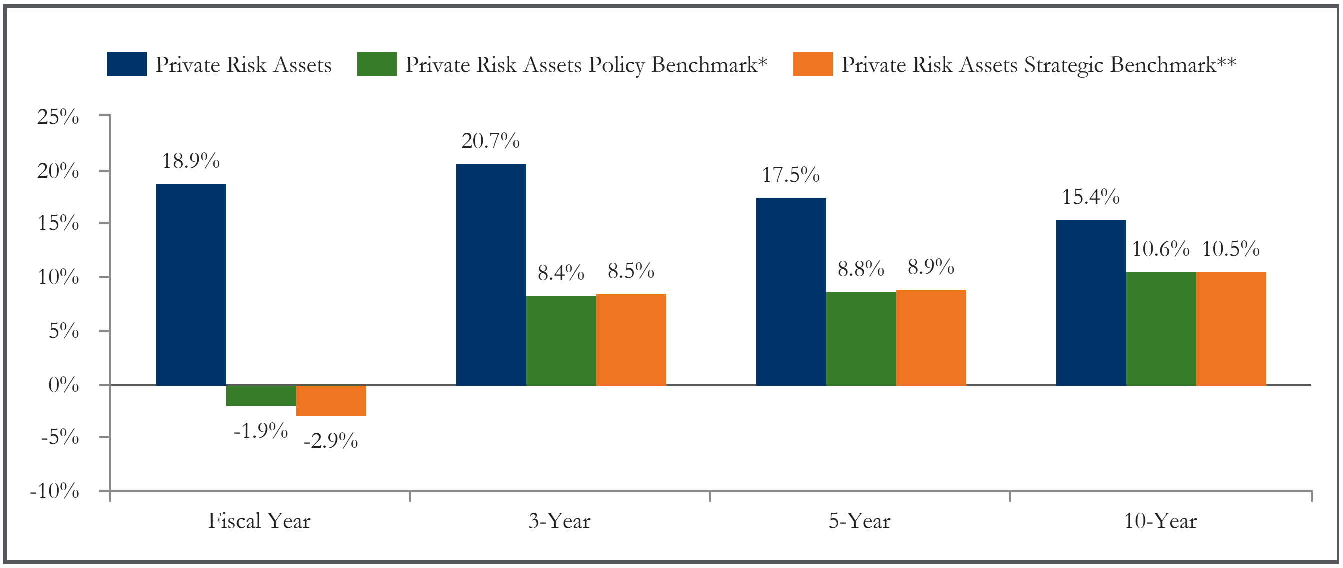
Private Risk: Actual Allocation



Performance

The total return for the Private Risk portfolio was 18.9%, compared to the policy benchmark return of -1.9% for the fiscal year ended June 30, 2022. The pricing and performance methodology utilized for private assets can provide for significant performance variances over short time periods. For instance, the Systems utilize liquid benchmarks (e.g., Russell 3000 Index) to measure an illiquid (Private Equity) asset class. Thus, there will be significant performance differences over short time periods in volatile markets. Due to the long-term nature of Private Risk assets, the performance can be more appropriately judged over a longer timeframe. As the table below indicates, the Private Risk portfolio has produced excellent absolute and relative returns over all time periods. The ten-year return exceeded the benchmark by 480 basis points. These excess returns are net of fees and expenses.

Private Risk Assets Performance



Private Risk Assets Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Risk Assets Return	18.9%	20.7%	17.5%	15.4%
Annualized Policy Benchmark Return*	-1.9%	8.4%	8.8%	10.6%
Annualized Strategic Benchmark Return**	-2.9%	8.5%	8.9%	10.5%
Excess Return	20.8%	12.3%	8.7%	4.8%

* *The Private Risk Assets Policy Benchmark is composed as follows: 43.5% Russell 3000 Index, 32.3% NFI-ODCE Index,14.5% MSCI ACWI ex-USA net Index and 9.7% ICE BofAML High Yield Master II Index.*

** *The Private Risk Assets Strategic Benchmark changes monthly based on the actual asset allocation at the end of the previous month.*

Private Equity Program Summary

As of June 30, 2022, the Private Equity program had a fair value of approximately $9.9 billion, representing 18.4% of total plan assets.

Investment Program Description

The Private Equity asset class is comprised of investment opportunities not typically included within the public equity and fixed income markets. Private Equity investments provide financing for start-up companies, private middle market companies, firms in financial distress and public and non-public firms seeking buyout financing. Private Equity investments can be classified into three basic sub-asset class categories:

- Venture Capital,
- Buyouts, and
- Debt-Related.

Investments in the sub-asset classes can be made in the U.S. or foreign countries. In total, the allocation to non-U.S. Private Equity investments will not exceed 50.0% of the overall Private Equity target allocation. The risks associated with Private Equity will be viewed both in isolation and within the context of the entire fund.

In January 2014, the Board of Trustees approved the development and implementation of a Private Equity Co-Investment program. The Co-Investment program is expected to further advance the goals and objectives of the overall Private Equity program by obtaining additional exposure to underlying portfolio company investments through direct equity investments made on a side-by-side basis with private equity funds where the Systems have an existing relationship. Co-Investments serve to increase exposure to the Private Equity asset class with little or no additional fees and/or performance carry paid to the underlying private equity partnerships. The objective of the Co-Investment program is to leverage existing, high-quality relationships with private equity managers in order to increase commitments to the asset class in a format that does not materially increase overall risk, while simultaneously helping to lower fees and performance carry.

Structure

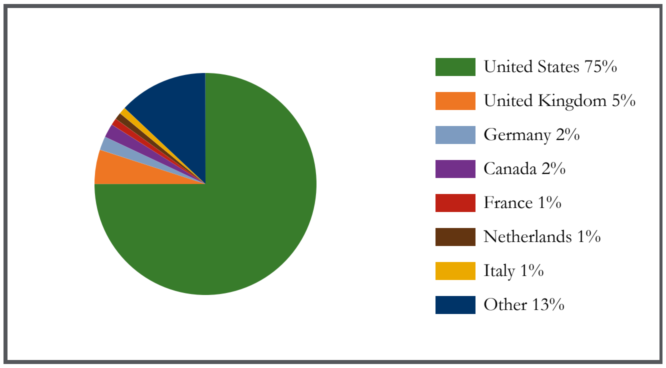
As of June 30, 2022, Private Equity assets committed* for investment were $14.2 billion. The fair value of funds that had been drawn down and actually invested as of June 30, 2022 was approximately $9.9 billion, representing 18.4% of total plan assets. The Systems' private equity investment commitments that have not yet been funded were approximately $3.7 billion as of June 30, 2022.

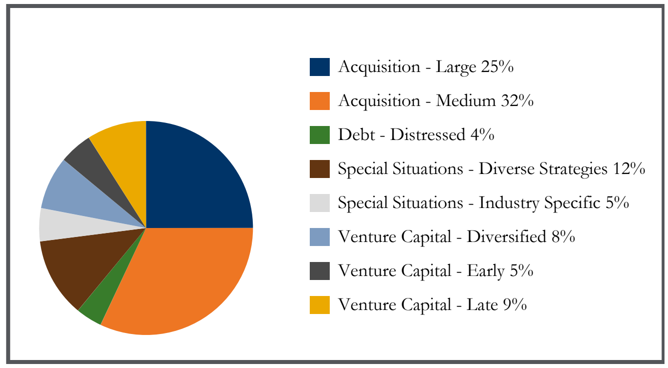
The objective of the Systems' allocation to Private Equity is to achieve returns that are higher than those attainable in the public equity markets with the added benefit of diversification. The long-term and illiquid nature of the Private Equity asset class dictates that capital must be invested at a measured pace. Pathway Capital Management has been retained by the Systems to provide private equity investment management services through three structures; a discretionary fund-of-funds relationship, an advisory relationship and a co-investment program. Additionally, the Systems have invested in private equity secondary funds and also utilize Albourne America, LLC to provide private equity advisory services.

The pie charts on the following page show the diversification (utilizing the fair value of invested assets) of the Systems' Private Equity holdings as of June 30, 2022 from both strategy and country perspectives.

** Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Fair value reflects capital that has actually been drawn and invested by the partnerships and funds.*

Private Equity Strategy and Diversification





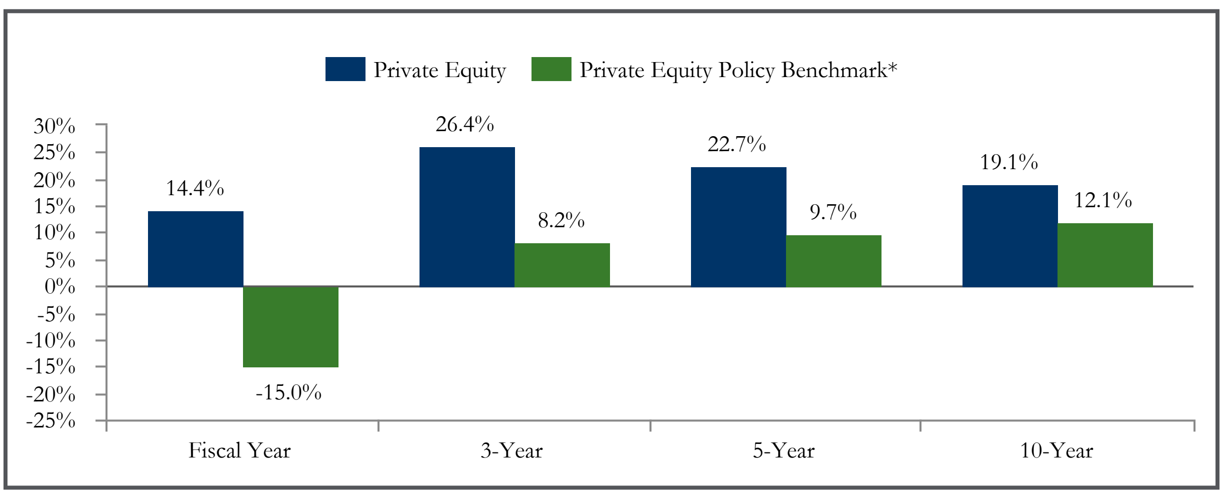
Market Overview

Private equity funds had a strong year producing positive returns during a very difficult public market investment environment. The buyout segment was supported by strong corporate earnings growth resulting in positive returns while venture capital funds experienced a moderate decline coming off record investment activity levels in 2021. The Systems' Private Equity program outperformed all other asset classes except for real estate in fiscal year 2022.

Performance

The total return for the Private Equity program was 14.4%, compared to the benchmark return of -15.0% for the fiscal year ended June 30, 2022. While short-term returns are not overly insightful for the Private Equity program in comparison to its benchmark, the one-year return exceeded the benchmark by 2,940 basis points. The Private Equity benchmark utilizes a blend of liquid public equity indices (e.g., Russell 3000 Index) to measure an illiquid (Private Equity) asset class. As such, there could be significant performance differences over short time periods in volatile markets. Due to the long-term nature of the asset class, the performance of a Private Equity portfolio can be more appropriately judged over a longer timeframe. As the table below indicates, the Private Equity portfolio has produced excellent absolute and relative returns over all time periods. The ten-year return exceeded the benchmark by 700 basis points. These excess returns are net of fees and expenses.

Private Equity Performance



Private Equity Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Equity Return	14.4%	26.4%	22.7%	19.1%
Annualized Policy Benchmark Return*	-15.0%	8.2%	9.7%	12.1%
Excess Return	29.4%	18.2%	13.0%	7.0%

* *Effective October 1, 2019 the Private Equity Policy Benchmark is 75% Russell 3000 Index and 25% MSCI ACWI ex-USA net Index. The Russell 3000 Index is used for prior periods.*

Private Equity Partnerships

As of June 30, 2022, the Systems were invested in 247 separate partnerships with 83 firms within the Private Equity asset class. In fiscal year 2022 the Systems committed to 31 new partnerships for $706 million. Additionally, the Systems received total distributions from the private equity partnerships of approximately $2.2 billion in fiscal year 2022.

Private Equity Partnerships

Partnerships	Investment Strategy	Fair Value* As of June 30, 2022	% of Total Plan Fair Value
Advent International GPE VII, VIII, IX, X, Lat Am	Acquisition - Medium	$ 93,193,171	0.2%
Alchemy Special Opportunities Fund IV	Debt - Distressed	8,095,661	0.0%
Baring Asia Private Equity Fund VI	Acquisition - Medium	34,938,907	0.1%
Battery Ventures XII, XII Side Fund, XIII, XIII Side Fund, XIV, Select II	Venture Capital	48,207,109	0.1%
BC European Capital IX	Acquisition - Large	18,889,778	0.0%
Berkshire Fund X	Special Situations - Diverse Strategies	3,429,216	0.0%
Blackstone Capital Partners V, VI	Acquisition - Large	12,555,873	0.0%
Canaan Equity IX, X, XI, XII	Special Situations - Diverse Strategies	145,787,731	0.3%
Carlyle Europe Partners III	Acquisition - Medium	376,801	0.0%
Carlyle Partners V, VI	Acquisition - Large	28,567,527	0.1%
Centerbridge Capital Partners I, II, III, IV	Special Situations - Diverse Strategies	60,611,437	0.1%
Centerbridge Special Credit Partners II, III, III-Flex	Debt - Distressed	99,820,213	0.2%
Charlesbank Fund IX, IX Overage Allocation Program, X	Acquisition - Medium	25,635,065	0.0%
Chequers Capital XVII	Acquisition - Medium	9,677,681	0.0%
Clayton, Dubilier & Rice Fund X	Acquisition - Medium	44,673,056	0.1%
Clearlake Capital Partners V, VI, VII	Special Situations - Diverse Strategies	67,100,581	0.1%
Clearlake Opportunities Partners II, III	Debt - Opportunistic	6,823,016	0.0%
Coller International Partners VII, VIII	Secondary Fund	190,773,022	0.4%
CVC Capital Partners VI, VII, VIII	Acquisition - Large	110,792,790	0.2%
CVC European Equity Partners IV, V, Tandem B	Acquisition - Large	899,757	0.0%
DEFY Partners I, II	Venture Capital	16,233,645	0.0%
EnCap Energy Capital Fund IX, X, XI, VIII Co-Investors	Special Situations - Industry Specific	107,847,359	0.2%
EnCap Flatrock Midstream III, IV	Special Situations - Industry Specific	14,924,507	0.0%
Energy Spectrum Partners VIII	Acquisition - Medium	34,429,178	0.1%
EQT VIII, IX	Acquisition - Medium	100,125,113	0.2%
Exponent Private Equity Partners II	Acquisition - Medium	690,188	0.0%
First Reserve Fund XI, XII	Special Situations - Industry Specific	256,763	0.0%
General Catalyst Group IX, X Early, X Endurance, X Growth	Venture Capital	110,877,190	0.2%
General Catalyst Group XI - Creation	Special Situations - Diverse Strategies	825,616	0.0%
General Catalyst Group XI - Endurance, Feeder, Ignition	Venture Capital	9,507,684	0.0%
Genstar Capital Partners V, VIII, IX, X	Acquisition - Medium	54,036,956	0.1%
Glendon Opportunities Fund I, II	Debt - Distressed	23,843,468	0.0%
Great Hill Equity Partners VII, VIII	Special Situations - Diverse Strategies	21,927,484	0.0%
GTCR Fund X, XI, XII, XIII	Acquisition - Medium	119,758,136	0.2%
H.I.G. Capital Partners VI	Acquisition - Large	8,065,623	0.0%
H.I.G. Growth Buyouts & Equity Fund III	Acquisition - Large	16,832,436	0.0%
Harvest Partners VIII, IX	Acquisition - Large	30,304,327	0.1%
Hellman & Friedman Capital Partners VI, Spock 1, VII, VIII, IX, X	Acquisition - Large	150,824,099	0.3%
Hillhouse Fund IV, V	Acquisition - Large	83,267,000	0.2%
Huron Fund V	Acquisition - Medium	11,954,993	0.0%
Icon Partners III, IV, V	Acquisition - Large	7,768,187	0.0%
Icon Software Partners	Special Situations - Diverse Strategies	7,420,834	0.0%
Incline Equity Partners V	Acquisition - Medium	2,894,738	0.0%
Insight Partners XII Buyout Annex Fund	Acquisition - Medium	2,987,692	0.0%
Insight Partners IX, X, XI, XII	Special Situations - Diverse Strategies	199,491,575	0.4%
Institutional Venture Partners XV, XVI, XVII	Venture Capital	98,946,218	0.2%
Kelso Investment Associates VIII	Acquisition - Medium	1,705,737	0.0%
KKR 2006 Fund	Acquisition - Large	3,182,626	0.0%
KRG CAPITAL FUND IV	Acquisition - Medium	1,254,768	0.0%
Lexington Capital Partners VI, VII, VIII, IX	Secondary Fund	470,750,445	0.9%
Lone Star Fund X	Debt - Distressed	51,249,772	0.1%
Madison Dearborn VI, VI Patriot, VII, VII Auxiliary SPV and VIII	Acquisition - Medium	128,603,245	0.2%
Marlin Equity V, Heritage II and Europe Heritage II	Acquisition - Medium	50,010,063	0.1%
Mayfair Equity Partners II and Sidecar	Acquisition - Medium	21,849,707	0.0%
Montagu IV	Acquisition - Medium	7,469,458	0.0%
Nautic Partners IX, X	Acquisition - Medium	16,418,387	0.0%
New Enterprise Associates 13, 14, 15, 16, 17, 18, VGE 18	Venture Capital	187,309,518	0.4%
New Horizon: Advantech Capital II, Redview Capital II	Special Situations - Diverse Strategies	9,854,654	0.0%
New Mountain Partners V, VI	Acquisition - Medium	73,357,987	0.1%
Nordic Capital CV1 Alpha, VIII, IX, X, XI	Acquisition - Medium	80,598,551	0.2%
NorthEdge Capital SME Fund I	Acquisition - Medium	6,858,117	0.0%
Oak Investment Partners XIII	Venture Capital	21,830,710	0.0%
Oaktree Opportunities Fund VII, VIIb, IX, Xb	Debt - Distressed	37,847,275	0.1%
Odyssey Investment Partners Fund IV, V	Acquisition - Medium	35,352,778	0.1%
Onex Partners II, III, IV, V, ONCAP IV	Acquisition - Medium	70,746,810	0.1%
Pamlico Capital IV, V	Acquisition - Medium	44,189,392	0.1%
Pantheon Global Secondary Fund III, IV	Secondary Fund	7,314,474	0.0%
Pathway Capital Management	Fund-of-Funds	4,744,537,629	8.9%
Paul Capital Partners IX	Secondary Fund	13,796,957	0.0%

Private Equity Partnerships			
Partnerships	Investment Strategy	Fair Value* As of June 30, 2022	% of Total Plan Fair Value
Permira Europe V, VI	Acquisition - Medium	116,281,608	0.2%
Permira VII, VIII	Acquisition - Large	11,827,089	0.0%
Providence Equity Partners VI and Strategic Growth IV, V	Special Situations - Industry Specific	32,628,358	0.1%
Quad-C Partners VIII, IX, X	Acquisition - Medium	55,521,866	0.1%
Quantum Energy Partners V, V-C, VI, VI-C, VII and VII-C	Special Situations - Industry Specific	89,976,247	0.2%
Ridgemont Equity Partners III, IV	Acquisition - Medium	44,181,983	0.1%
Riverside Micro-Cap Fund V, VI	Acquisition - Small	26,613,311	0.1%
Sentinel Capital Partners VI and Junior Capital I	Debt - Mezzanine	14,006,093	0.0%
Silver Lake Partners III, III SL SPV-2	Special Situations - Industry Specific	7,347,851	0.0%
Siris Partners IV	Acquisition - Medium	54,714,181	0.1%
Spectrum Equity Investors VI, VII, VIII and IX	Special Situations - Diverse Strategies	99,042,681	0.2%
Summit Partners Growth Equity Fund X, XI	Special Situations - Diverse Strategies	18,130,693	0.0%
Summit Partners Venture Capital Fund V-A	Special Situations - Diverse Strategies	6,328,922	0.0%
TA XI, XII, XIII, XIV	Special Situations - Diverse Strategies	99,317,785	0.2%
TCV VII, VIII, IX, X, XI	Venture Capital	173,308,692	0.3%
The Resolute Fund III, IV, V, II Continuation	Acquisition - Medium	95,475,452	0.2%
The Seventh Cinven Fund	Acquisition - Medium	27,339,930	0.1%
The Veritas Capital Fund VII, VIII	Acquisition - Medium	62,851,405	0.1%
Thoma Bravo Discover Fund I, II, III, IV	Acquisition - Medium	47,822,383	0.1%
Thoma Bravo Fund XII, XIII, XIV, XV	Acquisition - Large	116,631,261	0.2%
Thoma Bravo Special Opportunities Fund II	Acquisition - Medium	34,743,516	0.1%
TPG Partners V, VI	Acquisition - Large	1,826,161	0.0%
Trident Capital Fund VII, IX	Acquisition - Medium	78,006,129	0.2%
Vista Equity Partners Fund V, VI, VII, Foundation III, IV	Acquisition - Medium	198,518,815	0.4%
Wayzata Opportunities Fund II, III	Debt - Distressed	5,757,314	0.0%
Wind Point Partners CV1, VI, VII	Acquisition - Medium	4,777,373	0.0%
Wynnchurch Capital Partners V	Acquisition - Medium	5,531,648	0.0%
Stock distribution account	Public Stocks	168,114	0.0%
Total		**$ 9,861,655,322**	**18.4%**

* *Fair values are reported by the Systems' Private Equity advisors. Fair values reflect the most current net asset values. In instances where the most current net asset values were not as of June 30, 2022, the net asset values utilized were cash flow adjusted through June 30, 2022.*

Private Credit Program Summary

As of June 30, 2022, the Private Credit program had a fair value of approximately $2.2 billion, representing 4.2% of total plan assets.

Investment Program Description

Investments in Private Credit are similar to Private Equity investments in that they are typically very long-term in nature, not publicly traded, relatively illiquid, and offer the potential for substantially higher returns (along with a commensurate level of risk). The Private Credit portfolio also differs from the Private Equity portfolio and is a separate and distinct composite within Private Risk Assets. The Private Credit asset class is comprised primarily of debt-related investments that provide a current yield along with equity participation (usually warrants) referred to as an 'equity kicker.' Primary strategies are distressed debt, bankruptcy restructurings, mezzanine debt, bank loans and other credit-driven or debt-related investment strategies. Investments can be made in the U.S. or foreign countries. In total, the allocation to non-U.S. Private Credit investments will not exceed 50% of the overall Private Credit target allocation. The risks associated with Private Credit will be viewed both in isolation and within the context of the entire fund.

In October 2019 the Board of Trustees approved the development and implementation of a Private Credit Direct Investment program. The Direct Investment program is expected to further advance the goals and objectives of the overall Private Credit program by obtaining additional exposure to underlying credit and credit-related investments. This exposure may be obtained through co-investments made on a side-by-side basis with private credit funds where PSRS/PEERS is an investor or by investing in debt-oriented securities associated with private equity portfolio companies where the original equity investment occurred through private equity funds where the Systems have an existing relationship. The Direct Investments serve to increase exposure to the Private Credit asset class with little or no additional fees and/or performance carry paid to the underlying private equity or private credit partnerships. The objective of the Direct Investment Program is to leverage existing, high-quality relationships with private credit and private equity managers in order to increase commitments to the asset class in a format that does not materially increase overall risk, while simultaneously helping to lower fees and performance carry.

Structure

As of June 30, 2022, Private Credit assets committed* for investment were $5.0 billion. The fair value of funds that have been drawn down and actually invested as of June 30, 2022 was approximately $2.2 billion, representing 4.2% of total assets. The Systems' private credit investment commitments that have not yet been funded were approximately $1.9 billion as of June 30, 2022.

The objective for the Systems' allocation to Private Credit is to achieve returns that are higher than those attainable in the public markets with the added benefit of diversification. The long-term and illiquid nature of the Private Credit asset class dictates that capital must be invested at a measured pace. Pathway Capital Management has been retained by the Systems to provide private credit investment management services through three structures; a discretionary fund-of-funds relationship, an advisory relationship, and a direct investment program. Albourne America, LLC has also been retained to provide private credit advisory services.

Market Overview

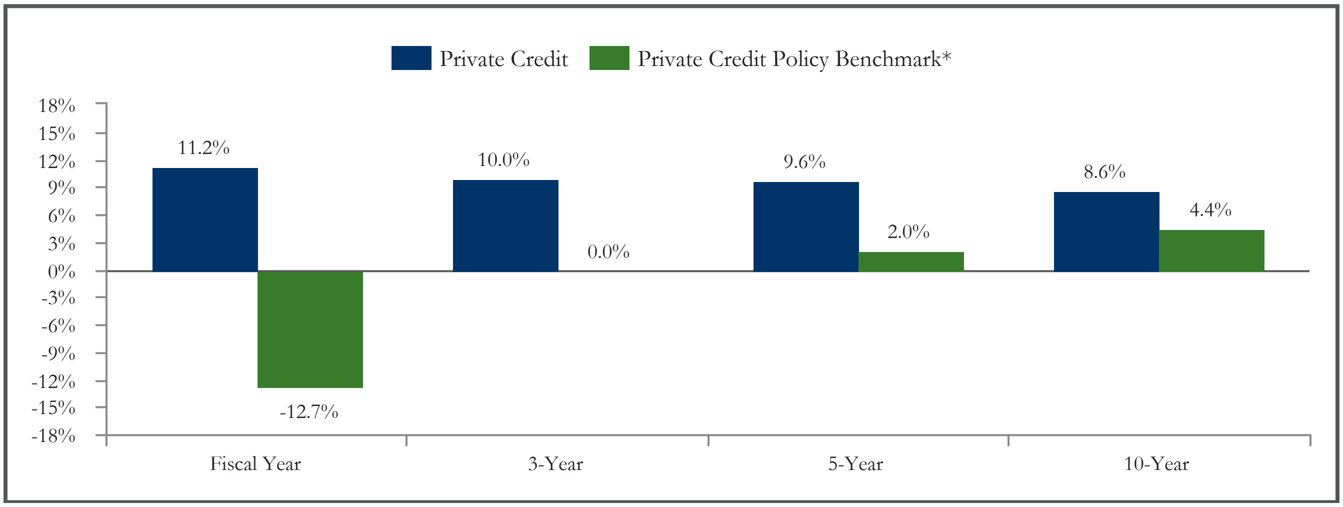
Credit markets saw negative returns for fiscal year 2022 as a result of inflation, higher bond yields, spikes in energy commodity prices and geopolitical uncertainty. The high yield market as measured by the private credit benchmark, ICE BofAML U.S. High Yield Master II Index, returned -12.7% for fiscal year 2022 compared to a 15.6% return for fiscal year 2021, demonstrating the stark change in economic environment. Despite losses for high yield, default rates remain near historic lows.

* *Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Fair value reflects capital that has actually been drawn and invested by the partnerships and funds.*

Performance

The total return for the Private Credit program was 11.2% compared to the benchmark return of -12.7% for the fiscal year ended June 30, 2022. Short-term returns can be volatile for the Private Credit program in comparison to a public benchmark, as discussed previously; private assets are more appropriately evaluated over longer time frames. As the table below indicates, the Private Credit portfolio has produced very significant absolute and relative returns over all reported time periods. The ten-year return exceeded the benchmark by 420 basis points. These excess returns are net of fees and expenses.

Private Credit Performance



Private Credit Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Credit Return	11.2%	10.0%	9.6%	8.6%
Annualized Policy Benchmark Return*	-12.7%	0.0%	2.0%	4.4%
Excess Return	23.9%	10.0%	7.6%	4.2%

* *The Private Credit Policy Benchmark is the ICE BofAML U.S. High Yield Master II Index.*

Private Credit Partnerships

As of June 30, 2022, the Systems were invested in 36 separate partnerships with 20 firms within the Private Credit asset class. Six new commitments were made to the Private Credit asset class during fiscal year 2022 for $475 million. The Systems received total distributions from the private credit partnerships of approximately $339 million in fiscal year 2022.

Private Credit Partnerships

Partnerships	Investment Strategy	Fair Value* As of June 30, 2022	% of Total Plan Fair Value
Bayview Opportunity Domestic V	Debt - Distressed	$ 52,728,344	0.1%
Bayview Opportunity Domestic VI	Debt - Distressed	75,967,442	0.2%
Benefit Street Partners Debt Fund IV	Debt - Lending	69,368,666	0.1%
Benefit Street Partners Debt Fund V	Debt - Lending	16,903,180	0.0%
Caltius IV	Debt - Mezzanine	1,056,568	0.0%
Centerbridge Special Credit Partners IV	Debt - Multi Strategy	18,750,000	0.0%
Clearlake Flagship Plus Partners	Special Situations - Industry Specific	37,426,914	0.1%
EIG Energy Fund XVI	Debt - Energy	64,368,520	0.1%
Encap Fund VII	Special Situations - Industry Specific	119,316	0.0%
Encap Fund VIII	Special Situations - Industry Specific	17,928,227	0.0%
GSO Capital Solutions Fund III	Debt - Distressed	7,973,235	0.0%
GSO Energy Select Opportunities Fund II	Debt - Distressed	19,078,940	0.0%
GSO European Senior Debt Fund II	Debt - Distressed	43,051,715	0.1%
H.I.G. Capital Bayside IV	Debt - Distressed	8,854,014	0.0%
H.I.G. Capital Bayside V	Debt - Distressed	53,746,550	0.1%
H.I.G. Capital Bayside VI	Debt - Distressed	46,750,983	0.1%
H.I.G. Capital Whitehorse	Debt - Distressed	25,369,352	0.1%
H.I.G. Capital Whitehorse 2020	Debt - Lending	48,325,124	0.1%
HPS Mezzanine Partners 2019	Debt - Mezzanine	70,380,074	0.1%
HPS Specialty Loan Fund 2016	Debt - Mezzanine	45,268,038	0.1%
HPS Specialty Loan Fund V	Debt - Mezzanine	76,273,811	0.2%
HPS Strategic Investment Partners V	Debt - Lending	193,776	0.0%
Hayfin Direct Lending Fund III	Debt - Lending	80,786,996	0.2%
Hayfin Special Opportunities Fund III SCSp	Debt - Lending	23,494,870	0.0%
HealthCare Royalty Partners IV	Debt - Lending	33,979,902	0.1%
Lone Star Real Estate Fund II	Debt - Distressed	94,490	0.0%
Oberland Capital Healthcare Fund II	Debt - Distressed	17,450,600	0.0%
OCM Opportunities Fund VIII	Debt - Distressed	210,613	0.0%
OCM Opportunities Fund VIII b	Debt - Distressed	11,629,960	0.0%
Pathway Capital Management	Fund-of-Funds	1,131,456,586	2.1%
Sixth Street Opportunities Partners V	Debt - Multi Strategy	6,434,316	0.0%
Summit Partners Credit Fund III	Debt - Lending	28,362,200	0.1%
TA Subordinated Debt Fund III	Debt - Mezzanine	3,328,123	0.0%
TA Subordinated Debt Fund IV	Debt - Mezzanine	36,791,801	0.1%
TSSP Adjacent Opportunities Partners	Debt - Multi Strategy	44,576,852	0.1%
TSSP Opportunities Partners IV	Debt - Multi Strategy	21,761,147	0.0%
Total		**$ 2,240,241,245**	**4.2%**

* *Fair values are reported by the Systems' Private Credit advisors. Fair values reflect the most current net asset values. In instances where the most current net asset values were not as of June 30, 2022, the net asset values utilized were cash flow adjusted through June 30, 2022.*

Private Real Estate Program Summary

As of June 30, 2022, the Private Real Estate program had a fair value of approximately $5.9 billion, representing 11.0% of total plan assets.

Investment Program Description

The Real Estate allocation is intended to provide exposure to a diversified portfolio of institutional quality private real estate investments that will provide meaningful, consistent returns and act as a hedge against inflation and as a diversifier to the overall investment portfolio. The specific objectives of the real estate allocation will be to optimize yield and return, preserve capital and enhance portfolio value across market cycles. The risks associated with Private Real Estate will be viewed both in isolation and within the context of the entire fund.

Structure

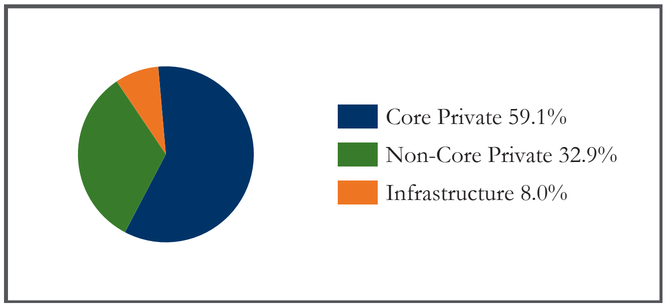
As of June 30, 2022, the Systems' Private Real Estate assets committed* for investment were $7.5 billion. The fair value of funds that had been drawn down and actually invested as of June 30, 2022 was approximately $5.9 billion, representing 11.0% of total assets. The Systems' private real estate investment commitments that had not yet been funded were approximately $2.0 billion as of June 30, 2022.

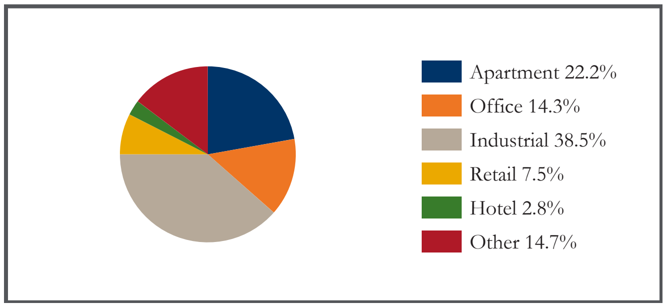
Within the overall Real Estate allocation, the Systems have established a 55% target allocation to non-core real estate (inclusive of infrastructure) and a 45% allocation to core private real estate. Non-core investments represent those properties and/or investment strategies that require specialized acquisition and management expertise or skill to mitigate the business and leasing risk that may be associated with individual investments. Non-core investments have greater associated risk compared to core investments. Core investments include existing, substantially leased income-producing properties located mainly in metropolitan areas that exhibit reasonable economic diversification and growth.

* *Committed capital reflects the total amount of capital that the Systems are legally obligated to supply to the partnerships and funds as the capital is needed to invest in underlying holdings. Fair value reflects capital that has actually been drawn and invested by the partnerships and funds.*

The following pie charts indicate the diversification (utilizing the fair value of invested assets) of the Systems' Real Estate holdings as of June 30, 2022 from both the strategy and property type perspectives.

Private Real Estate Diversification





Market Overview

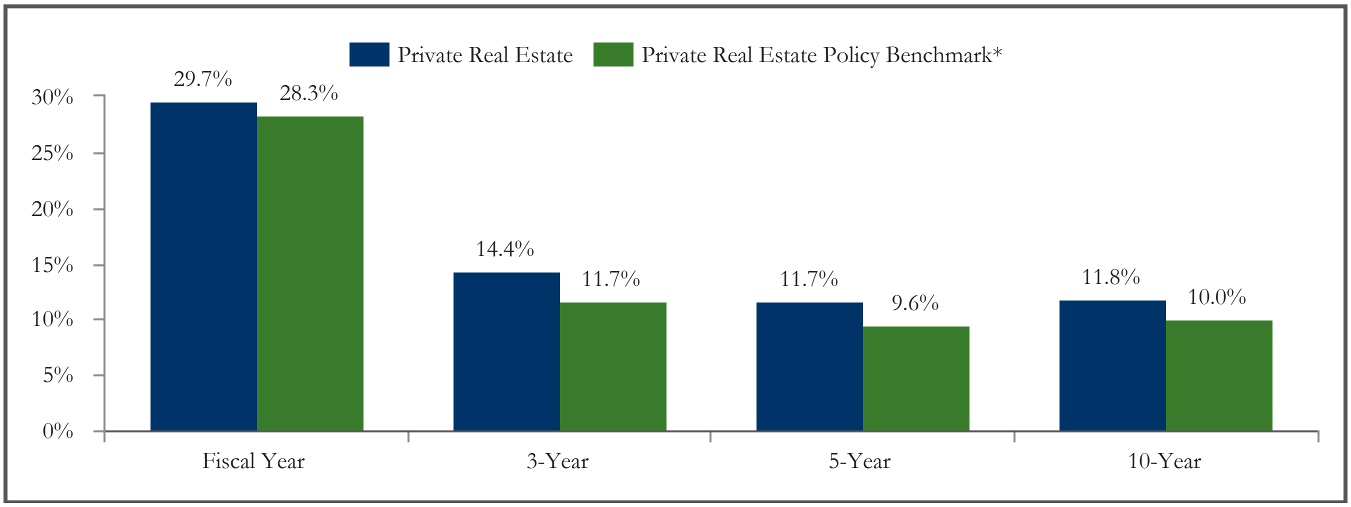
The real estate market performed very well during fiscal year 2022. The Private Real Estate benchmark, NCREIF Fund Index – Open Diversified Core Equity (NFI-ODCE), returned 28.3% for fiscal year 2022 compared to a 7.1% return for fiscal year 2021. Strong demand across all real estate sectors along with low interest rates and strong investment fundamentals drove the historically high return for the year. Real estate values increased across all property types for the year with the industrial and multi-family sectors producing the strongest returns.

The Systems maintain a sizable allocation to high-quality, stabilized real estate assets (core) due to the secure income return. Additionally, the Systems have an allocation to non-core assets to enhance return to the overall real estate portfolio. The Systems will continue to focus real estate efforts on investments that complement the existing portfolio.

Performance

The total return for the Private Real Estate program was 29.7% compared to the benchmark return of 28.3% resulting in 140 basis points of excess return for the fiscal year ended June 30, 2022. The Systems' Private Real Estate program has produced very strong absolute and relative returns for all reported time periods as noted below. These excess returns are net of fees and expenses.

Private Real Estate Performance



Private Real Estate Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Real Estate Return	29.7 %	14.4%	11.7 %	11.8%
Annualized Policy Benchmark Return*	28.3 %	11.7%	9.6%	10.0%
Excess Return	1.4%	2.7%	2.1%	1.8%

* *Effective January 1, 2016, the Real Estate Policy Benchmark is the NCREIF Open End Diversified Core Equity Index (NFI-ODCE). The NCREIF Property Index is used for prior periods.*

Private Real Estate Partnerships

As of June 30, 2022, the Systems were invested in 77 separate partnerships with 36 firms within the Private Real Estate asset class. In fiscal year 2022 the Systems committed to 10 new partnerships totaling $1.1 billion. The Systems also received total distributions from the real estate partnerships of approximately $804 million during the year.

Private Real Estate Partnerships

Partnerships	Investment Strategy		Fair Value* As of June 30, 2022	% of Total Plan Fair Value
AEW Core Property Fund	Core - Private	$	127,996,101	0.2%
AEW Partners Real Estate Fund IX	Non-Core - Private		48,229,841	0.1%
Almanac Realty Securities VIII and IX	Non-Core - Private		46,410,006	0.1%
Alterna Core Capital Assets Fund II	Infrastructure		55,034,125	0.1%
Angelo Gordon Realty Value Fund X	Non-Core - Private		73,919,724	0.1%
Ares Industrial Real Estate Fund	Non-Core - Private		189,145,188	0.3%
Asana Partners Fund I, II and III	Non-Core - Private		153,161,532	0.3%
Bain Capital Real Estate Fund II-A	Non-Core - Private		37,152,227	0.1%
BlackRock Global Energy & Power Infrastructure III	Infrastructure		40,410,196	0.1%
Blackstone BioMed Life Science Real Estate L.P.	Core - Private		94,916,224	0.2%
Blackstone R.E. Partners V, VI, VII, VIII and IX	Non-Core - Private		202,822,912	0.4%
Blackstone Real Estate Partners Europe VI (Cayman)	Non-Core - Private		37,420,168	0.1%
Blackstone Real Estate Partners Asia I and II	Non-Core - Private		100,688,226	0.2%
Brockton Capital II	Non-Core - Private		4,106,359	0.0%
Carlyle Europe Real Estate Partners III	Non-Core - Private		326,795	0.0%
Carlyle Property Investors	Core - Private		213,203,126	0.4%
Carlyle Realty V, VI, VII and VIII	Non-Core - Private		93,705,457	0.2%
CBRE US Value 7	Non-Core - Private		42,808	0.0%
CIM Fund III and VIII	Non-Core - Private		85,342,417	0.1%
Colony Investors VIII	Non-Core - Private		92,223	0.0%
Cortland Growth and Income	Core - Private		196,712,666	0.4%
CPI Capital Partners Europe	Non-Core - Private		673,883	0.0%
Dune Real Estate Fund I	Non-Core - Private		78,292	0.0%
Exeter Industrial Value Fund IV, V and Europe Logistics	Non-Core - Private		107,270,258	0.2%
Heitman Value Partners III, IV and V	Non-Core - Private		92,038,299	0.2%
IFM Global Infrastructure (US) L.P. Class A Interests	Infrastructure		122,645,089	0.2%
IPI Partners II-A	Non-Core - Private		41,875,048	0.1%
JPMorgan Special Situation Property Fund	Non-Core - Private		225,343,578	0.4%
JPMorgan Strategic Property Fund	Core - Private		332,104,308	0.6%
KKR Diversified Core Infrastructure Fund	Infrastructure		100,903,379	0.2%
KKR R.E. Fund I, II, III SCSp & Sec. Disloc. Oppt. Co-Inv.	Non-Core - Private		98,073,122	0.2%
LaSalle Asia Opportunity Fund III	Non-Core - Private		911,995	0.0%
LaSalle Property Fund	Core - Private		483,161,470	0.9%
Lone Star V and VI	Non-Core - Private		3,012,744	0.0%
Lone Star Real Estate Fund	Non-Core - Private		316,607	0.0%
Macquarie Infrastructure Partners IV and V	Infrastructure		152,747,240	0.3%
MetLife Core Property Fund	Core - Private		202,286,062	0.4%
Morgan Stanley Prime Property Fund	Core - Private		525,053,270	1.0%
North Haven Real Estate Fund V International	Non-Core - Private		1,122,521	0.0%
Noble Hospitality Fund III, IV-Income and IV-Value Added	Non-Core - Private		82,452,349	0.1%
Principal Enhanced Property Fund	Core - Private		196,168,444	0.4%
Prologis Targeted U.S. Logistics Holdings	Core - Private		647,472,976	1.2%
Prudential PRISA Fund	Core - Private		245,530,587	0.4%
Prudential PRISA III	Non-Core - Private		92,369,061	0.2%
Standard Life European Real Estate Fund I, II and III	Non-Core - Private		11,195,677	0.0%
Starwood Hospitality Fund	Non-Core - Private		2,131,450	0.0%
UBS Trumbull Property Fund	Core - Private		204,879,159	0.4%
Westbrook R.E. Fund VII, VIII, IX, X and XI	Non-Core - Private		97,149,024	0.2%
Total		**$**	**5,869,804,213**	**11.0%**

* *Fair values are reported by the Systems' Private Real Estate advisors. Fair values reflect the most current net asset values. In instances where the most current net asset values were not as of June 30, 2022, the net asset values utilized were cash flow adjusted through June 30, 2022.*

U.S. Public Equity Broker Commissions Report				
Brokerage Firm	**Shares Traded**	**Dollars Traded**	**Commissions Paid**	**Cost Per Share**
National Financial Services Corp	190,661,929	$ 1,321,006,944	$ 530,783	$ —
Bank of America	21,235,552	866,080,566	173,458	0.01
Morgan Stanley & Co.	21,588,351	1,012,871,841	149,296	0.01
Pershing LLC	3,948,858	153,328,812	138,960	0.04
Goldman Sachs & Co.	22,148,998	799,905,765	101,501	—
Jefferies & Co.	7,185,823	370,286,541	100,780	0.01
Piper Jaffray & Co.	10,947,341	677,964,518	73,031	0.01
Cap Institutional Services	2,365,180	154,664,035	70,154	0.03
Instinet, LLC	5,930,867	323,396,183	58,775	0.01
JP Morgan Chase	16,330,788	731,319,598	58,033	—
Other (<$50,000)	49,578,749	2,458,281,441	486,767	0.01
Total	**351,922,436**	**$ 8,869,106,244**	**$ 1,941,538**	**$ 0.01**

Non U.S. Public Equity Broker Commissions Report				
Brokerage Firm	**Shares Traded**	**Dollars Traded**	**Commissions Paid**	**Cost (Basis Points)**
JP Morgan Chase	295,747,810	$ 901,475,417	$ 313,458	3.5
Morgan Stanley & Co.	93,929,188	704,788,205	185,818	2.6
Goldman Sachs & Co.	38,837,697	590,646,249	170,620	2.9
Instinet, LLC	112,592,107	490,177,586	162,814	3.3
Credit Suisse Securities, LLC	93,144,057	494,991,025	135,278	2.7
UBS Securities, LLC	94,872,638	505,875,033	120,193	2.4
Merrill Lynch	68,918,662	410,567,325	114,723	2.8
HSBC Bank	791,654,991	116,691,031	71,308	6.1
Citigroup Global Markets, Inc.	24,639,043	216,864,995	66,571	3.1
CLSA Ltd.	66,538,114	154,624,937	63,105	4.1
Other (<$60,000)	555,357,891	2,067,676,571	595,489	2.9
Total	**2,236,232,198**	**$ 6,654,378,374**	**$ 1,999,377**	**3.0**

Investment Summary as of June 30, 2022						
		Percent of Total Fair Value			Percent of Market Exposure	
Asset Type	Fair Value	FY 2022	FY 2021	Market Exposure	FY 2022	FY 2021
Public Risk Assets						
U.S. Public Equity	$ 12,283,376,878	23.0%	26.5%	$ 12,507,663,267	23.4%	26.5%
Non-U.S. Public Equity	8,003,214,822	14.9%	16.6%	8,003,214,822	14.9%	16.6%
Public Credit	1,413,293,044	2.6%	3.8%	1,413,293,044	2.6%	3.8%
Hedged Assets	4,870,804,016	9.1%	9.0%	4,870,804,016	9.1%	9.0%
Total Public Risk Assets	***26,570,688,760***	***49.6%***	***55.9%***	***26,794,975,149***	***50.0%***	***55.9%***
Safe Assets						
U.S. Treasuries	7,390,179,625	13.8%	13.8%	7,390,179,625	13.8%	13.8%
U.S. TIPS	615,965,350	1.1%	1.4%	615,965,350	1.1%	1.4%
Cash & Cash Equivalents	892,512,692	1.7%	2.1%	892,512,692	1.7%	2.1%
Total Safe Assets	***8,898,657,667***	***16.6%***	***17.3%***	***8,898,657,667***	***16.6%***	***17.3%***
Private Risk Assets						
Private Real Estate	5,869,804,213	11.0%	7.9%	5,869,804,213	11.0%	7.9%
Private Equity	9,861,655,322	18.4%	16.3%	9,861,655,322	18.4%	16.3%
Private Credit	2,240,241,245	4.2%	2.5%	2,240,241,245	4.2%	2.5%
Total Private Risk Assets	***17,971,700,780***	***33.6%***	***26.7%***	***17,971,700,780***	***33.6%***	***26.7%***
Securities Lending Collateral	***(17,745)***	***0.0%***	***0.0%***	***(17,745)***	***0.0%***	***0.0%***
Cash & Equivalents*	***103,707,496***	***0.2%***	***0.1%***	***103,707,496***	***0.2%***	***0.1%***
Total Investments**	**$ 53,544,736,958**	**100.0%**	**100.0%**	**$ 53,769,023,347**	**100.4%**	**100.0%**
Reconciliation with Financial Statements						
Total from above	$ 53,544,736,958					
Accrued payable for investments purchased	1,310,273,546					
Accrued income payable	86,116					
Accrued receivable for investments sold	(956,185,086)					
Accrued income receivable	(92,637,552)					
Securities lending collateral	17,745					
Short-term investments designated for benefits	(517,873,044)					
Statements of Fiduciary Net Position	**$ 53,288,418,683**					

* *Managers may hold cash or cash equivalents as part of an active management strategy. Cash or cash equivalents held as part of an active management strategy are not separately listed.*
** *Total Investments includes accrued income and securities lending collateral as of June, 30, 2022.*

Investment Expenses for the Fiscal Year Ended June 30, 2022	
Investment Managers	
Investment Management Fees	
NISA Investment Advisors - Core	$ 4,954,947
NISA Investment Advisors - TIPS	416,195
Safe Assets Fees	5,371,142
NISA Investment Advisors - Corporate	1,075,670
Pacific Investment Management Company	540,873
Public Credit Fees	1,616,543
Allspring Global Investments, LLC	1,254,081
AQR Capital Management	1,317,071
BlackRock Investment Management	265,003
Coatue Long Only Partners	(1,751,401)
Coho Partners	1,593,661
Davis Selected Advisers	48,343
Eagle Capital Management	4,752,721
Grantham, Mayo, Van Otterloo & Co.	386,766
Lazard Asset Management	858,341
Martingale Asset Management	1,099,733
NISA Investment Advisors	17,830
Russell Investments	244,366
Select Equity Group	162,788
Westwood Management	1,542,363
Zevenbergen Capital	1,517,820
U.S. Public Equity Fees	13,309,486
ABS Investment Management	2,450,930
Acadian Asset Management	3,062,150
Alliance Bernstein L.P.	499,203
Allspring Global Investments, LLC	1,021,181
AQR Capital Management	1,775,896
Arrowstreet Capital	17,603,634
BlackRock Investment Management	258,486
Coronation Asset Management (Proprietary) Limited	1,156,702
Invesco Advisers, Inc.	710,563
MFS Institutional Advisors	5,628,082
Neon Capital Management	2,672,790
The Rock Creek Group	3,345,838
Walter Scott & Partners Limited	2,437,474
Non-U.S. Public Equity Fees	42,622,929
AQR Capital Management	292,637
BlackRock Investment Management	63,984
Chartwell Investment Partners	54,811
Greenhouse Funds	2,006,519
Martingale Asset Management	732,620
RK Capital Management	8,943,826
Russell Investments	22,087
Systematic Financial Management	979,470
S-Cap Fees	13,095,954
Alpha Overlay Fees	32,929,391
Hedged Assets Fees	109,512,491
Private Real Estate Fees	208,289,430
Private Credit Fees	38,737,969
Private Equity Fees	373,551,680
Commission Recapture Income	(44,847)
Investment Management Expense	838,992,168
Custodial Services	
JP Morgan Chase, NA	1,217,009
Custodial Fees	1,217,009
Investment Consultants	
Albourne America, LLC	750,000
Institutional Shareholder Services, Inc.	74,500
Pathway Consulting	3,689,885
Russell Investments Capital, LLC	212,500
Townsend	350,000
Verus Advisory Inc.	268,550
Investment Consultant Fees	5,345,435
Legal Expenses	1,207,426
Staff Investment Expenses	7,017,618
Total Investment Expenses	$ 853,779,656

The population of PSRS/PEERS retirees continues to grow year after year, and the majority remain in the state of Missouri upon retirement. Whether those retirees live in more populated and urban areas or in rural areas, their benefits provide overall economic activity in their communities.

ACTUARIAL SECTION

Actuarial Section

Certification of Actuarial Results

November 16, 2022

Board of Trustees
Public School Retirement System of Missouri
Public Education Employee Retirement System of Missouri
3210 West Truman Boulevard
Jefferson City, MO 65109

Re: Certification of Actuarial Results as of June 30, 2022

Dear Members of the Board:

At your request, we have performed actuarial valuations of the Public School Retirement System ("PSRS") and the Public Education Employee Retirement System ("PEERS") of Missouri as of June 30, 2022. An actuarial valuation of each System is performed annually for purposes of preparing the required accounting information under Governmental Accounting Standards and for purposes of determining the Actuarially Determined Contribution under the Board's funding policy. Our reports have been prepared pursuant to an engagement letter between PSRS and PEERS of Missouri and PwC, and are intended solely for the use and benefits of PSRS and PEERS of Missouri and not for reliance by any other person.

The actuarial valuations are based upon:

a. *Benefit Provisions* - Our understanding of the benefit provisions in effect on the valuation date under Missouri Revised Statutes Chapter 169.

b. *Data Relative to the Members of the Systems* - Data for all members of each System as of June 30, 2022 was provided by PSRS and PEERS of Missouri staff ("staff"). PwC relied on the data provided. PwC reviewed the data for reasonableness relative to the prior year's data, but the data was not audited.

c. *Assets of the Fund* - The values of the trust fund assets as of June 30, 2022 for each System were also provided by the staff. An actuarial value of assets, with investment gains and losses relative to the assumed return recognized over five years, is used in the development of the contribution rates.

d. *Actuarial Cost Method* - The actuarial cost method utilized by each System for accounting purposes is the Entry Age Normal, Level Percent method, as required by GASB Statement No. 67. Each System has elected to use the same cost method in the determination of the contribution rates for pre-funding the benefits. The objective of this method is to allocate the cost of benefits as a level percentage of pay over the entire career of each member. On a funding basis, any Unfunded Actuarial Accrued Liability ("UAAL") is separately financed as a level percentage of payroll over a fixed 30-year period, where a new 30-year amortization base is established for the gain or loss that occurred during the year prior to the valuation date. Increases in the Actuarial Accrued Liability caused by changes in the benefit provisions are amortized over a fixed 20-year period, as determined in the 2007 session of Legislature.

e. *Actuarial Assumptions* - The actuarial assumptions used for the June 30, 2022 valuations were based on an experience study that was completed for each System in May 2021. All economic and demographic assumptions were reviewed and certain assumptions were updated for the June 30, 2021 valuations, where appropriate, based on the results of the 2021 experience study. There were no changes in assumptions for the June 30, 2022 valuations. It is noted that the long-term inflation assumption was reviewed for the June 30, 2022 valuations in light of the current high inflationary environment. Capital market forecasts of both short and long-term inflation from various sources, the wide range of those forecasts, the volatility of recent observed inflation, and the efforts of the Federal Reserve Open Market Committee to reduce inflation were considered. Based on this information, the current long-term inflation assumption and COLA assumption were not adjusted for the June 30, 2022 valuations. The data sources and the effectiveness of the Federal Reserve's actions in reducing inflation will continue to be monitored in determining whether the long-term inflation assumption or COLA assumption should be updated before the next experience study.

For accounting purposes, the actuarial assumptions and methods used in this valuation were selected and approved by the Board and are in accordance with our understanding of GASB Statement No. 67.

For funding purposes, the actuarial assumptions and methods were selected and approved by the Board and are consistent with the funding policy adopted by the Board and summarized below. In general, the methods provide orderly funding of all benefits being accrued, as well as funding of the Unfunded Actuarial Accrued Liability over a period of 30 years. The five-year smoothing method elected by the Board in determining the Actuarial Value of Assets may accelerate or lengthen the effective funding period, depending on whether gains or losses are experienced. In our opinion, the actuarial assumptions and methods are reasonable for purposes of the actuarial valuations and meet the parameters set by the Actuarial Standards of Practice.

In order to establish long-term, consistent methods for pre-funding the benefits of each System, the Board of Trustees has adopted a funding policy. The objective is to achieve a funded ratio of 100% over a closed 30-year period. For this purpose, the funded ratio is defined as the Actuarial Value of Assets divided by the Actuarial Accrued Liability determined under the Entry Age Normal Level Percent cost method and the actuarial assumptions adopted by the Board.

PricewaterhouseCoopers LLP, One North Wacker Drive Chicago, IL,60606 T: (312)298 2000, F: (312) 298 2001, www.pwc.com/us

Certification of Actuarial Results, continued

The Board has identified the following principles to guide its funding policy:

1. Maintain adequate assets so that current plan assets plus future contributions and investment earnings should be sufficient to fund all benefits expected to be paid to members and their beneficiaries.
2. Maintain stability of contribution rates, consistent with other funding objectives.
3. Maintain public policy goals of accountability and transparency. Each policy element is clear in intent and effect, and each should allow an assessment of whether, how, and when the funding requirements of the plan will be met.
4. Promote intergenerational equity. Each generation of members and employers should incur the cost of benefits for the employees who provide services to them, rather than deferring those costs to future members and employers.
5. Provide a reasonable margin for adverse experience to help offset risks.
6. Review the investment earnings assumption in conjunction with the periodic asset / liability study and in consideration of the Board's risk profile.
7. Review demographic and economic assumptions in conjunction with the periodic experience study performed by an actuary.
8. Continue progress of systematic reduction of the Unfunded Actuarial Accrued Liabilities ("UAAL") while keeping the member and employer contribution rates at or near 14.5% of pay for PSRS and 6.86% of pay for PEERS, the contribution rates first paid during 2011-2012.

The actuarially determined contribution rates developed from the June 30, 2022 valuations reflect these principles.

We provide the following information used by PSRS and PEERS of Missouri staff to prepare the required schedules and other data in the Actuarial Section:

- Schedules of Funding Progress
- Required Contribution Rates and Amortizations of Unfunded Liability
- Reconciliation of Unfunded Actuarial Accrued Liability
- Solvency Tests
- Schedules of Active Member Valuation Data
- Schedules of Retirees and Beneficiaries Added to and Removed from Retirement Rolls

We also provide the information used by PSRS and PEERS of Missouri staff to prepare the following schedules and other data in the Financial Section:

- Sensitivity of the Net Pension Liabilities to Changes in the Discount Rate
- Schedules of Changes in the Employers' Net Pension Liability
- Schedules of Employers' Net Pension Liability
- Schedules of Employer Contributions

In preparing the results presented herein, we have used and evaluated actuarial models in accordance with Actuarial Standards of Practice ("ASOP") No. 56. PwC uses the ProVal valuation system developed by Winklevoss Technologies, LLC in performing valuations of pension and postretirement benefit plans. We have utilized the ProVal software to prepare the valuation results presented herein. ProVal is used to value participant data through projecting retirement benefits and applying plan specific assumptions, methods and plan provisions under applicable accounting and funding standards. PwC is not aware of any material limitations or known weaknesses in the ProVal software.

A range of results, different from those presented in this report could be considered reasonable. Future actuarial measurements may differ significantly from the current measurement presented in this report due to a number of factors including but not limited to: plan experience differing from that anticipated by the economic and demographic assumptions; increases or decreases expected as part of the natural operation of the methods used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); rounding conventions; and changes in plan provisions or applicable law. Due to the limited scope of this report, an analysis of the potential range of such future measurements has not been performed.

To the best of our knowledge, our actuarial reports are complete and accurate and have been prepared in accordance with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Our calculations also reflect our understanding of the requirements of Missouri state law. The undersigned actuaries are members of the Society of Actuaries and other professional organizations, including the American Academy of Actuaries, and meet the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States relating to pension plans. There is no relationship between the PwC practitioners involved in this engagement and PSRS and PEERS of Missouri that may impair our objectivity.

We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Plans administered by PSRS and PEERS of Missouri as of June 30, 2022 based on the underlying census data, asset information and selected assumptions and methods.

Sincerely,

Cindy Fraterrigo

Cindy Fraterrigo, FSA, EA, MAAA
Principal

Brandon A. Robertson

Brandon Robertson, ASA, EA, MAAA
Director

Schedule of Funding Progress

Public School Retirement System of Missouri

(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)-Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
6/30/13	$ 29,443,147	$ 36,758,165 [2]	$ 7,315,018	80.1%	$ 4,460,872	164.0%
6/30/14	31,846,599	38,483,184 [1]	6,636,585	82.8%	4,425,568	150.0%
6/30/15	34,073,415	40,610,540 [1]	6,537,125	83.9%	4,508,242	145.0%
6/30/16	35,419,278	41,744,619 [3]	6,325,341	84.8%	4,556,137	138.8%
6/30/17	37,373,740	44,501,771 [3]	7,128,031	84.0%	4,655,169	153.1%
6/30/18	39,211,452	46,702,002 [3]	7,490,550	84.0%	4,759,665	157.4%
6/30/19	40,498,479	47,973,829 [1]	7,475,350	84.4%	4,844,249	154.3%
6/30/20	41,705,059	49,641,020 [1]	7,935,961	84.0%	4,919,286	161.3%
6/30/21	45,033,548	52,834,297 [3]	7,800,749	85.2%	5,039,838	154.8%
6/30/22	47,185,300	55,405,260 [1]	8,219,960	85.2%	5,140,286	159.9%

[1] *There were no significant legislative changes in fiscal years 2014, 2015, 2019, 2020 and 2022 impacting the valuation.*
[2] *The extension of the 25-and-out and 2.55% provisions to 2014 are included in the AAL for 2013.*
[3] *There were no significant legislative changes in fiscal years 2016, 2017, 2018 and 2021, however actuarial assumptions were revised.*

Schedule of Funding Progress

Public Education Employee Retirement System of Missouri

(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL)-Entry Age (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
6/30/13	$ 3,237,200	$ 3,967,619 [2]	$ 730,419	81.6%	$ 1,470,830	49.7%
6/30/14	3,584,719	4,211,489 [1]	626,770	85.1%	1,442,701	43.4%
6/30/15	3,915,199	4,512,317 [1]	597,118	86.8%	1,469,772	40.6%
6/30/16	4,157,427	4,809,666 [3]	652,239	86.4%	1,519,081	42.9%
6/30/17	4,470,270	5,209,369 [3]	739,099	85.8%	1,558,183	47.4%
6/30/18	4,774,781	5,542,478 [3]	767,697	86.1%	1,636,008	46.9%
6/30/19	5,019,868	5,809,485 [1]	789,617	86.4%	1,665,654	47.4%
6/30/20	5,257,847	6,089,401 [1]	831,554	86.3%	1,732,243	48.0%
6/30/21	5,756,526	6,560,854 [3]	804,328	87.7%	1,758,535	45.7%
6/30/22	6,113,154	6,998,708 [1]	885,554	87.3%	1,864,704	47.5%

[1] *There were no significant legislative changes in fiscal years 2014, 2015, 2019, 2020 and 2022 impacting the valuation.*
[2] *The extension of the 25-and-out provision is included in the AAL for 2013.*
[3] *There were no significant legislative changes in fiscal years 2016, 2017, 2018 and 2021, however actuarial assumptions were revised.*

Required Contribution Rate & Amortization of Unfunded Liability

Public School Retirement System of Missouri

For the fiscal year ended June 30, 2022

	Percentage of Payroll
Normal cost rate	17.06 %
Rate needed to fund UAAL	12.16 %
Benchmark contribution rate - normal cost plus a rate to fund the UAAL over 20.0 years	29.22%
Recommended rate for FY 2024*	29.00 %

**The actuaries recommended no change in the contribution rate for FY 2024 based on a variety of factors, including but not limited to the following: 1) the effective UAAL amortization period for the current contribution rate (20.6 years at 29%) is within three years of the effective amortization period of the benchmark contribution rate noted above, 2) projections of future rates, 3) considerations of adverse experience and 4) the Board's overall funding policy.*

Required Contribution Rate & Amortization of Unfunded Liability

Public Education Employee Retirement System of Missouri

For the fiscal year ended June 30, 2022

	Percentage of Payroll
Normal cost rate	10.24%
Rate needed to fund UAAL	3.50%
Benchmark contribution rate - normal cost plus a rate to fund the UAAL over 20.4 years	13.74%
Recommended rate for FY 2024*	13.72%

**The actuaries recommended no change in the contribution rate for FY 2024 based on a variety of factors, including but not limited to the following: 1) the effective UAAL amortization period for the current contribution rate (20.6 years at 13.72%) is within three years of the effective amortization period of the benchmark contribution rate noted above, 2) projections of future rates, 3) considerations of adverse experience and 4) the Board's overall funding policy.*

Reconciliation of Unfunded Actuarial Accrued Liability			
Public School Retirement System of Missouri			
As of June 30, 2022			
(1) Unfunded actuarial liability as of July 1, 2021		$	7,800,748,844
(2) Changes in Unfunded Actuarial Accrued Liability			
a. Impact of Plan Changes	—		
b. Actuarial (Gains)/Losses			
i. From investment	(437,854,144)		
ii. From actuarial liabilities due to assumption changes	—		
iii. From actuarial liabilities due to actual vs. expected COLA	841,252,902		
iv. From actuarial liabilities due to actual vs. expected salary changes	57,283,816		
v. From actuarial liabilities due to other demographic experience	14,168,328		
vi. Total Unfunded Actuarial Accrued Liability (Gain)/Loss			474,850,902
c. Total New Amortization Bases: (2)(a) + (2)(b)(vi)			474,850,902
d. Net Change in Existing Bases Due to Prior Year Contributions, Net of Interest			(55,639,626)
e. Total changes in Unfunded Actuarial Accrued Liability			419,211,276
(3) Unfunded Actuarial Accrued Liability as of June 30, 2022		$	8,219,960,120

Reconciliation of Unfunded Actuarial Accrued Liability			
Public Education Employee Retirement System of Missouri			
As of June 30, 2022			
(1) Unfunded actuarial liability as of July 1, 2021		$	804,327,874
(2) Changes in Unfunded Actuarial Accrued Liability			
a. Impact of Plan Changes	—		
b. Actuarial (Gains)/Losses			
i. From investment	(64,096,947)		
ii. From actuarial liabilities due to assumption changes	—		
iii. From actuarial liabilities due to actual vs. expected COLA	79,094,422		
iv. From actuarial liabilities due to actual vs. expected salary changes	63,127,431		
v. From actuarial liabilities due to other demographic experience	7,351,157		
vi. Total Unfunded Actuarial Accrued Liability (Gain)/Loss			85,476,063
c. Total New Amortization Bases: (2)(a) + (2)(b)(vi)			85,476,063
d. Net Change in Existing Bases Due to Prior Year Contributions, Net of Interest			(4,249,457)
e. Total changes in Unfunded Actuarial Accrued Liability			81,226,606
(3) Unfunded Actuarial Accrued Liability as of June 30, 2022		$	885,554,480

Schedule of Active Member Valuation Data

Public School Retirement System of Missouri

Actuarial Valuation Date	Number of Employers	Number of Members	Covered Annual Payroll (000's)	Average Annual Salary	% Increase in Average Salary	Average Attained Age	Average Years of Service
6/30/13	535	78,076	$ 4,460,872	$ 57,135	1.2%	42.1	11.4
6/30/14	535	75,168	4,425,568	58,876	3.0%	42.2	11.8
6/30/15	535	78,138	4,508,242	58,582	-0.5%	42.0	11.5
6/30/16	534	78,129	4,556,137	59,005	0.7%	42.0	11.6
6/30/17	534	78,274	4,655,169	60,643	2.8%	42.0	11.7
6/30/18	533	78,700	4,759,665	61,634	1.6%	42.1	11.8
6/30/19	533	78,863	4,844,249	62,764	1.8%	42.2	12.0
6/30/20	533	78,848	4,919,286	63,688	1.5%	42.3	12.2
6/30/21	533	78,944	5,039,838	65,639	3.1%	42.3	12.3
6/30/22	533	78,973	5,140,286	67,225	2.4%	42.4	12.4

Schedule of Active Member Valuation Data

Public Education Employee Retirement System of Missouri

Actuarial Valuation Date	Number of Employers	Number of Members	Covered Annual Payroll (000's)	Average Annual Salary	% Increase in Average Salary	Average Attained Age	Average Years of Service
6/30/13	532	48,709	$ 1,470,830	$ 30,196	2.1%	48.1	8.5
6/30/14	532	45,589	1,442,701	31,646	4.8%	48.6	8.9
6/30/15	532	46,864	1,469,772	32,220	1.8%	48.4	8.6
6/30/16	530	47,851	1,519,081	32,887	2.1%	48.3	8.6
6/30/17	530	47,953	1,558,183	33,643	2.3%	48.3	8.5
6/30/18	530	48,549	1,636,008	34,361	2.1%	48.2	8.4
6/30/19	530	49,345	1,665,654	35,111	2.2%	48.1	8.3
6/30/20	530	50,179	1,732,243	35,800	2.0%	48.0	8.2
6/30/21	530	49,572	1,758,535	37,257	4.1%	47.9	8.2
6/30/22	530	50,179	1,864,704	39,112	5.0%	47.5	7.9

Solvency Test

Public School Retirement System of Missouri

(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Accrued Liability for: Member Contributions (1)	Current Retirees & Beneficiaries (2)	Active & Inactive Members Employer Financed Portion (3)	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Actuarial Value of Assets for: (1)	(2)	(3)
6/30/13	$ 6,856,920	$ 22,328,795	$ 7,572,451	$ 29,443,147	100.0%	100.0%	3.4%
6/30/14	6,985,665	23,579,998	7,917,522	31,846,599	100.0%	100.0%	16.2%
6/30/15	6,787,038	24,674,171	9,149,331	34,073,415	100.0%	100.0%	28.6%
6/30/16	6,994,370	25,895,012	8,855,237	35,419,278	100.0%	100.0%	28.6%
6/30/17	7,267,682	27,544,082	9,690,007	37,373,740	100.0%	100.0%	26.4%
6/30/18	7,593,869	28,811,151	10,296,982	39,211,452	100.0%	100.0%	27.3%
6/30/19	7,928,036	29,429,993	10,615,800	40,498,479	100.0%	100.0%	29.6%
6/30/20	8,268,226	30,515,563	10,857,231	41,705,059	100.0%	100.0%	26.9%
6/30/21	8,502,510	32,740,719	11,591,068	45,033,548	100.0%	100.0%	32.7%
6/30/22	8,674,301	34,541,914	12,189,045	47,185,300	100.0%	100.0%	32.6%

Solvency Test

Public Education Employee Retirement System of Missouri

(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Accrued Liability for: Member Contributions (1)	Current Retirees & Beneficiaries (2)	Active & Inactive Members Employer Financed Portion (3)	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Actuarial Value of Assets for: (1)	(2)	(3)
6/30/13	$ 862,035	$ 1,653,613	$ 1,451,971	$ 3,237,200	100.0%	100.0%	49.7%
6/30/14	894,650	1,861,575	1,455,264	3,584,719	100.0%	100.0%	56.9%
6/30/15	892,547	2,040,647	1,579,123	3,915,199	100.0%	100.0%	62.2%
6/30/16	926,274	2,205,328	1,678,064	4,157,427	100.0%	100.0%	61.1%
6/30/17	962,156	2,453,877	1,793,336	4,470,270	100.0%	100.0%	58.8%
6/30/18	1,004,383	2,678,124	1,859,971	4,774,781	100.0%	100.0%	58.7%
6/30/19	1,050,907	2,861,160	1,897,418	5,019,868	100.0%	100.0%	58.4%
6/30/20	1,097,457	3,071,099	1,920,845	5,257,847	100.0%	100.0%	56.7%
6/30/21	1,122,129	3,430,561	2,008,164	5,756,526	100.0%	100.0%	59.9%
6/30/22	1,147,612	3,755,741	2,095,355	6,113,154	100.0%	100.0%	57.7%

PSRS Schedule of Retirees and Beneficiaries Added to and Removed from Retirement Rolls

	Added to Rolls		Removed from Rolls		Rolls End of Year			% Increase	
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	Average Annual Allowances	in Annual Allowance	in Average Annual Allowance
2021-2022									
Service Retirees	2,731	$ 112,503,098	1,249	$ 50,727,803	61,604	$ 2,817,136,851	$ 45,730	7.18 %	4.60 %
Disability Retirees	26	830,363	32	857,886	1,032	31,289,041	30,319.00	3.85	4.96
Beneficiaries	431	16,682,043	308	9,278,481	5,040	175,874,217	34,896.00	8.11	5.43
Note: Other adjustments to 5 disability retirees and 2 beneficiaries occurred during the current year.									
2020-2021									
Service Retirees	2,587	$ 102,668,779	1,320	$ 51,809,696	60,122	$ 2,628,405,650	$ 43,718	3.94 %	1.75 %
Disability Retirees	44	1,224,478	31	539,059	1,043	30,129,625	28,887	3.03	1.94
Beneficiaries	430	16,073,547	273	8,114,216	4,915	162,677,085	33,098	7.86	3.32
Note: Other adjustments to 2 disability retirees and 50 beneficiaries occurred during the 2020-2021 fiscal year.									
2019-2020									
Service Retirees	2,472	$ 101,028,068	1,120	$ 41,405,854	58,855	$ 2,528,800,920	$ 42,967	2.39 %	0.04 %
Disability Retirees	56	1,554,789	43	795,175	1,032	29,243,125	28,336	1.46	0.28
Beneficiaries	370	12,637,095	238	7,157,255	4,708	150,820,748	32,035	4.24	0.74
Note: Other adjustments to 1 service retiree, 1 disability retiree, and 26 beneficiaries occurred during the 2019-2020 fiscal year.									
2018-2019									
Service Retirees	2,502	$ 98,082,129	935	$ 36,759,920	57,502	$ 2,469,681,559	$ 42,949	4.55 %	1.69 %
Disability Retirees	44	1,297,197	22	559,767	1,020	28,822,119	28,257	5.17	2.18
Beneficiaries	359	13,443,600	183	5,334,802	4,550	144,685,986	31,799	7.46	3.30
Note: Other adjustments to 5 service retirees and 7 disability retirees occurred during the 2018-2019 fiscal year.									
2017-2018									
Service Retirees	2,406	$ 90,851,701	1,105	$ 41,389,599	55,930	$ 2,362,271,747	$ 42,236	3.78 %	1.36 %
Disability Retirees	50	1,448,148	38	952,179	991	27,406,384	27,655	3.09	2.05
Beneficiaries	405	13,902,271	202	5,519,407	4,374	134,644,480	30,783	7.72	2.50
Note: Other adjustments to 2 disability retirees and 9 beneficiaries occurred during the 2017-2018 fiscal year.									
2016-2017									
Service Retirees	2,601	$ 97,816,017	1,042	$ 36,450,990	54,629	$ 2,276,325,975	$ 41,669	2.73 %	-0.21 %
Disability Retirees	56	1,525,607	30	585,716	981	26,584,277	27,099	2.83	0.31
Beneficiaries	345	12,304,287	203	5,520,642	4,162	124,990,237	30,031	6.00	1.72
Note: Other adjustments to 1 service retiree, 2 disability retirees and 26 beneficiaries occurred during the 2016-2017 fiscal year.									

PEERS Schedule of Retirees and Beneficiaries Added to and Removed from Retirement Rolls

	Added to Rolls		Removed from Rolls		Rolls End of Year			% Increase	
	Number	Annual Allowances	Number	Annual Allowances	Number	Annual Allowances	Average Annual Allowances	in Annual Allowance	in Average Annual Allowance
2021-2022									
Service Retirees	2,492	$ 31,119,074	1,064	$ 8,071,339	32,891	$ 335,105,022	$ 10,188	10.27 %	5.48 %
Disability Retirees	10	54,098	42	266,546	776	4,793,204	6,177	-0.40	3.83
Beneficiaries	276	1,975,900	151	1,038,394	2,531	17,662,965	6,979	9.80	4.07
Note: Other adjustments to 1 disability retiree and 7 beneficiaries occurred during the current year.									
2020-2021									
Service Retirees	2,326	$ 26,665,088	1,029	$ 6,928,991	31,463	$ 303,890,231	$ 9,659	7.20 %	2.79 %
Disability Retirees	19	180,395	41	149,600	809	4,812,612	5,949	0.60	3.34
Beneficiaries	257	1,900,419	138	851,511	2,399	16,086,917	6,706	11.05	3.46
Note: Other adjustments to 45 beneficiaries occurred during the 2020-2021 fiscal year.									
2019-2020									
Service Retirees	2,132	$ 24,672,435	914	$ 6,646,821	30,166	$ 283,475,672	$ 9,397	5.34 %	1.09 %
Disability Retirees	32	206,913	32	140,024	831	4,783,679	5,757	0.80	0.93
Beneficiaries	248	1,873,479	106	614,372	2,235	14,486,379	6,482	9.74	1.69
Note: Other adjustments to 1 service retiree, 1 disability retiree, and 22 beneficiaries occurred during the 2019-2020 fiscal year.									
2018-2019									
Service Retirees	2,104	$ 25,207,998	732	$ 5,118,903	28,947	$ 269,094,108	$ 9,296	8.20 %	3.07 %
Disability Retirees	45	337,905	25	148,841	832	4,745,905	5,704	5.82	3.41
Beneficiaries	179	1,332,732	94	440,834	2,071	13,200,310	6,374	9.18	3.96
Note: Other adjustments to 1 disability retiree and 14 beneficiaries occurred during the 2018-2019 fiscal year.									
2017-2018									
Service Retirees	2,025	$ 23,443,109	788	$ 5,183,020	27,575	$ 248,707,170	$ 9,019	7.93 %	3.07 %
Disability Retirees	36	219,230	27	179,121	813	4,484,799	5,516	2.19	1.06
Beneficiaries	206	1,426,667	92	482,533	1,972	12,090,177	6,131	10.00	3.92
Note: Other adjustments to 3 service retirees and 5 beneficiaries occurred during the 2017-2018 fiscal year.									
2016-2017									
Service Retirees	2,023	$ 23,078,805	752	$ 4,631,306	26,335	$ 230,438,067	$ 8,750	7.36 %	2.16 %
Disability Retirees	46	313,598	23	109,268	804	4,388,588	5,458	4.54	1.68
Beneficiaries	207	1,335,560	88	451,434	1,863	10,991,043	5,900	8.14	1.01
Note: Other adjustments to 3 service retirees, 1 disability retiree and 4 beneficiaries occurred during the 2016-2017 fiscal year.									

PSRS Summary Plan Description

The Public School Retirement System of Missouri (PSRS) became operative July 1, 1946. It was established by an Act of the Missouri Legislature and is governed by Chapter 169 of the Revised Statutes of Missouri. Its purpose is to provide benefits to members and their dependents at retirement or in the event of death or disability prior to retirement.

PSRS is a defined benefit plan funded on an actuarial reserve basis, which establishes the availability of funds to pay benefits as prescribed by law. The System is established as an independent trust fund and is not subject to direction by any state agency. Administrative expenses are paid entirely out of investment earnings.

Administration – The administration of PSRS is vested in a seven-member Board of Trustees, composed of three elected active PSRS members, one elected active Public Education Employee Retirement System of Missouri (PEERS) member, and three appointed trustees. The four elected trustees are selected by vote of the members and retirees of both Systems. Two are elected each even-numbered calendar year to serve four-year terms. The three appointed trustees, one of whom must be a PSRS or a PEERS retiree, are named by the governor to serve four-year terms. The appointed trustees must be residents of school districts included in the System but not employees of such districts nor state employees nor state elected officials.

The Board appoints an executive director who is responsible for employment of the retirement office staff, routine operation of the System, and acts as an advisor to the Board on all matters pertaining to the System.

Member Participation – PSRS membership is automatic for certificated, full-time employees of public school districts in Missouri (except the St. Louis city and the Kansas City school districts), public two-year colleges in Missouri, PSRS and certain statewide non-profit educational associations that have previously elected to join. Non-profit educational associations are no longer allowed to join the System. Certificated, part-time employees whose services would qualify them for membership in PEERS are contributing members of PSRS unless PEERS membership is elected. The vast majority of PSRS members are not covered by Social Security. However, there are a few exceptions due to specific guidance from the Social Security Administration. Those members who are also covered by Social Security contribute to PSRS at two-thirds the rate of other members and receive two-thirds benefits.

Members working in covered employment are considered active members. Such members contribute 14.5% of total retirement salary to PSRS. The contributions are deducted and remitted by the employer and are credited by PSRS to individual member accounts. Since July 1, 1989, member contributions have been tax-deferred for federal and state income tax purposes under IRC 414(h)(2). Contributions are not considered income for such purposes until they are paid as a lump-sum refund or monthly benefits.

Interest at a rate set each year by the Board of Trustees is credited to individual member accounts each June 30 on the previous June 30 balance. The interest rate, set annually by the Board, was 1.0% on June 30, 2022. Since PSRS is a defined benefit plan, benefits are based upon the member's final average salary and years of service. The amount of interest credited to a member's account has no bearing on the monthly benefit amount payable at retirement.

In addition to service earned for covered employment, members may purchase service in various categories including several types of leave, out-of-state school service, other public and private employment, active U.S. military duty, and service under the federal Uniformed Services Employment and Re-Employment Rights Act of 1994 (USERRA).

Members who have contributions on deposit with PSRS but are not working in covered employment are considered inactive members.

Employer Participation – The employers served by PSRS withhold members' contributions from salary payments and contribute an amount equal to those contributions at a current rate of 14.5% of payroll. Employer contributions and investment earnings on those funds are placed by PSRS in a general reserve account to pay monthly benefits to retirees and to beneficiaries of deceased members. Employers are responsible for remitting contributions promptly and for furnishing contribution information and new membership information to PSRS. Employers also provide needed data when members apply for monthly benefits or for refunds upon termination of employment.

Survivor Benefits – The designated beneficiary of a member who dies before retirement is eligible for a lump-sum refund of the member's contributions and interest. If the beneficiary is an eligible dependent and the member dies while in covered employment with at least two years of service, or while eligible for disability retirement benefits, monthly survivor benefits based on a percentage of the member's salary for the last full year of covered service can be elected instead of a lump-sum refund. Monthly survivor benefits may also be payable to qualified dependents of an inactive member who has at least five years of service.

In lieu of a lump-sum refund or monthly survivor benefits, survivors with an insurable interest and beneficiaries of disability retirees may elect to receive monthly benefits under the Joint-and-Survivor 100% benefit plan. Such benefits are payable when the member would have been eligible for early or normal service retirement.

Refund of Contributions – Member contributions and interest are fully refundable upon termination of covered employment or death. All service and benefit rights are forfeited upon voluntary refund or automatic termination of membership.

A member may, upon returning to covered employment, reinstate the service forfeited through termination of a previous membership by repaying the money refunded plus interest.

Membership Termination – Membership is terminated by death, retirement, refund of contributions or absence from covered employment by a non-vested member for five consecutive school years.

Disability Retirement Benefits – Disability retirement benefits are payable to eligible members who have met service and eligibility requirements and who, because of permanent disability, are unable to earn a livelihood in any occupation. In most instances, the disability retirement benefit is calculated at 50% of the member's salary for the last full year of service.

Service Retirement Benefits – Service retirement benefits are payable to members who have terminated covered employment and have met certain eligibility requirements.

Benefit Formula – All service retirement benefits are based on a formula which multiplies final average salary by the applicable benefit factor, by the years of service and, in the case of early retirement, by an age-reduction factor. Final average salary is obtained by dividing the total salaries for the three highest consecutive years of service by 36 months to arrive at a monthly average; the applicable factor is determined by the type of retirement eligibility; total service is the amount accumulated at retirement for covered employment and purchased service; and the age-reduction factor, when applicable, is determined by the age at retirement.

Normal Retirement – A member may retire with benefits calculated under the standard (2.5%) benefit factor at age 60 with five years of service, at any age with 30 years of service, or when a combination of age and service equals 80 or more. Between July 1, 2001 and July 1, 2014, a member could retire with a 2.55% benefit factor with 31 or more years of service.

Early Retirement – A member may retire with benefits calculated under the standard (2.5%) formula with an age-reduction factor applied, at age 55 with five years of service or at any age with 25 years of service, as long as he or she does not qualify for Rule of 80.

A special provision allows members under age 55 with 25.0 to 29.9 years of service to retire with benefits calculated under a modified benefit factor ranging from 2.2% to 2.4% with no age-reduction factor applied.

Payment Options – A retiring member may choose to receive the maximum benefits payable under the Single Life benefit plan, or may elect to receive a reduced benefit under one of three Joint-and-Survivor benefit plans or under one of two Term-Certain benefit plans, to provide survivor benefit coverage in varying degrees after the retiree's death.

Certain benefit minimums apply to normal or early retirement with 15 or more years of service. The minimums for 15 but fewer than 25 years of service are reduced if a Joint-and-Survivor or a Term-Certain benefit plan is elected and/or if an age-reduction factor is applicable because of early retirement. The minimums for 25 or more years of service are reduced only if a Joint-and-Survivor or a Term-Certain benefit plan is selected.

The Partial Lump Sum Option (PLSO) is available to qualified members. This option allows qualified members to choose to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time, lump-sum payment at retirement.

Cost-of-Living Adjustments – Cost-of-living adjustments (COLAs) are provided beginning the second January after retirement to service and disability retirees, and to Joint-and-Survivor and Term-Certain beneficiaries of deceased retirees. Lifetime COLAs are limited to 80% of the original retirement benefit.

The Department of Labor Consumer Price Index for Urban Consumers (CPI-U) for the previous fiscal year is used as a guideline for the annual COLA which is set by the Board. By law, if the change in CPI-U is 2% or more, the COLA must be at least 2%, but no more than 5%. If the change in CPI-U is between 0% and 2%, the Board may grant a COLA of 0% to 5%. If the change in CPI-U is less than 0%, no increase can be given. If it is more than 5%, the Board is required to give a 5% increase. Under the funding policies adopted by the Board, the following applies:

- If the June to June change in the CPI-U is less than 2% for consecutive one-year periods, a cost-of-living increase of 2% will be granted when the cumulative increase is equal to or greater than 2%, at which point the cumulative increase in the CPI-U will be reset to be based on the June value immediately preceding the January 1 at which the 2% cost-of-living increase is granted.
- If the June to June change in the CPI-U is greater than or equal to 2%, but less than 5%, a cost-of-living increase of 2% will be granted.
- If the June to June change in the CPI-U is greater than or equal to 5%, a cost-of-living increase of 5% will be granted.

Member Handbook – A ***Member Handbook*** containing detailed information concerning the retirement program is available on our website or can be obtained from the retirement office upon request.

PEERS Summary Plan Description

The Public Education Employee Retirement System of Missouri (PEERS) was established by an Act of the Missouri Legislature to begin operations on November 1, 1965, and is governed by Chapter 169 of the Revised Statutes of Missouri. Its purpose is to provide benefits to members and their dependents at retirement or in the event of death or disability prior to retirement.

PEERS is a defined benefit plan funded on an actuarial reserve basis, which establishes the availability of funds to pay benefits as prescribed by law. The System is established as an independent trust fund and is not subject to direction by any state agency. Administrative expenses are paid entirely out of investment earnings.

Administration – The law provides that the responsibility for the operation and administration of the retirement system is vested in the Public School Retirement System of Missouri (PSRS) Board of Trustees sitting as the Board of Trustees for PEERS. The Board is comprised of three elected active PSRS members, one elected active PEERS member and three appointed trustees. The four elected trustees are selected by vote of the members and retirees of both Systems. Two are elected each even-numbered calendar year to serve four-year terms. The three appointed trustees, one of whom must be a PSRS or a PEERS retiree, are named by the governor to serve four-year terms. The appointed trustees must be residents of school districts included in the System but not employees of such districts nor state employees nor state elected officials.

The Board appoints an executive director who is responsible for employment of the retirement office staff, routine operation of the System, and acts as an advisor to the Board on all matters pertaining to the System.

Member Participation – PEERS membership is automatic, regardless of position, for all persons not covered by PSRS who are employed for 20 or more hours a week on a regular basis in a position that normally requires at least 600 hours during the school term by the public school districts in Missouri (except the St. Louis city and the Kansas City school districts), public two-year colleges in Missouri (except St. Louis Community College), PSRS and statewide non-profit educational associations that have elected to join.

Members working in covered employment are considered active members. Such members contribute 6.86% of their total retirement salary to PEERS. The contributions are deducted by the employer and are credited by PEERS to individual member accounts. PEERS members are also covered by Social Security.

PEERS membership can be elected by employees with Missouri educator certificates who work in any position for 17 or more hours weekly but less than full time; however, PSRS membership is automatic if a PEERS election is not made. The election to join PEERS must be filed with the Board within 90 days after entering first time, part-time employment.

Since July 1, 1989, member contributions have been tax-deferred for federal and state income tax purposes under IRC 414(h)(2). Contributions are not considered as income for federal or state income tax purposes until they are paid in a lump-sum refund or in monthly benefits.

Individual accounts are maintained for all PEERS members. Interest is credited each June 30 on the previous June 30 balance. The interest rate, set annually by the Board, was 1.0% on June 30, 2022. Since PEERS is a defined benefit plan, benefits are based upon the member's final average salary and years of service. The amount of interest credited to a member's account has no bearing on the monthly benefit amount payable at retirement.

In addition to service earned for covered employment, members may purchase service in various categories including several types of leave, out-of-state school service, other public and private employment, active U.S. military duty, and service under the federal Uniformed Services Employment and Re-employment Rights Act of 1994 (USERRA).

Members who have contributions on deposit with PEERS but are not currently working in covered employment are considered inactive members.

Employer Participation – The employers served by PEERS withhold members' contributions from salary payments and contribute an amount equal to employee contributions at a current rate of 6.86% of payroll. Employer contributions and investment earnings on those funds are placed in a general reserve account to pay monthly benefits to retirees and to beneficiaries of deceased members. It is the responsibility of the employers to remit contributions promptly and for furnishing contribution information and new membership information to PEERS. Employers also provide needed data when members apply for benefits or refund of contributions upon termination of employment.

Survivor Benefits – When a member dies before retirement, the designated beneficiary becomes eligible for a lump-sum refund of the employee's contributions and interest. In lieu of a lump-sum refund, survivors with an insurable interest and beneficiaries of disability retirees may elect to receive monthly benefits under the Joint-and-Survivor 100% benefit plan. Such benefits are payable when the member would have been eligible for early or normal service retirement.

Refund of Contributions – Member contributions and interest are fully refundable upon termination of covered employment or death. All service and benefit rights are forfeited upon voluntary refund or automatic termination of membership.

A member may, upon returning to covered employment, reinstate the service forfeited through termination of a previous membership by repaying the money refunded plus interest.

Membership Termination – Membership is terminated by death, retirement, refund of contributions or absence from covered employment by a non-vested member for five consecutive school years.

Disability Retirement Benefits – Disability retirement benefits are payable to members who have met service and eligibility requirements and who, because of permanent disability, are unable to earn a livelihood in any occupation. The disability retirement benefit is calculated at 90% of the normal service retirement benefit.

Service Retirement Benefits – Service retirement benefits are payable to members who have terminated covered employment and who have met certain eligibility requirements.

Benefit Formula – All service retirement benefits are based on a formula which multiplies final average salary by the applicable benefit factor, by the years of service and, in the case of early retirement, by an age-reduction factor. Final average salary is obtained by dividing the total salaries for the three highest consecutive years of service by 36 months to arrive at a monthly average; the applicable factor is determined by the type of retirement eligibility; total service is the amount accumulated at retirement for covered employment and purchased service; and the age-reduction factor, when applicable, is determined by the age at retirement.

Because of the conversion of the System from a formula integrated with Social Security to the present basis, a special "frozen benefit" is in effect for certain members for service prior to July 1, 1973.

Normal Retirement – A member may retire with benefits calculated under the standard (1.61%) formula at age 60 with five years of service, at any age with at least 30 years of service, and at the point where the member's age plus service equals 80 or more (Rule of 80). A member may retire under the standard (1.61%) formula when the member qualifies for Rule of 80 or 30-and-Out and will receive an additional 0.8% multiplier until reaching minimum eligibility age for Social Security benefits (currently age 62).

Early Retirement – A member may retire with benefits calculated under the standard (1.61%) formula with an age-reduction factor applied at age 55 with five years of service, or at any age with 25 years of service, as long as he or she does not qualify for Rule of 80.

A special provision allows members under age 55 with 25.0 to 29.9 years of service to retire with benefits calculated under a modified benefit factor ranging from 1.51% to 1.59% with no age-reduction factor applied.

Payment Options – A retiring member may choose to receive the maximum benefits payable under the Single Life benefit plan, or may choose to receive a reduced benefit under one of three Joint-and-Survivor benefit plans or under one of two Term-Certain benefit plans, to provide survivor benefit coverage in varying degrees after the retiree's death.

Another option, the Accelerated Payment Plan (APP), allows members to receive a higher PEERS benefit prior to minimum Social Security eligibility age (currently age 62). When the minimum Social Security eligibility age is attained, the member's PEERS benefit is reduced and remains at a reduced level for the remainder of their retirement.

The Partial Lump Sum Option (PLSO) is available to qualified members. This option allows qualified members to choose to have their lifetime monthly benefits actuarially reduced in exchange for the right to also receive a one-time, lump-sum payment at retirement.

Cost-of-Living Adjustments – Cost-of-living adjustments (COLAs) are provided starting the fourth January after retirement to service and disability retirees, and to Joint-and-Survivor and Term-Certain beneficiaries of deceased retirees. Lifetime COLAs are limited to 80% of the original retirement benefit.

The Department of Labor Consumer Price Index for Urban Consumers (CPI-U) for the previous fiscal year is used as a guideline for the annual COLA which is set by the Board of Trustees. By law, if the change in CPI-U is 2% or more, the COLA must be at least 2%, but no more than 5%. If the change in CPI-U is between 0% and 2%, the Board may grant a COLA of 0% to 5%. If the change in CPI-U is less than 0%, no increase can be given. If it is more than 5%, the Board is required to give a 5% increase. Under the funding policies adopted by the Board, the following applies:

- If the June to June change in the CPI-U is less than 2% for consecutive one-year periods, a cost-of-living increase of 2% will be granted when the cumulative increase is equal to or greater than 2%, at which point the cumulative increase in the CPI-U will be reset to be based on the June value immediately preceding the January 1 at which the 2% cost-of-living increase is granted.
- If the June to June change in the CPI-U is greater than or equal to 2%, but less than 5%, a cost-of-living increase of 2% will be granted.
- If the June to June change in the CPI-U is greater than or equal to 5%, a cost-of-living increase of 5% will be granted.

Member Handbook – A ***Member Handbook*** containing detailed information concerning the retirement program is available on our website or can be obtained from the retirement office upon request.

PSRS and PEERS Summary of Actuarial Assumptions and Methods

The Board is responsible for the adoption of the Systems' Funding Policies and assumptions. A summary of the current Funding Policy is included in the Certification of Actuarial Results.

The actuarial assumptions and methods utilized for funding and financial reporting purposes differ slightly. The primary difference between the two methods is the fact that financial reporting requires the recognition of investment gains at market with no smoothing.

Inflation

Inflation is assumed to be 2.00% per annum. (effective 6/30/21)

Payroll Growth

Total payroll growth for PSRS is assumed to be 2.25% per annum, consisting of 2.00% inflation, 0.125% real wage growth due to the inclusion of active health care costs in pension earnings, and 0.125% of real wage growth due to productivity. (effective 6/30/21)

Total payroll growth for PEERS is assumed to be 2.50% per annum, consisting of 2.00% inflation, 0.25% real wage growth due to the inclusion of active health care costs in pension earnings, and 0.25% of real wage growth due to productivity. (effective 6/30/21)

Individual Salary Growth

PSRS

Individual salaries are assumed to increase each year with inflation of 2.00%, real wage growth generated by the cost of active health care of 0.125% (since health care costs are included in pension earnings), real wage growth due to productivity of 0.125%, and additional real salary growth for merit, promotion, and seniority. (effective 6/30/21)

PSRS – Salary Growth

Service	Inflation	Health Care Cost	Productivity	Merit, Promotion, Seniority	Total Individual Salary Growth
0	2.00%	0.125%	0.125%	6.625%	8.875%
1	2.00%	0.125%	0.125%	3.325%	5.575%
2	2.00%	0.125%	0.125%	2.775%	5.025%
3	2.00%	0.125%	0.125%	2.666%	4.916%
4	2.00%	0.125%	0.125%	2.557%	4.807%
5	2.00%	0.125%	0.125%	2.447%	4.697%
6	2.00%	0.125%	0.125%	2.338%	4.588%
7	2.00%	0.125%	0.125%	2.229%	4.479%
8	2.00%	0.125%	0.125%	2.120%	4.370%
9	2.00%	0.125%	0.125%	2.010%	4.260%
10	2.00%	0.125%	0.125%	1.901%	4.151%
11	2.00%	0.125%	0.125%	1.792%	4.042%
12	2.00%	0.125%	0.125%	1.683%	3.933%
13	2.00%	0.125%	0.125%	1.573%	3.823%
14	2.00%	0.125%	0.125%	1.464%	3.714%
15	2.00%	0.125%	0.125%	1.355%	3.605%
16	2.00%	0.125%	0.125%	1.285%	3.535%
17	2.00%	0.125%	0.125%	1.215%	3.465%
18	2.00%	0.125%	0.125%	1.145%	3.395%
19	2.00%	0.125%	0.125%	1.075%	3.325%
20	2.00%	0.125%	0.125%	1.005%	3.255%
21	2.00%	0.125%	0.125%	0.935%	3.185%
22	2.00%	0.125%	0.125%	0.865%	3.115%
23	2.00%	0.125%	0.125%	0.795%	3.045%
24	2.00%	0.125%	0.125%	0.725%	2.975%
25	2.00%	0.125%	0.125%	0.655%	2.905%
26	2.00%	0.125%	0.125%	0.585%	2.835%
27	2.00%	0.125%	0.125%	0.515%	2.765%
28	2.00%	0.125%	0.125%	0.445%	2.695%
29	2.00%	0.125%	0.125%	0.375%	2.625%
30+	2.00%	0.125%	0.125%	0.375%	2.625%

PEERS

Individual salaries are assumed to increase each year with inflation of 2.00%, real wage growth generated by the cost of active health care of 0.25% (since health care costs are included in pension earnings), real wage growth due to productivity of 0.25%, and additional real salary growth for merit, promotion, and seniority. (effective 6/30/21)

PEERS – Salary Growth					
Service	Inflation	Health Care Cost	Productivity	Merit, Promotion, Seniority	Total Individual Salary Growth
0	2.00%	0.25%	0.25%	7.25%	9.75%
1	2.00%	0.25%	0.25%	3.25%	5.75%
2	2.00%	0.25%	0.25%	2.75%	5.25%
3	2.00%	0.25%	0.25%	2.55%	5.05%
4	2.00%	0.25%	0.25%	2.35%	4.85%
5	2.00%	0.25%	0.25%	2.15%	4.65%
6	2.00%	0.25%	0.25%	2.00%	4.50%
7	2.00%	0.25%	0.25%	1.85%	4.35%
8	2.00%	0.25%	0.25%	1.75%	4.25%
9	2.00%	0.25%	0.25%	1.65%	4.15%
10	2.00%	0.25%	0.25%	1.55%	4.05%
11	2.00%	0.25%	0.25%	1.45%	3.95%
12	2.00%	0.25%	0.25%	1.35%	3.85%
13	2.00%	0.25%	0.25%	1.25%	3.75%
14	2.00%	0.25%	0.25%	1.20%	3.70%
15	2.00%	0.25%	0.25%	1.15%	3.65%
16	2.00%	0.25%	0.25%	1.10%	3.60%
17	2.00%	0.25%	0.25%	1.05%	3.55%
18	2.00%	0.25%	0.25%	1.00%	3.50%
19	2.00%	0.25%	0.25%	0.95%	3.45%
20	2.00%	0.25%	0.25%	0.90%	3.40%
21	2.00%	0.25%	0.25%	0.85%	3.35%
22	2.00%	0.25%	0.25%	0.80%	3.30%
23+	2.00%	0.25%	0.25%	0.75%	3.25%

Investment Return

It is assumed that investments of the Systems will return a yield of 7.30% per annum, net of system expenses (investment and administrative). (effective 6/30/21)

Cost-of-Living Adjustments

The Board's cost-of-living adjustment policy is as follows:

- If the June to June change in the CPI-U is less than 2.00% for consecutive one-year periods, a cost-of-living increase of 2.00% will be granted when the cumulative increase is equal to or greater than 2.00%, at which point the cumulative increase in the CPI-U will be reset to zero. For the following year, the starting CPI-U will be based on the June value immediately preceding the January 1 at which the 2.00% cost-of-living increase is granted.
- If the June to June change in the CPI-U is greater than or equal to 2.00%, but less than 5.00%, a cost-of-living increase of 2.00% will be granted.
- If the June to June change in the CPI-U is greater than or equal to 5.00%, a cost-of-living increase of 5.00% will be granted.

The actuarial assumption assumes a 2.0% COLA for the next 2 years and then 1.35% for all years thereafter.

The COLA applies to service retirements and beneficiary annuities. The COLA does not apply to the benefits for in-service death payable to spouses (where the spouse is over age 60), and does not apply to the spouse with children pre-retirement death benefit, the dependent children pre-retirement death benefit, or the dependent parent death benefit. The total lifetime COLA cannot exceed 80% of the original benefit. Future COLAs for current benefit recipients reflect actual cumulative adjustments granted at the time of valuation. (effective 6/30/21)

Mortality Rates

Active Member Mortality

PSRS

Mortality rates for PSRS active members are based on experience-adjusted PubT-2010 (Teachers) base mortality table for employees with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.10 at all ages for males and 1.04 at all ages for females. The Plan-specific experience adjustments are equivalent to the experience adjustment factors used for the retiree mortality rates. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PSRS Active Member Mortality

Age	Male	Female
20	0.380	0.144
30	0.314	0.186
40	0.543	0.356
50	1.150	0.729
60	3.031	1.758
70	7.345	4.608

PEERS

Mortality rates for PEERS active members are based on experience-adjusted PubG-2010(B) (General Employees, Below-Median Income) base mortality table for employees with generational projection using the MP-2020 improvement scale, multiplied by an adjustment factor of 1.13 at all ages for males and 0.94 at all ages for females. The Plan-specific experience adjustments are equivalent to the experience adjustment factors used for the retiree mortality rates. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PEERS Active Member Mortality

Age	Male	Female
20	0.470	0.130
30	0.760	0.228
40	1.277	0.488
50	2.319	0.965
60	5.494	2.348
70	10.908	5.384

Service Retiree Mortality

PSRS

Mortality rates for PSRS non-disabled retirees are based on experience-adjusted PubT-2010 (Teachers) base mortality table for retirees with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.10 at all ages for males and 1.04 at all ages for females. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PSRS Non-Disabled Retiree Mortality

Age	Male	Female
40	0.543	0.346
50	1.150	0.729
60	4.098	3.134
70	11.085	7.316
80	39.441	27.929
90	139.533	101.816
100	346.404	285.220
110	543.543	491.628

PEERS

Mortality rates for PEERS non-disabled retirees are based on experience-adjusted PubG-2010(B) (General Employees, Below-Median Income) base mortality table for retirees with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.13 at all ages for males and 0.94 at all ages for females. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PEERS Non-Disabled Retiree Mortality

Age	Male	Female
40	1.277	0.488
50	7.670	3.790
60	12.769	5.259
70	22.199	10.211
80	62.227	32.768
90	175.692	110.953
100	355.852	257.795
110	558.367	444.356

Beneficiary and Survivor Mortality

PSRS

Mortality rates for PSRS beneficiaries and survivors are based on experience-adjusted PubT-2010 (Teachers) base mortality table for contingent survivors with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.18 at all ages for males and 1.07 at all ages for females. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PSRS Beneficiary and Survivor Mortality		
Age	Male	Female
40	0.583	0.366
50	7.788	3.287
60	12.460	6.987
70	23.659	13.226
80	58.963	36.434
90	162.753	117.627
100	371.597	293.448
110	583.073	505.809

PEERS

Mortality rates for PEERS beneficiaries and survivors are based on experience-adjusted PubG-2010(B) (General Employees, Below-Median Income) base mortality table for contingent survivors with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.01 at all ages for males and 1.07 at all ages for females. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PEERS Beneficiary and Survivor Mortality		
Age	Male	Female
40	1.141	0.555
50	8.663	5.516
60	13.099	10.345
70	23.551	17.440
80	55.798	43.418
90	146.001	125.260
100	318.062	293.448
110	499.071	505.809

Disability Retiree Mortality

PSRS

Mortality rates for PSRS disabled retirees are based on experience-adjusted PubT-2010 (Teachers) base mortality table for disabled retirees with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.10 at all ages for males and 1.04 at all ages for females. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PSRS Disability Retiree Mortality		
Age	Male	Female
40	8.348	7.221
50	16.622	14.806
60	28.728	21.355
70	40.412	27.194
80	75.352	59.536
90	171.028	137.904
100	346.404	285.220
110	543.543	491.628

PEERS

Mortality rates for PEERS disabled retirees are based on experience-adjusted PubG-2010 (General Employees) base mortality table for disabled retirees with generational projection using the MP-2020 improvement scale multiplied by an adjustment factor of 1.13 at all ages for males and 0.94 at all ages for females. Illustrative rates per 1,000 members at various ages are as follows (effective 6/30/21):

PEERS Disability Retiree Mortality		
Age	Male	Female
40	8.576	6.526
50	17.075	13.383
60	29.511	19.302
70	41.514	24.579
80	77.407	53.811
90	175.692	124.644
100	355.852	257.795
110	558.367	444.356

Retirement Rates

Retirement is assumed in accordance with the following rates per 1,000 eligible members (effective 6/30/21):

PSRS Active Member Retirement

	Years of Service										
Age	<=20	21	22	23	24	25	26	27	28	29	>=30
<50	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	3.00 %	3.00 %	3.00 %	3.00 %	40.00 %
50	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	3.00 %	3.00 %	3.00 %	3.00 %	40.00 %
51	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	3.00 %	3.00 %	3.00 %	20.00 %	40.00 %
52	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	3.00 %	3.00 %	20.00 %	20.00 %	40.00 %
53	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	3.00 %	30.00 %	20.00 %	20.00 %	40.00 %
54	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %	40.00 %
55	5.00 %	3.00 %	3.00 %	3.00 %	3.00 %	40.00 %	20.00 %	20.00 %	20.00 %	20.00 %	40.00 %
56	5.00 %	3.00 %	3.00 %	3.00 %	40.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	40.00 %
57	5.00 %	3.00 %	3.00 %	40.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	40.00 %
58	5.00 %	3.00 %	40.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	40.00 %
59	5.00 %	40.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	40.00 %
60	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	40.00 %
61	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	40.00 %
62	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	40.00 %
63	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	40.00 %
64	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	40.00 %
65	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	45.00 %	45.00 %	45.00 %	45.00 %	45.00 %	40.00 %
66	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	40.00 %
67	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	40.00 %
68	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	40.00 %
69	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	40.00 %
>=70	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

PEERS Active Member Retirement

	Years of Service										
Age	<=20	21	22	23	24	25	26	27	28	29	>=30
<50	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	5.00 %	5.00 %	5.00 %	5.00 %	30.00 %
50	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	5.00 %	5.00 %	5.00 %	5.00 %	20.00 %
51	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	5.00 %	5.00 %	5.00 %	30.00 %	20.00 %
52	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	5.00 %	5.00 %	30.00 %	20.00 %	20.00 %
53	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %
54	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %	20.00 %
55	5.00 %	5.00 %	5.00 %	5.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
56	5.00 %	5.00 %	5.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
57	5.00 %	5.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
58	5.00 %	5.00 %	30.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
59	5.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
60	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %
61	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %	10.00 %
62	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
63	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
64	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
65	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %
66	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %	30.00 %
67	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %
68	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %
69	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %
70	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %
71	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %	25.00 %
72	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
73	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
74	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %	20.00 %
>=75	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %	100.00 %

Withdrawal Rates

Termination of membership prior to eligibility for retirement from all causes other than death, disability or retirement is assumed in accordance with the following illustrative rates per 1,000 members: (effective 6/30/16):

PSRS Active Member Withdrawal		PEERS Active Member Withdrawal	
Years of Service	Rate	Years of Service	Rate
0	240.0	0	350.0
1	115.0	1	230.0
2	100.0	2	180.0
3	80.0	3	150.0
4	70.0	4	125.0
5	60.0	5	100.0
10	28.0	10	55.0
15	15.0	15	33.0
20	10.0	20	18.0
25+	0.0	25+	0.0

Refund of Contributions

Active members who terminate employment with less than five years of service and inactive members with less than five years of service are assumed to take an immediate refund of their contributions.

Active members who terminate employment with five or more years of service, but prior to satisfying the age and service requirements for service retirement, and inactive members with five or more years of service are assumed to select the option that has the greater present value between an immediate refund of their contributions and a life annuity deferred to their earliest retirement age. (effective 6/30/16)

Active members who terminate employment with five or more years of service and satisfy the age and service requirements for service retirement upon termination, and inactive members with five or more years of service and currently eligible for service retirement are assumed to select an immediate life annuity. (effective 6/30/16)

Disability Rates

Retirement for disability prior to age 60 is assumed in accordance with the following illustrative rates per 1,000 eligible members:

PSRS Active Member Disability (effective 6/30/21)		PEERS Active Member Disability (effective 6/30/16)	
Age	Rates	Age	Rates
25	0.0017%	25	0.0017%
30	0.0080%	30	0.0080%
35	0.0220%	35	0.0160%
40	0.0480%	40	0.0320%
45	0.0880%	45	0.0640%
50	0.1290%	50	0.1220%
55	0.1660%	55	0.2100%

Interest on Member Accounts

1.00% per annum (effective 6/30/21)

Service Purchases

A 0.75% load for PSRS (effective 6/30/21) and a 1.50% load for PEERS (effective 6/30/16) is added to the Normal Cost to account for anticipated losses resulting from service purchases and reinstatements.

Provisions for Expenses

There is no specific provision for expenses. The implicit assumption is that investment and administrative expenses are paid from investment income in excess of 7.3% per annum. (effective 6/30/21)

Dependent Assumptions

(effective 6/30/16)

- **Marriage Assumptions (Pre-retirement)** 70% of male and female members are assumed to be married. Beneficiaries are assumed to be of the opposite sex from the member. Male spouses are assumed to be two years older than female spouses.
- **Beneficiary Assumptions (Post-retirement)** Retired members, regardless of gender, are assumed to be three years older than their joint annuitant.

Survivor Benefits (Pre-retirement PSRS Only)

All active members under age 50 are assumed to have two dependent children. Each child is assumed to receive payments of $860 per month for 18 years if the member is under age 32 and grading down to zero years if the member is age 50. (effective 6/30/16)

Return of Unused Member Account Balance

A cash refund feature is included in the valuation of annuity benefits to reflect that cumulative annuity payments to members may not be less than the amount of contributions paid by the member. (effective 6/30/16)

Actuarial Cost Method

The actuarial cost method is Entry Age Normal - Level Percent of Payroll.

The normal cost is calculated separately for each active member and is equal to the level percentage of payroll needed as an annual contribution from entry age to retirement age to fund projected benefits. The actuarial accrued liability on any valuation date is the accumulated value of such normal costs from entry age to the valuation date. (1947)

Asset Valuation Method

The Actuarial Value of Assets is a smoothed value of assets. The actuarial value at June 30 of the prior year is projected by increasing the amount by 7.3% interest, adding contributions with 7.3% interest for half the year, and subtracting benefit payments for half the year. Twenty percent of the difference between the actual returns on market value for the year and expected return from the projection of the prior year actuarial value, along with corresponding amounts from each of the prior four years is added to the actuarial value. The Actuarial Value of Assets was reset to market value at June 30, 2003. The methodology remains unchanged. (1994)

Amortization of Unfunded Actuarial Accrued Liability

Gains and losses occurring from census experience different than assumed and assumption changes are amortized over a 30-year period as a level percent of payroll. A new gain or loss base is established each year based on the additional gain or loss during that year and that base is amortized over a new 30-year period. The purpose of the method is to give a smooth progression of the costs from year to year and, at the same time, provide for an orderly funding of the unfunded liabilities. Increases or decreases in the Actuarial Accrued Liability caused by changes in the benefit provisions are amortized over 20 years, as determined in the 2007 session of the Legislature.

The method for amortizing the unfunded Actuarial Accrued Liability was changed from a rolling 30-year method to the closed 30-year method described above effective June 30, 2011.

For accounting, gains and losses occurring from census experience different than assumed and assumption changes are amortized into expense over the average expected future service of all plan participants (active and inactive). Gains and losses occurring from investment experience different than assumed are amortized into expense over a five-year period. The effect of plan changes on the plan liability are fully recognized in expense in the year in which they occur.

NOTE: *Dates reflect the effective date as adopted by the Board of Trustees.*

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Educators, administrators and staff understand the value of being a part of a defined benefit pension plan, and plan membership can be a serious consideration when deciding where one will spend their career. The opportunity for lifetime monthly benefits in retirement is attractive to educators and education professionals who are in it for the long haul. Their knowledge, time and caring improve the quality of the educational experience at our public schools and make our communities better places for students and families.

STATISTICAL SECTION

Statistical Section

Statistical Summary

Benefit Recipients

The largest percentage of the Systems' benefit recipients are service retirees. Service retirement benefits are payable to members who have met age and service requirements. The number of PSRS service retirees on the payment rolls increased by 1,482 from 60,122 at June 30, 2021 to 61,604 at June 30, 2022. The number of PEERS service retirees on the payment rolls increased by 1,428 from 31,463 at June 30, 2021 to 32,891 at June 30, 2022.

Disability benefits in PSRS and PEERS are paid to members who are unable to earn a livelihood due to permanent disability and who have met certain eligibility requirements. The number of PSRS disability retirees on the payment rolls decreased by 11 from 1,043 at June 30, 2021 to 1,032 at June 30, 2022. The number of PEERS disability retirees on the payment rolls decreased by 33 from 809 at June 30, 2021 to 776 at June 30, 2022.

In both PSRS and PEERS, beneficiary payments are available to survivors if the retiree elected this option. Three Joint-and-Survivor benefit plans and two Term-Certain benefit plans are available. In PSRS, survivor benefits are also available to designated beneficiaries of members who die before retirement.

The charts on page 134 detail the number of benefit recipients by type and monthly benefit amount for each System.

Pension Funding

An unfunded actuarial accrued liability (UAAL) for pension benefits generally represents the difference between the present value of all benefits estimated to be payable to plan members as a result of their age, salary, and service through the valuation date and the actuarial value of plan assets available to pay those benefits. This amount changes over time as a result of changes in accrued benefits, pay levels, rates of return on investments, changes in actuarial assumptions, and changes in the demographics of the employee base. Each year an external actuary performs a valuation to determine the present value of the benefits payable (actuarial accrued liability) and compares this to the assets available to arrive at the funded status of the Systems.

The charts on page 142 show a comparison of the assets and liabilities of the Systems over time. At June 30, 2022, PSRS was 85.2% pre-funded and PEERS was 87.3% pre-funded. At June 30, 2021, PSRS was 85.2% pre-funded and PEERS was 87.7% pre-funded. Detailed information on actuarial assumptions can be found in the *Actuarial Section* of this report.

Changes in Net Position

The charts on page 135 detail a 10-year history of the additions (revenue) and deductions (expenses) of the Systems.

Other charts in this section detail demographic information concerning our members and employers.

The data in this section was derived from internal sources and the annual actuarial valuation reports.

PSRS Summary of Benefit Recipients By Type As of June 30, 2022

Amount of Monthly Benefit	Service Retirement	Disability Retirement	Beneficiary Recipients: Disability	Beneficiary Recipients: Survivors	Beneficiary Recipients: Beneficiary	Beneficiary Recipients: Term-Certain	Total
<$1,000	5,131	16	240	382	300	5	6,074
$1,000 - $1,999	6,470	257	141	179	647	8	7,702
$2,000 - $2,999	9,278	498	46	81	829	4	10,736
$3,000 - $3,999	13,179	202	9	83	749	6	14,228
$4,000 - $4,999	12,061	50	3	42	568	1	12,725
$5,000 - $5,999	7,989	7	1	20	368	1	8,386
$6,000+	7,496	2	—	27	299	1	7,825
Total	61,604	1,032	440	814	3,760	26	67,676

PEERS Summary of Benefit Recipients By Type As of June 30, 2022

Amount of Monthly Benefit	Service Retirement	Disability Retirement	Beneficiary Recipients: Disability	Beneficiary Recipients: Survivors*	Beneficiary Recipients: Beneficiary	Beneficiary Recipients: Term-Certain	Total
<$500	14,780	454	263	—	1,214	19	16,730
$500 - $999	8,379	244	68	—	569	10	9,270
$1,000 - $1,999	6,980	77	13	—	297	7	7,374
$2,000 - $2,999	1,826	1	—	—	49	2	1,878
$3,000 - $3,999	591	—	—	—	13	1	605
$4,000+	335	—	—	—	6	—	341
Total	32,891	776	344	—	2,148	39	36,198

* Benefit not available in PEERS.

PSRS Schedule of Changes in Fiduciary Net Position, Last 10 Fiscal Years

(Dollar amounts in thousands)

	Fiscal Year									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Additions by source										
Member contributions	$ 665,926	$ 679,618	$ 689,187	$ 704,786	$ 719,625	$ 726,996	$ 747,403	$ 757,917	$ 779,834	$ 807,546
Employer contributions	634,040	643,763	656,925	670,794	684,858	696,970	712,545	724,995	745,638	764,348
Investment income	3,378,531	4,927,193	1,447,144	533,174	4,104,110	3,173,732	2,595,859	1,457,327	11,291,593	(1,451,317)
Other income	20	6	26	6	13	4	6	192	128	54
Total additions by source	4,678,517	6,250,580	2,793,282	1,908,760	5,508,606	4,597,702	4,055,813	2,940,431	12,817,193	120,631
Deductions by type										
Monthly benefits										
Service retirement	1,880,783	1,999,520	2,102,511	2,203,773	2,288,945	2,360,945	2,460,422	2,542,672	2,620,432	2,768,923
Service retirement -PLSO	61,062	58,849	37,191	32,365	34,721	37,754	33,751	39,628	38,966	35,448
Disability	21,120	22,138	23,447	25,309	26,379	27,235	27,826	29,373	30,020	30,676
Beneficiary	92,799	100,040	107,109	114,829	121,170	129,722	138,978	147,053	155,194	167,794
Lump-sum refunds										
Death	8,344	7,123	7,712	9,078	8,504	8,879	9,471	10,351	10,566	12,879
Withdrawal/transfers	47,051	48,799	48,226	45,553	42,114	42,450	39,825	44,155	40,982	42,696
Administrative expenses/other	8,714	8,919	10,015	11,563	10,497	11,418	11,326	10,653	10,818	11,680
Total deductions by type	2,119,873	2,245,388	2,336,211	2,442,470	2,532,330	2,618,403	2,721,599	2,823,885	2,906,978	3,070,096
Changes in plan net position	$2,558,644	$4,005,192	$ 457,071	$ (533,710)	$2,976,276	$1,979,299	$1,334,214	$ 116,546	$9,910,215	$(2,949,465)

PEERS Schedule of Changes in Fiduciary Net Position, Last 10 Fiscal Years

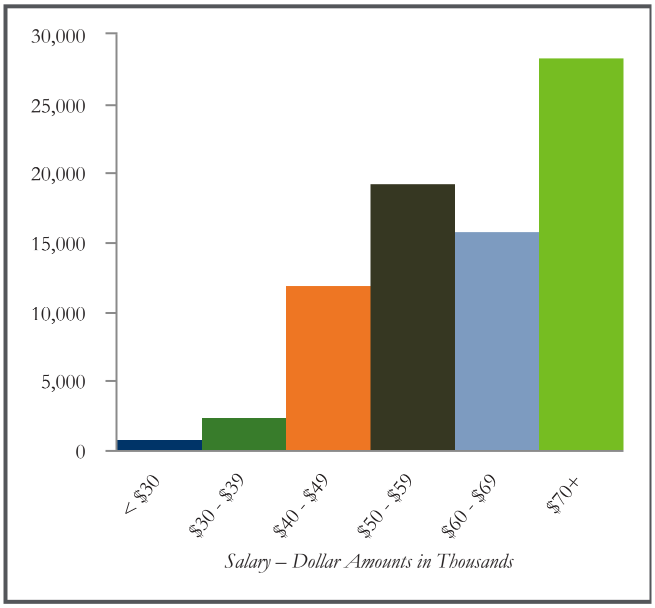
(Dollar amounts in thousands)

	Fiscal Year									
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Additions by source										
Member contributions	$ 103,271	$ 106,430	$ 110,444	$ 114,258	$ 118,447	$ 121,468	$ 126,609	$ 131,336	$ 134,324	$ 144,215
Employer contributions	97,059	100,690	103,624	106,717	111,240	115,103	120,042	124,545	126,877	135,181
Investment income	353,729	544,154	163,718	60,317	485,047	381,524	319,773	181,855	1,431,017	(189,301)
Other income	—	1	2	—	—	—	—	—	—	—
Total additions by source	554,059	751,275	377,788	281,292	714,734	618,095	566,424	437,736	1,692,218	90,095
Deductions by type										
Monthly benefits										
Service retirement	163,134	179,262	195,980	212,327	229,599	246,062	266,172	283,100	300,571	327,469
Service retirement -PLSO	5,006	5,971	6,576	4,410	6,585	7,274	8,138	7,849	8,870	9,722
Disability	3,430	3,665	3,917	4,158	4,313	4,453	4,621	4,817	4,817	4,769
Beneficiary	7,094	7,847	8,769	9,791	10,581	11,575	12,637	13,892	15,164	16,667
Lump-sum refunds										
Death	1,202	1,063	1,418	1,159	1,266	1,075	1,123	1,763	1,998	2,279
Withdrawal/transfers	17,434	18,817	18,410	18,546	16,925	17,195	17,551	18,917	19,101	21,055
Administrative expenses/other	4,803	4,840	5,629	6,981	6,377	7,113	7,424	7,078	7,379	7,706
Total deductions by type	202,103	221,465	240,699	257,372	275,646	294,747	317,666	337,416	357,900	389,667
Changes in plan net position	$ 351,956	$ 529,810	$ 137,089	$ 23,920	$ 439,088	$ 323,348	$ 248,758	$ 100,320	$1,334,318	$ (299,572)

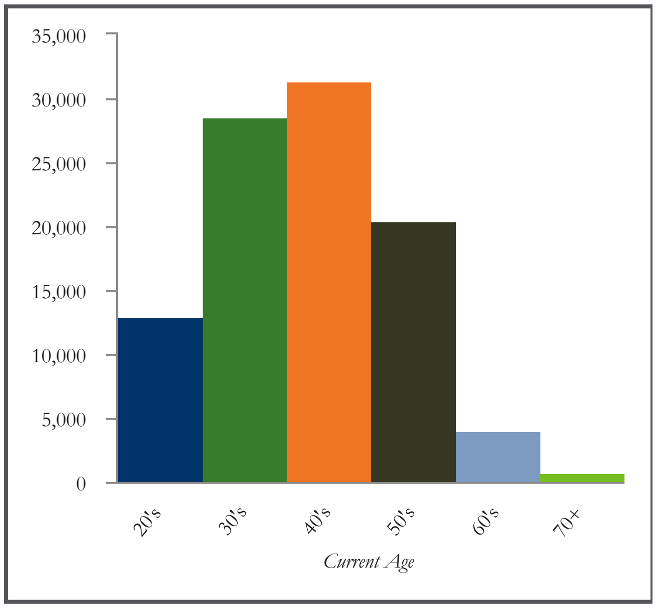
PSRS Summary of Changes in Membership During 2021 2022

		Male	Female	Total
Membership July 1, 2021		21,637	75,859	97,496
New members added		1,195	4,128	5,323
Less:	Service retirements	610	2,121	2,731
	Disability retirements	4	22	26
	Withdrawals	375	1,222	1,597
	Deaths	18	59	77
		1,007	3,424	4,431
	Other	(6)	11	5
Net change in membership 2021-2022		182	715	897
Membership June 30, 2022		21,819	76,574	98,393

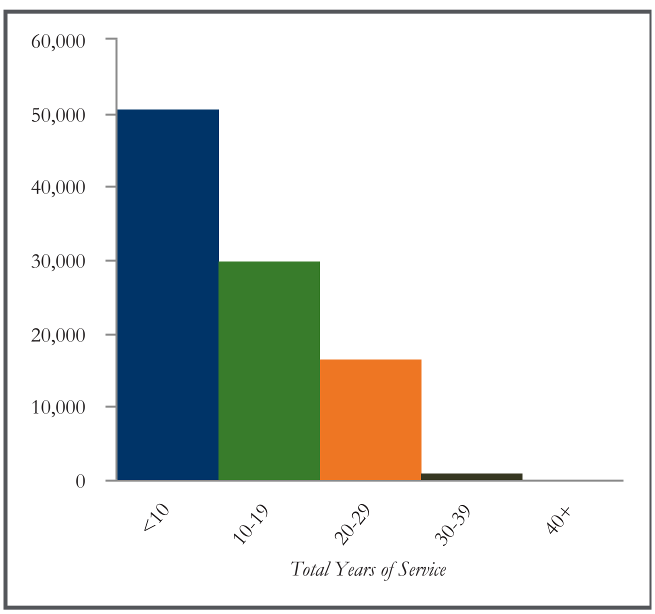
2021 2022 PSRS Members by Annual Salary



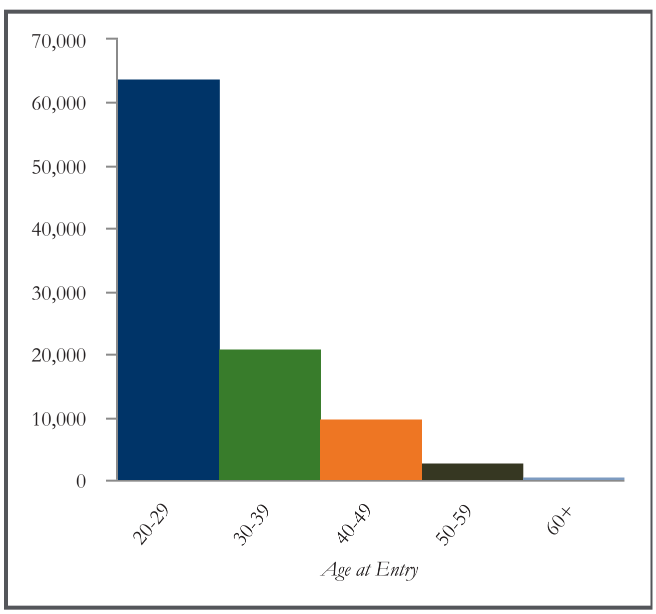
2021 2022 PSRS Members by Current Age



2021 2022 PSRS Members by Total Years of Service

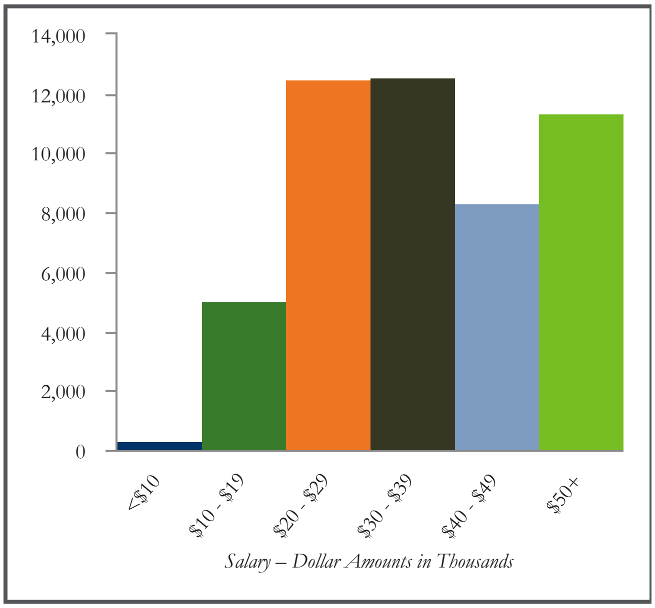


2021 2022 PSRS Member Age at Entry Into System

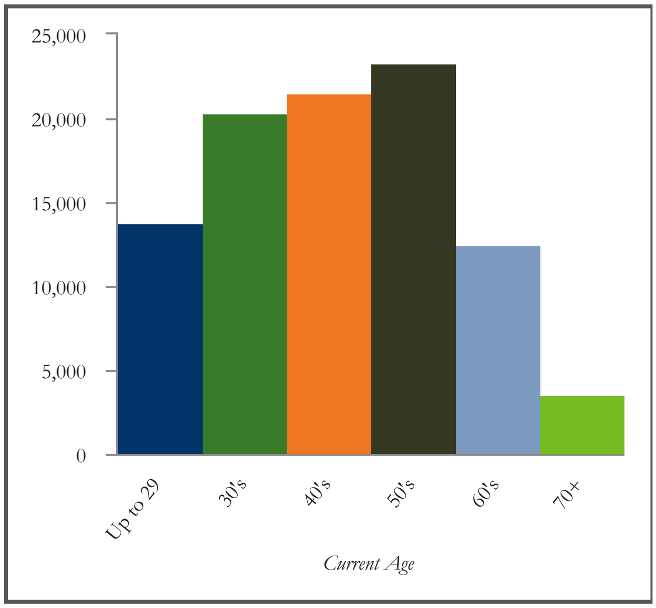


PEERS Summary of Changes in Membership During 2021 2022		Male	Female	Total
Membership July 1, 2021		24,594	66,226	90,820
New members added		2,979	8,024	11,003
Less:	Service retirements	626	1,866	2,492
	Disability retirements	2	8	10
	Withdrawals	1,140	2,710	3,850
	Deaths	72	105	177
		1,840	4,689	6,529
	Other	9	(4)	5
Net change in membership 2021-2022		1,148	3,331	4,479
Membership June 30, 2022		25,742	69,557	95,299

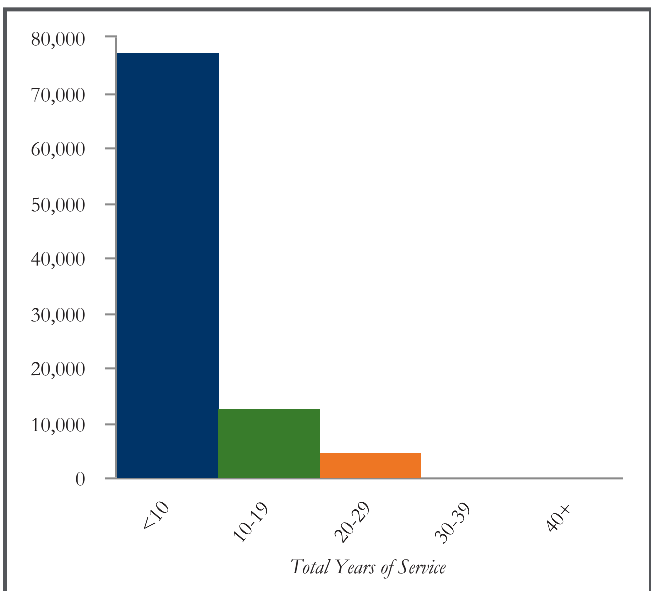
2021 2022 PEERS Members by Annual Salary



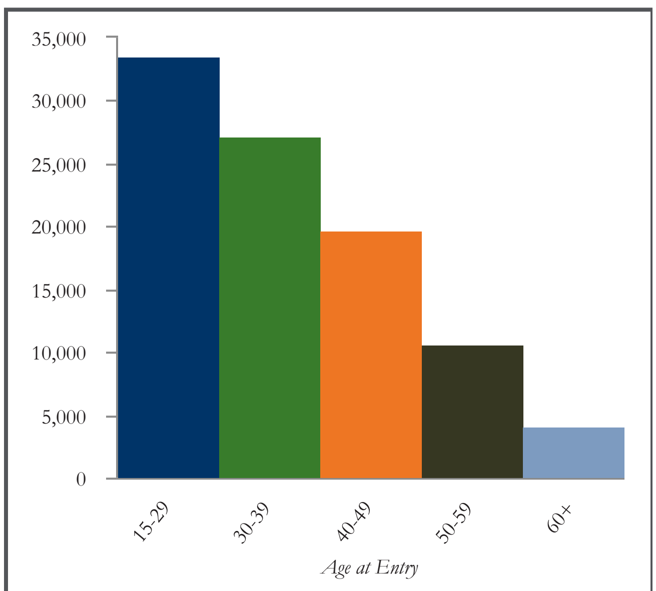
2021 2022 PEERS Members by Current Age



2021 2022 PEERS Members by Total Years of Service



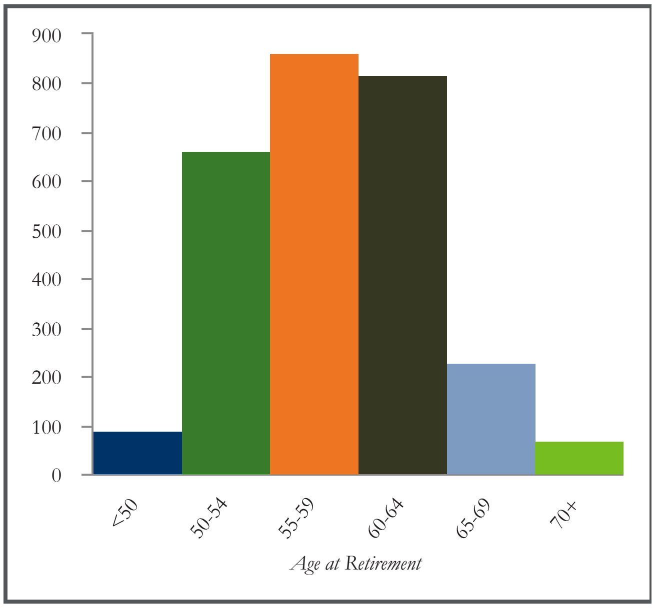
2021 2022 PEERS Member Age at Entry Into System



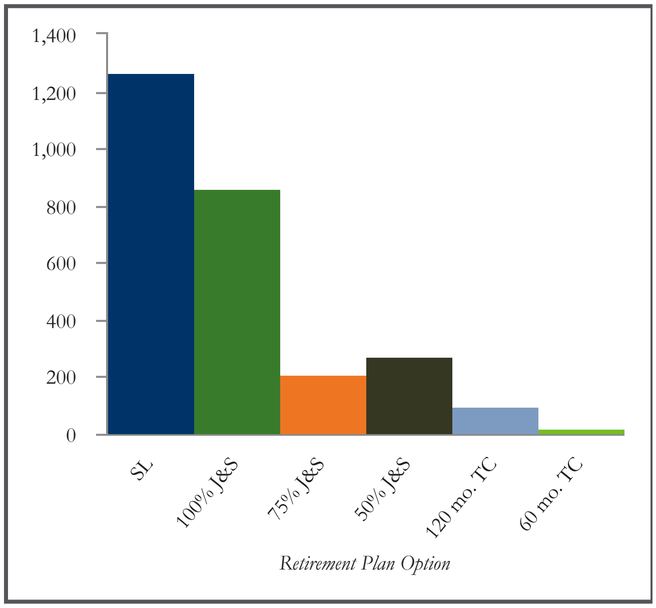
PSRS 2021 2022 New Service Retirees

	Service Retirees	Disability Retirees	Beneficiaries
Retirees July 1, 2021	60,122	1,043	4,915
Added during the Year	2,731	26	431
Died during the Year	(1,249)	(32)	(302)
Other	0	(5)	(4)
Retirees June 30, 2022	61,604	1,032	5,040

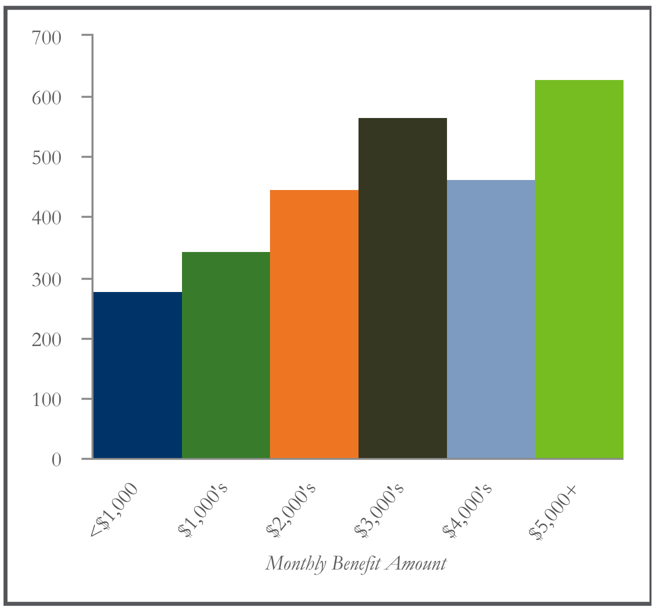
2021 2022 PSRS New Service Retirees by Age at Retirement



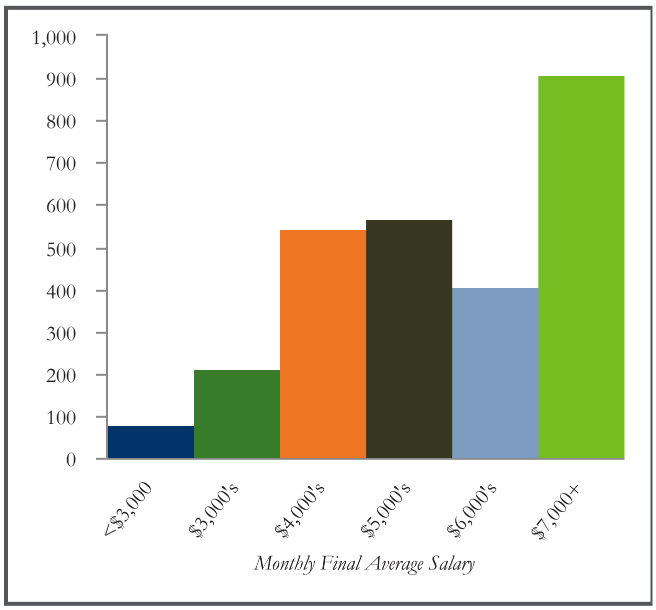
2021 2022 PSRS New Service Retirees by Retirement Plan Option



2021 2022 PSRS New Service Retirees by Single Life Monthly Benefit Amount

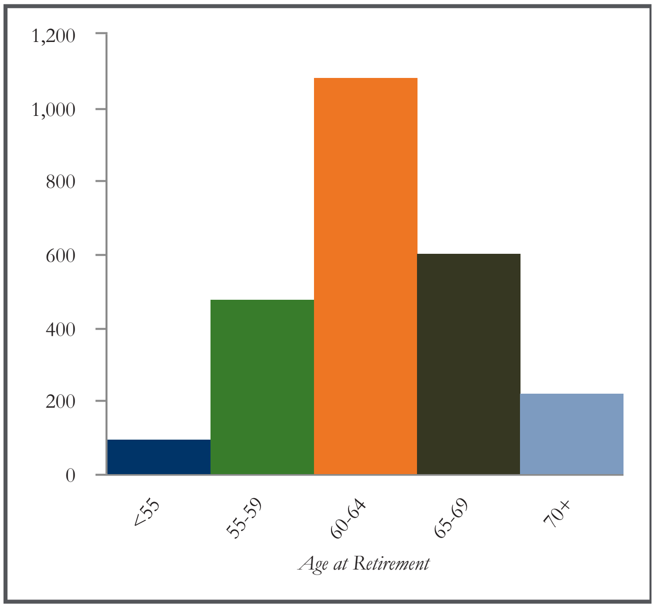


2021 2022 PSRS New Service Retirees by Monthly Final Average Salary

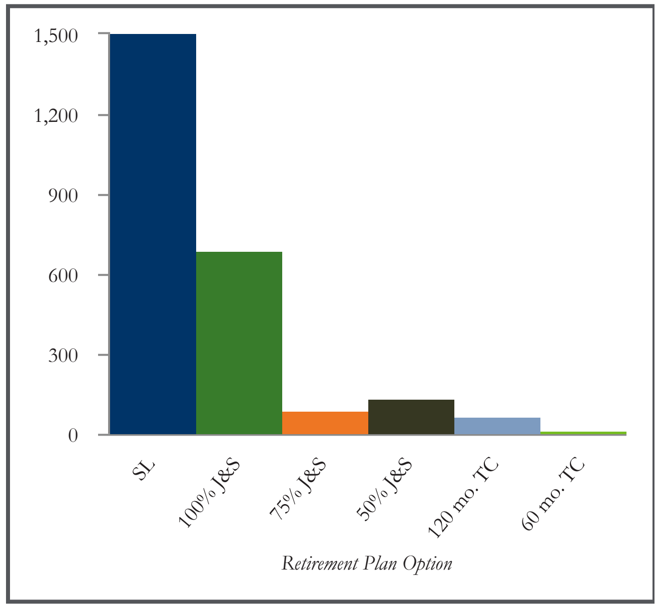


PEERS 2021 2022 New Service Retirees	Service Retirees	Disability Retirees	Beneficiaries
Retirees July 1, 2021	31,463	809	2,399
Added during the Year	2,492	10	276
Died during the Year	(1,064)	(42)	(139)
Other	0	(1)	(5)
Retirees June 30, 2022	32,891	776	2,531

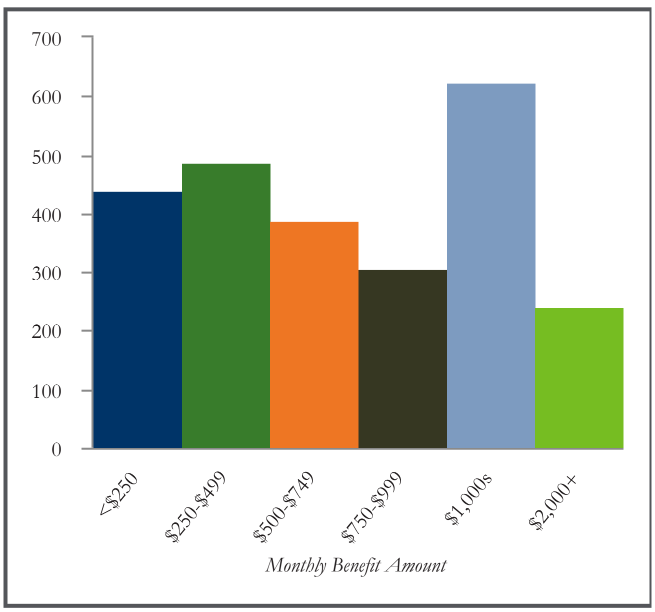
2021 2022 PEERS New Service Retirees by Age at Retirement



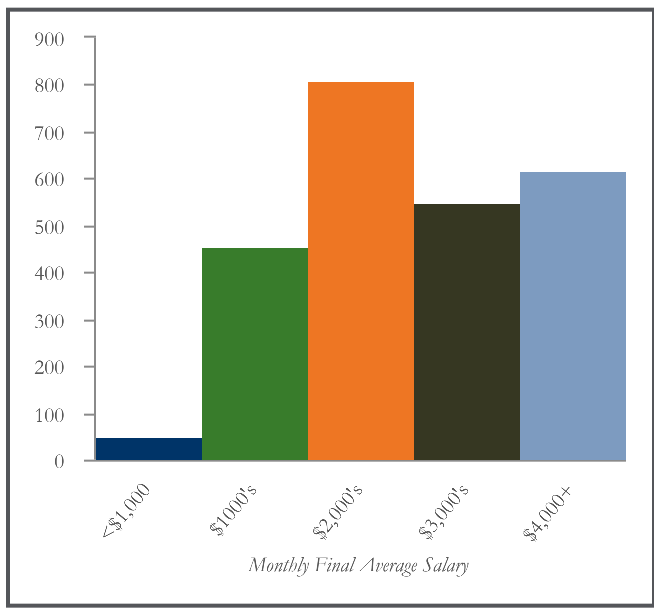
2021 2022 PEERS New Service Retirees by Retirement Plan Option



2021 2022 PEERS New Service Retirees by Single Life Monthly Benefit Amount



2021 2022 PEERS New Service Retirees by Monthly Final Average Salary



PSRS Schedule of Average Benefit Payments to New Service Retirees

	Years of Service							
	5 - 9.9	10 - 14.9	15 - 19.9	20 - 24.9	25 - 29.9	30 - 34.9	35 - 39.9	40+
2021-2022								
Average monthly benefit	$ 713	$ 1,465	$ 2,284	$ 3,506	$ 4,550	$ 5,776	$ 7,037	$ 8,161
Average final average salary	$ 4,523	$ 4,963	$ 5,571	$ 6,251	$ 6,786	$ 7,387	$ 7,915	$ 8,161
Number of retirees	276	236	324	538	914	396	39	8
2020-2021								
Average monthly benefit	$ 684	$ 1,381	$ 2,339	$ 3,423	$ 4,396	$ 5,558	$ 6,093	$ 7,218
Average final average salary	$ 4,380	$ 4,694	$ 5,519	$ 6,096	$ 6,609	$ 7,133	$ 6,791	$ 7,218
Number of retirees	267	239	289	518	825	397	40	12
2019-2020								
Average monthly benefit	$ 651	$ 1,419	$ 2,258	$ 3,412	$ 4,476	$ 5,766	$ 6,717	$ 8,435
Average final average salary	$ 3,940	$ 4,836	$ 5,345	$ 6,098	$ 6,673	$ 7,357	$ 7,428	$ 8,435
Number of retirees	220	235	299	482	785	390	53	8
2018-2019								
Average monthly benefit	$ 657	$ 1,323	$ 2,260	$ 3,273	$ 4,364	$ 5,480	$ 7,506	$ 8,813
Average final average salary	$ 4,117	$ 4,597	$ 5,375	$ 5,848	$ 6,541	$ 7,024	$ 8,156	$ 8,813
Number of retirees	249	267	267	494	766	408	38	13
2017-2018								
Average monthly benefit	$ 708	$ 1,361	$ 2,161	$ 3,124	$ 4,357	$ 5,374	$ 6,871	$ 7,111
Average final average salary	$ 4,394	$ 4,641	$ 5,144	$ 5,632	$ 6,453	$ 6,912	$ 7,410	$ 7,111
Number of retirees	228	263	301	486	712	371	35	10
2016-2017								
Average monthly benefit	$ 639	$ 1,296	$ 2,228	$ 3,213	$ 4,289	$ 5,135	$ 6,427	$ 6,881
Average final average salary	$ 3,806	$ 4,476	$ 5,320	$ 5,737	$ 6,395	$ 6,574	$ 7,056	$ 6,881
Number of retirees	249	243	339	531	756	427	44	12
2015-2016								
Average monthly benefit	$ 671	$ 1,322	$ 2,179	$ 3,127	$ 4,152	$ 4,942	$ 5,627	$ 6,686
Average final average salary	$ 4,141	$ 4,515	$ 5,192	$ 5,628	$ 6,193	$ 6,389	$ 6,195	$ 6,686
Number of retirees	251	265	328	530	745	430	37	17
2014-2015								
Average monthly benefit	$ 729	$ 1,351	$ 2,102	$ 3,083	$ 4,120	$ 5,064	$ 6,130	$ 6,418
Average final average salary	$ 4,342	$ 4,581	$ 5,004	$ 5,562	$ 6,091	$ 6,324	$ 6,521	$ 6,418
Number of retirees	255	308	313	487	677	469	46	15
2013-2014								
Average monthly benefit	$ 697	$ 1,299	$ 2,135	$ 3,108	$ 3,955	$ 5,147	$ 6,319	$ 6,601
Average final average salary	$ 4,257	$ 4,385	$ 5,024	$ 5,557	$ 5,930	$ 6,396	$ 6,730	$ 6,601
Number of retirees	274	260	317	483	746	696	101	11
2012-2013								
Average monthly benefit	$ 695	$ 1,327	$ 2,035	$ 3,143	$ 3,927	$ 4,998	$ 6,739	$ 6,033
Average final average salary	$ 4,067	$ 4,554	$ 4,818	$ 5,609	$ 5,896	$ 6,212	$ 7,218	$ 6,033
Number of retirees	233	263	286	483	692	583	79	13

PEERS Schedule of Average Benefit Payments to New Service Retirees

	Years of Service					
	5 - 9.9	10 - 14.9	15 - 19.9	20 - 24.9	25 - 29.9	30+
2021-2022						
Average monthly benefit	$ 266	$ 562	$ 888	$ 1,338	$ 1,846	$ 2,564
Average final average salary	$ 2,428	$ 2,872	$ 3,237	$ 3,731	$ 4,278	$ 4,783
Number of retirees	709	478	374	497	310	124
2020-2021						
Average monthly benefit	$ 257	$ 557	$ 860	$ 1,195	$ 1,617	$ 2,579
Average final average salary	$ 2,290	$ 2,849	$ 3,137	$ 3,353	$ 3,740	$ 4,755
Number of retirees	636	477	377	467	226	143
2019-2020						
Average monthly benefit	$ 261	$ 519	$ 849	$ 1,224	$ 1,708	$ 2,286
Average final average salary	$ 2,339	$ 2,684	$ 3,098	$ 3,418	$ 3,924	$ 4,228
Number of retirees	555	467	347	407	229	127
2018-2019						
Average monthly benefit	$ 253	$ 521	$ 828	$ 1,206	$ 1,691	$ 2,530
Average final average salary	$ 2,259	$ 2,680	$ 3,021	$ 3,363	$ 3,906	$ 4,629
Number of retirees	544	396	374	424	231	135
2017-2018						
Average monthly benefit	$ 244	$ 510	$ 830	$ 1,171	$ 1,787	$ 2,365
Average final average salary	$ 2,167	$ 2,686	$ 3,009	$ 3,303	$ 4,075	$ 4,367
Number of retirees	557	389	348	410	196	125
2016-2017						
Average monthly benefit	$ 255	$ 483	$ 802	$ 1,157	$ 1,690	$ 2,441
Average final average salary	$ 2,209	$ 2,523	$ 2,919	$ 3,225	$ 3,874	$ 4,505
Number of retirees	558	425	339	363	209	129
2015-2016						
Average monthly benefit	$ 238	$ 493	$ 785	$ 1,160	$ 1,630	$ 2,235
Average final average salary	$ 2,078	$ 2,520	$ 2,807	$ 3,231	$ 3,703	$ 4,128
Number of retirees	520	410	328	289	235	121
2014-2015						
Average monthly benefit	$ 237	$ 490	$ 766	$ 1,162	$ 1,665	$ 2,212
Average final average salary	$ 2,054	$ 2,500	$ 2,802	$ 3,229	$ 3,824	$ 4,073
Number of retirees	529	419	303	309	197	127
2013-2014						
Average monthly benefit	$ 228	$ 461	$ 796	$ 1,178	$ 1,588	$ 2,233
Average final average salary	$ 2,042	$ 2,406	$ 2,884	$ 3,257	$ 3,632	$ 4,110
Number of retirees	568	429	301	283	206	132
2012-2013						
Average monthly benefit	$ 219	$ 467	$ 735	$ 1,104	$ 1,512	$ 1,995
Average final average salary	$ 1,958	$ 2,439	$ 2,734	$ 3,054	$ 3,491	$ 3,672
Number of retirees	475	362	250	275	173	121

Comparisons of Actuarial Assets and Total Actuarial Liabilities

Public School Retirement System of Missouri

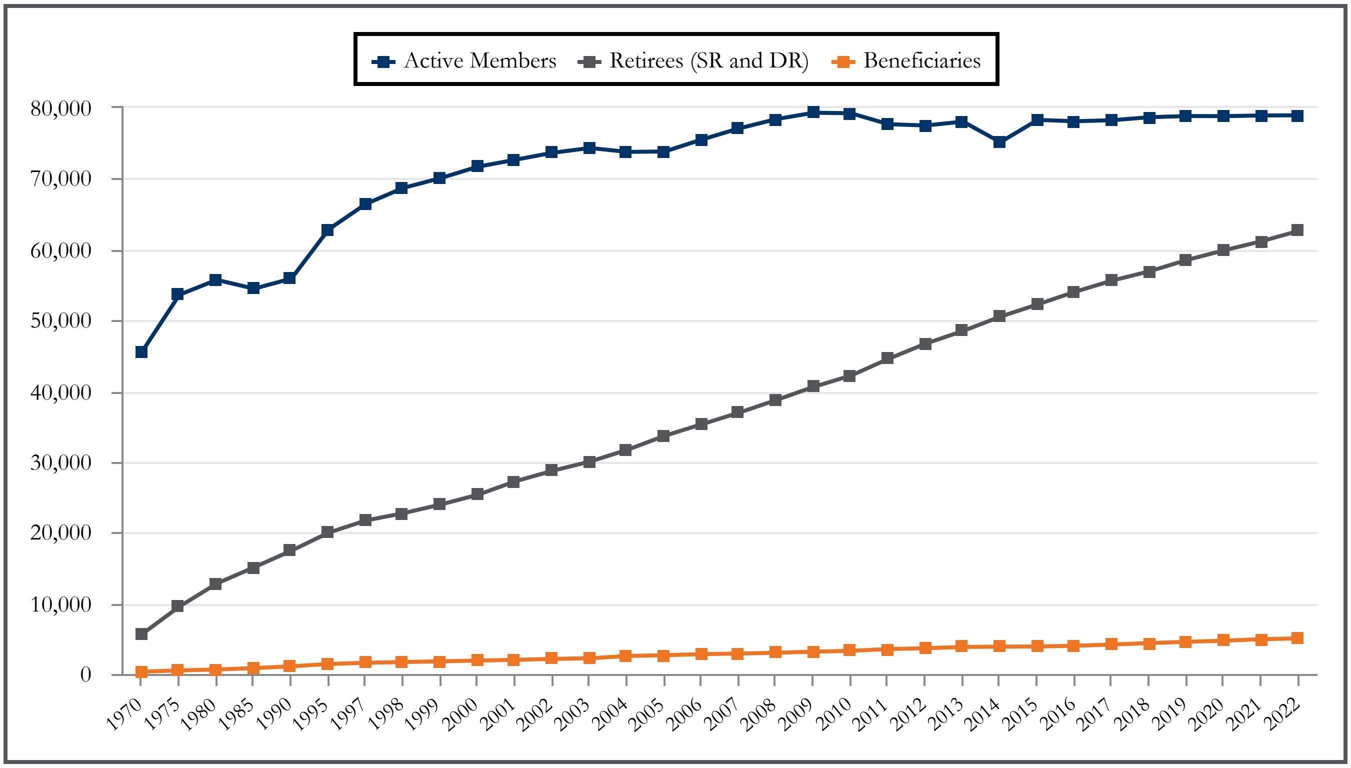
Dollar Amounts in Thousands

Public Education Employee Retirement System of Missouri

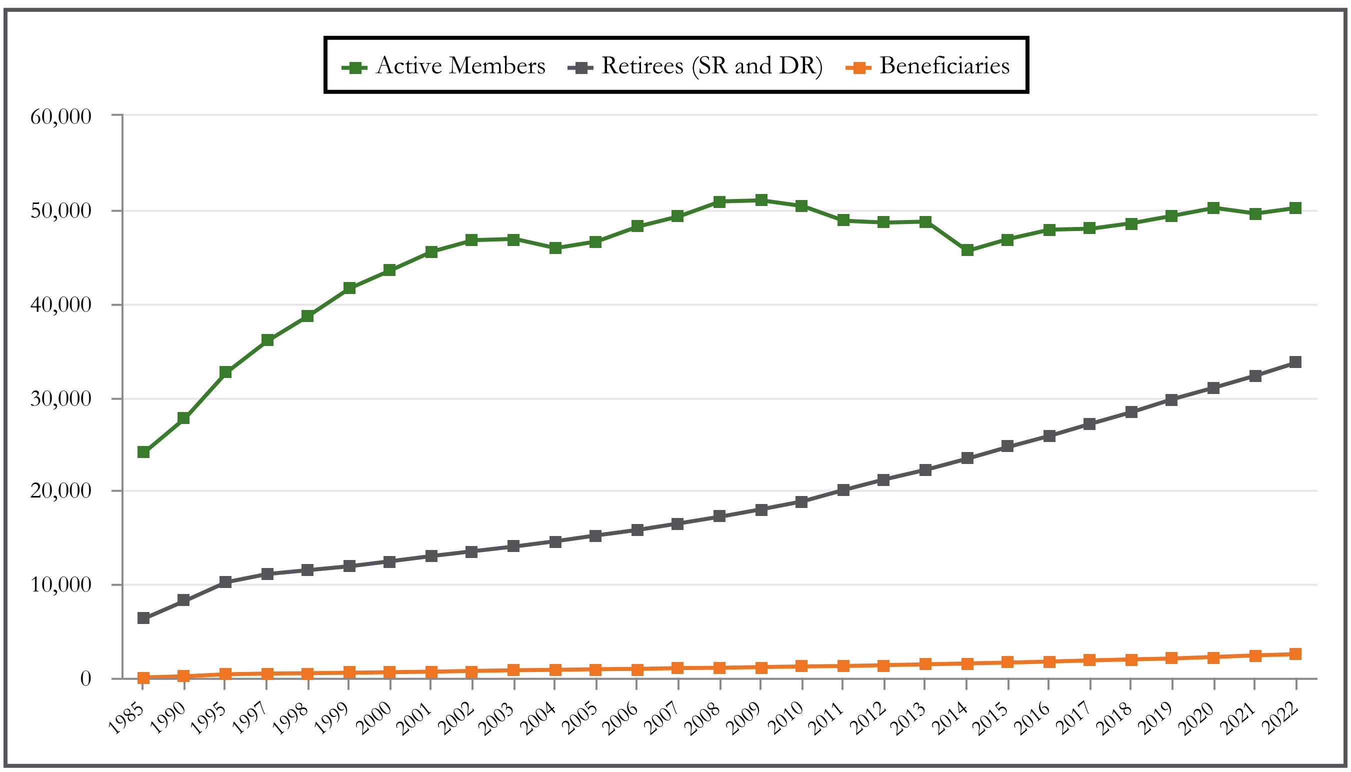
Dollar Amounts in Thousands

Growth in Membership

Public School Retirement System of Missouri



Public Education Employee Retirement System of Missouri



PSRS Schedule of Covered Employees in the Top 10 Employers

	2022		2021	
Employer	Covered Employees	Percentage of Total	Covered Employees	Percentage of Total
Special School District - St. Louis	2,850	3%	2,880	3%
Springfield R-XII Schools	2,585	3%	3,015	4%
Rockwood R-VI Schools	1,887	2%	1,934	2%
North Kansas City Schools	1,848	2%	1,811	2%
Columbia Public Schools	1,838	2%	1,810	2%
Ft. Zumwalt R-II Schools	1,732	2%	1,725	2%
Parkway C-2 Schools	1,679	2%	1,649	2%
Wentzville R-IV Schools	1,534	2%	1,517	2%
Hazelwood R-I Schools	1,526	2%	—	—%
Lee's Summit R-VII Schools	1,502	2%	1,499	2%
Francis Howell R-III Schools	—	—%	1,529	2%
All Others	64,313	78%	63,596	77%
Total - 533 Employers	80,444	100%	82,965	100 %

	2020		2019	
Employer	Covered Employees	Percentage of Total	Covered Employees	Percentage of Total
Special School District - St. Louis	2,873	3%	2,932	4%
Springfield R-XII Schools	2,759	3%	2,302	3%
Rockwood R-VI Schools	1,911	2%	1,915	2%
North Kansas City Schools	1,807	2%	1,797	2%
Columbia Public Schools	1,774	2%	1,745	2%
Ft. Zumwalt R-II Schools	1,727	2%	1,750	2%
Parkway C-2 Schools	1,685	2%	1,728	2%
Francis Howell R-III Schools	1,522	2%	1,523	2%
Lee's Summit R-VII Schools	1,480	2%	1,476	2%
Hazelwood R-I Schools	1,456	2%	1,449	2%
All Others	63,667	78%	63,951	77%
Total - 533 Employers	82,661	100%	82,568	100%

	2018		2017	
Employer	Covered Employees	Percentage of Total	Covered Employees	Percentage of Total
Special School District - St. Louis	2,922	4%	2,914	4%
Springfield R-XII Schools	2,205	3%	2,208	3%
Rockwood R-VI Schools	1,916	2%	1,926	2%
North Kansas City Schools	1,758	2%	1,735	2%
Columbia Public Schools	1,737	2%	1,726	2%
Ft. Zumwalt R-II Schools	1,736	2%	1,670	2%
Parkway C-2 Schools	1,733	2%	1,703	2%
Francis Howell R-III Schools	1,522	2%	1,510	2%
Lee's Summit R-VII Schools	1,471	2%	1,459	2%
Hazelwood R-I Schools	1,435	2%	1,488	2%
All Others	64,078	77%	63,886	77%
Total - 533 Employers during 2018 and 534 Employers during 2017	82,513	100%	82,225	100%

PSRS Schedule of Covered Employees in the Top 10 Employers (continued)

Employer	2016 Covered Employees	2016 Percentage of Total	2015 Covered Employees	2015 Percentage of Total
Special School District - St. Louis	2,956	4%	2,995	4%
Springfield R-XII Schools	2,208	3%	2,189	3%
Rockwood R-VI Schools	2,036	2%	2,003	2%
Columbia Public Schools	1,844	2%	1,779	2%
Parkway C-2 Schools	1,804	2%	1,769	2%
North Kansas City Schools	1,723	2%	1,713	2%
Ft. Zumwalt R-II Schools	1,611	2%	1,611	2%
Hazelwood R-I Schools	1,559	2%	1,577	2%
Francis Howell R-III Schools	1,549	2%	1,610	2%
Lee’s Summit R-VII Schools	1,443	2%	1,415	2%
All Others	64,842	77%	65,940	77%
Total - 534 Employers during 2016 and 535 Employers during 2015	83,575	100%	84,601	100%

Employer	2014 Covered Employees	2014 Percentage of Total	2013 Covered Employees	2013 Percentage of Total
Special School District - St. Louis	3,082	4%	3,080	4%
Springfield R-XII Schools	2,159	3%	2,096	3%
Rockwood R-VI Schools	1,912	2%	1,888	2%
North Kansas City Schools	1,740	2%	1,763	2%
Columbia Public Schools	1,690	2%	1,649	2%
Parkway C-2 Schools	1,672	2%	1,714	2%
Francis Howell R-III Schools	1,575	2%	1,538	2%
Ft. Zumwalt R-II Schools	1,568	2%	1,549	2%
Hazelwood R-I Schools	1,566	2%	1,600	2%
Lee's Summit R-VII Schools	1,390	2%	1,360	2%
All Others	64,335	77%	63,377	77%
Total - 535 Employers	82,689	100%	81,614	100%

Note: Schedules reflect total members reported at any time during the fiscal year. If an employer was not in the Top Ten for a year their covered employees are included in "All Others".

PEERS Schedule of Covered Employees in the Top 10 Employers

Employer	2022 Covered Employees	2022 Percentage of Total	2021 Covered Employees	2021 Percentage of Total
Special School District - St. Louis	2,704	5%	2,622	5%
Springfield R-XII Schools	1,609	3%	1,607	3%
North Kansas City Schools	1,526	3%	1,478	3%
Ft. Zumwalt R-II Schools	1,431	2%	1,404	2%
Lee's Summit R-VII Schools	1,356	2%	1,333	2%
Rockwood R-VI Schools	1,293	2%	1,399	2%
Columbia Public Schools	1,257	2%	1,187	2%
Wentzville R-IV Schools	1,200	2%	1,181	2%
Francis Howell R-III Schools	1,104	2%	1,118	2%
Independence Public Schools	1,078	2%	1,033	2%
All Others	44,160	75%	42,208	75%
Total - 530 Employers	58,718	100%	56,570	100%

Employer	2020 Covered Employees	2020 Percentage of Total	2019 Covered Employees	2019 Percentage of Total
Special School District - St. Louis	2,616	5%	2,573	5%
Springfield R-XII Schools	1,588	3%	1,505	3%
Rockwood R-VI Schools	1,480	3%	1,515	3%
North Kansas City Schools	1,463	3%	1,479	3%
Ft. Zumwalt R-II Schools	1,431	3%	1,388	2%
Lee's Summit R-VII Schools	1,330	2%	1,355	2%
Columbia Public Schools	1,186	2%	1,182	2%
Wentzville R-IV Schools	1,141	2%	1,107	2%
Francis Howell R-III Schools	1,137	2%	—	—%
Independence Public Schools	1,100	2%	1,094	2%
Parkway C-2 Schools	—	—%	1,038	2%
All Others	42,097	73%	41,776	74%
Total - 530 Employers	56,569	100%	56,012	100%

Employer	2018 Covered Employees	2018 Percentage of Total	2017 Covered Employees	2017 Percentage of Total
Special School District - St. Louis	2,500	5%	2,504	5%
Rockwood R-VI Schools	1,523	3%	1,499	3%
Springfield R-XII Schools	1,510	3%	1,503	3%
North Kansas City Schools	1,406	3%	1,406	3%
Ft. Zumwalt R-II Schools	1,352	2%	1,291	2%
Lee's Summit R-VII Schools	1,340	2%	1,278	2%
Columbia Public Schools	1,183	2%	1,160	2%
Wentzville R-IV Schools	1,099	2%	—	—%
Independence Public Schools	1,083	2%	1,083	2%
Parkway C-2 Schools	1,034	2%	1,054	2%
Hazelwood R-I Schools	—	—%	959	2%
All Others	41,029	74%	40,305	74%
Total - 530 Employers	55,059	100%	54,042	100%

PEERS Schedule of Covered Employees in the Top 10 Employers (continued)

Employer	2016 Covered Employees	2016 Percentage of Total	2015 Covered Employees	2015 Percentage of Total
Special School District - St. Louis	2,501	5%	2,496	5%
Springfield R-XII Schools	1,540	3%	1,540	3%
North Kansas City Schools	1,397	3%	1,369	3%
Rockwood R-VI Schools	1,319	2%	1,230	2%
Lee's Summit R-VII Schools	1,294	2%	1,283	2%
Ft. Zumwalt R-II Schools	1,228	2%	1,232	2%
Columbia Public Schools	1,126	2%	1,081	2%
Independence Public Schools	1,111	2%	1,135	2%
Parkway C-2 Schools	1,060	2%	1,054	2%
Hazelwood R-I Schools	964	2%	1,004	2%
All Others	40,351	75%	40,627	75%
Total - 530 Employers during 2016 and 532 Employers during 2015	53,891	100%	54,051	100%

Employer	2014 Covered Employees	2014 Percentage of Total	2013 Covered Employees	2013 Percentage of Total
Special School District - St. Louis	2,405	5%	2,386	5%
Springfield R-XII Schools	1,480	3%	1,488	3%
North Kansas City Schools	1,296	2%	1,246	2%
Lee's Summit R-VII Schools	1,207	2%	1,164	2%
Rockwood R-VI Schools	1,186	2%	1,179	2%
Ft. Zumwalt R-II Schools	1,180	2%	1,141	2%
Independence Public Schools	1,143	2%	1,065	2%
Columbia Public Schools	1,043	2%	982	2%
Parkway C-2 Schools	1,031	2%	1,041	2%
Hazelwood R-I Schools	960	2%	961	2%
All Others	39,568	76%	38,464	76%
Total - 532 Employers	52,499	100%	51,117	100%

Note: Schedules reflect total members reported at any time during the fiscal year. If an employer was not in the Top Ten for a year their covered employees are included in "All Others".

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PO Box 268
3210 W. Truman Blvd.
Jefferson City, MO 65102-0268
(573) 634-5290 or (800) 392-6848
Email: **psrspeers@psrspeers.org**
Website: **www.psrs-peers.org**