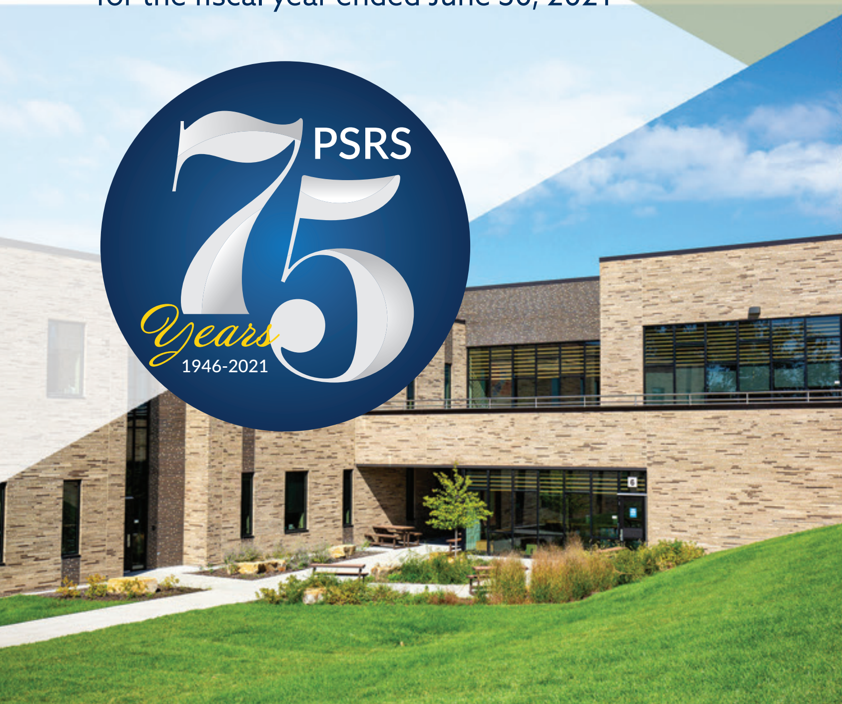
Annual Comprehensive Financial Report

for the fiscal year ended June 30, 2021

PSRS 75 Years 1946-2021



Making a Positive Impact on Our Employers

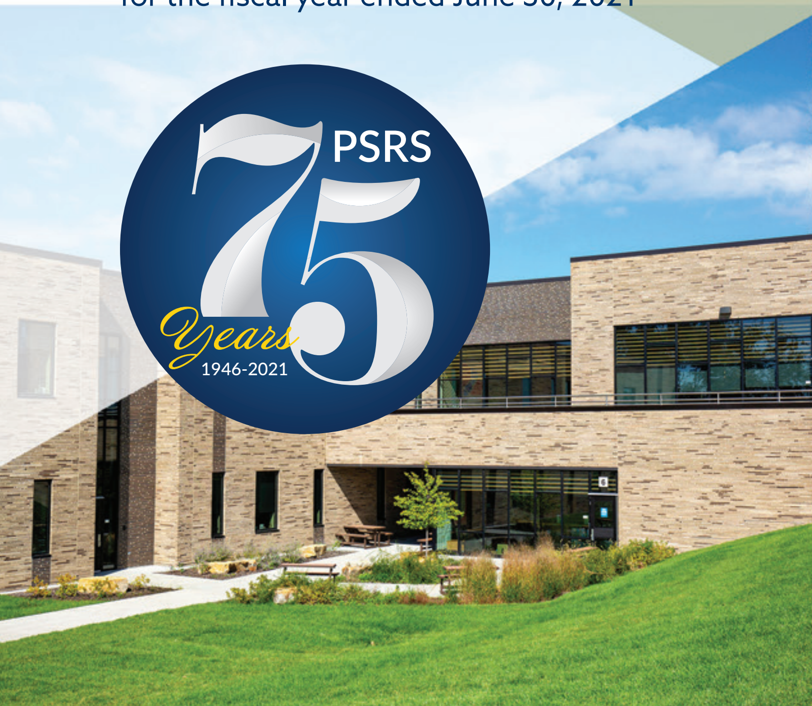
PSRS/PEERS

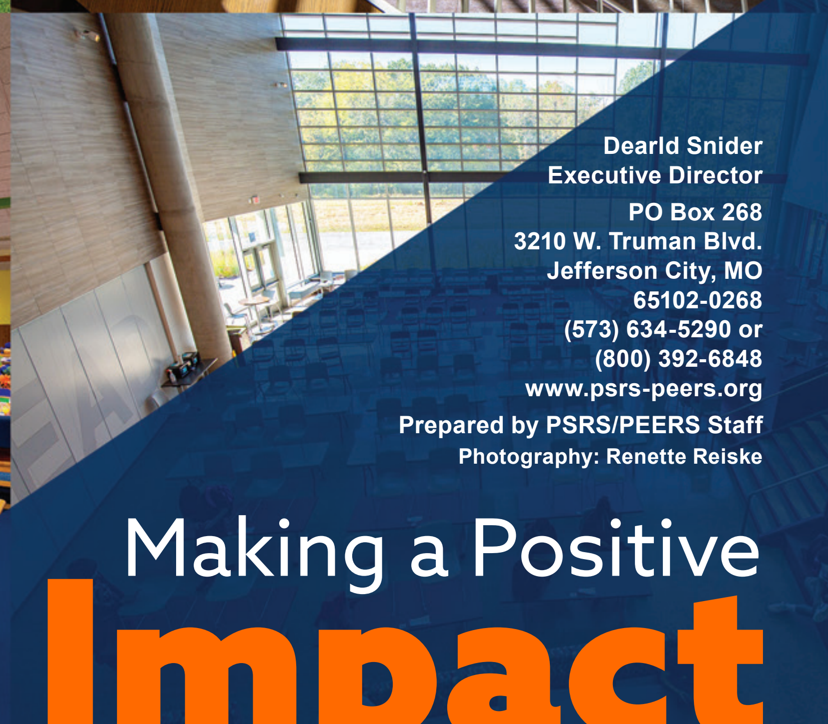
PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

Annual Comprehensive Financial Report

for the fiscal year ended June 30, 2021

PSRS 75 Years 1946-2021





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Executive Director
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Prepared by PSRS/PEERS Staff
Photography: Renette Reiske

Making a Positive Impact on Our Employers

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

INTRODUCTORY SECTION

FINANCIAL SECTION

INVESTMENT SECTION

ACTUARIAL SECTION

STATISTICAL SECTION

PSRS/PEERS partners with 534 employers who, through their participation in the Retirement Systems, provide their eligible employees membership in a defined benefit pension plan. PSRS/PEERS membership helps their employees achieve financial security in retirement.

At the same time, our participating employers are an integral part of what makes the Retirement Systems so successful. We are proud to work with each PSRS/PEERS participating public K-12 school district, community college and educational association to make a positive impact for them and for our members.

Introductory Section

Mission Statement, Goals, Focus Areas

MISSION STATEMENT

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

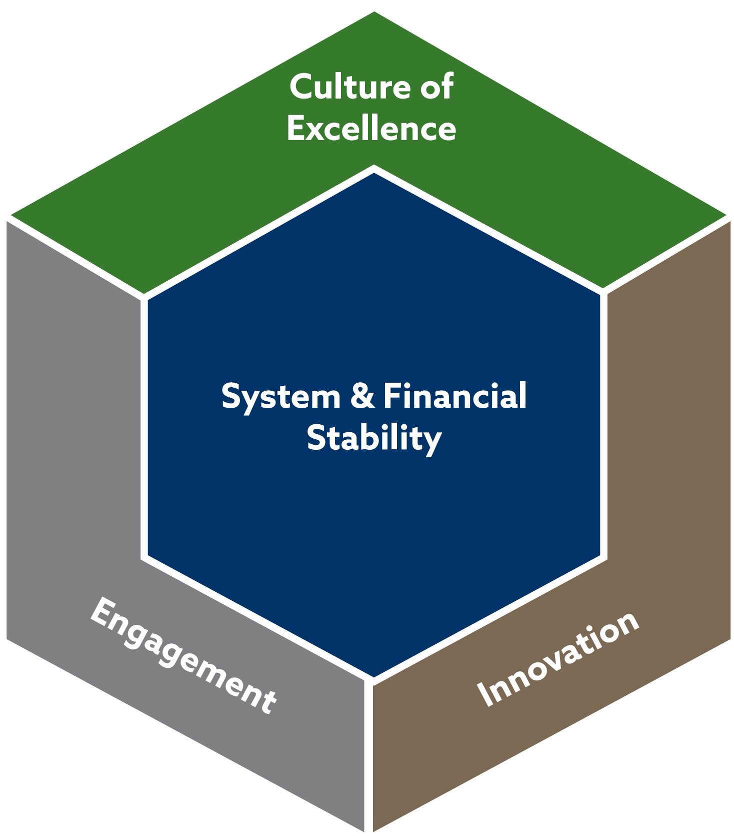
GOALS

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.

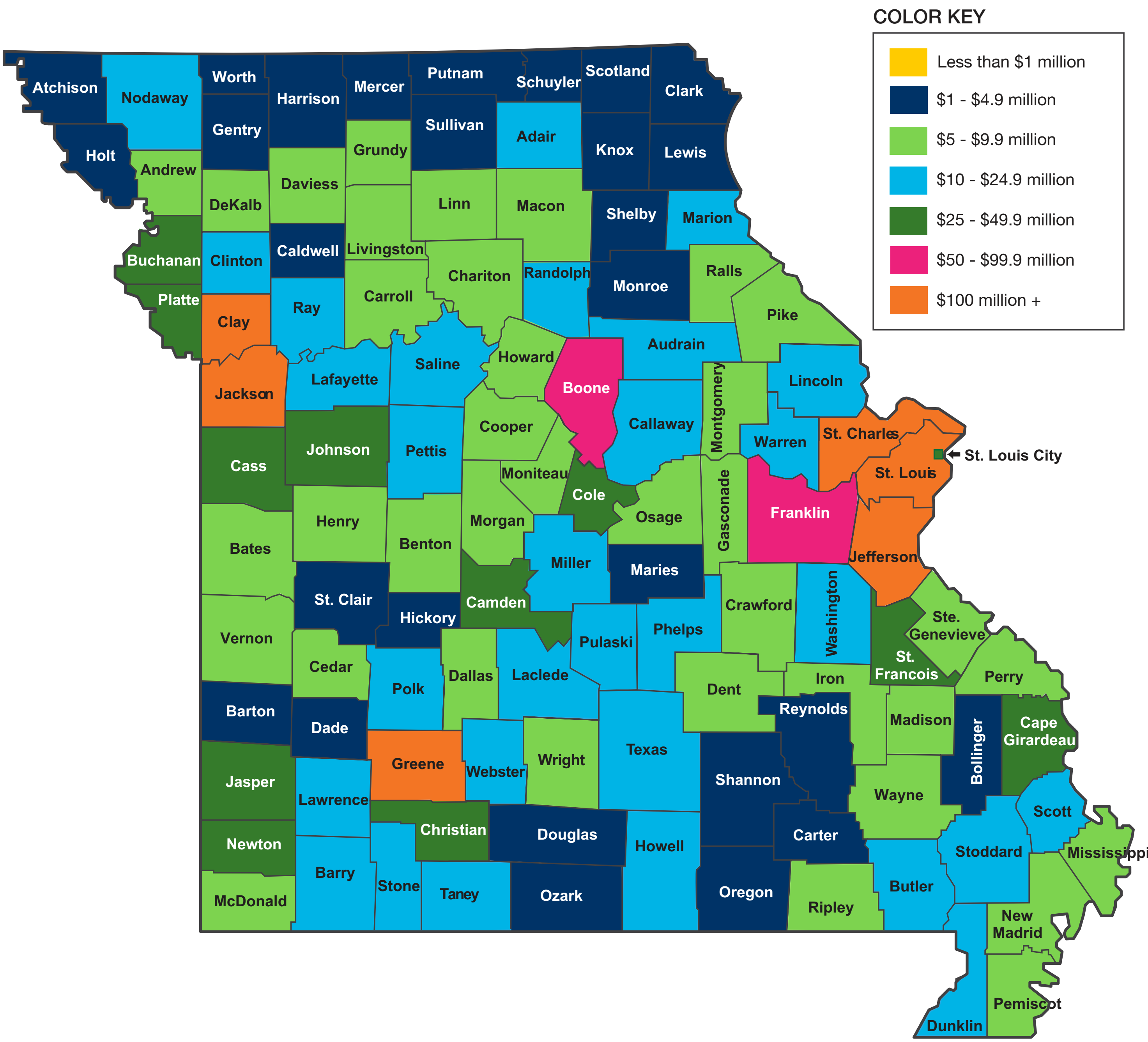
FOCUS AREAS



Economic Impact

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, 2021, approximately 101,000 individuals received benefits from PSRS/PEERS. Total benefits paid for the one-year period ended June 30, 2021 were nearly $3.2 billion. Of this amount, more than $2.8 billion, or 89%, was distributed among Missouri's 114 counties, positively impacting the state's economy.



Board of Trustees

As of June 30, 2021

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 Hoffman, Chair
Elected PEERS Trustee

Jason Steliga, Vice Chair
Elected PSRS Trustee

Scott Hunt
Appointed Trustee

Sharon Kissinger
Appointed Trustee

Beth Knes
Appointed Trustee

Dr. Kyle Collins
Elected PSRS Trustee

Dr. Melinda Moss
Elected PSRS Trustee

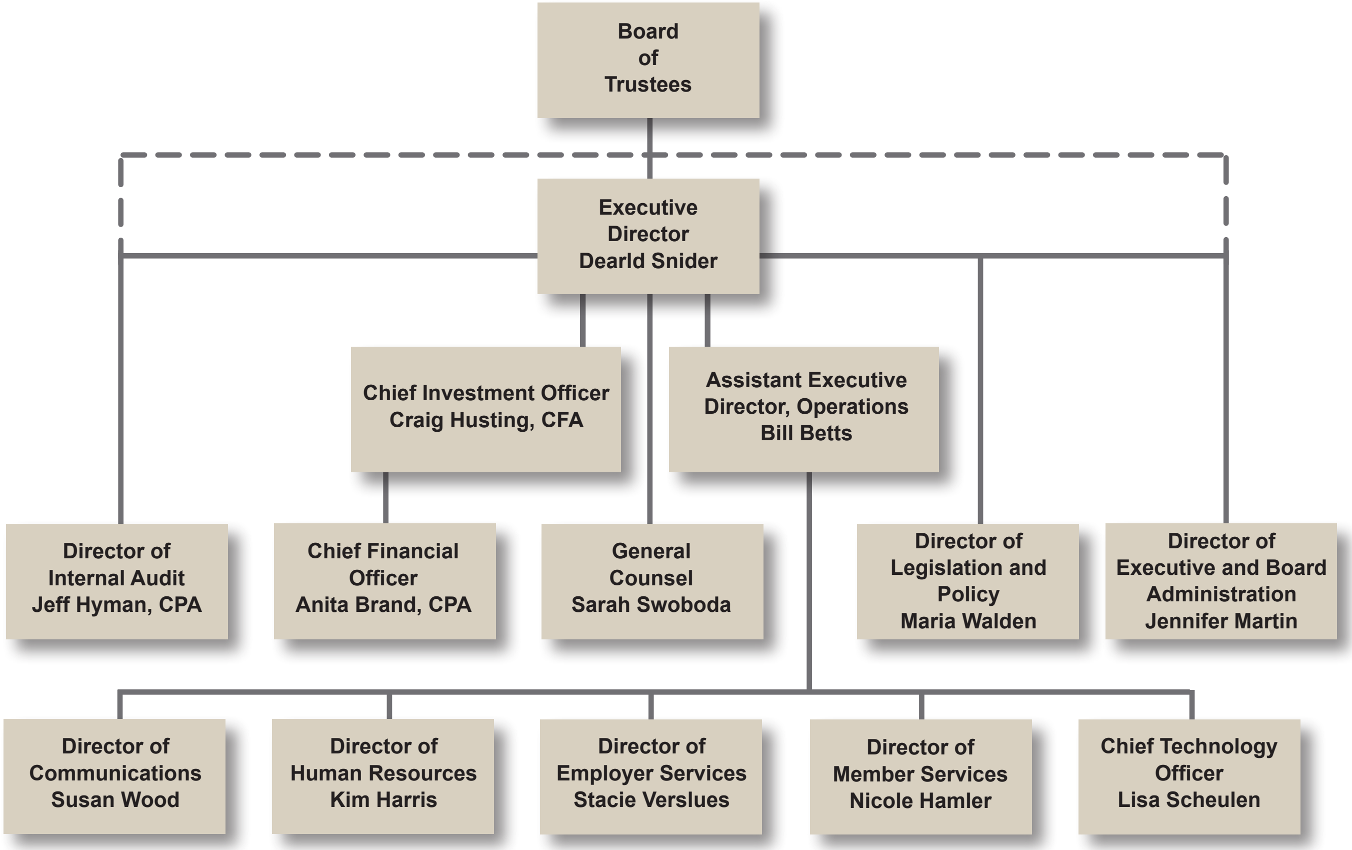
Administrative Organization

As of June 30, 2021

Dearld Snider
Executive Director

Craig Husting, CFA
Chief Investment Officer

Bill Betts
Assistant Executive Director, Operations



PSRS Celebrates 75 Years

Providing financial security and peace of mind for Missouri's public education community since 1946

Since becoming operational in 1946, the Public School Retirement System of Missouri (PSRS) has worked to achieve the following 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

A lot has changed during the past 75 years, and PSRS is no exception. From the number of PSRS members we serve, to our invested assets, to our physical location and staff, PSRS has experienced steady growth. Under the leadership of seven different executive directors, we have expanded and improved operations, investments, and as a result, the service and benefits we provide.

PSRS membership has grown from more than 20,000 in the 1946-1947 school year to more than 163,000 today. To serve those members, staff has increased from 11 to 149. The PSRS office itself has moved and become larger over the years, starting out in a room at the state Capitol, and after several moves, is now located in a newly renovated and expanded building on Jefferson City's west side.

In 1946, PSRS' assets were $1.5 million. As of June 30, 2021, the assets of PSRS were $50.6 billion, making the Systems the 46th largest institutional investor in the U.S. and the 105th largest in the world.

The first year of retirement benefits paid to PSRS retirees totaled $124,229. In contrast, we paid over $2.8 billion in benefits to PSRS retirees in the 2020-2021 school year. Average monthly service retirement benefits have increased one-hundredfold, from around $33 per month to around $3,500 per month.

Here's a look at some PSRS milestones over the years.

1940s

The first ever PSRS retirement benefit check was issued to 75-year-old Mr. Benjamin Rea of Buffalo, Missouri, on August 1, 1947. It was for $31.45.

1950s

In 1953, PSRS first provided survivor benefits for the surviving dependents of members who passed away prior to retirement. Missouri was the second state to have survivor benefits as part of its retirement plan.

1960s

The Non-Teacher Employee Retirement System of Missouri (NTRS) was created in 1965 with the goal of building a plan similar to PSRS, but for non-certificated public school personnel. The name of this system changed in 2005 to the Public Education Employee Retirement System of Missouri (PEERS) to better reflect its membership.

1970s

On January 1, 1977, PSRS provided its first COLA increase to eligible benefit recipients. It was 2%.

1980s

The 1980s brought PSRS' first AS400 computer system, installed to better serve members and more efficiently and securely store member data.

1990s

During the 1990s, PSRS introduced many of the customer service and benefit features we are familiar with today, including a toll-free telephone number, the System's first informational website, a three-year Final Average Salary, current service retirement benefit plans, and 25-and-Out early retirement.

2000s

In the early 2000s, PSRS modernized and diversified the investment program, began using outside legal counsel and directed the implementation of technology to improve the collection of information and benefits, including the digital scanning of over five million pages of paper records. This was the groundwork that created an infrastructure and staff at all levels that has made PSRS the successful and well-managed plan it is today.

2010s

PSRS' new-and-improved Web Member Services went online in 2015 providing members the ability to view and update personal membership information securely online and run personalized benefit estimates.

2020s

As increases in membership and necessary staff continued, PSRS/PEERS completed an extensive retirement system office renovation and expansion project in 2021 to provide much needed additional working, meeting and counseling spaces.

Transmittal Letter

PSRS/PEERS

PUBLIC SCHOOL & EDUCATION EMPLOYEE
RETIREMENT SYSTEMS OF MISSOURI

November 29, 2021

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, 2021.

Fiscal year 2021 marks the 75th year of PSRS ***making a positive impact on our employers, members, and communities across Missouri***. As we reflect on the many changes the Systems have experienced over the past 75 years, we take pride in knowing we met those challenges alongside with our members, employers, staff and business partners. The Systems have a strong foundation and an unwavering commitment to providing retirement security for Missouri's educators and education employees, however we must continue to be innovative and adaptative by deploying innovative investment strategies, new technology and relevant communication. We work to ensure all members have access to the best possible financial future by providing financial security in retirement through lifetime retirement benefits. 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 60 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 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 over 289,000 total members in 534 districts and other employers. As of June 30, 2021, approximately 101,000 individuals received retirement benefits from the Systems. Total annual benefits paid were nearly $3.2 billion for the year ended June 30, 2021. At June 30, 2021, PSRS/PEERS had a net position of approximately $57.1 billion, making it larger than all other public retirement systems in the state of Missouri combined.

Funding Status and Valuation Results

Consistent with industry best practices and the Board of Trustees' fiduciary duty, the Systems conducted actuarial experience studies during the current year. The studies review the differences between the Systems' assumed and actual experience over multiple years (typically three to five), with the goal of examining the trends related to actual experience and recommending changes to assumptions, if needed. The Systems perform an actuarial experience study at least every five years. The purpose of the studies is to confirm that the actuarial assumptions (economic and demographic) used in the annual valuations are: 1) reflective of the actual demographics and behaviors of the members, to the extent historical experience is measurable and expected to be an indicator of future experience, and 2) reflective of current economic conditions affecting members and their benefits. The actuarial methods utilized by the Systems are also reviewed as part of the studies. The actuarial experience studies were performed by PricewaterhouseCoopers (PwC), the Systems' retained actuary.

The overall results of the experience studies were excellent. The studies indicated the actual experience of the Systems over the past five years is very close to the assumptions that were utilized. The most significant discussion in the studies was inflation. Inflation is an underlying component of all other economic assumptions. PwC proposed recommendations to several of the Systems' actuarial assumptions, largely due to movements in inflation. Changes to economic assumptions related to inflation are driven by many factors within the market and do not represent a mismatch of prior assumptions. The Systems continue to monitor long-term inflation as we move into the new fiscal year. PwC also recommended revisions to the Systems' mortality tables and improvement scale. Such recommendations are consistent with prior experience and discussions. The results of the studies are detailed throughout the financial, investment and actuarial sections of the ACFR.

The Actuarial Funding Policies were reviewed in conjunction with the actuarial experience studies. 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

Transmittal Letter, continued

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. The Board of Trustees revised the Actuarial Funding Policies for the Systems at their June 8, 2021 Board meeting. The revisions incorporate the recommendations from the actuarial experience studies and are in alignment with the Board of Trustees funding goals.

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, 2021, PSRS was 85.2% pre-funded, while PEERS was 87.7% pre-funded. Both Systems showed an increase in funding from the June 30, 2020 funded percentage of 84.0% for PSRS and 86.3% for PEERS. The increase is due to significantly higher than expected investment returns of 28.5%, partially offset by changes in the actuarial assumptions as a result of the 2021 experience study and the January 1, 2022 COLA being 5.00% compared to the 2.00% COLA assumed. Additional information on actuarial assumptions and funding can be found in the Actuarial Section of this report. Based upon the June 30, 2021 valuations and overall financial projections, the Board of Trustees set the fiscal year 2023 contribution rates equivalent to the fiscal year 2022 level for both members and employers.

Investment Activities

The Systems' assets increased through investment earnings by $12.7 billion from the previous year with a total fund performance of 28.7% (28.5% net of all investment expenses and fees). The fiscal year 2021 investment performance was one of the strongest absolute and relative fiscal year returns that the Systems have achieved. The total plan return, net of all investment expenses and fees, exceeded both the policy benchmark return of 22.9% and the long-term investment goal (actuarially assumed return). This outperformance was due to portfolio construction and tactical asset allocation decisions by internal Investment Staff (overweighting and underweighting asset classes around targets) as well as active management on the part of external managers. 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 8.7% (8.5% net of all investment expenses and fees) over the last 30 years. As a result of the actuarial experience studies conducted during the year, the assumed investment rate of return was lowered to 7.3%, effective with the June 30, 2021 actuarial valuations and for investment performance measurement beginning with fiscal year 2022.

The Systems' investment return for fiscal year 2021 and for the last five- and ten-year time periods exceeded 65% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion. The Systems generated the strong returns while taking less risk than approximately two-thirds of comparable funds.

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 2021

The Systems are in the final phase of 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. The project is expected to be complete by January 1, 2022.

Legislative Changes During Fiscal Year 2021

There was no significant legislation passed in fiscal year 2021 impacting PSRS or PEERS. However, on August 7, 2020, Governor Parson signed a waiver of the Systems' working after retirement limitations. The waiver was part of an Executive Order declared to address impacts of the COVID-19 pandemic. The waiver remains in effect through December 31, 2021.

Awards

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

PSRS and PEERS each received the Public Pension Standards Awards in 2021 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 ***Comprehensive Annual Financial Report*** for the fiscal year ended June 30, 2020. 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 comprehensive annual 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 Verus Advisory, Inc.

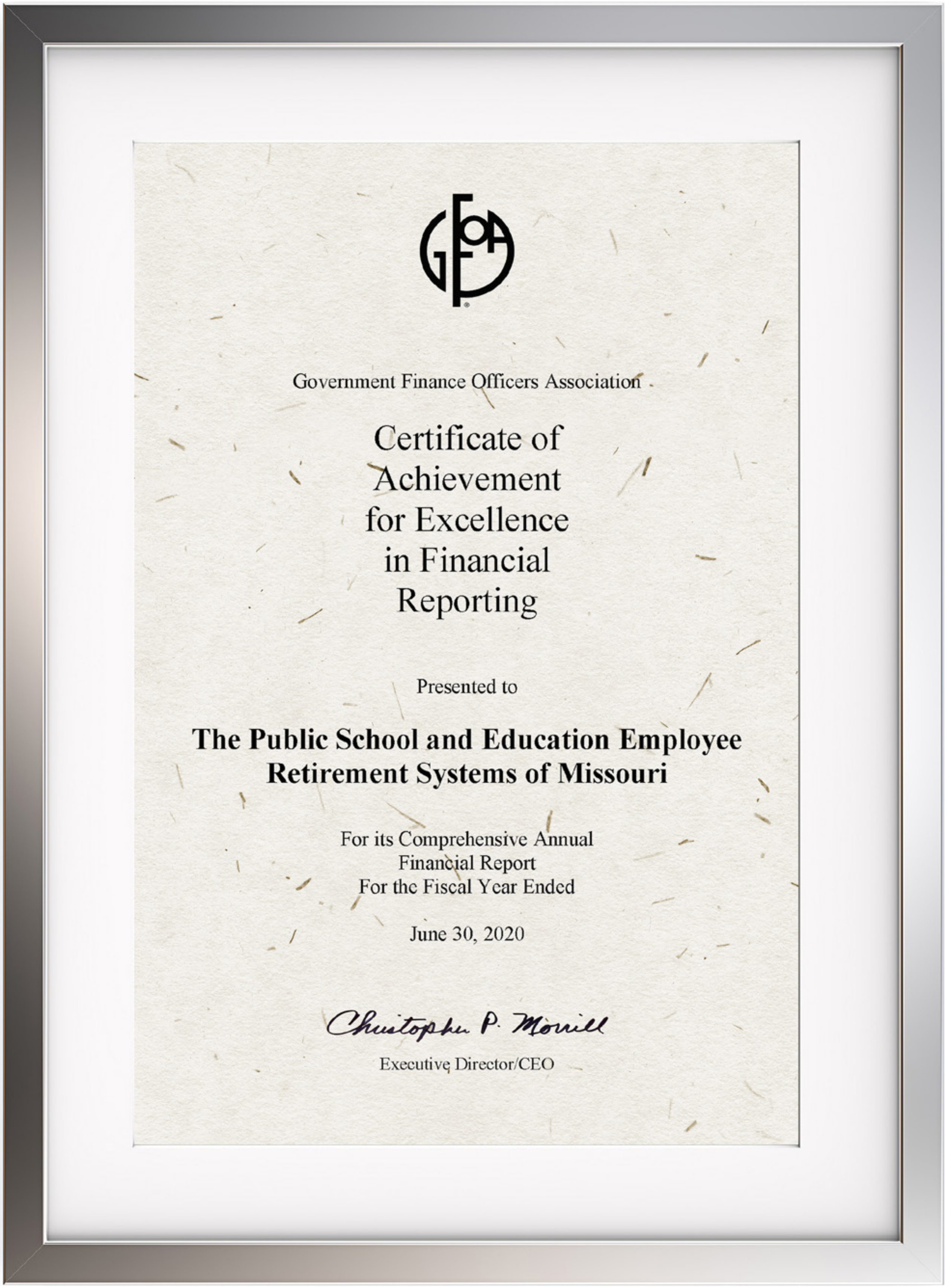
Acknowledgements

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 successful operation of the Systems.

Respectfully submitted,

Dearld Snider	Anita Brand, CPA
Executive Director	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**

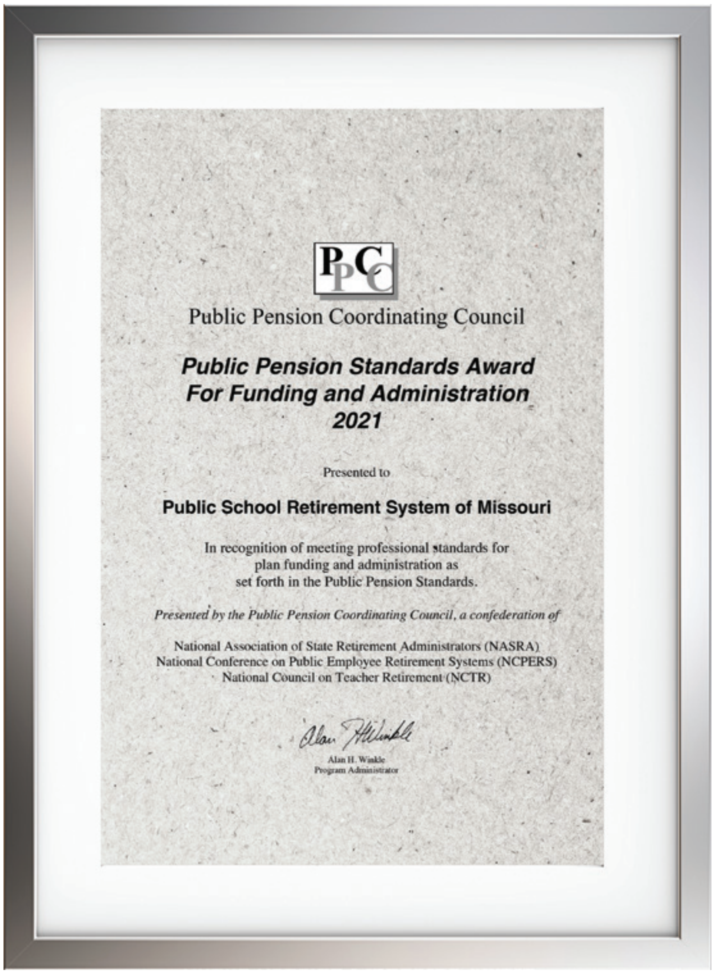
For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

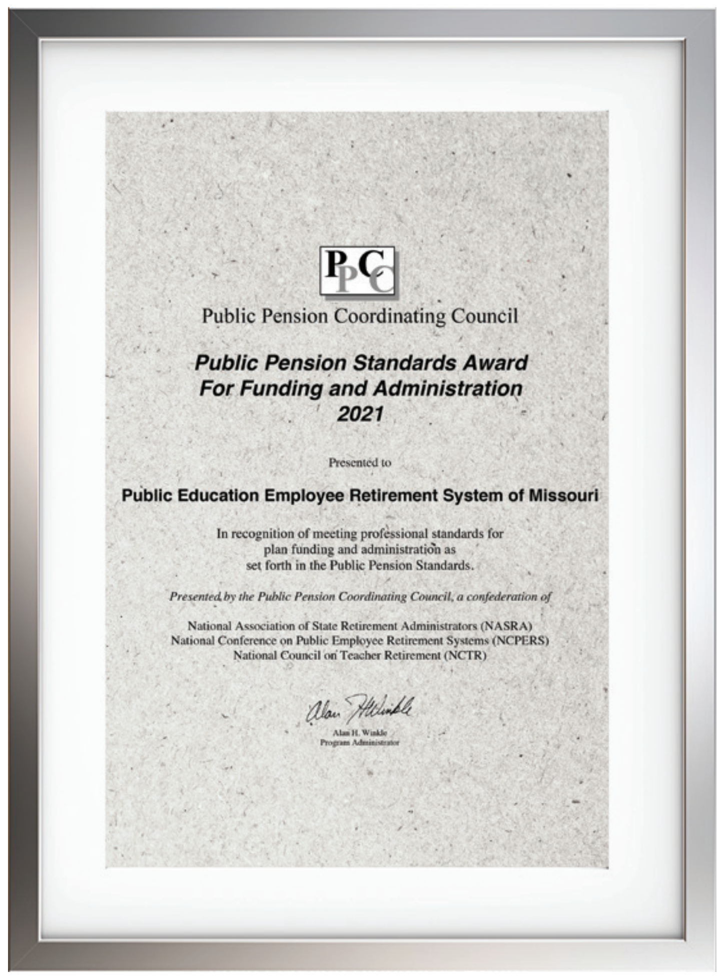
June 30, 2020

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council Public Pension Standards Awards





Professional Services

As of June 30, 2021

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

Cherry Road Technologies
Craig Mauer
Morris Plains, NJ

ConvergeOne, Inc.
Joseph Cook
St. Louis, MO

ConvergePoint Inc.
Steven Moore
Katy, TX

Critical River
Alex Hutton
Lewisville, TX

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

KiZAN Technologies LLC
Ken Fox
Louisville, KY

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

Other Consultants

Cortex
Tom Iannucci
Toronto, Ontario

Legal Counsel

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

Andrew Matera, M.D.
Columbia, Missouri

Investment Management, Custodial and Consulting fees can be found in the Schedule of Investment Expenses on page 106. Schedules of broker commissions can be found on page 104. Additional information on Investment Managers can also be found in the Investment Section of this report.

Government accounting standards require PSRS/PEERS-covered employers to recognize their long-term obligation for pension benefits as a liability on their annual financial statements. For many employers, this is a large task. The Systems partner with our covered-employers to ensure they have all the required information.

Annually, PSRS/PEERS works closely with our employers to verify the accuracy of their retirement reporting for the school year. Then, we provide each employer with a financial reporting package regarding their participation in the Systems.

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

We have audited the accompanying financial statements of the Public School and Public Education Employee Retirement Systems of Missouri (the Systems), which comprise the statements of fiduciary net position as of June 30, 2021, the related statements of changes in fiduciary net position for the year then ended, and the related notes to the financial statements.

Management's Responsibility 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.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with U.S. generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

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, 2021, and the respective changes in fiduciary net position for the year then ended, in conformity with U.S. generally accepted accounting principles.

Independent Auditors' Report, continued

Other Matters

Prior Year Information

The prior year combined total information has been derived from the Systems' 2020 financial statements and, in our report dated November 20, 2020, we expressed unmodified opinions on the respective financial statements of the Systems' fiduciary net position.

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 52-57, and schedules related to the defined benefit OPEB plan (schedule of changes in the net OPEB liability and related ratios) on page 58 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 audits 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 additional information presented on pages 59 through 60 are presented for purposes of additional analysis and are not a required part of the financial statements.

The additional information presented on pages 59 through 60 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 59 through 60 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

November 22, 2021

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, 2021. 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).

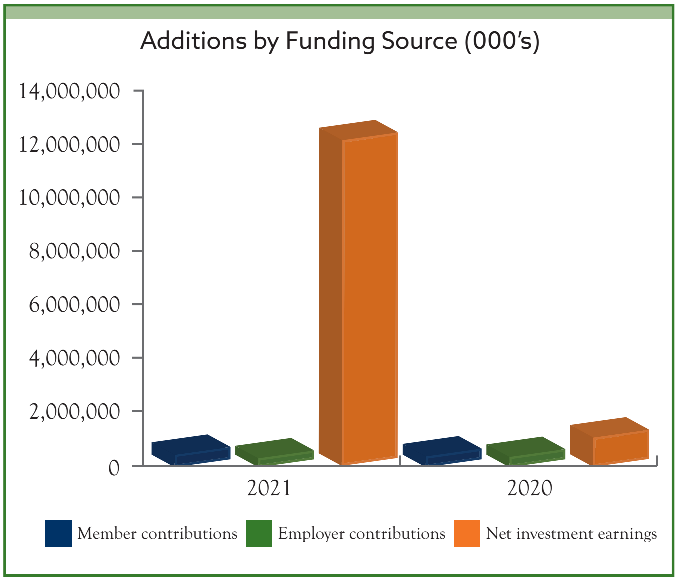
Financial Highlights

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

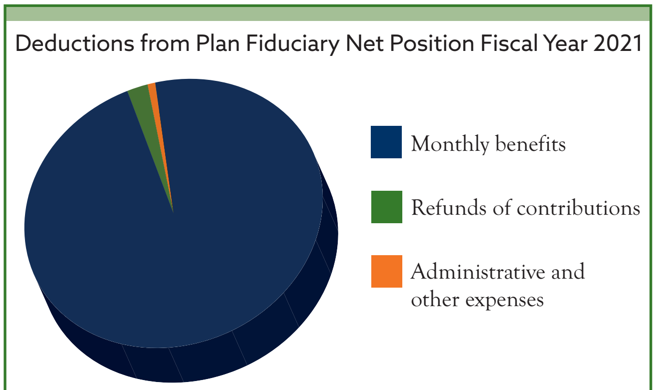
- The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience for the Systems, derived from experience studies conducted every fifth year. The most recent comprehensive experience studies were completed during fiscal 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.
- As of June 30, 2021, PSRS' fiduciary net position as a percentage of the total pension liability increased to 95.8% from 82.0% for the prior year. PSRS' net pension liability approximated $2.2 billion as of June 30, 2021. As of June 30, 2021, PEERS' fiduciary net position as a percentage of the total pension liability increased to 98.4% from 84.1% for the prior year. PEERS' net pension liability approximated $107.7 million as of June 30, 2021. 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, 2021, the pre-funded ratios for funding purposes were 85.2% for PSRS and 87.7% for PEERS.
- The fiscal year 2021 investment performance was one of the strongest absolute and relative fiscal year returns that the Systems have achieved. The Systems' assets increased through investment earnings by $12.7 billion from the previous year with a total fund performance of 28.7% (28.5% net of all investment expenses and fees). The total plan return, net of all investment expenses and fees, exceeded both the policy benchmark return of 22.9% and the long-term investment goal (actuarially assumed return) of 7.5% as a result of the Systems' strong investment program paired with substantial investment earnings in the equity 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 8.7% (8.5% net of all investment expenses and fees) over the last 30 years.
- The Systems' investment returns for fiscal year 2021 and for the three-year, five-year and ten-year time periods then ended exceeded the median 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 (and longer-term investment 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.
- 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. The following chart depicts the combined amount of funding received by the Systems from each source for the years ended June 30, 2021 and 2020.



- 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, 2021.



- The combined net position of the Systems increased by $11.2 billion. The net position of PSRS increased by $9.9 billion while the net position of PEERS increased by $1.3 billion.
- Total revenues for fiscal year 2021 were comprised of contribution revenue of $1.79 billion and investment gains of $12.7 billion, compared to contribution revenue of $1.74 billion and investment gains of $1.64 billion for fiscal year 2020.
- Expenses increased 3.3% over the prior year from $3.2 billion to $3.3 billion. Retirement benefits increased by $105.7 million and member refunds decreased by $2.5 million from the prior year, while administrative expenses increased by $ 0.4 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 51.

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 2021. 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)

	2021	2020	Change
Cash & investments	$ 51,032,956	$40,849,436	$10,183,520
Receivables	6,098,699	2,346,619	3,752,080
Other	33,086	27,516	5,570
Total assets	**57,164,741**	**43,223,571**	**13,941,170**
Deferred outflows of resources	**159**	**120**	**39**
Total liabilities	**6,544,243**	**2,513,222**	**4,031,021**
Deferred inflows of resources	**137**	**164**	**(27)**
Fiduciary net position	**$ 50,620,520**	**$40,710,305**	**$ 9,910,215**

Assets

Total assets of PSRS as of June 30, 2021 were $57.2 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets increased by $13.9 billion or 32.3% from the prior year due to significant fiscal year 2021 investment earnings.

Liabilities

Total liabilities as of June 30, 2021, were $6.5 billion and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities increased by $4.0 billion from the prior year. The increase was primarily due to an increase in investment purchases payable.

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, 2021, by $50.6 billion. This was an increase of $9.9 billion from the 2020 net position. This increase was a direct result of significant investment earnings that totaled $11.3 billion for the year offset by benefit payments and other expenses which exceeded contribution revenue by $1.4 billion.

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

	2021	2020	Change
Additions			
Member contributions	$ 779,834	$ 757,917	$ 21,917
Employer contributions	745,638	724,995	20,643
Investment income	11,291,593	1,457,327	9,834,266
Other	128	192	(64)
Total additions	**12,817,193**	**2,940,431**	**9,876,762**
Deductions			
Monthly benefits	2,844,612	2,758,726	85,886
Refunds of contributions	51,548	54,506	(2,958)
Administrative expenses	10,763	10,653	110
Other	55	-	55
Total deductions	**2,906,978**	**2,823,885**	**83,093**
Changes in fiduciary net position	**$ 9,910,215**	**$ 116,546**	**$ 9,793,669**

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 $42.6 million to $1.5 billion. This was a 2.9% increase over the prior year. Retirement contributions were calculated at 14.5% of retirement salary for each member during fiscal year 2021. 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 gain was $11.3 billion as compared to a net investment gain of $1.5 billion in 2020. The current year gains are reflective of a 28.5% net return on the Systems' diversified investment portfolio, compared to 3.7% in the prior year. 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 investments and securities lending 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 2021 were $2.9 billion, an increase of 2.9% over fiscal year 2020.

Benefit expenses increased by $85.9 million to $2.84 billion. This was a result of an overall increase of 1,485 monthly benefit recipients from the prior year end. There were no changes to the benefit formula during 2021. Refunds of contributions decreased by $2.9 million during the current year to a total of $51.5 million.

Administrative expenses increased by $0.1 million to $10.8 million due to increases in recruiting expenses, actuarial cost studies, computer consulting expenses and software services expenses offset by decreases in Board trustee election expenses and travel expenses. The cost of administrative items was charged 60% to PSRS and 40% to PEERS during the fiscal year (61% for PSRS and 39% for PEERS during fiscal year 2020) 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 2021. 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)

	2021	2020	Change
Cash & investments	$ 6,511,616	$ 5,143,569	$ 1,368,047
Receivables	778,225	293,649	484,576
Other	7	7	-
Total assets	**7,289,848**	**5,437,225**	**1,852,623**
Deferred outflows of resources	**106**	**77**	**29**
Total liabilities	**836,701**	**318,353**	**518,348**
Deferred inflows of resources	**91**	**105**	**(14)**
Fiduciary net position	**$ 6,453,162**	**$ 5,118,844**	**$ 1,334,318**

Assets

Total assets of PEERS as of June 30, 2021 were $7.3 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets increased by $1.9 billion or 34.0% from the prior year due to significant fiscal year 2021 investment earnings.

Liabilities

Total liabilities as of June 30, 2021 were $837.0 million and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities increased by $518.3 million. The increase was primarily due to an increase in investment purchases payable.

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, 2021 by $6.5 billion. This was an increase of $1.3 billion from the 2020 net position. This increase was a direct result of significant investment earnings that totaled $1.4 billion for the year offset by benefit payments and other expenses which exceeded contribution revenue by $100.0 million.

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

	2021	2020	Change
Additions			
Member contributions	$ 134,324	$ 131,336	$ 2,988
Employer contributions	126,877	124,545	2,332
Investment income	1,431,017	181,855	1,249,162
Total additions	**1,692,218**	**437,736**	**1,254,482**
Deductions			
Monthly benefits	329,422	309,658	19,764
Refunds of contributions	21,099	20,680	419
Administrative expenses	7,379	7,077	302
Other	-	1	(1)
Total deductions	**357,900**	**337,416**	**20,484**
Changes in fiduciary net position	**$1,334,318**	**$ 100,320**	**$1,233,998**

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 $5.3 million to $261.2 million. This was a 2.1% increase over the prior year. Retirement contributions were calculated at 6.86% of retirement salary for each member during fiscal year 2021. 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 gain was $1.4 billion as compared to a net investment gain of $181.9 million in 2020. The current year gains are reflective of a 28.5% net return on the Systems' diversified investment portfolio, as compared to 3.7% in the prior year. 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 investments and securities lending 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 2021 were $357.9 million, an increase of 6.1% over fiscal year 2020.

Benefit expenses increased by $19.8 million to $329.4 million. This was a result of an overall increase of 1,439 monthly benefit recipients from the prior year end. There were no changes to the benefit formula during 2021. Refunds of contributions increased by $0.4 million from the prior year.

Administrative expenses increased by $0.3 million due to increases in recruiting expenses, actuarial cost studies, computer consulting expenses and software services expenses offset by decreases in Board trustee election expenses and travel expenses. The cost of administrative items was charged 60% to PSRS and 40% to PEERS during the fiscal year (61% for PSRS and 39% for PEERS during fiscal year 2020) 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. The revisions incorporate the recommendations from the actuarial experience studies conducted during the current year. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the studies and the revisions are effective with the June 30, 2021 valuations. The Systems' funding objective is 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 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% is effective with the June 30, 2021 actuarial valuations and fiscal year 2022 investment performance measurement. Detailed information regarding the Systems' investment portfolio is included in the *Investment Section* of this report.

The Systems earned an investment return of 28.7% (28.5% net of all investment expenses and fees), exceeding the policy benchmark return of 22.9% by 580 basis points. The Systems' well-structured investment portfolio added $12.7 billion in total investment earnings to the growth of assets and $2.5 billion of investment earnings 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 8.5%, net of all fees and expenses.

The economic factor that is of primary significance to the Systems is the investment rate of return earned in global capital markets. 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 2023 contribution rates remain unchanged from the fiscal year 2022 rates and were approved by the Board of Trustees at their October 25, 2021 meeting. The fiscal year 2023 contribution rate for PSRS remains 29.0%. The fiscal year 2023 contribution rate for PEERS remains 13.72%. The fiscal year 2023 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, 2021
with comparative totals for June 30, 2020

			Combined Totals	
	PSRS	PEERS	June 30, 2021	June 30, 2020
ASSETS				
Cash	$ 449,647,517	$ 63,172,123	$ 512,819,640	$ 542,128,176
Receivables				
Contributions	212,835,173	28,586,471	241,421,644	209,208,593
Accrued interest and dividends	79,861,759	10,181,904	90,043,663	90,246,960
Investment sales	5,805,210,475	739,456,258	6,544,666,733	2,339,897,452
Receivable from PEERS for allocated expenses	783,932	-	783,932	909,995
Other	7,234	2	7,236	4,941
Total receivables	6,098,698,573	778,224,635	6,876,923,208	2,640,267,941
Investments, at fair value				
U.S. Treasuries and TIPS	8,097,236,798	1,032,471,336	9,129,708,134	8,361,862,860
U.S. public equities	12,561,829,121	1,599,830,386	14,161,659,507	12,164,331,941
Non-U.S. public equities	8,209,446,741	1,046,478,208	9,255,924,949	6,874,027,563
Short-term investments	2,172,524,249	278,480,953	2,451,005,202	956,474,441
Public debt	1,851,654,774	236,102,602	2,087,757,376	2,047,085,822
Private equity	8,181,376,614	1,043,199,926	9,224,576,540	5,858,545,057
Private credit	1,280,182,251	163,234,880	1,443,417,131	774,497,818
Private real estate	3,974,171,203	506,742,974	4,480,914,177	3,926,360,180
Hedged assets	4,040,920,767	514,620,001	4,555,540,768	4,357,935,062
Total investments	50,369,342,518	6,421,161,266	56,790,503,784	45,321,120,744
Invested securities lending collateral	213,965,790	27,282,584	241,248,374	129,756,215
Prepaid expenses	61,056	7,370	68,426	93,443
Capital assets, net of accumulated depreciation	33,024,577	-	33,024,577	27,430,262
Total assets	57,164,740,031	7,289,847,978	64,454,588,009	48,660,796,781
DEFERRED OUTFLOW OF RESOURCES				
Outflows related to other post-employment benefit obligations	159,040	106,027	265,067	196,377
LIABILITIES				
Accounts payable	22,292,961	2,793,700	25,086,661	17,146,188
Interest payable	705,878	90,000	795,878	436,259
Securities lending collateral	213,948,973	27,280,440	241,229,413	129,713,565
Investment purchases	6,302,527,693	802,722,816	7,105,250,509	2,676,154,017
Payable to PSRS for allocated expenses	-	783,932	783,932	909,995
Accrued medical claims	111,600	74,400	186,000	55,000
Net other post-employment benefit obligation	2,636,537	1,757,691	4,394,228	4,129,741
Compensated absences	2,019,742	1,198,007	3,217,749	3,030,926
Total liabilities	6,544,243,384	836,700,986	7,380,944,370	2,831,575,691
DEFERRED INFLOW OF RESOURCES				
Inflows related to other post-employment benefit obligations	136,603	91,068	227,671	269,426
NET POSITION - RESTRICTED FOR PENSIONS	$ 50,620,519,084	$ 6,453,161,951	$ 57,073,681,035	$ 45,829,148,041

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, 2021
with comparative totals for the year ended June 30, 2020

			Combined Totals Year Ended	
	PSRS	PEERS	June 30, 2021	June 30, 2020
ADDITIONS				
Contributions				
Employer	$ 745,638,245	$ 126,877,255	$ 872,515,500	$ 849,540,201
Member	779,834,058	134,324,324	914,158,382	889,252,914
Total contributions	1,525,472,303	261,201,579	1,786,673,882	1,738,793,115
Investment income				
From investing activities:				
Net appreciation in fair value of investments	12,127,504,369	1,533,204,321	13,660,708,690	1,601,454,121
Interest from investments	181,407,543	22,971,747	204,379,290	246,607,656
Interest from bank deposits	7,911	1,153	9,064	174,779
Dividends	185,248,085	23,478,074	208,726,159	221,367,520
Total investment income	12,494,167,908	1,579,655,295	14,073,823,203	2,069,604,076
Less investment expenses	1,204,568,997	148,891,059	1,353,460,056	433,770,576
Net income from investing activities	11,289,598,911	1,430,764,236	12,720,363,147	1,635,833,500
From security lending activities:				
Security lending gross income	711,014	88,935	799,949	3,304,411
Net (depreciation) appreciation in fair value of security lending collateral	(21,050)	(2,638)	(23,688)	29,658
Less security lending activity expenses:				
Agent fees	570,385	72,729	643,114	640,710
Broker rebates (received) paid	(1,874,925)	(239,070)	(2,113,995)	(654,628)
Total security lending expenses	(1,304,540)	(166,341)	(1,470,881)	(13,918)
Net income from security lending activities	1,994,504	252,638	2,247,142	3,347,987
Total net investment income	11,291,593,415	1,431,016,874	12,722,610,289	1,639,181,487
Other income				
Miscellaneous income	127,584	93	127,677	191,840
Total other income	127,584	93	127,677	191,840
Total additions	12,817,193,302	1,692,218,546	14,509,411,848	3,378,166,442
DEDUCTIONS				
Monthly benefits	2,844,612,045	329,422,222	3,174,034,267	3,068,383,655
Refunds of contributions	51,547,720	21,098,668	72,646,388	75,186,149
Administrative expenses	10,763,071	7,379,216	18,142,287	17,730,301
Other expenses	55,549	363	55,912	776
Total deductions	2,906,978,385	357,900,469	3,264,878,854	3,161,300,881
Net increase in net position	9,910,214,917	1,334,318,077	11,244,532,994	216,865,561
NET POSITION - RESTRICTED FOR PENSIONS				
Beginning of year	40,710,304,167	5,118,843,874	45,829,148,041	45,612,282,480
End of year	$ 50,620,519,084	$ 6,453,161,951	$ 57,073,681,035	$ 45,829,148,041

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 2021. 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, 2021:

Retirees and beneficiaries receiving benefits			66,080
Inactive members entitled to, but not yet receiving benefits			9,472
Active members:	Vested	61,542	
	Non-vested	17,402	
Total active members			78,944
Other inactive members and terminated accounts			9,080
Total			163,576

Employers – PSRS had 533 contributing employers during fiscal year 2021.

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 .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 2021. 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, 2021:

Retirees and beneficiaries receiving benefits			34,671
Inactive members entitled to, but not yet receiving benefits			7,158
Active members:	Vested	26,844	
	Non-vested	22,728	
Total active members			49,572
Other inactive members and terminated accounts			34,090
Total			125,491

Employers – PEERS had 530 contributing employers during fiscal year 2021.

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.

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, 2021. 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, 2020, 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

	2021
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$ 8,947,441,042
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.	32,740,718,973
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.	8,932,359,069
Net Position – Restricted For Pensions	$ 50,620,519,084

Public Education Employee Retirement System of Missouri

	2021
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$ 1,172,459,443
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.	3,430,561,254
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.	1,850,141,254
Net Position – Restricted For Pensions	$ 6,453,161,951

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, 2021, the PSRS carrying amount of deposits at the depository bank was $7,478,279 and the bank balance was $3,487,220. 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 $5,013,974. An additional $6,251,828 was held in overnight repurchase agreements with a book value of $6,251,828. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $6,251,828.

At June 30, 2021, the PEERS carrying amount of deposits at the depository bank was $356,690 and the bank balance was $195,849. Of the bank balance, $195,849 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 $992,704. An additional $745,328 was held in overnight repurchase agreements with a book value of $745,328. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $745,328.

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 as amended effective August 13, 1984, 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 2020 asset allocation/ liability study, the Board of Trustees amended the following long-term asset allocation targets: Public Risk Assets decreased 10% and Private Risk Assets increased 10%. Within Public Risk Assets, U.S. Equity decreased from 27% to 23%, Public Credit decreased from 7% to 0% and Non-U.S. Equity increased from 15% to 16%.

Within Private Risk Assets, Private Equity increased from 12% to 16%, Real Estate increased from 9% to 11% and Private Credit increased from 4% to 8%. Within Safe Assets, U.S. Treasuries increased from 16% to 20% while U.S. TIPS decreased from 4% to 0%.

Implementation of the amended long-term targets will be achieved over a number of years 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, 2021.

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	20.0%	0% - 40%
U.S. TIPS	0.0%	0% - 30%
Cash Equivalents	0.0%	0% - 10%
Total Safe Assets	**20.0%**	**10% - 40%**
Private Risk Asset Programs		
Private Equity	16.0%	4% - 22%
Private Real Estate	11.0%	4% - 15%
Private Credit	8.0%	0% - 12%
Total Private Risk Assets	**35.0%**	**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 6/30/2021	Fair Value Measurements Level 1	Level 2	Level 3
U.S. Treasuries and TIPS				
U.S. Treasuries	$ 9,129,708,134	$ -	$ 9,129,708,134	$ -
Total U.S. Treasuries and TIPS	9,129,708,134	-	9,129,708,134	-
U.S. public equities				
Equities	7,217,197,898	7,217,197,898	-	-
Total U.S. public equities	7,217,197,898	7,217,197,898	-	-
Non-U.S. public equities				
Equities	5,591,193,862	5,589,491,487	-	1,702,375
Corporate Bonds	541	-	541	-
Total Non-U.S. public equities	5,591,194,403	5,589,491,487	541	1,702,375
Short term investments				
Short term investment fund	2,895,782,968	-	2,895,782,968	-
Total Short term investments	2,895,782,968	-	2,895,782,968	-
Public debt				
Corporate Bonds	1,923,907,281	-	1,923,907,281	-
Bank Loans	255,244	-	255,244	-
U.S. Treasuries	137,470,424	-	137,470,424	-
Equities	11,917	-	-	11,917
Municipal Bonds	26,597,624	-	26,597,624	-
Total Public debt	2,088,242,490	-	2,088,230,573	11,917
Hedged assets				
U.S. Treasuries	42,566,336	-	42,566,336	-
Equities	247,417,716	247,417,716	-	-
Corporate Bonds	128,812,088	-	128,812,088	-
Mortgage Backed Securities	4,102,182	-	4,102,182	-
Agency Bonds	2,623,031	-	2,623,031	-
Total Hedged assets	425,521,353	247,417,716	178,103,637	-
Private equity				
Equities	10,232,209	10,232,209	-	-
Total Private equity	10,232,209	10,232,209	-	-
Total investments by fair value level	**$ 27,357,879,455**	**$ 13,064,339,310**	**$ 14,291,825,853**	**$ 1,714,292**
Total investments measured at the NAV ***(See detailed schedule on the following page)***	**29,448,858,889**			
Total Investments measured at fair value	**$ 56,806,738,344**			

Investment derivative instruments:	6/30/2021	Level 1	Level 2	Level 3
Equity total return swaps	$ 40,924,078	$ -	$ 40,924,078	$ -
Foreign currency forwards	(3,372,425)	-	(3,372,425)	-
Total investment derivative instruments	**$ 37,551,653**	**$ -**	**$ 37,551,653**	**$ -**

	6/30/2021	Level 1	Level 2	Level 3
Total invested securities lending collateral	**$ 241,248,374**	**$ 241,248,374**	**$ -**	**$ -**

Investments Measured at the NAV	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Public Equity Investments				
Passive U.S. Equity Funds	$ 4,557,219,182	$ -	Daily	1 day
Active U.S Equity Funds	552,412,500	-	Quarterly	45 days
Passive Non-U.S. Equity Fund	828,729,280	-	Daily	2 days
Active Non-U.S. Equity Funds	2,793,654,173	-	Monthly	15 - 30 days
Total Public Equity Investments	8,732,015,135	-		
Hedge Assets Investments				
Asset Allocation/Global Macro	573,191,604	-	Monthly	5 days
Distressed Debt/Credit	814,276,132	-	Quarterly, semi-annual	65 - 90 days
Diversified Beta	259,664,514	-	Quarterly	30 days
Equity Focused	1,690,509,892	-	Monthly, quarterly	5 - 60 days
Multi-Strategy	2,240,525,295	-	Monthly, quarterly	15 - 120 days
Total Hedge Investments	5,578,167,437	-		
Private Risk Investments				
Private Equity	9,214,345,008	4,387,914,200	Not eligible	N/A
Private Credit	1,443,417,131	1,303,738,575	Not eligible	N/A
Private Real Estate - closed end funds	1,352,875,099	1,553,361,637	Not eligible	N/A
Private Real Estate - open end funds	3,128,039,079	123,743,976	Quarterly	15 - 180 days
Total Private Risk Investments	15,138,676,317	7,368,758,388		
Total investments measured at the NAV	$ 29,448,858,889	$ 7,368,758,388		

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 eight 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 seven 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, 2021, the money-weighted rate of return, net of all investment expenses and fees, was 28.4%. 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, 2021 net of all investment expenses and fees, was 28.5%.

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, 2021, 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 includes collateral pledged for securities lending collateral. The maturities of all debt securities are presented below:

Security Type	Fair Value at June 30, 2021	< 1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
U.S. Treasuries	$ 9,359,743,268	$ 575,042,141	$ 4,652,653,594	$ 1,938,160,676	$ 2,193,886,857
Agencies	2,623,031	-	-	-	2,623,031
Corporate bonds	2,057,075,932	61,422,472	1,073,349,484	685,505,875	236,798,101
Repurchase agreements	48,235,915	48,235,915	-	-	-
Certificates of deposit	135,014,084	135,014,084	-	-	-
Derivatives	(2,984,572)	(2,984,572)	-	-	-
Municipals	26,597,624	3,701,711	347,948	12,403,511	10,144,454
Bank deposits	1,558,949,268	1,558,949,268	-	-	-
Commingled Funds (see note)					
Blackrock Fed Fund	1,002,287	1,002,287	-	-	-
Bridgewater STIF II	12,622,065	12,622,065	-	-	-
Bridgewater US IL Bond Fund	4,608,155	-	-	4,608,155	-
Bridgewater International Bond Fund	5,596,227	-	-	-	5,596,227
JP Morgan US Govt Market Fund	1,336,833,700	1,336,833,700	-	-	-
State Street Inst. US Govt Fund	7,000,000	7,000,000	-	-	-
Currency	(3,974,156)	(3,974,156)	-	-	-
Total	$14,548,942,828	$ 3,732,864,915	$ 5,726,351,026	$ 2,640,678,217	$ 2,449,048,670
Percentage of Total Fixed Income	100%	25%	39%	19%	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' deposits and repurchase agreements collateral.

Security Type	Fair Value at June 30, 2021	< 1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
PSRS - Agencies	$ 11,265,801	$ -	$ 1,188,223	$ 2,228,924	$ 7,848,654
PEERS - Agencies	$ 1,738,032	$ -	$ -	$ -	$ 1,738,032

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 includes collateral pledged for securities lending collateral. The Systems' debt investments by credit rating category as of June 30, 2021 are presented in the following table.

Security Type	Fair Value at June 30, 2021	%	FDIC Insured	AAA	AA	A	BBB	BB	B	CCC	Not Rated
U.S. Treasuries	$ 9,359,743,268	64%	$ -	$ 9,359,743,268	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Agencies	2,623,031	0%	-	2,623,031	-	-	-	-	-	-	-
Corporate bonds	2,057,075,932	14%	-	28,437,673	61,571,039	717,670,512	1,090,716,960	98,837,903	44,255,945	6,890,798	8,695,102
Repurchase agreements	48,235,915	1%	-	-	-	48,235,915	-	-	-	-	-
Certificates of deposit	135,014,084	1%	-	29,002,518	-	106,011,566	-	-	-	-	-
Derivatives	(2,984,572)	0%	-	-	-	-	-	-	-	-	(2,984,572)
Municipals	26,597,624	0%	-	16,105,222	347,948	10,144,454	-	-	-	-	-
Bank Deposits	1,558,949,268	11%	1,558,949,268	-	-	-	-	-	-	-	-
Commingled Funds (see note)											
Blackrock Fed Fund	1,002,287	0%	-	1,002,287	-	-	-	-	-	-	-
Bridgewater STIF II	12,622,065	0%	-	12,622,065	-	-	-	-	-	-	-
Bridgewater US IL Bond Fund	4,608,155	0%	-	-	4,608,155	-	-	-	-	-	-
Bridgewater International Bond Fund	5,596,227	0%	-	-	5,596,227	-	-	-	-	-	-
JP Morgan US Govt Market Fund	1,336,833,700	9%	-	1,336,833,700	-	-	-	-	-	-	-
State Street Inst. US Govt Fund	7,000,000	0%	-	7,000,000	-	-	-	-	-	-	-
Currency	(3,974,156)	0%	-	-	-	-	-	-	-	-	(3,974,156)
Total	$ 14,548,942,828	100%	$ 1,558,949,268	$10,793,369,764	$72,123,369	$ 882,062,447	$1,090,716,960	$ 98,837,903	$ 44,255,945	$ 6,890,798	$ 1,736,374
Percentage of Total Fixed Income	100.00%		11%	74%	0%	6%	8%	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' 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, 2021 is presented in the following table.

Currency	Equity	Currency/Short Term	Total
Australian Dollar	$ 79,164,697	$ (1,022,835)	$ 78,141,862
Brazilian Real	34,907,374	2,029,169	36,936,543
Canadian Dollar	180,763,449	(2,062,083)	178,701,366
Chilean Peso	4,475,991	(169,208)	4,306,783
Colombian Peso	335,167	(25,225)	309,942
Czech Koruna	8,360,020	(129,261)	8,230,759
Danish Krone	123,827,722	612,548	124,440,270
Egyptian Pound	9,376,975	190,025	9,567,000
Euro Currency	1,769,197,032	22,804,639	1,792,001,671
Hong Kong Dollar	384,622,846	(843,754)	383,779,092
Hungarian Forint	8,450,715	328,538	8,779,253
Indian Rupee	176,884,822	48,157	176,932,979
Indonesian Rupiah	4,918,414	(63,858)	4,854,556
Israeli Shekel	5,947,083	(11,628)	5,935,455
Japanese Yen	651,252,408	2,121,627	653,374,035
Malaysian Ringgit	18,114,997	282,704	18,397,701
Mexican Peso	15,035,902	(259,125)	14,776,777
New Taiwan Dollar	182,898,411	632,057	183,530,468
New Turkish Lira	11,599,684	33,030	11,632,714
New Zealand Dollar	3,618,915	(170,891)	3,448,024
Norwegian Krone	17,733,515	368,094	18,101,609
Pakistan Rupee	3,152,970	1,647	3,154,617
Peruvian Nuevo Sol	306,891	(317,716)	(10,825)
Philippine Peso	10,540,417	(240,002)	10,300,415
Polish Zloty	8,002,642	164,501	8,167,143
Pound Sterling	396,384,174	507,219	396,891,393
Qatari Rial	14,367,694	9,279	14,376,973
Russian Ruble	45,575,897	3,659,747	49,235,644
Saudi Riyal	-	(312)	(312)
Singapore Dollar	50,809,445	667,908	51,477,353
South African Rand	55,957,416	396,187	56,353,603
South Korean Won	189,597,186	1,265,801	190,862,987
Swedish Krona	64,047,551	(294,557)	63,752,994
Swiss Franc	459,371,908	557,047	459,928,955
Thailand Baht	12,534,633	11,060	12,545,693
UAE Dirham	5,650,330	63,386	5,713,716
Yuan Renminbi	141,993,363	777,045	142,770,408
Total	**$ 5,149,778,656**	**$ 31,920,960**	**$ 5,181,699,616**

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, 2021, classified by type are as follows:

	Fair Value at June 30, 2021		
Investment Derivatives	**Classification**	**Amount**	**Notional**
Swaps			
Total return swaps - equity	Investments, at fair value	$ 40,924,078	$ 1,823,612,317
Total swaps		**40,924,078**	**1,823,612,317**
Futures			
Equity futures long	Investments, at fair value	-	502,980,993
Equity futures short	Investments, at fair value	-	113,671,973
Interest rate futures short	Investments, at fair value	-	80,561,250
Interest rate futures long	Investments, at fair value	-	208,661,891
Commodity futures long	Investments, at fair value	-	8,503,680
Total futures		**-**	**914,379,787**
Foreign currency forwards net receivable/payable	Investment Sales and Purchases	(3,372,425)	-
Total Investment Derivatives		**$ 37,551,653**	**$ 2,737,992,104**

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 gains on swaps of $529.6 million were recognized for the fiscal year ended June 30, 2021.

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 gains on futures contracts of $120.2 million during the fiscal year ended June 30, 2021.

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, 2021.

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 $7.2 million during the fiscal year ended June 30, 2021.

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, 2021 the counterparties' credit ratings for currency forwards, options 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
AA	$ -	$ 1,439,363	$ 1,439,363
A	40,252,825	(4,811,460)	35,441,365
B	-	(328)	(328)
Total subject to credit risk	**$ 40,252,825**	**$ (3,372,425)**	**$ 36,880,400**

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, 2021 was $232,942,206. On June 30, 2021 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, 2021, 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, 2021, the cost basis of the invested cash collateral totaled $241,229,413 and the estimated fair value totaled $241,248,374.

The Systems' recognized net depreciation of $23,668 for the year ended June 30, 2021 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, 2021 was 29 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.

Note 5 – Net Pension Liability of Employers

The components of the net pension liability of the Systems' employers at June 30, 2021 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	$ 52,834,296,831	$ 50,620,519,084	$ 2,213,777,747	95.8%	$ 5,039,838,429	43.9%
PEERS	$ 6,560,854,343	$ 6,453,161,951	$ 107,692,392	98.4%	$ 1,758,535,339	6.1%

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 during the current fiscal year. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the studies and are 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, 2021. A summary of the significant actuarial assumptions as of June 30, 2021 are shown on the following page. The significant actuarial assumptions utilized in the previous year are also included to illustrate revisions from the prior year.

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 (asset) 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 (Asset)	$ 8,912,503,478	$ 2,213,777,747	$ (3,332,425,928)
PEERS	Net Pension Liability (Asset)	$ 911,938,897	$ 107,692,392	$ (563,469,120)

Measurement Date	June 30, 2021	June 30, 2020
Valuation Date	June 30, 2021	June 30, 2020
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Investment Rate of Return	7.30%	7.50%
Inflation	2.00%	2.25%
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.	2.75% per annum, consisting of 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, and 0.25% 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.	3.25% per annum, consisting of 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, and 0.50% 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.	3.00% - 9.50%, depending on service and including 2.25% 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, promotion and seniority of 0.25% to 6.75%.
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.	4.00% - 11.00%, depending on service and including 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, 0.50% of real wage growth for productivity, and real wage growth for merit, promotion and seniority of 0.75% to 7.75%.
Cost-of-Living Increases		
PSRS	2.0% compounded annually for the next 3 years and then 1.35% for all years thereafter. The COLA is compounded annually, beginning on the second January after retirement and capped at an 80% lifetime increase.	1.65% compounded annually, beginning on the second January after retirement and capped at 80% lifetime increase. The assumption increases from 1.35% to 1.65% over six years.
PEERS	2.0% compounded annually for the next 3 years and then 1.35% for all years thereafter. The COLA is compounded annually, beginning on the fourth January after retirement and capped at an 80% lifetime increase.	1.65% compounded annually, beginning on the fourth January after retirement and capped at 80% lifetime increase. The assumption increases from 1.35% to 1.65% over six years.

Measurement Date	June 30, 2021	June 30, 2020
Valuation Date	June 30, 2021	June 30, 2020
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.	RP 2006 White Collar Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.
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.	RP 2006 Total Dataset Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.
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.	RP 2006 White Collar Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

	Males	Females
Non-Disabled	1.10	1.04
Contingent Survivor	1.18	1.07

Age	Males	Females
<60	1.00	1.00
60-74	0.89	0.67
75-89	1.05	0.91
>=90	1.05	1.16

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.	RP 2006 Total Dataset Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

	Males	Females
Non-Disabled	1.13	0.94
Contingent Survivor	1.01	1.07

Age	Males	Females
<60	1.00	1.00
60-74	1.49	0.77
75-89	1.27	1.03
>=90	1.16	1.04

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.	PSRS and PEERS: RP 2006 Disabled Retiree Mortality Table, with static projections using the 2014 SSA Improvement Scale to 2028.

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, 2021 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	20.0 %	-0.02 %
U.S. TIPS	0.0 %	0.29 %
Private Credit	8.0 %	5.61 %
Private Equity	16.0 %	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, 2021 and is consistent with the long-term expected geometric return on plan investments. The Board of Trustees adopted a new actuarial assumed rate of return of 7.3% effective with the June 30, 2021 valuations based on the actuarial experience studies conducted during the current fiscal year. 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 2021, 2020, and 2019. 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 $107,209 for the 2021 fiscal year, $94,103 for the 2020 fiscal year and $84,515 for the 2019 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 2021, 2020 and 2019. 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 $866,145 for the 2021 fiscal year, $829,231 for the 2020 fiscal year, and $794,871 for the 2019 fiscal year. The amounts for these years are equal to the required contributions.

PSRS and PEERS, as the administrators for the defined 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 $127,544 and employer-paid contributions totaled $68,250 for the 2021 fiscal year. Employee contributions totaled $511,560 for the 2021 fiscal year. Employer-matching contributions totaled $122,064 and employer-paid contributions totaled $71,500 for the 2020 fiscal year. Employee contributions totaled $452,791 for the 2020 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, 2021, employees had a vested interest under the plan of $248,071 and disbursements of $64,971 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 $171,000 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 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	14
Active employees	134
Total	148

OPEB Liability – The components of the net OPEB Liability of the SRHP as of June 30, 2021 are as follows:

Total OPEB Liability - Beginning of the year	$ 4,129,741
Service Costs	185,640
Interest Costs	77,125
Experiences (gains) losses	45,526
Assumption changes	65,334
Plan amendments	-
Benefit payments	(109,138)
Total OPEB Liability - End of year	$ 4,394,228
OPEB Plan Fiduciary Net Position	$ -
Net OPEB Liability	$ 4,394,228

OPEB Expense – The components of the OPEB expense for the year ended June 30, 2021 are as follows:

Service Costs	$ 185,640
Plan Amendments	-
Interest Costs	77,125
Recognition of deferred (inflows) outflows of resources related to:	
Liability experiences (gains) losses	27,328
Assumption changes (gains) losses	(26,913)
Total Recognition of deferred (inflows) outflows of resources	415
Total collective OPEB expense recognized	$ 263,180

Actuarial Method and Assumptions - The total OPEB liability was determined by an actuarial valuation as of June 30, 2021. 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. Actuarial assumptions were revised during fiscal year 2021 and are detailed on the following page.

In the June 30, 2021 actuarial valuation, the following actuarial assumptions and methods were used:

Post-Employment Health Plan

Measurement date	June 30, 2021
Valuation date	June 30, 2021
Actuarial cost method	Entry Age Normal
Actuarial value of assets	No Assets (pay-as-you-go)
Amortization method	Level Percent Open
Discount rate	1.81% per year effective June 30, 2020 1.56% per year effective June 30, 2021
Wage inflation	3.25% per year effective June 30, 2016 2.50% per year effective June 30, 2021
Healthcare trend rate	6.00% in fiscal year 2022 and 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. Effective June 30, 2021
	Based on 75% of the RP-2006 Mortality Tables with static projection to 2028 using the 2014 Improvement Scale. Effective June 30, 2016
Non-disabled retirees and beneficiaries	Based on Experience-adjusted PUB-2010 Mortality Tables with generational projections using the MP-2020 Improvement Scale. Effective June 30, 2021
	Based on the RP-2006 Mortality Tables with plan-specific experience adjustments and static projection to 2028 using the 2014 SSA Improvement Scale. Effective June 30, 2016
	Based on Experience-adjusted PUB-2010 Mortality Tables with generational projections using the MP-2020 Improvement Scale. Effective June 30, 2021
	Based on the RP-2014 Disabled Retiree Mortality Table, adjusted to 2006, with static projection to 2028 using the 2014 SSA Improvement Scale. Effective June 30, 2016

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 and 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, 2021 and 2020 valuations. The June 30, 2021 rate was 1.56% and the June 30, 2020 rate utilized was 1.81%. 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, 2021, 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	$ 265,067	$ -
Changes of assumptions	-	227,671
Total	$ 265,067	$ 227,671

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

Year Ending June 30:	
2022	$ 415
2023	415
2024	415
2025	415
2026	415
Thereafter	35,321
	$ 37,396

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 1.56% is presented as well as what the net OPEB liability would be using a discount rate that is 1.0% lower (0.56%) or 1.0% higher (2.56%) than the current rate.

Discount Rate Sensitivity			
	1% Decrease (0.56%)	Current Rate (1.56%)	1% Increase (2.56%)
Net OPEB Liability	$ 4,902,229	$ 4,394,228	$ 3,934,007

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 between 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	$ 3,805,238	$ 4,394,228	$ 5,096,469

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 $162,053 for eight employees during 2021.

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, 2021 totaled $7,105,250,509.

Total unfunded capital commitments to private real estate, private equity and other alternative investments totaled approximately $7.4 billion as of June 30, 2021. 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.

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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, 2021	June 30, 2020	June 30, 2019	June 30, 2018
Total pension liability				
Service cost	$ 859,537,572	$ 845,283,640	$ 830,084,321	$ 792,276,388
Interest cost	3,682,226,376	3,559,151,521	3,466,455,926	3,346,220,624
Difference between actual and expected experience	957,100,081	75,988,120	(314,439,382)	137,516,335
Assumption changes	590,572,160	-	-	531,202,248
Plan amendments	-	-	-	-
Benefit payments	(2,896,159,765)	(2,813,232,110)	(2,710,273,502)	(2,606,985,013)
Net change in total pension liability	3,193,276,424	1,667,191,171	1,271,827,363	2,200,230,582
Total pension liability - beginning of year	$ 49,641,020,407	$ 47,973,829,236	$ 46,702,001,873	$ 44,501,771,291
Total pension liability - end of year (a)	$ 52,834,296,831	$ 49,641,020,407	$ 47,973,829,236	$ 46,702,001,873
Plan Fiduciary Net Position				
Employer contributions	$ 745,638,245	$ 724,995,473	$ 712,545,096	$ 696,970,398
Member contributions	779,834,058	757,916,937	747,402,726	726,996,161
Net investment return	11,291,720,999	1,457,518,290	2,595,865,535	3,173,735,918
Benefit payments, including refunds of member contributions	(2,896,159,765)	(2,813,232,110)	(2,710,273,502)	(2,606,985,013)
Administrative and other expenses	(10,818,620)	(10,653,288)	(11,326,398)	(11,418,119)
Net change in plan fiduciary net position	9,910,214,917	116,545,302	1,334,213,457	1,979,299,345
Plan fiduciary net position - beginning of year	$ 40,710,304,167	$ 40,593,758,865	$ 39,259,545,408	$ 37,280,246,063
Plan fiduciary net position - end of year (b)	$ 50,620,519,084	$ 40,710,304,167	$ 40,593,758,865	$ 39,259,545,408
Net pension liability - end of year (a-b)	$ 2,213,777,747	$ 8,930,716,240	$ 7,380,070,371	$ 7,442,456,465

Public Education Employee Retirement System of Missouri

Year Ended:	June 30, 2021	June 30, 2020	June 30, 2019	June 30, 2018
Total pension liability				
Service cost	$ 181,297,752	$ 173,676,697	$ 170,543,513	$ 161,028,014
Interest cost	457,694,318	436,863,559	417,341,777	397,675,858
Difference between actual and expected experience	98,736,815	(286,057)	(10,635,802)	117,686
Assumption changes	84,245,144	-	-	61,921,295
Plan amendments	-	-	-	-
Benefit payments	(350,520,890)	(330,337,694)	(310,242,399)	(287,634,108)
Net change in total pension liability	471,453,139	279,916,505	267,007,089	333,108,745
Total pension liability - beginning of year	$ 6,089,401,204	$ 5,809,484,699	$ 5,542,477,610	$ 5,209,368,865
Total pension liability - end of year (a)	$ 6,560,854,343	$ 6,089,401,204	$ 5,809,484,699	$ 5,542,477,610
Plan Fiduciary Net Position				
Employer contributions	$ 126,877,255	$ 124,544,728	$ 120,042,046	$ 115,103,143
Member contributions	134,324,324	131,335,977	126,609,105	121,467,850
Net investment return	1,431,016,967	181,855,037	319,773,260	381,523,965
Benefit payments, including refunds of member contributions	(350,520,890)	(330,337,694)	(310,242,399)	(287,634,108)
Administrative and other expenses	(7,379,579)	(7,077,789)	(7,423,689)	(7,113,566)
Net change in plan fiduciary net position	1,334,318,077	100,320,259	248,758,323	323,347,284
Plan fiduciary net position - beginning of year	$ 5,118,843,874	$ 5,018,523,615	$ 4,769,765,292	$ 4,446,418,008
Plan fiduciary net position - end of year (b)	$ 6,453,161,951	$ 5,118,843,874	$ 5,018,523,615	$ 4,769,765,292
Net pension liability - end of year (a-b)	$ 107,692,392	$ 970,557,330	$ 790,961,084	$ 772,712,318

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

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

June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014
$ 150,975,958	$ 161,391,660	$ 156,599,641	$ 159,672,364
374,497,203	372,184,628	333,780,285	315,131,402
3,076,923	(51,257,557)	45,518,402	(14,308,876)
140,420,925	65,420,724	-	-
-	-	-	-
(269,268,101)	(250,390,477)	(235,070,181)	(216,624,810)
399,702,908	297,348,978	300,828,147	243,870,080
$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832	$ 3,967,618,752
$ 5,209,368,865	$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832
$ 111,239,585	$ 106,717,021	$ 103,624,310	$ 100,699,735
118,446,790	114,257,497	110,443,660	106,420,656
485,046,867	60,317,387	163,719,526	544,154,941
(269,268,101)	(250,390,478)	(235,070,010)	(216,624,810)
(6,377,808)	(6,981,573)	(5,629,551)	(4,840,432)
439,087,333	23,919,854	137,087,935	529,810,090
$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886	$ 3,316,512,796
$ 4,446,418,008	$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886
$ 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%

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%

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) [1]	Covered Payroll	Contributions as a Percentage of Covered Payroll
2012	$ 720,303,976	$ 620,214,231	$ (100,089,745)	$ 4,277,339,524	14.50%
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%

Public Education Employee Retirement System of Missouri

Year Ended June 30	Actuarially Determined Contribution	Actual Employer Contributions	Contribution Excess/ (Deficiency) [1]	Covered Payroll	Contributions as a Percentage of Covered Payroll
2012	$ 95,094,785	$ 95,094,785	$ -	$ 1,386,221,356	6.86%
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%

[1]The annual statutory increase in the total contribution rate may not exceed 1% of pay for PSRS and 0.5% of pay for PEERS. The limitation on contribution increases resulted in a deficiency for some of the years presented. Contributions were funded to the maximum statutory limit each year.

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:	2021	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of all investment fees and expenses	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	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	In 2011, 2016 and 2021 payroll growth, salary increases, assumed life expectancies and mortality were adjusted to more closely reflect actual experience. In 2016, the inflation rate was adjusted to 2.25% from 2.5%, the investment rate of return from 8.00% to 7.75% and annual cost-of-loving adjustments were calculated in accordance with the funding policy as amended in June 2016. During 2016 and 2021, minor revisions were made to other actuarial assumptions including but not limited to, retirement rates, withdraw rates, etc. The assumption changes were a result of actuarial experience studies conducted during 2011, 2016 and 2021. For fiscal year 2017, the investment rate of return was further reduced from 7.75% to 7.6% and the assumption for annual cost-of-living adjustments changed. For fiscal year 2018, the investment rate of return was further reduced to 7.5%. In 2021, the inflation rate was adjusted to 2.0% from 2.25%, and the investment rate of return from 7.5% to 7.3%.	
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	20.6 years	
PEERS	20.8 years	
Asset valuation method	5-year smoothing of actual returns above or below expected returns	
Measurement Date	**June 30, 2021**	**June 30, 2020**
Valuation Date	**June 30, 2021**	**June 30, 2020**
Investment Rate of Return	7.30%	7.50%
Inflation	2.00%	2.25%
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.	2.75% per annum, consisting of 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pension earnings, and 0.25% 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.	3.25% per annum, consisting of 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, and 0.50% 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.	3.00% - 9.50%, depending on service and including 2.25% 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, promotion and seniority of 0.25% to 6.75%.
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.	4.00% - 11.00%, depending on service and including 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pension earnings, 0.50% of real wage growth for productivity, and real wage growth for merit, promotion and seniority of 0.75% to 7.75%.
Cost-of-Living Increases		
PSRS	2.0% compounded annually for the next 3 years and then 1.35% for all years thereafter. The COLA is compounded annually, beginning on the second January after retirement and capped at an 80% lifetime increase.	1.65% compounded annually, beginning on the second January after retirement and capped at 80% lifetime increase. The assumption increases from 1.35% to 1.65% over six years.
PEERS	2.0% compounded annually for the next 3 years and then 1.35% for all years thereafter. The COLA is compounded annually, beginning on the fourth January after retirement and capped at an 80% lifetime increase.	1.65% compounded annually, beginning on the fourth January after retirement and capped at 80% lifetime increase. The assumption increases from 1.35% to 1.65% over six years.

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, 2021**	**June 30, 2020**
Valuation Date	**June 30, 2021**	**June 30, 2020**
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.	RP 2006 White Collar Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.
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.	RP 2006 Total Dataset Employee Mortality Table, multiplied by an adjustment factor of 0.75 at all ages for both males and females, with static projection using the 2014 SSA Improvement Scale to 2028.
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.	RP 2006 White Collar Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

	Males	Females
Non-Disabled	1.10	1.04
Contingent Survivor	1.18	1.07

Age	Males	Females
<60	1.00	1.00
60-74	0.89	0.67
75-89	1.05	0.91
>=90	1.05	1.16

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	RP 2006 Total Dataset Mortality Table multiplied by the adjustment factors shown in the table below, with static projections using the 2014 SSA Improvement Scale to 2028.

	Males	Females
Non-Disabled	1.13	0.94
Contingent Survivor	1.01	1.07

Age	Males	Females
<60	1.00	1.00
60-74	1.49	0.77
75-89	1.27	1.03
>=90	1.16	1.04

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.	PSRS and PEERS: RP 2006 Disabled Retiree Mortality Table, with static projections using the 2014 SSA Improvement Scale to 2028.

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, 2021	June 30, 2020	June 30, 2019	June 30, 2018
Total OPEB Liability - beginning of the year	$ 4,129,740	$ 3,885,983	$ 3,788,863	$ 2,050,100
Remeasurement of June 30, 2017 OPEB liability	-	-	-	1,479,740
Service cost	185,640	163,813	151,794	152,625
Interest cost	77,125	98,507	132,375	116,484
Experience (gains) losses	45,526	12,551	74,147	110,476
Assumption changes	65,334	60,354	(259,345)	(104,653)
Plan amendments	-	-	-	-
Benefit payments	(109,137)	(91,468)	(1,850)	(15,909)
Net change in total OPEB liability	$ 4,394,228	$ 4,129,740	$ 3,885,984	$ 3,788,863
OPEB Plan Fiduciary Net Position	$ -	$ -	$ -	$ -
Net OPEB Liability - end of the year	$ 4,394,228	$ 4,129,740	$ 3,885,984	$ 3,788,863
Covered Payroll	$ 12,938,669	$ 12,645,475	$ 12,025,626	$ 10,742,062
Employer's Net OPEB Liability as a Percentage of Covered Payroll	34.0%	32.7%	32.3%	35.3%

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

Schedules of Administrative Expenses

for the year ended June 30, 2021

	PSRS	PEERS	Combined Totals
Personnel services	$ 6,934,427	$ 4,946,543	$ 11,880,970
Professional services			
Actuarial services	377,887	224,780	602,667
Legal services	191,606	32,806	224,412
Financial audit services	59,040	39,360	98,400
Other consultants	63,507	42,338	105,845
Technology consulting	255,340	170,625	425,965
Legislative consulting	29,250	19,500	48,750
Insurance consulting	6,600	4,400	11,000
Total professional services	983,230	533,809	1,517,039
Communications			
Information and publicity	225,634	179,544	405,178
Postage	212,347	154,474	366,821
Member education	1,424	959	2,383
Telephone	41,055	27,374	68,429
Total communications	480,460	362,351	842,811
Miscellaneous			
Building and utilities	83,946	55,969	139,915
Insurance	93,266	62,177	155,443
Office	1,000,147	665,160	1,665,307
Staff development	77,185	51,491	128,676
Miscellaneous	274,288	148,638	422,926
Total miscellaneous	1,528,832	983,435	2,512,267
Depreciation expense	836,122	553,078	1,389,200
Total administrative expenses	$ 10,763,071	$ 7,379,216	$ 18,142,287

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

Schedules of Professional Services

for the year ended June 30, 2021

	PSRS	PEERS	Combined Totals
Actuarial services	$ 377,887	$ 224,780	$ 602,667
Legal expenses	191,606	32,806	224,412
Financial audit services	59,040	39,360	98,400
Other consulting	63,507	42,338	105,845
Technology consulting	255,340	170,625	425,965
Legislative consulting	29,250	19,500	48,750
Insurance consulting	6,600	4,400	11,000
Total professional services	$ 983,230	$ 533,809	$ 1,517,039

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

Schedules of Investment Expenses

for the year ended June 30, 2021

	PSRS	PEERS	Combined Totals
Investment management expenses			
U.S. Treasuries and TIPS	$ 4,554,664	$ 562,936	$ 5,117,600
U.S. public equities	94,687,180	11,702,909	106,390,089
Non-U.S. public equities	37,901,755	4,684,486	42,586,241
Public debt	1,581,695	195,491	1,777,186
Private equity	784,408,036	96,949,308	881,357,344
Private credit	35,444,122	4,380,734	39,824,856
Private real estate	102,803,863	12,706,095	115,509,958
Hedged assets	130,548,562	16,135,216	146,683,778
Total investment management expenses	1,191,929,877	147,317,175	1,339,247,052
Investment consultant fees	4,816,876	595,344	5,412,220
Custodial bank fees	1,801,876	222,704	2,024,580
Investment staff expenses	6,058,310	760,640	6,818,950
Commission recapture income	(37,942)	(4,804)	(42,746)
Total investment expenses	$1,204,568,997	$ 148,891,059	$1,353,460,056
Security lending expenses			
Agent fees	$ 570,385	$ 72,729	$ 643,114
Broker rebates	(1,874,925)	(239,070)	(2,113,995)
Total security lending expenses	$ (1,304,540)	$ (166,341)	$ (1,470,881)

While rewarding, a career in public education can also be challenging.

The financial security enjoyed by PSRS/PEERS members, both before and after retirement, is an important consideration for education professionals when making career plans. The promise of lifetime service retirement benefits helps our covered employers attract and retain quality educators and staff for their schools and communities.

Investment Section

Letter from Verus

Verus

September 28, 2021

To the Members of the Board,

Over the fiscal year, the faster-than-expected distribution of effective vaccines within the developed world paved the way for the gradual reopening of developed economies, but emerging economies with less access to quality vaccines were less prepared to deal with the litany of more-virulent mutations. Risk-on sentiment propelled financial markets forward, backstopped by continued support from global central banks, the light at the end of the tunnel provided by vaccines, and the inclination of markets to shrug off negative surprises. Expectations for a strong rebound in economic growth and inflation over the intermediate-term sparked a rotation from the growth sectors that had performed well through the crisis toward more value-orientated sectors positioned to outperform in a period of rising interest rates. This reflation trade thrived from mid-August until mid-May but began to unravel late in the fiscal year as a result of concerns about the Delta Covid-19 variant impeding an economic recovery, as well as a hawkish pivot from the Federal Reserve which reduced the likelihood of higher inflation and interest rates over the longer term.

As of June 30, 2020, the S&P 500 Index remained -8.4% beneath its previous high-water mark. By August 18th, the overall index had reached a fresh all-time high, and between November 4, 2020 and June 30, 2021, the index never closed further than 5% beneath its previous record. Corporate revenues began to recover and resulted in supercharged earnings growth. The forward 12-month price-to-earnings ratio of the S&P 500 Index stood at 22.2x at June 30, 2021, well above both the five-year (18.1x) and ten-year (16.2x) averages. Small-cap equities (Russell 2000 Index +62.0%) made back lost ground relative to large-cap equities (Russell 1000 Index +43.1%), and value (Russell 1000 Value Index +43.7%) narrowly outperformed growth (Russell 1000 Growth Index +42.5). The MSCI ACWI Index returned 39.3% in U.S. dollar terms, with weakness in the U.S. dollar providing a slight boost to returns experienced by unhedged U.S. investors. Emerging market equities delivered a return of 40.9% in U.S. dollar terms, edging out U.S. equities (S&P 500 Index +40.8%) and outpacing international developed equities (MSCI EAFE +32.4%).

The 10-year Treasury yield rose from 0.65% to a peak of 1.74% by the end of the first quarter of 2021, before moderating to 1.45% by the end of the fiscal year. Breakeven inflation rates tracked Treasury yields in terms of direction – the ten-year breakeven inflation rate rose from 1.34% to an eight-year high of 2.56% in May before moderating slightly. The Fed remained steadfast in its view that recent increases in inflation rates are a transitory byproduct of the economic reopening, pandemic-related supply chain disruptions, and low base effects (inflation is a year-over-year calculation). U.S. Treasuries underperformed (-3.2%), while credit spreads compressed to the lowest level since the Global Financial Crisis. In the U.S., corporates within the Bloomberg Barclays Aggregate Index returned 3.0%, and high-yield credit returned 15.6% as spreads dipped from 6.26% to 2.68%.

The combined PSRS/PEERS plans, known collectively as the Missouri Education Pension Trust (MEPT), had a total (net) return of 28.5% for the fiscal year, one of its strongest one-year returns on record. The portfolio exceeded its Policy Index (22.9%) and ranked in the top 31 percent of U.S. Public Fund peers with assets of greater than $1 billion. Performance for the period was especially robust in U.S. equity (43.1%) and in Private Equity (65.0%).

The plans maintain a lower than median risk profile by design. Over the past year, MEPT and Verus have worked on implementation changes to incrementally increase alpha within this risk profile in public markets mandates, while the plan continues to work towards its long-term strategic allocation to private investments. Verus and MEPT recognize that future expected returns are lower than historical results, and MEPT has lowered its assumed rate to 7.3%.

Sincerely,

Margaret Jadallah

Margaret S. Jadallah
Managing Director

SEATTLE | LOS ANGELES | SAN FRANCISCO | PITTSBURGH | VERUS INVESTMENTS.COM

Letter from the Chief Investment Officer

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

November 29, 2021

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, 2021.

An improving global economy coupled with low interest rates and significant fiscal and monetary stimulus led to a perfect backdrop in fiscal year 2021 to achieve one of the highest investment returns for PSRS/PEERS in the history of the Systems. The strength in the investment markets resulted in peak gains for PSRS/PEERS as the Systems' assets increased through investment earnings by over $12.7 billion from the previous year with a total fund performance of 28.7% (or 28.5% 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, 2021, it is important to be aware of the following points:

- PSRS and PEERS significantly outperformed the assumed investment return of 7.5%,
- The Systems generated the 28.7% investment return while taking less risk (as measured by standard deviation) than the policy benchmark[1] and less risk than two-thirds of comparable public funds over all time periods,
- The PSRS and PEERS investment return for fiscal year 2021 and for the last five- and ten-year time periods exceeded 65% of the peer group as defined by the Wilshire TUCS universe of public pension plans with assets in excess of $1 billion,
- The PSRS/PEERS internal Investment Staff and external investment managers added value above the policy benchmark of over $2.5 billion, net of all fees and expenses. This outperformance was due to portfolio construction and tactical asset allocation decisions by internal Investment Staff (overweighting and underweighting asset classes around targets) 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 2.1% per year resulting in added value above a traditional portfolio of $7.9 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 28.5% for PSRS and PEERS,

[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.*

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- 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 approximately $56.8 billion on June 30, 2021, making the combined entity larger than all other public retirement plans in the state combined, and the 46th largest defined benefit plan in the United States.

Fiscal Year 2021 Year in Review

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

In fiscal year 2021, the combined asset allocation provided the Systems with substantial absolute returns, led by outstanding returns from global stocks. U.S. stocks returned 44.2% for the fiscal year ended June 30, 2021 (as measured by the Russell 3000 Index), non-U.S. developed stocks moved 32.4% higher (as measured by the MSCI EAFE Index), and emerging market stocks increased 40.9% (as measured by the MSCI Emerging Markets Index). In contrast, while interest rates remained near historical lows throughout the year, the yield on the 10-year Treasury bond did increase from 0.65% at the beginning of the fiscal year to 1.45% on June 30, 2021. This increase in yield contributed to negative absolute returns for the PSRS/PEERS' Safe Assets portfolio.

The PSRS/PEERS non-traditional asset classes also provided strong returns in fiscal year 2021. The Hedged Asset program represented 9.0% of total fund assets at fiscal year-end and generated a 19.2% return. The objective of the Hedged Assets program is to provide competitive returns, diversification and lower volatility (risk) than the Systems' stock portfolios. Diversification into private markets offered substantial benefits in fiscal year 2021. PSRS/PEERS began building private investment portfolios (including Private Equity, Private Credit and Private Real Estate) in 2003. 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/PEERS. Over the years, the Systems have continued to build on this successful investment platform that serves as an alternative to traditional public markets. At the close of fiscal year 2021, the Systems had over $15.0 billion invested in Private Risk Assets. The PSRS/PEERS' Private Equity composite returned 65.0% in the fiscal year with the Private Real Estate composite increasing 13.9%, and the Private Credit Composite returning 18.3%.

As noted above, significant absolute returns in most of the major asset classes contributed to the 28.7% return for PSRS and PEERS. Additionally, the investment returns were supported by effective implementation (security selection) and tactical asset allocation decisions. For example, the PSRS/PEERS' Non-U.S. Equity portfolio outperformed its benchmark (MSCI All Country World ex U.S. net Index) by 3.7% in fiscal year 2021 while the PSRS/PEERS' Real Estate portfolio outperformed its benchmark (NFI-ODCE Index) by 6.8%. The Systems' Private Equity portfolio substantially outperformed its public market benchmark (75% Russell 3000 Index and 25% MSCI All Country World ex U.S. net Index) by 22.7%. From a portfolio construction and tactical standpoint, the internal Investment Staff maintained an underweight to bonds (both credit and Treasury) throughout the year (due to historically low interest rates and tight credit spreads) and an overweight to Hedged Assets and stocks (both U.S. and non-U.S). The underweight to Safe Assets and the overweight to Hedged Assets and stocks for the fiscal year provided meaningful contribution to the overall PSRS/PEERS return.

Letter from the Chief Investment Officer, continued

Fiscal Year 2022: Assumed rate of return and risk

As I write this annual letter in late November 2021, we are five months into fiscal year 2022. Despite the recent investment gains, the economy (and the investment markets) remain somewhat fragile due to the continuation of the Covid-19 pandemic, inflationary pressures, supply chain issues, high levels of unemployment and geo-political events. Given the uncertainty and the headwinds that many investors face, we remain focused on prudently investing in opportunities that will protect the Systems' capital and produce attractive returns over the longer term. From a broader perspective, we continue to view capital markets as global and thus will always consider the full spectrum of asset classes and investment vehicles on a world-wide basis.

The Systems utilized a 7.0% assumed rate of return for the decade of the 1970's. The assumption was increased to 8.0% in 1980 as bond yields increased. This historical assumption was reasonable and supported by market expectations over many years. For example, the 30-year realized return for PSRS/PEERS is 8.7%. However, in the current environment, virtually every asset class (particularly global equities) is fully valued and interest rates remain near historical lows. As such, we believe that future investment returns could be lower than historical returns. To that end, the Board of Trustees, with input from both internal Investment Staff and external advisors, have worked to reduce the long-term assumed rate of return for the Systems. The Board moved from the 8.0% assumed rate of return in fiscal year 2016 and followed with three additional moves lower. The last decrease to 7.3% was approved at the June 8, 2021 Board meeting and is effective with the June 30, 2021 actuarial valuations and fiscal year 2022 investment performance. We believe that the directional move to a lower assumed rate of return is prudent and in concert with the Board's objective to provide for the long-term security and financial stability of the Systems.

The strategic asset allocation for PSRS/PEERS is designed to achieve the assumed investment return over long periods of time. To achieve that goal, the Systems will always have a high allocation to stocks (both public and private). Nevertheless, we are very focused on many risk factors in the portfolio including liquidity (ability to meet benefit payments), downside protection (how does the portfolio react in a down market) and tail risk (how does the portfolio perform in a substantial market correction). As you may note within the financial report, the Systems have generated a strong investment return (11.9%) over the last five years while taking less risk than approximately 72% of comparable public funds. This risk level is intentional. The best way to compound wealth over time is to limit losses. The PSRS/PEERS investment portfolio is therefore structured to capture growth in the global economy but also offer protection in the event of an economic downturn.

Fiscal Year 2022 Private Markets

The Systems' private markets portfolios will continue to be a focus for the Investment Staff in fiscal year 2022. PSRS/PEERS began building a private investment platform almost twenty years ago to generate long-term returns superior to the public markets, take advantage of market inefficiencies, and increase diversification.

As we discussed in last year's letter, the internal Investment Staff initiated a private equity co-investment program in 2014 to allow the Systems to make direct investments in private companies alongside private equity managers with whom PSRS/PEERS have an existing relationship. A similar program within private credit was implemented in fiscal year 2020 that allows the Investment Staff to lend directly to private operating businesses across various industries. The investments are compelling because (like private equity co-investments) they are executed with no direct investment fees and no performance-based fees. The internal Investment Staff will continue both programs in fiscal year 2022. With the yield on 10-year Treasury notes below 1.7%, direct private credit investments provide the Systems with an avenue to earn higher yields at relatively moderate levels of risk. As of June 30, 2021, the Systems had committed $850 million to 50 direct credit investments and $1.3 billion to 107 private equity co-investments.

Conclusion

Under the support and guidance of the Board of Trustees, I am confident that the investment program at PSRS/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 more than 289,000 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 66% 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 1996-2021.*

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, but limited, link to the Board on investment-related issues. The CIO's sole access to the Board is for 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 Verus Advisory, Inc. (Verus) as a general consultant and Albourne America, LLC (Albourne), Pathway Capital Management (Pathway) and The Townsend Group (Townsend) as specialty consultants. Verus 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, Verus 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 7.5% with a real rate of return of at least 5.25% per annum over time.**[2] 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. The Board of Trustees have revised the current long-term investment return objective of 7.5% to 7.3% effective for fiscal year 2022 investment performance.

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.

Understanding Risk

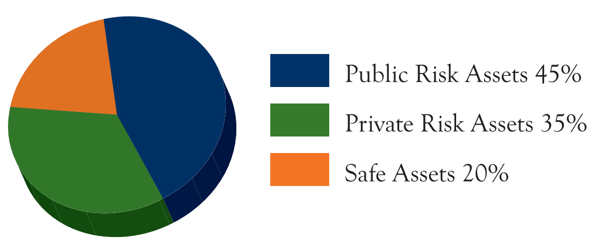
Selection of an appropriate asset allocation is one of the most important decisions made by a retirement plan. Within that asset allocation, it is important to not only consider the expected investment return, but also to understand the risks. The importance of risk consideration for institutional investors is critical to long-term success. To that end, the Systems employ an

[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 was 2.25% per annum during fiscal year 2021; however, the assumed inflation rate was revised to 2.0% for fiscal year 2022 investment performance.

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. Recently in fiscal year 2020, the Board of Trustees increased the Private Risk Assets target by 10% to 35% and proportionately decreased the Public Risk Assets target to 45%. 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 Verus. 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.

The Board of Trustees recently amended the long-term target asset allocation during fiscal year 2020 as a result of the 2020 asset allocation/liability study. 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 changes to the asset allocation are as follows: Public Risk Assets decreased 10% and Private Risk Assets increased 10%. Within Public Risk Assets, U.S. Equity decreased from 27% to 23%, Public Credit decreased from 7% to 0% and Non-U.S. Equity increased from 15% to 16%. Within Private Risk Assets, Private Equity increased from 12% to 16%, Private Real Estate increased from 9% to 11% and Private Credit increased from 4% to 8%. Within Safe Assets, U.S. Treasuries increased from 16% to 20% while U.S. TIPS decreased from 4% to 0%.

The following chart details the long-term target and interim target asset allocations for fiscal year 2021. 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 2021	As Amended in 2020	
Investment Type	Interim Target	Long-Term Target	Policy Ranges
Public Risk Asset Programs			
U.S. Public Equity	25.00%	23.00%	15% - 45%
Public Credit	8.00%	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	55.00%	45.00%	35% - 70%
Safe Assets Programs			
U.S. Treasuries	20.00%	20.00%	0% - 40%
U.S. TIPS	0.00%	0.00%	0% - 30%
Cash & Cash Equivalents	0.00%	0.00%	0% - 10%
Total Safe Assets	20.00%	20.00%	10% - 40%
Private Risk Asset Programs			
Private Equity	14.00%	16.00%	4% - 22%
Private Real Estate	9.00%	11.00%	4% - 15%
Private Credit	2.00%	8.00%	0% - 12%
Total Private Risk Assets	25.00%	35.00%	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 Verus 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 7.5% and a real rate of return net of expenses of at least 5.25% 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 Verus and the Director 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

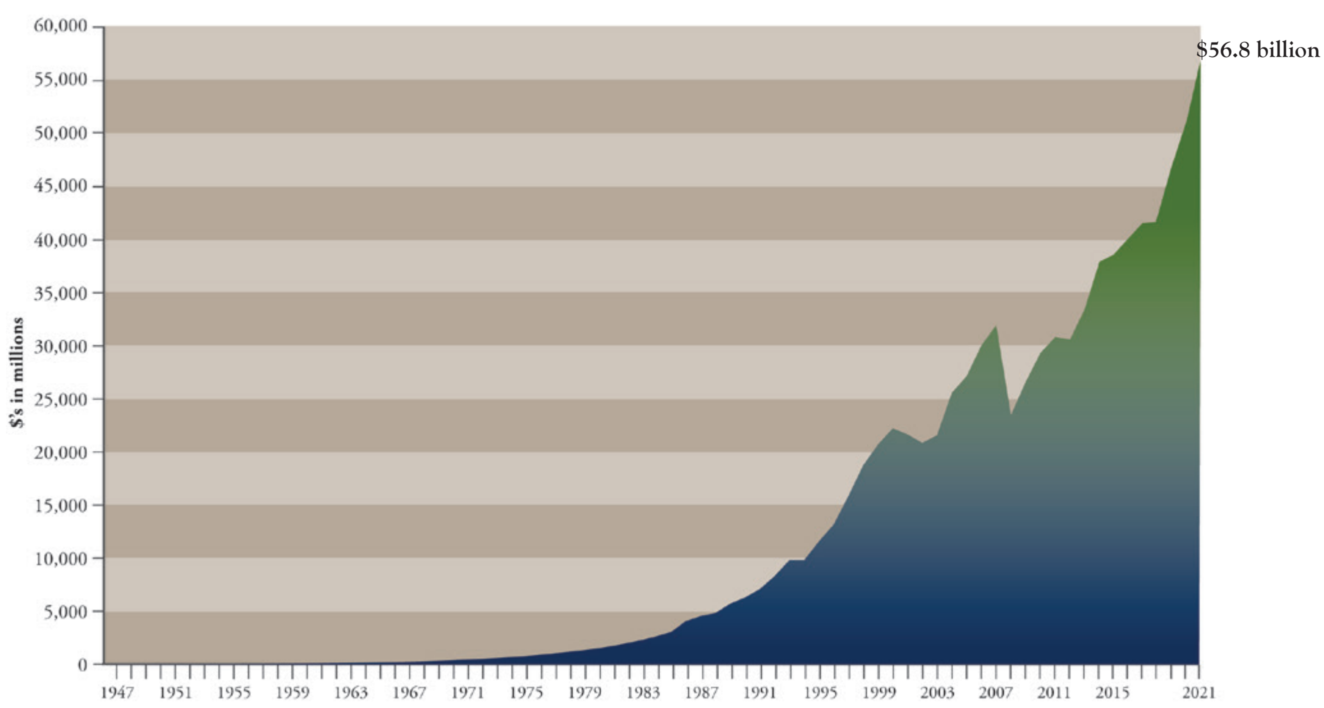
Implementation decisions are manager selection choices made by the internal staff with the approval of a consultant(s) and the Director. The value added through these manager selection decisions is measured by the difference between the actual portfolio return and the strategic benchmark return. An actual 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 recently conducted in fiscal year 2020. 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

75 Years of Asset Growth



The Systems' total invested assets were $56.8 billion as of June 30, 2021. 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 fiscal year 2021 investment performance was one of the strongest absolute and relative fiscal year returns that the Systems has achieved. The Systems earned an investment return of 28.7% (28.5% net of all investment expenses and fees), exceeding the policy benchmark return of 22.9% by 580 basis points. The Systems' well-structured investment portfolio added $12.7 billion in total investment earnings to the growth of assets and $2.5 billion of investment earnings in excess of the policy benchmark for the year.

As illustrated in the table below, the strong investment performance for the year was robust with six out of ten investment programs producing double digit returns and nine out of ten investment programs producing positive returns. The Private Equity program produced exceptional returns within Private Risk Assets while U.S. Public Equity and Non-U.S. Public Equity also generated substantial returns within Public Risk Assets. Each of these investment programs strongly contributed to the total return of the Systems while providing diversification from U.S. Treasuries.

Total Fund Performance

Investment Program	Total Return	Weighted Contribution
U.S. Public Equity	43.1%	11.6%
Public Credit	3.0%	0.1%
Hedged Assets	19.2%	1.8%
Non-U.S. Public Equity	39.4%	6.0%
Public Risk Assets	34.5%	19.5%
U.S. Treasuries	-4.0%	-0.6%
U.S. TIPS	6.5%	0.1%
Cash & Cash Equivalents	0.2%	0.0%
Safe Assets	-2.5%	-0.5%
Private Equity	65.0%	8.3%
Private Real Estate	13.9%	1.1%
Private Credit	18.3%	0.3%
Private Risk Assets	41.5%	9.7%
TOTAL RETURN	28.7%	28.7%

[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	**43.1%**	**17.0%**	**16.7%**	**14.1%**
Russell 3000 Index	44.2%	18.7%	17.9%	14.7%
Public Credit	**3.0%**	**6.2%**	**4.4%**	**4.2%**
Bloomberg Barclays U.S. Intermediate Credit Index	2.3%	5.8%	3.6%	3.8%
Hedged Assets	**19.2%**	**6.5%**	**7.1%**	**6.1%**
Hedged Assets Benchmark	20.0%	10.2%	9.2%	7.1%
Benchmark consists of:				
50.0% Bloomberg Barclays U.S. Intermediate Credit Index				
25.0% MSCI ACWI ex-USA net Index				
25.0% Russell 3000 Index				
Non-U.S. Public Equity	**39.4%**	**12.6%**	**13.3%**	**8.0%**
MSCI ACWI ex-USA net Index	35.7%	9.4%	11.1%	5.6%
Total Public Risk Assets	**34.5%**	**13.2%**	**13.0%**	**10.1%**
Public Risk Assets Policy Benchmark	32.1%	13.5%	12.8%	9.7%
Benchmark consists of:				
48.2% Russell 3000 Index				
31.8% MSCI ACWI ex-USA net Index				
20.0% Bloomberg Barclays U.S. Intermediate Credit Index				
Safe Assets Program				
Total Safe Assets	**-2.5%**	**4.2%**	**2.2%**	**2.4%**
Bloomberg Barclays U.S. Treasury Index	-3.2%	4.2%	2.2%	2.5%
Private Risk Assets Program				
Private Equity	**65.0%**	**26.7%**	**23.9%**	**18.4%**
Private Equity Benchmark	42.3%	17.6%	17.2%	14.4%
Benchmark consists of:				
75.0% Russell 3000 Index				
25.0% MSCI ACWI ex-USA net Index				
Private Real Estate	**13.9%**	**7.1%**	**7.9%**	**10.0%**
NFI-ODCE Index	7.1%	4.6%	5.6%	8.5%
Private Credit	**18.3%**	**8.2%**	**12.0%**	**7.9%**
ICE BofAML U.S. High Yield Master II Index	15.6%	7.2%	7.3%	6.5%
Total Private Risk Assets	**41.5%**	**18.0%**	**16.7%**	**14.4%**
Private Risk Assets Policy Benchmark	25.7%	11.9%	12.0%	11.6%
Benchmark consists of:				
42.0% Russell 3000 Index				
36.0% NFI-ODCE Index				
14.0% MSCI ACWI ex-USA net Index				
8.0% ICE BofAML U.S. High Yield Master II Index				
TOTAL FUND				
Total Fund	**28.7%**	**12.7%**	**11.9%**	**9.6%**
Total Fund Policy Benchmark	22.9%	11.5%	10.6%	8.7%
Benchmark consists of:				
37.0% Russell 3000 Index				
21.0% MSCI ACWI ex-USA net Index				
20.0% Bloomberg Barclays U.S. Treasury Index				
11.0% Bloomberg Barclays U.S. Intermediate Credit Index				
9.0% NFI-ODCE Index				
2.0% ICE BofAML U.S. High Yield Master II Index				
**Actuarial Required Rate of Return ** **	**7.5%**	**7.5%**	**7.6%**	**7.8%**
TUCS Universe Median	**27.0%**	**11.7%**	**11.3%**	**9.2%**

**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 7.5% per year and a real rate of return of at least 5.25% per year. The fiscal year 2021 total plan return of 28.7% was substantially higher than the long-term objective. Additionally, 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 8.7% (8.5% 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 7.5% effective for fiscal year 2019 through fiscal year 2021 and 7.3% effective for fiscal year 2022. The reductions in the long-term objective are 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 over all reported time periods the total fund return exceeded the strategic benchmark, and the strategic benchmark exceeded the policy benchmark. These excess returns demonstrate the significant added value by internal staff through both strategic asset allocation decisions and implementation decisions.

The fiscal year 2021 return of 28.7% (28.5% net of all investment expenses and fees) substantially exceeded the policy benchmark return of 22.9% by 580 basis points. Additionally, the total fund return has exceeded the policy benchmark in six 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 90 basis points, on an annualized basis, resulting in over $3.7 billion in excess performance (net of all investment expenses and fees) to the Systems.

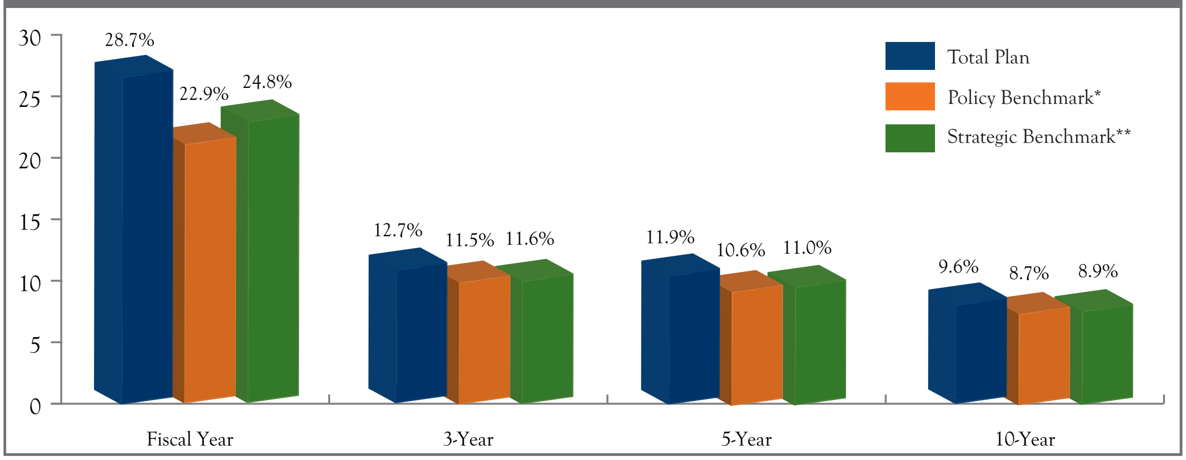
The Systems utilize the Trust Universe Comparison Services (TUCS) to compare the total return and risk levels of the Systems relative to other public pension funds with assets in excess of $1 billion. As the chart on page 72 indicates, the total fund return has exceeded the median return of other large public funds over all reported time periods. The Systems have taken substantially less risk than comparable funds during all time periods yet have consistently provided higher investment returns.

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

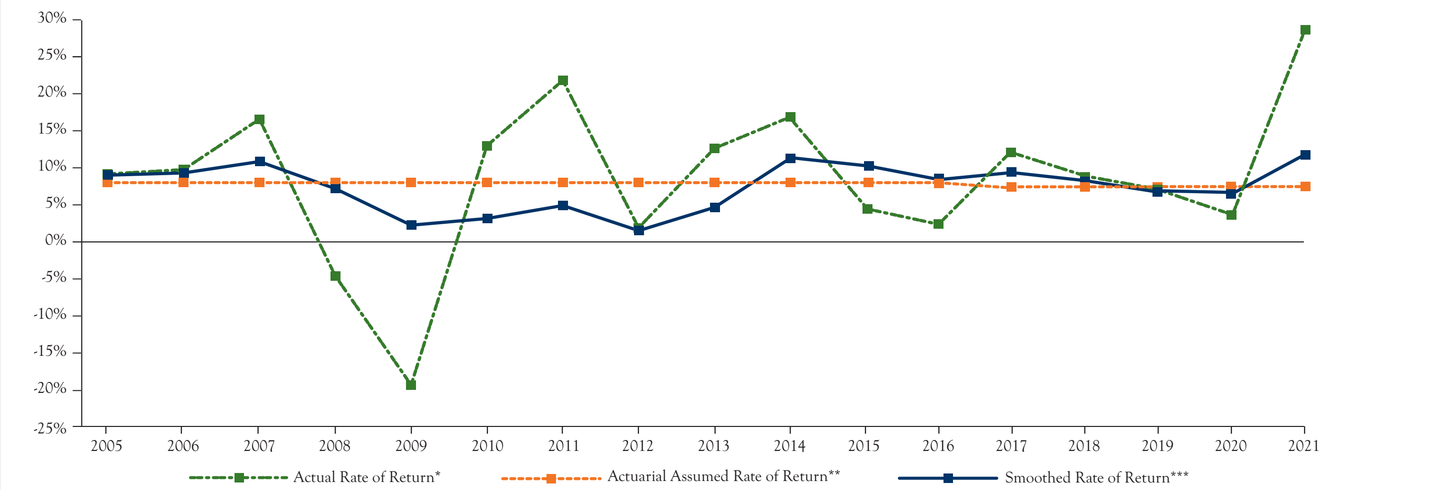
Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Total Plan Return	28.7%	12.7%	11.9%	9.6%
Annualized Policy Benchmark Return*	22.9%	11.5%	10.6%	8.7%
Annualized Strategic Benchmark Return**	24.8%	11.6%	11.0%	8.9%
Excess Return	5.8%	1.2%	1.3%	0.9%
Annualized Standard Deviation of Composite	6.8%	8.6%	6.9%	6.7%
Annualized Standard Deviation of Policy Benchmark*	8.7%	10.7%	8.6%	8.0%
Beta to Policy Benchmark*	0.77	0.79	0.80	0.83
Beta to MSCI ACWI net Index	0.46	0.47	0.47	0.47

**As of June 30, 2021: 37% Russell 3000 Index, 21% MSCI ACWI ex-USA net Index, 20% Bloomberg Barclays U.S. Treasury Index, 11% Bloomberg Barclays U.S. Intermediate Credit Index, 9.0% NFI-ODCE, and 2% ICE BofAML U.S. High Yield Master II Index.*

***As of June 30, 2021: 40.8% Russell 3000 Index, 23.2% MSCI ACWI ex-USA net Index, 14.7% Barclays U.S. Treasury Index, 8.5% Barclays U.S. Intermediate Credit Index, 7.8% NFI-ODCE, 2.7% Merrill Lynch 3- Month U.S. Treasury Bill Index, and 2.3% ICE BofAML U.S. High Yield Master II 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

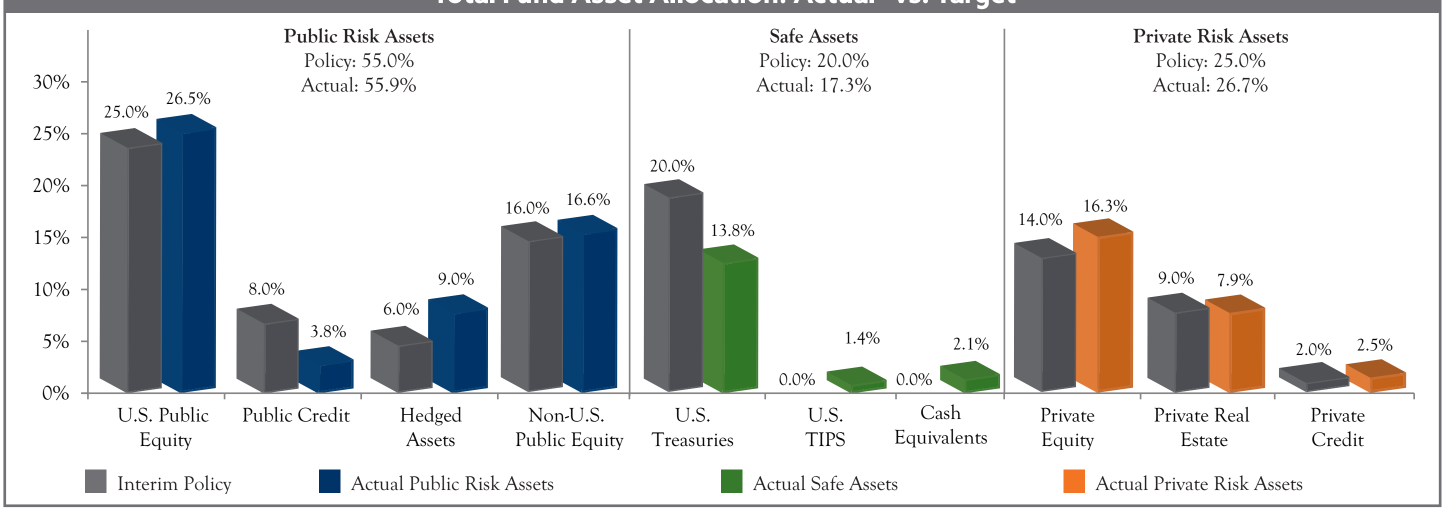
The long-term target asset allocation is expected to take several years to implement given the nature of investing in Private Risk Assets. As discussed in the Investment Policy Summary: Asset Allocation section, the interim policy allocations have been established to reflect meaningful progress towards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

The June 30, 2021 interim policy allocation was 55% Public Risk Assets, 20% Safe Assets and 25% Private Risk Assets. In fiscal year 2021 the interim asset class targets were updated to reflect the progress made in funding the Private Equity program. The U.S. Public Equity allocation was decreased from 27% to 25%, Public Credit was decreased from 9.0% to 8.0%, Non-U.S. Public Equity was increased from 15% to 16% and Private Equity was increased from 12% to 14%. These sub-asset class target allocation updates resulted in a 2% decrease in Public Risk Assets from 57% to 55% and a corresponding 2% increase to Private Risk Assets from 23% to 25%.

As illustrated in the chart, 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 U.S. Equities and Non-U.S. Equities which provided meaningful returns to the Systems in fiscal year 2021.

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 2020, the Systems utilized the total plan leverage by rebalancing into U.S. Public Equities during the severe market selloff from the COVID-19 pandemic. In fiscal year 2021, the Systems closed out of the total plan leverage, reducing total plan leverage from 0.3% as of June 30, 2020 to 0.0% as of June 30, 2021.

Total Fund Asset Allocation: Actual* vs. Target



**Total Plan assets include 0.1% invested in an operating cash account that is not reflected in the chart above.*

Public Risk Assets Summary

As of June 30, 2021, Public Risk Assets had a fair value of approximately $31.8 billion, representing 55.9% 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.

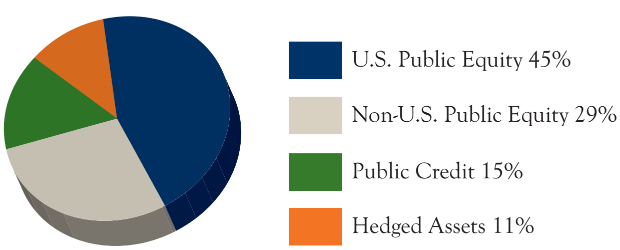
Structure

As of June 30, 2021, 47.4% of the Systems' Public Risk Assets were invested in the U.S. Public Equity program, 29.7% in the Non-U.S. Public Equity program, 6.9% in the Public Credit program and 16.0% in the Hedged Assets program. Each of these programs is discussed in more detail on the following pages.

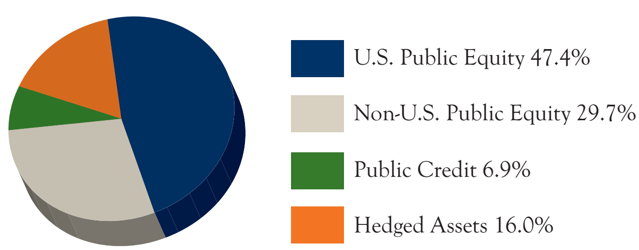
The Systems' allocation to Public Risk Assets at the end of fiscal year 2021 was 55.9% compared to the interim target allocation of 55.0%. The internal staff strategically increased the total plan's overweight to Public Risk Assets throughout the year from 0.4% at the beginning of the fiscal year, up to approximately 2.5% during the year, before decreasing to 0.9% at fiscal year-end. Throughout the fiscal year within the Public Risk Assets composite, internal staff increased the overweight to U.S. Public Equity, decreased an overweight to Hedged Assets while maintaining an overweight to Non-U.S. Public Equity and an underweight to Public Credit.

Public Risk Assets Allocation

Public Risk: Interim Target Allocation



Public Risk: Actual Allocation



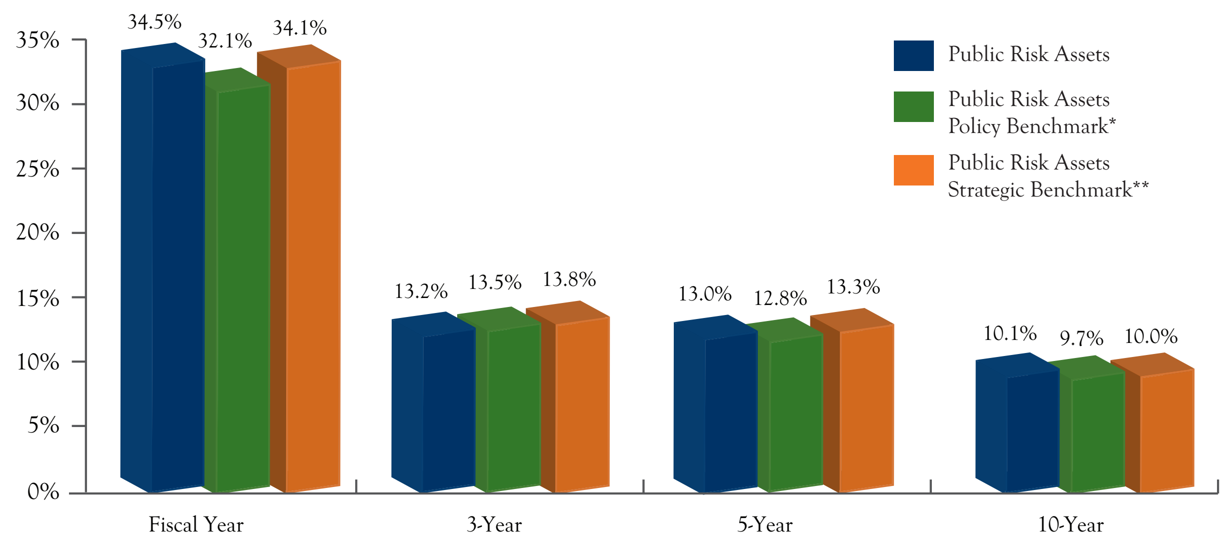
Market Overview

Global equity markets experienced a dramatic broad-based rally throughout fiscal year 2021. Equity gains were fueled by positive economic data, strong corporate earnings, accommodative monetary and fiscal policies, and optimism over the accelerating rollout of COVID-19 vaccinations around the world. The Russell 3000 Index (broad measure of the U.S. stock market) produced a 44.2% return for the year. The Non-U.S. equity markets also produced significant returns with the MSCI ACWI ex-USA Index (broad measure of the international stock markets) increasing 35.7%. Corporate credit markets experienced modest gains for the year despite a slight increase in interest rates with the Public Credit benchmark (Bloomberg Barclays U.S. Intermediate Credit Index) increasing 2.3%.

Performance

The Systems' Public Risk portfolio produced excellent absolute and relative returns for the fiscal year with a total return of 34.5%, outperforming the policy benchmark by 240 basis points. As shown in the table and graph below, the Systems' Public Risk composite has also performed well over long periods of time, providing meaningful absolute returns and 40 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	34.5%	13.2%	13.0%	10.1%
Annualized Policy Benchmark Return*	32.1%	13.5%	12.8%	9.7%
Annualized Strategic Benchmark Return**	34.1%	13.8%	13.3%	10.0%
Excess Return	2.4%	-0.3%	0.2%	0.4%
Annualized Standard Deviation of Composite	11.3%	15.0%	12.0%	10.9%
Annualized Standard Deviation of Policy Benchmark*	11.7%	14.8%	11.9%	11.0%
Beta to Policy Benchmark*	0.96	1.01	1.00	0.99
Beta to MSCI ACWI net Index	0.78	0.83	0.82	0.77

**The Public Risk Assets Policy Benchmark is composed as follows: 48.2% Russell 3000 Index, 31.8% MSCI ACWI ex-USA net Index and 20% Bloomberg Barclays 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, 2021, the U.S. Public Equity program had a fair value of approximately $15.1 billion, representing 26.5% 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).

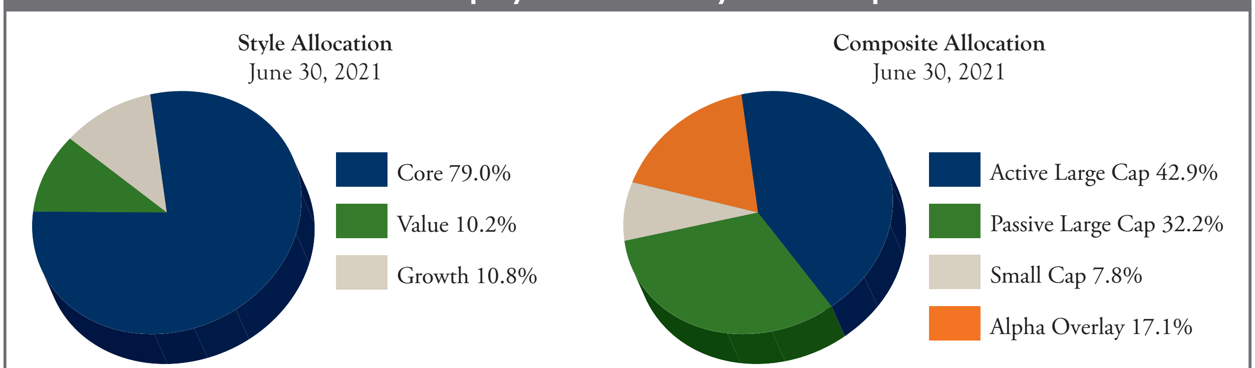
Structure

As of June 30, 2021, 32.5% 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



Market Overview

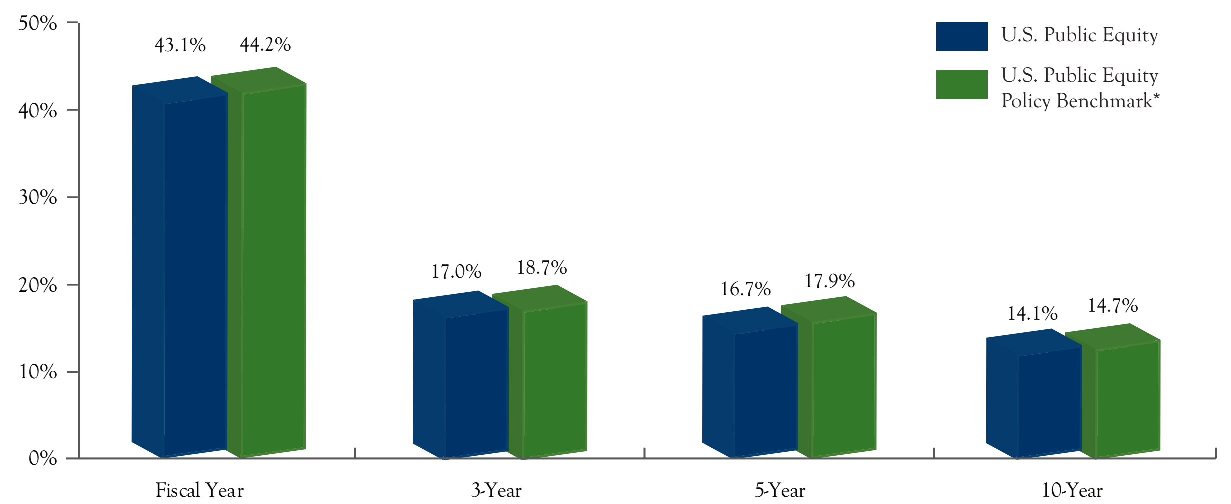
The U.S. equity markets had a very strong year with a broad-based rally across market capitalizations and styles. The comprehensive measure of the U.S. stock market (Russell 3000 Index) increased 44.2% while small-cap stocks (Russell 2000 Index) increased 62.0% outperforming large-cap stocks (Russell 1000 Index) which increased 43.1% for the year. Large-cap value stocks (Russell 1000 Value Index) outperformed large-cap growth stocks (Russell 1000 Growth Index) with a return of 43.7% compared to 42.5% while small cap value stocks (Russell 2000 Value Index) outperformed small-cap growth stocks (Russell 2000 Growth Index) with a return of 73.3% compared to 51.4%.

Performance

The total return for the U.S. Public Equity program was 43.1% compared to the benchmark return of 44.2% for the fiscal year ended June 30, 2021. Within the U.S. Public Equity program, the Large-Cap program returned 41.7%, Alpha Overlay returned 41.7% and the Small-Cap program returned 60.8% for the year.

As indicated in the table and graph, the U.S. Public Equity portfolio has produced very strong absolute returns over all reported time periods. Over longer 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	43.1%	17.0%	16.7%	14.1%
Annualized Policy Benchmark Return*	44.2%	18.7%	17.9%	14.7%
Excess Return	-1.1%	-1.7%	-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, 2021 with comparisons to the portfolio's policy benchmark. In addition, the top ten U.S. Public Equity holdings as of June 30, 2021 are shown in the table following the characteristics.

U.S. Public Equity Characteristics

Characteristics	June 30, 2021 Systems' U.S. Public Equity Program*	June 30, 2021 Russell 3000 Index
Number of Securities	2,211	3,009
Dividend Yield	1.3%	1.3%
Price-to-Earnings Ratio	31.1	26.1
Avg. Market Capitalization	$356.4 bil	$449.1 bil
Price-to-Book Ratio	4.9	4.5

** 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, 2021		Fair Value	% of Total U.S. Public Equity
Microsoft Corp.	$	141,751,405	0.9%
Amazon.com Inc.		97,968,876	0.6%
UnitedHealth Group Inc.		86,214,332	0.6%
Johnson & Johnson		83,289,414	0.6%
Alphabet Inc.		78,650,828	0.5%
Facebook Inc.		76,013,926	0.5%
Apple Inc.		74,890,961	0.5%
Medtronic PLC.		71,303,748	0.5%
The Coca-Cola Co.		71,237,384	0.5%
Tesla Inc.		70,370,700	0.5%
TOTAL	$	851,691,574	5.7%

Investment Advisors

As of June 30, 2021, the Systems had contracts with 19 external investment advisors who managed 24 portfolios that comprised 82.9% of the U.S. Public Equity portfolio. The remaining 17.1% of the portfolio was in the Alpha Overlay program described in the next section. The Systems repositioned the Large-Cap program during the year by terminating mandates with Aronson + Johnson + Ortiz, Martingale Asset Management and Westwood Management while adding new mandates with Coho Partners and Martingale Asset Management. The Systems repositioned the Small-Cap program during the year by terminating a mandate with Russell Investments.

U.S. Public Equity Investment Advisors

Investment Advisor	Investment Style	Fair Value As of June 30, 2021	% of Total Plan Fair Value
Analytic Investors	Quantitative Low Volatility	$ 1,117,888,757	2.0%
AQR Capital Management	Quantitative 140/40 Core	823,232,140	1.5%
Blackrock	Passive Russell 1000 Index	4,516,438,916	8.0%
Coatue Long Only Partners	Concentrated Technology	552,412,500	1.0%
Coho Partners	Concentrated High Quality	300,338,244	0.5%
Davis Selected Advisers	Concentrated Finance	118,285,203	0.2%
Eagle Capital Management	Concentrated Core	311,250,356	0.5%
Grantham, Mayo, Van Otterloo & Co.	Concentrated High Quality	762,462,825	1.3%
Lazard Asset Management	Concentrated All-Cap	167,081,699	0.3%
Martingale Asset Management	Quantitative Low Volatility	357,073,391	0.6%
NISA Investment Advisors	Passive S&P 500 Index	333,982,064	0.6%
Russell Investments	Completion Portfolio	289,329,338	0.5%
Select Equity Group	Concentrated High Quality	171,279,089	0.3%
Westwood Management	Concentrated Value	699,875,334	1.2%
Zevenbergen Capital	Concentrated All-Cap Growth	796,056,769	1.4%
Transition Account	Transition Account	1,575	0.0%
Large-Cap Subtotal		**11,316,988,200**	**19.9%**
AQR Capital Management	Quantitative Core	150,811,792	0.3%
Blackrock	Passive Russell 2000 Index	40,780,266	0.1%
Chartwell Investment Partners	Diversified Value	76,073,587	0.1%
Chartwell Investment Partners	Diversified Small/Midcap Value	49,122,359	0.1%
Greenhouse Funds	Concentrated Core	135,810,582	0.2%
Martingale Asset Management	Quantitative Low Volatility	143,084,366	0.3%
RK Capital Management	Diversified Core	172,997,177	0.3%
Russell Investments	Completion Portfolio	216,347,158	0.4%
Systematic Financial Management	Diversified Value	181,739,322	0.3%
Small-Cap Subtotal		**1,166,766,609**	**2.1%**
Total		$ 12,483,754,809	22.0%

Alpha Overlay Program Summary

As of June 30, 2021, the Alpha Overlay program had a fair value of approximately $2.6 billion, representing 4.5% 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

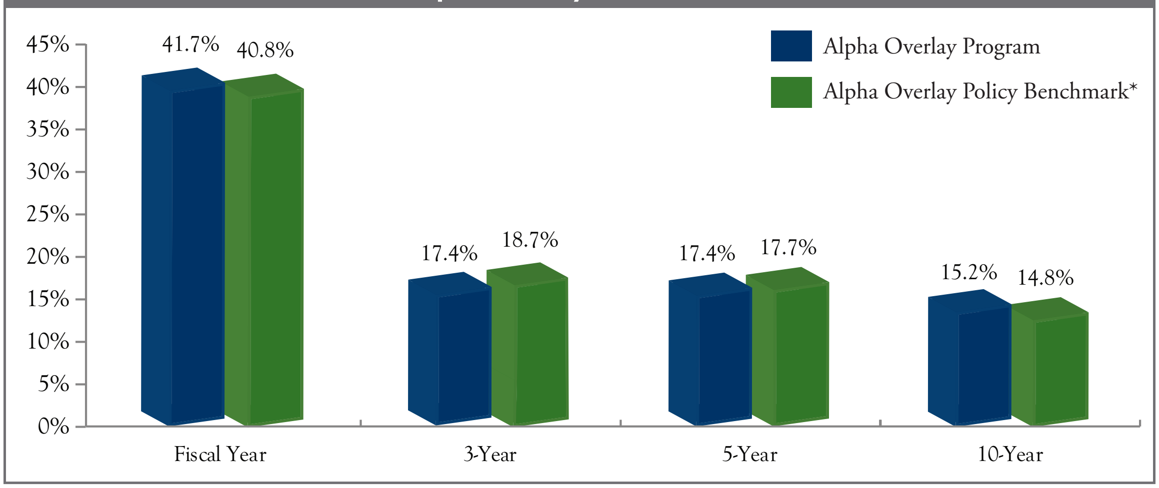
As of June 30, 2021, 32.9% of the Alpha Overlay composite assets were passively managed by NISA Investment Advisors using S&P 500 total return swaps to attain equitization. An additional 56.3% of the portfolio was actively managed across a diversified range of multi-strategy and market neutral hedge fund mandates. The remaining 10.8% 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, 2021.

Alpha Overlay Investment Advisors

Investment Advisor	Investment Style	Fair Value As of June 30, 2021	% of Total Plan Fair Value
Analytic Investors	Relative Value	$ 20,529,942	0.0%
AQR Absolute Return Fund	Relative Value	78,579,633	0.1%
Bridgewater Pure Alpha II	Asset Allocation/Global Macro	114,638,322	0.2%
Davidson Kempner Institutional Partners	Event Driven	235,549,880	0.4%
HBK Capital Management	Relative Value	181,061,593	0.3%
NISA Investment Advisors	S&P 500 Exposure	848,360,794	1.5%
Renaissance Institutional Equities Fund	Low Volatility Equity	273,988,026	0.5%
Rock Springs Capital Fund	Long-Biased Equity	89,295,271	0.2%
Sculptor Domestic Partners	Multi-Strategy	223,045,870	0.4%
Stark Investments Limited Partners	Equity Long/Short	1,133,548	0.0%
UBS O'Connor Multi-Strategy Alpha	Relative Value	237,302,662	0.4%
Zevenbergen Capital	Active All-Cap Growth	279,524,677	0.5%
Total		**$ 2,583,010,218**	**4.5%**

Performance

The fiscal year 2021 return for the Alpha Overlay program was 41.7%, outperforming the benchmark return of 40.8% by 90 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 Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Alpha Overlay Return	41.7%	17.4%	17.4%	15.2%
Annualized Policy Benchmark Return*	40.8%	18.7%	17.7%	14.8%
Excess Return	0.9%	-1.3%	-0.3%	0.4%
Annualized Standard Deviation of Composite	13.8%	18.0%	14.4%	12.9%
Annualized Standard Deviation of Policy Benchmark*	14.6%	18.5%	15.0%	13.6%
Beta to Benchmark*	0.91	0.95	0.94	0.93

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

Non-U.S. Public Equity Program Summary

As of June 30, 2021, the Non-U.S. Public Equity program had a fair value of approximately $9.4 billion, representing 16.6% of total plan assets.

Investment Program Description

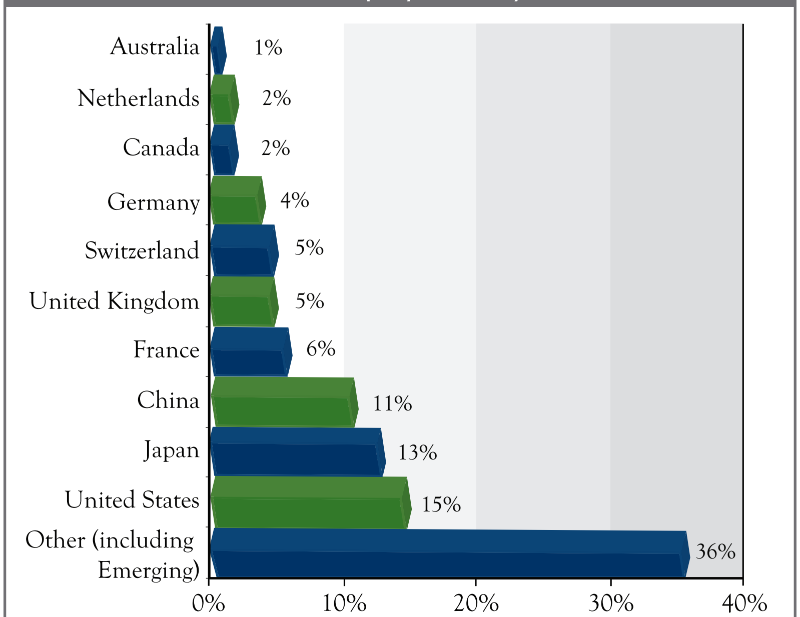
The Non-U.S. Public Equity program provides long-term capital appreciation and dividend income in excess of inflation through exposure to public equity securities on a global basis. Specific investment strategies approved for the Non-U.S. Public Equity program include passive investment vehicles, traditional 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, 2021, 8.8% 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



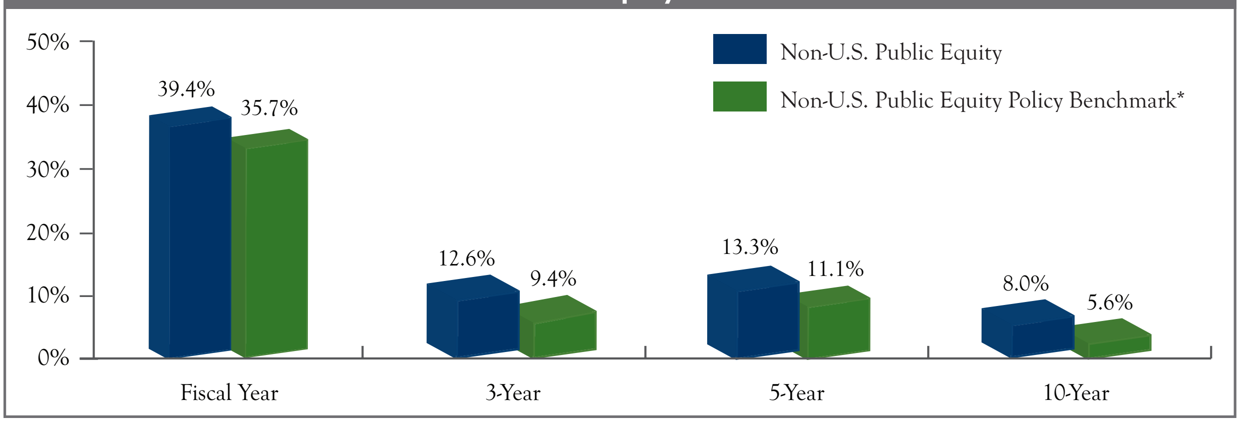
Market Overview

Non-U.S. equity markets increased substantially in fiscal year 2021, similar to the U.S. equity markets, with all major equity indices producing very strong returns. For the fiscal year ended June 30, 2021 emerging markets (MSCI EM net Index) increased 40.9% outperforming developed market global stocks (MSCI World net Index) which increased 39.0% and developed international markets (MSCI EAFE net Index) which increased 32.4%, while the broad measure of the non-U.S. equity markets (MSCI ACWI ex-USA Index) increased 35.7%.

Performance

The Non-U.S. Public Equity program has continued to produce strong absolute returns and excellent relative returns. The program generated a total return of 39.4% for fiscal year 2021, outperforming the policy benchmark of 35.7% by 370 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	39.4%	12.6%	13.3%	8.0%
Annualized Policy Benchmark Return*	35.7%	9.4%	11.1%	5.6%
Excess Return	3.7%	3.2%	2.2%	2.4%

**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, 2021.

Non-U.S. Public Equity - Top 10 Holdings			
Top 10 Largest Holdings* June 30, 2021		**Fair Value**	**% of Total Non-U.S. Public Equity**
Roche Holding AG	$	87,940,860	1.0%
Nestle SA		85,129,674	0.9%
AIA Group Ltd.		69,051,607	0.8%
Schneider Electric SE		68,302,770	0.7%
LVMH SE		67,972,058	0.7%
SAP SE		58,232,545	0.6%
Air Liquide SA		57,566,360	0.6%
Hoya Corp.		49,860,897	0.5%
Samsung Electronics Ltd.		49,538,184	0.5%
Tencent Holdings Ltd.		48,444,510	0.5%
Total	**$**	**642,039,465**	**6.8%**

** Includes only actively managed separate accounts.*

A complete list of portfolio holdings is available upon request.

Investment Advisors

As of June 30, 2021, the Systems had contracts with 13 external investment advisors who managed 19 portfolios within the Non-U.S. Public Equity portfolio. In fiscal year 2021 the Systems added a passive world mandate with Blackrock and an international mandate with Walter Scott.

Non-U.S. Public Equity Investment Advisors			
Investment Advisor	**Investment Style**	**Fair Value As of June 30, 2021**	**% of Total Plan Fair Value**
Acadian Asset Management	Quantitative Emerging Markets Low Volatility	$ 463,099,781	0.8%
Acadian Asset Management	Quantitative International Small Cap	177,433,843	0.3%
ABS Investment Management	Local Emerging Markets	368,766,885	0.6%
AllianceBernstein L.P.	Global Low Volatility	473,738,343	0.8%
Analytic Investors	Quantitative Global Low Volatility	513,080,591	0.9%
AQR Capital Management	Quantitative International Core	667,813,128	1.2%
Arrowstreet Capital	Quantitative Emerging Markets	493,479,315	0.9%
Arrowstreet Capital	Quantitative Global	199,088,471	0.4%
Arrowstreet Capital	Quantitative Global Long/Short	1,622,229,312	2.9%
Blackrock	Passive EAFE Index	420,001,661	0.7%
Blackrock	Passive Emerging Markets Index	87,628,285	0.2%
Blackrock	Passive World Index	321,099,335	0.6%
Coronation Asset Management Limited	Global Emerging Markets	430,271,484	0.8%
Invesco Advisers	Quantitative International Low Volatility	256,565,350	0.4%
MFS Investment Management	Diversifed International Core	1,216,119,090	2.1%
MFS Investment Management	Concentrated International Core	480,093,831	0.8%
Neon Capital Management	Emerging Markets Small Cap	157,137,636	0.3%
Rock Creek Group	Local Emerging Markets	645,520,340	1.1%
Walter Scott & Partners	Core International	436,673,300	0.8%
Total		**$9,429,839,981**	**16.6%**

Public Credit Program Summary

As of June 30, 2021, the Public Credit program had a fair value of approximately $2.2 billion, representing 3.8% of total plan assets.

Investment Program Description

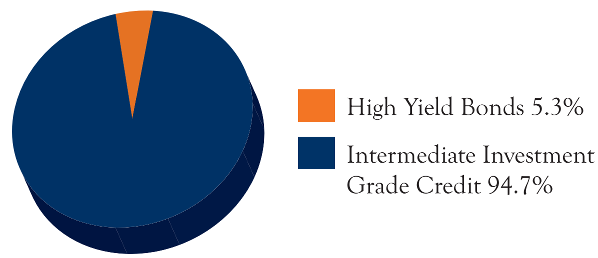
The Public Credit program is designed to provide a source of income and capital appreciation for the Systems while creating substantial diversification to the total plan with a low correlation to other asset classes. Most securities in this program exhibit high liquidity. Specific investments can include 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, 2021, 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, 2021.

Public Credit Allocation



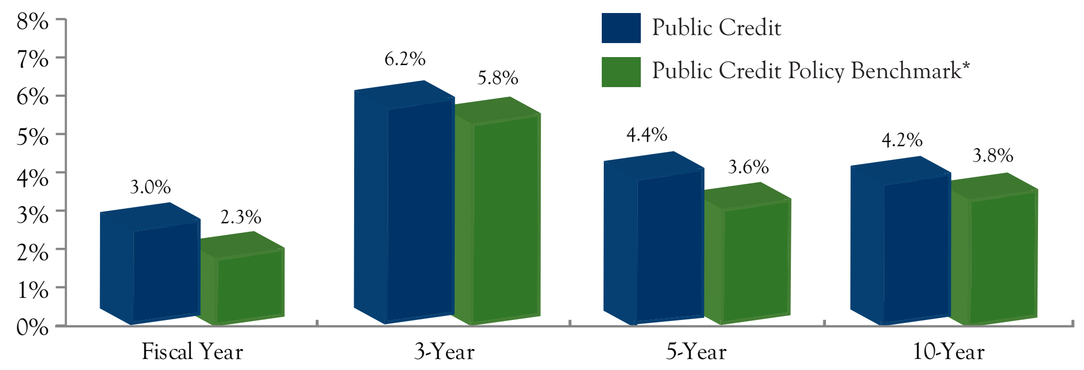
Market Overview

High yield bonds significantly outperformed Treasuries and investment grade credit during the year as the yield on the 10-year Treasury increased to 1.5% on June 30, 2021 from 0.7% on June 30, 2020. The comprehensive measure of the U.S. Treasury market (Bloomberg Barclays U.S. Treasury Index) decreased 3.2% and a broader measure of the U.S. bond market (Bloomberg Barclays U.S. Aggregate Index) decreased by 0.3% for the year. High yield, or lower quality bonds (ICE BofAML U.S. High Yield Master II Index) increased 15.6% for the year, global bonds (Bloomberg Barclays Global Agg. Ex-U.S. Index) increased 4.6% while U.S. investment grade credit corporate bonds (Bloomberg Barclays U.S. Intermediate Credit Index) increased 2.3%.

Performance

The Public Credit program generated a fiscal year return of 3.0% outperforming the benchmark return of 2.3% by 70 basis points. As indicated in the table and graph, the Public Credit portfolio has produced moderate 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	3.0%	6.2%	4.4%	4.2%
Annualized Policy Benchmark Return*	2.3%	5.8%	3.6%	3.8%
Excess Return	0.7%	0.4%	0.8%	0.4%

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

Statistics

The following table displays the top ten Public Credit holdings as of June 30, 2021.

Public Credit - Top 10 Holdings

Top 10 Largest Holdings* June 30, 2021	Fair Value	% of Total Public Credit
United States Treasury Note, 0.875%, 06/30/2026	$ 59,507,093	2.7%
United States Treasury Note, 1.625%, 05/15/2031	40,485,586	1.9%
Morgan Stanley, Floating, 01/20/2023	37,315,676	1.7%
AT&T Inc., 0.00%, 11/27/2022	35,457,212	1.6%
Transcontinental Gas Pipe Line Co. LLC, 7.85%, 02/01/2026	34,392,629	1.6%
Cintas Corp. No. 2, 3.25%, 06/01/2022	29,613,301	1.4%
DuPont de Nemours Inc., 4.205%, 11/15/2023	27,762,042	1.3%
Bank of America Corp., Floating, 12/20/2028	26,845,458	1.2%
Northrop Grumman Corp., 3.25%, 01/15/2028	24,637,801	1.1%
Gilead Sciences Inc., 0.75%, 09/29/2023	21,973,839	1.0%
Total	**$ 337,990,637**	**15.5%**

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

Investment Advisors

As of June 30, 2021, 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, 2021	% of Total Plan Fair Value
NISA Investment Advisors	Corporate Credit	$ 2,070,636,992	3.6%
Oaktree Bank Loans	Senior Bank Loans	337,218	0.0%
Pacific Investment Management Co.	High Yield	116,135,348	0.2%
Total		**$ 2,187,109,558**	**3.8%**

Hedged Assets Program Summary

As of June 30, 2021, the Hedged Assets program had a fair value of approximately $5.1 billion, representing 9.0% of total plan assets.

Investment Program Description

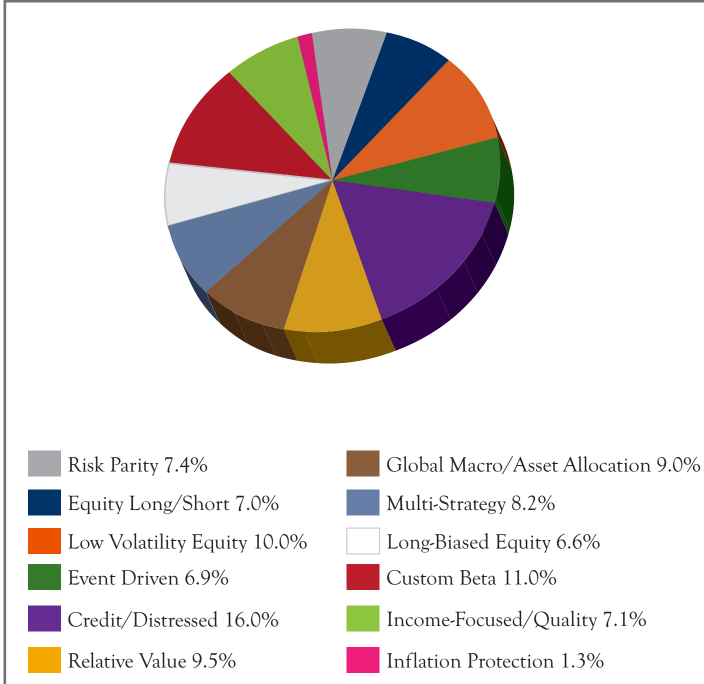
The Hedged Assets program's objective is to provide diversification to the total portfolio and reduce volatility within the Public Risk composite. The purpose of this program is to enhance the overall risk/return profile of the Public Risk composite through the inclusion of specialized investment strategies 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, 2021. 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 Barclays U.S. Intermediate Credit Index.

Hedged Assets Diversification

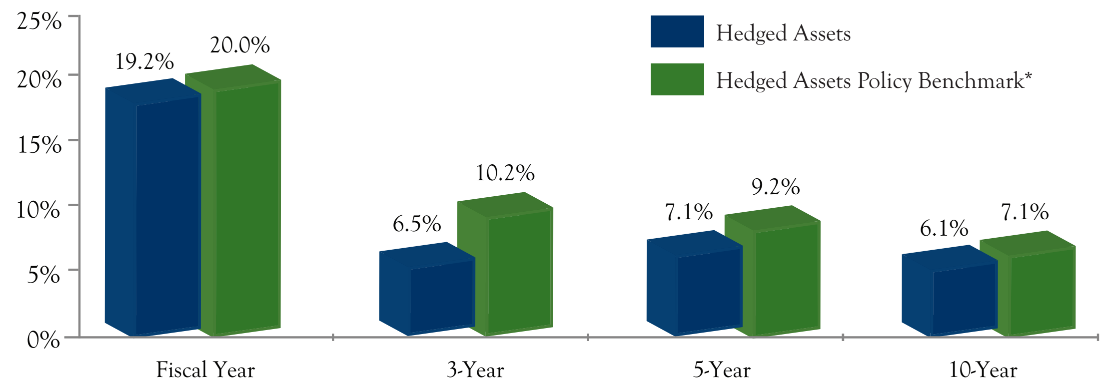


Performance

The total annualized return on the Systems' Hedged Assets portfolio was 19.2%, compared to the benchmark return of 20.0% for the fiscal year ended June 30, 2021.

Over the past ten years, the Hedged Assets program has underperformed its policy benchmark of 7.1%. The performance relative to the policy benchmark is reasonable however, given the significant performance of equities over this time period. The Russell 3000 Index was up an annualized 14.7% over the past ten years and the MSCI ACWI net Index was up an annualized 9.9%. 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 approximately 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	19.2%	6.5%	7.1%	6.1%
Annualized Policy Benchmark Return*	20.0%	10.2%	9.2%	7.1%
Excess Return	-0.8%	-3.7%	-2.1%	-1.0%
Annualized Standard Deviation of Composite	6.1%	8.3%	6.6%	6.3%
Annualized Standard Deviation of Policy Benchmark*	7.9%	10.4%	8.4%	7.9%
Beta to Policy Benchmark*	0.62	0.73	0.71	0.71
Beta to MSCI ACWI net Index	0.35	0.41	0.40	0.39

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

Investment Advisors

As of June 30, 2021, the Systems had contracts with 16 external investment advisors who managed 23 portfolios. During the fiscal year two investment mandates were terminated while one investment mandate with Southpoint Capital Advisors was added to the program.

Hedged Assets Investment Advisors			
Investment Advisor	**Investment Style**	**Fair Value As of June 30, 2021**	**% of Total Plan Fair Value**
AQR Absolute Return Fund	Relative Value	$ 145,933,605	0.3%
AQR Adaptive Multi-Strategy	Risk Parity	201,761,604	0.3%
AQR Diversified Beta Fund	Risk Parity	52,077,755	0.1%
AQR Real Asset Fund	Inflation Protection	31,549,965	0.1%
Bridgewater All Weather	Risk Parity	124,767,640	0.2%
Bridgewater Inflation Pool	Inflation Protection	34,144,215	0.1%
Bridgewater Pure Alpha II	Asset Allocation/Global Macro	458,553,281	0.8%
Davidson Kempner Institutional Partners	Event Driven	353,324,820	0.6%
Davidson Kempner Distressed Opportunities Fund	Distressed Debt/Credit	262,087,204	0.5%
GoldenTree Partners	Distressed Debt/Credit	552,188,928	1.0%
HBK Capital Management	Relative Value	181,061,593	0.3%
Hillhouse China Value Fund	Long-Biased Equity	278,178,779	0.5%
Indus Asia Pacific Fund	Equity Long/Short	1,559,617	0.0%
Maverick Fund USA	Equity Long/Short	202,001,749	0.3%
NISA Investment Advisors	Custom Beta	557,140,122	1.0%
Renaissance Institutional Equities Fund	Low Volatility Equity	508,834,905	0.9%
Rock Springs Capital Fund	Long-Biased Equity	59,530,181	0.1%
Stark Investments Limited Partners	Equity Long/Short	2,105,160	0.0%
Sculptor Domestic Partners	Multi-Strategy	414,228,044	0.7%
Sculptor Europe Domestic Partners	Multi-Strategy	685,869	0.0%
Southpoint Capital Advisors	Equity Long/Short	149,115,016	0.3%
UBS O'Connor Multi-Strategy Alpha	Relative Value	158,201,761	0.3%
Westwood Management	Income Focused/Quality	363,291,097	0.6%
Total		**$ 5,092,322,910**	**9.0%**

Safe Assets Summary

As of June 30, 2021, Safe Assets had a fair value of approximately $9.8 billion, representing 17.3% of total plan assets.

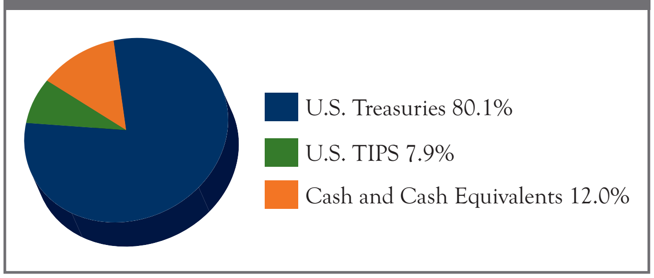
Investment Program Description

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, 2021, 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, 2021.

Safe Assets Allocation



The Systems allocation to Safe Assets decreased from 19.5% as of June 30, 2020 to 17.3% as of June 30, 2021.

Market Overview

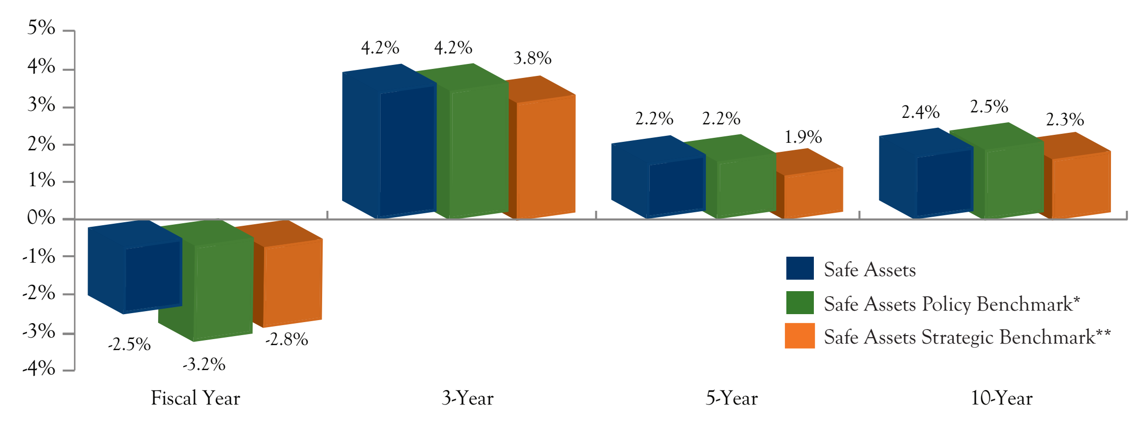
The yield on the 10-year Treasury increased to 1.5% on June 30, 2021 from 0.7% on June 30, 2020 as a result of improving U.S. economic conditions throughout fiscal year 2021. The increase in interest rates during the year negatively impacted the price of Treasuries. The comprehensive measure of the U.S. Treasuries market (Bloomberg Barclays U.S. Treasuries Index) decreased 3.2% for the year while the TIPS market (Bloomberg Barclays U.S. TIPS 1-10 Year) increased 6.6% due to higher inflation expectations.

Performance

The total return for the Safe Assets portfolio was -2.5% compared to the benchmark return of -3.2% for the fiscal year ended June 30, 2021.

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	-2.5%	4.2%	2.2%	2.4%
Annualized Policy Benchmark Return*	-3.2%	4.2%	2.2%	2.5%
Annualized Strategic Benchmark Return**	-2.8%	3.8%	1.9%	2.3%
Excess Return	0.7%	0.0%	0.0%	-0.1%
Annualized Standard Deviation of Composite	3.5%	3.8%	3.4%	3.1%
Annualized Standard Deviation of Policy Benchmark*	3.4%	4.0%	3.5%	3.2%
Beta to Policy Benchmark*	1.04	0.96	0.95	0.95
Beta to MSCI ACWI net Index	0.06	-0.07	-0.06	-0.07

**Effective July 1, 2020 the Safe Assets Policy Benchmark is the Bloomberg Barclays U.S. Treasury Index. The 80.0% Bloomberg Barclays U.S. Treasury Index and 20.0% Bloomberg Barclays U.S. TIPS 1-10 Yrs. Index is used for 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 over extended time periods, 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, 2021 with comparisons shown to the Bloomberg Barclays U.S. Treasury Index. Additionally, the top ten Safe Assets holdings as of June 30, 2021 are shown in the table below the characteristics.

Safe Assets Characteristics

Characteristics	June 30, 2021 Systems' Safe Assets Program	June 30, 2021 Bloomberg Barclays U.S. Treasury Index
Number of Securities	129	266
Average Coupon	1.5%	1.6%
Yield to Maturity	0.7%	0.9%
Average Maturity (Years)	8.2	8.2
Duration (Years)	6.9	6.9

Safe Assets - Top 10 Holdings

Top 10 Largest Holdings* June 30, 2021	Fair Value	% of Total Safe Assets
United States Treasury Note, 0.75%, 03/31/2026	$ 283,221,972	2.9%
United States Treasury Note, 2.875%, 08/15/2028	251,929,425	2.6%
United States Treasury Note, 1.875%, 07/31/2022	235,704,061	2.4%
United States Treasury Note, 2.75%, 07/31/2023	235,635,855	2.4%
United States Treasury Note, 1.5%, 11/30/2024	229,005,669	2.3%
United States Treasury Note, 0.25%, 08/31/2025	224,225,725	2.3%
United States Treasury Note, 1.625%, 05/15/2026	220,333,788	2.2%
United States Treasury Note, 0.125%, 08/15/2023	215,816,940	2.2%
United States Treasury Bond, 2.0%, 02/15/2050	211,318,946	2.2%
United States Treasury Bond, 2.875%, 05/15/2043	210,096,271	2.1%
Total	$ 2,317,288,652	23.6%

**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, 2021. 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, 2021	% of Total Plan Fair Value
NISA Investment Advisors	U.S. Treasuries	$ 7,858,138,240	13.8%
NISA Investment Advisors	U.S. TIPS	775,114,268	1.4%
NISA Investment Advisors	Cash Equivalents	544,724,068	1.0%
J.P. Morgan	Interest Bearing Cash Account	630,307,038	1.1%
Total		$ 9,808,283,614	17.3%

Private Risk Assets Summary

As of June 30, 2021, Private Risk Assets had a fair value of approximately $15.1 billion, representing 26.7% of total plan assets.

Investment Program Description

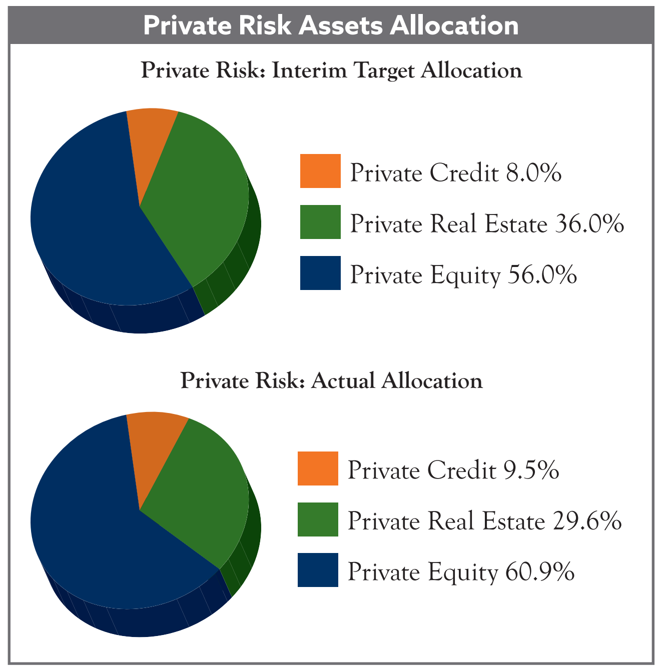
The allocation to Private Risk investments is viewed as a separate asset class for inclusion in the Systems' overall investment portfolios. The process of building the Systems' Private Risk program and fully funding the target allocation is expected to occur over a period of several years. Additional 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

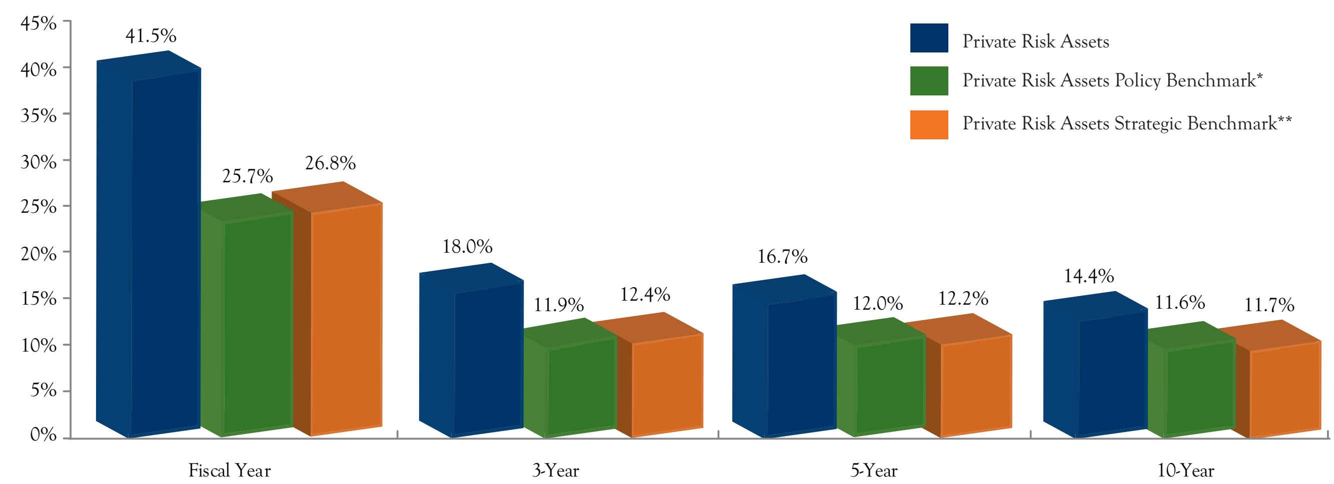
As of June 30, 2021, 60.9% of Private Risk Assets were invested in the Private Equity program, 29.6% in the Private Real Estate program and 9.5% in the Private Credit program. Each of these programs is discussed in more detail on the following pages.



Performance

The total return for the Private Risk portfolio was 41.5%, compared to the policy benchmark return of 25.7% for the fiscal year ended June 30, 2021. 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 280 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	41.5%	18.0%	16.7%	14.4%
Annualized Policy Benchmark Return*	25.7%	11.9%	12.0%	11.6%
Annualized Strategic Benchmark Return**	26.8%	12.4%	12.2%	11.7%
Excess Return	15.8%	6.1%	4.7%	2.8%

** The Private Risk Assets Policy Benchmark is composed as follows: 42.0% Russell 3000 Index, 36.0% NFI-ODCE Index, 14.0% MSCI ACWI ex-USA net Index and 8.0% ICE BofAML U.S. 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, 2021, the Private Equity program had a fair value of approximately $9.2 billion, representing 16.3% 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

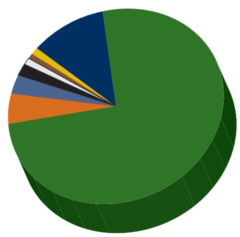
As of June 30, 2021, Private Equity assets committed* for investment were $13.6 billion. The fair value of funds that had been drawn down and actually invested as of June 30, 2021 was approximately $9.2 billion, representing 16.3% of total plan assets. The Systems' private equity investment commitments that have not yet been funded were approximately $4.4 billion as of June 30, 2021.

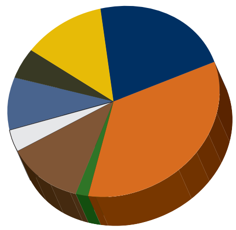
The objective of the Systems' allocation to Private Equity is to achieve returns that are higher than those attainable in the public equity markets with the added benefit of diversification. The long-term and illiquid nature of the Private Equity asset class dictates that capital must be invested at 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 following pie charts show the diversification (utilizing the fair value of invested assets) of the Systems' Private Equity holdings as of June 30, 2021 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





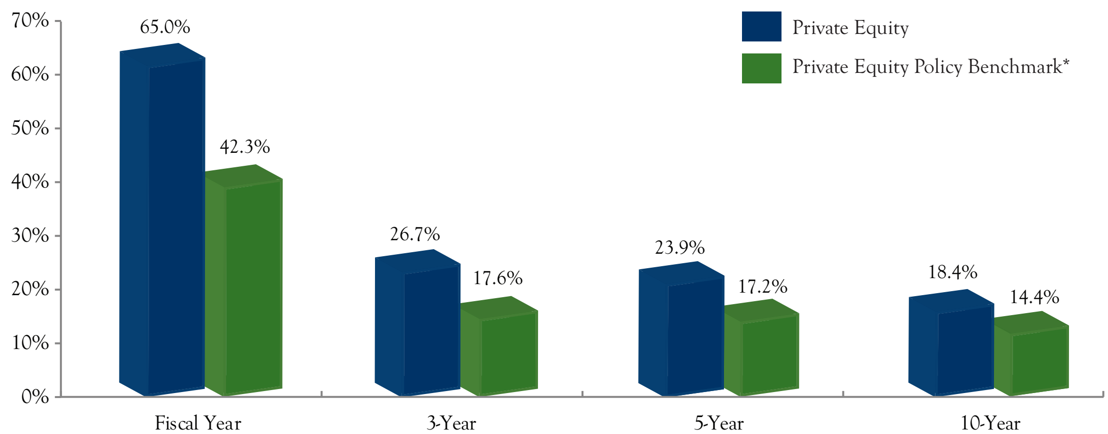
Market Overview

The private equity markets performed extremely well in fiscal year 2021 producing the highest absolute returns across all the Systems' asset classes, even outpacing the substantial public equity rally over the year. The buyout and venture capital segment of the private equity market had an especially strong year reaching near record levels for investment activity. A rebounding economy, robust credit markets, and increasing levels of capital fundraising activity helped propel the private equity markets to a very successful year.

Performance

The total return for the Private Equity program was 65.0%, compared to the benchmark return of 42.3% for the fiscal year ended June 30, 2021. 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 2,270 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 400 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	65.0%	26.7%	23.9%	18.4%
Annualized Policy Benchmark Return*	42.3%	17.6%	17.2%	14.4%
Excess Return	22.7%	9.1%	6.7%	4.0%

**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, 2021, the Systems were invested in 211 separate partnerships with 81 firms within the Private Equity asset class. In fiscal year 2021 the Systems committed to 23 new partnerships for $456 million. Additionally, the Systems received total distributions from the private equity partnerships of approximately $1.9 billion in fiscal year 2021.

Private Equity Partnerships

Partnerships	Investment Strategy	Fair Value* As of June 30, 2021	% of Total Plan Fair Value
Advent International GPE IX, VII-B and VIII	Acquisition - Medium	$ 131,566,524	0.2%
Advent Latin America VII	Acquisition - Medium	8,182	0.0%
Alchemy Special Opportunities Fund IV	Debt - Distressed	5,261,092	0.0%
Baring Asia VI	Acquisition - Medium	51,924,841	0.1%
Battery Ventures XII, XII Side Fund, XIII and XIII Side Fund	Venture Capital	28,525,947	0.1%
BC European IX	Acquisition - Large	43,853,663	0.1%
Berkshire Fund X	Special Situations - Diverse Strategies	1,327,965	0.0%
Blackstone Capital Partners V and VI	Acquisition - Large	19,927,216	0.0%
Canaan Partners IX, X, XI and XII	Venture Capital	148,488,855	0.3%
Carlyle Europe Partners III	Acquisition - Medium	3,494,713	0.0%
Carlyle Partners V and VI	Acquisition - Large	59,768,397	0.1%
Centerbridge Capital Partners I, II, III and IV	Special Situations - Diverse Strategies	63,709,344	0.1%
Centerbridge Capital Special Credit Partners II, III and III-Flex	Debt - Distressed	77,193,183	0.1%
Charlesbank Equity Fund IX and Overage Allocation Program	Acquisition - Medium	17,381,633	0.0%
Chequers Capital XVII	Acquisition - Medium	3,781,862	0.0%
Cinven VII Fund	Acquisition - Medium	4,926,355	0.0%
Clayton, Dubilier & Rice Fund X	Acquisition - Medium	57,134,875	0.1%
Clearlake Capital Partners V, VI and Opportunities Partners II	Special Situations - Diverse Strategies	41,106,886	0.1%
Coller International Partners VII and VIII	Secondary Fund	159,869,704	0.3%
CVC Capital Partners VI and VII	Acquisition - Large	102,926,849	0.2%
CVC European Equity Partners IV, V and Tandem Fund	Acquisition - Large	1,315,739	0.0%
DEFY Partners I and II	Venture Capital	10,738,291	0.0%
EnCap Energy IX, X, XI and VIII Co-Investors	Special Situations - Industry Specific	80,294,630	0.1%
EnCap Flatrock Midstream III and IV	Special Situations - Industry Specific	17,411,459	0.0%
Energy Spectrum Partners VIII	Acquisition - Medium	19,029,323	0.0%
EQT VIII and IX	Acquisition - Medium	67,897,690	0.1%
Exponent Partners II	Acquisition - Medium	914,590	0.0%
First Reserve Fund XI and XII	Special Situations - Industry Specific	1,791,409	0.0%
General Catalyst Group IX	Venture Capital	58,622,567	0.1%
General Catalyst X - Early, Endurance and Growth Ventures	Venture Capital	31,759,691	0.1%
Genstar Capital Partners V, VIII and IX	Acquisition - Medium	37,466,407	0.1%
Glendon Opportunities Fund and II	Debt - Distressed	33,786,960	0.1%
Great Hill Equity Partners VII	Special Situations - Diverse Strategies	6,947,169	0.0%
GTCR Fund X, XI, XII and XIII	Acquisition - Medium	137,988,035	0.2%
Harvest Partners VIII	Acquisition - Medium	21,196,489	0.0%
Hellman & Friedman VI, Spock 1, VII, VIII and IX	Acquisition - Large	150,002,886	0.3%
H.I.G. Capital Partners VI	Acquisition - Large	1,239,803	0.0%
H.I.G. Growth Buyouts & Equity Fund III	Acquisition - Large	4,149,014	0.0%
Hillhouse Fund IV	Acquisition - Large	89,596,152	0.2%
Huron Fund V	Acquisition - Medium	6,021,680	0.0%
Icon Software Partners	Special Situations - Diverse Strategies	5,750,623	0.0%
Incline Equity Partners V	Acquisition - Medium	662,455	0.0%
Insight Venture Partners IX, X and XI	Special Situations - Diverse Strategies	210,117,088	0.4%
Institutional Investment Partners XV, XVI and XVII	Venture Capital	105,957,094	0.2%
Kelso Investment Associates VIII	Acquisition - Medium	6,160,726	0.0%
KKR 2006 Fund	Acquisition - Large	6,860,520	0.0%
KRG Fund IV	Acquisition - Medium	1,484,355	0.0%
Lexington Capital Partners VI-B, VII, VIII and IX	Secondary Fund	347,358,647	0.6%
Lone Star Fund X	Debt - Distressed	60,803,017	0.1%
Madison Dearborn VI, VI Patriot, VII, VII Auxiliary SPV and VIII	Acquisition - Large	139,457,978	0.2%
Marlin Equity V, Heritage II and Europe Heritage II	Acquisition - Medium	27,022,304	0.1%
Mayfair Equity Partners II and Sidecar	Acquisition - Medium	25,785,527	0.1%
Montagu IV	Acquisition - Medium	9,507,718	0.0%
Nautic Partners IX	Acquisition - Medium	4,924,706	0.0%
New Enterprise Associates 13, 14, 15, 16 and 17	Venture Capital	310,742,217	0.5%
New Horizon VI: Advantech II and Redview II	Special Situations - Diverse Strategies	7,235,511	0.0%
New Mountain Partners V and VI	Acquisition - Medium	53,176,724	0.1%
Nordic VII, CVI Alpha, IX Beta and VIII	Acquisition - Medium	99,873,272	0.2%
NorthEdge Capital SME I	Acquisition - Medium	3,238,828	0.0%
Oak Investment Partners XIII	Venture Capital	25,029,751	0.0%
OCM Principal Opportunities Fund IV, VII, VIIb, IX and Xb	Debt - Distressed	33,551,951	0.1%
Odyssey Investment Partners IV and V	Acquisition - Medium	54,279,944	0.1%
Onex Partners II, III, IV, V and ONCAP IV	Acquisition - Medium	56,799,538	0.1%
Pamlico Capital IV and V	Acquisition - Medium	36,166,050	0.1%
Pantheon Global Secondary Fund III and IV	Secondary Fund	13,017,335	0.0%
Pathway Capital Management	Fund-of-Funds	4,251,850,864	7.5%
Paul Capital Partners IX	Secondary Fund	19,617,390	0.0%
Permira V, VI and VII	Acquisition - Medium	149,844,748	0.3%
Providence Equity Partners VI and Strategic Growth IV	Special Situations - Industry Specific	26,298,272	0.1%
Quad-C Partners VIII and IX	Acquisition - Medium	58,937,510	0.1%
Quantum Energy Partners V, V-C, VI, VI-C, VII and VII-C	Special Situations - Industry Specific	73,628,517	0.1%
Ridgemont Equity Partners III	Acquisition - Medium	28,215,841	0.1%
Riverside Micro-Cap Fund V	Acquisition - Medium	15,899,500	0.0%
The Resolute Fund II, III, IV and V	Acquisition - Medium	65,767,429	0.1%
Sentinel Capital Partners VI and Junior Capital I	Debt - Mezzanine	6,381,120	0.0%
Silver Lake Partners III and SPV-2	Special Situations - Industry Specific	9,142,328	0.0%
Siris Partners IV	Acquisition - Medium	28,687,852	0.1%
Spectrum Equity Investors VI, VII, VIII and IX	Special Situations - Diverse Strategies	96,665,269	0.2%
Summit Partners Growth Equity Fund X	Special Situations - Diverse Strategies	13,416,927	0.0%
Summit Partners Venture Capital Fund V	Special Situations - Diverse Strategies	788,648	0.0%
TA XI, XII and XIII-A	Special Situations - Diverse Strategies	112,550,693	0.2%
TCV VI, VII, VIII, IX, X and XI	Venture Capital	278,445,275	0.5%
Thoma Bravo Discover Fund I, II and III	Acquisition - Medium	59,701,755	0.1%
Thoma Bravo Fund XII, XIII and XIV	Acquisition - Large	109,180,074	0.2%
Thoma Bravo Special Opps Fund II	Acquisition - Medium	41,199,822	0.1%
TPG Partners V and VI	Acquisition - Large	3,369,053	0.0%
Trident Capital Fund VII	Acquisition - Medium	59,801,119	0.1%
Veritas Capital Fund VII	Acquisition - Medium	39,498,752	0.1%
Vista Equity Partners V, VI, VII, Foundation III and Foundation IV	Acquisition - Medium	196,682,245	0.4%
Wayzata Opportunities Fund II and III	Debt - Distressed	8,470,828	0.0%
Wind Point Partners VI, CV1 and VII	Acquisition - Medium	12,084,016	0.0%
Wynnchurch Capital Partners V	Acquisition - Medium	2,907,210	0.0%
Stock distribution account	Public Stocks	10,231,532	0.0%
Total		$ 9,224,576,538	16.3%

**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, 2021, the net asset values utilized were cash flow adjusted through June 30, 2021.*

Private Credit Program Summary

As of June 30, 2021, the Private Credit program had a fair value of approximately $1.4 billion, representing 2.5% 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, 2021, Private Credit assets committed* for investment were $3.5 billion. The fair value of funds that have been drawn down and actually invested as of June 30, 2021 was approximately $1.4 billion, representing 2.5% of total assets. The Systems' private credit investment commitments that have not yet been funded were approximately $1.3 billion as of June 30, 2021.

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

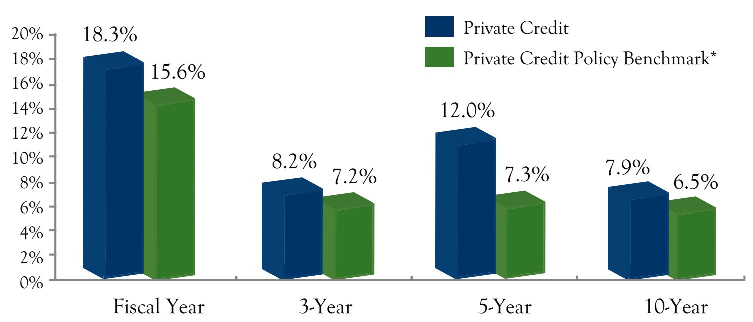
Credit market conditions improved significantly over the past year driven by the reopening of the economy, accommodative monetary and fiscal policies, and a rebound in commodity prices. Declining in default rates and narrowing credit spreads resulted in attractive high yield returns. The high yield market as measured by the private credit benchmark, ICE BofAML U.S. High Yield Master II Index, returned 15.6% for the year compared to a -1.1% return for fiscal year 2020.

Performance

The total return for the Private Credit program was 18.3% compared to the benchmark return of 15.6% for the fiscal year ended June 30, 2021. 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 on the following page 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 140 basis points. These excess returns are net of fees and expenses.

** 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 Credit Performance



Private Credit Statistical Performance

Portfolio Characteristics	Fiscal Year	3-Year	5-Year	10-Year
Annualized Private Credit Return	18.3%	8.2%	12.0%	7.9%
Annualized Policy Benchmark Return*	15.6%	7.2%	7.3%	6.5%
Excess Return	2.7%	1.0%	4.7%	1.4%

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

Private Credit Partnerships

As of June 30, 2021, the Systems were invested in 32 separate partnerships with 19 firms within the Private Credit asset class. Three new commitments were made to the Private Credit asset class during fiscal year 2021 for $275 million. The Systems received total distributions from the private credit partnerships of approximately $459 million in fiscal year 2021.

Private Credit Partnerships

Partnerships	Investment Strategy	Fair Value* As of June 30, 2021	% of Total Plan Fair Value
Bayview Opportunity Domestic V	Debt - Distressed	$ 55,225,395	0.1%
Bayview Opportunity Domestic VI	Debt - Distressed	24,857,232	0.1%
Benefit Street Partners Debt Fund IV	Debt - Lending	61,968,261	0.1%
Caltius IV	Debt - Mezzanine	1,323,659	0.0%
Clearlake Flagship Plus Partners, L.P.	Special Situations - Industry Specific	9,980,916	0.0%
EIG Energy Fund XVI	Debt - Energy	60,858,301	0.1%
Encap Fund VII	Special Situations - Industry Specific	1,890,338	0.0%
Encap Fund VIII	Special Situations - Industry Specific	12,125,872	0.0%
GSO Capital Solutions Fund III	Debt - Distressed	9,829,525	0.0%
GSO Energy Select Opportunities Fund II	Debt - Distressed	11,961,814	0.0%
GSO European Senior Debt Fund II	Debt - Distressed	23,317,659	0.0%
H.I.G. Capital Bayside IV	Debt - Distressed	11,238,087	0.0%
H.I.G. Capital Bayside V	Debt - Distressed	45,505,083	0.1%
H.I.G. Capital Bayside VI	Debt - Distressed	4,765,708	0.0%
H.I.G. Capital Whitehorse	Debt - Distressed	31,786,450	0.1%
HPS Mezzanine Partners 2019	Debt - Mezzanine	49,378,898	0.1%
HPS Specialty Loan Fund 2016	Debt - Mezzanine	70,137,020	0.1%
HPS Specialty Loan Fund V	Debt - Mezzanine	56,941,400	0.1%
Hayfin Direct Lending Fund III	Debt - Lending	71,104,520	0.1%
Hayfin Special Opportunities Fund III SCSp	Debt - Lending	7,917,161	0.0%
HealthCare Royalty Partners IV	Debt - Lending	47,382,267	0.1%
Indigo Capital V	Debt - Mezzanine	343,274	0.0%
Lone Star Real Estate Fund II	Debt - Distressed	166,175	0.0%
Oberland Capital Healthcare Fund II	Debt - Distressed	5,245,460	0.0%
OCM Opportunities Fund VIII	Debt - Distressed	581,475	0.0%
OCM Opportunities Fund VIII b	Debt - Distressed	11,077,407	0.0%
Pathway Capital Management	Fund-of-Funds	608,172,222	1.1%
Summit Partners Credit Fund III	Debt - Lending	30,652,179	0.1%
TA Subordinated Debt Fund III	Debt - Mezzanine	8,687,194	0.0%
TA Subordinated Debt Fund IV	Debt - Mezzanine	45,928,175	0.1%
TSSP Adjacent Opportunities Partners	Debt - Multi Strategy	46,988,560	0.1%
TSSP Opportunities Partners IV	Debt - Multi Strategy	16,079,444	0.0%
Total		$ 1,443,417,131	2.5%

**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, 2021, the net asset values utilized were cash flow adjusted through June 30, 2021.*

Private Real Estate Program Summary

As of June 30, 2021, the Private Real Estate program had a fair value of approximately $4.5 billion, representing 7.9% 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.

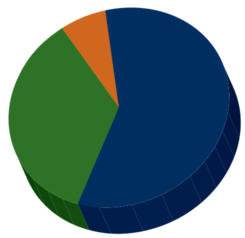
Structure

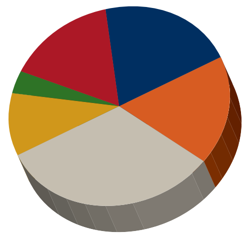
As of June 30, 2021, the Systems' Private Real Estate assets committed* for investment were $6.5 billion. The fair value of funds that had been drawn down and actually invested as of June 30, 2021 was approximately $4.5 billion, representing 7.9% of total assets. The Systems' private real estate investment commitments that had not yet been funded were approximately $1.7 billion as of June 30, 2021.

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.

The following pie charts indicate the diversification (utilizing the fair value of invested assets) of the Systems' Real Estate holdings as of June 30, 2021 from both the strategy and property type perspectives.

Private Real Estate Diversification





Market Overview

The Private Real Estate benchmark, NCREIF Fund Index – Open Diversified Core Equity (NFI-ODCE), returned 7.1% for fiscal year 2021 compared to a 1.3% return for fiscal year 2020. The total return of 7.1% consisted of 3.9% income and 4.0% appreciation, gross of fees. The positive appreciation for the year is a significant improvement over last year when the real estate market experienced considerable market disruption and uncertainty as a result of the COVID-19 pandemic. Real estate values increased across all property types for the year with the industrial sector producing the strongest returns.

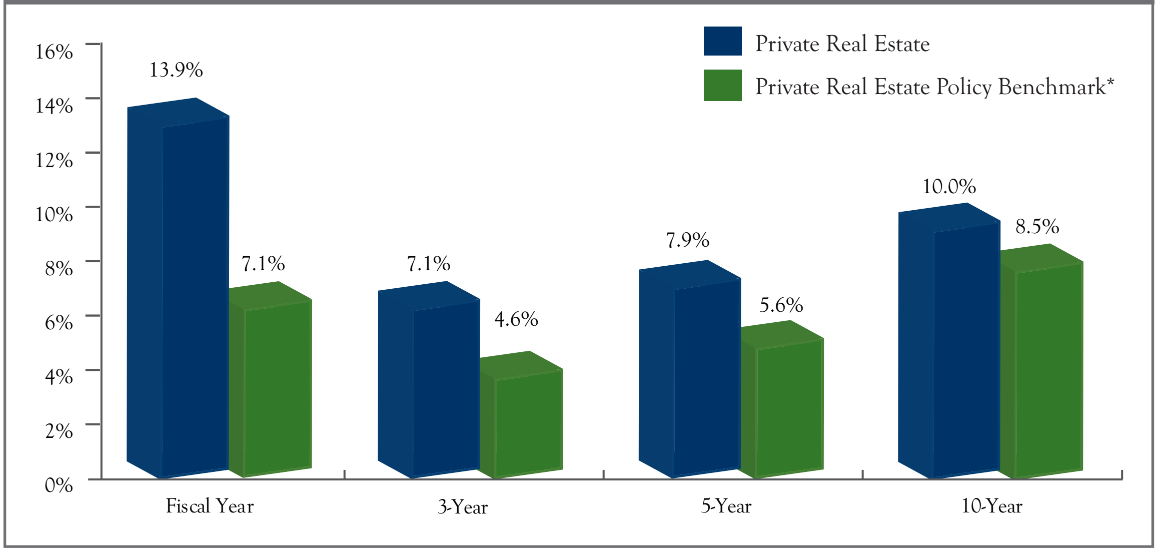
The Systems maintain a sizable allocation to high-quality, stabilized real estate assets (core) due to the secure income return. Additionally, the Systems have an allocation to non-core assets to enhance return to the overall real estate portfolio. The Systems will continue to focus real estate efforts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

** 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 Real Estate program was 13.9% compared to the benchmark return of 7.1% resulting in 680 basis points of excess return for the fiscal year ended June 30, 2021. 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	13.9%	7.1%	7.9%	10.0%
Annualized Policy Benchmark Return*	7.1%	4.6%	5.6%	8.5%
Excess Return	6.8%	2.5%	2.3%	1.5%

**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, 2021, the Systems were invested in 70 separate partnerships with 34 firms within the Private Real Estate asset class. In fiscal year 2021 the Systems committed to nine new partnerships totaling $884 million. Additionally, the Systems received total distributions from the real estate partnerships of approximately $440 million during the year.

Private Real Estate Partnerships

Partnerships	Investment Strategy	Fair Value* As of June 30, 2021	% of Total Plan Fair Value
AEW Core Property Fund	Core - Private	$ 103,743,672	0.2%
AEW Partners Real Estate Fund IX	Non-Core - Private	5,237,101	0.0%
Almanac Realty Securities VIII	Non-Core - Private	25,962,816	0.0%
Alterna Core Capital Assets Fund II	Infrastructure	52,622,707	0.1%
Angelo Gordon Realty Value Fund X	Non-Core - Private	41,644,290	0.1%
Ares Industrial Real Estate Fund	Non-Core - Private	133,292,309	0.2%
Asana Partners Fund I and II	Non-Core - Private	128,769,607	0.2%
BlackRock Global Energy & Power Infrastructure III	Infrastructure	29,373,098	0.1%
Blackstone BioMed Life Science Real Estate L.P.	Core - Private	76,288,984	0.1%
Blackstone R.E. Partners V, VI, VII, VIII and IX	Non-Core - Private	183,004,709	0.3%
Blackstone Real Estate Partners Europe VI (Cayman)	Non-Core - Private	40,117,191	0.1%
Blackstone Real Estate Partners Asia I and II	Non-Core - Private	92,651,216	0.2%
Brockton Capital II	Non-Core - Private	5,179,290	0.0%
Carlyle Europe Real Estate Partners III	Non-Core - Private	1,459,600	0.0%
Carlyle Property Investors	Core - Private	168,391,778	0.3%
Carlyle Realty V, VI, VII and VIII	Non-Core - Private	95,558,151	0.2%
CBRE US Value 7	Non-Core - Private	193,260	0.0%
CIM Fund III and VIII	Non-Core - Private	85,154,152	0.1%
Colony Investors VIII	Non-Core - Private	1,414,017	0.0%
CPI Capital Partners Europe	Non-Core - Private	778,100	0.0%
Dune Real Estate Fund I	Non-Core - Private	69,324	0.0%
Exeter Industrial Value Fund IV and V	Non-Core - Private	128,387,032	0.2%
Heitman Value Partners III and IV	Non-Core - Private	52,101,477	0.1%
IFM Global Infrastructure (US) L.P. Class A Interests	Infrastructure	115,006,587	0.2%
IPI Partners II-A	Non-Core - Private	642,554	0.0%
JPMorgan Special Situation Property Fund	Non-Core - Private	181,831,128	0.3%
JPMorgan Strategic Property Fund	Core - Private	266,964,786	0.5%
KKR Real Estate Partners America I and II	Non-Core - Private	96,744,158	0.2%
LaSalle Asia Opportunity Fund III	Non-Core - Private	917,858	0.0%
LaSalle Property Fund	Core - Private	385,824,034	0.7%
Lone Star V and VI	Non-Core - Private	10,756,122	0.0%
Lone Star Real Estate Fund	Non-Core - Private	1,554,215	0.0%
Macquarie Infrastructure Partners I, IV and V	Infrastructure	91,670,272	0.2%
MetLife Core Property Fund	Core - Private	159,937,994	0.3%
Morgan Stanley Prime Property Fund	Core - Private	426,138,956	0.7%
North Haven Real Estate Fund V International	Non-Core - Private	1,137,143	0.0%
Noble Hospitality Fund III, IV-Income and IV-Value Added	Non-Core - Private	73,983,371	0.1%
Principal Enhanced Property Fund	Core - Private	157,511,956	0.3%
Prologis Targeted U.S. Logistics Holdings	Core - Private	436,553,436	0.8%
Prudential PRISA Fund	Core - Private	197,821,669	0.3%
Prudential PRISA III	Non-Core - Private	94,740,912	0.2%
Standard Life European Real Estate Fund I, II and III	Non-Core - Private	12,773,524	0.0%
Starwood Hospitality Fund	Non-Core - Private	2,079,472	0.0%
UBS Trumbull Property Fund	Core - Private	223,990,878	0.4%
Westbrook R.E. Fund VII, VIII, IX, X and XI	Non-Core - Private	90,939,271	0.2%
Total		**$ 4,480,914,177**	**7.9%**

**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, 2021, the net asset values utilized were cash flow adjusted through June 30, 2021.*

U.S. Public Equity Broker Commissions Report				
Brokerage Firm	**Shares Traded**	**Dollars Traded**	**Commissions Paid**	**Cost Per Share**
Northern Trust	23,286,527	$ 1,204,605,247	$ 698,565	$ 0.03
Morgan Stanley & Co.	30,930,325	1,484,454,010	206,849	0.01
Piper Jaffray & Co.	24,002,072	1,835,318,228	176,596	0.01
Goldman Sachs & Co.	26,013,437	1,163,774,288	145,327	0.01
Pershing LLC	4,749,404	222,346,296	141,318	0.03
Bank of America	15,050,773	512,644,242	123,653	0.01
National Financial Services Corp	2,332,555	63,248,752	88,382	0.04
Cap Institutional Services	2,659,681	381,943,418	73,855	0.03
Barclays Capital, Inc.	4,120,864	261,540,868	59,634	0.01
UBS Securities, LLC	7,715,198	456,122,422	58,551	0.01
Other (<$58,000)	78,542,329	3,637,447,813	734,810	0.01
Total	**219,403,165**	**$11,223,445,584**	**$ 2,507,540**	**$ 0.01**

Non-U.S. Public Equity Broker Commissions Report				
Brokerage Firm	**Shares Traded**	**Dollars Traded**	**Commissions Paid**	**Cost (Basis Points)**
Morgan Stanley & Co.	125,601,266	$ 883,952,810	$ 246,258	2.8
Instinet, LLC	148,416,541	862,540,912	233,354	2.7
JP Morgan Chase	1,691,651,391	673,070,515	187,526	2.8
Goldman Sachs & Co.	70,579,011	661,595,179	186,923	2.8
UBS Securities, LLC	470,447,565	687,042,257	183,728	2.7
Merrill Lynch	71,159,912	482,801,841	141,440	2.9
Credit Suisse Securities, LLC	58,520,021	532,021,050	134,011	2.5
HSBC Bank	2,617,482,325	292,374,606	102,872	3.5
Citigroup Global Markets, Inc.	60,793,862	366,548,162	98,275	2.7
Macquarie Securities	87,364,638	244,032,165	81,201	3.3
Other (<$80,000)	553,288,829	3,471,368,278	791,472	2.3
Total	**5,955,305,361**	**$ 9,157,347,775**	**$ 2,387,060**	**2.6**

Investment Summary as of June 30, 2021						
		Percent of Total Fair Value			Percent of Market Exposure	
Asset Type	Fair Value	FY 2021	FY 2020	Market Exposure	FY 2021	FY 2020
Public Risk Assets						
U.S. Public Equity	$ 15,066,765,027	26.5%	27.2%	$ 15,066,765,027	26.5%	27.5%
Non-U.S. Public Equity	9,429,839,981	16.6%	15.4%	9,429,839,981	16.6%	15.4%
Public Credit	2,187,109,558	3.8%	4.7%	2,187,109,558	3.8%	4.7%
Hedged Assets	5,092,322,910	9.0%	9.8%	5,092,322,910	9.0%	9.8%
Total Public Risk Assets	***31,776,037,476***	***55.9%***	***57.1%***	***31,776,037,476***	***55.9%***	***57.4%***
Safe Assets						
U.S. Treasuries	7,858,138,240	13.8%	14.7%	7,858,138,240	13.8%	14.7%
U.S. TIPS	775,114,268	1.4%	2.7%	775,114,268	1.4%	2.7%
Cash & Cash Equivalents	1,175,031,106	2.1%	2.1%	1,175,031,106	2.1%	2.1%
Total Safe Assets	***9,808,283,614***	***17.3%***	***19.5%***	***9,808,283,614***	***17.3%***	***19.5%***
Private Risk Assets						
Private Real Estate	4,480,914,177	7.9%	8.6%	4,480,914,177	7.9%	8.6%
Private Equity	9,224,576,538	16.3%	12.9%	9,224,576,538	16.3%	12.9%
Private Credit	1,443,417,131	2.5%	1.7%	1,443,417,131	2.5%	1.7%
Total Private Risk Assets	***15,148,907,846***	***26.7%***	***23.2%***	***15,148,907,846***	***26.7%***	***23.2%***
Securities Lending Collateral	***18,962***	***0.0%***	***0.0%***	***18,962***	***0.0%***	***0.0%***
Cash & Equivalents*	***83,490,026***	***0.1%***	***0.2%***	***83,490,026***	***0.1%***	***0.2%***
Total Investments**	$56,816,737,924	100.0%	100.0%	$ 56,816,737,924	100.0%	100.3%
Reconciliation with Financial Statements						
Total from above	$ 56,816,737,924					
Accrued payable for investments purchased	7,105,250,509					
Accrued income payable	795,878					
Accrued receivable for investments sold	(6,544,666,733)					
Accrued income receivable	(90,043,663)					
Securities lending collateral	(18,962)					
Short-term investments designated for benefits	(497,551,169)					
Statements of Fiduciary Net Position	**$56,790,503,784**					

**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, 2021.*

Investment Expenses for the Fiscal Year Ended June 30, 2021

Investment Managers	
Investment Management Fees	
NISA Investment Advisors - Core	$ 4,574,311
NISA Investment Advisors - TIPS	543,289
Safe Assets Fees	5,117,600
NISA Investment Advisors - Corporate	1,241,941
Pacific Investment Management Company	535,245
Public Credit Fees	1,777,186
Analytic Investors, LLC	1,409,784
AQR Capital Management	1,048,340
Aronson & Johnson & Ortiz	179,160
BlackRock Investment Management	268,520
Coatue Long Only Partners	27,369,812
Coho Partners	59,254
Davis Selected Advisers	283,521
Eagle Capital Management	643,402
Grantham, Mayo, Van Otterloo & Co.	311,074
Lazard Asset Management	777,722
Martingale Asset Management	673,769
NISA Investment Advisors	64,828
Russell Investments	199,284
Select Equity Group	150,973
Westwood Management	1,422,096
Zevenbergen Capital	1,976,944
U.S. Public Equity Fees	36,838,483
ABS Investment Management	2,413,030
Acadian Asset Management	2,306,273
Alliance Bernstein L.P.	417,846
Analytic Investors, LLC	971,144
AQR Capital Management	1,704,437
Arrowstreet Capital	17,482,482
BlackRock Investment Management	202,085
Coronation Asset Management (Proprietary) Limited	1,388,426
Invesco Advisers, Inc.	661,581
MFS Institutional Advisors	5,483,075
Neon Capital Management	5,785,354
The Rock Creek Group	3,430,475
Walter Scott & Partners Limited	340,033
Non-U.S. Public Equity Fees	42,586,241
AQR Capital Management	244,453
BlackRock Investment Management	36,443
Chartwell Investment Partners	530,145
Greenhouse Funds	2,275,413
Martingale Asset Management	628,377
RK Capital Management	4,042,052
Russell Investments	141,099
Systematic Financial Management	831,800
S-Cap Fees	8,729,782
Alpha Overlay Fees	60,821,824
Hedged Assets Fees	146,683,778
Private Real Estate Fees	115,509,958
Private Credit Fees	39,824,856
Private Equity Fees	881,357,344
Commission Recapture Income	(42,746)
Investment Management Expense	1,339,204,306
Custodial Services	
JP Morgan Chase, NA	2,024,580
Custodial Fees	2,024,580
Investment Consultants	
Albourne America, LLC	750,000
Institutional Shareholder Services, Inc.	74,500
Pathway Consulting	3,769,323
RVK, Inc.	15,000
Townsend	350,000
Verus Advisory Inc.	453,397
Investment Consultant Fees	5,412,220
Legal Expenses	1,098,744
Staff Investment Expenses	5,720,206
Total Investment Expenses	$ 1,353,460,056

Accurate and timely employer data reporting is key for PSRS/PEERS' operations, and for our members' future financial security. The staff at our partner employers who report data to us provide the essential information we need to ensure member records are correct. We understand that employer reporting is just one of their many responsibilities, and that it can be complex.

Our Employer Services department is comprised of 13 individuals, dedicated to providing information, education and support to our employers. Whether through telephone support, webinars, in-person training or annual conferences, we work hard to help make employer reporting easier, faster and better.

Actuarial Section

Certification of Actuarial Results

pwc

November 9, 2021

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, 2021

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, 2021. 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, 2021 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, 2021 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.

e. *Actuarial Assumptions* - The actuarial assumptions used for the June 30, 2021 valuations were based on an experience study that was completed for each System in May 2021. Based on those studies, the Board adopted all assumptions required for the valuations.

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.

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.

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Certification of Actuarial Results, continued

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, 2021 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

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, 2021 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)
6/30/12	$ 29,013,002	$ 35,588,030 [1]	$ 6,575,028	81.5%	$ 4,379,060	150.1%
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%

[1] *There were no significant legislative changes in fiscal years 2012, 2014, 2015, 2019 and 2020 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)
6/30/12	$ 3,090,880	$ 3,746,347 [1]	$ 655,467	82.5%	$ 1,437,310	45.6%
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%

[1] *There were no significant legislative changes in fiscal years 2012, 2014, 2015, 2019 and 2020, 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, 2021

		Percentage of Payroll
(1)	Normal cost rate	17.06%
(2)	Rate needed to fund UAAL	11.56%
(3)	Benchmark contribution rate - normal cost plus a rate to fund the UAAL over 20.6 years	28.62%
(4)	Additional amount towards funding UAAL	0.38%
(5)	Recommended rate for FY 2023	29.00%

Required Contribution Rate & Amortization of Unfunded Liability

Public Education Employee Retirement System of Missouri
For the fiscal year ended June 30, 2021

		Percentage of Payroll
(1)	Normal cost rate	10.30%
(2)	Rate needed to fund UAAL	3.34%
(3)	Benchmark contribution rate - normal cost plus a rate to fund the UAAL over 20.8 years	13.64%
(4)	Additional amount towards funding UAAL	0.08%
(5)	Recommended rate for FY 2023	13.72%

Reconciliation of Unfunded Actuarial Accrued Liability

Public School Retirement System of Missouri
As of June 30, 2021

(1) Unfunded actuarial liability as of July 1, 2020		$ 7,935,961,741
(2) Changes in Unfunded Actuarial Accrued Liability		
a. Impact of Plan Changes	-	
b. Actuarial (Gains)/Losses		
i. From investment	(1,639,501,501)	
ii. From actuarial liabilities due to assumption changes	590,572,160	
iii. From actuarial liabilities due to actual vs. expected COLA	820,401,906	
iv. From actuarial liabilities due to actual vs. expected salary changes	72,323,700	
v. From actuarial liabilities due to other demographic experience	28,333,079	
vi. Total Unfunded Actuarial Accrued Liability (Gain)/Loss		(127,870,656)
c. Total New Amortization Bases: (2)(a) + (2)(b)(vi)		(127,870,656)
d. Net Change in Existing Bases Due to Prior Year Contributions, Net of Interest		(7,342,241)
e. Total changes in Unfunded Actuarial Accrued Liability		(135,212,897)
(3) Unfunded Actuarial Accrued Liability as of June 30, 2021		$ 7,800,748,844

Reconciliation of Unfunded Actuarial Accrued Liability

Public Education Employee Retirement System of Missouri
As of June 30, 2021

(1) Unfunded actuarial liability as of July 1, 2020		$ 831,554,515
(2) Changes in Unfunded Actuarial Accrued Liability		
a. Impact of Plan Changes	-	
b. Actuarial (Gains)/Losses		
i. From investment	(204,350,938)	
ii. From actuarial liabilities due to assumption changes	84,245,144	
iii. From actuarial liabilities due to actual vs. expected COLA	72,576,578	
iv. From actuarial liabilities due to actual vs. expected salary changes	(580,636)	
v. From actuarial liabilities due to other demographic experience	18,626,178	
vi. Total Unfunded Actuarial Accrued Liability (Gain)/Loss		(29,483,674)
c. Total New Amortization Bases: (2)(a) + (2)(b)(vi)		(29,483,674)
d. Net Change in Existing Bases Due to Prior Year Contributions, Net of Interest		2,257,033
e. Total changes in Unfunded Actuarial Accrued Liability		(27,226,641)
(3) Unfunded Actuarial Accrued Liability as of June 30, 2021		$ 804,327,874

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
6/30/12	537	77,529	$ 4,379,060	$ 56,483	1.2%	42.2	11.4
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

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
6/30/12	534	48,605	$ 1,437,310	$ 29,571	2.0%	48.1	8.4
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

Solvency Test

Public School Retirement System of Missouri
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Accrued Liability for: Member Contributions	Current Retirees & Beneficiaries	Active & Inactive Members Employer Financed Portion	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Actuarial Value of Assets for:		
	(1)	(2)	(3)		(1)	(2)	(3)
6/30/12	$ 6,687,358	$ 21,191,032	$ 7,709,641	$ 29,013,002	100.0%	100.0%	14.7%
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%

Solvency Test

Public Education Employee Retirement System of Missouri
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Accrued Liability for: Member Contributions	Current Retirees & Beneficiaries	Active & Inactive Members Employer Financed Portion	Actuarial Value of Assets	Percentage of Actuarial Liabilities Covered by Actuarial Value of Assets for:		
	(1)	(2)	(3)		(1)	(2)	(3)
6/30/12	$ 822,485	$ 1,541,541	$ 1,382,321	$ 3,090,880	100.0%	100.0%	52.6%
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%

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
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 current 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.									
2015-2016									
Service Retirees	2,603	$ 94,495,423	883	$ 30,442,764	53,069	$ 2,215,921,481	$ 41,755	5.03 %	1.62 %
Disability Retirees	83	2,292,574	23	524,458	957	25,852,085	27,014	9.35	1.92
Beneficiaries	311	9,947,411	190	4,077,020	3,994	117,916,972	29,524	6.53	3.60
Note: Other adjustments to 4 service retirees, 5 disability retirees and 11 beneficiaries occurred during the 2015-2016 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
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 current 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.									
2015-2016									
Service Retirees	1,903	$ 20,486,168	746	$ 4,299,969	25,061	$ 214,643,511	$ 8,565	8.59 %	3.57 %
Disability Retirees	53	333,484	31	149,572	782	4,198,147	5,368	5.38	3.35
Beneficiaries	192	1,254,525	90	413,164	1,740	10,163,757	5,841	11.60	4.60
Note: Other adjustments to 4 service retirees, 7 disability retirees and 7 beneficiaries occurred during the 2015-2016 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 IRS 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, 2021. 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, 2021. 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 3 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 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	449.071	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	
Years of Service	Rate
0	240.0
1	115.0
2	100.0
3	80.0
4	70.0
5	60.0
10	27.5
15	15.0
20	10.0
25+	0.0

PEERS Active Member Withdrawal	
Years of Service	Rate
0	350.0
1	230.0
2	180.0
3	150.0
4	125.0
5	100.0
10	55.0
15	33.0
20	18.0
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)	
Age	Rates
25	0.0017%
30	0.0080%
35	0.0220%
40	0.0480%
45	0.0880%
50	0.1290%
55	0.1660%

PEERS Active Member Disability (effective 6/30/16)	
Age	Rates
25	0.0017%
30	0.0080%
35	0.0016%
40	0.0320%
45	0.0640%
50	0.1220%
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% (effective 6/30/21) load for PEERS 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 that of 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 7.5% interest, adding contributions with 7.5% 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 decrease 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 form 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. The most recent assumption revisions were approved by the Board of Trustees at their June 8, 2021 meeting. The revised assumptions were used for the June 30, 2021 valuation.*

For security and efficiency, PSRS/PEERS provides our participating employers with electronic retirement reporting capabilities. Our current web-based retirement reporting system, the OASIS Employer Web Portal (EWP), is a robust and secure online reporting application that allows our employers to submit data, get messages, and view outstanding invoices all in one place.

We are presently working on improvements to this system which will be rolled out in early 2023, along with training opportunities, for all participating employers.

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 1,267 from 58,855 at June 30, 2020 to 60,122 at June 30, 2021. The number of PEERS service retirees on the payment rolls increased by 1,297 from 30,166 at June 30, 2020 to 31,463 at June 30, 2021.

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 increased by 11 from 1,032 at June 30, 2020 to 1,043 at June 30, 2021. The number of PEERS disability retirees on the payment rolls decreased by 22 from 831 at June 30, 2020 to 809 at June 30, 2021.

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 128 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 outside 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 136 show a comparison of the assets and liabilities of the Systems over time. At June 30, 2021, PSRS was 85.2% pre-funded and PEERS was 87.7% pre-funded. At June 30, 2020, PSRS was 84.0% pre-funded and PEERS was 86.3% 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 129 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, 2021

Amount of Monthly Benefit	Service Retirement	Disability Retirement	Beneficiary Recipients: Disability	Beneficiary Recipients: Survivors	Beneficiary Recipients: Beneficiary	Beneficiary Recipients: Term-Certain	Total
<$1,000	5,254	19	240	385	321	5	6,224
$1,000 - $1,999	6,542	317	130	185	699	6	7,879
$2,000 - $2,999	10,203	500	40	87	833	5	11,668
$3,000 - $3,999	13,668	169	10	81	754	4	14,686
$4,000 - $4,999	11,544	32	2	41	523	-	12,142
$5,000 - $5,999	7,218	4	-	15	295	-	7,532
$6,000+	5,693	2	-	24	229	1	5,949
Total	60,122	1,043	422	818	3,654	21	66,080

PEERS Summary of Benefit Recipients By Type As of June 30, 2021

Amount of Monthly Benefit	Service Retirement	Disability Retirement	Beneficiary Recipients: Disability	Beneficiary Recipients: Survivors*	Beneficiary Recipients: Beneficiary	Beneficiary Recipients: Term-Certain	Total
<$500	14,814	489	264	-	1,175	22	16,764
$500 - $999	7,979	249	50	-	529	8	8,815
$1,000 - $1,999	6,364	71	11	-	277	8	6,731
$2,000 - $2,999	1,546	-	-	-	39	2	1,587
$3,000 - $3,999	476	-	-	-	9	-	485
$4,000+	284	-	-	-	5	-	289
Total	31,463	809	325	-	2,034	40	34,671

**Benefit not available in PEERS.*

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

(Dollar amounts in thousands)

	Fiscal Year 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Additions by source										
Member contributions	$ 620,214	$ 665,926	$ 679,618	$ 689,187	$ 704,786	$ 719,625	$ 726,996	$ 747,403	$ 757,917	$ 779,834
Employer contributions	658,936	634,040	643,763	656,925	670,794	684,858	696,970	712,545	724,995	745,638
Investment income	449,822	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
Other income	441	20	6	26	6	13	4	6	192	128
Total additions by source	1,729,413	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
Deductions by type										
Monthly benefits										
Service retirement	1,775,305	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
Service retirement -PLSO	69,392	61,062	58,849	37,191	32,365	34,721	37,754	33,751	39,628	38,966
Disability	19,640	21,120	22,138	23,447	25,309	26,379	27,235	27,826	29,373	30,020
Beneficiary	85,894	92,799	100,040	107,109	114,829	121,170	129,722	138,978	147,053	155,194
Lump-sum refunds										
Death	9,295	8,344	7,123	7,712	9,078	8,504	8,879	9,471	10,351	10,566
Withdrawal/transfers	45,161	47,051	48,799	48,226	45,553	42,114	42,450	39,825	44,155	40,982
Administrative expenses/other	8,135	8,714	8,919	10,015	11,563	10,497	11,418	11,326	10,653	10,818
Total deductions by type	2,012,822	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
Changes in plan net position	$(283,409)	$2,558,644	$ 4,005,192	$ 457,071	$ (533,710)	$2,976,276	$ 1,979,299	$ 1,334,214	$ 116,546	$9,910,215

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

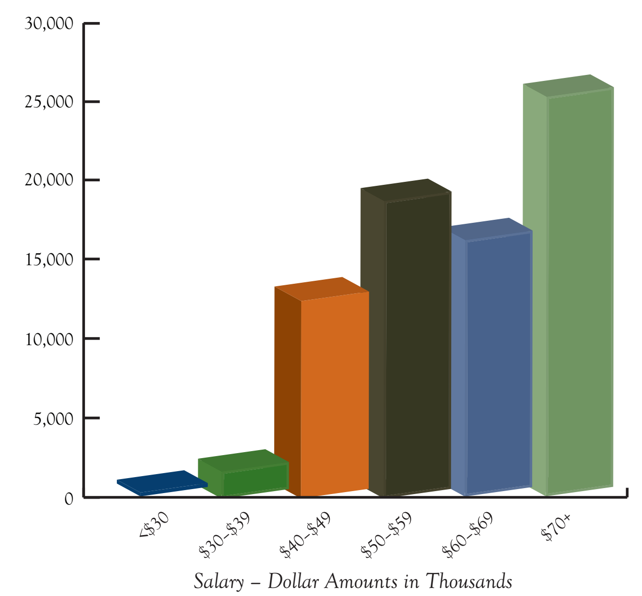
(Dollar amounts in thousands)

	Fiscal Year 2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Additions by source										
Member contributions	$ 95,095	$ 103,271	$ 106,430	$ 110,444	$ 114,258	$ 118,447	$ 121,468	$ 126,609	$ 131,336	$ 134,324
Employer contributions	101,930	97,059	100,690	103,624	106,717	111,240	115,103	120,042	124,545	126,877
Investment income	39,774	353,729	544,154	163,718	60,317	485,047	381,524	319,773	181,855	1,431,017
Other income	-	-	1	2	-	-	-	-	-	-
Total additions by source	236,799	554,059	751,275	377,788	281,292	714,734	618,095	566,424	437,736	1,692,218
Deductions by type										
Monthly benefits										
Service retirement	150,334	163,134	179,262	195,980	212,327	229,599	246,062	266,172	283,100	300,571
Service retirement -PLSO	7,191	5,006	5,971	6,576	4,410	6,585	7,274	8,138	7,849	8,870
Disability	3,057	3,430	3,665	3,917	4,158	4,313	4,453	4,621	4,817	4,817
Beneficiary	6,363	7,094	7,847	8,769	9,791	10,581	11,575	12,637	13,892	15,164
Lump-sum refunds										
Death	1,113	1,202	1,063	1,418	1,159	1,266	1,075	1,123	1,763	1,998
Withdrawal/transfers	17,357	17,434	18,817	18,410	18,546	16,925	17,195	17,551	18,917	19,101
Administrative expenses/other	5,591	4,803	4,840	5,629	6,981	6,377	7,113	7,424	7,078	7,379
Total deductions by type	191,006	202,103	221,465	240,699	257,372	275,646	294,747	317,666	337,416	357,900
Changes in plan net position	$ 45,793	$ 351,956	$ 529,810	$ 137,089	$ 23,920	$ 439,088	$ 323,348	$ 248,758	$ 100,320	$1,334,318

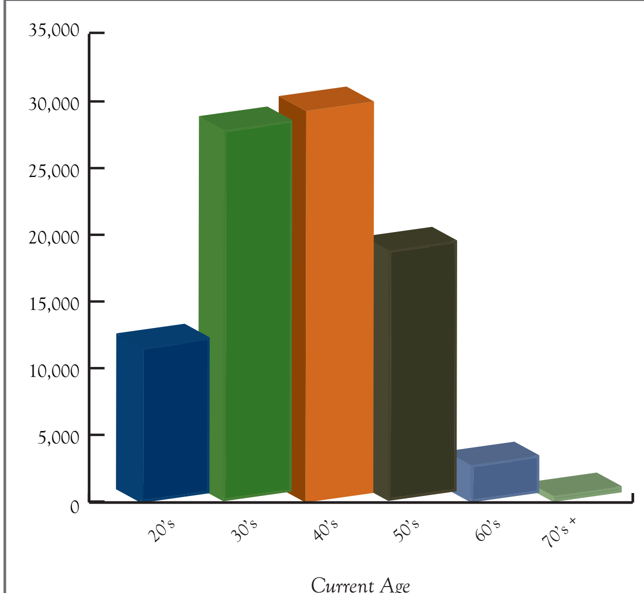
PSRS Summary of Changes in Membership During 2020-2021

		Male	Female	Total
Membership July 1, 2020		21,659	75,608	97,267
New members added		989	3,632	4,621
Less:	Service retirements	577	2,010	2,587
	Disability retirements	14	30	44
	Withdrawals	401	1,280	1,681
	Deaths	20	52	72
		1,012	3,372	4,384
	Other	1	(9)	(8)
Net change in membership 2020-2021		(22)	251	229
Membership June 30, 2021		21,637	75,859	97,496

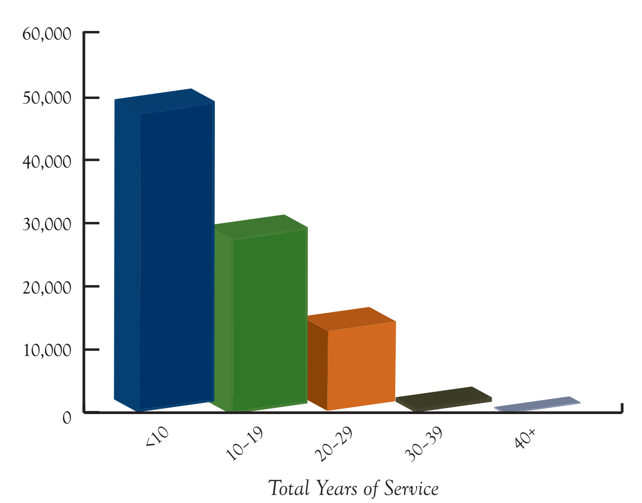
2020-2021 PSRS Members by Annual Salary



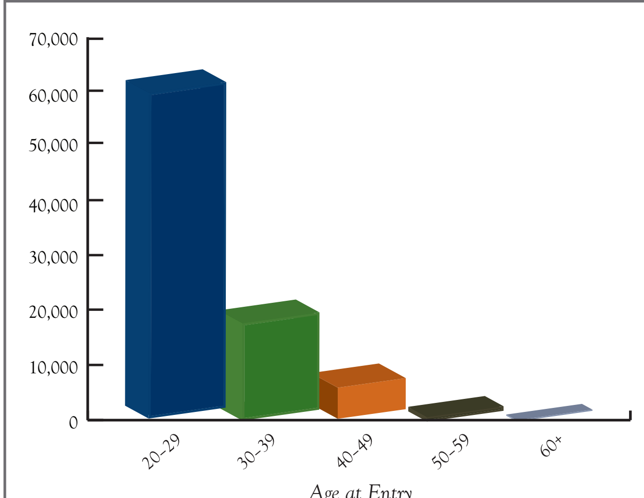
2020-2021 PSRS Members by Current Age



2020-2021 PSRS Members by Total Years of Service



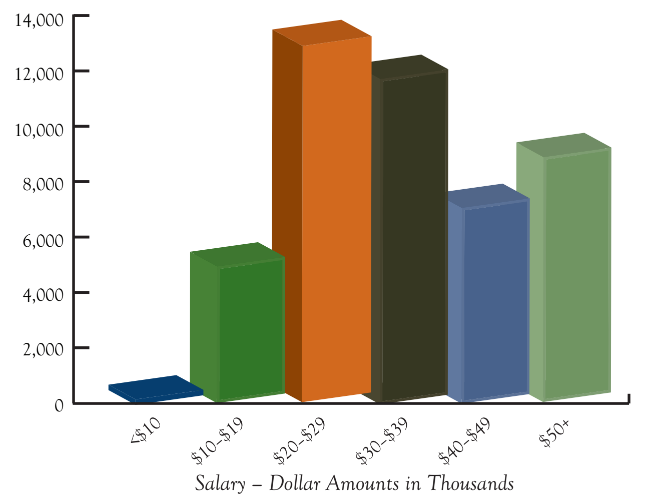
2020-2021 PSRS Member Age at Entry Into System



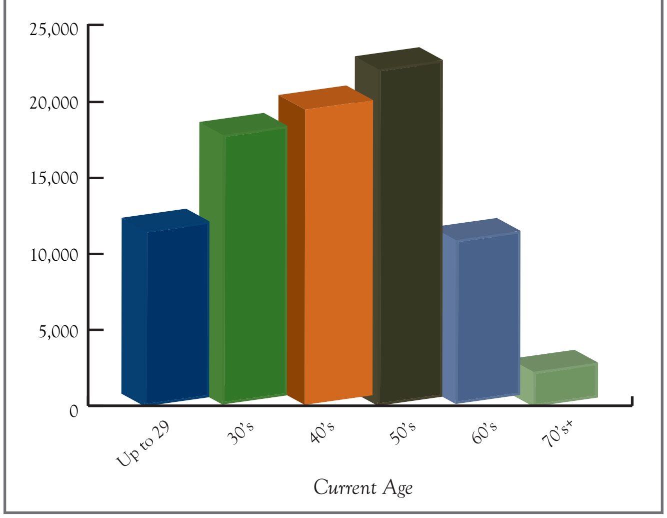
PEERS Summary of Changes in Membership During 2020-2021

		Male	Female	Total
Membership July 1, 2020		24,116	65,041	89,157
New members added		2,270	5,779	8,049
Less:	Service retirements	585	1,741	2,326
	Disability retirements	7	12	19
	Withdrawals	1,125	2,746	3,871
	Deaths	64	76	140
		1,781	4,575	6,356
	Other	(11)	(19)	(30)
Net change in membership 2020-2021		478	1,185	1,663
Membership June 30, 2021		24,594	66,226	90,820

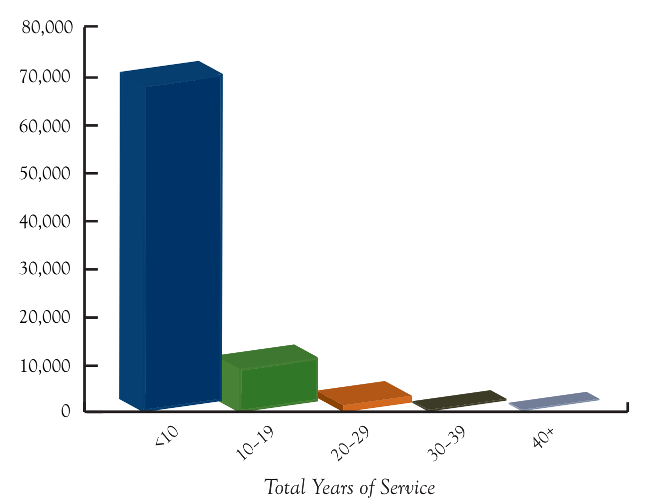
2020-2021 PEERS Members by Annual Salary



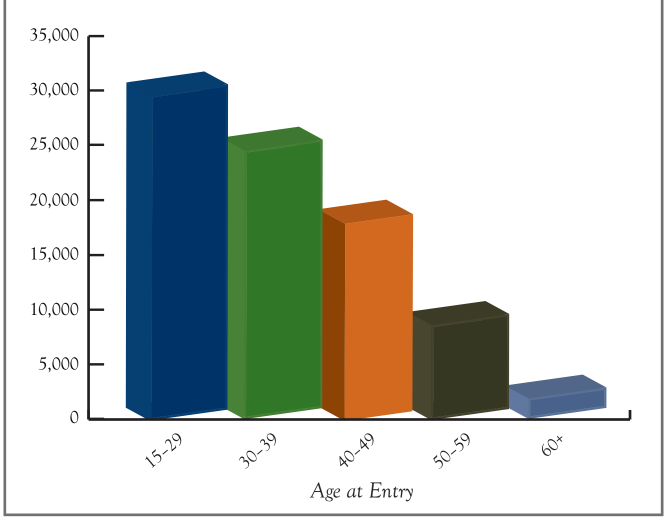
2020-2021 PEERS Members by Current Age



2020-2021 PEERS Members by Total Years of Service

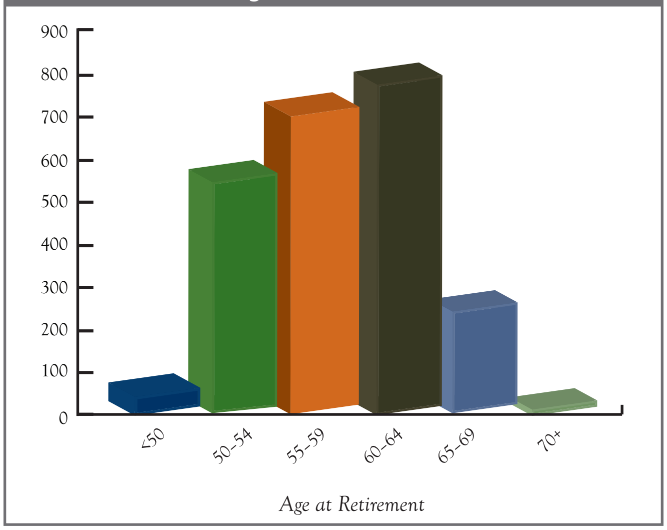


2020-2021 PEERS Member Age at Entry Into System

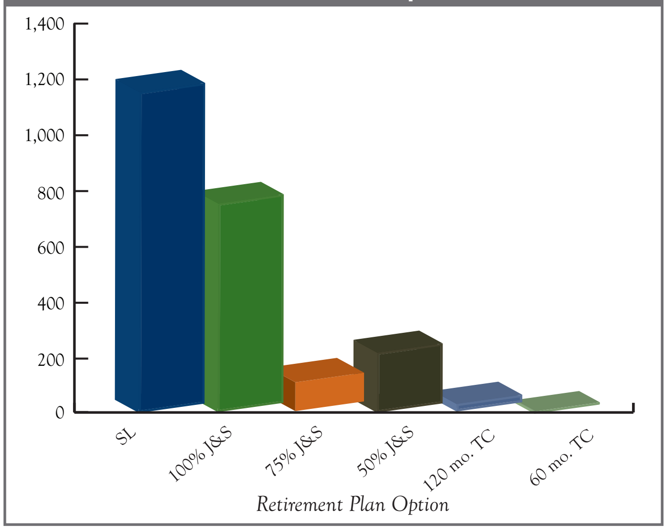


PSRS 2020-2021 New Service Retirees			
	Service Retirees	Disability Retirees	Beneficiaries
Retirees July 1, 2020	58,855	1,032	4,708
Added during the year	2,587	44	430
Died during the Year	(1,320)	(31)	(256)
Other	0	(2)	33
Retirees June 30, 2021	60,122	1,043	4,915

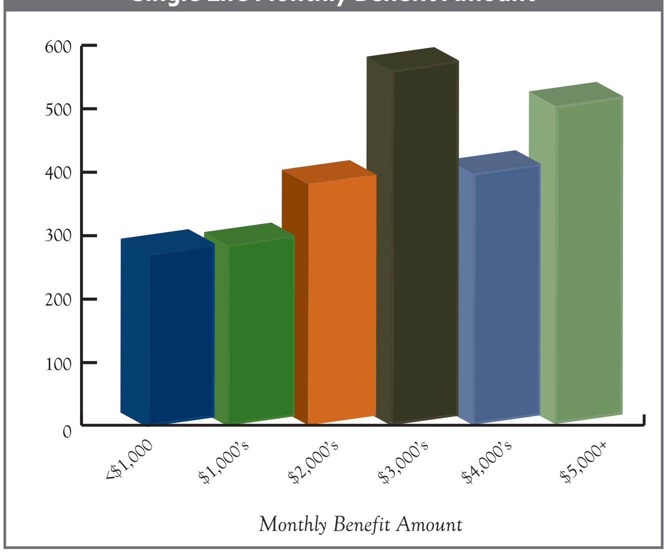
2020-2021 PSRS New Service Retirees by Age at Retirement



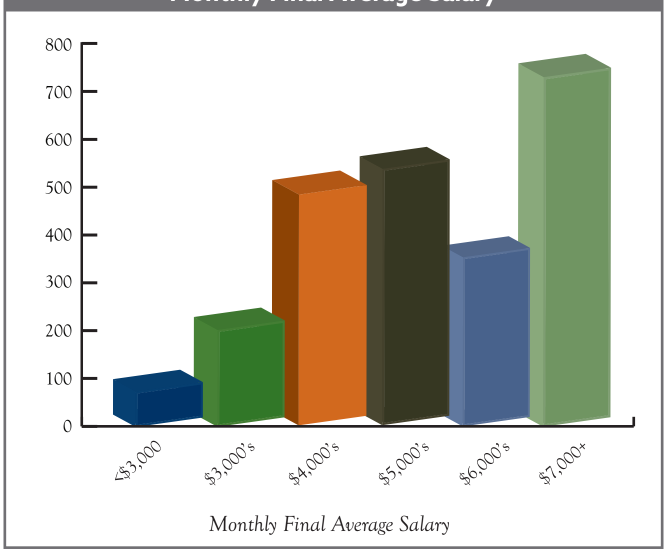
2020-2021 PSRS New Service Retirees by Retirement Plan Option



2020-2021 PSRS New Service Retirees by Single Life Monthly Benefit Amount

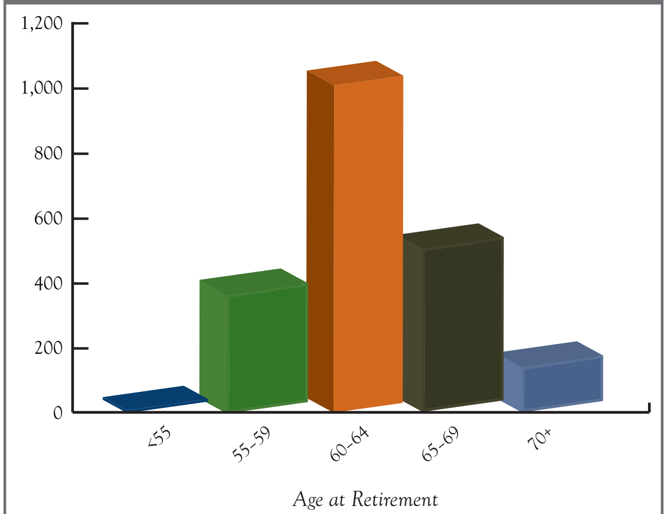


2020-2021 PSRS New Service Retirees by Monthly Final Average Salary

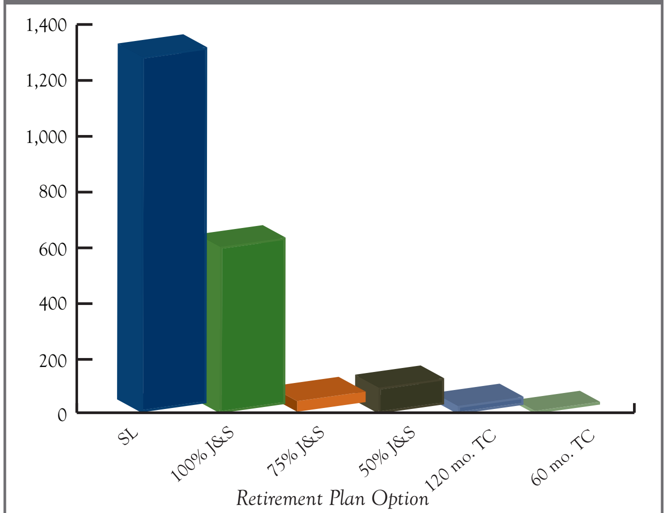


PEERS 2020-2021 New Service Retirees			
	Service Retirees	Disability Retirees	Beneficiaries
Retirees July 1, 2020	30,166	831	2,235
Added during the Year	2,326	19	257
Died during the Year	(1,029)	(41)	(123)
Other	0	0	30
Retirees June 30, 2021	31,463	809	2,399

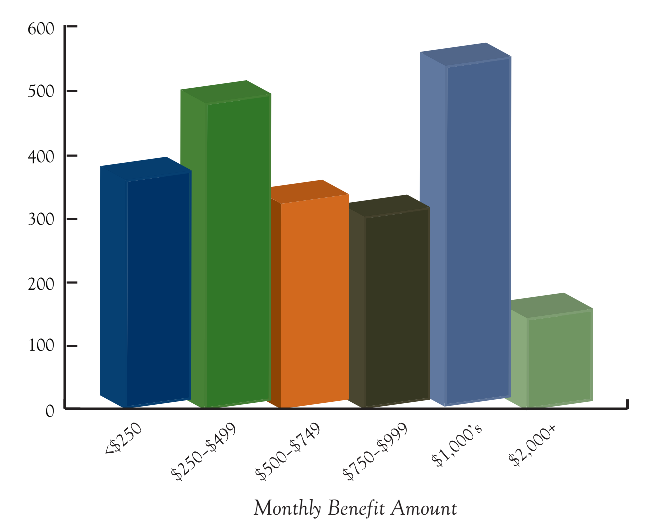
2020-2021 PEERS New Service Retirees by Age at Retirement



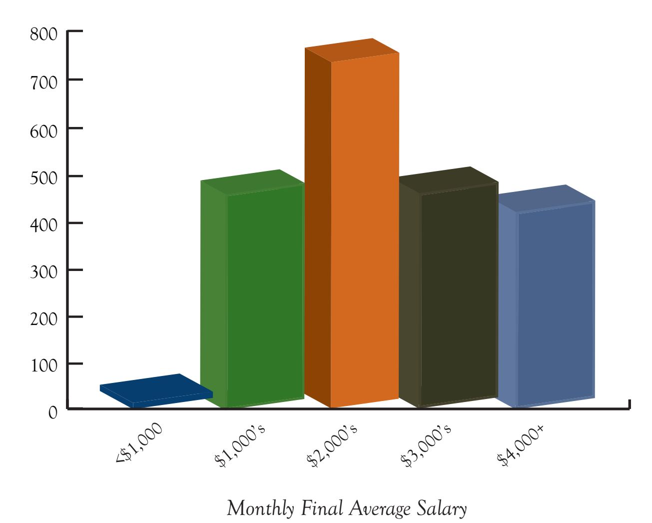
2020-2021 PEERS New Service Retirees by Retirement Plan Option



2020-2021 PEERS New Service Retirees by Single Life Monthly Benefit Amount



2020-2021 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+
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
2011-2012								
Average monthly benefit	$ 607	$ 1,261	$ 1,995	$ 2,980	$ 3,824	$ 4,893	$ 6,071	$ 5,262
Average final average salary	$ 3,946	$ 4,305	$ 4,795	$ 5,317	$ 5,713	$ 6,070	$ 6,506	$ 5,262
Number of retirees	248	265	293	531	723	767	81	18

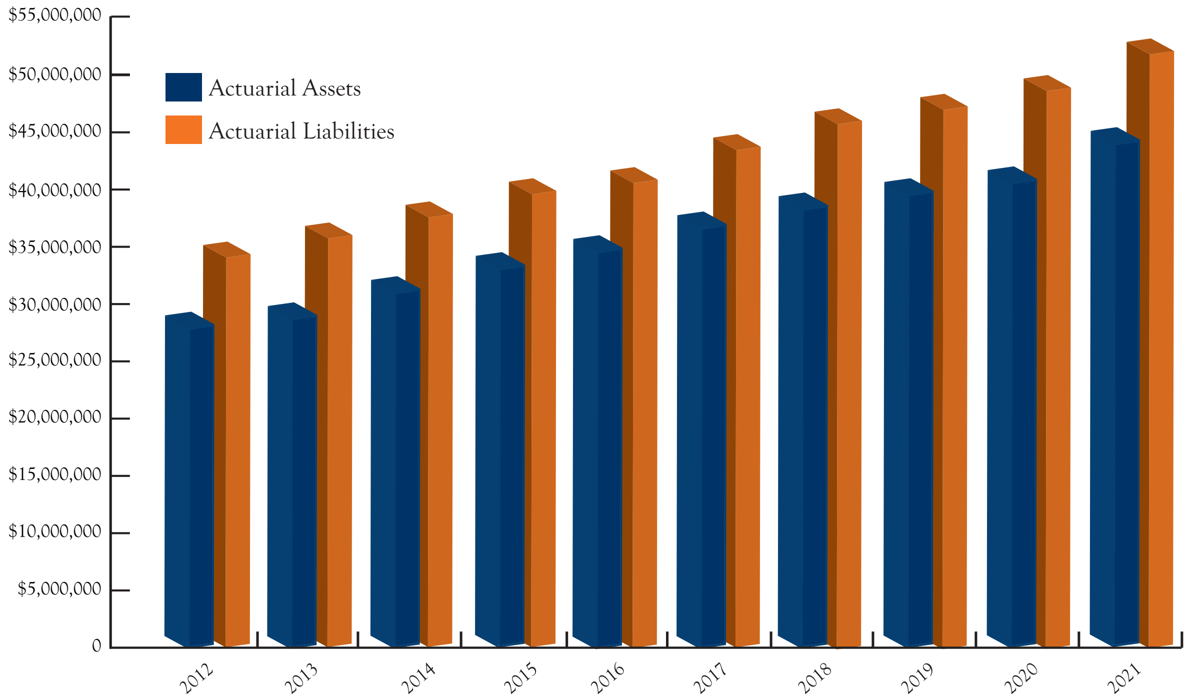
PEERS Schedule of Average Benefit Payments to New Service Retirees

	Years of Service					
	5 - 9.9	10 - 14.9	15 - 19.9	20 - 24.9	25 - 29.9	30+
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
2011-2012						
Average monthly benefit	$ 227	$ 433	$ 705	$ 1,063	$ 1,508	$ 1,957
Average final average salary	$ 2,010	$ 2,257	$ 2,597	$ 2,954	$ 3,502	$ 3,637
Number of retirees	516	371	246	250	184	147

Comparisons of Actuarial Assets and Total Actuarial Liabilities

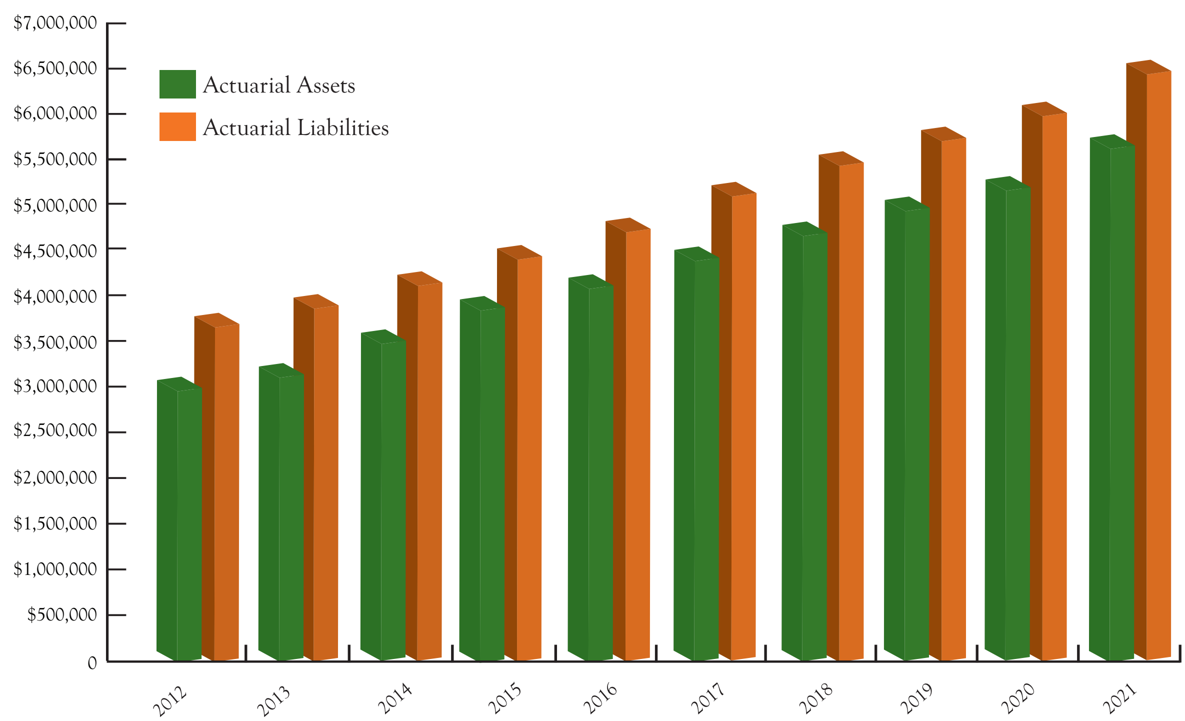
Public School Retirement System of Missouri

Dollar Amounts in Thousands



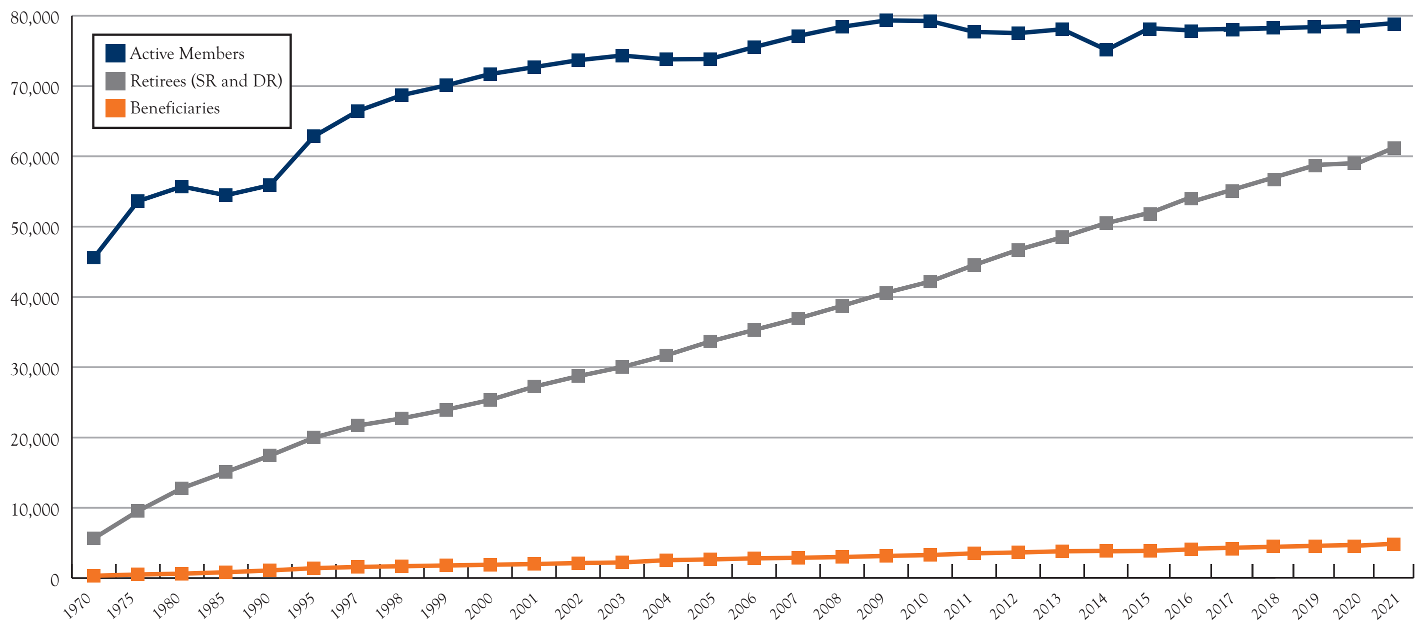
Public Education Employee Retirement System of Missouri

Dollar Amounts in Thousands

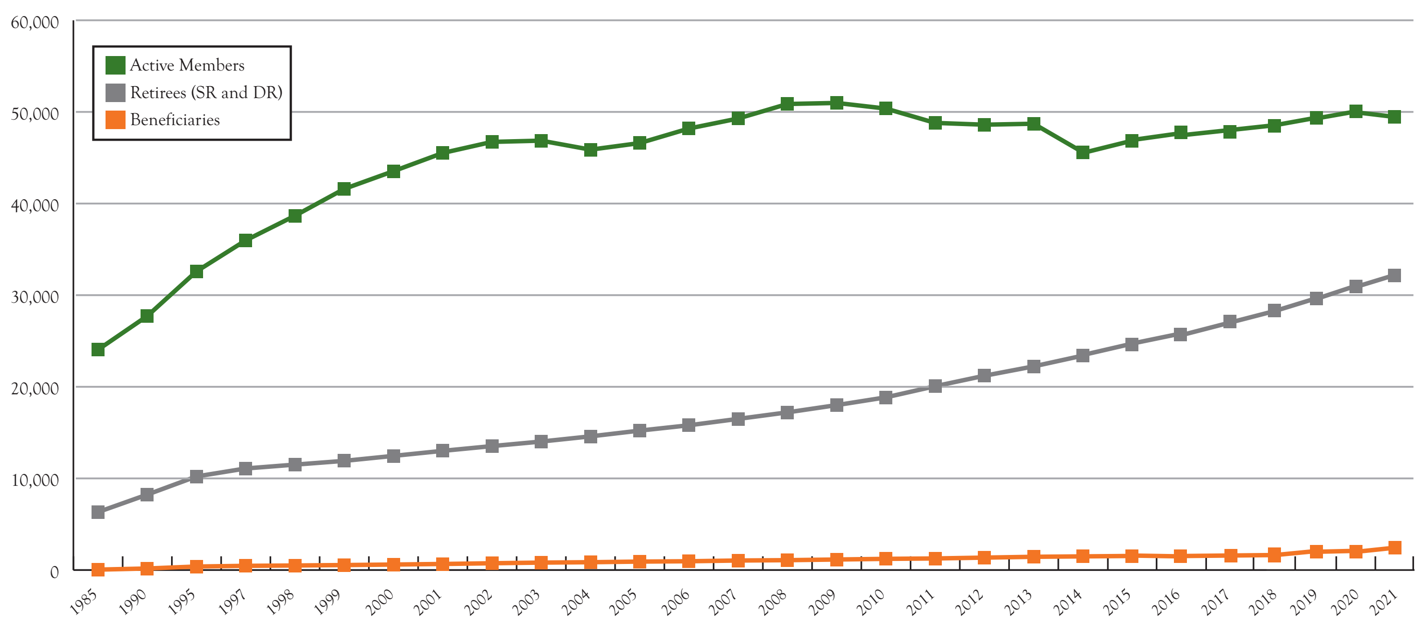


Growth in Membership

Public School Retirement System of Missouri



Public Education Employee Retirement System of Missouri



PSRS Schedule of Covered Employees in the Top 10 Employers

Employer	2021 Covered Employees	2021 Percentage of Total	2020 Covered Employees	2020 Percentage of Total
Springfield R-XII Schools	3,015	4%	2,759	3%
Special School District - St. Louis	2,880	3%	2,873	3%
Rockwood R-VI Schools	1,934	2%	1,911	2%
North Kansas City Schools	1,811	2%	1,807	2%
Columbia Public Schools	1,810	2%	1,774	2%
Ft. Zumwalt R-II Schools	1,725	2%	1,727	2%
Parkway C-2 Schools	1,649	2%	1,685	2%
Francis Howell R-III Schools	1,529	2%	1,522	2%
Wentzville R-IV Schools	1,517	2%	-	-
Lee's Summit R-VII Schools	1,499	2%	1,480	2%
Hazelwood R-I Schools	-	-	1,456	2%
All Others	63,596	77%	63,667	78%
Total - 533 Employers	82,965	100%	82,661	100%

Employer	2019 Covered Employees	2019 Percentage of Total	2018 Covered Employees	2018 Percentage of Total
Special School District - St. Louis	2,932	4%	2,922	4%
Springfield R-XII Schools	2,302	3%	2,205	3%
Rockwood R-VI Schools	1,915	2%	1,916	2%
North Kansas City Schools	1,797	2%	1,758	2%
Columbia Public Schools	1,745	2%	1,737	2%
Ft. Zumwalt R-II Schools	1,750	2%	1,736	2%
Parkway C-2 Schools	1,728	2%	1,733	2%
Francis Howell R-III Schools	1,523	2%	1,522	2%
Lee's Summit R-VII Schools	1,476	2%	1,471	2%
Hazelwood R-I Schools	1,449	2%	1,435	2%
All Others	63,951	77%	64,078	77%
Total - 533 Employers	82,568	100%	82,513	100%

Employer	2017 Covered Employees	2017 Percentage of Total	2016 Covered Employees	2016 Percentage of Total
Special School District - St. Louis	2,914	4%	2,956	4%
Springfield R-XII Schools	2,208	3%	2,208	3%
Rockwood R-VI Schools	1,926	2%	2,036	2%
North Kansas City Schools	1,735	2%	1,723	2%
Columbia Public Schools	1,726	2%	1,844	2%
Parkway C-2 Schools	1,703	2%	1,804	2%
Ft. Zumwalt R-II Schools	1,670	2%	1,611	2%
Francis Howell R-III Schools	1,510	2%	1,549	2%
Hazelwood R-I Schools	1,488	2%	1,559	2%
Lee's Summit R-VII Schools	1,459	2%	1,443	2%
All Others	63,886	77%	64,842	77%
Total - 534 Employers	82,225	100%	83,575	100%

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

Employer	2015 Covered Employees	2015 Percentage of Total	2014 Covered Employees	2014 Percentage of Total
Special School District - St. Louis	2,995	4%	3,082	4%
Springfield R-XII Schools	2,189	3%	2,159	3%
Rockwood R-VI Schools	2,003	2%	1,912	2%
Columbia Public Schools	1,779	2%	1,690	2%
Parkway C-2 Schools	1,769	2%	1,672	2%
North Kansas City Schools	1,713	2%	1,740	2%
Ft. Zumwalt R-II Schools	1,611	2%	1,568	2%
Francis Howell R-III Schools	1,610	2%	1,575	2%
Hazelwood R-I Schools	1,577	2%	1,566	2%
Lee's Summit R-VII Schools	1,415	2%	1,390	2%
All Others	65,940	77%	64,335	77%
Total - 535 Employers	84,601	100%	82,689	100%

Employer	2013 Covered Employees	2013 Percentage of Total	2012 Covered Employees	2012 Percentage of Total
Special School District - St. Louis	3,080	4%	3,039	4%
Springfield R-XII Schools	2,096	3%	2,096	3%
Rockwood R-VI Schools	1,888	2%	1,910	2%
North Kansas City Schools	1,763	2%	1,699	2%
Parkway C-2 Schools	1,714	2%	1,794	2%
Columbia Public Schools	1,649	2%	1,640	2%
Hazelwood R-I Schools	1,600	2%	1,589	2%
Ft. Zumwalt R-II Schools	1,549	2%	1,508	2%
Francis Howell R-III Schools	1,538	2%	1,494	2%
Lee's Summit R-VII Schools	1,360	2%	1,341	2%
All Others	63,377	77%	62,775	77%
Total - 535 Employers during 2013 and 537 Employers during 2012	81,614	100%	80,885	100%

Note: Schedules reflect total members reported at any time during the fiscal year.

PEERS Schedule of Covered Employees in the Top 10 Employers

Employer	2021 Covered Employees	2021 Percentage of Total	2020 Covered Employees	2020 Percentage of Total
Special School District - St. Louis	2,622	5%	2,616	5%
Springfield R-XII Schools	1,607	3%	1,588	3%
North Kansas City Schools	1,478	3%	1,463	3%
Ft. Zumwalt R-II Schools	1,404	2%	1,431	3%
Rockwood R-VI Schools	1,399	2%	1,480	3%
Lee's Summit R-VII Schools	1,333	2%	1,330	2%
Columbia Public Schools	1,187	2%	1,186	2%
Wentzville R-IV Schools	1,181	2%	1,141	2%
Francis Howell R-III Schools	1,118	2%	1,137	2%
Independence Public Schools	1,033	2%	1,100	2%
All Others	42,208	75%	42,097	73%
Total - 530 Employers	56,570	100%	56,569	100%

Employer	2019 Covered Employees	2019 Percentage of Total	2018 Covered Employees	2018 Percentage of Total
Special School District - St. Louis	2,573	5%	2,500	5%
Rockwood R-VI Schools	1,515	3%	1,523	3%
Springfield R-XII Schools	1,505	3%	1,510	3%
North Kansas City Schools	1,479	3%	1,406	3%
Ft. Zumwalt R-II Schools	1,388	2%	1,352	2%
Lee's Summit R-VII Schools	1,355	2%	1,340	2%
Columbia Public Schools	1,182	2%	1,183	2%
Wentzville R-IV Schools	1,107	2%	1,099	2%
Independence Public Schools	1,094	2%	1,083	2%
Parkway C-2 Schools	1,038	2%	1,034	2%
All Others	41,776	74%	41,029	74%
Total - 530 Employers	56,012	100%	55,059	100%

Employer	2017 Covered Employees	2017 Percentage of Total	2016 Covered Employees	2016 Percentage of Total
Special School District - St. Louis	2,504	5%	2,501	5%
Springfield R-XII Schools	1,499	3%	1,540	3%
North Kansas City Schools	1,406	3%	1,397	3%
Rockwood R-VI Schools	1,503	3%	1,319	2%
Lee's Summit R-VII Schools	1,291	2%	1,294	2%
Ft. Zumwalt R-II Schools	1,278	2%	1,228	2%
Columbia Public Schools	1,160	2%	1,126	2%
Independence Public Schools	1,083	2%	1,111	2%
Parkway C-2 Schools	1,054	2%	1,060	2%
Hazelwood R-I Schools	959	2%	964	2%
All Others	40,305	74%	40,351	75%
Total - 530 Employers	54,042	100%	53,891	100%

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

Employer	2015 Covered Employees	2015 Percentage of Total	2014 Covered Employees	2014 Percentage of Total
Special School District - St. Louis	2,496	5%	2,405	5%
Springfield R-XII Schools	1,540	3%	1,480	3%
North Kansas City Schools	1,369	3%	1,296	2%
Lee's Summit R-VII Schools	1,283	2%	1,207	2%
Ft. Zumwalt R-II Schools	1,232	2%	1,180	2%
Rockwood R-VI Schools	1,230	2%	1,186	2%
Independence Public Schools	1,135	2%	1,143	2%
Columbia Public Schools	1,081	2%	1,043	2%
Parkway C-2 Schools	1,054	2%	1,031	2%
Hazelwood R-I Schools	1,004	2%	960	2%
All Others	40,627	75%	39,568	76%
Total - 532 Employers	54,051	100%	52,499	100%

Employer	2013 Covered Employees	2013 Percentage of Total	2012 Covered Employees	2012 Percentage of Total
Special School District - St. Louis	2,386	5%	2,481	5%
Springfield R-XII Schools	1,488	3%	1,478	3%
North Kansas City Schools	1,246	2%	1,216	2%
Rockwood R-VI Schools	1,179	2%	1,222	2%
Lee's Summit R-VII Schools	1,164	2%	1,171	2%
Ft. Zumwalt R-II Schools	1,141	2%	1,131	2%
Independence Public Schools	1,065	2%	1,071	2%
Parkway C-2 Schools	1,041	2%	1,085	2%
Columbia Public Schools	982	2%	945	2%
Hazelwood R-I Schools	961	2%	964	2%
All Others	38,464	76%	38,222	76%
Total - 532 Employers during 2013 and 534 during 2012	51,117	100%	50,986	100%

**If an employer was not in the Top Ten for a year their covered employees are included in "All Others".*

PSRS 75 Years 1946-2021

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