“I love the fact that after leaving covered employment for three-and-a-half years, my money was still there when I returned. I just picked up where I left off, earning retirement service.”

Connie Cook, PEERS Active

Financial Section

Independent Auditors' Report

WILLIAMS KEEPERS LLC
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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, 2020, 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, 2020, 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' 2019 financial statements and, in our report dated November 26, 2019, 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 21-26, 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 20, 2020

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, 2020. 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 *Comprehensive Annual Financial Report* (CAFR).

Financial Highlights

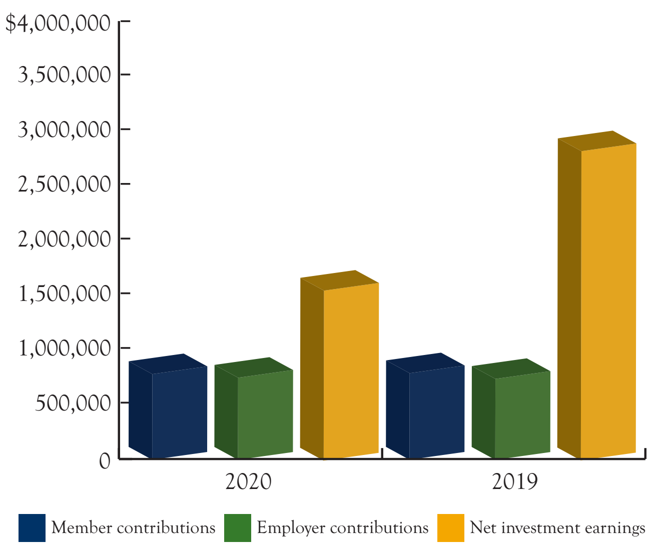
The following highlights are explained in more detail for each System later in this discussion.

- 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 study was completed in June 2016. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the study and effective with the June 30, 2016 valuations. For the June 30, 2017 valuations, the investment rate of return was reduced from 7.75% to 7.6% and the assumption for annual cost-of-living adjustments was updated in accordance with the funding policies amended by the Board of Trustees at their November 3, 2017 meeting. The Board of Trustees further reduced the investment rate of return to 7.5% at their October 29, 2018 meeting. The actuarial assumed rate of return of 7.5% was effective with the June 30, 2018 valuations and fiscal year 2019 investment performance. No additional assumption changes have occurred. The significant actuarial assumptions are detailed in the notes to the financial statements and the notes to the schedules of required supplementary information. The next experience studies are scheduled to occur in fiscal year 2021.
- As of June 30, 2020, PSRS' fiduciary net position as a percentage of the total pension liability decreased to 82.0% from 84.6% for the prior year. PSRS' net pension liability approximated $8.9 billion as of June 30, 2020. As of June 30, 2020, PEERS' fiduciary net position as a percentage of the total pension liability decreased to 84.1% from 86.4% for the prior year. PEERS' net pension liability approximated $970.6 million as of June 30, 2020. The net pension liability is calculated utilizing the market 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, 2020, the pre-funded ratios for funding purposes were 84.0% for PSRS and 86.3% for PEERS.
- The Systems' assets increased through investment earnings by $1.6 billion from the previous year with a total fund performance of 3.9% (3.7% net of all investment expenses and fees). The total plan return, net of all investment expenses and fees, fell short of both the policy benchmark return of 5.0% and the long-term investment goal (actuarially assumed return) of 7.5% as a result of extreme market volatility related to the global COVID-19 pandemic. 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 8.1% (8.0% net of all investment expenses and fees) over the last 30 years.
- The Systems' investment returns for fiscal year 2020 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 less

risk than the policy benchmark (as measured by standard deviation) and less risk than most comparable public funds over all time periods.

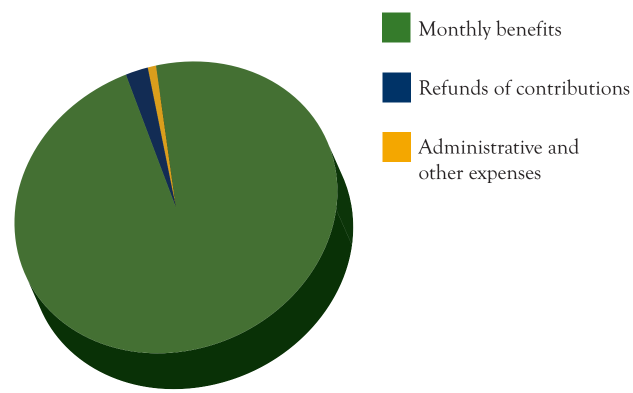
- Cost-sharing, defined-benefit, retirement systems such as the Systems have a long-term perspective on financial activities. The Systems' primary responsibility is to assure that sufficient funds will be available to provide retirement, disability and survivor benefits to current and future members. 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, 2020 and 2019.

Additions by Funding Source (000's)



- 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, 2020.

Deductions from Plan Fiduciary Net Position Fiscal Year 2020



- The combined net position of the Systems increased by $216.8 million. The net position of PSRS increased by $116.5 million while the net position of PEERS increased by $100.3 million.
- Total revenues for fiscal year 2020 were comprised of contribution revenue of $1.74 billion and investment gains of $1.64 billion, compared to contribution revenue of $1.71 billion and investment gains of $2.9 billion for fiscal year 2019.
- Expenses increased 4.0% over the prior year from $3.0 billion to $3.2 billion. Retirement benefits and member refunds increased by $123.1 million from the prior year, while administrative expenses decreased by $1.0 million during the same time period. Administrative expenditures decreased due to lower computer consulting expenses during fiscal year 2020.

Overview of the Financial Statements

The CAFR 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 CAFR. The financial section of the CAFR 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 30 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 2020. 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)

	2020	2019	Change
Cash & investments	$ 40,849,436	$ 41,057,494	$ (208,058)
Receivables	2,346,619	2,152,895	193,724
Other	27,516	24,867	2,649
Total assets	43,223,571	43,235,256	(11,685)
Deferred outflows of resources	120	93	27
Total liabilities	2,513,222	2,641,400	(128,178)
Deferred inflows of resources	164	190	(26)
Fiduciary net position	**$ 40,710,305**	**$ 40,593,759**	**$ 116,546**

Assets

Total assets of PSRS as of June 30, 2020 were $43.2 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets decreased by $11.7 million or 0.03% from the prior year due to decline in cash and investments offset by an increase in receivables and other assets.

Liabilities

Total liabilities as of June 30, 2020, were $2.5 billion and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities decreased by $128.2 million from the prior year. This was due to a decrease in interest payable, and obligations under security lending arrangements.

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, 2020, by $40.7 billion. This was an increase of $116.5 million from the 2019 net position. This increase was a result of investment earnings that totaled $1.5 billion for the year offset by benefit payments and other expenses which exceeded contribution revenue by $1.3 billion.

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

	2020	2019	Change
Additions			
Member contributions	$ 757,917	$ 747,403	$ 10,514
Employer contributions	724,995	712,545	12,450
Investment income	1,457,327	2,595,859	(1,138,532)
Other	192	6	186
Total additions	**2,940,431**	**4,055,813**	**(1,115,382)**
Deductions			
Monthly benefits	2,758,726	2,660,977	97,749
Refunds of contributions	54,506	49,296	5,210
Administrative expenses	10,653	11,282	(629)
Other	-	44	(44)
Total deductions	**2,823,885**	**2,721,599**	**102,286**
Changes in fiduciary net position	**$ 116,546**	**$1,334,214**	**$(1,217,668)**

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 $23.0 million to $1.5 billion. This was a 1.6% increase over the prior year. Retirement contributions were calculated at 14.5% of retirement salary for each member during fiscal year 2020. The employer matched this amount. Contribution rates were unchanged from the prior year. An increased retirement salary base, the addition of new members and an increase in contributions for members working after retirement resulted in the increase in contributions.

The net investment gain was $1.5 billion as compared to a net investment gain of $2.6 billion in 2019. The current year gains are reflective of a 3.7% net return on the Systems' diversified investment portfolio, compared to 6.9% 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 2020 were $2.8 billion, an increase of 3.8% over fiscal year 2019.

Benefit expenses increased by $97.7 million to $2.76 billion. This was a result of an overall increase of 1,523 monthly benefit recipients from the prior year end. There were no changes to the benefit formula during 2020. Refunds of contributions increased by $5.2 million during the current year to a total of $54.5 million.

Administrative expenses decreased by $0.6 million to $10.7 million due to a decrease in computer consulting expense. The cost of administrative items was charged 61% to PSRS and 39% to PEERS, unless the expense was determined to be of direct benefit to only one System. In such instance, the allocation of expense was 100% to the benefited System. As always, we will continue to look for ways to streamline costs when prudent.

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

PEERS is a mandatory cost-sharing multiple employer retirement system for non-certificated employees and certain part-time certificated employees of participating employers. PEERS members were required to contribute 6.86% of their annual covered salary during 2020. 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)

	2020	2019	Change
Cash & investments	$ 5,143,569	$ 5,080,876	$ 62,693
Receivables	293,649	266,717	26,932
Other	7	335	(328)
Total assets	**5,437,225**	**5,347,928**	**89,297**
Deferred outflows of resources	**77**	**59**	**18**
Total liabilities	**318,353**	**329,342**	**(10,989)**
Deferred inflows of resources	**105**	**121**	**(16)**
Fiduciary net position	**$ 5,118,844**	**$ 5,018,524**	**$ 100,320**

Assets

Total assets of PEERS as of June 30, 2020 were $5.4 billion and were mostly comprised of cash, investments, investment sales receivables and contributions due from employers. Total assets increased by $89.3 million or 1.7% from the prior year.

Liabilities

Total liabilities as of June 30, 2020 were $318.4 million and were mostly comprised of payables from the purchase of investments and obligations under security lending arrangements. Total liabilities decreased by $11.0 million. This was due to decreases in interest payable and obligations under security lending arrangements.

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, 2020 by $5.1 billion. This was up from the 2019 net position of $5.0 billion by $100.3 million. This increase was a result of investment earnings that totaled $181.9 million for the year offset by benefit payments and other expenses which exceeded contribution revenue by $81.6 million.

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

	2020	2019	Change
Additions			
Member contributions	$ 131,336	$ 126,609	$ 4,727
Employer contributions	124,545	120,042	4,503
Investment income	181,855	319,773	(137,918)
Total additions	**437,736**	**566,424**	**(128,688)**
Deductions			
Monthly benefits	309,658	291,568	18,090
Refunds of contributions	20,680	18,674	2,006
Administrative expenses	7,077	7,415	(338)
Other	1	9	(8)
Total deductions	**337,416**	**317,666**	**19,750**
Changes in fiduciary net position	**$ 100,320**	**$ 248,758**	**$(148,438)**

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 $9.2 million to $255.9 million. Retirement contributions were calculated at 6.86% of retirement salary for each member during fiscal year 2020. The employer matched this amount. Contribution rates were unchanged from the prior year. Overall contribution revenue increased by 3.7%. The increase in total contributions is attributable to a higher retirement salary base and the addition of new members.

The net investment gain was $181.9 million as compared to a net investment gain of $319.8 million in 2019. The current year gains are reflective of a 3.7% net return on the Systems' diversified investment portfolio, as compared to 6.9% 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 2020 were $337.4 million, an increase of 6.2% over fiscal year 2019.

Benefit expenses increased by $18.1 million to $309.7 million. This was a result of an overall increase of 1,382 monthly benefit recipients from the prior year end. There were no changes to the benefit formula during 2020. Refunds of contributions increased by $2.0 million from the prior year.

Administrative expenses decreased by $0.3 million due to a decrease in computer consulting expense. The cost of administrative items was charged 61% to PSRS and 39% to PEERS, unless the expense was determined to be of direct benefit to only one System. In such instance, the allocation of expense was 100% to the benefited System. As always, we will continue to look for ways to streamline costs when prudent.

Summary

The total net returns of 3.7% for the Systems was slightly under both the long-term investment goal of earning 7.5% and the total plan policy benchmark return of 5.0%. 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 8.0%, net of all fees and expenses.

The actuarial assumed rate of return was 8.0% from 1980 through fiscal year 2016. The Board of Trustees set the actuarial assumed rate of return at 7.75%, effective with the June 30, 2016 actuarial valuations and fiscal year 2017 investment performance measurement. The Board of Trustees considered the current funded status of the Systems, expectations of capital markets and other factors during fiscal year 2017 and 2018. Based on these considerations the Board of Trustees approved reducing the risk profile of the plans by approving a further reduction of the actuarial assumed rate of return to 7.6% as of June 30, 2017 and 7.5% as of June 30, 2018. The actuarial assumed rate of return of 7.5% was effective with the June 30, 2018 valuations and fiscal year 2019 investment performance. No assumption changes occurred during fiscal years 2019 and 2020. Detailed information regarding the Systems' investment portfolio is included in the *Investment Section* of this report.

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. Detailed information regarding the Systems' actuarial assumptions is included in the *Actuarial Section* of this report.

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 2022 contribution rates remain unchanged from the fiscal year 2021 rates and were approved by the Board of Trustees at their October 26, 2020 meeting. The fiscal year 2022 contribution rate for PSRS remains 29.0%. The fiscal year 2022 contribution rate for PEERS remains 13.72%. The fiscal year 2022 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.

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

as of June 30, 2020
with comparative totals for June 30, 2019

			Combined Totals	
	PSRS	PEERS	June 30, 2020	June 30, 2019
ASSETS				
Cash	$ 477,073,139	$ 65,055,037	$ 542,128,176	$ 334,797,286
Receivables				
Contributions	186,415,456	22,793,137	209,208,593	258,663,293
Accrued interest and dividends	80,164,310	10,082,650	90,246,960	99,963,264
Investment sales	2,079,124,234	260,773,218	2,339,897,452	2,060,201,722
Receivable from PEERS for allocated expenses	909,995	-	909,995	754,122
Other	4,939	2	4,941	30,033
Total receivables	2,346,618,934	293,649,007	2,640,267,941	2,419,612,434
Investments, at fair value				
U.S. Treasuries and TIPS	7,427,600,013	934,262,847	8,361,862,860	8,217,184,761
U.S. public equities	10,806,150,721	1,358,181,220	12,164,331,941	13,190,503,728
Non-U.S. public equities	6,106,269,068	767,758,495	6,874,027,563	7,270,096,566
Short term investments	847,870,071	108,604,370	956,474,441	431,747,383
Public debt	1,818,366,904	228,718,918	2,047,085,822	1,934,450,862
Private equity	5,203,924,420	654,620,637	5,858,545,057	5,159,620,661
Private credit	687,963,926	86,533,892	774,497,818	465,318,383
Private real estate	3,487,595,641	438,764,539	3,926,360,180	3,599,494,973
Hedged assets	3,871,363,162	486,571,900	4,357,935,062	5,277,066,528
Total investments	40,257,103,926	5,064,016,818	45,321,120,744	45,545,483,845
Invested securities lending collateral	115,258,679	14,497,536	129,756,215	258,087,676
Prepaid expenses	86,073	7,370	93,443	3,072,548
Capital assets, net of accumulated depreciation	27,430,262	-	27,430,262	22,128,631
Total assets	43,223,571,013	5,437,225,768	48,660,796,781	48,583,182,420
DEFERRED OUTFLOW OF RESOURCES				
Outflows related to other post employment benefit obligations	119,790	76,587	196,377	152,492
LIABILITIES				
Accounts payable	15,289,555	1,856,633	17,146,188	16,563,308
Interest payable	387,549	48,710	436,259	2,061,301
Securities lending collateral	115,220,794	14,492,771	129,713,565	258,074,683
Investment purchases	2,377,841,474	298,312,543	2,676,154,017	2,686,685,281
Payable to PSRS for allocated expenses	-	909,995	909,995	754,122
Accrued medical claims	33,550	21,450	55,000	96,000
Net other post employment benefit obligation	2,519,142	1,610,599	4,129,741	3,885,984
Compensated absences	1,930,222	1,100,704	3,030,926	2,620,573
Total liabilities	2,513,222,286	318,353,405	2,831,575,691	2,970,741,252
DEFERRED INFLOW OF RESOURCES				
Inflows related to other post employment benefit obligations	164,350	105,076	269,426	311,180
NET POSITION - RESTRICTED FOR PENSIONS	$ 40,710,304,167	$ 5,118,843,874	$ 45,829,148,041	$ 45,612,282,480

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, 2020
with comparative totals for the year ended June 30, 2019

			Combined Totals Year Ended	
	PSRS	**PEERS**	**June 30, 2020**	**June 30, 2019**
ADDITIONS				
Contributions				
Employer	$ 724,995,473	$ 124,544,728	$ 849,540,201	$ 832,587,142
Member	757,916,937	131,335,977	889,252,914	874,011,831
Total contributions	1,482,912,410	255,880,705	1,738,793,115	1,706,598,973
Investment income				
From investing activities:				
Net appreciation in fair value of investments	1,423,571,244	177,882,877	1,601,454,121	2,909,560,805
Interest from investments	219,245,591	27,362,065	246,607,656	253,322,972
Interest from bank deposits	155,218	19,561	174,779	370,042
Dividends	196,827,541	24,539,979	221,367,520	258,196,756
Total investment income	1,839,799,594	229,804,482	2,069,604,076	3,421,450,575
Less investment expenses	385,450,713	48,319,863	433,770,576	510,841,605
Net income from investing activities	1,454,348,881	181,484,619	1,635,833,500	2,910,608,970
From security lending activities:				
Security lending gross income	2,938,938	365,473	3,304,411	5,796,576
Net appreciation (depreciation) in fair value of security lending collateral	26,338	3,320	29,658	(2,541)
Less security lending activity expenses:				
Agent fees	569,124	71,586	640,710	962,280
Broker rebates paid (received)	(581,487)	(73,141)	(654,628)	(191,541)
Total security lending expenses	(12,363)	(1,555)	(13,918)	770,739
Net income from security lending activities	2,977,639	370,348	3,347,987	5,023,296
Total net investment income	1,457,326,520	181,854,967	1,639,181,487	2,915,632,266
Other income				
Miscellaneous income	191,770	70	191,840	6,529
Total other income	191,770	70	191,840	6,529
Total additions	2,940,430,700	437,735,742	3,378,166,442	4,622,237,768
DEDUCTIONS				
Monthly benefits	2,758,725,793	309,657,862	3,068,383,655	2,952,546,049
Refunds of contributions	54,506,317	20,679,832	75,186,149	67,969,852
Administrative expenses	10,653,233	7,077,068	17,730,301	18,697,059
Other expenses	55	721	776	53,028
Total deductions	2,823,885,398	337,415,483	3,161,300,881	3,039,265,988
Net increase in net position	116,545,302	100,320,259	216,865,561	1,582,971,780
NET POSITION - RESTRICTED FOR PENSIONS				
Beginning of year	40,593,758,865	5,018,523,615	45,612,282,480	44,029,310,700
End of year	$ 40,710,304,167	$ 5,118,843,874	$ 45,829,148,041	$ 45,612,282,480

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 2020. Employers were required to match the contributions made by employees. The contribution rate is set each year by the PSRS/PEERS 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, 2020:

Retirees and beneficiaries receiving benefits			64,595
Inactive members entitled to, but not yet receiving benefits			9,272
Active members:	Vested	61,016	
	Non-vested	17,832	
Total active members			78,848
Other inactive members and terminated accounts			9,147
Total			161,862

Employers – PSRS had 533 contributing employers during fiscal year 2020.

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 2020. Employers were required to match the contributions made by their employees. The contribution rate is set each year by the PSRS/PEERS 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, 2020:

Retirees and beneficiaries receiving benefits			33,232
Inactive members entitled to, but not yet receiving benefits			6,867
Active members:	Vested	26,981	
	Non-vested	23,198	
Total active members			50,179
Other inactive members and terminated accounts			32,111
Total			122,389

Employers – PEERS had 530 contributing employers during fiscal year 2020.

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 the uncertainty and volatility the COVID-19 pandemic has had on 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, 2020.

Actual results could differ from those estimates. The COVID-19 pandemic has created and may continue to create significant uncertainty in macroeconomic conditions. As a result, many of our estimates and assumptions required increased judgment and carry a higher degree of variability and volatility. As events continue to evolve and additional information becomes available, our actual results could significantly differ from those estimates in future periods.

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, 2019, from which the information was derived. Certain reclassifications have been made to the 2019 totals to conform with the classifications for 2020.

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

	2020
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$ 8,697,930,444
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.	30,515,563,219
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.	1,496,810,504
Net Position – Restricted For Pensions	$ 40,710,304,167

Public Education Employee Retirement System of Missouri

	2020
Designated for Members' Contributions (Member Reserves) – Accumulation of active and terminated member contributions plus interest.	$ 1,142,564,669
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.	3,071,099,312
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.	905,179,893
Net Position – Restricted For Pensions	$ 5,118,843,874

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, 2020, the PSRS carrying amount of deposits at the depository bank was $13,006,480 and the bank balance was $7,633,883. 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 $34,681,405. An additional $5,679,926 was held in overnight repurchase agreements with a book value of $5,679,926. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $5,679,926.

At June 30, 2020, the PEERS carrying amount of deposits at the depository bank was $966,290 and the bank balance was $551,844. 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 $10,318,788. An additional $624,453 was held in overnight repurchase agreements with a book value of $624,453. The overnight repurchase agreements were collateralized with U.S. agency securities held by a third-party institution in the System's name totaling $624,453.

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, 2020.

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 6/30/2020	Fair Value Measurements Level 1	Level 2	Level 3
U.S. Treasuries and TIPS				
U.S. Treasuries	$ 8,361,862,859	$ -	$ 8,361,862,859	$ -
Total U.S. Treasuries and TIPS	8,361,862,859	-	8,361,862,859	-
U.S. public equities				
Equities	5,374,423,530	5,374,423,530	-	-
U.S. Treasuries	175,793,755	-	175,793,755	-
Total U.S. public equities	5,550,217,285	5,374,423,530	175,793,755	-
Non-U.S. public equities				
Equities	4,668,637,133	4,666,509,150	-	2,127,983
Total Non-U.S. public equities	4,668,637,133	4,666,509,150	-	2,127,983
Short term investments				
Short term investment fund	1,417,278,713	-	1,417,278,713	-
Total Short term investments	1,417,278,713	-	1,417,278,713	-
Public debt				
Corporate Bonds	1,987,328,228	-	1,987,328,228	-
Bank Loans	547,335	-	547,335	-
U.S. Treasuries	55,315,759	-	55,315,759	-
Equities	129,072	25,842	-	103,230
Municipal Bonds	7,794,081	-	7,794,081	-
Total Public Debt	2,051,114,475	25,842	2,050,985,403	103,230
Hedged assets				
U.S. Treasuries	416,898,496	-	416,898,496	-
Equities	192,276,409	192,276,409	-	-
Corporate Bonds	105,753,228	-	105,753,228	-
Agency Bonds	10,972,975	-	10,972,975	-
Total Hedged assets	725,901,108	192,276,409	533,624,699	-
Private equity				
Equities	900,894	900,894	-	-
Total Private equity	900,894	900,894	-	-
Total investments by fair value level	**$ 22,775,912,467**	**$ 10,234,135,825**	**$12,539,545,429**	**$ 2,231,213**
Total investments measured at the NAV ***(See detailed schedule on the following page)***	**22,578,657,472**			
Total Investments measured at fair value	**$ 45,354,569,939**			

Investment derivative instruments:	6/30/2020	Level 1	Level 2	Level 3
Equity total return swaps	$ 5,037,220	$ -	$ 5,037,220	$ -
Interest rate swaps	(2,818,540)	-	(2,818,540)	-
Foreign currency forwards	6,792,381	-	6,792,381	-
Total investment derivative instruments	**$ 9,011,061**	**$ -**	**$ 9,011,061**	**$ -**

	6/30/2020	Level 1	Level 2	Level 3
Total invested securities lending collateral	$ 129,756,216	$ -	$ 129,756,216	$ -

Investments Measured at the NAV	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Public Equity Investments				
Passive U.S. Equity Funds	$ 4,560,045,716	$ -	Daily	1 day
Active U.S. Equity Funds	286,012,428	-	Quarterly	45 days
Passive Non-U.S. Equity Fund	342,138,914	-	Daily	2 days
Active Non-U.S. Equity Funds	1,822,101,826	-	Monthly	15 - 30 days
Total Public Equity Investments	7,010,298,884	-		
Hedge Fund Investments				
Asset Allocation/Global Macro	524,919,697	-	Monthly	5 days
Distressed Debt/Credit	681,991,547	-	Quarterly, semi-annual	65 - 90 days
Diversified Beta	240,787,566	-	Quarterly	30 days
Equity Focused	1,482,121,937	-	Monthly, quarterly	5 - 60 days
Multi-Strategy	2,080,035,681	-	Monthly, quarterly	15 - 120 days
Total Hedge Investments	5,009,856,428	-		
Private Risk Investments				
Private Equity	5,857,644,161	4,021,110,289	Not eligible	N/A
Private Credit	774,497,818	1,907,307,362	Not eligible	N/A
Private Real Estate - closed end funds	1,054,996,037	1,183,184,810	Not eligible	N/A
Private Real Estate - open end funds	2,871,364,144	-	Quarterly	15 - 180 days
Total Private Risk Investments	10,558,502,160	7,111,602,461		
Total investments measured at the NAV	$ 22,578,657,472	$ 7,111,602,461		

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

Hedged Assets

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

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

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

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

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

Multi-Strategy includes investments in nine 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, 2020, the money-weighted rate of return, net of all investment expenses and fees, was 3.7%. 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, 2020 net of all investment expenses and fees, was also 3.7%.

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, 2020, 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, 2020	< 1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
U.S. treasuries	$ 9,028,768,367	$ 1,208,422,250	$ 3,797,233,773	$ 2,266,714,131	$ 1,756,398,213
Agencies	12,072,927	1,099,952	4,999,372	-	5,973,603
Corporate bonds	2,093,628,785	55,080,606	827,105,525	835,687,969	375,754,685
Repurchase agreements	53,725,818	53,725,818	-	-	-
Certificate of deposit	56,032,948	56,032,948	-	-	-
Derivatives	(3,038,973)	(220,433)	-	-	(2,818,540)
Municipals	7,794,080	-	7,794,080	-	-
Bank deposits	1,417,278,713	1,417,278,713	-	-	-
Commingled Funds (see note)					
Bridgewater STIF II	6,951,030	6,951,030	-	-	-
Bridgewater US IL Bond Fund	3,555,170	-	-	3,555,170	-
Bridgewater International Bond Fund	4,382,693	-	-	-	4,382,693
Currency	18,402,334	18,402,334	-	-	-
Total	$12,699,553,892	$ 2,816,773,218	$ 4,637,132,750	$ 3,105,957,270	$ 2,139,690,654
Percentage of Total Fixed Income	100%	21%	37%	25%	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, 2020	< 1 year to maturity	1 to 5 years to maturity	6 to 10 years to maturity	Over 10 years to maturity
PSRS - Agencies	$ 40,361,330	$ -	$ 1,277,676	$ 10,093,693	$ 28,989,961
PEERS - Agencies	$ 10,943,241	$ -	$ 5,431,566	$ 2,554,084	$ 2,957,591

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, 2020 are presented in the following table.

Security Type	Fair Value at June 30, 2020	%	FDIC Insured	AAA	AA	A	BBB	BB	B	CCC	Not Rated
U.S. treasuries	$ 9,028,768,367	71%	$ -	$ 9,028,768,367	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Agencies	12,072,927	0%	-	12,072,927	-	-	-	-	-	-	-
Corporate bonds	2,093,628,785	17%	-	74,765,767	36,798,211	838,275,618	1,008,893,761	78,996,085	38,830,877	4,866,362	12,202,104
Repurchase agreements	53,725,818	0%	-	-	-	53,725,818	-	-	-	-	-
Certificates of deposit	56,032,948	1%	-	9,999,200	-	46,033,748	-	-	-	-	-
Derivatives	(3,038,973)	0%	-	-	-	-	-	-	-	-	(3,038,973)
Municipals	7,794,080	0%	-	7,326,590	467,490	-	-	-	-	-	-
Bank Deposits	1,417,278,713	11%	1,417,278,713	-	-	-	-	-	-	-	-
Commingled Funds (see note)											
Bridgewater STIF II	6,951,030	0%	-	6,951,030	-	-	-	-	-	-	-
Bridgewater US IL Bond Fund	3,555,170	0%	-	3,555,170	-	-	-	-	-	-	-
Bridgewater International Bond Fund	4,382,693	0%	-	4,382,693	-	-	-	-	-	-	-
Currency	18,402,334	0%	-	-	-	-	-	-	-	-	18,402,334
Total	$ 12,699,553,892	100%	$ 1,417,278,713	$ 9,147,821,744	$37,265,701	$ 938,035,184	$1,008,893,761	$ 78,996,085	$ 38,830,877	$ 4,866,362	$27,565,465
Percentage of Total Fixed Income	100.00%		11%	72%	0%	8%	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, 2020 is presented in the following table.

Currency	Equity	Currency/Short Term	Total
Australian Dollar	$ 64,715,472	$ 566,859	$ 65,282,331
Brazilian Real	52,779,443	302,185	53,081,628
Canadian Dollar	134,679,736	(2,034,717)	132,645,019
Chilean Peso	5,198,347	1,778,398	6,976,745
Colombian Peso	1,180,691	(278,065)	902,626
Czech Koruna	8,677,323	188,632	8,865,955
Danish Krone	64,143,630	181,915	64,325,545
Egyptian Pound	11,142,034	270,172	11,412,206
Euro Currency	1,206,476,226	21,475,650	1,227,951,876
Hong Kong Dollar	329,552,208	(4,931,108)	324,621,100
Hungarian Forint	7,246,797	85,962	7,332,759
Indian Rupee	98,964,964	378,049	99,343,013
Indonesian Rupiah	5,710,124	(774,109)	4,936,015
Israeli Shekel	9,027,262	94,075	9,121,337
Japanese Yen	501,139,828	2,813,331	503,953,159
Malaysian Ringgit	17,870,762	157,036	18,027,798
Mexican Peso	8,055,333	(111,616)	7,943,717
New Taiwan Dollar	91,490,505	503,730	91,994,235
New Turkish Lira	22,289,358	27,880	22,317,238
New Zealand Dollar	6,406,374	721,059	7,127,433
Norwegian Krone	9,560,792	(349,989)	9,210,803
Pakistan Rupee	132,619	3,520	136,139
Peruvian Nuevo Sol	155,743	-	155,743
Philippine Peso	10,400,213	306,414	10,706,627
Polish Zloty	7,945,231	(21,760)	7,923,471
Pound Sterling	285,232,734	33,983	285,266,717
Qatari Rial	14,342,592	39,562	14,382,154
Russian Ruble	74,977,654	2,795,991	77,773,645
Saudi Riyal	-	726	726
Singapore Dollar	26,206,772	258,641	26,465,413
South African Rand	44,198,810	3,097,221	47,296,031
South Korean Won	123,201,224	644,191	123,845,415
Swedish Krona	54,053,577	(390,198)	53,663,379
Swiss Franc	332,347,695	391,334	332,739,029
Thailand Baht	27,421,206	98,816	27,520,022
UAE Dirham	5,902,512	11,319	5,913,831
United Kingdom Pound	9,380,337	273,880	9,654,217
Yuan Renminbi	65,942,308	807,799	66,750,107
Total	**$ 3,738,148,436**	**$ 29,416,768**	**$ 3,767,565,204**

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, 2020, classified by type are as follows:

	Fair Value at June 30, 2020		
Investment Derivatives	**Classification**	**Amount**	**Notional**
Swaps			
Pay-fixed interest rate swaps	Investments, at fair value	$ (2,818,540)	$ 10,000,000
Total return swaps - equity	Investments, at fair value	5,037,220	1,347,550,924
Total swaps		**2,218,680**	**1,357,550,924**
Futures			
Equity futures long	Investments, at fair value	-	74,249,715
Equity futures short	Investments, at fair value	-	32,799,227
Interest rate futures short	Investments, at fair value	-	79,229,719
Commodity futures long	Investments, at fair value	-	6,671,800
Total futures		**-**	**192,950,461**
Foreign currency forwards net receivable/payable	Investment Sales and Purchases	6,792,381	-
Total Investment Derivatives		**$ 9,011,061**	**$ 1,550,501,385**

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 market 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 $80.8 million were recognized for the fiscal year ended June 30, 2020.

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 $69.4 million during the fiscal year ended June 30, 2020.

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, 2020.

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 gains on such contracts of $48.5 million during the fiscal year ended June 30, 2020.

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, 2020 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 41.

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	$ -	$ 547,951	$ 547,951
A	1,962,246	6,244,430	8,206,676
Total subject to credit risk	**$ 1,962,246**	**$ 6,792,381**	**$ 8,754,627**

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, 2020 was $125,864,545. On June 30, 2020 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, 2020, 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, 2020, the cost basis of the invested cash collateral totaled $129,713,565 and the estimated fair value totaled $129,756,215.

The Systems' recognized net appreciation of $29,658 for the year ended June 30, 2020 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, 2020 was 20 days and an average final maturity of approximately 37 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, 2020 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 ((b-a)/c)
PSRS	$ 49,641,020,407	$ 40,710,304,167	$ 8,930,716,240	82.0%	$ 4,919,286,103	181.5%
PEERS	$ 6,089,401,204	$ 5,118,843,874	$ 970,557,330	84.1%	$ 1,732,243,294	56.0%

Actuarial Assumptions -Actuarial valuations of the Systems involve estimates of the reported amount and assumptions about probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The Board of Trustees adopts actuarial assumptions, each of which individually represents a reasonable long-term estimate of anticipated experience for the Systems, derived from experience studies conducted every fifth year. The most recent comprehensive experience studies were completed in June 2016. All economic and demographic assumptions were reviewed and updated, where appropriate, based on the results of the study and effective with the June 30, 2016 valuation. The next experience studies are scheduled for fiscal year 2021. For the June 30, 2018 valuations, the investment rate of return was reduced from 7.6% to 7.5% and was updated in accordance with the funding policies amended by the Board of Trustees at their October 2018 meeting. No additional assumption changes have occurred.

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, 2020. A summary of the significant actuarial assumptions as of June 30, 2020 are shown on the following page.

Measurement Date	**June 30, 2020**
Valuation Date	**June 30, 2020**
Actuarial Cost Method	Entry Age Normal
Investment Rate of Return	7.50%
Inflation	2.25%
Total Payroll Growth	
PSRS	2.75% per annum, consisting of 2.25% inflation, 0.25% additional inflation due to the inclusion of health care costs in pensionable earnings, and 0.25% of real wage growth.
PEERS	3.25% per annum, consisting of 2.25% inflation, 0.50% additional inflation due to the inclusion of health care costs in pensionable earnings, and 0.50% of real wage growth.
Individual Salary Growth	
PSRS	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	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	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	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.
Mortality Assumption	
Actives	
PSRS	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	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	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.

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 — 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.

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 — RP 2006 Disabled Retiree Mortality Table, with static projections using the 2014 SSA Improvement Scale to 2028.

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 7.5% is presented as well as what the employers' net pension liability would be using a discount rate that is 1.0% lower (6.5%) or 1.0% higher (8.5%) than the current rate.

		1% Decrease (6.5%)	Current Rate (7.5%)	1% Increase (8.5%)
PSRS	Net Pension Liability	$ 15,154,947,371	$ 8,930,716,240	$ 3,754,469,990
PEERS	Net Pension Liability	$ 1,710,402,567	$ 970,557,330	$ 349,781,807

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, 2020 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 7.5% as of June 30, 2020 and is consistent with the long-term expected geometric return on plan investments. The actuarial assumed rate of return was 8.0% from 1980 through fiscal year 2016. The Board of Trustees adopted a new actuarial assumed rate of return of 7.75% effective with the June 30, 2016 valuation based on the actuarial experience studies and asset-liability study conducted during the 2016 fiscal year. The Board of Trustees further reduced the assumed rate of return to 7.6% effective with the June 30, 2017 valuation and then again with the June 30, 2018 valuation to 7.5%. 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 2020, 2019 and 2018. 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 $94,103 for the 2020 fiscal year, $84,515 for the 2019 fiscal year and $67,424 for the 2018 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 2020, 2019 and 2018. 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 $829,231 for the 2020 fiscal year, $794,871 for the 2019 fiscal year and $756,101 for the 2018 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. 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 $122,064 and employer-paid contributions totaled $71,500 for the 2020 fiscal year. Employee contributions totaled $452,791 for the 2020 fiscal year. Employer-matching contributions totaled $118,410 and employer-paid contributions totaled $68,250 for the 2019 fiscal year. Employee contributions totaled $462,727 for the 2019 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, 2020, employees had a vested interest under the plan of $153,486 and disbursements of $60,298 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 $56,000 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 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	16
Active employees	135
Total	151

OPEB Liability – The components of the net OPEB Liability of the SRHP as of June 30, 2020 are as follows:

Total OPEB Liability - Beginning of the year	$ 3,885,984
Service cost	163,813
Interest Costs	98,507
Experience (gains) losses	12,551
Assumption changes	60,354
Plan amendments	-
Benefit payments	(91,468)
Total OPEB Liability - End of year	$ 4,129,741
OPEB Plan Fiduciary Net Position	$ -
Net OPEB Liability	$ 4,129,741

OPEB Expense – The components of the OPEB expense for the year ended June 30, 2020 are as follows:

Service Cost	$ 163,813
Plan Amendments	-
Interest Costs	98,507
Recognition of deferred (inflows) outflows of resources related to:	
Liability experiences (gains) losses	21,928
Assumption changes (gains) losses	(34,663)
Total Recognition of deferred (inflows) outflows of resources	(12,735)
Total collective OPEB expense recognized	$ 249,585

Actuarial Method and Assumptions - The total OPEB liability was determined by an actuarial valuation as of June 30, 2020. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members) and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members to that point. The actuarial assumptions and methods used in the valuation are based on prior plan experience and industry trends. The nature of the plan design and overall plan size does not allow for full scale periodic experience studies; therefore, such a study has not been conducted. Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality and healthcare cost trends. Amounts determined regarding the total OPEB liability and expense are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future.

In the June 30, 2020 actuarial valuation, the following actuarial assumptions and methods were used:

Measurement date	June 30, 2020
Valuation date	June 30, 2020
Actuarial cost method	Entry Age Normal
Actuarial value of assets	No Assets (pay-as-you-go)
Amortization method	Level Percent Open
Discount rate	2.46% per year effective June 30, 2019 1.81% per year effective June 30, 2020
Wage inflation	3.5% per year for June 30, 2015 and prior years 3.25% per year effective June 30, 2016
Healthcare trend rate	6.5% in fiscal year 2020, decreasing by one-half percentage point per year to an ultimate of 4.5% in fiscal year 2024 and after
Mortality	
Active members	Based on 75% of the RP-2006 Mortality Tables with static projecting to 2028 using the 2014 Improvement Scale.
Non-disabled retirees and beneficiaries	Based on the RP-2006 Mortality Tables with plan-specific experience adjustments and static projection to 2028 using the 2014 SSA Improvement Scale
Disabled retirees	Based on the RP-2014 Disabled Retiree Mortality Table, adjusted to 2006, with static projection to 2028 using the 2014 SSA Improvement Scale

Discount Rate - GASB Statement No. 75 requires plans not administered through a trust to utilize the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with 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, 2020 and 2019 valuations. The June 30, 2020 rate was 1.81% and the June 30, 2019 rate utilized was 2.46%. 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, 2020, 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	$ 196,377	$ -
Changes of assumptions	-	269,426
Total	$ 196,377	$ 269,426

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

Year Ending June 30:	
2021	$ (12,735)
2022	(12,735)
2023	(12,735)
2024	(12,735)
2025	(12,735)
Thereafter	(9,374)
	$ $(73,049)

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 1.81% is presented as well as what the net OPEB liability would be using a discount rate that is 1.0% lower (0.81%) or 1.0% higher (2.81%) than the current rate.

Discount Rate Sensitivity			
	1% Decrease (0.81%)	Current Rate (1.81%)	1% Increase (2.81%)
Net OPEB Liability	$ 4,592,759	$ 4,129,740	$ 3,707,974

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 6.50% is presented as well as what the net OPEB liability would be using a healthcare trend rate that is 1.0% lower (5.50%) or 1.0% higher (7.50%) than the current rate.

Trend Rate Sensitivity			
	1% Decrease (5.50%)	Current Rate (6.50%)	1% Increase (7.50%)
Net OPEB Liability	$ 3,574,706	$ 4,129,740	$ 4,792,819

Post-Employment Health Plan

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 $71,184 for seven employees during 2020.

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, 2020 totaled $2,676,154,017.

Total unfunded capital commitments to private real estate, private equity and other alternative investments totaled approximately $7.1 billion as of June 30, 2020. The unfunded commitments are not recorded in the Statements of Fiduciary Net Position.

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

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

Required Supplementary Information

Schedules of Changes in the Employers' Net Pension Liability

Public School Retirement System of Missouri

Year Ended:	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017
Total pension liability				
Service cost	$ 845,283,640	$ 830,084,321	$ 792,276,388	$ 740,176,751
Interest cost	3,559,151,521	3,466,455,926	3,346,220,624	3,198,060,384
Difference between actual and expected experience	75,988,120	(314,439,382)	137,516,335	60,942,067
Assumption changes	-	-	531,202,248	1,279,805,826
Plan amendments	-	-	-	-
Benefit payments	(2,813,232,110)	(2,710,273,502)	(2,606,985,013)	(2,521,832,399)
Net change in total pension liability	1,667,191,171	1,271,827,363	2,200,230,582	2,757,152,629
Total pension liability - beginning of year	$ 47,973,829,236	$ 46,702,001,873	$ 44,501,771,291	$ 41,744,618,662
Total pension liability - end of year (a)	$ 49,641,020,407	$ 47,973,829,236	$ 46,702,001,873	$ 44,501,771,291
Plan Fiduciary Net Position				
Employer contributions	$ 724,995,473	$ 712,545,096	$ 696,970,398	$ 684,857,718
Member contributions	757,916,937	747,402,726	726,996,161	719,625,373
Net investment return	1,457,518,290	2,595,865,535	3,173,735,918	4,104,123,251
Benefit payments, including refunds of member contributions	(2,813,232,110)	(2,710,273,502)	(2,606,985,013)	(2,521,832,399)
Administrative and other expenses	(10,653,288)	(11,326,398)	(11,418,119)	(10,497,712)
Net change in plan fiduciary net position	116,545,302	1,334,213,457	1,979,299,345	2,976,276,231
Plan fiduciary net position - beginning of year	$ 40,593,758,865	$ 39,259,545,408	$ 37,280,246,063	$ 34,303,969,832
Plan fiduciary net position - end of year (b)	**$ 40,710,304,167**	**$ 40,593,758,865**	**$ 39,259,545,408**	**$ 37,280,246,063**
Net pension liability - end of year (a-b)	$ 8,930,716,240	$ 7,380,070,371	$ 7,442,456,465	$ 7,221,525,228

Public Education Employee Retirement System of Missouri

Year Ended:	June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017
Total pension liability				
Service cost	$ 173,676,697	$ 170,543,513	$ 161,028,014	$ 150,975,958
Interest cost	436,863,559	417,341,777	397,675,858	374,497,203
Difference between actual and expected experience	(286,057)	(10,635,802)	117,686	3,076,923
Assumption changes	-	-	61,921,295	140,420,925
Plan amendments	-	-	-	-
Benefit payments	(330,337,694)	(310,242,399)	(287,634,108)	(269,268,101)
Net change in total pension liability	279,916,505	267,007,089	333,108,745	399,702,908
Total pension liability - beginning of year	$ 5,809,484,699	$ 5,542,477,610	$ 5,209,368,865	$ 4,809,665,957
Total pension liability - end of year (a)	$ 6,089,401,204	$ 5,809,484,699	$ 5,542,477,610	$ 5,209,368,865
Plan Fiduciary Net Position				
Employer contributions	$ 124,544,728	$ 120,042,046	$ 115,103,143	$ 111,239,585
Member contributions	131,335,977	126,609,105	121,467,850	118,446,790
Net investment return	181,855,037	319,773,260	381,523,965	485,046,867
Benefit payments, including refunds of member contributions	(330,337,694)	(310,242,399)	(287,634,108)	(269,268,101)
Administrative and other expenses	(7,077,789)	(7,423,689)	(7,113,566)	(6,377,808)
Net change in plan fiduciary net position	100,320,259	248,758,323	323,347,284	439,087,333
Plan fiduciary net position - beginning of year	$ 5,018,523,615	$ 4,769,765,292	$ 4,446,418,008	$ 4,007,330,675
Plan fiduciary net position - end of year (b)	$ 5,118,843,874	$ 5,018,523,615	$ 4,769,765,292	$ 4,446,418,008
Net pension liability - end of year (a-b)	$ 970,557,330	$ 790,961,084	$ 772,712,318	$ 762,950,857

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

June 30, 2016	June 30, 2015	June 30, 2014
$ 842,548,463	$ 836,085,151	$ 849,712,130
3,263,288,365	3,019,050,250	2,885,182,982
(641,098,601)	598,417,056	226,591,816
100,247,551	-	-
-	-	-
(2,430,906,732)	(2,326,196,773)	(2,236,468,407)
1,134,079,046	2,127,355,684	1,725,018,521
$ 40,610,539,616	$ 38,483,183,932	$ 36,758,165,411
$ 41,744,618,662	$ 40,610,539,616	$ 38,483,183,932
$ 670,794,045	$ 656,924,899	$ 643,989,869
704,785,734	689,187,215	679,390,918
533,180,245	1,447,169,205	4,927,198,588
(2,430,906,732)	(2,326,196,773)	(2,236,468,407)
(11,562,965)	(10,013,601)	(8,919,201)
(533,709,673)	457,070,945	4,005,191,767
$ 34,837,679,505	$ 34,380,608,560	$ 30,375,416,793
$ 34,303,969,832	**$ 34,837,679,505**	**$ 34,380,608,560**
$ 7,440,648,830	$ 5,772,860,111	$ 4,102,575,372

June 30, 2016	June 30, 2015	June 30, 2014
$ 161,391,660	$ 156,599,641	$ 159,672,364
372,184,628	333,780,285	315,131,402
(51,257,557)	45,518,402	(14,308,876)
65,420,724	-	-
-	-	-
(250,390,477)	(235,070,181)	(216,624,810)
297,348,978	300,828,147	243,870,080
$ 4,512,316,979	$ 4,211,488,832	$ 3,967,618,752
$ 4,809,665,957	$ 4,512,316,979	$ 4,211,488,832
$ 106,717,021	$ 103,624,310	$ 100,699,735
114,257,497	110,443,660	106,420,656
60,317,387	163,719,526	544,154,941
(250,390,478)	(235,070,010)	(216,624,810)
(6,981,573)	(5,629,551)	(4,840,432)
23,919,854	137,087,935	529,810,090
$ 3,983,410,821	$ 3,846,322,886	$ 3,316,512,796
$ 4,007,330,675	$ 3,983,410,821	$ 3,846,322,886
$ 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 ((b-a)/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%

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 ((b-a)/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%

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
2011	$ 684,366,766	$ 594,732,137	$ (89,634,629)	$ 4,248,086,693	14.00%
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%

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
2011	$ 90,816,155	$ 90,816,155	$ -	$ 1,369,776,094	6.63%
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%

[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:	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of all investment fees and expenses	3.7%	6.9%	8.7%	12.3%	1.6%	4.3%	16.7%
Time-weighted rate of return, net of all investment fees and expenses	3.7%	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 in benefit terms:

PSRS:	The 25-and-Out and 2.55% provisions were extended in 2007 through 2013. In 2013 the state legislature provided a permanent extension of the 25-and Out provision and extended the 2.55% provision to 2014.
PEERS:	The 25-and-Out provision was extended in 2007 through 2013. In 2013 the state legislature provided a permanent extension of the 25-and- Out provision.
Changes of assumptions:	In 2011 and 2016 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, minor revisions were made to other actuarially assumptions including but not limited to, retirement rates, withdraw rates, etc. The 2016 assumption changes were a result of an actuarial experience study conducted during the 2016 fiscal year. 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. For fiscal year 2018, the investment rate of return was further reduced to 7.5%. There were no assumption changes made during fiscal years 2019 and 2020.
Actuarially 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	21.7 years
PEERS	22.0 years
Asset valuation method	5-year smoothing of actual returns above or below expected returns
Measurement Date	June 30, 2020
Valuation Date	June 30, 2020
Investment Rate of Return	7.50%
Inflation	2.25%
Total Payroll Growth	
PSRS	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	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	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	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	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	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, 2020**

Valuation Date **June 30, 2020**

Mortality Assumption

Actives:

PSRS — 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 — 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 — 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.

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 — 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.

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

Public School Retirement System of Missouri and
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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, 2020	June 30, 2019	June 30, 2018
Total OPEB Liability - beginning of the year	$ 3,885,983	$ 3,788,863	$ 2,050,100
Remeasurement of June 30, 2017 OPEB liability	-	-	1,479,740
Service cost	163,813	151,794	152,625
Interest cost	98,507	132,375	116,484
Experience (gains) losses	12,551	74,147	110,476
Assumption changes	60,354	(259,345)	(104,653)
Plan amendments	-	-	-
Benefit payments	(91,468)	(1,850)	(15,909)
Net change in total OPEB liability	$ 4,129,740	$ 3,885,984	$ 3,788,863
OPEB Plan Fiduciary Net Position	$ -	$ -	$ -
Net OPEB Liability - end of the year	$ 4,129,740	$ 3,885,984	$ 3,788,863
Covered Payroll	$ 12,645,475	$ 12,025,626	$ 10,742,062
Employer's Net OPEB Liability as a Percentage of Coverage Payroll	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, 2020

	PSRS	PEERS	Combined Totals
Personnel services	**$ 6,858,105**	**$ 4,568,830**	**$ 11,426,935**
Professional services			
Actuarial services	214,242	195,453	409,695
Legal services	76,034	80,528	156,562
Financial audit services	56,700	36,251	92,951
Other consultants	83,678	53,453	137,131
Technology consulting	145,346	92,926	238,272
Legislative consulting	29,738	19,013	48,751
Insurance consulting	3,355	2,145	5,500
Total professional services	609,093	479,769	1,088,862
Communications			
Information and publicity	198,050	138,164	336,214
Postage	307,165	207,878	515,043
Member education	15,458	9,442	24,900
Telephone	60,124	38,322	98,446
Total communications	580,797	393,806	974,603
Miscellaneous			
Building and utilities	123,100	78,706	201,806
Board of Trustees Election	87,667	56,050	143,717
Insurance	84,127	53,786	137,913
Office	918,722	587,074	1,505,796
Staff development	154,434	97,154	251,588
Miscellaneous	204,897	101,903	306,800
Total miscellaneous	1,572,947	974,673	2,547,620
Depreciation expense	1,032,291	659,990	1,692,281
Total administrative expenses	$ 10,653,233	$ 7,077,068	$ 17,730,301

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

Schedules of Professional Services

for the year ended June 30, 2020

	PSRS	PEERS	Combined Totals
Actuarial services	$ 214,242	$ 195,453	$ 409,695
Legal expenses	76,034	80,528	156,562
Financial audit services	56,700	36,251	92,951
Other consulting	83,678	53,453	137,131
Technology consulting	145,346	92,926	238,272
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Insurance consulting	3,355	2,145	5,500
Total professional services	$ 609,093	$ 479,769	$ 1,088,862

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

Schedules of Investment Expenses

for the year ended June 30, 2020

	PSRS	PEERS	Combined Totals
Investment management expenses			
U.S. Treasuries and TIPS	$ 4,532,630	$ 560,213	$ 5,092,843
U.S. public equities	70,656,794	8,853,453	79,510,247
Non-U.S. public equities	25,330,728	3,135,748	28,466,476
Public debt	1,504,965	186,006	1,690,971
Private equity	153,168,820	19,228,689	172,397,509
Private credit	12,354,456	1,553,023	13,907,479
Private real estate	34,364,717	4,322,484	38,687,201
Hedged assets	71,665,770	9,013,383	80,679,153
Total investment management expenses	373,578,880	46,853,001	420,431,881
Investment consultant fees	5,027,669	621,398	5,649,067
Custodial bank fees	1,511,274	186,786	1,698,060
Investment staff expenses	5,507,989	680,501	6,188,490
Commission recapture income	(175,099)	(21,821)	(196,920)
Total investment expenses	$ 385,450,713	$ 48,319,863	$ 433,770,576
Security lending expenses			
Agent fees	$ 569,124	$ 71,586	$ 640,710
Broker rebates	(581,487)	(73,141)	(654,628)
Total security lending expenses	$ (12,363)	$ (1,555)	$ (13,918)