

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Fiscal Year Ended June 30, 2019

**Teachers' Retirement System
of the State of Illinois**

a component unit of the State of Illinois

FISCAL YEAR 2019 HIGHLIGHTS

As of June 30, 2019

Active contributing members	163,027
Inactive noncontributing members	136,178
Benefit recipients*	124,299
Total membership	423,504

Investment return

Total fund investment return, net of fees	5.2%
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Actuarial information

Actuarial accrued liability (AAL)	\$131,456,968,953
Less actuarial value of assets (AVA)	53,391,192,733
Unfunded actuarial accrued liability, AVA basis (UAAL)	\$78,065,776,220
Funded ratio (AVA/AAL)	40.6%
Less fair value of assets (FVA)	53,262,789,267
Unfunded actuarial accrued liability, FVA basis (UAAL)	\$78,194,179,586
Funded ratio (FVA/AAL)	40.5%

GASB Statement No. 67 disclosure

Total pension liability (TPL)	\$134,370,954,628
Less fiduciary net position (FNP)	53,262,789,367
Net pension liability (NPL)	\$81,108,165,261
FNP as a percentage of TPL	39.6%

Income

Member contributions	\$963,972,120
Employer contributions	88,514,781
State of Illinois contributions	4,466,020,692
Total investment income	2,617,831,332
Total income	\$8,136,338,925

Expenses

Benefits paid	\$6,745,544,182
Refunds paid	73,216,390
Administrative expenses	24,335,680
Total expenses	\$6,843,096,252

* Benefit recipients includes retiree, disability and survivor benefit recipients.

PREFACE

COMPREHENSIVE ANNUAL FINANCIAL REPORT FOR THE FISCAL YEAR ENDED JUNE 30, 2019

This report was prepared by the TRS Accounting, Investments, Research and Communications Departments.

MILLENIA LAKES

Orlando, FL
Built between 2001 and 2007
Acquired in 2018

TEACHERS' RETIREMENT SYSTEM OF THE STATE OF ILLINOIS

a component unit of the State of Illinois

2815 West Washington | P.O. Box 19253 | Springfield, Illinois 62794-9253

<https://www.trsil.org>

"In order to assist System participants in achieving their financial security objectives, the TRS Board shall adopt a long-term plan by which the assets of the System will be maintained and enhanced through prudent investments."

- TRS Board of Trustees, April 7, 2000

The images that accompany the data in this report are examples of real estate investments owned by TRS on behalf of our 423,504 members. In all, TRS has \$7.35 billion invested in real estate all over the world, or 14 percent of the overall \$52.8 billion TRS investment portfolio. As the commentary explains, TRS manages a highly diversified portfolio comprised of four general categories in order to protect assets. In other words, not all eggs are in one basket.

In managing investments for members, TRS strives to:

- Protect the value of members' money through a long-term strategy that mitigates any losses in value which result from sharp fluctuations in the economy or investment markets.
- Maximize revenue while keeping the risk inherent in all investments below the average risk factors accepted by other comparable public pension systems across the United States.
- Stress a long-term view of investment results rather than emphasize short-term gains or losses. TRS is a perpetual entity and understands that its relationships with members last decades. Steady, positive returns over decades are important to people with a long-term stake in TRS.

This report includes a detailed look at the four general types of investments administered by TRS:

EQUITIES: \$26.68 BILLION

This asset class is broken down into three components – “public” equities (U.S. and international stocks) traded in markets around the world; “private” equity, (financial stakes in private companies that do not sell shares in a public market) and shares in certain types of real estate investments.

INCOME: \$13.97 BILLION

This asset class is composed primarily of investments in domestic and international credit instruments, as well as short-term investments that are designed to make sure that TRS can access cash, if needed.

REAL ASSETS: \$6.53 BILLION

This asset class is composed of most types of real estate investments as well as commitments to opportunities designed to protect TRS from inflationary pressures in the economy. The System has invested in all types of properties - office buildings, hotels, apartment complexes, retail and industrial.

DIVERSIFYING STRATEGIES: \$5.47 BILLION

This investment strategy includes “hedge funds” and other “absolute return” investments. These allocations are designed to provide steady, positive returns regardless of the state of the world economy. These investments seek to provide stability and asset protection when other investment strategies might suffer.



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INTRODUCTION

55 ALLEN PLAZA

Atlanta, GA

Built in 2007

Acquired in 2011





Public Pension Coordinating Council

***Recognition Award for Administration
2019***

Presented to

Teachers' Retirement System of the State of Illinois

In recognition of meeting professional standards for
plan administration as
set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

A handwritten signature in cursive script, reading 'Alan H. Winkle'.

Alan H. Winkle
Program Administrator



TEACHERS' RETIREMENT SYSTEM OF THE STATE OF ILLINOIS

2815 West Washington Street | P.O. Box 19253 | Springfield, Illinois 62794-9253

Richard W. Ingram, Executive Director

<http://www.trsil.org>

877-927-5877 (877) 9-ASK-TRS

LETTER OF TRANSMITTAL

Dec. 13, 2019

To the TRS Board of Trustees and TRS Members:

We are pleased to present the *Comprehensive Annual Financial Report* (CAFR) for the Teachers' Retirement System of the State of Illinois (TRS) for the fiscal year ended June 30, 2019. This report details the on-going work of the System's trustees and staff to fulfill our mission and keep the retirement promises made by the State of Illinois to educators in its public schools.

Concluding its 80th year of operation in FY19, TRS successfully distributed \$6.7 billion in retirement, survivor and disability benefits to 124,299 members. However, the System continues to be buffeted by funding and policy uncertainties within state government that raise the possibility of future insolvency.

TRS ended FY19 with a funded ratio of 40.6 percent, which is one of the lowest in the nation for a retirement system its size. The System had an actuarial value of assets of \$53 billion and a long-term benefit obligation of \$131 billion, which creates an unfunded liability of \$78 billion.

The unfunded liability carried by TRS overshadows the decisions trustees and staff make regularly on investments and future operations. For example, a top priority in a low-funded retirement system is the management of liquidity to ensure that all benefits can be paid.

More importantly, a low-funded ratio leaves TRS with no monetary safety cushion in the event of a slowdown in the investment markets or world economy. It would not take much of a downturn to significantly challenge TRS to meet its obligations over the long term.

For several years, TRS staff has repeatedly raised the alarm about the System's precarious financial situation, how that may affect TRS members and what needs to be done by state government to prevent insolvency. While the unfunded liability was caused by decades of insufficient funding from state government, there is little agreement on the best way to retire the unfunded liability and ensure benefit payments into the distant future.

Since 1939, Illinois officials have never, in any year, appropriated enough money to "fully fund" the pension promises to be paid by TRS, as determined by the System's actuaries. This annual underfunding of TRS and the state's other public pension systems is, sadly, codified in state law.

The statutory formula used to develop state government's annual contribution to its pension systems artificially lowers the state's cost of funding pensions. In FY19, the state contribution to TRS calculated by the formula was \$4.47 billion. Using actuarial calculations that are standard across the country, Illinois' contribution to TRS in FY19 should have been \$7.37 billion.

As a result of the unfunded liability created primarily by the state's consistent underfunding, 77 percent of the FY19 state contribution to TRS was dedicated to paying off a portion of the unfunded liability and not the actual cost of

benefits. If pensions had been properly funded over the last 80 years, the FY19 state appropriation for TRS would have been \$1.03 billion and the System's future would be more secure.

Historically, TRS has relied on the belief that the state will stick to the 24-year-old statutory funding plan for TRS and the other public pension systems. This law requires state government to allocate enough money annually to eliminate most of the systems' unfunded liabilities over time. This plan mathematically brings TRS to a 90 percent funding ratio in 2045.

However, hope is not a reliable strategy and the risk of not realizing the funding schedule is real. The circumstances in Illinois, where pension contributions in FY19 represented 24 percent of the state's General Funds budget, may not be sustainable over time as other priorities and services vie for limited state resources. At the same time, observers should keep in mind that changes in the composition of the General Fund complicate the pension contribution discussion. This is because as new state funds are created and appropriated and as a tax revenue distribution process is modified, it is very difficult to assess the impact on limited state resources when analyzing only the state's General Funds.

Because of the unfunded liability, there are dual concerns among decision-makers – that too much of the state budget is dedicated to public pensions and fears that TRS is so far in debt it will be unable to pay all pensions in the future. A disclosure the state included regularly in bond offering documents acknowledges that there is “no assurance” that the state can meet all future pension contributions.

In addition to the failings of the statutory pension funding formula, state officials continue to propose changes to state law that would further erode the annual contribution to TRS. The executive and legislative branches also continue to enact programs designed to reduce the long-term benefit obligation of TRS and the other systems. Unfortunately, these well-intentioned efforts, at most, would trim only a fraction of the debt owed by all systems, currently \$134 billion.

Upon taking office in 2019, **Gov. JB Pritzker** announced a comprehensive, five-point plan to begin dealing with the various financial problems plaguing Illinois' public pension systems. The elements of the Pritzker Plan were:

- Dedicating a total of \$200 million per year in future state budgets to the public pension systems in addition to the statutorily required pension contributions. This commitment, however, is dependent on voter approval in 2020 of a change in the Illinois Constitution that allows for the conversion of the current “flat rate” income tax to a “graduated rate” tax.
- Selling \$2 billion in Pension Obligation Bonds during FY20 and using the proceeds over three years to augment the state's pension contribution.
- Creating a task force to study the feasibility of “transferring” the value or revenue potential of existing state assets to TRS and the other pension systems, a move designed to enhance the total assets and funded status of the systems.
- Creating a task force to study the consolidation of 649 local police and firefighter pension systems. The panel recommended consolidating the systems' investment functions into two statewide authorities. The local systems would continue to administer benefits. The proposal's goal is to increase investment earnings and reduce administrative costs.
- Extending the operational life of two optional “accelerated pension benefit” programs for members from 2021 to 2024. The two initiatives are designed to reduce the state's total pension obligation and improve the systems' financial conditions.

- Restructuring the current pension funding law that is designed to bring the funded ratio of TRS and the other state systems to 90 percent by 2045. The governor's proposal would have extended the target date to 2052. One consequence of extending the target date was a reduction in the state's annual contribution to the five state systems by about \$1.1 billion.

Gov. Pritzker cancelled the restructuring in May because state revenues unexpectedly exceeded forecasts by \$1.5 billion. The governor decided to use the surprise windfall to pay the full statutory pension contribution, negating the need for the restructuring. However, the governor has said restructuring the state's pension debt payments is still an option that may be considered in the future.

In the years ahead, we look forward to working with the new administration and legislative leaders to develop a sustainable solution to our chronic underfunding. Our members and many stakeholders deserve a serious effort to secure the future of TRS.

The future of teacher pensions in Illinois will be determined over the next few years by how strongly state officials, our members, stakeholders and the public support real solutions required to reverse the erosion of the System's finances.

PROFILE OF TRS

TRS was established by the State of Illinois on July 1, 1939 to provide retirement, disability and death benefits to teachers employed by Illinois public elementary and secondary schools outside the city of Chicago. A 13-member board of trustees governs TRS. The board includes the state superintendent of education, six representatives of the public who are appointed by the governor, four members of TRS who are elected by active teachers and two retired members who are elected by annuitants. The TRS Board of Trustees appoints the executive director, who is responsible for the effective administration of TRS.

The annual budget for TRS administrative expenses is prepared by staff and approved by the TRS Board of Trustees. The TRS annual operating budget request is prepared in conjunction with a review of the long-range strategic plan.

FINANCIAL INFORMATION

Our staff issues a CAFR within six months of the close of each fiscal year. The report contains financial statements presented in conformity with generally accepted accounting principles (GAAP) applied within guidelines established by the Governmental Accounting Standards Board (GASB).

A system of internal controls helps us monitor and safeguard assets and promote efficient operations. Each year TRS's financial statements are audited by a professional accounting firm that serves as a special assistant auditor employed by the Illinois Auditor General. In addition, an annual compliance attestation examination is performed to review compliance with applicable statutes and codes. The Independent Auditor's Report on TRS's financial statements is included on pages 18 and 19 in the Financial Section of this report. TRS received an unmodified auditor opinion on the fair presentation of its financial statements.

TRS is required by law to publish a CAFR annually with information about the System's financial condition, investment methods, performance and actuarial conclusions that determine financial needs as well as statistical information about members, school districts, revenues and benefits. TRS management and staff are responsible for the accuracy of this report and for ensuring that all material disclosures have been made. TRS recognizes that the limitations of internal controls must be considered. These controls are designed to provide reasonable assurance regarding the safekeeping of assets, the reliability of financial records, the appropriate

segregation of duties and the use of sound accounting and financial practices. The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgments by management. The objective of internal controls at TRS is a reasonable, not absolute, assurance that the System's financial statements are free of material misstatements. Three internal auditors are employed to continually review and determine that all laws, rules, policies and procedures are followed.

Generally accepted accounting principles require that management provide a narrative introduction, overview and analysis to accompany the financial statements in the form of a Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement and should be read in conjunction with the MD&A, which can be found immediately following the report of the independent auditors.

REVENUES AND EXPENSES

The three sources of TRS funding are member contributions, investment income and employer contributions through state appropriations and payments by employers. TRS expenses include payments of benefits, refunds and administrative expenses. Negative amounts are shown in parentheses () throughout this report.

Revenues (\$ millions)

Source	2019	2018	Increase/(Decrease)	
			Amount	% Change
Member contributions	\$964	\$938	\$26	2.8%
State of Illinois	4,466	4,095	371	9.1
Employer contributions	88	85	3	4.6
Total investment income	2,618	4,049	(1,431)	(35.4)
Total	<u>\$8,136</u>	<u>\$9,167</u>	<u>(\$1,031)</u>	(11.2%)

Expenses (\$ millions)

	2019	2018	Increase/(Decrease)	
			Amount	% Change
Benefits payments	\$6,746	\$6,459	\$287	4.4%
Refunds	73	93	(20)	(21.2)
Administrative/ other	24	21	3	12.9
Total	<u>\$6,843</u>	<u>\$6,573</u>	<u>\$270</u>	4.1%

The TRS Board of Trustees and staff remain vigilant in our efforts to improve the retirement system's funded status for current and future members. We continue to invest prudently and in a disciplined manner for the benefit of our membership and for the long-term success of the retirement system. The TRS board and staff believe the overall investment strategy remains sound and appropriate for our circumstances.

INVESTMENTS

The TRS investment portfolio returned 5.2 percent, net of fees, for the fiscal year ended June 30, 2019. Total investment assets increased approximately \$0.8 billion during the year.

The TRS trust fund is invested under the authority of the Illinois Pension Code and follows the "prudent person rule," which requires investments to be managed solely in the interest of fund participants and beneficiaries. The TRS Investment Policy guides TRS's investments. Investment principles include preserving the long-term principal of the trust fund, maximizing total return within prudent risk parameters and acting in the exclusive interest of TRS members.

The Investment Section of this report contains a summary of the portfolio and investment activities. Pages 83 to 87 provide specific details regarding fees and commissions and a list of investment professionals who provided services to TRS.

FUNDING

During the year ended June 30, 2019, the funded ratio based on the actuarial value of assets of the Teachers' Retirement System decreased to 40.6 percent from its June 30, 2018 level of 40.7 percent. The actuarial value of assets at year end was \$53.4 billion and the actuarial accrued liability was \$131.5 billion. Under the smoothing methodology required by Public Act 96-0043, differences between actual and expected investment earnings are recognized prospectively over a five-year period.

The Actuarial Section of this report contains the actuary's letter and further information on funding.

MAJOR INITIATIVES AND ACCOMPLISHMENTS

SERVICE TO MEMBERS

TRS completed its fourth consecutive year as a client of CEM Benchmarking, Inc. of Toronto, Canada, an international consulting firm. CEM provides public pension systems with comparative statistics to help plan leaders determine how well their systems are performing in several areas compared to peers.

TRS operational costs remain \$3 below the peer average while service scores are improving more than our peers. The TRS call center handled 31 percent more calls than comparable public pension systems. Call wait times have declined and staff productivity remains higher than our peer average. TRS fulfilled requests for approximately 53,000 written pension estimates, which turned out to be 195 percent more than the median number of estimates completed by similar pension systems.

IMPLEMENTING A VOLUNTARY DEFINED CONTRIBUTION RETIREMENT PLAN

TRS is moving forward in the development of a voluntary defined contribution (DC) savings plan for active Tier 1 and Tier 2 members – the TRS Supplemental Savings Plan. A state law enacted in 2018 requires TRS to create a “DC” plan “as soon as practicable.” TRS plans to launch the program during FY21.

The optional DC plan will co-exist with the current TRS defined benefit pension plan and provide a supplementary retirement savings vehicle for interested members.

Participating members will make contributions to the DC plan. Employers also will be allowed to make contributions on behalf of members. TRS is required under the law to offer DC participants a menu of investment options.

“ACCELERATED” PENSION PAYMENT PROGRAMS

During the second half of FY19, TRS implemented a new state law and began offering all retiring Tier 1 members an accelerated pension benefit payment equal to a portion of their future pension benefit.

As of June 30, 2019, 36 members out of 3,580 retiring Tier 1 members had accepted the Accelerated Annual Increase (AAI) Program payment. By the end of 2019 retirement season, 558 were in line to be paid about \$82 million.

In order to receive the accelerated payment, a retiring Tier 1 member must accept an irrevocable reduction in the automatic annual increase that will apply to the remainder of his/her TRS pension. The AAI Program will be available until June 30, 2024.

Members who choose to accept the program will:

- **Renounce their rights to the current Tier 1 Automatic Annual Increase (AAI)** – a 3 percent annual increase in their pension benefits that is always calculated from the amount of their current pensions.
- **Accept a new AAI** – an annual 1.5 percent increase in their pensions that always will be calculated from the amount of their original pensions and begins later.

- **Receive a lump-sum “accelerated pension benefit payment”** that equals 70 percent of the monetary difference between the estimated current lifetime value of the 3 percent Tier 1 AAI and the estimated current lifetime value of the 1.5 percent delayed Tier 1 AAI.

TRS also worked to implement an Accelerated Pension Benefit (APB) Program that requires the System to offer all eligible inactive members a chance for a one-time, irrevocable lump sum equal to 60 percent of the present value of the member’s anticipated lifetime pension benefits. Members accepting the APB Program give up any future claim to a TRS benefit. This buyout program will be available until June 30, 2024 or until bond proceeds are depleted.

The program began early in FY20. TRS contacted 14,598 eligible inactive members and offered them an opportunity to participate. To be eligible, an inactive member must have “accrued sufficient service credit to be eligible to receive a retirement annuity.” An inactive Tier 1 member must have at least five years of TRS service and an inactive Tier 2 member must have at least 10 years of service.

Importantly, both accelerated pension benefit payment programs are funded exclusively by the proceeds of a state government bond sale and not TRS assets. During FY19, the Governor’s Office sold \$300 million in bonds to fund the payments and is planning a second bond sale for FY20.

COMMITMENT TO DIVERSITY

TRS continues to strengthen its existing commitment to diversity within the management of its \$52.8 billion investment portfolio. The TRS Board of Trustees is committed to continually improving access to the investment program for qualified firms owned by minorities, women and those with disabilities.

During FY19, 22.5 percent of the overall TRS investment portfolio was overseen by 32 minority and women business enterprise (WMBE) investment managers, with assets totaling \$11.7 billion. That is a 14 percent increase in assets under management over the last 12 months.

The participation goal for the fiscal year was 19 percent and TRS exceeded its goal for assets under WMBE management by \$1.8 billion.

DIGITAL RECORD CONVERSION

The goal of this multi-year initiative is to convert the System’s records from paper to a digital format in order to improve the security of the data and make the records easier to access.

Member records were selected as the first data for conversion. At the end of FY19, more than 99 percent of the member record back-file conversion was complete. The member record conversion will be completed during the second quarter of FY20.

DEVELOPMENT OF NEW PENSION ADMINISTRATION SYSTEM

Work is continuing toward building the new TRS pension administration system, Gemini. The first phase of the Gemini project involves building a reporting system for the 990 active employers to report member service and earnings on a pay-period basis. An Employer Portal has been created and is still in the development phase. This portal will allow employers to submit data to TRS and remit their contribution payments. It will also include increased employer self-service functions compared to our current Employer Web Access. These functions will include, but not be limited to:

- Sending payments and receiving invoices
- Maintaining current payroll schedules, sick leave and flexible benefit plan information

- Managing contacts and their portal access
- Making adjustments to service and/or earnings to previously reported data

Employers will be able to submit member data using one of two options: upload a file that meets the TRS payroll file layout requirements or copy data from a previous payroll and manually make necessary member changes. With both options, data submitted will run through an extensive list of validations to ensure that data received is verified upon receipt.

AWARDS

CERTIFICATE OF ACHIEVEMENT FOR EXCELLENCE IN FINANCIAL REPORTING

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to TRS for its *Comprehensive Annual Financial Report* for the fiscal year ended June 30, 2018. This was the 30th consecutive year that the System has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government or government entity must publish an easily readable and efficiently organized *Comprehensive Annual Financial Report*. This report must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for a period of one year only. We believe that our current *Comprehensive Annual Financial Report* continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

PUBLIC PENSION COORDINATING COUNCIL (PPCC), RECOGNITION AWARD FOR ADMINISTRATION

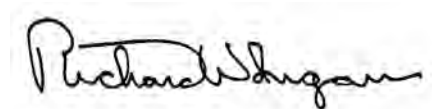
TRS received the Recognition Award for Administration in 2019 for meeting professional standards of plan administration as set forth in the Public Pension Standards of the PPCC. The award is presented by the PPCC, a confederation of the National Association of State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR).

ACKNOWLEDGMENTS

Information for this report was gathered by TRS staff under the leadership of the TRS Board of Trustees and the executive director and it is the responsibility of TRS management. It is intended to provide complete and reliable information as a basis for making management decisions, to determine our compliance with legal provisions and as a means of determining responsible stewardship of the assets contributed by members, their employers and the State of Illinois.

This report is made available to members of the General Assembly, participating employers and to other interested persons by request. The participating employers of TRS form a link between TRS and its members. Their cooperation contributes significantly to our success. We hope all recipients of this report find it informative and useful. This report is also available to the general public on our website, <https://www.trsil.org>.

We would like to take this opportunity to express our gratitude to staff, professional consultants and others who have worked so diligently to ensure TRS's successful operation.



Richard Ingram
Executive Director



Jana Bergschneider, CPA
Chief Financial Officer

TRS BOARD OF TRUSTEES

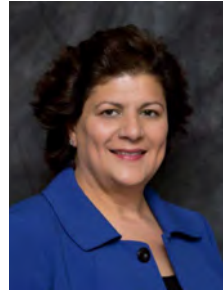
AS OF DECEMBER 1, 2019



Dr. Carmen I. Ayala
President
Superintendent of
Education
Downers Grove



Mark Bailey
Vice President
Elected
Palos Park



Norma Bellcoff
Appointed
Edwardsville



Devon Bruce
Appointed
Lake Forest



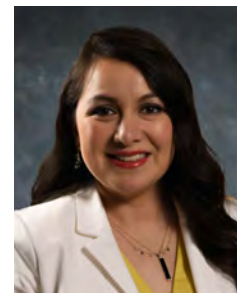
Marsha Byas
Elected
Marion



Andrew Hirshman
Elected
Oak Park



Matthew Hunt
Appointed
Frankfort



Maureen Mena
Appointed
Bolingbrook



David Miller
Appointed
Lynwood



Laura P. Pearl
Appointed
Glenview



Fred Peronto
Elected
Elmhurst



Larry Pfeiffer
Elected
Carlinville



Doug Strand
Elected
East Moline

TRS ORGANIZATION
EXECUTIVE CABINET
AS OF DECEMBER 1, 2019



Dick Ingram
Executive Director



Jeff Bennett
Director of
Operations



Jana Bergschneider, CPA
Chief Financial
Officer



Marcilene Dutton, JD
Chief Legal Counsel



Gina Larkin
Chief Human
Resources Officer



Carlton Lenoir, JD
Chief Benefits
Officer



Stan Rupnik, CFA
Chief Investment
Officer



Jay Singh
Chief Information
Officer



Stacy Smith, CPA, CIDA
Director of Internal
Audit and Risk

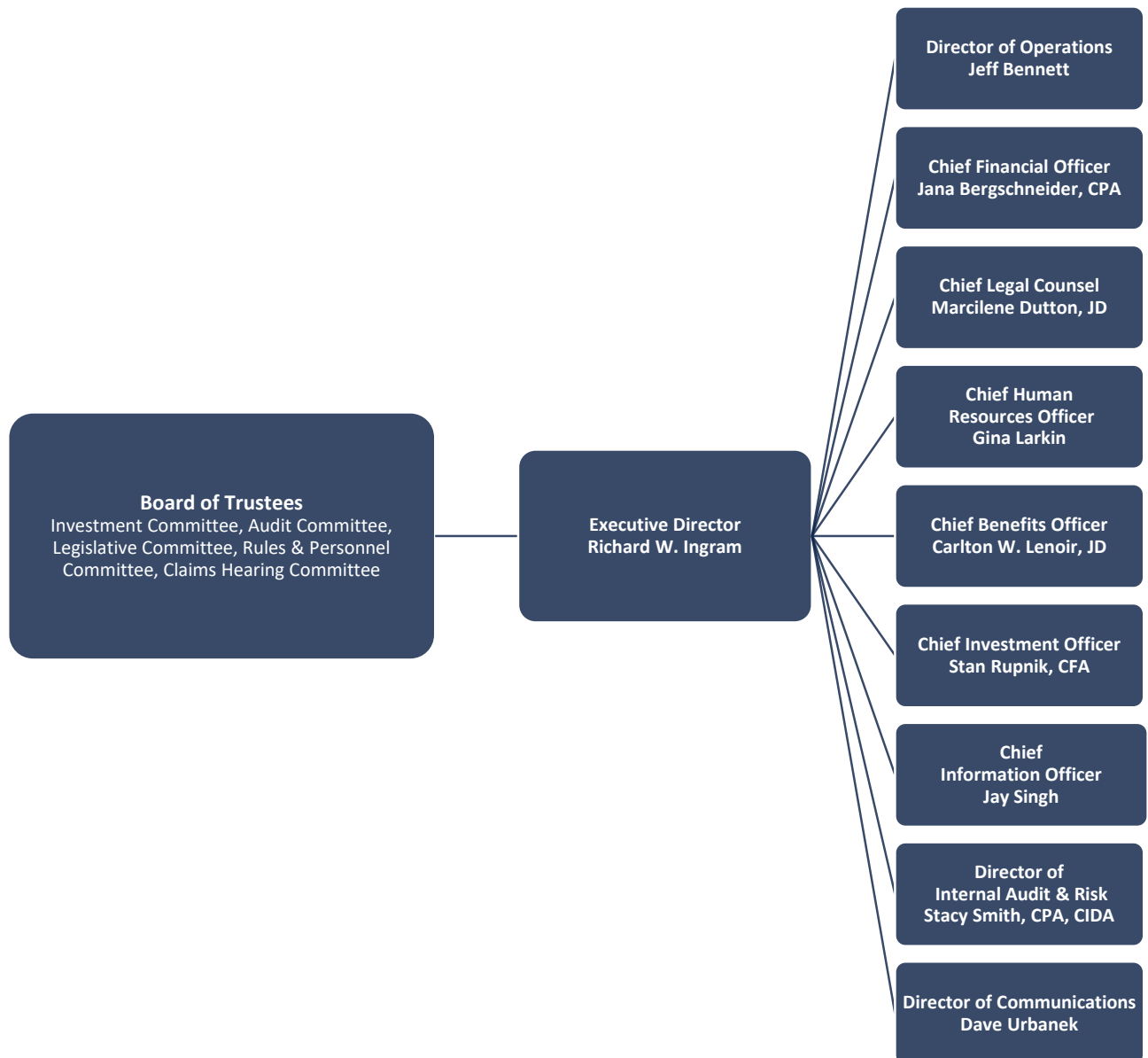


Dave Urbanek
Director of
Communications

TRS MISSION STATEMENT

TRS will continually deliver the retirement security promised to our members by maintaining the highest and most efficient level of service and by living our values:

- Put the best interests of others first
- Diversity
- Teamwork
- Continuous improvement



CONSULTING AND PROFESSIONAL SERVICES

ACTUARY

The Segal Company Midwest, Inc.

EXTERNAL AUDITORS

(Special assistants to the Office of the Auditor General)

BKD, L.L.P.

LEGAL SERVICES

DLA Piper, L.L.P.

Holland & Knight, L.L.P.

Howard & Howard Attorneys, P.L.L.C.

Kopec White & Spooner

Loewenstein & Smith, P.C.

Reinhart Boerner Van Deuren

Whitt Law, L.L.C.

LEGISLATIVE CONSULTING

Leinenweber Baroni & Daffada Consulting, L.L.C.

INFORMATION TECHNOLOGY

Advanced Design Management Group, L.L.C.

Agile Progress, L.L.C.

Apex Systems

Blu Age Corporation

Catapult Systems, L.L.C.

Converge One, Inc.

Decker Innovations, Inc.

HSO North America, L.L.C.

Illuminative Strategies, Inc.

Levi Ray & Shoup, Inc.

Linea Solutions, Inc.

ProCircular, Inc.

Promet Solutions Corporation

Provaliant Retirement, L.L.C.

Sentinel Technologies, Inc.

OPERATIONS

CEM Benchmarking, Inc.

Darlington & Company, Inc.

Darlington Partners, Ltd.

Higher Logic, L.L.C.

Jasculca Terman Strategic Communications

Levi Ray & Shoup, Inc.

Management Association

SABA Software

Segal Waters Public Sector

INTERNAL AUDIT

Investment Training & Consulting Institute, Inc.

MASTER TRUSTEE

State Street Bank and Trust Company

SECURITIES LENDING AGENT

Citibank, N.A.

INVESTMENT CONSULTANTS

Aksia, L.L.C. *(Diversifying strategies and private debt)*

Albourne America, L.L.C. *(Diversifying strategies through Nov. 2018)*

Stepstone Group Real Estate, L.P. *(Real estate)*

RVK, Inc. *(General investment)*

TorreyCove Capital Partners, L.L.C. *(Private equity)*

CO-INVESTMENT ADVISORS

Stout Risius Ross, Inc. *(Private equity)*

TorreyCove Capital Partners, L.L.C. *(Private equity)*

SECONDARY MARKET ADVISORS

Park Hill Group, L.L.C.



FINANCIAL

121 WEST TRADE

Charlotte, NC

Built in 1990

Acquired in 2015

Independent Auditor's Report

Honorable Frank J. Mautino
Auditor General
State of Illinois
and
The Board of Trustees
Teachers' Retirement System of Illinois

Report on the Financial Statements

As Special Assistant Auditors for the Auditor General, we have audited the accompanying Statement of Fiduciary Net Position of the Teachers' Retirement System of the State of Illinois (System), a component unit of the State of Illinois, as of June 30, 2019, and the Statement of Changes in Fiduciary Net Position for the year then ended, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; 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.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. 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 auditor's 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 System'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 System'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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System as of June 30, 2019, and the changes in fiduciary net position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

The actuarially determined net pension liability, calculated as required by GASB Statements No. 67, is dependent on several assumptions including the assumption that future required contributions from all sources are made based on statutory requirements in existence as of the date of this report. These assumptions are discussed in Note A.6 of the financial statements. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis, the schedule of changes in the net pension liability, the schedule of net pension liability, the schedule of contributions from employers and other contributing entities, the schedule of investment returns, and notes to required supplementary information as listed in the table of contents 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 auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit for the year ended June 30, 2019 was conducted for the purpose of forming an opinion on the System's basic financial statements.

The other supplementary information in the financial section and the accompanying preface, introduction, investments, actuarial, and statistical sections, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The other supplementary information in the financial section, as listed in the table of contents, 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 auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information in the financial section, as listed in the table of contents, is fairly stated, in all material respects, in relation to the basic financial statements as a whole for the year ended June 30, 2019.

We have also previously audited, in accordance with auditing standards generally accepted in the United States of America, the System's basic financial statements as of and for the year ended June 30, 2018 (not presented herein) and have issued our report thereon dated December 13, 2018 which contained an unmodified opinion on those financial statements. The other supplementary information in the financial section, as listed in the table of contents, for the year ended June 30, 2018 is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the June 30, 2018 financial statements. The other supplementary information in the financial section, as listed in the table of contents, have been subjected to the auditing procedures applied in the audit of the June 30, 2018 basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare those financial statements or to those financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information in the financial section, as listed in the table of contents, is fairly stated in all material respects in relation to the basic financial statements as a whole for the year ended June 30, 2018.

The preface, introduction, investments, actuarial and statistical sections, as listed in the table of contents, 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.

BKD, LLP

Decatur, Illinois
December 13, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

This discussion and analysis of the Teachers' Retirement System of the State of Illinois provides an overview of financial activities for the fiscal year ended June 30, 2019. Please read it in conjunction with the Letter of Transmittal in the Introduction Section on page 6 and the Financial Statements and related notes that follow this discussion.

FINANCIAL HIGHLIGHTS

- The net position of TRS at June 30, 2019 was \$53.3 billion.
- During FY19, the net position of TRS increased \$1.3 billion.
- Contributions from members, employers and the State of Illinois were \$5.5 billion, an increase of \$401 million or 7.8 percent for FY19.
- Total net investment income was \$2.6 billion, compared to \$4.0 billion in FY18, a decrease of \$1.4 billion.
- Benefits and refunds paid to members and annuitants were \$6.8 billion, an increase of \$267 million or 4.1 percent.
- The actuarial accrued liability was \$131.5 billion at June 30, 2019.
- The unfunded actuarial accrued liability was \$78.1 billion at June 30, 2019. The funded ratio was 40.6 percent at June 30, 2019. The unfunded liability and funded ratio are calculated using a smoothed value of assets, as required under Public Act 96-0043.
- The total pension liability was \$134.4 billion at June 30, 2019.
- The net pension liability was \$81.1 billion at June 30, 2019. The plan fiduciary net position, as a percentage of total pension liability, was 39.6 percent.

The Financial Statements contained in this section of the *Comprehensive Annual Financial Report* consist of:

Statement of Fiduciary Net Position. This statement reports the pension trust fund's net position which represents the difference between the financial statement elements comprised of assets and liabilities. It is the balance sheet for the pension system and reflects the financial position of the Teachers' Retirement System as of June 30, 2019.

Statement of Changes in Fiduciary Net Position. This statement details transactions that occurred during the fiscal year. It is the income statement of TRS and reflects the additions and deductions to net position recorded throughout the fiscal year. This statement supports the change in the value of net position reported on the Statement of Fiduciary Net Position.

Notes to the Financial Statements. The notes are an integral part of the financial statements and include additional information not readily evident in the statements themselves.

Required Supplementary Information and Other Supplementary Information. The required supplementary information and other supplementary information following the notes to the financial statements provide historical and additional detailed information considered useful in evaluating the pension system's financial condition.

The following are condensed comparative financial statements of the TRS pension trust fund.

CONDENSED COMPARATIVE STATEMENTS OF FIDUCIARY NET POSITION AS OF JUNE 30

	2019	Percentage Change	2018
Cash	\$27,358,430	(14.6%)	\$32,034,294
Receivables and prepaid expenses	7,164,874,414	22.3	5,856,758,011
Investments	52,825,807,531	1.4	52,070,945,762
Invested securities lending collateral	2,540,713,046	9.3	2,323,876,849
Capital assets	<u>2,856,794</u>	0.2	<u>2,851,122</u>
Total assets	62,561,610,215	3.8	60,286,466,038
Total liabilities	<u>9,298,820,848</u>	11.8	<u>8,316,919,344</u>
Net position restricted for pensions	<u>\$53,262,789,367</u>	2.5%	<u>\$51,969,546,694</u>

CONDENSED COMPARATIVE STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION FOR THE YEARS ENDED JUNE 30

	2019	Percentage Change	2018
Contributions	\$5,518,507,593	7.8%	\$5,117,795,720
Net investment income	<u>2,617,831,332</u>	(35.4)	<u>4,049,271,728</u>
Total additions	<u>8,136,338,925</u>	(11.2)	<u>9,167,067,448</u>
Benefits and refunds	6,818,760,572	4.1	6,551,634,376
Administrative expenses	<u>24,335,680</u>	12.9	<u>21,550,896</u>
Total deductions	<u>6,843,096,252</u>	4.1	<u>6,573,185,272</u>
Net increase in net position	1,293,242,673	(50.1)	2,593,882,176
Net position restricted for pensions - beginning of year	<u>51,969,546,694</u>	5.3	<u>49,375,664,518</u>
Net position restricted for pensions - end of year	<u>\$53,262,789,367</u>	2.5%	<u>\$51,969,546,694</u>

FINANCIAL ANALYSIS

TRS was created to provide retirement, survivor and disability benefits to qualified members. Increases or decreases in the plan's net position serve as useful indicators of TRS's financial position. The net position available to pay benefits was \$53.3 billion at June 30, 2019.

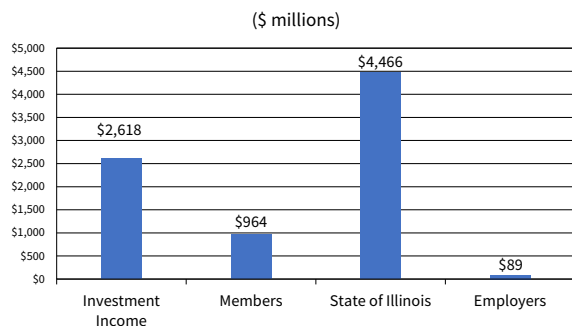
CONTRIBUTIONS

Contributions increased \$401 million during FY19. During FY19, contributions from the State of Illinois increased \$371 million and employer contributions from school districts increased \$3.9 million.

Public Act 100-0023 requires that the impact on state contributions due to changes in actuarial assumptions be phased in over five years on a retroactive basis. Its effect was to lower the increases in both the FY18 and FY19 state contributions that would have otherwise occurred.

State funding law provides for a 50-year funding plan that includes a 15-year phase-in period and a goal of 90 percent funding in the year 2045.

Revenues by Type for the Year Ended June 30, 2019



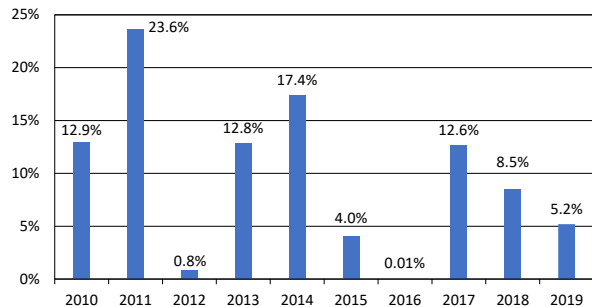
INVESTMENTS

The TRS trust fund is invested according to law under the "prudent person rule" requiring investments to be managed solely in the interest of fund participants and beneficiaries. Principles guiding the investment of funds include preserving the long-term principal of the trust fund and maximizing total return within prudent risk parameters.

The TRS investment portfolio returned 5.2 percent, net of fees, for the fiscal year ended June 30, 2019.

Total TRS investment assets increased approximately \$0.8 billion during the year.

Annual Rate of Return (net of investment expenses)

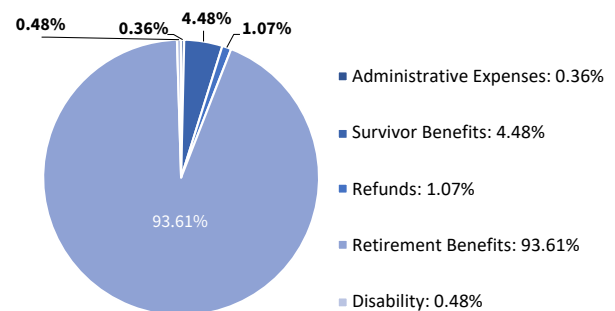


BENEFITS AND REFUNDS

Retirement, survivor and disability benefit payments increased \$287 million during FY19. Benefit payments increased to \$6.7 billion with 124,299 recipients in FY19. The overall increase in benefit payments is due to an increase in retirement and survivor benefits as well as the number of retirees. Retirement benefits were higher as a result of annual increases in retirement benefits and an increase in the number of retirees from 110,043 as of June 30, 2018 to 111,598 as of June 30, 2019.

Refunds of contributions decreased \$20 million in FY19. The decrease during FY19 was due to most eligible members withdrawing Early Retirement Option refunds in FY17 and FY18. FY19 also had fewer contribution withdrawals.

Deductions by Type for the Year Ended June 30, 2019



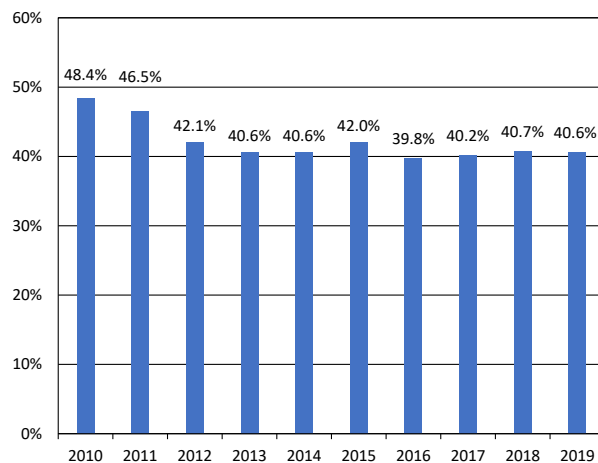
ACTUARIAL

For statutory funding and financial reporting, an actuarial valuation is performed annually and measures the total liability for all benefits earned to date. The actuarial accrued liability is a present value estimate of all benefits earned to date but not yet paid. The actuarial accrued liability based on statutory funding requirements increased \$4.5 billion in FY19 to \$131.5 billion at June 30, 2019. The actuarial unfunded liability is the present value of accrued benefits payable that are not covered by the actuarial value of assets as of the valuation date. The actuarial unfunded liability based on the actuarial value of assets increased \$2.8 billion during FY19 to \$78.1 billion at June 30, 2019. The funded ratio reflects the percentage of the actuarial accrued liability covered by the actuarial value of assets. The funded ratio decreased from 40.7 percent on June 30, 2018 to 40.6 percent on June 30, 2019.

The actuarial unfunded liability and funded ratio are based on the actuarial value of assets. Public Act 96-0043 requires the five state retirement systems to smooth actuarial gains and losses on investments over a five-year period.

When the funded ratio was based on the fair value of assets, the reported funded ratio was impacted immediately by changes in market conditions. State funding requirements based on fair value assets also were impacted immediately and therefore were more volatile. Using the actuarial value of assets results in more stable reported funded ratios and state funding requirements over time.

Funded Ratio Based on Actuarial Value of Assets



The funded ratio in this chart is the ratio of actuarial assets to the actuarial liability. An increase in this ratio indicates an improvement in TRS's ability to meet future benefit obligations.

During FY14, TRS implemented GASB Statement No. 67, "Financial Reporting for Pension Plans." As a result of implementing the new statement, TRS is required to disclose the net pension liability and total pension liability in the Financial Statement Notes and Required Supplementary Information in accordance with criteria which differs from criteria used to disclose the actuarial accrued liability and actuarial unfunded liability. The total pension liability is \$134.4 billion at June 30, 2019, while the net pension liability is \$81.1 billion at June 30, 2019.

LEGISLATIVE

During FY19, **Gov. JB Pritzker** and the General Assembly made a number of changes to the Illinois Pension Code that will impact the continuing operations of Teachers' Retirement System.

ADDITIONAL EMPLOYER CONTRIBUTIONS TRIGGERED BY RAISES FOR MEMBERS CLOSE TO RETIREMENT

For the second year in a row, the General Assembly altered a state law that greatly influences the salary increases that many school districts grant active teachers who are within four years of retirement, as well as the annual contribution employers pay to TRS.

The law in question sets a "threshold" on salary increases for TRS members if the raise would factor into the member's initial pension calculation. Typically, these raises are within a member's last four years of teaching. If a member's salary increase exceeds the threshold, the law requires the school district to pay the lifetime actuarial cost of the portion of that member's pension created by the part of the raise above the threshold. Some of these payments total several thousand dollars.

Between 2005 and 2018, the threshold on salary increases affected by the law was 6 percent. In 2018, the legislature reduced the threshold to 3 percent.

But in the spring of 2019, after a negative backlash from TRS members, lawmakers increased the threshold back to 6 percent. The 3 percent level was never implemented. TRS spent a considerable amount of time and money in the last year to reconfigure processes to administer the 3 percent threshold.

The salary increase threshold law is designed to discourage large salary increases to TRS members close to retirement that serve to boost or "spike" their initial pensions. Without the law, the long-term cost of these pension boosts would be paid by the state, not by local school districts that approved the salary increase.

SETTING A \$40,000 MINIMUM WAGE FOR ILLINOIS TEACHERS

A new minimum salary for teachers across the state is designed to help alleviate the on-going shortage of teachers (Public Act 101-0443). The salary schedule will be phased in over the next four years.

In the 2020-21 school year, the minimum wage for teachers is \$32,076. In the 2021-22 year, the minimum will be \$34,576. It will increase to \$37,076 in the 2022-23 school year and finally top out at \$40,000 in the 2023-24 school year.

EXTENDING "RETURN-TO-WORK" RULES TO COMBAT ILLINOIS' TEACHER SHORTAGE

To help alleviate the classroom teacher shortage problem in Illinois, a law (Public Act 101-0049) that allows retired TRS members to teach for a full school year in districts declared to be "Subject Shortage Areas" has been extended until 2021. Under the law, which was set to expire in 2019, retired educators who resume teaching in these designated districts are not subject to "return-to-work" restrictions imposed on other retirees.

EXTENDING THE AVAILABILITY OF MEMBER "ACCELERATED BENEFIT PAYMENT" PROGRAMS

The time period for the two "accelerated benefit payment" programs available to TRS members – one for retiring Tier 1 members and one for all inactive members – will be extended to the end of FY24 (Public Act 101-0010). Originally, the programs were set to automatically expire at the end of FY21.

EXTENDING STATE HEALTH INSURANCE COVERAGE TO MEMBERS WHO TAKE AN ACCELERATED PENSION BENEFIT

A new law (Public Act 101-0242) clarifies that if an inactive TRS member accepts an "accelerated pension benefit" and gives up their eligibility for a future retirement benefit, that member can still participate in state-administered health insurance programs if they meet all eligibility requirements.



SKYWATER AT TOWN LAKE

Tempe, AZ

Built in 2015

Acquired in 2015

FINANCIAL STATEMENTS

TEACHERS' RETIREMENT SYSTEM OF THE STATE OF ILLINOIS

STATEMENT OF FIDUCIARY NET POSITION

JUNE 30, 2019

	June 30, 2019
Assets	
Cash	\$27,358,430
Receivables and prepaid expenses:	
Member contributions	55,256,930
Employer contributions	8,215,327
State of Illinois	558,757,463
Investment income	344,551,118
Pending investment sales	6,195,921,852
Prepaid expenses	2,171,724
Total receivables and prepaid expenses	7,164,874,414
Investments, at fair value:	
Fixed income	13,725,761,411
Public equities	17,823,681,423
Alternative investments	19,635,394,819
Derivatives	(55,888,377)
Short-term investments	1,601,845,805
Foreign currency	95,012,450
Total investments	52,825,807,531
Invested securities lending collateral:	
Securities lending collateral	2,485,824,046
Securities lending collateral with the State Treasurer	54,889,000
Total invested securities lending collateral	2,540,713,046
Capital assets, net of accumulated depreciation	2,856,794
Total assets	62,561,610,215
Liabilities	
Benefits and refunds payable	6,844,767
Administrative and investment expenses payable	44,756,293
Pending investment purchases	6,706,535,186
Securities lending collateral	2,540,684,602
Total liabilities	9,298,820,848
Net position restricted for pensions	\$53,262,789,367

See accompanying Notes to Financial Statements.

TEACHERS' RETIREMENT SYSTEM OF THE STATE OF ILLINOIS
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED JUNE 30, 2019

	June 30, 2019
Additions	
Contributions:	
Members	\$963,972,120
State of Illinois	4,466,020,692
Employers	
Early retirement	32,449
Federal funds	18,472,267
2.2 benefit formula	62,744,266
Excess employer costs	7,265,799
Total contributions	<u>5,518,507,593</u>
Investment income:	
Net increase in fair value of investments	1,491,025,634
Alternatives income	975,251,437
Interest and dividends	924,617,550
Other investment income	35,183,396
Securities lending income	11,541,157
Less investment expenses:	
Alternatives expense	(470,341,524)
Direct investment expense	(348,753,860)
Securities lending management fees	(692,458)
Net investment increase	<u>2,617,831,332</u>
Total additions	<u>8,136,338,925</u>
Deductions	
Retirement benefits	6,405,907,842
Survivor benefits	306,502,713
Disability benefits	33,133,627
Refunds	73,216,390
Administrative expenses	24,335,680
Total deductions	<u>6,843,096,252</u>
Net increase in net position	1,293,242,673
Net position restricted for pensions	
Beginning of year	<u>51,969,546,694</u>
End of year	<u><u>\$53,262,789,367</u></u>

See accompanying Notes to Financial Statements.

NOTES TO FINANCIAL STATEMENTS

A. PLAN DESCRIPTION

1. REPORTING ENTITY

The Teachers' Retirement System of the State of Illinois (TRS) is the administrator of a cost-sharing, multiple-employer defined benefit public employee retirement system (PERS). Membership is mandatory for all full-time, part-time and substitute public school personnel employed outside of Chicago in positions requiring licensure. Persons employed at certain state agencies and certain non-government entities also are members. Established by the State of Illinois, TRS is governed by the Illinois Pension Code (40 ILCS 5/16). TRS is a component unit of the State of Illinois and is included in the State's financial statements as a pension trust fund.

TRS uses criteria established by the Governmental Accounting Standards Board (GASB) to determine whether other entities should be included within its financial reporting entity. Based on the criteria, TRS includes no other entities in these financial statements.

2. EMPLOYERS

Members of TRS are employed by school districts, special districts, certain state agencies and certain non-governmental entities. Each employer remits member contributions to TRS.

Employers are responsible for employer contributions for:

- Teachers paid from federal funds.
- The 2.2 formula increase.
- Salary increases in excess of 6 percent. When a member retires, the employer is required to pay TRS contributions equal to the actuarial value of a pension benefit that results from any salary increase over 6 percent that is used in a retiring member's final average salary calculation. Several permanent exemptions are in effect for excess salary increases.
- Sick leave days received in excess of the normal annual allotment and applied to service credit for members in their final four years prior to retirement.

- Any portion of a member's salary that is greater than the governor's statutory salary.

In addition, the State of Illinois is a nonemployer contributing entity that provides employer contributions on behalf of the System's employers. For information about employer contributions made by the State of Illinois, see "Schedule of Contributions from Employers and Other Contributing Entities" within the Required Supplementary Information (RSI) section of this report.

The state's statutory contribution requirements are described in the Actuarial Section under "Actuarial Standards and Illinois State Pension Funding."

Number of Employers (as of June 30)

	2019
Local school districts	851
Special districts	127
State agencies	12
Total	990

3. MEMBERS

TRS Membership (as of June 30)

	2019
Retirees and beneficiaries	124,299
Inactive members	136,178
Active members	163,027
Total	423,504

4. BOARD OF TRUSTEES

TRS is governed by a 13-member board of trustees. Trustees include the state superintendent of education, six trustees appointed by the governor, four trustees elected by contributing TRS members and two trustees elected by TRS annuitants.

The president of the TRS Board of Trustees, by law, is the Illinois superintendent of education. The board elects its vice president from among its members. The board appoints an executive director who also serves as the secretary of the board. The executive director is responsible for daily operations at TRS.

5. BENEFIT PROVISIONS

Governed by the Illinois Pension Code (40 ILCS 5/16), which is subject to amendment by the Illinois General Assembly and approval by the governor, TRS provides retirement, death and disability benefits. Membership is mandatory for all full-time, part-time and substitute public school personnel who are licensed and employed in Illinois outside the city of Chicago.

Public Act 96-0889, which was signed into law in the spring of 2010, added a new section to the Pension Code that applies different benefits to anyone who first contributes to TRS on or after Jan. 1, 2011 and does not have any previous service credit with one of the reciprocal retirement systems in Illinois. Members who first participate on or after that date are members of Tier 2.

The act does not apply to anyone who made contributions to TRS prior to Jan. 1, 2011. They remain participants of Tier 1.

Tier 3 was created in July 2017. It is a hybrid retirement plan with both defined benefit and defined contribution plan components.

TIER 1 BENEFITS

A member qualifies for an age retirement annuity after meeting one of the following requirements: age 62 with five years of service credit; age 60 with 10 years; or age 55 with 20 years. If a member retires between the ages of 55 and 60 with fewer than 35 years of service, the annuity will be reduced at the rate of 0.50 percent for each month the member is under age 60. A member with fewer than five years of creditable service and service on or after July 1, 1947, is entitled to a single-sum benefit payable at age 65.

A retirement benefit is determined by the average of the four highest consecutive years of creditable earnings within the last 10 years of creditable service and the percentage of average salary to which the member is entitled. Most members retire under a formula that provides 2.2 percent of final average salary up to a maximum of 75 percent

with 34 years of service. The 2.2 percent formula became effective July 1, 1998 but service earned before that date can be upgraded to the 2.2 formula with a member contribution. The cost of the upgrade can be reduced if members upgrade and continue teaching after 1998. A graduated formula applies to service earned before 1998 and provides a maximum benefit of 75 percent of average salary with 38 years of service.

Tier 1 members who contributed to TRS before July 1, 2005 receive a money purchase (actuarial) benefit if it provides a higher benefit than the 2.2 or graduated formulas. The 75 percent cap does not apply to the money purchase benefit.

All Tier 1 retirees receive an annual 3 percent increase in the current retirement benefit beginning Jan. 1 following the attainment of age 61 or on Jan. 1 following the member's first anniversary in retirement, whichever is later.

Disability and death benefits are provided.

If a member leaves covered employment, TRS will refund a member's retirement contributions upon request. The refund consists of actual contributions, excluding the 1 percent death benefit contribution.

Effective July 1, 2017, Tier 1 members contribute 9.0 percent of their creditable earnings to TRS and an additional contribution to a retiree health insurance program that is not administered by TRS.

TIER 2 BENEFITS

Differences with Tier 1 include raising the minimum eligibility to draw a retirement benefit to age 67 with 10 years of service. A discounted annuity can be paid at age 62 with 10 years of service. The Tier 2 law caps creditable earnings and contributions used for retirement purposes at a level that is lower than the Social Security wage base. Tier 2 annual increases will be the lesser of 3 percent or ½ percent of the rate of inflation of the original benefit beginning Jan. 1 following attainment of age 67 or on Jan. 1 following the member's first anniversary in retirement, whichever is later.

The 2.2 retirement formula also applies to Tier 2 but the final average salary is based on the highest consecutive eight years of creditable service rather than the highest consecutive four years of salary. The single-sum benefit also is payable at age 65 to Tier 2 members with fewer than five years of service. The money purchase (actuarial) benefit is not available to Tier 2 members.

Disability and refund provisions for Tier 2 are identical to those that apply to Tier 1. Death benefits are payable under a formula that is different from Tier 1.

Effective July 1, 2017, Tier 2 members contribute 9.0 percent of their creditable earnings to TRS and an additional contribution to a retiree health insurance program that is not administered by TRS.

TIER 3 BENEFITS

Enacted in July of 2017, the Tier 3 benefit is designed to be a hybrid retirement plan with two parts – a defined benefit (DB) pension and a defined contribution (DC) savings plan.

Under the law, Tier 3 members would make payroll contributions to their DB pensions that are based on the full cost of this part of the benefit, but no more than 6.2 percent of salary. In addition, Tier 3 members would contribute a minimum of 4 percent of their pay to the DC portion of the plan.

At retirement, TRS members would receive a pension and be able to access funds from their DC savings account as they see fit.

However, an implementation date for Tier 3 has not been set. As written, the current language of the Tier 3 statute inadvertently conflicts with other provisions of the Illinois Pension Code. Until these differences are corrected by the legislative and executive branches, Tier 3 cannot be implemented.

6. ACTUARIAL MEASUREMENTS

The Schedule of Changes in the Net Pension Liability, Schedule of the Net Pension Liability and the Schedule of Contributions from Employers and Other Contributing Entities may be found in

the Required Supplementary Information. Other schedules pertaining to the System's funded status are in the Actuarial section.

Member, employer and state contributions are statutorily defined by the Illinois Pension Code (40 ILCS 5/16), which is subject to amendment by the Illinois General Assembly with approval by the governor. Since July 1, 1995, state appropriations have been made through a continuing appropriation.

Member contributions are allocated as follows: 7.5 percent for retirement; 0.5 percent for post-retirement increases; and 1 percent for death benefits.

Employer contributions are made by or on behalf of employers from several sources. The State of Illinois provides the largest source of contributions through state appropriations from the Common School Fund. Employers also make contributions for the 2.2 benefit formula and for teachers who are paid from federal funds. Additionally, employers contribute their portion of any excess salary increase or sick leave costs due and the total employer normal cost on salaries exceeding the governor's salary.

State funding law provides for a 50-year funding plan that includes a 15-year phase-in period.

Public Act 96-0043, which was effective July 15, 2009, requires TRS to use a five-year smoothing method for asset valuation beginning on June 30, 2009. State contribution requirements were first affected by this change in FY11.

Public Act 100-0023, which was effective July 6, 2017, requires the impact on state contributions due to changes in actuarial assumptions to be phased in over five years. State contribution requirements were first affected by this change in FY18. The FY18 requirement was recertified in January 2018 due to the new law.

Administrative expenses are budgeted and approved by the TRS Board of Trustees. Funding for these expenses is included in the employer

contribution, as determined by the annual actuarial valuation.

PENSION LIABILITY

The actuarial assumptions included in the June 30, 2019 actuarial valuation were used to calculate the June 30, 2019 total pension liability. The investment return assumption of 7.0 percent is unchanged in the 2019 actuarial valuation.

The investment return assumption for the 2019 actuarial valuation is based on the 2017 asset allocation conducted by the TRS investment consultant and additional analysis conducted by the actuary in 2018 and 2019.

Assumptions used to calculate the June 30, 2019 total pension liability were nearly identical to those used in the June 30, 2018 calculation, as discussed later in this section.

As of June 30, 2019, the assumption for future investment returns was 7.0 percent, a rate unchanged from June 30, 2018. The TRS actuary used the following assumed rates of returns by asset class, excluding 2.50 percent for the assumed rate of inflation as well as investment expenses.

Expected Arithmetic Real Returns Over 20 Years

Asset Class	Allocation	Return
U.S. equities large cap	15.0%	6.3%
U.S. equities small/mid cap	2.0	7.7
International equities developed	13.6	7.0
Emerging market equities	3.4	9.5
U.S. bonds core	8.0	2.2
U.S. bonds high yield	4.2	4.0
International debt developed	2.2	1.1
Emerging international debt	2.6	4.4
Real estate	16.0	5.2
Real return	4.0	1.8
Absolute return	14.0	4.1
Private equity	15.0	9.7

If the plan's assets are not sufficient to cover all benefit payments to current plan members, GASB Statement No. 67 requires the discount rate to be

different from the assumed rate of return. Instead, the discount rate would be a blended rate, which includes the long-term expected rate of return and a municipal bond rate (the Bond Buyer's 20-Bond GO Index) as of the end of the current fiscal year. Based on the following projections, the System can use the long-term expected rate of return as the discount rate for the year ended June 30, 2019, as it did for the prior year.

TRS, with the assistance of the System's actuary, projected that the plan's fiduciary net position will provide for all benefit payments to current plan members. Projected contributions assume that all statutorily required contributions are made through FY21 including projected contributions from members, employers and the State of Illinois (nonemployer contributing entity). Projected state contributions reflect the changes enacted in Public Acts 100-0023, 100-0340, 100-0587 and 101-0010. However, the projections do not include any assumptions about the utilization of Tier 3 under PA 100-0023.

Estimated contributions from employers and the State of Illinois, of which the majority of the contributions (approximately 98 percent) are provided by the State of Illinois, are projected to be \$4.8 billion in FY20, \$5.1 billion in FY21 and grow to \$10.9 billion by FY45 based on present statutory requirements for current members. Tier 1's liability is partially funded by Tier 2 because the Tier 2 contributions are higher than the cost of Tier 2 benefits. Due to this subsidy, contributions from future members in excess of the service cost are also included in the determination of the discount rate.

The actuarial cost method required for financial reporting purposes is the entry age normal method. For TRS, total pension liability (TPL) is developed and rolled forward to the valuation date based on member census data one year prior. TPL is projected to the June 30, 2019 measurement date based on census data as of June 30, 2018. Assets, referred to as plan fiduciary net position, are measured at fair value.

Net Pension Liability

	June 30, 2019
Total pension liability	\$134,370,954,628
Plan fiduciary net position	53,262,789,367
Net pension liability	<u>\$81,108,165,261</u>
Plan fiduciary net position as a percentage of the total pension liability	39.6%

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

	1% Decrease	Current	1% Increase
Discount rate	6.0%	7.0%	8.0%
Net pension liability	\$99,066,519,428	\$81,108,165,261	\$63,228,760,783

Most of the actuarial assumptions used in the June 30, 2019 actuarial valuation are based on the actuarial experience analysis dated September 2018 that covered the period July 1, 2014 through June 30, 2017. The 2019 actuarial valuation slightly reduced the utilization assumption for the automatic annual increase buyout provision and extended the assumed buyout period to June 30, 2022 in connection with the expectation that the funds available for the buyouts are limited to \$650 million. The investment return assumption of 7.0 percent did not change from the June 30, 2018 actuarial valuation.

Actuarial Assumptions Used for Financial Reporting Disclosure

Actuarial Valuation Date	June 30, 2019
Census Date:	June 30, 2018 with total pension liability projected to June 30, 2019
Actuarial Cost Method:	
For financial reporting purposes	Entry age normal
Asset Valuation Method:	
For financial reporting purposes	Fair value as of valuation date
Actuarial Assumptions:	
Investment rate of return	7.0% adopted effective June 30, 2016
Real rate of investment return	4.5%
Projected salary increases	9.50% with 1 year of service to 4.0% with 20 or more years of service. Includes inflation and real wage growth (productivity) assumptions.
Group size growth rate	0%
Assumed inflation rate	2.5%
Post-retirement increase	Tier 1: 3%, compounded; Tier 2: 1.25%, not compounded
Mortality table:	RP - 2014 with future mortality improvements on a fully generational basis using projection table MP-2017.

B. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

1. BASIS OF ACCOUNTING

The financial transactions of TRS are recorded using the economic resources measurement focus and the accrual basis of accounting. Member and employer contributions are recognized as revenues when due pursuant to statutory or contractual requirements. Benefits and refunds are recognized as expenses when they are due and payable in accordance with the terms of the plan.

2. USE OF ESTIMATES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements as well as the reported amounts of additions to and deductions from net position during the reporting period. Actual results could differ from these estimates. TRS uses an actuary to determine the total pension liability for the defined benefit plan and to determine the actuarially-required contribution.

3. RISKS AND UNCERTAINTIES

TRS investments are diversified and include various investment securities. Investment securities are exposed to a variety of risk including credit, market and interest rate risk. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that value changes will occur in the near-term and such changes could materially affect the amounts reported in the Statement of Fiduciary Net Position.

4. NEW ACCOUNTING PRONOUNCEMENTS

TRS was not required to implement any new accounting pronouncements in FY19.

5. METHOD USED TO VALUE INVESTMENTS

TRS reports investments at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value for publicly traded real return funds, equities, foreign currency and exchange traded derivatives is determined by using the closing price listed on national securities exchanges as of June 30. Fair value for most of fixed income securities and over-the-counter derivatives is determined primarily by using quoted market prices provided by independent pricing services. Short-term investments are generally reported at amortized cost, which approximates fair value. Appraisals are used to determine fair value on directly-owned real estate investments. Fair value for private equity investments, absolute return funds, non-publicly traded real return funds and partnership interests in real estate funds is determined by TRS staff and the general partners or investment managers in accordance with the provisions in the individual agreements. These agreements also require that an independent audit be performed on an annual basis.

6. CAPITAL ASSETS

Equipment is stated on the basis of historical cost. Depreciation is computed using the straight-line method based upon the estimated useful lives of the assets. Capital assets activity for the year ended June 30, 2019 was as follows:

	Beginning Balance	Additions/ Transfers In	Disposals/ Transfers Out	Ending Balance
Capital Assets, not depreciated:				
Land	\$235,534	\$ -	\$ -	\$235,534
Mineral Lease Rights	2,643	-	-	2,643
	<u>238,177</u>	<u>-</u>	<u>-</u>	<u>238,177</u>
Capital Assets, depreciated:				
Office building	8,462,484	221,973	-	8,684,457
Site improvements	1,127,708	-	-	1,127,708
Equipment and furniture	2,849,869	304,947	106,593	3,048,223
Purchased Software	310,045	-	-	310,045
Internally Generated Software (IGS)	2,125,522	356,885	-	2,482,407
	<u>14,875,628</u>	<u>883,805</u>	<u>106,593</u>	<u>15,652,840</u>
Less accumulated depreciation:				
Office building	7,144,767	352,691	-	7,497,458
Site improvements	818,706	70,988	-	889,694
Equipment and furniture	2,469,872	203,502	106,178	2,567,196
Purchased Software	310,045	-	-	310,045
Internally Generated Software (IGS)	1,521,293	248,537	-	1,769,830
	<u>12,264,683</u>	<u>875,718</u>	<u>106,178</u>	<u>13,034,223</u>
Total Net Capital Assets	<u>\$2,849,122</u>	<u>\$8,087</u>	<u>\$415</u>	<u>\$2,856,794</u>
Office building and site improvements (\$25,000 or greater capitalized)				
				10-40 years
Equipment and furniture (\$5,000 or greater capitalized)				
				3-10 years
Software (\$25,000 or greater capitalized)				
				3-5 years

7. COMPENSATED ABSENCES

When employment is terminated, TRS employees are entitled to receive compensation for all accrued unused vacation time and one-half of all unused sick leave earned through Dec. 31, 1997. (Lump-sum payments for sick leave earned prior to Jan. 1, 1984, are subject to a maximum of 60 days or 420 hours.) Sick time earned after Dec. 31, 1997 is not compensable at termination.

At June 30, 2019, the System had a liability of \$1,977,395 for compensated absences. The liability is included in administrative and investment expenses payable on the Statement of Fiduciary Net Position. For non-investment staff, the

increase or decrease in liability is reflected in the financial statements as administrative expense. For investment staff, the increase or decrease is reflected as investment expense. Compensated absences payable for the year ended June 30, 2019 was as follows:

	Beginning Balance	Additions	Reductions	Ending Balance
Compensated absences payable	\$2,050,178	\$1,026,164	\$1,098,947	\$1,977,395
The estimated amount due within one year is: \$116,700				

8. RECEIVABLES

Receivables consist primarily of 1) member and employer contributions owed and yet to be remitted by the employing districts, 2) interest, dividends, real estate and private equity income owed to TRS, 3) appropriations not yet received from the State of Illinois as of June 30 and 4) pending investment sales.

TRS assesses penalties for late payment of contributions and may collect any unpaid amounts from the employing districts by filing a claim with the appropriate regional superintendent of education or the Office of the Comptroller against future state aid payments to the employer. TRS considers these amounts to be fully collectible.

9. RISK MANAGEMENT

TRS, as a component unit of the State of Illinois, provides for risks of loss associated with workers' compensation and general liability through the State's self-insurance program. TRS obtains commercial insurance for fidelity, surety and property. No material commercial insurance claims have been filed in the last three fiscal years.

C. CASH

Custodial credit risk for deposits is the risk that, in the event of a bank failure, TRS's deposits may not be returned. TRS has a formal policy to address custodial credit risk. The policy is designed to minimize custodial credit risk through proper due diligence of custody financial institutions and investment advisors; segregate safekeeping of TRS assets; establish investment guidelines and work to have all investments held in

custodial accounts through an agent, in the name of custodian's nominee, in a corporate depository or federal book entry account system. For those investment assets held outside of the custodian, TRS will follow the applicable regulatory rules.

The non-investment bank balance and carrying amount of TRS's deposits was \$27,984,061 and \$27,358,430, respectively, at June 30, 2019. All of the bank balance was on deposit with the State Treasurer at June 30, 2019. State Treasurer deposits are in an internal investment pool collateralized at a third-party custodial bank and are not subject to custodial credit risk.

Certain investments of TRS with maturities of 90 days or less would be considered cash equivalents; these consist of bank-sponsored, short-term investment funds, commercial paper and certificates of deposit. For financial statement presentation and investment purposes, TRS reports its cash equivalents as short-term investments in the Statement of Fiduciary Net Position. Included in the reported balances is the State Street Global Advisors Short-Term Investment Fund (STIF) with a value of \$1,414,878,655 at June 30, 2019. The STIF fund has an average credit quality rating of A1P1 and a weighted average maturity of 42.0 days.

For purposes of this disclosure, foreign currency held by investment managers is considered a deposit. However, for financial statement presentation and investment purposes, TRS considers foreign currency an investment asset. Uncollateralized foreign currency subject to custodial credit risk was \$95,012,450 at June 30, 2019.

D. INVESTMENTS

1. INVESTMENT POLICIES

Through the TRS Board of Trustees, as authorized in the Illinois Pension Code, TRS serves as fiduciary for the members' trust funds and is responsible for investment of those funds by authority of the "prudent person rule." This rule establishes a standard for all fiduciaries by specifying fiduciary responsibility with regard to the members' trust funds.

LONG-TERM ASSET ALLOCATION

The TRS Board of Trustees has the responsibility of establishing and maintaining broad policies and objectives for all aspects of the System's operations, including the allocation of invested assets. Plan 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 through the pension plan. The following table summarizes the board-adopted, long-term allocation targets in effect as of June 30, 2019.

Long-term Asset Allocation Policy Mix	
Equity investments	54%
Real assets	15
Diversifying strategies	14
Income investments	17
Total	100%

2. INVESTMENT RISK

CUSTODIAL CREDIT RISK

Custodial credit risk for investments is the risk that, in the event of a financial institution failure, TRS would not be able to recover the value of the investments in the possession of an outside party. The TRS investment policy adopted by the TRS Board of Trustees includes a formal process to address custodial credit risk. This policy requires the custodian to provide safekeeping of the System's assets in segregated accounts and to have the assets registered in TRS's name, custodian's nominee name or in a corporate depository or federal book entry system.

CONCENTRATION OF CREDIT RISK

Concentration of credit risk is the risk of loss that may be attributed to the magnitude of an investment in any one issuer. Investment parameters established in the Investment Management Agreements with external managers restrict holdings to no more than 5 percent of a single issuer within an account. The TRS portfolio has no investments in any one issuer that comprise 5 percent or more of the System's total investments or fiduciary net position.

CREDIT RISK

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations to TRS. Credit risk exposure is dictated by each investment manager's agreement. Each portfolio is managed in accordance with investment guidelines that are specific as to permissible credit quality ranges, exposure levels within individual security quality rating tiers and/or the average credit quality of the overall portfolio. Most guidelines allow managers to hold bonds rated Caa2 or better. However, in circumstances where position downgrades occur, investment managers have been given permission to hold securities below this rating due to circumstances such as a higher peer group rating from another nationally-recognized statistical rating organization, the investment manager's internal ratings or other mitigating factors.

As of June 30, 2019, TRS held the following fixed income investments with respective Moody's quality ratings or equivalent rating. Obligations of the U.S. government or obligations explicitly guaranteed by the U.S. government are not considered to have credit risk.

Quality Rating	Corporate Debt Securities	Asset-Backed Securities	Foreign Debt Securities	U.S. Agency Obligations	U.S. Government Backed Mortgages	U.S. Municipals	Commingled Funds	Total
Aaa	\$539,800,416	\$294,081,167	\$88,226,736	\$119,472,014	\$599,118,460	\$2,941,824	\$ -	\$1,643,640,617
Aa1	22,813,781	4,112,317	17,393,145	-	-	24,933,843	-	69,253,086
Aa2	120,884,130	3,521,358	261,605,569	-	-	10,904,233	69,076,528	465,991,818
Aa3	60,497,650	-	83,339,501	-	-	13,993,504	-	157,830,655
A1	192,406,120	421,728	164,317,350	-	-	5,440,695	434,714,090	797,299,983
A2	474,718,027	3,911,353	74,825,832	-	-	16,950,142	-	570,405,354
A3	518,032,458	3,970,446	259,517,654	-	-	1,231,746	19,007,511	801,759,815
Baa1	245,867,666	-	145,989,311	-	-	11,122,501	-	402,979,478
Baa2	451,067,906	691,863	557,047,523	-	-	851,252	304,692,744	1,314,351,288
Baa3	454,797,438	1,305,353	461,905,620	-	-	1,452,787	87,853,977	1,007,315,175
Ba1	104,130,478	894,119	88,021,594	-	-	3,199,187	-	196,245,378
Ba2	48,974,536	-	313,478,558	-	-	-	-	362,453,094
Ba3	157,294,722	883,761	145,229,187	-	-	-	414,998,639	718,406,309
B1	103,494,079	200,305	154,470,413	-	-	-	446,040,310	704,205,107
B2	90,184,667	-	392,645,713	-	-	-	106,207,901	589,038,281
B3	52,556,642	-	191,186,835	-	-	-	573,580,088	817,323,565
Caa1	27,541,202	-	54,356,765	-	-	-	-	81,897,967
Caa2	6,291,872	405,372	242,650	-	-	-	-	6,939,894
Caa3	4,611,908	-	627,369	-	-	-	-	5,239,277
Ca	1,016,072	2,177,829	2,399,589	-	-	-	2,467,611	8,061,101
C	4,616,669	67,269	3,407,287	-	-	-	-	8,091,225
Not available	-	-	-	-	-	-	1,506,324,273	1,506,324,273
Not rated	19,066,451	9,046,104	21,332,742	-	-	-	-	49,445,297
Withdrawn	3,521,784	-	1,708,946	-	-	-	-	5,230,730
Total credit risk, bonds, corporate notes and government obligations	3,704,186,674	325,690,344	3,483,275,889	119,472,014	599,118,460	93,021,714	3,964,963,672	12,289,728,767
U.S. Treasuries								1,436,032,644
Total bonds, corporate notes & government obligations	\$3,704,186,674	\$325,690,344	\$3,483,275,889	\$119,472,014	\$599,118,460	\$93,021,714	\$3,964,963,672	\$13,725,761,411

INTEREST RATE RISK

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. TRS's fixed income investments are managed in accordance with operational guidelines that are specific as to the degree of interest rate risk that can be taken. TRS manages the interest rate risk within the portfolio using various methods including effective duration, option adjusted duration, average maturity and segmented time distribution, which reflect the total fair value of investments maturing during a given time period.

The segmented time distribution of the various investment types of TRS debt securities as of June 30, 2019 is as follows:

Type	2019 Fair Value	Maturity in Years					Other*
		Less Than 1 year	1 to 5 years	5 to 10 years	10 to 20 years	More Than 20 years	
U.S. treasuries/agencies	\$1,555,504,658	\$264,493,946	\$504,420,005	\$523,237,521	\$58,427,498	\$204,925,688	\$ -
U.S. government-backed mortgages	599,118,460	767,662	8,111,543	10,676,293	46,820,280	532,742,682	-
Municipals	93,021,714	277,005	4,872,344	10,577,853	33,115,944	44,178,568	-
Asset-backed securities	325,690,344	1,217,377	224,372,765	47,140,829	34,705,065	18,254,308	-
Commingled funds (U.S. & international)**	3,964,963,672	-	1,906,753,078	880,169,985	-	-	1,178,040,609
Corporate debt securities	3,704,186,674	286,555,895	1,750,867,097	936,117,957	306,951,870	423,693,855	-
Foreign debt/corporate obligations	3,483,275,889	262,049,505	1,177,698,845	1,265,932,468	351,308,599	426,286,472	-
Total bonds, corporate notes and government obligations	13,725,761,411	815,361,390	5,577,095,677	3,673,852,906	831,329,256	1,650,081,573	1,178,040,609
Derivatives	(55,888,377)	980,267	(2,227,657)	(25,564,242)	(1,467,339)	(27,609,406)	-
Total bonds, corporate notes, government obligations, securities lending collateral and derivatives	\$13,669,873,034	\$816,341,657	\$5,574,868,020	\$3,648,288,664	\$829,861,917	\$1,622,472,167	\$1,178,040,609

* Maturity date is not available or applicable.

** Weighted average maturity figures were used if available to plot the commingled funds within the schedule.

FOREIGN CURRENCY RISK

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. TRS's currency risk exposure, or exchange rate risk, is primarily derived from its holdings in foreign currency-denominated equity, fixed income and derivative investments as well as foreign currency. According to TRS's Investment Policy and investment manager agreements, international equity and global fixed income managers, at their discretion, may or may not hedge the portfolio's foreign currency exposures with currency forward contracts or options, depending upon their views on a specific country or foreign currency relative to the U.S. dollar.

TRS's exposure to foreign currency risk in U.S. dollars as of June 30, 2019 is as follows:

Currency	Foreign Currency	Equities	Fixed Income	Derivatives	Total
Argentine Peso	\$4,270,341	\$ -	\$65,073,482	\$ -	\$69,343,823
Australian Dollar	3,612,880	382,233,590	25,582,311	-	411,428,781
Bangladeshi Taka	-	1,420,115	-	-	1,420,115
Brazilian Real	826,462	205,896,311	176,221,354	(502,358)	382,441,769
British Pound	13,786,536	950,982,799	103,716,435	(3,153,529)	1,065,332,241
Canadian Dollar	6,476,947	522,738,007	13,980,101	-	543,195,055
Chilean Peso	445,054	12,708,029	8,306,968	9	21,460,060
Chinese Yuan	7,833,457	-	-	154,169	7,987,626
Chinese Yuan Renminbi	(3,666,114)	106,281,952	-	62,722	102,678,560
Columbia Peso	604,163	1,115,172	57,205,286	132,201	59,056,822
Czech Koruna	6,271	1,855,709	2,980,023	28,836	4,870,839
Danish Krone	38,932	111,528,157	31,400,796	-	142,967,885
Dominican Peso	-	-	5,771,197	-	5,771,197
Egyptian Pound	264,866	5,012,479	28,867,837	-	34,145,182
Emirati Dirham	16,309	12,074,595	-	-	12,090,904
Euro	18,084,221	1,932,799,996	163,390,164	(1,092,400)	2,113,181,981
Ghana Cedi	551,138	-	28,171,612	-	28,722,750
Hong Kong Dollar	5,242,542	738,419,970	-	645,581	744,308,093
Hungarian Forint	349,295	20,075,221	5,396,650	-	25,821,166
Indian Rupee	1,271,990	189,784,370	104,595,757	-	295,652,117
Indonesian Rupiah	715,589	59,200,665	160,797,647	-	220,713,901
Israeli Shekel	550,680	47,968,016	-	196,378	48,715,074
Japanese Yen	20,025,902	1,405,022,864	27,855,269	(3,303,487)	1,449,600,548
Malaysian Ringgit	686,770	27,640,961	20,242,350	-	48,570,081
Mexican Peso	240,605	78,554,463	167,489,654	416,161	246,700,883
Moroccan Dirham	517	-	-	-	517
New Taiwan Dollar	768,420	263,936,795	-	-	264,705,215
New Zealand Dollar	730,024	7,565,181	5,924,024	(101,217)	14,118,012
Nigerian Naira	(1,378)	-	13,249,213	-	13,247,835
Norwegian Krone	493,446	51,931,318	-	-	52,424,764
Pakistani Rupee	11,227	151,906	-	-	163,133
Peruvian Sol	156,209	23,572	41,389,592	-	41,569,373
Philippine Peso	175,793	13,181,649	7,757,961	-	21,115,403
Polish Zloty	118,013	19,208,163	28,489,441	(105,105)	47,710,512
Qatari Riyal	23,028	3,572,010	-	-	3,595,038
Romanian Leu	105,744	-	14,198,756	-	14,304,500
Russian Ruble	136,473	29,942,105	65,682,534	-	95,761,112
Singapore Dollar	826,536	90,547,310	-	(33,091)	91,340,755
South African Rand	693,156	96,434,165	57,740,513	185,045	155,052,879
South Korean Won	2,946,360	333,671,616	77,772,202	980,002	415,370,180
Swedish Krona	1,037,287	159,513,291	6,875,007	-	167,425,585
Swiss Franc	3,047,727	472,049,347	-	-	475,097,074
Thailand Baht	784,904	68,239,653	21,120,549	-	90,145,106
Turkish Lira	613,270	30,917,474	12,246,879	(26,746)	43,750,877
Ukraine Hryvnia	-	-	1,861,923	-	1,861,923
Uruguayan Peso	10,932	-	623,137	-	634,069
Vietnam Dong	99,926	2,183,395	-	-	2,283,321
Total subject to foreign currency risk	95,012,450	8,456,382,391	1,551,976,624	(5,516,829)	10,097,854,636
Investments in international securities payable in U.S. dollars	-	1,453,214,262	1,945,109,596	(1,715,692)	3,396,608,166
Total international investment securities (including domestic securities payable in foreign currency)	95,012,450	9,909,596,653	3,497,086,220	(7,232,521)	13,494,462,802
Domestic investments (excluding securities payable in foreign currency)	-	7,914,084,770	10,228,675,191	(48,655,856)	18,094,104,105
Total fair value	\$95,012,450	\$17,823,681,423	\$13,725,761,411	(\$55,888,377)	\$31,588,566,907

In addition to the previous table, the fair value of TRS's investments in foreign currency denominated real estate and private equity funds was \$15,095,549 and \$458,506,146 at June 30, 2019, respectively. Currencies included Euro, British pound, Canadian dollar, Japanese yen and South Korean won.

3. SECURITIES LENDING PROGRAM

The TRS Board of Trustees' policies permit TRS to use investments to enter into securities lending transactions, which are loans of securities to broker-dealers or other approved entities. The borrower of a security must post collateral in excess of the fair value of the security. TRS receives both cash and non-cash (i.e., securities) collateral.

Eligible forms of collateral include cash consisting of U.S. dollar, euro, sterling and yen, U.S. treasuries, government agency securities, certificates of deposit, letters of credit issued by approved banks and specific types of corporate debt obligations and common stock. Initial collateral received from the borrower must be at least 102 percent of the fair value of all loaned securities except non-U.S. securities, which require 105 percent. Securities on loan are marked to market daily and collateral for the loan is required not to fall below minimum levels established by TRS and its lending agent. Agreements are in place allowing TRS, upon demand, to return the collateral in exchange for the original securities. TRS does not have the authority to pledge or sell collateral securities without borrower default; as such, the collateral security or non-cash collateral is not reported in TRS's financial statements in accordance with GASB Statement No. 28, "Accounting and Financial Reporting for Securities Lending Transactions."

As of June 30, 2019, Citibank, N.A. served as the third-party securities lending agent for the fixed income, domestic equity and international equity lending programs. In this capacity, TRS reduces credit risk by allowing Citibank to lend securities to a diverse group of dealers on behalf of TRS. At fiscal-year end, TRS has no credit risk exposure to borrowers because the amount TRS owes the borrowers exceeds the amount the borrowers owe TRS.

The weighted average term of the loans is 15 days as securities on loan can be recalled on demand by TRS or the borrower can return the loaned securities at any time. Since loans are terminable at will, the maturity of loans generally does not match the maturity of collateral investments. TRS may enter into term loan agreements, evaluated on an individual basis. As of June 30, 2019, there were no term loans outstanding.

Cash collateral received is invested in a separate account managed by the lending agent, with a weighted average maturity of 59 days at June 30, 2019. There were no significant violations of legal or contractual provisions and there were no borrower or lending agent default losses known to the securities lending agent.

As of June 30, 2019, TRS had outstanding loaned investment securities with a fair value of \$2,549,982,718 against which it had received cash and non-cash collateral with a fair value of \$2,628,040,181. The securities on loan remain on TRS's Statement of Fiduciary Net Position in their respective investment categories. As of June 30, 2019, TRS cash collateral received and reported as securities lending obligation on the Statement of Fiduciary Net Position totaled \$2,485,795,602; whereas, the fair value of reinvested cash collateral reported as securities lending collateral was \$2,485,824,046. The net increase (decrease) in fair value of investments within the Statement of Changes in Fiduciary Net Position reflects the change in fair value of the reinvested cash collateral. TRS also reports securities lending collateral with the Office of the Illinois State Treasurer on the Statement of Fiduciary Net Position. Further detail on this amount can be obtained by calling the Office of the Illinois State Treasurer at (217) 558-1250 or by visiting www.treasurer.il.gov.

Income earned and costs related to securities lending activities are reported on the Statement of Changes in Fiduciary Net Position. For FY19, the System earned net income of \$10,848,699 from securities lending. Additional detail regarding

securities lending activity is included within the Investments section.

4. DERIVATIVES

TRS, through its investment managers, invests in derivative securities as a fundamental part of the overall investment process. All TRS derivatives are considered investments and the fair value is reported in the Statement of Fiduciary Net Position. TRS does not directly invest in derivatives but allows certain external managers to utilize these instruments within the investment portfolio for a variety of purposes. TRS managers may hold derivatives to hedge investment transactions accounted for at fair value. The term “hedge” in this context denotes the broad economic activity of entering into contracts intended to offset risks associated with certain transactions, such as the changes in interest rates on investments in debt securities, commodities or instruments denominated in a foreign currency. Assets and liabilities that are measured at fair value, such as investments, do not qualify as hedgeable items and do not meet the requirements for hedge accounting.

A derivative security is an investment whose return depends upon the value of another financial instrument or security such as stocks, bonds, commodities or a market index. The derivative investments in TRS’s portfolio are used primarily to enhance performance and reduce volatility. TRS’s investments in derivatives are not leveraged through borrowing. In the case of an obligation to purchase (long a financial future or call option), the full value of the obligation is primarily held in cash or cash equivalents. For obligations to sell (short a financial future or put option), the reference security is held in the portfolio.

To varying degrees, derivative transactions involve credit risk, sometimes known as default or counterparty risk and market risk. Credit risk is the possibility that a loss may occur because a party to a transaction fails to perform according to the established contract terms. To eliminate credit risk, derivative securities can be acquired through a

clearinghouse that guarantees delivery and accepts the risk of default by either party. The Commodity Futures Trading Commission (CFTC) mandates that any entity that trades or is counterparty to OTC (over-the-counter) derivatives must have a Global Market Entity Identifier (GMEI). TRS is registered and maintains a legal entity identifier.

Market risk is the possibility that a change in interest, currency or other pertinent market rates will cause the value of a financial instrument to decrease or become more costly to settle. Imposing limits on the types, amounts and degree of risk that investment managers may undertake restricts the market risk associated with the constantly fluctuating prices of derivatives. These limits and derivative positions of the investment managers are reviewed on a regular basis to monitor compliance.

As of June 30, 2019, derivative investments in the TRS investment portfolio included currency forward contracts, rights, warrants, futures, options, swaps and swaptions. Within the financial statements, currency forward contracts are reflected as investment payables/receivables, rights and warrants are reflected as equities and all futures, options, swaps and swaptions are classified as derivatives. The change in fair value of derivative investments is included in investment income on the Statement of Changes in Fiduciary Net Position.

The following tables summarize the derivatives held within the TRS investment portfolio and the change in fair value of derivative investments, realized and unrealized, during the fiscal year. The notional amounts shown represent TRS’s financial exposure to these instruments in U.S. dollars. Investments in limited partnerships and commingled funds may include derivatives that are not covered in the following disclosure.

As of June 30, 2019, the TRS investment portfolio held the following derivatives.

Investment Derivatives	Fair Value at June 30, 2019	Change in Fair Value	Shares/Par	Notional
Credit default swaps buying protection	\$545,840	(\$879,660)	51,807,000	\$51,329,877
Credit default swaps selling protection	(382,139)	1,314,681	154,718,261	154,388,969
Index and variance swaps	1,161,659	(5,805,322)	(39,084,049)	64,892,408
Pay fixed interest rate swaps	(62,276,154)	(105,366,644)	1,443,647,390	1,446,599,853
Receive fixed interest rate swaps	7,068,097	18,848,460	272,687,256	266,163,797
Pay fixed inflation swaps	(2,796,610)	(1,790,404)	76,129,033	74,193,553
Receive fixed inflation swaps	722,370	1,718,330	46,895,519	47,617,890
Commodity futures long	-	(2,817,383)	1,220,955	7,430,587
Commodity futures short	-	(217,900)	(10,087,280)	(11,695,278)
Equity futures long	-	935,360	76,952,475	76,578,052
Equity futures short	-	799,535	(34,832)	(36,913,592)
Fixed income futures long	-	71,701,034	1,030,982,949	1,347,700,867
Fixed income futures short	-	(36,491,791)	(845,996,041)	(865,735,859)
Currency forward options purchased	309,747	(684,701)	89,991,483	83,287,525
Currency forward options written	-	177,383	-	-
Options on futures purchased	-	(32,625)	-	-
Options on futures written	(167,545)	1,340,498	(650,000)	35,405,972
Swaptions purchased	1,015,249	(1,772,690)	197,535,531	14,029,676
Swaptions written	(1,058,994)	5,649,044	(316,941,613)	41,224,924
Inflation options	(29,897)	211,400	(146,005,042)	104,074,008
FX forwards	(14,458,812)	77,359,951	-	-
Rights	840,589	151,824	8,040,058	8,040,058
Warrants	33,180,378	1,823,359	7,827,332	7,827,332
Grand total	<u>(\$36,326,222)</u>	<u>\$26,171,739</u>		<u>\$ 2,916,440,619</u>

CURRENCY FORWARD CONTRACTS

Objective: Currency forward contracts are agreements to exchange one currency for another at an agreed upon price and settlement date. TRS's investment managers use these contracts primarily to hedge the currency exposure of its investments.

Terms: Currency forward contracts are two-sided contracts in the form of either forward purchases or forward sales. Forward purchases obligate TRS to purchase specific currency at an agreed upon price. Forward sales obligate TRS to sell specific currency at an agreed upon price. As of June 30, 2019, TRS had currency forward purchase or sale

contracts for 37 different currencies with various settlement dates.

Fair Value: As of June 30, 2019, TRS's open currency forward contracts had a net fair value (unrealized-loss) of \$14,458,812.

FINANCIAL FUTURES

Objective: Financial futures are agreements to purchase or sell a specific amount of an asset at a specified delivery or maturity date for an agreed upon price. These derivative securities are used to improve yield, adjust the duration of the fixed

income portfolio, protect against changes in interest rates or replicate an index.

Terms: Futures contracts are standardized and traded on organized exchanges, thereby minimizing TRS's credit risk. As the daily market value of the futures contract varies from the original contract price, a gain or loss is recognized and paid to, or received from, the clearinghouse. As of June 30, 2019, TRS had outstanding futures contracts with a notional value, or exposure, of \$517,364,777. Notional values do not represent the actual values in the Statement of Fiduciary Net Position. The contracts have various expiration dates through March 2020.

Fair Value: Gains and losses on futures contracts are settled daily based on the change of the index or commodity price for the underlying notional value. Because of daily settlement, the futures contracts have no fair value. TRS's realized gain on futures contracts was \$26,775,396 during FY19.

Type	Number of Contracts	Notional Principal
Commodity Futures		
Commodity futures - long	133	\$7,430,587
Commodity futures - short	(245)	(11,695,278)
Equity Futures		
U.S. stock index futures - long	21	1,106,070
International equity index futures - long	1,384	75,471,982
International equity index futures - short	(1,234)	(36,913,592)
Fixed Income/Cash Equivalent Futures		
Fixed income index futures - long	8,552	1,152,471,047
Fixed income index futures - short	(2,004)	(330,462,149)
International fixed income index futures - long	712	139,042,295
International fixed income index futures - short	(3,216)	(331,106,198)
Cash equivalent (eurodollar) futures - long	229	56,187,525
Cash equivalent (eurodollar) futures - short	(833)	(204,167,512)
Total futures (net)	<u>3,499</u>	<u>\$517,364,777</u>

FINANCIAL OPTIONS

Objective: Financial options are agreements that give one party the right, but not the obligation, to buy or sell a specific amount of an asset for a specified price, called the strike price, on or before a specified expiration date. The owner (buyer) of an option has all the rights, while the seller (writer) of an option has the obligations of the agreement. As a writer of financial options, TRS receives a premium at the outset of the agreement and bears the risk of an unfavorable change in the price of the financial instrument underlying the option. Premiums received are recorded as a liability when the financial option is written. The Options Clearing Corporation (OCC) performs much the same function for options markets as the clearinghouse does for futures markets.

Terms: As of June 30, 2019, the TRS investment portfolio held currency forward options with notional value of \$83,287,525, inflation options with notional value of \$104,074,008, and options on futures with underlying notional value of \$35,405,972. Contractual principal/notional values do not represent the actual values in the Statement of Fiduciary Net Position. The contracts have various expiration dates through June 2035.

Fair Value: Fluctuations in the fair value of financial options are recognized in TRS's financial statements as incurred rather than at the time the options are exercised or expire. As of June 30, 2019, the fair value of all option contracts, gross of premiums received, was \$112,305. The fair value represents the amount needed to close all positions as of that date. The following table presents the aggregate contractual principal (notional value) of outstanding contracts as of June 30, 2019. Notional principal amounts are often used to express the volume of these transactions but do not reflect the extent to which positions may offset one another. Options on futures represent the corresponding futures exposure.

Type	Number of Contracts	Notional Principal
Currency Forward Options		
Currency forward call options - purchased	1	\$22,091,948
Currency forward put options - purchased	2	61,195,577
Inflation Options		
Inflation call options - written	5	104,005,053
Inflation put options - written	9	68,955
Options on Futures		
Fixed income call options on futures USD - written	(85)	5,959,520
Fixed income put options on futures USD - written	(37)	88,800
Commodity call options on futures USD - written	(60)	809,652
Commodity put options on futures USD - written	(36)	28,548,000

SWAPTIONS

Objective: Swaptions are options on swaps that give the purchaser the right, but not the obligation, to enter into a swap at a specific date in the future. An interest-rate swaption gives the buyer the right to pay or receive a specified fixed interest rate in a swap in exchange for a floating rate for a stated time period. TRS has both written and purchased interest rate swaptions in its portfolio. In a written call swaption, the seller (writer) is obligated to pay a fixed rate in exchange for a floating rate for a stated period of time and in a written put swaption, the seller is obligated to receive a fixed rate in exchange for a floating rate if the swaption is exercised. A purchased (long) call swaption gives the buyer the right to receive a fixed rate in exchange for a floating rate for a stated period of time while a purchased (long) put swaption gives the buyer the right to pay a fixed rate in exchange for a floating rate if the swaption is exercised.

The TRS investment portfolio also holds credit default swaptions. A credit default swaption gives the holder the right, but not the obligation to buy (call) or sell (put) protection on a specified entity or index for a specified future time period.

As the writer of a swaption, TRS receives a premium at the outset of the agreement. Premiums are

recorded as a liability when the swaption is written. As the purchaser of a swaption, TRS pays an upfront premium.

Terms: As of June 30, 2019, TRS had outstanding written put swaption exposure of \$41,224,924 and purchased put swaption exposure of \$14,029,676. The contracts have various maturity dates through December 2019. Exposure amounts for swaptions do not represent the actual values in the Statement of Fiduciary Net Position.

Fair Value: Fluctuations in the fair value of swaptions are recognized in TRS's financial statements as incurred rather than at the time the swaptions are exercised or when they expire. As of June 30, 2019, the fair value of swaption contracts was (\$43,745).

CREDIT DEFAULT SWAPS/INDEX SWAPS

Objective: Credit default swaps are financial instruments used to replicate the effect of investing in debt obligations of corporate bond issuers as a means to manage bond exposure, effectively buying or selling insurance protection in case of default. Credit default swaps may be specific to an individual security or to a specific market sector (index swaps). The risk of the credit default/index swap is comparable to the credit risk of the underlying debt obligations of issuers that comprise the credit default/index swap, with the primary risk being counterparty risk. The owner/buyer of protection pays an agreed upon premium to the seller of protection for the right to sell the debt at a previously agreed upon value in the event of a default by the bond issuer. The premium is paid periodically over the term of the swap or until a credit event of the bond issuer occurs. In the event of a default, the swap is called and the seller of protection makes a payment to the buyer, which is usually based on a fixed percentage of total par.

Purchased credit default swaps decrease credit exposure (buying protection), providing the right to sell debt to the counterparty in the event of a default. A buyer of credit protection against a basket of securities pays an upfront or periodic payment until either maturity or default. In the event of a

default, the buyer receives a lump-sum payment. If no default occurs, the buyer loses only the premium paid.

Written credit default swaps increase credit exposure (selling protection), obligating the portfolio to buy debt from counterparties in the event of a default. A seller of credit protection against a basket of securities receives an upfront or periodic payment to compensate against potential default events. If a default event occurs, the seller must pay the buyer the full notional value of the obligation in exchange for the obligation. If no default occurs, the seller will have earned the premium paid.

Terms: As of June 30, 2019, TRS had credit default/index swaps in its portfolio with various maturity dates through May 2063. The notional values as of June 30, 2019, included purchased credit default swaps (buying protection) of \$51,329,877, written credit default swaps (selling protection) of \$154,388,969 and index swaps of \$64,892,408.

Fair Value: The fair value of credit default swaps, including index swaps, held by TRS was \$1,325,360 as of June 30, 2019. This represents the amount due to or (from) TRS under the terms of the counterparty agreements.

INTEREST RATE SWAPS

Objective: Interest rate swaps are agreements between parties to exchange a set of cash flow streams over a period of time. 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. Long positions (receive fixed) increase exposure to long-term interest rates; short positions (pay fixed) decrease interest rate/risk exposure.

Terms: As of June 30, 2019, TRS held interest rate swaps in various currencies with various expiration/maturity dates ranging from 2019 to 2049. Swap agreements typically are settled on a net basis, with a party receiving or paying only the net amount of the fixed/floating payments. Payments may be

made at the conclusion of a swap agreement or periodically during its term.

Fair Value: The table below presents the fair value of TRS's interest rate swap exposure as of June 30, 2019.

As of June 30, 2019	
Receive floating/pay fixed	(\$62,276,154)
Receive fixed/pay floating	7,068,097

INFLATION-LINKED SWAPS

Objective: Inflation-linked swaps are agreements where a fixed payment is exchanged for a variable payment linked to an inflation index. These swaps can protect against unfavorable changes in inflation expectations and are used to transfer inflation risk from one counterparty to another.

Terms: As of June 30, 2019, TRS was a party to inflation-linked swaps denominated in various currencies with expiration dates through October 2046. Inflation-linked swaps initially have no net value; the value of the swap's outstanding payments will change as interest and inflation rates change. The value may be either positive or negative.

Fair value: The fair value of the inflation-linked swaps held by TRS was (\$2,074,240) as of June 30, 2019.

DERIVATIVE INTEREST RATE RISK

Interest rate risk for derivative securities is disclosed in the Financial Note D. 2. Both interest rate and inflation rate swaps have fair values that are sensitive to interest rate changes.

TRS had the following interest rate and inflation swaps at June 30, 2019.

Asset Description	Par	Gross Notional	TRS Receives	TRS Pays	Maturity Date	Fair Value 6/30/19
Pay Fixed Interest Rate Swaps:						
Interest Rate Swap GBP	700,000	\$893,148	6 month LIBOR	2.05%	9/23/2019	(\$2,314)
Interest Rate Swap ILS	22,450,000	6,296,619	3 month TELBOR	0.29	2/16/2020	(106)
Interest Rate Swap ILS	13,770,000	3,861,654	3 month TELBOR	0.27	3/21/2020	514
Interest Rate Swap EUR	14,300,000	16,297,408	12 month EONIA	0.99	3/30/2020	12,562
Interest Rate Swap ILS	16,530,000	4,632,487	3 month TELBOR	0.37	6/20/2020	(2,595)
Interest Rate Swap ILS	11,400,000	3,193,247	3 month TELBOR	0.42	6/20/2020	(3,361)
Interest Rate Swap USD	50,200,000	50,257,554	3 month LIBOR	2.90	9/14/2020	(560,288)
Interest Rate Swap USD	500,000	500,435	3 month LIBOR	2.00	12/16/2020	(772)
Interest Rate Swap USD	18,300,000	18,314,753	3 month LIBOR	2.75	12/19/2020	(228,037)
Interest Rate Swap USD	800,000	800,530	3 month LIBOR	1.25	6/21/2021	8,644
Interest Rate Swap GBP	17,220,000	21,915,897	6 month LIBOR	1.00	9/18/2021	(71,492)
Interest Rate Swap USD	52,250,000	53,188,367	12 month LIBOR	2.33	9/27/2021	(908,211)
Interest Rate Swap EUR	1,125,000	1,281,150	EONIA	0.25	5/11/2022	(9,762)
Interest Rate Swap USD	9,030,000	9,030,000	12 month LIBOR	2.35	5/31/2022	(220,326)
Interest Rate Swap USD	810,000	810,000	12 month LIBOR	2.36	9/27/2022	(22,292)
Interest Rate Swap USD	14,115,000	14,313,484	12 month LIBOR	2.61	11/30/2022	(547,470)
Interest Rate Swap USD	2,100,000	1,867,168	3 month LIBOR	2.56	5/8/2023	(232,832)
Interest Rate Swap EUR	2,770,000	3,154,477	EONIA	0.10	5/11/2023	(46,510)
Interest Rate Swap USD	825,000	827,712	3 month LIBOR	2.11	2/15/2024	(13,513)
Interest Rate Swap USD	8,548,000	8,576,101	3 month LIBOR	2.15	2/15/2024	(152,620)
Interest Rate Swap USD	2,595,000	2,603,531	3 month LIBOR	2.18	2/15/2024	(50,090)
Interest Rate Swap EUR	3,140,000	3,575,833	EONIA	0.05	5/11/2024	(82,489)
Interest Rate Swap USD	15,955,000	16,007,450	3 month LIBOR	1.96	5/15/2024	(152,847)
Interest Rate Swap ZAR	18,350,000	1,307,602	3 month JIBAR	7.15	6/6/2024	(6,709)
Interest Rate Swap ZAR	29,490,000	2,101,427	3 month JIBAR	7.18	6/6/2024	(13,149)
Interest Rate Swap USD	15,900,000	15,904,083	3 month LIBOR	1.98	6/27/2024	(168,894)
Interest Rate Swap USD	13,144,000	13,224,412	3 month LIBOR	2.73	7/7/2024	(619,605)
Interest Rate Swap USD	25,855,000	25,939,996	3 month LIBOR	2.17	8/15/2024	(517,140)
Interest Rate Swap USD	14,410,000	14,457,371	3 month LIBOR	2.18	8/15/2024	(292,267)
Interest Rate Swap GBP	96,400,000	122,688,299	6 month LIBOR	1.25	9/18/2024	(2,039,308)
Interest Rate Swap USD	53,215,000	53,389,939	3 month LIBOR	2.33	11/15/2024	(1,538,806)
Interest Rate Swap USD	13,890,000	13,957,992	3 month LIBOR	1.91	1/22/2025	(103,622)
Interest Rate Swap USD	10,240,000	10,287,745	3 month LIBOR	1.97	1/27/2025	(108,029)
Interest Rate Swap USD	2,560,000	2,571,385	3 month LIBOR	1.94	1/29/2025	(22,160)
Interest Rate Swap USD	2,170,000	2,179,652	3 month LIBOR	1.94	1/30/2025	(19,207)
Interest Rate Swap USD	3,420,000	3,434,436	3 month LIBOR	1.82	2/3/2025	(7,196)
Interest Rate Swap USD	7,920,000	7,920,000	12 month LIBOR	2.45	2/28/2025	(397,673)
Interest Rate Swap USD	5,525,000	5,538,153	3 month LIBOR	3.02	2/28/2025	(369,381)
Interest Rate Swap USD	7,050,000	7,051,810	3 month LIBOR	1.98	3/27/2025	(78,230)
Interest Rate Swap USD	7,050,000	7,051,810	3 month LIBOR	1.99	3/27/2025	(81,048)
Interest Rate Swap EUR	190,000	216,372	EONIA	0.10	5/11/2025	(5,711)
Interest Rate Swap USD	23,079,000	23,129,116	3 month LIBOR	3.00	5/31/2025	(1,570,583)
Interest Rate Swap USD	7,760,000	7,810,435	3 month LIBOR	2.45	7/2/2025	(260,162)
Interest Rate Swap USD	2,145,000	2,145,000	12 month LIBOR	2.80	7/31/2025	(160,892)

(continued)

(continued)

Asset Description	Par	Gross Notional	TRS Receives	TRS Pays	Maturity Date	Fair Value 6/30/19
Interest Rate Swap USD	8,200,000	\$8,236,474	3 month LIBOR	3.10%	7/31/2025	(\$621,363)
Interest Rate Swap USD	20,397,000	20,487,727	3 month LIBOR	3.11	7/31/2025	(1,550,821)
Interest Rate Swap GBP	6,560,000	8,348,913	6 month LIBOR	2.34	1/13/2026	(553,446)
Interest Rate Swap USD	60,545,000	60,545,000	12 month LIBOR	2.27	1/31/2026	(2,656,522)
Interest Rate Swap USD	2,700,000	2,700,524	3 month LIBOR	2.24	1/31/2026	(71,295)
Interest Rate Swap USD	5,137,000	5,137,000	3 month LIBOR	2.41	1/31/2026	(190,135)
Interest Rate Swap USD	5,100,000	5,100,000	12 month LIBOR	2.29	3/12/2026	(230,384)
Interest Rate Swap JPY	1,490,000,000	13,829,697	6 month JPY LIBOR	0.30	3/18/2026	(356,248)
Interest Rate Swap USD	10,395,000	10,395,000	3 month LIBOR	1.88	4/30/2026	(49,043)
Interest Rate Swap GBP	310,000	387,402	12 month SONIA	1.00	5/8/2026	(7,135)
Interest Rate Swap USD	2,600,000	2,602,815	3 month LIBOR	2.25	6/15/2026	(71,515)
Interest Rate Swap USD	34,910,000	34,910,000	3 month LIBOR	2.40	12/7/2026	(791,210)
Interest Rate Swap USD	36,400,000	36,424,126	3 month LIBOR	1.75	12/21/2026	263,828
Interest Rate Swap USD	6,171,000	6,226,937	12 month LIBOR	1.82	2/15/2027	(77,877)
Interest Rate Swap USD	4,330,000	4,369,249	12 month LIBOR	1.90	2/15/2027	(79,388)
Interest Rate Swap USD	1,720,000	1,735,592	12 month LIBOR	1.96	2/15/2027	(40,164)
Interest Rate Swap USD	4,335,000	4,374,298	12 month LIBOR	2.07	2/15/2027	(135,210)
Interest Rate Swap USD	1,790,000	1,796,873	3 month LIBOR	2.31	5/8/2027	(58,538)
Interest Rate Swap USD	525,000	526,726	3 month LIBOR	2.29	5/15/2027	(16,475)
Interest Rate Swap USD	6,300,000	6,304,176	3 month LIBOR	1.50	6/21/2027	180,831
Interest Rate Swap USD	6,200,000	6,204,521	3 month LIBOR	2.50	12/20/2027	(290,378)
Interest Rate Swap JPY	380,000,000	3,527,031	6 month JPY LIBOR	0.30	3/20/2028	(100,180)
Interest Rate Swap NZD	1,200,000	806,329	3 month NZD Bank Bill	3.25	3/21/2028	(101,217)
Interest Rate Swap JPY	520,000,000	4,826,464	6 month JPY LIBOR	0.30	3/21/2028	(137,042)
Interest Rate Swap USD	34,000,000	34,000,000	3 month LIBOR	3.10	4/17/2028	(1,572,403)
Interest Rate Swap EUR	4,010,000	4,566,590	12 month EONIA	0.50	5/11/2028	(245,381)
Interest Rate Swap USD	169,680,000	169,803,689	3 month LIBOR	2.25	6/20/2028	(4,730,499)
Interest Rate Swap USD	4,200,000	4,222,454	3 month LIBOR	2.72	7/18/2028	(277,652)
Interest Rate Swap USD	15,200,000	15,281,263	3 month LIBOR	2.77	7/18/2028	(1,062,230)
Interest Rate Swap USD	18,626,600	18,626,600	12 month LIBOR	2.58	8/15/2028	(1,427,633)
Interest Rate Swap USD	7,540,000	7,564,787	3 month LIBOR	2.84	8/15/2028	(585,379)
Interest Rate Swap JPY	5,231,690,000	48,558,775	6 month JPY LIBOR	0.45	3/20/2029	(2,096,429)
Interest Rate Swap USD	20,400,000	20,416,246	3 month LIBOR	3.00	6/19/2029	(1,923,183)
Interest Rate Swap CLP	748,315,000	1,102,174	3 month Chile Interbank Rate	1.00	7/1/2029	9
Interest Rate Swap GBP	6,300,000	8,018,011	6 month LIBOR	1.50	9/18/2029	(339,367)
Interest Rate Swap EUR	320,000	364,416	12 month EONIA	0.75	5/11/2033	(25,210)
Interest Rate Swap GBP	305,000	388,581	12 month SONIA	1.20	5/8/2034	(15,590)
Interest Rate Swap EUR	2,650,000	3,017,821	6 month EURIBOR	2.11	10/25/2037	(291,149)
Interest Rate Swap JPY	720,000,000	6,682,796	6 month JPY LIBOR	0.75	3/20/2038	(613,589)
Interest Rate Swap EUR	935,000	1,064,778	12 month EONIA	1.10	5/11/2039	(128,791)
Interest Rate Swap USD	870,000	872,860	3 month LIBOR	2.66	11/15/2043	(78,529)
Interest Rate Swap USD	19,030,000	19,153,313	3 month LIBOR	3.49	3/31/2044	(4,758,079)
Interest Rate Swap USD	1,800,000	1,801,567	3 month LIBOR	2.75	12/16/2045	(195,351)
Interest Rate Swap USD	19,845,000	19,866,480	3 month LIBOR	2.50	6/15/2046	(1,134,876)
Interest Rate Swap USD	5,400,000	5,406,191	3 month LIBOR	2.25	9/14/2046	(24,070)

(continued)

(continued)

Asset Description	Par	Gross Notional	TRS Receives	TRS Pays	Maturity Date	Fair Value 6/30/19
Interest Rate Swap USD	48,300,000	\$48,441,981	3 month LIBOR	2.38%	11/18/2046	(\$1,755,505)
Interest Rate Swap USD	19,100,000	19,112,660	3 month LIBOR	2.25	12/21/2046	(84,246)
Interest Rate Swap USD	7,500,000	7,541,115	3 month LIBOR	2.54	4/13/2047	(532,210)
Interest Rate Swap USD	4,870,000	4,933,436	12 month LIBOR	2.00	12/15/2047	(43,147)
Interest Rate Swap USD	1,300,000	1,300,000	12 month LIBOR	2.43	12/20/2047	(137,567)
Interest Rate Swap USD	863,000	863,000	12 month LIBOR	2.48	12/20/2047	(101,206)
Interest Rate Swap USD	1,110,000	1,110,000	12 month LIBOR	2.50	12/20/2047	(135,533)
Interest Rate Swap USD	5,700,000	5,704,157	3 month LIBOR	2.75	12/20/2047	(646,470)
Interest Rate Swap USD	15,000,000	15,009,942	3 month LIBOR	2.59	12/21/2047	(1,264,506)
Interest Rate Swap USD	17,234,000	17,283,454	3 month LIBOR	2.98	2/20/2048	(2,920,864)
Interest Rate Swap USD	17,234,000	17,282,320	3 month LIBOR	3.00	2/22/2048	(3,005,624)
Interest Rate Swap USD	17,234,000	17,281,114	3 month LIBOR	3.02	2/23/2048	(3,069,859)
Interest Rate Swap EUR	2,870,000	3,268,357	6 month EURIBOR	1.66	3/19/2048	(206,999)
Interest Rate Swap USD	400,000	400,182	3 month LIBOR	2.54	3/23/2048	(27,161)
Interest Rate Swap USD	25,100,000	25,118,304	3 month LIBOR	2.50	6/20/2048	(1,487,608)
Interest Rate Swap USD	1,900,000	1,905,194	3 month LIBOR	2.91	8/22/2048	(283,956)
Interest Rate Swap USD	600,000	601,640	3 month LIBOR	2.94	8/22/2048	(94,343)
Interest Rate Swap USD	21,900,000	21,907,059	3 month LIBOR	2.97	9/26/2048	(3,601,822)
Interest Rate Swap USD	4,700,000	4,703,789	3 month LIBOR	3.00	12/19/2048	(808,031)
Interest Rate Swap EUR	6,800,000	7,743,843	6 month EURIBOR	1.25	9/18/2049	(1,137,210)
Total Pay Fixed Interest Rate Swaps:		\$1,446,599,853				(\$62,276,154)

Receive Fixed Interest Rate Swaps:

Interest Rate Swap USD	27,000,000	\$27,006,713	1.75%	3 month LIBOR	12/19/2020	\$6,713
Interest Rate Swap EUR	1,125,000	-	0.37	EONIA	5/11/2022	-
Interest Rate Swap EUR	2,770,000	447	0.37	EONIA	5/11/2023	-
Interest Rate Swap USD	11,100,000	11,680,885	2.80	3 month LIBOR	8/22/2023	469,515
Interest Rate Swap USD	49,600,000	51,684,067	2.60	3 month LIBOR	9/26/2023	1,743,756
Interest Rate Swap USD	15,200,000	15,840,268	2.70	3 month LIBOR	12/14/2023	620,888
Interest Rate Swap CNY	27,750,000	4,105,934	3.10	7 day CNRR	4/10/2024	37,417
Interest Rate Swap CNY	7,335,000	1,087,674	3.17	7 day CNRR	4/22/2024	13,213
Interest Rate Swap CNY	7,335,000	1,090,572	3.23	7 day CNRR	4/23/2024	16,084
Interest Rate Swap EUR	3,140,000	-	0.37	EONIA	5/11/2024	-
Interest Rate Swap CNY	13,600,000	1,987,734	3.01	7 day CNRR	5/15/2024	23
Interest Rate Swap CZK	60,850,000	2,758,796	1.91	6 month PRIBOR	5/17/2024	28,836
Interest Rate Swap CNY	33,230,000	4,852,760	2.93	7 day CNRR	6/5/2024	4,592
Interest Rate Swap CNY	12,520,000	1,824,764	2.90	7 day CNRR	6/14/2024	(546)
Interest Rate Swap CNY	37,395,000	5,441,586	2.88	7 day CNRR	6/19/2024	(8,097)
Interest Rate Swap CNY	36,000,000	5,241,508	2.90	7 day CNRR	6/28/2024	36
Interest Rate Swap EUR	37,200,000	43,356,562	0.25	6 month EURIBOR	9/18/2024	993,187
Interest Rate Swap EUR	190,000	-	0.37	EONIA	5/11/2025	-
Interest Rate Swap BRL	4,293,312	1,120,227	7.33	3 month Brazilian CDI	1/4/2027	33
Interest Rate Swap MXN	110,000,000	5,696,839	7.35	28 day Mexican TIIE	9/30/2027	(41,713)

(continued)

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Asset Description	Par	Gross Notional	TRS Receives	TRS Pays	Maturity Date	Fair Value 6/30/19
Interest Rate Swap ILS	4,730,000	\$1,407,015	1.97%	3 month TELBOR	2/16/2028	\$71,206
Interest Rate Swap ILS	2,890,000	851,624	1.88	3 month TELBOR	3/21/2028	37,106
Interest Rate Swap EUR	4,010,000	-	0.37	EONIA	5/11/2028	-
Interest Rate Swap ILS	3,530,000	1,043,579	2.00	3 month TELBOR	6/20/2028	53,233
Interest Rate Swap ILS	2,430,000	723,094	2.08	3 month TELBOR	6/20/2028	41,338
Interest Rate Swap USD	41,800,000	43,694,734	3.13	3 month LIBOR	9/13/2028	1,894,734
Interest Rate Swap MXN	25,700,000	1,419,942	8.37	28 day Mexican TIIE	2/13/2029	78,169
Interest Rate Swap MXN	32,000,000	1,741,798	8.09	28 day Mexican TIIE	3/21/2029	63,789
Interest Rate Swap COP	8,577,950,000	2,806,959	5.88	COOVIBR	5/14/2029	132,201
Interest Rate Swap MXN	51,500,000	2,764,235	7.98	28 day Mexican TIIE	5/16/2029	80,599
Interest Rate Swap MXN	124,590,000	6,762,398	8.08	28 day Mexican TIIE	5/22/2029	237,995
Interest Rate Swap GBP	3,660,000	4,601,617	3.47	UK Retail Price Index	9/15/2032	(56,465)
Interest Rate Swap EUR	320,000	-	0.37	EONIA	5/11/2033	-
Interest Rate Swap GBP	3,930,000	4,948,689	3.50	UK Retail Price Index	9/15/2033	(53,022)
Interest Rate Swap EUR	2,650,000	3,309,667	2.09	3 month EURIBOR	10/25/2037	291,846
Interest Rate Swap EUR	935,000	-	0.37	EONIA	5/11/2039	-
Interest Rate Swap EUR	2,870,000	3,477,256	1.65	3 month EURIBOR	3/19/2048	208,899
Interest Rate Swap USD	1,730,000	1,833,854	2.50	3 month LIBOR	6/20/2048	102,532
Total Receive Fixed Interest Rate Swaps:		\$266,163,797				\$7,068,097

Pay Fixed Inflation-Linked Swaps:

Inflation Swap USD	13,600,000	\$13,600,000	U.S. CPI URNSA	1.82%	5/13/2021	(\$16,875)
Inflation Swap EUR	6,280,000	7,151,667	France CPI ex-Tobacco Index	1.35	6/15/2021	(96,500)
Inflation Swap USD	18,200,000	16,264,519	U.S. CPI URNSA	2.50	7/15/2022	(1,935,481)
Inflation Swap USD	2,760,000	2,760,000	U.S. CPI URNSA	2.26	5/9/2023	(71,054)
Inflation Swap USD	4,230,000	4,230,000	U.S. CPI URNSA	2.28	5/10/2023	(112,650)
Inflation Swap EUR	15,200,000	17,309,766	EMU HICP	1.23	12/15/2023	(316,032)
Inflation Swap USD	10,600,000	10,600,000	U.S. CPI URNSA	1.96	7/25/2024	(35,052)
Inflation Swap EUR	2,000,000	2,277,601	EMU HICP	1.71	3/15/2033	(212,966)
Total Pay Fixed Inflation-Linked Swaps:		\$74,193,553				(\$2,796,610)

Receive Fixed Inflation-Linked Swaps:

Inflation Swap EUR	2,000,000	\$2,340,977	1.54%	EMU HICP	6/15/2023	\$63,376
Inflation Swap USD	3,600,000	3,544,491	1.79	U.S. CPI URNSA	7/18/2026	(55,509)
Inflation Swap USD	2,900,000	2,862,387	1.81	U.S. CPI URNSA	7/19/2026	(37,613)
Inflation Swap USD	2,000,000	1,972,143	1.80	U.S. CPI URNSA	7/20/2026	(27,857)
Inflation Swap USD	500,000	493,750	1.81	U.S. CPI URNSA	9/20/2026	(6,250)
Inflation Swap USD	3,000,000	3,050,981	2.09	U.S. CPI URNSA	7/17/2027	50,981
Inflation Swap USD	1,600,000	1,628,536	2.10	U.S. CPI URNSA	7/20/2027	28,536
Inflation Swap USD	2,300,000	2,335,177	2.08	U.S. CPI URNSA	7/25/2027	35,177
Inflation Swap USD	60,000	61,415	2.18	U.S. CPI URNSA	9/20/2027	1,415
Inflation Swap USD	2,300,000	2,346,273	2.15	U.S. CPI URNSA	9/25/2027	46,273
Inflation Swap USD	2,600,000	2,654,964	2.16	U.S. CPI URNSA	10/17/2027	54,964
Inflation Swap USD	3,200,000	3,359,731	2.37	U.S. CPI URNSA	6/6/2028	159,731

(continued)

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Asset Description	Par	Gross Notional	TRS Receives	TRS Pays	Maturity Date	Fair Value 6/30/19
Inflation Swap USD	8,200,000	\$8,624,633	2.38%	U.S. CPI URNSA	7/9/2028	\$424,633
Inflation Swap GBP	5,100,000	6,566,501	3.58	UK Retail Price Index	10/15/2033	75,730
Inflation Swap GBP	4,600,000	5,762,105	3.36	UK Retail Price Index	4/15/2035	(92,316)
Inflation Swap GBP	10,000	13,826	3.59	UK Retail Price Index	10/15/2046	1,099
Total Receive Fixed Inflation-Linked Swaps:		\$47,617,890				\$722,370

CDI - Cetip Interbank Deposit (interbank lending rate)

COOVIBR - Columbia Overnight Interbank Rate

CNRR - China Fixing Repo Rates

CPI - Consumer Price Index

EMU HICP - European Monetary Union Harmonized Index of Consumer Prices

EONIA - Euro Over Night Index Average

EURIBOR - Euro Interbank Offered Rate

JIBAR - Johannesburg Interbank Agreed Rate

LIBOR - London Interbank Offered Rate

PRIBOR - Czech Interbank Offered Rate

SONIA - Sterling Over Night Index Average

TELBOR - Tel Aviv Interbank Offered Rate

URNSA - Urban Consumers NSA Index Rate

DERIVATIVE CREDIT RISK

Credit risk is the possibility that a loss may occur because a party to a transaction fails to perform according to the established terms. In order to eliminate credit risk, derivative securities are traded through a clearing house that guarantees delivery and accepts the risk of default by either party. Derivatives that are exchange traded are not subject to credit risk and are evaluated within the investment risk disclosure.

Non-exchange traded derivative instruments may expose TRS to credit/counterparty risk. TRS investment managers reduce credit risk by evaluating the credit quality and operational capabilities of the counterparties. Because the counterparty risk of a security will fluctuate with market movements, all TRS managers using non-exchange traded derivatives operate a collateral call process ensuring full collateralization of these derivatives. TRS does not have a policy regarding master netting arrangements.

As of June 30, 2019, the aggregate fair value of non-exchange traded derivative instruments in asset positions was \$42,226,731. All applicable futures, options and swaps are in compliance with Dodd-Frank requirements and cleared through the appropriate futures and swaps exchanges. The counterparty risk exposure below is primarily unsettled currency forward contracts. This represents the maximum loss that would be recognized at the

reporting date if all counterparties failed to perform as contracted.

Counterparty Ratings for Non-Exchange Traded Derivatives

Quality Rating	Fair Value at June 30, 2019
Aa2	\$7,118,487
Aa3	16,977,638
A1	4,236,396
A2	7,166,845
A3	6,727,365
Total subject to credit risk	\$42,226,731

Although the derivative instruments held within the TRS investment portfolio are executed with various counterparties, approximately 90 percent of the net market value exposure to credit risk is for non-exchange traded derivative contracts held with 9 counterparties.

5. INVESTMENT COMMITMENTS

Investments in certain limited partnerships commit TRS to possible future capital contributions. As of June 30, 2019, TRS had remaining unfunded commitments of \$8,397,888,687 within the real estate, other real assets, private equity, diversifying strategies and global fixed income asset classes.

6. SCHEDULE OF INVESTMENT RETURNS

For the year ended June 30, 2019, the annual money-weighted rate of return on pension plan investments, net of investment expense, was 5.1 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the timing of cash flows and the changing amounts invested.

7. FAIR VALUE MEASUREMENT

TRS categorizes investments measured at fair value within the fair value hierarchy established by generally accepted accounting principles. The hierarchy prioritizes valuation inputs used to measure the fair value of the asset or liability into three broad categories. The inputs or methodology used for valuing securities are not necessarily an indication of the risk associated with investing in those securities. Levels 1, 2 and 3 (lowest priority level) of the fair value hierarchy are defined as follows:

- Level 1** Inputs using unadjusted quoted prices in active markets or exchanges for identical assets and liabilities.
- Level 2** Significant other observable inputs, which may include quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in non-active markets; and inputs other than quoted prices that are observable for the assets or liabilities, either directly or indirectly.
- Level 3** Valuations for which one or more significant inputs are unobservable and may include situations where there is minimal, if any, market activity for the investment.

If the fair value is measured using inputs from different levels in the fair value hierarchy, the measurement should be categorized based on the lowest priority level input that is significant to the valuation. The System's assessment of the significance of a particular input to the fair

value measurement in its entirety requires judgment and considers factors specific to the investment.

Investments measured at fair value using net asset value (NAV) per share (or equivalent) as a practical expedient to fair value are not classified in the fair value hierarchy; however, separate disclosures for these investments are required.

Debt and equity investments classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets, to the extent these securities are actively traded.

Short-term investments consisting of money market funds, certificates of deposit and highly liquid cash equivalents are generally reported at amortized cost which approximates fair market value. These investments are not categorized in the fair value hierarchy.

Debt and investment derivatives classified in Level 2 of the fair value hierarchy are normally valued based on price data obtained from observed transactions and market price quotations from broker dealers and/or pricing vendors. Valuation estimates from service providers' internal models use observable inputs such as interest rates, yield curves, credit/risk spreads and default rates. Matrix pricing techniques value securities based on their relationship to benchmark quoted prices. Exchange traded and over-the-counter investment derivatives valued by independent pricing service providers, where the value is derived from underlying asset prices, reference rates, indices or other observable inputs are also included in Level 2.

Debt securities classified as Level 3 include valuations using significant unobservable inputs, valuations using proprietary information, inputs that cannot be corroborated by observable market data and securities valued with last trade date due to limited trading volume. Real assets classified as Level 3 include direct investments in real estate. Valuations for real estate investments are performed quarterly by investment managers. An appraisal by an independent third-party member of the Appraisal Institute is obtained once every three years for each property and is used to establish fair market value.

The following table summarizes the valuation of TRS investments by the fair value hierarchy levels as of June 30, 2019.

Investments and Derivative Instruments Measured at Fair Value (\$ thousands)

	June 30, 2019	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Investments by fair value level				
Debt securities				
Asset-backed securities	\$325,690	\$ -	\$324,718	\$972
Collateralized loan obligations	220,444	-	220,444	-
Commercial & collateralized mortgages	425,435	-	425,435	-
Domestic corporate obligations	3,058,308	-	3,058,308	-
Fixed income mutual funds	827,491	827,491	-	-
Foreign debt/corporate obligations	3,483,276	-	3,476,941	6,335
Municipals	93,022	-	93,022	-
U.S. agencies obligations	119,472	-	119,472	-
U.S. government-backed mortgages	599,118	-	599,118	-
U.S. treasuries	1,436,033	-	1,436,033	-
Total debt securities	10,588,289	827,491	9,753,491	7,307
Equity investments				
International common and preferred stock	9,603,424	9,589,909	13,515	-
U.S. common and preferred stock	7,918,737	7,914,493	4,244	-
Total equity investments	17,522,161	17,504,402	17,759	-
Real assets				
Real estate	4,839,257	-	-	4,839,257
Total real assets	4,839,257	-	-	4,839,257
Total investments by fair value level	\$32,949,707	\$18,331,893	\$9,771,250	\$4,846,564
Investments measured at the Net Asset Value (NAV)				
Commingled fixed income funds	\$3,137,473			
Diversifying strategies	5,374,252			
International equity commingled fund	301,521			
Private equity partnerships	6,378,902			
Private real estate partnerships	2,515,552			
Other real assets	527,431			
Total investments measured at the NAV	18,235,131			
Total investments measured at fair value	\$51,184,838			
Investment derivative instruments				
Credit default swaps	\$164	\$ -	\$164	\$ -
Index and variance swaps	1,162	-	1,162	-
Inflation swaps	(1,714)	-	(1,714)	-
Interest rate swaps	(55,568)	-	(55,568)	-
Options	3,691	-	3,691	-
Swaptions	(3,623)	-	(3,623)	-
Total investment derivative instruments	(\$55,888)	\$ -	(\$55,888)	\$ -
Invested securities lending collateral				
Total invested securities lending collateral*	\$2,485,824	\$325,881	\$2,159,943	\$ -

* Does not include lending collateral with the State Treasurer.

Investments measured at NAV for fair value are not subject to level classification. The valuation method for investments measured at the NAV per share (or its equivalent) is presented on the following table.

Investments Measured at the Net Asset Value (NAV)
(\$ thousands)

	Fair Value June 30, 2019	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Diversifying funds - liquid ¹	\$4,799,439	\$ -	Daily, weekly, monthly, quarterly	1 - 90 days
Diversifying funds - illiquid ²	574,813	139,855	Not eligible	N/A
Total diversifying strategies	5,374,252	139,855		
Commingled fixed income funds ³	1,625,529	-	Monthly, quarterly	30-90 days
Fixed income private debt funds ⁴	1,511,944	1,281,329	Not eligible	N/A
Total commingled fixed income funds	3,137,473	1,281,329		
International equity commingled fund ⁵	301,521	-	Daily	1 day
Private equity partnerships ⁶	6,378,902	3,314,719	Not eligible	N/A
Private real estate partnerships ⁶	2,515,552	2,879,948	Not eligible	N/A
Real return fund ⁷	275,078	-	Monthly	30 days
Real assets partnerships ⁸	252,353	782,038	Not eligible	N/A
Total other real assets	527,431	782,038		
Total investments measured at the NAV	\$18,235,131	\$8,397,889		

- 1) **Diversifying funds (liquid strategies):** The diversifying strategies asset class applies various strategies that provide diversification to the total investment portfolio. Investments focus on reducing equity-like risk characteristics encompassed in the overall TRS portfolio by enhancing exposures to strategies that show little to no correlation to growth factors while adding positive skew and active risk management characteristics. Risk parity and alternative risk premia strategies consists of four direct investments focusing on market neutral and long only expressions of cross-asset risk. The systematic and discretionary macro strategies include direct investments in 10 funds diversifying through regional and product expertise, speed of algorithms and style of trading. Opportunistic alpha funds, including six direct investments and one diversified fund of funds, use idiosyncratic alpha capture through liquidity and security selection. The fair value of these investments has been determined using the NAV per share of the investments. The strategies maintain a liquidity profile of less than one year, ranging from daily to quarterly and require advance notice prior to redemption. TRS submitted redemption requests for two direct investments, valued at \$122.7 million, with exit dates of July 31 and September 30, 2019.
- 2) **Diversifying funds (illiquid strategies):** The diversifying strategies asset class also includes three opportunistic alpha funds in which redemptions are restricted over the life of the partnership. The partnership's interest is valued using the NAV per share (or its equivalent). The most significant element of NAV is the fair value of the underlying investment holdings which are valued on a monthly basis by the general partner and are audited annually. The average life of these funds spans five to 10 years and the funds will distribute any free cash from the master fund in excess of the amount needed to maintain prudent liquidity. TRS has no plans to liquidate as of June 30, 2019.
- 3) **Commingled fixed income funds:** The investment strategies for the 11 fixed income funds include high yield, defensive bond arbitrage, emerging market debt, relative value and TRS customized accounts investing in

opportunistic investments. The fair value of the investments has been determined using the NAV per share (or its equivalent) of the investments. Liquidity ranges from monthly to quarterly upon notice of redemption and TRS has no plans to liquidate as of June 30, 2019.

- 4) **Fixed income private debt funds:** Private debt funds consist of 36 funds investing across strategies such as stressed debt/credit, direct and specialty lending, real estate credit and bank loans. These funds provide additional exposure to niche and/or specific non-traditional point-in-time opportunities that are not normally targeted by traditional fixed income managers. Funds are valued using the NAV per share (or its equivalent) and are audited annually. Redemption restrictions are in place over the life of the partnership. The average life of these funds span three to 12 years and distributions are received throughout the life of the fund. TRS has no plans to liquidate as of June 30, 2019; however, three of the funds, with fair value of \$45.9 million, are approaching the end of the partnership term, winding down and distributing cash as the funds sell underlying investments.
- 5) **International equity commingled fund:** Includes one fund investing in emerging market small cap equities diversified across multiple sectors. The fair value of the investment has been determined using the NAV per share of the investments. Daily liquidity is available.
- 6) **Private equity and real estate partnerships:** TRS has 170 private equity partnerships which include investments in privately held equity, such as buyouts, co-investments, venture capital and growth equity, as well privately held debt. The 51 real estate limited partnerships invest in various property types across multiple geographic regions. Investments in limited partnerships are normally long-term with an approximate life of 10 to 12 years and considered illiquid. Investors are subject to redemption restrictions which limit and restrict the ability of limited partners to exit prior to dissolution. Partnership interests are valued using their respective NAV calculated by the general partner's fair valuation policy and are generally audited annually. The most significant element of NAV is the fair value of the investment holdings which are typically valued on a quarterly basis by the general partners. Distributions are received as the funds sell underlying portfolio company investments. TRS has no plans on liquidating the portfolio, however will opportunistically sell funds in the secondary market to reposition the portfolio and optimize returns. During the fiscal year, TRS sold 33 private equity funds on the secondary market. As of June 30, 2019, it is probable that all investments in this type will be sold at an amount different from the current NAV of the plan's ownership interest.
- 7) **Real return fund:** TRS holds one multi-strategy real return fund that targets assets that hedge inflation while mitigating extraneous risks (such as equities and real rates). The fund allows monthly redemptions with notice and the partnership's interest is valued using the NAV per share (or its equivalent). The most significant element of NAV is the fair value of the underlying securities which are valued on a monthly basis by the general partner. TRS has no plans to liquidate this fund as of June 30, 2019.
- 8) **Real assets partnerships:** Real assets strategies include seven limited partnerships investing in global infrastructure, direct energy and non-U.S. agriculture. These partnerships are not eligible for redemption, considered illiquid and have an approximate life of six to 20 years. Distributions are received during the life of the fund as underlying investments are liquidated. Partnership interests are valued by the general partner using their respective NAV per share (or equivalent), with the most significant element of NAV being the fair value of the investment holdings. TRS has no plans to liquidate these funds. As of June 30, 2019, it is probable that all investments in this type will be sold at an amount different from the current NAV of the plan's ownership interest.

E. RESERVES

TRS maintains statutory reserve accounts in accordance with the provisions of 40 ILCS 5/16-101 et seq. In 1997, the Illinois General Assembly passed legislation that allowed the crediting of income at fair value, as opposed to book value, to the Benefit Trust Reserve.

1. BENEFIT TRUST

2019	
Balances at June 30	\$53,253,086,048

This reserve serves as a clearing account for TRS income and expenses. The reserve is credited with contributions from the State of Illinois that are not specifically allocated to the Minimum Retirement Annuity Reserve, member and employer contributions, income from TRS invested assets and contributions from annuitants who qualify for automatic annual increases in annuity.

The reserve accumulates, with 6 percent interest, the contributions by members prior to retirement. Contributions have been 7.5 percent of salary since July 1, 1998. Contributions are fully refundable upon withdrawal from TRS, excluding interest credited thereon. The interest accrued is refundable only in the event of death. Interest is credited as of the date of retirement or death of those retiring or dying during the year and as of the end of the fiscal year for all other members. Interest is computed annually based upon the individual member's balance in the reserve at the beginning of the fiscal year.

This reserve is charged for transfers to the Minimum Retirement Annuity Reserve and all

- refunds to withdrawing members,
- retirement annuity payments (except as provided by the Minimum Retirement Annuity Reserve),
- benefits that are paid to disabled members,
- death benefits paid and

- refunds to annuitants for survivor benefit contributions.

The expected benefit payments do not equal the present value of the reserve. The additional amount needed (the unfunded actuarial accrued liability) as calculated by the actuary was \$78.1 billion in FY19, based on the actuarial value of assets.

2. MINIMUM RETIREMENT ANNUITY

2019	
Balances at June 30	\$9,703,319

The minimum annuity is set by law at \$25 per month for each year of creditable service to a maximum of \$750 per month after 30 or more years of creditable service. To qualify, annuitants are required to make a one-time contribution that is credited to the reserve. Interest at 6 percent is credited to the reserve annually based upon the average reserve balance. The State of Illinois also appropriated funds necessary to pay the minimum benefits. All benefits paid under this program are charged to the reserve. This reserve is fully funded.

F. OTHER POST-EMPLOYMENT BENEFITS FOR TRS EMPLOYEES

The state provides health, dental, vision and life insurance benefits for retirees and their dependents in a program administered by the Department of Central Management Services (CMS). Substantially all state employees become eligible for post-employment benefits if they eventually become annuitants of one of the state-sponsored pension plans.

Health, dental and vision benefits include basic benefits for annuitants and dependents under the state's self-insurance plan and insurance contracts currently in force. Annuitants may be required to contribute towards health, dental and vision benefits with an amount based on factors such as date of retirement, years of credited service with the State of Illinois, whether the annuitant is covered by Medicare and whether the annuitant has chosen a managed health care plan. Employees of the System

who retired before Jan. 1, 1998 and are vested in either SERS or TRS do not contribute towards health and vision benefits. A premium is required for dental. For annuitants who retired on or after Jan. 1, 1998, the annuitant's contribution amount is reduced 5 percent for each year of credited service with the state allowing those annuitants with 20 or more years of credited service to not have to contribute towards health and vision benefits. A premium is required for dental. Annuitants also receive life insurance coverage equal to the annual salary of their last day of employment until age 60, at which time the benefit becomes \$5,000.

The State of Illinois pays the TRS portion of employer costs for the benefits provided. The total cost of the state's portion of health, dental, vision and life insurance benefits of all members, including post-employment health, dental, vision and life

insurance benefits, is recognized as an expenditure by the state in the Illinois *Comprehensive Annual Financial Report*. The System adopted GASB 75 during the previous year, but has chosen not to record the other post-retirement liability because it is deemed insignificant to the financial statements. The footnote and required supplementary information also required by GASB 75 have been excluded, as well, due to the insignificance of the liability.

A summary of post-employment benefit provisions, changes in benefit provisions and employee eligibility requirements, including eligibility for vesting and the authority under which benefit provisions are established, are included as an integral part of the financial statements for CMS. A copy of the financial statements may be obtained by contacting their office, Department of Central Management Services, 704 Stratton Office Building, Springfield, IL 62706.

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability for Fiscal Years:

	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	\$1,947,627,286	\$1,838,002,948	\$1,877,570,053	\$1,681,242,232	\$1,948,079,771	\$1,894,351,211
Interest	8,991,684,121	8,703,519,454	8,390,352,464	8,264,257,311	7,864,916,421	7,561,104,814
Changes of benefit terms	-	(374,603,419)	-	-	-	-
Difference between expected and actual experience	258,778,925	1,191,346,970	482,486,212	701,827,169	(90,079,446)	39,950,212
Change of assumptions	77,241,572	(666,054,719)	(2,725,599,755)	7,553,894,504	1,136,454,886	-
Benefit payments, including refund of member contributions	(6,818,760,572)	(6,551,634,376)	(6,438,005,920)	(5,931,207,177)	(5,625,037,173)	(5,320,662,979)
Net change in total pension liability	4,456,571,332	4,140,576,858	1,586,803,054	12,270,014,039	5,234,334,459	4,174,743,258
Total pension liability - beginning	129,914,383,296	125,773,806,438	124,187,003,384	111,916,989,345	106,682,654,886	102,507,911,628
Total pension liability - ending (a)	134,370,954,628	129,914,383,296	125,773,806,438	124,187,003,384	111,916,989,345	106,682,654,886
Plan fiduciary net position						
Contributions - employer	88,514,781	84,633,117	149,495,577	148,040,767	145,591,585	158,334,598
Contributions - nonemployer contributing entity	4,466,020,692	4,095,125,358	3,986,363,699	3,742,469,245	3,377,664,945	3,438,382,892
Contributions - member	963,972,120	938,037,245	929,130,165	951,809,398	935,451,049	928,745,853
Net investment income (loss)	2,617,831,332	4,049,271,728	5,520,453,001	(44,103,178)	1,770,549,533	6,782,031,720
Benefit payments, including refund of member contributions	(6,818,760,572)	(6,551,634,376)	(6,438,005,920)	(5,931,207,177)	(5,625,037,173)	(5,320,662,979)
Administrative expense	(24,335,680)	(21,550,896)	(22,728,735)	(22,967,917)	(21,686,860)	(21,218,069)
Net change in plan fiduciary net position	1,293,242,673	2,593,882,176	4,124,707,787	(1,155,958,862)	582,533,079	5,965,614,015
Plan fiduciary net position - beginning	51,969,546,694	49,375,664,518	45,250,956,731	46,406,915,593	45,824,382,514	39,858,768,499
Plan fiduciary net position - ending (b)	53,262,789,367	51,969,546,694	49,375,664,518	45,250,956,731	46,406,915,593	45,824,382,514
Employers' net pension liability - ending (a) - (b)	<u>\$81,108,165,261</u>	<u>\$77,944,836,602</u>	<u>\$76,398,141,920</u>	<u>\$78,936,046,653</u>	<u>\$65,510,073,752</u>	<u>\$60,858,272,372</u>

Note: Information is not available prior to 2014. Additional years will be added to future reports as schedules are intended to show 10 years of historical data.

Schedule of the Net Pension Liability for Fiscal Years:

	2019	2018	2017	2016	2015	2014
Total pension liability	\$134,370,954,628	\$129,914,383,296	\$125,773,806,438	\$124,187,003,384	\$111,916,989,345	\$106,682,654,886
Plan fiduciary net position	53,262,789,367	51,969,546,694	49,375,664,518	45,250,956,731	46,406,915,593	45,824,382,514
Net pension liability	\$81,108,165,261	\$77,944,836,602	\$76,398,141,920	\$78,936,046,653	\$65,510,073,752	\$60,858,272,372
Plan fiduciary net position as a percentage of the total pension liability	39.6%	40.0%	39.3%	36.4%	41.5%	43.0%
Covered payroll	\$10,450,452,444	\$10,163,980,000	\$9,965,569,893	\$9,811,614,284	\$9,641,170,627	\$9,512,809,680
Net pension liability as a percentage of covered payroll	776.1%	766.9%	766.6%	804.5%	679.5%	639.8%

Schedule of Investment Returns for Fiscal Years:

	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	5.1%	8.5%	12.5%	(0.1%)	4.0%	17.4%

Note: Information is not available prior to 2014. Additional years will be added to future reports as schedules are intended to show 10 years of historical data.

Schedule of Contributions from Employers and Other Contributing Entities, Last 10 Fiscal Years (\$ thousands)

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Actuarially-determined contribution (ADC)	\$7,429,037	\$7,080,756	\$6,248,879	\$4,582,530	\$4,119,526	\$4,091,978	\$3,582,033	\$3,429,945	\$2,743,221	\$2,481,914
Contributions in relation to the actuarially-determined contribution:*										
State	4,465,578	4,094,616	3,985,783	3,741,802	3,376,878	3,437,478	2,702,278	2,405,172	2,169,518	2,079,129
Federal & Employer Contributions	87,707	84,034	148,749	147,408	144,780	157,228	155,787	153,409	154,150	170,653
Total contributions	4,553,285	4,178,650	4,134,532	3,889,210	3,521,658	3,594,706	2,858,065	2,558,581	2,323,668	2,249,782
Contribution deficiency	\$2,875,752	\$2,902,106	\$2,114,347	\$693,320	\$597,868	\$497,272	\$723,968	\$871,364	\$419,553	\$232,132
Covered payroll	\$10,450,452	\$10,163,980	\$9,965,570	\$9,811,614	\$9,641,171	\$9,512,810	\$9,394,741	\$9,321,098	\$9,205,603	\$9,251,139
Contributions as a percentage of covered payroll	43.6%	41.1%	41.5%	39.6%	36.5%	37.8%	30.4%	27.4%	25.2%	24.3%

* Contributions for minimum benefits from the state and for excess sick from employers do not count towards actuarial funding requirements. Beginning in FY18, employer contributions on salaries exceeding the statutory salary of the governor are included and the projected excess salary contribution is included in the ADC. In all years, employer contributions for excess salary increases are included. However, employer contributions for excess sick leave are not included because there is no assumption for excess sick leave and it is not included in the funding requirements. Before FY17, the actuarially determined contribution was based on GASB Statement No. 25. Beginning in FY17, a different basis for determining the actuarially-determined contribution is used, as described in the following table.

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

The Schedule of Changes in Net Pension Liability and the Schedule of Net Pension Liability are affected by various factors. In FY19, they increased the total pension liability by \$4.5 billion.

The Schedule of Contributions from Employers and Other Contributing Entities compares actual and actuarially-determined contributions. There is a difference between these amounts because actual contributions are based on state statute under a methodology that does not conform to that used to determine the actuarially-determined contribution.

The following assumptions were used to determine the statutory and actuarially-determined contributions for FY19.

For Funding per State Statute		For Determining the Actuarially-determined Contribution
Valuation Used to Determine Funding Amount:	June 30, 2017	June 30, 2017
Actuarial Cost Method:	Projected unit credit	Entry age normal
Amortization Method:	15-year phase-in to a level percent of payroll reached in FY10; then level percent of payroll until a 90 percent funding level is achieved in FY45	Level percent of payroll
Remaining Amortization:	26 years, closed	20 years, closed beginning with 2015 actuarial valuation; subsequent increases in the UL amortized over subsequent 20-year periods.
Asset Valuation Method:	Actuarial value of assets with five-year smoothing of investment gains and losses	Actuarial value of assets with five-year smoothing of investment gains and losses

OTHER SUPPLEMENTARY INFORMATION

SCHEDULE OF ADMINISTRATIVE EXPENSES

FOR THE YEARS ENDED JUNE 30

	2019	2018
Personnel services		
Salaries	\$11,031,954	\$10,346,412
Retirement contributions	2,259,264	2,030,511
Insurance and payroll taxes	3,724,737	3,408,592
	<u>17,015,955</u>	<u>15,785,515</u>
Professional services		
Actuarial services	259,272	267,156
External auditors	261,014	269,125
Legal services	213,249	174,288
Legislative consulting	84,000	84,000
Information systems consulting	1,734,617	844,845
Operations consulting	318,242	233,466
Other	4,565	6,748
	<u>2,874,959</u>	<u>1,879,628</u>
Communications		
Postage	191,128	165,325
Printing and copying	205,490	202,744
Telephone	161,340	163,494
	<u>557,958</u>	<u>531,563</u>
Other services		
Administrative services	549,072	270,677
Building operations and maintenance	441,844	500,749
EDP supplies and equipment	242,881	95,747
Equipment repairs, rental and maintenance	196,268	219,130
Insurance	181,883	304,757
Memberships and subscriptions	144,838	96,130
Office equipment and furniture	68,861	29,458
Office supplies	16,625	19,398
Software licenses and maintenance	965,505	659,828
Travel, conferences, education	203,312	209,816
	<u>3,011,089</u>	<u>2,405,690</u>
Depreciation expense	<u>875,719</u>	<u>948,500</u>
Total administrative expenses	<u><u>\$24,335,680</u></u>	<u><u>\$21,550,896</u></u>

Note: Above amounts do not include investment administrative expenses, which are deducted from investment income and shown in a separate schedule on the following page.

SCHEDULE OF INVESTMENT EXPENSES FOR THE YEARS ENDED JUNE 30

	2019	2018
Investment manager fees	<u>\$316,622,153</u>	<u>\$350,149,552</u>
Master custodian fees		
State Street Bank and Trust Company	<u>2,604,167</u>	<u>2,531,250</u>
Consulting services		
Albourne America, L.L.C.	166,667	416,000
Aksia, L.L.C.	525,153	-
Courtland Partners, Ltd.	-	208,944
RVK, Inc.	525,000	457,646
Stepstone Group Real Estate, L.P.	288,370	71,027
Stout Risius Ross, Inc.	85,000	-
TorreyCove Capital Partners, L.L.C.	<u>1,101,250</u>	<u>997,500</u>
	<u>2,691,440</u>	<u>2,151,117</u>
Legal services		
DLA Piper, L.L.P.	737,886	123,767
Jackson Walker, L.L.P.	-	253,292
	<u>737,886</u>	<u>377,059</u>
Tax advisory services		
Ernst & Young Private, Ltd.	<u>84,681</u>	<u>75,482</u>
Other investment expense		
Auditing costs	70,200	63,430
Communication services	24,367	30,311
Dividend expense	974,876	3,190,912
Education, meetings and travel	155,261	153,678
Foreign tax expense	17,457,561	18,064,442
Investment activity expenses	1,124,017	2,298,273
Investment analytical systems	1,103,484	1,116,671
Personnel costs	4,896,596	4,974,888
Research, subscriptions and memberships	84,205	81,407
Other costs	<u>122,966</u>	<u>98,141</u>
	<u>26,013,533</u>	<u>30,072,153</u>
Total investment expenses	<u>\$348,753,860</u>	<u>\$385,356,613</u>

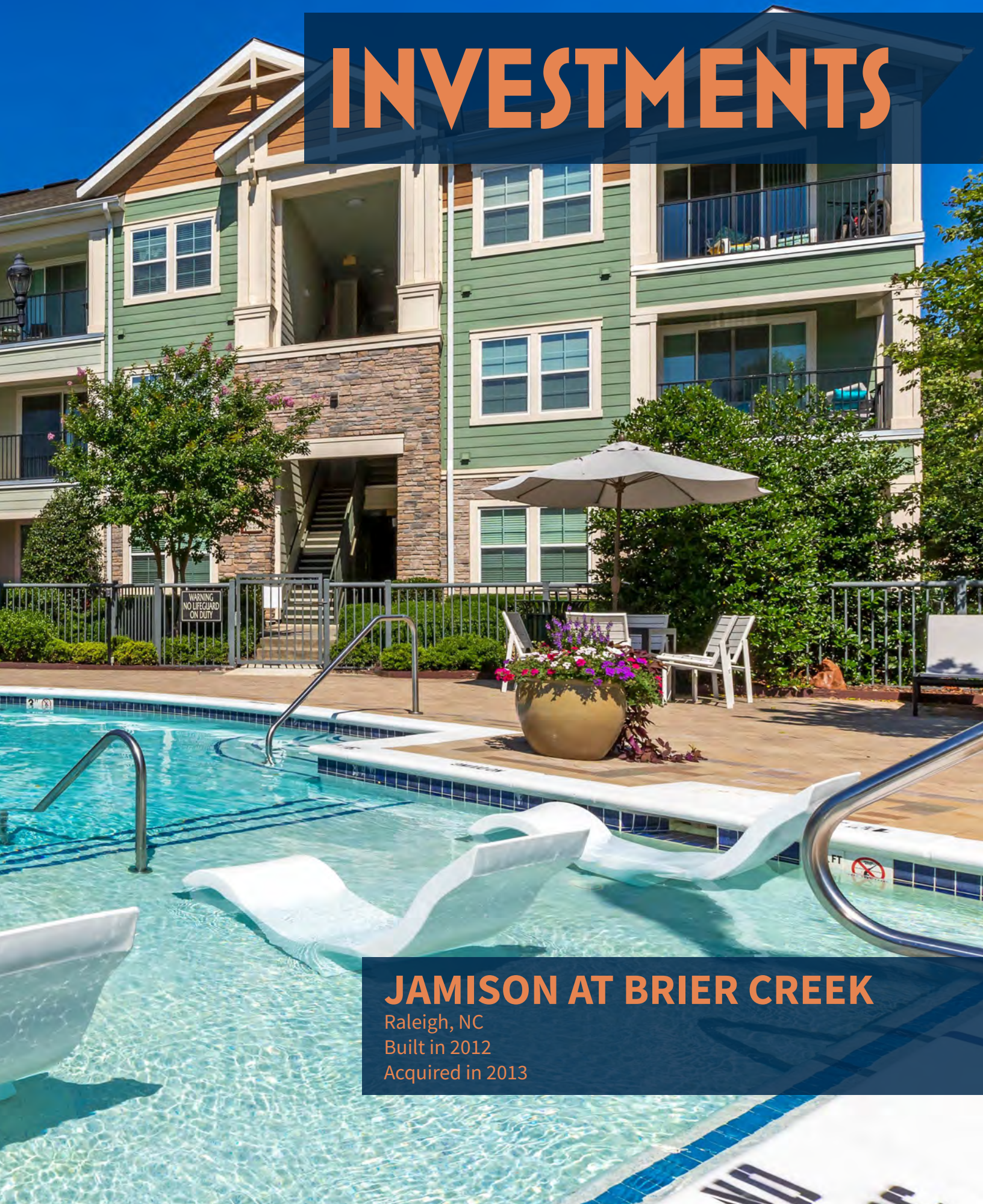
Note: Investment manager fee detail is shown on pages 84 to 87.

SCHEDULE OF PROFESSIONAL SERVICES FOR THE YEARS ENDED JUNE 30

	2019	2018
Actuarial services		
The Segal Company Midwest, Inc.	\$259,272	\$267,156
External auditors		
Office of the Auditor General (BKD)	261,014	269,125
Legal services		
Cavanagh & O'Hara	-	8,414
DLA Piper, L.L.C.	4,915	-
Holland & Knight, L.L.P.	142,120	33,080
Howard & Howard Attorneys, P.L.L.C.	3,093	5,406
Kopec White & Spooner	2,784	28,640
Loewenstein & Smith, P.C.	832	12,189
Reinhart Boerner Van Deuren	51,562	85,822
Whitt Law, L.L.C.	7,943	737
	213,249	174,288
Legislative consulting		
Leinenweber Baroni & Daffada Consulting, L.L.C.	84,000	84,000
Information systems consulting		
Advanced Design Management Group, L.L.C.	21,420	37,864
Agile Progress, L.L.C.	206,554	528,769
Apex Systems	97,533	-
AT&T Corporation	-	1,440
Blu Age Corporation	562	-
Capitol Strategies Consulting, Inc.	-	16,813
Catapult Systems, L.L.C.	15,530	-
Converge One, Inc.	2,695	-
Decker Innovations, Inc.	272,547	-
HSO North America, L.L.C.	265,764	208,995
Illuminative Strategies, Inc.	53,331	-
Levi Ray & Shoup, Inc.	343,779	-
Linea Solutions, Inc.	13,750	-
ProCircular, Inc.	24,100	8,000
Promet Solutions Corporation	30,229	28,343
Provaliant Retirement, L.L.C.	351,063	-
Sentinel Technologies, Inc.	35,760	14,621
	1,734,617	844,845
Operations consulting		
CDW L.L.C.	6,299	-
CEM Benchmarking, Inc.	45,000	45,000
Darlington & Company, Inc.	76,428	-
Darlington Partners Ltd.	31,544	43,347
Graham & Hyde	-	3,042
Higher Logic, L.L.C. (formerly known as Real Magnet, L.L.C.)	10,396	15,971
Holland, William G.	-	500
Jasculca Terman Strategic Communications	86,000	70,000
Levi Ray & Shoup, Inc.	11,914	16,814
Management Association	15,596	10,313
SABA Software	2,900	8,479
Segal Waters Public Sector	32,165	20,000
	318,242	233,466
Other	4,565	6,748
Total professional services	\$2,874,959	\$1,879,628



INVESTMENTS



JAMISON AT BRIER CREEK

Raleigh, NC

Built in 2012

Acquired in 2013

INTRODUCTION

The Teachers' Retirement System trust fund is invested by authority of the Illinois Pension Code under the “prudent person rule,” requiring investments to be managed solely in the interest of fund participants and beneficiaries. The TRS Investment Policy guides TRS’s investments. Investment principles include preserving the long-term principal of the trust fund, maximizing total return within prudent risk parameters and acting in the exclusive interest of TRS members.

The TRS investment portfolio increased \$754.9 million over the past 12 months, ending with a value of \$52.8 billion on June 30, 2019. The TRS portfolio remains fully diversified across different asset classes. Within each asset class, TRS utilizes a number of investment managers with various investment styles to ensure appropriate diversification, allowing the portfolio to achieve broad exposure to the market while minimizing overall risk. This broad diversification serves as the best defense against the uncertainty of volatile global markets.

The global public equity market has continued to rally since the Global Financial Crisis ended in early 2009; however, global central bank narratives became more dovish as global growth began to slow and geopolitics contributed to brief periods of market volatility. Under these market conditions, the System’s private assets in private equity and opportunistic real estate outperformed public assets during the fiscal year; generating 12.3 percent and 8.2 percent, net of fee returns, respectively. All asset classes produced positive returns, contributing to the overall TRS portfolio posting a return of 5.2 percent, net of fees, for the fiscal year ended June 30, 2019.

State Street Bank and Trust, as master trustee, has provided TRS a statement of detailed assets, along

with their fair value as of June 30, 2019. State Street Bank and Trust has also provided detailed financial reports of all investments, receipts, disbursements, purchases and sales of securities and other transactions pertinent to the fund for fiscal year 2019. TRS investment consultants have also contributed key investment portfolio data and analysis during the fiscal year and throughout the investment process.

Investment performance calculations use time-weighted rate of return. State Street Bank and Trust calculates returns using industry best practices. Additionally, State Street Bank and Trust calculates performance rates of return by portfolio, composite and for all respective indices used throughout this section. The TRS investment staff, in collaboration with the staff of its custodian, prepared the Investments section.

A complete listing of investment holdings is available upon request.

Summary Data as of June 30, 2019

Total fund fair value	\$52.8 billion
1-year return (net of fees)	5.2%
3-year return (net of fees)	8.7%
5-year return (net of fees)	5.9%
10-year return (net of fees)	9.5%
20-year return (net of fees)	6.3%
30-year return (net of fees)	8.0%
Percent externally managed	100.0%
Number of external managers	159
Master Trustee and Custodian	State Street Bank and Trust Company
General consultant	RVK, Inc.

TRS is the 42nd largest pension system in the United States according to *Pensions & Investments*. Rankings are based on the fair value of total assets as of Sept. 30, 2018.

ASSET ALLOCATION

A pension fund's most important investment policy decision is the selection of its asset allocation. Similar to other large institutional funds, TRS maintains a well-diversified portfolio to manage risk effectively. The TRS Board of Trustees adopts long-term strategic allocation targets to be implemented over several years. Recognizing the prudence of making measured movement toward long-term targets, the board also sets interim targets for shorter periods.

During FY19, TRS continued implementation of the asset allocation structure adopted by the board in June 2017 (effective July 1, 2017). This implementation solidifies the previously adopted asset class structure and seeks to continue minor shifts focused on balancing private and public capital, improving diversification, managing liquidity and enhancing the overall portfolio risk/return profile. The 2017 study established new targets for the continued diversification of the fund by modestly reducing the long-term allocation to diversifying strategies, accompanied by slight increases to the income and real assets classes in order to balance the portfolio and its defensive characteristics. Further rebalancing within the equity class resulted in a gradual reduction in exposure to publicly-traded equity securities, with corresponding increases to private equity and opportunistic real estate in an effort to enhance long-term returns.

TRS periodically compares the asset mix to policy targets to determine when rebalancing of the fund or changes to the interim policy targets are necessary. The following Strategic Investment Listing table shows the asset allocation targets, as adopted by the TRS Board of Trustees, compared to the total assets assigned to each particular asset class at June 30, 2019.

Strategic Investment Listing Allocation Targets vs. Total Assets

Asset Class	As of June 30, 2019				As of June 30, 2018	
	Total Fund \$ (Million)	Actual Percent	Interim Target	Long-term Target	Actual Percent	Long-term Target
Public equity	\$18,090.1	34.4%	36.0%	34.0%	35.9%	34.0%
Private equity	7,240.5	13.7	12.0	15.0	13.2	15.0
Real estate (opportunistic)	1,351.9	2.6	3.0	5.0	2.8	5.0
Total Equity	26,682.5	50.7	51.0	54.0	51.9	54.0
Real estate (core - value-add)	6,003.4	11.4	11.0	11.0	11.2	11.0
Other real assets	527.4	1.0	4.0	4.0	2.5	4.0
Total Real Assets	6,530.8	12.4	15.0	15.0	13.7	15.0
Total Diversifying Strategies	5,471.8	10.4	13.0	14.0	11.4	14.0
Global income	13,089.7	24.8	20.0	17.0	20.7	17.0
Short-term	879.5	1.7	1.0	0.0	2.3	0.0
Total Income	13,969.2	26.5	21.0	17.0	23.0	17.0
Pending settlements/expenses*	171.5	NA	NA	NA	NA	NA
Total TRS Fund	<u>\$52,825.8</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>

Sources: State Street Bank and Trust and TRS

* This amount is included within the liability section in the Statement of Fiduciary Net Position.

PORTFOLIO SECURITIES SUMMARY

The Portfolio Securities Summary table contains a detailed list of security types. The amounts in this table differ from the allocation percentages shown in the previous Strategic Investment Listing table. The Strategic Investment Listing represents assets assigned to managers within each asset class, whereas the Portfolio Securities Summary represents specific types of financial instruments; thus, the types of investments a manager holds explain the principal difference. For example, cash and currency held within a manager's portfolio are categorized according to the manager's primary assignment on the Strategic Investment Listing. However, in the Portfolio Securities Summary, these investments are categorized as cash and/or foreign currency.

Portfolio Securities Summary for the Years Ended June 30

	2019		2018	
	Fair Value	% of Total	Fair Value	% of Total
U.S. treasuries & agencies	\$1,555,504,658	2.9%	\$1,734,891,964	3.3%
U.S. government-backed mortgages	599,118,460	1.1	679,749,043	1.3
Municipals	93,021,714	0.2	46,548,126	0.1
Asset-backed securities	325,690,344	0.6	354,042,784	0.7
Collateralized loan obligations	220,443,502	0.4	143,394,757	0.3
Commercial & collateralized mortgages	425,435,486	0.8	282,315,363	0.5
Commingled funds (U.S. & international)	3,964,963,672	7.5	3,508,455,165	6.7
Domestic corporate obligations	3,058,307,686	5.8	2,741,852,675	5.3
Foreign debt/corporate obligations	3,483,275,889	6.6	2,646,843,261	5.1
Total fixed income	13,725,761,411	25.9	12,138,093,138	23.3
U.S. equities	7,918,736,361	15.0	7,792,088,707	15.0
International equities	9,904,945,062	18.8	10,415,507,298	20.0
Total public equities	17,823,681,423	33.8	18,207,596,005	35.0
Diversifying strategies	5,374,252,320	10.2	5,855,617,530	11.2
Private equity	6,378,902,197	12.1	6,788,646,545	13.0
Real estate	7,354,809,101	13.9	7,235,561,047	13.9
Other real assets	527,431,201	1.0	464,051,207	0.9
Total alternative investments	19,635,394,819	37.2	20,343,876,329	39.0
Derivatives	(55,888,377)	(0.1)	32,220,547	0.1
Short-term investments	1,601,845,805	3.0	1,280,712,915	2.5
Foreign currency	95,012,450	0.2	68,446,828	0.1
TRS total portfolio	<u>\$52,825,807,531</u>	<u>100.0%</u>	<u>\$52,070,945,762</u>	<u>100.0%</u>

Sources: State Street Bank and Trust and TRS

SECURITIES HOLDINGS (HISTORICAL)

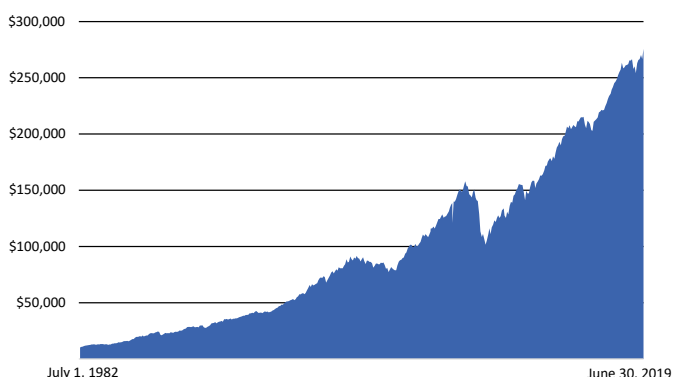
Historically, TRS has adopted various asset allocation strategies. The Securities Holdings table shows the actual asset allocation based on asset types for the last five-year period.

Securities Holdings for the Years Ended June 30

Asset Type	2019	2018	2017	2016	2015
Fixed income	25.9%	23.3%	21.5%	21.7%	18.8%
Public equities	33.8	35.0	35.5	35.2	40.1
Diversifying strategies	10.2	11.2	11.9	12.6	13.4
Private equity	12.1	13.0	13.1	12.0	11.5
Real estate	13.9	13.9	14.4	15.2	13.6
Other real assets	1.0	0.9	0.9	0.7	0.6
Short-term/currency/derivatives	3.1	2.7	2.7	2.6	2.0
Total	100.0%	100.0%	100.0%	100.0%	100.0%

TRS's asset allocation has provided consistent overall returns throughout the years, as represented by the following chart showing the growth of \$10,000 since July 1, 1982.

Growth of \$10,000



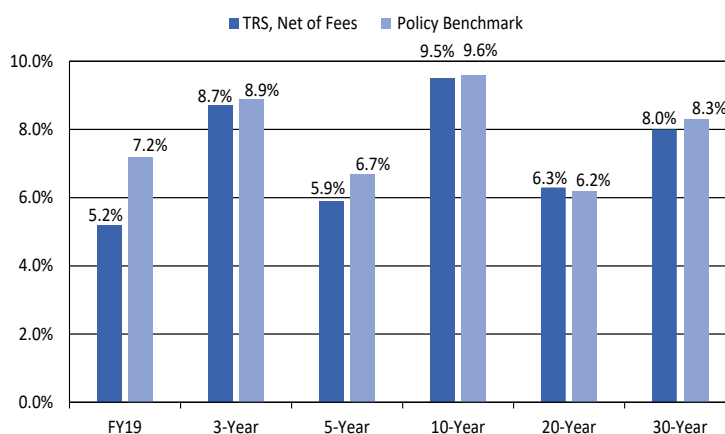
INVESTMENT RESULTS

As of June 30, 2019, the fair value of TRS's investments as reported on the Statement of Fiduciary Net Position was \$52.8 billion, an increase of \$0.8 billion from prior year. TRS had a total fund annualized return of 5.8 percent, gross of fees and 5.2 percent, net of fees, for the one-year period ended June 30, 2019.

The Performance Summary chart and table summarize total fund and asset class performance versus comparative benchmarks. As illustrated, the TRS total fund underperformed the policy index by 200 basis points for the year ended June 30, 2019. The TRS policy index represents a weighted average of each asset class benchmark, based on the total fund's interim target asset allocation. The fund's total return also underperformed the 7.0 percent actuarial return assumption and the real rate of return expectation, which is to exceed the rate of inflation, as measured by the Consumer Price Index, by 4.5 percentage points.

Total Fund Performance Summary (net of fees)

TRS Total Fund vs. Policy Benchmark



Sources: State Street Bank and Trust and TRS

Asset Class Performance Summary (net of fees)

Asset Class/Index	Years ended June 30					Annualized at 6/30/19		
	2019	2018	2017	2016	2015	3 Years	5 Years	10 Years
TRS total fund	5.2%	8.5%	12.6%	0.01%	4.0%	8.7%	5.9%	9.5%
TRS weighted policy index*	7.2	8.2	11.4	2.4	4.6	8.9	6.7	9.6
Equity	5.7	12.8	19.8	(3.3)	3.5	12.6	7.4	11.6
TRS equity composite benchmark ¹	6.5	12.7	19.4	(1.4)	3.7	12.8	7.9	12.3
Real assets	1.6	6.2	5.2	11.4	8.5	4.3	6.5	7.6
TRS real asset composite benchmark ²	6.6	7.4	6.9	9.5	11.0	7.0	8.3	8.6
Diversifying strategies	2.1	4.5	3.5	(2.4)	2.4	3.4	2.0	6.3
TRS diversifying composite benchmark ³	6.4	5.4	5.5	5.1	4.6	5.8	5.4	5.6
Income	7.0	2.0	5.8	2.9	3.2	4.9	4.2	6.5
TRS income composite benchmark ⁴	7.4	(0.3)	(0.3)	5.7	1.8	2.2	2.8	3.7

* Policy index and TRS benchmarks represent weighted average of asset class benchmarks and interim target allocations.

Note: Performance calculations provided by State Street Bank and Trust use net-of-fee time-weighted rates of return.

Sources: State Street Bank and Trust and TRS

- Equity composite includes the following asset classes and corresponding benchmarks:

Asset Class	Benchmark
Public equity	MSCI ACWI Investable Market Index
Private equity	Russell 3000 Index + 3.0%
Real estate opportunistic	NCREIF Property Index

- Real assets composite includes the following asset classes and corresponding benchmarks:

Asset Class	Benchmark
Real estate core and value-add	NCREIF Property Index
Other real assets	CPI (inflation) + 5.0%

- Diversifying strategies composite includes the following asset classes and corresponding benchmarks:

Asset Class	Benchmark
Diversifying strategies	ICE BofAML 3 Month U.S. Treasury Bill Index + 4.0%

- Income composite includes the following asset classes and corresponding benchmarks:

Asset Class	Benchmark
Global income	Bloomberg Barclays Aggregate Index (Hedged)
Short-term investments	ICE BofAML 3 Month U.S. Treasury Bill Index

The following sections provide a brief and informative overview of the assets held by TRS for the period ended June 30, 2019.

EQUITY

TRS's equity asset class broadly includes investments in global public equity securities, private equity investments and opportunistic real estate strategies. As of June 30, 2019, the asset class represented 50.7 percent of total fund with a value of \$26.7 billion.

GLOBAL PUBLIC EQUITY

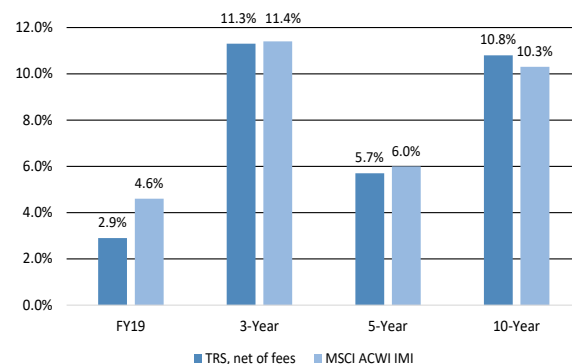
TRS invests in public equities, or common stock, representing shares or units of ownership in specific corporations offering the opportunity to participate in the success of the global economy. Stockholders share in the growth of a company through an increase in stock price, as well as through the distribution of corporate profits in the form of dividends. TRS's public equity managers are able to participate in the strength of individual markets by seeking out superior companies that are particularly strong in their own markets or industries, as not all economies move in tandem.

The global public equity market has continued to rally since the end of the Global Financial Crisis in early 2009. Market volatility remains low, relative to history. Both domestic and international markets contributed to global public equity performance for the year ended June 30, 2019.

As of June 30, 2019, the global public equity portfolio value represented \$18.1 billion, or 34.4 percent of the total fund. The long-term policy target for public equities is 34.0 percent of total fund. The global public equity portfolio earned 2.9 percent on a net of fee basis, underperforming the MSCI All Country World Investable Market Index by 1.7 percent.

One-, three-, five- and 10-year comparisons to these benchmarks are shown in the following charts.

Global Public Equity vs. Benchmark Return



Sources: State Street Bank and Trust and TRS

The top 10 holdings in global public equities, categorized by U.S. and international, as of June 30, 2019 are shown below. These 20 securities combine to represent 11.2 percent of the Global Public Equity holdings. These stocks illustrate the sector and geographic diversification present in the portfolio.

Top 10 U.S. Equity Holdings at June 30, 2019

Firm	Sector	Fair Value (USD)
Microsoft Corp.	Technology	\$209,785,111
Amazon.com, Inc.	Consumer	186,499,831
Apple, Inc.	Technology	142,165,144
Berkshire Hathaway, Inc.	Financials	126,310,899
Facebook, Inc.	Technology	115,506,254
Johnson & Johnson	Health Care	114,723,404
Verizon Communications, Inc.	Communication	94,727,424
Pfizer, Inc.	Health Care	92,065,050
Alphabet, Inc.	Communication	79,105,317
Cisco Systems, Inc.	Technology	77,300,926
Total		<u>\$1,238,189,360</u>

Sources: State Street Bank and Trust and TRS

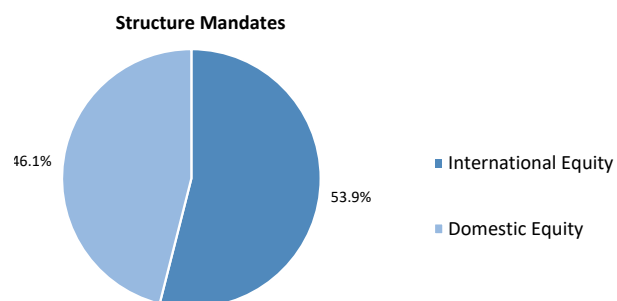
Top 10 International Equity Holdings at June 30, 2019

Firm	Country	Fair Value (USD)
Roche Holding AG	Switzerland	\$143,204,482
Alibaba Group Holding LTD	China	105,269,287
Tencent Holdings LTD	China	84,382,991
Samsung Electronics LTD	Korea	78,301,312
Nestle SA	Switzerland	73,873,202
Enel Group	Italy	60,112,883
Novartis AG	Switzerland	56,171,939
Sanofi	France	55,168,152
Allianz SE	Germany	53,531,076
Nippon Telegraph & Telephone Corp.	Japan	49,895,262
Total		\$759,910,586

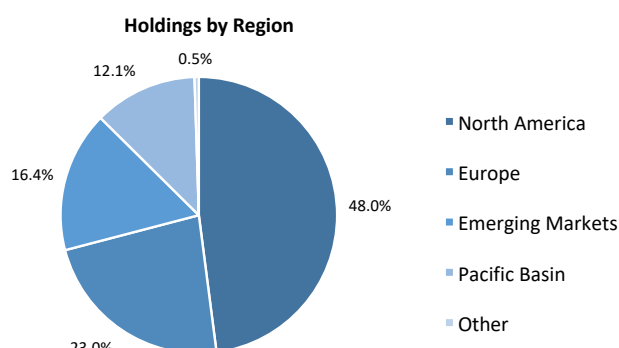
Sources: State Street Bank and Trust and TRS

Investment managers are chosen to diversify the portfolio based on capitalization, geography and style basis. This diversification is important for controlling the risk of the portfolio, as well as balancing the portfolio. As of June 30, 2019, the following charts convey the sector and regional exposure, asset allocation mix and fundamental characteristics for the global public equity portfolio.

Global Public Equity Characteristics and Exposures

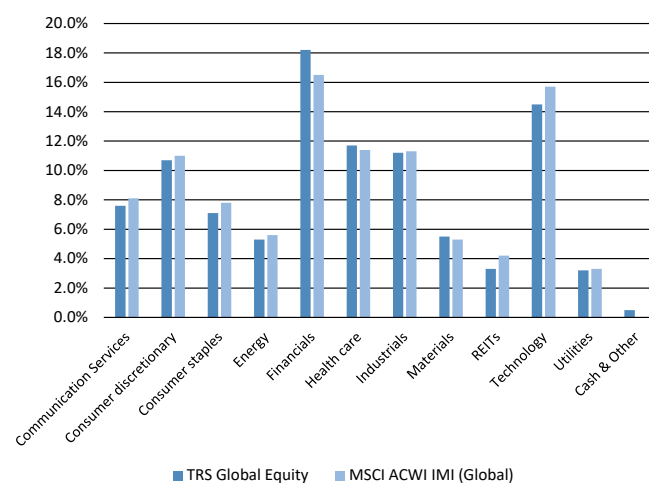


Source: State Street Bank and Trust and TRS



Sources: BlackRock Aladdin and TRS

Diversification by Sector



Sources: BlackRock Aladdin and TRS

Fundamental Characteristics	TRS Global Public Equity	MSCI ACWI IMI (Global)
Average market cap (\$ billions)	\$118.2	\$139.5
Price/earnings ratio	14.6x	16.2x
Dividend yield	2.65%	2.38%
Price/book ratio	2.4x	2.5x

Sources: BlackRock Aladdin and TRS

TRS employed the following public equity managers as of June 30, 2019.

Global Public Equity Managers and Assets Under Management
(inception date of account)

	Assets
Developed Markets Large Cap	
Acadian Asset Management, L.L.C. (07/16)	\$988,026,149
AQR Capital Management, L.L.C. (8/18)	467,587,475
Arrowstreet Capital, L.P. (11/17)	1,031,859,694
Boston Partners Global Investors, Inc. (3/10)	671,700,461
Brown Capital Management, L.L.C. (10/16)	62,081,671
J.P. Morgan Investment Management, Inc. (07/16)	356,253,026
LSV Asset Management (9/14)	2,048,651,288
Mondrian Investment Partners Limited (4/93)	528,197,576
Northern Trust Investments, Inc. (8/10)	2,231,370,570
RhumbLine Advisors, L.P. (5/06)	4,439,729,560
Strategic Global Advisors (3/11)	602,444,713
T. Rowe Price Associates, Inc. (11/06)	814,788,068
Developed Markets Small Cap	
AQR Capital Management, L.L.C. (5/17)	213,440,340
Emerald Advisors, Inc. (11/04)	209,096,503
Grandeur Peak Global Advisors, L.L.C. (12/18)	244,949,889
LSV Asset Management (12/02)	606,420,358
Matarin Capital Management (7/17)	30,602,101
RhumbLine Advisors, L.P. (5/07)	98,224,606
Strategic Global Advisors (12/13)	333,353,673
Emerging Markets	
AQR Capital Management, L.L.C. (7/13)	604,776,507
Axiom International Investors (5/15)	436,661,069
Dimensional Fund Advisors (6/11)	301,521,067
J.P. Morgan Investment Management, Inc. (8/15)	477,354,506
Northern Trust Investments, Inc. (4/13)	62,020,754
Wasatch Advisors (11/14)	226,971,734

Note: The list does not include managers terminated prior to June 30, 2019 with residual assets in the account.

PRIVATE EQUITY

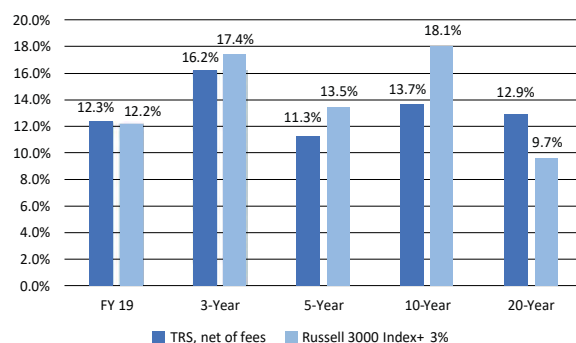
Private equity includes investments that are placed and traded outside of the stock exchanges and other public markets. Over the long term, they are an attractive investment for pension funds, endowments, insurance companies and other sophisticated investors. The investment class benefits the economy by providing needed capital to start-up companies and for continued growth in privately held companies and firms that are restructuring to better compete. Investing in private equity carries additional risk, but with skillful selection of managers, returns can be significantly higher than public equity investments.

The asset class is commonly referred to as private equity, even though it includes privately placed debt instruments as well. Often, the debt includes a control position that is similar to equity as it allows the debt holder to influence the operations and management of the company. TRS is widely diversified across all subsectors within private equity, including buyout, growth equity, venture capital and distressed debt.

TRS measures private equity performance against the Russell 3000 Index plus 300 basis points (3 percentage points). This benchmark does not specifically compare performance to the private equity industry, but rather to the TRS long-term expectation that private equity produce returns superior to the public markets. For the one-year period ended June 30, 2019, private equity earned 12.3 percent on a net of fee basis, compared to the benchmark gain of 12.2 percent. TRS's investments in private equity maintain strong long-term returns. The long-term performance strength of the private equity program and the asset class's diversification both benefit the overall portfolio.

One-, three-, five-, 10- and 20-year comparisons relative to the benchmark follow.

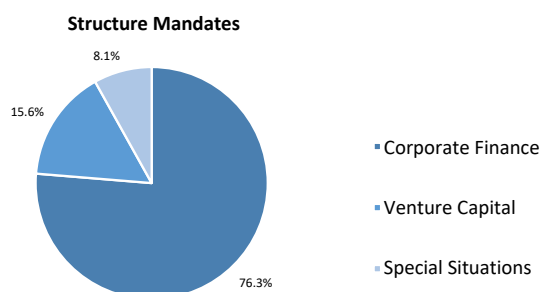
Private Equity vs. Benchmark Return



Sources: State Street Bank and Trust and TRS

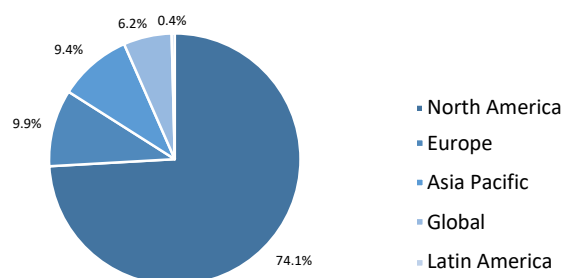
In May 2018, the Board of Trustees approved an asset allocation study keeping the private equity long-term allocation target at 15 percent, effective Jan. 1, 2019. Successful implementation of this target is subject to many factors, including public market performance and sufficient availability of high-quality private equity opportunities in the market. TRS continues to prudently increase its exposure to private equity and as of June 30, 2019, \$7.2 billion or 13.7 percent of the TRS investment portfolio was assigned to the private equity asset class. The following charts provide exposure percentage by type and geography at June 30, 2019.

Exposure % by Investment Type



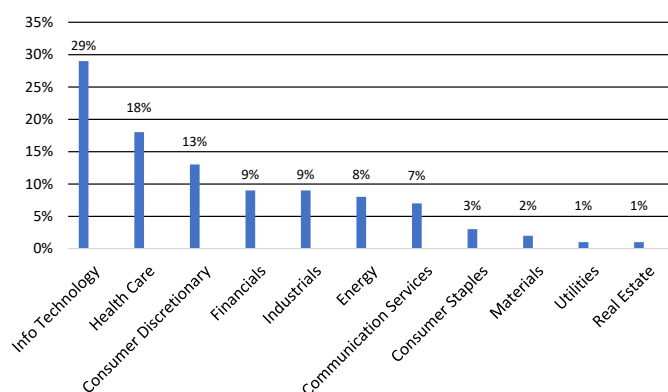
Source: TorreyCove Capital Partners, L.L.C.

Holdings by Region



Source: TorreyCove Capital Partners, L.L.C.

Sector Positioning of Private Equity Holdings



Source: TorreyCove Capital Partners, L.L.C.

The following table lists the private equity partnerships/funds and the respective assets under management that TRS has investments with as of June 30, 2019.

Private Equity Partnerships and Assets Under Management (inception date of account)

	Assets
Advent International GPE VI Limited Partnership (7/08)	\$12,056,265
Advent International GPE VII-C Limited Partnership (12/12)	74,410,630
Advent International GPE VIII-B-2 Limited Partnership (9/16)	113,903,210
Altaris Constellation Partners IV, L.P. (6/18)	5,308,837
Altaris Health Partners IV, L.P. (6/18)	16,971,754
Apollo Investment Fund V, L.P. (5/01)	2,305,001
Apollo Investment Fund VI, L.P. (5/06)	2,798,690
Apollo Investment Fund VII Annex A (5/12)	164,359
Apollo Investment Fund VII, L.P. (1/08)	49,640,168
Apollo Investment Fund VIII Annex A (4/16)	25,573,718
Apollo Investment Fund VIII, L.P. (12/13)	223,818,506
Apollo Investment Fund IX, L.P. (3/19)	19,069,988
Apollo Lincoln Private Credit Fund, L.P. (10/14)	31,481,456
Astorg VI, SLP (7/16)	50,213,803
Astorg VII, SLP (6/19)	3,028,588
Battery Ventures XI-A Side Fund, L.P. (6/16)	7,403,999
Battery Ventures XI-A, L.P. (6/16)	11,179,880
Blackstone Capital Partners VI Annex A (10/11)	22,141,016
Carlyle Japan International Partners III Annex A (10/14)	146,441
Carlyle Partners IV, L.P. (4/05)	2,606,696
Carlyle/Riverstone Global Energy and Power Fund III, L.P. (4/06)	6,337,627
Clearlake Capital Partners II, L.P. (7/09)	5,146,213
Clearlake Capital Partners III, L.P. (10/12)	31,490,359
Clearlake Capital Partners IV, L.P. (9/15)	105,794,932
Clearlake Capital Partners IV Annex A (1/17)	34,265,883
Clearlake Capital Partners V, L.P. (2/18)	50,029,607
Clearlake Opportunities Partners (P), L.P. (9/15)	33,473,748
Edgewater Growth Capital Partners, L.P. (11/03)	1,915,826
Edgewater Growth Capital Partners II, L.P. (2/06)	3,583,483
Edgewater Growth Capital Partners III, L.P. (9/11)	35,785,847
EIF United States Power Fund IV, L.P. (11/11)	69,629,307
Energy Capital Partners II Annex A (10/11)	9,001,969
EQT Midmarket Europe, L.P. (8/17)	46,448,810
EQT VI, L.P. (9/11)	35,043,017
EQT VII, L.P. (1/16)	125,623,176
EQT VIII, L.P. (8/18)	19,988,957
(continued)	

(continued)	
	Assets
Evercore Capital Partners II, L.P. (distributed securities) (4/03)	\$15,757
Grain Communications Opportunity Fund, L.P. (7/16)	44,016,467
Grain Communications Opportunity Fund II, L.P. (12/18)	4,881,192
Granite Ventures II, L.P. (5/05)	36,472,356
Green Equity Investors V, L.P. (8/07)	24,500,977
Green Equity Investors VI, L.P. (11/12)	115,279,075
Greenspring IL Master, L.P. (1/18)	85,227,794
Greenspring IL Special, L.P. (6/18)	70,798,669
GTCR Fund VIII, L.P. (7/03)	465,669
Harvest Partners Structured Capital Fund II, L.P. (6/18)	21,112,926
Hopewell Ventures, L.P. (6/04)	3,476,588
ICV Partners II, L.P. (1/06)	311,296
ICV Partners III, L.P. (10/13)	21,347,849
ICV Partners IV, L.P. (5/18)	6,127,646
IL Asia Investors, L.P. (12/14)	155,500,409
Inflexion Partnership Capital II, L.P. (6/18)	1,747,514
Inflexion Buyout Partnership V, L.P. (6/18)	1,677,771
Inflexion Enterprise Fund V (No. 1), L.P. (6/19)	11,944
Inflexion Supplemental Fund V (No. 1), L.P. (5/19)	81,639
Institutional Venture Partners XV, L.P. (6/15)	53,039,148
Institutional Venture Partners XVI, L.P. (2/18)	36,995,436
JMI Equity Fund VII, L.P. (2/11)	20,066,822
JMI Equity Fund VIII-A, L.P. (10/15)	29,701,939
Lightspeed Venture Partners IX, L.P. (3/12)	59,389,857
Lightspeed Venture Partners X, L.P. (7/14)	17,861,692
Lightspeed Venture Partners XI, L.P. (3/16)	12,197,485
Lightspeed Venture Partners Select, L.P. (3/14)	18,938,233
Lightspeed Venture Partners Select II, L.P. (6/16)	19,197,028
Littlejohn Fund IV, L.P. (7/10)	24,840,497
LiveOak Venture Partners I, L.P. (2/13)	31,076,616
Longitude Venture Partners, L.P. (3/08)	451,426
Longitude Venture Partners II, L.P. (4/13)	37,001,645
Longitude Venture Partners III, L.P. (12/16)	30,307,610
Madison Dearborn Capital Partners VII, L.P. (1/16)	55,268,048
Marlin Equity V, L.P. (2/18)	16,580,564
(continued)	

(continued)

	Assets
MBK Partners Fund II, L.P. (5/09)	\$1,427,703
MBK Partners Fund III Annex B (10/15)	35,076,184
MBK Partners Fund III, L.P. (4/13)	156,049,290
MBK Partners Fund IV, L.P. (3/17)	80,729,529
Morgan Creek Partners Asia, L.P. (1/11)	84,752,500
New Enterprise Associates 15, L.P. (3/15)	46,339,031
New Enterprise Associates 16, L.P. (5/17)	29,009,803
New Mountain Partners III, L.P. (8/07)	76,566,849
New Mountain Partners IV, L.P. (7/14)	120,448,492
New Mountain Partners V, L.P. (11/17)	37,699,011
NGP Natural Resources IX Annex A (11/12)	247,154
NGP Natural Resources X, L.P. (5/12)	32,597,402
NGP Natural Resources XI, L.P. (11/14)	91,495,457
NGP Natural Resources XII, L.P. (11/17)	27,996,007
Oaktree European Principal Fund III, L.P. (11/11)	45,094,048
Oaktree Opportunities Fund VIII, L.P. (3/10)	5,194,159
Oaktree Opportunities Fund IX, L.P. (3/13)	76,749,759
Oaktree Opportunities Fund Xb, L.P. (6/18)	11,797,735
OCM European Principal Opportunities Fund II, L.P. (8/08)	687,709
OCM Opportunities Fund V, L.P. (6/04)	13,974
OCM Opportunities Fund VIIb, L.P. (6/08)	2,171,214
Sunstone Partners I, L.P. (2/16)	19,151,860
Palladium Equity Partners IV, L.P. (3/14)	11,681,402
Parthenon Investors IV Annex A (6/15)	258,476,109
Parthenon Investors IV, L.P. (4/12)	67,020,767
Parthenon Investors V, L.P. (1/17)	76,446,987
Providence Equity Partners VI Annex A (8/12)	45,020,093
Providence Equity Partners VI International, L.P. (3/07)	31,990,911
Providence Equity Partners VII, L.P. (6/12)	192,649,849
RCP SBO Fund, L.P. (10/16)	48,072,380
Rhone Partners IV, L.P. (1/12)	22,682,051
Rhone Partners V, L.P. (7/15)	58,650,506
Riverstone/Carlyle Global Energy and Power Fund IV, L.P. (3/08)	29,616,912
Riverstone Global Energy and Power Fund V Annex A (11/13)	1,538,699
	<i>(continued)</i>

(continued)

	Assets
Riverstone Global Energy and Power Fund V, L.P. (6/12)	\$145,210,814
Riverstone Global Energy and Power Fund VI, L.P. (9/16)	85,257,753
RRJ Capital Master Fund III, L.P. (12/15)	57,057,590
Scale Venture Partners V, L.P. (1/16)	40,713,435
SCP Private Equity Partners, L.P. (5/97)	20,370
Shasta Ventures, L.P. (1/05)	2,129,611
Silver Lake Alpine, L.P. (9/18)	9,205,371
Silver Lake Partners III, L.P. (8/07)	31,909,164
Silver Lake Partners IV, L.P. (10/13)	210,665,974
Silver Lake Partners V, L.P. (6/18)	78,003,650
Siris Partners II, L.P. (1/12)	16,148,210
Siris Partners III Annex A (12/15)	5,510,996
Siris Partners III, L.P. (5/15)	37,641,198
Siris Partners IV, L.P. (3/19)	7,061,565
SK Capital Partners V-A, L.P. (10/18)	6,576,827
Sofinnova Venture Partners VIII, L.P. (8/11)	19,609,164
Sofinnova Venture Partners IX, L.P. (12/14)	50,528,986
Sofinnova Venture Partners X, L.P. (11/17)	14,615,896
StarVest Partners II, L.P. (1/09)	7,147,402
TA XII-A, L.P. (2/16)	86,027,603
TDR Capital IV 'A', L.P. (11/18)	569
The Baring Asia Private Equity Fund V, L.P. (4/11)	86,586,585
The Baring Asia Private Equity Fund VI, L.P.1 (9/15)	102,665,639
Trident V Annex A (10/11)	2,204,554
Trident V, L.P. (12/10)	48,272,790
Trident VI, L.P. (9/14)	107,003,575
Trident VII, L.P. (12/11)	76,521,331
Trustbridge Partners IV, L.P. (12/11)	60,875,158
Veritas Capital Fund IV, L.P. (11/10)	13,050,778
Veritas Capital Fund V, L.P. (6/15)	167,918,303
Veritas Capital Fund VI, L.P. (6/17)	107,994,456
Vista Equity Partners Fund III, L.P. (11/07)	9,946,758
Vista Equity Partners Fund IV, L.P. (10/11)	36,880,897
Vista Equity Partners Fund V, L.P. (5/14)	259,659,602
Vista Equity Partners Fund VI, L.P. (6/16)	179,729,603
Vista Foundation Fund III, L.P. (7/16)	39,659,132

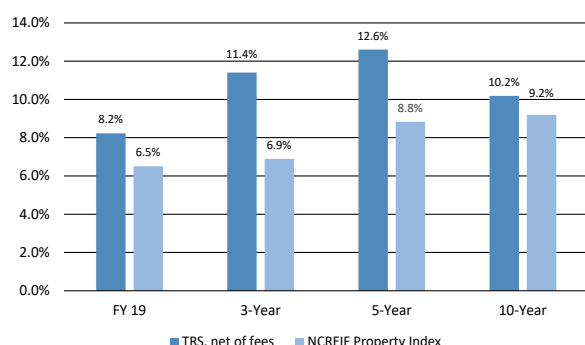
OPPORTUNISTIC REAL ESTATE

Due to the risk profile inherent within opportunistic real estate investments, these assets are included in the equity asset class for reporting purposes.

The TRS portfolio maintains a long-term target allocation of 5.0 percent to opportunistic strategies.

As of June 30, 2019, TRS held \$1.4 billion in opportunistic real estate assets, or 2.6 percent of the total fund portfolio. For the fiscal year, this sub component of TRS's real estate portfolio earned 8.2 percent, net of fees, outpacing the National Council of Real Estate Investment Fiduciaries ("NCREIF") Index by 170 basis points. Opportunistic real estate performance and benchmark comparisons are noted in the following chart; sector and geographical exposures are presented with the real estate portfolio within the real assets narrative.

Opportunistic Real Estate vs. Benchmark Return



Source: State Street Bank and Trust and TRS

Performance of the opportunistic real estate funds has been strong throughout multiple time periods. The opportunistic funds outperformed relative to NCREIF by 170 bps for one-year, 450 bps for three-year, 380 bps for five-year, and 100 bps for 10-years. The near-term strength of the real estate market coupled with accretive value enhancement strategies employed within the opportunistic real estate portfolio has been favorable, thus driving positive returns.

The following table lists the opportunistic real estate partnerships/funds (and the respective assets under management) that TRS has investments with as of June 30, 2019.

Opportunistic Real Estate Partnerships and Assets Under Management (inception date of account)

	Assets
Opportunistic Real Estate	
Blackstone Real Estate Partners VI, L.P. (9/07)	\$5,088,351
Blackstone Real Estate Partners VII, L.P. (1/12)	123,280,000
Blackstone Real Estate Partners VIII.TE.2, L.P. (8/15)	260,590,660
Blackstone Real Estate Partners Asia, L.P. (12/13)	82,262,081
Blackstone Real Estate Partners Asia II, L.P. (6/18)	22,471,003
Capri Select Income II, L.L.C. (12/05)	38,757
Carlyle Europe Real Estate Partners III, L.P. (3/08)	3,593,199
Carlyle Realty Partners VII, L.P. (7/14)	59,637,738
Carlyle Realty Partners VIII, L.P. (8/17)	16,944,013
Carlyle Realty Qualified Partners IV, L.P. (6/05)	28,073,072
CB Richard Ellis Strategic Partners Europe Fund III, L.P. (5/07)	1,062,163
Dyal Capital III Annex A (5/17)	48,855,363
European Property Investors Special Opportunities 5 SCSP (3/19)	105,043
Fortress Japan Opportunity Fund III (Dollar A), L.P. (8/15)	91,155,582
Fortress Japan Opportunity Fund IV (Dollar A), L.P. (7/18)	4,314,160
Gateway Real Estate Fund IV, L.P. (7/13)	19,791,746
IC Hospitality Fund II, L.P. (4/15)	8,951,712
LaSalle Asia Opportunity Fund III, L.P. (12/07)	917,806
LaSalle Asia Opportunity Fund IV, L.P. (7/13)	9,414,069
Lone Star Real Estate Fund III (U.S.), L.P. (1/14)	7,291,061
Lone Star Real Estate Fund IV (U.S.), L.P. (10/15)	107,883,464
Lone Star Real Estate Fund V (U.S.), L.P. (9/17)	22,293,869
Niam Nordic V, L.P. (4/12)	10,335,144
Rockpoint Real Estate Fund V, L.P. (8/15)	85,937,218
Southwest Multifamily Partners, L.P. (8/12)	19,034,830
Starwood Distressed Opportunity Fund IX Global, L.P. (3/13)	54,213,646
Starwood IX Annex A (11/13)	18,831,817
Starwood Opportunity Fund X Global, L.P. (10/15)	125,994,825
Starwood Opportunity Fund XI Global, L.P. (7/18)	28,407,190
Starwood X Annex A (1/15)	5,568,001
Starwood X Annex B (7/15)	2,105,930
Walton Street Real Estate Fund IV, L.P. (7/03)	768,101
Walton Street Real Estate Fund VI, L.P. (4/09)	37,739,909
Walton Street Real Estate Fund VII, L.P. (6/13)	38,946,789

INCOME

The income asset class is comprised of investments in the financial obligations of entities, including, but not limited to, U.S. and foreign corporations, governments, agencies or municipalities and short-term investments. These investments may be publicly-traded instruments or private debt or credit investments. The majority of global income assets promise to pay a specified sum of money at a future date, while paying specified interest during the term of the issue. Income generative assets and other debt-related investments can reduce volatility, offer low or negative correlation to other asset classes and provide income streams, or coupons.

Global central bank narratives became more dovish as global growth began to slow. Lower growth and inflation forecasts, combined with speculation of developed markets' central banks ending balance sheet reduction programs, caused U.S. rates to significantly back up during the fiscal year. Geopolitics, including elections, trade war speculation and political controversy in several countries, dominated headlines and contributed to brief periods of market volatility. Expected fundamentals continue to project a global slowdown. Staying senior in the capital stack will continue to be a theme within the global income asset class, while being opportunistic across the globe.

The asset class blended benchmark consists of global income measured against the Bloomberg Barclays Aggregate Hedged Index, along with short-term investments against the ICE BofAML 3-month U.S. Treasury Bill Index.

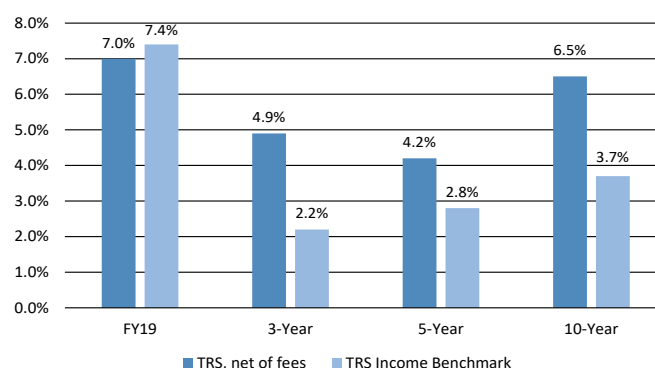
For the fiscal year ending June 30, 2019, the \$14.0 billion income portfolio represented 26.5 percent of the total fund. Traditional fixed income investments and private debt strategies comprise the majority of investments, representing 93.7 percent of the asset class, while TRS's cash portfolio completes the remainder of the asset class. The long-term policy target

for income is 17.0 percent of total fund; however, current levels remain closer to the interim target.

TRS's income portfolio modestly underperformed the asset class blended index during the fiscal year. Sub-asset classes, including global/EMD and private credit, outperformed their sub components; however, the rapid U.S. interest rate decline is reflective of the underweight to U.S. treasury bills. TRS continues to maintain a bias away from U.S. and global fixed income indices as benchmark investments tend to reward governments and corporations with the highest debt levels, while increasing exposures to private debt opportunities, higher in the capital debt structure. TRS also maintained below market weight duration and safety in anticipation of potential market dislocations or liquidity events.

For the year ended June 30, 2019, the income asset class earned 7.0 percent on a net of fee basis compared to asset class blended benchmark of 7.4 percent. One-, three-, five-, and 10-year comparisons to this benchmark are shown in the following chart, showing strong outperformance over the long term.

Income vs. Benchmark Return



Sources: State Street Bank and Trust and TRS

The following table lists the top 10 global income investments or funds held by TRS as of June 30, 2019, exclusive of the TRS cash portfolio.

Top 10 Global Income Holdings at June 30, 2019

Security/Position	Fair Value (USD)
PIMCO Horseshoe Fund, L.P.	\$466,618,362
Franklin Templeton Emerging Market Debt Opportunities (Cayman) Fund, Ltd.	396,846,132
PGIM Fixed Income Global Liquidity Relative Value Fund I (Cayman), Ltd.	341,615,706
PIMCO Income Fund	304,692,744
PIMCO Asset-Backed Securities Portfolio	279,653,657
Prudential Trust Company Collective Trust	155,060,433
Federal National Mortgage Association	152,038,109
NXT Capital Senior Loan Fund IV, L.P.	123,701,499
Apollo Lincoln Fixed Income Fund, L.P.	106,961,726
Global Transport Income Fund Master Partnership SCSp	106,811,581
Total	\$2,433,999,949

Sources: State Street Bank and Trust and TRS

The following table lists the top 10 largest debt securities holdings, excluding commingled funds, held within the TRS plan portfolio as of June 30, 2019. A complete listing of investment holdings is available as a separate report.

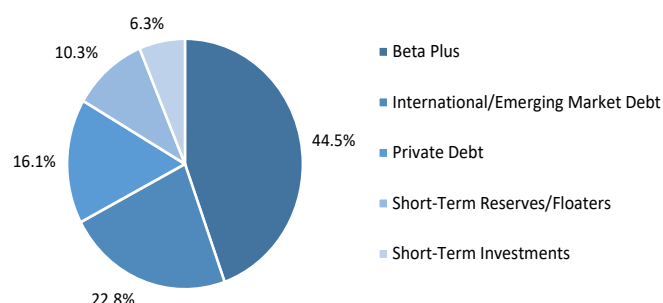
Largest Debt Securities Holdings at June 30, 2019

Security/Position	Maturity Date	Interest Rate	Fair Value (USD)
Federal National Mortgage Association	8/19/49	3.50%	\$152,038,109
United States Treasury Note/Bond	5/15/46	2.50	104,273,663
United States Treasury Note/Bond	8/15/27	2.25	99,404,220
Federal National Mortgage Association	9/12/49	3.50	62,331,230
United States Treasury Note/Bond	5/31/22	1.75	58,438,781
United States Treasury Bill	8/29/19	0.01	54,721,018
United States Treasury Bill	11/14/19	0.01	53,956,045
United States Treasury Note/Bond	3/15/21	2.38	47,958,301
United States Treasury Note/Bond	11/30/22	2.00	47,323,199
United Kingdom Gilt Inflation Linked	3/22/26	0.13	47,184,245
Total			\$727,628,811

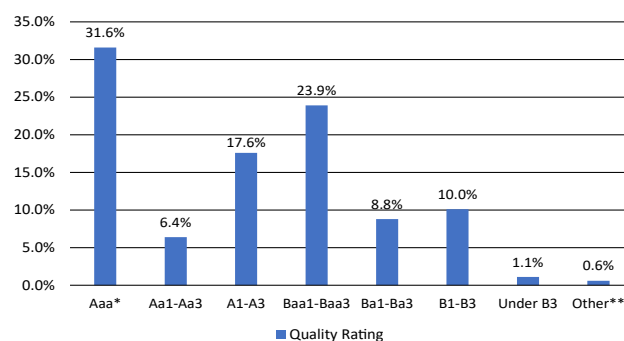
Sources: State Street Bank and Trust and TRS

The following charts provide the asset allocation mix and statistical information on TRS's income portfolio as of June 30, 2019.

Income Allocation



Diversification by Quality Rating for Individual Bonds



Sources: State Street Bank and Trust and TRS

* U.S. treasury securities are included.

** Other includes unrated securities.

Note: Public debt instruments only.

Global Income Fundamental Characteristics

	TRS Global Income Portfolio	Bloomberg Barclays Hedged Index
Average maturity	6.6 years	7.9 years
Effective duration	3.7 years	5.7 years
Average quality rating	A3	Aa2

Sources: State Street Bank and Trust and TRS

Note: Public debt instruments only.

TRS employed the following income managers as of June 30, 2019. This excludes assets overseen by managers in other asset classes containing income or other debt securities/funds as a small part of their overall strategies.

Income Managers and Assets Under Management (inception date of account)

	Assets
AllianceBernstein, L.P. (8/18)	\$533,839,270
AG Direct Lending Fund II, L.P. (12/16)	95,940,042
Apollo Lincoln Fixed Income Fund, L.P. (3/14)	180,231,873
BIG Real Estate Fund I, L.P. (11/17)	22,172,462
Beach Point Sangamon, L.P. (9/18)	89,973,064
Dolan McEnery Capital Management, L.L.C. (5/06)	863,694,829
DoubleLine Mortgage Opportunities L.P. (9/17)	79,285,334
EISAF II, L.P. (10/18)	49,468,327
Franklin Advisers, Inc. (2/08)	810,588,596
Franklin Templeton Emerging Market Debt Opportunities (Cayman) Fund, Ltd. (12/10)	396,846,132
Garcia Hamilton & Associates, L.P. (6/10)	927,089,157
Global Transport Income Fund Master Partnership SCSp (11/17)	106,811,581
LCM Partners CO IIIa, L.P. (9/16)	66,770,803
LCM Partners SOLO III, L.P. (9/18)	24,469,693
MacKay Shields L.L.C. (8/11)	999,071,636
Maranon Senior Credit Fund II-B, L.P. (6/13)*	37,666,232
Monroe Capital Private Credit Fund II, L.P. (4/16)	40,503,000
Northern Shipping Fund III, L.P. (1/16)	68,708,402
NXT Capital Senior Loan Fund II, L.P. (8/13)*	17,017,855
NXT Capital Senior Loan Fund IV, L.P. (1/16)	123,701,499
NXT Capital Senior Loan Fund V, L.P. (10/17)	66,876,531
Oaktree Enhanced Income Fund II, L.P. (5/14)	28,144,515
Oaktree Enhanced Income Fund III, L.P. (4/16)	97,791,337
Oaktree Real Estate Debt Fund, L.P. (10/13)	18,152,507
Oaktree Real Estate Debt Fund II, L.P. (3/17)	38,360,511
Pacific Investment Management Company, L.L.C. (7/82)	2,193,579,095
(continued)	

(continued)	
	Assets
PIMCO BRAVO Fund III Onshore Feeder, L.P. (12/16)	\$70,563,033
PIMCO BRAVO Fund Onshore Feeder I, L.P. (11/10)*	766,064
PIMCO BRAVO Fund Onshore Feeder II, L.P. (3/13)	71,147,454
PIMCO Corporate Opportunities Fund II, L.P. (1/16)	69,500,361
PIMCO Commercial Real Estate Debt Fund, L.P. (2/19)	10,201,345
PIMCO Horseshoe Fund, L.P. (12/14)	466,618,362
Pemberton Debt Fund Delaware I, L.P. (11/16)	45,538,848
Pemberton Debt Fund Delaware II, L.P. (1/19)	43,651,198
PGIM, Inc. (12/08)	1,560,277,731
PGIM Fixed Income Global Liquidity Relative Value Fund I (Cayman), Ltd. (12/15)	341,615,706
PGIM Fixed Income Emerging Markets Long Short Fund I, L.P. (9/18)	42,026,609
Ramirez Asset Management, Inc. (3/17)	134,638,761
Riverstone Credit Partners, L.P. (12/15)	41,953,091
Riverstone Credit Partners II, L.P. (5/18)	46,158,843
SCP Private Corporate Lending Fund, L.P. (5/19)	9,550,179
State Street Global Advisors Trust Company (8/18)	307,563,720
Taplin, Canida & Habacht (4/13)	1,438,210,239
Taurus Mining Finance Annex Fund L.L.C. (1/17)	18,446,166
Taurus Mining Finance Fund L.L.C. (4/15)	47,391,834
TCW Asset Management Company (8/13)	908,432,636
The Varde Private Debt Opportunities Fund (Onshore), L.P. (8/18)	39,910,037
Vista Credit Opportunities Fund I-B, L.P. (10/14)	15,324,959

* Accounts currently in liquidation or being discontinued.

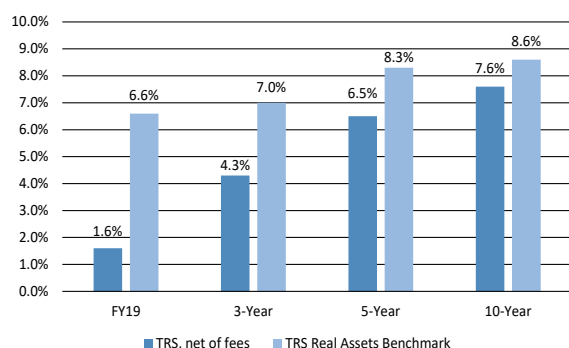
Note: The list does not include managers terminated prior to June 30, 2019 with residual assets in the account.

REAL ASSETS

For the fiscal year ended June 30, 2019, the \$6.5 billion real assets portfolio represented 12.4 percent of the total fund. Real estate core and value-add strategies comprise the majority of investments, representing 92 percent of the asset class, while other real assets including infrastructure, agriculture and special situations complete the remainder of the asset class. Given TRS has moved to a risk-based asset class structure, opportunistic real estate investments are grouped within equity exposure; whereas, core and value-add real estate investments are classified as real assets.

The asset class blended benchmark consists of real estate strategies measured against the NCREIF Property Index, while other real assets are benchmarked against the Consumer Price Index (CPI) + 5.0 percent. The long-term policy target for real assets is 15.0 percent of total fund, comprised of 11.0 percent allocated to core and value-add real estate and 4.0 percent allocated to other real assets. For the fiscal year, TRS's real assets portfolio generated 1.6 percent, net of fees, compared to the 6.6 percent return of the benchmark. Real assets performance and benchmark comparisons are noted in the following chart.

Real Assets vs. Benchmark Return



Sources: State Street Bank and Trust and TRS

The real asset class offers competitive returns, provides diversification benefits to portfolios of stocks and bonds, and serves as a hedge against inflation. Investments in real assets are intended to increase the TRS total portfolio long-term rate of return and reduce year-to-year volatility. Additionally, real

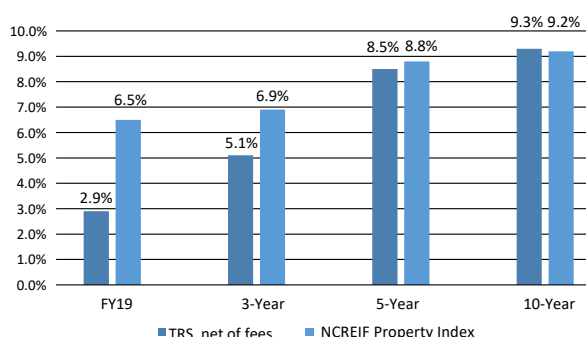
assets provide a strong income component to pay TRS benefits.

Real estate investments currently represent a significant portion of the asset class and are defined as direct investments or ownership in land and buildings including apartments, offices, warehouses, shopping centers and hotels. Further, TRS holds partnership interests in entities that purchase and manage property and pass rent and sale income back to TRS. In addition to direct investments, TRS may also make investments in commingled funds and co-investments.

Real estate returns moderated to normalized/sustainable levels in FY19. Overall, real estate market fundamentals remain strong, which supports continued favorable income returns; however, appreciation returns have diminished to more typical historical levels. TRS's real estate managers have been active in the market throughout the year, upgrading the portfolios by identifying investments that provide downside protection in the event of a market correction.

The TRS portfolio maintains a long-term target allocation of 11.0 percent to core and value-add real estate. As of June 30, 2019, TRS held \$6.0 billion in such assets or 11.4 percent of the total fund portfolio. For the fiscal year, TRS's core and value-add real estate portfolio earned 2.9 percent, net of fees, compared to the benchmark of 6.5 percent. Real estate performance and benchmark comparisons are noted in the following chart.

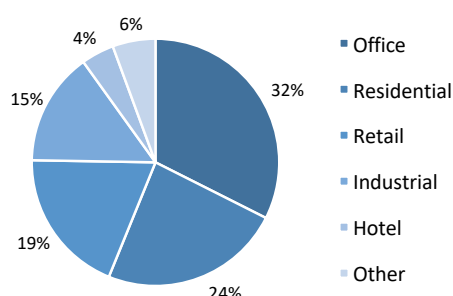
Core and Value-add Real Estate vs. Benchmark Return



Sources: State Street Bank and Trust and TRS

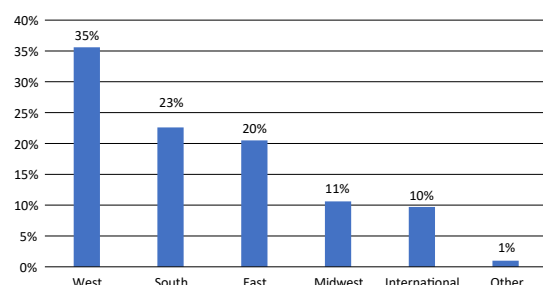
To enhance returns and reduce risk, TRS acquires high quality properties diversified geographically and by property type. In an effort to accurately capture sector and geographical exposures, the following charts are inclusive of opportunistic real estate investments (detailed further in the equity discussion). The data sets below exhibit TRS's real estate holdings by type, geography and risk return profiles as of June 30, 2019.

Real Estate Holdings by Property Type



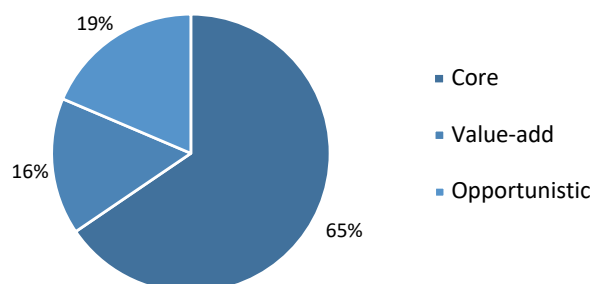
Source: StepStone Group Real Estate L.P.

Geographic Diversification of Real Estate Holdings



Source: StepStone Group Real Estate L.P.

Real Estate Holdings by Risk/Return



Source: StepStone Group Real Estate L.P.

Professional real estate advisors manage real estate owned by TRS. Separate account managers administer TRS's direct investments in real estate assets; closed-end and open-end accounts represent partnership interests in real estate funds including TRS's international real estate accounts.

As of June 30, 2019, TRS employed the following managers and/or funds investing in core real estate, value-add real estate and other real assets including their respective assets under management.

Real Asset Managers & Assets Under Management (inception date of account)

	Assets
Real Estate (Core and Value-add)	
Separate Accounts	
Barings, L.L.C. (7/08)	\$443,260,483
Barings II, L.L.C. (7/09)	6,098,773
Capri/Capital Advisors, L.L.C. (12/91)	827,487,830
Heitman Capital Management, L.L.C. (7/09)	1,664,502,231
Invesco Institutional (N.A.), Inc. (7/08)	884,591,877
LPC Realty Advisors I, Ltd. (7/92)	897,669,607
Principal Real Estate Investors, L.L.C. (10/13)	199,176,517
Commingled Accounts	
Exeter Value Fund IV, L.P. (9/17)	28,893,452
Lion Industrial Trust (4/05)	554,802,924
Madison International Real Estate Liquidity Fund VI (TE), L.P. (3/16)	100,981,788
Oak Street Real Estate Capital Fund III, L.P. (5/16)	11,111,551
Oak Street Real Estate Capital Fund IV, L.P. (11/17)	32,671,179
Starwood Value Add Fund, L.P. (6/17)	292,639,815
Westbrook Real Estate Fund X, L.P. (7/16)	59,022,762
Other Real Assets	
AQR Real Return Offshore Fund, L.P. (6/12)	275,077,985
Black River Agriculture Fund 2, L.P. (6/13)	76,780,415
Blackstone Infrastructure Partners, L.P. (3/19)	41,589,636
Blackstone Infrastructure Partners (Supplemental Account), L.P. (3/19)	24,953,633
Sheridan Production Partners III-B, L.P. (11/14)	24,347,000
West Street Global Infrastructure Partners III, L.P. (1/16)	84,682,532

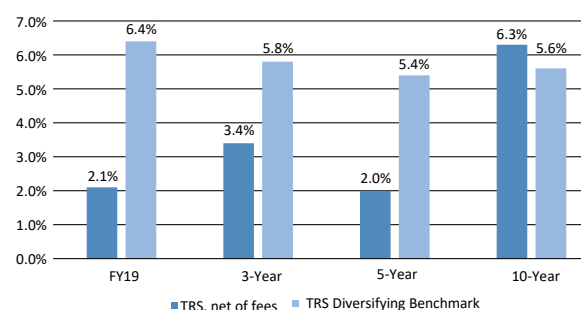
DIVERSIFYING STRATEGIES

Diversifying strategies includes mandates designed to provide attractive return and risk attributes while exhibiting low correlation to traditional public equity and fixed income investments. This segment of the portfolio continues to evolve and currently includes systematic macro, discretionary macro, opportunistic, risk parity and alternative risk premia strategies. TRS has been investing in diversifying strategies profiles since FY07. The makeup of the program has gone through a number of evolutions as strategic adjustments are made in response to changes throughout the entire plan and global financial markets. Investments in diversifying strategies are administered via both direct investment manager relationships and diversified fund of funds.

The current benchmark consists of the relatively risk-free index of 90-Day Treasury Bills + 4.0 percent. While this is not an investible index, the benchmark represents the intended risk reduction characteristic of the asset class. Structurally, TRS continues to migrate away from fund of funds investments in order to lower the program's total expense ratio while increasing return expectations. Consistent with objectives, the asset class provides beneficial diversification for the total plan, while producing relatively stable, low volatility returns.

The long-term policy target for diversifying strategies is 14.0 percent of total fund. As of June 30, 2019, the TRS diversifying strategies asset class value was \$5.5 billion, or 10.4 percent of total fund. For the fiscal year, TRS's diversifying strategies portfolio generated 2.1 percent, net of fees, compared to the 6.4 percent return of the benchmark. Diversifying strategies performance and benchmark comparisons are noted in the following chart.

Diversifying Strategies vs. Benchmark Return



Sources: State Street Bank and Trust and TRS

As of June 30, 2019, TRS employed the following managers and/or funds including their respective assets under management.

Diversifying Strategies Managers and Assets Under Management (inception date of account)

	Assets
Diversified Fund of Funds	
Grosvenor Monarch Fund, L.L.C. (6/07)	\$330,760,536
Direct Investment Funds	
1818 I, L.P. (03/16)	84,316,009
Alphadyne Global Rates Fund II, Ltd. (06/14)	403,327,195
AQR Multi-Strategy Fund XIV, L.P. (07/07)	548,177,188
Brevan Howard Systematic Trading Fund, L.P. (06/15)	172,510,720
Bridgewater Optimal Portfolio, L.L.C. (04/16)	458,871,837
CCP Core Macro Fund, L.P. (03/18)	219,025,020
Crabel Fund, L.P. (12/15)	90,314,498
Graham Global Investment Fund I SPC, Ltd. (02/19)	304,743,442
Grosvenor Monarch Fund Series B (03/11)	400,842,841
IPM Systematic Macro Fund, L.P. (01/19)	245,658,036
Kepos Exotic Beta Fund, L.P. (04/18)	200,957,671
Key Trends 15 Fund, L.L.C. (11/16)	109,793,790
Kirkoswald Global Macro Fund, L.P. (06/19)	200,000,000
Light Sky Macro Fund, L.P. (07/18)	227,424,410
Man Alternative Risk Premia, S.P. (12/17)	304,153,931
PDT Mosaic Offshore Holdings, L.L.C. (06/15)	193,936,341
Tilden Park Investment Fund, L.P. (08/18)	287,041,624
Trend Macro Onshore, L.P. (12/18)	253,181,588
Varadero International, Ltd. (06/14)	269,291,498
Varadero Special Opportunities International, L.P. (06/18)	71,834,971

SECURITIES LENDING

Citibank, N.A. served as the third-party securities lending agent for the fixed income, domestic equity and international equity lending programs. The lending agent is responsible for making loans, acquiring collateral, marking loans and collateral to market on a daily basis and investing cash collateral based on lending agreement terms. The TRS Board of Trustees' policies permit TRS to use investments to enter into securities lending transactions, which are loans of securities to broker-dealers or other entities. Additional information regarding securities lending activity is included in the Notes to Financial Statements under "Note D. Investments."

The borrower of a security must post collateral in excess of the fair value of the security. TRS receives both cash and non-cash (i.e., securities) collateral. The following table represents the fair values of the securities lending activity based on type of collateral as of June 30, 2019.

Collateral Type	Collateral Received	Securities on Loan	Collateral %
Cash collateral	\$2,485,795,602	\$ 2,419,967,264	102.7%
Non-cash collateral	142,244,579	130,015,454	109.4
Total	\$2,628,040,181	\$2,549,982,718	103.1%
Reinvested cash collateral	\$2,485,824,046		

Source: Citibank, N.A.

Note: Does not include lending collateral with the State Treasurer.

TRS earns income from fees paid by the borrowers and interest earned from investing the cash collateral. For the year ended June 30, 2019, TRS earned net income of \$10.8 million through its securities lending program. The following table summarizes fiscal year net income from securities lending activity and the fiscal year averages regarding securities available to loan.

Lending Income for FY19	
Securities lending income	\$58,380,879
Borrower rebates	(46,839,722)
Lending agent fees	(692,458)
Securities lending net income	\$10,848,699
Loan Averages During FY19	
Available to loan	\$19,346,422,785
Securities on loan	2,276,896,261
Percentage on loan	11.8%

Sources: State Street Bank and Trust and Citibank, N.A.

BROKERAGE ACTIVITY

The following table shows the top 50 listed brokers used by TRS external equity managers for the year ended June 30, 2019. TRS also manages a commission recapture program as part of its trading strategies. For the year ended June 30, 2019, TRS recaptured \$0.02 million in cash that was reinvested in the fund. In addition, TRS uses commission recapture refunds to pay for Investment Department expenses. During FY19, TRS used \$0.2 million of recaptured funds to offset expenses.

Top 50 Brokers Used by TRS Managers

Broker	Shares Traded	FY19 Commission
Goldman Sachs & Co. (Worldwide)	137,247,528	\$945,561
Citigroup, Inc. and all Subsidiaries (Worldwide)	616,912,072	583,850
Instinet, L.L.C. (Worldwide)	251,825,170	506,551
Merrill Lynch & Co., Inc. and all Subsidiaries (Worldwide)	169,557,230	405,139
Cowen, Inc.	256,918,529	351,298
Credit Suisse (Worldwide)	174,789,260	293,426
UBS AG	62,526,383	271,631
Loop Capital Markets, L.L.C.	24,251,825	259,880
HSBC Bank PLC	117,671,926	246,814
J.P. Morgan Securities, Inc. (Worldwide)	203,575,992	233,027
Macquarie Bank & Securities, Ltd. (Worldwide)	51,188,221	210,411
Morgan Stanley & Co., Inc. and Subsidiaries (Worldwide)	88,923,652	178,987
BNP Paribas Securities Services S.C.A.	40,414,261	173,755
Societe Generale S.A. and all Subsidiaries	81,925,148	150,917
Jefferies & Company, Inc.	74,481,696	136,205
Investment Technology Group, Inc. (Worldwide)	55,142,871	113,494
Williams Capital Group, L.P.	8,197,182	101,135
Barclays (Worldwide)	1,900,380	98,004
Sanford Bernstein (Worldwide)	25,427,104	87,041
CLSA Securities	16,770,579	64,393
Deutsche Bank & Securities (Worldwide)	40,398,331	59,313
Brasil Plural S.A.	3,886,660	56,966
Cabrera Capital Markets, Inc.	5,329,806	51,193
CL King & Associates, Inc.	2,064,100	49,313
KB Financial Group	824,256	43,557

(continued)

(continued)

Broker	Shares Traded	FY19 Commission
North South Capital, L.L.C.	1,926,989	\$40,216
Liquidnet, Inc.	4,982,481	39,737
Credit Lyonnais Securities	40,475,953	32,443
Mischler Financial Group	1,584,067	30,754
Academy Securities, Inc.	1,454,129	28,591
Mirae Asset Daewoo Co., Ltd.	536,284	24,986
Sturdivant & Co., Inc.	784,331	22,769
Korea Investment Holdings	146,024	22,088
Pershing, L.L.C.	1,981,575	20,961
RBC Dain Rauscher (Worldwide)	1,808,701	20,683
Exane, Inc.	6,274,089	19,934
Joh. Berenberg, Gossler & Co.	213,330	17,400
Penserra Securities, L.L.C.	4,299,438	15,948
Stifel Nicolaus & Company, Inc.	559,521	14,769
Banco Bradesco, S.A.	3,044,688	14,618
Kim Eng Securities, Ltd.	3,809,305	13,790
EFG Hermes Holding S.A.E	10,661,396	13,433
Baird, Robert W., & Company, Incorporated	480,728	13,254
Kotak Securities, Ltd.	496,573	13,123
Investec Group	734,297	12,794
Ambit Holdings Pvt., Ltd.	1,692,174	11,853
ICICI Brokerage Services, Ltd.	2,361,128	10,362
XP Investimentos S.A.	2,320,300	10,203
Raymond James and Associates, Inc. (Worldwide)	343,697	10,180
Abg Securities, Ltd.	588,776	9,394
(All Others - 113 Brokers)	47,496,468	264,292
Total	2,653,206,604	\$6,420,436

Sources: State Street Bank and Trust and TRS

INVESTMENT MANAGER AND CUSTODIAN FEES

For the year ended June 30, 2019, fee payments to external investment managers and the master custodian totaled \$319.2 million.

Schedule of Fees

Investment Manager/Account	FY19
Acadian Asset Management, L.L.C.	\$3,080,384
Advent International GPE VI Limited Partnership	166,809
Advent International GPE VII-C Limited Partnership	819,909
Advent International GPE VIII-B-2 Limited Partnership	1,599,441
AG Direct Lending Fund II, L.P.	1,159,996
All Weather Portfolio Limited	1,003,252
AllianceBernstein, L.P.	939,534
Alphadyne Global Rates Fund II, Ltd.	22,493,015
Altaris Health Partners IV, L.P.	146,279
Apollo Investment Fund IX, L.P.	4,206,057
Apollo Investment Fund VI, L.P.	1,958
Apollo Investment Fund VII, L.P.	459,261
Apollo Investment Fund VIII, L.P.	467,475
Apollo Lincoln Fixed Income Fund, L.P.	910,323
Apollo Lincoln Private Credit Fund, L.P.	352,092
AQR Capital Management, L.L.C.	6,902,987
AQR Real Return Offshore Fund, L.P.	2,052,774
AQR U.S. Relaxed Constraint Equity Fund II, L.P.	663,772
Arrowstreet Capital, L.P.	6,126,867
Astorg VI, SLP	969,151
Astorg VII, SLP	442,151
Axiom International Investors, L.L.C.	2,752,031
The Baring Asia Private Equity Fund V, L.P.	1,208,366
The Baring Asia Private Equity Fund VI, L.P.1	749,873
Barings, L.L.C.	1,504,796
Battery Ventures XI-A Side Fund, L.P.	104,607
Battery Ventures XI-A, L.P.	249,723
Beach Point Sangamon, L.P.	297,900
BIG Real Estate Fund I, L.P.	42,703
Black River Agriculture Fund 2, L.P.	1,067,545
BlackRock Asia Property Fund III, L.P.	(129)
Blackstone Capital Partners VI, L.P.	85,263
Blackstone Infrastructure Partners, L.P.	687,326
Blackstone Real Estate Partners Asia II, L.P.	1,619,683
Blackstone Real Estate Partners Asia, L.P.	871,810
Blackstone Real Estate Partners VI, L.P.	9,202
Blackstone Real Estate Partners VII, L.P.	1,397,888
Blackstone Real Estate Partners VIII.TE.2, L.P.	1,845,748
Brevan Howard Systematic Trading Fund, L.P.	1,601,252
Bridgewater Optimal Portfolio, L.L.C.	5,138,657
(continued)	

(continued)	
Investment Manager/Account	FY19
Brown Capital Management, L.L.C.	\$385,800
Capri/Capital Advisors, L.L.C.	2,158,439
Carlson Capital, L.P.	4,233,756
Carlyle Europe Real Estate Partners III, L.P.	140,776
Carlyle Japan International Partners III, L.P.	144,209
Carlyle Partners VI, L.P.	113,285
Carlyle Realty Partners VII, L.P.	653,178
Carlyle Realty Partners VIII, L.P.	1,484,402
Carlyle Realty Qualified Partners IV, L.P.	11,928
Carlyle/Riverstone Global Energy and Power Fund III, L.P.	152,555
CCP Core Macro Fund, L.P.	984,505
Channing Capital Management, L.L.C.	244,108
Clearlake Capital Partners II, L.P.	62,303
Clearlake Capital Partners III, L.P.	273,621
Clearlake Capital Partners IV, L.P.	961,302
Clearlake Capital Partners V, L.P.	348,881
Clearlake Opportunities Partners (P), L.P.	704,822
Crabel Fund, L.P.	436,039
Dimensional Fund Advisors, L.P.	2,745,506
Dolan McEniry Capital Management, L.L.C.	1,932,907
DoubleLine Mortgage Opportunities, L.P.	484,459
Edgewater Growth Capital Partners II, L.P.	79,199
EIF United States Power Fund IV, L.P.	878,466
EISAF II, L.P.	1,919,697
Emerald Advisers, Inc.	1,071,136
Energy Capital Partners II Annex A	42,103
EQT Midmarket Europe, L.P.	1,467,373
EQT VI, L.P.	445,729
EQT VII, L.P.	1,089,070
EQT VIII, L.P.	1,637,562
European Property Investors Special Opportunities 5 SCSP	959,676
Exeter Value Fund IV, L.P.	460,000
Fortress Japan Opportunity Fund III (Dollar A), L.P.	(157,902)
Fortress Japan Opportunity Fund IV (Dollar A), L.P.	604,398
Franklin Advisers, Inc.	2,375,964
Franklin Templeton Emerging Market Debt Opportunities (Cayman) Fund, Ltd.	1,863,063
Garcia Hamilton & Associates, L.P.	887,342
Gateway Real Estate Fund IV, L.P.	361,546
(continued)	

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Investment Manager/Account	FY19
GI Partners Fund IV, L.P.	\$281,272
Global Transport Income Fund Master Partnership SCSP	408,911
Graham Global Investment Fund I SPC Ltd.	867,160
Grain Communications Opportunity Fund II, L.P.	1,148,352
Grain Communications Opportunity Fund, L.P.	648,270
Grandeur Peak Global Advisors	809,344
Granite Ventures II, L.P.	90,559
Great Point Partners II, L.P.	56,758
Green Equity Investors VI, L.P.	339,104
Greenspring IL Master, L.P.	863,671
Grosvenor Monarch Fund, L.L.C.	2,363,613
Harvest Partners Structured Capital Fund II, L.P.	(130,597)
Heitman Capital Management, L.L.C.	5,345,969
Hopewell Ventures, L.P.	14,070
IC Hospitality Fund II, L.P.	133,844
ICV Partners III, L.P.	5,435
ICV Partners IV, L.P.	935,810
IL Asia Investors, L.P.	853,959
Inflexion Partnership Capital II, L.P.	425,035
Inflexion Buyout Partnership V, L.P.	970,308
Inflexion Supplemental Fund V (No. 1), L.P.	120
Institutional Venture Partners XV, L.P.	876,517
Institutional Venture Partners XVI, L.P.	1,043,318
Invesco Institutional (N.A.), Inc.	2,889,459
IPM Systematic Macro Fund, L.P.	769,059
ISAM Systematic Trend, L.L.C.	275,882
JMI Equity Fund VII, L.P.	325,505
JMI Equity Fund VIII-A, L.P.	408,000
JP Morgan Investment Management, Inc.	3,078,411
JP Morgan Management Associates, L.L.C.	217,844
Kepos Exotic Beta Fund, L.P.	1,201,355
Key Trends 15 Fund, L.L.C.	989,742
LaSalle Asia Opportunity Fund IV, L.P.	213,145
LCM Partners CO IIIa, L.P.	677,217
LCM Partners SOLO III, L.P.	104,131
Lee Overlay Partners Limited	65,000
Levin Capital Strategies, L.P.	259,923
Light Sky Macro Fund, L.P.	2,128,223
Lightspeed Venture Partners IX, L.P.	652,275
Lightspeed Venture Partners Select II, L.P.	345,116
Lightspeed Venture Partners Select, L.P.	384,319
Lightspeed Venture Partners X, L.P.	329,178
Lightspeed Venture Partners XI, L.P.	272,088
Lion Industrial Trust	4,416,652
Littlejohn Fund IV, L.P.	236,826
<i>(continued)</i>	

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Investment Manager/Account	FY19
LiveOak Venture Partners I, L.P.	\$382,500
Lone Star Real Estate Fund III (U.S.), L.P.	\$22,953
Lone Star Real Estate Fund IV (U.S.), L.P.	502,596
Lone Star Real Estate Fund V (U.S.), L.P.	2,288,084
Longitude Venture Partners II, L.P.	358,961
Longitude Venture Partners III, L.P.	886,342
LPC Realty Advisors I, Ltd.	3,306,681
LSV Asset Management	8,103,992
MacKay Shields, L.L.C.	2,372,958
Madison Dearborn Capital Partners VII, L.P.	988,600
Madison International Real Estate Liquidity Fund VI (TE), L.P.	1,195,507
Magnetar Constellation Fund IV, L.L.C.	753,853
Magnetar Constellation Fund V, L.L.C.	813,813
Man Alternative Risk Premia SP	2,691,592
Maranon Mezzanine Fund, L.P.	3,823
Maranon Senior Credit Fund II-B, L.P.	327,332
Marlin Equity V, L.P.	939,606
Matarin Capital Management, L.L.C.	125,008
MBK Partners Fund III Annex B	(85,027)
MBK Partners Fund III, L.P.	1,335,307
MBK Partners Fund IV, L.P.	2,057,755
Mondrian Investment Partners Limited	1,939,659
Monroe Capital Private Credit Fund II, L.P.	497,702
Morgan Creek Partners Asia, L.P.	724,751
Morgan Creek Partners Venture Access Fund, L.P.	(134,602)
New Enterprise Associates 15, L.P.	293,354
New Enterprise Associates 16, L.P.	501,962
New Mountain Partners IV, L.P.	229,708
New Mountain Partners V, L.P.	1,253,783
NGP Natural Resources X, L.P.	806,182
NGP Natural Resources XI, L.P.	1,368,336
NGP Natural Resources XII, L.P.	1,373,974
Niam Nordic V, L.P.	136,353
Northern Shipping Fund III, L.P.	796,977
Northern Trust Investments, Inc.	648,046
NXT Capital Senior Loan Fund II, L.P.	173,368
NXT Capital Senior Loan Fund IV, L.P.	2,426,232
NXT Capital Senior Loan Fund V, L.P.	936,836
Oak Street Real Estate Capital Fund III, L.P.	152,841
Oak Street Real Estate Capital Fund IV, L.P.	327,271
Oaktree Enhanced Income Fund II, L.P.	1,661,655
Oaktree Enhanced Income Fund III, L.P.	2,029,737
Oaktree European Principal Fund III, L.P.	743,421
Oaktree Opportunities Fund IX, L.P.	1,130,782
Oaktree Opportunities Fund VIII, L.P.	177,976
<i>(continued)</i>	

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Investment Manager/Account	FY19
Oaktree Opportunities Fund Xb, L.P.	\$120,143
Oaktree Real Estate Debt Fund II, L.P.	93,330
Oaktree Real Estate Debt Fund, L.P.	293,618
OCM European Principal Opportunities Fund II, L.P.	114,762
OCM Opportunities Fund VIIb, L.P.	64,816
Pacific Investment Management Company, L.L.C.	12,277,529
Palladium Equity Partners IV, L.P.	127,226
Parthenon Investors V, L.P.	1,213,036
PDT Partners, L.L.C.	15,098,753
Pemberton Debt Fund Delaware I, L.P.	730,619
Pemberton Debt Fund Delaware II, L.P.	169,180
Penso Fund Platform SPC	963,041
PGIM Fixed Income Emerging Markets Long Short Fund I, L.P.	191,896
PGIM Fixed Income Global Liquidity Relative Value Fund I (Cayman), Ltd.	4,108,303
PGIM, Inc.	2,109,112
PIMCO BRAVO Fund III Onshore Feeder, L.P.	832,994
PIMCO BRAVO Fund Onshore Feeder I, L.P.	634
PIMCO BRAVO Fund Onshore Feeder II, L.P.	1,264,171
PIMCO Commercial Real Estate Debt Fund, L.P.	39,426
PIMCO Distressed Senior Credit Opportunities Fund II, L.P.	1,025,378
Pine Brook Capital Partners, L.P.	30,167
Principal Real Estate Investors, L.L.C.	704,384
Prism Mezzanine Fund, L.P.	26,646
Proterra Credit Fund, L.P.	104,110
Providence Equity Partners VII, L.P.	485,469
Ramirez Asset Management, Inc.	193,640
RCP SBO Fund, L.P.	512,500
Rhone Partners IV, L.P.	258,267
Rhone Partners V, L.P.	1,280,924
RhumbLine Advisers, L.P.	342,591
Riverstone Credit Partners II, L.P.	443,228
Riverstone Credit Partners, L.P.	537,478
Riverstone Global Energy and Power Fund V, L.P.	1,378,628
Riverstone Global Energy and Power Fund VI, L.P.	2,112,383
Riverstone/Carlyle Global Energy and Power Fund IV, L.P.	218,619
Robeco Boston Partners Asset Management, L.P.	1,206,702
Robeco Transtrend Diversified Fund L.L.C.	788,020
Rockpoint Real Estate Fund V, L.P.	1,327,541
RRJ Capital Master Fund III, L.P.	(2,984,615)
Scale Venture Partners V, L.P.	600,000
SCP Illinois. L.L.C.	99,044
<i>(continued)</i>	

<i>(continued)</i>	
Investment Manager/Account	FY19
SCP Private Corporate Lending Fund, L.P.	\$146,268
Sheridan Production Partners III-B, L.P.	1,125,000
Silver Lake Alpine, L.P.	24,444
Silver Lake Partners III, L.P.	156,881
Silver Lake Partners IV, L.P.	912,670
Silver Lake Partners V, L.P.	1,882,520
Siris Partners II, L.P.	436,084
Siris Partners III, L.P.	1,134,233
Siris Partners IV, L.P.	463,211
SK Capital Partners V-A, L.P.	296,840
Sofinnova Venture Partners IX, L.P.	1,008,117
Sofinnova Venture Partners VIII, L.P.	542,179
Sofinnova Venture Partners X, L.P.	1,490,598
Southwest Multifamily Partners, L.P.	188,563
Standard Life Investments Global Absolute Return Strategies Master Fund Ltd.	241,079
StarVest Partners II, L.P.	94,730
Starwood Distressed Opportunity Fund IX Global, L.P.	929,869
Starwood IX Annex A	309,840
Starwood Opportunity Fund X Global, L.P.	8,146,316
Starwood Opportunity Fund XI Global, L.P.	4,819,682
Starwood Value Add Fund, L.P.	1,344,498
Starwood X Annex A	(80,489)
Starwood X Annex B	(1,986)
State Street Bank and Trust Company (Custody)	2,604,167
State Street Global Advisors Trust Company	221,663
Strategic Global Advisors, L.L.C.	3,690,319
Sunstone Partners I, L.P.	319,483
T. Rowe Price Associates, Inc.	2,432,189
TA XII-A, L.P.	1,048,838
Taplin, Canida & Habacht, L.L.C.	904,984
Taurus Mining Finance Annex Fund L.L.C.	487,500
Taurus Mining Finance Fund L.L.C.	1,000,000
TCW Asset Management Company	3,250,018
TDR Capital IV 'A', L.P.	1,466,566
Tilden Park Investment Fund, L.P.	2,359,333
Trend Macro Onshore, L.P.	756,265
Trident V, L.P.	544,928
Trident VI, L.P.	1,100,461
Trident VII, L.P.	1,283,849
Trustbridge Partners IV, L.P.	463,630
TSG8, L.P.	1,246,575
Union Grove Partners Direct Venture Fund, L.P.	(28,292)
Union Grove Partners Venture Access Fund II, L.P.	(41,460)
Union Grove Partners Venture Access Fund, L.P.	(131,266)
Varadero International, Ltd.	6,285,124
<i>(continued)</i>	

(continued)

Investment Manager/Account	FY19
Varadero Special Opportunities International, L.P.	\$399,603
The Varde Private Debt Opportunities Fund (Onshore), L.P.	119,952
Veritas Capital Fund V, L.P.	74,475
Veritas Capital Fund VI, L.P.	257,997
Vicente Capital Partners Growth Equity Fund, L.P.	23,441
Vista Credit Opportunities Fund I-B, L.P.	415,290
Vista Equity Partners Fund III, L.P.	8,664
Vista Equity Partners Fund IV, L.P.	91,657
Vista Equity Partners Fund V, L.P.	2,606,584
Vista Equity Partners Fund VI, L.P.	1,783,989
Vista Foundation Fund III, L.P.	906,442
Walton Street Real Estate Fund VI, L.P.	417,764
Walton Street Real Estate Fund VII, L.P.	1,003,343
Wasatch Advisors, Inc.	2,180,723
West Street Global Infrastructure Partners III, L.P.	1,687,500
Westbrook Real Estate Fund X, L.P.	871,556
Total fees paid by TRS	<u>\$319,226,320</u>



ACTUARIAL

STERLING PARC

Cedar Knolls, NJ

Phase 1 built in 1988 and phase 2 built in 2001

Acquired in 2016

November 12, 2019

Board of Trustees
Teachers' Retirement System of the State of Illinois
2815 West Washington Street
Springfield, Illinois 62702

ACTUARIAL CERTIFICATION

Ladies and Gentlemen:

This report presents the results of the annual valuation of the assets and liabilities of the Teachers' Retirement System of the State of Illinois (TRS or System) as of June 30, 2019, prepared in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/16). This valuation takes into account all of the pension benefits to which members are entitled.

Actuarial Assumptions and Methods

The valuation was based on the actuarial assumptions adopted by the Board of Trustees, reflecting the three-year demographic and economic experience review covering the period July 1, 2014, through June 30, 2017, presented at the August 2018 Board meeting. Based upon recent experience and the expectation that the funds available for the automatic annual increase and inactive vested buyouts are limited to \$650 million, the buyout assumptions used for the valuation have been modified. In our opinion, the actuarial assumptions used are reasonable, taking into account the experience of the System and reasonable long-term expectations, and represent our best estimate of the anticipated long-term experience of the System. The actuarial assumptions and methods used for funding purposes meet the parameters set by Actuarial Standards of Practice. The methods mandated by the Illinois Pension Code as described in the Funding Adequacy section are inadequate to appropriately fund TRS.

Assets and Membership Data

TRS reported to the actuary the individual data for members of the System as of the prior valuation date. Valuation results are projected, based upon the actuarial assumptions, to account for the one-year difference between the date of the census data and the valuation date. The amount of assets in the trust fund as of the valuation date was based on statements prepared by TRS.

Funding Adequacy

The member and employer contribution rates are determined in accordance with the funding policy specified under the Illinois Pension Code (40 ILCS 5/16). The member contribution rate is 9.0%, which is comprised of 7.5% toward the cost of the retirement annuity, 0.5% toward the cost of the automatic annual increase in the retirement annuity and 1.0% for survivor benefits. The employer contributions are determined such that, together with the member contributions, the plan is projected to achieve 90% funding by 2045. The 2045 funding objective of 90% was set in 1994 as a 50-year objective. TRS members have always contributed their share. **The State funding has been inadequate, resulting in TRS being among the worst funded public employee retirement systems in the United States. We strongly recommend an actuarial funding method that targets 100% funding. Generally, this implies payments that are ultimately at least enough to cover normal cost, interest on the unfunded actuarial accrued liability, and the principal balance.** The funding policy adopted by the Board, referred to as the Board Funding Policy, meets this standard.

The valuation indicates that for the fiscal year ending June 30, 2019, the actuarial experience of TRS was unfavorable, generating a net actuarial loss of \$942 million (0.7% of the actuarial accrued liability). This loss is the net result of a \$590 million loss due to unfavorable investment return experience and a \$352 million net loss due to demographic experience in fiscal 2019.

Actuarial Certification

In preparing the results presented in this report, we have relied upon information TRS provided to us regarding the benefit provisions, System members, benefit payments and unaudited plan assets. While the scope of our engagement did not call for us to perform an audit or independent verification of this information, we have reviewed this information for reasonableness. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information.

There is a schedule of Required Supplementary Information in the Financial Section of the System's Annual Financial Report. Segal has provided the Schedule of Changes in the Net Pension Liability, the Schedule of the Net Pension Liability, and the Schedule of Contributions from Employers and Other Contributing Entities. Segal reviewed this information in the Required Supplementary Information and the Notes to Required Supplementary Information to verify its consistency with the valuation report.

The Actuarial Section of the System's Annual Financial Report contains the following schedules, which were not prepared by Segal, but were reviewed by Segal for consistency with the valuation report: Actuarial Valuation, Reconciliation of Unfunded Liability, State Funding Amounts, Unfunded Liability as a Percentage of Payroll Test, and Schedule of Contributions from Employers and Other Contributing Entities. The Actuarial Section also contains the following schedules, which were prepared by Segal: Funded Ratio Test, Solvency Test, Employer Normal Cost by Tier, and Funded Ratio by Tier. Segal neither reviewed nor prepared any items beyond those specifically listed in this paragraph and the preceding paragraph.

In our opinion, the results presented comply with the Illinois Pension Code and, where applicable, the Internal Revenue Code, and the Statements of the Governmental Accounting Standards Board. While all calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board, this does not endorse the funding methodology required by the Illinois Pension Code. The undersigned are independent actuaries. They are Fellows of the Society of Actuaries, Enrolled Actuaries, and Members of the American Academy of Actuaries, and are experienced in performing valuations for large public retirement systems. They meet the Qualification Standards of the American Academy of Actuaries.

Respectfully submitted,

Segal Consulting, a Member of the Segal Group

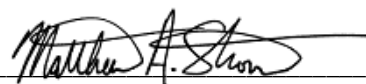
By:



Kim Nicholl, FSA, MAAA, EA
Senior Vice President and Actuary



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The Actuarial Section of this report discusses the System's funded status and measures changes in its financial condition over time. The actuarial accrued liability, actuarial value of assets and unfunded liability presented in this section are used to determine state funding requirements. The total pension liability, plan fiduciary net position and net pension liability are used for financial disclosure only and are required by GASB Statement No. 67. For the GASB disclosure, please see the Financial Section of this report: "Notes to Financial Statements, A. Plan Description, 6. Actuarial Measurements."

Pursuant to Public Act 97-0674, the Office of the Auditor General employs a state actuary, Cheiron, to review the five state systems' actuarial valuation reports. The reports are considered preliminary until the state actuary has reviewed them. In its review of the previous report prepared by Segal Consulting, Cheiron recommended that federal funds contributions be treated in the same manner as other school district contributions resulting in the calculation of state contributions to be the level percent of payroll required to attain 90 percent by fiscal year 2045. The change was implemented for the June 30, 2019 actuarial valuation, effective for contributions in fiscal years 2021 and thereafter. Cheiron recommended additional disclosure on stress testing, but it has not been included in the 2019 preliminary actuarial valuation.

TRS and Segal believe this type of analysis is better suited for discussion with input from the TRS Board of Trustees, staff, the actuary and the TRS general investment consultant, RVK, Inc. However, additional disclosure on the types of risk faced by the plan has been added to the actuarial report. The preliminary June 30, 2019 actuarial valuation prepared by Segal Consulting has been submitted to the state actuary.

ACTUARIAL ASSUMPTIONS AND METHODS

Each year the actuary reconciles the differences between actuarial assumptions and experience to explain the change in TRS's unfunded liability.

The unfunded liability is the difference between the accrued liability (the present value of benefits including the cost of annual increases) and the assets that are available to cover the liability.

Most assumptions were adopted in the FY18 valuation and are based on the 2018 experience analysis unless otherwise noted.

INVESTMENT RETURN

The investment return rate is 7.0 percent per annum, compounded annually and net of investment expenses, including inflation at 2.5 percent and real return at 4.5 percent. This is the expected rate of return on investments adopted effective June 30, 2016 and is also used to discount benefit payments. These rates were adopted in the FY16 valuation.

SALARY INCREASES

Components of the salary increase assumption include:

- inflation of: 2.5 percent and
- real wage growth (productivity) of: 0.75 percent.

The sample annual percentage salary increases (including merit and components of increase listed previously) are below.

Salary Increase Assumptions

Service	Male and Female
1 year	9.50%
2 years	7.50
3 years	7.00
4 years	6.75
5 years	6.50
10 years	5.50
15 years	4.75
20 years and above	4.00

For a member who works 34 years, the assumed average salary increase over the member's career is 4.94 percent per year. The actual average salary increase for teachers who were in full-time or regular part-time status at both June 30, 2017 and June 30, 2018 is 5.93 percent.

INFLATION

Inflation is assumed to be 2.5 percent per annum and is implicit in investment and earnings progression assumptions. This rate was adopted in the FY16 valuation.

RETIREMENT AGE

Graduated rates are based on age and service of active members at retirement.

Sample annual retirement rates follow. The Tier 1 rates were revised in 2018 and the Tier 2 rates were revised in 2012.

Tier 1 is composed of members who entered into service before Jan. 1, 2011:

Tier 1 Retirement Assumptions

Age	Years of Service				
	5-18	19-29	30-31	32-33	34+
54	-%	7%	8%	40%	45%
55	-	7	8	40	45
60	20	30	40	60	40
65	25	40	45	50	40
70	100	100	100	50	30
75	100	100	100	100	100

Tier 2 is composed of those entering into service on or after Jan. 1, 2011:

Tier 2 Retirement Assumptions

Age	Years of Service				
	9-18	19-30	31	32-33	34+
62	13%	15%	20%	25%	25%
65	8	10	15	20	20
67	20	40	70	70	70
70	100	100	100	100	100

MORTALITY

The assumed mortality rates are based on the Society of Actuaries RP-2014 mortality tables with adjustments as appropriate for TRS experience. The rates are used on a fully generational basis using projection table MP-2017.

For retirees, the RP-2014 White Collar

Annuitant table:

- female rates are multiplied by 70 percent for ages under 78 and 110 percent for ages 78 to 114 and
- male rates are multiplied by 94 percent for ages under 81 and 110 percent for ages 81-114.

For disabled members, the RP-2014 Disabled Retiree table is used with male and female rates multiplied by 117 percent for ages 45-99.

For beneficiaries, the RP-2014 Annuitant table is used with male and female rates multiplied by 116 percent and 96 percent, respectively, for ages 50-114.

For active and inactive members, the RP-2014 White Collar Employee table is used with male and female rates multiplied by 104 percent for all ages.

DISABILITY

Here are the sample annual disability rates:

Disability Assumptions

Age	Male	Female
25	0.01%	0.03%
30	0.01	0.04
40	0.03	0.07
50	0.10	0.18
55	0.14	0.20
60	0.18	0.27
65	0.25	0.30

TERMINATION FROM ACTIVE SERVICE

Here are the sample annual termination rates (for reasons other than death, disability or retirement):

Termination Assumptions

Age	Under 5 Yrs of Service		5 or More Yrs of Service	
	Male	Female	Male	Female
25	7.0%	6.5%	3.0%	5.0%
30	6.5	7.0	3.0	4.8
40	10.0	8.0	1.8	1.5
50	12.0	8.0	1.3	1.5
55	11.5	11.8	2.0	2.0
60	15.0	14.0	3.0	2.5
65	30.0	30.0	3.0	3.0

SEVERANCE PAY

The percent of retirees from active service assumed to receive severance pay and the amount of such severance payments are assumed to be as follows and are not applicable to Tier 2.

Severance Pay Assumptions

Percent Retiring with Severance Pay	Severance Pay as a Percent of Other Pensionable Earnings in Last Year of Service
20%	10.0%

OPTIONAL SERVICE AT RETIREMENT

The accrued liability for retirement benefits for active members who have not previously purchased optional service is increased to cover the employer cost of optional service purchased in the last two years of service. The sample purchases at retirement follow.

Optional Service Assumptions

Years of Regular Service at Retirement	Maximum Service Purchased
10	0.107 years
20	0.445 years
25	0.752 years
30	0.841 years
34 or more	None

UNUSED AND UNCOMPENSATED SICK LEAVE

Unused and uncompensated sick leave varies by the amount of regular service at retirement.

The sample amounts of sick leave at retirement are:

Sick Leave Assumptions

Years of Service at Retirement	Sick Leave Service Credit
20	0.953 years
25	1.137 years
30	1.376 years
34	1.387 years
35 or more	None

POST-RETIREMENT INCREASES

Tier 1: 3%, compounded (statutory).

Tier 2: 1.25%, not compounded (adopted in 2016 valuation).

ACTUARIAL COST METHOD

The actuarial cost method required by the Illinois Pension Code is projected unit credit, which was adopted in the FY89 valuation as required by Public Act 86-0273. The entry age normal cost method has been the basis of the TRS board's funding policy since FY15 and is used for financial reporting under GASB Statement No. 67.

ASSET VALUATION METHOD

The practice of five-year prospective asset smoothing was adopted in the FY09 valuation as required by Public Act 96-0043.

ACCELERATED BENEFIT PROGRAMS (BUYOUTS)

Under the programs established by Public Act 100-0587 and extended to June 30, 2024 by Public Act 101-0010:

- 22 percent of eligible Tier 1 and Tier 2 inactive members are assumed to participate in the Accelerated Pension Benefit Program.
- 15 percent of new Tier 1 retirees are assumed to participate in the Accelerated Annual Increase Program.

Buyouts are assumed to be paid through June 30, 2022, at which point the assumed \$650 million buyout allotment to TRS is expected to be reached.

The Accelerated Pension Benefit Program participation assumption is based on the experience of the state of Missouri and used by the Illinois legislature in its analysis of the proposed legislation. It was adopted in the 2018 actuarial valuation.

The Accelerated Annual Increase Program participation assumption is based on TRS experience for the first year of the program and was adopted in the 2019 valuation.

ANNUAL ACTUARIAL VALUATION

The annual actuarial valuation measures the total liability for all benefits earned to date. The accrued liability is a present value estimate of all the benefits that have been earned to date but not yet paid. The unfunded liability is the present value of future benefits payable that are not covered by the assets on the valuation date.

All actuarial assumptions used to prepare the actuarial valuation are reviewed every three years. The last review, called an actuarial experience analysis, was conducted in 2018. The major economic assumptions are reviewed every year. This more frequent review was recommended by the state actuary.

The funded ratio shows the percentage of the accrued liability covered by assets. The following table shows the funded ratio based on the actuarial value of assets and the fair value of assets.

Actuarial Valuation (\$ thousands)

	Year Ended June 30, 2019
Based on actuarial value of assets	
Total actuarial accrued liability	\$131,456,969
Less actuarial value of assets*	53,391,193
Unfunded liability	<u>\$78,065,776</u>
Funded ratio*	40.6%
Based on fair value of assets	
Total actuarial accrued liability	\$131,456,969
Less assets at fair value	53,262,789
Unfunded liability	<u>\$78,194,180</u>
Funded ratio	40.5%

* Five-year prospective smoothing began in FY09.

ANALYSIS OF FINANCIAL EXPERIENCE: RECONCILIATION OF UNFUNDED LIABILITY

The \$2.8 billion net increase in the 2019 unfunded liability was caused by a combination of factors.

The first factor shown in the table is the difference between actual employer/state contributions and the amount that would cover the employer/state's cost of benefits earned during the year and prevent the prior year's unfunded liability from growing. That shortfall was \$1.8 billion.

Actuarial gains and losses occurred under the other assumptions. The most significant loss was on investments, which includes 20 percent of the difference between expected and actual returns in FY19 and increased the unfunded liability by \$590 million during the year. Other actuarial losses occurred under the assumptions for retirement, terminations, mortality and rehires (members coming back into teaching service). The loss of \$29 million in the "other" category is a balancing item.

Actuarial gains occurred under the assumptions for salary increases, disabilities and new members, meaning that experience was more favorable (less costly) than assumed.

The net effect of the actuarial gains and losses was an increase in the unfunded liability of \$0.9 billion.

Further increases in the unfunded liability were due to revised assumptions about the impact of the accelerated pension benefit payments described in the Financial Section under "Legislative." Based on the first year of the experience with the automatic annual increase buyout program, TRS lowered assumed utilization from 25 percent to 15 percent. This lowered liability savings and increased the unfunded liability by \$81 million (\$0.1 billion).

In summary, the \$2.8 billion increase in the unfunded liability is due to the \$1.8 billion employer cost in excess of contributions, the \$0.9 billion

increase due to experience and the \$0.1 billion increase due to assumption changes.

Reconciliation of Unfunded Liability

Reconciliation of Unfunded Actuarial Accrued Liability	Year Ended June 30, 2019
Unfunded liability at beginning of year	\$75,288,440,204
Additions	
Employer cost in excess of contributions	1,754,692,034
Experience (gain)/loss from:	
Investment (gain)/loss on actuarial value of assets*	589,910,262
Salary increases for continuing active members	(84,011,865)
Retirements other than expected	324,388,173
Disabilities other than expected	(17,840,394)
Terminations other than expected	60,351,523
Mortality other than expected	10,977,383
Rehires	39,508,399
New entrants	(10,851,490)
Other	29,494,007
Net experience (gain)/loss	941,925,998
Changes in actuarial assumptions on buyout utilization	80,717,984
Net increase in unfunded liability	2,777,336,016
Unfunded liability at end of year	\$78,065,776,220

* Assets were expected to earn 7.0 percent during the year ended June 30, 2019. This item is the difference between the expected and the actual return on an actuarial basis. For example, in FY19, the actual return of \$2.985 billion was less than the expected actuarial return of \$3.575 billion, resulting in an actuarial loss which increased the unfunded pension benefit liability by \$0.590 billion.

ACTUARIAL STANDARDS AND ILLINOIS STATE PENSION FUNDING

In 2012, the TRS Board of Trustees resolved to begin certifying state funding amounts that were in accordance with generally accepted actuarial principles and standards. These amounts have been submitted to the legislative and executive branches in addition to the amounts calculated under Illinois law. The board's purpose is to illustrate the gap between sound funding policy and current practice.

Additional amounts certified by the board from 2012 through 2014 would have begun amortizing the unfunded liability over an open 30-year period or would have stabilized it by paying the accruing interest. Over time, however, actuarial standards have evolved and become more stringent.

In 2015, the board adopted the actuary's recommendation to shorten the amortization period under its alternative certification to 20 years. In this scenario, the amortization payments would increase by 2 percent per year, which is the actuary's estimate of the annual increase in Illinois revenue. Future increases in the unfunded liability would be amortized over subsequent 20-year periods (layered amortization). Additionally, the actuarial accrued liability and the employer's normal cost would be calculated under the entry age normal actuarial cost method, which is the most commonly used method in the public sector. Entry age would assign costs more evenly over an employee's career. It would replace the projected unit credit actuarial cost method that is required under Illinois law. The projected unit credit method has the effect of delaying the cost of a member's service and deferring contributions, thereby leading to higher costs in the long run.

STATE FUNDING

Public Act 88-0593 was enacted in 1994 and first affected state contributions in FY96. The law established a 50-year funding plan that includes a 15-year phase-in period. By the end of the funding period in FY45, TRS will have a 90 percent funded ratio. A key feature of this act is the "continuing appropriation" language that requires state contributions to be made automatically to TRS, provided state funds are available.

Public Act 93-0002, the pension obligation bond legislation, was enacted in 2003 and first affected state contributions in FY05. The law requires a multi-step process that ensures that state contributions through FY33 do not exceed certain maximums. After FY33 when debt service on the bonds is repaid, contributions are higher than they would have been without the maximums.

Public Act 100-0023, enacted in 2017, made two changes that affected TRS funding and required TRS to recertify the FY18 state contribution. First, changes in actuarial assumptions made since the FY12 actuarial valuation are to be phased in over five-year periods to reduce volatility in the state contribution. Second, the act requires employers to contribute to TRS an amount that covers the employer normal cost on earnings that exceed the governor's statutory salary.

STATE FUNDING AMOUNTS

The FY20 certified state contributions are based on the June 30, 2018 actuarial valuation and the FY21 certifications are based on the June 30, 2019 actuarial valuation. The state actuary will review the proposed certifications for FY21 as well as the preliminary June 30, 2019 valuation. Final certifications for FY21 are due Jan. 15, 2020 pursuant to Public Act 97-0674.

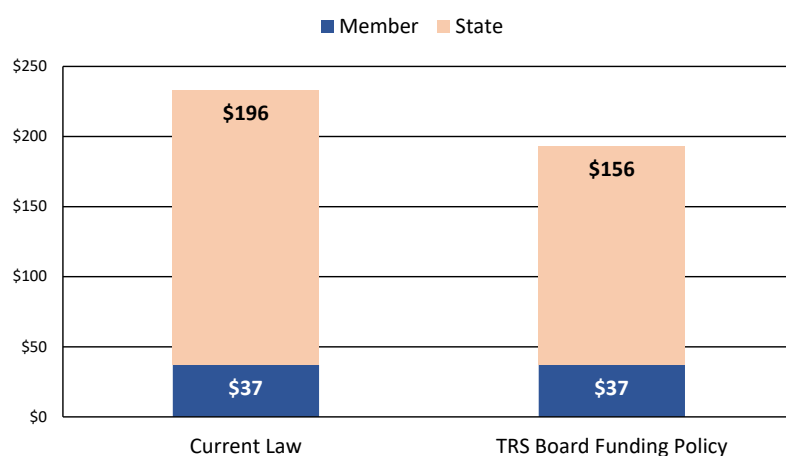
The following table shows funding requirements under the statutory funding plan and the TRS Board of Trustee's funding plan that was adopted in 2015.

FY20 & FY21 State Contribution Requirements

	FY20 Requirements	FY21 Requirements
Based on Statutory Funding Plan		
Benefit Trust Reserve	\$4,813,077,696	\$5,140,336,721
Minimum Annuity Reserve	500,000	400,000
Total State Contribution	\$4,813,577,696	\$5,140,736,721
Based on TRS Board Funding Policy		
Benefit Trust Reserve	\$7,878,170,709	\$8,343,796,301
Minimum Annuity Reserve	500,000	400,000
Total State Contribution	\$7,878,670,709	\$8,344,196,301
Employer Normal Cost Rate		
Tier 1	13.75%	13.85%
Tier 2	(1.48%)	(1.43%)
Combined	10.66%	10.41%

Under the TRS Board of Trustee's funding policy, the state funding requirement is initially higher than under the statutory plan because it begins reducing the unfunded liability immediately. Over time, however, funding based on this actuarial standard greatly reduces state contributions because it reduces the finance charges that occur under the statutory plan. Under the board's funding policy, total state contributions through FY45 would be \$40 billion lower than under current law.

State and Member Required Contributions FY21-FY45 (\$ Billions)



TESTS OF FINANCIAL CONDITION

The funded ratio shows the percentage of the accrued liability covered by actuarial value of assets and the fair value of assets.

Funded Ratio Test (\$ thousands)

As of June 30	Assets			Unfunded Liability Using Assets Based on		Funded Ratio Using Assets Based on	
	Actuarial Accrued Liability	Actuarial Value	Fair Value	Actuarial Value	Fair Value	Actuarial Value	Fair Value
2010	\$77,293,198	\$37,439,092	\$31,323,784	\$39,854,106	\$45,969,414	48.4%	40.5%
2011	81,299,745	37,769,753	37,471,267	43,529,992	43,828,478	46.5	46.1
2012	90,024,945	37,945,397	36,516,825	52,079,548	53,508,120	42.1	40.6
2013	93,886,988	38,155,191	39,858,768	55,731,797	54,028,220	40.6	42.5
2014	103,740,377	42,150,765	45,824,383	61,589,612	57,915,994	40.6	44.2
2015	108,121,825	45,435,193	46,406,916	62,686,632	61,714,909	42.0	42.9
2016	118,629,890	47,222,098	45,250,957	71,407,792	73,378,933	39.8	38.1
2017	122,904,034	49,467,525	49,375,665	73,436,509	73,528,369	40.2	40.2
2018	127,019,330	51,730,890	51,969,547	75,288,440	75,049,783	40.7	40.9
2019	131,456,969	53,391,193	53,262,789	78,065,776	78,194,180	40.6	40.5

The unfunded liability as a percentage of payroll is a standard measure of the relative size of the unfunded liability. Increases in this percentage indicate deterioration in a system's financial position.

Unfunded Liability as a Percentage of Payroll Test Based on Actuarial Value of Assets (\$ thousands)

Year Ended June 30	Approximate Member Payroll*	Unfunded Liability	Percentage of Payroll
2010	\$9,251,139	\$39,854,106	430.8%
2011	9,205,603	43,529,992	472.9
2012	9,321,098	52,079,548	558.7
2013	9,394,741	55,731,797	593.2
2014	9,512,810	61,589,612	647.4
2015	9,641,171	62,686,632	650.2
2016	9,811,614	71,407,792	727.8
2017	9,965,570	73,436,509	736.9
2018	10,163,980	75,288,440	740.7
2019	10,450,452	78,065,776	747.0

* Payroll supplied by TRS

The solvency test measures TRS's ability to cover different types of obligations if the plan was terminated and is hypothetical. The columns are in the order that assets would be used to cover certain types of obligations. Employee contributions would be refunded first, amounts due for participants currently receiving benefits would be covered next and the employer's obligation for active members would be covered last. Columns (1) and (2) should be fully covered by assets. The portion of column (3) that is covered by assets should increase over time.

Solvency Test (\$ thousands)

Year Ended June 30	Aggregate Accrued Liabilities for			Actuarial Value of Assets	Percentage of Benefits Covered by Net Assets		
	Active Member Contributions (1)	Participants Currently Receiving Benefits) (2)	Active Members Employer Portion (3)		(1)	(2)	(3)
2010	\$7,715,984	\$47,475,906	\$22,101,308	\$37,439,092	100%	63%	-
2011	8,048,689	50,567,881	22,683,175	37,769,753	100	59	-
2012	8,270,073	58,734,636	23,020,236	37,945,397	100	51	-
2013	8,569,939	61,254,334	24,062,715	38,155,191	100	48	-
2014	8,890,558	65,614,627	29,235,192	42,150,765	100	51	-
2015	9,281,893	70,545,782	28,294,150	45,435,193	100	51	-
2016	9,629,934	77,688,075	31,311,881	47,222,098	100	48	-
2017	9,683,095	80,882,353	32,338,586	49,467,525	100	49	-
2018	10,057,427	82,968,465	33,993,438	51,730,890	100	50	-
2019	10,474,097	85,788,806	35,194,066	53,391,193	100	50	-

OTHER INFORMATION

Schedule of Contributions from Employers and Other Contributing Entities¹ (\$ thousands)

Year Ended June 30	State Contributions ²	Federal and Employer Contributions ³	Total	Actuarially Determined Contribution ⁴	Percentage Contributed	Annual Required Contribution per State Statute	Percentage Contributed
2010	\$2,079,129	\$170,653	\$2,249,782	\$2,481,914	90.6%	\$2,217,053	101.5%
2011	2,169,518	154,150	2,323,668	2,743,221	84.7	2,293,321	101.3
2012	2,405,172	153,409	2,558,581	3,429,945	74.6	2,547,803	100.4
2013	2,702,278	155,787	2,858,065	3,582,033	79.8	2,843,463	100.5
2014	3,437,478	157,228	3,594,706	4,091,978	87.8	3,592,578	100.1
2015	3,376,878	144,780	3,521,658	4,119,526	85.5	3,497,366	100.7
2016	3,741,802	147,408	3,889,210	4,582,530	84.9	3,883,544	100.1
2017	3,985,783	148,749	4,134,532	6,248,879	66.2	4,124,119	100.3
2018	4,094,616	84,034	4,178,650	7,080,756	59.0	4,183,040	99.9
2019	4,465,578	87,707	4,553,285	7,429,037	61.3	4,554,862	100.0

1. Actual contributions varied slightly from contributions that are required by statute mainly because of differences between estimated and actual federal contributions.
2. State contribution amounts reflect recertifications and may not agree with original certifications in actuarial reports. Minimum benefit reimbursements are excluded.
3. Beginning in FY18, the federal contribution rate for salaries paid from federal funds is the same as the total employer normal cost rate. Previously, it was the same as the state contribution rate.
4. Actuarially determined contribution (ADC) through FY16 was based on GASB Statement No. 25. Beginning in FY17, the ADC is based on the TRS Board of Trustees funding policy.

The previous Schedule of Contributions from Employers and Other Contributing Entities is similar to the Schedule of the Employers' Contributions shown in the Required Supplementary Information in the Financial Section. Through FY16, both tables are based on an Actuarially Determined Contribution (ADC). Until FY17, the ADC includes the employer's normal cost and amortizes the System's unfunded liability over a 30-year open period, with the amortization component based on a level percent of pay pursuant to GASB Statement No. 25. Beginning in FY17, a different comparison is used due to the board's adoption of a more stringent actuarial funding calculation for its alternative certification. The board's funding policy was described earlier in this section under "Actuarial Standards and Illinois State Pension Funding."

The schedule of Retirees and Beneficiaries Added and Removed from the Rolls shows the overall trends in the number of benefit recipients and the amounts they receive.

Retirees and Beneficiaries Added to and Removed from Rolls

Year Ended June 30	Number at Beginning of Year	Number Added to Rolls	Number Removed from Rolls	Number at End of Year	End-of-Year Annual Allowances		Average Annual Allowance	
					Amount	Increase	Amount	Increase
2010	94,424	5,711	2,381	97,754	\$4,109,018,971	7.7%	\$42,034	4.0%
2011	97,754	6,377	2,843	101,288	4,418,500,521	7.5	43,623	3.8
2012	101,288	6,943	2,784	105,447	4,781,692,373	8.2	45,347	4.0
2013	105,447	6,404	3,068	108,783	5,100,219,925	6.7	46,884	3.4
2014	108,783	6,433	2,883	112,333	5,430,104,782	6.5	48,339	3.1
2015	112,333	5,789	3,200	114,922	5,718,110,055	5.3	49,756	2.9
2016	114,922	5,723	2,995	117,650	6,024,825,507	5.4	51,210	2.9
2017	117,650	5,627	3,126	120,151	6,328,506,420	5.0	52,671	2.9
2018	120,151	5,672	3,400	122,423	6,629,605,138	4.8	54,153	2.8
2019	122,423	5,238	3,362	124,299	6,915,297,528	4.3	55,634	2.7

Source: TRS

Year Ended June 30	Amount Added to Rolls			Amount Removed from Rolls
	Annual Benefit Increases	New Benefit Recipients		
2010	\$114,879,927	\$247,234,501		\$68,388,326
2011	125,124,423	263,213,399		78,856,272
2012	135,604,876	311,161,467		83,574,491
2013	145,282,975	268,124,075		94,879,498
2014	153,329,242	273,690,582		97,134,967
2015	162,158,193	237,388,307		111,541,227
2016	168,459,973	250,009,083		111,753,604
2017	180,258,847	242,035,397		118,613,331
2018	187,737,960	249,984,285		136,623,527
2019	194,545,787	233,753,123		142,606,520

Source: TRS

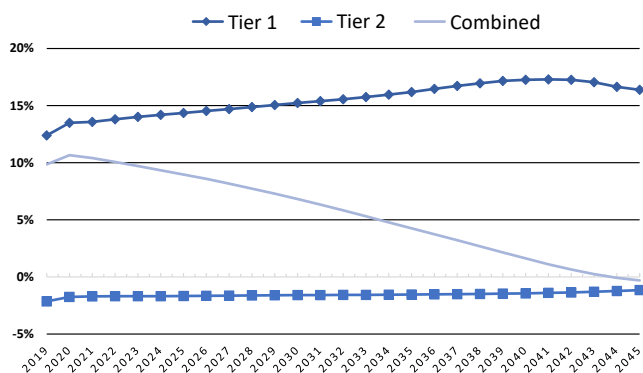
FUNDING ANALYSIS BY TIER

Public Act 96-0889 established a new tier of benefits for teachers who first contributed to TRS or another reciprocal pension system on or after Jan. 1, 2011. Tier 2 teachers have later retirement dates, longer vesting requirements, salary caps for pensions lower than the Social Security wage base and lower cost of living increases after retirement that are not compounded. On July 1, 2016, the member contribution rate for both tiers decreased from 9.4 percent to 9.0 percent.

The employer normal cost rate measures the employer's cost of the benefits being earned by active teachers during the year. It does not include any contributions towards the unfunded liability. The chart below shows that while the combined employer normal cost of both tiers in 2019 is nearly 10 percent of pay, the cost of Tier 2 is negative and stays negative through 2045.

As more Tier 2 members enter TRS, the combined employer normal cost continues to fall. By 2044, the combined employer normal cost is negative. In the meantime, the cost of Tier 1, which is a closed group, continues to increase as Tier 1 members age and accrue more service. The increases in employer normal cost for both tiers is a function of the projected unit credit actuarial cost method required by the Illinois Pension Code.

Employer Normal Cost by Tier



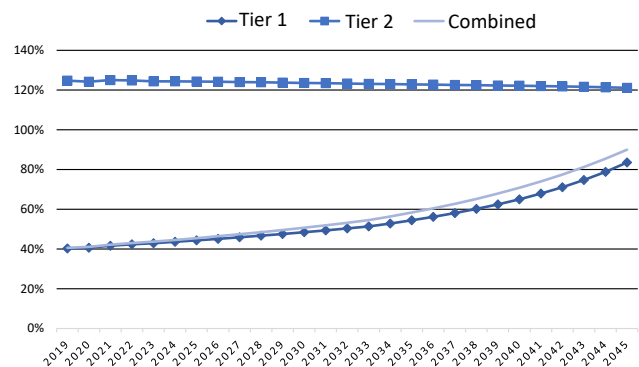
Note: Combined rate includes administrative expenses.

Source: 2017 valuation for 2019 data; 2018 valuation for 2020 data; 2019 valuation for subsequent years.

Under the 50-year funding plan, TRS will attain a funded ratio of 90 percent by 2045. The following chart illustrates what the funded ratios would be if they were operated as separate retirement plans. Tier 2 would be overfunded because member contributions are higher than the cost of Tier 2 benefits. The surplus Tier 2 assets lower the employer/state contributions required for Tier 1. Tier 2 active members are projected to outnumber Tier 1 active members by 2026.

By 2045, Tier 1 would be 84 percent funded and Tier 2 would be 121 percent funded, with the combined plan attaining the 90 percent target funded ratio. In practice, the two tiers are combined for administrative and funding purposes and their assets are commingled.

Funded Ratio by Tier



Source: 2017 valuation for 2019 data; 2018 valuation for 2020 data; 2019 valuation for subsequent years.

Average Annual Salary for Active Members (Excluding Substitutes) by Years of Service and Number of Employers

Years of Service		2019	2018	2017	2016
Under 5	Members	26,111	25,959	26,486	26,767
	Salary	\$51,835	\$50,568	\$49,935	\$49,464
5-9	Members	26,264	25,831	26,436	27,845
	Salary	\$60,626	\$59,615	\$59,150	\$59,276
10-14	Members	28,322	29,465	29,617	29,395
	Salary	\$73,266	\$72,008	\$71,412	\$71,140
15-19	Members	24,459	24,304	23,936	22,894
	Salary	\$85,131	\$84,065	\$82,745	\$81,868
20-24	Members	16,209	15,590	14,728	14,120
	Salary	\$94,599	\$93,379	\$92,035	\$90,942
25-29	Members	10,038	8,786	8,254	8,087
	Salary	\$101,340	\$99,102	\$97,624	\$96,157
30-34	Members	3,950	3,976	3,979	3,936
	Salary	\$106,097	\$105,266	\$104,652	\$102,896
35 +	Members	353	379	453	592
	Salary	\$112,963	\$111,104	\$110,576	\$107,826
Total Members		135,706	134,290	133,889	133,636
Salary		\$74,518	\$73,028	\$71,773	\$70,868
% Change salary		2.0%	1.7%	1.3%	1.9%
Total payroll full & part-time		\$10,112,568,797	\$9,806,930,120	\$9,609,615,197	\$9,470,516,048
Number of Employers		990	990	989	992

Source: TRS

Annual salaries are computed using full- and part-time salary rates only; substitute and hourly employee salaries are omitted. Total payroll shown will be lower than payroll figures used elsewhere in this report.

2015	2014	2013	2012	2011	2010
26,698	25,191	24,812	25,733	27,960	33,487
\$47,796	\$46,845	\$46,058	\$46,222	\$47,292	\$46,324
29,798	33,028	34,682	35,071	34,626	34,529
\$58,935	\$58,540	\$58,027	\$57,741	\$57,416	\$57,105
29,214	28,747	28,503	28,105	26,865	25,051
\$70,589	\$70,233	\$69,686	\$68,751	\$67,691	\$66,788
21,421	19,917	19,406	18,610	17,935	17,790
\$80,737	\$79,921	\$79,295	\$78,328	\$77,268	\$76,001
13,877	13,562	12,280	11,834	11,682	11,391
\$89,591	\$88,037	\$86,235	\$84,904	\$83,563	\$82,184
7,908	7,827	7,913	7,940	7,834	7,786
\$94,510	\$93,016	\$91,735	\$89,986	\$88,416	\$86,566
3,970	3,941	4,247	4,826	5,839	6,554
\$100,785	\$98,807	\$96,966	\$94,665	\$93,299	\$91,077
731	809	889	994	1,179	1,251
\$105,372	\$103,533	\$101,293	\$98,140	\$98,678	\$95,486
133,617	133,022	132,732	133,113	133,920	137,839
\$69,538	\$68,556	\$67,558	\$66,696	\$66,044	\$64,385
1.4%	1.5%	1.3%	1.0%	2.6%	3.3%
\$9,291,458,946	\$9,119,456,232	\$8,967,108,456	\$8,878,104,648	\$8,844,612,480	\$8,874,727,268
1,006	1,013	1,019	1,024	1,029	1,030

Average Annual Salary and Age for Active Members by Years of Service as of June 30, 2019

			Years of Service			
			Under 5	5-9	10-14	15-19
Age		Subs				
20-24	Members	2,057	3,251	-	-	-
	Salary	\$4,937	\$44,384	-	-	-
25-29	Members	2,646	9,514	4,276	-	-
	Salary	\$5,979	\$49,829	\$56,077	-	-
30-34	Members	2,184	4,641	10,513	4,203	-
	Salary	\$5,822	\$53,541	\$60,253	\$69,292	-
35-39	Members	2,666	3,035	4,511	11,819	4,312
	Salary	\$5,395	\$55,356	\$62,750	\$73,822	\$82,765
40-44	Members	3,360	2,250	2,616	4,782	9,810
	Salary	\$5,809	\$54,962	\$61,751	\$75,294	\$85,943
45-49	Members	3,623	1,547	1,949	3,115	4,429
	Salary	\$5,718	\$57,025	\$63,131	\$73,776	\$86,813
50-54	Members	3,121	955	1,271	2,145	2,677
	Salary	\$5,841	\$56,600	\$62,355	\$72,498	\$85,262
55-59	Members	2,876	576	743	1,513	2,044
	Salary	\$6,136	\$57,645	\$63,665	\$73,356	\$82,272
60-64	Members	2,299	259	311	611	957
	Salary	\$5,796	\$56,524	\$64,749	\$73,220	\$85,071
65-69	Members	1,551	63	67	115	201
	Salary	\$5,673	\$57,425	\$64,906	\$75,734	\$85,879
70-74	Members	677	17	7	17	25
	Salary	\$5,861	\$58,134	\$54,425	\$81,692	\$92,976
Over 74	Members	261	3	-	2	4
	Salary	\$6,029	\$71,342	-	\$64,974	\$82,383
Total Members		27,321	26,111	26,264	28,322	24,459
Salary		\$5,742	\$51,835	\$60,626	\$73,266	\$85,131

Source: TRS

	Average Age	Average Years of Service	Members
Full and part-time members	42	13	135,706
Substitutes	46	4	27,321
All	43	11	163,027

Years of Service							Full & Part-time Member Totals
20-24	25-29	30-34	35-39	40-44	45-49	50+	
-	-	-	-	-	-	-	3,251
-	-	-	-	-	-	-	\$44,384
-	-	-	-	-	-	-	13,790
-	-	-	-	-	-	-	\$51,766
-	-	-	-	-	-	-	19,357
-	-	-	-	-	-	-	\$60,606
1	-	-	-	-	-	-	23,678
\$103,300	-	-	-	-	-	-	\$70,976
3,163	-	-	-	-	-	-	22,621
\$94,477	-	-	-	-	-	-	\$79,006
7,140	2,448	-	-	-	-	-	20,628
\$95,729	\$99,738	-	-	-	-	-	\$84,993
3,113	4,915	1,456	-	-	-	-	16,532
\$95,196	\$102,304	\$106,041	-	-	-	-	\$88,956
1,867	2,010	2,190	118	-	-	-	11,061
\$90,993	\$101,793	\$106,472	\$110,843	-	-	-	\$88,636
708	552	235	119	32	-	-	3,784
\$91,533	\$98,820	\$103,249	\$115,135	\$109,495	-	-	\$85,029
182	93	60	22	29	16	-	848
\$91,120	\$99,192	\$105,793	\$116,775	\$120,130	\$96,992	-	\$86,909
35	17	8	6	1	7	1	141
\$94,492	\$98,215	\$98,310	\$109,985	\$92,796	\$128,653	\$134,029	\$89,596
-	3	1	1	-	-	1	15
-	\$75,205	\$134,642	\$66,900	-	-	\$132,578	\$82,216
16,209	10,038	3,950	266	62	23	2	135,706
\$94,599	\$101,340	\$106,097	\$113,069	\$114,200	\$106,628	\$133,304	\$74,518

PLAN SUMMARY

ADMINISTRATION

TRS was created and is governed by Article 16 of the Illinois Pension Code, contained in the Illinois Compiled Statutes (ILCS). A 13-member board of trustees is authorized to carry out duties granted to it under the article.

MEMBERSHIP

Membership in TRS is mandatory for all full-time, part-time and substitute school personnel employed in Illinois outside the city of Chicago in positions requiring licensure. Persons employed at certain state agencies are also members.

BENEFITS

Public Act 96-0889 established a second, lower tier of benefits for teachers who first contributed to TRS or one of the Illinois reciprocal retirement systems on or after Jan. 1, 2011. Tier 1 benefits were not affected by PA 96-0889. See the table on pages 108-109 for a summary of Tier 1 and Tier 2 benefits.

See the Financial Section for a discussion of benefit programs recently enacted by the legislature. The accelerated benefit programs and optional defined contribution plan are discussed on page 10. Tier 3 is discussed in the Notes to the Financial Section under "A. Plan Description, 5. Benefits Provisions."

OTHER PROVISIONS

EMPLOYMENT-RELATED FELONY CONVICTION

Any member convicted of a felony related to or in connection with teaching is not eligible for TRS benefits. However, the member may receive a refund of contributions.

CONTINUITY OF CREDIT WITHIN ILLINOIS

TRS is one of 13 public retirement systems that are included in the provisions of the Illinois Reciprocal Act. This act ensures continuous pension credit for public employment in Illinois.

CONFLICTS

Conditions involving a claim for benefits may require further clarification. If conflicts arise between the material in this summary and that of the law, the law takes precedence.



AQUA VIA

Oakland, CA

Built in 2006

Acquired in 2011

SUMMARY OF TIER 1 AND TIER 2 BENEFIT PROVISIONS

Tier 1	
Tier 1 Defined	Members who first contributed to TRS or one of the other Illinois reciprocal retirement systems before Jan. 1, 2011 are covered by Tier 1. Tier 1 membership is retained even if a member takes a refund and does not repay it.
Retirement Eligibility (Vesting)	<p>Tier 1 members who meet the following age and service requirements are eligible to retire:</p> <ul style="list-style-type: none"> • Age 55 with 20 years of service (reduced 6% for every year that the member's age at retirement is under 60) • Age 55 with 35 years of service (no reduction) • Age 60 and 10 years of service (no reduction) • Age 62 with 5 years of service (no reduction) <p>A member with fewer than five years of service can receive a single sum retirement benefit at age 65.</p>
Retirement Formula	<p>Retirement benefits for most Tier 1 members are based on a formula of 2.2% times years of creditable service times final average salary. The maximum benefit is 75% of final average salary.</p> <p>Some Tier 1 members with service before July 1, 1998 will have benefits based on the graduated formula that was in effect before that date. The maximum benefit is also 75% under the graduated formula.</p> <p>Public Act 90-0582 changed the benefit accrual rate beginning July 1, 1998. Members could upgrade their service under the graduated formula by making a contribution to TRS. The law provides that each three full years worked after the effective date reduces the number of years to be upgraded by one. Subsequently, Public Act 91-0017 reduced the 2.2 formula upgrade cost for members with more than 34 years of service.</p> <p>The final average salary is based on the member's highest four consecutive years of service out of the last 10.</p> <p>Tier 1 members hired before July 1, 2005 may receive a money-purchase style "actuarial" benefit. By law, the higher of the formula benefit or the actuarial benefit is paid.</p>
Post-Retirement Increases	<p>Annual increases are 3% of the current retiree benefit.</p> <p>The first increase is the later of the Jan. 1 following attainment of age 61 or the first anniversary of retirement.</p>
Disability Benefits	<p>Nonoccupational disability benefits are payable as disability benefits or disability retirement benefits to members who have a minimum of three years of creditable service.</p> <p>No minimum service requirement applies to occupational benefits for duty-related accidents or illnesses. Members continue to accrue service credit while they are receiving disability benefits but not while receiving disability retirement benefits.</p> <p>Generally, nonoccupational disability benefits are 40% of pay; occupational disability benefits are 60% of pay, reduced by payments received under workers' compensation and disability retirement benefits are 35% of pay annually or a higher amount based on service credit and age.</p> <p>On the Jan. 1 following the fourth anniversary of the granting of the disability benefit, the monthly benefit is increased by 7%. Thereafter, the benefit increases by 3% of the current benefit.</p> <p>Public Act 94-0539 allows individuals who have received disability benefits for at least one year to return to teaching on a limited basis if their conditions improve. Disability benefits can continue so long as the combined earnings from teaching and disability benefits do not exceed 100% of the salary rate upon which the disability is based.</p>
Survivor Benefits	<p>In most cases, survivor benefits for Tier 1 members' dependent beneficiaries are 50% of the retired member's benefit. The annual increase is 3% of the current survivor benefit.</p> <p>A dependent beneficiary can elect a lump sum payment instead of a monthly annuity. Nondependent beneficiaries are only eligible for lump sum payments. Refunds of member contributions not already received in retirement benefits are also payable as death benefits.</p>
Post-Retirement Employment	Until June 30, 2020, Tier 1 retirees can teach up to 120 days or 600 hours per year without having their retirement benefits suspended. After that date, the limits return to 100 days or 500 hours.
Contributions to TRS	<p>During FY19, Tier 1 members contributed 9.0% of pay. Of this rate, 7.5% is for retirement benefits, 1.0% is for survivor benefits and 0.5% is for the annual increase.</p> <p>TRS members do not contribute to Social Security or Medicare for TRS-covered employment. However, members who were hired or changed employers after March 31, 1986 and who elected to participate in Medicare during a 2004 referendum do contribute to Medicare.</p>
Contributions for Retiree Health Insurance	During FY19, members contributed 1.24% of pay to the Teachers' Health Insurance Security Fund.
Refunds	After a four-month waiting period from the date last taught, a member ceasing TRS-covered employment may withdraw all contributions except for the 1% survivor benefit contribution. Credit can be re-established if the member returns to a TRS-covered position for one year or to a reciprocal system for two years and repays the refund with interest. A member receiving disability benefits is not eligible for a refund.
Service Credit	A member is granted a maximum of one year of service credit for 170 paid days per school year, defined by statute as July 1 through June 30. Optional service credit is available for periods of public school teaching in other states or under the authority of the United States government; substitute or part-time teaching prior to July 1, 1990; leaves of absence or involuntary layoff; military service; and gaps in teaching due to pregnancy or adoption prior to July 1, 1983. Up to two years of unused, uncompensated sick leave that has been certified by former employers may also be added to service credit at retirement.
Accelerated Benefit Programs (temporary)	<p>Until June 30, 2024, inactive members with five years of TRS service can take a lump-sum payment of 60 percent of the present value of their future benefit payments. Buyout payments are contingent upon sufficient bond proceeds being available.</p> <p>Until June 30, 2024, retiring members can elect to receive 70 percent of the present value of the difference between the current 3 percent compounded annual increase that starts no earlier than age 61 and a 1.5 percent noncompounded annual increase that starts no earlier than age 67. Buyout payments are contingent upon sufficient bond proceeds being available.</p>

Tier 2	
Tier 2 Defined	Members who first contributed to TRS on or after Jan. 1, 2011 and do not have any previous service with one of the other Illinois reciprocal retirement systems are covered by Tier 2.
Retirement Eligibility (vesting)	<p>Tier 2 members who meet the following age and service requirements are eligible to retire:</p> <ul style="list-style-type: none"> • Age 67 with 10 years of service (no reduction) • Age 62 with 10 years of service (reduced 6% for every year the member's age at retirement is under age 67) <p>A member with fewer than five years of service can receive a single sum retirement benefit at age 65.</p>
Retirement Formula	<p>Retirement benefits for Tier 2 members are based on a formula of 2.2% times years of creditable service times final average salary. The maximum benefit is 75% of final average salary.</p> <p>Tier 2 creditable earnings for pension purposes are limited by an amount that is tied to the 2010 Social Security Wage Base (SSWB). The Tier 2 limit increases by 3% or half the increase in the Consumer Price Index, whichever is less. The FY18 Tier 2 limit was \$113,644.91.</p> <p>The final average salary is based on the member's highest eight consecutive years of service out of the last 10.</p> <p>Tier 2 does not provide a money-purchase style "actuarial" benefit.</p>
Post-Retirement Increases	<p>Annual increases will be the lesser of 3% or one-half of the increase in the Consumer Price Index times the original retiree benefit.</p> <p>The first increase is the later of the Jan. 1 following attainment of age 67 or the first anniversary of retirement.</p>
Disability Benefits	Same as Tier 1, including increases.
Survivor Benefits	<p>In most cases, survivor benefits for Tier 2 members' dependent beneficiaries will be 66 2/3% of the retired member's benefit. The annual increase is the lesser of 3% or one-half of the increase in the Consumer Price Index times the original survivor benefit.</p> <p>A dependent beneficiary can elect a lump sum payment instead of a monthly annuity. Nondependent beneficiaries are only eligible for lump sum payments. Refunds of member contributions not already received in retirement benefits are also payable as death benefits.</p>
Post-Retirement Employment	The law suspends a Tier 2 member's retirement benefits if the member accepts full-time employment in a position covered by one of the Illinois reciprocal retirement systems.
Contributions to TRS	<p>During FY19, Tier 2 members also contributed 9.0% of pay, with components designated for the same purposes.</p> <p>Tier 2 members do not contribute to Social Security for their TRS-covered employment but do contribute to Medicare.</p>
Contributions for Retiree Health Insurance	Same as Tier 1.
Refunds	Same as Tier 1.
Service Credit	Same as Tier 1. The purchase of optional service earned before Jan. 1, 2011 does not change a Tier 2 member's status to Tier 1.
Accelerated Benefit Program (temporary)	Until June 30, 2024, inactive members with 10 years of TRS service can take a lump-sum payment of 60 percent of the present value of their future benefit payments. Buyout payments are contingent upon sufficient bond proceeds being available.



STATISTICAL



CORPORATE 500

Deerfield, IL

Built between 1986 and 1990

Acquired in 2015

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STATISTICAL SECTION

The tables in this section present detailed information on benefit payments and recipients, member and employer contributions, employer contribution rates and the largest TRS employers.

SECTION CONTENTS

10-YEAR FINANCIAL TRENDS – PAGES 114-115

These two schedules contain information that allows the reader to view the change in net position and benefit and refund deductions from net position over a 10-year period. Both schedules help the reader understand the financial changes that have occurred over time.

EMPLOYEE AND EMPLOYER CONTRIBUTION RATES – PAGE 116

This schedule offers information on the contribution rates for employees, the state and employers to the System over a 10-year period.

ACTIVE MEMBERS BY TIER – PAGE 116

This schedule shows the number of members by tier since Tier 2 began in FY11.

RETIRED MEMBERS BY YEARS OF SERVICE AND YEARS IN RETIREMENT – PAGE 117

This schedule shows the number of retirees by their years of service and years in retirement in five-year increments. It also shows their average current monthly benefits and average benefits when they first retired. A column on the right shows the average age of retirees in each “years retired” increment.

DEMOGRAPHICS OF BENEFIT RECIPIENTS AND ACTIVE MEMBERS – PAGE 118-119

These schedules help the reader understand characteristics of the specific groups of benefit recipients and active members of the TRS.

BENEFIT RECIPIENTS BY TYPE AND SUMMARY STATISTICS, ALL BENEFIT RECIPIENTS – PAGE 120

This schedule shows counts by benefit type and range. Additional tables show averages by benefit type and retirements by subtype.

AVERAGE BENEFIT PAYMENTS TO NEW RETIREES – PAGE 121

This schedule contains information regarding the average benefits paid to new retirees over a 10-year period. The schedule also allows the reader to view those payments by increments of years of service.

MEDIANS FOR RETIREES – PAGE 121

This schedule shows the median age, median monthly amount, median service credit and retiree count for all and new retirees.

PARTICIPATING EMPLOYERS – PAGE 122

This schedule allows the reader to view the 10 largest participating employers of TRS. The reader can also view the percentages of total membership covered by the largest employers in the current year and nine years ago.

Changes in Net Position Restricted for Pensions, Last 10 Fiscal Years (\$ thousands)

	2019	2018	2017	2016
Additions				
Member contributions*	\$963,972	\$938,037	\$929,130	\$951,809
State of Illinois	4,466,021	4,095,125	3,986,364	3,742,469
Employer contributions**	88,514	84,633	149,495	148,041
Investment income (loss) net of expenses	<u>2,617,831</u>	<u>4,049,272</u>	<u>5,520,453</u>	<u>(44,103)</u>
Total additions to/reductions from plan net position	8,136,338	9,167,067	10,585,442	4,798,216
Deductions				
Benefit payments	6,745,544	6,458,710	6,152,868	5,848,180
Refunds	73,216	92,925	285,138	83,027
Administrative expenses	<u>24,336</u>	<u>21,550</u>	<u>22,729</u>	<u>22,968</u>
Total deductions from plan net position	6,843,096	6,573,185	6,460,735	5,954,175
Changes in net position restricted for pensions				
Beginning of year	51,969,547	49,375,665	45,250,957	46,406,916
Net increase (decrease)	<u>1,293,242</u>	<u>2,593,882</u>	<u>4,124,708</u>	<u>(1,155,959)</u>
End of year	<u>\$53,262,789</u>	<u>\$51,969,547</u>	<u>\$49,375,665</u>	<u>\$45,250,957</u>

* Member contributions include contributions for purchases of optional service, early retirement and upgrades to the 2.2 formula.

** Employer contributions include contributions from federal funds and for early retirement, the 2.2 formula, salary increases in excess of 6 percent used in final average salary calculations and excess sick leave used for service credit. Beginning in 2018, contributions on earnings exceeding the governor's statutory salary are also included.

Benefit and Refund Deductions from Net Position by Type, Last 10 Fiscal Years (\$ thousands)

	2019	2018	2017	2016
Type of benefit				
Retirement	\$6,405,908	\$6,140,877	\$5,857,968	\$5,575,130
Survivor	306,503	285,068	263,430	242,578
Disability	<u>33,133</u>	<u>32,765</u>	<u>31,470</u>	<u>30,472</u>
Total benefits	\$6,745,544	\$6,458,710	\$6,152,868	\$5,848,180
Type of refund				
Withdrawals	23,358	27,356	30,487	26,797
Death benefits and excess contribution refunds paid to survivors	21,172	20,263	19,135	17,094
2.2 and optional service	11,132	13,247	14,185	15,074
Survivor contributions refunded to retirees	8,225	8,839	9,410	10,458
Early Retirement Option and other	<u>9,329</u>	<u>23,220</u>	<u>211,921</u>	<u>13,604</u>
Total refunds	\$73,216	\$92,925	\$285,138	\$83,027

2015	2014	2013	2012	2011	2010
\$935,451	\$928,746	\$921,423	\$917,661	\$909,577	\$899,401
3,377,665	3,438,383	2,703,312	2,406,364	2,170,918	2,080,729
145,591	158,335	157,179	154,895	155,111	171,421
<u>1,770,550</u>	<u>6,782,031</u>	<u>4,561,768</u>	<u>224,107</u>	<u>7,234,539</u>	<u>3,679,643</u>
6,229,257	11,307,495	8,343,682	3,703,027	10,470,145	6,831,194
5,536,399	5,225,207	4,893,084	4,553,822	4,228,283	3,927,838
88,638	95,456	88,398	84,635	76,587	60,350
<u>21,687</u>	<u>21,218</u>	<u>20,257</u>	<u>19,012</u>	<u>17,792</u>	<u>16,951</u>
5,646,724	5,341,881	5,001,739	4,657,469	4,322,662	4,005,139
45,824,382	39,858,768	36,516,825	37,471,267	31,323,784	28,497,729
582,534	5,965,614	3,341,943	(954,442)	6,147,483	2,826,055
<u>\$46,406,916</u>	<u>\$45,824,382</u>	<u>\$39,858,768</u>	<u>\$36,516,825</u>	<u>\$37,471,267</u>	<u>\$31,323,784</u>

2015	2014	2013	2012	2011	2010
\$5,281,221	\$4,986,156	\$4,670,385	\$4,347,173	\$4,036,147	\$3,749,666
224,779	208,424	192,390	177,422	163,910	151,074
<u>30,399</u>	<u>30,627</u>	<u>30,309</u>	<u>29,227</u>	<u>28,226</u>	<u>27,098</u>
\$5,536,399	\$5,225,207	\$4,893,084	\$4,553,822	\$4,228,283	\$3,927,838
29,789	33,128	30,194	25,563	22,528	17,149
17,881	20,633	16,764	18,415	16,404	15,161
17,855	19,331	20,053	20,988	19,861	15,050
10,197	10,990	10,780	10,358	10,252	7,967
<u>12,916</u>	<u>11,374</u>	<u>10,607</u>	<u>9,311</u>	<u>7,542</u>	<u>5,023</u>
\$88,638	\$95,456	\$88,398	\$84,635	\$76,587	\$60,350

Employee and Employer Contribution Rates, Last 10 Fiscal Years

Fiscal Year	Employee Rate (%) ¹	Employer Rate (%)			Total ⁴
		State ²	School Districts for 2.2 Formula	School Districts from Federal Sources ³	
2010	9.40%	22.56%	0.58%	0.82%	23.96%
2011	9.40	22.38	0.58	0.72	23.68
2012	9.40	24.06	0.58	0.85	25.49
2013	9.40	27.21	0.58	0.84	28.63
2014	9.40	34.44	0.58	0.97	35.99
2015	9.40	32.42	0.58	0.58	33.58
2016	9.40	35.30	0.58	0.76	36.64
2017	9.00	37.81	0.58	0.73	39.12
2018	9.00	39.22	0.58	0.20	40.02
2019	9.00	41.93	0.58	0.20	42.71

1. Employee rate decreased to 9.00 percent in FY17 because the ERO program was discontinued.
2. State contributions rates reflect recertifications and may not agree with original certifications in actuarial reports.
3. Beginning in FY18, the federal contribution rate for salaries paid from federal funds is the same as the total employer normal cost rate. Previously, it was the same as the state contribution rate.
4. Totals shown are rates certified by the TRS Board of Trustees based on estimated payrolls and may not total due to rounding. Actual amounts collected do not equal amounts estimated by actuaries due to differences between estimated and actual payroll.

Active Members by Tier

Fiscal Year	Tier 1		Tier 2		Total - Both Tiers	
	Number	% of Total	Number	% of Total	Number	% of Total
2011	164,030	98.8%	1,983	1.2%	166,013	100.0%
2012	150,996	93.1	11,221	6.9	162,217	100.0
2013	144,297	89.8	16,395	10.2	160,692	100.0
2014	138,260	86.5	21,578	13.5	159,838	100.0
2015	133,147	83.4	26,560	16.6	159,707	100.0
2016	128,107	80.2	31,628	19.8	159,735	100.0
2017	123,630	77.0	36,858	23.0	160,488	100.0
2018	119,333	74.2	41,526	25.8	160,859	100.0
2019	115,839	71.1	47,188	28.9	163,027	100.0

Note: Tier 2 membership began Jan. 1, 2011.

Retired Members by Years of Service and Years in Retirement as of June 30, 2019*

Years Retired		Years of Service											Weighted Average	Avg. Age
		Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+		
Under 1	Retirees	131	210	288	415	524	493	599	768	52	11	2	3,493	61
	Avg. current benefit	\$222	\$806	\$1,475	\$2,532	\$3,491	\$4,712	\$5,985	\$6,941	\$7,864	\$8,673	\$11,286	\$4,371	
	Avg. orig. benefit	\$222	\$806	\$1,475	\$2,527	\$3,484	\$4,708	\$5,976	\$6,941	\$7,864	\$8,673	\$11,286	\$4,368	
1 - 4	Retirees	841	1,421	1,543	1,859	2,617	2,471	2,737	3,424	321	51	8	17,293	64
	Avg. current benefit	\$291	\$787	\$1,575	\$2,583	\$3,590	\$4,774	\$6,065	\$6,787	\$7,756	\$9,793	\$11,819	\$4,205	
	Avg. orig. benefit	\$273	\$733	\$1,474	\$2,428	\$3,397	\$4,524	\$5,777	\$6,573	\$7,277	\$9,142	\$11,003	\$4,009	
5 - 9	Retirees	1,123	2,183	2,107	2,074	3,290	3,176	4,375	6,402	579	94	12	25,415	67
	Avg. current benefit	\$340	\$877	\$1,658	\$2,684	\$3,737	\$5,064	\$6,535	\$7,204	\$8,096	\$9,178	\$14,759	\$4,728	
	Avg. orig. benefit	\$279	\$717	\$1,358	\$2,206	\$3,098	\$4,184	\$5,387	\$5,952	\$6,674	\$7,570	\$12,275	\$3,903	
10 - 14	Retirees	895	1,517	1,404	1,373	2,465	2,590	7,953	5,179	325	46	5	23,752	71
	Avg. current benefit	\$342	\$828	\$1,597	\$2,677	\$3,777	\$5,207	\$7,030	\$7,538	\$7,998	\$8,653	\$12,111	\$5,401	
	Avg. orig. benefit	\$241	\$587	\$1,129	\$1,900	\$2,679	\$3,674	\$4,919	\$5,374	\$5,634	\$6,109	\$8,974	\$3,811	
15 - 19	Retirees	759	853	843	783	1,877	2,198	9,038	3,622	232	30	4	20,239	75
	Avg. current benefit	\$332	\$809	\$1,533	\$2,542	\$3,615	\$5,084	\$7,048	\$7,649	\$7,601	\$7,841	\$8,360	\$5,713	
	Avg. orig. benefit	\$202	\$494	\$942	\$1,563	\$2,228	\$3,137	\$4,379	\$4,712	\$4,664	\$4,882	\$5,266	\$3,536	
20 - 24	Retirees	409	446	347	292	670	771	1,287	1,485	694	8	-	6,409	80
	Avg. current benefit	\$379	\$864	\$1,239	\$2,099	\$2,997	\$4,530	\$6,239	\$7,160	\$7,458	\$8,013	-	\$4,835	
	Avg. orig. benefit	\$202	\$454	\$655	\$1,119	\$1,618	\$2,460	\$3,434	\$3,816	\$3,717	\$4,366	-	\$2,578	
25 - 29	Retirees	177	243	338	288	751	1,150	1,772	2,822	3,692	5	2	11,240	83
	Avg. current benefit	\$274	\$741	\$1,264	\$1,756	\$2,538	\$3,186	\$4,283	\$5,467	\$6,150	\$5,319	\$4,684	\$4,670	
	Avg. orig. benefit	\$126	\$333	\$569	\$795	\$1,140	\$1,466	\$1,985	\$2,569	\$2,946	\$2,482	\$2,074	\$2,200	
30 - 34	Retirees	56	97	187	203	600	526	625	430	13	1	-	2,738	90
	Avg. current benefit	\$256	\$610	\$1,095	\$1,681	\$2,350	\$3,279	\$4,773	\$5,697	\$5,280	\$7,244	-	\$3,383	
	Avg. orig. benefit	\$99	\$227	\$426	\$661	\$935	\$1,309	\$1,911	\$2,260	\$2,112	\$3,025	-	\$1,347	
35 - 39	Retirees	11	11	51	68	240	183	191	114	8	-	-	877	94
	Avg. current benefit	\$244	\$409	\$922	\$1,362	\$1,954	\$2,604	\$3,720	\$4,793	\$3,666	-	-	\$2,712	
	Avg. orig. benefit	\$84	\$113	\$304	\$461	\$673	\$905	\$1,306	\$1,696	\$1,255	-	-	\$945	
40 - 44	Retirees	4	1	7	9	38	27	17	21	3	1	-	128	99
	Avg. current benefit	\$188	\$356	\$793	\$1,215	\$1,337	\$2,016	\$2,318	\$3,019	\$2,832	\$2,655	-	\$1,850	
	Avg. orig. benefit	\$58	\$14	\$220	\$341	\$384	\$619	\$704	\$930	\$891	\$849	-	\$556	
45 - 49	Retirees	-	-	-	1	6	2	1	4	-	-	-	14	104
	Avg. current benefit	-	-	-	\$976	\$1,287	\$787	\$1,525	\$2,845	-	-	-	\$1,656	
	Avg. orig. benefit	-	-	-	\$97	\$279	\$143	\$349	\$777	-	-	-	\$394	
Total retirees		4,406	6,982	7,115	7,365	13,078	13,587	28,595	24,271	5,919	247	33	111,598	
Avg. current benefit		\$326	\$827	\$1,546	\$2,532	\$3,477	\$4,731	\$6,565	\$7,027	\$6,747	\$8,872	\$12,048	\$4,905	
Avg. orig. benefit		\$239	\$629	\$1,188	\$1,995	\$2,628	\$3,507	\$4,583	\$5,148	\$3,889	\$7,093	\$9,938	\$3,510	

* Represents monthly benefit

Demographics of Benefit Recipients and Active Members as of June 30, 2019
(excludes inactive members)

Age	Retirees			Disability Benefit Recipients			Survivors		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 20	-	-	-	-	-	-	47	10	57
20-24	-	-	-	-	-	-	12	5	17
25-30	-	-	-	-	1	1	-	1	1
30-34	-	-	-	1	6	7	4	6	10
35-39	-	-	-	2	29	31	10	9	19
40-44	-	-	-	3	44	47	12	35	47
45-49	-	-	-	19	76	95	24	35	59
50-54	10	14	24	21	135	156	33	69	102
55-59	967	2,865	3,832	40	151	191	95	154	249
60-64	3,313	12,208	15,521	28	146	174	175	284	459
65-69	6,352	22,206	28,558	24	116	140	346	745	1,091
70-74	8,547	19,620	28,167	20	83	103	596	1,215	1,811
75-79	5,793	11,220	17,013	14	38	52	620	1,592	2,212
80-84	3,406	6,130	9,536	6	29	35	519	1,594	2,113
85-89	1,949	3,497	5,446	2	19	21	468	1,391	1,859
90+	925	2,576	3,501	1	6	7	358	1,177	1,535
Total:	31,262	80,336	111,598	181	879	1,060	3,319	8,322	11,641

Actives			Total Retirees, Disabled, Survivors and Active Members			Percent Distribution of Retirees, Disabled, Survivors and Active Members		
Male	Female	Total	Male	Female	Total	Male	Female	Total
3	10	13	50	20	70	71%	29%	100%
1,047	4,250	5,297	1,059	4,255	5,314	20	80	100
3,552	12,884	16,436	3,552	12,886	16,438	22	78	100
5,005	16,536	21,541	5,010	16,548	21,558	23	77	100
6,296	20,047	26,343	6,308	20,085	26,393	24	76	100
6,133	19,848	25,981	6,148	19,927	26,075	24	76	100
5,726	18,525	24,251	5,769	18,636	24,405	24	76	100
4,607	15,045	19,652	4,671	15,263	19,934	23	77	100
2,938	10,999	13,937	4,040	14,169	18,209	22	78	100
1,254	4,829	6,083	4,770	17,467	22,237	21	79	100
773	1,626	2,399	7,495	24,693	32,188	23	77	100
335	483	818	9,498	21,401	30,899	31	69	100
118	108	226	6,545	12,958	19,503	34	66	100
26	13	39	3,957	7,766	11,723	34	66	100
3	3	6	2,422	4,910	7,332	33	67	100
3	2	5	1,287	3,761	5,048	25	75	100
37,819	125,208	163,027	72,581	214,745	287,326	25	75	100

Benefit Recipients by Type as of June 30, 2019

Monthly Benefit Range	Number of Recipients (all)	Type of Monthly Benefit					Subtypes of Age Retirement Benefit						
		Retirement	Disability Retirement	Non-occupational Disability	Occupational Disability	Survivor Monthly Benefits	Regular 2.2 Flat Formula	Graduated Formula	Actuarial Benefit Style	ERO (2.2 & Grad. Form.)	ERI (State or TRS)	Other	Retirement Total
Under \$500	6,505	5,575	3	1	-	926	1,281	1,404	2,888	1	-	1	5,575
\$500 - \$999	7,063	5,396	35	1	-	1,631	931	1,148	3,273	7	26	11	5,396
\$1,000 - \$1,499	6,439	4,949	74	5	-	1,411	970	1,304	2,513	57	87	18	4,949
\$1,500 - \$1,999	6,725	4,902	266	48	-	1,509	1,267	1,139	2,031	246	199	20	4,902
\$2,000 - \$2,499	7,072	5,308	168	62	2	1,532	1,671	1,064	1,634	600	319	20	5,308
\$2,500 - \$2,999	7,216	5,612	94	48	1	1,461	2,100	833	1,241	936	485	17	5,612
\$3,000 - \$3,499	6,978	5,765	62	34	2	1,115	2,392	600	943	1,180	622	28	5,765
\$3,500 - \$3,999	7,143	6,335	30	17	1	760	2,864	522	736	1,404	778	31	6,335
\$4,000 - \$4,499	7,612	7,027	21	11	-	553	3,346	497	603	1,717	816	48	7,027
\$4,500 - \$4,999	7,941	7,611	14	5	-	311	3,660	549	487	2,026	812	77	7,611
\$5,000 - \$5,499	7,942	7,730	15	3	-	194	3,802	629	429	2,037	753	80	7,730
\$5,500 - \$5,999	7,810	7,698	9	-	-	103	3,668	631	384	2,144	766	105	7,698
\$6,000 - \$6,499	7,055	6,998	10	-	1	46	3,297	567	292	2,182	554	106	6,998
\$6,500 - \$6,999	5,804	5,760	6	1	-	37	2,787	578	228	1,692	395	80	5,760
\$7,000 - \$7,499	4,769	4,745	3	-	-	21	2,317	530	165	1,296	352	85	4,745
\$7,500 - \$7,999	4,183	4,168	3	-	-	12	1,983	485	126	1,177	326	71	4,168
\$8,000 - \$8,499	3,491	3,483	2	-	-	6	1,687	406	104	940	292	54	3,483
\$8,500 - \$8,999	3,002	2,997	1	-	-	4	1,375	353	64	961	190	54	2,997
\$9,000 - \$9,499	2,467	2,464	-	-	-	3	1,114	321	55	791	147	36	2,464
\$9,500 - \$9,999	1,905	1,905	-	-	-	-	857	247	50	621	87	43	1,905
\$10,000 or more	5,177	5,170	1	-	-	6	2,312	767	145	1,578	241	127	5,170
Total benefit recipients:	124,299	111,598	817	236	7	11,641	45,681	14,574	18,391	23,593	8,247	1,112	111,598

Summary Statistics, all Benefit Recipients, as of June 30, 2019

	Age Retirement	Disability Benefits (3 types)	Survivor Benefits
Average Monthly Benefit	\$4,905	\$2,507	\$2,251
Average Age	72	60	78
Average Service Credit	27	16	-
Average Years Receiving Benefits	13	10	10

Percentage of Retirement Benefits by Subtype						
Regular 2.2 Flat Form.	Graduated Formula	Actuarial Benefit Style	ERO (2.2 & Grad. Form.)	ERI (State or TRS)	Other	Retirement Total
41%	13%	17%	21%	7%	1%	100%

Average Benefit Payments for New Retirees, Last 10 Fiscal Years

Retirement Effective Dates		Years of Service									All FY Retirees	Avg. Age all FY Retirees	Avg. Service all FY Retirees
		Under 5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+			
Period July 1, 2018 through June 30, 2019	Average monthly benefit	\$222	\$806	\$1,480	\$2,528	\$3,484	\$4,708	\$5,976	\$6,941	\$8,106	\$4,366	age	25
	Average final average salary	\$50,646	\$40,502	\$54,277	\$76,259	\$86,859	\$95,751	\$103,192	\$110,647	\$114,482	\$88,551	61	years
	Number of retired members	131	210	289	417	524	493	599	768	65	3,496		
Period July 1, 2017 through June 30, 2018	Average monthly benefit	\$257	\$735	\$1,529	\$2,558	\$3,405	\$4,633	\$6,048	\$6,954	\$8,000	\$4,316	age	25
	Average final average salary	\$52,883	\$41,137	\$58,671	\$77,377	\$84,015	\$95,035	\$104,219	\$111,051	\$118,480	\$88,392	61	years
	Number of retired members	154	269	337	423	585	576	633	855	73	3,905		
Period July 1, 2016 through June 30, 2017	Average monthly benefit	\$272	\$787	\$1,482	\$2,497	\$3,457	\$4,589	\$5,770	\$6,581	\$7,733	\$4,162	age	25
	Average final average salary	\$59,017	\$44,909	\$56,887	\$74,590	\$85,524	\$93,583	\$99,597	\$104,930	\$111,419	\$86,183	61	years
	Number of retired members	184	255	351	426	615	587	666	816	102	4,002		
Period July 1, 2015 through June 30, 2016	Average monthly benefit	\$287	\$715	\$1,461	\$2,407	\$3,453	\$4,595	\$5,710	\$6,496	\$7,728	\$4,130	age	25
	Average final average salary	\$63,114	\$37,543	\$55,895	\$70,973	\$84,277	\$91,799	\$97,075	\$103,177	\$110,395	\$84,256	61	years
	Number of retired members	193	289	330	429	660	630	728	832	107	4,198		
Period July 1, 2014 through June 30, 2015	Average monthly benefit	\$262	\$744	\$1,499	\$2,338	\$3,342	\$4,331	\$5,641	\$6,237	\$7,003	\$3,977	age	25
	Average final average salary	\$55,476	\$39,421	\$56,937	\$69,664	\$81,069	\$87,776	\$95,675	\$99,309	\$100,159	\$81,522	61	years
	Number of retired members	185	277	325	466	651	591	647	882	94	4,118		
Period July 1, 2013 through June 30, 2014	Average monthly benefit	\$273	\$775	\$1,461	\$2,267	\$3,214	\$4,349	\$5,602	\$6,118	\$7,027	\$4,058	age	26
	Average final average salary	\$54,810	\$46,277	\$52,702	\$67,862	\$78,513	\$88,108	\$94,508	\$97,649	\$102,670	\$81,542	61	years
	Number of retired members	173	313	348	403	695	574	774	1,037	133	4,450		
Period July 1, 2012 through June 30, 2013	Average monthly benefit	\$279	\$771	\$1,424	\$2,237	\$3,179	\$4,232	\$5,396	\$6,066	\$7,369	\$4,070	age	26
	Average final average salary	\$59,313	\$42,291	\$49,881	\$66,108	\$76,095	\$83,918	\$90,517	\$96,245	\$101,109	\$79,689	61	years
	Number of retired members	149	298	353	391	673	664	750	1,115	142	4,535		
Period July 1, 2011 through June 30, 2012	Average monthly benefit	\$271	\$787	\$1,426	\$2,354	\$3,159	\$4,310	\$5,568	\$6,214	\$7,273	\$4,292	age	27
	Average final average salary	\$63,513	\$49,970	\$53,199	\$68,176	\$76,104	\$85,929	\$92,839	\$98,975	\$103,131	\$83,346	60	years
	Number of retired members	215	358	375	380	620	702	923	1,516	177	5,266		
Period July 1, 2010 through June 30, 2011	Average monthly benefit	\$281	\$712	\$1,317	\$2,171	\$2,989	\$4,097	\$5,190	\$5,708	\$6,527	\$3,984	age	27
	Average final average salary	\$59,267	\$40,317	\$48,191	\$62,212	\$71,841	\$81,416	\$86,636	\$91,033	\$92,605	\$76,805	60	years
	Number of retired members	160	328	349	357	599	562	905	1,359	134	4,753		
Period July 1, 2009 through June 30, 2010	Average monthly benefit	\$280	\$670	\$1,228	\$2,121	\$2,947	\$3,891	\$5,063	\$5,621	\$5,819	\$3,960	age	27
	Average final average salary	\$61,557	\$38,116	\$44,679	\$62,156	\$71,152	\$77,352	\$84,466	\$89,648	\$82,289	\$75,507	60	years
	Number of retired members	144	312	304	335	495	536	887	1,410	118	4,541		

Medians for Retirees as of June 30, 2019

	Median Age	Median Monthly Benefit	Median Service Credit	Retiree Count
All retirees	71	\$4,820	31	111,598
New Retirees	61	\$4,129	27	3,496

Principal Participating Employers

Participating Employer	City	Rank	Year ended June 30, 2019		Rank	Year ended June 30, 2010	
			Covered Employees (including subs)	Percentage of Total TRS Membership		Covered Employees	Percentage of Total TRS Membership
School District U46	Elgin	1	3,058	1.9%	1	3,167	1.9%
Indian Prairie CUSD 204	Naperville	2	2,568	1.6	2	2,763	1.6
Plainfield SD 202	Plainfield	3	2,403	1.5	3	2,533	1.5
Rockford School District 205	Rockford	4	2,311	1.4	4	2,453	1.4
Community USD 300	Algonquin	5	1,896	1.2	6	1,712	1.0
Naperville CUSD 203	Naperville	6	1,853	1.1	5	1,725	1.0
Oswego CUSD 308	Oswego	7	1,834	1.1	-	-	-
Schaumburg CCSD 54	Schaumburg	8	1,748	1.1	9	1,538	0.9
Valley View CUSD 365	Romeoville	9	1,747	1.1	8	1,611	0.9
Springfield SD 186	Springfield	10	1,439	0.8	7	1,676	1.0
Waukegan CUSD 60	Waukegan	-	-	-	10	1,455	0.9
Total, largest 10 employers			20,857	12.8%		20,633	12.1%
All Other (980 employers in 2019*; 1,020 employers in 2010)			142,170	87.2%		149,642	87.9%
Grand total			163,027	100.0%		170,275	100.0%

*Other Employers by Type as of June 30, 2019	Number of Other Employers	Other Covered Employees
Local school districts	841	135,325
Special districts	127	6,183
State agencies	12	662
Total, all employers other than largest 10	980	142,170

Total Employers by Type as of June 30, 2019	Total Number of Employers	Total Covered Employees
Local school districts	851	156,182
Special districts	127	6,183
State agencies	12	662
Total, all employers	990	163,027