CALSTRS
HOW WILL YOU SPEND YOUR FUTURE?

Comprehensive Annual Financial Report

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM

A COMPONENT UNIT OF THE STATE OF CALIFORNIA
FOR THE FISCAL YEAR ENDED JUNE 30, 2019

GLOBAL STEWARDSHIP AT WORK

CALSTRS

CALIFORNIA STATE TEACHERS' RETIREMENT SYSTEM

A Component Unit of the State of California
Comprehensive Annual Financial Report
for the Fiscal Year Ended June 30, 2019

Prepared by CalSTRS Staff

CalSTRS Comprehensive Annual Financial Report

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Introductory Section

MISSION:

Securing the financial future and sustaining the trust of California's educators

STRATEGIC GOALS:

Financial/Governance

Ensure a well-governed, financially sound trust fund.

Digital Transformation

Leverage technology to securely transform business and service delivery models to maximize operational efficiency.

Member/Employer

Strengthen partnerships and services to members, employers and stakeholders.

Organizational Strength

Grow capacity and enhance efficiency in alignment with the mission and vision.

California State Teachers'
Retirement System
100 Waterfront Place
West Sacramento, CA 95605

December 3, 2019

The *Comprehensive Annual Financial Report* issued by the California State Teachers' Retirement System details the system's performance for the fiscal year beginning July 1, 2018, and ending June 30, 2019.

CalSTRS was established more than a century ago in 1913 as the pension plan for California's public school educators. The organization began by serving 120 retired members and 15,000 active members. We have grown significantly and currently serve more than 960,000 dedicated educators and their beneficiaries by helping them reach their secure retirement future. As of June 30, 2019, CalSTRS employed more than 1,200 staff at our headquarters in West Sacramento and our member service centers located throughout California.

With approximately $240 billion in net assets as of June 30, 2019, CalSTRS is the largest educator-only pension fund in the world and the second largest pension plan in the U.S. We administer a hybrid retirement system, consisting of a traditional defined benefit pension, cash balance and defined contribution plans, as well as disability and survivor benefits for full-time and part-time California public school educators, from pre-kindergarten through community college. We also administer a post-employment health benefit program and a voluntary defined contribution plan. Our members include educators employed by 1,778 school districts, community college districts, county offices of education and regional occupational programs. Our relationship with them spans from the new teacher just starting out to the retired educator enjoying the fruits of decades of teaching in the classroom.

As trusted fiduciaries, we take deliberate actions and make informed, accountable decisions to ensure a sustainable organization. This unwavering commitment to stewardship enables us to be here for our members long after they dedicate their careers to educating California's youth, as we steadfastly deliver on the promise of a secure retirement future.

Helping Members Build for the Future

CalSTRS' vision is to ensure that our members understand their retirement benefits and make smart decisions today to secure their financial futures. We are increasingly focused on engaging with our partners in this responsibility—our members' employers. Accurate data and complete reporting of member information are just as critical to a secure retirement as the employer's role in educating employees about their benefits.

The average CalSTRS pension replaces less than 60% of a member's final salary for those who retired in 2018–19. Financial advisors recommend income replacement rates as high as 80% to 90% to maintain a similar lifestyle in retirement. Public educators do not receive Social Security benefits for their CalSTRS service, and due to the federal

Government Pension Offset and Windfall Elimination Provision, retirees who are eligible for Social Security from other work or their spouse often have their Social Security benefits reduced when receiving a CalSTRS benefit. Most retired educators also do not have employer-funded health insurance after age 65.

Our relationship with our members begins when they first enter the profession and extends through their retirement years. The average CalSTRS retired member dedicated more than 25 years to education and retired at 62 years of age. Our members live longer than the average population—and according to our most recent actuarial experience study, we expect our members to continue living longer in retirement.

Reflecting the longevity of our members' careers and their increased lifespans, we dedicate resources to emphasize awareness about retirees' financial needs and to provide members with retirement planning tools throughout their careers. We educate our members on the importance of saving early in their careers when they can benefit most from the power of time and compounding. This education includes a financial awareness workshop series focused on the value of supplemental savings plans. Additionally, we provide members with tools to determine their financial goals targeting specific career stages, so they are better prepared for the future.

We continue to reach members in their communities with benefits planning services and workshops that explain retirement options and emphasize the need for early savings. Through multiple communication channels, including our Member Service Centers, websites, publications, and outreach to employers and other partners, we strive to be our members' trusted guide to retirement. CalSTRS also provides a variety of financial education tools, including the robust 403bCompare.com website, a comprehensive resource that provides fee-cost comparisons for 403(b) supplemental savings plans. By providing these financial awareness and retirement planning tools, we aim to empower our members to meet their future income needs.

Our Commitment to Global Stewardship at Work

We demonstrate our commitment to securing our members' retirement futures and organizational sustainability by modeling best practices in corporate governance, employing risk-mitigation policies, hiring and developing staff to meet the needs of our changing business models, and dedicating resources to increase our members' financial awareness and retirement security. Across the spectrum of our activities, we consistently advocate for the importance of long-term value creation. In fact, long-term value creation continues to be the essence of our commitment to the theme of "Global Stewardship at Work," which is reinforced across the family of CalSTRS annual reports.

We have a fiduciary duty to be principled and effective within our operations, and we believe that a corporate environment that values sustainability is key to long term-value creation and responsible investment strategies. Major initiatives with significant investments, benefits and administrative impact are summarized in the sections that follow.

Pension Solution Project

CalSTRS is continuing efforts to replace the legacy pension administration system with contemporary 21st-century functionality. Through this project, we seek to increase our ability to respond to customer and business needs; enhance services to members and their beneficiaries, staff and employers; gain long-term operational efficiencies; and improve internal controls.

Information Security

Information security is an increasing risk that can threaten the sustainability of any organization today. For that reason, CalSTRS continues to focus substantial attention on this issue and is vigilant in detecting threats, proactively mitigating identified risks, and adapting to the rapidly evolving nature of the cybersecurity landscape. CalSTRS has several key initiatives underway related to ensuring our policies and technology continue to secure the confidentiality and integrity of data and member information.

Sustainable Investment and Stewardship

CalSTRS is an active shareowner, although largely an indexed investor, who regularly engages with our portfolio companies to ensure responsible corporate governance and compensation practices, board diversity, and ultimately, performance accountability to their shareholders. CalSTRS continues to expand our engagement efforts to effect positive change within our portfolio companies. We see engagement as part of our responsibility to California's educators, our members; and we are actively influencing the market to ensure companies are sustainable and provide long-term risk adjusted returns to strengthen the fund.

One area of emphasis in our engagement efforts is the need for better disclosures on human capital management, including the board's role in ensuring the effective management and the future preparedness of their workforce for changing times. As a long-term shareowner, CalSTRS' duty is to protect our assets by ensuring that the companies in which we invest effectively manage and mitigate material risks to long-term value through the pursuit of good governance and operational accountability.

CalSTRS Collaborative Model

In 2018–19, one of CalSTRS' main initiatives was the continued implementation of the CalSTRS Collaborative Model, an internally led approach to engaging in the investment marketplace. The mission of the CalSTRS Collaborative Model is to leverage CalSTRS' strengths to bring more of our externally managed assets in-house as well as invest more directly to reduce costs and risks. CalSTRS brought $5.5 billion in-house from external managers in the passive-developed market sector in the fourth quarter. Implementation of additional efforts is ongoing and will involve resources across four enterprise-wide pillars: Human Resources, Procurement, Travel and other (including Legal, Technology Services, Financial Services and Communications).

West Sacramento Headquarters Expansion

In fall 2019, CalSTRS began efforts to expand its headquarters located in West Sacramento. The headquarters expansion will accommodate organizational growth resulting from both an increase in membership and implementation of the CalSTRS Collaborative Model. The new 10 story tower will include 260,000 square feet of additional office space and will be financed through conduit tax-exempt lease revenue bonds issued by the California Infrastructure and Economic Development Bank. The sale of the bonds is expected to close in December 2019, and construction is expected to be completed in early 2022.

Progress on Full Funding of the Defined Benefit Program

CalSTRS' primary goal continues to be ensuring a financially sound retirement system. We remain focused on achieving full funding of the CalSTRS Defined Benefit Program according to the plan established by the California Legislature in June 2014.

The CalSTRS Funding Plan, set in motion via Chapter 47, Statutes of 2014 (Assembly Bill 1469–Bonta), established a predictable schedule of contribution rate increases shared between members, employers and the state to bring CalSTRS toward full funding by 2046. The funding plan is a model of shared responsibility and works with investment portfolio performance to advance us along the path of long-term sustainability.

In June 2019, CalSTRS presented our first report to the Legislature on the progress of the funding plan since its enactment, as required by statute. As detailed in the report, the funding plan is working. Prior to the adoption of the plan, the Defined Benefit Program was expected to run out of assets by 2046. Today, it is projected to reach approximately 100% funded by 2046.

The 2019–20 California state budget includes additional contributions to CalSTRS on behalf of employers and the state over several fiscal years, which is expected to improve projected funding levels and mitigate some of the expected increases in the state and employer contribution rates, as discussed in the Financial Section: Management's Discussion and Analysis of this report.

While a gap remains between our current assets and the obligations facing the Defined Benefit Program—known as the unfunded actuarial obligation, or unfunded liability—we continue to make progress toward reducing the funding shortfall. A snapshot of the Defined Benefit Program's assets and liabilities as reported in the June 30, 2018, actuarial valuation (released in May 2019) reflects an improving funding picture due to stronger than expected investment returns. The unfunded actuarial obligation inched down from $107.3 billion at the June 30, 2017, valuation to $107.2 billion as of the June 30, 2018, report. The funded ratio—the amount of assets on hand to pay for obligations—improved from 62.6% at the June 30, 2017, valuation to 64.0% as of the June 30, 2018, valuation. We expect an upward trajectory during the coming years as progress is made on the gradual path to reach full funding by the year 2046.

It is important to note that these actuarial valuation numbers are computed differently than the Net Pension Liability amounts as defined by Governmental Accounting Standards Board pronouncements, which are reported in the Financial Section: Basic Financial Statements (Note 3–Net Pension Liability of Employers and Nonemployer Contributing Entity) of this report.

Management Responsibility

The basic financial statements were prepared in accordance with accounting principles generally accepted in the U.S. CalSTRS management is responsible for the contents of this report, and the integrity and fairness of the information presented in the basic financial statements, including data that, out of necessity, is based on estimates and judgments. Management is also responsible for establishing and maintaining an effective internal control structure. A system of internal controls provides reasonable, but not absolute, assurance that assets are properly safeguarded and that financial statements are reliable. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived; and second, the valuation of the cost and benefits requires estimates and judgments by management. We believe that the internal controls currently in place support this purpose, and that the basic financial statements, accompanying schedules and statistical tables are fairly presented in all material respects.

Financial Statements

The basic financial statements and the accompanying notes, along with Management's Discussion and Analysis in this report present and analyze the changes in CalSTRS' fiduciary net position for the fiscal year ended June 30, 2019. The markets are dynamic and fluid; any judgment of the financial statements should also consider current market conditions. CalSTRS' external auditors, Crowe LLP, conducted an independent audit of the financial statements in accordance with auditing standards generally accepted in the U.S. and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Crowe LLP issued an unmodified opinion on CalSTRS' financial statements, which can be found in the independent auditor's report within the Financial Section.

Investment Overview

The CalSTRS Investment Portfolio is broadly diversified, holding investments ranging from publicly traded short-term bonds to privately held partnerships. The scale and breadth of investments make the management and oversight of these assets highly complex. In light of these factors, CalSTRS has been effective in using our resources in a cost-efficient manner to ensure benefits continue to flow to CalSTRS members and their beneficiaries. Over the last year, the CalSTRS portfolio generated a 6.8% net one-year return calculated on a time-weighted performance basis.

See the Investment Section of this report for more detailed information on the performance of the CalSTRS Investment Portfolio.

Actuarial Reports

A summary of demographic and economic assumptions adopted from experience studies that CalSTRS generally conducts every four years is highlighted in this section. These assumptions are applied to an actuarial valuation that is performed on an annual basis. The actuarial valuation provides a picture of the overall funding health of our programs, including the Defined Benefit, Defined Benefit Supplement, Cash Balance Benefit and Medicare Premium Payment programs. See the Actuarial Section of this report for more detailed information.

Statistical Reports

The Statistical Section of this report includes tables that reflect financial trends of the State Teachers' Retirement Plan and demographic characteristics of the Defined Benefit, Defined Benefit Supplement, Cash Balance Benefit, CalSTRS Pension2®, and Medicare Premium Payment programs. Also captured in the tables, when applicable, is information comparing the last nine years to the previous fiscal year. This historical view reveals overall trends in our programs and membership demographics that help us forecast our future ability to meet our members' retirement needs.

GFOA Award

The Government Finance Officers Association of the U.S. and Canada awarded a Certificate of Achievement for Excellence in Financial Reporting to CalSTRS for our *Comprehensive Annual Financial Report* for the year ended June 30, 2018. This is the 24th consecutive year CalSTRS has received this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized *Comprehensive Annual Financial Report*. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe our current *Comprehensive Annual Financial Report* continues to meet the Certificate of Achievement Program's requirements and are submitting it to the GFOA to determine its eligibility for another certificate.

PPCC Standards Award Program

The Public Pension Coordinating Council (PPCC) presented CalSTRS with its Public Pension Standards Award for Funding and Administration for the fiscal year ended June 30, 2019, for meeting professional standards for funding and administration as set forth in the Public Pension Standards. The PPCC is a coalition of three national associations that represent public retirement systems and administrators. The associations that form the PPCC are the National Association of State Retirement Administrators, National Council on Teacher Retirement and National Conference on Public Employee Retirement Systems. Together, these associations represent more than 500 of the largest pension plans in the U.S. A Public Pension Standards Award is valid for a period of one year.

Acknowledgements

The 2019 *Comprehensive Annual Financial Report* demonstrates our commitment to ensure the financial security of California's educators. The accuracy of the financial data reflects CalSTRS' executive leadership and is a duty performed with prudence in perpetuity. The notion that the ideas of the future are influenced by the day-to-day interactions that teachers have with students today drives the high quality of service we provide. I would like to thank the many staff, advisors and stakeholder organizations dedicated to securing the financial future of our members.

For a complete understanding of CalSTRS' performance and sustainability milestones, this *Comprehensive Annual Financial Report* should be reviewed in conjunction with our annual sustainability report based on Global Reporting Initiative standards. The sustainability report can be found online at **CalSTRS.com/sustainability-reports**.

Respectfully submitted,

Jack Ehnes
Chief Executive Officer
CalSTRS

Award: Government Finance Officers Association Certificate

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

California State Teachers' Retirement System

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2018

Christopher P. Morrill

Executive Director/CEO

Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2019

Presented to

California State Teachers' Retirement System

In recognition of meeting professional standards for
plan funding and 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)

Alan H. Winkle

Alan H. Winkle
Program Administrator

Teachers’ Retirement Board

SHARON HENDRICKS
Board Chair
Community College Instructor
Term: January 1, 2016 –
December 31, 2019[1]

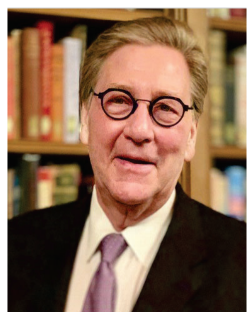
HARRY M. KEILEY
Board Vice Chair
K–12 Classroom Teacher
Term: January 1, 2016 –
December 31, 2019[1]

KEELY BOSLER
Director of Finance
Ex Officio Member

DANA DILLON
K–12 Classroom Teacher
Term: January 1, 2016 –
December 31, 2019

JOY HIGA
Public Representative
Term: January 19, 2018 –
December 31, 2021

FIONA MA
State Treasurer
Ex Officio Member



WILLIAM PREZANT
Public Representative
Term: March 26, 2019 –
December 31, 2022

TONY THURMOND
State Superintendent of Public Instruction
Ex Officio Member

NORA E. VARGAS
School Board Representative
Term: January 1, 2016 –
December 31, 2019

KAREN YAMAMOTO
Retiree Representative
Term: April 17, 2017 –
December 31, 2019

BETTY YEE
State Controller
Ex Officio Member

VACANT
Public Representative

Note: Board members are listed as of the date this report is issued.

1 Board member was re-elected and will serve a 4-year term beginning January 1, 2020.

Executive Staff

Executive

JACK EHNES
Chief Executive Officer

Investments

CHRISTOPHER J. AILMAN
Chief Investment Officer

CASSANDRA LICHNOCK
Chief Operating Officer

Financial Services

JULIE UNDERWOOD
Chief Financial Officer

General Counsel

BRIAN J. BARTOW
General Counsel

Administrative Services

LISA BLATNICK
Chief of Administrative Services

Benefits and Services

WILLIAM PEREZ
Benefits and Services
Executive Officer

Public Affairs

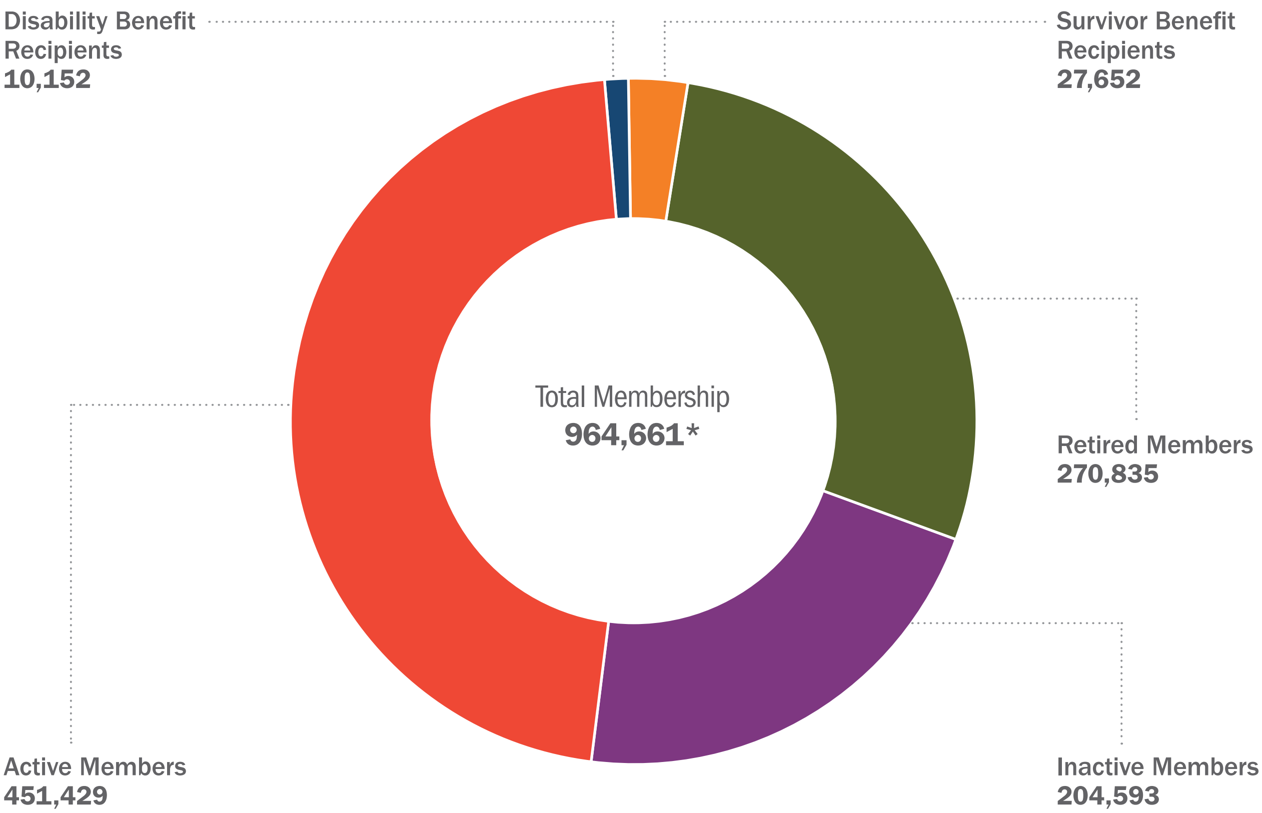
GRANT BOYKEN
Public Affairs
Executive Officer

Technology Services

ASHISH JAIN
Chief Technology Officer

Note: Executive staff are listed as of the date this report is issued.

MEMBERS BY THE NUMBERS



*Due to the timing of when DB membership numbers were pulled, there will be a difference between the numbers reported in this section and the Financial Section.

Membership

Membership in the CalSTRS Defined Benefit Program includes California public school employees, pre-kindergarten through community college, who teach or who are involved in selecting and preparing instructional materials, provide vocational or guidance counseling or are supervising people engaged in those activities. Membership is in effect as long as contributions remain on deposit with CalSTRS.

Members are employed in 1,778 public school districts, community college districts, county offices of education, charter schools and regional occupational programs. The CalSTRS Defined Benefit Program includes retirement, disability and survivor benefits. Members can elect an option to provide a monthly lifetime income for their beneficiaries upon the member's death.

Benefits to Members and Their Beneficiaries

Service Retirement

CalSTRS is committed to providing exceptional service to its retired members. Our staff establishes and maintains timely and accurate benefits.

12,331	Members who retired in fiscal year 2018–19
3.5%	Decrease from fiscal year 2017–18

Disability Benefits

92%	Applications processed within 150 days
632	Applications received in 2018–19
462	Applications approved in 2018–19
13.9%	Decrease in number of disability applications received from fiscal year 2017–18

Survivor Benefits

93%	Payments processed within 30 days of receiving all necessary information
9,890	Notifications of death received in 2018–19
3.5%	Increase in number of notifications from fiscal year 2017–18

Communicating With Our Members and Beneficiaries

Customer Service

Members may contact a CalSTRS Contact Center agent by phone, secure online message or written correspondence.

272,875	Member inquiries answered
68%	Member calls answered within 30 seconds
94 seconds	Average wait time to talk with a Contact Center agent
85%	Members who received a response to their secure online message within one business day

CalSTRS places great emphasis on customer satisfaction and regularly surveys members to ensure they receive accurate, timely and thorough answers to their questions.

- **76%** of members were "highly satisfied" with their Contact Center experience.

Member Communications

CalSTRS communicates with its active and retired members through a variety of channels.

Newsletters

CalSTRS reaches out to members and their beneficiaries through the *CalSTRS Connections: Reaching Your Retirement*, *CalSTRS Connections: Your Money Matters* and *Retired Educator* newsletters.

CalSTRS Connections: Reaching Your Retirement is sent in the spring and fall to active and inactive members age 50 and older. It provides information about retirement planning and decisions, workshops and benefits planning, legislative news and more.

CalSTRS Connections: Your Money Matters is sent in the spring and fall to active and inactive members age 49 and younger. It provides updates on CalSTRS programs and services, articles on retirement benefits, supplemental savings options, financial planning, legislative news and more.

Retired Educator is sent to retired members and their beneficiaries in the summer and winter. It provides information on benefits and services, legislation, investments and board updates.

Retirement Progress Report

Every year Defined Benefit members and Cash Balance Benefit participants receive a personalized *Retirement Progress Report* that contains retirement planning information and detailed account information as of June 30 for the fiscal year. For Defined Benefit members age 45 and older, the report includes retirement benefit estimates. The reports are available online in September in the member's *my*CalSTRS account and are mailed in October if requested. Retired members and other benefit recipients do not receive this report.

Member Informational Publications

CalSTRS offers a number of publications to members at various stages in their careers.

The *CalSTRS Member Handbook* is a comprehensive resource on CalSTRS programs and benefits, including eligibility requirements and worksheets. The handbook is updated annually.

Your Retirement Guide provides information members need to plan, research and make retirement decisions regarding their defined benefit pension and Defined Benefit Supplement funds. It includes step-by-step instructions for applying for service retirement and what to expect after submitting the retirement application.

CalSTRS Member Kits contain targeted retirement information and are sent to four groups of CalSTRS members when they reach a career milestone. The first three career milestones—newly vested, mid-career and near retirement—are based on the member's age and years of service credit. The last member kit is sent when the member reaches the fourth milestone—retirement.

In addition, CalSTRS produces publications that cover specific topics including, but not limited to:

- *Cash Balance Benefit Program*
- *Community Property Guide*
- *Concurrent Retirement*
- *Introduction to CalSTRS Disability Benefits*
- *Join CalSTRS? Join CalPERS?*
- *myCalSTRS*
- *Pension2 ebook*
- *Purchase Additional Service Credit*
- *Refund: Consider the Consequences*
- *Social Security, CalSTRS and You*
- *Tax Considerations for Rollovers*
- *Understanding the Formula*
- *Uniformed Services Employment and Reemployment Rights Act*
- *Your Disability Benefits Guide*
- *Welcome to CalSTRS*
- *Working After Retirement*

CalSTRS Online

CalSTRS has four websites for members: CalSTRS.com, *my*CalSTRS, Pension2.com and 403bCompare.com.

CalSTRS.com is the main site for information about membership and benefits, investments, board meetings, our newsroom and business partner opportunities, and also includes links to information for employers, including the Secure Employer Website. Features include online calculators to estimate retirement benefits and the cost to purchase service credit or redeposit funds; CalSTRS publications and forms; recent CalSTRS news including, an investment overview; and self-scheduling for workshops and benefits planning sessions.

***my*CalSTRS**, our secure self-service site for members, provides convenient access to members' personal accounts. After registering for *my*CalSTRS, members can view their account balances, complete and submit forms online, keep their contact information current, view their *Retirement Progress Reports*, manage their beneficiary selections, and exchange secure messages with CalSTRS representatives.

Pension2.com is the website for Pension2, the CalSTRS defined contribution plan that offers 403(b) and 457(b) plans. It features online enrollment, financial planning tools and webinars.

At **403bCompare.com** members can easily compare investment fees, performance and services of their employer's 403(b) plans to find the best one for their savings goals. Members can learn about the advantages of a 403(b) account, find their employer's list of approved vendors, compare up to three plans side by side and get information on how to enroll and start contributions. 403bCompare was created by CalSTRS under state legislation.

Members can also stay connected to CalSTRS through social media on Facebook, Twitter, Instagram, LinkedIn, YouTube and Pinterest.

Benefits Planning Services

CalSTRS has eight member service centers across California: West Sacramento (headquarters), Fresno, Glendale, Irvine, Redding, Riverside, San Diego and Santa Clara.

Member service centers offer educational and benefits planning services, including individual and group benefits planning sessions and financial savings workshops. Existing member service centers serve the greater Sacramento, Los Angeles, Bay Area, Orange County, the Inland Empire, San Diego, Shasta Cascade and Central Valley regions. CalSTRS offices are open Monday through Friday, 8 a.m. to 5 p.m. Certain locations and some Saturday services are available by appointment only.

At each member service center, members can attend educational workshops, meet with CalSTRS benefits specialists by appointment or seek assistance with general information questions on a walk-in basis. Member service center staff also review and receive forms, transmit them to CalSTRS Headquarters for processing, and provide CalSTRS forms and publications.

This year, more than 38,000 members attended group or individual benefits planning sessions or workshops, while more than 13,500 members took advantage of the opportunity to walk in and receive immediate assistance. In addition, more than 11,000 members received services at outreach events, including job fairs and on-campus presentations.

Since the launch of our 2018–19 Business Plan, we have increased our efforts regarding member-employer engagement. This has led to more outreach directly with stakeholders, which includes school districts, various unions and other teacher organizations. Through this outreach, we have more than doubled the number of teachers we have met over the course of the past fiscal year. The convenient estimate-only service provided more than 2,000 members with updated retirement benefit estimates.

CalSTRS continues to focus on providing services that increase accessibility for members, reflect individual member needs and increase member self-education.

Services to Employers, Member and Client Organizations

CalSTRS staff supports our employer reporting partners by providing dedicated service, training, outreach and technical guidance. CalSTRS has enhanced the delivery of contribution reporting education by making it available electronically and on-demand for the employer while supplementing this information with in-person training and timely responses to their inquiries. The Secure Employer Website, a secure channel for employers to submit their monthly reporting data, includes rules and feedback to ensure contribution reporting data is timely and accurate.

CalSTRS is committed to preventing pension abuse by dedicating staff to reviewing reported compensation and other inputs to our members' retirement benefits. The CalSTRS Compensation Review Unit has increased reviews of potential abuse cases through an online reporting form, the Pension Abuse Reporting Hotline, collaboration with partner benefit areas responsible for establishing benefit payments and historical data mining to review prior benefits.

Professional Services

CalSTRS contracts for the services of various independent consultants essential to the effective and professional operation of the system. Milliman, Inc. provides actuarial services, Crowe LLP is the independent financial statement auditor, and Meketa Investment Group provides investment consulting services. Lists of investment professionals for investment services and other consultants are provided on Schedules VIII and IX, respectively, in the Financial Section of this report. Table 9 in the Investment Section also lists entities to whom CalSTRS paid broker commissions during the fiscal year.

Financial Section

CalSTRS is the largest educator-only pension fund in the world, with $240.0 billion in net position as of June 30, 2019.

Crowe LLP
Independent Member Crowe Global

INDEPENDENT AUDITOR'S REPORT

Teachers' Retirement Board of the California
State Teachers' Retirement System
West Sacramento, California

Report on the Financial Statements

We have audited the accompanying financial statements of California State Teachers' Retirement System ("System" or "CalSTRS"), a component unit of the State of California, as of and for the year ended June 30, 2019, 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 and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. 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 California State Teachers' Retirement 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 Matters

Net Pension Liability of Employers and Nonemployer Contributing Entity

As described in Note 3, based on the most recent actuarial valuation as of June 30, 2018, the System's independent actuaries determined that, at June 30, 2019, the value of the State Teachers' Retirement Plan (STRP) total pension liability exceeded the STRP fiduciary net position by $90.3 billion. The actuarial valuation is sensitive to the underlying actuarial assumptions, including investment rate of return of 7.1%, consumer price inflation of 2.75%, wage growth of 3.5% and custom mortality tables based on CalSTRS most recent Experience Analysis. Our opinion is not modified with respect to this matter.

Fair Value of Investments

As described in Notes 5 and 6, the financial statements include investments valued at approximately $76.6 billion as of June 30, 2019, for which fair value has been estimated by general partners and investment advisors, and reviewed and approved by the System's management, in the absence of readily ascertainable market values. Because of the inherent uncertainty of valuation, the estimate of values may differ from the values that would have been used had a ready market existed for the investment securities, and the differences could be material. 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 on pages 27 - 44 and the Schedule of Changes in Net Pension Liability of Employers and Nonemployer Contributing Entity, Schedule of Net Pension Liability of Employers and Nonemployer Contributing Entity, Schedule of Pension Contributions from Employers and Nonemployer Contributing Entity, Schedule of Money-Weighted Investment Returns for State Teachers' Retirement Plan and Medicare Premium Payment Program, Schedule of Changes in Net OPEB Liability of Employers and Schedule of Net OPEB Liability of Employers on pages 86 - 91 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by 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.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The Introductory Section, Schedule of Administrative Expenses, Schedule of Investment Expenses, Schedule of Consultant and Professional Services Expenses, Investments Section, Actuarial Section, and Statistical Section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The Schedule of Administrative Expenses, Schedule of Investment Expenses and Schedule of Consultant and Professional Services Expenses are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Administrative Expenses, Schedule of Investment Expenses and Schedule of Consultant and Professional Services Expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The Introductory Section, Investments Section, Actuarial Section, and Statistical Section 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.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 14, 2019 on our consideration of California State Teachers' Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering California State Teachers' Retirement System's internal control over financial reporting and compliance.

Crowe LLP

Crowe LLP

Sacramento, California
October 14, 2019

Introduction

Management's discussion and analysis of the California State Teachers' Retirement System's (CalSTRS, system, our or we) financial performance is intended to fairly and transparently provide an overview of activities for the fiscal year ended June 30, 2019. The discussion and analysis focuses on business events and resulting changes for fiscal year 2018–19. This discussion is more meaningful when read in conjunction with CalSTRS' basic financial statements and accompanying notes.

CalSTRS' actual results, performance and achievements expressed or implied in these statements are subject to changes in interest rates, securities markets, general economic conditions, legislation, regulations and other factors.

Mission

Over the past 106 years, CalSTRS' mission has remained the same—*securing the financial future and sustaining the trust of California's educators.* Since CalSTRS was founded in 1913, we have grown from no assets and about 15,000 members to net assets of approximately $240.0 billion serving 964,572 members and beneficiaries as of June 30, 2019. In 1913, the annual benefit was $500; today, the average annual member-only benefit is approximately $49,000. Today, CalSTRS is the largest educator-only pension fund in the world and the second largest pension fund in the U.S.

Year in Review

The paragraphs that follow discuss significant events, changes and updates on ongoing efforts for fiscal year 2018–19 that affect CalSTRS operations.

Teachers' Retirement Board Update

During fiscal year 2018–19, CalSTRS announced three member-elected individuals representing current educators to the Teachers' Retirement Board (the board), who will each serve a four-year term beginning on January 1, 2020.

Harry M. Keiley and Sharon Hendricks, who have served on the board since 2007 and 2011, respectively, were re-elected. Denise Bradford was elected and will succeed Dana Dillon, who has been on the board since January 1, 2004. Ms. Dillon will vacate her seat when her term expires on December 31, 2019.

In addition, Sharon Hendricks and Harry M. Keiley were elected to serve as board chair and vice-chair, respectively, at the May 2019 board meeting, with the positions effective immediately.

The board also has three new members resulting from the California statewide election and governor appointment as follows:

In November 2018, Fiona Ma was elected as Treasurer of the State of California and Tony Thurmond was elected as State Superintendent of Public Instruction. By virtue of their elections, both Treasurer Ma and Superintendent Thurmond currently serve as ex-officio members of the board. In March 2019, Governor Gavin Newsom appointed William Prezant as a public representative to the board, whose term will run through December 31, 2022.

Supplemental General Fund Contributions

On June 27, 2019, California Senate Bill 90 (SB 90) was signed into law and appropriated approximately $2.2 billion in fiscal year 2018–19 from the General Fund of the State of California (the state) as contributions to CalSTRS on behalf of employers of the Defined Benefit (DB) Program. The bill allocates portions of the contribution to pay in advance, on behalf of employers, 1.03 and 0.70 percentage points of the contributions required from DB employers for fiscal years 2019–20 and 2020–21, respectively. The remaining portion of the contribution is allocated to reduce the employers' share of the unfunded actuarial obligation of the DB Program.

In addition, the bill appropriates future supplemental contributions based on excess General Fund revenue, pursuant to the requirements of California Proposition 2, the Rainy Day Budget Stabilization Fund Act, passed in 2014. When received, these supplemental payments will reduce the state's portion of the unfunded actuarial obligation of the DB Program in fiscal years 2019–20 through 2022–23.

Headquarters Expansion Project

In November 2018, the board approved the construction of an expansion to CalSTRS' West Sacramento headquarters utilizing bond financing at a cost not to exceed $300 million, excluding the cost of financing. The expansion will allow the organization to meet the long-term space needs resulting from the increase in size and complexity of the system. CalSTRS will finance the project through conduit tax-exempt lease revenue bonds issued by the California Infrastructure Economic Development Bank. The sale of the bonds is expected to close in December 2019.

CalSTRS' vision and guiding beliefs support advancing sustainability. As such, the headquarters expansion is being designed to support sustainable green building practices, including green technologies, sustainable construction, energy conservation and whole-building integrated energy efficiency measures as well as employee wellness goals. These efforts are intended to qualify the tax-exempt lease revenue bonds to be classified as Green Bonds, which identify to investors that the bond proceeds will be used specifically for sustainable projects that will have a positive impact on the environment. Construction for the expansion is set to begin in late 2019 with completion expected sometime in early 2022.

Pension Solution Project

The Pension Solution Project is an ongoing effort by CalSTRS to modernize the legacy pension administration system. In July 2018, the board approved a revised timeline for completion of the project. CalSTRS staff and CGI Group, Inc., the vendor contracted to configure and implement the new system, continue to work closely to mitigate certain challenges and risks. The project is currently on track with the revised timeline, and is anticipated to be completed by February 2022.

CalSTRS Collaborative Model

During fiscal year 2018–19, CalSTRS staff presented information and recommendations to the board's Investment Committee on the CalSTRS Collaborative Model. This approach embraces partnerships and collaboration by expanding direct investment opportunities through various investment structures, including peer partnerships, joint ventures, co-investments and passive and controlling stakes in investment companies, while building additional direct investing capabilities. Continued implementation efforts of the CalSTRS Collaborative Model will involve resources across four enterprise-wide Pillars: Human Resources, Procurement, Travel and Other (such as Legal, Technology, Financial Services and Communications). Full implementation will be measurable, span multiple years and be reported to the Investment Committee. At its May 2019 meeting, the board approved a budget and staffing augmentation to provide the Investments Branch additional resources for the 2019–20 fiscal year to continue implementation of the CalSTRS Collaborative Model.

Financial Highlights

This section discusses major changes in account balances for the State Teachers’ Retirement Plan (STRP), CalSTRS Pension2 Programs (Pension2), Medicare Premium Payment (MPP) Program and the Teachers’ Deferred Compensation Fund (TDCF). Comparative financial statement information is presented for the STRP through condensed versions of the Statement of Fiduciary Net Position and Statement of Changes in Fiduciary Net Position as of and for the fiscal years ended June 30, 2019, and June 30, 2018.

State Teachers’ Retirement Plan

The STRP is a multiple-employer, cost-sharing defined benefit plan composed of four programs: the DB Program, Defined Benefit Supplement (DBS) Program, Cash Balance Benefit (CBB) Program and Replacement Benefits Program. The STRP holds assets for the exclusive purpose of providing benefits to members of these programs and their beneficiaries.

Fiduciary Net Position

(Dollars in Thousands)

Assets and Deferred Outflows of Resources	2019	2018	% Change
Investment Assets[1]	$ 261,270,852	$247,370,532	5.6%
Cash	321,051	153,256	109.5%
Investment Receivables	4,763,939	3,076,620	54.8%
Member, Employer, State and Other Receivables	5,830,354	3,468,656	68.1%
Capital and Other Assets	317,418	276,245	14.9%
Total Assets	**272,503,614**	**254,345,309**	**7.1%**
Deferred Outflows of Resources	**68,561**	**117,457**	**(41.6%)**
Total Assets and Deferred Outflows of Resources	**272,572,175**	**254,462,766**	**7.1%**
Liabilities and Deferred Inflows of Resources			
Investment Liabilities	123,852	140,070	(11.6%)
Investments Purchased Payable	5,194,433	3,346,989	55.2%
Loans Payable	2,787,387	2,731,737	2.0%
Benefits in Process of Payment	1,513,766	263,254	475.0%
Net Pension and OPEB Liabilities	816,327	835,204	(2.3%)
Securities Lending Obligation	22,786,907	21,917,706	4.0%
Other	369,832	303,893	21.7%
Total Liabilities	**33,592,504**	**29,538,853**	**13.7%**
Deferred Inflows of Resources	**117,783**	**55,278**	**113.1%**
Total Liabilities and Deferred Inflows of Resources	**33,710,287**	**29,594,131**	**13.9%**
NET POSITION RESTRICTED FOR PENSIONS	**$238,861,888**	**$224,868,635**	**6.2%**

1 Includes securities lending collateral of $22.8 billion and $21.9 billion as of June 30, 2019, and June 30, 2018, respectively.

Changes in Fiduciary Net Position

(Dollars in Thousands)

Additions	2019	2018	% Change
Member Contributions	$3,647,999	$3,496,245	4.3%
Employer Contributions	5,644,472	4,866,661	16.0%
State of California Contributions	5,334,860	2,796,673	90.8%
Net Investment Income	14,897,833	18,673,537	(20.2%)
Other Income	127,603	105,144	21.4%
Total Additions	**29,652,767**	**29,938,260**	**(1.0%)**
Deductions			
Benefit Payments	15,196,087	14,432,810	5.3%
Refunds of Member Contributions	99,893	103,886	(3.8%)
Administrative Expenses	253,953	216,083	17.5%
Borrowing Costs	105,306	94,249	11.7%
Other Expenses	4,275	1,678	154.8%
Total Deductions	**15,659,514**	**14,848,706**	**5.5%**
Increase in Net Position	**13,993,253**	**15,089,554**	**(7.3%)**
Net Position Restricted for Pensions			
Beginning of the Year-As Previously Reported	224,868,635	210,289,900	6.9%
Less: Adjustment for Application of GASB 75	-	510,819	(100.0%)
Beginning of the Year-As Adjusted	**224,868,635**	**209,779,081**	**7.2%**
END OF THE YEAR	**$238,861,888**	**$224,868,635**	**6.2%**

Net position for the STRP increased approximately $14.0 billion or 6.2% from $224.9 billion as of June 30, 2018, to $238.9 billion as of June 30, 2019, primarily due to increased contributions and positive investment returns.

The STRP's time-weighted investment return for fiscal year 2018–19 was 6.8% (net of fees). This resulted in net investment income of $14.9 billion for the same period. Despite positive returns for the current fiscal year, net investment income decreased $3.8 billion or 20.2% compared to the prior fiscal year, which had an investment return of 9.0% (net of fees) and net investment income of $18.7 billion. Investment gains primarily contributed to a $13.9 billion increase in the STRP's investment assets from $247.4 billion as of June 30, 2018, to $261.3 billion as of June 30, 2019. Additional discussion of the STRP's investment returns can be found within the Investment Management section of this analysis.

Member, employer and State of California contributions increased by $3.5 billion or 31.1% primarily due to approximately $2.2 billion in supplemental state contributions to the DB Program on behalf of employers pursuant to SB 90. Payment of the additional contributions had not been received as of June 30, 2019, which resulted in a corresponding increase of $2.4 billion or 68.1% to member, employer, state and other receivables. The increased contributions are also attributable to an increase in active members, creditable compensation and contribution rates implemented through the CalSTRS Funding Plan, which was passed into law in June 2014 with the enactment of AB 1469.

Benefit payments for fiscal year 2018–19 were $15.2 billion, which is an increase of $0.8 billion or 5.3% compared to June 30, 2018. This is due to an increase in the STRP's retirees and beneficiaries and a cost-of-living adjustment added to benefit allowances. Benefits in process of payment increased $1.3 billion due to timing, as the June 2019 monthly benefit payments were disbursed on July 1, 2019, in accordance with the annual pay dates calendar.

Investment receivables increased $1.7 billion and investments purchased payable increased $1.8 billion due to the timing of settlement of investment purchases and sales.

Other Programs and Funds

In addition to the STRP, CalSTRS administers two defined contribution plans within the CalSTRS Pension2 Program, a postemployment benefit plan known as the MPP Program and the TDCF which accounts for ancillary activities associated with the various deferred compensation plans and programs. The following discussion provides noteworthy changes for each of these programs and funds.

Pension2 403(b) Plan

CalSTRS Pension2 403(b) Plan is a voluntary defined contribution program that offers low-cost and tax-deferred 403(b) and Roth 403(b) plans for additional retirement savings.

Net position for the Pension2 403(b) Plan increased $0.2 billion or 16.1% to $1.1 billion as of June 30, 2019, primarily due to positive net investment income and increased member contributions, which are voluntary for the 403(b) Plan.

Pension2 457(b) Plan

CalSTRS Pension2 457(b) Plan is a voluntary defined contribution program that offers low-cost and tax-deferred 457(b) and Roth 457(b) plans for additional retirement savings.

Net position for the Pension2 457(b) Plan increased $9.9 million or 23.5% to $52.2 million as of June 30, 2019, primarily due to positive net investment income and increased member contributions, which are voluntary for the 457(b) Plan.

Medicare Premium Payment Program

CalSTRS administers the MPP Program through the Teachers' Health Benefit Fund. The MPP Program pays Medicare Part A premiums and Medicare Parts A and B late enrollment surcharges for retired members of the DB Program who meet certain eligibility criteria. Members who retire on or after July 1, 2012, are not eligible for coverage under the MPP Program.

The MPP Program has reflected a net deficit for the past two years primarily resulting from the implementation of Governmental Accounting Standards Board (GASB) Statement No. 68, *Accounting and Financial Reporting for Pensions—an Amendment of GASB Statement No. 27*, in fiscal year 2014–15 and GASB Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*, in fiscal year 2017–18. The implementation of these standards resulted in the program incurring increased administrative expenses from the recognition of its share of the state's net pension liability (NPL) and net other postemployment benefits (OPEB) liability. The amounts recognized represent long-term liabilities reported on an accrual basis and do not adversely impact the viability of the fund or its ability to meet current obligations.

Operationally, the MPP Program is funded on a pay-as-you-go basis, with contributions generally being made at the same time and in the same amount as benefit payments and expenses coming due. The current net deficit of the MPP Program increased to approximately $3.0 million as of June 30, 2019, primarily due to an increase in the MPP Program's proportionate share of the state's OPEB expense.

Teachers' Deferred Compensation Fund

The TDCF is a trust fund established to account for ancillary activities associated with various deferred compensation plans and programs offered by CalSTRS, such as the 403(b) and 457(b) plans.

The TDCF has reflected a net deficit for the past five years primarily resulting from the implementation of GASB Statement No. 68 in fiscal year 2014–15 and GASB Statement No. 75 in fiscal year 2017–18. The implementation of these standards resulted in the TDCF incurring increased administrative expenses resulting from the recognition of its share of the state's NPL and net OPEB liability. The amounts recognized represent long-term liabilities reported on an accrual basis and do not adversely impact the viability of the fund or its ability to meet current obligations.

The current net deficit of the TDCF improved slightly to approximately $4.7 million as of June 30, 2019, due to a reduction of administrative expenses incurred and higher administrative fees earned.

Overview of Financial Statements

The Management's Discussion and Analysis section is also an introduction to CalSTRS' basic financial statements. CalSTRS' financial statements include the following components:

- Statement of Fiduciary Net Position
- Statement of Changes in Fiduciary Net Position
- Notes to the Basic Financial Statements
- Required Supplementary Information (Unaudited)
- Other Supplementary Information

Statement of Fiduciary Net Position

The Statement of Fiduciary Net Position presents information on all of CalSTRS' assets and liabilities, with the difference between the two reported as net position. Over time, the increase or decrease in net position serves as an indicator of CalSTRS' financial condition and our ability to fund future benefit payments.

Statement of Changes in Fiduciary Net Position

The Statement of Changes in Fiduciary Net Position reflects how CalSTRS' net position changed during the fiscal year and presents contributions earned, benefit payments made, investment returns and the costs of plan administration.

Notes to the Basic Financial Statements

The Notes to the Basic Financial Statements provide information essential to a full understanding of the basic financial statements. The type of information provided in each note is as follows:

- Note 1 provides a summary of information on the significant provisions of CalSTRS' plans and programs.
- Note 2 provides a summary of significant accounting policies, including the basis of accounting for CalSTRS, management's use of estimates, cash and investment accounting policies and other significant accounting policies.
- Note 3 provides information regarding the NPL of employers and nonemployer contributing entity for the STRP, including the actuarial assumptions and methods used to determine the total pension liability.
- Note 4 provides information regarding the net OPEB liability of employers for the MPP Program including the actuarial assumptions and methods used to determine the total OPEB liability.
- Note 5 provides information related to deposits, investments and risks (credit, interest rate and foreign currency) in addition to a Schedule of Investments that discloses the types of investments within each broad investment category.
- Note 6 provides information related to the fair value measurement of investments.
- Note 7 provides potential contingencies of CalSTRS.
- Note 8 provides a summary of CalSTRS' significant commitments.
- Note 9 provides a summary of new accounting and financial reporting pronouncements that have a material impact on CalSTRS' basic financial statements.

Required Supplementary Information

The Required Supplementary Information section consists of six schedules intended to assist readers in understanding the NPL of the STRP and the net OPEB liability of the MPP Program. The information available in this section includes:

- Schedule I – Schedule of Changes in Net Pension Liability of Employers and Nonemployer Contributing Entity
- Schedule II – Schedule of Net Pension Liability of Employers and Nonemployer Contributing Entity
- Schedule III – Schedule of Pension Contributions from Employers and Nonemployer Contributing Entity
- Schedule IV – Schedule of Money-Weighted Investment Returns for State Teachers' Retirement Plan and Medicare Premium Payment Program
- Schedule V – Schedule of Changes in Net OPEB Liability of Employers
- Schedule VI – Schedule of Net OPEB Liability of Employers

Other Supplementary Information

Other Supplementary Information includes details on administrative expenses, investment expenses, and consultant and professional services expenses. The schedules available in the Other Supplementary Information section include:

- Schedule VII – Schedule of Administrative Expenses
- Schedule VIII – Schedule of Investment Expenses
- Schedule IX – Schedule of Consultant and Professional Services Expenses

Major Business Components

The sections that follow describe the activities and results of CalSTRS' major business components (investment management and pension administration) for fiscal year 2018–19.

Investment Management

CalSTRS' primary goal is to maintain a financially sound retirement system. Our investment philosophy is "long-term patient capital"—investing for long-term net cash flows and capital gain potential at a reasonable price.

CalSTRS' investment beliefs serve as the foundation for our investment policies and describe the authority, responsibility and fiduciary duty CalSTRS has in executing our investment process. The eight investment beliefs are:

1. Diversification strengthens the fund.
2. The global public investment markets are largely, but not completely, efficient.
3. Managing investment costs yields long-term benefits.
4. Internal management is a critical capability.
5. CalSTRS can potentially capture an illiquidity risk premium.
6. Managing short-term draw down risk can positively impact CalSTRS' ability to meet its long-term financial obligations.
7. Responsible corporate governance, including the management of environmental, social and governance (ESG) factors, can benefit long-term investors like CalSTRS.
8. Alignment of financial interests between CalSTRS and its advisors is critical.

CalSTRS uses a time-weighted return to evaluate returns for portfolio performance purposes, and the discussion of investment performance that follows is based on the time-weighted methodology. CalSTRS also prepares and discloses a money-weighted return for financial reporting purposes in accordance with GASB Statement No. 67, *Financial Reporting for Pension Plans—an Amendment of GASB Statement No. 25*, and GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*. Additional detail and discussion of money-weighted returns can be found in Note 5 of the Notes to the Basic Financial Statements.

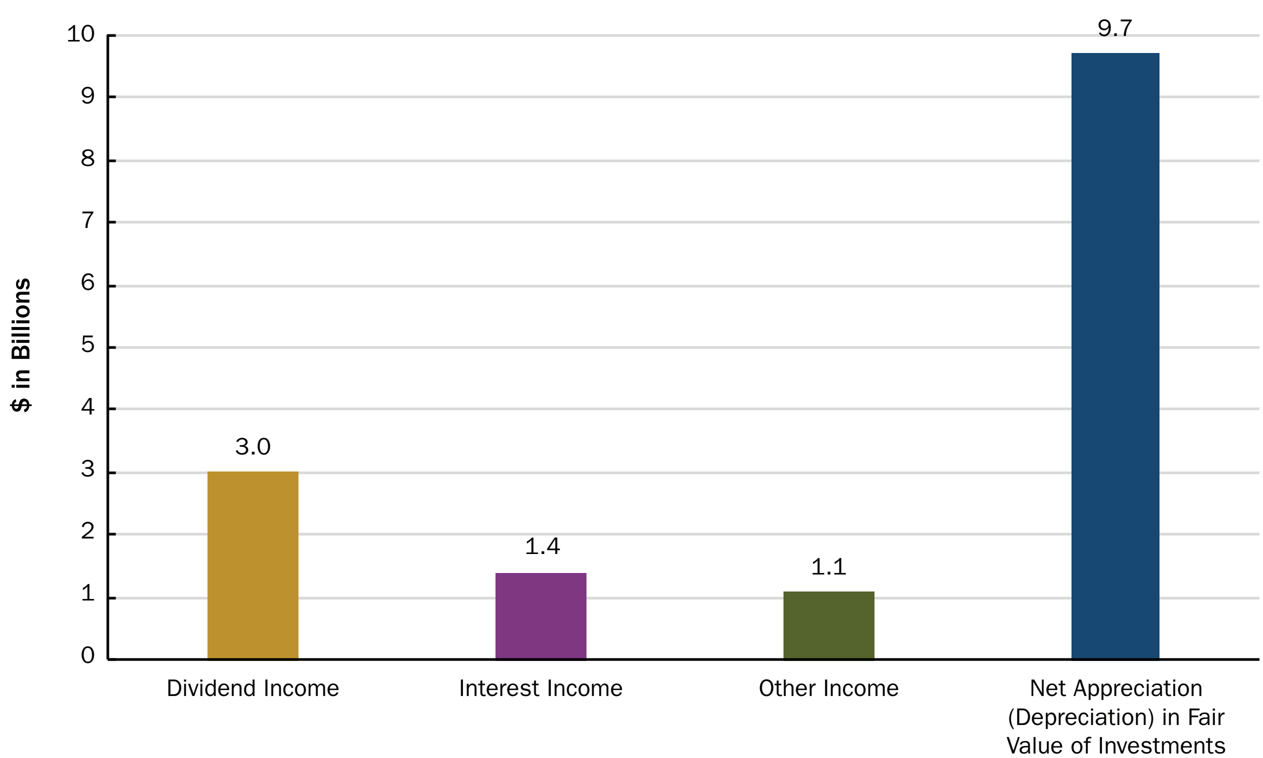
For the fiscal year ended June 30, 2019, CalSTRS' time-weighted return was approximately 6.8% calculated on a net-of-fees basis, which was below the actuarially assumed 7.00% rate of return used for funding purposes. CalSTRS' returns (net of fees) reflect the following longer-term performance:

- 9.7% over 3 years
- 6.9% over 5 years
- 10.1% over 10 years
- 6.2% over 20 years

Sources of Investment Income

The graph below displays a detailed view of the sources of investment income for the STRP (excluding securities lending income), based on the Statement of Changes in Fiduciary Net Position as of June 30, 2019.

Investment Income (Gross of Expenses)

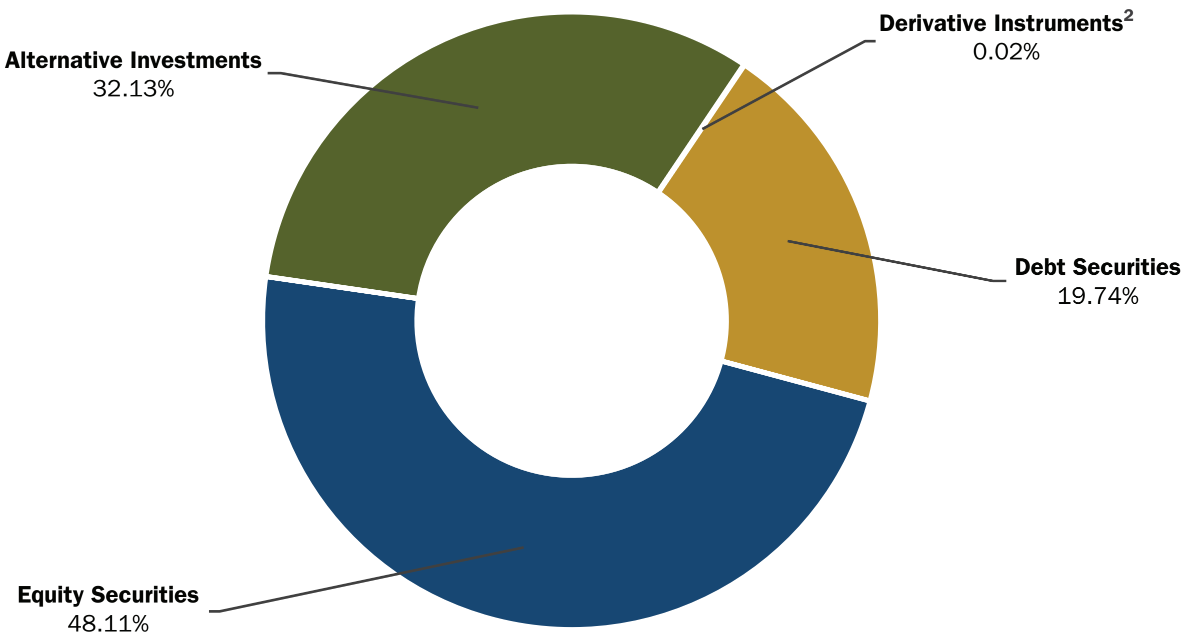


CalSTRS' investments earn income in the form of interest and dividends from holding fixed income securities and various types of equity interests in public companies, limited partnerships and co-investments. Other income consists primarily of distributed income from alternative investments (such as rent), term loans and securities litigation. Net appreciation (depreciation) in fair value of investments consists of realized gains (losses) and unrealized appreciation (depreciation). Realized gains and losses are generally a result of investment sales, write-offs and re-organizations. Unrealized appreciation and depreciation is generated by period-over-period valuation fluctuations in all types of investments.

Asset Allocation and Performance

The graph below presents net investments of the STRP (excluding securities lending collateral and obligations) allocated based on investment classifications within the Statement of Fiduciary Net Position as of June 30, 2019.

Allocation of Investments Based on the Statement of Fiduciary Net Position[1]



1 This chart only represents investments of the STRP as investment assets of the STRP are managed by CalSTRS. While CalSTRS offers investment strategies for the Pension2 programs, investment assets of the 403(b) and 457(b) plans are not actively managed by CalSTRS. Additionally, investment assets in the MPP Program and the TDCF are invested in the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer.

2 Derivative instruments are reported on a net basis in the chart above. Please refer to the Schedule of Investments in the Note 5 of the Notes to the Basic Financial Statements for more information.

The following table displays the distribution of net investments based on the portfolio allocation as compared to the classification within the Statement of Fiduciary Net Position as of June 30, 2019.

Portfolio Allocation Versus Financial Statement Classification

Portfolio Allocation		Financial Statement Classification	
Asset Class/Strategy	**Asset Allocation**	**Investments**	**% of Asset Class**
Global Equity	50.5%	Equity Securities	95.7%
		Alternative Investments	2.7%
		Debt Securities	1.5%
		Other[1]	0.1%
Fixed Income	12.3%	Debt Securities	100.1%
		Other[1]	(0.1%)
Real Estate	13.7%	Alternative Investments	99.6%
		Equity Securities	0.4%
Private Equity	9.2%	Alternative Investments	99.9%
		Equity Securities	0.1%
Cash / Liquidity	2.1%	Debt Securities	100.0%
Inflation Sensitive	2.5%	Alternative Investments	70.9%
		Debt Securities	34.4%
		Derivative Instruments	0.3%
		Other[1]	(5.6%)
Risk Mitigating Strategies	9.4%	Alternative Investments	59.3%
		Debt Securities	40.4%
		Other[1]	0.3%
Innovative Strategies	0.3%	Alternative Investments	100.0%
Strategic Overlay	0.0%[2]	Debt Securities	(0.4%)
		Derivative Instruments	(49.6%)
		Equity Securities	(1.1%)
		Other[1]	151.1%
Total Fund	**100.0%**		

1 Other consists of cash, payables and receivables that are reflected as such on the Statement of Fiduciary Net Position as well as any investment categories less than 0.1%.

2 As of June 30, 2019, the net asset value for Strategic Overlay was ($6.7) million, which rounds to less than 0.1% of the total asset allocation.

Equity Securities

Representing 50.5% of total investments as of June 30, 2019, the Global Equity asset class is comprised of equity securities within the U.S., non-U.S. developed countries and emerging markets. Sustainable Investment and Stewardship Strategies (SISS) funds (formerly known as Corporate Governance funds) are included within the Global Equity asset class but are classified as Alternative Investments on the financial statements as reflected in the table above. Approximately 61% of the Global Equity assets are managed internally by CalSTRS' investment staff, while the remaining 39% are managed by external investment managers.

As of June 30, 2019, the STRP held $114.7 billion in equity securities across all portfolios, a decrease of 0.6% compared to the prior year.

Performance was volatile for global equities throughout the fiscal year. Domestic and international equities produced solid returns in the first quarter of the reporting period. Tax cuts passed in the previous year contributed to a rise in corporate earnings and were a driving factor for first quarter performance; however, equity markets took a downturn in the second quarter. Rising interest rates and trade tensions between the U.S. and China caused a sharp sell-off in October and declined even further in December as global growth concerns and the partial U.S. government shutdown weighed heavily on investor sentiment. International and emerging markets also decreased amid political uncertainty and falling oil prices.

Equity markets recovered the majority of their losses in the second half of the fiscal year despite a sharp decline in May due to continued concerns of a trade war between the U.S. and China. The Federal Reserve's decision to hold rates steady and expectations of possible rate cuts eased investor concerns and boosted markets. International and emerging markets advanced as central banks around the world also took a dovish turn to improve the slowing economy. U.K. stocks lagged the overall market amid ongoing Brexit uncertainty and the resignation of Prime Minister Theresa May.

Debt Securities

The Fixed Income asset class is composed of U.S. and non-U.S. dollar-based investment grade and non-investment grade securities. Approximately 86% of the asset class is managed internally by CalSTRS staff, while the remaining 14% is managed by external investment managers.

Debt securities within Fixed Income and other asset classes increased $3.0 billion or 7.0% to $47.0 billion at June 30, 2019.

Fixed income assets appreciated reflecting positive returns despite market performance being mixed throughout the fiscal year. In the first quarter of fiscal year 2018–19, U.S. Treasury yields increased, which lowered bond prices. Positive economic growth and an increase in interest rates reduced demand for safe-haven investments. However, in November and December, demand increased as less risky investments became more attractive amid the volatile equity markets. As the Federal Reserve and other central banks left rates unchanged, investor expectations of more accommodative monetary policies contributed to the rise in bond prices during the second half of the fiscal year.

Alternative Investments

Alternative investments include private investments in Private Equity, Real Estate, Inflation Sensitive, SISS, Innovative Strategies and Risk Mitigating Strategies (RMS). Alternative investments increased $10.7 billion or 16.2% to $76.6 billion as of June 30, 2019. The increase was primarily due to an increase in privately held equities attributed to new investments within Private Equity and RMS.

RMS represented 9.4% of total STRP investments as of June 30, 2019. This asset class was introduced as a result of the 2015 Asset Liability Management (ALM) study and seeks to construct a portfolio of strategies that provide protection to the STRP during deep and extended equity market downturns. These strategies include trend following, long-duration U.S. Treasuries, global macro and systematic risk premia. RMS generated positive returns for the fiscal year as trend following, long-duration U.S. Treasuries and global macro all contributed to performance.

The Private Equity asset class is composed of limited partnerships and co-investments focusing on commitments to domestic and international partnerships. Types of investment strategies include leveraged buyouts, venture capital and debt-related investments. Emphasis is placed on returns (net of fees), as well as negotiating and monitoring costs associated with limited partnership investments in the Private Equity asset class.

The Private Equity asset class posted positive returns for the fiscal year ended June 30, 2019. For the industry, performance remained strong but has gradually decreased amid various global market concerns. Fundraising and the number of funds closed have declined compared to previous years as capital raised remains concentrated among a small number of large funds. Unfunded commitments have also remained at record levels. Capital called exceeded distributions during the current fiscal year primarily due to an increase in commitments to new Private Equity investments.

The Real Estate asset class is composed of investments in directly held real estate, such as wholly owned properties and joint venture investments and non-directly held real estate, which consists primarily of commingled funds and co-investments. Emphasis is placed on negotiating, monitoring and managing the costs associated with each real estate investment to more closely align the interest of CalSTRS and the real estate managers.

The Real Estate asset class generated positive returns for the fiscal year. Demand exceeded supply in the commercial property space as new construction activity for all property types declined. Low vacancy rates and rent growth contributed to rising net operating income and higher valuations. In private real estate, the number of funds available in the market increased and fundraising levels remained healthy over the fiscal year.

Asset Liability Management Study

CalSTRS conducts an ALM study every four years, which is a critical process for pension funds that drives the performance of the investment portfolio. Investment returns are expected to be the largest contributor to CalSTRS' ability to pay benefits and reach full funding over the next 30 years and beyond.

CalSTRS commenced a new ALM study in January 2019 with the first of six presentations to the board's Investment Committee. To date, the Investment Committee has been presented with a high-level overview of the project, education on the asset allocation process, a historical perspective on asset allocation at CalSTRS, assumptions of the ALM study and a discussion of CalSTRS' strategic asset classes and their roles. Future presentations will include the following items:

- Key decision factors: metrics that the Investment Committee members can use to weigh the merits of different portfolio options.
- A presentation of preliminary portfolios that span a wide range of risk and return.
- Detailed analysis of portfolios selected by the Investment Committee for a desired level of risk. Analysis will include growth regimes and sensitivity analyses.

Presentations on the ALM study to the Investment Committee are set to conclude in November 2019 with the goal of formally adopting a new long-term asset allocation. If selected and approved, CalSTRS staff will return to the board in February 2020 with an implementation plan for the new asset allocation.

Detailed information regarding the current study and presentations to the board can be found at CalSTRS.com.

Investment Cost Report

The 2017 calendar year investment cost report presented to the board in January 2019 provided a comprehensive view of investment costs across asset classes and investment strategies. The report includes two views of the cost information: internal and external management costs and public and private market costs. Enhancements to the report include a 3-year trend analysis ratio and capture ratios. Total investment cost remained relatively stable over the past three years as basis points (bps) excluding carried interest for calendar years 2015, 2016 and 2017 were 51.8 bps, 50.0 bps and 50.7 bps, respectively.

The 2017 calendar year investment cost report also presented a comparison of CalSTRS' investment costs to 14 global peers whose assets under management ranged from $79 billion to $548 billion. CalSTRS' investment strategies saved approximately $132 million compared to our peers (adjusting for asset mix). These comparisons were compiled by a third-party cost measurement service provider using various customized methodologies. CalSTRS will continue to develop standardized cost reporting practices to enhance the investment management reporting. A copy of the report is available at CalSTRS.com.

Pension Administration

As a provider of pension and other postemployment benefits, CalSTRS must ensure that the contributions we receive and investment income we earn will fund current and future benefits owed to our members and their beneficiaries. Actuarial valuation reports are prepared on an annual basis to help assess the funded status of our programs and are integral to our administration of benefits. As a result of requirements set forth by GASB standards, CalSTRS prepares separate actuarial valuations for financial reporting purposes and funding purposes.

Pension System Financial Reporting Actuarial Valuation

The actuarial valuation for financial reporting focuses on the obligation an employer incurs on behalf of employees through the employment-exchange process. The primary purpose of the valuation for financial reporting is to provide a consistent, standardized methodology that allows comparability of data and increased transparency of the pension liability across plans. To achieve this, GASB requires a different approach for determining the reported NPL as compared to the Unfunded Actuarial Accrued Liability (UAAL).

The UAAL is derived through a separate actuarial valuation used for funding purposes, and is one of many necessary elements of a funding valuation to make a comprehensive assessment of the health of the pension plan. The primary purpose of a funding valuation is to assess both the funding levels and sufficiency of existing assets and future contributions to fund promised benefits. The UAAL is assessed separately for each program administered by CalSTRS based on actuarial assumptions specific to each program. The NPL, which pertains to the STRP as a whole, is a GASB required measure that reflects benefits earned by plan members as of a certain date net of pension plan assets.

CalSTRS does not project a depletion of assets with the provision of additional member, employer and state contributions resulting from the enactment of the CalSTRS Funding Plan in June 2014. CalSTRS discounted all future obligations for the STRP using the long-term assumed rate of return on plan assets gross of administrative costs (currently 7.10%). Based on that assumption, the STRP has an NPL of $90.3 billion as of June 30, 2019.

Pension System Funding Actuarial Valuation

The purpose of the actuarial valuations for funding the programs within the STRP is to guide decisions regarding the long-term viability of the programs. Specifically, the purpose is to analyze the sufficiency of future contributions from members, employers and the state to meet current and future obligations. Historically, CalSTRS' investment income has comprised 61.1% of the total inflows to the STRP, with member, employer and state contributions comprising the remaining 14.5%, 15.5% and 8.9%, respectively. These percentages change over time due to fluctuating net investment income as well as the adjustments to required member, employer and state contribution rates under the CalSTRS Funding Plan.

Separate funding actuarial valuations are performed for the DB Program, DBS Program and CBB Program. An actuarial projection is performed for the Supplemental Benefit Maintenance Account (SBMA), which is a special account in the STRP that provides inflation protection to CalSTRS members whose current purchasing power has fallen below 85% of the purchasing power of their initial benefit. The assets in the SBMA are credited each year at the rate of investment return assumed for the DB Program. Currently, the investment rate of return and discount rate assumption (net of investment and administrative expenses) for funding actuarial valuations is 7.00% (6.50% for CBB Program). The investment return assumption, according to actuarial principles, should be based on an estimated long-term investment yield for the STRP with consideration given to the nature and mix of current and expected plan investments and is the basis for determining the actuarial value of assets.

The investment return assumptions are developed by CalSTRS' investment and actuarial consultants and are adopted by the board. The actuarial assumptions and methods used in the June 30, 2018, actuarial valuation were based on the 2015 actuarial experience study adopted by the board in February 2017.

The most recent actuarial funding valuation indicates that the DB Program had 64.0% of the funds needed to pay the actuarial cost of the benefits accrued as of June 30, 2018, which increased by 1.4% from the June 30, 2017, valuation. This increase is primarily attributable to increased contributions to the DB Program resulting from the enactment of the CalSTRS Funding Plan.

Additionally, the funding actuarial valuation for the DBS Program indicates that as of June 30, 2018, the DBS Program had a funded ratio of 124.6% compared to the June 30, 2017, funded ratio of 122.1%. The funding actuarial valuation for the CBB Program indicates that as of June 30, 2018, the program had a funded ratio of 121.6% compared to the June 30, 2017 funded ratio of 120.0%.

Interest is credited to the nominal DBS and CBB program accounts at the minimum guaranteed annual rate established by the board prior to each plan year, which was 2.89% for the fiscal year ended June 30, 2019. The board may credit additional earnings to members' nominal accounts if actual investment earnings exceed the minimum guaranteed annual rate and meet criteria set out by the board.

The board granted additional earnings credit for the DBS and CBB programs totaling $393.8 million and $10.0 million, respectively. Awarding credits reduced the funded ratios cited above from 124.6% to 120.1% for the DBS Program and from 121.6% to 117.3% for the CBB Program. Refer to Note 1 for additional information.

Other Postemployment Benefits Financial Reporting Actuarial Valuation

The financial reporting actuarial valuation for the MPP Program is performed to determine the net OPEB liability and other required financial disclosures in accordance with GASB standards. The MPP Program pays for Medicare Part A premiums and Medicare Parts A and B late enrollment surcharges for eligible members of the DB Program. The total OPEB liability for the MPP Program was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2018, and rolling forward the total OPEB liability to June 30, 2019. As of June 30, 2019, the net OPEB liability for the MPP Program was $372.4 million.

The MPP Program is funded on a pay-as-you-go basis, with contributions generally being made at the same time, in the same amount, as benefit payments and expenses coming due. Minimal investment assets are maintained in the fund to manage differences between estimated and actual amounts to be paid and are invested in the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer. For financial reporting purposes, the plan is essentially unfunded as the fiduciary net position of the plan will not be sufficient to make the projected future benefit payments. Therefore, in accordance with GASB Statement No. 74, in instances such as this, the rate used to discount the total OPEB liability represents the yield or index rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The discount rate as of June 30, 2019, for the MPP Program OPEB liability is 3.50% as measured by the Bond Buyer's 20-Bond GO Index as of June 30, 2019.

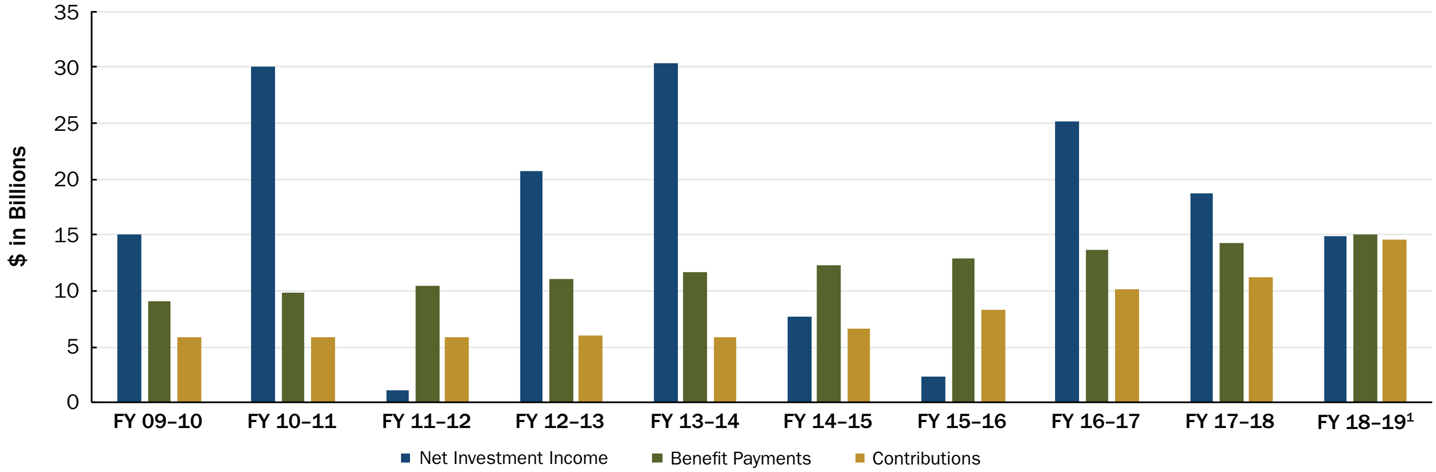
OPEB Funding Actuarial Valuation

The MPP Program is funded on a pay-as-you-go basis from redirected contributions from the DB Program. The MPP Program funding actuarial valuation measures the value of DB Program employer contributions that will be available to fund the MPP Program benefits in future periods. This valuation differs from the actuarial valuation for financial reporting for the MPP Program, which focuses on the obligation an employer incurs on behalf of employees through the employment-exchange process.

The MPP Program funding actuarial valuation as of June 30, 2018, found that the MPP Program assets, along with MPP allocated funding from future employer contributions, are sufficient to finance the future MPP Program obligations of $285.8 million for both Part A premiums and Parts A and B surcharges. The valuation considered the most recent actuarial experience study and was based on the assumption that, on average, Medicare Part A and B premiums and surcharges will continue to annually increase at a rate of 3.7% and 4.1%, respectively.

STRP Investment Income, Benefit Payments and Contributions

The following chart is a 10-year comparison of investment income, contributions and benefit payments.

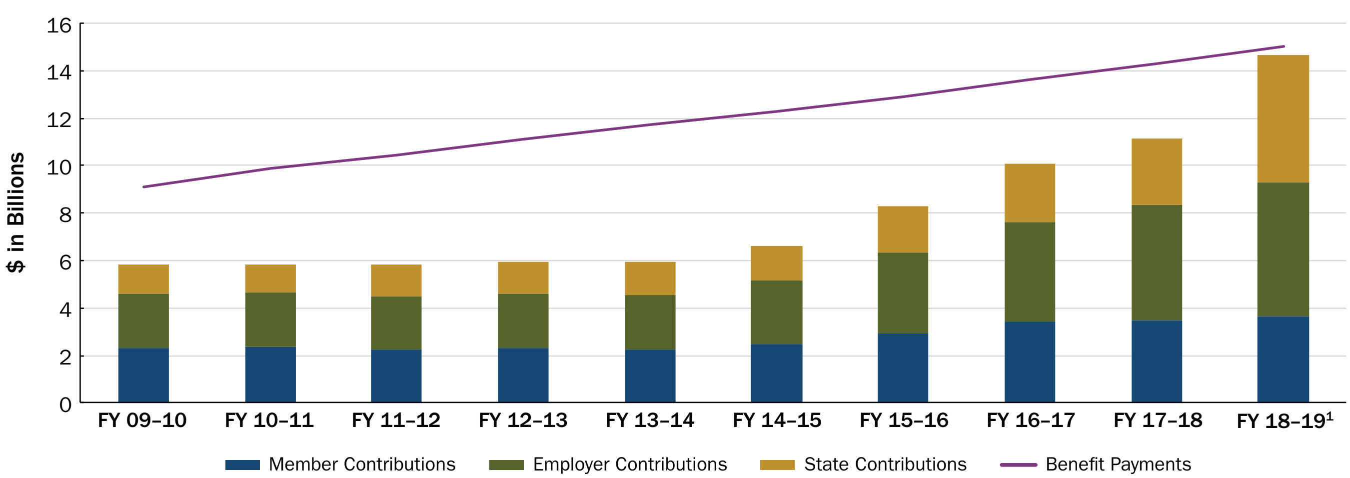


1 State contributions include approximately $2.2 billion of one-time, supplemental contributions on behalf of employers resulting from SB 90.

STRP Contributions and Benefit Payments

The chart below shows that prior to the enactment of the CalSTRS Funding Plan in June 2014, there had been a growing gap between contributions and benefit payments. During fiscal year 2018–19, the gap narrowed by 82.6% primarily due to the supplemental state contributions resulting from SB 90.

Contribution rates will continue to increase according to the funding plan, which has improved the long-term sustainability of the DB Program as it continues making progress toward near full funding by the year 2046. Despite this, investment volatility, longevity and membership levels pose potential risks to full funding. The experience beyond 2046 may differ.



1 State contributions include approximately $2.2 billion of one-time, supplemental contributions on behalf of employers resulting from SB 90.

Requests for Information

This financial report is designed to provide a general overview of CalSTRS’ finances. For questions concerning the information in this report or for additional information, contact CalSTRS, P.O. Box 15275, Sacramento, CA 95851–0275.

Respectfully submitted,

Julie Underwood
Chief Financial Officer

Statement of Fiduciary Net Position

(Dollars in Thousands)

As of June 30, 2019

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Total
Assets						
Investments:						
Debt Securities	$47,044,526	$473,493	$19,574	$300	$1,605	$47,539,498
Equity Securities	114,667,170	600,151	31,985	–	–	115,299,306
Alternative Investments	76,575,615	–	–	–	–	76,575,615
Derivative Instruments	188,225	–	–	–	–	188,225
Securities Lending Collateral	22,795,316	–	–	–	–	22,795,316
Total Investment Assets	**261,270,852**	**1,073,644**	**51,559**	**300**	**1,605**	**262,397,960**
Cash	**321,051**	**–**	**–**	**1**	**1**	**321,053**
Receivables:						
Investments Sold	4,155,791	–	–	–	–	4,155,791
Interest and Dividends	608,148	–	–	7	10	608,165
Member, Employer and State	3,011,460	13,624	569	–	–	3,025,653
Loans Receivable	2,778,564	4,539	218	–	–	2,783,321
Other	40,330	–	–	1	159	40,490
Total Receivables	**10,594,293**	**18,163**	**787**	**8**	**169**	**10,613,420**
Other Assets:						
Capital Assets, Net of Accumulated Depreciation	317,147	–	–	–	–	317,147
Other	271	–	–	–	–	271
Total Other Assets	**317,418**	–	–	**–**	**–**	**317,418**
Total Assets	**272,503,614**	**1,091,807**	**52,346**	**309**	**1,775**	**273,649,851**
Deferred Outflows of Resources	**68,561**	**–**	**–**	**116**	**409**	**69,086**
Total Assets and Deferred Outflows of Resources	**272,572,175**	**1,091,807**	**52,346**	**425**	**2,184**	**273,718,937**
Liabilities						
Investments:						
Derivative Instruments	123,852	–	–	–	–	123,852
Total Investment Liabilities	**123,852**	**–**	**–**	**–**	**–**	**123,852**
Investments Purchased Payable	5,194,433	–	–	–	–	5,194,433
Loans Payable	2,787,387	–	–	–	–	2,787,387
Benefits in Process of Payment	1,513,766	–	–	–	–	1,513,766
Net Pension and OPEB Liabilities	816,327	–	–	2,863	5,023	824,213
Securities Lending Obligation	22,786,907	–	–	–	–	22,786,907
Other	369,832	4,144	115	65	854	375,010
Total Liabilities	**33,592,504**	**4,144**	**115**	**2,928**	**5,877**	**33,605,568**
Deferred Inflows of Resources	**117,783**	**–**	**–**	**481**	**982**	**119,246**
Total Liabilities and Deferred Inflows of Resources	**33,710,287**	**4,144**	**115**	**3,409**	**6,859**	**33,724,814**
NET POSITION RESTRICTED FOR PENSIONS/OPEB	**$238,861,888**	**$1,087,663**	**$52,231**	**($2,984)**	**($4,675)**	**$239,994,123**

The accompanying notes are an integral part of these statements.

Statement of Changes in Fiduciary Net Position

For the Fiscal Year Ended June 30, 2019

(Dollars in Thousands)

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Total
Additions						
Contributions:						
Member	$3,647,999	$174,230	$9,307	$–	$–	$3,831,536
Employer	5,644,472	982	110	27,977	–	5,673,541
State of California	5,334,860	–	–	–	–	5,334,860
Total Contributions	**14,627,331**	**175,212**	**9,417**	**27,977**	**–**	**14,839,937**
Investment Income:						
Net Appreciation/(Depreciation) in Fair Value of Investments	9,744,897	28,933	1,407	2	5	9,775,244
Interest, Dividends and Other	5,495,693	22,534	1,025	27	34	5,519,313
Securities Lending Income	567,667	–	–	–	–	567,667
Investment Expenses:						
Cost of Lending Securities	(526,935)	–	–	–	–	(526,935)
Other Investment Expenses	(383,489)	–	–	–	–	(383,489)
Net Investment Income	**14,897,833**	**51,467**	**2,432**	**29**	**39**	**14,951,800**
Other Income	**127,603**	**273**	**10**	**–**	**1,743**	**129,629**
Total Additions	**29,652,767**	**226,952**	**11,859**	**28,006**	**1,782**	**29,921,366**
Deductions						
Retirement, Disability, Death and Survivor Benefits	15,001,620	–	–	–	–	15,001,620
Premiums Paid	–	–	–	27,546	–	27,546
Distributions and Withdrawals	–	67,772	1,659	–	–	69,431
Purchasing Power Benefits	194,467	–	–	–	–	194,467
Refunds of Member Contributions	99,893	5,754	141	–	–	105,788
Administrative Expenses	253,953	2,739	122	1,901	1,622	260,337
Borrowing Costs	105,306	–	–	–	–	105,306
Other Expenses	4,275	–	–	1	3	4,279
Total Deductions	**15,659,514**	**76,265**	**1,922**	**29,448**	**1,625**	**15,768,774**
Increase (Decrease) in Net Position	**13,993,253**	**150,687**	**9,937**	**(1,442)**	**157**	**14,152,592**
Net Position Restricted for Pensions/OPEB						
Beginning of the Year	224,868,635	936,976	42,294	(1,542)	(4,832)	225,841,531
END OF THE YEAR	**$238,861,888**	**$1,087,663**	**$52,231**	**($2,984)**	**($4,675)**	**$239,994,123**

The accompanying notes are an integral part of these statements.

1. Significant Provisions of CalSTRS Plans and Programs

The California State Teachers' Retirement System (CalSTRS, our or we) administers a hybrid retirement system consisting of a defined benefit plan, two defined contribution plans, a postemployment benefit plan and a fund used to account for ancillary activities associated with various deferred compensation plans and programs:

- State Teachers' Retirement Plan (STRP)
- CalSTRS Pension2 403(b) Plan
- CalSTRS Pension2 457(b) Plan
- Medicare Premium Payment (MPP) Program
- Teachers' Deferred Compensation Fund (TDCF)

CalSTRS provides pension benefits, including disability and survivor benefits, to California full-time and part-time public school teachers from pre-kindergarten through community college and certain other employees of the public school system. The Teachers' Retirement Law (California Education Code Section 22000 et seq.), as enacted and amended by the California Legislature and the Governor, established these plans and CalSTRS as the administrator. The terms of the plans may be amended through legislation.

CalSTRS is a component unit of the State of California (the state). These financial statements include only the accounts of CalSTRS. The state includes CalSTRS' various plans and funds as fiduciary funds in its financial statements.

The Teachers' Retirement Board (the board) has exclusive control over the administration of the retirement system plans and the investment of funds, makes rules, sets policies and has the authority to hear and determine all facts pertaining to application for benefits under the retirement system. It is composed of 12 members:

- Five members appointed by the Governor and confirmed by the Senate for a term of four years: one school board representative, one retired CalSTRS member and three public representatives.
- Four ex-officio members who serve for the duration of their term in office: the State Superintendent of Public Instruction, the California State Treasurer, the California State Controller and the California Director of Finance (who is appointed by the Governor and confirmed by the Senate).
- Three member-elected positions representing current educators who serve for a term of four years.

Section 22209 of the California Education Code gives the board authority to appoint a Chief Executive Officer (CEO), while Section 20520 of the California Education Code gives authority to delegate any acts within the board's power to the CEO. Pursuant to Section 22301 of the California Education Code, the CEO may delegate any act or duty to subordinates unless required by the board to act personally.

State Teachers' Retirement Plan

The STRP is a multiple-employer, cost-sharing defined benefit plan composed of four programs: Defined Benefit (DB) Program, Defined Benefit Supplement (DBS) Program, Cash Balance Benefit (CBB) Program and Replacement Benefits (RB) Program. The STRP holds assets for the exclusive purpose of providing benefits to members and their beneficiaries of these programs. CalSTRS also uses plan assets to defray reasonable expenses of administering the STRP. Although CalSTRS is the administrator of the STRP, the state is the sponsor and obligor of the trust. In addition, the state is both an employer and nonemployer contributing entity to the STRP.

STRP Defined Benefit Program

As of June 30, 2019, there were 1,778 contributing employers (school districts, community college districts, county offices of education, charter schools and regional occupational programs). Membership is mandatory for all employees meeting certain statutory requirements and optional for all other employees performing creditable service activities. The DB Program provides retirement benefits based on members' final compensation, age and years of service credit. In addition, the program provides benefits to members upon disability and to their survivors or beneficiaries upon the death of eligible members.

As of June 30, 2019, membership consisted of:

Active Members	
Vested	316,734
Nonvested	134,609
Inactive Members	
Vested	41,247
Nonvested	163,460
Retirees and Beneficiaries	308,522
Total Members, Retirees and Beneficiaries	**964,572**

The DB Program has two benefit formulas:

- CalSTRS 2% at 60: Members first hired on or before December 31, 2012, to perform service that could be creditable to CalSTRS.
- CalSTRS 2% at 62: Members first hired on or after January 1, 2013, to perform service that could be creditable to CalSTRS.

There are several differences between the two benefit formulas, which are noted below.

CalSTRS 2% at 60

- CalSTRS 2% at 60 members are eligible for normal retirement at age 60, with a minimum of five years of credited service. The normal retirement benefit is equal to a factor of 2.0% of final compensation multiplied by the number of years of credited service. Early retirement options are available at age 55 with five years of credited service or as early as age 50 with 30 years of credited service. The age factor for retirements after age 60 increases with each quarter year of age to a maximum of 2.4% at age 63 or older. Members who have 30 years or more of credited service receive an additional increase of up to 0.2% to the age factor, up to the 2.4% maximum.
- CalSTRS calculates retirement benefits based on one-year final compensation for members with 25 or more years of credited service, or for classroom teachers with fewer than 25 years of credited service if the employer entered into, extended, renewed or amended an agreement prior to January 1, 2014, to elect to pay the additional benefit cost for all of its classroom teachers. One-year final compensation is a member's highest average annual compensation earnable for 12 consecutive months based on the creditable compensation that the member could earn in a school year while employed on a full-time basis. For most members with fewer than 25 years of credited service, final compensation is the highest average annual compensation earnable for any

36 consecutive months based on the creditable compensation that the member could earn in a school year while employed on a full-time basis.

- For fiscal year 2018–19, the limit on compensation that can be counted toward a member's benefit is $275,000, if hired on or after July 1, 1996, pursuant to Internal Revenue Code (IRC) section 401(a)(17). No contributions are paid by the member, employer or the state on compensation in excess of the limit, and any compensation beyond the limit is excluded from determining final compensation.
- Final compensation is based on salary and certain other types of remuneration. Other types of compensation, such as allowances, cash in lieu of fringe benefits and compensation for unused accumulated leave are not creditable compensation and do not count toward any CalSTRS benefit program. Limited-period compensation and compensation determined to have been paid to enhance a benefit are creditable to the DBS Program.
- Members who accumulated at least 30 years of credited service by December 31, 2010, receive a longevity bonus of $200, $300 or $400 per month for 30, 31 or 32 or more years of credited service, respectively.

<u>CalSTRS 2% at 62</u>

- CalSTRS 2% at 62 members are eligible for normal retirement at age 62, with a minimum of five years of credited service. The normal retirement benefit is equal to 2.0% of final compensation multiplied by the number of years of credited service. An early retirement option is available at age 55. The age factor for retirement after age 62 increases with each quarter year of age to 2.4% at age 65 or older.
- All CalSTRS 2% at 62 members have their final compensation based on their highest average annual compensation earnable for 36 consecutive months based on the creditable compensation that the member could earn in a school year while employed on a full-time basis.
- The limit on creditable compensation that can be counted toward a member's benefit is adjusted each fiscal year based on changes in the Consumer Price Index. In fiscal year 2018–19, the limit was $146,230.
- Compensation paid in cash by an employer, pursuant to a publicly available written contractual agreement, for each pay period in which creditable service is performed is creditable to CalSTRS benefit programs for CalSTRS 2% at 62 members. Other compensation, such as allowances, cash in lieu of fringe benefits, limited-period compensation and compensation determined to have been paid to enhance a benefit, is not creditable to any CalSTRS benefit program.

<u>The following provisions apply to both CalSTRS 2% at 60 and 2% at 62 members:</u>

- After earning five years of credited service, members become vested to receive service retirement benefits.
- After five years of credited service, a member (younger than age 60 if under disability Coverage A or no age limit if under disability Coverage B) is eligible for disability benefits of 50% of final compensation plus 10% of final compensation for each eligible child, up to a maximum addition of 40%. The member must have a disability that can be expected to last continuously for at least 12 months to qualify for a benefit.
- Contributions on compensation for service in excess of one year due to overtime or working additional assignments are credited to the DBS Program at the lowest annual pay rates up to the creditable compensation limit.
- A family benefit is available if an active member dies and has at least one year of credited service.

- Members' accumulated contributions are refundable with interest upon separation from CalSTRS. The board determines the credited interest rate for each fiscal year. For the fiscal year ended June 30, 2019, the rate of interest credited to members' accounts was 1.54%.
- There is a postretirement annual benefit increase of 2% per year on a simple (rather than compound) basis. This benefit is vested for members who retired in 2014 or pay the higher contribution rates resulting from the CalSTRS Funding Plan, which was passed into law in June 2014 with the enactment of AB 1469.
- The member's benefit is reduced dollar for dollar, regardless of age, for the first 180 calendar days after retirement if the member performs activities in the public schools that could be creditable to CalSTRS, unless the governing body of the school district takes specified actions with respect to a member who is above normal retirement age.
- There is an annual limitation on earnings from activities that could be creditable to CalSTRS for retired members. The member's benefit is reduced dollar for dollar by the amount of any earnings in excess of $45,022 in 2018–19.
- Any enhancements to the CalSTRS DB Program made on or after January 1, 2013, apply only to service performed on or after the effective date of the enhancement.
- A CalSTRS member who is convicted of committing a felony in the course of his or her official duties, including specifically a felony involving a child with whom the member had contact as part of the member's official duties, forfeits a right to any benefits accrued commencing with the commission of the felony.

<u>Purchasing Power Protection</u>

Purchasing power protection is provided to members of the DB Program through annual distributions (in quarterly payments) to retired and disabled members and their beneficiaries to restore purchasing power up to 85% of the initial monthly benefit. Funding for purchasing power protection is from School Lands revenue generated from the use of school lands (land granted to California by the Federal government to support schools) and in lieu lands (properties purchased with the proceeds from the sale of school lands) and from the Supplemental Benefit Maintenance Account (SBMA). Payments are made only to the extent funds are available in the SBMA and are not a vested benefit.

Public Resources Code section 6217.5 allocates School Lands revenue to the system for purchasing power protection. In addition, a continuous appropriation from the state's General Fund is made to the SBMA in an amount equal to 2.5% of the total creditable compensation of the fiscal year ending in the immediately preceding calendar year, reduced by $72.0 million, pursuant to Education Code section 22954. For the fiscal year ended June 30, 2019, School Lands revenue and the amount contributed to the SBMA were $6.5 million and $730.4 million, respectively.

<u>Benefit Enhancements</u>

A school employer may provide, at the employer's cost, an additional two years of service credit to increase the amount of the member's monthly retirement benefit. This may be paid for by the employer in installments not to exceed eight years. If the employer chooses to pay in installments, the employer is charged interest on the unpaid balance at the actuarially assumed rate of return on investments for the DB Program (currently 7.00%). As of June 30, 2019, the outstanding balance of receivables for benefit enhancements was $11.5 million.

Contributions

The parameters for member, employer and state contribution rates are set by the California Legislature and the Governor and detailed in the Teachers' Retirement Law. Current contribution rates were established by the CalSTRS Funding Plan.

In June 2019, California Senate Bill 90 (SB 90) was signed into law and appropriated approximately $2.2 billion in fiscal year 2018–19 from the state's General Fund as contributions to CalSTRS on behalf of employers. The bill requires portions of the contribution to supplant the amounts remitted by employers such that the amounts remitted will be 1.03 and 0.70 percentage points less than the statutorily required amounts due for fiscal years 2019–20 and 2020–21, respectively. The remaining portion of the contribution is allocated to reduce the employers' share of the unfunded actuarial obligation of the DB Program.

The employer contribution rates set in statute by the CalSTRS Funding Plan were not changed by the passage of SB 90. A summary of statutory contribution rates and other sources of contributions to the DB Program pursuant to the CalSTRS Funding Plan are discussed below.

Members

Member contribution rates effective for fiscal year 2018–19 and fiscal year 2019–20 are summarized in the table below:

Effective Date	2% at 60 Members[1]	2% at 62 Members
July 1, 2018	10.250%	10.205%
July 1, 2019	10.250%	10.205%[2]

1 The contribution rate for 2% at 60 members is set in statute at 10.250%.

2 According to current law, the contribution rate for CalSTRS 2% at 62 members is adjusted if the normal cost increases or decreases by more than 1% since the last time the member contribution rate was set. Based on the June 30, 2018, valuation adopted by the board in May 2019, the increase in normal cost was less than 1%. Therefore, contribution rates for CalSTRS 2% at 62 members will not change effective July 1, 2019.

Employers

CalSTRS employer contribution rate increases effective for fiscal year 2018–19 through fiscal year 2045–46 are summarized in the table below:

Effective Date	Pre-AB 1469 Rate	Increase	Total
July 1, 2018	8.250%	8.030%	16.280%
July 1, 2019	8.250%	9.880%	18.130%[1]
July 1, 2020	8.250%	10.850%	19.100%[2]
July 1, 2021–June 30, 2046	8.250%	[3]	[3]
July 1, 2046	8.250%	Increase from prior rate ends in 2046–47	

1 This rate does not reflect the reduction of employer contributions to be paid by the employer for fiscal year 2019–20 by 1.03 percentage points pursuant to SB 90.

2 This rate does not reflect the reduction of employer contributions to be paid by the employer for fiscal year 2020–21 by 0.70 percentage points pursuant to SB 90.

3 The CalSTRS Funding Plan authorizes the board to adjust the employer contribution rate up or down 1% each year, but no higher than 20.25% total and no lower than 8.25%.

Notes to the Basic Financial Statements

State

As a result of the CalSTRS Funding Plan, the additional state appropriation required to fully fund the benefits in effect as of 1990 by 2046 is specified in subdivision (b) of Education Code section 22955.1. The increased contributions end as of fiscal year 2045–46. The CalSTRS state contribution rates effective for fiscal year 2018–19 and beyond are summarized in the table below.

The state's base contribution to the DB Program is calculated based on creditable compensation from two fiscal years prior. The state rate will increase to 5.811% on July 1, 2019, to continue paying down the unfunded liabilities associated with the benefits structure that was in place in 1990 prior to certain enhancements in benefits and reductions in contributions. Additionally, the enactment of SB 90 will result in future supplemental contributions to be made by the state to pay down its portion of the unfunded actuarial obligation of the DB Program in fiscal years 2019–20 through 2022–23.

Effective Date	Base Rate	AB 1469 Increase For 1990 Benefit Structure	SBMA Funding[1]	Total
July 1, 2018	2.017%	5.311%	2.500%	9.828%
July 1, 2019	2.017%	5.811%[2]	2.500%	10.328%[3]
July 1, 2020–June 30, 2046	2.017%	[4]	2.500%	[4]
July 1, 2046 and thereafter	2.017%	[5]	2.500%	4.517%[5]

1 This rate does not include the $72 million reduction in accordance with Education Code section 22954. Refer to Note 1, Purchasing Power Protection section, for further discussion.

2 In May 2019, the board exercised its limited authority to increase the state contribution rate by 0.5% of the creditable compensation effective July 1, 2019.

3 This rate does not include the $2.2 billion supplemental state contribution on behalf of employers pursuant to SB 90.

4 The board has limited authority to adjust state contribution rates annually through June 2046 in order to eliminate the remaining unfunded actuarial obligation associated with the 1990 benefit structure. The board cannot increase the rate by more than 0.50% in a fiscal year, and if there is no unfunded actuarial obligation, the contribution rate imposed to pay for the 1990 benefit structure would be reduced to 0%.

5 From July 1, 2046, and thereafter, the rates in effect prior to July 1, 2014, are reinstated, if necessary, to address any remaining 1990 unfunded actuarial obligation.

STRP Defined Benefit Supplement Program

The DBS Program, established pursuant to Chapter 74, Statutes of 2000 (AB 1509), is a cash balance defined benefit pension program that operates within the STRP. All members of the DB Program who make contributions to CalSTRS on creditable compensation earned on or after January 1, 2001, have an account under the DBS Program and are eligible to receive a DBS benefit based on the amount of funds contributed to the DBS account. Membership in the DBS Program is mandatory.

Interest is credited to the nominal DBS Program accounts at the minimum guaranteed annual rate established by the board prior to each plan year, which was 2.89% for the fiscal year ended June 30, 2019. The board may credit additional earnings to members' nominal accounts if actual investment earnings exceed the minimum guaranteed annual rate and meet criteria set out in the board policy. In May 2019, the board elected to award Additional Earnings Credits (AEC) of 4.36% of DBS members' June 30, 2018, nominal account balances. The total value of the AEC awarded was approximately $393.8 million.

<u>Contributions</u>

For creditable service performed by DB members in excess of one year of service credit within one fiscal year, member contributions of either 8% (CalSTRS 2% at 60 members) or 9% (CalSTRS 2% at 62 members) and employer contributions of 8% are credited to the members' nominal DBS Program account (up to any applicable compensation cap). For CalSTRS 2% at 60 members only, member contributions of 8% and employer contributions of 8% for compensation as a result of retirement incentives or limited term enhancements are also credited to DBS Program accounts.

STRP Cash Balance Benefit Program

The CBB Program, established under Chapter 592, Statutes of 1995 (AB 1298), and subsequently merged into the STRP by Chapter 1048, Statutes of 1998 (SB 2085), is a cash balance defined benefit pension program. The CBB Program is designed for employees of California's public schools who are hired to perform creditable service for less than 50% of the full-time equivalent for a position in a school district or county office of education or on a part-time or temporary basis for not more than 67% of a full-time position in a community college district. Participation in the CBB Program is optional; a school district, community college district, county office of education, charter school or regional occupational program may elect to offer the CBB Program. Under such election, the program will automatically cover each eligible employee, unless the employee elects to participate in the DB Program or an alternative plan provided by the employer within 60 days of hire or the election period determined by the employer. As of June 30, 2019, there were 29 contributing school districts and 40,652 contributing participants.

Interest is credited to nominal CBB Program accounts at the minimum guaranteed annual rate established by the board prior to each plan year, which was 2.89% for the fiscal year ended June 30, 2019. The board may credit additional earnings to members' nominal accounts if actual investment earnings exceed the minimum guaranteed annual rate and meet criteria pursuant to the board policy. In May 2019, the board elected to award an AEC of 3.86% of CBB members' June 30, 2018, nominal account balances. The total value of the AEC awarded was approximately $10.0 million.

<u>Contributions</u>

A summary of statutory contribution rates for the CBB Program is as follows:

Participants – 4.0% of applicable participant salaries

Employers – 4.0% of applicable participant salaries

Employers may enter into a collective bargaining agreement to pay different rates if certain minimum conditions are met.

STRP Replacement Benefits Program

The STRP RB Program is an excess benefits arrangement for DB Program members that is administered as a qualified excess benefit arrangement through a separate pension program apart from the other three STRP programs. It is established in accordance with IRC section 415(m). IRC section 415(b) imposes a dollar limit on the annual retirement benefits an individual may receive from a qualified defined benefit pension plan. The limit for individual CalSTRS 2% at 60 members varies based on the age at which they retire. For calendar year 2019, the federal dollar limit applicable to a CalSTRS member retiring at exactly age 65 and receiving only a single life benefit from the DB Program is $191,290. The federal dollar limit for other ages at retirement and other benefit types will differ.

Contributions that would otherwise be credited to the DB Program each month are instead credited to the RB Program to fund monthly program costs. Monthly employer contributions are received and paid to members in amounts equivalent to the benefits not paid as a result of IRC section 415(b), subject to withholding for any applicable income or employment taxes. As of June 30, 2019, there were 349 retirees, beneficiaries and non-member spouses receiving benefits from the RB Program.

CalSTRS Pension2 Program

Pursuant to Chapter 291, Statutes of 1994 (AB 3064), the CalSTRS Pension2 Program (Pension2) was established to include two tax-deferred defined contribution plans pursuant to IRC sections 403(b) and 457(b). Voya Institutional Plan Services (Voya) and the Teachers Insurance and Annuity Association (TIAA) are responsible for administrative services, including custody and record-keeping, while CalSTRS determines the investment options that are offered to plan participants.

The 403(b) plan and the 457(b) plan had 17,205 and 1,026 plan participants and 987 and 92 participating employers, respectively, with account balances as of June 30, 2019. Pension2 is available to all full-time California pre-kindergarten through community college district and county office of education employees. Part-time employees' eligibility is determined by their employers. Enrollment in the 457(b) plan is by employer adoption only. Employee contributions to the plans are voluntary and require no minimum limitations; however, the IRC imposes an annual maximum amount that can be contributed to the plans. Pension2 is not directly affected by the California Public Employees' Pension Reform Act of 2013 (PEPRA). However, according to PEPRA, employers may provide a contribution to a defined contribution plan, such as Pension2, for 2% at 62 member compensation in excess of the compensation limit.

The Pension2 investments are composed of a selection of mutual funds with underlying investments that include stocks, bonds, real estate investments and guaranteed annuity contracts, which are participant directed. The Pension2 benefits are the accumulation of contributions and investment earnings credited to the members' accounts.

Medicare Premium Payment Program

The MPP Program is a cost-sharing multiple-employer other postemployment benefit (OPEB) plan established pursuant to Chapter 1032, Statutes of 2000 (SB 1435). CalSTRS administers the MPP Program through the Teachers' Health Benefit Fund. The MPP Program pays Medicare Part A premiums and Medicare Parts A and B late enrollment surcharges for eligible members of the DB Program who were retired or began receiving a disability allowance prior to July 1, 2012, and were not eligible for premium-free Medicare Part A. Members who retire on or after July 1, 2012, are not eligible for coverage under the MPP Program.

As of June 30, 2019, 5,744 retirees participated in the MPP Program. The number of retired members who will participate in the program in the future is unknown as eligibility cannot be predetermined.

The MPP Program is funded on a pay-as-you-go basis from a portion of monthly employer contributions. In accordance with California Education Code section 25930, contributions that would otherwise be credited to the DB Program each month are instead credited to the MPP Program to fund monthly program and administrative costs. Total redirections to the MPP Program are monitored to ensure that total incurred costs do not exceed the amount initially identified as the cost of the program.

Teachers' Deferred Compensation Fund

The TDCF was established pursuant to Chapter 655, Statutes of 2006 (SB 1466), and is used to account for ancillary activities associated with various deferred compensation plans and programs offered by CalSTRS to enhance the tax-deferred financial options for the members and their beneficiaries.

The TDCF is funded by the fee revenues received by CalSTRS from deferred compensation plans, a vendor registration program and an employer compliance assistance program.

2. Summary of Significant Accounting Policies

Basis of Accounting

CalSTRS maintains our accounting records using the accrual basis of accounting. We recognize member, employer and state contributions in the period in which the contributions are required by statute. Also, CalSTRS recognizes benefits when due and payable in accordance with our retirement and benefits programs. Purchases and sales of investments are recorded on the trade date. Interest income is recorded on an accrual basis. Dividends are recorded on the ex-dividend date.

Use of Estimates in the Preparation of Financial Statements

CalSTRS' financial statements are prepared in conformity with accounting principles generally accepted in the U.S. as promulgated by the Governmental Accounting Standards Board (GASB). Management makes estimates and assumptions that affect certain amounts and disclosures in the accompanying financial statements, the most significant of which include estimates related to contribution revenues, total pension liability, total OPEB liability and the fair value of certain alternative investments. Refer to Notes 3, 4 and 6, respectively, for further discussion of these estimates. Actual results could differ from those estimates.

Cash

Cash held by CalSTRS includes foreign currency, deposits with the California State Treasury and master custodian and cash held at commercial banks for operational purposes. CalSTRS maintains a targeted balance within the Surplus Money Investment Fund (SMIF) held at the California State Treasury to meet daily obligations. Cash balances in excess of needs are swept nightly into SMIF and invested in short-term assets by the State Treasurer's Office (STO). In addition to the SMIF account, CalSTRS also operates checking accounts and zero balance accounts with various banking institutions authorized to provide services to state agencies. While zero balance accounts do not require collateralization, other non-zero balance accounts have a collateralization requirement set forth by the California Government Code 16521 and are monitored by the STO.

Investments

Under the California Constitution, article 16, section 17, the board has the sole and exclusive fiduciary responsibility over the assets of the retirement system and to administer the system in a manner that will assure prompt delivery of benefits and related services to the members and their beneficiaries. As an administrator of public pension funds, CalSTRS is not subject to the Employee Retirement Income Security Act (ERISA), which governs corporate pension plans. However, the CalSTRS investment decision-making criteria are based on the "prudent investor" standard, for which the ERISA standards serve as a basis.

Additionally, the California Constitution, article 16, section 17, and the California Education Code, part 13, chapter 4, section 22250 require the diversification of investments so as to minimize the risk of loss and maximize the rate of return, unless, under the circumstances, it is clearly not prudent to do so. The CalSTRS Investment Policy and Management Plan is established, and may be amended, by a majority vote of the board. It allows for investments consisting of debt and equity securities, alternative investments and derivative instruments. See Note 5 for disclosures on deposits and investments.

In the Statement of Changes in Fiduciary Net Position, CalSTRS presents the net appreciation (depreciation) in the fair value of its investments, which consists of the realized gains and losses on securities sold and the unrealized appreciation (depreciation) on those investments still held in the portfolio.

The value and performance of CalSTRS' investments are subject to various risks, including credit risk, interest rate risk, concentration of credit risk, custodial credit risk and foreign currency risk, which are in turn affected by economic and market factors impacting certain industries, sectors or geographies. See Note 5 for disclosures related to these risks.

Most investments are reported at fair value. The diversity of the investment types held by CalSTRS requires a wide range of valuation techniques to determine fair value. See Note 6 for disclosures related to fair value.

Investment Risk Management

CalSTRS enters into currency forwards and option contracts to protect the value of non-U.S. investments against foreign currency fluctuation. CalSTRS could be exposed to risk if the counterparties to the forward and option contracts are unable to meet the terms of their contracts. CalSTRS also enters into futures contracts, swaps and options to hedge risks in the equity and fixed income markets. CalSTRS seeks to minimize risk from counterparties by establishing minimum credit quality standards and through the use of master trading agreements, which require a daily exchange of collateral that is marked to market as required to help offset counterparty risk. See Note 5 for disclosures related to these risks.

Capital Assets

Capital assets held by CalSTRS, which consist of land, building, equipment and intangible assets, are recorded at cost and reflected on the Statement of Fiduciary Net Position, net of accumulated depreciation/amortization. The capitalization threshold is $1.0 million. Depreciation/amortization is charged to operations using the straight-line method on the estimated useful life of the related asset and is included in administrative expenses on the Statement of Changes in Fiduciary Net Position. Estimated useful lives range from a minimum of five years for equipment and amortizable intangible assets to 40 years for buildings. As of June 30, 2019, accumulated depreciation/amortization was $90.0 million, and depreciation/amortization expense was $5.3 million for the fiscal year ended June 30, 2019.

CalSTRS reviews our capital assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. As of June 30, 2019, there has been no impairment of capital assets.

Administrative Expenses

The cost of administering the CalSTRS system is financed through contributions and investment earnings. The Schedule of Administrative Expenses in the Other Supplementary Information section of this report provides a listing of administrative expenses by type.

Income Taxes

The STRP and MPP Program are organized as tax-exempt retirement plans under the IRC. Pension2, which includes IRC 403(b) and 457(b) plans, is organized as a tax-deferred supplemental program under the IRC. The TDCF is also organized as a tax-deferred supplemental program under the IRC. CalSTRS management believes that it has operated these funds and programs within the constraints imposed by federal tax law.

Investment Expenses

Expenses directly associated with investment management, operations and servicing, as well as foreign taxes, have been included as Other Investment Expenses in the Statement of Changes in Fiduciary Net Position. The Schedule of Investment Expenses in the Other Supplementary Information section of this report provides a listing of investment expenses by type. Broker commissions for securities trades and private asset fees are capitalized, with the exception of certain equity and derivative securities for which they are expensed.

Securities Lending Transactions

CalSTRS reports securities lent, reinvested cash collateral and the related liabilities resulting from securities lending transactions on the Statement of Fiduciary Net Position. CalSTRS also reports the income earned and costs of lending securities as investment income and expenses on the Statement of Changes in Fiduciary Net Position.

Reserves

CalSTRS maintains accounts within the net position restricted for pensions and OPEB as reserve accounts for various operating purposes. These include four reserve accounts for the DBS Program, four reserve accounts for the CBB Program, one reserve account for the SBMA and other reserves not legally required for disclosure.

Defined Benefit Supplement Contribution, Accumulated Interest and Annuitant Reserves

Section 25002 of the Education Code formed the DBS Annuitant Reserve to establish and maintain a segregated account for expenditures on annuities payable under the DBS Program. The DBS Program is a cash balance defined benefit pension program that provides a supplemental benefit in addition to the regular DB Program benefit. During a member's career, credits and interest accumulate in the DBS Program's Contribution and Accumulated Interest reserves, respectively. When a member retires, the reserve funds are either paid out as a lump sum or transferred to the DBS Annuitant Reserve if the participant elects to receive their benefit as an annuity.

Defined Benefit Supplement Gain and Loss Reserve

Section 25001 of the Education Code establishes the DBS Gain and Loss Reserve, which represents a segregated account that may be used to: 1) credit interest to member DBS accounts at the minimum interest rate for plan years in which the obligation cannot be met from the plan's investment earnings, 2) make additional earnings credits to DBS accounts upon a decision by the board to allocate excess investment earnings, or 3) provide additions to the DBS Annuitant Reserve for annuities payable under the DBS Program.

Cash Balance Benefit Active Contribution, Accumulated Interest and Annuitant Reserves

Section 26204 of the Education Code establishes the CBB Annuitant Reserve for the payment of monthly annuities with respect to the CBB Program. The CBB Program is an optional cash balance pension plan for part-time certificated educators available to CalSTRS employers as an alternative to the DB Program, Social Security and other retirement plans. During a participant's career, credits and interest accumulate in the Cash Balance Benefit Active Contribution and Accumulated Interest reserves. When a participant retires, the reserve funds are either paid out as a lump sum or transferred to the Cash Balance Benefit Annuitant Reserve if the participant elects to receive their benefit as an annuity.

Cash Balance Benefit Gain and Loss Reserve

Section 26202 of the Education Code establishes the CBB Gain and Loss Reserve, which may be used to: 1) credit interest to participants' accounts at the minimum interest rate during years in which CalSTRS' investment earnings with respect to the CBB Program are not sufficient for that purpose, 2) make additional earnings credits to participants' accounts upon a decision by the board to allocate excess investment earnings, or 3) provide additions to the CBB Annuitant Reserve for monthly annuity payments.

Supplemental Benefit Maintenance Account Reserve

Section 22400 of the Education Code establishes the SBMA to separately maintain and manage the annual supplemental payments disbursed in quarterly installments to all benefit recipients whose purchasing power has fallen below 85% of the purchasing power of the initial benefit, as long as funds are available. The SBMA is primarily funded by contributions from the state, School Lands monies and the interest earned on the SBMA reserve balance credited at the actuarially assumed interest rate.

Other Reserves Not Legally Required For Disclosure

These reserves represent accumulated changes in operations reflecting contributions earned, benefit payments made, investment returns and the costs of plan administration for the STRP, Pension2, MPP Program and TDCF.

The reserve balances as of June 30, 2019, are summarized in the table below:

Reserve Type	Reserve Balance (Dollars in Thousands)
Defined Benefit Supplement Contribution Reserve	$7,013,717
Defined Benefit Supplement Accumulated Interest Reserve	2,577,923
Defined Benefit Supplement Annuitant Reserve	681,094
Defined Benefit Supplement Gain and (Loss) Reserve	3,572,564
Cash Balance Benefit Active Contribution Reserve	221,329
Cash Balance Benefit Accumulated Interest Reserve	67,297
Cash Balance Benefit Annuitant Reserve	7,021
Cash Balance Benefit Gain and (Loss) Reserve	60,294
Supplemental Benefit Maintenance Account Reserve	17,382,807
Other Reserves Not Legally Required for Disclosure	208,410,077
TOTAL	**$239,994,123**

3. Net Pension Liability of Employers and Nonemployer Contributing Entity

The components of the net pension liability (NPL) of the STRP for participating employers and the state (nonemployer contributing entity) as of June 30, 2019, are as follows:

June 30, 2019
(Dollars in Millions)

Total Pension Liability	$329,178
Less: STRP Fiduciary Net Position	238,862
NPL of Employers and the State of California	90,316
STRP Fiduciary Net Position as a % of the Total Pension Liability	**72.6%**

Actuarial Methods and Assumptions

The total pension liability for the STRP was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2018, and rolling forward the total pension liability to June 30, 2019. In determining the total pension liability, the financial reporting actuarial valuation used the following actuarial methods and assumptions:

June 30, 2019

Valuation Date	June 30, 2018
Experience Study	July 1, 2010 through June 30, 2015
Actuarial Cost Method	Entry age normal
Investment Rate of Return[1]	7.10%
Consumer Price Inflation	2.75%
Wage Growth	3.50%
Postretirement Benefit Increases	2% simple for DB (annually) Maintain 85% purchasing power level for DB Not applicable for DBS/CBB

1 Net of investment expenses but gross of administrative expenses.

CalSTRS uses a generational mortality assumption, which involves the use of a base mortality table and projection scales to reflect expected annual reductions in mortality rates at each age, resulting in increases in life expectancies each year into the future. The base mortality tables are CalSTRS custom tables derived to best fit the patterns of mortality among our members. The projection scale was set equal to 110% of the ultimate improvement factor from the Mortality Improvement Scale (MP–2016) table issued by the Society of Actuaries.

The long-term investment rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. The best-estimate ranges were developed using capital market assumptions from CalSTRS' general investment consultant (Pension Consulting Alliance) as inputs to the process.

The actuarial investment rate of return assumption was adopted by the board in February 2017 in conjunction with the most recent experience study. For each future valuation, CalSTRS' independent consulting actuary (Milliman) reviews the return assumption for reasonableness based on the most current capital market assumptions. Best estimates of expected 20-year geometrically linked real rates of return and the assumed asset allocation for each major asset class as of June 30, 2019, are summarized in the following table:

Asset Class	Assumed Asset Allocation	Long-Term Expected Real Rate of Return[1]
Global Equity	47.0%	4.8%
Fixed Income	12.0%	1.3%
Real Estate	13.0%	3.6%
Private Equity	13.0%	6.3%
Risk Mitigating Strategies	9.0%	1.8%
Inflation Sensitive	4.0%	3.3%
Cash/Liquidity	2.0%	(0.4%)

1 20-year average.

Discount Rate

The discount rate used to measure the total pension liability was 7.10%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members and employers are made at statutory contribution rates in accordance with the rate increases as disclosed in Note 1. Projected inflows from investment earnings were calculated using the long-term assumed investment rate of return (7.10%) and assuming that contributions, benefit payments and administrative expenses occur midyear. Based on those assumptions, the STRP's fiduciary net position was projected to be available to make all projected future benefit payments to current plan members. Therefore, the long-term assumed investment rate of return was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the NPL to Changes in the Discount Rate

Presented below is the NPL of employers and the state using the current discount rate of 7.10%, as well as what the NPL would be if it were calculated using a discount rate that is 1% to 3% lower or 1% to 3% higher than the current rate:

Discount Rate	NPL of Employers and Nonemployer Contributing Entity (Dollars in Millions)
3% Decrease (4.10%)	$254,006
2% Decrease (5.10%)	188,236
1% Decrease (6.10%)	134,488
Current Discount Rate (7.10%)	90,316
1% Increase (8.10%)	53,689
2% Increase (9.10%)	23,061
3% Increase (10.10%)	(2,665)[1]

1 Net Pension Asset.

4. Net Other Postemployment Benefit (OPEB) Liability of Employers

The components of the net OPEB liability of the MPP Program for participating employers as of June 30, 2019, are as follows:

June 30, 2019
(Dollars in Thousands)

Total OPEB Liability	$369,413
Less: MPP Program Fiduciary Net Position	(2,984)
Net OPEB Liability of Employers	372,397
MPP Program Fiduciary Net Position as a % of the Total OPEB Liability	**(0.81%)**

Actuarial Methods and Assumptions

The total OPEB liability for the MPP Program as of June 30, 2019, was determined by applying update procedures to the financial reporting actuarial valuation as of June 30, 2018, and rolling forward the total OPEB liability to June 30, 2019, using the assumptions listed below.

June 30, 2019

Valuation Date	June 30, 2018
Experience Study	July 1, 2010 through June 30, 2015
Actuarial Cost Method	Entry age normal
Investment Rate of Return	3.50%
Medicare Part A Premium Costs Trend Rate[1]	3.7%
Medicare Part B Premium Costs Trend Rate[1]	4.1%

1 The assumed increases in the Medicare Part A and Part B Cost Trend Rates vary by year; however, the increases are approximately equivalent to a 3.7% and 4.1% increase each year for Medicare Part A and Part B, respectively.

In addition, assumptions were made about future participation (enrollment) into the MPP Program as CalSTRS is unable to determine which members not currently participating meet all eligibility criteria for enrollment in the future. Assumed enrollment rates were derived based on past experience and are stratified by age with the probability of enrollment diminishing as the members' ages increase. This estimated enrollment rate was then applied to the population of members who may meet criteria necessary for eligibility and are not currently enrolled in the MPP Program. Based on this, the estimated number of future enrollments used in the financial reporting valuation was 380 or an average of 0.23% of the potentially eligible population of 165,422.

CalSTRS uses a generational mortality assumption, which involves the use of a base mortality table and projection scales to reflect expected annual reductions in mortality rates at each age, resulting in increases in life expectancies each year into the future. The base mortality tables are CalSTRS custom tables derived to best fit the patterns of mortality among our members. The projection scale was set equal to 110% of the ultimate improvement factor from the Mortality Improvement Scale (MP–2016) table issued by the Society of Actuaries.

Discount Rate

The MPP Program is funded on a pay-as-you-go basis with contributions generally being made at the same time and in the same amount as benefit payments and expenses coming due. Any funds within the MPP Program as of June 30, 2019, were to manage differences between estimated and actual amounts to be paid and were invested in the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer.

The discount rate used to measure the total OPEB liability was 3.50%. The MPP Program is funded on a pay-as-you-go basis as previously noted, and under the pay-as-you-go method, the OPEB plan's fiduciary net position was not projected to be sufficient to make projected future benefit payments. Therefore, a discount rate of 3.50%, which is the Bond Buyer's 20-Bond GO Index from Bondbuyer.com as of June 30, 2019, was applied to all periods of projected benefit payments to measure the total OPEB liability. The discount rate decreased 0.37% from 3.87% as of June 30, 2018.

Presented below is the net OPEB liability of employers using the current discount rate as well as what the net OPEB liability would be if it were calculated using a discount rate that is 1% lower or 1% higher than the current rate:

Discount Rate	Net OPEB Liability of Employers (Dollars in Thousands)
1% Decrease (2.50%)	$406,370
Current Discount Rate (3.50%)	372,397
1% Increase (4.50%)	341,160

Medicare Costs Trend Rate

The June 30, 2018, valuation uses the 2019 Medicare Part A and Part B premiums as the basis for future premium calculations. Future premiums are assumed to increase with a medical trend rate that varies by year, as shown in the following table:

Trend Assumption

	Assumed Annual Increase	
Years[1]	Part A	Part B
2017–2026	3.4%	4.0%
2027–2036	4.6%	5.2%
2037–2046	4.1%	4.7%
2047 & Later	3.9%	4.5%

1 Trend rates indicate medical inflation in the specific year and, therefore, affect the premiums for the following years. For example, the projected 2020 premium is the 2019 premium increased by the assumed 2019 trend rate.

The Part A trend is approximately equivalent to assuming a fixed 3.7% increase each year. The Part B trend is approximately equivalent to assuming a fixed 4.1% increase each year.

Presented below is the net OPEB liability of employers using the current Medicare costs trend rates, as well as what the net OPEB liability would be if it were calculated using Medicare costs trend rates that are 1% lower and 1% higher than the current rate:

Medicare Costs Trend Rate	Net OPEB Liability of Employers (Dollars in Thousands)
1% Decrease (2.7% Part A and 3.1% Part B)	$339,339
Current Rates (3.7% Part A and 4.1% Part B)	372,397
1% Increase (4.7% Part A and 5.1% Part B)	410,282

Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts (for example, Medicare premiums) and assumptions about the probability of occurrence of events far into the future (for example, mortality, disabilities and retirees eligible for the program). Actuarially determined amounts are subject to continual review and potential modifications, as actual results are compared with past expectations and new estimates are made about the future.

Projections of benefits for financial reporting purposes are based on the substantive plan and include the types of benefits provided at the time of each valuation and the historical pattern of benefit costs. The projection of benefits for financial reporting purposes does not explicitly incorporate the potential effects of legal or contractual funding limitations.

Actuarial calculations reflect a long-term perspective and take into account the premiums and surcharges paid after termination of employment until the death of the employee. In many cases, actuarial calculations reflect several decades of payments after termination of employment.

5. Deposits and Investments

Money-Weighted Rate of Return

For the fiscal year ended June 30, 2019, the money-weighted rate of return on STRP investments, net of pension plan investment expenses, was 6.6%. While the MPP Program is funded on a pay-as-you-go basis, any excess funds are held in the Surplus Money Investment Fund. The money-weighted rate of return on MPP Program investments, net of OPEB plan investment expenses, was 2.2%. The money-weighted rate of return expresses investment performance, taking into account the impact of cash infusion into and disbursements from the pension or OPEB plan.

Schedule of Investments

CalSTRS is authorized to invest and reinvest the monies of the system to meet the objectives of the Investment Policy and Management Plan as established by the board.

The table that follows represents the detailed investments by type within debt securities, equity securities, alternative investments and derivative instruments presented in the Statement of Fiduciary Net Position.

Schedule of Investments

(Dollars in Thousands)

As of June 30, 2019

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Total
Assets						
Debt Securities						
Asset-Backed Securities	$459,452	$–	$–	$–	$–	$459,452
Corporate Bonds	10,817,194	–	–	–	–	10,817,194
Foreign Government Issues	549,840	–	–	–	–	549,840
Mortgage-Backed Securities	8,270,968	–	–	–	–	8,270,968
Municipal Securities	178,737	–	–	–	–	178,737
U.S. Government and Agency Obligations	21,257,211	–	–	–	–	21,257,211
Short-Term Securities	5,511,124	10,015	1,239	300	1,605	5,524,283
Mutual Funds-Bond Funds	–	79,487	3,656	–	–	83,143
Guaranteed Annuity Contracts	–	383,991	14,679	–	–	398,670
Total Debt Securities	**47,044,526**	**473,493**	**19,574**	**300**	**1,605**	**47,539,498**
Equity Securities						
Common Stocks	107,194,328	–	–	–	–	107,194,328
Depository Receipts	3,390,927	–	–	–	–	3,390,927
Mutual Funds-Stock Funds	362,936	600,151	31,985	–	–	995,072
Preferred Stocks	476,881	–	–	–	–	476,881
Real Estate Investment Trusts	3,242,098	–	–	–	–	3,242,098
Total Equity Securities	**114,667,170**	**600,151**	**31,985**	–	–	**115,299,306**
Alternative Investments						
Debt-Privately Held	2,239,773	–	–	–	–	2,239,773
Equity-Privately Held	41,631,339	–	–	–	–	41,631,339
Real Estate-Directly Held	22,741,680	–	–	–	–	22,741,680
Real Estate-Non-Directly Held	9,962,823	–	–	–	–	9,962,823
Total Alternative Investments	**76,575,615**	–	–	–	–	**76,575,615**
Derivative Instruments						
Forwards	70,342	–	–	–	–	70,342
Futures	43,992	–	–	–	–	43,992
Options	12,122	–	–	–	–	12,122
Rights and Warrants	31,887	–	–	–	–	31,887
Swaps	29,882	–	–	–	–	29,882
Total Derivative Instruments	**188,225**	–	–	–	–	**188,225**
Securities Lending Collateral	**22,795,316**	–	–	–	–	**22,795,316**
Total Investment Assets	**261,270,852**	**1,073,644**	**51,559**	**300**	**1,605**	**262,397,960**
Liabilities						
Derivative Instruments						
Forwards	77,257	–	–	–	–	77,257
Futures	16,671	–	–	–	–	16,671
Options	3,586	–	–	–	–	3,586
Swaps	26,338	–	–	–	–	26,338
Total Derivative Instruments	**123,852**	–	–	–	–	**123,852**
Total Investment Liabilities	**123,852**	**–**	**–**	**–**	**–**	**123,852**
TOTAL NET INVESTMENTS	**$261,147,000**	**$1,073,644**	**$51,559**	**$300**	**$1,605**	**$262,274,108**

Debt Securities

Debt securities consist primarily of long-term investments issued by the U.S. government and U.S. government-sponsored agencies, municipal securities, foreign governments, corporations, securitized offerings backed by residential and commercial mortgages, and inflation-indexed bonds (also known as inflation-linked bonds). Debt securities also consist of short-term securities that by definition typically have maturities of less than one year. Debt securities in Pension2 include securities such as bond mutual funds and guaranteed annuity contracts.

Short-term investments consist of money market funds, certificates of deposits and similar instruments with maturities and/or holding periods generally of less than one year. Deposits in the Pooled Money Investment Account (classified under short-term securities), administered by the California State Treasurer, represent various investments with approximately 173 average days to maturity. The California State Treasury pools these monies with those of other state agencies for investing in short-term securities. The monies are available for withdrawal at any time. Deposits in the Short-Term Investment Fund, administered by State Street Bank and Trust Company (State Street Bank), represent various investments with approximately 42 average days to maturity.

Pension2 offers bond mutual funds and annuity contracts to individual participants. The annuity contracts offered guarantee a specified minimum interest rate, which is subject to change at any time.

Equity Securities

Equity securities consist primarily of domestic and international common stocks, preferred stocks, depository receipts, real estate investment trusts (REITs), exchange-traded funds (ETFs) and stock mutual funds.

Alternative Investments

Alternative investments consist primarily of limited partnership structures invested in privately held debt or privately held equity, including venture capital, leveraged buyouts and co-investments, as well as investments in real estate, infrastructure, agriculture and timberland. They include investments held within Private Equity, Real Estate, Global Equity, Risk Mitigating Strategies, Inflation Sensitive and Innovative Strategies.

Alternative investments are generally long-term and illiquid in nature. As a result, investors are subject to redemption restrictions, which generally limit distributions and restrict the ability of limited partners to exit a partnership investment prior to its dissolution.

Investments in real estate directly held assets are in separate accounts and joint ventures, which are primarily composed of retail, office, industrial and multi-family properties. Certain real estate investments are leveraged through partnerships using a combination of equity contributions from CalSTRS and other investors and through the utilization of debt. CalSTRS engages real estate advisors and operating partners who are responsible for managing a portfolio's day-to-day activities, performance and reporting. Real estate non-directly held investments primarily include commingled limited partnership investments in which CalSTRS does not have a controlling interest.

While Sustainable Investment and Stewardship Strategies (SISS) funds (formerly known as Corporate Governance funds) are included in the Global Equity asset class, they are classified as alternative investments on the financial statements due to their structure. These funds employ specific investment strategies and co-investments, including, but not limited to, publicly traded equity securities of companies on U.S., Asian, Canadian and European exchanges.

Derivative Instruments

CalSTRS holds investments in futures, foreign currency forward contracts, options, swaps, rights and warrants.

A futures contract is an exchange-traded contract whereby the purchaser agrees to buy an asset at a stated price on a specific future date. A foreign currency forward contract is a customized, bilateral agreement to exchange a specified currency at a specified future settlement date at a forward price agreed to on the trade date.

CalSTRS invests in exchange-traded options and over-the-counter options. An option is a contract that entitles the holder to purchase or sell a specific amount of contracts or notional amount at a specified price (strike price). The underlying asset, quantity of the underlying or notional amount, expiration date and strike price are standardized for exchange-traded options and are customized for over-the-counter options.

Swaps are derivative instruments in which two parties agree to exchange one stream of cash flows against another stream or a guarantee. These streams are called the legs of the swap, and usually at least one leg has a rate that is variable. The variable leg can depend on a reference rate, the total return of an asset or an economic statistic. Cash flows are calculated based on a notional amount, which are usually not exchanged between counterparties.

Rights and warrants held by CalSTRS are typically acquired through corporate actions. A right is a privilege granted to shareholders of a corporation to subscribe to shares of a new issue of common stock before it is offered to the public. A warrant gives the holder the right, but not the obligation, to buy an underlying equity security at a given price and quantity during a specified period.

Securities Lending

California statutes and board policies permit CalSTRS to make short-term, collateralized loans of its securities to broker-dealers and other entities in order to earn incremental income. CalSTRS has contracted with our custodian (State Street Bank), third-party securities lending agents and their respective custodians to lend equity and debt securities. The majority of the security loans can be terminated on demand by either CalSTRS or the borrower. The underlying securities on loan are reported as assets on the Statement of Fiduciary Net Position.

Collateral in the form of cash or other securities is required for 102% and 105% of the fair value of domestic and international securities loaned, respectively. For non-U.S. debt securities loaned, CalSTRS follows market practice, which requires collateral of 102% of the fair value of the loaned securities. Since the majority of loans are terminable at will, their duration does not generally match the duration of the investments made with the cash collateral. As of June 30, 2019, the weighted duration difference between the investments and these loans was 30 days.

As of June 30, 2019, the fair value of the securities on loan was $24.9 billion. The securities lending cash collateral obligations were $22.8 billion. The fair value of the re-invested cash collateral was $22.8 billion, the non-cash collateral was $2.7 billion, and the calculated mark (collateral adjustment requested for the next business day) was $18.6 million. The invested collateral and corresponding obligation are reflected in the Statement of Fiduciary Net Position as assets and liabilities, respectively. The re-invested cash collateral securities in this program are typically held to maturity and are expected to mature at par.

In accordance with GASB Statement No. 28, *Accounting and Financial Reporting for Securities Lending Transactions*, the non-cash collateral of $2.7 billion is not reported in the Statement of Fiduciary Net Position because CalSTRS is not permitted to pledge or sell these collateral securities received unless the borrower defaults. The contracts with the securities lending agents require them to indemnify CalSTRS if the borrowers fail to return the securities (or if the collateral is not sufficient to replace the securities lent) or if the borrowers fail to pay CalSTRS for income distributions by the securities' issuers while the securities are on loan.

Master Credit Facility Portfolio

CalSTRS Master Credit Facility Portfolio consists of three separate unsecured credit facilities and one unsecured loan. The proceeds from the Master Credit Facility Portfolio provide the source of funds for managing capital flows of investment strategies.

As of June 30, 2019, the total lender commitments available under the credit facilities was $3.9 billion. The principal amount of draws and repayments in fiscal year 2018–19 were $1.11 billion and $1.05 billion, respectively. At June 30, 2019, there was approximately $2.8 billion of principal outstanding under the credit facilities. The remaining amount available was approximately $1.1 billion. These credit facilities will mature between December 2019 and April 2021.

Pursuant to the terms and conditions of the loan agreements, upon an event of default, all outstanding amounts shall become immediately due, and any commitments of the lenders to fund additional borrowings shall automatically terminate if CalSTRS is unable to make the required payments. The loan agreements may also contain a subjective acceleration clause that allows the lender to accelerate payment of the principal amount to become immediately due if the lender determines, with reasonable judgment, that a material, adverse change occurs.

Investment Risk Schedules

In accordance with GASB Statement No. 40, *Deposit and Investment Risk Disclosures–an amendment of GASB Statement No. 3,* the following investment risk schedules disclose CalSTRS' investments that are subject to certain types of risks, including credit risk, interest rate risk, concentration of credit risk, custodial credit risk and foreign currency risk. The policies addressing each risk, discussed in more detail below, are contained within the Investment Policy and Management Plan reviewed and approved annually by the board.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to a debt instrument will not fulfill its obligations. This is measured by the assignment of ratings by nationally recognized statistical rating organizations.

CalSTRS Investment Guidelines require that, at the time of purchase, at least 95% of the fair value of the corporate securities comprising the credit portion of the core fixed income portfolio be rated investment grade as defined by the Bloomberg Barclays U.S. Aggregate Bond Index.

The ratings used to determine the quality of the individual securities in the table below are the ratings provided by S&P Global Inc. Obligations issued or guaranteed by the U.S. federal government or government-sponsored agencies are eligible without limit. Furthermore, the total position of the outstanding debt of any non-agency mortgage-backed, asset-backed and commercial mortgage-backed securities issuer shall be limited to 10% of the fair value of the portfolio, on the basis of each separate trust (pool of assets), at the time of purchase. Obligations of other issuers are not to exceed 5% per issuer, at the time of purchase, of the fair value of any individual portfolio.

The CalSTRS Investment Guidelines also include an allocation for opportunistic strategies, which allows for the purchase of bonds rated below investment grade. The amount of these investments that each investment manager may hold is negotiated on a manager-by-manager basis.

CalSTRS may invest in an unrated security if the security is comparable in quality to other rated securities that are eligible for purchase. The notation NR represents those securities that are not rated, and NA represents those securities for which the rating disclosure requirements are not applicable, such as obligations of the U.S. government and obligations explicitly guaranteed by the U.S. government.

As of June 30, 2019, the credit ratings of all debt securities and securities lending collateral are as follows:

Debt Securities

(Dollars in Thousands)

Ratings	Asset-Backed Securities	Corporate Bonds	Foreign Government Issues	Mortgage-Backed Securities	Municipal Securities	U.S. Government and Agency Obligations	Short-Term Securities	Mutual Funds - Bond Funds	Guaranteed Annuity Contracts	Total
Long-term Ratings										
AAA	$221,624	$228,250	$66,833	$83,924	$20,082	$–	$–	$–	$–	$620,713
AA	9,251	1,146,643	82,792	50,461	89,431	1,387,960	–	41,730	–	2,808,268
A	9,127	3,202,016	103,866	17,547	58,092	–	–	–	–	3,390,648
BBB	633	4,149,480	194,542	7,597	11,132	–	–	–	–	4,363,384
BB	4,468	835,475	54,960	5,918	–	–	–	–	–	900,821
B	322	769,432	14,144	1,372	–	–	–	–	–	785,270
CCC	2,457	129,351	–	4,076	–	–	–	–	–	135,884
C	–	223	–	–	–	–	–	–	–	223
D	1,123	1,087	–	–	–	–	–	–	–	2,210
NR	210,447	355,237	32,703	6,476,592	–	291,327	–	–	398,670	7,764,976
NA	–	–	–	1,623,481	–	19,577,924	–	41,413	–	21,242,818
Short-term Ratings										
A-1	–	–	–	–	–	–	109,760	–	–	109,760
NR	–	–	–	–	–	–	4,837,895	–	–	4,837,895
NA	–	–	–	–	–	–	576,628	–	–	576,628
TOTAL	**$459,452**	**$10,817,194**	**$549,840**	**$8,270,968**	**$178,737**	**$21,257,211**	**$5,524,283**	**$83,143**	**$398,670**	**$47,539,498**

Securities Lending Collateral

(Dollars in Thousands)

Ratings	Asset-Backed Securities	Corporate Bonds	Mortgage-Backed Securities	U.S. Government and Agency Obligations	Short-Term Securities	Total
Long-term Ratings						
AAA	$1,927,255	$25,014	$25,048	$–	$–	$1,977,317
AA	–	1,859,811	–	180,053	–	2,039,864
A	–	3,383,443	2,038	–	–	3,385,481
CC	232	–	–	–	–	232
NA	–	–	–	14,977	–	14,977
NR	1,057,350	285,127	53,310	–	–	1,395,787
Short-term Ratings						
A-1	–	–	–	–	334,725	334,725
NA	–	–	–	–	99,122	99,122
NR	–	–	–	–	13,547,789	13,547,789
TOTAL	**$2,984,837**	**$5,553,395**	**$80,396**	**$195,030**	**$13,981,636**	**$22,795,294**[1]

1 Cash total of $22 (in thousands) is not included in this total above but is included in the Securities Lending Collateral line item in the Statement of Fiduciary Net Position.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment.

Investments may contain terms that increase the sensitivity of their fair values to increasing and decreasing interest rates. Although CalSTRS has investments that have an inherent prepayment risk as well as caps, floors and step-up features, these are mitigated through the diversification of asset classes, security selection, maturity and credit quality.

The CalSTRS Investment Guidelines allow the core long-term investment grade portfolios the discretion to deviate the average duration of the portfolio within a range of +/– 20% (80% to 120%) of the weighted average effective duration of the performance benchmark.

As of June 30, 2019, the overall weighted effective duration and benchmark of the long-term Fixed Income portfolios were 5.37 years and 5.34 years, respectively. The following table presents the net asset values, durations and associated benchmarks by investment type held in the long-term Fixed Income portfolios.

Long-Term Fixed Income Duration

(Dollars in Thousands)

Investment Type (by portfolio)	Portfolio Net Asset Value	Effective Duration	Benchmark Duration	Difference
Core Portfolio				
Commercial Mortgage-Backed Securities	$476,699	5.26	5.20	0.06
Credit Obligations	7,350,125	7.22	7.21	0.01
Mortgage-Backed Securities	6,681,008	2.89	2.64	0.25
U.S. Government and Agency Obligations	9,803,743	6.20	6.13	0.07
Debt Opportunistic				
Corporate High Yield	1,151,178	3.22	3.28	(0.06)
Debt Core Plus	3,141,820	5.51	5.31	0.20
Leveraged Loans	507,743	0.48	0.25	0.23
Special Situations	5,915	0.00	5.34	(5.34)
TOTAL	**$29,118,231**			

The U.S. Treasury Inflation Protected Securities (TIPS), CalSTRS Home Loan Program, long-duration U.S. Treasury securities and other debt securities in non-Fixed Income portfolios are not included in the table above. The duration or weighted average to maturity for these investments are as follows:

- The U.S. TIPS had a net asset value of $828.3 million with an effective duration of 7.50 years compared to the benchmark duration of 7.48 years.
- CalSTRS Home Loan Program had a net asset value of $47.9 million with a weighted average to maturity of 20.07 years.
- The long-duration U.S. Treasury securities had a net asset value of $9.0 billion with an effective duration and benchmark duration of 17.78 years.
- Other debt securities in non-Fixed Income portfolios had a fair value of $217.6 million with a weighted average to maturity of 9.44 years.

Cash and accruals totaling ($450.9) million and swaps and other collateral totaling $16.9 million are included in the net asset value within the Fixed Income portfolios but are not included in debt securities on the Statement of Fiduciary Net Position.

Notes to the Basic Financial Statements

As of June 30, 2019, the segmented time distribution for the short-term securities based upon the expected maturity or first reset dates are as follows:

Short-Term Fixed Income Segmented Time Distribution

(Dollars in Thousands)

Investment Type	0–30 days	31–90 days	91–120 days	121–180 days	181–365 days	366+ days	Total
Asset-Backed Securities	$295,670	$–	$–	$–	$9,977	$–	$305,647
Corporate Bonds	661,980	543,987	–	–	25,141	25,012	1,256,120
Money Market Securities	2,730,146	1,094,139	25,504	50,071	54,018	–	3,953,878
Pooled Money Investment Account	64,850	–	–	–	–	–	64,850
Short Term Investment Fund	780,881	–	–	–	–	–	780,881
U.S. Government and Agency Obligations	946,514	206,771	–	24,952	402,741	327,346	1,908,324
TOTAL	**$5,480,041**	**$1,844,897**	**$25,504**	**$75,023**	**$491,877**	**$352,358**	**$8,269,700**
WEIGHTINGS	**66.3%**	**22.3%**	**0.3%**	**0.9%**	**5.9%**	**4.3%**	**100.0%**

The primary investment objective for the short-term investments is to seek the preservation of capital and liquidity and to generate the highest possible current income consistent with a prudent level of risk. The previous table includes $2.8 billion debt securities that are managed within the short-term fixed income portfolio but may have original maturities of over a year. However, the investment guidelines of the short-term portfolio state that the average maturity of the investments shall be managed such that it will not exceed 180 days.

As of June 30, 2019, the segmented time distribution based upon the expected maturity or first reset date for the invested securities lending cash collateral are as follows:

Securities Lending Collateral Segmented Time Distribution

(Dollars in Thousands)

Investment Type	0–1 days	2–6 days	7–29 days	30–59 days	60–89 days	90+ days	Total
Asset-Backed Securities	$–	$–	$2,143,903	$46,815	$47,611	$746,508	$2,984,837
Corporate Bonds	–	637,265	1,501,264	1,670,927	1,538,528	205,411	5,553,395
Mortgage-Backed Securities	–	–	53,310	–	27,086	–	80,396
U.S. Government and Agency Obligations	–	–	–	–	–	195,030	195,030
Short-Term Securities	2,442,549	1,510,663	3,511,484	2,832,573	2,056,787	1,627,580	13,981,636
TOTAL	**$2,442,549**	**$2,147,928**	**$7,209,961**	**$4,550,315**	**$3,670,012**	**$2,774,529**	**$22,795,294**[1]
WEIGHTINGS	**10.7%**	**9.4%**	**31.6%**	**20.0%**	**16.1%**	**12.2%**	**100.0%**

1 Cash total of $22 (in thousands) is not included in the total above but is included in the Securities Lending Collateral line item in the Statement of Fiduciary Net Position.

The invested securities lending cash collateral is diversified among different investment types with the maximum remaining effective maturity of any instrument being three years at the time of purchase. The fund must remain liquid to meet collateral returns.

Pension2

The primary objectives of Voya Fixed Plus III and TIAA Traditional Annuities are the guarantee of principal and a guaranteed minimum interest rate of 1.0% for the life of the contract. The interest rate guarantees under the contracts are subject to the claim-paying abilities of Voya Retirement Insurance and Annuity Company and TIAA.

As of June 30, 2019, the weighted average maturity of investments with underlying debt holdings for the Pension2 403(b) and 457(b) plans on the Statement of Fiduciary Net Position are as follows:

Pension2 Weighted Average Maturity

(Dollars in Thousands)

Investment	Maturity	Fair Value
CREF Money Market Account	43 days	$32
Federated U.S. Treasury Cash Reserves	39 days	11,222
Vanguard Inflation-Protected Securities Fund	8.2 years	41,413
Vanguard Short-Term Bond Index Fund	2.9 years	18,513
Vanguard Total Bond Market Index Fund	8.2 years	23,217
TOTAL		**$94,397**

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of CalSTRS' investment in a single issuer. As of June 30, 2019, CalSTRS has no single issuer that exceeds 5% of total investments or fiduciary net position. Investments issued or explicitly guaranteed by the U.S. government and investments in mutual funds, external investment pools and other pooled investments are excluded. The CalSTRS Investment Policy and Management Plan states that no more than 3% of the total fund shall be invested in or exposed to any one security or corporation, with the exception of U.S. Treasury or Agency Obligations.

Custodial Credit Risk

Custodial credit risk is the risk that if a depository institution or counterparty fails, CalSTRS would not be able to recover the value of our deposits, investments or collateral securities. As of June 30, 2019, all of CalSTRS non-cash investments are not exposed to custodial credit risk because they are held in CalSTRS name. Demand and time deposits held by the various financial institutions and the state banks are insured up to $250,000 by the Federal Deposit Insurance Corporation or by collateral held by the California State Treasurer's Office or an agency of that office in the state's name. CalSTRS does not have a general policy relating to custodial credit risk.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. As of June 30, 2019, CalSTRS' investment exposure in foreign currency risk is as follows:

Foreign Currency Risk

(Dollars in Thousands; In U.S. Dollar Equivalents)

Currency Name	Debt Securities	Equity Securities	Alternative Investments	Derivative Instruments	Cash[1]	Total Exposure
Argentine Peso	$842	$–	$–	$1,177	$126	$2,145
Australian Dollar	–	2,218,609	–	1,036	39,637	2,259,282
Brazilian Real	23,191	908,865	–	(1,414)	949	931,591
Canadian Dollar	–	3,414,400	89,715	4,118	36,521	3,544,754
Chilean Peso	–	46,276	–	(5,812)	1,948	42,412
Colombian Peso	–	2,284	–	558	197	3,039
Czech Koruna	–	14,846	–	298	155	15,299
Danish Krone	23,869	654,553	–	(207)	664	678,879
Egyptian Pound	–	–	–	(73)	11	(62)
Euro Currency	28,048	10,828,382	3,547,486	(692)	88,927	14,492,151
Hong Kong Dollar	–	3,684,687	–	3,032	19,447	3,707,166
Hungarian Forint	–	91,478	–	130	633	92,241
Indian Rupee	–	931,733	–	1,539	4,758	938,030
Indonesian Rupiah	–	311,619	–	(705)	1,752	312,666
Japanese Yen	–	8,114,640	–	(89)	109,129	8,223,680
Kenyan Shilling	–	5,788	–	–	–	5,788
Malaysian Ringgit	–	163,992	–	1	2,157	166,150
Mexican Peso	40,665	288,038	–	1,696	2,310	332,709
New Israeli Sheqel	–	150,581	–	(36)	1,290	151,835
New Taiwan Dollar	–	1,337,016	–	(1,323)	10,979	1,346,672
New Zealand Dollar	–	104,081	–	(1,351)	1,022	103,752
Norwegian Krone	–	320,963	–	724	626	322,313
Pakistani Rupee	–	18,063	–	–	339	18,402
Philippine Peso	–	73,051	–	1,666	574	75,291
Polish Zloty	–	92,247	–	2,444	873	95,564
Pound Sterling	15,725	5,842,519	993,160	2,632	39,745	6,893,781
Qatari Rial	–	31,093	–	–	338	31,431
Russian Ruble	22,926	–	–	4,872	19	27,817
Singapore Dollar	–	633,446	–	(451)	5,436	638,431
Peruvian Nouveau Sol	–	–	–	142	5	147
South African Rand	–	653,870	–	(3,236)	1,132	651,766
South Korean Won	–	1,812,202	49,204	(3,068)	8,395	1,866,733
Sri Lanka Rupee	–	2,175	–	–	–	2,175
Swedish Krona	–	1,044,160	–	169	2,638	1,046,967
Swiss Franc	–	2,733,765	–	(3,972)	7,107	2,736,900
Thailand Baht	–	276,862	–	93	5,727	282,682
Turkish Lira	–	101,504	–	186	737	102,427
UAE Dirham	–	59,689	–	(15)	614	60,288
Yuan Renminbi	4,604	332,318	–	(1,783)	13,531	348,670
TOTAL	**$159,870**	**$47,299,795**	**$4,679,565**	**$ 2,286**	**$410,448**	**$52,551,964**

1 Spot contracts of $294 (in thousands) are included in the cash total above.

CalSTRS' investments denominated in foreign currencies are reported within assets and liabilities on the Statement of Fiduciary Net Position.

Foreign currency is composed of international investment proceeds and income to be repatriated into U.S. dollars and funds available to purchase international securities. Foreign currency is held temporarily in foreign accounts until it is able to be repatriated or expended.

In accordance with the Investment Policy and Management Plan, CalSTRS has established a strategic allocation to non-U.S. dollar public and private equity assets (i.e. private equity investments and real estate). Considering this commitment to non-U.S. dollar assets and the impact currency fluctuations can have on the total return of dollar-based investors, CalSTRS has recognized the need to implement strategies designed to address the management of currency risk. CalSTRS believes that our Currency Management Program should emphasize the protection of the value of its non-U.S. dollar public and private equity assets against a strengthening U.S. dollar first, yet recognizes that opportunities also exist for alpha generation (the ability to derive a return in excess of a market return) within the currency markets.

CalSTRS Fixed Income staff has management and oversight responsibilities for the Currency Management Program. The position range has been designed to allow for some degree of symmetry around the underlying exposure to the foreign-denominated assets within CalSTRS in order to both protect the translation value of the assets against a strengthening U.S. dollar and to enhance returns in a declining U.S. dollar environment.

As of June 30, 2019, the Pension2 403(b) and 457(b) plans do not expose CalSTRS to foreign currency risk.

Derivative Instruments

As of June 30, 2019, the derivative instruments held by CalSTRS are considered investments and not hedges for accounting purposes. The term hedging, as it is used elsewhere in the notes to these financial statements, denotes an economic activity and not an accounting method. The gains and losses arising from this activity are recognized as incurred in the Statement of Changes in Fiduciary Net Position.

All investment derivatives discussed below are included within the Investment Risk Schedules, which precede this section. Investments in derivative instruments are disclosed separately to provide a comprehensive view of this activity and its impact on the overall investment portfolio.

Derivative instrument fair values are reported as investments in the Statement of Fiduciary Net Position with changes in fair values reported as investment income (loss) in the Statement of Changes in Fiduciary Net Position.

The table below presents the related net change in fair value, fair value and notional amount of derivative instruments outstanding as of June 30, 2019.

Investment Derivatives Disclosure

(Dollars in Thousands)

Derivative Instruments	Net Change in Fair Value for the Year Ended June 30, 2019	Fair Value	Notional Amount[1]	
Forwards				
Foreign Currency Forward Contracts	$84,259	($6,915)	10,049,801	
Total Forwards	**84,259**	**(6,915)**		
Futures				
Commodity Futures Long	(32,647)	(2,779)	22,345	
Commodity Futures Short	31,305	1,906	(36,075)	
Fixed Income Futures Long	49,535	18,308	911,493	
Fixed Income Futures Short	(30,676)	(6,944)	(624,920)	
Index Futures Long	333,612	16,785	369,509	
Index Futures Short	(99,554)	45	(101)	
Total Futures	**251,575**	**27,321**		
Options				
Commodity Futures Options Bought	(179)	2,078	350	
Commodity Futures Options Written	1,030	(1,025)	(3,291)	
Credit Default Swap Options Bought	(39)	–	–	
Credit Default Swap Options Written	(19)	(4)	(23,019)	
Fixed Income Futures Options Bought	(4,755)	785	2,750	
Fixed Income Futures Options Written	3,235	(2,262)	(7,905)	
Foreign Currency Options Bought	(53,446)	9,259	2,249,936	
Foreign Currency Options Written	4,081	(295)	(52,613)	
Total Options	**(50,092)**	**8,536**		
Rights and Warrants				
Rights	1,233	2,431	32,619	Units
Warrants	(192)	29,456	7,775	Units
Total Rights and Warrants	**1,041**	**31,887**		
Swaps				
Commodity Forward Swaps	93	(12)	3,616	Units
Credit Default Swaps Bought	(6,902)	(6,095)	259,850	
Credit Default Swaps Written	1,580	3,392	81,450	
Pay-Fixed Interest Rate Swaps	(20,687)	(17,477)	462,866	
Receive-Fixed Interest Rate Swaps	9,340	4,624	265,442	
Total Return Swaps	(63,576)	19,155	1,121,973	
Variance Swaps	(91)	(43)	5,153	
Total Swaps	**(80,243)**	**3,544**		
TOTAL DERIVATIVE INSTRUMENTS	**$206,540**	**$64,373**		

1 In U.S. dollars unless otherwise indicated.

Counterparty Credit Risk

The table below depicts the counterparty credit ratings of CalSTRS non-exchange traded investment derivative instruments outstanding and subject to loss as of June 30, 2019.

Counterparty Credit Rating

(Dollars in Thousands)

S&P Rating	Commodity Forward Swaps	Credit Default Swaps Written	Foreign Currency Forward Contracts	Receive-Fixed Interest Rate Swaps	Total Return Swaps	Variance Swaps	Total
AA	$–	$–	$18,451	$–	$2,256	$–	$20,707
A	475	54	43,566	–	14,149	4	58,248
BBB	22	–	2,934	1,247	4,623	7	8,833
TOTAL INVESTMENTS IN ASSETS	**$497**	**$54**	**$64,951**	**$1,247**	**$21,028**	**$11**	**$87,788**

The ratings used to determine the quality of the individual counterparty are S&P ratings. The aggregate fair value of investment derivative instruments in an asset position subject to counterparty credit risk as of June 30, 2019, was $87.8 million. This represents the maximum loss that would be recognized at the reporting date if all counterparties failed to perform as contracted. However, master agreements exist that call for daily exchange of collateral for the mark-to-market to minimize this risk.

CalSTRS may enter into a master netting arrangement with a counterparty. In the event of default or early termination, the master agreement permits the non-defaulting party the right to close-out all transactions in a single net settlement to one net amount payable by one counterparty to the other. As of June 30, 2019, there were assets of $89.6 million, including collateral held by CalSTRS, and liabilities of $67.8 million from non-exchange traded derivatives subject to master netting agreements. As of June 30, 2019, CalSTRS did not have any significant exposure to counterparty credit risk with any single party.

Custodial Credit Risk

The custodial credit risk disclosure for exchange-traded derivative instruments is made in accordance with the custodial credit risk disclosure requirements of GASB Statement No. 40. As of June 30, 2019, all of CalSTRS' investments in derivative instruments are held in CalSTRS name or CalSTRS nominee's name and are not exposed to custodial credit risk.

Interest Rate Risk

As of June 30, 2019, CalSTRS is exposed to interest rate risk on its derivative instruments described below by maturity period.

Investment Maturities

(Dollars in Thousands)

		Investment Maturities (in years)			
Investment Type	**Fair Value**	**Less Than 1**	**1–5**	**6–10**	**More than 10**
Fixed Income Futures Long	$18,308	$18,081	$227	$–	$–
Fixed Income Futures Short	(6,944)	(6,944)	–	–	–
Fixed Income Futures Options Bought	785	785	–	–	–
Fixed Income Futures Options Written	(2,262)	(2,262)	–	–	–
Pay-Fixed Interest Rate Swaps	(17,477)	–	(1,171)	(4,984)	(11,322)
Receive-Fixed Interest Rate Swaps	4,624	1,247	443	–	2,934
Total Return Swaps	19,155	19,155	–	–	–
TOTAL	**$16,189**	**$30,062**	**($501)**	**($4,984)**	**($8,388)**

The table below shows swaps that are highly sensitive to changes in interest rates. The table below details the reference rate, fair value and notional amount of these derivative instruments as of June 30, 2019:

Derivative Instruments Highly Sensitive to Interest Rate Changes

(Dollars in Thousands)

Investment Type	Reference Rate/Asset	Fair Value	Notional Amount
Interest Rate Swap	Receive Fixed 1.85%, Pay Variable 3-month London Interbank Offered Rate	$118	$37,850
Interest Rate Swap	Receive Fixed 2.25%, Pay Variable 3-month London Interbank Offered Rate	501	80,150
Interest Rate Swap	Receive Fixed 3.00%, Pay Variable 3-month London Interbank Offered Rate	2,976	24,366
Interest Rate Swap	Receive Fixed 3.47%, Pay Variable 0-month United Kingdom Retail Price Index	(42)	3,564
Interest Rate Swap	Receive Fixed 7.33%, Pay Variable 1-month Mexico Interbank Equilibrium Interest Rate	(8)	30,944
Interest Rate Swap	Receive Fixed 7.35%, Pay Variable 1-month Mexico Interbank Equilibrium Interest Rate	(168)	45,141
Interest Rate Swap	Receive Fixed 8.41%, Pay Variable Brazil CDI Rate	1,247	43,427
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 1.39%	(583)	93,770
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 1.85%	(23)	8,007
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 2.25%	(1,639)	60,608
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 2.30%	(461)	81,653
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 2.50%	(2,662)	62,347
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 2.75%	(2,263)	21,313
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 2.88%	(2,427)	18,796
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 3.00%	(2,778)	18,056
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 3.33%	(3,499)	16,074
Interest Rate Swap	Receive Variable 3-month London Interbank Offered Rate, Pay Fixed 3.13%	(695)	15,200
Interest Rate Swap	Receive Variable 3-month U.S. FEDL, Pay Fixed 1.55%	35	50,585
Interest Rate Swap	Receive Variable 6-month Euro Interbank Offered Rate, Pay Fixed 1.50%	(354)	1,714
Interest Rate Swap	Receive Variable 6-month London Interbank Offered Rate, Pay Fixed 1.27%	(128)	14,743
INTEREST RATE SWAPS TOTAL		**($12,853)**	**$728,308**
Total Return Swap	Receive BCOMF1T Index, Pay 3-month U.S. Treasury Bill plus 0.14%	2,868	115,274
Total Return Swap	Receive BCOMTR Index, Pay 3-month U.S. Treasury Bill plus 0.12%	55	2,225
Total Return Swap	Receive BCOMTR Index, Pay 3-month U.S. Treasury Bill plus 0.13%	3,326	134,872
Total Return Swap	Receive BCOMTR1 Index, Pay 3-month U.S. Treasury Bill plus 0.14%	1,917	77,745
Total Return Swap	Receive BCOMTR2 Index, Pay 3-month U.S. Treasury Bill plus 0.14%	3,197	129,862
Total Return Swap	Receive 1-month Brazil Interbank Deposit Rate minus 0.60%, Pay MSCI Brazil Net Return Index	(12)	(597)
Total Return Swap	Receive 1-month Johannesburg Interbank Agreed Rate minus 0.47%, Pay MSCI South Africa Net Return Index	526	(33,188)
Total Return Swap	Receive 1-month London Interbank Offered Rate plus 0.22%, Pay MSCI Israel Net Return Index	(5)	(329)
Total Return Swap	Receive MSCI China Net Return Index, Pay 1-month Hong Kong Interbank Offered Rate	1,106	34,510
Total Return Swap	Receive MSCI Mexico Net Return Index, Pay 1-month Mexico Interbank Equilibrium Interest Rate plus 0.15%	(17)	1,273
Total Return Swap	Receive MSCI Thailand Net Return Index, Pay 1-month London Interbank Offered Rate plus 0.30%	6	649
Total Return Swap	Receive RBCAECTO Index, Pay 3-month U.S. Treasury Bill plus 0.10%	2,256	90,573
Total Return Swap	Receive 1-month Singapore Interbank Offered Rate minus 0.10%, Pay MSCI Singapore Net Return Index	(164)	(3,242)
Total Return Swap	Receive 1-month Warsaw Interbank Offered Rate minus 0.60%, Pay MSCI Poland Net Return Index	(41)	(3,177)
TOTAL RETURN SWAPS TOTAL		**$15,018**	**$546,450**

Notes to the Basic Financial Statements

Investment Allocation Policy

In accordance with GASB Statement No. 67, *Financial Reporting for Pension Plans—an Amendment of GASB Statement No. 25*, and GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other Than Pension Plans*, CalSTRS discloses investment policies pertaining to asset allocation and changes to any significant investment policies. The board approves the allocation of investment assets as described in the board policy manual. The key goal of the asset allocation process is to develop an asset allocation policy that maximizes the likelihood that the investment portfolio's assets will, over the planning horizon, fund plan benefits. CalSTRS conducts an asset allocation study every three years, or more frequently if there is a significant change in the liabilities or assets. The asset allocation study involves a comprehensive review of the financial condition of the plan, including the actuarial requirements of the plan, such as future benefit payments and expected cash flow of contributions. In conjunction with the long-term strategic target, a range for each asset class is established to provide flexibility designed to reduce rebalancing costs and adapt to changing market conditions. The board approved changes to asset allocation ranges effective April 1, 2019.

The following table displays the previous and current board-approved target allocation, the policy range and the actual allocation for the STRP per the portfolio allocation and management structure as of June 30, 2019.

Asset Class / Strategy	Previous Target Allocation as of June 30, 2018	Current Target Allocation as of June 30, 2019	Policy Range	Actual Allocation as of June 30, 2019
Global Equity	54.0%	51.0%	+/– 6%	50.5%
Fixed Income	13.0%	13.0%	+/– 3%	12.3%
Real Estate	12.0%	13.0%	+/– 3%	13.7%
Private Equity	8.0%	9.0%	+/– 3%	9.2%
Cash / Liquidity	2.0%	2.0%	+/– 3%	2.1%
Inflation Sensitive	2.0%	3.0%	+/– 3%	2.5%
Risk Mitigating Strategies	9.0%	9.0%	+/– 3%	9.4%
Innovative Strategies	0.0%	0.0%	+/– 3%	0.3%
Strategic Overlay	0.0%	0.0%		0.0%
TOTAL ASSET ALLOCATION	**100.0%**	**100.0%**		**100.0%**

All excess monies from the MPP Program and TDCF are invested into the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer.

6. Fair Value Measurements

The fair value of a financial instrument is the amount 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 (the exit price). Fair value is a market-based measurement, not a CalSTRS-specific measurement; hence, valuation assumptions reflect those that market participants would use to price assets and liabilities at the measurement date.

U.S. Generally Accepted Accounting Principles (GAAP) as promulgated by GASB establish a hierarchy that prioritizes and ranks the inputs to valuation techniques used to measure fair value based on observability. Market price observability may be affected by a number of factors, including the investment type, investment-specific characteristics, state of the marketplace and existence and transparency of transactions between market participants.

CalSTRS follows the fair value measurement and disclosure guidance under U.S. GAAP, which establishes a hierarchical disclosure framework. This framework prioritizes and ranks the level of market price observability used in measuring investments at fair value. U.S. GAAP also allows investments to be valued at cost or net asset value (NAV). The Fair Value Leveling Hierarchy table that follows presents CalSTRS' investments at their fair value level but also includes certain investments at cost or NAV.

Investments with readily available active quoted prices or for which fair value can be measured from actively quoted prices in an orderly market generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. In all cases, an instrument's level within the hierarchy is based upon the market pricing transparency of the instrument and does not necessarily correspond to CalSTRS' perceived risk or the liquidity of the instrument.

Assets and liabilities measured at fair value are classified into one of the following categories:

Level 1 – Fair value is determined using unadjusted quoted prices in active markets for identical assets or liabilities accessible on the measurement date.

Level 2 – Fair value is determined using quoted prices in inactive markets or significant observable inputs (including, but not limited to, quoted prices for similar investments, interest rates, foreign exchange rates, volatility and credit spreads), either directly or indirectly. These inputs may be derived principally from, or corroborated by, observable market data through correlation or by other means.

Level 3 – Fair value is determined using unobservable inputs, including situations where there is little market activity, if any, for the asset or liability.

The fair value hierarchy level within which a fair value measurement falls is determined based on the lowest level input that is significant to the fair value measurement. The availability of valuation techniques and observable inputs may vary and is affected by factors such as the type of security, whether the security is established in the marketplace and market liquidity. Inputs used to measure fair value may require significant judgment or estimation, and CalSTRS may use models or other valuation methodologies to estimate fair value. Accordingly, the degree of judgment exercised by CalSTRS in estimating fair value is greatest for assets and liabilities categorized in Level 3.

Fair Value Leveling Hierarchy

(Dollars in Thousands)

		Fair Value Measurements Using		
Assets:	**June 30, 2019**	**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	$459,452	$–	$456,876	$2,576
Corporate Bonds	10,817,194	–	10,810,623	6,571
Foreign Government Issues	549,840	–	549,840	–
Mortgage-Backed Securities	8,270,968	–	8,215,687	55,281
Municipal Securities	178,737	–	178,737	–
U.S. Government and Agency Obligations	21,257,211	–	21,257,211	–
Short-Term Securities	3,240,990	792,135	2,448,855	–
Mutual Funds-Bond Funds	83,143	83,143	–	–
Guaranteed Annuity Contracts	398,670	–	–	398,670
Total Debt Securities	**45,256,205**	**875,278**	**43,917,829**	**463,098**
Equity Securities				
Common Stocks	107,194,328	107,169,355	19,677	5,296
Depository Receipts	3,390,927	3,390,869	–	58
Mutual Funds-Stock Funds	995,072	995,072	–	–
Preferred Stocks	476,881	475,825	25	1,031
Real Estate Investment Trusts	3,242,098	3,222,010	20,088	–
Total Equity Securities	**115,299,306**	**115,253,131**	**39,790**	**6,385**
Alternative Investments				
Debt-Privately Held	881	–	–	881
Equity-Privately Held	5,204	–	–	5,204
Real Estate-Directly Held	22,741,680	–	–	22,741,680
Total Alternative Investments	**22,747,765**	**–**	**–**	**22,747,765**
Derivative Instruments				
Forwards	70,342	–	70,342	–
Futures	43,992	43,992	–	–
Options	12,122	–	12,122	–
Rights and Warrants	31,887	31,840	–	47
Swaps	29,882	–	29,882	–
Total Derivative Instruments	**188,225**	**75,832**	**112,346**	**47**
Securities Lending Collateral	**18,946,222**	**1,564,973**	**17,381,249**	**–**
Total Investment Assets Recorded at Fair Value	**$202,437,723**	**$117,769,214**	**$61,451,214**	**$23,217,295**
Investments Measured at Cost				
Short-Term Securities	2,283,293			
Securities Lending Collateral	3,849,094			
Total Investments Measured at Cost	**6,132,387**			
Investments Measured at NAV				
Debt-Privately Held	2,238,892			
Equity-Privately Held	41,626,135			
Real Estate-Non-Directly Held	9,962,823			
Total Investments Measured at NAV	**53,827,850**			
Total Investment Assets	**$262,397,960**			
Liabilities:				
Investments by Fair Value Level				
Derivative Instruments				
Forwards	77,257	–	77,257	–
Futures	16,671	16,671	–	–
Options	3,586	–	3,586	–
Swaps	26,338	–	26,338	–
Total Derivative Instruments	**123,852**	**16,671**	**107,181**	**–**
Total Investment Liabilities Recorded at Fair Value	**$123,852**	**$16,671**	**$107,181**	**$–**
TOTAL NET INVESTMENTS	**$262,274,108**			

Notes to the Basic Financial Statements

Level 1 measurements are generally valued at the official closing price (usually the last trade price) or the last bid price on the security's primary exchange. Such investments generally include common stocks, REITs, depository receipts and mutual funds.

Level 2 measurements are generally valued using indicative prices from vendors, brokers or ask prices. These indicative measurements often use matrix pricing, the Black-Scholes-Merton model or a lattice model and incorporate observable inputs such as yield, prepayment speeds, credit spreads, volatility curves or currency curves. Such investments generally include debt securities, bonds and over-the-counter derivatives. Other factors such as infrequent trading, inactive market or adjusted quoted prices may also result in Level 2 measurements.

Level 3 measurements are generally valued using significant inputs that are unobservable to the marketplace. This may occur if an investment is illiquid or is internally estimated. For CalSTRS, such investments primarily include directly held real estate. Properties are appraised using discounted cash flows, income capitalization, adjusted comparable sales and replacement cost (if recent) methods. The method chosen is the one most relevant to how an investor would assess a property as a potential buyer. Additionally, debt associated with real estate properties is valued using income approach methods such as cash equivalency (gross method) or leveraged equity (net method).

CalSTRS measures certain investments that do not have a readily determinable fair value using NAV as a practical expedient. These investments are generally structured as limited partnerships with an investment manager and are created by raising pools of capital from investors that will be invested according to one or more specific investment strategies. Investors commit capital to the fund, and as the investment manager identifies investment opportunities, the committed capital is called to purchase the investments.

NAV is calculated using measurement principles similar to investment companies. CalSTRS updates the NAV for cash contributions, cash distributions and changes in the fair value of the underlying investments using capital account statements and estimates if the NAV is not updated as of the reporting date. CalSTRS does not currently have any plans to sell any of these investments before their stated term.

The following table displays information regarding investments that use NAV per share (or equivalent) as their fair value measurement:

NAV Practical Expedient

(Dollars in Thousands)

	Fair Value June 30, 2019	Total Unfunded Commitments	Redemption Frequency if Currently Eligible	Redemption Notice Period
Debt-Privately Held[1]	$2,238,892	$2,462,433	N/A	N/A
Equity-Privately Held				
Private Equity Funds[2]	23,673,680	14,622,568	N/A	N/A
Risk Mitigating Strategies Funds[3]	13,185,292	–	Monthly	2–60 days
Sustainable Investment and Stewardship Strategies Funds[4]	3,241,242	195,249	N/A, Monthly, Quarterly, Annually	60–120 days
Other[5]	1,525,921	116,000	Daily, Monthly, Quarterly	3–90 days
Real Estate-Non-Directly Held				
Real Estate Funds[6]	6,653,435	5,001,450	N/A	N/A
Other[7]	3,309,388	329,049	Quarterly	30–90 days
TOTAL INVESTMENTS MEASURED AT NAV	**$53,827,850**	**$22,726,749**		

1 This category includes private equity funds that invest in privately held debt. CalSTRS' investment in each fund is generally not subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets over a weighted-average period of approximately nine years as of June 30, 2019.

2 This category includes private equity funds that invest in non-marketable securities of private companies, which ultimately may become public in the future and whose strategies include leveraged buyouts, expansion capital and venture capital. Generally, CalSTRS' investment in each fund in this category may not be subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets over a weighted-average period of approximately nine years as of June 30, 2019.

3 This category includes funds that include investment strategies with structural aspects that provide improved diversification and potential protection in negative equity markets. Investments in this category can be redeemed monthly upon written notice.

4 This category includes funds that invest strategically in publicly traded equities of companies on U.S. and non-U.S. exchanges to achieve capital appreciation and income. The funds in this category are generally subject to a lockup period before redemption is permissible. Investments representing 7.0%, 15.2%, 13.8% and 55.8% of the value of the investments in this category can be redeemed monthly, quarterly, annually and at the end of a three-year or rolling three-year period, respectively. The remaining 8.2% of the value of the investments in this category is not subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets.

5 This category includes funds that invest primarily in equities, fixed income securities, opportunistic and other funds. Investments representing 26.4%, 30.8% and 37.3% in this category can be redeemed daily, monthly and quarterly, respectively, upon written notice. The remaining 5.5% of the value of the investments in this category is subject to a lockup period before a one-time full redemption is permissible.

6 This category includes funds that invest directly in real estate and real estate-related assets, including retail, industrial, office, residential and hotels. Generally, CalSTRS' investment in each fund in this category may not be subject to redemption and is normally returned through distributions as a result of the liquidation of the underlying assets over a weighted-average period of approximately six years as of June 30, 2019.

7 This category includes open-ended funds that invest directly in real estate and real estate-related assets, including retail, industrial, office, residential and hotels. Investments in this category can be redeemed quarterly upon written notice.

Debt Securities

Certain debt securities have an active market for identical securities and are valued using the close or last traded price on a specific date. Debt securities that are not as actively traded are valued by pricing vendors using modeling techniques that include market observable inputs as well as unobservable inputs required to develop a fair value. Typical inputs include recent trades, yields, price quotes, cash flows, maturity, credit ratings and other assumptions based upon the specifics of the investment type.

Short-term investments are reported at fair value or at cost or amortized cost. For those investments that are reported at fair value, the investments are valued using similar methodologies as debt securities traded in active markets.

Bond mutual funds offered by Voya and TIAA are open-ended funds that are priced daily at NAV based generally upon the exchange-traded official closing price of the securities held by the funds. CalSTRS' allocation in the Voya annuity contracts is carried at contract value, which approximates fair value.

Equity Securities

The majority of equity securities held by CalSTRS are actively traded on major stock exchanges. These exchanges make information on trades of securities available daily on a last trade or official close basis. If such information is not available, other pre-established means are used to determine a price. Stock mutual funds, held in the STRP and Pension2, are open-ended funds that are priced daily at NAV by the fund sponsor based generally upon the exchange-traded official closing price of the securities held by the fund.

Alternative Investments

Partnership interests are valued using their respective NAV calculated in accordance with the general partner's valuation policy as of the measurement date and are audited annually. The most significant input into the NAV of such an entity is the fair value of its investment holdings, which is typically valued on a quarterly or semi-annual basis by the general partners. The valuation assumptions are based upon the nature of the investment and the underlying business. The valuation techniques vary by investment type and involve a certain degree of expert judgment.

SISS funds structured as limited partnerships have been valued using the NAV of the entity, with the most significant input into the NAV being the value of its investment holdings. The general partners obtain prices for their holdings in a manner similar to that described above for equity securities.

Investments in real estate directly held assets are subject to independent third-party appraisals performed annually in accordance with the Uniform Standards of Professional Appraisal Practice. On a quarterly basis, fair values are estimated by the third-party advisor or operating partner using general market and property-specific assumptions, which are reviewed by CalSTRS valuation consultant. Leverage may be used to enhance investment returns as set forth in the CalSTRS Real Estate Investment Policy.

Real estate investments in non-directly held limited partnership interests in commingled funds are valued by CalSTRS using the NAV of the partnership provided by the general partner. The most significant input into the NAV of such an entity is the fair value of its investment holdings. These holdings are valued using the general partners' valuation policy on a continuous basis, audited annually and periodically appraised by an independent third party as directed by the governing document for each commingled fund investment. The valuation assumptions use both market and property-specific inputs.

Derivative Instruments

The fair value of exchange-traded derivative instruments such as futures, options, rights and warrants are determined based on the quoted market prices or mean prices. The fair value of derivative instruments that are not exchange-traded, such as swaps, is determined by external pricing services.

Futures contracts are exchange-traded financial instruments that derive their value from underlying securities, indices or reference rates and are marked-to-market at the end of each day. The fair value of futures are accounted for as unrealized appreciation or depreciation until the contract is closed.

The fair value of the foreign currency forward contracts is the unrealized gain or loss calculated based on the difference between the specified exchange rate and the closing forward rate as of the reporting period.

7. Contingencies

CalSTRS is involved in litigation relating to various matters. In the opinion of management, after consultation with legal counsel, the outcome of these matters is not expected to have a material adverse effect on CalSTRS basic financial statements.

8. Commitments

In connection with the purchase of partnership interests under various investment portfolios, CalSTRS has remaining unfunded commitments of approximately $28.5 billion at June 30, 2019.

The following table depicts the unfunded commitments by asset strategy:

Asset Class / Strategy	Unfunded Commitments (Dollars in Thousands)
Global Equity (Sustainable Investment and Stewardship Strategies Funds)	$195,249
Inflation Sensitive	1,329,022
Innovative Strategies	870,981
Private Equity	20,213,505
Real Estate	5,857,696
TOTAL	**$28,466,453**

These unfunded commitments include agreements for acquisitions not yet initiated, which are not included in the NAV Practical Expedient table.

Medicare Premium Payment Program

Under current board policy, assets are set aside from the future employer contributions to the DB Program to fund the MPP Program. Based on the funding actuarial valuation for the DB Program, as of June 30, 2018, the assets set aside are equal to the actuarial obligation of the MPP Program less the value of any assets already in the program. As of June 30, 2018, the future employer contributions committed to funding the MPP Program totaled $285.8 million, which equals the projected cost of the program.

This amount is a funding measure that assumes the value of these contributions will be available to fund the MPP Program benefits in future periods, as the assets currently in the program are not sufficient to fund the projected future benefits. This differs from the net OPEB liability as of June 30, 2019, of $372.4 million, which was measured in accordance with GASB Statement No. 74 and represents the actuarial present value of projected benefit payments that is attributable to the MPP Program participants.

9. New Accounting Pronouncements

CalSTRS reviews the requirements of all new GASB pronouncements and assesses the potential impact to the system. CalSTRS implemented all applicable new GASB pronouncements for the fiscal year ended June 30, 2019, as required by each statement. There were no new GASB standards that materially impacted CalSTRS' financial statements for the fiscal year ended June 30, 2019.

Schedule of Changes in Net Pension Liability of Employers and Nonemployer Contributing Entity

Schedule I[1]

(Dollars in Millions)

State Teachers' Retirement Plan

Year Ended June 30[2]	2019	2018	2017	2016	2015	2014
Total Pension Liability						
Service Cost	$7,055	$7,142	$6,064	$5,874	$5,556	$5,338
Interest	22,458	21,496	20,227	19,332	18,556	17,822
Changes in Benefit Terms	32	–	–	–	–	–
Differences Between Expected and Actual Experience	(1,847)	(94)	399	(1,209)	(1,312)	–
Changes of Assumptions	–	–	19,988[3]	–	–	–
Benefit Payments, Including Refunds of Member Contributions	(15,296)	(14,537)	(13,903)	(13,149)	(12,565)	(12,035)
Net Change in Total Pension Liability	**12,402**	**14,007**	**32,775**	**10,848**	**10,235**	**11,125**
Beginning Total Pension Liability	**316,776**	**302,769**	**269,994**	**259,146**	**248,911**	**237,786**
Ending Total Pension Liability (a)	**329,178**	**316,776**	**302,769**	**269,994**	**259,146**	**248,911**
Plan Fiduciary Net Position						
Member Contributions	3,648	3,496	3,441	2,957	2,510	2,264
Employer Contributions	5,644	4,867	4,173	3,391	2,678	2,272
State of California Contributions	5,335[4]	2,797	2,478	1,940	1,426	1,383
Net Investment Income	14,898	18,674	25,165	2,305	7,612	30,402
Other Income	127	106	72	42	4	2
Benefit Payments, Including Refunds of Member Contributions	(15,296)	(14,537)	(13,903)	(13,149)	(12,565)	(12,035)
Administrative Expenses	(254)	(216)	(182)	(180)	(145)	(154)
Borrowing Costs[5]	(105)	(94)	(58)	–	–	–
Other Expenses	(4)	(2)	(10)	(15)	(10)	(9)
Net Change in Plan Fiduciary Net Position	**13,993**	**15,091**	**21,176**	**(2,709)**	**1,510**	**24,125**
Beginning Plan Fiduciary Net Position-As Previously Reported	**224,869**	**210,289**	**189,113**	**191,822**	**190,474**	**166,349**
Adjustment for Application of New GASB Statements[6]	–	(511)	–	–	(162)	–
Beginning Plan Fiduciary Net Position-As Adjusted	**224,869**	**209,778**	**189,113**	**191,822**	**190,312**	**166,349**
Ending Plan Fiduciary Net Position (b)	**238,862**	**224,869**	**210,289**	**189,113**	**191,822**	**190,474**
ENDING NET PENSION LIABILITY OF EMPLOYERS AND THE STATE (a) – (b)	**$90,316**	**$91,907**	**$92,480**[7]	**$80,881**	**$67,324**	**$58,437**[8]

1 Some numbers in this schedule are rounded for presentation purposes and may differ slightly from those presented in the Statement of Fiduciary Net Position.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

3 The assumptions used in determining the Total Pension Liability of the State Teachers' Retirement Plan (STRP) changed as a result of the actuarial experience study conducted for the period July 1, 2010 through June 30, 2015. The assumption changes effective in fiscal year 2016–17 were to price inflation, wage growth, discount rate and the mortality tables.

4 Includes contributions of approximately $2.2 billion related to the one-time, supplemental contributions on behalf of employers resulting from SB 90.

5 Borrowing costs of $105 million, $94 million and $58 million associated with the master credit facility portfolio, which were previously recorded within net investment income, have been reclassified for the years ended June 30, 2019, 2018 and 2017, respectively.

6 Adjustments were made to the STRP's beginning net position in fiscal year 2017–18 and fiscal year 2014–15 due to the implementation of requirements from GASB Statement No. 75 and GASB Statement No. 68, respectively.

7 The net pension liability (NPL) for fiscal year 2016–17 does not include the $511 million reduction to the net position as a result of CalSTRS implementation of GASB Statement No. 75.

8 The NPL for fiscal year 2013–14 does not include the $162 million reduction to the net position as a result of CalSTRS implementation of GASB Statement No. 68.

Schedule of Net Pension Liability of Employers and Nonemployer Contributing Entity

Schedule II[1]

(Dollars in Millions)

State Teachers' Retirement Plan

Year Ended June 30[2]	(a) Total Pension Liability	(b) Plan Fiduciary Net Position	(a – b) NPL of Employers and the State	(b / a) Plan Fiduciary Net Position as a % of Total Pension Liability	(c) Covered Payroll	(a – b) / c NPL of Employers and the State as a % of Covered Payroll
2019	$329,178	$238,862	$90,316	72.6%	$35,805	252.2%
2018	316,776	224,869	91,907	71.0%	34,753	264.5%
2017	302,769[3]	210,289	92,480[4]	69.5%	34,126	271.0%
2016	269,994	189,113	80,881	70.0%	31,910	253.5%
2015	259,146	191,822	67,324	74.0%	32,026[5]	210.2%
2014	248,911	190,474	58,437[6]	76.5%	27,486	212.6%

1 Some numbers in this schedule are rounded for presentation purposes and may differ slightly from those presented in the Statement of Fiduciary Net Position.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

3 The assumptions used in determining the Total Pension Liability of the STRP changed as a result of the actuarial experience study conducted for the period July 1, 2010 through June 30, 2015. The assumption changes effective in fiscal year 2016–17 were to price inflation, wage growth, discount rate and the mortality tables.

4 The net pension liability (NPL) for fiscal year 2016–17 does not include a $511 million reduction to the net position as a result of CalSTRS implementation of GASB Statement No. 75.

5 In fiscal year 2013–14, CalSTRS reported pensionable compensation as part of GASB Statement No. 67 implementation. In fiscal year 2014–15, GASB clarified the requirement to be covered-employee payroll, which includes both pensionable and non-pensionable compensation. In fiscal year 2015–16, GASB Statement No. 82 was issued, which amended GASB Statements No. 67 and 68, to instead require the presentation of covered payroll, which is pensionable compensation. The amount reported in the schedule above for fiscal year 2014–15 includes pensionable and non-pensionable compensation; however, the covered payroll amount for fiscal year 2014–15 is $30.5 billion.

6 The NPL for fiscal year 2013–14 does not include a $162 million reduction to the net position as a result of CalSTRS' implementation of GASB Statement No. 68.

Schedule of Pension Contributions from Employers and Nonemployer Contributing Entity

Schedule III

(Dollars in Millions)

The information presented in this schedule for the STRP is required for defined benefit pension plans.

State Teachers' Retirement Plan

Year Ended June 30[1]	(a) Actuarially Determined Contributions	Legally Required Contributions for Employers and the State	(b) Employer Contributions[2,3]	(c) State Contributions[4]	(b + c) Total Contributions	a – (b + c) Contribution Deficiency (Excess)	(d) Covered Payroll	(b + c) / d Contributions as a % of Covered Payroll
2019	$10,790	$10,968	$5,633	$5,335	$10,968	($178)	$35,805	30.6%
2018	9,577	7,654	4,857	2,797	7,654	1,923	34,753	22.0%
2017	7,959	6,638	4,160	2,478	6,638	1,321	34,126	19.5%
2016	7,748	5,318	3,378	1,940	5,318	2,430	31,910	16.7%
2015	7,707	4,093	2,667	1,426	4,093	3,614	32,026[5]	12.8%
2014	7,158	3,641	2,258	1,383	3,641	3,517	27,486	13.2%

1 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

2 Excludes $10.7 million, $10.3 million, $13.3 million, $13.5 million, $11.2 million and $14.5 million for fiscal years 2018–19, 2017–18, 2016–17, 2015–16, 2014–15 and 2013–14, respectively, in contributions to separately finance specific liabilities, such as benefit enhancements, of an individual employer.

3 Includes employer contributions under Education Code sections 22711, 22713, 22905, 22950, 22950.5, 22951, 24260, 26503 and 26504.

4 Includes state contributions under Education Code sections 22954, 22955 and 22955.1, as well as Public Resources Code section 6217. Additionally, 2019 state contributions include the one-time, supplemental contributions resulting from SB 90.

5 In fiscal year 2013–14, CalSTRS reported pensionable compensation as part of GASB Statement No. 67 implementation. In fiscal year 2014–15, GASB clarified the requirement to be covered-employee payroll, which includes both pensionable and non-pensionable compensation. In fiscal year 2015–16, GASB Statement No. 82 was issued, which amended GASB Statements No. 67 and 68, to instead require the presentation of covered payroll, which is pensionable compensation. The amount reported in the schedule above for fiscal year 2014–15 includes pensionable and non-pensionable compensation; however, the covered payroll amount for fiscal year 2014–15 is $30.5 billion.

Methods and Assumptions Used in Calculations of Actuarially Determined Contributions

The actuarially determined contribution (ADC) for the STRP for 2019 presented in this Schedule of Pension Contributions from Employers and Nonemployer Contributing Entity was determined based on the assumptions used in the June 30, 2017, actuarial valuation. The following actuarial methods and assumptions were used to determine the ADC:

State Teachers' Retirement Plan[1]	
Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percent of Payroll Basis
Amortization Period	Closed/Open[2]
Remaining Amortization Period	30 years
Asset Valuation Method	Adjustment to market value
Actuarial Assumptions:	
Investment Rate of Return	7.00%[3]
Interest on Accounts	3.00%
Wage Growth	3.50%
Consumer Price Inflation	2.75%
Postretirement Benefit Increases	2.00% simple

1 The assumptions shown above are for the ADC of the Defined Benefit (DB) Program. The ADC for the year ending June 30, 2019, is the statutory contribution rate as of the June 30, 2017, actuarial valuation applied to actual DB Program payroll for the fiscal year ended June 30, 2019. For the Defined Benefit Supplement (DBS), Cash Balance Benefit (CBB) and Supplemental Benefit Maintenance Account programs, the ADC reflects the contributions recognized on an accrual basis for the fiscal year ended June 30, 2019.

2 The actuarial gains/losses and the unfunded actuarial obligation are amortized over a closed period for the DB Program, in contrast to the use of an open amortization period for the DBS and CBB programs.

3 The actuarially determined contribution for the fiscal year ending June 30, 2019, was calculated based on the economic and demographic assumptions in place for the funding actuarial valuation as of June 30, 2017. This valuation was performed using a 7.00% assumed investment rate of return, net of investment and administrative expenses. For financial reporting purposes, the NPL (shown in Note 3 of the basic financial statements) was calculated using actuarial assumptions adopted in 2017, which included an assumed rate of return of 7.10%, net of investment expenses but gross of administrative expenses.

Schedule of Money-Weighted Investment Returns for State Teachers' Retirement Plan and Medicare Premium Payment Program

Schedule IV

State Teachers' Retirement Plan

Year Ended June 30[1]	Money-Weighted Rate of Return, Net of Investment Expenses
2019	6.6%
2018	8.9%
2017	13.4%
2016	1.2%
2015	4.1%
2014	18.6%

1 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2013–14. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Medicare Premium Payment Program[1]

Year Ended June 30[2]	Money-Weighted Rate of Return, Net of Investment Expenses
2019	2.2%
2018	1.3%
2017	0.9%

1 The funds within the Medicare Premium Payment (MPP) Program as of June 30, 2019, were to manage differences between estimated and actual amounts to be paid and were invested in the Surplus Money Investment Fund, which is a pooled investment program administered by the California State Treasurer.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2016–17. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Schedule V

Schedule of Changes in Net OPEB Liability of Employers

(Dollars in Thousands)

Medicare Premium Payment Program

Year Ended June 30[1]	2019	2018	2017
Total OPEB Liability			
Interest	$14,225	$14,567	$12,928
Differences Between Expected and Actual Experience	(10,605)	(15,759)	(41)
Changes of Assumptions	12,111	(10,293)	(31,240)
Premiums Paid	(27,546)	(28,036)	(28,929)
Net Change in Total OPEB Liability	**(11,815)**	**(39,521)**	**(47,282)**
Beginning Total OPEB Liability	**381,228**	**420,749**	**468,031**
Ending Total OPEB Liability (a)	**369,413**	**381,228**	**420,749**
Plan Fiduciary Net Position			
Employer Contributions	27,977	28,218	29,117
Net Investment Income	29	18	11
Premiums Paid	(27,546)	(28,036)	(28,929)
Administrative Expenses	(1,901)	(578)	(168)
Other Expenses	(1)	–	–
Net Change in Plan Fiduciary Net Position	**(1,442)**	**(378)**	**31**
Beginning Plan Fiduciary Net Position-As Previously Reported	**(1,542)**	**41**	**10**
Adjustment for Application of New GASB Statements[2]	–	(1,205)	–
Beginning Plan Fiduciary Net Position-As Adjusted	**(1,542)**	**(1,164)**	**10**
Ending Plan Fiduciary Net Position (b)	**(2,984)**	**(1,542)**	**41**
ENDING NET OPEB LIABILITY OF EMPLOYERS (a) – (b)	**$372,397**	**$382,770**	**$420,708**[3]

1 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2016–17. Years will be added to this schedule in future fiscal years until 10 years of information is available.

2 An adjustment was made to the MPP Program's beginning net position in fiscal year 2017–18 due to the implementation of requirements from GASB Statement No. 75.

3 The net OPEB liability for fiscal year 2016–17 does not include the $1.2 million reduction to the net position as a result of CalSTRS implementation of GASB Statement No. 75.

Schedule VI

Schedule of Net OPEB Liability of Employers

(Dollars in Thousands)

Medicare Premium Payment Program

Year Ended June 30[1]	(a) Total OPEB Liability	(b) Plan Fiduciary Net Position	(a – b) Net OPEB Liability of Employers	(b / a) Plan Fiduciary Net Position as a % of Total OPEB Liability
2019	$369,413	($2,984)	$372,397	(0.81%)
2018	381,228	(1,542)	382,770	(0.40%)
2017	420,749	41	420,708	0.01%

1 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2016–17. Years will be added to this schedule in future fiscal years until 10 years of information is available.

Other Supplementary Information

Schedule of Administrative Expenses

(Dollars in Thousands)

Schedule VII

	State Teachers' Retirement Plan	Pension2 403(b) Plan	Pension2 457(b) Plan	Medicare Premium Payment Program	Teachers' Deferred Compensation Fund	Totals
Personnel Services:						
Salaries and Wages	$75,996	$–	$–	$228	$333	$76,557
Staff Benefits	16,246	–	–	73	93	16,412
Accrued Pension and OPEB Expense	90,065	–	–	1,500	440	92,005
Total Personnel Services	**182,307**	**–**	**–**	**1,801**	**866**	**184,974**
Operating Expenses and Equipment:						
General	1,210	–	–	81	82	1,373
Depreciation/Amortization	5,346	–	–	–	–	5,346
Printing	611	–	–	–	10	621
Communications	1,214	–	–	–	–	1,214
Postage	923	–	–	–	–	923
Insurance	303	–	–	–	–	303
Travel	889	–	–	–	30	919
Training	875	–	–	–	–	875
Facilities Operations	10,214	–	–	–	–	10,214
Consultants and Professional Services	26,034	2,739	122	–	531	29,426
Information Technology	10,132	–	–	–	–	10,132
Indirect State Central Services	10,112	–	–	19	103	10,234
Equipment	3,760	–	–	–	–	3,760
Other	23	–	–	–	–	23
Total Operating Expenses and Equipment	**71,646**	**2,739**	**122**	**100**	**756**	**75,363**
TOTAL ADMINISTRATIVE EXPENSES	**$253,953**	**$2,739**	**$122**	**$1,901**	**$1,622**	**$260,337**

Schedule of Investment Expenses
(Dollars in Thousands)

Schedule VIII

	Contract Start Date	Amount
Investment Management Fees		
Aberdeen Standard Investments, Inc.	12/15/06	$1,730
Acadian Asset Management, LLC	2/1/18	636
AGF Investments America, Inc.	3/19/07	1,132
AQR Capital Management Holdings, LLC	12/1/14	21,169
Arrowstreet Capital, Ltd.	8/1/15	8,493
Baillie Gifford Overseas, Ltd.	1/15/06	7,298
Bivium Capital Partners, LLC	2/15/08	2,315
BlackRock Financial Management, Inc.	5/12/99	5,001
BlackRock Institutional Trust, N.A.	10/27/98	3,560
Columbia Management Investment Advisers, LLC	10/1/11	592
Credit Suisse Asset Management, LLC	9/1/11	1,490
Fidelity Institutional Asset Management Co.	2/1/00	2,671
First Quadrant, LP	11/1/98	162
FIS Group, Inc.	2/27/04	3,145
Generation Investment Management	3/19/07	17,799
Hermes Investment Managers, Ltd.	2/1/19	37
Hotchkis and Wiley Capital Management, LLC	10/1/18	466
Impax Asset Management Limited	2/1/19	112
JP Morgan Investment Management, Inc.	1/1/14	8,881
Lazard Asset Management, LLC	5/18/99	12,570
Leading Edge Investment Advisors, LLC	2/15/08	2,684
Lee Overlay Partners, Ltd.	10/15/09	2,888
LM Capital Group, LLC	10/30/06	785
Lyxor Asset Management, Inc.	8/1/16	6,076
Macquarie Investment Management	11/1/98	2,480
Millennium Global Investments, Ltd.	7/1/10	3,229
Mondrian Investment Partners, Ltd.	5/13/99	16,068
PanAgora Asset Management, Inc.	11/01/18	741
PIMCO	2/28/17	1,444
Post Advisory Group, LLC	1/31/02	446
Principal Global Investors, LLC	1/1/14	2,924
Progress Investment Management	2/15/08	2,246
Pyrford International Limited	8/15/18	1,622
Pzena Investment Management, LLC	7/1/15	3,575
Robeco Institutional Asset Management	2/1/18	793
Sasco Capital, Inc.	10/30/98	15
Schroder Investment Management	9/1/14	7,459
Silvercrest Asset Management	7/1/11	1,578
State Street Global Advisors Trust Company	12/1/00	7,931
Sterling Capital Management, LLC	3/11/04	673
T. Rowe Price Associates, Inc.	1/15/06	7,374
Templeton Asset Management, Ltd.	5/18/99	3,483
Western Asset Management Co.	10/30/06	1,630
Total Investment Management Fees		**177,403**

Schedule of Investment Expenses (continued)

(Dollars in Thousands)

Schedule VIII

	Contract Start Date	Amount
Advisors and Consultants		
Altus Group U.S., Inc.	7/1/15	$812
Bard Consulting, LLC	9/20/07	865
Bickmore Risk Services and Consulting	12/1/16	118
Callan Associates	9/20/07	82
Cambridge Associates, LLC	5/31/14	2,673
Colmore, Inc	4/1/19	24
Crosswater Realty Advisors, LLC	6/1/16	185
Ernst & Young U.S. LLP	1/1/16	169
Hamilton Lane Advisors, LLC	9/20/07	29
Lyxor Asset Management, Inc.	8/1/16	300
Meketa Investment Group, Inc.	1/1/12	1,201
Pavilion Alternatives Group, LLC	1/1/12	958
Pension Consulting Alliance, LLC	6/1/14	1,085
Principal Global Investors, LLC	1/1/14	647
RCLCO Fund Advisors, LLC	1/15/18	380
RERC, LLC	9/20/07	3,975
StepStone Group Real Estate LP	9/20/07	61
Valuation Research Corporation	8/1/01	220
Miscellaneous	N/A	5
Total Advisors and Consultants		**13,789**
External Services–Legal and Attorney Fees		
Berman DeValerio	4/19/11	343
BLA Schwartz, PC	11/1/13	593
Chapman and Cutler, LLP	8/9/12	16
Covington & Burling, LLP	4/20/11	12
Cox, Castle & Nicholson, LLP	11/30/09	2,874
DLA Piper LLP (US)	3/1/18	796
Grant & Eisenhofer	9/1/10	11
Morgan, Lewis & Bockius, LLP	12/9/10	982
Proskauer, LLP	3/9/11	852
Reed Smith, LLP	7/1/15	172
Steptoe & Johnson, LLP	3/1/17	25
Miscellaneous	N/A	9
Total External Services–Legal and Attorney Fees		**6,685**
Master Custodian		
State Street Bank & Trust Co.	7/1/01	3,226
Total Master Custodian		**3,226**
Research and Rating Services		
Abel Noser Holdings, LLC	4/1/18	46
Accounting Research & Analytics, LLC	1/1/19	27
Activist Insight, Ltd.	9/1/18	18
AlternativeSoft AG	10/1/18	26
CEM Benchmarking, Inc.	12/4/17	70

Schedule of Investment Expenses (continued)

(Dollars in Thousands)

Schedule VIII

	Contract Start Date	Amount
Cornerstone Macro, LP	1/1/19	$70
CPR & CDR Alpha, LLC	3/1/19	60
Creditsights, Inc.	12/30/18	40
Equilar, Inc.	7/1/18	45
eVestment Alliance, LLC	8/1/18	42
FactSet Research System, Inc.	7/1/17	820
Glass Lewis & Co., LLC	6/1/18	255
Global Financial Data, Inc.	5/9/19	28
GNA Services, LLC	1/1/19	25
ICE Benchmark Administration	7/1/18	16
Informa Investment Solutions	1/12/18	27
Institutional Shareholder Services	7/1/18	106
KDP Investment Advisors, Inc.	10/1/18	37
London Stock Exchange PLC	1/1/18	34
Management CV, Inc.	2/1/19	16
Moody's Investors Service	1/1/19	387
MSCI ESG Research, Inc.	1/1/19	135
MSCI, Inc.	1/1/18	968
Nomura Research Institute	12/31/18	18
Preqin Limited	5/31/18	29
Refinitiv US, LLC	7/1/18	145
Russell Investment Group	7/1/17	303
Standard & Poor's	1/1/19	514
StarCompliance Operating, LLC	3/31/19	55
Strategas Securities, LLC	7/1/18	67
Sustainable Investments Institute	7/1/18	32
Sustainalytics U.S., Inc.	1/1/19	11
Technical Analysis Group, LLC	2/3/19	35
Trepp, LLC	1/1/18	71
Miscellaneous	N/A	20
Total Research and Rating Services		**4,598**
Risk Management Systems		
Barclays Bank PLC	4/1/18	100
BlackRock Financial Management, Inc.	7/1/06	7,253
MSCI, Inc. d/b/a Barra, LLC	4/1/19	143
Total Risk Management Systems		**7,496**
Trading Systems		
Bloomberg, LP	12/6/16	940
Fixed Income Clearing Corp	7/1/17	12
Intex Solutions, Inc.	9/1/18	168
Market Axess Corporation	10/1/17	16
Markit N.America Inc. / Markit Group	10/14/18	35
Omgeo, LLC	7/1/17	27
Miscellaneous	N/A	12
Total Trading Systems		**1,210**

Schedule of Investment Expenses (continued)

(Dollars in Thousands)

Schedule VIII

	Contract Start Date	Amount
Operating Expenses		
Administrative Costs		$61,317
Aon Risk Insurance		1,592
Council of Institutional Investors		37
Total Operating Expenses		**62,946**
Subtotal		**277,353**
Other Investment Expenses		
Foreign Tax Withheld		74,445
Real Estate		469
Broker Commissions		21,813
Miscellaneous		9,409
Total Other Investment Expenses		**106,136**
TOTAL INVESTMENT EXPENSES		**$383,489**

Schedule of Consultant and Professional Services Expenses

(Dollars in Thousands)

Schedule IX

Individual or Firm	Commission/Fee
State Teachers' Retirement Plan	
Actuarial Services	
Milliman, Inc.	$535
Total Actuarial Services	**535**
Auditing Services	
Crowe LLP	1,998
Grant Thornton, LLP	245
KPMG, LLP	368
State Personnel Board	37
Total Auditing Services	**2,648**
Consulting and Other Professional Services	
22nd Century Technologies, Inc.	43
Abacus Data Systems, Inc.	31
Accuity, Inc.	88
Acuity Technical Solutions	338
Agile Global Solutions, Inc.	176
Avante Solutions, Inc.	192
Background Profiles, Inc.	12
Bank of America Merrill Lynch, N.A.	13
Business Advantage Consulting, Inc.	556
Capio Group	194
CEB, Inc.	112
CEM Benchmarking, Inc.	50
CGI Technologies and Solutions, Inc.	27,397
Cloud Services Integrators, Inc.	12
Daniel J. Edelman, Inc.	116
Deloitte Consulting, LLP	2,436
Department Of Forestry and Fire Protection	23
Department Of Human Resources	45
Digital Deployment, Inc.	161
EFL Associates, Inc	31
Entisys 360, Inc.	160
Estrada Consulting, Inc.	320
Eventus Solutions Group, LLC	214
ExamWorks, Inc.	41
Forrester Research, Inc.	95
Gartner, Inc.	282
Global Governance Advisors, LLC	165
GoldLink Pacific, Inc.	1,176
Government Operations Agency	226
Grant Thornton, LLP	515

Schedule of Consultant and Professional Services Expenses (continued)

(Dollars in Thousands)

Schedule IX

Individual or Firm	Commission/Fee
Hogan Lovells US, LLP	$240
IMPLAN Group, LLC	13
Infinite Solutions, Inc.	159
InfoCap Networks, LLC	119
Infojini, Inc.	48
Integrated Consulting and Management	165
IntelliSurvey	19
International Network Consulting	519
Jaykumar Maistry	168
Kanini Infotech Consultants	116
LexisNexis	24
Linea Solutions, Inc.	712
Lucas Public Affairs	44
Mailing Systems, Inc.	45
Matthew Bender & Company, Inc.	17
MaritzCX Research, LLC	40
Maximus Human Services, Inc.	2,313
McLagan Partners, Inc.	66
Menlo Technologies, Inc.	39
MG Systems and Software, LLC	469
Microsoft Corporation	363
Montague DeRose and Associates, LLC	53
Montridge Consulting	161
Mosaic Governance Advisors, LLC	117
Natl Disability Evaluations, Inc.	56
NTT DATA, Inc.	2,161
Oak Technical Services, LLC	417
OnCore Consulting, LLC	474
Pension Benefit Information, LLC	65
Performance Technology Partners, LLC	50
Pinnacle Consulting	250
Providence Technology Group	803
QualApps, Inc.	37
R Systems, Inc.	154
Radian Solutions, LLC	89
ResilienSoft	54
Ridge Capital, Inc.	8,108
Robert J. Yetman	172
Sierra Metrics, Inc.	142
Signal Perfection, Ltd.	85
Solutions Simplified	61
State Controller's Office	1,918
SupportFocus, Inc.	650

Schedule of Consultant and Professional Services Expenses (continued)

(Dollars in Thousands)

Schedule IX

Individual or Firm	Commission/Fee
System Solutions DVBE, Inc.	$31
Taborda Solutions, Inc.	378
Technology Management Solutions	201
The Highlands Consulting Group, LLC	143
Thomas V. Ennis Consulting	182
Thomas/Ferrous, Inc.	126
University Enterprises, Inc.	390
Vasquez & Company, LLP	17
Vector Consulting, Inc.	122
Visionary Integration Professionals	1,466
Total Consulting and Other Professional Services	**60,051**
Legal Services	
California Department of Justice	20
Department of General Services	263
Klinedinst, PC	445
Nossaman, LLP	20
Olson Hagel Fishburn, LLP	17
Pillsbury Winthrop Shaw Pittman, LLP	264
Reed Smith, LLP	184
Shaw Law Group, PC	55
Sheppard Mullin Richter & Hampton	406
Total Legal Services	**1,674**
Regional Counseling Services	
Fresno County Office Of Education	31
Humboldt County Office Of Education	70
Kern County Office of Education	167
Santa Barbara County Office of Education	176
Santa Cruz County Office of Education	104
Total Regional Counseling	**548**
Various Services Under $10K	
Others	88
Total Various Services Under $10K	**88**
Gross Consulting and Professional Services	**65,544**
Less: Amounts Capitalized[1]	39,510
TOTAL STATE TEACHERS' RETIREMENT PLAN — CONSULTING AND PROFESSIONAL SERVICES NET OF AMOUNTS CAPITALIZED	**$26,034**

1 Vendor costs that meet the CalSTRS capitalization criteria are backed out from gross consultant and professional services expenses. Refer to Note 2 for discussion of CalSTRS' treatment of capital assets.

Other Supplementary Information

Schedule of Consultant and Professional Services Expenses (continued)

(Dollars in Thousands)

Schedule IX

Individual or Firm	Commission/Fee
Pension2 – IRC 403(b) Plan	
Administrative Services	
TIAA	$14
Voya Institutional Plan	2,725
Total Administrative Services	**2,739**
TOTAL PENSION2–IRC 403(b) PLAN — CONSULTING AND PROFESSIONAL SERVICES	**$2,739**
Pension2 – IRC 457(b) Plan	
Administrative Services	
Voya Institutional Plan	122
Total Administrative Services	**122**
TOTAL PENSION2–IRC 457(b) PLAN — CONSULTING AND PROFESSIONAL SERVICES	**$122**
Teachers' Deferred Compensation Fund	
Consulting Services	
JNT Resource Partners, LP	437
Morningstar, Inc	85
Meridian Wealth Management	9
Total Consulting Services	**531**
TOTAL TEACHERS' DEFERRED COMPENSATION FUND — CONSULTING AND PROFESSIONAL SERVICES	**$531**

Investment Section \\

The CalSTRS Investment Portfolio generated 6.82% absolute return net of manager fees on its investments for the fiscal year ended June 30, 2019.

M E K E T A   I N V E S T M E N T   G R O U P

Boston MA
Chicago IL
Miami FL
New York NY
Portland OR
San Diego CA
London UK

The CalSTRS Investment Portfolio produced a 6.8% net-of-fees return over the latest fiscal year, ahead of its benchmark return and the median fund return in the State Street Master Trust Universe. The portfolio increased by $13.1 billion over the past 12 months, ending with a value of $236.9 billion on June 30, 2019, despite significant net cash outflows during the year. As highlighted below, the CalSTRS portfolio continues to be broadly diversified, holding investments ranging from publicly traded short-term bonds to privately held partnerships.

Investment Allocation

The Teachers' Retirement Board adopts long-term strategic allocation targets to be implemented over several years. The fiscal year-end report reflects strategic allocation guidelines for the 2018–19 fiscal year as adopted by the Board. As of year-end, the portfolio's actual allocation was slightly different from policy (see table below). As of June 30, 2019, the Real Estate class was slightly overweight, while Fixed Income and Inflation Sensitive were slightly underweight their respective targets. All of these classes were, however, within policy ranges. Moreover, the remaining classes were in-line with policy.

Asset Allocation as of June 30, 2019

	CalSTRS Policy	CalSTRS Actual*
Cash	2%	2%
Global Equity	51%	51%
Private Equity	9%	9%
Real Estate	13%	14%
Fixed Income	13%	12%
Inflation Sensitive	3%	2%
Risk Mitigating Strategies (RMS)	9%	9%

* Additional assets (<1%) held in the *Innovative Strategies and Strategic Overlay* classes. Note: Allocations may not sum to 100% due to rounding

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760 795 3450   fax 760 795 3445   www.meketagroup.com

Fiscal Year In Review

While global equities rebounded significantly from December lows to close out the June 2019 fiscal year, the past twelve months certainly saw heightened volatility. The VIX reached 36 in December before re-tracing to 25 and further retreating to around 15 by the June 30 fiscal year-end. Nonetheless, for much of the fiscal year, most markets embraced a "risk on" appetite.

The start of 2019 was characterized by worries of rising interest rates globally, this theme quickly shifted throughout the remainder of the fiscal year as increasing concerns of slowing global growth—made worse by trade tensions between the U.S. and China—prompted major central banks to consider more accommodative policies. In the U.S., the Federal Reserve held the federal funds rate steady at its June meeting, while signaling the potential for future interest rate cuts. The European Central Bank (ECB) also held rates steady with a potential for further reductions, and the Bank of Japan showed no signs of pulling back from its unprecedented monetary stimulus. Of all the central banks, the U.S. has the most room to lower rates, while Japan and Europe are already in negative territory. With growth revisions for 2019 and 2020 (IMF forecast of 3.2% and 3.5% respectively) down by 0.1%, key risks to monitor will not only be trade tensions between the U.S. and China, but declining growth in China, political uncertainty in Europe, and risks related to Brexit.

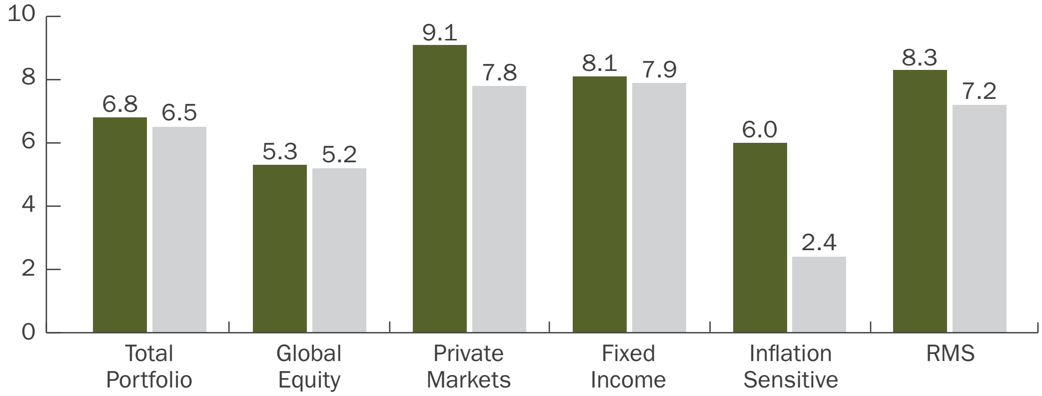
U.S. equities, as represented by the Russell 3000 Index, closed out the fiscal year with an 8.98% return. Non-U.S. equity markets did not fare as well. Emerging markets delivered negative returns in the first half of the fiscal year, but reversed course in the second half, with the MSCI Emerging Market Index finishing the fiscal year with a 1.21% return. Trade tensions and a strong U.S. dollar continued to weigh on results. The MSCI EAFE Index, representing foreign developed markets, followed closely behind returning 1.08%. Overall growth has declined in Europe given the slowdown in Germany, uncertainties related to Brexit, and trade tensions.

The trend of U.S. growth stocks outperforming value stocks persisted throughout the year, with growth holding a 3.26% lead over value, as the Russell 3000 Growth Index closed out the year with a 10.60% return, versus 7.34% for the Russell 3000 Value Index.

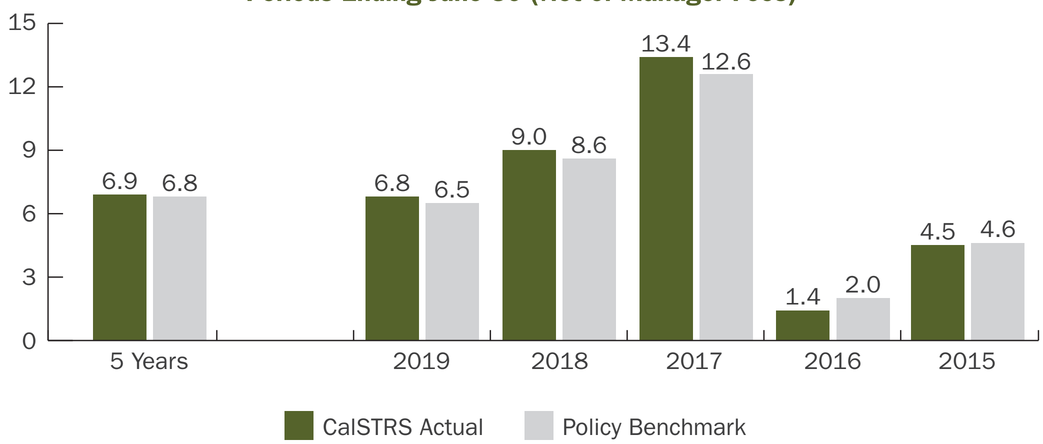
Within fixed income, investment grade markets closed out the fiscal year on a strong note. Throughout the first half of fiscal year 2019, concerns over rising interest rates and inflation created headwinds. In the U.S., the Federal Reserve increased short-term interest rates to a range of 2.25% to 2.50% by December, but this hawkish stance turned dovish in the second half of the fiscal year as central banks abruptly shifted to a more accommodative policy by early January. Investment grade credit and high yield bonds rebounded alongside the equity markets as a result, with the high yield market posting one of the strongest returns in nearly 10 years (Bloomberg Barclays High Yield index was up 7.26% for the quarter ending March 31, 2019). Despite this, the deterioration of U.S. and China trade talks in May prompted a temporary drop in global equity prices and U.S. Treasury yields. The 3-month–10-year segment of the yield curve inverted for the second time in 2019, causing investors to question whether this might be a sign of worse to come.

Over the fiscal year, the broad U.S. bond market, represented by the Bloomberg Barclays Aggregate Index, returned 7.87%, high yield bonds returned 7.48%, and TIPS returned 4.84%. Emerging market bonds (as represented by the JPM GBI EM Global Diversified Index) posted an 8.99% return for the fiscal year.

Last 12 Months Ending June 30 (Net of Manager Fees)



Periods Ending June 30 (Net of Manager Fees)



Investment Results (Net of Manager Fees)

Over the last year, the CalSTRS portfolio produced an absolute return of 6.8% net of manager fees, ranking in the second quartile among its large public pension fund peers[1]. During this period, the CalSTRS portfolio results outperformed the policy benchmark[2] return by 30 basis points (top bar chart). Relative outperformance was assisted by asset classes outperforming their benchmarks across the boards, primarily driven by the Private Markets, Risk Mitigating Strategies, and Inflation Sensitive classes.

During the last three years, CalSTRS generated a 9.7% annualized investment return net of manager fees, ahead of its benchmark by 50 basis points, and ranking in the top third of its peer group. Three-year returns were dominated by public and private market performance (12.0% and 13.8%, respectively). Longer term performance has also been strong, with CalSTRS posting a 6.9% return over the last five years, and 10.1% over the last ten years. Five-year performance of 6.9% was ahead of the policy benchmark by 10 basis points, and closely aligned with the long term actuarial assumption for the portfolio.[3]

Sincerely,

Stephen P. McCourt, CFA
Managing Principal

1 Per State Street Universe of Master Trust Public Funds with assets in excess of $10 billion.

2 The policy benchmark consists of passively managed strategic class portfolios weighted by CalSTRS policy allocations. The difference between actual results and the benchmark are due to two factors: i) deviations from policy, and ii) active decisions on the part of CalSTRS and its investment managers.

3 CalSTRS investment performance is calculated using a daily time-weighted return geometrically linked to calculate a monthly return. Periods longer than one month are geometrically linked to calculate annualized “time-weighted” rates of return.

Investment Objectives

The main goal for the California State Teachers' Retirement System is to maintain a financially sound retirement system. The following general investment objectives establish a framework for the operation of the investment portfolio.

1. **Provide for Present and Future Benefit Payments**—The CalSTRS Investment Program shall: provide liquidity to pay benefits to its participants and their beneficiaries in the amounts and at the times called for through the investment of contributions and other fund assets, strive to meet the assumptions built into the actuarial model and strive to maintain a fully funded pension system.

2. **Diversify the Assets**—Seek to diversify the assets to achieve the desired rate of return at a prudent level of risk. The asset structure must provide for diversification of risk between asset classes in order to manage the risk/return relationship through strategic asset allocation.

3. **The Reduction of CalSTRS' Funding Costs**—Within prudent levels of risk, the reduction of CalSTRS' funding costs shall be a consideration in the organization and structure of the investment portfolio.

4. **Maintain the Trust of the Participants and Public**—Manage the investment program in such a manner that will enhance the member and public's confidence in the CalSTRS Investment Program.

5. **Establish Policy and Objective Review Process**—A formal review of the CalSTRS Investment Policy and Management Plan will be conducted annually, with an updated financial projection developed every two years.

6. **Create Reasonable Pension Investments Relative to Other Pension Funds**—The selection of investment vehicles and policies will be judged against other private and public pension funds. Investment performance, asset management costs, staffing and overall expenses will be compared to other public and corporate pension plans, with special emphasis on comparisons with other large public funds.

7. **Minimize Costs**—Management fees, trading costs and other expenses will be aggressively monitored and controlled.

8. **Compliance with State and Federal Laws**—The investment program must operate in compliance with all applicable State and Federal laws and regulations concerning the investment of pension assets.

Basis of Presentation

Investment values and the related returns for the CalSTRS Investment Portfolio (Total Fund) are presented differently within the Investments and Financial Sections of the CAFR for various reasons. Therefore, it is important to understand the methodology presented in each section. In the following pages, news releases and on the internet, the investment values and related returns are presented using common investment industry practices that reflect the way in which CalSTRS manages our investment portfolio. The presentation based on investment industry practices provides timely information that is easily compared to benchmarks and peer results.

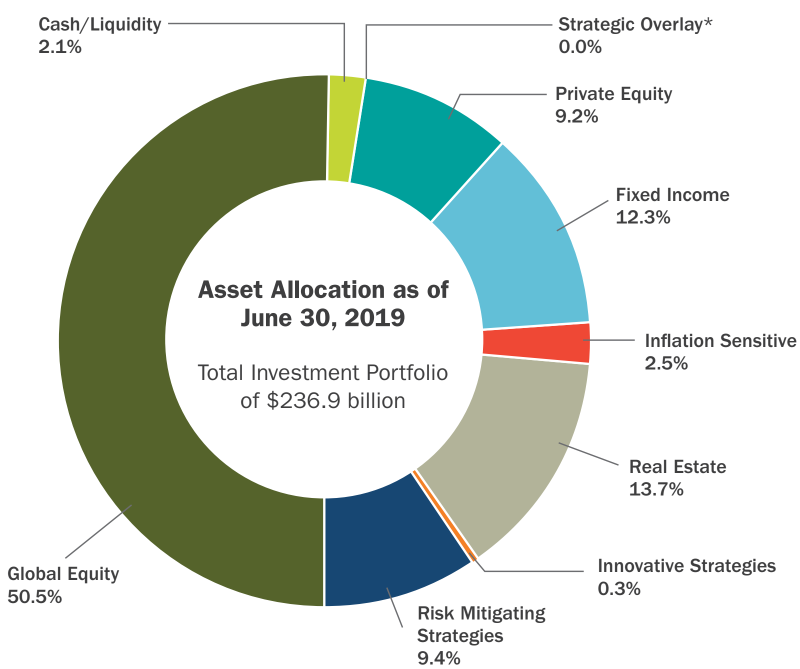
Within the Financial Section, the same information is reported in accordance with U.S. Generally Accepted Accounting Principles. The primary difference between the presentations is the categorization of the investments. In this section, the amortization from securities lending is included in the earned net income; in the Financial Section, amortization from securities lending is reported within net appreciation/(depreciation) in fair value of investments. Additional differences result from the timing of recognition of performance for certain investments in the portfolio. In accordance with investment industry practices, private asset performance is reported with a quarter lag; for financial reporting purposes, adjustments are made to bring results current. Both sets of numbers are relevant but reflect different methodologies and serve different purposes.

Performance information in this section is reported net of fees and is calculated using a time-weighted return methodology. Also, the investment information on the CalSTRS website is reported consistent with investment industry standards and is comparable to the global financial markets, other pension plans and institutional investors. For more information, visit CalSTRS.com.

Investment Overview and Results

The CalSTRS Investment Portfolio's assets under management ended the fiscal year 2018–19 at $236.9 billion. The Investment Portfolio generated a 1-year 6.82% return net of fees, just below the 7.00% actuarial rate of return for funding purposes, yet above the policy benchmark of 6.48%. CalSTRS' 1-year return ranked in the top half of all public pension plans in the United States; however, one year is a very short time period when you have a 30-year investment horizon. As a long-term investor, it is more meaningful to review the CalSTRS investment performance over longer time periods. At June 30, 2019, the investment portfolio generated 9.72% return net of fees over the past three years, 6.95% over the last five years and 7.98% over the past 25 years. Compared to other U.S. public pensions plans, CalSTRS investment returns ranked in the top quartile over 3 and 5 years ending June 30, 2019.

While this annual report provides a significant amount of information regarding the CalSTRS Investment Portfolio, only one point in time is represented: June 30, 2019. It is difficult to compare this time measurement to the movement and complexity of the investment portfolio in this highly dynamic global financial market. For more current investment information, as well as videos detailing key aspects of the investment portfolio, visit CalSTRS.com.



*Strategic Overlay consists of the Currency Management Program and Derivative Overlay.

Investments

Table 1

Market Value of Investments (Fiscal years ended June 30)

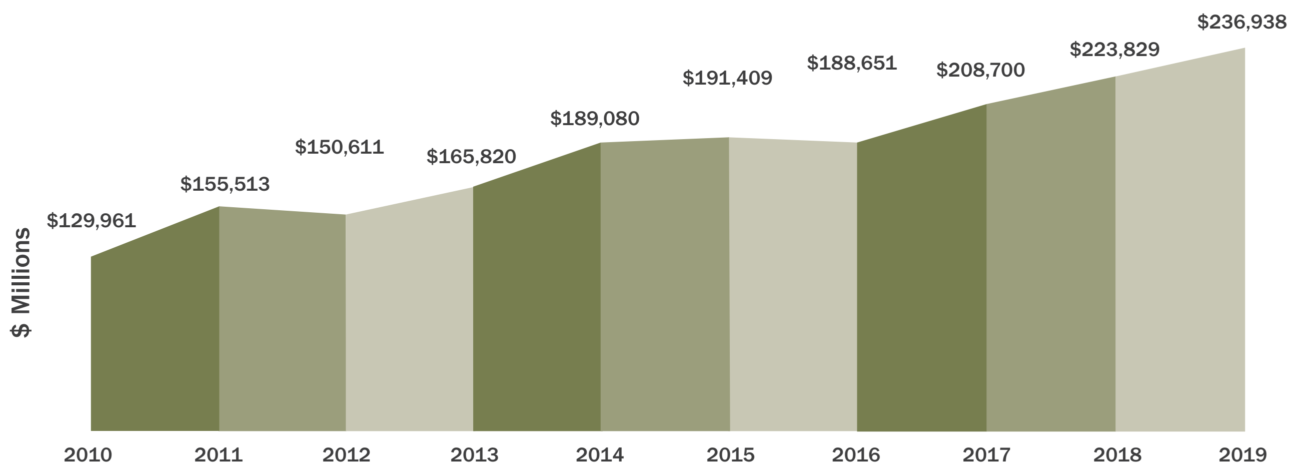


Table 2

10 Years of Time-Weighted Annual Returns (Fiscal years ended June 30)

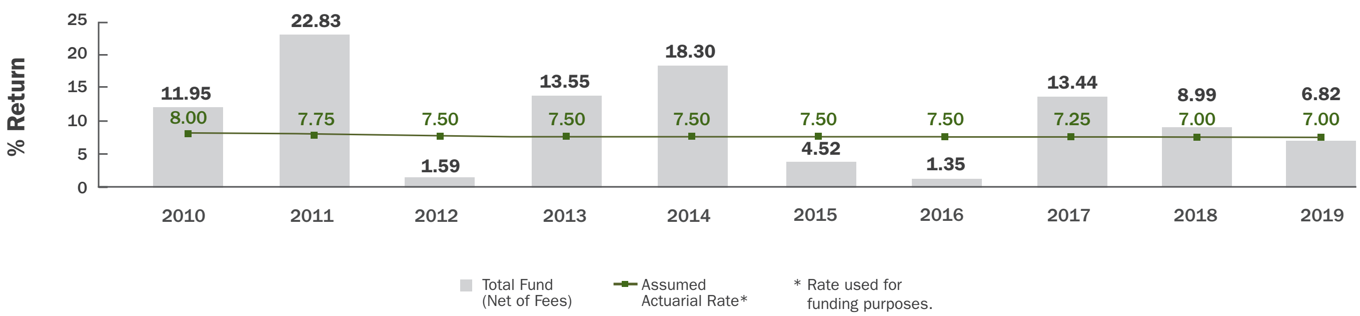


Table 3

Time-Weighted Returns (as of June 30, 2019)

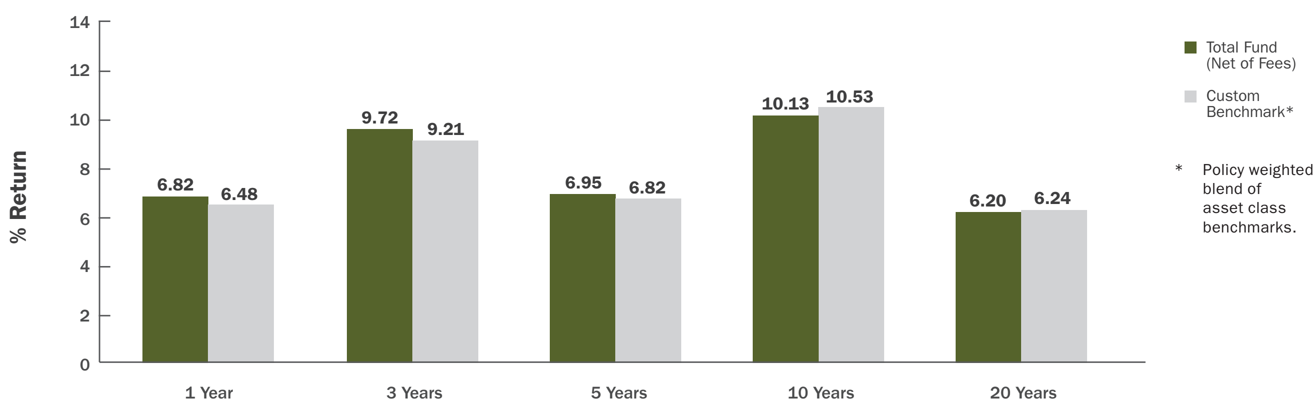


Table 4

Time-Weighted Returns Net of Fees by Portfolio Types (as of June 30, 2019)

Portfolio Type / Associated Index[1]	1 Yr	3 Yr	5 Yr	10 Yr
Global Equity	**5.34%**	**12.03%**	**7.18%**	**11.83%**
Global Equity Custom Index[2]	5.20%	12.02%	7.14%	11.73%
U.S. Equity	**8.95%**	**14.20%**	**10.16%**	**14.64%**
Russell 3000 Custom Index	9.10%	14.24%	10.22%	14.66%
Non-U.S. Equity	**1.02%**	**9.87%**	**2.68%**	**6.99%**
MSCI All Country World Index ex-U.S. Custom Investable Market Index	0.51%	9.44%	2.12%	6.46%
Fixed Income	**8.08%**	**3.13%**	**3.42%**	**4.82%**
U.S. Debt Custom Index[3]	7.86%	2.57%	3.04%	4.16%
Real Estate	**8.19%**	**8.93%**	**9.94%**	**8.22%**
Real Estate Custom Index[4]	6.55%	7.01%	9.18%	8.68%
Private Equity	**10.55%**	**13.83%**	**10.60%**	**13.54%**
Private Equity Custom Index[5]	9.61%	12.18%	9.74%	17.31%
Risk Mitigating Strategies[6]	**8.32%**	**0.15%**	**1.41%**	**—**
Risk Mitigating Strategies Custom Index[7]	7.16%	0.04%	0.73%	—
Inflation Sensitive[8]	**6.03%**	**7.87%**	**4.50%**	**—**
Inflation Sensitive Custom Index[9]	2.36%	3.79%	3.28%	—
Innovative Strategies[10]	**9.21%**	**8.83%**	**5.46%**	**2.69%**
Innovative Strategies Custom Index[11]	5.09%	7.64%	4.99%	—
Cash/Liquidity[12]	**2.63%**	**1.72%**	**1.34%**	**3.42%**
Bloomberg Barclays Capital 3-Month Treasury Bill	2.33%	1.40%	0.89%	0.50%

CalSTRS' investment performance is calculated using a daily time-weighted return geometrically linked to calculate a monthly return. Periods longer than one month are geometrically linked to calculate annualized time-weighted rates of return. Custom public indices are updated quarterly in accordance with CalSTRS restricted securities list. Exclusions include tobacco, illegal California firearms, thermal coal, Iran, Sudan, Saudia Arabia, U.S. private prisons, and geopolitical companies.

1 Benchmark descriptions are as of June 30, 2019, and subject to changes within the portfolio policies. Performance returns are comprised of historical changes within each benchmark. For additional information on benchmarks, please refer to the respective investment policies on CalSTRS' website.

2 Weighted blend of the Russell 3000 Custom Index + MSCI All Country World Index (ACWI) ex-U.S Custom Investable Market Index (IMI).

3 95% Bloomberg Barclays U.S. Aggregate Custom Index + 5% Bloomberg Barclays U.S. High Yield 2% Issuer Capped custom index.

4 NCREIF ODCE Value Weighted Index net of fees (quarter lagged). Previously NCREIF Property Index (quarter lagged) through June 2013.

5 Weighted blend of the CalSTRS Custom Private Equity Index and Custom Tactical Index (both quarter lagged). Previously, Russell 3000 Custom Index quarter lag + 3% from July 2008 through June 2014.

6 Asset class established in July 2016. Prior to July 2016, the assets in this program were part of Absolute Return.

7 Weighted blend of Bloomberg Barclays U.S. Treasury 20+year Total Return Index, SG Trend Index, HFRI Macro: Discretionary Thematic Index and the Eurekahedge MF Risk Premia Index.

8 The 10-year return is not yet available as the inception date is February 2010.

9 Weighted blend of the Bloomberg Barclays U.S. Treasury Inflation Linked-Bond Index (Series L), NCREIF Timberland Fund Index, Bloomberg Commodity Index, Alerian MLP Daily index, CPI+3% (quarter lagged) and CPI+4% (quarter lagged). Previously, a weighted blend of Bloomberg Barclays U.S. Treasury Inflation Linked Bond Index (Series L), Alerian MLP Daily Index and CPI+4% quarter lag. From July 2014–April 2016, a weighted blend of Bloomberg Barclays Global Inflation Linked Series L Index and CPI+4% quarter lag. Prior to July 2014, weighted blend of Bloomberg Barclays Global Inflation Linked Series L Index and CPI+5% quarter lag.

10 Prior to July 2016, this investment strategy was part of Absolute Return. Returns prior to the restructure reflects the historical Absolute Return performance.

11 Weighted blend of 60% MSCI EAFE + Canada/ 40% BarCap U.S. blended, Bloomberg Barclays Capital 3-Month Treasury Bill, and Zero Return index. Previously, a weighted blend of 60% MSCI EAFE + Canada/ 40% BarCap U.S. blended, Custom Tactical index and Bloomberg Barclays Capital 3-Month Treasury Bill from July 2016 to December 2016. Returns prior to July 2016 reflect Absolute Return historical performance.

12 Includes the Securities Lending Program loss incurred in fiscal year 2008–09 and subsequent income earned through December 2013.

Global Equity

For the fiscal year ending June 30, 2019, the $119.7 billion Global Equity Portfolio represented 50.5% of the Total Fund. Approximately 60% of the portfolio's assets are internally managed in passively implemented index strategies in the U.S. and the developed market. The remaining assets are managed by external investment managers in active strategies. As of June 30, 2019, the portfolio had 56% of its assets in U.S. equity and 44% in non-U.S. equity.

As shown in Table 4, the Global Equity Portfolio generated a 5.34% one-year return net of fees, beating its policy benchmark by 14 basis points. The relative performance was primarily attributable to the portfolio's active emerging market managers who in aggregate outperformed their benchmark by 164 basis points.

Table 5 lists the largest public equity holdings as of June 30, 2019, which represents 9.9% of the Global Equity Portfolio.

For more information about the Global Equity Portfolio, refer to the Investments section on CalSTRS.com.

Sustainable Investment and Stewardship Strategies

Formerly Corporate Governance, the name change in 2019 to Sustainable Investment and Stewardship Strategies (SISS) reflects the extended scope of CalSTRS' environmental, social and governance (ESG) related investment and stewardship activities supporting long-term value creation. The SISS unit undertakes three core pillars of activity: the SISS Investment Portfolio, Stewardship Activities and Stakeholder Relations Management. Within the SISS Investment Portfolio, the team oversees approximately $8.0 billion of assets under management, which includes activist managers, sustainability-focused funds and the low carbon index strategies. In the first half of 2019, SISS funded three new sustainability-focused managers totaling $750 million which included Impax Leaders, Hermes Global Emerging Markets and Schroders International. SISS also funded Impactive Capital, a women and minority owned small cap activist manager with a value creation focus linked to ESG factors.

The SISS activist funds invest in companies with poor governance structures and engage management to improve operations and governance to enhance

Table 5

Largest Public Equity Holdings (as of June 30, 2019) (CalSTRS maintains a complete list of portfolio holdings)

Security Name	Shares	Market Value
Microsoft Corp.	16,056,459	$2,150,923,248
Apple Inc.	9,374,736	1,855,447,749
Amazon.com Inc.	880,840	1,667,985,049
Alphabet Inc.	1,299,355	1,405,686,322
Facebook Inc. Class A	5,053,174	975,262,582
Johnson + Johnson	6,185,172	861,470,756
Berkshire Hathaway Inc. Cl B	3,854,633	821,692,117
JPMorgan Chase + Co.	6,670,392	745,749,826
Samsung Electronics	17,168,976	719,870,524
Exxon Mobil Corp.	8,570,021	656,720,709

long-term shareholder value. The sustainability-focused funds integrate ESG factors into their long-term investment strategy to deliver market outperformance. The internally managed low carbon index strategies focus on an index designed to have significantly lower exposure to carbon emissions and to fossil fuel reserves than the broad market. The SISS Portfolio had a since inception return of 8.98% for its blended index.

In addition, as part of the SISS team's stewardship activities, CalSTRS believes voting proxies is an important fundamental shareholder right and is one tool for investors to influence change at portfolio companies. Staff always exercise voting rights guided by the CalSTRS Corporate Governance Principles in a manner consistent with the interests of our beneficiaries—California's public school teachers. We believe our proxy votes can affect necessary changes designed to enhance a company's long-term value. Over the last fiscal year, CalSTRS voted approximately 9,000 proxies, with more than half of them being voted during U.S. proxy season, which occurs in the months of April, May and June. Each year, our voting activities cover a variety of proposals. This fiscal year voting activities include: 53,389 director elections, 13,005 auditor ratifications, 11,029 compensation plans, 6,196 capital management, 998 mergers and acquisitions, 3,198 changes to company statues, 2,295 meeting administration, 976 other and 1,006 shareholder proposals.

CalSTRS believes the overall market continues to demonstrate improved governance with many large companies adopting governance best practices. These companies are also seeking input from shareholders on various issues, including executive compensation, board composition and ESG concerns during the proxy off-season. Some companies, however, continue to demonstrate suboptimal governance and, because of this, CalSTRS will continue to use proxy votes and direct engagement of portfolio companies to enhance long-term shareholder value for California's educators.

Fixed Income

For the fiscal year ending June 30, 2019, the Fixed Income Portfolio had total assets of $29.2 billion, representing 12.3% of the Total Fund. The Fixed Income Unit operates a hybrid model portfolio that takes advantage of the benefits and efficiencies of both internal and external asset management. Internal staff manage 86% of the portfolio's assets

Table 6

Largest Fixed Income Holdings (as of June 30, 2019) (CalSTRS maintains a complete list of portfolio holdings)

Security Name	Maturity Date	Interest Rate	Par Value	Market Value
U.S. Treasury N/B	11/30/2024	2.125%	$335,000,000	$340,731,642
U.S. Treasury N/B	1/15/2022	2.500%	325,817,400	332,002,841
U.S. Treasury N/B	5/15/2022	2.125%	325,220,000	328,878,725
U.S. Treasury N/B	5/15/2044	3.375%	257,760,000	299,565,450
U.S. Treasury N/B	2/28/2021	1.125%	295,000,000	291,692,773
U.S. Treasury N/B	5/15/2046	2.500%	290,000,000	288,368,750
U.S. Treasury N/B	11/15/2021	2.875%	280,000,000	287,393,750
U.S. Treasury N/B	5/31/2025	2.875%	267,950,000	283,712,997
U.S. Treasury N/B	12/31/2023	2.250%	270,000,000	275,842,970
U.S. Treasury N/B	5/15/2047	3.000%	245,000,000	268,351,563

using enhanced core and high yield strategies with a moderate level of risk. The remaining 14% is managed by external managers using broader opportunistic strategies which assume a higher level of risk and therefore a higher level of expected return.

As shown in Table 4, the Fixed Income Portfolio generated an 8.08% 1-year return net of fees, outperforming its benchmark by 22 basis points. The 3-, 5- and 10-year net returns were positive and have outperformed the benchmark by 56, 38 and 66 basis points, respectively. The portfolios overweight to credit, primarily investment grade, accounted for much of the outperformance.

Table 6 lists the largest fixed income holdings as of June 30, 2019, which represent 10.3% of the Fixed Income Portfolio.

The Fixed Income Unit manages two additional programs: Securities Lending and Currency Management, discussed in the next two sections.

For more information about the Fixed Income Portfolio, refer to the Investments section on CalSTRS.com.

Securities Lending Program

The Securities Lending Program is a low-risk strategy that allows the fund to use its existing asset base and lending expertise to generate additional income. For the fiscal year ended June 30, 2019, the Securities Lending Program earned approximately $101.7 million in additional net income for the fund, which was an increase of $3.6 million compared to the previous year. The increase in earnings is attributed to several factors: increased balances from generally improved asset prices, increased utilization of non-cash collateral and greater returns from investing end of day cash.

For information about the Securities Lending Program, refer to the Investments section on CalSTRS.com.

Currency Management Program

The Currency Management Program is designed to address the global nature of all the fund's assets and attempts to add value on a fund-wide basis. The currency markets are some of the most liquid and volatile markets CalSTRS operates within. The internally managed core strategy outperformed its benchmark by 3 basis points for the year ending June 30, 2019, while the opportunistic external strategy outperformed its benchmark by 4 basis points for the same period. For the internally managed portion, a generally long U.S. dollar bias in an environment of low market volatility earned a positive return over the period. For the externally managed program, some of the improved performance can be attributed to an overall outperformance of carry and commodity currencies in which the managers were generally long those currencies. Since inception, the Currency Management Program has outperformed its benchmark by nearly 45 basis points on an annualized basis.

Home Loan Program

The CalSTRS Home Loan Program was established by legislation in 1984 and provided home ownership to qualified participants, which attributed to CalSTRS' investment mortgage asset objectives. New home loan origination activity was suspended by the Teachers' Retirement Board on October 1, 2011. Staff continues to manage the existing assets of $47.9 million for the fiscal year ending June 30, 2019, within the Fixed Income Portfolio.

Real Estate

The Real Estate Portfolio ended fiscal year 2018–19 with a market value of $32.5 billion or 13.7% of the Total Fund. Over the last several years, staff has emphasized an increase in joint ventures, separate accounts and open-ended funds in order to increase internal management control and lower fees. As of June 30, 2019, these strategies combined made up 83.5% of the Real Estate Portfolio. In addition, staff has emphasized an increase in investments in core and value add strategies. The core strategy has reached its policy target of 66.9%.

Real Estate is a long-term asset with performance results influenced by various factors. As shown in Table 4, the Real Estate Portfolio generated 8.19% 1-year return net of fees outperforming its policy benchmark by 164 basis points. The 10-year underperformance is due to a historical overweight in pre-crisis higher risk strategies. The bulk of those investments have been liquidated. Staff is focused on increasing investments in higher control vehicles with low to moderate leverage and risk. Investments that staff has recommended since the global financial crisis of 2008 have outperformed the benchmark in all time periods.

For current information on the CalSTRS Real Estate Portfolio, refer to the Investments section on CalSTRS.com.

Private Equity

The Private Equity Portfolio ended fiscal year 2018–19 with a market value of $21.7 billion or 9.2% of the Total Fund. The portfolio consists primarily of investments in limited partnerships, which accounts for 91% of the allocation with the remaining assets consisting of co-investments.

As shown in Table 4, the Private Equity Portfolio generated 10.55% 1-year return net of fees, 13.83% 3-year return net of fees and 10.60% 5-year return net of fees, outperforming its policy benchmark by 94, 165 and 86 basis points, respectively. The portfolio has underperformed its benchmark for the 10-year period, primarily due to the reasons described in the following paragraph.

Private Equity is difficult to benchmark; the CalSTRS Private Equity Portfolio benchmark has changed twice over the past decade. Regarding the longer-term performance metrics, the benchmark for these periods includes a large component linked to public equity market performance plus a spread. Given the abnormally strong performance of public equity markets in the wake of the global financial crisis of 2008, it is neither surprising nor atypical that the CalSTRS Private Equity Portfolio is underperforming such a benchmark. Regarding the short-term performance metrics, the Private Equity Portfolio has substantially increased its investment pace over the past three years and therefore J-curve effects are influencing performance.

For current information on the CalSTRS Private Equity Portfolio, refer to the Investments section on CalSTRS.com.

Risk Mitigating Strategies

For the fiscal year ending June 30, 2019, the Risk Mitigating Strategies Portfolio had total assets of $22.2 billion representing 9.4% of the Total Fund. The RMS Portfolio was established on July 1, 2016, with a long-term target allocation of 9.0% of the Total Fund. Prior to this, the assets in this program were part of the Absolute Return Portfolio. The RMS Portfolio invests in strategies that further diversify CalSTRS' overall investment portfolio and primarily its significant equity exposure. These strategies include trend-following, long-duration U.S. Treasuries, global macro and systematic risk premia. Rather than focusing on achieving a specific return objective, the RMS Portfolio is expected to help the Total Fund achieve its return objective by protecting capital during equity downturns or volatile periods.

The RMS portfolio generated a positive 8.32% 1-year return net of fees for the fiscal year ending June 30, 2019, outperforming its policy benchmark by 116 basis points. The outperformance is due to strong positive relative performance from both trend-following and global macro and a slight positive relative contribution from long-duration U.S. Treasuries. The long-term returns for the RMS portfolio are expected to be positive and exhibit low correlation to equity markets.

For more information about the RMS Portfolio, refer to the Investments section on CalSTRS.com.

Inflation Sensitive

For the fiscal year ending June 30, 2019, the $5.9 billion Inflation Sensitive Portfolio represented 2.5% of the Total Fund. The Inflation Sensitive Portfolio invests in strategies that include infrastructure, commodities, U.S. Treasury inflation protected securities, timberland and agriculture.

For the fiscal year ending June 30, 2019, the Inflation Sensitive Portfolio generated a 6.03% 1-year return net of fees, outperforming its policy benchmark return of 2.36% by 367 basis points. The outperformance can be attributed to the continued execution of the infrastructure strategy, which includes investments across a variety of risk characteristics which provide essential services in businesses with high barriers to entry. Also, this strategy has begun to enter a more mature phase and is beginning to achieve greater cash flow potential.

The infrastructure strategy returned a net 11.46%, beating its benchmark by 564 basis points. The commodities strategy returned a net negative 6.73%, beating its benchmark by 214 basis points. The U.S. treasury inflation protected securities strategy had a net return of 4.91%, besting its benchmark by 8 basis points. The timberland and agriculture strategies had less than three years of performance since inception and are in their development stage. Over the previous three years, the Inflation Sensitive Portfolio outperformed its benchmark by 408 basis points.

For more information about the Inflation Sensitive Portfolio, refer to the Investments section on CalSTRS.com.

Innovative Strategies

For the fiscal year ending June 30, 2019, the $785.2 million Innovative Strategies Portfolio represented 0.3% of the Total Fund. The objective of this portfolio is to help mitigate the plan's dependency on economic growth and low inflation to meet long-term expectations. This is achieved by incubating and graduating new strategies expected to diversify the risk of the Total Fund while providing attractive real returns over a market cycle. The framework will help improve CalSTRS' investment process and provide tools to mitigate the impact of a severe macroeconomic or market event. As shown in Table 4, for the fiscal year ending June 30, 2019, the Innovative Strategies Portfolio generated 9.21% 1-year return net of fees, outperforming its policy benchmark of 5.09%. With the graduation of RMS into its own asset class in July 2016, returns longer than three years reflect the historical Absolute Return Portfolio performance.

For more information about the Innovative Strategies Portfolio, refer to the Investments section on CalSTRS.com.

Other Investment Tables

The following tables summarize investment activity. Table 7 represents the investment summary by portfolio type compared to prior fiscal year. Table 8 reflects the investment expenses by portfolio type as of June 30, 2019. Investment expenses reflected in Table 8 generally represent direct costs associated with investing. Certain expenses, such as carried interest and management fees related to private assets, are not included; however, these expenses may be reflected within the net asset value. Table 9 displays the broker commissions for the fiscal year ended June 30, 2019.

Table 7

Investment Summary for the Current and Previous Fiscal Year

(Dollars in Millions)

	June 30, 2018		June 30, 2019			
Portfolio Type	**Book Value**	**Net Asset Value**	**Book Value**	**Net Asset Value**	**% of Net Asset Value**	**Net Value Change**
Global Equity	$92,286	$120,282	$92,918	$119,727	50.5%	($555)
Fixed Income	28,612	27,495	28,372	29,185	12.3%	1,690
Real Estate	28,956	28,733	31,757	32,479	13.7%	3,746
Private Equity	21,338	18,316	24,754	21,669	9.2%	3,353
Risk Mitigating Strategies	20,576	19,990	21,063	22,212	9.4%	2,222
Inflation Sensitive	3,876	4,178	5,739	5,871	2.5%	1,693
Innovative Strategies	348	483	609	785	0.3%	302
Strategic Overlay	918	1,288	(3)	(7)	0.0%	(1,295)
Cash/Liquidity	3,057	3,064	5,008	5,017	2.1%	1,953
PORTFOLIO TOTAL	**$199,967**	**$223,829**	**$210,217**	**$236,938**	**100.0%**	**$13,109**
Adjustments:						
Securities Lending Collateral		21,932		22,795		
Accruals		1,622		1,735		
Cash & Cash Equivalent		(153)		(321)		
STRP NET INVESTMENTS		**$247,230**		**$261,147**		

Table 8

Schedule of Investment Expenses

July 1, 2018 through June 30, 2019 (dollars in thousands)

Portfolio Type	Net Asset Value	Investment Expenses	Basis Points
Global Equity	$119,726,980	$200,648	16.8
Fixed Income	29,184,986	18,740	6.4
Real Estate	32,479,328	21,623	6.7
Private Equity	21,668,421	10,527	4.9
Risk Mitigating Strategies	22,211,601	14,173	6.4
Inflation Sensitive	5,870,789	3,498	6.0
Innovative Strategies	785,164	275	3.5
Strategic Overlay	(6,677)	6,114	*
Cash/Liquidity	5,017,008	1,755	3.5
TOTAL INVESTMENT ASSETS AND EXPENSES	**$236,937,600**	**$277,353**	**11.7**

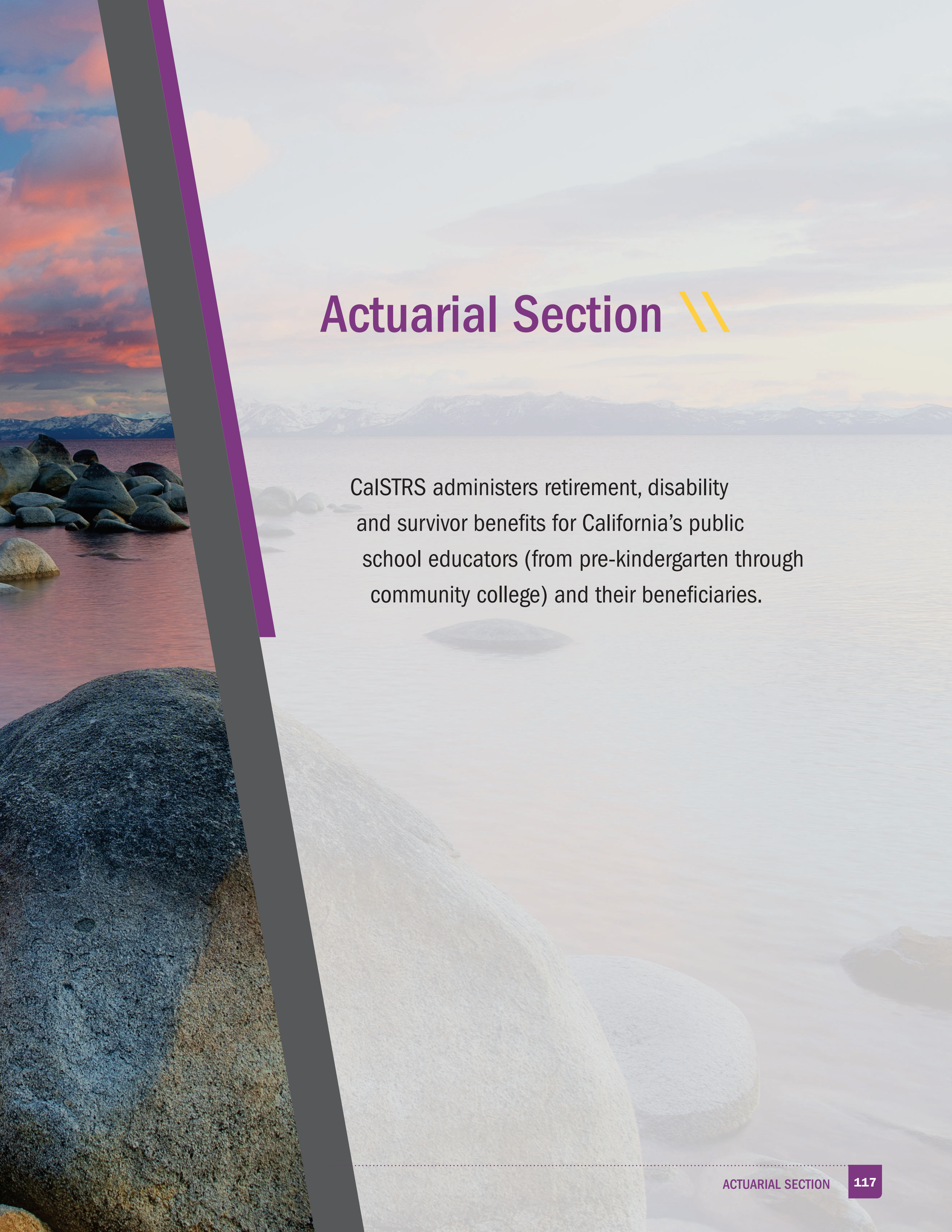
* Strategic Overlay calculates basis points using notional values instead of net asset values.

Table 9

Broker Commissions

July 1, 2018, through June 30, 2019

Broker Name	Commission	Shares	Average Commission Per Share
Citigroup	$2,144,388	640,481,086	$0.003
JP Morgan	2,127,093	629,572,726	0.003
Goldman Sachs	2,085,601	752,937,371	0.003
Merrill Lynch	1,893,423	1,045,583,544	0.002
Credit Suisse First Boston	1,521,969	1,299,585,866	0.001
UBS	1,346,944	543,737,812	0.002
Instinet	1,193,550	448,925,925	0.003
Morgan Stanley	1,065,968	547,115,251	0.002
Barclays Capital	720,604	122,294,752	0.006
Investment Technology Group Inc.	559,893	201,925,250	0.003
All Other Brokers	7,153,142	2,476,034,496	0.003
TOTAL COMMISSIONS	**$21,812,575**	**8,708,194,079**	**$0.003**



Actuarial Section

CalSTRS administers retirement, disability and survivor benefits for California's public school educators (from pre-kindergarten through community college) and their beneficiaries.

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November 11, 2019

Teachers' Retirement Board
California State Teachers' Retirement System

Re: Valuation of the DB, DBS, CBB, and MPP Programs

Dear Members of the Board:

Annual valuations are performed for four benefit programs administered by the California State Teachers' Retirement System (CalSTRS).

Defined Benefit Program

The basic financial goal of the CalSTRS Defined Benefit Program is to establish contributions which fully fund the obligations and which, as a percent of payroll, remain level for each generation of active members. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

CalSTRS measures its funding status as the Funded Ratio of the actuarial value of valuation assets over the actuarial accrued liabilities. The funding status based on the past three actuarial valuations is shown below:

Valuation Date	Funded Ratio
June 30, 2016	64%
June 30, 2017	63%
June 30, 2018	64%

Based on the June 30, 2018 actuarial valuation, the scheduled income from member, employer, and State contributions is projected to finance the DB Program on an actuarially sound basis. The DB Program is projected to reach approximately a 100% Funded Ratio in 2046.

Defined Benefit Supplement and Cash Balance Benefit Program

The basic financial goal of the Defined Benefit Supplement (DBS) Program and the Cash Balance Benefit (CBB) Program is to maintain sufficient resources to fully fund the obligations. Annual actuarial valuations measure the progress toward this goal, as well as test the adequacy of the contribution rates.

CalSTRS measures its funding status as the Funded Ratio of the actuarial value of valuation assets over the actuarial accrued liabilities. The funding status based on the past three actuarial valuations is shown below:

Valuation Date	DBS Funded Ratio	CBB Funded Ratio
June 30, 2016	112%	109%
June 30, 2017	118%	116%
June 30, 2018	120%	117%

For both programs, the actual return was greater than the assumed return for the fiscal year ended in 2018 which, combined with other factors, caused an increase in the Funded Ratios. As of June 30, 2018, the Market Value of Assets for the DBS and CBB Programs exceeded the respective program's Actuarial Obligation. Additional interest credits were granted based on the programs' funded level and are reflected in the Funded Ratio shown above.

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November 11, 2019
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Medicare Premium Payment Program

The basic financial goal of the Medicare Premium Payment (MPP) Program is to maintain sufficient resources to fully fund the obligations. Actuarial valuations are performed every year (every two years prior to 2017) and measure the progress toward this goal, as well as test the adequacy of the contribution rates. The most recent valuation was as of June 30, 2018.

The MPP Program is essentially funded on a pay-as-you-go basis with a portion of contributions to the DB Program diverted to the Teachers' Health Benefit Fund to make MPP Program payments. As of June 30, 2018, $287 million of future employer contributions to the DB Program have been allocated to pay the MPP Program benefits; however, this amount is not included as an asset for GASB 74 reporting. This gives the appearance that the MPP Program is significantly underfunded in the GASB 74 results. However, based on the commitment to transfer a portion of future contributions from the DB Program to fund the MPP Program, it is our opinion that the MPP Program continues in sound financial condition as of June 30, 2018.

Data, Assumptions and Methods Applicable to All Programs

The June 30, 2018 valuation results are based on the membership data and the asset information provided by CalSTRS. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes, although we have not audited the data at the source. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is found to be materially inaccurate or incomplete, our calculations will need to be revised.

Milliman did not prepare the summaries or schedules shown in the Financial and Actuarial Sections. However, the actuarial information contained in the Financial Section and in this Actuarial Section was derived from our June 30, 2018 actuarial valuation reports for funding and our 2019 GASB 67/68 and GASB 74/75 reports that communicated the actuarial results for financial reporting for June 30, 2019.

The actuarial computations presented in the valuation reports are for purposes of determining the recommended funding amounts for CalSTRS consistent with our understanding of their funding requirements and goals. For the DB and MPP Programs, the Actuarial Obligation is determined by using the entry age normal funding method (a slightly different version than specified for financial reporting specified in GASB 67/68); the traditional unit credit method is used for the DBS and CBB Programs. For the DB Program, the actuarial assets are determined by using a one-third smoothed recognition method of the difference between the actual market value to the expected actuarial value. For the other programs the market value was used with no smoothing applied.

The valuations are based on our understanding of the current benefit provisions for the respective programs and the actuarial assumptions adopted by the Board. The assumptions are reviewed annually for reasonableness, with a detailed experience analysis completed every three to five years. The last detailed experience analysis was completed in February of 2017 when the Board adopted the current assumptions. The assumptions are scheduled to be reviewed in detail again for use in the June 30, 2019 funding valuation and the GASB valuations for reporting date June 30, 2020. The assumptions and methods used for financial reporting under GASB 67/68 and GASB 74/75 are the same as the funding valuation assumptions with the following exceptions:

1. The discount rate of 7.10% (gross of administrative expenses) is used for the DB, DBS & CBB Programs;
2. The discount rate of 3.50% is used for the MPP Program based on the rate for 20-year, tax-exempt general obligation municipal bonds with an average rating of AA/Aa or higher;
3. The market value of assets is used for the Fiduciary Net Position (i.e., there is no smoothing of the DB Program assets for GASB 67/68), and;
4. The individual entry age normal cost method, as specified by GASB, is used for all programs.

Milliman

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For financial reporting purposes, all programs within the State Teachers' Retirement Plan are reported in aggregate. This includes the obligation, and associated assets, for purchasing power benefits financed through the Supplemental Benefits Maintenance Account.

We believe the actuarial assumptions and methods are internally consistent, reasonable and meet the parameters of Governmental Accounting Standards Board Statement Numbers 67, 68, 74, 75 and 82 for fulfilling financial reporting requirements and meet the parameters set forth in the relevant Actuarial Standards of Practice (ASOPs). Nevertheless, the emerging costs will vary from those presented in our report to the extent that actual experience differs from that projected by the actuarial assumptions. Future actuarial measurements may differ significantly from the current measurements as presented in the valuation report due to many factors. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Our valuation report and this letter have been prepared exclusively for CalSTRS for a specific and limited purpose. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. It is a complex, technical analysis that assumes a high level of knowledge concerning CalSTRS operations, and uses CalSTRS data, which Milliman has not audited. No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on these assignments are retirement and OPEB (Other Postemployment Benefit) actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel. The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

We certify that the June 30, 2018 valuation was performed in accordance with the Actuarial Standards Board (ASB) standards of practice and by qualified actuaries. We are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems.

Respectfully submitted,

Mark C Olleman

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Principal and Consulting Actuary

Nick Collier

Nick J. Collier, ASA, EA, MAAA
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Julie D. Smith

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Actuarial Methods

CalSTRS administers the Defined Benefit (DB), Defined Benefit Supplement (DBS), Cash Balance Benefit (CBB) and Medicare Premium Payment (MPP) programs. The DB Program and the MPP Program are cost-sharing multiple employer programs. The MPP Program is a postemployment benefit plan established on January 1, 2001, administered through the Teachers' Health Benefit Fund, which pays Medicare Part A premiums and Medicare Part B late enrollment surcharges for eligible members of the DB Program. The DBS Program and the CBB Program are cash balance plans which were established on January 1, 2001 and July 1, 1996, respectively. CalSTRS has adopted actuarial methods with the objective of funding each program in a manner which minimizes year-to-year variation in cost while ensuring sufficient assets are accumulated over each member's working career. The following is a summary of the various methods used for each program.

Actuarial Cost Method

For funding purposes of the DB Program, the entry age normal cost method was selected, which is the most common cost method among public sector pension plans. The advantage of using this method is that the cost over time tends to remain fairly level as a percentage of overall payroll. This is well-suited to most public systems, which benefit from a stable contribution rate for budgeting and planning purposes. The traditional unit credit cost method was selected for the DBS Program and the CBB Program since the projected benefits of each individual member are allocated by a consistent formula to valuation years. As a result, the actuarial obligation is equal to the accumulated account balances, and the normal cost is equal to the total annual contribution. Neither the DBS Program nor the CBB Program provide a cost-of-living adjustment for benefit recipients. For funding purposes, the entry age normal cost method was also used for the MPP Program.

Asset Valuation Method

The DB Program uses an asset smoothing method, as adopted by the Teachers' Retirement Board (the board), which projects an Expected Value of Assets using the assumed rate of investment return, then one-third of the difference between the Expected Value and the Fair Market Value is recognized in the Actuarial Value of Assets. The DBS Program and the CBB Program use the fair market value of assets for actuarial valuation purposes and asset smoothing is not used for these two programs. Because the MPP Program was created using surplus assets of the DB Program, the MPP Program is considered fully funded for funding purposes. Assets are equal to the actuarial obligation of the MPP Program and asset smoothing is also not used for this program.

Funding Method

The DB Program receives contributions from members, employers and the State of California (the state). In 2014, the California legislature and the Governor enacted the CalSTRS Funding Plan, a joint commitment set forth in statute with the goal of achieving full funding of the DB Program by 2046. Actuarial gains and losses and the unfunded actuarial obligation are amortized over a closed period ending June 30, 2046.

Member DB Contributions: For members covered by the 2% at 60 benefit formula, the contribution rate is 10.250% of creditable compensation. For members covered by the 2% at 62 benefit formula, the contribution rate is equal to one-half of the Normal Cost rate determined in the valuation rounded to the nearest quarter percent, plus a supplemental amount. The contribution rate for 2% at 62 members only changes when the Normal Cost rate changes by more than 1% of creditable compensation as compared to the initial Normal Cost rate (or at the time of the last adjustment). For fiscal year ended June 30, 2019, the member contribution rate was equal to 10.205% of creditable compensation.

Employer DB Contributions: Employers pay a base contribution rate of 8.25% of creditable compensation. Additionally, employers contribute a supplemental contribution rate for the purpose of amortizing the employers' share of the unfunded actuarial obligation by the fixed date of June 30, 2046. Currently the supplemental contributions follow a fixed schedule set in statute. The total employer contribution rate is set to increase to 19.100% of creditable compensation by the 2020–21 fiscal year. In July 2019, CalSTRS received additional supplemental contributions from the state to reduce the employers' contribution rate by 1.03% for fiscal year 2019–20 and by 0.7% for fiscal year 2020–21. Effective with the 2021–22 fiscal year, the board will have limited authority to adjust the contribution rate to amortize the remaining unfunded actuarial obligation by the 2046 deadline. For fiscal year ended June 30, 2019, the total employer contribution rate was equal to 16.280% of creditable compensation.

State DB Contributions: The state contributes a base contribution rate of 2.017% of creditable compensation. Additionally, the state contributes a supplemental contribution rate for the purpose of amortizing the state's share of the unfunded actuarial obligation by the fixed date of June 30, 2046. The board currently has limited authority to adjust the state contribution rate to amortize the unfunded actuarial obligation by the 2046 deadline. For fiscal year ended June 30, 2019, the total state contribution rate was equal to 7.328% of creditable compensation.

The state's base contribution to the DB Program is calculated based on creditable compensation from two fiscal years prior. The state also contributes an additional 2.500% of members' creditable earnings to protect retirees' purchasing power.

For the DBS Program, member and employer contributions are credited to the member's account for service greater than one year during a single school year. For CalSTRS 2% at 60 members, compensation for limited-term payments and retirement incentives are credited to the member's account. Generally for the CBB Program, participants and employers each contribute 4% of salary. Rules for contribution rates may differ for participants covered by a collective bargaining agreement, but the sum of participant and employer contributions must equal or exceed 8% of salary. The employer contribution rate cannot be less than 4% of salary and the participant rate cannot be less than the employer rate. The board may adjust employer contributions for a fixed number of years, but the adjustment shall not exceed 0.25% of salaries in any plan year.

For both the DBS and CBB programs there is currently no provision in the Education Code to increase contributions to make up for any future shortfalls (if they were to occur). However, the assumed return on investments currently exceeds the Minimum Interest Rate. To the extent that the assets earn more than the accounts are credited in the future, this may be sufficient to make up any potential shortfall.

The MPP Program is funded on a pay-as-you go basis from a portion of monthly employer contributions of the DB Program. In accordance with California Education Code Section 25930 and board policy, contributions of the DB Program that would otherwise be credited to the DB Program each month are instead credited to the MPP Program to fund monthly program and administrative costs. For funding purposes, the MPP Program is assumed to be 100% funded by including the value of future employer contributions that have been allocated to fully fund the MPP Program obligations. As a result, the funding method does not require an amortization method for any unfunded actuarial obligation or surplus. Actuarial gains and losses are funded as they occur through the pay-as-you go method described above. There are no retiree contributions, per capita claims costs or pay increase assumptions.

Financial Reporting Method

Under GASB Statement No. 67, *Financial Reporting for Pension Plans—an amendment of GASB Statement No. 25* (GASB 67), financial reporting for the State Teachers' Retirement Plan (STRP) includes the DB, DBS, CBB, Supplemental Benefit Maintenance Account and Teachers' Replacement Benefits programs. For financial reporting, the aggregate assets of all programs in the STRP on a market basis are used in the determination of the net pension liability. GASB 67 also specifies that, for financial reporting purposes, the entry age normal cost method should be used to calculate total pension liability.

For financial reporting purposes of the MPP Program, the actuarial cost method used is the entry age normal cost method as specified by GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other than Pension Plans* (GASB 74). The asset valuation method is fair market value of assets.

Actuarial Assumptions

The actuarial valuation utilizes two different types of assumptions: economic and demographic. Economic assumptions are related to the general economy and its impact on CalSTRS. Demographic assumptions predict the future experience of the membership with respect to eligibility and benefits and are directly related to the specific experience of CalSTRS members. As the DB Program and the DBS Program share the same population, it is reasonable to use most of the same assumptions for both programs. The assumptions for the DBS Program and the CBB Program will have minimal impact under the traditional unit credit cost method or only have significance when participants elect to annuitize the account balance. Under the DBS Program and the CBB Program, a member must have at least $3,500 in their account to elect to annuitize the account balance.

CalSTRS, through its consulting actuary, generally performs an experience study every four years to determine appropriate demographic and economic assumptions. These assumptions are then applied when the consulting actuary performs actuarial valuations to monitor the funding status of the DB, DBS, CBB and MPP programs. The most recent experience study for demographic and economic assumptions examined data for the five-year period spanning July 1, 2010, through June 30, 2015, and the assumptions were adopted by the board in February 2017. Below is a summary of the different types of assumptions used.

Economic Assumptions

The two major economic assumptions for the DB, DBS and CBB programs are investment return and wage growth, and each is affected by the underlying assumed rate of inflation. The assumption for investment return, also known as the discount rate, is 7.00% for the DB and DBS programs and 6.50% for the CBB Program (net of investment and administrative expenses). The assumption for general wage increase is 3.50%, of which 2.75% is due to inflation and 0.75% is due to expected gain in productivity.

The economic assumptions used for the MPP valuation are the investment return, medical inflation and rate of inflation. The investment return assumption for the MPP Program is 7.00% (net of investment and administrative expenses). The assumption for premium cost trend rates varies by years; however, the increases are approximately equivalent to a 3.7% and 4.1% increase each year for Medicare Part A and Part B, respectively. The assumption for price inflation is also 2.75%.

As required by GASB 67, for financial reporting for the STRP the discount rate of 7.10% is net of investment expenses but gross of administrative expenses. The MPP Program is funded on a pay-as-you-go basis, and the OPEB plan's fiduciary net position was not projected to be sufficient to make projected future benefit payments. As such, GASB 74 requires the MPP Program's discount rate be based on the 20-year, tax exempt general obligation municipal bonds with an average rating of AA/Aa or higher. The board has adopted The Bond Buyer's 20-Bond GO Index for this purpose. The MPP Program's discount rate of 3.50% is net of investment expenses but gross of administrative expenses. Table 6 provides a summary of the economic actuarial assumptions for these programs as reflected in the most recent actuarial valuations.

Demographic Assumptions

Demographic assumptions are based on the most recent CalSTRS experience study adopted by the board in February 2017 and include assumptions for postretirement mortality; probabilities of retirement, disability or withdrawal from the system; assumptions for pay increases due to promotions; and various other assumptions needed to value the DB, DBS and CBB Program benefits. Members whose retirement date is on or after July 1, 2012, are not eligible for coverage under the MPP Program. As such, assumptions related to active members are not applicable to this program. The primary MPP Program demographic assumptions are postretirement mortality rates and program enrollment rates. Tables 1–5 and 7–8 provide a summary of the demographic assumption information for these programs as reflected in the most recent actuarial valuations.

Changes Since Prior Valuation

Changes in Actuarial Methods

There were no changes in the actuarial methods for the DB, DBS, CBB and MPP programs.

Changes in Actuarial Assumptions

There were no changes in the funding actuarial assumptions for the DB, DBS, CBB and MPP programs. The discount rate used for 2019 MPP Program for financial reporting purposes was 3.50%, a decrease of 0.37% from the prior year.

Changes in Plan Provisions

There were no changes in plan provisions for the DBS, CBB and MPP Programs that were reflected in the June 30, 2018 actuarial valuations. For the DB Program, on May 10, 2018, the board increased the lump sum death benefits by 3.4%, effective July 1, 2018 which was reflected in the June 30, 2018 valuation. On May 9, 2019, the board declared 4.36% and 3.86% additional earnings credits be awarded for the fiscal year ended June 30, 2018, for the DBS Program and the CBB Program, respectively.

Valuation Results

The most recent DB, DBS, CBB and MPP Program actuarial valuations were completed as of June 30, 2018 and were presented to the board on May 9, 2019.

The DB Program valuation determined the DB Program was 64% funded with an unfunded actuarial obligation of $107.2 billion as of June 30, 2018. The valuation projected the DB Program will reach approximately 100% funding by 2046 as contributions increase in accordance with the funding plan.

The DB Program actuarial valuation provides the best estimate of the program's long-term financing by using the actuarial methods and assumptions adopted by the board. Comparing the unfunded actuarial obligation as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the unfunded actuarial obligation on the valuation date and the expected unfunded actuarial obligation projected from the prior valuation date using the actuarial assumptions in effect for the period of comparison.

Actuarial gains reduce the DB Program's unfunded actuarial obligation as of the valuation date, and actuarial losses increase the DB Program's unfunded actuarial obligation. Most actuarial gains and losses are a result of short-term fluctuations in experience or changes in actuarial assumptions. Because of the long-term nature of actuarial assumptions, future patterns of emerging experience may offset these short-term fluctuations.

The DBS Program valuation determined there was an actuarial surplus of approximately $2.6 billion before the awarding of any additional earnings credit. After awarding the 4.36% additional earnings credit, the actuarial surplus was reduced to approximately $2.2 billion.

The CBB valuation determined there was an actuarial surplus of approximately $58.4 million before the awarding of any additional earnings credit. After awarding the 3.86% additional earnings credit, the actuarial surplus was reduced to approximately $48.3 million.

The MPP Program valuation indicated that the current program assets, along with MPP-allocated funding from future employer contributions that would otherwise have been credited to the DB Program, were sufficient to finance the future MPP Program obligations of $287.3 million for both Medicare Part A premiums and Medicare Part B penalties.

Tables 11–15 provide summaries of all the valuation results. The data displayed in Table 11 is as of June 30 of the specified year. Other information, specifically annual payroll amounts, reported in the Financial Section of this report will generally not be consistent with this data as the financial data reflects payroll for all individuals who were active during the year, while Table 11 only includes those individuals who are active as of June 30. It does not include those individuals who were active at some point during the year but not as of June 30.

In addition, amounts provided in Table 12 represent the status of the population as of June 30 of the indicated year. For the DB Program, information provided in the "Removed from Rolls" and "Rolls End of Year" columns include the application of the annual postretirement 2% non-compounded benefit adjustment.

The data provided for each year in Table 12 is a snapshot of the population taken following year-end closing for the indicated period. It is likely adjustments will be made subsequent to this closing. No attempt is made to update the data in Table 12 for these adjustments.

Independent Actuarial Review

Actuarial services for CalSTRS are provided under contract by a qualified independent actuarial firm with additional review provided by CalSTRS actuarial staff. The current actuarial firm, Milliman, has been the program's actuarial firm since January 15, 2000.

In addition to the review performed by CalSTRS actuarial staff, all independent actuarial services are subject to a periodic independent review. The selection of the firm performing the independent review is done generally every five years through the competitive bid process.

A review of the most recent Actuarial Experience Study of the DB Program was performed by the actuarial firm Cheiron. The result of the review was reported to the board on February 1, 2017. Cheiron found the recommendations made by Milliman in the Actuarial Experience Study to be reasonable, and the work performed by Milliman on the experience study meets the Actuarial Standards of Practice.

A review of the 2014 Actuarial Valuation of the MPP Program and the 2015 Actuarial Valuations of the DBS and CBB programs was also performed by Cheiron. The result of the review was reported to the board on April 6, 2017. Overall, Cheiron was able to replicate the results of the actuarial valuation with no material differences. Cheiron commented that the actuarial valuation was performed by qualified actuaries and in accordance with generally accepted actuarial principles. Cheiron further stated that appropriate methods, checking and reviewing procedures were followed in the preparation of the valuation and that the communication in the valuation report was clear and complete given the underlying plan of benefits.

A review of the 2015 Actuarial Valuation of the DB Program was performed by the actuarial firm Segal Consulting. The result of the review was reported to the board on April 6, 2017. Overall Segal found that the results of the June 30, 2015, DB Actuarial Valuation were reasonable and accurate. Segal was able to match the valuation results and the individual sample test lives within an acceptable range and found the economic assumptions and cost method used were appropriate. Segal stated that Milliman adhered to reasonable quality control procedures and the valuation was performed in accordance with the principles and practices of the California Actuarial Advisory Panel, the Public Plan Committee of the Conference of Consulting Actuaries, the Actuarial Standards Board, the American Academy of Actuaries, the Society of Actuaries and the Joint Board for the Enrollment of Actuaries.

Summary of Plan Provisions — DB Program

The plan provisions of the DB Program are detailed in the Teachers' Retirement Law (TRL). The following is a summary of these provisions which were used in the June 30, 2018, valuation of the DB Program.

Normal Retirement

Eligibility Requirement

CalSTRS 2% at 60 Members: Age 60 with five years of credited service.

CalSTRS 2% at 62 Members: Age 62 with five years of credited service.

Benefit

2% of final compensation for each year of credited service.

Benefit Factors

Credited Service—For each year of membership, credited service is granted based on the ratio of creditable compensation earned to compensation earnable. No more than one full year of service credit is allowed during any school year; however, the contributions for any service in excess of one year are deposited to the member and employer contribution accounts within the DBS Program.

Contributions received for DBS compensation that are attributable to increases under the CalSTRS Funding Plan will be returned to school district employers. School district employers return excess member contributions to their employees, and the returned pre-tax contributions will be considered taxable income in the year they are received by the employee.

Final Compensation—CalSTRS 2% at 60 Members: Highest average annual compensation earnable for 36 consecutive months of credited service. For members with 25 years of service, the calculation is based on the highest average annual compensation earnable for 12 consecutive months.

CalSTRS 2% at 62 Members: Final compensation is based on the highest three consecutive years of salary earnable. The limit effective July 1, 2018, is $146,230 (after applying the 120% factor) and is adjusted annually based on changes to the Consumer Price Index for All Urban Consumers. The 2% at 62 members are not eligible for the one-year final compensation benefit enhancement.

Internal Revenue Code (IRC) Section 401(a)(17)—Compensation is limited under IRC section 401(a)(17) and assumed to increase at the rate of inflation.

Sick Leave Service Credit—Credited service is granted for unused sick leave at the time of retirement. Up to 0.2 years of credited service for sick leave may be used for eligibility for one-year final compensation or to attain the career factor or the longevity bonus for eligible members.

Career Factor—If a CalSTRS 2% at 60 member has 30 years of credited service, the age factor is increased by 0.2%. However, the maximum age factor is 2.4%. The career factor does not apply to CalSTRS 2% at 62 members.

Longevity Bonus—If a CalSTRS 2% at 60 member attains 30 years of service by January 1, 2011, a longevity bonus of $200 per month is added to the Member-Only Benefit. The bonus is increased to $300 per month with 31 years of service and $400 per month with 32 or more years of service. The longevity bonus does not apply to CalSTRS 2% at 62 members.

Postretirement Benefit Adjustment

Annual Benefit Adjustment—2% simple increase on September 1 following the first anniversary of the effective date of the benefit, applied to all continuing benefits.

IRC Section 415(b)—For CalSTRS 2% at 60 members, benefits are subject to limits imposed under IRC section 415(b). However, no limits are imposed in the valuation of the DB Program in order to address the potential pay-as-you-go funding needs of the Teachers' Replacement Benefits Program Fund. CalSTRS 2% at 62 members will not receive any benefits in excess of the federal limit.

Early Retirement

Eligibility Requirement—CalSTRS 2% at 60 Members: Age 55 with five years of credited service, or age 50 with 30 years of credited service.

CalSTRS 2% at 62 Members: Age 55 with five years of credited service.

Benefit Reduction—CalSTRS 2% at 60 Members: A 0.5% reduction in the normal retirement allowance for each full month or partial month the member is younger than age 60, plus a reduction of 0.25% for each full month or partial month the member is younger than age 55.

CalSTRS 2% at 62 Members: A 0.5% reduction in the normal retirement allowance for each full month or partial month the member is younger than age 62.

Late Retirement

Benefit—CalSTRS 2% at 60 Members: For members who continue to earn additional service credit after age 60, the 2% age factor increases by 0.033% for each quarter year of age that the member is over age 60, up to a maximum of 2.4%.

CalSTRS 2% at 62 Members: For members who continue to earn additional service credit after age 62, the 2% age factor increases by 0.033% for each quarter year of age that the member is over age 62, up to a maximum of 2.4%.

Deferred Retirement

Benefit—Any time after satisfying the minimum service requirement, a member may cease active service, leave the accumulated contributions on deposit and later retire upon attaining the minimum age requirement.

Disability Allowance—Coverage A

Eligibility Requirement—Member has five years of credited California service and has not attained age 60, or if a member has earned one year of creditable service and is disabled due to an unlawful act of bodily harm committed by another person while performing creditable service.

Benefit—50% of final compensation.

- or -

5% of final compensation for each year of service credit if over age 45 with fewer than 10 years of service credit.

Children's Benefit—10% for each eligible dependent child, up to a maximum of 40% of final compensation. The increment for each eligible child continues until the child marries or attains age 22.

Offsets—Benefit, including children's increment, is reduced by disability benefits payable under Social Security, workers' compensation and employer-paid income protection plan.

Disability Allowance—Coverage B

Eligibility Requirement—Member has five years of credited California service, or if a member has earned one year of creditable service and is disabled due to an unlawful act of bodily harm committed by another person while performing creditable service.

Benefit—50% of final compensation, regardless of age and service credit.

Children's Benefit—10% for each eligible child up to four children, for a maximum of 40% of final compensation. The increment for each child continues until the child attains age 21, regardless of student, marital or employment status.

Offsets—The member's benefit is reduced by disability benefits payable under workers' compensation.

Death Before Retirement—Coverage A

Eligibility Requirement—One or more years of service credit for active members or members receiving a disability benefit.

Lump-Sum Payment—The one-time death benefit recipient receives a $6,372 lump-sum payment.

Benefit—The surviving spouse or registered domestic partner with eligible children will receive a family benefit of 40% of final compensation for as long as there at least one eligible child. An additional 10% of final compensation is payable for each eligible child up to a maximum benefit of 90%.

If there is no surviving spouse or registered domestic partner, a benefit of 10% of final compensation is payable to eligible children up to a maximum benefit of 50%.

When there are no eligible children, the spouse or registered domestic partner may elect to receive one-half of a 50% joint and survivor benefit projected to age 60 or take a lump-sum payment of the remaining contributions and interest.

Death Before Retirement—Coverage B

Eligibility—One or more years of service credit for active members.

Lump-Sum Payment—The one-time death benefit recipient receives a $25,488 lump-sum payment.

Benefit—A lump-sum payment of the contributions and interest.

– or –

One-half of a 50% joint and survivor benefit, beginning on the member's 60th birthday or immediately with a reduction based on the member's age and that of the spouse or registered domestic partner at the time the benefit begins.

If the surviving spouse or registered domestic partner elects a monthly benefit, or there is no surviving spouse, each eligible child would receive 10% of the member's final compensation, with a maximum benefit of 50%.

Death After Retirement

Lump-Sum Payment—The one-time death benefit recipient receives a $6,372 lump-sum payment.

Members of retirement age may make a preretirement election of an option to designate a beneficiary.

Annuity Form—If the retired member had elected one of the joint and survivor options, the retirement benefit would be reduced in accordance with the option elected.

If no option had been elected, payment of the unpaid contributions and interest, if any, remaining in the member's account will be made to the beneficiary, if one is named, or to the deceased member's estate.

Termination From CalSTRS

Refund—Refund of the member's contributions with interest as credited to the member's account to date of withdrawal. A refund terminates membership and all rights to future benefits from the program.

Re-entry After Refund—Former members who re-enter the program may redeposit all amounts previously refunded plus regular interest. The member must earn one year of credited service after re-entry before becoming eligible for program benefits.

Summary of Plan Provisions — DBS Program

The plan provisions of the DBS Program are detailed in the TRL. The following is a summary of these provisions which were used in the June 30, 2018, valuation of the DBS Program.

Membership

Eligibility Requirement—All members of the DB Program who perform creditable service and earn creditable compensation after December 31, 2000, have a DBS account.

Member—An eligible employee with creditable service subject to coverage who has contributions credited in the program or is receiving an annuity from the program.

Account Balance

Account Balance—Nominal accounts are established for the purpose of determining DBS benefits payable to the member. Accounts are credited with contributions, interest at the minimum interest rate and, if applicable, additional earnings credits.

Contributions—Member and employer contributions are credited to the member's DBS account for service greater than one year during a single school year, and for CalSTRS 2% at 60 members, compensation for limited-term payments and retirement incentives are credited.

Minimum Interest Rate—Annual rate determined for the plan year by the board in accordance with federal laws and regulations. The minimum interest rate is equal to the average of the yields on 30-year Treasury Notes for the twelve months ending in February preceding the beginning of the plan year, rounded to the next highest basis point. The minimum interest rate is not less than the rate at which interest is credited under the DB Program.

Additional Earnings Credit—Annual rate determined for the plan year by the board based on the actual earnings during the plan year but only to the extent the earnings are sufficient to credit the minimum interest rate and provide any additions to the gain and loss reserve deemed warranted by the board. The board declared an additional earnings credit of 4.36% be awarded for the fiscal year ended June 30, 2018.

Normal Retirement

Eligibility Requirement—Receipt of a corresponding benefit under the DB Program.

Benefit—The account balance at the benefit effective date is subject to limits imposed under IRC section 415(b).

Form of Payment—The normal form of payment is a lump-sum distribution. Annuity options are available if the account balance is at least $3,500.

Early Retirement

Eligibility Requirement—Same as Normal Retirement.

Benefit and Form of Payment—Same as Normal Retirement.

Late Retirement

Benefit and Form of Payment—Same as Normal Retirement.

Contributions and earnings may continue to be credited to the account balance.

Deferred Retirement

Benefit—A member must receive a DBS Program benefit when the corresponding benefit is received under the DB Program.

Disability Benefit

Eligibility Requirement—Receipt of a corresponding benefit under the DB Program.

Benefit—The account balance at the date the disability benefit becomes payable.

Form of Payment—Same as Normal Retirement. An annuity benefit is discontinued upon termination of the corresponding DB Program benefit.

Death Before Retirement

Eligibility Requirement—Deceased member has an account balance.

Benefit—The account balance at the date of death is payable to the designated beneficiary.

Form of Payment—Similar to Normal Retirement.

Death After Retirement

Eligibility Requirement—The deceased member was receiving an annuity.

Benefit—According to the terms of the annuity elected by the member.

Termination from the Program

Eligibility Requirement—Termination of all CalSTRS-covered employment.

More than five years has elapsed since the most recent termination benefit, if any, has been paid.

Benefit and Form of Payment—Lump-sum distribution of the account balance as of the date of distribution.

Summary of Plan Provisions — CBB Program

The plan provisions of the CBB Program are detailed in the TRL. The following is a summary of these provisions which were used in the June 30, 2018, valuation of the CBB Program.

Membership

Eligibility Requirement—Membership if employed at less than 50% of a full-time position for a California school district, community college district or county office of education that has elected to offer the CBB Program.

Extended eligibility to members hired by a community college district to perform creditable service on a part-time or temporary basis (semester to semester) or for not more than 60% of the hours per week considered a regular full-time assignment.

Participant—An eligible employee with creditable service subject to coverage who has contributions credited in the program or is receiving an annuity from the program.

Account Balance

Account Balance—Nominal accounts established for the purpose of determining benefits payable to the participant. Accounts are credited with contributions, minimum interest rate and additional earnings credits.

Contributions—Generally, participant contributions are 4% of salary and employer contributions are 4% of salary.

Rules for contribution rates may differ for participants covered by a collective bargaining agreement, but the sum of the participant and employer contributions must equal or exceed 8% of salary. The employer contribution rate cannot be less than 4% of salary and the participant rate cannot be less than the employer's rate.

The board may adjust employer contributions for a fixed number of years, but the adjustment shall not exceed 0.25% of salaries in any plan year.

Minimum Interest Rate—Annual rate determined for the plan year by the board in accordance with federal laws and regulations. The minimum interest rate is equal to the average of the yields on 30-year Treasury Notes for the 12 months ending in February preceding the beginning of the plan year, rounded to the next highest basis point.

Additional Earnings Credit—Annual rate determined for the plan year by the board based on the actual earnings during the plan year, but only to the extent the earnings are sufficient to credit the minimum interest rate and provide any additions to the gain and loss reserve deemed warranted by the board. The board declared an additional earnings credit of 3.86% be awarded for the fiscal year ended June 30, 2018.

Normal Retirement

Eligibility Requirement—Age 60.

Benefit—The account balance at the retirement date subject to limits imposed under IRC section 415(b). For participants hired on or after January 1, 2013, salary credited to CalSTRS from all employers is capped at $146,230 for 2018–19 fiscal year. The limit is adjusted each fiscal year based on the changes in the Consumer Price Index for all Urban Consumers: U.S. City Average.

Form of Payment—The normal form of payment is a lump-sum distribution. Annuity options are available if the sum of the employer and employee accounts equals or exceeds $3,500.

Early Retirement

Eligibility Requirement—Age 55.

Benefit and Form of Payment—Same as Normal Retirement.

Late Retirement

Benefit and Form of Payment—Same as Normal Retirement. Contributions and interest continue to be credited to the account balances until distributed.

Deferred Retirement

Benefit—A participant may cease active service, leave the accumulated account balance on deposit and later retire upon attaining the minimum age requirement.

Disability Benefit

Eligibility Requirement—Determination by the board that the participant has a total and permanent disability.

Benefit—The account balance at the date of disability. An annuity benefit is discontinued if the participant is re-employed before age 60 and performs service creditable under the program.

Form of Payment—Same as Normal Retirement.

Death Before Retirement

Eligibility Requirement—Deceased participant has an account balance.

Benefit—The account balance at the date of death payable to the designated beneficiary.

Form of Payment—Normal distribution is a lump-sum benefit. A participant's beneficiary may elect to receive the benefit in the form of a period-certain annuity if the sum of the balance of credits to the participant's employee and employer accounts is $3,500 or more.

Death After Retirement

Eligibility Requirement—The deceased participant was receiving an annuity.

Benefit—According to the terms of the annuity elected by the participant.

Termination from the Program

Eligibility Requirement—More than five years has elapsed since the most recent termination benefit, if any, has been paid.

Benefit and Form of Payment—Lump-sum distribution of the account balance as of the date of distribution. The benefit is payable six months from the termination of creditable service.

Summary of Plan Provisions — MPP Program

The plan provisions of the MPP Program are detailed in the TRL. The following is a summary of these provisions which were used in the June 30, 2018, valuation of the MPP Program.

Membership

Eligibility Requirement – Part A

DB Member – satisfies either:

1. Retired or disabled prior to January 1, 2001; age 65 or above; enrolled in Medicare Part A and Part B; and not eligible for Part A without premium payment.

   – or –

2. Meet all above requirements, except retired or disabled before July 1, 2012; district completed a Medicare Division election prior to retirement; and active member voted yes if they were less than 58 years of age at the time of the election.

Spouse Eligibility – Spouses of members are not eligible to participate in the program.

Members who retire on or after July 1, 2012, are not eligible for coverage under the MPP Program.

Eligibility Requirement – Part B Late Penalty Surcharges

Only those currently enrolled are eligible.

Benefits Paid

Premium payments are made directly to the Centers for Medicare and Medicaid Services (CMS) on a monthly basis. Medicare Part A premium rates for fiscal year 2018–19 are as follows:

Medicare Part A Premium Rate[1]

July 1, 2018 to December 31, 2018	$422
January 1, 2019 to June 30, 2019	$437

Part A and B late enrollment penalties are generally 10% of the respective monthly premium rates; however, the fees charged to individual participants may be higher based on certain income thresholds.

Based on the published premium rates during fiscal year 2018–19, Part A late enrollment surcharges were $42.20 and $43.70 for the period of July 1, 2018, to December 31, 2018, and January 1, 2019, to June 30, 2019, respectively. Part B late enrollment surcharges were $13.40 and $13.55 for the period of July 1, 2018, to December 31, 2018, and January 1, 2019, to June 30, 2019, respectively.

1 Individuals with 30-39 quarters of Medicare covered employment pay a reduced monthly premium rate, which was $232 and $240 for the period of July 1, 2018, to December 31, 2018, and January 1, 2019, to June 30, 2019, respectively.

All demographic assumptions used in the actuarial valuations were adopted by the board when the experience study was adopted on February 1, 2017. Following are the assumptions adopted by the board for the DB, DBS, CBB and MPP programs unless stated otherwise. Where indicated, duration is based on elapsed service since membership date.

Table 1

Postretirement Mortality for Sample Ages

	Retired Members/Participants		Disabled Members/Participants (After Year 3)[1]	
Age	**Male**	**Female**	**Male**	**Female**
50	0.238%	0.132%	1.827%	1.032%
55	0.350%	0.208%	2.125%	1.291%
60	0.469%	0.277%	2.410%	1.524%
65	0.667%	0.418%	2.805%	1.820%
70	1.068%	0.689%	3.478%	2.363%
75	1.915%	1.266%	4.586%	3.363%
80	3.514%	2.428%	6.349%	4.981%
85	6.756%	4.842%	9.223%	7.401%
90	13.026%	9.847%	13.983%	10.932%
95	22.246%	18.442%	20.892%	16.170%

Selected Rates for Disability		
First year of disability	4.0%	3.0%
Second year of disability	3.5%	2.5%
Third year of disability	3.0%	2.0%

1 The mortality assumption uses a generational mortality approach with a base year of 2016. Projected improvement is based on 110% of the MP-2016 Ultimate Projection Scale. The rates shown reflect mortality improvement through June 30, 2018. The projection scale does not apply to the select minimum rates.

Table 2

Probabilities of Retirement for Sample Ages[1] — DB, DBS and CBB only

			2% at 60 Members		2% at 62 Members
	Age	**1990 Benefits**	**Under 30 Years**	**30 or More Years**	**All Years**
Male	55	5.8%	2.7%	6.0%	3.0%
	60	25.0%	6.3%	25.0%	9.0%
	65	20.0%	14.0%	32.5%	30.0%
	70	100.0%	12.0%	25.0%	20.0%
	75	100.0%	100.0%	100.0%	100.0%
Female	55	7.0%	3.5%	8.0%	4.0%
	60	22.0%	7.0%	29.0%	9.0%
	65	18.0%	17.0%	37.5%	30.0%
	70	100.0%	14.0%	30.0%	20.0%
	75	100.0%	100.0%	100.0%	100.0%

1 Probabilities of retirement are adjusted for members with service credit between 25 and 30 years.

Table 3

Probabilities of Withdrawal From Active Service Before Age and Service Retirement for Sample Duration in Years — DB, DBS and CBB only

Duration	Male	Female
1	11.0%	9.0%
2	8.5%	7.0%
3	6.3%	5.5%
4	4.0%	4.0%
5	3.5%	3.0%
10	1.8%	1.8%
15	1.2%	1.2%
20	0.9%	0.9%
25	0.7%	0.7%

Table 4

Probabilities of Refund by Sample Duration in Years of Members and Sample Entry Ages — DB only

	Entry Age				
Duration[1]	Under 25	25-29	30-34	35-39	40+
Male					
Under 5	100%	100%	100%	100%	100%
5	60%	60%	60%	56%	45%
10	46%	46%	38%	36%	36%
15	38%	38%	31%	21%	—
20	31%	31%	15%	—	—
25	15%	15%	—	—	—
Female					
Under 5	100%	100%	100%	100%	100%
5	60%	60%	60%	52%	35%
10	34%	34%	32%	32%	29%
15	27%	24%	24%	24%	—
20	19%	14%	14%	—	—
25	10%	10%	—	—	—

1 Assumption applied at time of assumed termination.

Table 5

Assumption for Pay Increases Due to Promotions and Longevity for Sample Ages in Years — DB, DBS and CBB only

(Exclusive of the assumed general wage increase, which includes inflation)

	Entry Ages					
Duration	Under 25	25-29	30-34	35-39	40-44	45+
1	6.4%	5.8%	5.3%	4.8%	4.5%	3.7%
5	5.2%	4.8%	4.3%	3.9%	3.8%	2.8%
10	3.7%	3.4%	3.0%	2.7%	2.5%	1.8%
20	1.3%	1.2%	1.2%	0.8%	0.8%	0.6%
30	0.9%	0.8%	0.7%	0.5%	—	—
40	0.8%	0.7%	—	—	—	—

Table 6

Economic Assumptions

	DB	DBS	CBB	MPP
Consumer Price Inflation	2.75%	2.75%	2.75%	2.75%
Investment Rate of Return (net of expenses)[1]	7.00%	7.00%	6.50%	7.00%
Wage Inflation	3.50%	3.50%	3.50%	n/a
Interest on Member Accounts	3.00%	7.00%	6.50%	n/a
Medical Inflation (varies by year—average percentage below)				
Part A Premiums	n/a	n/a	n/a	3.70%
Part B Premiums	n/a	n/a	n/a	4.10%

1 Investment rate of return is 7.10% (net of investment expenses but gross of administrative expenses) for financial reporting purposes when applying GASB 67 for the DB, DBS and CBB programs. The investment rate of return is 3.50% (net of investment expenses but gross of administrative expenses) for financial reporting purposes when applying GASB 74 for the MPP Program.

Table 7

Mortality Assumptions

	Male	Female
Retired Members[1]	2016 CalSTRS Retired Male	2016 CalSTRS Retired Female
Active Members[2]	RP-2014 White Collar Employee Male set back 2 years	RP-2014 White Collar Employee Female set back 2 years
Beneficiaries[1]	2016 CalSTRS Retired Male	2016 CalSTRS Retired Female
Disabled[1,3]	RP-2014 Disabled Retiree Male set back 2 years	RP-2014 Disabled Retiree Female set back 2 years

1 For future years, the projected improvement is based on 110% of the MP-2016 Ultimate Projection Scale.
2 Mortality assumptions for active members are N/A for the DBS, CBB and MPP programs.
3 Select rates in first three years for both males and females.

Table 8

Disability Rates for Sample Ages — DB, DBS and CBB only

Coverage A

Male		Female	
Age	Rate	Age	Rate
25	0.018%	25	0.018%
30	0.027%	30	0.027%
35	0.045%	35	0.054%
40	0.072%	40	0.081%
45	0.099%	45	0.099%
50	0.144%	50	0.198%
55	0.189%	55	0.252%

Coverage B

Male		Female	
Age	Rate	Age	Rate
25	0.010%	25	0.020%
30	0.020%	30	0.020%
35	0.030%	35	0.040%
40	0.060%	40	0.070%
45	0.100%	45	0.110%
50	0.140%	50	0.185%
55	0.245%	55	0.300%
60	0.365%	60	0.380%
65	0.400%	65	0.400%
70	0.400%	70	0.400%

Table 9

Supplemental Assumptions — DB only

PEPRA Coverage	All members hired on or after the valuation date are assumed to be subject to the provisions of PEPRA.	
Unused Sick Leave	Credited Service is increased by 1.8%.	
Optional Forms	Active and Inactive: Based on single life annuity assumed. Retirees and Beneficiaries: Based on optional form in data.	
Probability of Marriage	Male: 85% Female: 65% Male spouses are assumed to be three years older than female spouses.	
Number of Children	Married members under age 60 are assumed to have the following number of children:	
	Member's Gender	**Assumed Number of Children**
	Male	0.65
	Female	0.50
Assumed Offsets	There are no assumed offsets to death and disability benefits under Coverage A or Coverage B.	

Table 10

Schedule of Medicare Part A Enrollment Rates[1] — MPP only

Assumption		Best Estimate	
		Male	**Female**
% of Under 65 Retirees Enrolling (Retired On or After 2001)[2]		2.50%	2.50%
% of Under 65 Retirees Enrolling (Retired Before 2001)		3.50%	3.50%
% of Over 65 Retirees Enrolling (For Those Not Currently Enrolled) at Age[3]:	65	0.60%	0.60%
	66	0.06%	0.06%
	67	0.04%	0.04%
	68	0.03%	0.03%
	69	0.03%	0.03%
	70–84	0.02%	0.02%
	85 & above	—	—

1 Only current enrollees are assumed to receive Part B payments.

2 For under age 65 retirees, the enrollment percent applies upon reaching age 65. No enrollment is assumed after age 65 for retirees currently under age 65.

3 For over 65 retirees, the enrollment percent applies in each future year.

Table 11

Schedule of Active Member Valuation Data

Valuation Date (as of June 30)[1]	Number of Participating Employers[2]	Count	Annual Payroll	Annual Average Pay	% Increase In Average Pay
DB Program					
2009	1,472	459,009	$27,327,386,616	$59,536	1.3%
2010	1,514	441,544	26,274,889,981	59,507	0.0%
2011	1,587	429,600	25,576,008,636	59,534	0.0%
2012	1,660	421,499	25,388,209,920	60,233	1.2%
2013	1,670	416,643	25,479,056,693	61,153	1.5%
2014	1,690	420,887	26,469,883,008	62,891	2.8%
2015	1,724	429,460	28,013,191,853	65,229	3.7%
2016	1,739	438,537	29,826,149,337	68,013	4.3%
2017	1,746	445,935	31,136,104,704	69,822	2.7%
2018	1,752	449,595	31,884,303,004	70,918	1.6%
DBS Program[3]					
2009	1,472	459,009	$27,327,386,616	$59,536	1.3%
2010	1,514	441,544	26,274,889,981	59,507	0.0%
2011	1,587	429,600	25,576,008,636	59,534	0.0%
2012	1,660	421,499	25,388,209,920	60,233	1.2%
2013	1,670	416,643	25,479,056,693	61,153	1.5%
2014	1,690	420,887	26,469,883,008	62,891	2.8%
2015	1,724	429,460	28,013,191,853	65,229	3.7%
2016	1,739	438,537	29,826,149,337	68,013	4.3%
2017	1,746	445,935	31,136,104,704	69,822	2.7%
2018	1,752	449,595	31,884,303,004	70,918	1.6%
CBB Program					
2009	33	11,332	$182,871,332	$16,138	3.6%
2010	33	10,378	163,248,119	15,730	(2.5%)
2011	33	9,923	158,501,388	15,973	1.5%
2012	33	9,273	151,284,621	16,315	2.1%
2013	31	9,129	151,281,260	16,572	1.6%
2014	32	9,955	175,058,251	17,585	6.1%
2015	33	10,416	193,075,185	18,536	5.4%
2016	30	10,676	211,259,529	19,788	6.8%
2017	30	10,480	220,767,125	21,066	6.5%
2018	29	10,469	231,621,196	22,124	5.0%
MPP Program[4]					
N/A	N/A	N/A	N/A	N/A	N/A

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2018) for each respective program. Actuarial valuation results as of June 30, 2019, are expected to be available by May 2020.

2 Number of employers is based on employers who submit the last contribution line for the active member in each respective fiscal year; however, the number of the employers in the Financial Section is based on contributing employers as of the end of the respective fiscal year.

3 Active member valuation data for the DBS was revised in 2019 to reflect all active members in the DB Program, who are eligible to participate in the DBS Program. The data aligns with reported totals in the DBS actuarial valuation report.

4 MPP Program is a closed program for members whose retirement date is on or after July 1, 2012, and are not eligible for coverage.

Table 12

Schedule of Retired Members/Participants and Beneficiaries Added to and Removed From Rolls[1]

Valuation Date (as of June 30)[2]	Added to Rolls Count	Added to Rolls Annual Allowances	Removed from Rolls Count	Removed from Rolls Annual Allowances	Rolls – End of Year Count	Rolls – End of Year Annual Allowances	% Increase in Annual Allowances	Average Annual Allowances
DB Program								
2009	13,420	$657,984,000	6,163	$149,998,000	228,969	$8,340,671,000	8.2%	$36,427
2010	16,201	777,293,000	6,499	165,404,000	243,796	9,171,309,000	10.0%	37,619
2011	14,559	671,868,000	6,938	181,927,000	253,041	9,802,995,000	6.9%	38,741
2012	14,316	635,935,000	6,860	187,271,000	262,039	10,458,555,000	6.7%	39,912
2013	12,377	555,751,000	7,119	205,779,000	269,429	11,091,944,000	6.1%	41,168
2014	11,383	507,801,000	7,299	221,733,000	275,627	11,624,220,000	4.8%	42,174
2015	11,952	558,655,000	7,759	247,766,000	282,100	12,197,828,000	4.9%	43,239
2016	12,014	591,902,000	7,871	262,170,000	288,195	12,792,104,000	4.9%	44,387
2017	12,823	649,503,000	8,381	289,955,000	294,874	13,439,239,000	5.1%	45,576
2018	13,340	682,533,000	8,606	300,558,000	301,859	14,114,787,000	5.0%	46,760
DBS Program								
2009	6,668	$22,090,439	1,582	$4,948,230	23,010	$55,237,098	48.1%	$2,401
2010	8,796	31,707,577	1,816	6,612,662	30,048	80,571,112	45.9%	2,681
2011	8,811	31,693,536	343	1,329,718	36,110	103,087,388	27.9%	2,855
2012	8,257	32,650,936	2,386	11,666,909	42,055	124,148,784	20.4%	2,952
2013	7,425	30,392,875	2,657	13,354,982	47,014	141,044,393	13.6%	3,000
2014	6,753	27,678,797	3,115	16,285,428	50,963	153,375,082	8.7%	3,010
2015	7,097	31,304,181	3,423	18,040,255	54,901	167,972,370	9.5%	3,060
2016	7,324	35,828,397	3,335	17,497,131	59,075	187,434,597	11.6%	3,173
2017	7,813	39,827,784	3,444	18,242,423	63,653	209,657,263	11.9%	3,294
2018	7,873	40,794,850	3,535	19,256,485	68,194	231,963,834	10.6%	3,402
CBB Program								
2009	12	$29,184	2	$4,104	33	$81,935	44.3%	$2,483
2010	18	55,193	5	23,079	46	114,047	39.2%	2,479
2011	24	66,664	2	6,899	68	173,813	52.4%	2,556
2012	42	139,297	5	18,110	105	294,000	69.1%	2,800
2013	30	132,912	8	26,578	127	401,112	36.4%	3,158
2014	42	212,087	10	43,746	159	568,682	41.8%	3,577
2015	52	164,451	11	74,583	200	658,550	15.8%	3,293
2016	62	261,067	10	43,035	252	841,230	27.7%	3,338
2017	80	430,331	22	87,768	310	1,223,947	45.5%	3,948
2018[3]	85	475,148	25	159,001	370	1,539,585	25.8%	4,161
MPP Program								
2009	399	$1,489,000	208	$604,000	6,431	$35,814,000	14.3%	$5,569
2010	347	1,215,000	220	660,000	6,475	34,015,000	(5.0%)	5,253
2011	537	2,202,000	231	695,000	6,709	34,677,000	1.9%	5,169
2012	359	1,177,000	218	634,000	6,742	33,708,000	(2.8%)	5,000
2013[4]	305	1,009,000	212	641,000	6,770	33,663,000	(0.1%)	4,972
2014	235	751,000	259	703,000	6,684	32,047,000	(4.8%)	4,795
2015	178	443,000	254	772,000	6,474	29,729,000	(7.2%)	4,592
2016	166	404,000	264	768,000	6,324	28,345,000	(4.7%)	4,482
2017	102	211,000	273	766,000	6,124	27,632,000	(2.5%)	4,512
2018	119	451,000	281	751,000	5,917	26,947,000	(2.5%)	4,554

1 Each year's data population is a snapshot taken following year-end closings; subsequent adjustments made to snapshots of data prior to the current period are not reflected in the table.

2 The data provided in this table is as of the most recent actuarial valuation (June 30, 2018) for each respective program. Actuarial valuation results as of June 30, 2019, are expected to be available by May 2020.

3 Numbers revised in 2019.

4 Number revised in 2014.

Table 13

Solvency Test

Valuation Date (as of June 30)[1]	Aggregate Accrued Liabilities for: (1) Active Member Contributions on Deposit	(2) Future Benefits to Benefit Recipients	(3) Service Already Rendered by Active Members (Financed by Employer)	Actuarial Value of Assets	Funding of Liabilities: (1)	(2)	(3)
DB Program (Dollars in Millions)							
2009	$27,477	$88,927	$69,279	$145,142	100.0%	100.0%	41.5%
2010	27,105	99,135	70,075	140,291	100.0%	100.0%	20.1%
2011	27,038	109,984	71,383	143,930	100.0%	100.0%	9.7%
2012	27,245	116,475	71,469	144,232	100.0%	100.0%	0.7%
2013	27,683	121,714	72,884	148,614	100.0%	99.4%	—
2014	28,290	126,235	76,688	158,495	100.0%	100.0%	5.2%
2015	28,935	131,451	81,367	165,553	100.0%	100.0%	6.4%
2016	30,046	145,108	91,550	169,976	100.0%	96.4%	—
2017	31,523	154,618	100,809	179,689	100.0%	95.8%	—
2018	33,012	161,219	103,372	190,451	100.0%	97.7%	—
DBS Program (Dollars in Thousands)							
2009	$6,316,154	$283,161	$ —	$5,145,981	81.5%	—	—
2010	7,012,291	444,151	—	6,412,180	91.4%	—	—
2011	7,196,652	577,115	—	8,054,962	100.0%	100.0%	—
2012	7,280,977	710,586	—	8,042,090	100.0%	100.0%	—
2013	7,641,488	850,275	—	8,983,919	100.0%	100.0%	—
2014	8,077,762	942,945	—	10,493,062	100.0%	100.0%	—
2015	8,532,216	1,021,092	—	10,940,917	100.0%	100.0%	—
2016	8,604,042	1,200,485	—	10,943,296	100.0%	100.0%	—
2017	9,020,170	1,381,932	—	12,269,382	100.0%	100.0%	—
2018	9,426,949	1,541,170	—	13,173,522	100.0%	100.0%	—
CBB Program (Dollars in Thousands)							
2009	$114,338	$354	$ —	$91,793	80.3%	—	—
2010	129,065	509	—	114,418	88.7%	—	—
2011	143,695	767	—	151,248	100.0%	100.0%	—
2012	156,600	1,386	—	158,020	100.0%	100.0%	—
2013	174,171	1,952	—	188,551	100.0%	100.0%	—
2014	194,792	3,061	—	231,671	100.0%	100.0%	—
2015	215,851	3,843	—	248,699	100.0%	100.0%	—
2016	230,864	4,974	—	256,675	100.0%	100.0%	—
2017	253,572	7,411	—	302,448	100.0%	100.0%	—
2018	270,269	9,433	—	328,022	100.0%	100.0%	—
MPP Program[2,3] (Dollars in Millions)							
2006	$ —	$528	$ —	$528	—	100.0%	—
2008	—	630	—	630	—	100.0%	—
2010	—	602	—	602	—	100.0%	—
2012	—	424	—	424	—	100.0%	—
2014	—	342	—	342	—	100.0%	—
2016	—	315	—	315	—	100.0%	—
2017	—	302	—	302	—	100.0%	—
2018	—	286	—	286	—	100.0%	—

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2018) for each respective program. Actuarial valuation results as of June 30, 2019, are expected to be available by May 2020.

2 This is a 10-year schedule. However, the information in this schedule is not available for periods prior to fiscal year 2005–06. Years will be added to this schedule in future fiscal years until 10 years information is available.

3 For funding purposes, the assets are valued as the allocated value of DB Program assets. This figure is equal to the actuarial obligation of the MPP Program benefits.

Table 14

Analysis of Financial Experience

(Gains and losses in unfunded actuarial obligation resulting from differences between assumed and actual experience)

(Dollars in Millions)	Actuarial Valuation as of June 30[1,2] DB Program 2018	2017
Beginning Actuarial Obligation	**$286,950**	**$266,704**
Normal Cost	6,611	6,312
Benefits Paid	(13,930)	(13,314)
Expected Interest	19,835	19,319
Expected Actuarial Obligation at June 30	**299,466**	**279,021**
Expected Actuarial Value of Assets at June 30	**188,319**	**177,767**
Expected UAO at June 30	**111,147**	**101,254**
Actuarial (Gains) or Losses		
Change in Assumptions	—	8,706
Investment Return Assumptions	(2,101)	(1,709)
Demographic Assumptions	(1,862)	(777)
Net Change Other Sources	(31)	(213)
Total Actuarial (Gains) & Losses	**(3,994)**	**6,007**
Unfunded Actuarial Obligation at June 30	**107,153**	**107,261**
Funded Ratio	**64.0%**	**62.6%**

(Dollars in Millions)	Actuarial Valuation as of June 30[1,2] DBS Program 2018	DBS Program 2017	CBB Program 2018	CBB Program 2017
Beginning Actuarial Obligation	**$10,402**	**$9,805**	**$261**	**$236**
Expected Changes:				
Contributions	282	263	19	18
Benefits Paid	(419)	(405)	(14)	(12)
Expected Earnings/Credits	723	706	17	16
Expected Actuarial Obligation at June 30	**10,988**	**10,369**	**283**	**258**
Expected Actuarial Value of Assets at June 30	**12,987**	**11,590**	**327**	**280**
Expected UAO (Surplus) at June 30	**(1,999)**	**(1,221)**	**(44)**	**(22)**
Actuarial (Gains) or Losses				
(Gain) on Actuarial Obligation	(414)	(324)	(14)	(5)
(Gain) on Assets	(187)	(679)	(1)	(23)
Total Actuarial (Gains)	**(601)**	**(1,003)**	**(15)**	**(28)**
Additional Earnings Credits	394	357	10	9
Unfunded Actuarial Obligation (Surplus) at June 30	**(2,206)**	**(1,867)**	**(49)**	**(41)**
Funded Ratio	**120.1%**	**118.0%**	**117.3%**	**115.9%**

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2018) for each respective program. Actuarial valuation results as of June 30, 2019, are expected to be available by May 2020.

2 Numbers may not agree to respective valuation reports due to rounding.

Table 14

Analysis of Financial Experience (continued)

(Gains and losses in unfunded actuarial obligation resulting from differences between assumed and actual experience)

(Dollars in Millions)	Actuarial Valuation as of June 30[1]	
	MPP Program	
	2018	2017
Beginning Actuarial Obligation	not calculated	not calculated
Expected Changes:		
Eligibility Extended	not calculated	not calculated
Benefits Paid	($28)	($29)
Interest	not calculated	not calculated
Expected Actuarial Obligation at June 30	not calculated	not calculated
Expected Actuarial Value of Assets at June 30	not calculated	not calculated
Expected UAO at June 30	not calculated	not calculated
Actuarial (Gains) or Losses		
(Gain) on Medical Trend Assumption	not calculated	not calculated
(Gain) on Premium/Penalty	not calculated	not calculated
(Gain) on Part B Premium for higher earners	not calculated	not calculated
(Gain) other sources	not calculated	not calculated
Total Actuarial Gains & Losses	not calculated	not calculated
Unfunded Actuarial Obligation at June 30[2]	—	—
Funded Ratio	100.0%	100.0%

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2018) for each respective program. Actuarial valuation results as of June 30, 2019, are expected to be available by May 2020.

2 Based on the actuarial value of assets. For funding purposes, the MPP Program assets are valued as the allocated value of DB Program assets, which are equal to the actuarial obligation of the MPP Program benefits.

Table 15

Schedule of Funding Progress

(Dollars in Millions)

Valuation Date as of June 30[1]	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (Funding Excess) (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Covered Payroll ((b-a)/c)
DB Program						
2009	$145,142	$185,683	$40,541	78.2%	$27,327	148.4%
2010	140,291	196,315	56,024	71.5%	26,275	213.2%
2011	143,930	208,405	64,475	69.1%	26,592	242.5%
2012	144,232	215,189	70,957	67.0%	26,404	268.7%
2013	148,614	222,281	73,667	66.9%	26,483	278.2%
2014	158,495	231,213	72,718	68.5%	26,398	275.5%
2015	165,553	241,753	76,200	68.5%	28,640	266.1%
2016	169,976	266,704	96,728	63.7%	30,324	319.0%
2017	179,689	286,950	107,261	62.6%	31,961	335.6%
2018	190,451	297,603	107,152	64.0%	32,613	328.6%
DBS Program[2]						
2009	$5,146	$6,599	$1,453	78.0%	$27,327	5.3%
2010	6,412	7,456	1,044	86.0%	26,274	4.0%
2011	8,055	7,774	(281)	103.6%	25,536	(1.1%)
2012	8,042	7,992	(50)	100.6%	25,091	(0.2%)
2013	8,984	8,492	(492)	105.8%	24,994	(2.0%)
2014	10,493	9,021	(1,472)	116.3%	25,805	(5.7%)
2015	10,941	9,553	(1,388)	114.5%	27,143	(5.1%)
2016	10,943	9,805	(1,138)	111.6%	28,788	(4.0%)
2017	12,269	10,402	(1,867)	117.9%	29,971	(6.2%)
2018	13,173	10,968	(2,205)	120.1%	30,650	(7.2%)
CBB Program						
2009	$92	$115	$23	80.0%	$182	12.6%
2010	114	130	16	87.7%	163	9.8%
2011	151	144	(7)	104.9%	158	(4.4%)
2012	158	158	—	100.0%	151	—
2013	189	176	(13)	107.4%	151	(8.6%)
2014	232	198	(34)	117.2%	174	(19.5%)
2015	249	220	(29)	113.2%	192	(15.1%)
2016	257	236	(21)	108.9%	209	(10.0%)
2017	302	261	(41)	115.7%	218	(18.8%)
2018	328	280	(48)	117.1%	232	(20.7%)
MPP Program[3]						
2006	$528	$528	$ —	100.0%	n/a	n/a
2008	630	630	—	100.0%	n/a	n/a
2010	602	602	—	100.0%	n/a	n/a
2012	424	424	—	100.0%	n/a	n/a
2014	342	342	—	100.0%	n/a	n/a
2016	315	315	—	100.0%	n/a	n/a
2017	302	302	—	100.0%	n/a	n/a
2018	286	286	—	100.0%	n/a	n/a

1 The data provided in this table is as of the most recent actuarial valuation (June 30, 2018) for each respective program. Actuarial valuation results as of June 30, 2019, are expected to be available by May 2020.

2 Covered payroll has changed to reflect active members with non-zero DBS account balance.

3 For funding purposes, the assets are valued as the allocated value of DB Program assets. This figure is equal to the actuarial obligation of the MPP Program benefits.

Note: Information of actuarially determined and actual contributions for the State Teachers' Retirement Plan is provided in the Financial Section, Schedule III, Contributions of Employer and Nonemployer Contributing Entity table.

Statistical Section

In fiscal year 2018–19, CalSTRS members, on average, retired at age 63 after about 24 years of service with a pension replacing less than 60% of their highest salary.

Statistical Overview

The Statistical Section presents additional detailed information to assist users of the basic financial statements, notes to the basic financial statements and required supplementary information in assessing the economic condition of CalSTRS. The section provides financial trend information for the State Teachers' Retirement Plan (STRP), which includes Defined Benefit (DB), Defined Benefit Supplement (DBS), Cash Balance Benefit (CBB) and Replacement Benefits programs, as well as operating information for the Pension2, Medicare Premium Payment (MPP) Program and Teachers' Deferred Compensation Fund. Financial trend information for the DB, DBS and CBB programs has been consolidated and presented as the STRP to be consistent with the basic financial statements. Operating information for STRP programs continues to be presented separately because consolidation would not provide meaningful information due to the unique characteristics of those programs.

The financial trend schedules assist users in understanding and assessing how the system's financial position has changed over time and include:

- Changes in Fiduciary Net Position
- Benefit and Refund Deductions From Net Position by Type

The operating information schedules provide data about the system's operations and resources to assist users in understanding CalSTRS benefits and services and include:

- Members and Benefit Recipient Statistics
- Participating Employers Statistics

The information in this section was derived from the Financial Section and the CalSTRS pension administration system, START, except where noted. Due to the timing of when membership numbers were pulled, there will be a difference between the membership numbers reported in this section and the Financial Section of this report.

Supplemental statistical tables are available on request.

Table 1

Changes in Fiduciary Net Position for the State Teachers' Retirement Plan

(Dollars in Millions)

	Fiscal Year Ending June 30									
	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Additions										
Member Contributions	$3,648	$3,496	$3,441	$2,958	$2,510	$2,264	$2,337	$2,280	$2,356	$2,332
Employer Contributions	5,644	4,867	4,173	3,391	2,678	2,272	2,283	2,238	2,310	2,286
State of California Contributions[1]	5,335	2,797	2,478	1,940	1,426	1,384	1,328	1,303	1,193	1,222
Net Investment Income	14,898	18,674	25,165	2,305	7,612	30,402	20,682	1,071	30,030	15,089
Other Income	128	105	72	42	4	2	1	4	7	8
Total Additions	**$29,653**	**$29,939**	**$35,329**	**$10,636**	**$14,230**	**$36,324**	**$26,631**	**$6,896**	**$35,896**	**$20,937**
Deductions										
Benefit Payments[2]	$15,002	$14,271	$13,626	$12,892	$12,284	$11,725	$11,133	$10,443	$9,855	$9,085
Purchasing Power Benefits	194	162	161	172	193	202	222	235	238	273
Refunds of Member Contributions	100	104	116	84	88	108	105	108	116	100
Administrative Expenses	254	216	182	180	145	154	137	138	110	140
Borrowing Costs[3]	105	94	58	—	—	—	—	—	—	—
Other Expenses	4	2	10	15	9	9	4	—	—	—
Total Deductions	**$15,659**	**$14,849**	**$14,153**	**$13,343**	**$12,719**	**$12,198**	**$11,601**	**$10,924**	**$10,319**	**$9,598**
Change in Fiduciary Net Position	**$13,994**	**$15,090**	**$21,176**	**($2,707)**	**$1,511**	**$24,126**	**$15,030**	**($4,028)**	**$25,577**	**$11,339**

Note: There may be immaterial rounding differences between the figures presented in this table and in the Statement of Changes in Fiduciary Net Position presented in the Financial Section.

1 Includes SBMA contributions and school lands revenue.

2 Includes member elected administrative transfers to purchase service credit in the Defined Benefit program.

3 Borrowing costs associated with the master facility credit portfolio, which were previously reported in Net Investment Income were reclassified to Deductions for financial reporting purposes.

Table 2

Benefit and Refund Deductions From Changes in Fiduciary Net Position by Type

(Dollars in Millions)

	Fiscal Year Ending June 30									
Type of Benefit	**2019**	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**	**2011**	**2010**
Age & Service Benefits										
Retired Members[1]	$13,797	$13,121	$12,538	$11,869	$11,306	$10,821	$10,281	$9,704	$9,167	$8,357
Survivors	768	732	686	634	591	547	528	503	465	504
Death	80	72	66	63	76	57	74	31	35	43
Purchasing Power Benefits	194	162	161	172	193	202	222	235	238	273
Disability Benefits										
Retired Members	357	346	336	326	311	300	251	205	187	182
Total Benefits	**$15,196**	**$14,433**	**$13,787**	**$13,064**	**$12,477**	**$11,927**	**$11,356**	**$10,678**	**$10,092**	**$9,359**

Type of Refund										
Separation	$100	$104	$116	$84	$88	$108	$105	$108	$116	$100
Total Refunds	**$100**	**$104**	**$116**	**$84**	**$88**	**$108**	**$105**	**$108**	**$116**	**$100**

Note: There may be immaterial rounding differences between the figures presented in this table and in the Statement of Changes in Fiduciary Net Position.

1 Includes member elected administrative transfers to purchase service credit in the Defined Benefit program.

Table 1

Active Member Characteristics

Fiscal Year Ending June 30	Count	Average Earnable Compensation[1]	Average Age	Average Service Credit	Average Service Projected to Age 60
2010	441,544	$64,156	45.1	11.3	26.3
2011	429,600	64,069	45.3	11.7	26.3
2012	421,499	64,743	45.5	11.9	26.5
2013	416,643	65,571	45.6	12.2	26.6
2014	420,887	67,276	45.6	12.3	26.6
2015	429,460	69,597	45.5	12.2	26.7
2016	438,537	72,550	45.4	12.1	26.7
2017	445,935	74,346	45.3	12.1	26.8
2018	449,595	75,604	45.2	12.1	26.9
2019	451,429	77,736	45.2	12.2	27.0

1 Average salary that would be paid if members worked on a full-time basis.

Table 2

Members Retired for Service During Fiscal Year 2018–19, Classified by Unmodified Allowance[1,2]

Monthly Unmodified Allowance	Count	Average Age at Retirement	Average Service Credit	Average Final Compensation[3]	Average Allowance Payable[4]
Less than $500	463	63.5	4.9	$4,000	$304
500–1000	649	63.3	8.8	4,489	725
1000–1500	496	62.8	12.1	5,352	1,206
1500–2000	570	62.2	14.9	6,138	1,690
2000–2500	678	62.3	17.0	6,757	2,183
2500–3000	741	62.9	19.0	7,098	2,663
3000–3500	879	63.1	20.7	7,462	3,135
3500–4000	952	63.7	22.2	7,784	3,598
4000–4500	935	63.4	24.3	8,061	4,105
4500–5000	868	63.7	26.3	8,157	4,542
5000–5500	855	63.3	28.0	8,454	5,052
5500–6000	829	63.4	29.8	8,503	5,488
6000 & Greater	3,416	63.5	33.8	9,821	7,385
Total	**12,331**	**63.3**	**24.1**	**$7,880**	**$4,354**

1 Does not include formerly disabled members.
2 Unmodified allowance includes longevity bonus.
3 Excludes new retirees with no final compensation data.
4 Includes cumulative application of annual 2% benefit improvement factor.

Table 3

Members Retired for Service During Fiscal Year 2018–19, Classified by Age and Joint & Survivor Option Elected[1,2]

			Option Types							
Age	**Total**	**Unmodified**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Under 55	21	10	3	—	—	—	5	1	2	—
55	460	313	—	—	—	—	84	41	11	11
56	315	203	—	—	—	—	50	39	7	16
57	374	221	—	—	—	—	64	52	8	29
58	485	274	—	—	—	—	92	61	17	41
59	557	297	—	—	—	—	114	85	11	50
60	1,022	554	—	—	—	—	205	147	20	96
61	1,291	648	—	—	—	—	271	207	25	140
62	1,450	705	—	—	—	—	311	232	33	169
63	1,488	826	—	—	—	—	284	226	27	125
64	944	536	—	—	—	—	174	117	17	100
65	928	540	—	—	—	—	146	130	22	90
66	698	416	1	—	—	—	133	81	13	54
67	556	331	—	—	—	—	111	57	11	46
68	396	265	—	—	—	—	60	40	10	21
69	304	184	3	—	—	—	50	26	14	27
70	280	181	5	—	—	—	44	25	12	13
71	214	134	2	—	—	—	37	17	4	20
72	160	90	2	—	—	—	36	20	4	8
73	104	66	3	—	—	—	19	11	1	4
74	65	39	—	—	—	—	12	8	2	4
75 & Over	219	141	4	—	—	—	28	29	5	12
Total	**12,331**	**6,974**	**23**	**—**	**—**	**—**	**2,330**	**1,652**	**276**	**1,076**
% of Total	**100.0%**	**56.6%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**18.9%**	**13.4%**	**2.2%**	**8.7%**

1 Does not include formerly disabled members.
2 Option Elected:
Option 2 - Beneficiary receives 100% of member’s modified allowance.
Option 3 - Beneficiary receives 50% of member’s modified allowance.
Option 4 - Beneficiary receives 2/3 of member’s modified allowance.
Option 5 - Survivors receives 50% of member’s modified allowance, upon death of either member or beneficiary.
Option 6 - Beneficiary receives 100% of member’s modified allowance. If beneficiary pre-deceases the member the allowance increases to the unmodified amount.
Option 7 - Beneficiary receives 50% of member’s modified allowance. If beneficiary pre-deceases the member the allowance increases to the unmodified amount.
Option 8 - Compound option that allows the member to provide for more than one beneficiary.
Option 9 - Beneficiary receives 75% of member’s modified allowance. If beneficiary pre-deceases the member the allowance increases to the unmodified amount.

Table 4

Characteristics of Members Going on Disability During Target Fiscal Year

Fiscal Year Ending June 30	Count	Average Disability Allowance Payable	Average Service Credit	Average Final Compensation	Average Age at Disability
2010	498	$2,825	14.5	$5,827	55.3
2011	504	2,784	14.3	5,781	55.0
2012	488	2,825	14.3	5,823	55.4
2013	571	2,788	14.8	5,742	54.9
2014	494	2,875	15.0	5,967	55.1
2015	503	2,899	15.2	6,002	54.3
2016	455	2,936	14.9	6,081	54.1
2017	394	3,056	16.0	6,365	54.4
2018	381	3,144	16.4	6,512	54.9
2019	373	3,150	16.4	6,631	54.5

Table 5

Total Number of Benefit Recipients by Type of Benefit

Fiscal Year Ending June 30	Service Retirement	Disability Benefits	Benefits for Survivors	Total Benefit Recipients[1]
2010	213,952	8,581	21,263	243,796
2011	222,222	8,813	22,006	253,041
2012	230,278	9,036	22,724	262,038
2013	236,487	9,374	23,413	269,274
2014	241,920	9,604	24,103	275,627
2015	247,353	9,848	24,899	282,100
2016	252,672	9,940	25,583	288,195
2017	258,550	10,023	26,301	294,874
2018	264,780	10,089	26,990	301,859
2019	270,835	10,152	27,652	308,639

1 Benefit recipients reported in this section will differ from those reported in the Financial Section due to timing of when membership numbers were pulled.

Table 6

Members Retired for Service Characteristics by Year of Retirement[1]

Effective Date of Retirement by Service Credit	Number of Retirements	Average Service Credit	Average Unmodified Allowance	Average Final Compensation	Average Age at Retirement
7/1/2009 thru 6/30/2010[2]					
0–5	148	2.3	$ 289	$5,535	61.4
5–10	1,356	7.4	686	4,287	63.0
10–15	1,436	12.6	1,446	5,385	62.4
15–20	1,663	17.6	2,326	6,138	62.3
20–25	2,323	22.4	3,236	6,658	62.4
25–30	1,885	27.1	4,231	7,165	62.5
30–35	3,620	32.4	5,665	7,478	61.2
35–40	2,481	37.2	7,228	7,999	61.6
40 & Over	581	42.3	8,759	8,409	65.4
Total	**15,493**	**25.5**	**$4,256**	**$6,800**	**62.2**
7/1/2010 thru 6/30/2011[2]					
0–5	194	2.4	$ 305	$6,182	62.0
5–10	1,388	7.3	663	4,187	62.9
10–15	1,506	12.5	1,487	5,491	62.7
15–20	1,571	17.5	2,320	6,191	62.2
20–25	2,005	22.4	3,278	6,729	62.5
25–30	1,834	27.1	4,237	7,186	62.4
30–35	2,874	32.4	5,693	7,508	61.3
35–40	2,068	37.2	7,313	8,091	61.8
40 & Over	456	42.3	9,037	8,738	65.6
Total	**13,896**	**24.5**	**$4,088**	**$6,763**	**62.3**
7/1/2011 thru 6/30/2012[2]					
0–5	167	2.4	$ 310	$6,013	63.0
5–10	1,497	7.3	676	4,224	63.2
10–15	1,659	12.5	1,437	5,315	62.7
15–20	1,743	17.4	2,316	6,122	62.7
20–25	1,962	22.5	3,350	6,788	62.6
25–30	1,878	27.1	4,318	7,212	62.8
30–35	2,547	32.5	5,750	7,550	61.4
35–40	1,770	37.2	7,364	8,093	61.9
40 & Over	396	42.1	9,487	9,113	65.2
Total	**13,619**	**23.7**	**$3,936**	**$6,670**	**62.5**

1 Does not include formerly disabled members.
2 The Average Unmodified Allowance for this fiscal year includes the Longevity Bonus.

Table 6

Members Retired for Service Characteristics by Year of Retirement (continued)[1]

Effective Date of Retirement by Service Credit	Number of Retirements	Average Service Credit	Average Unmodified Allowance	Average Final Compensation	Average Age at Retirement
7/1/2012 thru 6/30/2013[2]					
0–5	132	2.5	$ 311	$6,092	62.8
5–10	1,017	7.2	710	4,540	63.1
10–15	1,298	12.6	1,521	5,528	63.1
15–20	1,678	17.4	2,392	6,272	63.0
20–25	1,760	22.6	3,367	6,802	62.8
25–30	1,817	27.2	4,319	7,169	62.7
30–35	2,150	32.5	5,700	7,528	61.6
35–40	1,522	37.2	7,329	8,038	61.8
40 & Over	271	42.3	8,924	8,439	65.6
Total	**11,645**	**24.1**	**$3,980**	**$6,769**	**62.6**
7/1/2013 thru 6/30/2014[2]					
0–5	144	2.2	$ 268	$5,994	62.9
5–10	950	7.4	721	4,463	63.2
10–15	1,176	12.6	1,533	5,553	63.1
15–20	1,604	17.4	2,425	6,286	63.2
20–25	1,593	22.4	3,334	6,743	62.9
25–30	1,845	27.2	4,443	7,367	63.0
30–35	1,814	32.3	5,607	7,532	61.6
35–40	1,374	37.2	7,295	7,973	61.9
40 & Over	236	42.2	9,197	8,741	65.5
Total	**10,736**	**23.8**	**$3,939**	**$6,774**	**62.7**
7/1/2014 thru 6/30/2015[2,3]					
0–5	168	2.2	$ 275	$6,195	62.6
5–10	855	7.4	736	4,517	63.7
10–15	1,125	12.6	1,554	5,597	63.4
15–20	1,764	17.6	2,520	6,467	63.4
20–25	1,585	22.4	3,415	6,883	63.0
25–30	2,069	27.2	4,603	7,576	63.3
30–35	1,948	32.1	5,709	7,787	62.0
35–40	1,482	37.1	7,490	8,207	62.2
40 & Over	282	42.4	9,539	9,166	65.8
Total	**11,278**	**24.2**	**$4,142**	**$7,013**	**63.0**

1 Does not include formerly disabled members.
2 The Average Unmodified Allowance for this fiscal year includes the Longevity Bonus.
3 Excludes retirees with no final compensation data.

Table 6

Members Retired for Service Characteristics by Year of Retirement (continued)[1]

Effective Date of Retirement by Service Credit	Number of Retirements	Average Service Credit	Average Unmodified Allowance	Average Final Compensation	Average Age at Retirement
7/1/2015 thru 6/30/2016[2,3]					
0–5	170	2.4	$ 314	$6,438	62.7
5–10	793	7.4	754	4,637	63.9
10–15	1,046	12.6	1,608	5,792	63.5
15–20	1,751	17.6	2,612	6,664	63.6
20–25	1,652	22.2	3,534	7,149	63.4
25–30	2,152	27.3	4,861	7,928	63.4
30–35	2,034	32.1	5,899	8,108	62.0
35–40	1,467	37.2	7,836	8,624	62.4
40 & Over	309	42.5	9,666	9,215	66.4
Total	**11,374**	**24.5**	**$4,369**	**$7,329**	**63.2**
7/1/2016 thru 6/30/2017[2,3]					
0–5	155	2.2	$ 306	$6,402	63.6
5–10	837	7.4	773	4,709	63.9
10–15	1,075	12.6	1,628	5,861	63.5
15–20	1,836	17.7	2,701	6,857	63.7
20–25	1,932	22.2	3,628	7,326	63.6
25–30	2,246	27.3	4,955	8,082	63.5
30–35	2,423	32.2	6,126	8,438	62.1
35–40	1,414	37.3	7,807	8,711	62.4
40 & Over	329	42.6	10,267	9,986	66.4
Total	**12,247**	**24.6**	**$4,475**	**$7,527**	**63.3**
7/1/2017 thru 6/30/2018[2,3]					
0–5	190	2.5	$ 335	$6,521	63.2
5–10	877	7.3	787	4,830	63.8
10–15	1,091	12.6	1,676	5,955	63.7
15–20	1,855	17.7	2,817	7,110	63.8
20–25	2,362	22.3	3,832	7,645	63.9
25–30	2,368	27.5	5,123	8,379	63.4
30–35	2,530	32.2	6,308	8,642	62.0
35–40	1,262	37.1	8,049	9,057	62.7
40 & Over	243	43.2	10,476	9,956	68.1
Total	**12,778**	**24.3**	**$4,512**	**$7,729**	**63.3**

1 Does not include formerly disabled members.
2 The Average Unmodified Allowance for this fiscal year includes the Longevity Bonus.
3 Excludes retirees with no final compensation data.

Table 6

Members Retired for Service Characteristics by Year of Retirement (continued)[1]

Effective Date of Retirement by Service Credit	Number of Retirements	Average Service Credit	Average Unmodified Allowance	Average Final Compensation	Average Age at Retirement
7/1/2018 thru 6/30/2019[2,3]					
0–5	216	2.3	$ 320	$6,713	62.9
5–10	878	7.3	762	4,658	64.0
10–15	1,072	12.7	1,725	6,141	63.7
15–20	1,772	17.7	2,847	7,252	63.7
20–25	2,309	22.4	3,883	7,824	63.5
25–30	2,174	27.4	5,255	8,578	63.6
30–35	2,543	32.2	6,457	8,925	61.9
35–40	1,137	37.1	8,108	9,225	62.7
40 & Over	230	42.8	10,496	9,978	67.8
Total	**12,331**	**24.1**	**$4,547**	**$7,880**	**63.3**

1 Does not include formerly disabled members
2 The Average Unmodified Allowance for this fiscal year includes the Longevity Bonus
3 Excludes retirees with no final compensation data

Table 7

Members Retired for Service Characteristics[1]

Fiscal Year Ending June 30	Average Age at Retirement	Average Years of Service Credit	Average Final Compensation	Average Current Allowance Payable
2010	60.9	26.3	$4,983	$3,302
2011	61.0	26.3	5,138	3,417
2012	61.1	26.2	5,271	3,517
2013	61.1	26.1	5,385	3,609
2014	61.2	26.0	5,487	3,694
2015	61.3	25.9	5,597	3,786
2016	61.3	25.8	5,716	3,884
2017	61.4	25.7	5,846	3,985
2018	61.5	25.6	5,981	4,086
2019	61.6	25.6	6,110	4,184

1 Does not include formerly disabled members.

Table 8

Benefit Recipients by Type of Benefit and Option Elected

Monthly Unmodified Allowance[3]	Total	Type of Benefit[1] 1[4]	2	3	Option Elected[2] Unmodified	2	3	4	5	6	7	8	9
Less than $500	16,799	14,556	57	2,186	12,241	1,031	309	56	68	1,963	661	211	259
500–1000	24,378	21,337	603	2,438	16,516	1,430	680	91	86	3,287	1,535	151	602
1000–1500	24,710	20,688	975	3,047	14,697	1,860	947	160	134	3,673	2,289	154	796
1500–2000	27,093	22,191	1,510	3,392	15,149	1,903	822	358	151	4,046	3,418	172	1,074
2000–2500	28,447	22,885	1,997	3,565	14,878	1,890	775	325	177	4,737	4,151	248	1,266
2500–3000	26,625	21,554	2,033	3,038	13,612	1,552	541	248	115	4,875	4,118	248	1,316
3000–3500	23,771	19,808	1,651	2,312	12,031	1,175	353	217	60	4,509	3,735	276	1,415
3500–4000	19,562	17,407	634	1,521	9,624	852	263	151	52	3,831	3,285	234	1,270
4000–4500	18,140	16,692	240	1,208	8,707	757	224	92	38	3,534	3,288	274	1,226
4500–5000	17,463	16,332	69	1,062	7,973	703	202	64	29	3,741	3,195	296	1,260
5000–5500	18,105	16,334	350	1,421	8,585	690	181	64	21	3,748	3,164	292	1,360
5500–6000	15,548	14,852	13	683	6,881	573	147	59	16	3,488	2,760	279	1,345
6000 & Greater	47,998	46,199	20	1,779	18,704	2,101	337	143	43	12,174	8,110	1,415	4,971
Total	**308,639[5]**	**270,835**	**10,152**	**27,652**	**159,598**	**16,517**	**5,781**	**2,028**	**990**	**57,606**	**43,709**	**4,250**	**18,160**

1 Type of Benefit: 1) Service Retirement 2) Disability Benefits 3) Survivor Benefits.
2 Option Elected:
Option 2 - Beneficiary receives 100% of member's modified allowance.
Option 3 - Beneficiary receives 50% of member's modified allowance.
Option 4 - Beneficiary receives 2/3 of member's modified allowance.
Option 5 - Survivors receives 50% of member's modified allowance, upon death of either member or beneficiary.
Option 6 - Beneficiary receives 100% of member's modified allowance. If beneficiary pre-deceases the member the allowance increases to the unmodified amount.
Option 7 - Beneficiary receives 50% of member's modified allowance. If beneficiary pre-deceases the member the allowance increases to the unmodified amount.
Option 8 - Compound option that allows the member to provide for more than one beneficiary.
Option 9 - Beneficiary receives 75% of member's modified allowance. If beneficiary pre-deceases the member the allowance increases to the unmodified amount.
3 Unmodified allowance includes longevity bonus.
4 Does not include formerly disabled members.
5 Benefit recipients reported in this section will differ from those reported in the Financial Section due to the timing of when membership numbers were pulled.

Table 9

Largest Participating Defined Benefit and Defined Benefit Supplement Employers for Current Year and Nine Years Ago

Fiscal Year 2018–19

Participating Employers	Covered Employees[1]	Rank	Percentage of Total System
Los Angeles Unified School District	40,873	1	7.7%
San Diego Unified School District	8,114	2	1.5%
Long Beach Unified School District	6,228	3	1.2%
Fresno Unified School District	5,798	4	1.1%
San Francisco Unified School District	5,528	5	1.0%
Elk Grove Unified School District	4,490	6	0.8%
San Bernardino City Unified School District	4,034	7	0.8%
Sacramento City Unified School District	3,674	8	0.7%
Oakland Unified School District	3,494	9	0.7%
Corona-Norco Unified School District	3,442	10	0.6%
Top 10 Total	**85,675**		**16.1%**
All Other	447,937		83.9%
Total Covered Employees	**533,612**		**100.0%**

Fiscal Year 2009–10

Participating Employers	Covered Employees[1]	Rank	Percentage of Total System
Los Angeles Unified School District	45,903	1	9.1%
San Diego Unified School District	10,775	2	2.1%
Long Beach Unified School District	6,084	3	1.2%
Fresno Unified School District	5,442	4	1.1%
San Francisco Unified School District	4,924	5	0.9%
Elk Grove Unified School District	4,449	6	0.9%
San Bernardino City Unified School District	4,032	7	0.8%
Capistrano Unified School District	3,537	8	0.7%
Oakland Unified School District	3,499	9	0.7%
Corona-Norco Unified School District	3,475	10	0.7%
Top 10 Total	**92,120**		**18.2%**
All Other	413,409		81.8%
Total Covered Employees	**505,529**		**100.0%**

1 Covered employees are calculated as all employees for whom an employer reports service credit during the fiscal year. Covered employees in this table are counted more than once if they are reported by multiple employers. They are also counted if their employer reports service credit for a retired employee from prior fiscal years. Therefore, the total number of covered employees in this table is higher than the number of active members shown in Table 11 of the Actuarial Section.

Table 10

Restoration of Purchasing Power by Year of Retirement Fiscal Year 2018–19[1,2]

Calendar Year of Benefit Effective Date	CCPI Increases Since Benefit Effective Date	Member Retired Before September 1st			Member Retired on or After September 1st[3]		
		Benefit Increases Since Benefit Effective Date	Purchasing Power Percentage (Prior to SBMA)	Purchasing Power Restored by SBMA	Benefit Increases Since Benefit Effective Date	Purchasing Power Percentage (Prior to SBMA)	Purchasing Power Restored by SBMA
1955	960.2%	126.0%	21.3%	63.7%	124.0%	21.1%	63.9%
1956	939.9%	124.0%	21.5%	63.5%	122.0%	21.3%	63.7%
1957	905.4%	122.0%	22.1%	62.9%	120.0%	21.9%	63.1%
1958	869.6%	120.0%	22.7%	62.3%	118.0%	22.5%	62.5%
1959	856.0%	118.0%	22.8%	62.2%	116.0%	22.6%	62.4%
1960	836.3%	116.0%	23.1%	61.9%	114.0%	22.9%	62.1%
1961	823.6%	114.0%	23.2%	61.8%	112.0%	23.0%	62.0%
1962	808.2%	112.0%	23.3%	61.7%	110.0%	23.1%	61.9%
1963	802.2%	110.0%	23.3%	61.7%	108.0%	23.1%	61.9%
1964	784.6%	108.0%	23.5%	61.5%	106.0%	23.3%	61.7%
1965	762.2%	106.0%	23.9%	61.1%	104.0%	23.7%	61.3%
1966	748.8%	104.0%	24.0%	61.0%	102.0%	23.8%	61.2%
1967	728.2%	102.0%	24.4%	60.6%	100.0%	24.2%	60.8%
1968	694.3%	100.0%	25.2%	59.8%	98.0%	24.9%	60.1%
1969	656.8%	98.0%	26.2%	58.8%	96.0%	25.9%	59.1%
1970	618.9%	96.0%	27.3%	57.7%	94.0%	27.0%	58.0%
1971	591.5%	94.0%	28.1%	56.9%	92.0%	27.8%	57.2%
1972	572.7%	92.0%	28.5%	56.5%	90.0%	28.2%	56.8%
1973	538.1%	90.0%	29.8%	55.2%	88.0%	29.5%	55.5%
1974	478.5%	88.0%	32.5%	52.5%	86.0%	32.2%	52.8%
1975	424.0%	86.0%	35.5%	49.5%	84.0%	35.1%	49.9%
1976	393.6%	84.0%	37.3%	47.7%	82.0%	36.9%	48.1%
1977	357.9%	82.0%	39.7%	45.3%	80.0%	39.3%	45.7%
1978	321.8%	80.0%	42.7%	42.3%	78.0%	42.2%	42.8%
1979	283.7%	78.0%	46.4%	38.6%	76.0%	45.9%	39.1%
1980	227.1%	76.0%	53.8%	31.2%	74.0%	53.2%	31.8%
1981	202.4%	74.0%	57.5%	27.5%	72.0%	56.9%	28.1%
1982	176.6%	72.0%	62.2%	22.8%	70.0%	61.5%	23.5%
1983	174.9%	70.0%	61.8%	23.2%	68.0%	61.1%	23.9%
1984	163.0%	68.0%	63.9%	21.1%	66.0%	63.1%	21.9%
1985	151.3%	66.0%	66.0%	19.0%	64.0%	65.2%	19.8%
1986	142.8%	64.0%	67.5%	17.5%	62.0%	66.7%	18.3%

1 This table is new in 2019 and presents the restoration of DB members' purchasing power over time, based on the application of the terms and provisions of both the DB Program and SBMA.

2 Fiscal Year 2018–19 SBMA is based on June 2018 California Consumer Price Index (CCPI).

3 Members who retired on or after September 1st have to wait an extra year to be eligible for the 2% benefit adjustment.

Table 10

Restoration of Purchasing Power by Year of Retirement Fiscal Year 2018–19 (continued)[1,2]

		Member Retired Before September 1st			Member Retired on or After September 1st[3]		
Calendar Year of Benefit Effective Date	CCPI Increases Since Benefit Effective Date	Benefit Increases Since Benefit Effective Date	Purchasing Power Percentage (Prior to SBMA)	Purchasing Power Restored by SBMA	Benefit Increases Since Benefit Effective Date	Purchasing Power Percentage (Prior to SBMA)	Purchasing Power Restored by SBMA
1987	134.3%	62.0%	69.1%	15.9%	60.0%	68.3%	16.7%
1988	123.9%	60.0%	71.5%	13.5%	58.0%	70.6%	14.4%
1989	112.5%	58.0%	74.3%	10.7%	56.0%	73.4%	11.6%
1990	102.9%	56.0%	76.9%	8.1%	54.0%	75.9%	9.1%
1991	94.5%	54.0%	79.2%	5.8%	52.0%	78.2%	6.8%
1992	87.6%	52.0%	81.0%	4.0%	50.0%	79.9%	5.1%
1993	83.0%	50.0%	82.0%	3.0%	48.0%	80.9%	4.1%
1994	80.8%	48.0%	81.9%	3.1%	46.0%	80.8%	4.2%
1995	76.7%	46.0%	82.6%	2.4%	44.0%	81.5%	3.5%
1996	74.0%	44.0%	82.8%	2.2%	42.0%	81.6%	3.4%
1997	70.3%	42.0%	83.4%	1.6%	40.0%	82.2%	2.8%
1998	66.5%	40.0%	84.1%	0.9%	38.0%	82.9%	2.1%
1999	62.4%	38.0%	85.0%	0.0%	36.0%	83.8%	1.2%
2000	56.6%	36.0%	86.9%	0.0%	34.0%	85.6%	0.0%
2001	48.7%	34.0%	90.1%	0.0%	32.0%	88.8%	0.0%
2002	46.6%	32.0%	90.1%	0.0%	30.0%	88.7%	0.0%
2003	43.5%	30.0%	90.6%	0.0%	28.0%	89.2%	0.0%
2004	39.2%	28.0%	92.0%	0.0%	26.0%	90.5%	0.0%
2005	35.4%	26.0%	93.1%	0.0%	24.0%	91.6%	0.0%
2006	29.2%	24.0%	96.0%	0.0%	22.0%	94.4%	0.0%
2007	25.3%	22.0%	97.3%	0.0%	20.0%	95.8%	0.0%
2008	19.3%	20.0%	100.6%	0.0%	18.0%	98.9%	0.0%
2009	21.1%	18.0%	97.4%	0.0%	16.0%	95.8%	0.0%
2010	20.0%	16.0%	96.7%	0.0%	14.0%	95.0%	0.0%
2011	16.8%	14.0%	97.6%	0.0%	12.0%	95.9%	0.0%
2012	14.6%	12.0%	97.7%	0.0%	10.0%	96.0%	0.0%
2013	12.6%	10.0%	97.7%	0.0%	8.0%	95.9%	0.0%
2014	10.2%	8.0%	98.0%	0.0%	6.0%	96.2%	0.0%
2015	8.8%	6.0%	97.4%	0.0%	4.0%	95.6%	0.0%
2016	6.6%	4.0%	97.6%	0.0%	2.0%	95.7%	0.0%
2017	3.9%	2.0%	98.2%	0.0%	0.0%	96.3%	0.0%
2018	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%

1 This table is new in 2019 and presents the restoration of DB members' purchasing power over time, based on the application of the terms and provisions of both the DB Program and SBMA.

2 Fiscal Year 2018–19 SBMA is based on June 2018 California Consumer Price Index (CCPI).

3 Members who retired on or after September 1st have to wait an extra year to be eligible for the 2% benefit adjustment.

Table 11

Restoration of Allowance Purchasing Power Through Supplemental Benefit Payments

Retirees' Purchasing Power Protection Account Payments

Year	Purchasing Power	Count	Total $ Paid	Income Source		
				School Lands	Investment Earnings	General Fund
83–84	58.4%	35,654	$21,394,183	N/A	$894,183	$20,500,000
84–85	62.4%	57,189	54,306,976	$10,119,124	2,426,456	41,761,396
85–86	65.5%	56,811	85,675,243	7,770,757	3,994,458	73,910,028
86–87	68.2%	57,343	122,275,289	4,167,970	5,511,448	112,595,871
87–88	68.2%	59,092	128,231,357	6,083,374	5,317,456	116,830,527
88–89	68.2%	58,037	143,061,285	4,479,266	5,956,019	132,626,000
89–90	68.2%	55,971	158,274,048	2,751,075	N/A	155,522,973[1]

Supplemental Benefit Payments

Year	Purchasing Power	Count	Total $ Paid	Income Source		
				School Lands	Teachers' Retirement Fund	SBMA
90–91	68.2%	52,199	$168,922,827	$2,964,211	$111,103,596	$54,855,020
91–92	68.2%	48,650	178,057,887	2,913,338	56,985,521	118,159,028
92–93	68.2%	54,029	184,551,442	6,658,800	—	177,892,642
93–94	68.2%	49,113	178,886,980	4,225,808	—	174,661,172
94–95	68.2%	46,459	168,359,918	4,973,687	—	163,386,231
95–96	68.2%	41,703	168,517,183	1,171,779	—	167,345,404
96–97	68.2%	38,939	159,786,521	1,870,825	—	157,915,696
97–98	68.2%[2]/75.0%	44,887	179,308,000	2,586,920	—	176,721,080
98–99	75.0%	42,624	197,860,324	4,168,363	—	193,691,961
99–00	75.0%	41,048	190,478,334	2,704,171	—	187,774,163
00–01	75.0%	44,699	189,388,495	4,023,007	—	185,365,488
01–02	80.0%[3]	60,428	256,976,204	7,967,992	—	249,008,212
02–03	80.0%	58,591	233,814,578	3,543,362	—	230,271,216
03–04	80.0%	55,779	223,501,415	2,922,844	—	220,578,571
04–05	80.0%	57,079	221,271,470	3,318,095	—	217,953,375
05–06	80.0%	54,360	215,257,813	4,301,959	—	210,955,854
06–07	80.0%	56,002	230,336,754	6,205,860	—	224,130,894
07–08	80.0%	53,122	229,860,349	6,522,856	—	223,337,493
08–09	85.0%[4]	89,142	348,105,380	7,036,201	—	341,069,179
09–10	85.0%	63,949	272,579,522	6,334,670	—	266,244,852
10–11	85.0%	53,870	237,572,962	1,929,606	—	235,643,356
11–12	85.0%	57,337	234,612,294	5,227,046	—	229,385,248
12–13	85.0%	54,847	221,451,056	10,277,064	—	211,173,992
13–14	85.0%	50,331	202,231,778	10,297,864	—	191,933,914
14–15	85.0%	52,474	192,831,167	4,386,099	—	188,445,068
15–16	85.0%	47,764	172,292,148	5,256,886	—	167,035,262
16–17	85.0%	49,519	160,729,280	4,675,196	—	156,054,084
17–18	85.0%	61,476	161,932,385	4,409,980	—	157,522,405
18–19	85.0%	72,216	194,467,089	5,454,757	—	189,012,332

1 The 89–90 appropriation was from the Teachers' Retirement Fund. This amount plus regular interest was repaid from General Fund contributions to the SBMA.
2 Percentage changed to 75% effective 1/1/1998 and payable 4/1/1998 (Chapter 939, Statutes of 1997).
3 Percentage changed to 80% effective 1/1/2002 and payable 10/1/2001 (Chapter 840, Statutes of 2001).
4 Percentage changed to 85% effective 9/30/2008 and payable 10/1/2008 (Chapter 751, Statutes of 2008).

Defined Benefit Supplement Program Schedules

Table 1

Members Retired for Service During Fiscal Year 2018-19, Classified by Age and Option Elected[1]

		Regular Annuity				Period Certain Annuity							
Age	Total	Single Life With Cash	100% Joint And Survivor	75% Joint And Survivor	50% Joint And Survivor	10 Years	9 Years	8 Years	7 Years	6 Years	5 Years	4 Years	3 Years
Under 55	19	5	1	1	4	2	—	—	—	2	1	1	2
55	314	105	49	5	9	56	5	3	6	6	38	9	23
56	152	44	16	4	8	30	3	2	2	3	16	5	19
57	206	58	22	5	8	46	2	8	4	7	13	9	24
58	304	76	46	1	17	59	7	4	16	12	34	10	22
59	386	107	44	4	19	82	10	5	15	19	50	9	22
60	653	155	69	20	33	153	10	4	14	23	104	16	52
61	943	220	135	32	65	199	25	13	19	24	110	40	61
62	877	246	112	26	62	161	7	19	21	17	96	31	79
63	775	217	86	17	45	159	14	8	38	23	87	19	62
64	574	155	70	29	43	106	5	3	9	27	75	12	40
65	548	172	80	8	28	102	7	—	14	8	74	19	36
66	413	133	54	14	27	81	8	3	3	11	40	11	28
67	312	79	27	16	20	78	3	2	8	2	31	9	37
68	236	78	30	2	10	51	1	4	7	3	26	3	21
69	180	49	18	4	12	48	2	2	4	4	18	5	14
70	157	49	16	10	7	37	3	1	1	2	19	4	8
71	108	35	11	2	8	28	1	3	1	2	7	1	9
72	74	26	8	—	5	13	1	1	3	1	11	1	4
73	51	12	5	1	5	7	2	—	1	2	6	2	8
74	50	13	4	2	3	19	—	—	—	3	3	—	3
75 & Over	109	37	10	2	7	25	—	1	2	1	12	2	10
Total	**7,441**	**2,071**	**913**	**205**	**445**	**1,542**	**116**	**86**	**188**	**202**	**871**	**218**	**584**

1 Does not include formerly disabled members.

Table 2

Characteristics of All Members Retired for Service and Receiving an Annuity

Fiscal Year Ending June 30	Count	Average Monthly Retirement Annuity	Average Accumulated Credits[1]	Average Age at Retirement
2010	29,261	$227	$10,651	61.7
2011	34,917	241	12,004	61.9
2012	40,493	250	13,133	62.0
2013	45,110	254	14,088	62.1
2014	48,745	255	14,848	62.2
2015	52,335	259	15,659	62.3
2016	56,238	269	16,590	62.4
2017	60,505	280	23,873	62.5
2018	64,796	289	24,883	62.6
2019	68,091	301	25,750	62.7

1 Neither service credit nor final compensation are factors in determining a benefit from the DBS Program and, therefore, are not included in this table.

Table 3

Characteristics of All Members Retired for Disability and Receiving an Annuity

Fiscal Year Ending June 30	Count	Average Monthly Retirement Annuity	Average Accumulated Credits[1]	Average Age at Retirement
2010	336	$201	$7,673	55.6
2011	575	239	9,436	55.4
2012	747	239	10,404	55.5
2013	977	244	11,495	55.6
2014	1,123	239	12,407	55.8
2015	1,263	245	13,237	55.6
2016	1,340	239	13,953	55.5
2017	1,428	246	19,793	55.3
2018	1,464	244	20,232	55.2
2019	1,495	243	20,441	55.2

1 Neither service credit nor final compensation are factors in determining a benefit from the DBS Program and, therefore, are not included in this table.

Table 4

Benefit Recipients by Type of Benefit and Option Elected

(as of June 30, 2019)

	Monthly Unmodified Allowance					
Type of Benefit	**Less than $250**	**$250–500**	**$500–750**	**$750–1,000**	**$1,000 & Greater**	**Total**
Retirement	38,668	1,954	19,056	6,181	2,232	68,091
Disability	1,035	19	321	88	32	1,495
Survivors	1,217	62	361	127	55	1,822
Total	**40,920**	**2,035**	**19,738**	**6,396**	**2,319**	**71,408**

Type of Payment						
Regular Annuity						
Single Life Without Cash	1,035	—	1	—	—	1,036
Single Life With Cash	20,170	71	4,011	464	150	24,866
100% J&S	10,163	81	2,517	363	94	13,218
75% J&S	1,520	18	493	85	15	2,131
50% J&S	3,558	22	984	151	47	4,762
Period Certain Annuity						
10 Year	3,597	375	8,341	1,795	484	14,592
9 Year	157	44	620	170	43	1,034
8 Year	74	37	362	149	33	655
7 Year	72	69	565	331	82	1,119
6 Year	67	80	405	430	102	1,084
5 Year	302	407	1,059	1,850	625	4,243
4 Year	66	155	126	328	194	869
3 Year	139	676	254	280	450	1,799
Total	**40,920**	**2,035**	**19,738**	**6,396**	**2,319**	**71,408**

Table 1

Participants Retired for Service During Fiscal Year 2018–19, Classified by Age and Type of Annuity Elected

		Regular Annuity				Period Certain Annuity							
Age	**Total**	**Participant Only**[1]	**100% Beneficiary**[2]	**75% Beneficiary**[3]	**50% Beneficiary**[4]	**10 Years**	**9 Years**	**8 Years**	**7 Years**	**6 Years**	**5 Years**	**4 Years**	**3 Years**
Under 55	—	—	—	—	—	—	—	—	—	—	—	—	—
55	1	—	—	—	—	—	—	—	—	—	—	—	1
56	—	—	—	—	—	—	—	—	—	—	—	—	—
57	—	—	—	—	—	—	—	—	—	—	—	—	—
58	1	—	—	—	—	—	—	—	—	—	—	—	1
59	1	—	—	—	—	—	—	—	—	—	—	—	1
60	1	—	1	—	—	—	—	—	—	—	—	—	—
61	2	—	1	—	—	—	—	—	—	1	—	—	—
62	—	—	—	—	—	—	—	—	—	—	—	—	—
63	4	2	—	—	—	—	1	—	—	—	—	—	1
64	2	—	1	—	—	—	—	—	1	—	—	—	—
65	8	4	2	—	—	—	—	1	—	—	—	1	—
66	4	2	1	—	—	—	—	—	—	1	—	—	—
67	6	3	—	—	—	1	—	—	—	—	—	—	2
68	3	1	—	—	1	—	—	—	—	—	—	—	1
69	7	1	1	—	—	5	—	—	—	—	—	—	—
70	6	1	—	—	—	2	—	—	—	—	1	1	1
71	5	1	—	—	—	2	—	—	—	—	1	—	1
72	5	2	1	—	—	—	—	—	—	—	1	1	—
73	2	2	—	—	—	—	—	—	—	—	—	—	—
74	2	—	—	—	—	2	—	—	—	—	—	—	—
75 & Over	8	4	1	—	—	1	—	—	—	1	—	—	1
Total	**68**	**23**	**9**	**—**	**1**	**13**	**1**	**1**	**1**	**3**	**3**	**3**	**10**

1 Formerly known as the Single Life Annuity with Cash Refund.
2 Formerly known as the 100% Joint and Survivor Annuity.
3 New option available for selection effective 1/1/2007.
4 Formerly known as the 50% Joint and Survivor Annuity.

Table 2

Characteristics of All Members Retired for Service and Receiving an Annuity

Fiscal Year Ending June 30	Average Age at Retirement	Average Annuitant Reserve	Average Monthly Annuity
2010	68.1	$12,701	$204
2011	67.8	13,388	215
2012	67.7	15,945	233
2013	67.1	18,442	263
2014	67.5	20,365	281
2015	67.6	20,815	251
2016	67.9	21,700	270
2017	68.0	26,501	308
2018[1]	68.3	27,869	335
2019	68.5	28,665	322

1 Revised in 2019.

Table 3

All Participants Receiving an Annuity by Type of Benefit and Type of Annuity Elected

(as of June 2019)

	Monthly Unmodified Allowance					
Type of Benefit	**Less than $250**	**$250–500**	**$500–750**	**$750–1,000**	**$1,000 & Greater**	**Total**
Retirement	225	95	43	18	15	396
Disability	—	—	—	—	1	1
Survivors	8	4	—	—	1	13
Total	**233**	**99**	**43**	**18**	**17**	**410**
Type of Payment						
Regular Annuity	1	—	—	—	—	1
Single Life With Cash	2	—	—	—	—	2
Single Life Without Cash	107	44	14	4	1	170
Participant Only	45	5	2	1	1	54
100% Beneficiary Annuity	4	2	1	—	—	7
75% Beneficiary Annuity	8	4	1	—	1	14
50% Beneficiary Annuity	—	—	—	—	—	—
Period—Certain Annuity						
10 Year	42	13	8	1	1	65
9 Year	2	2	—	1	—	5
8 Year	2	2	—	1	—	5
7 Year	1	3	3	1	—	8
6 Year	3	—	2	—	1	6
5 Year	5	9	4	4	1	23
4 Year	4	4	1	1	2	12
3 Year	7	11	7	4	9	38
Total	**233**	**99**	**43**	**18**	**17**	**410**

Table 4

Largest Participating Employers for the Cash Balance Benefit Program, Current Year and Nine Years Ago

Fiscal Year 2018–19

Participating Employers	Covered Employees[1]	Rank	Percentage of Total System
Los Angeles Community College District	6,202	1	14.7%
Contra Costa Community College District	2,764	2	6.5%
Peralta Community College District	2,561	3	6.1%
City College of San Francisco	2,093	4	5.0%
West Contra Costa Unified School District	2,082	5	4.9%
San Jose/Evergreen Community College District	1,979	6	4.7%
Foothill De Anza Community College District	1,876	7	4.4%
Chabot-Las Positas Community College District	1,764	8	4.2%
Glendale Community College District	1,751	9	4.1%
Santa Rosa Junior College	1,589	10	3.8%
Top 10 Total	**24,661**		**58.4%**
All Other	17,558		41.6%
Total Covered Employees	**42,219**		**100.0%**

Fiscal Year 2009–10

Participating Employers	Covered Employees[1]	Rank	Percentage of Total System
Los Angeles Community College District	3,924	1	12.2%
Contra Costa Community College District	2,198	2	6.9%
Peralta Community College District	2,122	3	6.6%
West Contra Costa Unified School District	2,113	4	6.6%
City College of San Francisco	1,861	5	5.8%
San Jose/Evergreen Community College District	1,651	6	5.1%
Chabot-Las Positas Community College District	1,615	7	5.0%
Santa Rosa Junior College	1,357	8	4.2%
Glendale Community College District	1,276	9	4.0%
Grossmont Union High	1,213	10	3.8%
Top 10 Total	**19,330**		**60.2%**
All Other	12,802		39.8%
Total Covered Employees	**32,132**		**100.0%**

1 Covered employees are calculated as all employees for whom an employer reports service credit during the fiscal year. Covered employees in this table are counted more than once if they are reported by multiple employers. They are also counted if their employer reports service credit for a retired employee from prior fiscal years. Therefore, the total number of covered employees in this table is higher than the number of active members shown in Table 11 of the Actuarial Section under the CBB Program.

Table 1A

Changes in Fiduciary Net Position for the Pension2 IRC 403(b) Plan[1]

(Dollars in Thousands)

	Fiscal Year Ending June 30									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions										
Participant Contributions	$174,230	$122,113	$121,945	$96,347	$72,042	$66,545	$57,273	$53,111	$47,181	$53,536
Employer Contributions	982	369	393	377	301	151	269	188	225	—
Net Investment Income	51,467	65,104	77,730	9,548	19,363	66,002	43,151	6,132	43,782	17,175
Other Income	273	309	141	120	91	28	—	—	—	—
Total Additions	**$226,952**	**$187,895**	**$200,209**	**$106,392**	**$91,797**	**$132,726**	**$100,693**	**$59,431**	**$91,188**	**$70,711**
Deductions										
Distributions and Withdrawals[2]	$67,772	$48,481	$36,322	$32,936	$32,648	$22,173	$25,727	$19,978	$16,690	$11,892
Refunds of Participant Contributions	5,754	5,614	4,657	4,965	7,753	2,523	—	—	—	—
Administrative Expenses	2,739	2,406	1,975	1,583	1,405	1,146	754	606	538	374
Total Deductions	**$76,265**	**$56,501**	**$42,954**	**$39,484**	**$41,806**	**$25,842**	**$26,481**	**$20,584**	**$17,228**	**$12,266**
Change in Fiduciary Net Position	**$150,687**	**$131,394**	**$157,255**	**$66,908**	**$49,991**	**$106,884**	**$74,212**	**$38,847**	**$73,960**	**$58,445**

1 Certain changes have been made to the presentation of this table to conform with the presentation on the Statement of Changes in Fiduciary Net Position in the Financial Section.

2 Distributions and Withdrawals reflects the Benefit Payments to Participant and Refunds of Participant Contributions combined for fiscal years 2009–10 through 2012–13.

Table 1B

Changes in Fiduciary Net Position for the Pension2 IRC 457(b) Plan[1]

(Dollars in Thousands)

	Fiscal Year Ending June 30									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions										
Participant Contributions	$9,307	$7,038	$6,516	$4,898	$4,025	$3,230	$2,591	$6,877	$1,289	$674
Employer Contributions	110	85	44	77	71	51	37	37	42	—
Net Investment Income	2,432	2,555	3,338	426	547	1,934	1,081	219	155	60
Other Income	10	11	8	4	2	—	—	—	—	—
Total Additions	**$11,859**	**$9,689**	**$9,906**	**$5,405**	**$4,645**	**$5,215**	**$3,709**	**$7,133**	**$1,486**	**$734**
Deductions										
Distributions and Withdrawals[2]	$1,659	$1,411	$769	$905	$807	$358	$530	$19	$82	$ —
Refunds of Participant Contributions	141	88	36	266	—	45	—	—	—	—
Administrative Expenses	122	100	79	56	47	36	22	8	2	—
Total Deductions	**$1,922**	**$1,599**	**$884**	**$1,227**	**$854**	**$439**	**$552**	**$27**	**$84**	**$ —**
Change in Fiduciary Net Position	**$9,937**	**$8,090**	**$9,022**	**$4,178**	**$3,791**	**$4,776**	**$3,157**	**$7,106**	**$1,402**	**$734**

1 Certain changes have been made to the presentation of this table to conform with the presentation on the Statement of Changes in Fiduciary Net Position in the Financial Section.

2 Distributions and Withdrawals reflects the Benefit Payments to Participant and Refunds of Participant Contributions combined for fiscal years 2009–10 through 2012–13.

Table 2

Largest Participating Employers for CalSTRS Pension2, Current Year and Nine Years Ago

Fiscal Year 2018–19

Participating Employers	Covered Employees[1]	Rank	Percentage of Total System
Los Angeles Unified School District	3,264	1	13.0%
Los Angeles Community College District	576	2	2.3%
San Diego Unified School District	522	3	2.1%
Elk Grove Unified School District	383	4	1.6%
San Francisco Unified School District	382	5	1.5%
Fremont Unified School District	324	6	1.3%
Los Rios Community College District	261	7	1.0%
City College of San Francisco	245	8	1.0%
Long Beach Unified School District	238	9	0.9%
Sacramento City Unified School District	220	10	0.9%
Top 10 Total	**6,415**		**25.6%**
All Other	18,650		74.4%
Total Covered Employees	**25,065**		**100.0%**

Fiscal Year 2009–10

Participating Employers	Covered Employees[1]	Rank	Percentage of Total System
Los Angeles Unified School District	1,290	1	20.4%
San Diego City Unified School District	161	2	2.5%
Long Beach Unified School District	94	3	1.5%
Los Angeles Community College District	84	4	1.3%
Sacramento City Unified School District	74	5	1.2%
San Juan Unified School District	74	6	1.2%
City College of San Francisco	73	7	1.2%
San Diego Community College	72	8	1.1%
San Francisco Unified School District	60	9	0.9%
Poway Unified School District	56	10	0.9%
Top 10 Total	**2,038**		**32.2%**
All Other	4,282		67.8%
Total Covered Employees	**6,320**		**100.0%**

1 If employers offer a 403(b) or 457(b), they are counted twice; totals also include all accounts with or without balances.

Table 1

Changes in Fiduciary Net Position for the Medicare Premium Payment Program

(Dollars in Thousands)

	Fiscal Year Ending June 30									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions										
Employer Contributions	$27,977	$28,218	$29,117	$29,982	$30,527	$33,395	$35,022	$34,614	$36,145	$31,749
Net Investment Income	29	18	11	9	—	10	6	8	10	33
Total Additions	**$28,006**	**$28,236**	**$29,128**	**$29,991**	**$30,527**	**$33,405**	**$35,028**	**$34,622**	**$36,155**	**$31,782**
Deductions										
Premiums Paid	$27,546	$28,036	$28,929	$29,661	$30,615	$32,632	$34,702	$34,412	$35,785	$35,421
Administrative Expenses	1,901	578	168	380	360	327	340	370	345	309
Other Expenses	1	—	—	—	—	—	—	—	—	—
Total Deductions	**$29,448**	**$28,614**	**$29,097**	**$30,041**	**$30,975**	**$32,959**	**$35,042**	**$34,782**	**$36,130**	**$35,730**
Change in Fiduciary Net Position	**($1,442)**	**($378)**	**$31**	**($50)**	**($448)**	**$446**	**($14)**	**($160)**	**$25**	**($3,948)**

Table 2

Benefit and Refund Deductions From Changes in Fiduciary Net Position by Type

(Dollars in Thousands)

	Fiscal Year Ending June 30									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Type of Benefit										
Age & Services Benefits										
Retired Members	$27,546	$28,036	$28,929	$29,661	$30,615	$32,632	$34,702	$34,412	$35,785	$35,421
Total Benefits	**$27,546**	**$28,036**	**$28,929**	**$29,661**	**$30,615**	**$32,632**	**$34,702**	**$34,412**	**$35,785**	**$35,421**

Table 3

Retired Members Enrolled in Medicare Premium Payment Program During Fiscal Year 2018–19, Classified by Age at Retirement

Age	Count
<55	2
55–56	5
56–57	5
57–58	7
58–59	15
59–60	5
60–61	3
61–62	1
62–63	—
63–64	—
64–75	—
75 & Over	—
Grand Total	**43**

Table 4

Characteristics of All Retired Members Enrolled in Medicare Premium Payment Program

Fiscal Year Ending June 30	Average Age at Retirement	Average Monthly Medicare Premium
2010	60.3	$438
2011	60.3	431
2012	60.3	417
2013	60.3	413
2014	60.3	400
2015	60.2	383
2016	60.2	374
2017	60.2	376
2018	60.1	380
2019	60.1	390

Table 1

Changes in Fiduciary Net Position for the Teachers' Deferred Compensation Fund[1]

(Dollars in Thousands)

	Fiscal Year Ending June 30									
	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions										
Net Investment Income	$39	$17	$9	$6	$1	$4	$3	$3	$4	$5
Other Income	1,743	1,607	1,453	1,339	1,072	1,241	563	767	497	539
Total Additions	**$1,782**	**$1,624**	**$1,462**	**$1,345**	**$1,073**	**$1,245**	**$566**	**$770**	**$501**	**$544**
Deductions										
Administrative Expenses	$1,622	$2,198	$1,542	$1,433	$996	$874	$600	$698	$569	$414
Other Expenses	3	—	22	14	14	15	30	—	—	—
Total Deductions	**$1,625**	**$2,198**	**$1,564**	**$1,447**	**$1,010**	**$889**	**$630**	**$698**	**$569**	**$414**
Change in Fiduciary Net Position	**$157**	**($574)**	**($102)**	**($102)**	**$63**	**$356**	**($64)**	**$72**	**($68)**	**$130**

1 Certain reclassifications have been made to the additions for fiscal years 2010–11 and 2011–12.

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