ANNUAL REPORT

FOR FISCAL YEAR ENDED JUNE 30, 2018

SFERS

San Francisco Employees' Retirement System

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INTRODUCTORY SECTION

LETTER OF TRANSMITTAL

April 10, 2019

San Francisco Employees' Retirement System
1145 Market Street, 5th Floor
San Francisco, CA 94103

On behalf of the Retirement Board and Retirement System staff, we are pleased to present the San Francisco a Employees' Retirement System Annual Report for Fiscal Year 2017-18.

ABOUT SFERS

The Retirement System

Initially established by approval of City voters on November 2, 1920 and the California State Legislature on January 12, 1921, the San Francisco Employees' Retirement System ("Retirement System" or "SFERS") is deeply rooted in the history and culture of the City and County of San Francisco and is committed to serving the retirement needs of its members. Originally established as a fund to assist families and orphans of firefighters and police, today the Retirement System serves more than 73,000 active, vested and retired employees of the City and County of San Francisco and their survivors.

Under the direction of the Executive Director, the System's management team administers two employee benefit programs for eligible City and County employees:

- City and County of San Francisco Employees' Retirement System pension plan, a defined benefit plan.
- San Francisco Deferred Compensation Plan, an IRC §457(b) deferred compensation plan.

Specific San Francisco City Charter sections and/or Administrative Code provisions mandate each of these benefit plans.

Our Mission

The San Francisco City and County Employees' Retirement System is dedicated to securing, protecting and prudently investing the pension trust assets, administering mandated benefit programs, and providing promised benefits to the active and retired members of the City and County of San Francisco.

The Pension Plan

The SFERS Pension Plan is a tax-qualified defined benefit plan that provides for the following benefits upon separation:
service and disability retirement,
refund or vesting allowance,
and pre and post-retirement death benefits to beneficiaries.
Defined benefit plans are funded through employee and employer contributions and investment earnings.

SFERS has a reciprocity agreement with CalPERS, California county retirement systems covered by the 1937 Act Retirement Law, and certain other local, independent retirement systems that have a reciprocity contract with CalPERS (listed on the CalPERS website).

As of June 30, 2018, the Fund was valued at $24.3 billion returning 11.14% for the fiscal year, significantly outperforming our peers' median return, 8.00%. SFERS Annual benefit payments totaled $1.350 billion paid to over 29,900 retirees and their beneficiaries

The San Francisco 457(b) Deferred Compensation Plan

The San Francisco Deferred Compensation Plan (SFDCP), a voluntary IRC §457(b) plan, was adopted in 1976, and allows eligible City employees to elect to voluntarily defer receipt and taxation of a portion of their regular earnings until after they retire or separate from service. The SFDCP also offers a Roth after-tax contribution option. These options offer eligible employees an opportunity to supplement pension income during retirement.

During Fiscal Year 2017-18, the SFDCP made changes to the core investment options and eliminated four fund options, improving overall diversification. The changes were implemented in March 2108.

Additionally, to align with the core investment changes mentioned above, the Retirement Board approved adjustments to the SFDCP Target Date Funds glide path, including a modest increase in the growth asset exposure for those currently in or closer to retirement.

Our Members

During the fiscal year, SFERS enrolled 3,784 new members and added 1,365 new retirees. SFERS members include eligible employees of the City and County of San Francisco, the San Francisco Unified School District, the San Francisco Community College District, and the San Francisco Trial Courts. Uniformed employees working for the City's Police and Fire Departments are covered by the SFERS Safety Plans. Eligible civilian (non- Safety) employees of the City are covered by the SFERS Miscellaneous Plan.

Sheriff, Undersheriff, and deputized personnel of the Sheriff's Department hired after January 7, 2012 are covered by the SFERS Sheriff's Plan. Probation Officers, District Attorney Investigators and Juvenile Court Counselors hired after January 7, 2012 are covered by the SFERS Miscellaneous Safety Plan.

SFERS Administration

The Executive Director leads a team of senior managers who oversee each of the functional areas in the department. The leadership team manages the day-to-day activities of the System including:

- Member services, communications and benefits administration
- Retirement Board administration, including preparation of meeting materials, minutes and public notice requirements for Board and committee meetings
- Responding to Public Records Requests in accordance with the City's Sunshine Act, State of California Public Records Act, and Federal Freedom of Information Act
- Accounting and financial reporting
- Actuarial services
- Investment activities
- Recruitment and personnel management
- Records management and systems administration

The Retirement Board

The Retirement System and its members benefit greatly from the leadership of an experienced and knowledgeable Retirement Board. Within the scope of its fiduciary duties, the Board establishes and follows policies governing the administration, management, and operation of the City's retirement plans; manages the investment of the Retirement System's assets; approves disability benefit determinations; and approves actuarial assumptions used to fund long-term benefit promises of the SFERS Pension Plan.

The Retirement Board generally meets once each month to review and to approve important elements of Retirement System business. The Retirement Board is composed of seven members: three members elected by the active and retired members of SFERS; three members appointed by the Mayor in accordance with §12.100, the San Francisco City Charter; and one member of the Board of Supervisors appointed by the President of the Board of Supervisors.

FINANCE AND FUNDING

Financial Reporting

The accounting policies followed in preparing the SFERS financial statements by the City's auditors Marcias, Gini & O'Connell, LLP, conform to standards prescribed by the Governmental Accounting Standards Board (GASB). The audited Statements of Fiduciary Net Position and Statements of Changes in Fiduciary Net Position provide a general overview of the City and County of San Francisco Employees' Retirement System's finances for the fiscal year ended June 30, 2018.

Financial highlights and analysis can be found in the SFERS Discussion and Analysis preceding the financial statements. This transmittal letter, when taken into consideration with the Financial Section of this report, provides an enhanced picture of the activities of the organization.

Readers who have questions regarding the financial information provided in this report are encouraged to visit the SFERS website at www.mysfers.org to view the full set of audited Financial Statements and Required Supplemental Information as prepared by the City's independent auditors, Macias Gini & O'Connell, LLP.

Actuarial Services and Funding

The Retirement Board contracts with a consulting actuarial firm to produce and report to the Retirement Board and Retirement System staff, actuarial information related to the benefit structure and funding status of the Retirement System. The Retirement Board's current consulting actuarial firm is Cheiron. The Retirement Board also employs an Actuarial Services Coordinator to coordinate the work of the consulting actuary, participate in the presentation of actuarial reports to the Retirement Board, and provide other in-house actuarial services.

The consulting actuarial firm conducts annual actuarial valuations of the Retirement System's assets and liabilities in order to assess its funded status and to determine the appropriate level of employer contributions to the Fund. Each year, the Retirement Board looks to the consulting actuary and staff Actuarial Services Coordinator to recommend appropriate actuarial assumptions to provide the required funding for the promised benefits. The recommendations are based on results from economic experience analyses conducted each year, as well as demographic experience analyses conducted approximately every five years. The actuarial assumptions are included in the Actuarial Section of this report.

Sponsoring employers of the Retirement System are required to contribute 100% of the actuarially determined contribution approved by the Retirement Board. A 10-year chart of employer contributions may be found in the Required Supplementary Information found in the Financial Section.

The consulting actuarial firm also calculates the total pension liability and net pension liability as required by GASB Statement No. 67. At the June 30, 2018 fiscal year-end measurement date, the fiduciary net position as a percentage of total pension liability is 85.2% based on total pension liability of $28.8 billion and fiduciary net position of $24.6 billion. The net pension liability at June 30, 2018 is $4.3 billion. Details may be found in Note 10 of the Notes to the Basic Financial Statements and also in the Required Supplementary Information.

INVESTMENTS

The Retirement System's investment objective is to maximize long-term rates of return on investments within prudent guidelines.

The professional Investment Staff, supported by a group of professional consulting firms hired by the Retirement Board, analyzes, develops and recommends asset allocation mixes, manages investment portfolios, and monitors the activities and performance of external investment managers. For Fiscal Year 2018, the investment portfolio returned 11.14%.

At the start of the fiscal year, the Retirement Board approved a revised asset allocation policy, driven by a 10% allocation to implement a new Private Credit Program. Additionally, under the authorization of the Retirement Board, and in line with the 2018 Annual Investment Plan, the investment team committed a total of $6.9 billion in new investments: $818 million in Private Equity, $663 million in the Real Assets portfolio, $4.2 billion in Absolute Return, $1.1 billion in Public Equity, and $100 million in private credit.

The landscape of investing has significantly changed over the past few decades, and as a result of these developments, SFERS has sought to evolve in our asset allocation, strategy, manager selection, and management of risk. We have recruited a top team of investment professionals with deep research experience, increased the diversification of our asset allocation, strengthened our research process for manager selection, and implemented comprehensive risk management and investment research tools. The results have been encouraging. This year SFERS returns ranked in the top 5% compared to peers, and in the past three and five years, we have ranked in the top 3%.

ACKNOWLEDGMENTS

We would like to express our personal appreciation to the Retirement Board members who, without compensation, have provided the leadership, direction and support that have made all of our achievements possible. SFERS members and the citizens of the City and County have been well-served by their leadership.

Finally, we would like to thank the SFERS staff for their hard work to support our mission.

Respectfully submitted,

Jay Huish
Executive Director

Brian Stansbury

Brian Stansbury
President

THE RETIREMENT SYSTEM ORGANIZATION FOR FISCAL YEAR 2018

THE SFERS RETIREMENT BOARD

BRIAN STANSBURY
President

Officer
San Francisco Police Department
Elected Member
Term Expires:
02/20/2020

LEONA M. BRIDGES

Former Managing Director
Barclays Global Investors
Appointed Member
Term Expires:
02/20/2023

CROCE ALEXANDER ("AL") CASCIATO

Retiree
Elected Member
Term Expires:
02/20/2022

CARMEN CHU

Assessor
City and County of San Francisco
Appointed Member
Term Expires:
02/20/2019

WENDY PASKIN-JORDAN
Vice President

Chief Executive Officer
Paskin Capital Advisers, LLC
Appointed Member
Term Expires: 02/20/2019

MALIA COHEN

Member, Board of Supervisors
Ex-Officio Member
Term Expires:
01/20/2019

JOSEPH D. DRISCOLL, CFA

Captain, San Francisco Fire Department
Elected Member
Term Expires:
02/20/2021

SFERS LEADERSHIP TEAM

Jay P. Huish
Executive Director

Caryn Bortnick
Deputy Executive Director

William J. Coaker, Jr., CFA
Chief Investment Officer

Janet Brazelton, FSA, EA
Actuarial Services Coordinator

Kurt Braitberg
Managing Director, Public Markets

Ellen Brownell
Managing Director, Asset Allocation, Risk Management and Innovative Solutions

Jim Burruel
Finance Manager

Diane Chui Justen
Deferred Compensation Manager

Chris Colandene
Retirement Services Administrator

David Francl
Managing Director, Absolute Return

Alison Johnson
Communications Manager

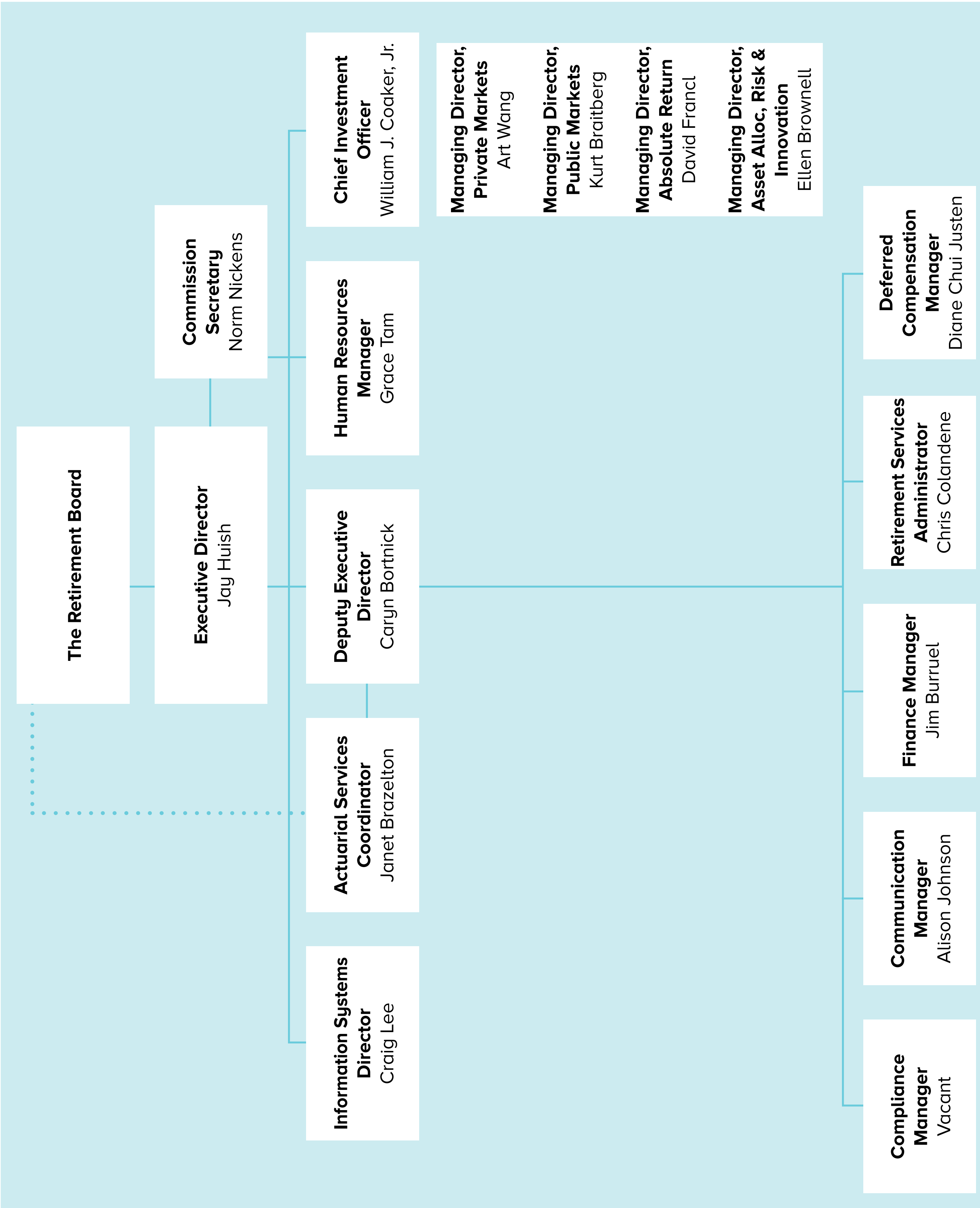
Craig Lee
Information Systems Director

Norm Nickens
Commission Secretary

Grace Tam
Human Resources Manager

Art Wang
Managing Director, Private Markets

SFERS ORGANIZATIONAL CHART - JUNE 30, 2018



PROFESSIONAL CONSULTANTS

Consulting Actuary

- Cheiron, Inc.

Investment Consultants

- NEPC, LLC
- Callan Associates, Inc.
- Cambridge Associates, LLC
- Torrey Cove Capital Partners, LLC

Governance Consultants

- Institutional Shareholder Services, Inc.
- Nossaman, LLP

FINANCIAL SECTION

SFERS DISCUSSION AND ANALYSIS

The management of the City and County of San Francisco Employees' Retirement System is pleased to provide this overview and analysis of the financial activities of its cost-sharing multiple-employer defined benefit pension plan (the "Plan") for the fiscal year ended June 30, 2018. We encourage readers to consider the information presented here in conjunction with the Basic Financial Statements and Required Supplementary Information which follow this discussion.

Financial Highlights of Fiscal Year 2018

- The assets and deferred outflows of resources of the Retirement System exceeded its liabilities and deferred inflows of resources at the close of the year ended June 30, 2018. The Plan held $24.6 billion of net position restricted for pension benefits. All of the fiduciary net position is available to meet the Retirement System's ongoing obligations to plan participants and their beneficiaries.
- The Retirement System's funding objective is to meet long term benefit obligations through contributions and investment income. The Retirement System's fiduciary net position as a percentage of the total pension liability should be considered when evaluating the Retirement System's financial health. Based on the June 30, 2018 measurement date, the fiduciary net position was 85.2% of the total pension liability.
- For the year ended June 30, 2018, the Retirement System's net investment income of $2.5 billion represents 11.4% of fiduciary net position as of the beginning of the fiscal year.
- Total fiduciary net position held in trust for pension benefits increased by $2.1 billion, or 9.6%, primarily as a result of strong investment returns, which were slightly reduced by the net difference between contributions earned by the Plan and benefits, refunds, and administrative expenses incurred by the Plan.
- Members' contributions to the Plan totaled $364.7 million, an increase of $47.9 million or 15.1% from the prior year. This increase is primarily a result of higher employee contribution rates in fiscal year 2017-18 and also an increase in the number of active employees contributing to the Plan. Employee contribution rates in fiscal year 2017-18 ranged from 7.5% - 13.0%, while employee contribution rates in fiscal year 2016-17 ranged from 7.5% - 12.0%.
- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $619.1 million, an increase of $67.3 million or 12.2% from the prior year. This increase is mainly due to an average increase of 6.2% in required contribution rates and a 5.9% increase in covered payroll.
- Total deductions from the Plan were $1,382.8 million, an increase of 6.8% from the prior year due to the increase in benefits paid during the current fiscal year, as a result of an increase in the number of retirees and cost of living (COLA) adjustments.

Overview of Financial Statements

The following discussion and analysis are intended to serve as an introduction to the Retirement System's financial statements, which are comprised of the following components:

1. ***Statements of Fiduciary Net Position*** are snapshots of account balances as of the close of the fiscal years – June 30, 2018 and 2017. They indicate the total assets, deferred outflows of resources, total liabilities, deferred inflows of resources, and the net position restricted for future payment of retirement benefits and operating expenses as of June 30, 2018 and 2017.
2. ***Statements of Changes in Fiduciary Net Position*** provide a view of additions to and deductions from the Plan during the fiscal years ended June 30, 2018 and 2017.
3. ***Notes to Financial Statements*** provide additional information that is essential to a full understanding of the data provided in the financial statements.

The statements of fiduciary net position and the statements of changes in fiduciary net position report information about the Retirement System's financial activities, prepared using the accrual basis of accounting. Contributions to the Plan are recognized when due pursuant to legal requirements and benefits and refunds are recognized when currently due and payable in accordance with the terms of the Plan.

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Securities that do not have an established market are reported at estimated fair value derived from third party pricing services. Purchases and sales of investments are recorded on a trade date basis. Private equity investments represent the Retirement System's interest in limited partnerships. The fair values of the Retirement System's partnership interests and real estate investments are based on net asset values provided by the general partners and investment managers.

Investments in forward currency contract investments are commitments to purchase and sell stated amounts of foreign currency. Changes in fair value of open contracts are immediately recognized as gains or losses. The fair value of forward currency contracts is determined by quoted currency prices from national exchanges.

Additional information on the Retirement System's investments can be found in Notes 4 and 5 to the Basic Financial Statements of this report.

Financial Analysis

The Plan's net position may serve over time as a useful indication of the Plan's financial position. The assets and deferred outflows of resources of the Plan exceeded its liabilities and deferred inflows of resources at June 30, 2018 and 2017. All of the Plan's net position is restricted to meet the Retirement System's ongoing obligation to Plan participants and their beneficiaries.

The Plan's net position as of June 30, 2018, 2017, and 2016 are represented in the table below:

(Dollars in thousands)

	2018	2017	2016
Other assets	$ 329,188	$ 256,857	$ 164,233
Investments at fair value	24,327,090	22,319,815	20,980,136
Total assets	24,656,278	22,576,672	21,144,369
Deferred outflows of resources	641	-	-
Total assets and deferred outflows of resources	24,656,919	22,576,672	21,144,369
Total liabilities	98,934	166,322	989,866
Deferred inflows of resources	19	-	-
Total liabilities and deferred inflows of resources	98,953	166,322	989,866
Fiduciary Net position	$ 24,557,966	$ 22,410,350	$ 20,154,503

As of June 30, 2018, the Plan's total fiduciary net position held in trust for pension benefits increased by $2,147.6 million or 9.6% for the year, primarily due to strong investment returns as a result of the improvement in financial market conditions. Payables to brokers decreased by $86.8 million and payables to borrowers of securities decreased by $0.1 million due to the timing of investment trades and termination of the Securities Lending Program.

As fiduciaries to the Plan members and beneficiaries, the Retirement Board, Retirement System staff, and our investment consultants continuously monitor the Plan's investment strategies, which comply with a "prudent expert" standard, to secure and maintain the sustainability of the Plan.

Highlights of Changes in Fiduciary Net Position – Years ended June 30, 2018, 2017, and 2016

(Dollars in thousands)

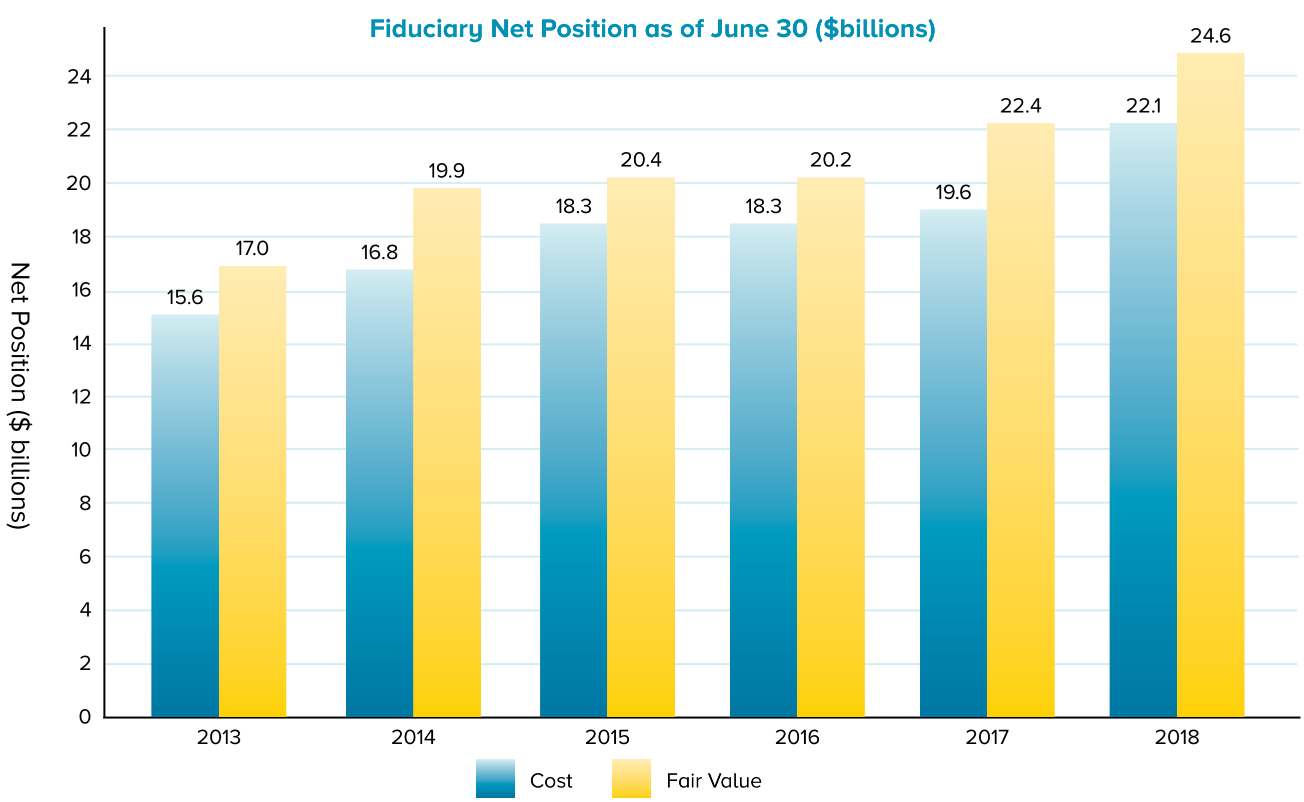
	2018	2017	2016
Additions:			
Member contributions	$ 364,696	$ 316,844	$ 322,764
Employer contributions	619,067	551,809	526,805
Interest	132,988	159,065	188,292
Dividends	244,721	209,951	219,529
Net appreciation (depreciation) in fair value of investments	2,221,453	2,356,332	(216,852)
Securities lending income	393	9,004	7,562
Investment expenses	(49,881)	(47,395)	(47,026)
Securities lending borrower rebates and expenses	-	(3,489)	(1,315)
Total additions	$ 3,533,437	$ 3,552,121	$ 999,759
Deductions:			
Benefits	$ 1,350,009	$ 1,264,633	$ 1,243,260
Refunds of contributions	14,578	13,507	12,886
Administrative expenses	17,762	16,586	16,079
Other administrative expenses - OPEB	476	1,548	1,100
Total deductions	$ 1,382,825	$ 1,296,274	$ 1,273,325
Change in fiduciary net position	$ 2,150,612	$ 2,255,847	$ (273,566)
Fiduciary net position – restricted for pension benefits:			
Beginning of year (as previously reported)	$ 22,410,350	$ 20,154,503	$ 20,428,069
Cumulative effect of change in accounting principle due to adoption of GASB 75 [1]	(2,996)	-	-
Beginning of year (as restated)	22,407,354	20,154,503	20,428,069
End of the year	$ 24,557,966	$ 22,410,350	$ 20,154,503

1 Refer to Note 2 in the Notes to Financial Statements for discussion of the cumulative effect of change in accounting principle to beginning net position due to the adoption of GASB Statement No. 75.

Highlights of Changes during Fiscal Year 2018

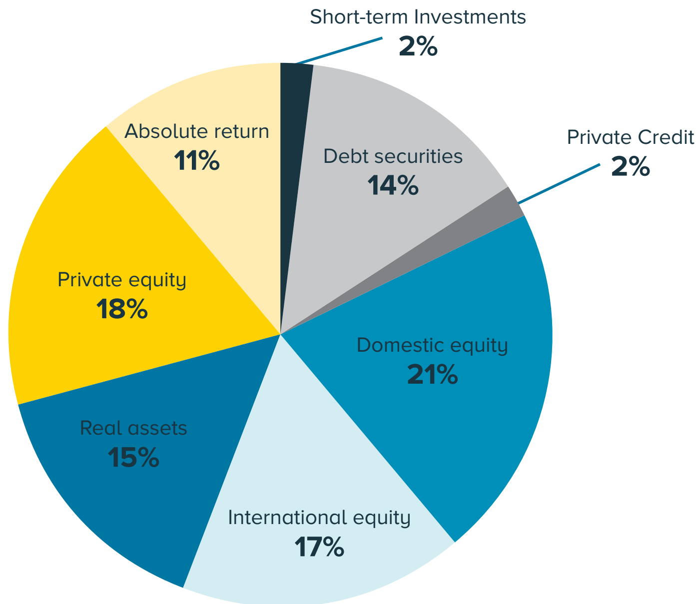
- Members' contributions to the Plan totaled $364.7 million for the year ended June 30, 2018, which is an increase of $47.9 million or 15.1% from the prior year. This increase is primarily a result of higher employee contribution rates in fiscal year 2017-18 and an increase in the number of active employees contributing to the Plan. Employee contribution rates in fiscal year 2017-18 ranged from 7.5% - 13.0%, while employee contribution rates in fiscal year 2016-17 ranged from 7.5% - 12.0%.
- In order to maintain the fiscal soundness of the Plan, $619.1 million in required employer contributions were made during the year ended June 30, 2018. The increase of $67.3 million in required employer contributions reflects the increase in active members and covered payroll and an increase in the employer contribution rates, which ranged from 18.96% to 23.46% in fiscal year 2017-18 and 17.90% to 21.40% in fiscal year 2016-17.
- Net investment income was $2,549.7 million for fiscal year 2017-18, with net appreciation in fair value of investments of $2,221.5 million. This compares to net investment income of $2,683.5 million for fiscal year 2016-17, with net appreciation in fair value of investments of $2,356.3 million. Net investment income was $133.8 million lower than the prior year; however, net appreciation in fair value of investments reflects positive investment returns in the majority of asset classes that the Retirement System invests in for both fiscal years. Interest income decreased by $26.1 million, mainly due to the domestic fixed income markets.
- Benefit payments to Plan participants increased by $85.4 million or 6.8%, which is primarily due to an increase in service retirement benefits as a result of increased average benefit payments. This increase was mainly due to an approximate increase of 3.0% in the number of retirees and both a Supplemental and Basic COLA effective July 1, 2017.
- Accrued DROP retirement benefits did not change from fiscal year 2016-17 due to member's disability retirement applications were still under review and pending decision.

Fiduciary net position as of June 30, 2013 through 2018 expressed at cost and fair value of investments are represented in the chart below:



The investment allocation at fair value based on investment category (excluding foreign currency contracts) as of June 30, 2018 is represented in the chart below:

Investment Allocation as of June 30, 2018 - Fair Value



Currently Known Facts and Events Affecting Next Year

The Retirement System's funding objective is to meet long-term benefit obligations through contributions and investment income. The Retirement Board believes that the Retirement System remains in a strong financial position to meet its obligations to Plan participants and beneficiaries.

Requests for information

This financial report is designed to provide a general overview of the Retirement System's finances for the year ended June 30, 2018. Questions regarding any of the information provided in this report or requests for additional financial information should be addressed to:

Jay Huish, Executive Director
San Francisco City and County
Employees' Retirement System
1145 Market Street – 5th floor
San Francisco, CA 94103

BASIC FINANCIAL STATEMENTS

Statements of Fiduciary Net Position, June 30, 2018 and 2017

(Dollars in thousands)

	2018	2017
Assets:		
Deposits	$ 105,525	$ 65,697
Contributions receivable – members	13,557	11,594
Investment income receivable:		
Interest	20,828	20,988
Dividends	10,342	12,496
Securities lending	-	287
Receivable from brokers, general partners, others	178,936	145,795
Investments at fair value:		
Short-term investments	521, 870	$ 347,744
City investment pool	24,275	11,800
Debt securities:		
U. S. Government and agency securities	1,593,955	1,555,180
Other debt securities	1,712,045	2,504,017
Equity securities:		
Domestic	5,233,524	5,666,244
International	4,240,318	4,891,772
Real assets	3,578,379	2,975,974
Private credit	454,199	387,205
Private equity	4,344,306	3,401,547
Absolute return	2,625,376	577,967
Foreign currency contracts, net	(1,157)	164
Invested securities lending collateral	-	201
Total investments	$ 24,327,090	$ 22,319,815
Total assets	$ 24,656,278	$ 22,576,672
Deferred outflows of resources:		
Employer's contributions - other postemployment benefits	641	-
Total assets and deferred outflows of resources	$ 24,656,919	$ 22,576,672
Liabilities		
Payable to brokers	60,297	147,095
Deferred retirement option program	313	313
Other	38,324	18,808
Payable to borrowers of securities	-	106
Total liabilities	$ 98,934	166,322
Deferred inflows of resources:		
Net investment earnings - other postemployment benefits	19	-
Total liabilities and deferred inflows of resources	$ 98,953	$ 166,322
Fiduciary net position – restricted for pension benefits	$ 24,557,966	$ 22,410,350

The accompanying Notes are an integral part of these financial statements.

Statements of Changes in Fiduciary Net Position, June 30, 2018 and 2017

(Dollars in thousands)

	2018	2017
Additions:		
Member contributions		
Miscellaneous	$ 302,865	$ 262,647
Police	35,791	31,085
Firefighter	26,040	23,112
Total member contributions	$ 364,696	$ 316,844
Employer contributions:		
Miscellaneous	$ 525,315	$ 465,671
Police	54,150	49,640
Firefighter	39,602	36,498
Total employer contributions	$ 619,067	$ 551,809
Investment income (expenses):		
Interest	$ 132,988	$ 159,065
Dividends	244,721	209,951
Net appreciation (depreciation) in fair value of investments	2,221,453	2,356,332
Securities lending income	393	9,004
Investment expenses	(49,881)	(47,395)
Securities lending borrower rebates and expenses	-	(3,489)
Net investment income	$ 2,549,674	$ 2,683,468
Total additions	$ 3,533,437	$ 3,552,121
Deductions:		
Benefits	$ 1,350,009	$ 1,264,633
Refunds of contributions	14,578	13,507
Administrative expenses	17,762	16,586
Other administrative expenses - other postemployment benefits	476	1,548
Total deductions	$ 1,382,825	$ 1,296,274
Net increase in net position	$ 2,150,612	$ 2,255,847
Fiduciary net position – restricted for pension benefits:		
Beginning of year (as previously reported)	22,410,350	20,154,503
Cumulative effect of change in accounting principle due to adoption of GASB 75 [1]	(2,996)	-
Beginning of year (as restated)	22,407,354	20,154,503
End of year	$ 24,557,966	$ 22,410,350

1 Refer to Note 2 in the Notes to Financial Statements for discussion of the cumulative effect of change in accounting principle to beginning net position due to the adoption of GASB Statement No. 75.

The accompanying Notes are an integral part of these financial statements.

NOTES TO THE BASIC FINANCIAL STATEMENTS

The Notes below provide a summary of the complete Notes found in SFERS' 2018 audited financial statements dated February 22, 2019.

(1) Plan Description

(a) General

The San Francisco City and County Employees' Retirement System (the Retirement System) administers a cost-sharing multiple employer defined benefit pension plan (the Plan) established to provide pension benefits for substantially all employees of the City and County of San Francisco (the City and County), certain classified and certificated employees of the Community College and Unified School Districts, and San Francisco Trial Court employees other than judges. The Retirement System provides service retirement, disability, and death benefits based on specified percentages of defined final average monthly salary and annual cost of living adjustments after retirement. While the Plan is not subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA), it is a tax-qualified plan under Internal Revenue Code provisions. The City and County Charter (the Charter) and the Administrative Code are the authorities that establish and amend the benefit provisions and employer and member obligations to the Plan.

The Retirement System is considered to be a part of the City and County's financial reporting entity and is included in the City and County's basic financial statements as a pension trust fund. The financial statements of the Retirement System are intended to present only the fiduciary net position and changes in fiduciary net position of the Retirement System. They do not purport to, and do not, present fairly the financial position of the City and County as of June 30, 2018 and 2017, and the changes in its financial position for the years then ended in conformity with accounting principles generally accepted in the United States of America. The City and County's basic financial statements can be obtained from City Hall, Room 316, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102.

The Retirement System is administered by the Executive Director, an employee of the City and County, in accordance with the provisions of the Charter and Administrative Code, and the policies and regulations of the Retirement Board. The Retirement Board is composed of seven members: three members elected by the active and retired members of the Retirement System; three members appointed by the Mayor in accordance with Section 12.100 of the San Francisco City Charter; and one member of the Board of Supervisors appointed by the President of the Board of Supervisors.

The Retirement System pays benefits according to the category of employment and the type of benefit coverage provided by the City and County. The four main categories of Plan membership are:

- Miscellaneous Non-Safety Members – staff, operational, supervisory, and all other eligible employees who are not in special membership categories.
- Sheriff's Department and Miscellaneous Safety Members – sheriffs assuming office on and after January 7, 2012, and undersheriffs, deputized personnel of the sheriff's department, and miscellaneous safety employees hired on and after January 7, 2012.
- Firefighter Members – firefighters and other employees whose principal duties are in fire prevention and suppression work or who occupy positions designated by law as firefighter member positions.
- Police Members – police officers and other employees whose principal duties are in active law enforcement or who occupy positions designated by law as police member positions.

(b) Service Retirement

Membership Group	Service Retirement Benefit
Miscellaneous Old Plan A8.509 - Miscellaneous employees who became members before November 2, 1976	2.3% @ age 62; maximum benefit 75% of average monthly compensation (12 mo. avg.)
Miscellaneous New Plan Tier I A8.587 - Miscellaneous employees who became members on or after November 2, 1976	2.3% @ age 62; maximum benefit 75% of average monthly compensation (12 mo. avg.)
Miscellaneous New Plan Tier II Plan A8.600 - Miscellaneous employees who became members on or after July 1, 2010 and before January 7, 2012	2.3% @ age 62; maximum benefit 75% of average monthly compensation (24 mo. avg.)
Miscellaneous New Plan Tier III Plan A8.603 - Miscellaneous employees who became members on or after January 7, 2012	2.3% @ age 65; maximum benefit 75% of average monthly compensation (36 mo. avg.)
Police Old Plan A8.595 - Police officers who became members before November 2, 1976 and elected Proposition H benefits effective January 1, 2003	3.0% @ age 55; maximum benefit 90% of average monthly compensation (12 mo. avg.)
Police New Plan Tier I A8.597 - Police officers who became members on or after November 2, 1976 and were eligible for Proposition H benefits effective January 1, 2003	3.0% @ age 55; maximum benefit 90% of average monthly compensation (12 mo. avg.)
Police New Plan Tier II A8.602 - Police officers who became members on or after July 1, 2010 and before January 7, 2012	3.0% @ age 55; maximum benefit 90% of average monthly compensation (24 mo. avg.)
Police New Plan Tier III A8.605 - Police officers who became members on or after January 7, 2012	3.0% @ age 58; maximum benefit 90% of average monthly compensation (36 mo. avg.)
Firefighter Old Plan A8.588 - Firefighters who were members on January 1, 2003, who did not elect Proposition H	2.7% @ age 55; maximum benefit 75% of average monthly compensation (12 mo. avg.)
Firefighter Old Plan A8.596 - Firefighters who became members before November 2, 1976 and elected Proposition H benefits effective January 1, 2003	3.0% @ age 55; maximum benefit 90% of average monthly compensation (12 mo. avg.)
Firefighter New Plan Tier I A8.598 - Firefighters who became members on or after November 2, 1976 and were eligible for 2002 Proposition H benefits effective January 1, 2003	3.0% @ age 55; maximum benefit 90% of average monthly compensation (12 mo. avg.)
Firefighter New Plan Tier II A8.601 - Firefighters who became members on or after July 1, 2010 and before January 7, 2012	3.0% @ age 55; maximum benefit 90% of average monthly compensation (24 mo. avg.)
Firefighter New Plan Tier III A8.604 - Firefighters who became members on or after January 7, 2012	3.0% @ age 58; maximum benefit 90% of average monthly compensation (36 mo. avg.)
Sheriffs Plan A8.608 - Sheriffs, undersheriffs and all deputized personnel of the Sheriff's Department hired on or after January 7, 2012	3.0% @ age 58; maximum benefit 90% of average monthly compensation (36 mo. avg.)
Miscellaneous Safety Plan A8.610 - Probation Officers, District Attorney Investigators and Juvenile Court Counselors who hired on or after January 7, 2012	2.7% @ age 58; maximum benefit 90% of average monthly compensation (36 mo. avg.)

(c) Disability Retirement

All members are eligible to apply for a disability retirement benefit, regardless of age, when they have 10 or more years of credited service and they sustain an injury or illness that prevents them from performing their duties. Safety members are eligible to apply for an industrial disability retirement benefit from their first day on the job if their disability is caused by an illness or injury that they receive while performing their duties.

(d) Separation and Death Benefits

Upon separation from employment, members may either elect to withdraw their accumulated contributions from the Plan or, if they have 5 or more years of credited service, elect to leave their accumulated contribution in the Plan and receive a vesting benefit that is first payable at or after age 50 for Safety members or members hired prior to January 7, 2012 or at or after age 53 for non-Safety members hired on or after January 7, 2012.

Prior to retirement, qualified surviving spouses or qualified domestic partners receive death benefits based upon a percentage of the service retirement benefit. Prior to eligibility for service retirement, a lump sum death payment equal to 6 months' earnable salary plus the member's accumulated contributions is payable to the members' named beneficiary or estate. For Safety members whose death is due to injury or illness caused by performance of duty, salary continuance is provided until the date member would have been eligible for service retirement.

Death benefits after retirement are contingent upon the form of annuity payment selected by the member.

(e) Cost of Living Adjustments (COLA)

Basic COLA: All retired members receive a benefit adjustment each July 1. The majority of adjustments are determined by changes in CPI with increases capped at 2%. Old Plan Police and Firefighter members receive benefit adjustments based upon 50% of either the actual dollar or the percentage change in the salary of the rank or position on which the member's retirement benefit is based. Although decreases are possible in a given year, a negative adjustment cannot reduce a member's monthly benefit below the initial pension amount.

Supplemental COLA: The Plan provides for a Supplemental COLA in years when there are sufficient "excess" investment earnings in the Plan. Effective July 1, 2012, voters approved changes in the criteria for payment of the Supplemental COLA benefit. Certain provisions of the voter approved proposition were challenged in the Courts. A decision by the California Courts modified the interpretation of the proposition. Effective July 1, 2012, SFERS members who retired before November 6, 1996 will receive a Supplemental COLA when there are sufficient "excess" investment earnings in the Plan and the Plan is also fully funded on a market value of assets basis. The "full funding" requirement does not apply to SFERS members who retired on or after November 6, 1996 and were hired before January 7, 2012. For members who were hired before January 7, 2012, all Supplemental COLAs paid to them in retirement benefits will continue into the future even where an additional Supplemental COLA is not payable in any given year. For members who are hired on and after January 7, 2012, a Supplemental COLA will be paid to retirees when there are sufficient "excess" investment earnings in the Plan and the Plan is also fully funded on a market value of assets basis. For this group, Supplemental COLAs will not be permanent adjustments to retirement benefits. In years when a Supplemental COLA is not paid, all previously paid Supplemental COLAs will expire.

Ad-hoc COLA: There is no authority for granting ad-hoc COLA increases.

(f) Deferred Retirement Option Program

In February 2008, the voters of the City and County approved a Charter amendment to provide a Deferred Retirement Option Program (DROP) for certain Police members of the Plan to be effective July 1, 2008. An eligible police officer could elect to participate in DROP for a specified period of time up to a maximum of three years depending on the rank of the police officer. While participating in DROP, the police officer continues to work and receive pay as a police officer and accrues monthly DROP distributions posted to a nominal account maintained by the Retirement System. The monthly DROP distribution is equal to the participant's monthly service retirement allowance calculated as of the participant's entry into DROP. Interest at an annual effective rate of 4% and applicable COLAs are posted to the participant's DROP account during participation in DROP.

Upon exiting from DROP, the participant receives a lump sum distribution from his or her DROP account and begins to receive a monthly service retirement allowance calculated using age, covered compensation, and service frozen as of the date of his or her entry into DROP. DROP was closed to new applicants on June 30, 2011.

The Retirement System held $313 thousand pursuant to the DROP as of June 30, 2018.

(g) Membership

Total membership in the Retirement System as of July 1, 2018 is as follows:

	Police[1]	Fire	Miscellaneous	Total
Active members (including DROP)	2,394	1,642	29,910	33,946
Terminated members entitled to but not yet receiving benefits	214	71	8,898	9,183
Retirees and beneficiaries currently receiving benefits	2,680	2,117	25,168	29,965
Total	5,288	3,830	63,976	73,094

1 Police counts include Sheriff and Miscellaneous Safety.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying financial statements are prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America as promulgated by the Governmental Accounting Standards Board (GASB).

Member contributions are recognized in the period in which the contributions are due. Employer contributions and member contributions made by the employer to the Plan are recognized when due pursuant to legal requirements. Benefits and refunds are recognized when currently due and payable in accordance with the terms of the Plan.

(b) Investments

Investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Securities that do not have an established market are reported at estimated fair value derived from third party pricing services. Purchases and sales of investments are recorded on a trade date basis.

The fair values of the Retirement System's real estate investments are based on net asset values (NAV) provided by the investment managers. Partnership financial statements are audited annually as of December 31 and net asset values are adjusted monthly or quarterly for cash flows to/ from the Retirement System, investment earnings and expenses, and changes in fair value. The Retirement System has established leverage limits for each investment style based on the risk/return profile of the underlying investments. The leverage targets for core and value-added real estate investments are 40% and 65%, respectively. The leverage limits for high return real estate investments depend on each specific offering. Outstanding mortgages for the Retirement System's real estate investments were none as of June 30, 2018. The underlying real estate holdings are valued periodically based on appraisals performed by independent appraisers in accordance with Uniform Standards of Professional Appraisal Practice (USPAP). Such fair value estimates involve subjective judgments of unrealized gains and losses, and the actual market price of the real estate can only be determined by negotiation between independent third parties in a purchase and sale transaction.

Private equity and private credit investments represent the Retirement System's interest in limited partnerships. The fair values of private equity and private credit investments are based on NAV provided by the general partners. Partnership financial statements are audited annually as of December 31 and NAV is adjusted monthly or quarterly for cash flows to/ from the Retirement System, investment earnings and changes in fair value. Such fair value estimates involve subjective judgments of unrealized gains and losses, and the actual market price of the investments can only be determined by negotiation between independent third parties in a purchase and sale transaction.

The Absolute Return Program invests in limited partnerships and other alternative investment vehicles. The most common investment strategies include, but are not limited to equity, credit, macro, emerging markets, quantitative, multi-strategy, special situations/other, and commodities. These investments are valued using their respective net asset value, and are audited annually. The most significant input into the NAV of such an entity is the fair value of its investment holdings. These holdings are typically valued on a monthly basis by each fund's independent administrator and for certain illiquid investments, where no market exists, the General Partner may provide pricing input. The management assumptions are based upon the nature of the investment and the underlying business. Investments have the potential to become illiquid under stressed market conditions and, in certain circumstances, investors may be subject to redemption restrictions which can impede the timely return of capital. The valuation techniques vary based upon underlying investment type, but are predominantly derived from observed market prices.

The Charter and Retirement Board policies permit the Retirement System to use investments of the Plan to enter into securities lending transactions – loans of securities to broker dealers and other entities for collateral with a simultaneous agreement to return the collateral for the same securities in the future. However, the Retirement Board approved discontinuing the Securities Lending Program during fiscal year 2016-17.

(c) Administrative Expenses

All costs to administer the Retirement System are borne by the Retirement System.

(d) Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, and deferred inflows of resources, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Actual results could differ from those estimates.

(e) Reclassifications

Certain reclassifications have been made to the 2017 amounts, to conform to the presentation as of and for the year ended June 30, 2018.

(f) Implementation of New GASB Statement

The Retirement System adopted GASB Statement No. 75, Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions. As prescribed under GASB Statement No. 75, net other postemployment benefits (OPEB) liability, deferred outflows/ inflows of resources related to OPEB, and OPEB expense are actuarially determined on a citywide basis. Net OPEB liability is measured as the portion of the present value of projected benefit payments to be provided to current active and inactive employees attributed to those employees' past service, less the fiduciary net position of the Retiree Health Care Trust Fund.

The provisions of GASB Statement No. 75 are effective for the Retirement System's year ended June 30, 2018. While restatement of all prior periods was not practical because the actuarial information was not available, the cumulative effect of applying this statement is reported as a restatement of beginning net position as of July 1, 2017 as follows:

Record Beginning Net OPEB Liability	(11,174,000)
Record Beginning Deferred Outflows of Resources - OPEB items	578,000
Remove Net OPEB Obligation (Change from GASB 45)	7,600,000
Total Cumulative Effect of Change in Accounting Principle	(2,996,000)

(3) Deposits

Deposits are carried at cost, which approximates fair value. Deposits in bank accounts were $105.5 million as of June 30, 2018.

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, a government may not be able to recover its deposits or may not be able to recover collateral securities that are in the possession of an outside party. The Retirement System does not have a specific policy addressing custodial credit risk for deposits. As of June 30, 2018, the Retirement System's deposits in bank accounts were not exposed to custodial credit risk.

(4) Investments

The Retirement System's investments are invested pursuant to investment policy guidelines as established by the Retirement Board. The objective of the policy is to maximize the expected return of the fund at an acceptable level of risk. The Retirement Board has established percentage guidelines for types of investments to ensure the portfolio is diversified.

Investment managers are required to diversify by issue, maturity, sector, coupon, and geography. Investment managers retained by the Retirement System follow specific investment guidelines and are evaluated against specific market benchmarks that represent their investment style. Any exemption from general guidelines requires approval from the Retirement Board. The Retirement System invests in securities with contractual cash flows, such as asset-backed securities, commercial mortgage-backed securities, and collateralized mortgage obligations. The value, liquidity, and related income of these securities are sensitive to changes in economic conditions, including real estate values, delinquencies or defaults, or both, and may be affected by shifts in the market's perception of the issuers and changes in interest rates.

The investment policy permits investments in domestic and international debt and equity securities, real estate, securities lending, foreign currency contracts, derivative instruments, and private equity investments, which include investments in a variety of commingled partnership vehicles.

The Retirement Board's asset allocation policies for the year ended June 30, 2018 are as follows:

Asset Class	Target Allocation since September 2017
Global Equity	31.0%
Treasuries	6.0%
Liquid Credit	3.0%
Private Credit	10.0%
Private Equity	18.0%
Real Assets	17.0%
Hedge Funds/Absolute Return	15.0%
	100.0%

Asset Class	Target Allocation at July 2017
Global Equity	40.0%
Fixed Income	20.0%
Private Equity	18.0%
Real Assets	17.0%
Hedge Funds/Absolute Return	5.0%
	100.0%

The Retirement System is not directly involved in repurchase or reverse repurchase agreements. However, external investment managers retained by the Retirement System may employ repurchase arrangements if the securities purchased or sold comply with the manager's investment guidelines. The Retirement System monitors the investment activity of its investment managers to ensure compliance with guidelines.

The Retirement System maintains its operating fund cash in the City and County's investment pool. The City and County's pool is invested pursuant to investment policy guidelines established by the City Treasurer, subject to review by the Treasury Oversight Committee. The Treasury Oversight Committee, established under California Government Code Sections 27130 to 27137, is composed of various City and County officials and representatives of agencies with large cash balances in the pool. The investment policy addresses soundness of financial institutions in which the City and County will deposit funds, types of investment instruments as permitted by the California Government Code, and the percentage of the portfolio which may be invested in certain instruments with longer terms to maturity. The provisions of the City and County's investment policy also address interest rate risk, credit risk, and concentration of credit risk and provide for additional restrictions related to investments. The notes to the basic financial statements of the City and County provide more detailed information concerning deposit and investment risks associated with the City and County's pool of cash and investments at June 30, 2018.

(a) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates may adversely affect the fair value of an investment. The Retirement System does not have a specific policy to manage interest rate risk.

The table below depicts the segmented time distribution for fixed income investments based upon the expected maturity (in years) as of June 30, 2018.

Fixed Income Investments at Fair Value as of June 30, 2018

(Dollars in thousands)

		Maturities			
Investment Type	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Asset Backed Securities	$ 43,499	-	$ 9,771	$ 4,212	$ 29,516
Bank Loans	93,935	378	34,210	59,347	-
City Investment Pool	24,275	13,333	10,942	-	-
Commercial Mortgage-Backed	187,451	420	4,682	2,756	179,593
Commingled and Other Fixed Income Funds	592,013	14,401	-	344,247	233,365
Corporate Bonds	442,037	21,175	146,323	204,160	70,379
Corporate Convertible Bonds	223,175	11,399	115,464	70,313	25,999
Government Bonds	1,611,076	14,064	1,044,367	479,202	73,443
Government Mortgage Backed Securities	60,858	-	-	7,475	53,383
Municipal/Provincial Bonds	4,558	-	-	118	4,440
Non-Government Backed Collateralized Mortgage Obligations	48,725	-	579	-	48,146
Options	(2)	(2)	-	-	-
Short Term Investment Funds	521,910	521,910	-	-	-
Swaps	(155)	(1,033)	897	(15)	(4)
Total	$ 3,853,355	$ 596,045	$ 1,367,235	$ 1,171,815	$ 718,260

(b) Credit Risk – Investments

Credit risk is the risk that an issuer or other counterparty to an investment may not fulfill its obligations. Fixed income investment managers retained by the Retirement System follow specific investment guidelines and are evaluated against specific market benchmarks that represent their investment style. Fixed income managers typically are limited within their portfolios to no more than 5% exposure in any single security, with the exception of United States Treasury and government agency securities. The Retirement System's credit risk policy is embedded in the individual investment manager agreements as prescribed and approved by the Retirement Board.

Investments are classified and rated using the lower of (1) Standard & Poor's (S&P) rating or (2) Moody's Investors Service (Moody's) rating corresponding to the equivalent S&P rating. If only a Moody's rating is available, the rating equivalent to S&P is used for the purpose of this disclosure.

The credit rating of the United States remains a point of concern for some investors. In 2011, S&P lowered the credit rating for U.S. long-term debt to AA+ from AAA and continues to maintain that posture. Moody's and Fitch, the other two large credit rating agencies, continue to maintain a AAA rating for U.S. long-term debt. Additional ratings changes by the credit rating agencies would likely have a material impact on the credit risk and value of the Retirement System's investments in U.S. government agency securities, U.S. government bonds, and U.S. government mortgage-backed securities.

The following table illustrates the Retirement System's exposure to credit risk as of June 30, 2018. Investments issued or explicitly guaranteed by the U.S. government of $1,533.5 million as of June 30, 2018 are exempt from the credit rating disclosures and are excluded from the table below.

Credit Ratings of Fixed Income Investments as of June 30, 2018
(Dollars in thousands)

Credit Rating	Fair Value	Fair Value as a Percentage of Total
AAA	$ 47,859	2.1%
AA	77,040	3.3%
A	81,394	3.5%
BBB	295,078	12.7%
BB	175,659	7.6%
B	162,248	7.0%
CCC	35,781	1.5%
CC	1,318	0.1%
C	389	0.0%
D	5,502	0.2%
Not Rated	1,437,553	62.0%
Total	$ 2,319,821	100.0%

The securities listed as "Not Rated" include short-term investment funds, government mortgage backed securities, and investments that invest primarily in rated securities, such as commingled funds and money market funds, but do not themselves have a specific credit rating. Excluding these investments, the "not rated" component of credit would be approximately 21% for 2018.

(c) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Retirement System's investment in a single issuer. Securities issued or guaranteed by the U.S. government or its agencies are exempt from this limit.

As of June 30, 2018, the Retirement System had no investments of a single issuer that equaled or exceeded 5% of total Retirement System's investments or net position.

(d) Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, a government may not be able to recover the value of investment or collateral securities that are in the possession of an outside party. The Retirement System does not have a specific policy addressing custodial credit risk for investments, but investments are generally insured, registered, or held by the Retirement System or its agent in the Retirement System's name. As of June 30, 2018, $157.1 million of the Retirement System's investments were exposed to custodial credit risk, because they were not insured or registered in the name of the Retirement System and were held by the counterparty's trust department or agent but not in the Retirement System's name.

(e) Foreign Currency Risk

The Retirement System's exposure to foreign currency risk derives from its positions in foreign currency denominated cash, equity, fixed income, private equity, and real assets. The Retirement System's investment policy allows international managers to enter into foreign exchange contracts, which are limited to hedging currency exposure existing in the portfolio.

The Retirement System's net exposures to foreign currency risk as of June 30, 2018 are as follows:

Foreign Currency Risk Analysis as of June 30, 2018

(Dollars in thousands)

Currency	Cash	Equities	Fixed Income	Private Equities	Real Assets	Private Credit	Foreign Currency Contracts	Total
Argentine peso	$ 3,008	$ -	$ 2,543	$ -	$ -	$ -	$ (3,843)	$ 1,708
Australian dollar	-	93,034	(344)	3,384	-	-	32,083	128,157
Brazil real	-	30,672	6,930	-	-	-	4,651	42,253
Canadian dollar	-	81,863	-	-	-	-	110,296	192,159
Chilean peso	-	-	2,718	-	-	-	205	2,923
Chinese yuan renminbi	27,377	231,085	991	-	-	-	-	259,453
Colombian peso	-	-	9,465	-	-	-	171	9,636
Czech koruna	-	1,504	876	-	-	-	5,768	8,148
Danish krone	-	29,746	-	-	-	-	(1,528)	28,218
Egyptian pound	-	-	-	-	-	-	2,805	2,805
Euro	-	697,571	38,262	130,278	201,576	31,870	(103,680)	995,877
Hong Kong dollar	-	170,960	76	-	-	-	1,533	172,569
Hungarian forint	-	2,129	454	-	-	-	649	3,232
Indian rupee	-	-	-	-	-	-	645	645
Indonesian rupiah	-	4,741	10,965	-	-	-	(480)	15,226
Israeli shekel	-	10,225	-	-	-	-	3,157	13,382
Japanese yen	-	558,795	(1,455)	-	63,266	-	79,314	699,920
Kazakhstan tenge	-	-	314	-	-	-	-	314
Malaysian ringgit	-	8,825	5,581	-	-	-	658	15,064
Mexican peso	-	6,981	1,078	-	-	-	12,300	20,359
New Taiwan dollar	-	47,126	-	-	-	-	(969)	46,157
New Zealand dollar	-	299	-	-	-	-	18,841	19,140
Norwegian krone	-	12,570	-	-	-	-	(48,471)	(35,901)
Peruvian sol	-	-	5,431	-	-	-	(1,891)	3,540
Philippines peso	-	1,979	456	-	-	-	(1,349)	1,086
Polish zloty	-	400	13,259	-	-	-	1,424	15,083
Pound sterling	-	507,461	3,034	17,374	12,221	-	35,695	575,785
Qatari riyal	-	3,156	-	-	-	-	-	3,156
Romanian leu	-	-	628	-	-	-	794	1,422
New Russian ruble	-	-	9,575	-	-	-	767	10,342
Singapore dollar	-	14,001	-	-	-	-	3,208	17,209

Foreign Currency Risk Analysis as of June 30, 2018 (continued)
(Dollars in thousands)

Currency	Cash	Equities	Fixed Income	Private Equities	Real Assets	Private Credit	Foreign Currency Contracts	Total
South African rand	-	16,345	14,790	-	-	-	(2,907)	28,228
South Korean won	-	86,791	-	-	-	-	34	86,825
Swedish krona	-	65,639	69	-	-	-	(66,631)	(923)
Swiss franc	-	166,744	452	-	-	-	(96,530)	70,666
Thailand baht	-	7,471	1,661	-	-	-	8,226	17,358
Turkish lira	-	10,301	7,135	-	-	-	964	18,400
United Arab Emirate dirham	-	4,967	-	-	-	-	-	4,967
Ukraine hryvana	-	-	230	-	-	-	-	230
Uruguayan Peso	-	-	373	-	-	-	-	373
Total	$30,385	$2,873,381	$135,547	$151,036	$277,063	$31,870	$(4,091)	$3,495,191

(f) Unfunded Investments Commitments

The Retirement System has unfunded commitments to contribute capital for real assets in the amount of $2,173.4 million, private equity in the amount of $2,688.8 million, private credit (formerly known as opportunistic fixed income) in the amount of $685.1 million, and absolute return in the amount of $77.5 million totaling $5,624.9 million as of June 30, 2018.

(g) Derivative Instruments

The Retirement System reports its derivative instruments under the provisions of GASB Statement No. 53, Accounting and Financial Reporting for Derivative Instruments. Pursuant to the requirements of this statement, the Retirement System has provided a summary of derivative instrument activities during the reporting periods presented and the related risks.

As of June 30, 2018, the derivative instruments held by the Retirement System are considered investments and not hedges for accounting purposes. 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 subsection. Investment derivative instruments are disclosed separately to provide a comprehensive and distinct view of this activity and its impact on the overall investment portfolio.

Valuation methods used by the Retirement System are described in more detail in Note 2(b). The fair value of the exchange traded derivative instruments, such as futures, options, rights, and warrants are based on quoted market prices. The fair values of forward foreign currency contracts are determined using a pricing service, which uses published foreign exchange rates as the primary source. The fair values of swaps are determined by the Retirement System's investment managers based on quoted market prices of the underlying investment instruments.

The table below presents the notional amounts, the fair values, and the related net appreciation (depreciation) in the fair value of derivative instruments that were outstanding at June 30, 2018:

Derivative Instruments as of and for the Year Ended June 30, 2018

(Dollars in thousands)

Derivative Type / Contracts	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Exchange Contracts	$1,382,441	$ (1,157)	$ (1,321)
Futures			
Currency Futures Long	2,742	(39)	(39)
Equity Index Futures Long	201,613	(3,824)	1,169
Equity Index Futures Short	(99,762)	443	(1,444)
Treasury Futures Long	47,329	391	391
Options			
Foreign Exchange Contracts	(700)	(2)	(69)
Swaps			
Credit Contracts	3,100	(23)	12
Equity Index Contracts	27,438	(1,561)	(1,409)
Total Return Contracts	101	(220)	(1,453)
Interest Rate Contracts	64,646	88	(225)
Rights/Warrants			
Equity Contracts	45,291 shares	86,250	(11,268)
Total		$ 80,346	$ (15,656)

All investment derivatives are reported as investments at fair value in the statements of fiduciary net position. Rights and warrants are reported in equity securities. Foreign exchange contracts are reported in foreign currency contracts, which also include spot contracts that are not derivatives. All other derivative contracts are reported in other debt securities. All changes in fair value are reported as net appreciation (depreciation) in fair value of investments in the statements of changes in fiduciary net position.

Counterparty Credit Risk

The Retirement System is exposed to credit risk on non-exchange traded derivative instruments that are in asset positions. As of June 30, 2018, the fair value of forward currency contracts in asset positions (including foreign exchange contract options) to purchase and sell international currencies were $1.7 million and $2.8 million, respectively. The Retirement System's counterparties to these contracts held credit ratings of A or better on 53.6% and credit ratings of B on 46.4% of the positions, as assigned by one or more of the major credit rating organizations (S&P and/or Moody's).

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. At June 30, 2018, all of the Retirement System's investments in derivative instruments are held in the Retirement System's name and are not exposed to custodial credit risk.

Interest Rate Risk

The table below describes the maturity periods of the derivative instruments exposed to interest rate risk at June 30, 2018.

Derivative Interest Rate Risk as of June 30, 2018
(Dollars in thousands)

		Maturities			
Derivative Type / Contracts	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Forwards					
Foreign Exchange Contracts	$ (1,157)	$ (1,157)	$ -	$ -	$ -
Options					
Foreign Exchange Contracts	(2)	(2)	-	-	-
Swaps					
Credit Contracts	(23)	(5)	(18)	-	-
Total Return Contracts	(220)	(220)	-	-	-
Interest Rate Contracts	88	(808)	915	(15)	(4)
Total	$ (1,314)	$ (2,192)	$ 897	$ (15)	$ (4)

The following table details the reference rate, notional amount, and fair value of interest rate swaps that are highly sensitive to changes in interest rates as of June 30, 2018:

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2018

(Dollars in thousands)

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 1.93%, Pay Variable 6-Month THB	$ 319	$ 2
Interest Rate Swap	Receive Fixed 10.30%, Payable Variable 1-Day BIDOR	390	(8)
Interest Rate Swap	Receive Fixed 10.33%, Payable Variable 1-Day BIDOR	2,157	(44)
Interest Rate Swap	Receive Fixed 11.33%, Payable Variable 1-Day BIDOR	2,261	36
Interest Rate Swap	Receive Fixed 11.35%, Payable Variable 1-Day BIDOR	2,729	185
Interest Rate Swap	Receive Fixed 11.38%, Payable Variable 1-Day BIDOR	182	11
Interest Rate Swap	Receive Fixed 12.06%, Payable Variable 1-Day BIDOR	725	49
Interest Rate Swap	Receive Fixed 12.20%, Payable Variable 1-Day BIDOR	1,349	110
Interest Rate Swap	Receive Fixed 12.29%, Payable Variable 1-Day BIDOR	182	8
Interest Rate Swap	Receive Fixed 15.96%, Payable Variable 1-Day BIDOR	4,237	(581)
Interest Rate Swap	Receive Fixed 16.40%, Payable Variable 1-Day BIDOR	3,119	634
Interest Rate Swap	Receive Fixed 2.00%, Payable Variable 6-Month WIBOR	641	-
Interest Rate Swap	Receive Fixed 2.01%, Payable Variable 6-Month THB	1,078	(5)
Interest Rate Swap	Receive Fixed 2.02%, Payable Variable 6-Month THB	604	5
Interest Rate Swap	Receive Fixed 2.12%, Payable Variable 6-Month THB	1,053	7
Interest Rate Swap	Receive Fixed 2.19%, Payable Variable 6-Month THB	211	2
Interest Rate Swap	Receive Fixed 2.22%, Payable Variable 6-Month THB	423	5
Interest Rate Swap	Receive Fixed 2.25%, Payable Variable 6-Month BUBOR	3,260	(11)
Interest Rate Swap	Receive Fixed 2.51%, Payable Variable 6-Month THB	329	4
Interest Rate Swap	Receive Fixed 2.56%, Payable Variable 6-Month THB	706	5
Interest Rate Swap	Receive Fixed 2.58%, Payable Variable 6-Month THB	395	6
Interest Rate Swap	Receive Fixed 2.63%, Payable Variable 6-Month THB	661	12
Interest Rate Swap	Receive Fixed 2.78%, Payable Variable 6-Month THB	28	1
Interest Rate Swap	Receive Fixed 2.81%, Payable Variable 6-Month THB	556	17
Interest Rate Swap	Receive Fixed 3.54%, Payable Variable 6-Month CLP	762	(7)
Interest Rate Swap	Receive Fixed 4.84%, Payable Variable 1-Day CIBR	876	(5)
Interest Rate Swap	Receive Fixed 4.91%, Payable Variable 1-Day CIBR	935	(2)
Interest Rate Swap	Receive Fixed 5.23%, Payable Variable 1-Day CIBR	123	1
Interest Rate Swap	Receive Fixed 5.31%, Payable Variable 1-Day CIBR	48	-
Interest Rate Swap	Receive Fixed 5.32%, Payable Variable 1-Day CIBR	562	5
Interest Rate Swap	Receive Fixed 5.33%, Payable Variable 1-Day CIBR	569	6
Interest Rate Swap	Receive Fixed 5.61%, Payable Variable 28-Day MXIBR	397	(26)
Interest Rate Swap	Receive Fixed 5.63%, Payable Variable 28-Day MXIBR	946	(64)

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2018 (continued)
(Dollars in thousands)

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 5.84%, Payable Variable 28-Day MXIBR	321	(19)
Interest Rate Swap	Receive Fixed 6.12%, Payable Variable 1-Day CIBR	111	2
Interest Rate Swap	Receive Fixed 6.20%, Payable Variable 1-Day CIBR	102	2
Interest Rate Swap	Receive Fixed 6.43%, Payable Variable 1-Day CIBR	32	(1)
Interest Rate Swap	Receive Fixed 6.49%, Payable Variable 28-Day MXIBR	290	(27)
Interest Rate Swap	Receive Fixed 6.80%, Payable Variable 28-Day MXIBR	122	(6)
Interest Rate Swap	Receive Fixed 7.25%, Payable Variable 3-Month JIBAR	540	(14)
Interest Rate Swap	Receive Fixed 7.38%, Payable Variable 28-Day MXIBR	1,190	(45)
Interest Rate Swap	Receive Fixed 7.65%, Payable Variable 28-Day MXIBR	2,915	(27)
Interest Rate Swap	Receive Fixed 7.83%, Payable Variable 28-Day MXIBR	621	(1)
Interest Rate Swap	Receive Fixed 7.86%, Payable Variable 28-Day MXIBR	870	(1)
Interest Rate Swap	Receive Fixed 7.88%, Payable Variable 28-Day MXIBR	1,262	-
Interest Rate Swap	Receive Fixed 7.92%, Payable Variable 28-Day MXIBR	2,015	4
Interest Rate Swap	Receive Fixed 8.04%, Payable Variable 28-Day MXIBR	2,081	(54)
Interest Rate Swap	Receive Fixed 8.28%, Payable Variable 28-Day MXIBR	198	-
Interest Rate Swap	Receive Fixed 8.31%, Payable Variable 28-Day MXIBR	81	-
Interest Rate Swap	Receive Fixed 8.32%, Payable Variable 28-Day MXIBR	412	6
Interest Rate Swap	Receive Fixed 9.65%, Payable Variable 1-Day BIDOR	624	(28)
Interest Rate Swap	Receive Fixed 9.76%, Payable Variable 1-Day BIDOR	26	(1)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 12.44%	3,743	(229)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 6.54%	6,444	1
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 9.60%	1,066	81
Interest Rate Swap	Receive Variable 1-Day CIBR, Pay Fixed 5.28%	472	(6)
Interest Rate Swap	Receive Variable 1-Day CIBR, Pay Fixed 6.42%	72	(2)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.71%	148	16
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.87%	2,330	56
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 8.00%	580	(3)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 8.02%	376	(2)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 8.20%	575	(7)
Interest Rate Swap	Receive Variable 3-Month JIBAR, Pay Fixed 7.75%	679	28
Interest Rate Swap	Receive Variable 3-Month KLIBOR, Pay Fixed 3.74%	594	3
Interest Rate Swap	Receive Variable 3-Month KLIBOR, Pay Fixed 3.75%	941	4
Total Interest Rate Swaps		$ 64,646	$ 88

Foreign Currency Risk

At June 30, 2018, the Retirement System is exposed to foreign currency risk on its investments in forwards, rights, warrants, swaps and futures denominated in foreign currencies.

Derivative Instruments Foreign Currency Risk Analysis as of June 30, 2018

(Dollars in thousands)

Currency	Forwards	Rights/ Warrants	Swaps	Futures	Total
Argentina peso	$ (3,843)	$ -	$ -	$ -	$ (3,843)
Australian dollar	32,083	-	(344)	(213)	31,526
Brazil real	4,651	-	224	-	4,875
Canadian dollar	110,296	-	-	23	110,319
Chilean peso	205	-	(7)	-	198
Colombian peso	171	-	1	-	172
Czech koruna	5,768	-	-	-	5,768
Danish krone	(1,528)	-	-	-	(1,528)
Egyptian pound	2,805	-	-	-	2,805
Euro	(103,680)	244	(171)	(390)	(103,997)
Hong Kong dollar	1,533	-	76	18	1,627
Hungarian forint	649	-	(11)	-	638
Indian rupee	645	-	-	-	645
Indonesian rupiah	(480)	-	-	-	(480)
Israeli shekel	3,157	-	-	-	3,157
Japanese yen	79,314	-	(1,455)	(427)	77,432
Malaysian ringgit	658	-	6	-	664
Mexican peso	12,300	-	(200)	-	12,100
New Taiwan dollar	(969)	-	-	-	(969)
New Zealand dollar	18,841	-	-	-	18,841
Norwegian krone	(48,471)	-	-	-	(48,471)
Peruvian sol	(1,891)	-	-	-	(1,891)
Philippines peso	(1,349)	-	-	-	(1,349)
Polish zloty	1,424	-	-	-	1,424
Pound sterling	35,695	-	-	263	35,958
Romanian leu	794	-	-	-	794
New Russian ruble	767	-	-	-	767
Singapore dollar	3,208	-	-	7	3,215
South African rand	(2,907)	-	14	-	(2,893)
South Korean won	34	-	-	-	34
Swedish krona	(66,631)	-	69	8	(66,554)
Swiss franc	(96,530)	-	44	-	(96,486)
Thailand baht	8,226	-	61	-	8,287
Turkish lira	964	-	-	-	964
Total	$ (4,091)	$ 244	$ (1,693)	$ (711)	$ (6,251)

Contingent Features

At June 30, 2018, the Retirement System held no positions in derivatives containing contingent features.

(5) Fair Value Measurement of Investments

The Retirement System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles

The Retirement System has the following recurring fair value measurements as of June 30, 2018:

As of June 30, 2018	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
Investments by fair value level				
Short-term investments	$ 499,570	$ (39)	$ 3,068	$ 496,541
Debt securities:				
U.S. government and agency securities	1,593,955	1,519,716	74,239	-
Other debt securities	1,367,798	233,610	1,019,807	114,381
Equity securities:				
Domestic	4,342,015	4,334,396	7,371	248
International	4,237,691	4,234,440	3,242	9
Foreign currency contracts, net	(1,157)	-	-	(1,157)
Total investments by fair value level	$ 12,039,872	$ 10,322,123	$ 1,107,727	$ 610,022
Investments measured at the net asset value (NAV)				
Short-term investments	22,300			
Fixed income funds invested in:				
Other debt Securities	344,247			
Equity funds invested in:				
Domestic	891,509			
International	2,627			
Real assets	3,578,379			
Private Equity	4,344,306			
Private Credit	454,199			
Absolute return	2,625,376			
Total investments measured at the NAV	12,262,943			
Investments not subject to the fair value hierarchy				
City investment pool	24,275			
Total investments measured at fair value	$ 24,327,090			

Investments, at Fair Value

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. In some cases, a valuation technique may have multiple inputs used to measure fair value, and each input might fall into a different level of the fair value hierarchy. The level in the fair value hierarchy within which a fair value measurement falls in its entirety is determined based on the lowest level input that is significant to the measurement. The prices used in determining the fair value hierarchy are obtained from various pricing sources by the Retirement System's custodian bank.

Equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets. Debt and equity securities classified in Level 2 of the fair value hierarchy are valued using prices determined by the use of matrix pricing techniques maintained by the various pricing vendors for these securities. Debt securities including short-term instruments are priced based on evaluated prices. Such evaluated prices may be determined by factors which include, but are not limited to, market quotations, yields, maturities, call features, ratings, institutional size trading in similar groups of securities and developments related to specific securities. For equity securities not traded on an active exchange, or if the closing price is not available, corroborated indicative quotes obtained from pricing vendors are generally used. Debt and equity securities classified in Level 3 of the fair value hierarchy are securities whose stated market prices are unobservable by the market place. Many of these securities are priced using uncorroborated indicative quotes, adjusted prices based on inputs from different sources, or evaluated prices using unobservable inputs, such as extrapolated data, proprietary models, and indicative quotes from pricing vendors.

Investments, at Net Asset Value (NAV)

The equity and debt funds are commingled funds that are priced at net asset value by industry vendors and fund families. NAV is the fair value of all securities owned by a fund, minus its total liabilities, divided by the number of shares issued and outstanding. The NAV of an open-end fund is its price.

The fair value of the Retirement System's investments in private credit investments, opportunistic public equity, real assets, private equity, and absolute return investments are based on NAV provided by the investment managers and general partners (hereinafter collectively referred to as the "General Partners"). Such value generally represents the Retirement System's proportionate share of the net assets of the limited partnerships. The partnership financial statements are audited annually as of December 31 and the NAV is adjusted by additional contributions to and distributions from the partnership, the Retirement System's share of net earnings and losses, and unrealized gains and losses resulting from changes in fair value, as determined by the General Partners.

The General Partners may use one or more valuation methodologies outlined in FASB ASC 820, Fair Value Measurement. For some investments, little market activity may exist. The General Partners' determination of fair value is then based on the best information available in the circumstances and may involve subjective assumptions and estimates, including the General Partners' assessment of the information that market participants would use in valuing the investments. The General Partners may take into consideration a combination of internal and external factors, including but not limit to, appropriate risk adjustments for nonperformance and liquidity. Such fair value estimates involve subjective judgments of unrealized gains and losses.

The values provided by the General Partners may differ significantly from the values that would have been used had a ready market existed for these investments.

Private credit investments are held in commingled funds. These investments are mostly illiquid with distributions received over the life of the investments. They are typically not redeemed, nor do they have set redemption schedules. Two opportunistic public equity investments, valued at $2.4 million, are currently being liquidated. These proceeds are expected to be received over the next 2-4 years. The remaining five opportunistic public equity investments are subject to varying lock-up periods, notice requirements and withdrawal windows. The real asset holdings are illiquid. Distributions are received over the life of the investments, which could equal or exceed ten years. They are not redeemed, nor do they have set redemption schedules. Private equity investment strategies include buyout, venture capital, growth capital, and special situations. Investments in the asset class are achieved primarily through commingled funds and separate account partnerships, but may also include direct and co-investment opportunities. Private equity investments are illiquid and distributions are received over the life of the investments, which could equal or exceed ten years. These investments are not typically redeemed, nor do they have set redemption schedules.

Absolute return investment strategies include equity, credit, macro, emerging markets, quantitative, multi-strategy, special situations/other, and commodities. Investments are achieved through limited partnerships. The table below provides a summary of the terms and conditions upon which the Retirement System may redeem its absolute return investments. Investments have the potential to become illiquid under stressed market conditions and, in certain circumstances, investors may be subject to redemption restrictions that differ from the standard terms and conditions summarized here, which can impede the return of capital according to those terms and conditions.

Absolute Return Investments Measured at NAV as of June 30, 2018:

% of NAV	Redemption Frequency	Redemption Notice Period
80%	Monthly	60-95 Days
16%	Quarterly	30-180 Days
<1%	Semi-annually	60 Days
4%	Greater Than Annually	90 Days
100%		

% of NAV in Lock Up	As of Fiscal Year End
13%	2018
11%	2019
11%	2020
0%	2021

(6) Securities Lending

The Retirement Board authorized Investment Staff to discontinue the Securities Lending Program on April 12, 2017, in an orderly fashion.

(7) Investments in Real Assets

Real assets investments represent the Retirement System's interests in real assets limited partnerships and separate accounts. The change in these investments during the year ended June 30, 2018 is summarized as follows:

(Dollars in thousands)

	2018
Investments:	
Beginning of the year	$ 2,975,974
Capital investments	748,528
Equity in net earnings	76,834
Net appreciation in fair value	391,107
Capital distributions	(614,064)
End of the year	$ 3,578,379

(8) Benefits

Allowances and benefits incurred during the year are summarized as follows:

(Dollars in thousands)

	2018
Service retirement benefits	$ 1,063,184
Disability retirement benefits	187,365
Death benefits	10,224
COLA benefit adjustments	89,236
Adjustment to accrued DROP benefits	-
Total	$ 1,350,009

(9) Funding Policy

Employer and employee (member) contributions are mandated by the Charter. The Charter specifies that employer contributions are determined as normal cost plus an amortization of the unfunded liability over a period not to exceed 20 years. Retirement Board policy determines the actual amortization period subject to the Charter limitation. Schedules of both employer and employee contribution rates may be found in the Statistical Section of this report. A ten-year schedule of funding progress may be found in the Actuarial Section, while a ten-year schedule of actuarially determined employer contributions is in the Required Supplemental Information subsection of this Financial Section.

(10) Net Pension Liability of Employers

The components of the employers' net pension liability at June 30, 2018 was as follows:

(Dollars in thousands)

	June 30, 2018
Total pension liability	$ 28,840,673
Plan fiduciary net position	$ 24,557,966
Net pension liability	$ 4,282,707
Plan fiduciary net position as a percentage of total pension liability	85.2%

(a) Actuarial Assumptions

The total pension liability as of June 30, 2018 was determined by an actuarial valuation as of July 1, 2017 which was rolled forward to June 30, 2018 using standard roll forward procedures.

The following is a summary of actuarial methods and assumptions used at the June 30, 2018 measurement date:

Inflation	3.00%
Salary increases	3.50% plus merit component based on employee classification and years of service
Investment rate of return	7.50%, net of pension plan investment expense, including inflation

Mortality rates for active members and healthy annuitants were based upon adjusted Employee and Healthy Annuitant CalPERS mortality tables projected generationally from the 2009 base year using a modified version of the MP-2015 projection scale.

The actuarial assumptions used at the June 30, 2018 measurement date were based upon the results of a demographic experience study for the period July 1, 2009 through June 30, 2014 and an economic experience study as of July 1, 2017.

The Supplemental COLA assumption as of June 30, 2018 was developed based upon the probability and amount of Supplemental COLA for each future year. The tables below show the net assumed Supplemental COLA for members at sample years.

Assumed Future Supplemental COLA for Members Retiring Before 11/6/1996 or Hired After Prop C

July 1	Old Miscellaneous and all New Plans	Old Police & Fire, pre-7/1/75 Retirements	Old Police & Fire A8.595, A8.596, Retirements
2018	0.000%	0.000%	0.000%
2019	0.000%	0.000%	0.000%
2022	0.290%	0.190%	0.080%
2025	0.350%	0.230%	0.090%
2028	0.360%	0.240%	0.100%
2031+	0.375%	0.250%	0.100%

Assumed Future Supplemental COLA for Members Retiring After 11/6/1996 and Hired Before Prop C

July 1	Old Miscellaneous and all New Plans	Old Police & Fire
2018	1.500%	3.5% less assumed Basic COLA
2019+	0.750%	½ x (3.5% less assumed Basic COLA)

The long-term expected rate of return on pension plan investments was 7.50%. It was set by the Retirement Board after consideration of both expected future returns and historical returns experienced by the Retirement System. Expected future returns were determined by using a building-block method in which best-estimate ranges of expected future real rates of return were developed for each major asset class. These ranges were combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The target allocation and best estimates of geometric long-term expected real rates of return (expected returns, net of pension plan investment expense and inflation) for each major asset class as of June 30, 2018 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	31.0%	5.4%
Treasuries	6.0%	0.5%
Liquid Credit	3.0%	3.3%
Private Credit	10.0%	4.6%
Private Equity	18.0%	6.6%
Real Assets	17.0%	4.5%
Hedge Funds/Absolute Return	15.0%	3.7%
	100.0%	

(b) Discount Rate

The discount rate used to measure the total pension liability at June 30, 2018 was 7.50%. The projection of cash flows used to determine the discount rate assumed that plan member contributions will continue to be made at the rates specified in the Charter. Employer contributions were assumed to be made in accordance with the contribution policy in effect for the July 1, 2017 actuarial valuation. While the contributions and measure of actuarial liability in the funding valuation do not anticipate any future Supplemental COLAs, the projected contributions for the determination of the discount rate include the anticipated future amortization payments on future Supplemental COLAs for current members when they are expected to be granted. The projection of benefit payments to current members for determining the discount rate includes the payment of anticipated future Supplemental COLAs.

As of June 30, 2018 the System's fiduciary net position was projected to be available to make projected future benefit payments for current members until FY 2096-97 when only a portion of the projected benefit payments are expected to be made from the projected fiduciary net position. Projected benefit payments are discounted at the long-term expected return on assets of 7.50% to the extent the fiduciary net position is available to make the payments and at the municipal bond rate of 3.87% to the extent that they are not available. The single equivalent rate used to determine the total pension liability as of June 30, 2018 rounded to two decimals is 7.50%.

The municipal bond rate of 3.87% used to determine the above discount rate represents the yield available at June 30, 2018 on the Bond Buyer 20-Bond GO Index.

(c) Sensitivity of the net pension liability to changes in the discount rate

The following presents the net pension liability, calculated using the discount rate of 7.50%, as well as what the total net pension liability would be if it were calculated using a discount rate that is one percentage-point lower (6.50%) or one -percentage-point higher (8.50%) than the current rate:

Sensitivity of the net pension liability to changes in the discount rate
(Dollars in thousands)

	Net pension liability June 30, 2018
1% Decrease	$ 8,021,065
Current Discount Rate	$ 4,282,707
1% Increase	$ 1,191,402

(d) Money Weighted Rate of Return

For the year ended June 30, 2018, the annual money-weighted rate of return on pension plan investments, net of investment expenses, adjusted for the changing amounts actually invested, was 11.55%.

(11) Postemployment Healthcare Plan

(a) Other Postemployment Benefits (OPEB)

The Retirement System participates in the City's agent multiple-employer defined benefit other postemployment benefits plan (the Plan). The Plan is maintained by the City and is administered through the City's Health Service System. It provides postemployment medical, dental and vision insurance benefits to eligible employees, retired employees, surviving spouses, and domestic partners. Health benefit provisions are established and may be amended through negotiations between the City and the respective bargaining units. The City does not issue a separate report on its other postemployment benefit plan.

GASB Statement No. 75 requires that reported results must pertain to liability and asset information within certain defined timeframes. For this report, the following timeframes are used.

San Francisco Health Service System Retiree Plan – Agent Multiple-Employer	
Valuation Date (VD)	June 30, 2016 updated to June 30, 2017
Measurement Date (MD)	June 30, 2017
Measurement Period (MP)	July 1, 2016 to June 30, 2017

The Retirement System's proportionate share percentage of the Plan was determined based on its percentage of citywide "pay-as-you-go" contributions for the year ended June 30, 2017.

The Retirement System's net OPEB liability, deferred outflows/inflows of resources related to OPEB, amortization of deferred outflows/inflows and OPEB expense to each department is based on the Retirement System's allocated percentage. The Retirement System's proportionate share of the City's OPEB elements was 0.31% as of the measurement date.

(12) Contingencies

Proposition C, a pension reform Charter amendment approved by voters in November 2011, included changes in the calculation of certain supplemental cost of living adjustments and was intended to reduce pension costs. These Proposition C changes in the calculation of certain supplemental cost of living adjustments were the subject of litigation and a decision of the California Court of Appeals. The California Court of Appeals held that the changes to the supplemental cost of living adjustments in Proposition C could not be applied to retirees who retired after November 1996. That decision was appealed to the California Supreme Court. The California Supreme Court denied review of the Court of Appeals decision. On October 25, 2015, the San Francisco Superior Court entered an amended judgment consistent with the Court of Appeals decision.

After due consideration and in consultation with Board legal counsel, at its July 2016 regular Board meeting, the Retirement Board determined, in light of the conclusions recited in the Court of Appeals decision, Proposition C should be interpreted to provide payment of the supplemental cost of living adjustments to pre-1996 retirees without a “fully funded” precondition to payment. On September 19, 2016, the City and County of San Francisco and the Controller filed an action against the Retirement Board and the Retirement System’s Executive Director, seeking to permanently enjoin the Retirement System from paying supplemental COLA benefits to pre-1996 retirees on the same basis that those benefits have been paid to the post-1996 retirees in accordance with the Court’s decision in *Protect Our Benefits v. City and County of San Francisco*. The San Francisco Superior Court granted the City’s request for a permanent injunction. The Retirement Board and the Retirement System’s Executive Director have appealed that decision, and it is pending before the California Court of Appeals. The amount of the retroactive adjustments to be paid to eligible retirees and beneficiaries if the Court of Appeals overturns the Superior Court decision cannot be reasonably estimated at this time.

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in Net Pension Liability

(Dollars in thousands)

Year ended June 30	2018	2017	2016	2015	2014
Total pension liability					
Service cost	$ 632,118	$ 644,277	$ 567,576	$ 523,644	$ 509,200
Interest	2,041,110	1,924,206	1,669,996	1,621,582	1,542,266
Changes of benefit terms	0	0	1,293,714	0	0
Differences between expected and actual experience	(42,382)	57,911	(119,270)	(197,981)	0
Changes of assumptions	170,699	88,180	1,087,309	216,845	(73,315)
Benefit payments, including refunds of member contributions	(1,364,587)	(1,278,140)	(1,256,146)	(1,131,030)	(1,072,526)
Net change in total pension liability	1,436,958	$ 1,436,434	$ 3,243,179	$ 1,033,060	$ 905,625
Total pension liability—beginning	27,403,715	25,967,281	22,724,102	21,691,042	20,785,417
Total pension liability—ending, (a)	28,840,673	27,403,715	25,967,281	22,724,102	21,691,042
Plan fiduciary net position					
Contributions—employer	619,067	551,809	526,805	592,643	532,882
Contributions—employee	364,696	316,844	322,764	301,682	289,020
Net investment income	2,549,674	2,683,468	150,190	763,429	3,175,431
Benefit payments, including refunds of member contributions	(1,364,587)	(1,278,140)	(1,256,146)	(1,131,030)	(1,072,526)
Administrative expenses	(18,238)	(18,134)	(17,179)	(19,262)	(15,745)
Net change in plan fiduciary net position	2,150,612	2,255,847	(273,566)	507,462	2,909,062
Plan fiduciary net position—beginning					
Beginning of year (as reported)	22,410,350	20,154,503	20,428,069	19,920,607	17,011,545
Restatement due to adoption of GASB 75	(2,996)	-	-	-	-
Beginning of year (as restated)	**22,407,354**	**20,154,503**	**20,428,069**	**19,920,607**	**17,011,545**
Plan fiduciary net position—ending, (b)	**24,557,966**	**22,410,350**	**20,154,503**	**20,428,069**	**19,920,607**
Net pension liability—ending, (a) – (b)	**$ 4,282,707**	**$ 4,993,365**	**$ 5,812,778**	**$ 2,296,033**	**$ 1,770,435**

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Schedule of Net Pension Liability

(Dollars in thousands)

	6/30/2018	6/30/2017	6/30/2016	6/30/2015	6/30/2014
Total pension liability	$ 28,840,673	$ 27,403,715	$ 25,967,281	$ 22,724,102	$ 21,691,042
Plan fiduciary net position	(24,557,966)	(22,410,350)	(20,154,503)	(20,428,069)	(19,920,607)
Net pension liability	$ 4,282,707	$ 4,993,365	$ 5,812,778	$ 2,296,033	$ 1,770,435
Plan fiduciary net position as a percentage of the total pension liability	85.2%	81.8%	77.6%	89.9%	91.8%
Covered payroll	$ 3,221,544	$ 3,041,818	$ 2,836,498	$ 2,642,752	$ 2,507,162
Net pension liability as a percentage of covered payroll	132.9%	164.2%	204.9%	86.9%	70.6%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Schedule of Employer Contributions

(Dollars in thousands)

Year Ended June 30	Actuarially Determined Contribution (ADC)	Contributions in Relation to the ADC	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
2009	119,751	119,751	-	2,457,196*	4.9%
2010	223,614	223,614	-	2,544,939*	8.8%
2011	308,823	308,823	-	2,398,823*	12.9%
2012	410,797	410,797	-	2,360,413*	17.4%
2013	442,870	442,870	-	2,448,734	18.1%
2014	532,882	532,882	-	2,507,162	21.3%
2015	592,643	592,643	-	2,642,752	22.4%
2016	526,805	526,805	-	2,836,498	18.6%
2017	551,809	551,809	-	3,041,818	18.1%
2018	619,067	619,067	-	3,221,544	19.2%

* Covered compensation from actuarial projection.

Schedule of Money-Weighted Rate of Return

Year Ended June 30	Money-Weighted Rate of Return
2009	(22.28)%
2010	14.53%
2011	22.65%
2012	0.81%
2013	13.91%
2014	19.10%
2015	4.03%
2016	0.96%
2017	13.52%
2018	11.55%

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

Note to Schedules of Changes in Net Pension Liability and Schedules of Net Pension Liability

The total pension liability contained in the schedule was determined by the Retirement System's actuary, Cheiron, Inc. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the Retirement System.

A summary of assumptions may be found in Note 10 to the financial statements. A complete description of methods and assumptions may be found in the Retirement System's GASB 67/68 Report for the corresponding fiscal years. The discount rates were 7.52%, 7.58%, and 7.46% at fiscal year-ends 2013, 2014, and 2015, respectively, and 7.50% at fiscal year-ends 2016 through 2018.

Note to Schedule of Employer Contributions

Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the fiscal year in which contributions are reported. Assumptions used to determine contribution rates are:

Year Ended June 30	Valuation Date	Investment return	Salary Increase/ Amortization Growth	Mortality	Change in Funding Methods or Assumption from Prior Year
2009	7/1/2007	8.00%	4.50%	1994 GAM	None
2010	7/1/2008	7.75%	4.50%	1994 GAM	Investment return
2011	7/1/2009	7.75%	4.50%	1994 GAM	None
2012	7/1/2010	7.75%	4.00%	RP2000 Mortality projected with Scale AA	Wage inflation and demographic assumptions including salary merit increases based upon experience study
2013	7/1/2011	7.66%	3.91%	RP2000 Mortality projected with Scale AA	Investment return and wage inflation assumptions
2014	7/1/2012	7.58%	3.83%	RP2000 Mortality projected with Scale AA	Investment return and wage inflation assumptions
2015	7/1/2013	7.58%	3.83%	RP2000 Mortality projected with Scale AA	None
2016	7/1/2014	7.50%	3.75%	RP2000 Mortality projected with Scale AA	Investment return and wage inflation assumptions
2017	7/1/2015	7.50%	3.75%	Adj. 2009 CalPERS Mortality Tables projected generationally with mod. MP-2015	Demographic assumptions including rates of retirement, termination, refund, disability and mortality and salary merit based upon experience study
2018	7/1/2016	7.50%	3.75%	Adj. 2009 CalPERS Mortality Tables projected generationally with mod. MP-2015	None

Complete descriptions of the methods and assumptions used to determine contribution rates can be found in each applicable actuarial valuation report.

Salary increase assumptions in above table are shown before the addition of merit components based upon employee classification and years of service.

Summaries of plan provisions used in each valuation can be found in each applicable actuarial valuation report.

OTHER SUPPLEMENTARY INFORMATION

Comparison of Contributions

Employer Contributions
(Dollars in thousands)

Member Plan	Plan Year 2017-18	Plan Year 2016-17	Plan Year 2015-16
Miscellaneous Plans	$ 525,315	$ 465,671	$ 442,184
Police Plans	54,150	49,640	49,164
Firefighter Plans	39,602	36,498	35,457
Total	**$ 619,067**	**$ 551,809**	**$ 526,805**

Employee Contributions
(Dollars in thousands)

Member Plan	Plan Year 2017-18	Plan Year 2016-17	Plan Year 2015-16
Miscellaneous Plans	$ 302,865	$ 262,647	$ 266,929
Police Plans	35,791	31,085,	32,345
Firefighter Plans	26,040	23,112,	23,490
Total	**$ 364,696**	**$ 316,844**	**$ 322,764**

Pension Fund Net Investment Income

Fiscal Year 2017-18
(Dollars in thousands)

	Income[1]	Realized Gain/Loss	Unrealized Gain/Loss	Total
Interest Earned	$ 132,988	$ -	$ -	$ 132,988
Dividends Earned	244,721	-	-	244,721
Net Appreciation in Fair Value of Investments:				
Recaptured Commission Income	16	-	-	16
Short-term Securities	-	105	(165)	(60)
Equities	17,206	1,869,312	(805,417)	1,081,101
Debt Securities	-	(15,706)	(68,194)	(83,900)
Real Assets	76,834	50,517	324,496	451,847
Private Credit	-	14,752	8,079	22,831
Private Equities	(34,940)	334,374	358,534	657,968
Absolute Returns	-	-	51,486	51,486
Other Assets	-	51,957	(11,793)	40,164
Securities Lending Income - Net	393	-	-	393
Investment Expenses	(49,881)	-	-	(49,881)
Total Net Investment Income (including Net Appreciation)	**$ 387,337**	**$ 2,305,311**	**$ (142,974)**	**$ 2,549,674**

1 Total investment income excludes employee and employer contributions.

Pension Fund Disbursements

Plan Year 2017-18
(Dollars in thousands)

Payments/Expenses	Amount
Service Retirement Payments	$ 1,063,184
Disability Retirement Payments	187,365
Cost of Living Adjustments	89,236
Death Allowance Payments	4,422
Death Benefits	2,490
Retired Annuitant Rolls (Option 1 Death Benefit)	3,312
DROP Program Accrued Retirement Benefits	0
Refunds of Contributions – Death Benefits	3,282
Refunds of Contributions – Other than Death Benefits	11,296
Administrative Expenses: Retirement Services/ Administration	18,238
Total Payments & Expenses, FY2017-18	$ 1,382,825
Total Payments & Expenses, FY2016-17	$ 1,296,274
Increase from FY 2016-17:	$86,551

Comparison of Actual Administrative Expenditures

Retirement Services & Administration Divisions
(Dollars in thousands)

Description of Expenditures	2017-18	2016-17	2015-16
Personnel Services	$ 11,971	$ 10,329	$ 10,954
Equipment Purchase	77	131	96
Materials and Supplies	47	101	135
Services of Other Departments	3,613	3,320	3,495
Other Services	2,530	4,253	2,499
Total	**$ 18,238**	**$ 18,134**	**$ 17,179**

Investment Division
(Dollars in thousands)

Description of Expenditures	2017-18	2016-17	2015-16
Personnel Services	$ 6,132	$ 5,142	$ 3,756
Equipment Purchase	4	0	169
Materials and Supplies	6	8	9
Services of Other Departments	3,470	1,782	2,733
Recaptured Commission Expense	1,578	1,469	948
Other Services	38,691	38,994	39,411
Total	**$ 49,881**	**$ 47,395**	**$ 47,026**

INVESTMENT SECTION

STATEMENT FROM THE CHIEF INVESTMENT OFFICER

1 - Overview

In the fiscal year ended June 30, 2018, the investments of the San Francisco Employees Retirement System (SFERS) gained 11.14%, significantly outperforming our peers whose median return was 8.00%. Our returns this year ranked in the top 5% compared to our peer universe of defined benefit plans with over $1 billion in assets. Performance was backed by solid market returns in public equity, private equity, and real assets, as well as significant excess returns through manager selection. The value of our portfolio rose from $22.2 billion one year ago to $24.3 billion at June 30, 2018.

In recent years SFERS has sought to enhance our asset allocation, investment strategy, manager selection, and management of risk. We have expanded the size of our investment team, recruited a team of top investment professionals, increased the diversification of our asset allocation, strengthened our research process for manager selection, implemented comprehensive risk management and investment research tools, and increased our allocation to alternative investments to 60% (from 28%) and private markets to 45% (from 28%). The results have been encouraging. This year SFERS returns ranked in the top 5% compared to peers, and in the past three and five years, we have ranked in the top 3%.

2 - Investment Objective

While the landscape of investing is constantly changing, our investment objective has remained the same. SFERS investment objective is to maximize long-term return on investments within prudent guidelines.

3 - Asset Allocation

In September 2017 the Retirement Board approved the strategic asset allocation policy summarized in Table 1.

Table 1 - Strategic Asset Allocation					
Public Equity	31%	Real Assets	17%	Private Credit	10%
Private Equity	18%	Absolute Return	15%	Liquid Credit	9%
Growth Assets	49%	Diversifying Assets	32%	Income Assets	19%

The S&P 500 has earned 10.00% annualized since 1926. However, public equity returns can sometimes be very painful. From March 2000 to October 2002 and again from August 2007 to March 2009, the S&P 500 lost more than 50%, losing more than half its value twice in less than a decade. It also declined 35% from August 1987 to October 1987, including a loss of 22% in one day, and in 1973-74 it lost 45%. To reduce the impact a large loss would have on our funded status, our investment strategy emphasizes asset allocation, diversification, manager selection and risk management. At the same time, our strategy seeks to earn high long-term returns.

The actual asset allocation as of June 30, 2018 is found in the Appendix (page 68). The implementation status of the strategic asset allocation approved this year is as follows: Private equity and real assets are mostly complete, while the allocation to absolute return will be completed by early to mid-2019. The allocation to private credit is expected to take another five years. The remaining allocations to real assets, absolute return and private credit will be funded by reducing public equity and liquid credit.

4 - Investment Performance

This section highlights SFERS investment returns on an absolute basis and compared to our peers. Our peer universe is defined benefit plans with assets over $1 billion. All returns are annualized and net of fees.

Total Plan Returns

In fiscal year ended June 30, 2018, SFERS investments returned 11.14%, outperforming the median returns of our peer universe of 8.00%. Table 2 shows that SFERS returns consistently rank near the top, posting returns that have been in the top 5% over the past one year and in the top 3% over the past three and five years.

Table 2 - Total Fund Returns

Total Fund	SFERS	Peer Median	Value Added	Rank
1 Year	11.14%	8.00%	3.14%	5
3 Years	8.61%	6.68%	1.93%	3
5 Years	9.61%	7.50%	2.11%	3
10 Years	6.87%	6.06%	0.81%	14
20 Years	7.22%	5.84%	1.38%	1

Table 3 - SFERS Investment Performance for Periods Ending June 30, 2018

Description	1 Year Return (%)	Rank	3 Years Return (%)	Rank	5 Years Return (%)	Rank	10 Years Return (%)	Rank	20 Years Return (%)	Rank
Total Fund	11.14	5	8.61	3	9.61	3	6.87	14	7.22	1
Peer Median	8.00		6.68		7.50		6.06		5.84	
Value Added vs Peers	3.14		1.93		2.11		0.81		1.38	
Public Equity	12.31	27	8.96	27	10.14	30	6.83	50	6.18	17
Peer Median	10.94		8.53		9.79		6.83		5.25	
Value Added vs Peers	1.37		0.43		0.35		0.00		0.93	
Private Equity	17.33	18	12.79	20	15.81	11	10.66	18	14.16	8
Peer Median	12.10		9.26		10.94		8.21		11.20	
Value Added vs Peers	5.23		3.53		4.87		2.45		2.96	
Real Assets	15.16	1	14.29	1	14.23	2	5.90	18	8.82	31
Peer Median	6.99		8.28		9.96		4.31		8.23	
Value Added vs Peers	8.17		6.01		4.27		1.59		0.59	
Absolute Return	4.73	67	6.41[1]	n/a[1]						
Peer Median	5.88		6.00[1]							
Value Added vs Peers	-1.15		0.41[1]							
Private Credit	13.49	1	10.32	1	9.23	1	8.36	1		
Peer Median	0.78		3.06		2.94		5.12			
Value Added vs Peers	12.71		7.26		6.29		3.24			
Liquid Credit	0.02	86	2.35	80	3.27	41	4.90	59	5.60	18
Peer Median	0.78		3.06		2.94		5.12		5.49	
Value Added vs Peers	-0.76		-0.71		0.33		-0.22		0.11	

Source: BNY Mellon for SFERS returns; NEPC for median peer returns and rankings.

Notes: Peer universe for Real Assets is the InvestorForce Total Funds Public and Private Real Estate Universes. Peer Universe for Private Equity is the InvestorForce Total Funds Private Equity Universe. Peer Universe for Private Credit is the InvestorForce All DB Plans greater than $1.0 bn Fixed Income Universe. Peer universe for all other asset classes and the Total Fund are their respective universes within the InvestorForce All DB Plans greater than $1.0 bn group. n/a = Returns of the Absolute Return program are since inception (October 2016), a period of 1.75 years.

Asset Class Returns

Public Equity

Table 4 summarizes SFERS returns in its public equity portfolio. Our public equity returns have been high the past five years, and in recent years our peer ranking has improved.

Table 4 - Public Equity Returns

Public Equity	SFERS	Peer Median	Value Added	Rank
1 Year	12.31%	10.94%	1.37%	27
3 Years	8.96%	8.53%	0.43%	27
5 Years	10.14%	9.79%	0.35%	30
10 Years	6.83%	6.83%	0.00%	50
20 Years	6.18%	5.25%	0.93%	17

Private Equity

In the fiscal year ended June 30, 2018, our private equity portfolio returned 17.33%, substantially outperforming our peers who returned 12.10%. Over the past five years, our private equity strategy has posted returns of 15.81% compared to our peer universe return of 10.94%, outperforming by 4.87% and ranking in the top 11%. Table 5 shows that SFERS has posted high returns investing in private equity across all time periods.

Table 5 - Private Equity Returns

Private Equity	SFERS	Peer Median	Value Added	Rank
1 Year	17.33%	12.10%	5.23%	18
3 Years	12.79%	9.26%	3.53%	20
5 Years	15.81%	10.94%	4.87%	11
10 Years	10.66%	8.21%	2.45%	18
20 Years	14.16%	11.20%	2.96%	8

Real Assets

For the fiscal year ended June 30, 2018, our real assets portfolio gained 15.16%, outperforming our peers whose median return was 6.99%. For the past five years, our real assets portfolio posted returns of 14.23%, outpacing the median return of other defined benefit plans of 9.96%. Table 6 shows that over the past one and three years, SFERS real assets portfolio ranks in the top 1% compared to our peers, and over the past five years, ranks in the top 2%.

Table 6 - Real Assets Returns

Real Assets	SFERS	Peer Median	Value Added	Rank
1 Year	15.16%	6.99%	8.17%	1
3 Years	14.29%	8.28%	6.01%	1
5 Years	14.23%	9.96%	4.27%	2
10 Years	5.90%	4.31%	1.59%	18
20 Years	8.82%	8.23%	0.59%	31

Absolute Return

SFERS Absolute Return program made its first investments in October 2016. For the fiscal year ended June 30, 2018, the Absolute Return portfolio returned 4.73%, underperforming our peers who returned 5.88%. Since the inception of the program in October 2016 our Absolute Return portfolio has edged our peers 6.41% vs. 6.00%.

Table 7 - Absolute Return

Absolute Return	SFERS	Peer Median	Value Added	Rank
1 Year	4.73%	5.88%	-1.15%	67
1.75 Years	6.41%	6.00%	0.41%	NA

Private Credit

SFERS Private Credit portfolio returned 13.49% in Fiscal Year 2018, an especially strong return in view of today's very low bond yields. SFERS began investing in this space in October 2007. Table 8 shows that our private credit returns rank in the top 1% versus peers, and our returns have moved higher in recent years even as bond yields have continued to be very low.

Table 8 - Private Credit Returns

Private Credit	SFERS	Peer Median	Value Added	Rank
1 Year	13.49%	0.78%	12.71%	1
3 Years	10.32%	3.06%	7.26%	1
5 Years	9.23%	2.94%	6.29%	1
10 Years	8.36%	5.12%	3.24%	1

Liquid Credit
The objectives of SFERS liquid credit strategy are to provide capital preservation, income, and liquidity. Here, we are more interested in insuring the objectives for our liquid credit investments are met rather than outperforming our peers. During the Global Financial Crisis, in fiscal year ended June 30, 2009, our liquid credit portfolio lost more than 15%. We have restructured our liquid credit strategy to prevent a large loss from reoccurring, with an emphasis on providing the three traits noted above.

In the fiscal year ended June 30, 2018, our liquid credit portfolio returned 0.02%, underperforming our peers who returned 0.78%. Our three and five-year returns have been 2.35% and 3.27%, respectively. In 2014 we anticipated very low bond returns and began reducing our allocation. Our actual allocation to liquid credit has declined from 27% four years ago to 13% today, with a long-term strategic allocation of 9%.

Table 9 - Liquid Credit Returns

Liquid Credit	SFERS	Peer Median	Value Added	Rank
1 Year	0.02%	0.78%	-0.76%	86
3 Years	2.35%	3.06%	-0.71%	80
5 Years	3.27%	2.94%	0.33%	41
10 Years	4.90%	5.12%	-0.22%	59
20 Years	5.60%	5.49%	0.11%	18

5 - Management Discussion and Analysis

Investment Returns
SFERS investments returned 11.14% this past year versus our peer's median return of 8.00%, an outperformance of 3.14%, ranking SFERS in the top 5% compared to our peer universe. From a macro perspective, returns were boosted by solid economic growth, very strong earnings growth in the U.S., strong job creation, and low unemployment.

Our higher risk assets all performed very well including Public Equity (12.31%), Private Equity (17.33%), Real Assets (15.16%), and Private Credit (13.49%).

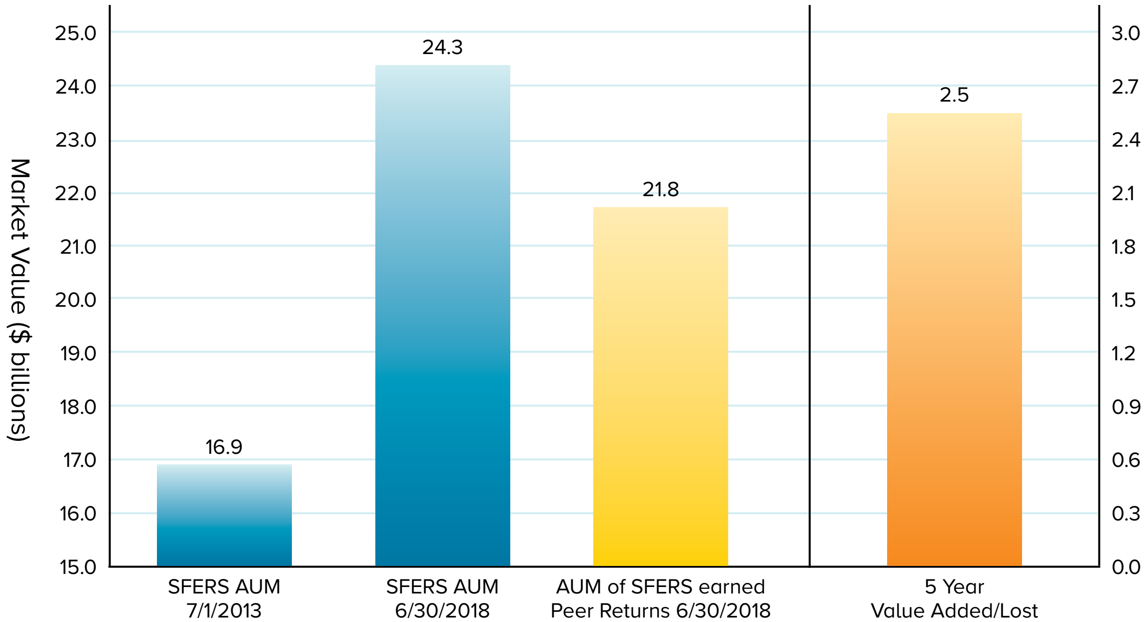
Manager selection added significant value to SFERS returns this past year. In particular, our Private Credit (excess returns of 12.71%), Real Assets (outpaced peers by 8.17%), and Private Equity (excess returns of 5.23%) strategies all significantly outperformed their respective peer universe. Our Public Equity strategy also outperformed (by 1.37%).

The returns of our lower risk assets – Liquid Credit and Absolute Return – were much more modest. Our Liquid Credit returns were essentially flat for the year (0.02%) due to low bond yields and rising interest rates. Returns in our Absolute Return portfolio were modest (4.73%), but in down markets we expect Absolute Return and Liquid Credit to post better returns than our other asset classes.

Value Added

As shown in Chart 1, in the past five years, SFERS annualized returns of 9.61% have added approximately $2.5 billion in value compared to if SFERS had earned the median return of our peers of 7.50%.

Chart 1 – Value Added: 5 Years Ended June 30, 2018



Notes: Peer universe represented by InvestorForce's universe of Public Defined Benefit Plans with more than 1 billion in assets. "Assuming Peer Return" Market Value adjusted for SFERS' net flows.

The value added of $2.5 billion over the past five years contrasts with the prior five-year period when SFERS underperformed the median peer return by a total of $400 million. The following initiatives undertaken by SFERS have resulted in $2.5 billion of outperformance over the past five years:

- Investment Team — Hired an investment team with distinguished credentials and insight
- Asset Allocation — Enhanced our diversification and ability to perform well in different markets
- Investment Strategy — Designed a unique strategy for each asset class
- Manager Research — Formed more than 50 new partnerships with top rated managers
- Due Diligence — Enhanced our due diligence research in asset allocation and selection
- Risk Management — Implemented advanced tools to measure, monitor and report risk
- Support — Staff has received extraordinary support from our Board and Executive Director

In addition to evaluating our performance versus other defined benefit plans, another way to measure our returns is versus a passive portfolio consisting of 60% global public equity and 40% U.S. bonds. As shown in Table 10, this past year SFERS outperformed 60/40 by 4.89%, and over the past five years, we topped a 60/40 portfolio by 2.97% annualized.

Table 10 - SFERS Value Added v. 60% Stocks and 40% Bonds							
	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	30 Years
SFERS Total Fund	11.14%	8.61%	9.61%	6.87%	8.33%	7.22%	9.16%
60/40 Benchmark	6.25%	5.70%	6.64%	5.31%	6.69%	5.43%	7.21%
Outperformance	4.89%	2.91%	2.97%	1.56%	1.64%	1.79%	1.95%

Note: 60/40 Simple Benchmark comprises 60% MSCI All Country World Index from January 1999 through current (MSCI World Index prior to 1999) and 40% Bloomberg Barclays US Aggregate Bond Index.

Risk-Adjusted Returns

Another method of evaluating performance is to assess risk-adjusted returns. Tables 11 and 12 show our risk-adjusted returns over the past three and five years.

Standard Deviation calculates the volatility of returns, with lower rankings indicating less volatility and less risk. Sharpe Ratio measures risk-adjusted returns, with higher ranks reflecting higher returns in relation to the amount of risk incurred. The Sortino Ratio computes an investor's risk-adjusted returns in down markets, with higher rankings indicating better returns in down markets.

SFERS has achieved outperformance even as we incurred slightly less volatility than our peers, as measured by our slightly lower Standard Deviation. We also recorded high risk-adjusted returns, as measured by Sharpe and Sortino Ratios that rank in the top 10% versus our peer universe.

Table 11 - Risk Adjusted Returns 3 Years Ended June 30, 2018						
	Standard Deviation	Rank	Sharpe Ratio	Rank	Sharpe Ratio	Rank
SFERS Total Fund	5.51%	39	1.44	7	2.00	9
Policy Benchmark Total Fund	6.51%	77	1.17	22	1.74	23
InvestorForce Public DB > $1B Median	5.72%	50	1.01	50	1.49	50

Table 12 - Risk Adjusted Returns 5 Years Ended June 30, 2018						
	Standard Deviation	Rank	Sharpe Ratio	Rank	Sharpe Ratio	Rank
SFERS Total Fund	5.54%	46	1.66	7	2.79	9
Policy Benchmark Total Fund	6.30%	71	1.40	21	2.50	17
InvestorForce Public DB > $1B Median	5.74%	50	1.24	50	2.05	50

Investment Strategy
SFERS has a differentiated investment strategy across our entire portfolio. There are three components of our strategy: asset allocation, manager selection, and risk management.

Asset Allocation
SFERS is much more diversified than most defined benefit plans. We have less exposure to public equity and fixed income, and more exposure to private equity, real assets, private credit, and absolute return, than our peers. Below is a summary of the role of each asset class in our overall strategy and the rationale for our weightings:

Public Equity
The role of public equity is to provide long-term capital appreciation and liquidity. Public equity consists of investments in publicly traded stocks in the U.S., international developed markets, and emerging markets.

We have a 31% strategic allocation to public equity, much lower than our peers whose average is approximately 50%. Our allocation is much lower than our peers in order to reduce the volatility of our returns and to reduce the impact a large loss in public equity would have on our funded status. We have partially completed a strategic initiative to significantly increase the excess returns generated in our public equity portfolio.

Private Equity
The role of private equity is to provide high long-term returns. Core private equity strategies include buyouts, venture capital, growth capital and special situations. Other investment strategies that can be pursued opportunistically include co-investments and secondary transactions.

We have a strategic allocation to private equity of 18%, much higher than our peer's average of about 8%. Our higher allocation is due to our talented investment team, supportive Retirement Board and Executive Director, reputation with private equity managers, success investing in private equity, access to top managers, and the potential to earn high alpha through manager selection.

Real Assets
The role of real assets is to provide high long-term returns, enhance diversification, deliver unique exposures compared to public and private equity, and inflation protection. Real assets consist of private real estate and natural resources investments. Real assets furnish SFERS with income from property lease payments or the extraction and harvesting of commodities, long-term capital appreciation from rising property, land and asset values, and inflation protection.

We have a strategic allocation to real assets of 17%, which is much higher than our peer's average of about 8%. Our higher allocation is to enhance diversification by investing in real estate as well as natural resources, and due to their unique exposures, the large opportunity set of both, the potential to earn high excess returns, and to provide inflation protection. Our real assets strategy places greater emphasis on earning high returns than income, due to the potential to earn high excess returns through manager selection in the space.

Absolute Return
The role of absolute return is to provide better protection in down markets than stocks, higher returns than bonds, unique exposures compared to our other asset classes, better liquidity than private investments, low net market exposure, and high risk-adjusted returns. Its role is also to incur less volatility than all of our other exposures except U.S. treasuries, reduce total portfolio volatility, and provide more consistent returns. Absolute Return includes investing both long and short in equities, bonds, mergers, reorganizations, currencies, interest rates, and macroeconomic trends and forecasts.

Our 15% allocation to Absolute Return is higher than our peers average of about 5%, though it is somewhat lower than most endowments and foundations. The size of our allocation is attributable to our ability to access top performing managers, the size of the investment opportunity set, the potential to add significant alpha through manager selection, reduce total portfolio volatility, higher returns than bonds, much lower volatility than stocks, higher risk-adjusted returns, and much better returns than stocks in large market declines.

Private Credit
The role of private credit is to provide high cash flow, strong returns, unique exposures, and a shorter return of capital compared to other private markets investments such as private equity and real assets. Private credit includes investments in senior debt, direct lending, mezzanine financing, specialty finance, real estate lending, and distressed debt situations when we can buy assets at a significant discount that are expected to recover in value.

Our strategic allocation to private credit of 10% is about double the average of our peers. Our weighting is driven by private credit's high cash yield, the substantial size of its investment universe, the potential to earn significant alpha through manager selection, and its much higher expected returns compared to Liquid Credit.

Liquid Credit
The liquid credit portfolio consists of investments in publicly traded bonds. Approximately two-thirds of our liquid credit strategy is allocated to U.S. treasuries, with the remainder invested in high yield bonds, emerging market bonds, and bank loans.

The role of U.S. treasuries is to provide protection in down markets, liquidity, and income. The role of high yield bonds, emerging market bonds, and bank loans is to earn a higher total return and cash yield than treasuries.

Our strategic allocation to liquid credit of 9% is less than half compared to our peer universe, due to its low expected returns.

Traits of Each Asset Class
Table 13 summarizes the traits of SFERS asset classes. Each asset class provides important traits to enhance our potential to meet our dual objectives of maximizing long-term returns while reducing the impact a large decline in investment values would have on our portfolio.

Table 13 - Traits of Each Asset Class

Asset Type	Asset Class Returns	Volatility	Diversification	Liquidity	Yield	Risk-Adjusted	Beta	Alpha
Public Equity	High	High	Low	High	Low	Moderate	High	High
Private Equity	Very High	High	Low	Very Low	Very Low	Moderate	High	Very High
Real Assets	Moderate	High	Moderate	Very Low	Low	Moderate	Moderate	Very High
Absolute Return	Moderate	Low	High	Moderate	Low	High	Low	High
Private Credit	Moderate	Moderate	Moderate	Low	High	Moderate	Moderate	High
Liquid Credit	Low	Low	High	High	Moderate	Moderate	Low	Low

Notes: Beta measures systematic risk to public equity. Alpha measures excess returns through manager selection.

Manager Selection

SFERS seeks to earn high excess returns through manager selection, utilizing a process that is both deeply intensive and highly selective. We have formed more than 70 new manager relationships the past five years. These new relationships have been instrumental in posting our recent outperformance. Traits we seek in manager selection are found in Table 14.

Table 14 - Traits in Manager Selection	
Unique	Managers must possess unique competitive advantages. Unique advantages may be in specialized skill and experience; insight and intuition; size and breadth of market inefficiencies; process; philosophy; fundamental or quantitative; trading advantages; network; operations; and risk controls.
Significant	The manager's advantages must be significant. The advantages cannot be marginal or moderate. The manager must possess clear, compelling advantages by a large margin.
Sustainable	The manager's advantages must be sustainable. For another manager to try and catch up, it would take them 10 years, and they may never do so.
Alignment	Manager's must have a high alignment with our interests. Desirable traits are manager's with low management fees, most of their revenue generated from investment returns, most of their net worth invested in the strategy we are investing in, asset size that optimizes returns, and firms that manage one or few strategies.

Risk Management

Managing risk is engrained throughout our investment process in both asset allocation and manager selection.

Asset allocation modeling requires hundreds of hours of data gathering, macroeconomic inputs, valuation metrics, cash flow and liquidity analysis, statistical modeling, forecasting estimates, historical and scenario-based stress testing, and the judgment of our senior investment staff and our investment consultants.

Strategic planning for each asset class, and the portfolio as a whole, requires extensive preparation, planning, and evaluation. Our due diligence process for manager selection requires 100 to 500 hours of work for each investment we make, lower amounts for certain reups with whom we have a long history, and more hours for newer strategies. Manager weightings are determined by modeling managers in a portfolio context. We also remain diligent after managers are hired, speaking with them and meeting in person on a highly regular basis.

In recent years SFERS has implemented comprehensive risk management tools that enhance our understanding of the impact different market environments, especially major down markets, could have on our returns, funded status, asset allocation, and liquidity, and to prepare for such events before they occur. These tools have also enhanced our evaluation of portfolio traits, connect decisions to where we wish to accept risk and pursue returns, and identify opportunities for improvement.

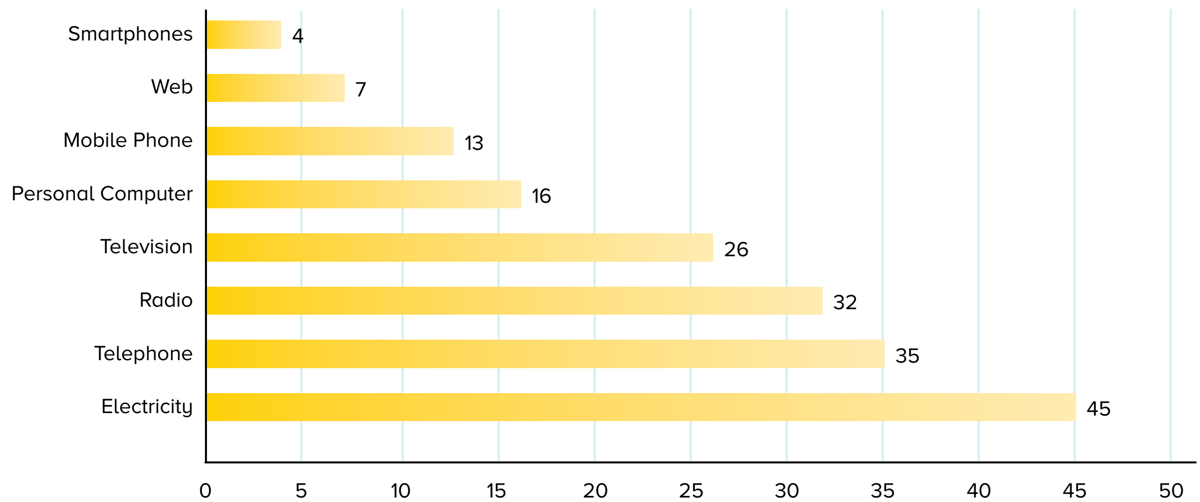
Science, Technology and Innovation

Technology has come under significant scrutiny and criticism in recent years, due to security breaches and the narrative of online content.

While technology presents vitally important challenges that need to be resolved, we also believe that science and technology will be increasingly able to solve huge problems, delivering substantial improvements in human health, transportation, energy, agriculture, and much more. We believe that the human experience is rapidly evolving from the industrial age to an era of science, technology, and innovation, and that the benefits will have as positive an impact on the human experience as the move from the agricultural era to the industrial age.

Further, the pace of innovation is accelerating. Chart 2 shows that recent inventions are being adopted more than ten times faster than a century ago, and three to five times faster than just two decades ago. For example, market leaders such as AirBnB, Amazon, Facebook, Google, Lyft, Netflix, Priceline, Salesforce, Twitter, and Uber, and leading products such as Android, Instagram, I-Phone, Snapchat, and YouTube, are only 10 to 25 years old.

Chart 2 - Acceleration of Pace of Adoption
Technology Adoption Rates
Years Until 25% Adoption of U.S. Population



Leaders in science and technology have been sources of significant outperformance, and we believe that leaders in innovation, the frontrunners in how business will be done in the future, will continue to post sizeable market-beating returns. Determining managers with the experience, skills, insight, intuition, and judgement to identify and invest in such companies are important aspects in our manager research and portfolio construction efforts.

SFERS has a sizeable allocation to science, technology, and innovation, which we believe will continue to furnish us with market-beating returns while also bringing a much-improved human experience.

Long-Term Returns

Chart 3 shows that our rolling 10-year returns have declined significantly since 2008. In 1982 valuations were very low, which combined with a strong economy led to high returns in the 1980's and 1990's. Two major bear markets in the 2000's pushed our rolling 10-year returns much lower. It's worth noting that returns, even over periods as long as 10 years, can be very low.

Chart 3 – SFERS Rolling 10-Year Returns (July 1, 1985 to June 30, 2018)

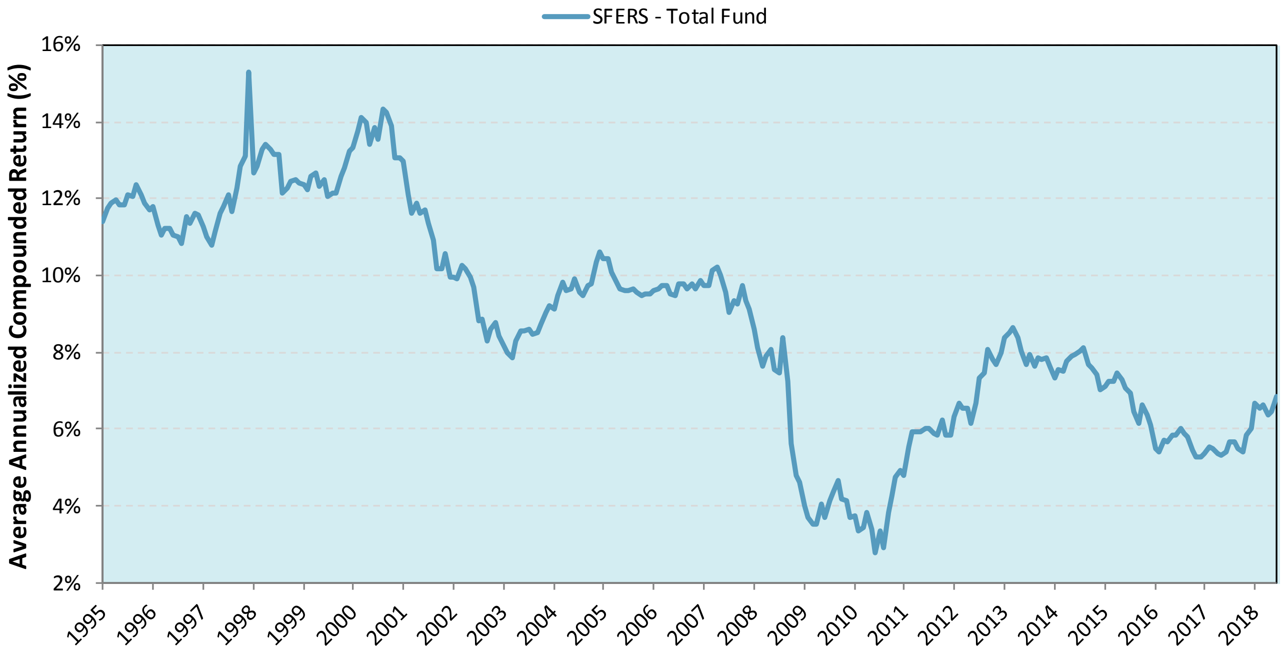
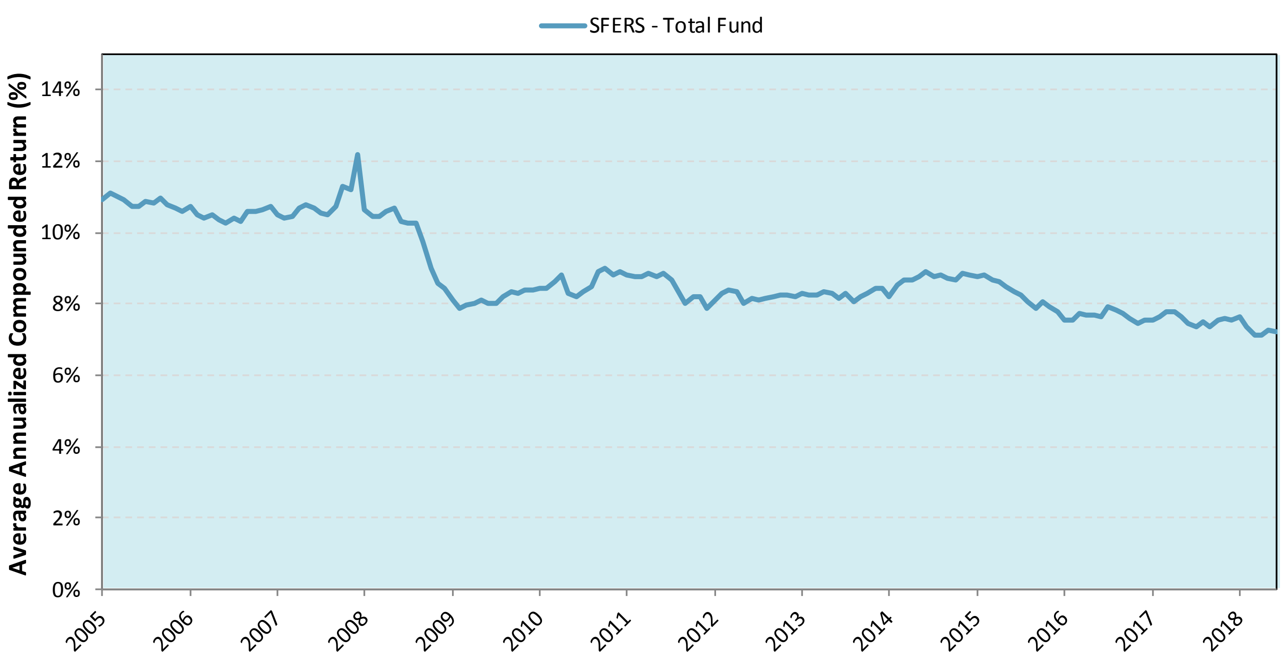


Chart 4 shows our rolling 20-year returns have also declined, but they have been much more consistent than our rolling 10-year returns. Comparing Charts 3 and 4, show that success in investing requires a long time horizon, even as much as 20 years.

Chart 4 – SFERS Rolling 20-Year Returns (January 1, 1985 to June 30, 2018)

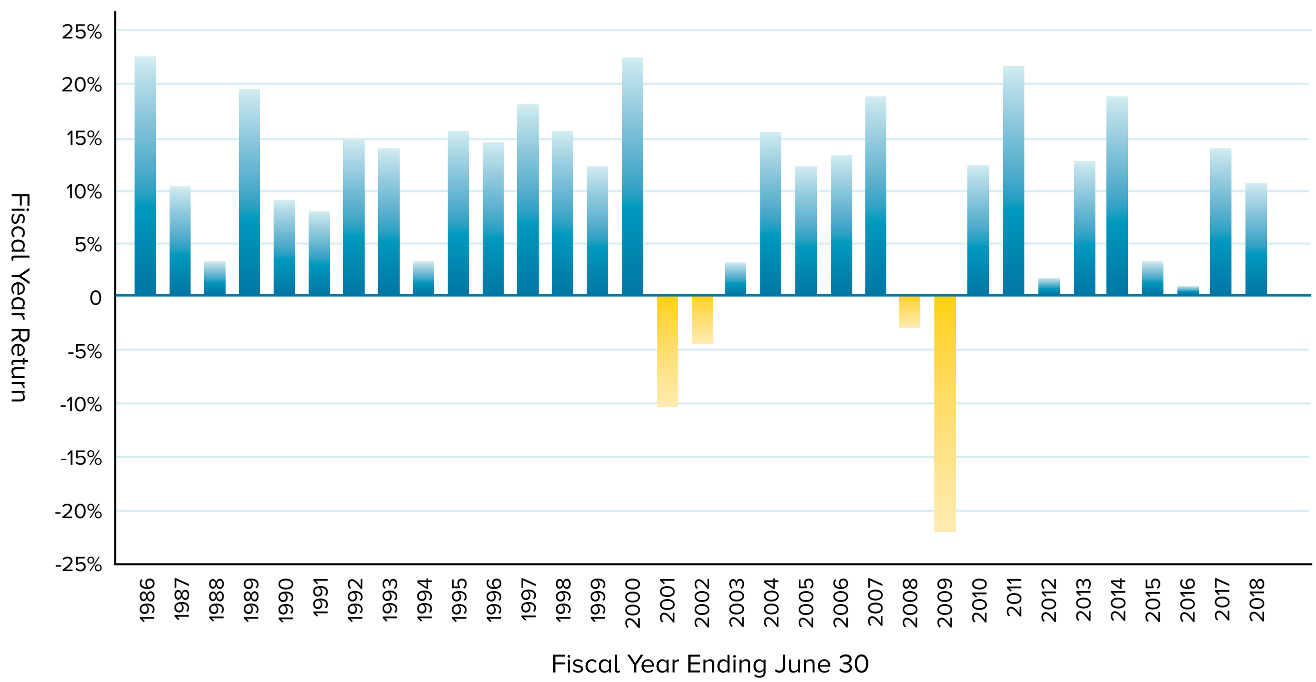


SFERS Fiscal Year Returns

Chart 5 shows SFERS fiscal year returns since 1985-86. The highlights are as follows:

- SFERS has recorded positive returns in 29 of the past 33 fiscal years.
- SFERS experienced negative returns four times since 1985-86, all of which occurred during two major bear markets involving the bursting of the internet bubble and the Global Financial Crisis (GFC).
- SFERS has lost more than 10.5% just once, in fiscal year ended June 2009 when we lost more than 22%.
- SFERS has returned 7.50% or higher in 23 of the past 33 years.
- SFERS has posted returns of 10.00% or higher in 21 of the past 33 years.

Chart 5 – SFERS Fiscal One-Year Returns



Our investment team manages the SFERS Trust to reduce the impact a large loss in asset values would have on our funded status while simultaneously seeking to achieve high long-term returns. We do so by emphasizing asset allocation, diversification, manager selection, and risk management, backed by deep research.

Regards,

William J. Coaker, Jr.
Chief Investment Officer

Summary of Investments & Performance

As of June 30, 2018, approximately 95% of SFERS assets were managed by external managers. The remainder of SFERS assets are managed internally in index funds and co-investments.

Table 15 - Asset Allocation as of June 30, 2018 and June 30, 2017

	2018		2017	
	Market Value *($thousands)*	**Weight (%)**	**Market Value *($thousands)***	**Weight (%)**
Public Equity	$ 10,236,408	42.1%	$ 10,680,079	48.0%
Private Equity	4,203,964	17.3%	3,297,907	14.8%
GROWTH ASSETS	**14,440,372**	**59.4%**	**13,977,986**	**62.8%**
Real Assets	3,535,531	14.5%	3,108,591	14.0%
Absolute Return	2,623,813	10.8%	577,978	2.6%
DIVERSIFYING ASSETS	**6,159,344**	**25.3%**	**3,686,569**	**16.6%**
Fixed Income	3,148,152	12.9%	4,081,266	18.3%
Private Credit	446,172	1.8%	376,678	1.7%
INCOME GENERATING ASSETS	**3,594,324**	**14.8%**	**4,457,944**	**20.0%**
Cash	116,596	0.5%	125,415	.06%
Total Investment Portfolio	**$ 24,310,636**	**100.0%**	**$ 22,247,914**	**100.0%**

Investment portfolio totals are net of management fees and expenses and therefore does not track to pension net assets reported in SFERS audited financial statements. Source: BNY Mellon.

Table 16 - Investment Performance vs. Benchmarks for periods ending June 30, 2018

Description	1-Year	3-Years	5-Years	10-Years	20-Years
Public Equity Public Equity Policy Benchmark [1]	12.31% 11.14%	8.96% 8.34%	10.14% 9.60%	6.83% 6.60%	6.18% 5.79%
Private Equity Private Equity Policy Benchmark [2]	17.33% 17.51%	12.79% 16.65%	15.81% 18.53%	10.66% 15.39%	14.16% 11.89%
Real Assets Real Assets Policy Benchmark [3]	15.16% 8.51%	14.29% 8.17%	14.23% 8.10%	5.90% 5.41%	8.82%
Absolute Return Absolute Return Policy Benchmark [4]	4.73% 6.47%	N/A	N/A	N/A	N/A
Fixed Income Fixed Income Policy Benchmark [5]	0.02% -0.02%	2.35% 2.20%	3.27% 2.68%	4.90% 4.09%	5.60% 4.25%
Private Credit Private Credit Policy Benchmark [6]	13.49% 4.81%	10.32% 6.22%	9.23% 6.36%	8.36% 7.79%	
Cash	1.45%	0.90%	0.59%	0.45%	2.20%
Total Fund **Total Fund Policy Benchmark [7]**	**11.14%** **9.38%**	**8.61%** **8.29%**	**9.61%** **9.22%**	**6.87%** **7.42%**	**7.22%** **6.93%**

Source: BNY Mellon

1 Public Equity Policy consists of 100% MSCI ACWI IMI (ND) from 10/1/2012 through current, 47% MSCI ACWI IMI Ex-US (ND) and 53% Russell 3000 from 10/1/2008 through 9/30/2012, 42% MSCI ACWI Ex-US (ND) and 58% Russell 3000 from 9/1/2005 through 9/30/2008, 33% MSCI ACWI Ex-US (ND) and 67% Russell 3000 from 10/1/2002 to 8/31/2005, 36% MSCI ACWI Ex-US (ND) and 64% Russell 3000 from 4/1/2000 to 9/30/2002, 36% MSCI EAFE (ND) and 64% Russell 3000 from 12/1/1989 to 3/31/2000.

2 Private Equity Policy consists of 25% MSCI ACWI Ex-US (ND) and 75% Russell 3000 plus 300 bps from 1/1/2018 through current, S&P 500 plus 500 bps prior to 12/31/2017.

3 Real Assets Policy consists of 50% NCREIF ODCE and 50% Cambridge Associates NR Quarter Lag from 1/1/2018 through current, 8% annual return from 10/1/2011 to 12/31/2017, NCREIF Property Index plus 150 bps from 10/1/1999 to 9/30/2011.

4 Absolute Return Policy consists of the 90-day Treasury Bill plus 500 bps.

5 Fixed Income Policy consists of 71.43% Bloomberg Barclays US Aggregate and 28.57% Bloomberg Barclays Intermediate Treasury from 4/1/2018 through current, 81.25% Bloomberg Barclays US Aggregate and 18.75% Bloomberg Barclays Intermediate Treasury from 1/1/2018 to 3/31/2018, Bloomberg Barclays US Universal from 7/1/2007 to 12/31/2017, 75% Bloomberg Barclays Universal and 25% Bloomberg Barclays Global Aggregate from 10/1/2005 to 6/30/2007, 80% Bloomberg Barclays Universal and 20% Bloomberg Barclays Global Aggregate from 10/1/2002 to 9/30/2005, Bloomberg Barclays Universal from 10/1/2000 to 9/30/2002, Bloomberg Barclays Aggregate 12/1/1984 to 9/30/2002.

6 Private Credit Policy consists of 50% Bank of America Merrill Lynch US High Yield BB/B Constrained Index and 50% Credit Suisse Leveraged Loan Index plus 150bps.

7 The current SFERS policy benchmark (starting 4/1/2018) consists of 43% MSCI-ACWI IMI (ND), 4% Bloomberg Barclays Intermediate US Treasury, 10% Bloomberg Barclays Capital US Aggregate, 2% Private Credit Policy, 15% Real Assets Policy, 16% Private Equity Policy and 10% 90-day Treasury Bill plus 500 bps.

ACTUARIAL SECTION

Actuarial valuations are conducted annually to determine the funding requirements of the Retirement System. San Francisco City Charter specifies that the Retirement Board determines the employer contribution as a normal cost rate plus an amortization of the unfunded actuarial liability over a period not to exceed 20 years. Sponsoring employers are required to contribute 100% of the Board-approved actuarially determined contribution. Member contribution rates are also specified in City Charter.

Actuarial assumptions and methods are adopted by the Retirement Board with input from the consulting actuary. Key economic assumptions are reviewed annually, while demographic assumptions are studied every five years. The current demographic assumptions were adopted at the November 18, 2015 Board meeting for the July 1, 2015 actuarial valuation and are based upon the June 2015 Demographic Experience Study for the period covering July 1, 2009 through June 30, 2014. The study covered rates of retirement, termination, refund, disability, and mortality in addition to merit salary increases, final year salary increases, administrative expenses, and family composition.

A brief summary of the plan provisions may be found in the Notes to the Basic Financial Statements found in the Financial Section. A detailed summary of plan provisions may be found in the July 1, 2017 actuarial funding report issued in February 2018.

The pension plan is a cost-sharing multiple-employer defined benefit pension plan as the plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan. Here the term “cost-sharing” refers to the sharing of costs between the employers: plan assets are pooled and individual employer contributions are not segregated from each other. The Introductory Section contains more details of the Retirement System, the Board, and its members.

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

JULY 1, 2017 ACTUARIAL VALUATION

Actuarial Asset Valuation Method for Funding Policy

The assets were valued using a 5-year phase-in of investment return greater than or less than the assumed investment return. This actuarial value is calculated by recognizing 20% of each of the past five years of actual investment experience relative to the expected return on the actuarial asset value. The expected return on actuarial value of assets is determined using actual cash flows and the assumed investment return. The balance of the actual investment experience is recognized in a similar fashion in future years.

This asset smoothing method started with the market value as of July 1, 2004. The Retirement Board adopted the method upon recommendation from the actuarial audit of 2005.

Actuarial Cost Method

The individual Entry Age Normal actuarial cost method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed termination of employment. The actuarial liability is the difference between the present value of future benefits and the present value of future normal costs. Actuarial gains or losses which arise from the deviation of actual experience from expected experience lead to decreases or increases in the unfunded actuarial liability.

This cost method meets the Charter requirement that normal cost be determined as a level percent of pay.

Amortization Method for Funding Policy

The Retirement Board's funding policy specifies the various periods over which different components of the unfunded actuarial liability must be amortized subject to the Charter requirement that amortization periods not exceed 20 years.

The Retirement Board adopted the following amortization methods beginning with the July 1, 2014 actuarial funding valuation:

- 20-year closed periods for net actuarial gains and losses
- 20-year closed periods for assumption changes
- 15-year closed periods for Charter amendments (five-year closed periods for retirement incentive programs and amendments for inactive members)
- 5-year closed periods for supplemental COLAs
- The portion of the unfunded actuarial liability not attributable to Charter amendments as of July 1, 2013 was re-amortized over a closed 19-year period as of July 1, 2014.

Any Charter amendment prior to July 1, 2014 has been amortized over 20 years from the date it was first recognized in the valuation. Prior to July 1, 2014, the portion of the unfunded actuarial liability not attributable to Charter amendments was amortized over a rolling 15-year period.

The amortization payment on the July 1, 2015 assumption changes is being phased in over a five-year period.

All amortization schedules are determined on a level percent of pay basis which means that for the duration of the amortization schedule, payment amounts increase each year at the assumed wage inflation rate.

Investment Return Assumption

SFERS' assets are assumed to earn 7.50% net of investment expenses. This assumption was adopted beginning with the July 1, 2014 valuation.

Cost-of-Living Increase in Benefits

The following cost-of-living assumptions were adopted at the July 1, 2017 actuarial valuation:

Old Plans - Police and Fire, Charters 8.559 and 8.585	4.20% per year
Old Plans - Police and Fire, Charters 8.595 and 8.596	3.10% per year
Old Plans - Police and Fire, pre-7/1/75 retirement	2.50% per year
Old Plans - Miscellaneous	2.00% per year
New Plans - Police, Fire and Miscellaneous	2.00% per year

Supplemental Cost-of-Living Increases

No future supplemental COLAs are assumed in the actuarial funding valuation. An assumption for future supplemental COLAs is included in the financial reporting valuation; see Note 10 to the financial statements.

Salary Increase Rate

- Wage inflation component: 3.50% (adopted July 1, 2017)
- The additional merit component at selected years of service:

Years of Service	Police	Fire	Muni Drivers	Craft	Other Misc.
0	8.00%	15.00%	15.00%	3.50%	5.25%
5	3.50	2.25	0.00	0.55	1.25
10	1.80	1.60	0.00	0.15	0.50
15	1.50	1.50	0.00	0.00	0.25

Extra covered wages in the last year before service retirement are assumed to be as follows:

Safety	3.5% per year
Muni Drivers	4.5% per year
Craft Workers	4.5% per year
Other Miscellaneous	2.5% per year

Future Interest Crediting Rate on Member Contributions

4.5% compounded annually.

Administrative Expense Assumption

There is a 0.60% of Payroll assumption included in the normal cost rates for administrative expenses.

Member Refunds

Non-vested terminated members are assumed to receive a refund of their contributions with interest. The rates of refund for terminated vested members in the year of termination are shown below at selected ages.

	Rates of Refund for Vested Terminated Members	
Age	Police & Fire	Misc.
Under 25	50.0%	60.0%
30	30.0	37.5
40	15.0	22.5
50	0.0	5.0

In estimating refund amounts, it is assumed that employee contribution rates are, on average, not changed by the cost-sharing provisions of the November 2011 Proposition C.

Family Composition

The percentage assumed to be married (including assumption for Domestic Partners, 1994 Proposition H) is shown in the table below. Spouses of male members are assumed to be four years younger than the member and spouses of female members are assumed to be two years older than the member.

	Percentage Married
Safety Males	85%
Safety Females	55
Miscellaneous Males	75
Miscellaneous Females	52

Rates of Termination of Employment

Sample rates of termination by age and service for Miscellaneous (excluding Muni drivers and Craft) members are shown below:

	Years of Service		
Age	0	3	5+
20	37.5%	12.0%	6.5%
30	24.0	9.0	5.5
40	17.5	6.0	3.0
50	15.0	4.5	2.6
60	15.0	4.5	5.0

Sample rates of termination by service for Police, Fire, Muni Drivers and Craft members are shown below:

Service	Police	Fire	Muni Drivers	Craft
0	10.00%	4.00%	12.00%	10.00%
5	0.75	1.50	3.25	3.25
10	0.75	0.75	3.00	1.75
15	0.50	0.50	3.00	1.75
20	0.50	0.50	3.00	1.75

20% of terminating employees are assumed to subsequently work for a reciprocal employer and receive pay increases equal to the wage inflation assumption.

In estimating termination benefits for Miscellaneous members, it is assumed that employee contribution rates are, on average, not changed by the cost-sharing provisions of the November 2011 Proposition C.

Rates of Disability

Sample disability rates of active participants are provided below:

Age	Police	Fire	Muni Drivers	Craft	Misc. Females	Misc. Males
30	0.05%	0.06%	0.01%	0.01%	0.01%	0.01%
40	0.16	0.38	0.11	0.12	0.10	0.08
50	0.79	1.20	0.75	0.44	0.55	0.30
60	6.10	12.75	0.00	0.00	0.00	0.00

100% of safety and 0% of miscellaneous disabilities are assumed to be duty related. If projected disability occurs prior to service retirement eligibility, the level of duty disability is assumed to 55% of pay for Police and 55% of pay for Fire.

Rates of Retirement

Rates of retirement are based upon years of service and age. Members hired on or after January 7, 2012 (Tier III Plans) reach the highest benefit multiplier at later ages than the other members and have separate assumed rates of retirement. Sample retirement rates for active participants are provided in the following two tables:

Old Plans and New Plans' Tiers I and II

	Years of Service		
Age	19 or less (24 or less for Safety)	20-29 (25-29 for Safety)	30 or more
Muni Drivers			
55	0.0000	0.0500	0.1500
60	0.1000	0.1000	0.2000
65	0.2750	0.3500	0.4500
Craft			
55	0.0000	0.0400	0.0750
60	0.1000	0.1000	0.3750
65	0.1500	0.2750	0.3000
Other Misc.			
55	0.0000	0.0400	0.0550
60	0.1050	0.1150	0.3750
65	0.2375	0.3000	0.3250
Police			
55	0.0700	0.2400	0.4000
60	0.0900	0.3400	0.5000
65	1.0000	1.0000	1.0000
Fire			
55	0.0750	0.2250	0.3500
60	0.2000	0.3500	0.3500
65	1.0000	1.0000	1.0000

Tier III Plans (includes Sheriffs Plan and Miscellaneous Safety Plan)

	Years of Service		
Age	**19 or less (24 or less for Safety)**	**20-29 (25-29 for Safety)**	**30 or more**
Muni Drivers			
55	0.0000	0.0300	0.1000
60	0.0500	0.1000	0.1500
65	0.2500	0.3000	0.5000
Craft			
55	0.0000	0.0300	0.0500
60	0.0500	0.0750	0.2000
65	0.2000	0.3250	0.4000
Other Misc.			
55	0.0000	0.0400	0.0400
60	0.0750	0.1000	0.1500
65	0.3000	0.4000	0.4000
Police			
55	0.0700	0.2000	0.3500
60	0.0900	0.3400	0.5000
65	1.0000	1.0000	1.0000
Fire			
55	0.0750	0.1750	0.2500
60	0.2000	0.3500	0.3500
65	1.0000	1.0000	1.0000

The assumed retirement age for terminated vested members is age 55 for all groups except for Tier I and Tier II Safety whose assumed retirement age is 51.

Rates of Mortality for Healthy Lives

Mortality rates for non-disabled members are based upon adjusted Employee and Healthy Annuitant CalPERS mortality tables projected generationally from the 2009 base year using a modified version of the MP-2015 projection scale as described below.

The table below provides a sample of these rates prior to any projection for mortality improvements.

	Actives			Annuitants	
Age	Male	Female	Age	Male	Female
25	0.04%	0.02%	55	0.58%	0.47%
35	0.06	0.03	65	0.96	0.76
45	0.11	0.07	75	2.71	2.22
55	0.23	0.14	85	8.57	6.77
65	0.48	0.30	95	23.01	21.14

For active members, 25% of Safety deaths and 0% of Miscellaneous deaths are assumed to be duty related.

Rates of Mortality for Retired Disabled Lives

Mortality rates for disabled Safety members are based upon adjusted CalPERS' Industrial Disability mortality tables projected generationally from the 2009 base year. Rates for disabled Miscellaneous members are based upon the RP-2014 Disabled Retiree Tables projected generationally from the 2006 base year. The projection scale is the same as used for healthy mortality and is described below.

The table below provides a sample of these rates prior to any projection for mortality improvements.

	Police and Fire		All Miscellaneous	
Age	Male	Female	Male	Female
55	0.58%	0.45%	2.34%	1.60%
65	1.30	1.05	3.42	2.70
75	3.49	2.90	6.31	5.24
85	9.44	7.82	12.92	11.57
95	23.01	20.50	26.34	24.16

Mortality Projection Scale

The mortality rates shown in the base tables above are projected generationally from the base year using a modified version of the MP-2015 projection scale. The scale was modified using the Society of Actuaries' model implementation tool with rates converging to the ultimate rate in 2017 (instead of 2029) and an ultimate rate of improvement of 0.85% (instead of 1.0%) up to age 85 decreasing to 0.70% (instead of 0.85%) at age 95.

Sample rates of improvement are shown in the table below.

	Females			Males		
Age	2009	2013	2017+	2009	2013	2017+
30	-0.0064	0.0031	0.0085	0.0066	0.0132	0.0085
50	0.0036	0.0101	0.0085	0.0167	0.0170	0.0085
70	0.0211	0.0146	0.0085	0.0227	0.0140	0.0085
90	0.0145	0.0113	0.0078	0.0158	0.0120	0.0078

Recent Changes

The following changes in actuarial assumptions were made since the July 1, 2016 valuation:

Wage Inflation:	3.75% to 3.50% compounded annually
Cost-of-Living Increases in Benefits:	
Old Plans - Police and Fire, Charters 8.559 and 8.585	4.4% to 4.2% per year
Old Plans - Police and Fire, Charters 8.595 and 8.596	3.3% to 3.1% per year
Old Plans - Police and Fire, pre-7/1/75 DOR	2.7% to 2.5% per year

The July 1, 2017 actuarial liability reflects the July 1, 2017 supplemental COLA. There have been no other significant changes in plan provisions reflected since the July 1, 2016 actuarial valuation.

There have been no changes in retained actuary or actuarial firm.

Contribution Information

The funding policy of the Retirement System is described in this Actuarial Section and also in Note 9 of the financial statements. A ten-year schedule of employer contributions may be found in the Required Supplementary Information of the Financial Section. Information on rates of employer and member contributions based on covered payroll may be found in the Statistical Section.

Total Pension Liability for GASB 67 Financial Reporting

The Actuarial Accrued Liability of this Actuarial Section differs from the Total Pension Liability found in Note 10 of the financial statements and in the required supplementary information in three ways:

- The Actuarial Accrued Liability (AAL) developed for the funding valuation does not include an assumption of future supplemental COLAs. The AAL does include all liabilities for supplemental COLAs that have already occurred as of the valuation date. Total Pension Liability incorporates the probability that future supplemental COLAs may occur in years after the valuation date.
- The census date of the AAL is the same as the valuation date of July 1. The census date for the June 30 fiscal year-end Total Pension Liability is as of previous July 1 valuation date. The Total Pension Liability is a roll-forward liability using standard roll-forward procedures, adjusted for significant changes during the fiscal year.
- The AAL is valued at a discount rate equal to the assumed investment return, while the Total Pension Liability is valued at a discount rate that may differ from the assumed investment return.

Note 10 contains further information about the assumed probabilities of future supplemental COLAs, the roll-forward of liabilities, and the assumed discount rate for GASB 67 financial reporting. Other than these differences, the actuarial assumptions used for funding purposes are the same assumptions used for financial reporting purposes.

ACTUARIAL ANALYSIS OF FINANCIAL EXPERIENCE

The analysis of financial experience is a gain/loss analysis of changes in the unfunded actuarial accrued liability (UAAL) that considers variances between actual experience and assumed experience. The net expected changes in the UAAL from one year to the next include the sum of the additional benefits accrued during the year (the normal cost) and the interest accrual on the UAAL reduced by the payment of employer contributions.
The analysis also shows the impact on the UAAL due to changes in benefits due to voter-approved propositions and supplemental COLAs and also due to changes in assumptions such as mortality, investment return, or salary merit scale. Changes in the UAAL due to asset returns include the impacts of the five-year smoothing of investment returns inherent in the actuarial asset valuation method.

(Dollars in millions)

As of July 1	2017	2016	2015	2014	2013
Prior Valuation Unfunded Actuarial Accrued Liability	$ 3,749.2	$ 3,317.60	$ 3,110.5	$ 3,921.4	$ 3,366.2
Expected change from Prior Valuation	(82.5)	(25.2)	(70.7)	(98.6)	(80.1)
Expected Unfunded Actuarial Liability as of Valuation Date	3,666.7	3,292.4	3,039.8	3,822.8	3,286.1
Changes in Benefits due to Propositions and/or Supplemental COLAs	200.1	429.3	0.0	0.0	0.0
Changes in Assumptions	50.2	0.0	1,084.4	153.1	0.0
Salary Increases Greater/(Less) than Expected	(80.6)	4.9	(79.9)	(214.6)	(a)
Asset Return Less/(Greater) than Expected	(405.7)	51.5	(545.5)	(749.2)	584.0
All Other Experience	90.1	(28.9)	(145.2)	98.4	51.3
Unfunded Actuarial Accrued Liability as of Valuation Date	**$ 3,520.8**	**$ 3,749.2**	**$ 3,317.6**	**$ 3,110.5**	**$ 3,921.4**

(a) Salary experience included with all other experience

SCHEDULE OF FUNDING PROGRESS

The schedule below presents valuation results for the last 10 years based upon actuarial methods and assumptions used for funding purposes.

(Dollars in thousands)

Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll[1]	UAAL as a % of Covered Payroll
7/01/2008	15,941,390	15,358,824	(582,566)	103.8%	2,457,196	(23.7%)
7/01/2009	16,004,730	16,498,649	493,919	97.0%	2,544,939	19.4%
7/01/2010	16,069,058	17,643,394	1,574,336	91.1%	2,398,823	65.6%
7/01/2011	16,313,120	18,598,728	2,285,608	87.7%	2,360,413	96.8%
7/01/2012	16,027,683	19,393,854	3,366,171	82.6%	2,393,842	140.6%
7/01/2013	16,303,397	20,224,777	3,921,380	80.6%	2,535,963	154.6%
7/01/2014	18,012,088	21,122,567	3,110,479	85.3%	2,640,153	117.8%
7/01/2015	19,653,339	22,970,892	3,317,553	85.6%	2,820,968	117.6%
7/01/2016	20,654,703	24,403,882	3,749,179	84.6%	3,062,422	122.4%
7/01/2017	22,185,244	25,706,090	3,520,846	86.3%	3,242,468	108.6%

1 Covered payroll based upon actuarial projection of annualized pay for the year beginning on the valuation date.

ACTUARIAL SOLVENCY TEST

The solvency test compares aggregate actuarial liabilities by various categories with the plan's present assets. Category (A), active member contributions, includes both employee contributions and earned interest. Category (B) includes all liabilities for members no longer working, both retirees and beneficiaries who are receiving payments and also other inactives entitled to future payments. Category (C) includes the actuarial accrued liability for active members in excess of the active member contributions.

The table below shows a 100% funded status over the last ten years for employee contributions with interest (Category A) and for members who have terminated service with rights to future payments (Category B). The liabilities for service already rendered by active members (Category C) is not fully funded for valuations after July 1, 2008. The decline in funding percentages for Category C reflects both the 2008-2009 financial crisis and the lowering of the discount rate over the last ten years from 8.00% at July 1, 2007 to 7.50% at July 1, 2016. The decline in Category C funding percentages also reflects revisions in actuarial assumptions including the adoption of a generational projection of mortality improvements at July 1, 2015.

(Dollars in millions)

	Actuarial Accrued Liability (AAL)				Percentage of AAL Covered by Assets		
Valuation Date	Active Member Contributions (A)	Retirees, Beneficiaries, and Inactives (B)	Employer Financed Portion of Active Members (C)	Actuarial Value of Assets	(A)	(B)	(C)
7/1/2008	$ 2,298	$ 8,013*	$ 5,047*	$ 15,941	100%	100%	100%
7/1/2009	2,376	9,028	5,095	16,005	100%	100%	90%
7/1/2010	2,331	10,171	5,141	16,069	100%	100%	69%
7/1/2011	2,364	10,987	5,248	16,313	100%	100%	56%
7/1/2012	2,451	11,658	5,285	16,028	100%	100%	36%
7/1/2013	2,633	12,257	5,335	16,303	100%	100%	26%
7/1/2014	2,825	12,901	5,397	18,012	100%	100%	42%
7/1/2015	2,995	13,931	6,045	19,653	100%	100%	45%
7/1/2016	3,175	14,941	6,288	20,655	100%	100%	40%
7/1/2017	3,325	15,847	6,535	22,185	100%	100%	46%

* Inactive liabilities are included in Category (C) for 7/1/2008. The percentages of AAL covered by assets are unaffected as all three categories are at 100% at that valuation date.

SCHEDULE OF ACTIVE MEMBER VALUATION DATA

Valuation Date	Plan Type	Count[1]	Annual Covered Pay[1]	Average Annual Covered Pay	% Increase in Average Covered Pay
7/1/2008	General	26,878	$ 2,059,587,819	$ 76,627	1.5%
	Safety	3,772	397,608,369	105,410	2.6%
7/1/2009	General	26,205	1,981,788,543	75,626	(1.3)%
	Safety	3,714	402,975,857	108,502	2.9%
7/1/2010	General	24,689	1,915,169,605	77,572	2.6%
	Safety	3,533	400,262,779	113,293	4.4%
7/1/2011	General	24,701	1,883,122,340	76,237	-1.7%
	Safety	3,255	380,458,039	116,884	3.2%
7/1/2012	General	24,878	1,928,148,586	77,504	1.7%
	Safety	3,219	395,842,540	122,971	5.2%
7/1/2013	General	25,392	2,031,987,811	80,025	3.3%
	Safety	3,325	417,543,208	125,577	2.1%
7/1/2014	General	26,053	2,109,100,013	80,954	1.2%
	Safety	3,463	429,618,756	124,060	(1.2)%
7/1/2015	General	27,233	2,259,320,255	82,963	2.5%
	Safety	3,604	441,419,658	122,480	(1.3)%
7/1/2016	General	28,623	2,439,969,498	85,245	2.8%
	Safety	3,783	462,752,871	122,324	(0.1)%
7/1/2017	General	29,545	2,621,632,438	88,734	4.1%
	Safety	3,902	481,039,920	123,280	0.8%

1 July 1, 2008 through July 1, 2010 include DROP members. DROP members are excluded from July 1, 2011 forward. There are no active DROP members on or after July 1, 2016. Annual Covered Pay represents the sum of the annualized valuation salary for the prior fiscal year for each active member as of the July 1 valuation date.

RETIREES AND BENEFICIARIES IN PAYEE STATUS

	Added to Rolls		Removed from Rolls		Rolls at End of Year			
Fiscal Year	Member Count	Annual Allowance	Member Count	Annual Allowance	Member Count	Annual Allowance	% Increase in Annual Allowance	Average Annual Allowance
2007-08	1,269	44,225,244	881	23,553,431	21,514	691,842,055	1.2%	32,158
2008-09	1,545	60,356,100	765	20,550,523	22,294	755,029,081	9.1%	33,867
2009-10	2,004	85,601,938	798	22,483,938	23,500	834,425,915	10.5%	35,507
2010-11	1,672	66,575,560	880	24,641,442	24,292	905,053,471	8.5%	37,257
2011-12	1,769	70,868,367	871	26,958,609	25,190	982,250,287	8.5%	38,994
2012-13	1,577	66,437,220	733	22,406,077	26,034	1,045,547,799	6.4%	40,161
2013-14	1,588	65,923,470	770	25,170,856	26,852	1,103,959,803	5.6%	41,113
2014-15	1,564	63,136,134	931	29,314,643	27,485	1,157,081,680	4.8%	42,099
2015-16	1,657	72,049,646	856	30,384,191	28,286	1,247,230,245	7.8%	44,094
2016-17	1,769	80,214,008	928	35,082,179	29,127	1,332,430,263	6.8%	45,746

STATISTICAL SECTION

The Statistical Section provides financial and operational information in further detail to assist users in understanding trends in the basic financial statements, notes to basic financial statements, and required supplemental information.

Financial Information

- ***Additions to Pension Plan by Source*** reflects the various sources of income to SFERS
- ***Deductions to Pension Plan by Type*** displays the major expenses to SFERS which are benefits paid to members, refunds of employee contributions to members, and administrative expenses
- ***Changes in Fiduciary Net Position*** shows the changes in net position during each of the last 10 fiscal years
- ***Benefit Expenses of Pension Plan by Type*** details the benefits paid during the fiscal year due to retirements, disability, death, newly granted COLAs, and accruals for DROP

Operational Information

- ***Average Pension Benefit Payments*** highlights benefit levels paid to newly retired and disabled members with differing amounts of credited service
- ***Active Members by Employer*** compares the current active member counts for each SFERS cost-sharing employer to counts from 2012
- ***Employer Contribution Rates*** details the components that comprise the last ten years of employer contribution rates
- ***Employer and Employee Contribution Rates for Fiscal Year 2017-18*** shows the contribution rates for various member classes after application of the cost-sharing provisions of 2011 Proposition C

ADDITIONS TO PENSION PLAN BY SOURCE

(Dollars in thousands)

Fiscal Year Ending June 30	Member Contributions	Employer Contributions	Gross Return on Investments	Investment Expenses	Total
2009	192,964	126,101[1]	(3,475,740)	(37,110)	(3,193,785)
2010	189,948	223,614	1,699,307	(44,206)	2,068,663
2011	181,755	308,823	2,932,154	(44,579)	3,378,153
2012	198,160	410,797	124,942	(44,540)	689,359
2013	258,726	442,870	2,106,204	(41,654)	2,766,146
2014	289,020	532,882	3,223,030	(47,599)	3,997,333
2015	301,682	592,643	808,340	(44,911)	1,657,754
2016	322,764	526,805	197,216	(47,026)	999,759
2017	316,844	551,809	2,730,863	(47,395)	3,552,121
2018	364,696	619,067	2,599,555	(49,881)	3,533,437

1 Includes $6,350,000 transfer from CalPERS

DEDUCTIONS TO PENSION PLAN BY TYPE

(Dollars in thousands)

Fiscal Year Ending June 30	Benefits Paid	Refunds of Contributions	Administrative Expenses	Total
2009	732,342	6,714	12,951	752,007
2010	792,776	11,997	13,833	818,606
2011	889,744	11,548	14,808	916,100
2012	968,528	11,030	14,916	994,474
2013	1,023,354	9,453	15,518	1,048,325
2014	1,062,229	10,297	15,745	1,088,271
2015	1,118,691	12,339	19,262	1,150,292
2016	1,243,260	12,886	17,179	1,273,325
2017	1,264,633	13,507	18,134	1,296,274
2018	1,350,009	14,578	18,238	1,382,825

Together, the above two tables present the changes in fiduciary net position during each of the last 10 fiscal years. Total additions less total deductions equal the net increase or decrease in fiduciary net position.

CHANGES IN FIDUCIARY NET POSITION

(Dollars in thousands)

Fiscal Year Ending June 30	Additions	Deductions	Net Change	Fiduciary Net Position	
				Beginning of Year	End of Year
2009	(3,193,785)	752,007	(3,945,792)	15,832,521	11,886,729
2010	2,068,663	818,606	1,250,057	11,886,729	13,136,786
2011	3,378,153	916,100	2,462,053	13,136,786	15,598,839
2012	689,359	994,474	(305,115)	15,598,839	15,293,724
2013	2,766,146	1,048,325	1,717,821	15,293,724	17,011,545
2014	3,997,333	1,088,271	2,909,062	17,011,545	19,920,607
2015	1,657,754	1,150,292	507,462	19,920,607	20,428,069
2016	999,759	1,273,325	(273,566)	20,428,069	20,154,503
2017	3,552,121	1,296,274	2,255,847	20,154,503	22,410,350
2018	3,533,437	1,382,825	2,150,612	22,407,354	24,557,966

Note that 2018 fiscal year fiduciary net position at beginning of year was restated due to adoption of GASB No. 75.

BENEFIT PAYMENTS OF PENSION PLAN BY TYPE

(Dollars in thousands)

Fiscal Year	Retirement Benefits	Disability Benefits	Death Benefits	COLA Benefit Adjustments	DROP Accrued Retirement	Total
2009	539,917	140,804	11,031	36,447	4,143	732,342
2010	593,048	149,122	8,325	35,287	6,994	792,776
2011	662,277	154,631	8,234	48,514	16,088	889,744
2012	716,744	161,782	8,198	57,234	24,570	968,528
2013	770,521	168,365	8,387	54,816	21,265	1,023,354
2014	827,311	172,619	7,998	53,098	1,203	1,062,229
2015	878,834	175,620	7,492	51,447	5,298	1,118,691
2016	937,388	179,056	8,990	118,012	(186)	1,243,260
2017	994,408	184,376	11,163	74,890	(294)	1,264,633
2018	1,063,184	187,365	10,224	89,236	0	1,350,009

Fiscal year 2016 COLA benefits include retroactive supplemental COLA benefits for 2013 and 2014 paid after the October 2015 Superior Court judgment. See Note (12) of the Basic Financial Statements in the Financial Section for additional information. Benefit payments for the most recent fiscal year are provided in further detail in the Financial Section under Other Supplementary Information.

AVERAGE PENSION BENEFIT PAYMENT FOR RETIRED AND DISABLED MEMBERS

	Years of Credited Service					
Retirement Effective Dates	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30+
07/1/11 to 6/30/12						
Average Mo. Benefit	$ 899	$ 1,769	$ 2,675	$ 3,373	$ 5,084	$ 7,308
Average Final Comp.	$ 7,543	$ 7,050	$ 7,044	$ 7,099	$ 8,258	$ 9,405
Number	138	228	179	207	235	331
07/1/12 to 6/30/13						
Average Mo. Benefit	$ 909	$ 1,776	$ 2,792	$ 3,579	$ 5,720	$ 7,340
Average Final Comp.	$ 7,225	$ 6,982	$ 7,409	$ 7,564	$ 8,699	$ 9,758
Number	116	195	120	193	253	275
07/1/13 to 6/30/14						
Average Mo. Benefit	$ 980	$ 1,971	$ 2,812	$ 3,826	$ 5,720	$ 6,927
Average Final Comp.	$ 7,866	$ 7,214	$ 7,530	$ 7,905	$ 8,656	$ 9,143
Number	138	181	170	155	212	257
7/1/14 to 6/30/15						
Average Mo. Benefit	$ 969	$ 1,817	$ 2,930	$ 4,321	$ 5,237	$ 6,654
Average Final Comp.	$ 6,627	$ 6,844	$ 7,759	$ 8,267	$ 7,977	$ 8,827
Number	109	177	163	165	187	245
7/1/15 to 6/30/16						
Average Mo. Benefit	$ 1,051	$ 2,077	$ 2,906	$ 4,071	$ 5,716	$ 6,514
Average Final Comp.	$ 7,363	$ 8,266	$ 7,485	$ 8,404	$ 9,534	$ 9,016
Number	110	184	196	175	211	291
7/1/16 to 6/30/17						
Average Mo. Benefit	$ 1,113	$ 2,057	$ 3,184	$ 4,657	$ 6,138	$ 7,275
Average Final Comp.	$ 8,182	$ 7,989	$ 8,106	$ 9,205	$ 9,455	$ 9,651
Number	129	197	211	167	199	263
7/1/17 to 6/30/18						
Average Mo. Benefit	$ 1,150	$ 2,139	$ 3,293	$ 4,294	$ 6,762	$ 7,249
Average Final Comp.	$ 7,949	$ 8,229	$ 8,369	$ 8,647	$ 10,158	$ 9,590
Number	98	210	289	251	244	429

ACTIVE MEMBERS BY EMPLOYER

Employer	July 1, 2018	Percentage of System	July 1, 2012	Percentage of System
City and County of San Francisco[1]	31,718	93.4%	26,001	91.9%
San Francisco Unified School District	1,145	3.4%	1,180	4.2%
San Francisco Community College District	663	2.0%	686	2.4%
San Francisco Trial Courts	420	1.2%	415	1.5%
Total	**33,946**	**100.0%**	**28,282**	**100.0%**

1 Includes active DROP

EMPLOYER CONTRIBUTION RATES

Before Adjustment for Cost-Sharing Provisions[1]

Fiscal Year	Normal Cost	Remaining Cost of Propositions	Other UAL	Employee Contributions	Administrative Expenses	Total
2009	16.19%	3.42%	(7.55%)	(7.52%)	0.45%	4.99%
2010	18.16%	5.41%	(7.03%)	(7.50%)	0.45%	9.49%
2011	18.18%	5.53%	(3.09%)	(7.51%)	0.45%	13.56%
2012	17.90%	6.51%	0.73%	(7.50%)	0.45%	18.09%
2013	17.90%	6.21%	3.66%	(7.51%)	0.45%	20.71%
2014	17.91%	6.11%	7.88%	(7.53%)	0.45%	24.82%
2015	18.26%	5.99%	9.60%	(7.54%)	0.45%	26.76%
2016	18.38%	5.86%	5.65%	(7.54%)	0.45%	22.80%
2017	18.65%	5.69%	4.02%	(7.56%)	0.60%	21.40%
2018	18.56%	5.12%	6.75%	(7.57%)	0.60%	23.46%

1 Cost sharing provisions effective July 1, 2012 following passage of Proposition C in November of 2011

FISCAL YEAR 2017-2018 EMPLOYER AND EMPLOYEE CONTRIBUTION RATES

Employer and employee contribution rates are shown below after adjustment for the Proposition C cost-sharing provisions. Proposition C was passed by voters in the November 2011 election and established cost-sharing provisions between employee-members and employers. When the unadjusted employer contribution rates are higher than 12.00%, a portion of the employer contribution (up to 6.00%) is transferred to the member contribution rate. When unadjusted employer contribution rates are lower than 11.01%, a portion of the member contribution rate (up to 6.00%) would be transferred to the employer. Contribution rates are adjusted once a year based on the unadjusted employer contribution rate adopted by the Retirement Board and the member's hourly base rate of pay as of the June 30 prior to the effective date of the contribution rate.

Fiscal Year 2017-2018 Employer Contribution Rates

After Cost-Sharing Provisions

Member Group	Base Rate of Pay less than $28 per hour	Base Rate of Pay at or above $28 but less than $55 per hour	Base Rate of Pay at or above $55 per hour
Miscellaneous Non-Safety Plans	23.46%	19.96%	19.46%
Police and Firefighter Old Plans	18.96%	18.96%	18.96%
Police and Firefighter New Plans Tier I	18.96%	18.96%	18.96%
Police and Firefighter New Plans Tiers II and III	19.96%	19.96%	19.46%
Miscellaneous Safety and Sheriffs Plans	19.96%	19.96%	19.46%

Fiscal Year 2017-2018 Employee Contribution Rates

After Cost-Sharing Provisions

Member Group	Base Rate of Pay less than $28 per hour	Base Rate of Pay at or above $28 but less than $55 per hour	Base Rate of Pay at or above $55 per hour
Miscellaneous Old Plans	8.0%	11.5%	12.0%
Miscellaneous New Plans	7.5%	11.0%	11.5%
Police and Firefighter Old Plans	11.5%	11.5%	11.5%
Police and Firefighter New Plans Tier I	12.0%	12.0%	12.0%
Police and Firefighter New Plans Tiers II and III	12.5%	12.5%	13.0%
Miscellaneous Safety and Sheriffs Plans	12.5%	12.5%	13.0%

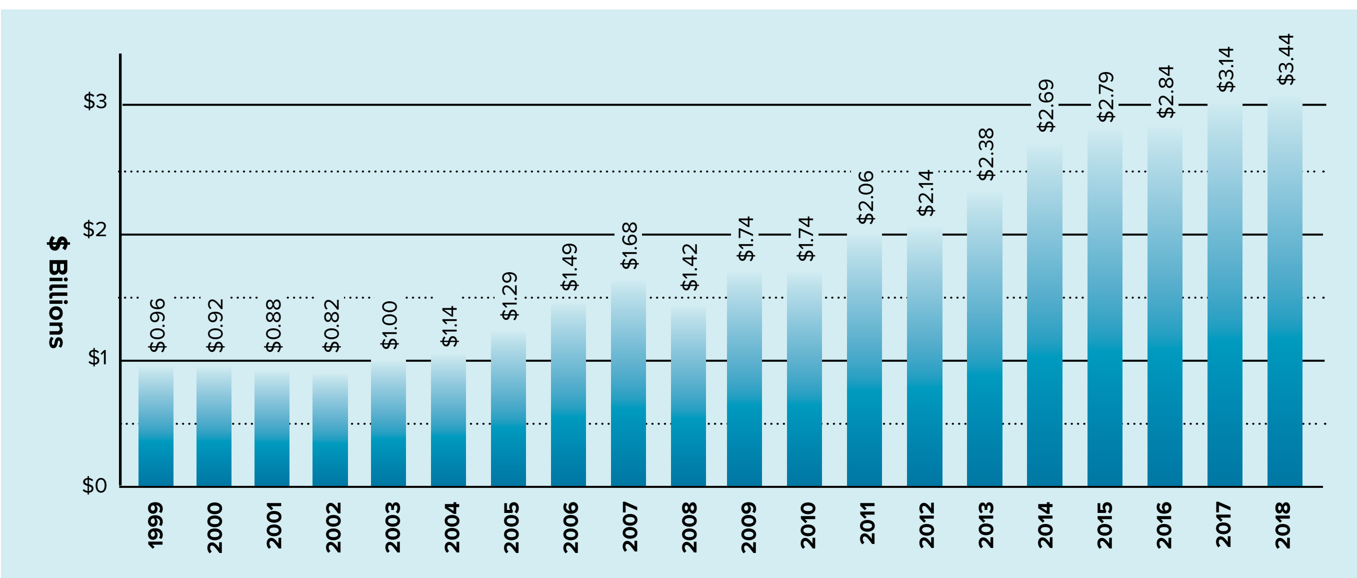
DEFERRED COMPENSATION PLAN (SFDCP)

The San Francisco 457(b) Deferred Compensation Plan (SFDCP) was adopted in 1979 to offer active members an opportunity to acquire additional retirement savings intended to complement pension benefits. The SFDCP allows City employees to voluntarily defer a portion of their regular earnings until after they retire or separate from service. This method of tax deferral has become increasingly popular and the Plan also offers Roth after-tax contributions. During the past fiscal year, total assets for the SFDCP grew at approximately 10%, and the average account balance per participant was $114,984.

The Plan provides a diverse selection of thirteen core investment funds, a suite of Target Date Funds, and access to a self-directed brokerage account. In addition to an enhanced line up of investment options, the SFDCP offers participants low fees, a customized website, client communications, online transactions, and dedicated retirement counselors available daily at the SFDCP office. Prudential Retirement currently serves as the Plan's third-party administrator.

As of June 30, 2018, there were 30,195 participants in the SFDCP with Plan assets valued at $3.472 billion. The following chart and table provide detailed information about the investments that make up the City's 457(b) Deferred Compensation Plan, as well as customer service and participation activity for the Fiscal Year 2017-18.

SFDCP Assets under Management



SFDCP Values as of June 30, 2018

Funds	Total Assets	Percent Of Total Assets	Annual Performance
SFDCP Stable Value Fund	$ 973,202,480	28.33%	1.89%
SFDCP Core Bond Fund	$ 162,287,078	4.72%	-0.16%
SFDCP Bond Index Fund[1,3]	$ 2,416,996	0.07%	0.47%
SFDCP Retirement Fund	$ 133,891,450	3.90%	3.53%
SFDCP Target Date 2020 Fund	$ 111,979,828	3.26%	3.93%
SFDCP Target Date 2025 Fund	$ 132,326,083	3.85%	5.05%
SFDCP Target Date 2030 Fund	$ 117,909,477	3.43%	6.77%
SFDCP Target Date 2035 Fund	$ 91,534,664	2.66%	9.13%
SFDCP Target Date 2040 Fund	$ 64,106,868	1.87%	10.36%
SFDCP Target Date 2045 Fund	$ 39,937,916	1.16%	10.36%
SFDCP Target Date 2050 Fund	$ 12,839,010	0.37%	10.36%
SFDCP Target Date 2055 Fund	$ 6,483,208	0.19%	10.36%
SFDCP Large Cap Value Equity Fund	$ 100,210,054	2.92%	7.84%
SFDCP Large Cap Equity - S&P 500 Index Fund	$ 282,395,106	8.22%	14.36%
SFDCP Large Cap Social Equity Fund	$ 46,015,463	1.34%	15.57%
SFDCP Large Cap Growth Equity Fund[5]	$ 541,112,327	15.75%	21.23%
SFDCP Active Equity Fund[6]	$ 131,617,716	3.83%	13.07%
SFDCP Small-Mid Cap Equity Index Fund[2, 4]	$ 198,606,415	5.78%	1.76%
SFDCP Small-Mid Cap Equity Fund[1, 2]	$ 738,254	0.02%	0.36%
SFDCP International Equity Fund	$ 234,039,447	6.81%	9.37%
SFDCP International Equity Index Fund[1, 3]	$ 3,518,193	0.10%	-3.20%
SFDCP Real Estate Fund	$ 34,350,905	1.00%	4.26%
Self Directed Brokerage	$ 14,066,474	0.41%	N/A
TOTAL PLAN ASSETS	**$ 3,435,585,412**	**100.00%**	

* Assets are rounded up to the nearest dollar
1 New investment option as of March 9, 2018
2 Since Inception performance return 03/09/18 through 06/30/18
3 Since Inception performance return 03/12/18 through 06/30/18
4 New investment option as of March 9, 2018 mapped from SFDCP Small Cap Core Equity Portfolio, SFDCP Small Cap Value Portfolio and SFDCP Small Cap Growth Portfolio
5 Includes assets mapped from SFDCP Large Cap Core Equity – Active Portfolio as of March 9, 2018
6 Formerly named SFDCP Mid Cap Core Equity Portfolio

SFDCP Statistics Summary

Plan Year Ended June 30, 2018

ASSET SUMMARY	
Beginning Assets July 1, 2017	$ 3,162,785,569
Contributions	167,496,643
Roll-ins	15,455,102
Less Distributions	(141,216,961)
Outstanding Loans	36,347,695
Ending Assets June 30, 2018[1]	**$ 3,471,933,105**
PARTICIPANT SUMMARY	
Beginning Participants July 1, 2017	28,583
New Participants	2,433
Actively Contributing Participants	19,318
Ending Participants June 30, 2018	**30,195**
SERVICE SUMMARY	
Group Meetings	610
Field and Office Individual Counseling Sessions	6,061
Customer Service Calls (IVR and Representatives)	22,003
Web Logins	436,566

* Data certified by Prudential Retirement Insurance and Annuity Company

1 Includes miscellaneous transactions, loan repayments and net appreciation (earnings)