**SAN FRANCISCO CITY AND COUNTY
EMPLOYEES' RETIREMENT SYSTEM**

Financial Statements and
Required Supplementary Information
(With Independent Auditor's Report Thereon)

Years Ended June 30, 2017 and 2016

Certified
Public
Accountants

SAN FRANCISCO CITY AND COUNTY
EMPLOYEES' RETIREMENT SYSTEM
Years Ended June 30, 2017 and 2016

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MGO Certified Public Accountants

Independent Auditor's Report

Retirement Board of San Francisco
City and County Employees' Retirement System
San Francisco, California

Report on the Financial Statements

We have audited the accompanying financial statements of the San Francisco City and County Employees' Retirement System ("Retirement System"), a pension trust fund of the City and County of San Francisco, California, as of and for the years ended June 30, 2017 and 2016, and the related notes to the financial statements, as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Retirement System as of June 30, 2017 and 2016, and the changes in its fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

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San Francisco, CA 94111

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Emphasis of Matter

As described in Note 1, the financial statements present only the Retirement System and do not purport to, and do not, present fairly the financial position of the City and County of San Francisco as of June 30, 2017 and 2016, 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.

As described in Note 2 to the financial statements, effective July 1, 2015, the Retirement System adopted the provisions of Governmental Accounting Standards Board (GASB) Statement No. 72, *Fair Value Measurement and Application*.

As discussed in Note 10 to the financial statements, the total pension liability based on the actuarial valuation as of June 30, 2016, rolled forward to June 30, 2017, exceeded the pension plan fiduciary net position by $5.0 billion. The actuarial valuation is very sensitive to the underlying assumptions, including the discount rate of 7.50%, which represents the long-term expected rate of return.

Our opinion is not modified with respect to these matters.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that management's discussion and analysis, the schedule of changes in the net pension liability and related ratios, the schedule of employer contributions, and the schedule of money-weighted rate of return, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audits of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 29, 2017 on our consideration of the Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters for the year ended June 30, 2017. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Retirement System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Retirement System's internal control over financial reporting and compliance.

Macias Gini É O'Connell LLP

San Francisco, California
December 29, 2017

The management of the City and County of San Francisco Employees' Retirement System (Retirement System) is pleased to provide this overview and analysis of the financial activities of its cost-sharing multiple-employer defined benefit pension plan (Plan) for the years ended June 30, 2017 and 2016. We encourage readers to consider the information presented here in conjunction with the *Financial Statements and Required Supplementary Information*, which follow this discussion. All amounts, unless otherwise indicated, are expressed in thousands of dollars.

Financial Highlights

Fiscal Year 2017

- The assets of the Retirement System exceeded its liabilities at the close of the year ended June 30, 2017. The Plan held $22,410,350 of net position restricted for pension benefits. All of the 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, 2017 measurement date, the fiduciary net position was 81.8% of the total pension liability.
- For the year ended June 30, 2017, the Retirement System's net investment income of $2,683,468 represents 13.3% of fiduciary net position as of the beginning of the fiscal year. Specifically, net appreciation in fair value of investments totaled $2,356,332 as a result of strong returns in all asset classes.
- Total net position held in trust for pension benefits increased by $2,255,847, or 11.2%, primarily as a result of strong investment returns which were slightly reduced by the net difference between contributions received by the Plan and increased benefit payments made from the Plan.
- Members' contributions to the Plan totaled $316,844, a decrease of $5,920 or 1.8% from the prior year. This decrease is primarily a result of lower employee contribution rates in fiscal year 2016-17 offset by increases in the number of active employees contributing to the Plan. Employee contribution rates in fiscal year 2016-17 ranged from 7.5% - 12.0%, while employee contribution rates from fiscal year 2015-16 ranged from 7.5% - 13.0%.
- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $551,809, an increase of $25,004 or 4.7% from the prior year.
- Total deductions from the Plan were $1,296,274, an increase of 1.8% from the prior year due to the increase in benefits paid during the current fiscal year.

Fiscal Year 2016

- The assets of the Retirement System exceeded its liabilities at the close of the year ended June 30, 2016. The Plan held $20,154,503 of net position restricted for pension benefits. All of the 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, 2016 measurement date, the fiduciary net position was 77.6% of the total pension liability.

- For the year ended June 30, 2016, the Retirement System's net investment income of $150,190 represents 0.7% of fiduciary net position as of the beginning of the fiscal year. Specifically, net appreciation in fair value of investments declined by $595,371 as a result of lower returns in all asset classes relative to the prior fiscal year.
- Total net position held in trust for pension benefits decreased by $273,566, or 1.3%, primarily as a result of market conditions and the net difference between contributions received by the Plan and increased benefit payments made from the Plan.
- Members' contributions to the Plan totaled $322,764, an increase of $21,082 or 7.0% from the prior year. This increase is primarily a result of increases in the number of active employees contributing to the Plan. Employee contribution rates in fiscal year 2015-16 were unchanged from fiscal year 2014-15, ranging from 7.5% - 13.0%.
- In order to maintain the fiscal soundness of the Plan, required employer contributions to the Plan totaled $526,805, a decrease of $65,838 or 11.1% from the prior year.
- Total deductions from the Plan were $1,273,325, an increase of 10.7% from the prior year due to the increase in benefits paid during the current fiscal year.

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 years – June 30, 2017 and 2016. They indicate the total assets, total liabilities and the net position restricted for future payment of retirement benefits and operating expenses as of June 30, 2017 and 2016.
2. ***Statements of Changes in*** Fiduciary ***Net Position*** provide a view of additions to and deductions from the Plan during the years ended June 30, 2017 and 2016.
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 of this report.

(Dollar amounts in thousands)

Financial Analysis

The Plan's net position may serve over time as a useful indication of the Plan's financial position. The assets of the Plan exceeded its liabilities at June 30, 2017 and 2016. 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, 2017, 2016, and 2015 are represented in the table below:

Net Position Summary – June 30, 2017, 2016, and 2015

	2017	2016	2015
Other assets	$ 256,857	$ 164,233	$ 305,801
Investments at fair value	22,319,815	20,980,136	21,540,021
Total assets	22,576,672	21,144,369	21,845,822
Total liabilities	166,322	989,866	1,417,753
Fiduciary net position	$ 22,410,350	$ 20,154,503	$ 20,428,069

As of June 30, 2017, the Plan's total net position held in trust for pension benefits increased by $2,255,847 or 11.2% for the year, primarily due to strong investment returns as a result of the improvement in financial market conditions. Payables to brokers increased by $39,651 and payables to borrowers of securities decreased by $863,430 due to the timing of investment trades and lending activities.

As of June 30, 2016, the Plan's total net position held in trust for pension benefits decreased by $273,566 or 1.3% for the year, primarily due to investment returns that did not offset the net difference between contributions received by the Plan and benefit payments made from the Plan. Payables to brokers decreased by $266,557 and payables to borrowers of securities decreased by $138,010 due to the timing of investment trades and lending activities.

The Retirement Board believes that the Plan remains in a strong financial position to meet its obligations to the Plan members and beneficiaries. For fiscal year 2016-2017, although the Fed raised rates three times, both it and international central banks remain quite accommodative, helping support strong equity gains globally. U.S. equities posted their eighth consecutive positive year with a +17.9% return as measured by the S&P 500 Index. International developed-markets equities outperformed domestic equities by 2.4% as European equity returns overcame political uncertainty and reflected signs of economic recovery. Emerging markets equities outperformed both U.S. and developed-international equities by 5.8% and 3.4% respectively. U.S. high quality fixed income investments produced a negative return (-0.3%), measured by the Bloomberg Barclays U.S. Aggregate Bond Index, driven lower by 10 year U.S. Treasury yields spiking in the wake of U.S. elections. High quality global bonds declined -4.1% on a U.S. dollar basis.

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 Net Position – Years ended June 30, 2017, 2016, and 2015
(Dollars in thousands)

	2017	2016	2015
Additions:			
Member contributions	$ 316,844	$ 322,764	$ 301,682
Employer contributions	551,809	526,805	592,643
Interest	159,065	188,292	209,520
Dividends	209,951	219,529	214,636
Net appreciation (depreciation) in fair value of investments	2,356,332	(216,852)	378,519
Securities lending income	9,004	7,562	4,869
Investment expenses	(47,395)	(47,026)	(44,911)
Securities lending borrower rebates and expenses	(3,489)	(1,315)	796
Total additions	3,552,121	999,759	1,657,754
Deductions:			
Benefits	1,264,633	1,243,260	1,118,691
Refunds of contributions	13,507	12,886	12,339
Administrative expenses	16,586	16,079	18,108
Other administrative expenses - OPEB	1,548	1,100	1,154
Total deductions	1,296,274	1,273,325	1,150,292
Change in fiduciary net position	2,255,847	(273,566)	507,462
Fiduciary net position - beginning of the year	20,154,503	20,428,069	19,920,607
Fiduciary net position - end of the year	$ 22,410,350	$ 20,154,503	$ 20,428,069

Fiscal Year 2017

- Members' contributions to the Plan totaled $316,844 for the year ended June 30, 2017, which is a decrease of $5,920 or 1.8% from the prior year. This decrease is primarily a result of lower employee contribution rates in fiscal year 2016-17 offset by an increase in the number of active employees contributing to the Plan. Employee contribution rates in fiscal year 2016-17 ranged from 7.5% - 12.0%, while employee contribution rates in fiscal year 2015-16 ranged from 7.5% - 13.0%.
- In order to maintain the fiscal soundness of the Plan, $551,809 in required employer contributions were made during the year ended June 30, 2017. The increase of $25,004 in required employer contributions reflects the increase in active members and covered payroll offset by a decrease in the employer contribution rates, which ranged from 17.90% to 21.40% in fiscal year 2016-17 and 18.30% to 22.80% in fiscal year 2015-16.

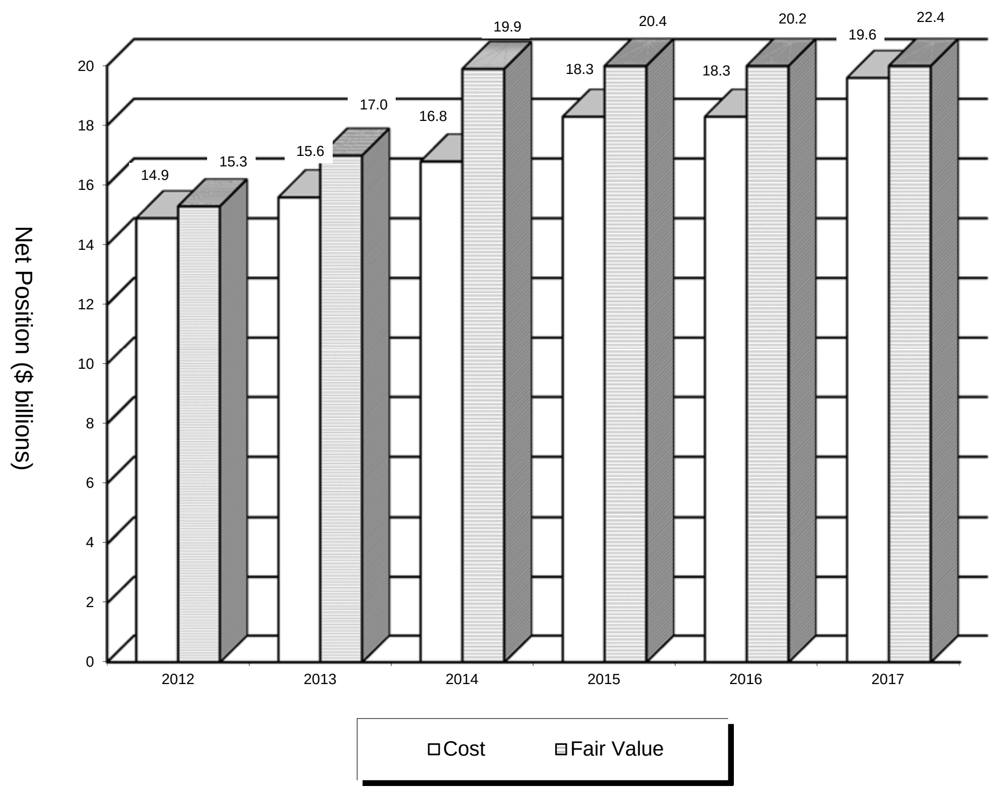
- Net investment income increased by $2,533,278 from the prior year. The majority of the increase is attributed to the $2,573,184 increase in net appreciation in fair value of investments primarily due to strong investment returns in all of the asset classes that the Retirement System invests in. Interest income decreased by $29,227, due mainly to the domestic fixed income market.
- Benefit payments to Plan participants increased by $21,373 or 1.7%, primarily due to new retirements and cost-of-living increases. The increase over fiscal year 2015-16 benefit payments is modest because fiscal year 2015-16 payments included one-time retroactive Supplemental COLAs paid as a result of the Court decision that removed the "fully funded" requirement for certain SFERS retired members.
- Accrued DROP retirement benefits decreased by $300 reflecting the wind down of the program as a result of the program being closed to new participants as of July 1, 2011.

Fiscal Year 2016

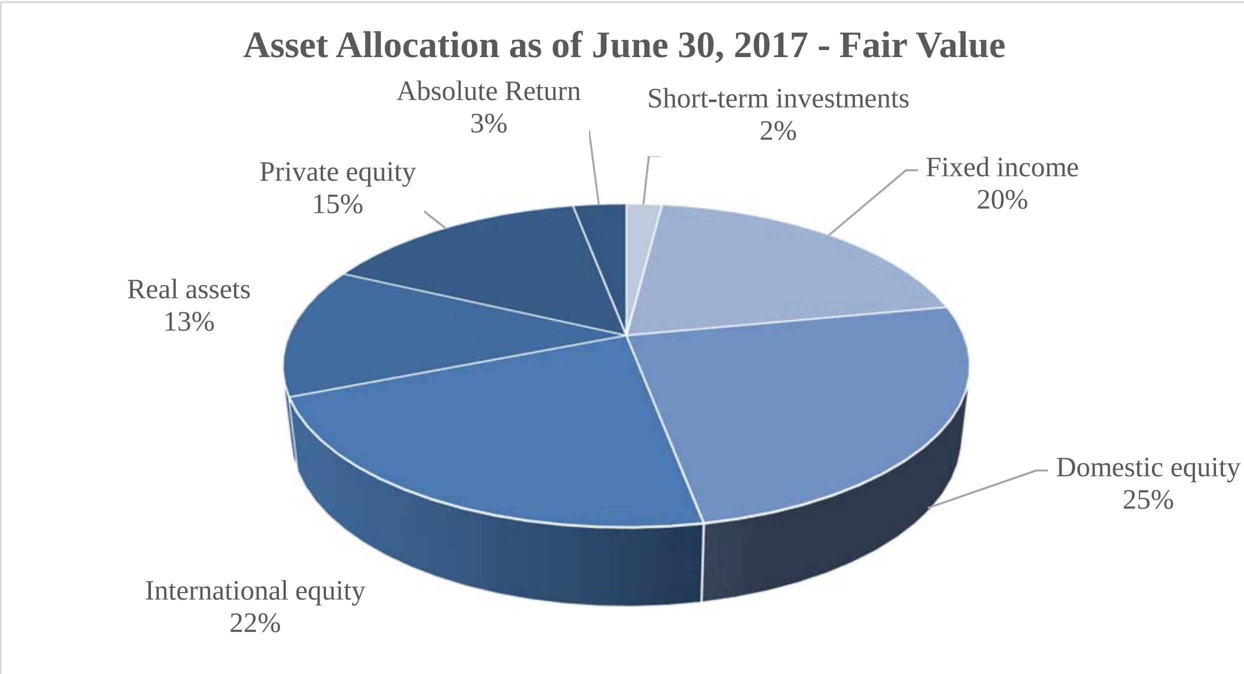
- Member contributions for the year ended June 30, 2016 increased by $21,082 or 7.0% from the prior year. This increase is primarily a result of increases in the number of active employees contributing to the Plan and in employee contribution rates, which ranged from 7.5% - 13.0% in fiscal year 2015-16.
- In order to maintain the fiscal soundness of the Plan, $526,805 in required employer contributions were made during the year ended June 30, 2016. The decrease of $65,838 in required employer contributions reflect a decrease in the employer contribution rates, which ranged from 18.30% to 22.80% in fiscal year 2015-16 and 22.26% to 26.76% in fiscal year 2014-15.
- Net investment income decreased by $613,239 from the prior year. The majority of the decrease is attributed to the $595,371 decline in net appreciation in fair value of investments primarily due to lower investment returns in all of the asset classes that the Retirement System invests in. Interest income decreased by $21,228, due mainly to the domestic fixed income market.
- Benefit payments to Plan participants increased by $124,569 or 11.1%, primarily due to retroactive Supplemental COLAs paid as of a result of the Court decision that removed the "fully funded" requirement for SFERS members who retired after November 6, 1996 and were hired before January 7, 2012.
- Accrued DROP retirement benefits decreased by $878 reflecting the wind down of the program as a result of the program being closed to new participants as of July 1, 2011.

Fiduciary net position as of June 30, 2012 through 2017 expressed at cost and fair value are represented in the chart below:

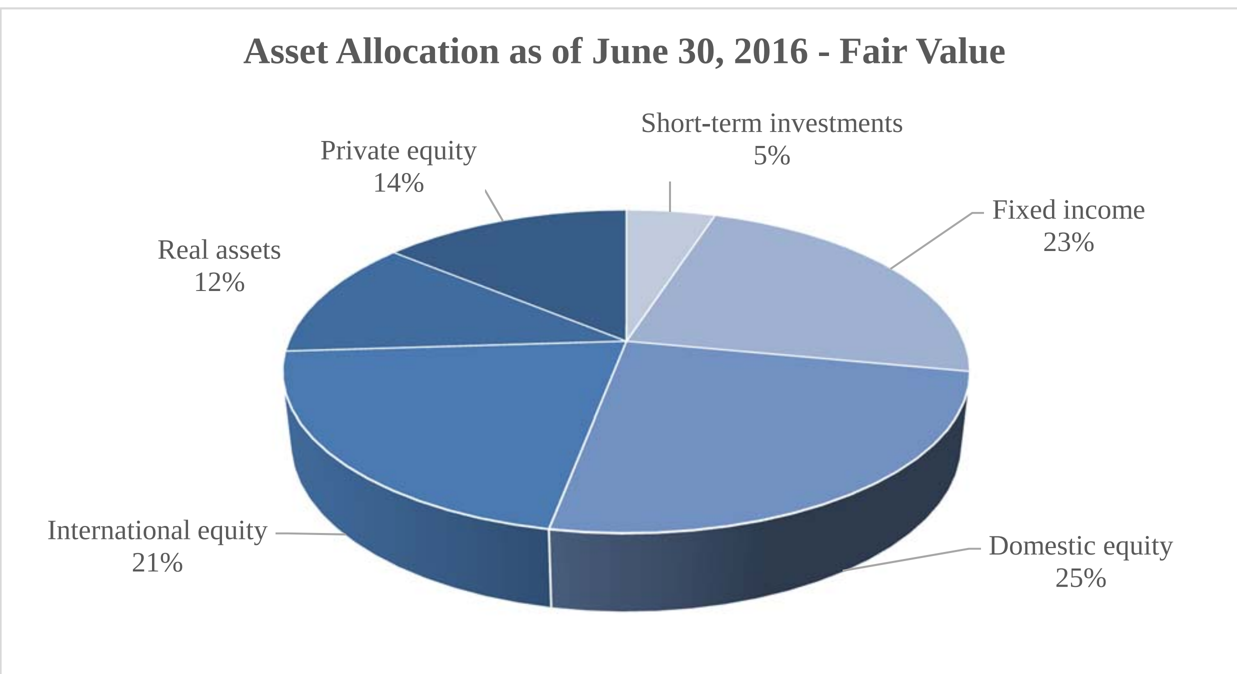
Fiduciary Net Position as of June 30 ($billions)



The asset allocation at fair value based on holdings (excluding securities lending collateral and foreign currency contracts) as of June 30, 2017 is represented in the chart below:



The asset allocation at fair value based on holdings (excluding securities lending collateral and foreign currency contracts) as of June 30, 2016 is represented in the chart below:



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 years ended June 30, 2017 and 2016. 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

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM
Statements of Fiduciary Net Position
June 30, 2017 and 2016
(In thousands)

	2017	2016
Assets:		
Deposits	$ 65,697	$ 43,521
Contributions receivable - members	11,594	10,908
Investment income receivable:		
Interest	20,988	21,831
Dividends	12,496	20,643
Securities lending	287	641
Receivable from brokers, general partners, and others	145,795	66,689
Investments at fair value:		
Short-term investments	347,744	1,009,676
City investment pool	11,800	6,656
Debt securities:		
U.S. government and agency securities	1,555,180	1,648,271
Other debt securities	2,891,222	3,068,745
Equity securities:		
Domestic	5,666,244	4,970,838
International	4,891,772	4,304,025
Real assets	2,975,974	2,341,500
Private equity	3,401,547	2,750,619
Absolute return	577,967	-
Foreign currency contracts, net	164	14,125
Invested securities lending collateral	201	865,681
Total investments	22,319,815	20,980,136
Total assets	22,576,672	21,144,369
Liabilities:		
Payable to brokers	147,095	107,444
Deferred retirement option program	313	613
Other	18,808	18,273
Payable to borrowers of securities	106	863,536
Total liabilities	166,322	989,866
Fiduciary net position – restricted for pension benefits	$ 22,410,350	$ 20,154,503

See accompanying notes to financial statements.

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM
Statements of Changes in Fiduciary Net Position
Years Ended June 30, 2017 and 2016
(In thousands)

	2017	2016
Additions:		
Member contributions		
Miscellaneous	$ 262,647	$ 266,929
Police	31,085	32,345
Fire	23,112	23,490
Total member contributions	316,844	322,764
Employer contributions		
Miscellaneous	465,671	442,184
Police	49,640	49,164
Fire	36,498	35,457
Total employer contributions	551,809	526,805
Investment income (expenses)		
Interest	159,065	188,292
Dividends	209,951	219,529
Net appreciation (depreciation) in fair value of investments	2,356,332	(216,852)
Securities lending income	9,004	7,562
Investment expenses	(47,395)	(47,026)
Securities lending borrower rebates and expenses	(3,489)	(1,315)
Net investment income	2,683,468	150,190
Total additions	3,552,121	999,759
Deductions:		
Benefits	1,264,633	1,243,260
Refunds of contributions	13,507	12,886
Administrative expenses	16,586	16,079
Other administrative expenses - other postemployment benefits	1,548	1,100
Total deductions	1,296,274	1,273,325
Net increase (decrease) in net position	2,255,847	(273,566)
Fiduciary net position – restricted for pension benefits		
Beginning of year	20,154,503	20,428,069
End of year	$ 22,410,350	$ 20,154,503

See accompanying notes to financial statements.

(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, 2017 and 2016, 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

Miscellaneous Non-Safety Members who became members prior to July 1, 2010 qualify for a service retirement benefit if they are at least 50 years old and have at least 20 years of credited service or if they are at least 60 years old and have at least 10 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest one-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 75% of the member's final compensation.

Miscellaneous Non-Safety Members who became members on or after July 1, 2010 and prior to January 7, 2012 qualify for a service retirement benefit if they are at least 50 years old and have at least 20 years of credited service or if they are at least 60 years old and have at least 10 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest two-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 75% of the member's final compensation.

Miscellaneous Non-Safety Members who became members on or after January 7, 2012 qualify for a service retirement benefit if they are at least 53 years old and have at least 20 years of credited service or if they are at least 60 years old and have at least 10 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest three-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 75% of the member's final compensation.

Sheriff's Department Members and Miscellaneous Safety Members who were hired on or after January 7, 2012 qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest three-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan before November 2, 1976 qualify for a service retirement benefit if they are at least 50 years old and have at least 25 years of credited service. The service retirement benefit is calculated using the member's final compensation (monthly salary earnable at the rank or position the member held for at least one year immediately prior to retiring) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan on or after November 2, 1976 and prior to July 1, 2010 qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest one-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan on or after July 1, 2010 and prior to January 7, 2012 qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest two-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

Firefighter Members and Police Members who became members of the Plan on or after January 7, 2012 qualify for a service retirement benefit if they are at least 50 years old and have at least 5 years of credited service. The service retirement benefit is calculated using the member's final compensation (highest three-year average monthly compensation) multiplied by the member's years of credited service times the member's age factor up to a maximum of 90% of the member's final compensation.

(c) Disability Retirement

Miscellaneous Non-Safety 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. The disability retirement benefit is calculated using the member's average final compensation multiplied by the member's years of credited service times the disability factor (1.8) up to a maximum of 75% of average final compensation.

Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members are eligible to apply for an industrial disability retirement benefit from their first day on the job in firefighter or police service if their disability is caused by an illness or injury that they receive while performing their duties. The industrial disability retirement benefit is based on the member's average final compensation multiplied by the permanent disability rating (from 50% to 90%) or the member's service retirement benefit if the member is eligible for a service retirement.

Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members are eligible to apply for an ordinary disability retirement benefit, regardless of age, when they have 10 or more years of credited service and they sustain an injury or illness that is not caused by their work, but that prevents them from performing their duties. The disability retirement benefit is calculated using 1.5% of the member's average final compensation multiplied by years of credited service subject to a minimum of 33.3% and a maximum (75% to 90%).

(d) Separation and Death Benefits

<u>Separation from Employment</u>

Upon separation from City employment, **Miscellaneous Non-Safety 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 contributions in the Plan and receive a vesting benefit that is first payable at or after age 50 for members hired prior to January 7, 2012 or at or after age 53 for members hired on or after January 7, 2012. Miscellaneous members hired before November 2, 1976 need 10 years of credited service to elect the vesting option.

Upon separation from City employment, **Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety 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 contributions in the Plan and receive a deferred benefit that is first payable at or after age 50.

Death Benefits Prior to Retirement

Generally, upon the death of an active employee who is eligible for a service retirement, the Retirement System provides continuation benefits to a qualified surviving spouse or qualified domestic partner equal to 50% to 100% of the member's retirement allowance that the member would have received had he or she retired on the date of death.

For qualified surviving spouses and qualified domestic partners of **Firefighter Members, Police Members, Sheriff Members, and Miscellaneous Safety Members** who die prior to becoming eligible for service retirement and whose death is due to an injury received in or illness caused by the performance of duty, salary continuation is provided to the qualified survivor until such time as the member would have qualified for service retirement had he or she lived at which time a continuation benefit equal to 100% of the member's service retirement allowance is provided to the qualified survivor.

A lump sum death payment equal to 6 months' earnable salary plus the member's accumulated contributions is provided upon the death of an active employee not yet eligible for a service retirement to the member's named beneficiary or estate.

Death Benefits after Retirement

Generally, upon the death of a retired member, the Retirement System provides continuation benefits to a qualified surviving spouse or qualified domestic partner equal to 50% to 100% of the member's retirement allowance as of the date of death.

(e) Cost of Living Adjustments (COLA)

Basic COLA

Miscellaneous Non-Safety Members receive a benefit adjustment each July 1 equal to the percentage increase or decrease in the Consumer Price Index (CPI) rounded to the nearest 1%, to a maximum of 2% of the member's previous June 30 retirement benefit. If the CPI decreases in a particular year, however, the negative adjustment cannot reduce a member's monthly retirement benefit below the initial pension amount.

Firefighter Members and Police Members who became members of the Plan before November 2, 1976 receive a benefit adjustment each July 1 equal to 50% of the actual dollar or percentage increase or decrease 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.

Firefighter Members and Police Members who became members of the Plan on or after November 2, 1976 and Sheriff Members and Miscellaneous Safety Members receive a benefit adjustment each July 1 equal to the percentage increase or decrease in the CPI rounded to the nearest 1%, to a maximum of 2% of the member's previous June 30 retirement benefit. If the CPI decreases in a particular year; however, the negative adjustment cannot reduce a member's monthly retirement benefit below the initial pension amount.

(Dollar amounts in thousands)

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, Retirement System 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 Retirement System members who retired 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.

(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 continued to work and receive pay as a police officer and accrued 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 were 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 and $613 pursuant to the DROP as of June 30, 2017 and 2016, respectively.

(g) Membership

Membership of the Retirement System consisted of the following as of June 30, 2017:

	Police[1]	Fire	Miscellaneous	Total
Retirees and beneficiaries currently receiving benefits	2,647	2,075	24,399	29,121
Active members	2,293	1,609	29,545	33,447
Terminated members entitled to but not yet receiving benefits	199	75	8,146	8,420
Total	5,139	3,759	62,090	70,988

[1] Police counts include Sheriff and Miscalleneous Safety.

(Dollar amounts in thousands)

Membership of the Retirement System consisted of the following as of June 30, 2016:

	Police[1]	Fire	Miscellaneous	Total
Retirees and beneficiaries currently receiving benefits	2,639	2,069	23,595	28,303
Active members	2,260	1,572	29,598	33,430
Terminated members entitled to but not yet receiving benefits	131	71	6,615	6,817
Total	5,030	3,712	59,808	68,550

[1] Police counts include Sheriff and Miscalleneous 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 limits 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 $7,425 as of June 30, 2017, and $492,212, including $26,665 in recourse debt, as of June 30, 2016. 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 investments represent the Retirement System's interest in limited partnerships. The fair values of private equity investments are based on net asset values provided by the general partners. 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 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, 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. The collateral may consist of cash or non-cash; non-cash collateral is generally U.S. Treasuries or other U.S. government obligations. The Retirement System's securities custodian is the agent in lending the Plan's domestic securities for collateral of 102% and international securities for collateral of 105%. Contracts with the lending agent require them to indemnify the Retirement System if the borrowers fail to return the securities (and if the collateral were inadequate to replace the securities lent) or fail to pay the Retirement System for income distributions by the securities' issuers while the securities are on loan. Non-cash collateral cannot be pledged or sold unless the borrower defaults, and therefore, is not reported in the Retirement System's financial statements.

All securities loans can be terminated on demand by either the Retirement System or the borrower, although the average term of the loans as of June 30, 2017 and 2016 was 31 days and 78 days, respectively. All cash collateral received was invested in a separately managed account by the lending agent using investment guidelines developed and approved by the Retirement System. As of June 30, 2017 and 2016, the weighted average maturity of the reinvested cash collateral account was 1 day and 25 days, respectively. The term to maturity of the loaned securities is generally not matched with the term to maturity of the investment of the said collateral. Cash collateral may also be invested separately in term loans, in which case the maturity of the loaned securities matches the term of the loan.

Cash collateral invested in the separate account managed by the lending agent is reported at fair value. Payable to borrowers of securities in the statements of fiduciary net position represents the cash collateral received from borrowers. Additionally, the income and costs of securities lending transactions, such as borrower rebates and fees, are recorded respectively as revenues and expenses in the statements of changes in fiduciary net position.

(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 and liabilities 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) Implementation of GASB Statement

The Retirement System adopted GASB Statement No. 72, *Fair Value Measurement and Application.* This Statement addresses accounting and financial reporting issues related to fair value measurements. GASB Statement No. 72 requires the Retirement System to use valuation techniques that are appropriate under the circumstances and for which sufficient data are available to measure fair value. The techniques should be consistent with one or more of the following approaches: the market approach, the cost approach, or the income approach. This statement establishes a three-tier hierarchy of inputs to valuation techniques used to measure fair value.

- Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly.
- Level 3 inputs are all inputs that are unobservable.

The Retirement System's implementation of this statement effective July 1, 2015 has no material impact on the financial statements. The additional disclosures and related notes are presented in Note 5.

(3) Deposits

Deposits are carried at cost, which approximates fair value. Deposits in bank accounts were $65,697 and $43,521 as of June 30, 2017, and 2016, respectively.

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, 2017 and 2016, the Retirement System's deposits in bank accounts were not exposed to custodial credit risk.

(Dollar amounts in thousands)

(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 years ended June 30, 2017 and 2016 are as follows:

Asset Class	Target Allocation through January 2015	Target Allocation since February 2015
Global Equity	47.0%	40.0%
Fixed Income	25.0%	20.0%
Private Equity	16.0%	18.0%
Real Assets	12.0%	17.0%
Hedge Funds/Absolute Return	0%	5.0%
	100.0%	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. In addition, the Retirement System's securities lending cash collateral separately managed account is authorized to use repurchase arrangements. As of June 30, 2017 and 2016, none of reinvested cash collateral and $419,000 (or 48.4%) of reinvested cash collateral, respectively, consisted of such agreements.

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, 2017 and 2016.

(Dollar amounts in thousands)

(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.

Below are tables depicting the segmented time distribution for fixed income investments based upon the expected maturity (in years) as of June 30, 2017 and 2016.

Investments at Fair Value as of June 30, 2017

		Maturities			
Investment Type	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Asset Backed Securities	$ 163,350	$ -	$ 69,301	$ 8,992	$ 85,057
Bank Loans	148,645	1,870	79,302	67,473	-
City Investment Pool	11,800	-	11,800	-	-
Collateralized Bonds	184	-	-	-	184
Commercial Mortgage-Backed	425,755	-	5,124	4,298	416,333
Commingled and Other Fixed Income Funds	373,993	387,199	1,084	117	(14,407)
Corporate Bonds	1,421,430	532,928	401,830	321,188	165,484
Corporate Convertible Bonds	189,953	7,342	105,315	42,489	34,807
Foreign Currencies and Cash Equivalents	134,745	134,745	-	-	-
Government Agencies	371,575	360,801	-	544	10,230
Government Bonds	1,116,583	44,633	876,704	47,440	147,806
Government Mortgage-Backed Securities	144,202	11	10,387	4,210	129,594
Municipal/Provincial Bonds	33,513	2,618	3,052	1,551	26,292
Non-Government Backed Collateralized Mortgage Obligations	55,790	3	2,511	1	53,275
Options	(12)	(12)	-	-	-
Short Term Investment Funds	212,999	212,999	-	-	-
Swaps	1,441	1,034	11	271	125
Total	$ 4,805,946	$ 1,686,171	$ 1,566,421	$ 498,574	$ 1,054,780

(Dollar amounts in thousands)

Investments at Fair Value as of June 30, 2016

		Maturities			
Investment Type	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Asset Backed Securities	$ 178,327	$ -	$ 57,102	$ 11,880	$ 109,345
Bank Loans	139,680	1,240	106,587	31,853	-
City Investment Pool	6,656	-	6,656	-	-
Collateralized Bonds	167	-	-	-	167
Commercial Mortgage-Backed	438,764	6,254	6,708	5,558	420,244
Commingled and Other Fixed Income Funds	231,780	264,114	569	51	(32,954)
Corporate Bonds	1,627,327	580,310	443,592	437,779	165,646
Corporate Convertible Bonds	293,360	3,460	197,038	35,709	57,153
Foreign Currencies and Cash Equivalents	144,456	144,456	-	-	-
Government Agencies	971,329	952,962	368	-	17,999
Government Bonds	589,416	150,467	278,583	43,497	116,869
Government Mortgage-Backed Securities	145,030	-	10,819	-	134,211
Index Linked Government Bonds	1,359	-	-	1,243	116
Municipal/Provincial Bonds	40,049	-	9,182	1,628	29,239
Non-Government Backed Collateralized Mortgage Obligations	59,543	-	2,376	2,033	55,134
Options	(64)	(64)	-	-	-
Short Term Investment Funds	865,219	865,219	-	-	-
Swaps	950	(78)	831	197	-
Total	$ 5,733,348	$ 2,968,340	$ 1,120,411	$ 571,428	$ 1,073,169

(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.

(Dollar amounts in thousands)

The following table illustrates the Retirement System's exposure to credit risk as of June 30, 2017. Investments issued or explicitly guaranteed by the U.S. government of $1,021,676 as of June 30, 2017 are exempt from the credit rating disclosures and are excluded from the table below.

Credit Ratings of Fixed Income Investments as of June 30, 2017

Credit Rating		Fair Value	Fair Value as a Percentage of Total
AAA	$	166,573	4.4%
AA		46,442	1.2%
A		203,966	5.4%
BBB		708,834	18.7%
BB		239,996	6.3%
B		252,346	6.7%
CCC		53,906	1.4%
CC		2,424	0.1%
C		2,279	0.1%
D		1,766	0.0%
Not Rated		2,105,738	55.7%
Total	$	3,784,270	100.0%

The following table illustrates the Retirement System's exposure to credit risk as of June 30, 2016. Investments issued or explicitly guaranteed by the U.S. government of $505,310 as of June 30, 2016 are exempt from the credit rating disclosures and are excluded from the table below.

Credit Ratings of Fixed Income Investments as of June 30, 2016

Credit Rating		Fair Value	Fair Value as a Percentage of Total
AAA	$	164,327	3.1%
AA		72,743	1.4%
A		247,306	4.7%
BBB		683,951	13.1%
BB		322,941	6.2%
B		294,025	5.6%
CCC		79,658	1.5%
CC		1,956	0.0%
C		4,240	0.1%
D		4,159	0.1%
Not Rated		3,352,732	64.2%
Total	$	5,228,038	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 20.2% for 2017 and 12.7% for 2016.

(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. Guidelines for investment managers typically restrict a position to become no more than 5% (at fair value) of the investment manager's portfolio. Securities issued or guaranteed by the U.S. government or its agencies are exempt from this limit.

As of June 30, 2017 and 2016, 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, 2017 and 2016, $759,574 and $153,613, respectively, 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.

For fiscal years 2017 and 2016, cash received as securities lending collateral is invested in a separate account managed by the lending agent using investment guidelines approved by the Retirement System and held by the custodial bank. Securities in this separately managed account are not exposed to custodial credit risk.

(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 investments, 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. Derivatives are considered investments, rather than hedges, for accounting and financial reporting purposes.

(Dollar amounts in thousands)

The Retirement System's net exposures to foreign currency risk as of June 30, 2017 are as follows:

Foreign Currency Risk Analysis as of June 30, 2017

Currency	Cash	Equities	Fixed Income	Private Equities	Real Assets	Foreign Currency Contracts	Total
Argentine peso	$ -	$ -	$ 3,528	$ -	$ -	$ 149	$ 3,677
Australian dollar	-	105,175	25	9,501	-	51	114,752
Brazilian real	-	20,912	23,388	-	-	(10,227)	34,073
British pound sterling	-	632,031	5,258	4,895	19,722	(5,307)	656,599
Canadian dollar	-	76,518	3,158	-	-	747	80,423
Chilean peso	-	532	2,384	-	-	(241)	2,675
Colombian peso	-	-	8,122	-	-	1,342	9,464
Czech koruna	-	1,582	2,758	-	-	1,209	5,549
Danish krone	-	43,245	-	-	-	(170)	43,075
Euro	-	944,005	79,140	150,551	103,487	(36,342)	1,240,841
Offshore Chinese yuan renminbi	-	-	-	-	-	(1,285)	(1,285)
Hong Kong dollar	-	181,729	-	-	-	(140)	181,589
Hungarian forint	-	-	-	-	-	2,166	2,166
Indian rupee	-	-	-	-	-	764	764
Indonesian rupiah	-	9,348	11,046	-	-	2,846	23,240
Japanese yen	89	688,598	-	-	43,686	(2,132)	730,241
Kenyan shilling	-	836	-	-	-	-	836
Malaysian ringgit	-	11,238	6,740	-	-	1,807	19,785
Mexican peso	-	10,314	9,232	-	-	5,338	24,884
New Israeli shekel	-	12,885	-	-	-	-	12,885
New Romanian leu	-	-	2,007	-	-	262	2,269
New Taiwan dollar	-	56,942	-	-	-	(2,332)	54,610
New Zealand dollar	-	2,233	-	-	-	-	2,233
Norwegian krone	-	12,969	-	-	-	-	12,969
Peruvian nuevo sol	-	-	4,648	-	-	168	4,816
Philippine peso	-	537	506	-	-	(57)	986
Polish zloty	-	-	10,316	-	-	5,803	16,119
Qatari riyal	-	3,114	-	-	-	-	3,114
Russian ruble	-	-	7,805	-	-	36	7,841
Singapore dollar	-	15,658	-	-	-	(592)	15,066
South African rand	-	22,378	11,508	-	-	(878)	33,008
South Korean won	-	104,362	-	-	-	(732)	103,630
Swedish krona	-	88,894	399	-	-	-	89,293
Swiss franc	-	250,421	243	-	-	(872)	249,792
Thai baht	-	7,125	118	-	-	9,928	17,171
Turkish lira	-	13,100	6,754	-	-	4,628	24,482
United Arab Emirates dirham	-	3,690	-	-	-	-	3,690
Uruguayan peso uruguayo	-	-	389	-	-	-	389
Total	$ 89	$ 3,320,371	$ 199,472	$ 164,947	$ 166,895	$ (24,063)	$ 3,827,711

(Dollar amounts in thousands)

The Retirement System's net exposures to foreign currency risk as of June 30, 2016 are as follows:

Foreign Currency Risk Analysis as of June 30, 2016

Currency	Equities	Fixed Income	Private Equity	Real Asset	Foreign Currency Contracts	Total
Australian dollar	$ 103,293	$ -	$ 10,641	$ -	$ 2,650	$ 116,584
Brazilian real	26,060	19,870	-	-	(5,475)	40,455
British pound sterling	533,900	12,635	-	18,874	(45,288)	520,121
Canadian dollar	69,596	6,851	-	-	30,932	107,379
Chilean peso	2,012	-	-	-	94	2,106
Chinese yuan renminbi	-	-	-	-	(1,582)	(1,582)
Colombian peso	-	5,451	-	-	1,872	7,323
Czech koruna	337	-	-	-	(101)	236
Danish krone	39,118	-	-	-	(1,423)	37,695
Euro	745,341	108,816	148,583	39,685	(66,038)	976,387
Offshore Chinese yuan renminbi	-	-	-	-	(1,052)	(1,052)
Hong Kong dollar	162,696	-	-	-	3,862	166,558
Hungarian forint	327	-	-	-	2,515	2,842
Indian rupee	-	-	-	-	564	564
Indonesian rupiah	11,124	10,163	-	-	1,100	22,387
Japanese yen	532,091	-	-	23,343	98,308	653,742
Malaysian ringgit	20,649	6,628	-	-	4,087	31,364
Mexican peso	34,581	9,098	-	-	4,764	48,443
New Israeli shekel	9,685	-	-	-	5,513	15,198
New Romanian leu	-	2,138	-	-	(740)	1,398
New Taiwan dollar	66,010	-	-	-	(2,758)	63,252
New Zealand dollar	3,174	-	-	-	53,079	56,253
Norwegian krone	11,966	-	-	-	(1,661)	10,305
Peruvian nuevo sol	-	2,398	-	-	(319)	2,079
Philippine peso	2,641	811	-	-	(272)	3,180
Polish zloty	-	9,510	-	-	2,280	11,790
Qatari rial	5,448	-	-	-	-	5,448
Russian ruble	-	5,857	-	-	721	6,578
Singapore dollar	14,748	-	-	-	3,074	17,822
South African rand	24,765	8,183	-	-	2,250	35,198
South Korean won	98,501	-	-	-	(75)	98,426
Swedish krona	65,241	-	-	-	9,961	75,202
Swiss franc	192,496	147	-	-	(33,363)	159,280
Thai baht	7,354	2,198	-	-	6,696	16,248
Turkish lira	10,286	17,013	-	-	(7,381)	19,918
United Arab 'Emirates dirham	5,893	-	-	-	-	5,893
Grand Total	$ 2,799,333	$ 227,767	$ 159,224	$ 81,902	$ 66,794	$ 3,335,020

(f) Unfunded Investments Commitments

The Retirement System has unfunded commitments to contribute capital for real assets in the amount of $2,072,544, private equities in the amount of $2,595,804, private credit Investments (formerly known as opportunistic fixed income) in the amount of $571,556, and absolute return in the amount of $73,818 totaling $5,313,722 as of June 30, 2017.

(Dollar amounts in thousands)

(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, 2017 and 2016, 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 tables below present 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, 2017 and 2016:

As of and for the Year Ended June 30, 2017

Derivative Type / Contracts	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Exchange Contracts	(a)	$ 167	$ 167
Other Contracts	(a)	(153)	(151)
Options			
Foreign Exchange Contracts	$ 3,900	(12)	76
Swaps			
Credit Contracts	5,000	(45)	73
Interest Rate Contracts	46,632	253	326
Total Return Contracts	80	1,233	1,233
Rights/Warrants			
Equity Contracts	12,458 shares	76	(2,306)
Total		$ 1,519	$ (582)

(a) SFERS' investment managers enter into a wide variety of forward foreign exchange and other contracts, which frequently do not involve the US dollar. As a result, a US dollar-based notional value is not included.

(Dollar amounts in thousands)

As of and for the Year Ended June 30, 2016

Derivative Type / Contracts	Notional Amount	Fair Value	Net Appreciation (Depreciation) in Fair Value
Forwards			
Foreign Exchange Contracts	(a)	$ 14,144	$ 14,144
Other Contracts	(a)	(114)	(114)
Options			
Foreign Exchange Contracts	$ 8,426	(64)	4
Swaps			
Credit Contracts	2,300	(18)	12
Interest Rate Contracts	43,514	968	766
Rights/Warrants			
Equity Contracts	23,123 shares	1,857	(6,406)
Total		$ 16,773	$ 8,406

[a] SFERS' investment managers enter into a wide variety of forward foreign exchange and other contracts, which frequently do not involve the US dollar. As a result, a US dollar-based notional value is not included.

All investment derivatives are reported as investments at fair value in the statement 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, 2017, the fair value of forward currency contracts in asset positions (including foreign exchange contract options) to purchase and sell international currencies were $967 and $811, respectively. The Retirement System's counterparties to these contract held credit ratings of A or better on 85.3% and credit ratings of B on 14.0% of the positions, as assigned by one or more of the major credit rating organizations (S&P and/or Moody's), while 0.7% was not rated. As of June 30, 2016, the fair value of forward currency contracts in asset positions (including foreign exchange contract options) to purchase and sell international currencies were $14,872 and $793, respectively. The Retirement System's counterparties to these contract held credit ratings of A or better on 99.6% of the positions, as assigned by one or more of the major credit rating organizations (S&P and/or Moody's), while 0.4% was not rated.

(Dollar amounts in thousands)

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, 2017 and 2016, 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 tables below describe the maturity periods of the derivative instruments exposed to interest rate risk at June 30, 2017 and 2016.

Derivative Interest Rate Risk as of June 30, 2017

		Maturities			
Derivative Type / Contracts	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**	**10+ years**
Forwards					
Foreign Exchange Contracts	$ 167	$ 178	$ (11)	$ -	$ -
Options					
Foreign Exchange Contracts	(12)	(12)	-	-	-
Swaps					
Credit Contracts	(45)	18	(63)	-	-
Interest Rate Contracts	253	(217)	74	271	125
Total Return Contracts	1,233	1,233	-	-	-
Total	$ 1,596	$ 1,200	$ -	$ 271	$ 125

Derivative Interest Rate Risk as of June 30, 2016

		Maturities		
Derivative Type / Contracts	**Fair Value**	**Less than 1 year**	**1-5 years**	**6-10 years**
Forwards				
Foreign Exchange Contracts	$ 14,144	$ 14,053	$ 91	$ -
Options				
Foreign Exchange Contracts	(64)	(64)	-	-
Swaps				
Credit Contracts	(18)	2	(20)	-
Interest Rate Contracts	968	(80)	851	197
Total	$ 15,030	$ 13,911	$ 922	$ 197

(Dollar amounts in thousands)

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, 2017 and 2016:

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2017

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 1.93%, Pay Variable 6-Month THB	$ 311	$ 2
Interest Rate Swap	Receive Fixed 2.015%, Pay Variable 6-Month THB	589	6
Interest Rate Swap	Receive Fixed 2.115%, Pay Variable 6-Month THB	1,027	11
Interest Rate Swap	Receive Fixed 2.12%, Pay Variable 6-Month THB	386	5
Interest Rate Swap	Receive Fixed 2.175%, Pay Variable 6-Month THB	665	10
Interest Rate Swap	Receive Fixed 2.19%, Pay Variable 6-Month THB	206	3
Interest Rate Swap	Receive Fixed 2.22%, Pay Variable 6-Month THB	412	6
Interest Rate Swap	Receive Fixed 2.25%, Pay Variable 1-Day WIBOR	836	(6)
Interest Rate Swap	Receive Fixed 2.505%, Pay Variable 6-Month THB	321	7
Interest Rate Swap	Receive Fixed 2.56%, Pay Variable 6-Month THB	689	14
Interest Rate Swap	Receive Fixed 2.58%, Pay Variable 6-Month THB	386	10
Interest Rate Swap	Receive Fixed 2.625%, Pay Variable 6-Month THB	645	20
Interest Rate Swap	Receive Fixed 2.78%, Pay Variable 6-Month THB	27	1
Interest Rate Swap	Receive Fixed 5.23%, Pay Variable 3-Month CIBR	118	1
Interest Rate Swap	Receive Fixed 5.32%, Pay Variable 3-Month CIBR	540	6
Interest Rate Swap	Receive Fixed 5.33%, Pay Variable 3-Month CIBR	547	6
Interest Rate Swap	Receive Fixed 5.61%, Pay Variable 28-Day MXIBR	431	(17)
Interest Rate Swap	Receive Fixed 5.63%, Pay Variable 28-Day MXIBR	1,028	(42)
Interest Rate Swap	Receive Fixed 5.84%, Pay Variable 28-Day MXIBR	348	(11)
Interest Rate Swap	Receive Fixed 6.12%, Pay Variable 3-Month CIBR	107	3
Interest Rate Swap	Receive Fixed 6.20%, Pay Variable 3-Month CIBR	98	3
Interest Rate Swap	Receive Fixed 6.24%, Pay Variable 28-Day MXIBR	138	(2)
Interest Rate Swap	Receive Fixed 6.49%, Pay Variable 28-Day MXIBR	315	(13)
Interest Rate Swap	Receive Fixed 6.80%, Pay Variable 28-Day MXIBR	133	(1)
Interest Rate Swap	Receive Fixed 7.38%, Pay Variable 28-Day MXIBR	1,293	26
Interest Rate Swap	Receive Fixed 7.50%, Pay Variable 3-Month JIBAR	2,313	13
Interest Rate Swap	Receive Fixed 7.75%, Pay Variable 3-Month JIBAR	664	8
Interest Rate Swap	Receive Fixed 7.86%, Pay Variable 28-Day MXIBR	1,022	54
Interest Rate Swap	Receive Fixed 8.00%, Pay Variable 3-Month JIBAR	53	1
Interest Rate Swap	Receive Fixed 8.25%, Pay Variable 3-Month JIBAR	229	4
Interest Rate Swap	Receive Fixed 8.28%, Pay Variable 28-Day MXIBR	215	17
Interest Rate Swap	Receive Fixed 8.31%, Pay Variable 28-Day MXIBR	88	7
Interest Rate Swap	Receive Fixed 8.32%, Pay Variable 28-Day MXIBR	663	56
Interest Rate Swap	Receive Fixed 8.50%, Pay Variable 3-Month JIBAR	481	18
Interest Rate Swap	Receive Fixed 8.75%, Pay Variable 3-Month JIBAR	38	2
Interest Rate Swap	Receive Fixed 9.50%, Pay Variable 3-Month JIBAR	244	25
Interest Rate Swap	Receive Fixed 9.76%, Pay Variable 1-Day BIDOR	15	(1)
Interest Rate Swap	Receive Fixed 10.30%, Pay Variable 1-Day BIDOR	211	(4)
Interest Rate Swap	Receive Fixed 11.33%, Pay Variable 1-Day BIDOR	1,088	58
Interest Rate Swap	Receive Fixed 11.35%, Pay Variable 1-Day BIDOR	2,151	99

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Notes to Financial Statements
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Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2017 (continued)

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 11.38%, Pay Variable 1-Day BIDOR	$ 1,766	$ 68
Interest Rate Swap	Receive Fixed 12.20%, Pay Variable 1-Day BIDOR	1,071	79
Interest Rate Swap	Receive Fixed 12.28%, Pay Variable 1-Day BIDOR	636	84
Interest Rate Swap	Receive Fixed 12.44%, Pay Variable 1-Day BIDOR	1,854	91
Interest Rate Swap	Receive Fixed 15.96%, Pay Variable 1-Day BIDOR	884	148
Interest Rate Swap	Receive Fixed 16.40%, Pay Variable 1-Day BIDOR	1,722	561
Interest Rate Swap	Receive Fixed 16.95%, Pay Variable 1-Day BIDOR	80	31
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 11.16%	93	1
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 11.26%	724	(38)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 12.06%	244	(16)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 12.44%	5,070	(248)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 12.86%	630	(5)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 15.50%	1,088	(85)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 15.77%	1,581	(135)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 15.96%	4,017	(671)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 16.15%	229	(71)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 4.65%	431	9
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.50%	249	18
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.71%	751	35
Interest Rate Swap	Receive Variable 3-Month CIBR, Pay Fixed 6.42%	69	(3)
Interest Rate Swap	Receive Variable 3-Month CIBR, Pay Fixed 6.43%	31	(1)
Interest Rate Swap	Receive Variable 3-Month JIBAR, Pay Fixed 8.09%	511	(3)
Interest Rate Swap	Receive Variable 3-Month JIBAR, Pay Fixed 8.25%	1,120	(18)
Interest Rate Swap	Receive Variable 3-Month JIBAR, Pay Fixed 8.50%	168	(6)
Interest Rate Swap	Receive Fixed 2.81%, Pay Return THB	542	23
Total Interest Rate Swaps		$ 46,632	$ 253

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2016

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 1.50%, Pay Variable 6-Month WIBOR	$ 606	$ (1)
Interest Rate Swap	Receive Fixed 1.93%, Pay Variable 6-Month THB	301	4
Interest Rate Swap	Receive Fixed 12.055%, Pay Variable 1-Day BIDOR	252	(2)
Interest Rate Swap	Receive Fixed 12.20%, Pay Variable 1-Day BIDOR	1,108	13
Interest Rate Swap	Receive Fixed 12.23%, Pay Variable 1-Day BIDOR	203	(1)
Interest Rate Swap	Receive Fixed 12.255%, Pay Variable 1-Day BIDOR	5,381	(71)
Interest Rate Swap	Receive Fixed 12.85%, Pay Variable 1-Day BIDOR	298	19
Interest Rate Swap	Receive Fixed 13.73%, Pay Variable 1-Day BIDOR	528	5
Interest Rate Swap	Receive Fixed 15.44%, Pay Variable 1-Day BIDOR	588	104
Interest Rate Swap	Receive Fixed 15.96%, Pay Variable 1-Day BIDOR	5,287	534
Interest Rate Swap	Receive Fixed 16.15%, Pay Variable 1-Day BIDOR	824	172

(Dollar amounts in thousands)

Derivative Instruments Highly Sensitive to Interest Rate Changes as of June 30, 2016 (continued)

Investment Type	Reference Rate	Notional Value	Fair Value
Interest Rate Swap	Receive Fixed 16.395%, Pay Variable 1-Day BIDOR	$ 102	$ 23
Interest Rate Swap	Receive Fixed 16.40%, Pay Variable 1-Day BIDOR	127	30
Interest Rate Swap	Receive Fixed 16.95%, Pay Variable 1-Day BIDOR	82	22
Interest Rate Swap	Receive Fixed 2.015%, Pay Variable 6-Month THB	569	10
Interest Rate Swap	Receive Fixed 2.12%, Pay Variable 6-Month THB	683	14
Interest Rate Swap	Receive Fixed 2.175%, Pay Variable 6-Month THB	643	16
Interest Rate Swap	Receive Fixed 2.19%, Pay Variable 6-Month THB	199	5
Interest Rate Swap	Receive Fixed 2.22%, Pay Variable 6-Month THB	398	10
Interest Rate Swap	Receive Fixed 2.58%, Pay Variable 6-Month THB	771	45
Interest Rate Swap	Receive Fixed 2.625%, Pay Variable 6-Month THB	1,190	75
Interest Rate Swap	Receive Fixed 2.78%, Pay Variable 6-Month THB	26	2
Interest Rate Swap	Receive Fixed 5.21%, Pay Variable 1-Day MXIBR	596	(6)
Interest Rate Swap	Receive Fixed 5.23%, Pay Variable 3-Month CIBR	124	(5)
Interest Rate Swap	Receive Fixed 5.31%, Pay Variable 3-Month CIBR	48	(2)
Interest Rate Swap	Receive Fixed 5.32%, Pay Variable 3-Month CIBR	567	(20)
Interest Rate Swap	Receive Fixed 5.33%, Pay Variable 3-Month CIBR	574	(40)
Interest Rate Swap	Receive Fixed 5.61%, Pay Variable 28-Day MXIBR	1,724	6
Interest Rate Swap	Receive Fixed 5.63%, Pay Variable 28-Day MXIBR	1,008	3
Interest Rate Swap	Receive Fixed 5.84%, Pay Variable 28-Day MXIBR	341	4
Interest Rate Swap	Receive Fixed 6.12%, Pay Variable 3-Month CIBR	112	(5)
Interest Rate Swap	Receive Fixed 6.20%, Pay Variable 3-Month CIBR	144	(5)
Interest Rate Swap	Receive Fixed 6.22%, Pay Variable 3-Month CIBR	151	(6)
Interest Rate Swap	Receive Fixed 6.24%, Pay Variable 28-Day MXIBR	136	4
Interest Rate Swap	Receive Fixed 7.50%, Pay Variable 3-Month JIBAR	868	(22)
Interest Rate Swap	Receive Fixed 8.00%, Pay Variable 3-Month JIBAR	901	4
Interest Rate Swap	Receive Fixed 8.50%, Pay Variable 3-Month JIBAR	1,831	36
Interest Rate Swap	Receive Fixed 8.75%, Pay Variable 3-Month JIBAR	1,072	37
Interest Rate Swap	Receive Fixed 9.00%, Pay Variable 3-Month JIBAR	205	9
Interest Rate Swap	Receive Fixed 9.50%, Pay Variable 3-Month JIBAR	498	38
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 11.16%	96	7
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 12.86%	651	7
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 14.205%	5,133	(9)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 15.50%	1,125	(56)
Interest Rate Swap	Receive Variable 1-Day BIDOR, Pay Fixed 15.77%	1,635	(92)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 4.65%	423	2
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 5.66%	721	14
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.08%	1,241	(3)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.32%	363	(8)
Interest Rate Swap	Receive Variable 28-Day MXIBR, Pay Fixed 6.50%	244	(1)
Interest Rate Swap	Receive Variable 3-Month CIBR, Pay Fixed 6.42%	223	6
Interest Rate Swap	Receive Variable 3-Month CIBR, Pay Fixed 6.43%	69	2
Interest Rate Swap	Receive Fixed 2.81%, Pay Return THB	524	41
Total Interest Rate Swaps		$ 43,514	$ 968

(Dollar amounts in thousands)

Foreign Currency Risk

At June 30, 2017, the Retirement System is exposed to foreign currency risk on its investments in forwards, rights, warrants and swaps denominated in foreign currencies.

Derivative Instruments Foreign Currency Risk Analysis as of June 30, 2017

Currency	Forwards	Rights/ Warrants	Swaps	Total
Argentine peso	$ 149	$ -	$ -	$ 149
Australian dollar	-	6	25	31
Brazilian real	(10,598)	-	(55)	(10,653)
British pound sterling	(6,219)	-	-	(6,219)
Canadian dollar	747	-	-	747
Chilean peso	(241)	-	-	(241)
Colombian peso	1,342	-	16	1,358
Czech koruna	1,273	-	-	1,273
Euro	(36,771)	41	567	(36,163)
Offshore Chinese yuan renminbi	(1,285)	-		(1,285)
Hong Kong dollar	(36)	-	-	(36)
Hungarian forint	2,166	-	-	2,166
Indian rupee	764	-	-	764
Indonesian rupiah	2,846	-	-	2,846
Japanese yen	(1,096)	-	-	(1,096)
Malaysian ringgit	1,807	-	-	1,807
Mexican peso	5,867	-	135	6,002
New Romanian leu	262	-	-	262
New Russian ruble	36	-	-	36
New Taiwan dollar	(2,332)	-	-	(2,332)
Peruvian nuevo sol	168	-	-	168
Philippine peso	(57)	-	-	(57)
Polish zloty	5,790	-	(6)	5,784
Singapore dollar	(592)	-	-	(592)
South African rand	(997)	-	45	(952)
South Korean won	(732)	-	-	(732)
Swedish krona	-	-	399	399
Swiss franc	(117)	-	243	126
Thai baht	9,928	-	118	10,046
Turkish lira	4,753	-	-	4,753
Total	$ (23,175)	$ 47	$ 1,487	$ (21,641)

(Dollar amounts in thousands)

At June 30, 2016, the Retirement System is exposed to foreign currency risk on its investments in forwards, rights, warrants and swaps denominated in foreign currencies.

Derivative Instruments Foreign Currency Risk Analysis as of June 30, 2016

Currency	Forwards	Rights/ Warrants	Swaps	Total
Australian dollar	$ 2,650	$ -	$ -	$ 2,650
Brazilian real	(5,349)	-	703	(4,646)
British pound sterling	(43,351)	-	-	(43,351)
Canadian dollar	31,384	-	-	31,384
Chilean peso	94	-	-	94
Chinese yuan renminbi	(1,582)	-	-	(1,582)
Colombian peso	1,872	-	(74)	1,798
Czech koruna	(45)	-	-	(45)
Danish krone	(1,423)	-	-	(1,423)
Euro	(67,878)	75	-	(67,803)
Offshore Chinese yuan renminbi	(1,052)	-	-	(1,052)
Hong Kong dollar	3,569	-	-	3,569
Hungarian forint	2,652	-	-	2,652
Indian rupee	564	-	-	564
Indonesian rupiah	1,100	-	-	1,100
Japanese yen	100,599	-	-	100,599
Malaysian ringgit	4,087	-	-	4,087
Mexican peso	3,471	-	16	3,487
New Israeli shekel	5,513	-	-	5,513
New Romanian leu	(740)	-	-	(740)
New Russian ruble	150	-	-	150
New Taiwan dollar	(2,758)	-	-	(2,758)
New Zealand dollar	53,079	-	-	53,079
Norwegian krone	(1,656)	87	-	(1,569)
Peruvian nuevo sol	(319)	-	-	(319)
Philippine peso	(272)	-	-	(272)
Polish zloty	1,865	-	(1)	1,864
Singapore dollar	3,074	-	-	3,074
South African rand	2,689	-	101	2,790
South Korean won	(75)	-	-	(75)
Swedish krona	10,958	-	-	10,958
Swiss franc	(33,477)	-	-	(33,477)
Thai baht	6,696	-	222	6,918
Turkish lira	(6,647)	-	-	(6,647)
Total	$ 69,442	$ 162	$ 967	$ 70,571

(Dollar amounts in thousands)

Contingent Features

At June 30, 2017 and 2016, the Retirement System held no positions in derivatives containing contingent features.

(5) Fair Value Measurement of Investments

In Fiscal Year 2016, the Retirement System adopted GASB Statement No. 72, *Fair Value Measurement and Application*. 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, 2017:

As of June 30, 2017	Total	Quoted Prices in Active Markets for Identical Assets (Level One)	Significant Other Observable Inputs (Level Two)	Unobservable Inputs (Level Three)
Investments by fair value level				
Short-term investments	$ 329,587	$ -	$ 2,967	$ 326,620
Debt securities:				
U.S. government and agency securities	1,194,634	-	1,194,634	-
Other debt securities	2,004,564	-	1,940,027	64,537
Equity securities:				
Domestic	4,749,997	4,654,187	203	95,607
International	3,770,343	3,764,376	4,084	1,883
Foreign currency contracts, net	164	-	-	164
Invested securities lending collateral	201	-	-	201
Total investments by fair value level	$ 12,049,490	$ 8,418,563	$ 3,141,915	$ 489,012
Investments measured at the net asset value (NAV)				
Short-term investments	18,157			
Fixed income funds invested in:				
U.S. government and agency securities	360,546			
Other debt securities	886,658			
Equity funds invested in:				
Domestic	916,247			
International	1,121,429			
Real assets	2,975,974			
Private equity	3,401,547			
Absolute return	577,967			
Total investments measured at the NAV	10,258,525			
Investments not subject to the fair value hierarchy				
City investment pool	11,800			
Total investments measured at fair value	$ 22,319,815			

(Dollar amounts in thousands)

The Retirement System has the following recurring fair value measurements as of June 30, 2016:

As of June 30, 2016	Total	Quoted Prices in Active Markets for Identical Assets (Level One)	Significant Other Observable Inputs (Level Two)	Unobservable Inputs (Level Three)
Investments by fair value level				
Short-term investments	$ 1,009,676	$ -	$ -	$ 1,009,676
Debt securities:				
U.S. government and agency securities	695,309	-	695,309	-
Other debt securities	2,246,680	-	2,134,644	112,036
Equity securities:				
Domestic	4,296,051	4,198,957	7,508	89,586
International	3,087,999	3,077,546	7,961	2,492
Foreign currency contracts, net	14,125	-	-	14,125
Invested securities lending collateral	865,681	-	389,095	476,586
Total investments by fair value level	$ 12,215,521	$ 7,276,503	$ 3,234,517	$ 1,704,501
Investments measured at the net asset value (NAV)				
Fixed income funds invested in:				
U.S. government and agency securities	952,962			
Other debt securities	822,065			
Equity funds invested in:				
Domestic	674,787			
International	1,216,026			
Real assets	2,341,500			
Private equity	2,750,619			
Total investments measured at the NAV	8,757,959			
Investments not subject to the fair value hierarchy				
City investment pool	6,656			
Total investments measured at fair value	$ 20,980,136			

Investments, at Fair Value

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.

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.

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 market 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 net asset values 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 net asset value are 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 $4.2 million, are currently being liquidated. These proceeds are expected to be received over the next 3-5 years. The remaining Opportunistic Public Equity investments are subject to a 2-year lock up with liquidity provided every December 31 with 60 days' notice. 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 fund 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.

(Dollar amounts in thousands)

Absolute Return investment strategies include Equity, Credit, Macro, Emerging Markets, Quantitative, Multi-Strategy, Special Situations, 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 Investment Measured at NAV as of June 30, 2017

% of NAV	**Redemption Frequency**	**Redemption Notice Period**
25%*	Quarterly	65-95 days
46%	Semi-annually	95 days
10%	Annually	95 days
19%	Greater than Annually	95 days
100%		

* 5% subject to a lock-up that expires as of April 1, 2018

(6) Securities Lending

The Retirement System lends U.S. government obligations, domestic and international bonds, and equities to various brokers with a simultaneous agreement to return collateral for the same securities plus a fee in the future. The securities lending agent manages the securities lending program and receives securities and cash as collateral. Cash and non-cash collateral is pledged at 102% and 105% of the fair value of domestic securities and international securities lent, respectively. There are no restrictions on the number of securities that can be lent at one time. However, starting in the year ended June 30, 2009, the Retirement System engaged in a systematic reduction of the value of securities on loan with a target of no more than ten percent (10%) of total fund assets on loan at any time. The term to maturity of the loaned securities is generally not matched with the term to maturity of the investment of the corresponding collateral. In April 2017, the Retirement Board authorized Investment Staff to discontinue the Securities Lending Program in an orderly fashion.

The Retirement System does not have the ability to pledge or sell collateral securities unless a borrower defaults. The securities collateral is not reported on the statements of fiduciary net position. As of June 30, 2017 and 2016, the Retirement System has no credit risk exposure to borrowers because the amounts the Retirement System owes them exceed the amounts they owe the Retirement System. As with other extensions of credit, the Retirement System may bear the risk of delay in recovery or of rights in the collateral should the borrower of securities fail financially. However, the lending agent indemnifies the Retirement System against all borrower defaults.

As of June 30, 2017, the Retirement System has lent $259 in securities and received collateral of $106 and $160 in cash and securities, respectively, from borrowers. The cash collateral is invested in a separate account managed by the lending agent using investment guidelines approved by the Retirement Board. Due to the increase in the fair value of assets held in the separately managed account, the Retirement System's invested cash collateral was valued at $201. The net unrealized gain of $95 is presented as part of the net appreciation (depreciation) in fair value of investments in the statement of changes in fiduciary net position in the year in which the unrealized gains and losses occur. The Retirement System is exposed to investment risk including the possible loss of principal value in the separately managed securities lending account due to the fluctuation in the fair value of the assets held in the account.

(Dollar amounts in thousands)

The Retirement System's securities lending transactions as of June 30, 2017 are summarized in the following table.

Securities Lending as of June 30, 2017

Investment Type	Fair Value of Loaned Securities	Cash Collateral	Fair Value of Non-Cash Collateral
Securities on Loan for Cash Collateral			
U.S. Corporate Fixed Income	$ 103	$ 106	-
Securities on Loan for Non-Cash Collateral			
U.S. Corporate Fixed Income	156	-	160
	$ 259	$ 106	$ 160

The following table presents the segmented time distribution and credit risk for the reinvested cash collateral account based upon the expected maturity (in years) as of June 30, 2017.

Fair Value and Credit Rating of Cash Collateral Account as of June 30, 2017

Investment Type	Credit Rating	Fair Value	Maturity Less Than 1 Year
Short Term Investment Funds	AA	$ 201	$ 201

As of June 30, 2016, the Retirement System has lent $1,196,354 in securities and received collateral of $863,536 and $368,251 in cash and securities, respectively, from borrowers. The cash collateral is invested in a separate account managed by the lending agent using investment guidelines approved by the Retirement Board. Due to the increase in the fair value of assets held in the separately managed account, the Retirement System's invested cash collateral was valued at $865,681. The net unrealized gain of $2,145 is presented as part of the net appreciation (depreciation) in fair value of investments in the statement of changes in fiduciary net position in the year in which the unrealized gains and losses occur. The Retirement System is exposed to investment risk including the possible loss of principal value in the separately managed securities lending account due to the fluctuation in the fair value of the assets held in the account.

The Retirement System's securities lending transactions as of June 30, 2016 are summarized in the following table.

Securities Lending as of June 30, 2016

Investment Type	Fair Value of Loaned Securities	Cash Collateral	Fair Value of Non-Cash Collateral
Securities on Loan for Cash Collateral			
International Corporate Fixed Income	$ 5,600	$ 5,842	$ -
International Equities	40,741	42,797	-
International Government Fixed Income	1,105	1,153	-
U.S. Government Agencies	204	208	-
U.S. Corporate Fixed Income	114,536	116,353	-
U.S. Equities	439,182	445,863	-
U.S. Government Fixed Income	247,020	251,320	-

(Dollar amounts in thousands)

Securities Lending as of June 30, 2016 (continued)

Investment Type	Fair Value of Loaned Securities	Cash Collateral	Fair Value of Non-Cash Collateral
Securities on Loan for Non-Cash Collateral			
International Corporate Fixed Income	$ 8,736	$ -	$ 9,163
International Equities	295,913	-	315,144
International Government Fixed Income	105	-	110
U.S. Corporate Fixed Income	6,132	-	6,225
U.S. Equities	37,080	-	37,609
	$ 1,196,354	$ 863,536	$ 368,251

The following table presents the segmented time distribution for the reinvested cash collateral account based upon the expected maturity (in years) as of June 30, 2016.

Fair Value of Cash Collateral Account as of June 30, 2016

Investment Type	Fair Value	Maturity Less Than 1 Year
Commercial Paper	$ 44,260	$ 44,260
Negotiable Certificates of Deposit	345,116	345,116
Repurchase Agreements	419,000	419,000
Short Term Investment Funds	57,305	57,305
Total	$ 865,681	$ 865,681

The Retirement System's exposure to credit risk in its reinvested cash collateral account as of June 30, 2016 is as follows:

Credit Rating of Cash Collateral Account as of June 30, 2016

Credit Rating	Fair Value	Fair Value as a Percentage of Total
AA	$ 153,323	17.7%
A	337,078	38.9%
Not Rated *	375,280	43.4%
Total	$ 865,681	100.0%

* Repurchase agreements of $270,000 are not rated by Moody's, but are held by counterparties with S&P ratings of A or AA.

(Dollar amounts in thousands)

(7) Investments in Real Assets

Real assets investments represent the Retirement System's interests in real assets limited partnerships and separate accounts. The changes in these investments during the years ended June 30, 2017 and 2016 are summarized as follows:

	2017	2016
Investments:		
Beginning of the year	$ 2,341,500	$ 1,975,926
Capital investments	1,434,150	1,318,111
Equity in net earnings	26,959	48,492
Net appreciation in fair value	232,967	168,196
Capital distributions	(1,059,602)	(1,169,225)
End of the year	$ 2,975,974	$ 2,341,500

(8) Benefits

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

	2017	2016
Service retirement benefits	$ 994,408	$ 937,388
Disability retirement benefits	184,376	179,056
Death benefits	11,163	8,990
COLA benefit adjustments	74,980	118,012
Adjustment to accrued DROP benefits	(294)	(186)
Total	$ 1,264,633	$ 1,243,260

(9) Funding Policy

Contributions are made to the Plan by both the employers and the participating employees. The basic employer contributions are the amounts deemed necessary on an actuarial basis using the entry age normal cost method to provide the Retirement System with assets sufficient to pay the basic benefits that are not provided for by employees' contributions. Contribution rates used in fiscal years 2017 and 2016 are based on a schedule of rates determined from actuarial studies by the consulting actuary as of July 1, 2015 and 2014, respectively.

Required and actual employer contribution rates for the years ended June 30, 2017 and 2016 as a percentage of covered payrolls were as follows:

	Fiscal Year 2017	Fiscal Year 2016
Police plan members	17.90% - 18.90%	18.30% - 19.30%
Fire plan members	17.90% - 18.90%	18.30% - 19.30%
Miscellaneous Non-Safety members	18.40% - 21.40%	18.80% - 22.80%
Sheriff and Miscellaneous Safety members	18.40% - 18.90%	18.80% - 19.30%

(Dollar amounts in thousands)

Employee contributions are mandatory as required by the Charter. Employee contribution rates for fiscal years 2017 and 2016 as a percentage of gross covered salary were as follows:

	Fiscal Year 2017	Fiscal Year 2016
Participants entering the Retirement System prior to November 2, 1976		
Police and fire	10.5%	11.5%
Miscellaneous	8.0% - 11.0%	8.0% - 12.0%
Participants entering the Retirement System after November 2, 1976 and prior to July 1, 2010		
Police and fire	11.0%	12.0%
Miscellaneous	7.5% - 10.5%	7.5% - 11.5%
Participants entering the Retirement System on or after July 1, 2010		
Police and fire	11.5% - 12.0%	12.5% - 13.0%
Miscellaneous	7.5% - 10.5%	7.5% - 11.5%
Sheriff and Miscellaneous Safety hired on or after January 7, 2012	11.5% - 12.0%	12.5% - 13.0%

Beginning in the year ended June 30, 2006, most employee groups agreed through collective bargaining for employees to contribute all or a portion of the employee contributions, per memorandums of understanding (MOU's), on a pretax basis. As of July 1, 2011, substantially all employee groups have agreed through collective bargaining for employees to contribute all employee contributions on a pre-tax basis.

Prior to the early 1950s, all Retirement System members were covered by the Federal Old-Age and Survivors Disability Insurance provisions of the Federal Social Security Act. In the early 1950s, the City and County agreed to exclude uniformed police officers and firefighters from Social Security coverage. Prior to 1990, miscellaneous members covered by Social Security were able to elect to reduce the above stated rate of employee contributions in consideration of their anticipated Social Security benefit payments. All participants who elected such reduction must repay the amount of unpaid employee contributions with interest or there will be an appropriate actuarial reduction in benefits.

Participants terminating service with the employers may withdraw employee contributions plus interest. The interest rate applied to accumulated employee contributions is determined by the Retirement System's consulting actuary and recommended to the Retirement Board. The Retirement Board reviews and sets the crediting interest rate for the Plan on an annual basis. Interest for the years ended June 30, 2017 and 2016 accumulated at 4.00%.

(10) Net Pension Liability of Employers

The components of the employers' net pension liability at June 30, 2017 and 2016 were as follows:

	June 30, 2017	June 30, 2016
Total pension liability	$ 27,403,715	$ 25,967,281
Fiduciary net position	$ 22,410,350	$ 20,154,503
Net pension liability	$ 4,993,365	$ 5,812,778
Fiduciary net position as a percentage of total pension liability	81.8%	77.6%

(Dollar amounts in thousands)

(a) Actuarial Assumptions

The total pension liabilities as of June 30, 2017 and 2016 were determined by actuarial valuations as of July 1, 2016 and 2015, respectively, which were rolled forward to June 30, 2017 and 2016 using standard roll forward procedures. The June 30, 2016 total pension liabilities include an adjustment for the October 2015 State Appeals Court determination that the "full funding" requirement for Supplemental COLAs of Proposition C does not apply to members who worked after November 6, 1996 and were hired prior to January 7, 2012. Retroactive lump sums were paid during fiscal year 2015-16 for the restoration of 2013 and 2014 Supplemental COLAs to this subgroup of members. The updated adjustment procedures also include the increased expectation of future Supplemental COLAs for these members.

The following is a summary of actuarial methods and assumptions used at the June 30, 2017 measurement date:

Inflation	3.25%
Salary increases	3.75% 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, 2017 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, 2016.

The Supplemental COLA assumption as of June 30, 2017 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
2017	0.000%	0.000%	0.000%
2018	0.000%	0.000%	0.000%
2023	0.294%	0.160%	0.040%
2028	0.345%	0.180%	0.050%
2033+	0.375%	0.200%	0.050%

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
2017	1.500%	3.5% less assumed Basic COLA
2018+	0.750%	½ x (3.5% less assumed Basic COLA)

(Dollar amounts in thousands)

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, 2017 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	40.0%	5.3%
Fixed Income	20.0%	1.6%
Private Equity	18.0%	6.5%
Real Assets	17.0%	4.6%
Hedge Funds/Absolute Return	5.0%	3.6%
	100.0%	

The following is a summary of actuarial methods and assumptions used at the June 30, 2016 measurement date:

Inflation	3.25%
Salary increases	3.75% 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, 2016 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, 2015.

The probability of a Supplemental COLA as of June 30, 2016 was developed based upon the probability and amount of Supplemental COLA for each future year. The table below shows the net assumed Supplemental COLA for members with a 2.00% basic COLA for sample years.

Assumed Supplemental COLA for Members with a 2.00% Basic COLA

July 1,	**11/6/1996 – Prop C**	**Before 11/6/1996 or After Prop C**
2018	0.750%	0.000%
2023	0.750%	0.220%
2028	0.750%	0.322%
2033	0.750%	0.370%
2038+	0.750%	0.375%

(Dollar amounts in thousands)

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, 2016 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global Equity	40.0%	5.1%
Fixed Income	20.0%	1.1%
Private Equity	18.0%	6.3%
Real Assets	17.0%	4.3%
Hedge Funds/Absolute Return	5.0%	3.3%
	100.0%	

(b) Discount Rate

The discount rate used to measure the total pension liability at June 30, 2017 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, 2014 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, 2017 the System's fiduciary net position was projected to be available to make projected future benefit payments for current members until FY 2095-96 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 3.58% to the extent that they are not available. The single equivalent rate used to determine the total pension liability as of June 30, 2017 rounded to four decimals is 7.50%.

The discount rate used to measure the total pension liability at June 30, 2016 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, 2014 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.

(Dollar amounts in thousands)

As of June 30, 2016 the System's fiduciary net position was projected to be available to make projected future benefit payments for current members until FY 2092-93 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 2.85% to the extent that they are not available. The single equivalent rate used to determine the total pension liability as of June 30, 2016 rounded to four decimals is 7.50%.

The municipal bond rates of 3.58% and 2.85% used to determine the above discount rates represent the yields available at June 30, 2017 and June 30, 2016, respectively, 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 as of June 30, 2017 and 2016, calculated using the discount rates of 7.50%, as well as what the total net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the discount rates:

	Net Pension Liability	
	June 30, 2017	June 30, 2016
1% Decrease	$8,554,436	$9,211,449
Current Discount Rate	$4,993,365	$5,812,778
1% Increase	$2,046,840	$3,001,677

(d) Money Weighted Rate of Returns

For the years ended June 30, 2017 and 2016, the annual money-weighted rates of return on pension plan investments, net of investment expenses, adjusted for the changing amounts actually invested, were 13.52% and 0.96%, respectively.

(11) Postemployment Healthcare Plan

(a) Health Care Benefits

Health care benefits of the Retirement System's employees, retired employees and their beneficiaries are financed by the City and County through the City and County of San Francisco Health Service System (Health Service System).

The City and County has determined a City-wide annual required contribution (ARC), interest on net OPEB obligation, ARC adjustment, and OPEB cost based upon an actuarial valuation performed in accordance with GASB Statement No. 45, by the City and County's actuary. The City and County's allocation of the OPEB-related costs to the Retirement System for the years ended June 30, 2017 and 2016 based upon its percentage of City-wide payroll costs is presented below. Included in the Retirement System's payments for all health care benefits amounts are approximately $590 and $533 for the years ended June 30, 2017 and 2016, respectively, to provide postretirement benefits for retired employees on a pay-as-you-go basis. The OPEB expense for the

(Dollar amounts in thousands)

Retirement System is included in other administrative expenses for fiscal years 2016-17 and 2015-16.

Plan Fiscal Year Ended June 30	Annual OPEB Cost	Percentage of OPEB Cost Contributed	Net OPEB Obligations
2014	$1,195	44.4%	$5,464
2015	1,154	47.1%	6,075
2016	1,100	48.5%	6,642
2017	1,548	38.1%	7,600

The following table shows the components of the City and County's annual OPEB allocations for the Retirement System, for the amount contributed to the OPEB plan, and changes in the Retirement System's net OPEB obligation:

	2017	2016
Annual required contribution	$ 1,332	$ 1,038
Interest on net OPEB obligation	362	330
Adjustment to annual required contribution	(146)	(268)
Annual OPEB cost	1,548	1,100
Contribution made	(590)	(533)
Increase in net OPEB obligation	958	567
Net OPEB obligation - beginning of year	6,642	6,075
Net OPEB obligation - end of year	$ 7,600	$ 6,642

The City and County issues a publicly available financial report that includes the complete note disclosures and RSI related to the City and County's postemployment health care obligations. The report may be obtained by writing to the City and County of San Francisco, Office of the Controller, 1 Dr. Carlton B. Goodlett Place, Room 316, San Francisco, California 94102, or by calling (415) 554-7500.

(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.

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM
Required Supplementary Information – Unaudited
Years Ended June 30, 2017 and 2016
(Dollar amounts in thousands)

Schedule of Changes in Net Pension Liability and Related Ratios

	Year Ended June 30, 2017	Year Ended June 30, 2016	Year Ended June 30, 2015	Year Ended June 30, 2014
Total pension liability:				
Service cost	$ 644,277	$ 567,576	$ 523,644	$ 509,200
Interest on total pension liability	1,924,206	1,669,996	1,621,582	1,542,266
Changes of benefit terms	-	1,293,714	-	-
Differences between expected and actual experience	57,911	(119,270)	(197,981)	-
Changes of assumptions	88,180	1,087,309	216,845	(73,315)
Benefit payments, including refunds of contributions	(1,278,140)	(1,256,146)	(1,131,030)	(1,072,526)
Net change in total pension liability	1,436,434	3,243,179	1,033,060	905,625
Total pension liability - beginning of year	25,967,281	22,724,102	21,691,042	20,785,417
Total pension liability - end of year (a)	27,403,715	25,967,281	22,724,102	21,691,042
Fiduciary net position:				
Contributions - member	316,844	322,764	301,682	289,020
Contributions - employer	551,809	526,805	592,643	532,882
Net investment income	2,683,468	150,190	763,429	3,175,431
Benefit payments, including refunds of contributions	(1,278,140)	(1,256,146)	(1,131,030)	(1,072,526)
Administrative expense	(18,134)	(17,179)	(19,262)	(15,745)
Net change in fiduciary net position	2,255,847	(273,566)	507,462	2,909,062
Fiduciary net position - beginning of year	20,154,503	20,428,069	19,920,607	17,011,545
Fiduciary net position - end of year (b)	22,410,350	20,154,503	20,428,069	19,920,607
Net pension liability - end of year (a) - (b)	$ 4,993,365	$ 5,812,778	$ 2,296,033	$ 1,770,435
Fiduciary net position as a percentage of total pension liability	81.8%	77.6%	89.9%	91.8%
Covered payroll	$ 3,041,818	$ 2,836,498	$ 2,642,752	$ 2,507,162
Net pension liability as a percentage of covered payroll	164.2%	204.9%	86.9%	70.6%

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

SAN FRANCISCO CITY AND COUNTY EMPLOYEES' RETIREMENT SYSTEM
Required Supplementary Information – Unaudited
Years Ended June 30, 2017 and 2016
(Dollar amounts in thousands)

Schedule of Employer Contributions

Year Ended June 30	Actuarially Determined Contributions	Contributions in Relation to Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll		Contributions as a Percentage of Covered Payroll
2017	$ 551,809	$ 551,809	$ -	$ 3,041,818		18.1%
2016	526,805	526,805	-	2,836,498		18.6%
2015	592,643	592,643	-	2,642,752		22.4%
2014	532,882	532,882	-	2,507,162		21.3%
2013	442,870	442,870	-	2,448,734		18.1%
2012	410,797	410,797	-	2,360,413	*	17.4%
2011	308,823	308,823	-	2,398,823	*	12.9%
2010	223,614	223,614	-	2,544,939	*	8.8%
2009	119,751	119,751	-	2,457,196	*	4.9%
2008	134,060	134,060	-	2,376,221	*	5.6%

* Covered compensation from actuarial projection.

Schedule of Money-Weighted Rate of Return

Year Ended June 30	Money-Weighted Rate of Return
2017	13.52%
2016	0.96%
2015	4.03%
2014	19.10%
2013	13.91%
2012	0.81%
2011	22.65%
2010	14.53%
2009	-22.28%
2008	-4.09%

(Dollar amounts in thousands)

Note to Schedule of Changes in Net Pension Liability and Related Ratios

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. The June 30, 2016 total pension liability includes an adjustment for the October 2015 State Appeals Court determination that the "full funding" requirement for Supplemental COLAs of Proposition C does not apply to members who retired on or after November 6, 1996 and were hired prior to January 7, 2012. The restoration of and the resulting increased expectation of future Supplemental COLAs are accounted for as a change in benefits in the measurement of the total pension liability as of June 30, 2016.

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 7.50% as of both June 30, 2016 and 2017, 7.46% as of June 30, 2015, 7.58% as of June 30, 2014, and 7.52% as of June 30, 2013.

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. Methods and assumptions used to determine contribution rates are:

Year Ended June 30	Valuation Date	Discount Rate	Salary Increase/ Amortization Growth	Mortality	Significant Changes in Assumptions from Prior Year
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
2016	7/1/2014	7.50%	3.75%	RP2000 Mortality projected with Scale AA	Investment return and wage inflation assumptions
2015	7/1/2013	7.58%	3.83%		None
2014	7/1/2012	7.58%	3.83%		Investment return and wage inflation assumptions
2013	7/1/2011	7.66%	3.91%		Investment return and wage inflation assumptions
2012	7/1/2010	7.75%	4.00%		Wage inflation and demographic assumptions including salary merit increases based upon experience study
2011	7/1/2009	7.75%	4.50%	1994 GAM	None
2010	7/1/2008	7.75%	4.50%		Investment return
2009	7/1/2007	8.00%	4.50%		None
2008	7/1/2006	8.00%	4.50%		None

A complete description of the methods and assumptions used to determine contribution rates can be found in the corresponding actuarial valuation reports.