

FINANCIAL SECTION

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Report of Independent Public Accountants

The Board of Trustees of
Commonwealth of Pennsylvania Public School Employees' Retirement System
Harrisburg, Pennsylvania

Report on the Financial Statements

We have audited the accompanying basic financial statements of the Commonwealth of Pennsylvania Public School Employees' Retirement System (PSERS), as of June 30, 2016 and 2015, and for the years then ended, and the related notes to the financial statements, which collectively comprise PSERS' basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

PSERS' 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 the basic financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the basic financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the basic financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the basic 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 basic 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 basic financial statements.

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

Opinion

In our opinion, the basic financial statements referred to above present fairly, in all material respects, the respective financial position of PSERS, as of June 30, 2016 and 2015, and the respective changes in its financial position thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America (GAAP).



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Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and Required Supplementary Schedule of Changes in the Employer Net Pension Liability, Schedule of Employer Net Pension Liability, Schedule of Employer Contributions, Schedule of Investment Returns, Schedule of Funding Progress and related notes to Required Supplementary Schedules be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with evidence sufficient to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise PSERS' basic financial statements. The Schedule of Operating Expenses, Summary of Investment Expenses, Schedule of Payments to Non-Investment Consultants, and the Introductory, Investment, Actuarial, and Statistical Sections are presented for purposes of additional analysis and are not a required part of the basic financial statements.

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

The Introductory, Investment, Actuarial, and Statistical Sections as listed in the table of contents have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Hunt Valley, Maryland
September 26, 2016

Management's Discussion and Analysis

Management's Discussion and Analysis (MD&A) of the Commonwealth of Pennsylvania Public School Employees' Retirement System (PSERS, System, Fund) for the fiscal year ended June 30, 2016 (FY 2016) provides a narrative summary of PSERS' financial position and performance, including highlights and comparative data. The MD&A is presented as required supplementary information to the financial statements and should be read in conjunction with the financial statements, the notes to financial statements, and the supplementary schedules.

Overview of Financial Statements

PSERS is primarily responsible for administering a defined benefit pension plan for public school employees in the Commonwealth of Pennsylvania. PSERS also administers two voluntary postemployment healthcare programs, the Health Insurance Premium Assistance Program (Premium Assistance) and the Health Options Program (HOP), for its annuitants. As part of the HOP, PSERS has an Employer/Union Direct Contract with the Centers for Medicare and Medicaid Services (CMS) to provide a Medicare Part D Prescription Drug Plan to participants. The financial statements present the financial position and activities for the pension plan and the two postemployment healthcare programs.

The *Statements of Fiduciary Net Position* provide a snapshot of the financial position of PSERS at June 30, 2016, including comparative amounts for the prior year.

The *Statements of Changes in Fiduciary Net Position* summarize PSERS' financial activities that occurred during the fiscal period from July 1, 2015 to June 30, 2016, including comparative amounts for the prior year.

The *Notes to Financial Statements* provide additional information that is essential for a full understanding of the financial statements. The notes are an integral part of the financial statements and include detailed information not readily evident in the basic financial statements such as accounting policies, plan membership and benefits, and summary disclosures of selected financial data.

The *Required Supplementary Schedules* immediately following the notes to financial statements provide five schedules illustrating the Changes in the Employer Net Pension Liability, Employer Net Pension Liability, Employer Contributions, Investment Returns, and Funding Progress.

The remaining supplementary schedules provide additional detailed information concerning the operating expenses, investment expenses, payments to non-investment consultants, and the employer contributions. These

schedules emphasize the long-term nature of the pension and premium assistance plans and show the progress of PSERS in accumulating assets sufficient to pay benefits when due. All of this supplementary information is considered useful in understanding and evaluating the financial activities of PSERS.

Financial Highlights

- The time-weighted rate of return on investments was 1.29% for FY 2016, 3.04% for the fiscal year ended June 30, 2015 (FY 2015), and 14.91% for the fiscal year ended June 30, 2014 (FY 2014). The annualized rate of return since the Great Recession was 9.16%, which exceeded the 7.5% actuarial investment rate. Unless otherwise noted, all rates of return are net of fees.
- PSERS' total net position decreased by \$1.7 billion from \$51.9 billion at June 30, 2015 to \$50.2 billion at June 30, 2016. The change in total net position from June 30, 2014 to June 30, 2015 was a decrease of \$1.4 billion from \$53.3 billion at June 30, 2014 to \$51.9 billion at June 30, 2015. This decrease in both years was due in large part to deductions for benefits and administrative expenses exceeding net investment income plus member and employer contributions.
- Total employer contributions increased from \$2.7 billion in FY 2015 to \$3.3 billion in FY 2016. This increase was primarily attributable to an increase in the total employer contribution rate from 21.40% in FY 2015 to 25.84% in FY 2016 in accordance with Act 120 of 2010.
- Total PSERS' benefit expense increased slightly from \$6.6 billion in FY 2015 to \$6.8 billion in FY 2016. The average monthly benefit and the number of members receiving benefits increased in FY 2016. New retirements during FY 2016 decreased by approximately 7% from FY 2015.

Progress of Act 120 on PSERS' Funding

On November 23, 2010, the Governor signed HB 2497 into law. The legislation is now known as Act 120 of 2010. Act 120 preserves the benefits of existing members and includes a series of actuarial and funding changes to PSERS and benefit reductions for individuals who become new members of PSERS on or after July 1, 2011. The Act created two new membership classes, T-E and T-F. T-E and T-F members are "shared-risk," meaning that their

Management’s Discussion and Analysis (continued)

employee contributions can increase or decrease due to investment performance.

Act 120 addressed the pending employer contribution rate spike projected for FY 2013 by smoothing the projected rate increases over a five- to nine-year time period. Instead of a large rate spike in one year, under Act 120, the employer contribution rate has increased steadily each year from the 5.64% in effect when Act 120 became law to the 25.84% rate in the FY 2016. During that time, PSERS’ Annual Required Contribution (ARC) percentage under Governmental Accounting Standards Board (GASB) standards increased from 27% to 80%. On July 1, 2016, PSERS began receiving 100% of actuarially required contributions for the first time in 15 years. This marks a significant milestone in PSERS’ contribution history and establishes a path to full funding.

The employer normal cost of Act 120 members is less than 3% of payroll which is over 65% less than the normal cost for pre-Act 120 members. As the

percentage of T-E and T-F membership grows, the annual cost of benefits continues to decline steadily.

Funded Status and State Accumulation Account

PSERS uses an actuarial reserve type of funding that is financed by member contributions, employer contributions, and earnings from invested assets. Figure 1 illustrates a thirty-year history of PSERS’ funded status. An independent actuarial valuation of PSERS’ actuarial assets and liabilities is performed annually. As part of this valuation, the progress toward funding pension obligations of PSERS is measured by comparing the actuarial value of assets to the actuarial accrued liability. This measurement is referred to as the funded ratio or funded status. The most recent actuarial valuation reports that PSERS is 60.6% funded as of June 30, 2015. The funded ratio decreased from 62.0% as of June 30, 2014 due to employer contributions below the actuarially recommended level and an increase in the actuarial accrued liability, offset by a slight increase in

Analysis of Fiduciary Net Position

(Dollar Amounts in Thousands)

Summary of Fiduciary Net Position	FY 2016	Increase (Decrease)	FY 2015	Increase (Decrease)	FY 2014
Assets:					
Receivables	\$ 3,196,024	\$ 860,107	\$ 2,335,917	\$ 929,888	\$ 1,406,029
Investments	47,997,984	(2,581,047)	50,579,031	(2,349,076)	52,928,107
Securities lending collateral pool	2,092,729	885,559	1,207,170	610,234	596,936
Capital assets	22,871	57	22,814	(37)	22,851
Total Assets	53,309,608	(835,324)	54,144,932	(808,991)	54,953,923
Deferred outflows of resources	11,324	7,429	3,895	3,895	-
Liabilities:					
Payables and other liabilities	1,076,373	19,834	1,056,539	(38,524)	1,095,063
Obligations under securities lending	2,092,729	885,559	1,207,170	610,234	596,936
Total Liabilities	3,169,102	905,393	2,263,709	571,710	1,691,999
Deferred inflows of resources	1,268	1,224	44	44	-
Net Position	\$ 50,150,562	\$ (1,734,512)	\$ 51,885,074	\$ (1,376,850)	\$ 53,261,924
Summary of Changes in Fiduciary Net Position					
Additions:					
Contributions	\$ 4,292,083	\$ 593,910	\$ 3,698,173	\$ 621,295	\$ 3,076,878
Participant premiums and CMS	359,166	34,875	324,291	28,792	295,499
Net investment income	474,047	(854,836)	1,328,883	(5,769,139)	7,098,022
Total Additions	5,125,296	(226,051)	5,351,347	(5,119,052)	10,470,399
Deductions:					
Benefit expense	6,779,577	165,423	6,614,154	196,699	6,417,455
Administrative expenses	80,231	7,731	72,500	5,783	66,717
Total Deductions	6,859,808	173,154	6,686,654	202,482	6,484,172
Changes in Net Position	\$ (1,734,512)	\$ (399,205)	\$ (1,335,307)	\$ (5,321,534)	\$ 3,986,227

Management’s Discussion and Analysis (continued)

the actuarial value of assets, which is based on a ten-year smoothing period.

The results of operations for FY 2016 will be reflected in the actuarial valuation for the year ended June 30, 2016. Due to the normal lag time for completion of the actuarial valuation, the resulting funded status will be available at the end of the 2016 calendar year and will be reported in the financial statements for the fiscal year ending June 30, 2017 (FY 2017). Based on the investment performance for the ten-year period ended June 30, 2016, which is below the investment rate of return assumption during that time period, and employer contributions below the actuarially recommended level, the funded ratio at June 30, 2016 is expected to decrease.

PSERS’ State Accumulation Account deficit increased from June 30, 2015 to June 30, 2016 (See Note 3). One-year investment returns below the return assumption and employer contributions below the normal cost plus interest contributed to the deficit increase. Increased employer contributions, as mandated by Act 120, and investment earnings will be used to reduce the deficit in this account in the future.

Investments

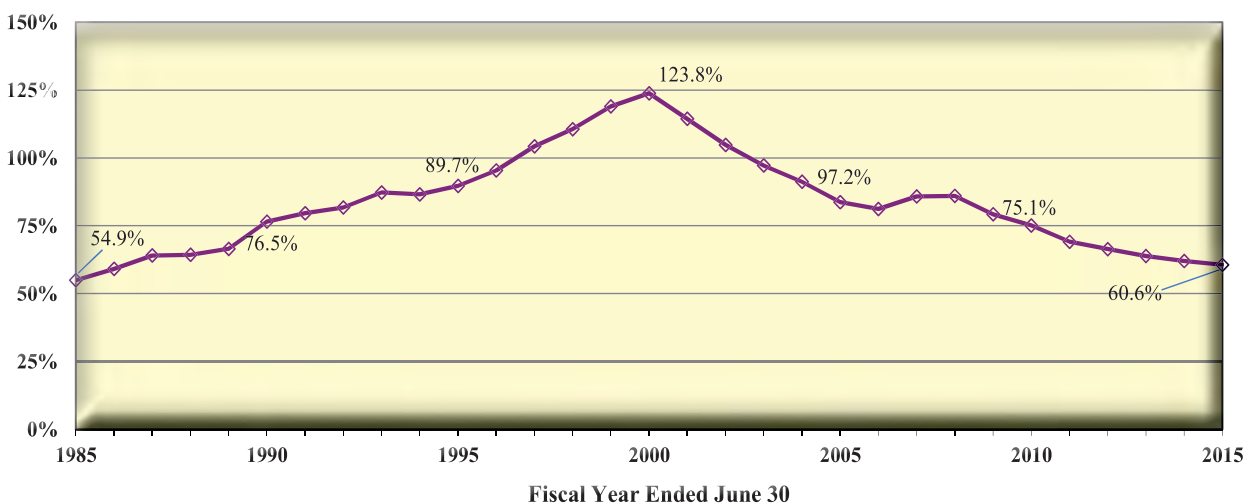
PSERS is a long-term investor and manages the pension fund with long-term objectives in mind. A primary element of PSERS’ investment philosophy is diversification among various asset classes, which is the best way to achieve its goals. PSERS makes estimates of future long-term market returns and establishes an asset allocation plan taking into account the risk associated with each asset class as well as the financial objectives of the Fund.

Economically, the fiscal year was a tale of two halves. The first seven and a half months (July 1, 2015 to February 11, 2016) were weak, marked by a Fed rate hike in December, expectations of multiple interest rate hikes in 2016, and risk assets falling in price. The MSCI All Country World Index, a global equity index, fell by 16.6% during this period, only to rebound 13.0% from the middle of February to June 30, 2016, for a total return of negative 3.1% for the fiscal year. Commodities fell by 27.9% during the first seven and a half months, but rebounded 20.3% during the remainder of the year for a total return of negative 13.3%. U.S. long-term treasuries were up 14.0% during the first half and continued to rise another 4.6% during the second half for a total return of 19.3%.

The U.S. economy has shown continued, albeit slow, growth this past fiscal year. Low interest rates have provided a low cost of borrowing so that the economy, housing, and employment conditions can continue to improve. The U.S. real Gross Domestic Product (GDP) increased an average of 1.2% per quarter during the past fiscal year with a range of 0.8% to 2.0%. Housing during the past fiscal year has shown continued improvement, up around 4.6% as measured by the S&P Case-Shiller 20-City Home Price Index.

Economic conditions continue to be very weak in Europe as aggressive European Central Bank policies have been unable to generate any significant improvements in economic growth, employment, and inflation. The United Kingdom (U.K.) held a non-binding referendum to determine if the U.K. would remain in or leave the European Union (EU), where the U.K. had been a member since being admitted in 1973. The polls all suggested prior to the vote that the U.K. would remain; however, its citizens voted to leave. Global risk markets (equities, commodities, credit) heavily sold

Figure 1 - PSERS' Funded Ratio
Funded Ratio = Actuarial Value of Assets / Actuarial Accrued Liability



Management’s Discussion and Analysis (continued)

off for a couple of days immediately following the vote; however, they rebounded quickly. The long-term impacts have yet to be determined. While the Euro Area economy is weak, Japan’s economy may be even weaker. As of the first quarter 2016 (the latest data available), Japan’s real GDP increased by 0.1% over the past year. China had robust growth compared to the other developed regions of the world. China’s real GDP increased by 6.7% over the past year, slightly slower than the 7.0% pace as of June 2015. Inflation in China has remained relatively stable over the past year at 1.8% compared to 1.4% last year.

For FY 2016, PSERS’ time-weighted rate of return on investments was 1.29% which trailed PSERS’ total fund Policy Index of 2.00% for the same time period. A time-weighted rate of return considers investment performance of a hypothetical dollar invested from the beginning of an investment period to the period’s end. The Policy Index is a custom benchmark, which is based on the Board-established asset allocation structure, that seeks to generate a return that meets the actuarial rate of return assumption. Net investment income of \$0.5 billion in FY 2016 decreased from a net investment income of \$1.3 billion in FY 2015 due to a lower total return.

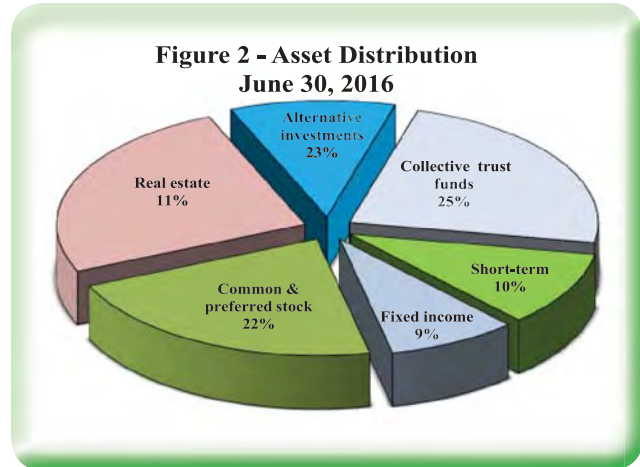
The time-weighted annualized rate of return over the past three- and five-year periods ended June 30, 2016 was 6.24% and 6.01%, respectively. The time-weighted returns for the three- and five-year periods exceeded the total fund Policy Index returns for those periods by 105 and 150 basis points, respectively. The annualized time-weighted rate of return for the ten- and twenty-five-year periods ended June 30, 2016 was 4.94% and 8.18%, respectively.

PSERS’ long-term actuarial investment rate of return assumption was 7.50% during FY 2016. PSERS’ Board lowered the return assumption from 7.50% to 7.25% effective with the June 30, 2016 actuarial valuation which will be completed in December 2016.

The asset distribution of PSERS’ investment portfolio at June 30, 2016, 2015, and 2014, at fair value, and including postemployment healthcare assets, is presented in Figure 2 and Table 1.

FY 2016

- **Short-term investments** (cash and cash equivalents) increased by \$1.2 billion from \$3.8 billion at June 30, 2015 to \$5.0 billion at June 30, 2016. Due to a reallocation of exposure from other asset classes, PSERS increased its short-term investments during FY 2016.
- **Fixed income investments** decreased by \$1.0 billion from \$5.1 billion at June 30, 2015 to \$4.1 billion at June 30, 2016 mostly due to manager terminations and



reallocation of exposure to other asset classes during FY 2016.

- **Common and preferred stock investments** decreased by \$0.9 billion from \$11.4 billion at June 30, 2015 to \$10.5 billion at June 30, 2016. The decrease in this asset category was mainly due to lower market value increases in domestic and global stock investments compared to the prior fiscal year.
- **Collective trust funds** decreased by \$1.0 billion from \$13.1 billion at June 30, 2015 to \$12.1 billion at June 30, 2016 mostly due to reallocation of exposure from other asset classes.
- **Real estate investments** decreased by \$1.2 billion from \$6.4 billion at June 30, 2015 to \$5.2 billion at June 30, 2016 due to the sale of limited partnership interests to third parties and to significant partnership distributions which exceeded contributions to new and existing partnerships partially offset by valuation increases in partnership portfolio holdings.
- **Alternative investments** increased by \$0.4 billion from \$10.8 billion at June 30, 2015 to \$11.2 billion at June 30, 2016 due to contributions to new and existing partnerships combined with valuation increases in partnership portfolio holdings which exceeded significant partnership distributions.

FY 2015

- **Short-term investments** (cash and cash equivalents) decreased by \$0.5 billion from \$4.3 billion at June 30, 2014 to \$3.8 billion at June 30, 2015. Due to a reallocation of exposure from other asset classes, PSERS decreased its short-term investments during FY 2015.
- **Fixed income investments** decreased by \$0.4 billion from \$5.5 billion at June 30, 2014 to \$5.1 billion at June 30, 2015 mostly due to manager terminations and reallocation of exposure to other asset classes during FY 2015.
- **Common and preferred stock investments** increased by \$0.5 billion from \$10.9 billion at June 30, 2014 to

Management's Discussion and Analysis (continued)

\$11.4 billion at June 30, 2015. The rise in this asset category was mainly the result of strong returns for domestic equity, international equity, and master limited partnerships, as well as the continual reallocation of exposure from other asset classes to master limited partnerships.

- **Collective trust funds** rose by \$1.3 billion from \$11.8 billion at June 30, 2014 to \$13.1 billion at June 30, 2015 mostly due to reallocation of exposure from other asset classes.
- **Real estate investments** decreased by \$0.8 billion from \$7.2 billion at June 30, 2014 to \$6.4 billion at June 30, 2015 due to significant partnership distributions which exceeded contributions to new and existing partnerships partially offset by valuation increases in partnership portfolio holdings.
- **Alternative investments** decreased by \$2.4 billion from \$13.2 billion at June 30, 2014 to \$10.8 billion at June 30, 2015 partially due to the sale of limited partnership interests to third parties and to significant partnership distributions which exceeded contributions to new and existing partnerships partially offset by valuation increases in partnership portfolio holdings.

total employer contribution rate from 16.93% in FY 2014 to 21.40% in FY 2015.

Total member contributions increased from \$984.6 million in FY 2015 to \$989.3 million in FY 2016. The increase was mainly due to an increase in member contributions from active member payroll and purchase of service. Total member contributions increased from \$966.9 million in FY 2014 to \$984.6 million in FY 2015. The increase was mainly due to a \$12.7 million increase in member contributions from active member payroll. Additionally, there was a \$5.0 million rise in purchase of service contributions.

As a result of an increase in member purchase of service contributions and an increase in the receivables of member contributions from active member payroll, in the last quarter of FY 2015 to the last quarter of FY 2016, member contribution receivables increased from \$329.2 million at June 30, 2015 to \$336.8 million at June 30, 2016. The increase in the employer contribution rate from FY 2015 to FY 2016, resulted in the employer contribution receivables rising from \$785.0 million at June 30, 2015 to \$961.6 million at June 30, 2016.

Securities Lending

The System's net income from securities lending activities increased from \$9.0 million in FY 2015 to \$11.9 million in FY 2016 as volume increased with the third party lending agent with whom PSERS entered into a new agreement late in FY 2015.

Contributions

Employer contributions increased from \$2.7 billion in FY 2015 to \$3.3 billion in FY 2016 due to the increase in the total employer contribution rate from 21.40% in FY 2015 to 25.84% in FY 2016. Total employer contributions increased from \$2.1 billion in FY 2014 to \$2.7 billion in FY 2015. This increase was primarily attributable to an increase in the

Investment Income

Net investment income decreased from \$1.3 billion in FY 2015 to \$0.5 billion in FY 2016, which is consistent with the decrease in the time-weighted investment rate of return from 3.04% for FY 2015 to 1.29% for FY 2016. Net investment income decreased from \$7.1 billion in FY 2014 to \$1.3 billion in FY 2015, which is consistent with the decrease in the time-weighted investment rate of return from 14.91% for FY 2014 to 3.04% for FY 2015. As depicted in Figure 3, investment earnings provided 65% of PSERS' funding over the past 20 years. Net investment income also includes investment expenses as a deduction. The "Total PSERS' Benefits and Expenses" section that follows includes an analysis of investment expenses.

Table 1 - Investment Balances by Asset Class

Asset Class	(Dollar Amounts in Thousands)					
	2016	%	2015	%	2014	%
Short-term	\$ 4,980,721	10.4	\$ 3,780,778	7.5	\$ 4,331,188	8.2
Fixed income	4,052,513	8.4	5,085,921	10.0	5,532,214	10.4
Common and preferred stock	10,456,298	21.8	11,420,135	22.6	10,851,457	20.5
Collective trust funds	12,143,184	25.3	13,102,950	25.9	11,795,390	22.3
Real estate	5,166,068	10.8	6,386,295	12.6	7,230,493	13.7
Alternative investments	11,199,200	23.3	10,802,952	21.4	13,187,365	24.9
Total	\$ 47,997,984	100.0	\$ 50,579,031	100.0	\$ 52,928,107	100.0

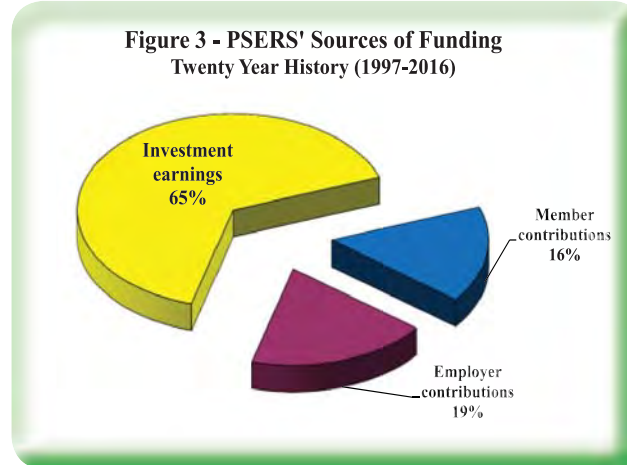
Management’s Discussion and Analysis (continued)

Total PSERS’ Benefits and Expenses

The primary source of expense during FY 2016 was for the payment of benefits approximating \$6.8 billion. The breakdown consisted of \$6.3 billion for Pension, \$108.3 million for Premium Assistance, and \$311.0 million for HOP benefits. Figure 5 illustrates the significant portion of expenses attributable to benefit payments.

Total PSERS’ benefit expense increased from \$6.6 billion in FY 2015 to \$6.8 billion in FY 2016. The increase is attributable to an ongoing increase to the average monthly benefit and an increase in the number of members receiving benefits. Pension benefits payable decreased from \$560.3 million at June 30, 2015 compared to \$520.5 million at June 30, 2016. This decrease was mainly attributable to lower fourth quarter retirements in FY 2016 as compared to the same period in FY 2015. New retirements during FY 2016 decreased by approximately 7% from FY 2015. Total PSERS’ benefit expense increased from \$6.4 billion in FY 2014 to \$6.6 billion in FY 2015. The increase is attributable to an ongoing increase to the average monthly benefit and an increase in the number of members receiving benefits. Pension benefits payable increased from \$531.6 million at June 30, 2014 compared to \$560.3 million at June 30, 2015. This increase was due to the payment of the federal withholding tax earlier in FY 2014. This was partially offset by lower fourth quarter retirements in FY 2015 as compared to the same period in FY 2014. New retirements during FY 2015 increased by approximately 9% from FY 2014.

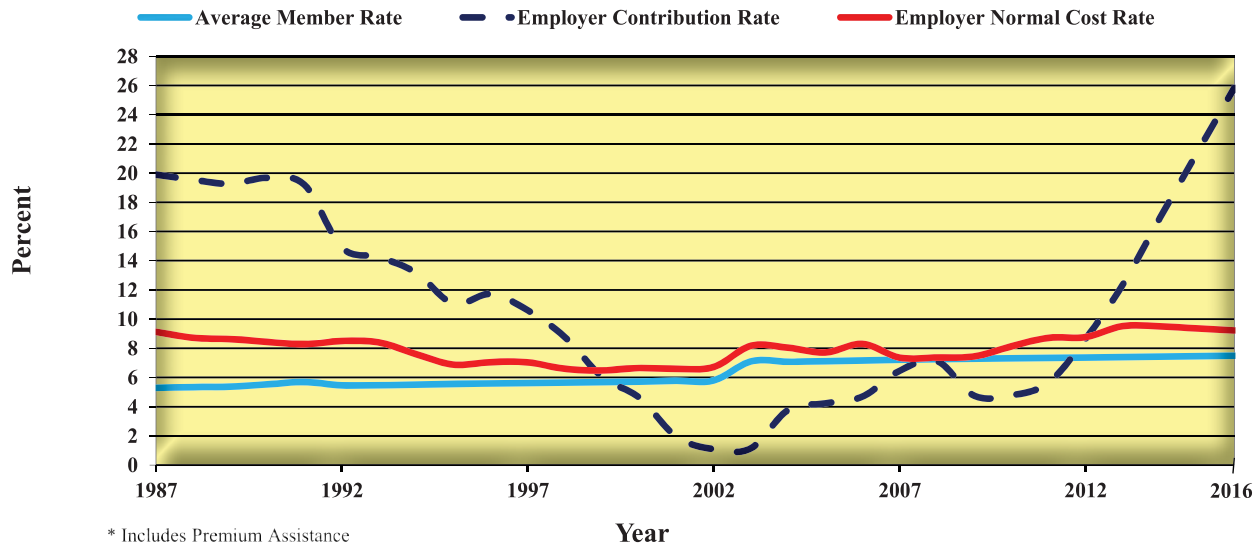
Investment expenses decreased by \$39.4 million from \$455.2 million in FY 2015 to \$415.8 million in FY 2016 mainly due to a decrease in management fees in the absolute return and real estate asset classes, partially offset



by an increase in risk parity fees. The fee decrease in the absolute return asset class is mainly attributable to higher performance fees due to the stronger performance this asset class had for FY 2015. The decrease in the real estate class is partially attributable to the sale of certain limited partnership interests and to changes in fee structure brought on by partnerships maturing. The risk parity fee increase was attributable to a higher allocation in this asset class. As a percentage of total benefits and expenses, investment expense has decreased from 6.9% in FY 2014 to 5.7% in FY 2016. Investment expenses decreased by \$27.0 million from \$482.2 million in FY 2014 to \$455.2 million in FY 2015 mainly due to a decrease in management fees in the absolute return and alternative investment asset classes. These decreases were slightly offset by an increase in management fees in the fixed income and risk parity asset classes and consultant and legal fees. The fee decrease in the absolute return asset class is mainly attributable to higher performance fees due to the stronger performance this asset class had for FY 2014. The decrease in the

Below is a thirty-year history of PSERS’ contribution rates:

Figure 4 - History of PSERS' Contribution Rates as a Percent of Payroll*



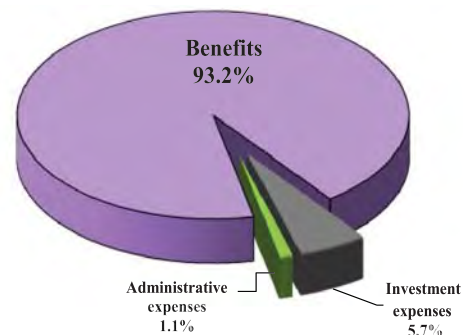
* Includes Premium Assistance

Management's Discussion and Analysis (continued)

alternative investment class is partially attributable to the sale of certain limited partnership interests and to changes in fee structure brought on by partnerships maturing. As a percentage of total benefits and expenses, investment expense has decreased from 8.2% in FY 2013 to 5.7% in FY 2016.

Administrative expenses increased by \$7.7 million from \$72.5 million during FY 2015 compared to \$80.2 million during FY 2016. This rise was mainly attributable to the increase in administrative costs for HOP due to increased membership. Administrative expenses increased by \$5.8 million from \$66.7 million during FY 2014 compared to \$72.5 million during FY 2015. This rise was mainly attributable to the implementation of GASB 68, as discussed in Note 7 of the Notes to the Financial Statements. A contributing factor was the increase in administrative costs for HOP due to increased membership.

Figure 5 - Total PSERS' Benefits and Expenses
Fiscal Year Ended June 30, 2016



Management’s Discussion and Analysis (continued)

Postemployment Healthcare

PSERS administers two postemployment healthcare programs, the Health Insurance Premium Assistance Program (Premium Assistance) and the Health Options Program (HOP), for its annuitants. The following paragraphs and summary financial data provide supplementary information to the financial statements which contain the financial position and activities for the two postemployment healthcare programs.

**Health Insurance Premium Assistance Program
(Premium Assistance)**

Financial Highlights

- Total net position increased by \$3.9 million in FY 2016 due to an increase in employer contributions driven by the increase in active member payroll. This increase was slightly offset by a decrease in the contribution rate from 0.90% for FY 2015 to 0.84% for the FY 2016. The change from June 30, 2014 to June 30, 2015 was an increase of \$8.6 million due to an increase in employer contributions driven by the increase in active member payroll. This increase was slightly offset by a decrease in the contribution rate from 0.93% for FY 2014 to 0.90% for the FY 2015.
- Investments increased from \$86.0 million at June 30, 2015 to \$88.9 million at June 30, 2016 mainly due to the increase in net position.

Contributions

Total employer contributions for Premium Assistance decreased from \$116.8 million in FY 2015 to \$113.3 million in FY 2016 due to the decrease in the employer contribution rate from FY 2015 to FY 2016. The contribution rate decreased from 0.90% in FY 2015 to 0.84% in FY 2016. This decrease was moderately offset by an increase in active member payroll.

Investment Income

Total investment income for Premium Assistance increased slightly from \$0.2 million for FY 2015 to \$0.5 for FY 2016.

Benefits and Expenses

Overall deductions for Premium Assistance increased from \$108.4 million in FY 2015 to \$109.9 million in FY 2016. This increase is primarily due to the increase in number of members receiving premium assistance benefits.

Health Options Program (HOP)

Financial Highlights

- Total net position increased by \$15.0 million in FY 2016 primarily due to the rise in premiums that outpaced the rise in expenses. The change from June 30, 2014 to June 30, 2015 is also primarily due to the rise in premiums that outpaced the rise in expenses.
- Total receivables increased from \$39.1 million at June 30, 2015 to \$52.8 million at June 30, 2016. The increase is tied primarily to higher premiums due to an increase in participation in the HOP and due to a large increase in the 2015 calendar year for the Centers for Medicare and Medicaid Services (CMS) reinsurance receivable estimate.
- Investments increased slightly from \$186.3 million at June 30, 2015 to \$193.3 million at June 30, 2016.
- Total liabilities increased 12.3% from \$46.4 million at June 30, 2015 to \$52.1 million at June 30, 2016. The increase is mainly due to increased participation in the program causing an increase in claims payable and administrative expense payable.

Participant and CMS Premiums

Total participant CMS premiums for HOP increased from \$324.3 million in FY 2015 to \$359.2 million in FY 2016. This increase is representative of the 10.3% increase in plan participation.

Investment Income

Investment income for HOP increased slightly from \$0.2 million for FY 2015 to \$0.3 million for FY 2016 due to the increase in investments.

Benefits and Expenses

Overall deductions for HOP increased from \$315.3 million in FY 2015 to \$344.4 million in FY 2016. This increase is primarily due to the increase in number of members enrolled in the HOP combined with an increase in the administrative costs.

Management's Discussion and Analysis (continued)**Premium Assistance****Summary of Fiduciary Net Position**

(Dollar Amounts in Thousands)

Assets:	FY 2016	Increase (Decrease)	FY 2015	Increase (Decrease)	FY 2014
Receivables	\$ 36,452	\$ 594	\$ 35,858	\$ (12,644)	\$ 48,502
Investments	88,887	2,892	85,995	21,896	64,099
Total Assets	125,339	3,486	121,853	9,252	112,601
Liabilities:					
Payables and other liabilities	776	(434)	1,210	669	541
Total Liabilities	776	(434)	1,210	669	541
Net Position	\$ 124,563	\$ 3,920	\$ 120,643	\$ 8,583	\$ 112,060

Summary of Changes in Fiduciary Net Position

Additions:	FY 2016	Increase (Decrease)	FY 2015	Increase (Decrease)	FY 2014
Contributions	\$ 113,307	\$ (3,501)	\$ 116,808	\$ (1,060)	\$ 117,868
Net investment income	542	327	215	145	70
Total Additions	113,849	(3,174)	117,023	(915)	117,938
Deductions:					
Benefit expenses	108,273	1,975	106,298	2,101	104,197
Administrative expenses	1,656	(486)	2,142	112	2,030
Total Deductions	109,929	1,489	108,440	2,213	106,227
Changes in Net Position	\$ 3,920	\$ (4,663)	\$ 8,583	\$ (3,128)	\$ 11,711

Health Options Program**Summary of Fiduciary Net Position**

(Dollar Amounts in Thousands)

Assets:	FY 2016	Increase (Decrease)	FY 2015	Increase (Decrease)	FY 2014
Receivables	\$ 52,759	\$ 13,693	\$ 39,066	\$ 11,202	\$ 27,864
Investments	193,330	7,038	186,292	(1,111)	187,403
Total Assets	246,089	20,731	225,358	10,091	215,267
Liabilities:					
Payables and other liabilities	52,150	5,702	46,448	930	45,518
Total Liabilities	52,150	5,702	46,448	930	45,518
Net Position	\$ 193,939	\$ 15,029	\$ 178,910	\$ 9,161	\$ 169,749

Summary of Changes in Fiduciary Net Position

Additions:	FY 2016	Increase (Decrease)	FY 2015	Increase (Decrease)	FY 2014
Participant and CMS premiums	\$ 359,166	\$ 34,875	\$ 324,291	\$ 28,792	\$ 295,499
Net investment income	299	147	152	(39)	191
Total Additions	359,465	35,022	324,443	28,753	295,690
Deductions:					
Benefit expenses	310,979	23,724	287,255	27,502	259,753
Administrative expenses	33,457	5,430	28,027	2,052	25,975
Total Deductions	344,436	29,154	315,282	29,554	285,728
Changes in Net Position	\$ 15,029	\$ 5,868	\$ 9,161	\$ (801)	\$ 9,962

Statements of Fiduciary Net Position
June 30, 2016 and 2015
(Dollar Amounts in Thousands)

	2016			
	Postemployment Healthcare			Totals
	Pension	Premium Assistance	Health Options Program	
Assets:				
Receivables:				
Members	\$ 333,289	\$ 3,427	\$ 46	\$ 336,762
Employers	930,286	31,276	-	961,562
Investment income	415,987	233	39	416,259
Investment proceeds	1,426,968	-	-	1,426,968
CMS Part D and prescriptions	-	-	52,578	52,578
Interfund	-	1,029	-	1,029
Miscellaneous	283	487	96	866
Total Receivables	3,106,813	36,452	52,759	3,196,024
Investments, at fair value:				
Short-term	4,698,504	88,887	193,330	4,980,721
Fixed income	4,052,513	-	-	4,052,513
Common and preferred stock	10,456,298	-	-	10,456,298
Collective trust funds	12,143,184	-	-	12,143,184
Real estate	5,166,068	-	-	5,166,068
Alternative investments	11,199,200	-	-	11,199,200
Total Investments	47,715,767	88,887	193,330	47,997,984
Securities lending collateral pool	2,092,729	-	-	2,092,729
Capital assets (net of accumulated depreciation \$28,096)	22,871	-	-	22,871
Total Assets	52,938,180	125,339	246,089	53,309,608
Deferred outflows of resources	11,324	-	-	11,324
Liabilities:				
Accounts payable and accrued expenses	174,820	203	3,250	178,273
Benefits payable	520,462	72	22,079	542,613
Participant premium advances	-	-	26,821	26,821
Investment purchases and other liabilities	327,136	501	-	327,637
Obligations under securities lending	2,092,729	-	-	2,092,729
Interfund payable	1,029	-	-	1,029
Total Liabilities	3,116,176	776	52,150	3,169,102
Deferred inflows of resources	1,268	-	-	1,268
Net position restricted for pension and postemployment healthcare benefits	\$ 49,832,060	\$ 124,563	\$ 193,939	\$ 50,150,562

The accompanying notes are an integral part of the financial statements.

Statements of Fiduciary Net Position
June 30, 2016 and 2015
(Dollar Amounts in Thousands)

	2015			
	Postemployment Healthcare			Totals
	Pension	Premium Assistance	Health Options Program	
Assets:				
Receivables:				
Members	\$ 325,285	\$ 3,852	\$ 35	\$ 329,172
Employers	754,873	30,163	-	785,036
Investment income	149,175	41	18	149,234
Investment proceeds	1,031,297	-	-	1,031,297
CMS Part D and prescriptions	-	-	38,938	38,938
Interfund	-	929	-	929
Miscellaneous	363	873	75	1,311
Total Receivables	2,260,993	35,858	39,066	2,335,917
Investments, at fair value:				
Short-term	3,508,491	85,995	186,292	3,780,778
Fixed income	5,085,921	-	-	5,085,921
Common and preferred stock	11,420,135	-	-	11,420,135
Collective trust funds	13,102,950	-	-	13,102,950
Real estate	6,386,295	-	-	6,386,295
Alternative investments	10,802,952	-	-	10,802,952
Total Investments	50,306,744	85,995	186,292	50,579,031
Securities lending collateral pool	1,207,170	-	-	1,207,170
Capital assets (net of accumulated depreciation \$26,153)	22,814	-	-	22,814
Total Assets	53,797,721	121,853	225,358	54,144,932
Deferred outflows of resources	3,895	-	-	3,895
Liabilities:				
Accounts payable and accrued expenses	147,235	319	1,700	149,254
Benefits payable	560,319	191	20,308	580,818
Participant premium advances	-	-	24,440	24,440
Investment purchases and other liabilities	300,398	700	-	301,098
Obligations under securities lending	1,207,170	-	-	1,207,170
Interfund payable	929	-	-	929
Total Liabilities	2,216,051	1,210	46,448	2,263,709
Deferred inflows of resources	44	-	-	44
Net position restricted for pension and postemployment healthcare benefits	\$ 51,585,521	\$ 120,643	\$ 178,910	\$ 51,885,074

The accompanying notes are an integral part of the financial statements.

Statements of Changes in Fiduciary Net Position
Years Ended June 30, 2016 and 2015
(Dollar Amounts in Thousands)

	2016			
	Pension	Postemployment Healthcare		Totals
		Premium Assistance	Health Options Program	
Additions:				
Contributions:				
Members	\$ 989,266	\$ -	\$ -	\$ 989,266
Employers	3,189,510	113,307	-	3,302,817
Total contributions	4,178,776	113,307	-	4,292,083
Participant premiums	-	-	308,132	308,132
Centers for Medicare & Medicaid Services premiums	-	-	51,034	51,034
Investment income:				
From investing activities:				
Net appreciation (depreciation) in fair value of investments	(160,712)	(154)	-	(160,866)
Short-term	17,418	734	337	18,489
Fixed income	145,326	-	-	145,326
Common and preferred stock	311,356	-	-	311,356
Collective trust funds	3,168	-	-	3,168
Real estate	246,217	-	-	246,217
Alternative investments	314,270	-	-	314,270
Total investment activity income	877,043	580	337	877,960
Investment expenses	(415,706)	(38)	(38)	(415,782)
Net income from investing activities	461,337	542	299	462,178
From securities lending activities:				
Securities lending income	13,187	-	-	13,187
Securities lending expense	(1,318)	-	-	(1,318)
Net income from securities lending activities	11,869	-	-	11,869
Total net investment income	473,206	542	299	474,047
Total Additions	4,651,982	113,849	359,465	5,125,296
Deductions:				
Benefits	6,340,256	108,273	310,979	6,759,508
Refunds of contributions	20,069	-	-	20,069
Administrative expenses	45,118	1,656	33,457	80,231
Total Deductions	6,405,443	109,929	344,436	6,859,808
Net increase (decrease)	(1,753,461)	3,920	15,029	(1,734,512)
Net position restricted for pension and postemployment healthcare benefits:				
Balance, beginning of year	51,585,521	120,643	178,910	51,885,074
Balance, end of year	\$ 49,832,060	\$ 124,563	\$ 193,939	\$ 50,150,562

The accompanying notes are an integral part of the financial statements.

Statements of Changes in Fiduciary Net Position
Years Ended June 30, 2016 and 2015
(Dollar Amounts in Thousands)

	2015			
	Postemployment Healthcare			Totals
	Pension	Premium Assistance	Health Options Program	
Additions:				
Contributions:				
Members	\$ 984,634	\$ -	\$ -	\$ 984,634
Employers	2,596,731	116,808	-	2,713,539
Total contributions	3,581,365	116,808	-	3,698,173
Participant premiums	-	-	281,855	281,855
Centers for Medicare & Medicaid Services premiums	-	-	42,436	42,436
Investment income:				
From investing activities:				
Net appreciation (depreciation) in fair value of investments	511,997	(128)	-	511,869
Short-term	8,940	376	186	9,502
Fixed income	167,788	-	-	167,788
Common and preferred stock	279,940	-	-	279,940
Collective trust funds	2,117	-	-	2,117
Real estate	345,250	-	-	345,250
Alternative investments	458,658	-	-	458,658
Total investment activity income	1,774,690	248	186	1,775,124
Investment expenses	(455,140)	(33)	(34)	(455,207)
Net income from investing activities	1,319,550	215	152	1,319,917
From securities lending activities:				
Securities lending income	9,934	-	-	9,934
Securities lending expense	(968)	-	-	(968)
Net income from securities lending activities	8,966	-	-	8,966
Total net investment income	1,328,516	215	152	1,328,883
Total Additions	4,909,881	117,023	324,443	5,351,347
Deductions:				
Benefits	6,199,681	106,298	287,255	6,593,234
Refunds of contributions	20,920	-	-	20,920
Administrative expenses	42,331	2,142	28,027	72,500
Total Deductions	6,262,932	108,440	315,282	6,686,654
Net increase (decrease)	(1,353,051)	8,583	9,161	(1,335,307)
Net position restricted for pension and postemployment healthcare benefits:				
Balance, beginning of year	52,980,115	112,060	169,749	53,261,924
Effect of change in accounting principle	(41,543)	-	-	(41,543)
Balance, beginning, as restated	52,938,572	112,060	169,749	53,220,381
Balance, end of year	\$ 51,585,521	\$ 120,643	\$ 178,910	\$ 51,885,074

The accompanying notes are an integral part of the financial statements.

Notes to Financial Statements

Years Ended June 30, 2016 and 2015

1. Organization and Description of the System

(A) Organization

The System was established on July 18, 1917, under the provisions of Pamphlet Law 1043, No. 343 as a governmental cost-sharing multiple-employer plan that provides retirement allowances and other benefits to its members. Membership in the System is mandatory for nearly all qualifying public school employees in the Commonwealth of Pennsylvania (Commonwealth). As of June 30, 2016, there were 781 participating employers, generally school districts. Membership as of June 30, 2015, the most recent year for which actual amounts are available, is presented in Table 2.

The Public School Employees’ Retirement Board (Board) is established by state law as an independent administrative board of the Commonwealth. The Board exercises control and management of the System, including the investment of its assets. The Board has fifteen members including the Commonwealth’s Secretary of Education, the State Treasurer, the Executive Director of the Pennsylvania School Boards Association, two members appointed by the Governor, six elected members (three from among the System’s certified members, one from among the System’s noncertified members, one from among the System’s annuitants, and one from among school board members in Pennsylvania), two members from the Senate, and two members from the House of Representatives.

The State Treasurer is the custodian of the System’s fund. The retirement plan of the System is a contributory defined benefit plan for which the benefit payments to members and contribution provisions by employers and employees are specified in the Pennsylvania Public School Employees’ Retirement Code (Code). Changes in benefit and contribution provisions for the retirement plan must be made by legislation. Pursuant to state law, all legislative bills and amendments proposing to change the System’s retirement plan are to be accompanied with an actuarial note prepared by an enrolled pension actuary from the

Independent Fiscal Office (IFO) providing an estimate of the cost and actuarial effect of the proposed change.

Based upon criterion of financial accountability as defined by governmental accounting standards, the System is considered a component unit of the Commonwealth of Pennsylvania financial reporting entity and is included in the Comprehensive Annual Financial Report of the Commonwealth of Pennsylvania.

(B) Pension Plan

i. Pension Benefits

Under the provisions of the 1975 revision of the Code by the Pennsylvania General Assembly, members are eligible for monthly retirement benefits upon reaching (a) age 62 with at least 1 year of credited service; (b) age 60 with 30 or more years of credited service; or (c) 35 or more years of service regardless of age. Act 120 of 2010 (Act 120) preserves the benefits of existing members and introduced benefit reductions for individuals who become new members on or after July 1, 2011. Act 120 created two new membership classes, Membership Class T-E (Class T-E) and Membership Class T-F (Class T-F). To qualify for normal retirement, Class T-E and Class T-F members must work until age 65 with a minimum of 3 years of service or attain a total combination of age and service that is equal to or greater than 92 with a minimum of 35 years of service. The Internal Revenue Code (IRC) limitation on the annual benefits for a defined benefit plan was \$210,000 for 2016 and 2015.

Benefits are generally equal to 2% or 2.5%, depending upon membership class, of the member’s final average salary (as defined in the Code) multiplied by the number of years of credited service. For members whose membership started prior to July 1, 2011, after completion of five years of service, a member’s right to the defined benefits is vested and early retirement benefits may be elected. For Class T-E and Class T-F members, the right to benefits is vested after ten years of service. Active members may purchase

Table 2 - Membership as of June 30, 2015

Currently employed members:		
Vested	192,925	
Nonvested	66,943	
Total currently employed members		259,868
Retirees and beneficiaries currently receiving benefits	219,775	
Inactive members and vestees entitled to but not receiving benefits	21,909	
Total retirees and other members		241,684
Total number of members		501,552

Notes to Financial Statements (continued)

The contribution rates based on qualified member compensation for virtually all members are presented below:

PSERS members whose membership started prior to July 1, 2011:

Membership Class T-C	Active Members hired before July 22, 1983	5.25%
Membership Class T-C	Active Members hired on or after July 22, 1983	6.25%
Membership Class T-D	Active Members hired before July 22, 1983	6.50%
Membership Class T-D	Active Members hired on or after July 22, 1983	7.50%

PSERS members whose membership started on or after July 1, 2011 (Act 120 members):

Membership Class T-E*		7.50%
Membership Class T-F**		10.30%

* Shared risk program could cause future contribution rates to fluctuate between 7.5% and 9.5%

** Shared risk program could cause future contribution rates to fluctuate between 10.3% and 12.3%

credit for various types of school and non-school service on a lump-sum, installment purchase basis, or through an actuarially calculated benefit reduction. Class T-E and Class T-F members must purchase Non Qualifying Part Time service and most other types of non-school or non-state service credit at full actuarial cost. Class T-E and Class T-F members must purchase credit for Non Qualifying Part Time service within 365 days of enrollment in the system.

In addition to regular retirement benefits, the System also provides for disability retirement benefits and death benefits. Participants are eligible for disability retirement benefits after completion of five years of credited service. Such benefits are generally equal to 2% or 2.5%, depending upon membership class, of the member's final average salary (as defined in the Code) multiplied by the number of years of credited service, but not less than one-third of such salary nor greater than the benefit the member would have had at normal retirement age. Members over normal retirement age may apply for disability benefits.

Death benefits are payable upon the death of an active member who has reached age 62 with at least one year of credited service (age 65 with at least three years of credited service for Class T-E and Class T-F members) or who has at least five years of credited service (ten years for Class T-E and Class T-F members). Such benefits are actuarially equivalent to the benefit that would have been effective if the member had retired on the day before death.

Members with credited service in the Commonwealth of Pennsylvania State Employees' Retirement System (SERS) may elect to transfer service to the Public School Employees' Retirement System upon commencement of employment in the public school system. Similarly, a member with credited service in the System may transfer such service to SERS upon becoming a member of that system.

All members are fully vested in their individual balance in the Members' Savings Account which is described in Note 3. All non-vested members may receive a refund of their individual balance of member contributions and interest

from the Members' Savings Account upon termination of public school employment. Vested members who enrolled prior to July 1, 2011 may elect to receive a return of their accumulated contributions and interest upon their retirement which results in a reduced monthly annuity. Vested Class T-E and Class T-F members cannot withdraw their accumulated contributions and interest from the Members' Savings Account upon their retirement.

ii. Contributions

The contribution policy is set by the Code and requires contributions by active members, employers, and the Commonwealth. The System's funding policy provides for periodic employer and Commonwealth contributions at actuarially determined rates, expressed as a percentage of annual covered payroll, such that they, along with employee contributions and an actuarially determined rate of investment return, are adequate to accumulate assets to pay retirement benefits when due. Level percentage of payroll employer contribution rates are determined using the entry age normal actuarial funding method. This method determines the amount of contributions necessary to (1) fully fund all current costs, (also known as normal cost), which represents the estimated amount necessary to pay for the benefits earned by the employees during the current service year; and (2) liquidate the prior service cost for service earned prior to the current service year and subsequent benefit increases, which represents the amount necessary to fund accrued liabilities over the appropriate amortization periods.

Contribution rates for active members are set by law (redefined with the provisions of Act 9 of 2001 and Act 120) and are dependent upon membership class. The IRC limitation on the annual compensation of active members for a defined benefit plan was \$265,000 for 2015 and 2016.

Active members who enrolled between July 1, 2001, the effective date of Act 9, and June 30, 2011 are Membership Class T-D (Class T-D). The contribution rates for all members in Class T-D were effective January 1, 2002.

Notes to Financial Statements (continued)

For Act 120 members, all new members automatically become Class T-E members. New members, however, have a one-time opportunity to elect Class T-F within 45 days of receiving written notification from PSERS. Failure to elect Class T-F at time of original eligibility will make the member ineligible for Class T-F forever. Act 120 introduced a shared risk program that could affect Class T-E and Class T-F members' contribution rates in future fiscal years. With the shared risk program Class T-E and Class T-F members benefit when investments of the fund are doing well and share some of the risk when investments underperform. The member contribution rate will stay within the specified range allotted for Class T-E or Class T-F; but could increase or decrease by 0.5% every three years starting July 1, 2015, dependent on investment performance of PSERS. The member contribution rate will never go below the base rate of 7.5% for Class T-E and 10.3% for Class T-F members, or above 9.5% for Class T-E and 12.3% for Class T-F members.

The total contribution rate for the employers and the Commonwealth was 25.84% and 21.40% (25.00% and 20.50% for pension component) of qualified compensation for the years ended June 30, 2016 and 2015, respectively.

Act 120 suppresses the employer contribution rate by using rate caps in future years to keep the rate from rising too high, too fast for budgetary purposes.

The rate caps limit the amount the pension component of the employer contribution rate can increase over the prior year's rate. For FY 2014 and thereafter, the rate can increase no more than 4.5% plus the premium assistance contribution rate.

The rate cap remains at 4.5% until the rate cap no longer applies, i.e., the rise in the employer contribution rate is less than the rate cap in effect at that time. Once the rate caps no longer apply, the employer normal cost becomes the contribution rate floor.

According to requirements established in Act 29 of 1994, the Commonwealth reimburses school entity employers a portion of the employer contributions paid to the System. All school entity employers are reimbursed by the Commonwealth at least 50% of the total employer contributions based on the total contribution rate. The Commonwealth reimburses certain school entity employers at a rate greater than 50% based upon non-pension criteria which stipulate that the entity must have a Commonwealth Department of Education calculated Market Value / Personal Income Aid Ratio in excess of .5000. The Commonwealth remits 50% of the total employer contributions for employers other than school entities directly to the System. All contributions from employers and the Commonwealth

are shown as employer contributions on the Statements of Changes in Fiduciary Net Position.

(C) Postemployment Healthcare Plans

i. Health Insurance Premium Assistance Program

(a) Premium Assistance Benefits

The System provides a Health Insurance Premium Assistance Program (Premium Assistance) for all eligible annuitants who qualify and elect to participate. Under this program, employer contribution rates for Premium Assistance are established to provide reserves in the Health Insurance Account that are sufficient for the payment of Premium Assistance benefits for each succeeding year. Effective January 1, 2002, under the provisions of Act 9 of 2001, participating eligible annuitants are entitled to receive premium assistance payments equal to the lesser of \$100 per month or their out-of-pocket monthly health insurance premium. To receive premium assistance, eligible annuitants must obtain their health insurance through either their school employer or the PSERS' Health Options Program. As of June 30, 2016 there were no assumed future benefit increases to participating eligible annuitants in the Premium Assistance program.

(b) Contributions

A portion of each employer and Commonwealth contribution to the System is set aside for the funding of Premium Assistance. The Premium Assistance contribution rate is set at a level necessary to establish reserves sufficient to provide Premium Assistance payments for all participating eligible members for the subsequent fiscal year. The portion of the total contribution rate for employers and the Commonwealth used to fund Premium Assistance was 0.84% and 0.90% for the years ended June 30, 2016 and 2015, respectively.

(c) Funding Status and Annual Required Contributions (ARC)

As of June 30, 2015, the most recent actuarial valuation, the plan was 8.8% funded. The actuarial accrued liability for benefits was \$1.368 billion, and the actuarial value of assets was \$120.6 million, resulting in an unfunded accrued liability of \$1.247 billion. The covered payroll of active members was \$12.7 billion and the ratio of the unfunded actuarial accrued liability to the covered payroll was 9.8%.

For fiscal year ended June 30, 2016, the ARC was \$129.5 million. The actual employer contributions for fiscal year ended June 30, 2016 was \$113.3 million resulting in a 88%

Notes to Financial Statements (continued)

contributed rate. The ratio of assets to Actuarial Accrued Liabilities (AAL) was 8.8%, 8.2%, and 7.2% for fiscal years ended June 30, 2015, 2014, and 2013, respectively. Assets have increased in relation to AAL from fiscal year ended June 30, 2013 to 2014 and increased from fiscal year ended June 30, 2014 to 2015.

The Schedule of Funding Progress and the Schedule of Employer Contributions included as Required Supplementary Information following the notes to the financial statements provide multiple year presentations about whether the actuarial value of plan assets is increasing or decreasing relative to the actuarial accrued liability for benefits over time.

(d) Actuarial Assumptions and Methods

The health insurance liability and funding provisions of the PSERS Code differ from the GASB disclosure requirements. As a result, there are different determinations of actuarial liability and contribution requirements for GASB accounting purposes and for Commonwealth funding purposes. For purposes of funding, the actuarial liability equals the assets in the Premium Assistance account, and the contribution required is the amount necessary to establish reserves sufficient to provide Premium Assistance payments to all participating eligible annuitants during the fiscal year that immediately follows the year the employer contribution is made. For GASB accounting purposes, the actuarial liability has been determined under the entry age normal actuarial cost method, and the ARC is equal to the entry age normal cost for health insurance plus an amount that will amortize the entry age unfunded actuarial liability for health insurance over a period of 30 years using level dollar open amortization. The entry age actuarial cost method was selected for this calculation because it meets the GASB parameters for determining actuarial liability and normal cost, and is the cost method specified by the PSERS Code for the PSERS pension plan.

Each annual actuarial valuation for Premium Assistance includes calculations that are based on the Premium Assistance benefits provided under the terms of the substantive plan in effect at the time of each valuation. The valuations involve estimates of the value of reported amounts and assumptions about the probability of events far into the future. The actuarial calculations for Premium Assistance reflect a long-term perspective. Actuarially determined amounts are subject to continual revision as results are compared to past expectations and new estimates are made about the future. Other significant actuarial assumptions employed by the actuary as of June 30, 2015, the date of the most recent actuarial valuation were:

- Investment return - 7.50%, includes inflation at 3.00%
- Salary growth - 5.50%, which reflects an allowance for inflation of 3.00%, real wage growth of 1%, and merit or seniority increases of 1.50%
- Multiple decrement tables - mortality, vesting, retirement age, and withdrawal estimates are based upon tables provided by the actuary

ii. Health Options Program

The Health Options Program (HOP) is a PSERS-sponsored voluntary health insurance program for the sole benefit of annuitants of PSERS, spouses of annuitants, survivor annuitants and their dependents who participate in HOP. The HOP is funded exclusively by the premiums paid by its participants for the benefit coverage they elect. HOP offers several health plans. Participants may select among a self-funded Medicare supplement plan, two Medicare Rx plans, and multiple Medicare Advantage plans for those eligible for Medicare. Participants not eligible for Medicare have a choice of a self-funded high deductible indemnity plan and multiple managed care plans. Medicare Advantage and managed care plans are available to retirees residing in the plan's service area. The Medicare Advantage and managed care plans are provided by private insurance companies or managed care organizations and benefits are fully insured. The Medicare supplement and high deductible plans are self-funded and claims are adjudicated by a third party administrator. The Medicare Rx Options and the prescription drug benefit of the high deductible plan for those not eligible for Medicare are also self-funded. HOP uses a pharmacy benefits manager to administer the benefits. Effective January 1, 2006, PSERS entered into an Employer/Union Entity contract with the Centers for Medicare and Medicaid Services (CMS) to operate a voluntary Medicare Prescription Drug Plan (PDP). Monthly premiums are received from CMS covering the 76,207 participants in the PDP. An independent actuarial consulting firm sets the rates for the self-funded benefits. The HOP maintains reserves for claims that are Incurred But Not Reported (IBNR) and for claim fluctuation for the self-funded benefit plans. At June 30, 2016 and 2015 PSERS recorded \$14,701,000 and \$13,571,000, respectively, in IBNR. The IBNR is included in benefits payable. The PSERS pension fund assets are not available to fund or satisfy obligations of the HOP.

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies

(A) Basis of Accounting

The financial statements of the System are prepared on the accrual basis of accounting under which expenses are recorded when the liability is incurred, revenues are recorded in the accounting period in which they are earned and become measurable, and investment purchases and sales are recorded as of their trade date. Member and employer contributions are recognized in the period for which employees' salaries are reported. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

The accounting and reporting policies of the System conform to accounting principles generally accepted in the United States of America (GAAP). The preparation of financial statements in conformity with GAAP 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 in fiduciary net position during the reporting period. Actual results could differ from those estimates.

(B) Investments

The System's investments are reported at fair value. Fair value is the amount that the System can reasonably expect to receive for an investment in a current sale between a willing buyer and a willing seller, that is, other than in a forced or liquidation sale. See Note 4(B) for the description of the Fair Value of Investments.

Net appreciation (depreciation) is determined by calculating the change in fair value of investments between the beginning of the year and end of the year, less purchases of investments at cost, plus sales of investments at fair value.

Investment purchases and sales are recorded as of the trade date. Interest income is comprised of dividend, interest, and other investment income. Dividend income is recognized on the ex-dividend date. Interest and other investment income is recognized when earned.

Investment expenses consist of investment manager fees and those administrative expenses directly related to the System's investment operations. Investment proceeds receivable generally includes unsettled investment sales and unsettled investment purchases are included in investment purchases and other liabilities. At June 30, 2016 investment proceeds receivable also includes \$1,067,000,000 in receivables due to the sale of limited partnership and real estate interests during FY 2015 and FY 2016.

(C) Capital Assets

Capital assets consist primarily of data processing equipment, software, and internally developed computer software recognized as intangible assets. Capital assets are depreciated using the straight-line method over an estimated useful life of five years. Intangible assets are amortized using the straight-line method over an estimated useful life of twenty years for assets purchased prior to July 1, 2012 and 5 years for assets purchased after June 30, 2012.

(D) Benefits Payable

Benefits payable identifies the obligations of the System, on an accrual basis, at the end of the fiscal year. It includes the estimated retirement and death benefits payable, premium assistance benefits payable, and the HOP IBNR claims for its participants.

(E) Pensions for Employees of the System

For purposes of measuring the net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense, information about the fiduciary net position of the Pennsylvania State Employees' Retirement System (SERS) and additions to/deductions from SERS' fiduciary net position have been determined on the same basis as they are reported by SERS, please refer to Note 7 for additional information regarding SERS. PSERS' net pension liability for its employees to SERS is reported in Accounts payable and accrued expenses. The pension expense is reported in administrative expenses and is detailed on the Schedule of Operating Expenses Supplementary Schedule.

(F) Compensated Absences

The System uses the accrual basis of accounting for measuring vacation leave, sick leave, and other compensated absences liabilities. Employees of the System are paid for accumulated vacation leave upon termination or retirement. Retiring employees of the System that meet service, age, or disability requirements are paid between 30% and 100% of sick days available at retirement, up to 161 maximum days paid. As of June 30, 2016 and 2015, \$3,226,000 and \$3,647,000, respectively, were accrued for unused vacation and sick leave for the System's employees and are included in "Accounts payable and accrued expenses" on the Statements of Fiduciary Net Position.

(G) Participant Premium Advances

Premium advances in the fiscal years ended June 30, 2016 and 2015 are for HOP premiums related to health care coverage to be provided in calendar years 2016 and 2015, respectively.

Notes to Financial Statements (continued)**(H) Federal Income Taxes**

The Internal Revenue Service (IRS) issued a determination letter dated September 30, 2013 which stated that the plan and its underlying trust qualify under the provisions of Section 501(a) of the Internal Revenue Code (IRC) and therefore are exempt from federal income taxes.

(I) Risk Management

The System is exposed to various liabilities and risks of loss, including, without limitation, the ordinary risks of investment losses, risks related to theft or destruction of assets, liabilities resulting from injuries to employees, and liabilities resulting from court challenges to fiduciary decisions. As an administrative agency of the Commonwealth of Pennsylvania, the System is accorded sovereign immunity. For claims not shielded by sovereign immunity, the System participates in certain Commonwealth pooled insurance programs and requires asset managers to carry certain insurance coverage for the protection of the System. The System has implemented a self-insurance program for fiduciary and director and officer liability coverage. During the past three fiscal years, insurance settlements did not exceed insurance coverage.

(J) Reclassifications

Certain 2015 amounts have been reclassified in conformity with the 2016 presentation. These reclassifications had no effect on net position restricted for pension benefits or the change in fiduciary net position.

(K) Members Receivables

Members receivables include an amount for members' obligations to the System for the purchase of service credit. Members have a variety of options to remit purchase of service payments:

- Remit a lump sum payment.
- Request an installment plan from one to seven years where the member's employer establishes a payroll deduction process. The member's employer then forwards monthly payments of the withheld amounts to PSERS.
- Accept an actuarial reduction debt through which the amount of the purchase plus accumulated interest will reduce the member's retirement or death benefit.
- Rollover funds from an eligible distribution.

(L) Interfund Transactions and Balances

Interfund transfers of assets take place on a regular recurring basis between Pension and Premium Assistance. The

The following is a summary of the members receivables at June 30, 2016 and 2015:

	(Dollar Amounts in Thousands)	
	2016	2015
Pension:		
Member contributions	\$ 71,708	\$ 74,488
Purchase of service	255,509	245,180
Other	6,072	5,617
Total Members Receivables	\$ 333,289	\$ 325,285

transfers occur upon receipt of employer contributions and payment of benefits or expenses. The interfund receivables and payables related to interfund activity are classified under receivables and liabilities on the financial statements.

(M) Adoption of New Accounting Standards

During the fiscal year ended June 30, 2016 the System adopted GASB Statement No. 72, *Fair Value Measurement and Application* which addresses accounting and financial reporting issues related to fair value measurements.

During the fiscal year ended June 30, 2016, the System adopted GASB Statement No. 73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68*. Upon examination of GASB 73, it was determined to have no current impact on PSERS.

During the fiscal year ended June 30, 2015 the System adopted GASB Statement No. 68, *Accounting and Financial Reporting for Pensions* which replaces the requirements of GASB Statement Nos. 25 and 50 related to pension plans that are administered through trusts or equivalent arrangements.

During the fiscal year ended June 30, 2015 the System adopted GASB Statement No. 69, *Government Combinations and Disposals of Government Operations*. Upon examination of GASB 69, it was determined to have no current impact on PSERS.

During the fiscal year ended June 30, 2015 the System adopted GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date* which is to be applied simultaneously with the provisions of GASB Statement No. 68.

(N) Change in Accounting Principle

Due to the implementation of GASB Statement No. 68, the beginning net position restricted for pension and

Notes to Financial Statements (continued)

postemployment healthcare benefits for the fiscal year ended June 30, 2015 was restated by \$(41,543,000). The purpose of the restatement was to record the beginning net pension liability of \$(42,989,000) and the beginning deferred outflows of resources for contributions subsequent to the measurement date of \$1,446,000 to SERS.

3. Description of Accounts

The Code requires the System to maintain the following accounts which represent reserves held for future and current benefit payments as follows and as illustrated in Table 3.

(A) State Accumulation Account

The State Accumulation Account is credited with contributions from the Commonwealth and the employers. Additionally, interest earnings of the System (after crediting the Members’ Savings Account with 4% interest and the reserve for retirement with 5.50% statutory interest) are credited to this account. Each year, the necessary amounts, as determined by the actuary for the payment of retirement, disabilities, and death benefits, are transferred from the State Accumulation Account to the Annuity Reserve Account increasing the reserve credit to the 7.50% valuation assumption rate determined by the actuary. All administrative expenses necessary for the operation of the System, except for Premium Assistance and HOP expenses, are paid from the State Accumulation Account.

(B) Members’ Savings Account

The Members’ Savings Account is credited with all contributions made by active members of the System. Interest is added to the member’s individual account at an annual rate of 4%.

Upon death or retirement of a member, the accumulated contributions plus interest are transferred to the Annuity Reserve Account for subsequent payment of benefits.

(C) Annuity Reserve Account

The Annuity Reserve Account represents the amounts transferred from the Members’ Savings and State Accumulation Accounts, plus additional contributions made by the Commonwealth and employers for the payment of supplemental annuities and cost-of-living increases. All death, disability, and retirement benefits are paid from this account. Annual interest of 5.50% is credited to the Annuity Reserve Account.

	2016	2015
Pension:		
State Accumulation Account	\$ (18,726,300)	\$ (15,751,974)
Members’ Savings Account	14,907,731	14,079,658
Annuity Reserve Account	53,650,628	53,257,837
	\$ 49,832,060	\$ 51,585,521
Postemployment Healthcare:		
Health Insurance Account	\$ 124,563	\$ 120,643
Health Insurance Program Account	193,939	178,910
	\$ 318,502	\$ 299,553

(D) Health Insurance Account

The Health Insurance Account is credited with contributions from the Commonwealth and the employers for Premium Assistance. Effective January 1, 2002, under the provisions of Act 9 of 2001, participating eligible annuitants are entitled to receive premium assistance payments equal to the lesser of \$100 per month or their out-of-pocket monthly health insurance premium. The Health Insurance Account pays all administrative expenses necessary to operate the Premium Assistance.

(E) Health Insurance Program Account

The Health Insurance Program Account is credited with premiums from members of the HOP and from CMS. All benefits related to the HOP (premium payments to the insurance companies and self-funded benefits) are paid from this account. The Health Insurance Program Account pays all administrative expenses necessary to operate the HOP.

4. Investments

(A) Summary of Investments

The Board has the responsibility to invest and reinvest available funds of the System in accordance with the guidelines and limitations set forth in the Code and other applicable state law. The Board accomplishes the daily management of the System’s investments through investment advisors who act as agents for the System and through internal investment managers.

The Board invests the funds of the System using the Prudent Investor Standard, as articulated in the Code, which means “the exercise of that degree of judgment, skill and care under the circumstances then prevailing which persons of prudence, discretion, and intelligence who are familiar with such matters exercise in the management of their own affairs

Notes to Financial Statements (continued)

not in regard to speculation, but in regard to the permanent disposition of the fund, considering the probable income to be derived therefrom as well as the probable safety of their capital.” The Board has adopted its investment policy to formally document investment objectives and responsibilities. This policy, as well as applicable state law, establishes guidelines for permissible investments of the System.

(B) Fair Value of Investments

i. Fair Value Levels

PSERS measures and records its investments using fair value measurement guidelines established by generally accepted accounting principles. These guidelines recognize a three-tiered fair value hierarchy as follows:

- **Level 1 inputs:** Level 1 inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets. A quoted price for an identical asset or liability in an active market (e.g., an equity security traded on a major exchange) provides the most reliable fair value measurement and, if available, should be used to measure fair value in that particular market.
- **Level 2 inputs:** The categorization of an asset/liability as Level 1 requires that it is traded in an active market. If an instrument is not traded in an active market, it may fall to Level 2. Level 2 inputs are inputs that are observable, either directly or indirectly, but do not qualify as Level 1.
- **Level 3 inputs:** Reporting entities may use unobservable inputs to measure fair value if relevant observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at the measurement date. These unobservable inputs are considered Level 3.

Debt, equity, and derivative instrument securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Debt securities classified in Level 2 of the fair value hierarchy are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities’ relationship to benchmark quoted prices and recently printed security specific trading levels. Short-term securities are carried at cost, which approximates fair value, unless they have published market prices or quotations from national securities exchanges or securities pricing services, in which case they are valued at the published market price. Fixed income securities and common and preferred stocks are generally valued based on published market prices and

quotations from national securities exchanges or securities pricing services. Securities which are not traded on a national securities exchange are valued by the respective fund manager or other third parties based on similar sales.

Directly-owned real estate investments are primarily valued based on appraisals performed by independent appraisers and, for properties not appraised, the present value of the projected future net income stream is used. Real estate owned investments are reported net of related debt borrowed against the market value of the property. As of June 30, 2016 and 2015, \$132,000,000 in line of credit advances were netted against the related property valuation and are classified as Level 1. The line of credit balance is due on March 3, 2017. The line is payable at an interest rate equivalent to LIBOR plus 85 basis points and is collateralized by certain fixed income investments of the System.

Derivative instruments classified in Level 1 of the fair value hierarchy are valued using observable exchange, dealer, or broker market pricing.

The Premium Assistance investment assets have the following recurring fair value measurements as of June 30, 2016:

- PSERS Short-Term Investment Fund of \$23,944,000 is valued using pricing quoted in active markets for those securities (Level 1 inputs).
- Other domestic short-term investments of \$64,943,000 are valued using a matrix pricing model (Level 2 inputs).

The HOP investment assets have the following recurring fair value measurements as of June 30, 2016:

- PSERS Short-Term Investment Fund of \$89,125,000 is valued using pricing quoted in active markets for those securities (Level 1 inputs).
- Other domestic short-term investments of \$104,205,000 are valued using pricing quoted in active markets for those securities (Level 1 inputs).

Notes to Financial Statements (continued)

At June 30, 2016, the System had the following recurring fair value measurements.

Investments and Derivative Instruments Measured at Fair Value

(Dollar Amounts in Thousands)

	2016	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Pension investments:				
Investments by fair value level				
Short term:				
PSERS Short-Term Investment Fund	\$ 4,459,476	\$ 4,459,476	\$ -	\$ -
Other domestic short-term	132,603	129,859	-	2,744
International short-term	106,425	105,455	970	-
	<u>4,698,504</u>	<u>4,694,790</u>	<u>970</u>	<u>2,744</u>
Fixed income:				
Domestic asset-backed and mortgage-backed securities	1,450,885	-	1,450,885	-
U.S. government and agency obligations	923,896	909,123	14,773	-
Domestic corporate and taxable municipal bonds	1,195,561	-	1,195,561	-
International fixed income	482,171	-	481,327	844
	<u>4,052,513</u>	<u>909,123</u>	<u>3,142,546</u>	<u>844</u>
Common and preferred stock:				
Domestic common and preferred stock	5,331,356	5,329,831	-	1,525
International common and preferred stock	5,124,942	5,124,867	-	75
	<u>10,456,298</u>	<u>10,454,698</u>	<u>-</u>	<u>1,600</u>
Directly-owned real estate	<u>330,599</u>	<u>(132,000)</u>	<u>-</u>	<u>462,599</u>
Total investments by fair value level	<u>19,537,914</u>	<u>\$ 15,926,611</u>	<u>\$ 3,143,516</u>	<u>\$ 467,787</u>
Investments measured at the net asset value (NAV)				
Collective trust funds	<u>12,143,184</u>			
Equity real estate	<u>4,835,469</u>			
Alternative investments:				
Private equity	5,792,265			
Private debt	4,441,297			
Venture capital	965,638			
	<u>11,199,200</u>			
Total investments measured at the NAV	<u>28,177,853</u>			
Total investments measured at fair value	<u>\$ 47,715,767</u>			
Investment derivative instruments				
Futures	\$ 32,019	\$ 32,019	\$ -	\$ -
Total return type swaps	302,321	302,321	-	-
Foreign exchange contracts	(9,932)	(9,932)	-	-
Total investment derivative instruments	<u>\$ 324,408</u>	<u>\$ 324,408</u>	<u>\$ -</u>	<u>\$ -</u>

Notes to Financial Statements (continued)

The valuation method for investments measured at the net asset value (NAV) per share (or its equivalent) as of June 30, 2016 is presented in the following table.

Investments measured at the NAV				
(Dollar Amounts in Thousands)				
	<u>Fair Value</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency</u>	<u>Redemption Notice Period</u>
Collective trust funds (a)	<u>\$ 12,143,184</u>	\$ 160,000	see note (a)	0 - 90 Days
Equity real estate (b)	<u>4,835,469</u>	2,205,905	see note (b)	
Alternative investments:				
Private equity (c)	5,792,265	3,404,544	see note (c)	
Private debt (d)	4,441,297	3,175,050	see note (d)	
Venture capital (e)	965,638	422,282	see note (e)	
	<u>11,199,200</u>			
Total investments measured at the NAV	<u>\$ 28,177,853</u>			

ii. Investments at Net Asset Value (NAV)

- (a) Collective trust fund investments (CTF) consist primarily of domestic and international institutional funds. The fair value of CTF is based on the reported share value of the respective fund. CTF are managed by state chartered banks for which various state banking departments have regulatory oversight and investment advisors for which regulatory agencies such as the Securities and Exchange Commission have regulatory oversight. Investments that are not subject to this oversight are subject to annual independent audits. Redemption frequency for these assets range from monthly, to quarterly, to annual. One asset has a 2-year hard lock that expires on December 31, 2017.
- (b) Equity real estate includes 75 real estate funds that invest primarily in U.S., Latin American, European and Asian commercial real estate. Fund investments can be made across the capital structure of each property venture. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from each fund may be received as: 1) cash flows from operations or 2) return of capital from dispositions. It is expected that the underlying assets of the funds will be liquidated over the next 7 to 12 years.
- (c) Private equity includes 74 U.S. buyout funds and 35 international buyout funds that invest mostly in private companies across a variety of industries (although they may invest in public companies from time to time). The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. The nature of private equity investments is that distributions are received through the liquidation of the underlying assets of the fund. The expected holding period of a private equity portfolio company is 3 to 7 years.
- (d) Private debt includes 61 private investment funds that invest across the fixed income capital structure primarily in North America and Western Europe. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Instead, the nature of the investments in this type is that distributions are received through the orderly liquidation of the underlying assets of the fund throughout the stated term of the fund. It is expected that the underlying assets of the funds will be liquidated over the next 3 to 7 years.
- (e) Venture capital includes 36 U.S. based private funds that finance young, relatively small, rapidly growing companies, typically in either the health care or information technology sectors. The fair value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. The nature of venture capital investments is that distributions are received through the liquidation of the underlying assets of the fund. It is expected that the underlying assets of the funds will be liquidated over the next 5 to 10 years.

Notes to Financial Statements (continued)

(C) Deposit and Investment Risk Disclosures

i. Deposits

Custodial credit risk for deposits is the risk that, in the event of a financial institution failure, the System would not be able to recover the value of the deposits. The Commonwealth’s Treasury Department is the custodian of the System’s funds. Commonwealth Treasury Department deposits must be held in insured depositories approved by the Commonwealth’s Board of Finance and Revenue and must be fully collateralized.

The System, through its third party administrator, maintains certain bank deposits for the operation of its voluntary HOP. These deposits are not required to be collateralized by statute or policy. These deposits totaled \$104,205,000 and \$97,483,000 at June 30, 2016 and 2015, respectively, and are under the custody of M&T Bank which has an A rating by Standard and Poor’s (S&P) and an Aa2 rating by Moody’s Investor Services (Moody’s).

ii. Investment Risks

The System’s investments, including derivatives and other similar investments, may be subject to various risks. Among these risks are concentration of credit risk, custodial credit risk, credit risk, interest rate risk, and foreign currency risk. The policies addressing each one of these risks, discussed in more detail below, are contained within the Investment Policy Statement, Objectives, and Guidelines reviewed and approved annually by the Board. Due to the level of risk associated with certain investments, it is possible that changes in the values of investments may occur in the near term and that such changes could materially affect the amounts reported in the Statements of Fiduciary Net Position.

(a) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the System’s investment in a single issuer. As of June 30, 2016 and 2015 the System had no single issuer that exceeded 5% of total investments. Investments issued or explicitly guaranteed by the U.S. government and investments in mutual funds, external investment pools, and other pooled investments were excluded.

(b) Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the System would not be able to recover the value of investment or collateral securities that are in the possession of an outside party. In accordance with a contractual relationship between

The following table discloses aggregate market value by credit quality rating category. Many securities have ratings from more than one NRSRO and sometimes those ratings differ from one NRSRO to another. The data listed below uses the rating (expressed as S&P equivalent) available from Fitch, Moody’s and/or S&P that indicates the lowest credit quality at June 30, 2016 and 2015.

Quality Rating	(Dollar Amounts in Thousands)	
	2016 Fair Value	2015 Fair Value
AAA	\$ 638,124	\$ 624,399
AA	153,353	417,854
A	238,902	398,294
BBB	455,746	693,513
BB and Below	254,925	309,954
NR*	10,592,798	13,638,198
Total Exposed to Credit Risk	12,333,848	16,082,212
US Government Guaranteed**	1,331,821	1,578,899
Total Fixed Income and Short-Term Investments	\$ 13,665,669	\$ 17,661,111

* Not Rated securities include \$4,632,435 and \$8,794,411 in collective trust funds and \$4,572,545 and \$3,321,807 in PSERS Short Term Investment Fund assets at June 30, 2016 and 2015 respectively.

** Comprised of U.S. government and agency obligations explicitly guaranteed by the U.S. government and not considered to have credit risk.

the Commonwealth’s Treasury Department and its custodial agent, substantially all investments, where securities are used as evidence of the investment, are held by the custodian in book-entry form in the System’s name. Those investments are defined as insured or registered investments for which the securities are held by the System or its agent and, therefore, have a very minimal level of custodial credit risk. The remaining investments, which do not have securities that are used as evidence of the investment, are primarily in collective trust funds and limited partnerships, which include real estate and alternative investments.

(c) Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The credit risk of a debt instrument is measured by nationally recognized statistical rating organizations (NRSRO) such as Fitch Investor Services (Fitch), Moody’s, and S&P. Annually, the Board establishes an asset allocation plan. This plan manages the overall credit risk of the fixed income asset class through a clearly defined long-term asset allocation policy. This policy establishes a long-term target allocation of the fixed income asset class at 23.0% of the investment portfolio. The fixed income target allocation consists of:

Notes to Financial Statements (continued)

For derivatives exposed to credit risk, the table below presents aggregate market value by the least favorable credit rating provided by NRSROs at June 30, 2016 and 2015.

Quality Rating	(Dollar Amounts in Thousands)	
	2016	2015
	Fair Value	Fair Value
A	\$ 281,337	\$ (15,821)
BBB	20,984	(2,179)
Total Swaps-Total Return	\$ 302,321	\$ (18,000)

- An allocation of 5.0% of the portfolio has been made to the U.S. core plus segment of the fixed income asset class benchmarked to the Barclays Capital U.S. Aggregate Index. The U.S. core plus allocation is composed of primarily investment grade, relatively liquid, public domestic bonds with an overall weighted-average NRSRO credit rating of A or better.
- An allocation of 6.0% of the portfolio has been made to the high yield segment of the fixed income asset class benchmarked to the Barclays Capital U.S. High Yield Index. The high yield allocation is composed of less liquid public non-investment grade fixed income securities with an overall weighted-average NRSRO credit rating of B- or better.
- An allocation of 6.0% of the portfolio has been made to the Treasury Inflation-Protected Securities (TIPS) segment of the fixed income asset class benchmarked to the Barclays Capital U.S. TIPS Index and composed of primarily government issued TIPS with an overall weighted-average NRSRO credit rating of AA or better. The portfolio manager is permitted to leverage the portfolio using TIPS total return swaps up to 3:1.
- An allocation of 1.0% of the portfolio has been made to the non-U.S. developed markets fixed income asset class benchmarked to the Barclays Capital Global Aggregate GDP-weighted Developed Market ex-U.S. (Unhedged) Index composed of primarily investment grade, relatively liquid non-U.S. public bonds with an overall weighted-average NRSRO credit rating of A or better.
- An allocation of 2.0% of the portfolio has been made to the emerging markets fixed income asset class benchmarked to the Barclays Capital EM Local Currency-Government-MV Weighted (Unhedged) -10% Country Cap Index composed of primarily investment grade, relatively liquid non-U.S. public bonds with an overall weighted-average NRSRO credit rating of BB- or better.
- An allocation of 3.0% of the portfolio has been made to cash benchmarked to the Merrill Lynch U.S. Treasury Bill 0-3 Months Index composed of primarily investment grade, relatively liquid U.S. and non-U.S. public bonds with an overall weighted-average NRSRO credit rating of AA or better.

At June 30, 2016 and 2015, the System's fixed income portfolio had the following option-adjusted durations by fixed income sector:

Investment Type	(Dollar Amounts in Thousands)			
	2016		2015	
	Option-Adjusted Duration	Fair Value	Option-Adjusted Duration	Fair Value
Domestic asset-backed and mortgage-backed securities	0.9	\$ 1,450,885	1.0	\$ 1,269,736
U.S. government and agency obligations	8.2	923,896	6.7	1,399,117
Domestic corporate and taxable municipal bonds	3.2	1,195,561	2.9	1,594,524
International fixed income	6.5	482,171	5.5	822,544
Collective trust funds	3.8	4,632,435	3.7	8,794,411
PSERS Short-Term Investment Fund	0.1	4,572,545	0.1	3,410,615
Total	2.6*	\$ 13,257,493	3.0*	\$ 17,290,947

* Fixed income investment managers enter into futures contracts to adjust the durations of their portfolios as a whole rather than any particular investment type within the portfolio. In total, the futures contracts have adjusted PSERS' total portfolio duration upward by 0.1 at June 30, 2016 and 2015. The total portfolio option-adjusted duration is calculated by weighting each investment type by fair value.

Notes to Financial Statements (continued)

At June 30, 2016 and 2015, the System had the following foreign currency exposures for its derivatives (except for foreign exchange contracts which are included in Note 5):

Currency	(Dollar Amounts in Thousands)	
	2016	2015
	Notional Value	Notional Value
Euro	\$ 300,680	\$ 212,058
Japanese yen	122,950	136,159
British pound sterling	108,612	140,441
Canadian dollar	54,550	45,424
Australian dollar	32,856	41,481
Hong Kong dollar	7,425	4,056
Total Futures Contracts and Total Return Swaps	\$ 627,073	\$ 579,619

(d) Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of a fixed income investment. The System manages its interest rate risk by diversifying the fixed income portfolio and maintaining the fixed income portfolio at a Board-approved effective duration range of the benchmark index.

Duration is a measure of the approximate sensitivity of a bond's value to interest rate changes. The higher the duration, the greater the changes in fair value when interest rates change. For example, a duration of 4.0 would mean that, given a 100-basis point change up/down in rates, a bond's price would move down/up approximately 4.0%. PSERS measures interest rate risk using option-adjusted duration, which recognizes the fact that yield changes may change the expected cash flows due to embedded options.

(e) Foreign Currency Risk

Foreign currency risk is the risk that fluctuations in exchange rates will adversely affect the fair value of an investment. As part of the System's program to manage risk and enhance returns, the System invests in non-U.S. markets. Investment managers in non-U.S. equity and global fixed income may hedge their non-U.S. foreign currency exposure back to U.S. dollars.

(D) Securities Lending

During the year ended June 30, 2015, the System entered into a securities lending program with a third party agent. Under this program, the lending agent loans securities (equities, fixed income, and money market instruments) to independent brokers and dealers in exchange for U.S. dollar cash collateral in an amount not less than 102% of the fair value of any securities loaned except for non-U.S. corporations for which 105% of the fair value is required. Collateral is marked-to-market daily. If the fair value of the collateral held falls below the minimum guidelines

for securities loaned, additional collateral is obtained. The lending agent invests the cash collateral in accordance with reinvestment guidelines approved by the System.

As of June 30, 2016 and 2015, the System had no credit risk exposure to borrowers because the amounts the System owed the borrowers exceeded the amounts the borrowers owed the System. Under the securities lending program, the lending agent provides indemnification to the System if a borrower fails to return borrowed securities (and the collateral is inadequate to replace the loaned securities) or fails to pay income distributions on them. The lending agent also provides indemnification to the System if investment of cash collateral results in investment loss. There were no losses during the fiscal years ended June 30, 2016 and 2015 resulting from a default of the borrowers or the lending agent.

All securities loans can be terminated on demand by either the System or the borrower, although the average term of the loan is one day. There were no term loans as of June 30, 2016 and 2015.

Cash collateral is invested in a short-term collateral investment pool that is managed by the lending agent, is segregated from all other clients of the lending agent, and is not subject to custodial credit risk. The System's income from securities lending represents its pro-rata share from participating in the program. The weighted-average maturity of the investments in the pool was one day at June 30, 2016 and 2015. During the fiscal years ended June 30, 2016 and 2015, the mismatch between the maturities of the investments made with cash collateral and the maturities of the securities loans may have posed some interest rate risk to the System. In the event of a default, the lending agent may use the collateral to replace the loaned securities.

As of June 30, 2016, the fair value of loaned securities was \$2,046,869,000. The fair value of the associated collateral was \$2,092,729,000, all of which was cash. As of June 30, 2015, the fair value of loaned securities was

Notes to Financial Statements (continued)

Non-U.S. currency exposures at June 30, 2016 and 2015:

2016						
(Dollar Amounts in Thousands)						
Currency	Equity	Fixed Income	Alternative Investments & Real Estate	Short-Term*	Currency Hedge	Total Fair Value
Euro	\$ 906,601	\$ 104,468	\$ 1,787,026	\$ 36,889	\$ (1,879,668)	\$ 955,316
British pound sterling	878,211	34,096	124,921	27,078	(768,640)	295,666
South Korean won	117,185	10,286	-	182	(3,834)	123,819
Taiwan new dollar	100,552	-	-	3,067	(4,738)	98,881
Indian rupee	75,260	7,328	-	4,043	(2,037)	84,594
South African rand	56,661	7,626	-	(90)	1,917	66,114
Danish krone	133,456	808	-	1,051	(73,384)	61,931
Mexican new peso	44,094	15,302	-	407	(2,680)	57,123
Brazil real	33,249	16,468	-	269	(14,432)	35,554
Other non-U.S. currencies	2,514,294	135,675	27	72,313	(2,647,952)	74,357
Total	\$ 4,859,563	\$ 332,057	\$ 1,911,974	\$ 145,209	(5,395,448)	\$ 1,853,355

2015						
(Dollar Amounts in Thousands)						
Currency	Equity	Fixed Income	Alternative Investments & Real Estate	Short-Term*	Currency Hedge	Total Fair Value
Euro	\$ 1,134,258	\$ 106,466	\$ 2,163,559	\$ 32,433	\$ (2,069,019)	\$ 1,367,697
South Korean won	123,179	37,570	-	241	(5,305)	155,685
British pound sterling	1,137,744	35,406	60,984	45,979	(1,154,757)	125,356
Taiwan new dollar	107,355	-	-	(2)	(1,188)	106,165
South African rand	59,842	40,085	-	262	(1,757)	98,432
Mexican new peso	23,208	49,808	-	9,664	75	82,755
Indian rupee	69,658	7,933	-	-	-	77,591
Brazil real	26,411	65,829	-	952	(18,192)	75,000
Hong Kong dollar	237,528	-	-	2,549	(176,248)	63,829
Other non-U.S. currencies	2,861,729	277,629	38	77,944	(3,130,990)	86,350
Total	\$ 5,780,912	\$ 620,726	\$ 2,224,581	\$ 170,022	(6,557,381)	\$ 2,238,860

* Includes investment receivables and payables

\$1,179,064,000. The fair value of the associated collateral was \$1,207,170,000, all of which was cash.

5. Derivative and Other Similar Investments

The System enters into a variety of financial contracts, which include options and futures. The System also enters into foreign exchange positions, such as forward and spot contracts to obtain or hedge foreign currency exposure; swap agreements to gain exposure to certain sectors of the equity and fixed income markets; collateralized mortgage obligations (CMOs); other forward contracts; and U.S. Treasury STRIPS. The System is not a dealer, but an end-user of these instruments. The contracts are used primarily to enhance performance and/or reduce the volatility of the portfolio. The System is exposed to credit risk in the event of non-performance by counterparties to financial instruments.

The System generally enters into transactions only with high quality institutions. Legal risk is mitigated through selection of executing brokers and review of all documentation. The System is exposed to market risk, the risk that future changes in market conditions may make an instrument less valuable. Exposure to market risk is managed in accordance with risk limits set by senior management, through buying or selling instruments or entering into offsetting positions.

The notional or contractual amounts of derivatives indicate the extent of the System's involvement in the various types and uses of derivative financial instruments and do not measure the System's exposure to credit or market risks and do not necessarily represent amounts exchanged by the parties. The amounts exchanged are determined by reference to the notional amounts and the other terms of the derivatives.

Notes to Financial Statements (continued)

Table 4 - Notional Amounts of Derivatives

The table presented below summarizes the aggregate notional or contractual amounts for the System's derivative financial instruments at June 30, 2016 and 2015.

	(Dollar Amounts in Thousands)	
	2016	2015
Futures contracts - long:		
Treasury futures	\$ 1,960,030	\$ 1,835,560
U.S. equity futures	1,163,719	1,096,741
Non-U.S. equity futures	774,998	488,995
Commodity futures	325,440	381,855
Non-U.S. bond futures	255,428	128,229
Futures contracts - short:		
Treasury futures	78,100	27,541
U.S. equity futures	-	24,008
Non-U.S. bond futures	1,596	-
Foreign exchange forward and spot contracts, gross	5,558,947	8,302,553
Swaps - total return type	7,105,829	4,224,789

Futures contracts are contracts in which the buyer agrees to purchase and the seller agrees to make delivery of a specific financial instrument at a predetermined date and price. Gains and losses on futures contracts are settled daily based on a notional (underlying) principal value and do not involve an actual transfer of the specific instrument. Futures contracts are standardized and are traded on exchanges. The exchange assumes the risk that a counterparty will not pay and generally requires margin payments to minimize such risk. In addition, the System enters into short sales, sales of securities it does not presently own, to neutralize the market risk of certain equity positions. Initial margin requirements on futures contracts and collateral for short sales are provided by investment securities pledged as collateral and by cash held by various brokers. Although the System has

the right to access individual pledged securities, it must maintain the amount pledged by substituting other securities for those accessed. The value of securities pledged and the amount of cash held at June 30, 2016 and 2015 represent a restriction on the amount of assets available as of year-end for other purposes.

Option contracts provide the option purchaser with the right, but not the obligation, to buy or sell the underlying security at a set price during a period or at a specified date. The option writer is obligated to buy or sell the underlying security if the option purchaser chooses to exercise the option. The System generally uses exchange listed currency, index, stock, and futures options. The System held no option positions at June 30, 2016 and 2015.

The fair values of derivative instruments outstanding at June 30, 2016 and 2015 are classified by type and by the changes in fair value of the derivative instrument in the table below.

Investment Derivative Type	(Dollar Amounts in Thousands)			
	Change in Fair Value Gain/(Loss) FY 2016		Fair Value at June 30, 2016	
	Classification	Amount	Classification	Amount
Futures	Investment income	\$ 32,019	Receivable/(Payable)	\$ 32,019
Total return type swaps	Investment income	302,321	Receivable/(Payable)	302,321
Foreign exchange contracts	Investment income	(9,932)	Receivable/(Payable)	(9,932)
Total		\$ 324,408		\$ 324,408
Investment Derivative Type	Change in Fair Value Gain/(Loss) FY 2015			
	Change in Fair Value Gain/(Loss) FY 2015		Fair Value at June 30, 2015	
	Classification	Amount	Classification	Amount
Futures	Investment income	\$ (52,839)	Receivable/(Payable)	\$ (52,839)
Total return type swaps	Investment income	(18,000)	Receivable/(Payable)	(18,000)
Foreign exchange contracts	Investment income	(24,982)	Receivable/(Payable)	(24,982)
Total		\$ (95,821)		\$ (95,821)

Notes to Financial Statements (continued)

The following table summarizes the System's foreign exchange contracts by currency at June 30, 2016 and 2015:

2016				
(Dollar Amounts in Thousands)				
Currency	Buys	Unrealized Gain/(Loss)	Sells	Unrealized Gain/(Loss)
Euro	\$ 19,838	\$ (117)	\$ 1,897,067	\$ 17,760
British pound sterling	13,225	(607)	781,865	67,533
Japanese yen	11,240	247	1,110,034	(68,467)
Brazilian real	5,778	92	20,210	(1,252)
Taiwan new dollar	5,495	16	10,233	(76)
Swedish krona	3,460	(26)	124,446	1,871
Canadian dollar	3,014	(4)	444,470	(5,649)
Hong Kong dollar	2,594	3	158,615	(156)
Indian rupee	2,120	(8)	4,157	4
Swiss franc	1,832	2	331,245	(5,772)
Singapore dollar	1,286	31	67,283	(1,806)
Israeli shekel	394	-	28,597	(132)
Danish krone	287	1	73,672	571
Australian dollar	76	-	350,030	(13,036)
Other non-US currencies	16,229	385	70,156	(1,340)
Total	\$ 86,868	\$ 15	\$ 5,472,080	\$ (9,947)

2015				
(Dollar Amounts in Thousands)				
Currency	Buys	Unrealized Gain/(Loss)	Sells	Unrealized Gain/(Loss)
Euro	\$ 251,588	\$ (906)	\$ 2,289,025	\$ 26,764
British pound sterling	152,820	912	1,307,577	(34,253)
Japanese yen	111,106	425	1,396,701	(23,285)
Australian dollar	109,548	(1,376)	473,944	(2,207)
Canadian dollar	96,932	(1,084)	637,493	2,994
New Zealand dollar	39,460	(1,303)	81,090	4,048
Swedish krona	37,599	(197)	187,052	215
Brazilian real	32,138	245	50,330	(68)
Polish zloty	20,668	(409)	11,252	129
Norwegian krone	12,187	(20)	50,613	666
Romanian leu	6,909	(6)	-	-
Philippine dollar	6,526	(76)	83	-
Swiss franc	5,535	24	483,605	3,211
Russian ruble	5,348	(273)	13,168	727
Singapore dollar	1,358	11	85,102	(549)
South Korean won	44	-	5,349	(15)
Hong Kong dollar	29	-	176,277	(7)
Danish krone	-	-	95,058	1,441
Israeli shekel	-	-	34,999	(567)
Turkish lira	-	-	5,517	(98)
Other non-US currencies	17,155	(84)	11,368	(11)
Total	\$ 906,950	\$ (4,117)	\$ 7,395,603	\$ (20,865)

Notes to Financial Statements (continued)

Foreign exchange contracts involve an agreement to exchange the currency of one country for the currency of another country at an agreed-upon price and settlement date. To reduce the risk of counterparty non-performance, the investment managers generally enter into these contracts with institutions regarded as meeting high standards of credit worthiness. The contracts reported in Table 4 primarily include forwards. The \$5,558,947,000 of foreign currency contracts outstanding at June 30, 2016 consist of “buy” contracts, which represent the U.S. dollar equivalents of commitments to purchase foreign currencies of \$86,868,000 and “sell” contracts, which represent U.S. dollar equivalents of commitments to sell foreign currencies of \$5,472,080,000. The \$8,302,553,000 of foreign currency contracts outstanding at June 30, 2015 consist of “buy” contracts of \$906,950,000 and “sell” contracts of \$7,395,603,000. The unrealized loss on contracts of \$(9,932,000) and \$(24,982,000) at June 30, 2016 and 2015, respectively, is included in the Statements of Fiduciary Net Position and represents the fair value of the contracts.

Swap agreements provide for periodic payments at predetermined future dates between parties based on the change in value of underlying securities, indexes, or interest rates. During the year ended June 30, 2016 and 2015, the System entered into total return type swaps. Under the total return type swap arrangements, the System receives the net return of certain equity securities or indexes in exchange for a short-term rate minus a spread or a predetermined fixed charge. The receivable (payable) on the total return type swap contracts of \$302,321,000 and \$(18,000,000) at June 30, 2016 and 2015, respectively, is included in the Statements of Fiduciary Net Position and represents the fair value of the contracts. The contracts have varying maturity dates ranging from August 3, 2016 to June 26, 2017.

The System also invests in mortgage-backed securities (MBS) such as CMOs and MBS forwards to maximize yields. These securities are sensitive to prepayments of mortgages, which may result from a drop in interest rates. The MBS forwards are subject to credit risk in the event of nonperformance by counterparties. The fair value of CMOs at June 30, 2016 and 2015 is \$477,412,000 and \$663,492,000, respectively.

The System invests in U.S. Treasury STRIPS which essentially act as zero coupon bonds and are subject to market volatility from a rise or drop in interest rates.

Through certain collective trust funds, the System also indirectly holds various derivative financial instruments. The collective trust funds invest in futures and options thereon; forward foreign currency contracts; options; interest rate, currency, equity, index, and total return swaps; interest-only

STRIPS; and CMOs, to enhance the performance and/or reduce the volatility of their portfolios.

6. Net Pension Liability of Participating Employers

The components of the net pension liability of the participating employers at June 30, 2016 were as follows:
(Dollar amounts in thousands)

Total pension liability	\$ 99,388,887
Plan fiduciary net position	(49,832,060)
Employer net pension liability	<u>\$ 49,556,827</u>
Plan fiduciary net position as a percentage of the total pension liability	50.14%

Actuarial Assumptions

The total pension liability as of June 30, 2016 was determined by rolling forward the System’s total pension liability as of June 30, 2015 to June 30, 2016 using the following actuarial assumptions, applied to all periods included in the measurement:

- Actuarial cost method - Entry Age Normal - level % of pay.
- Investment return - 7.25%, includes inflation at 2.75%.
- Salary growth - Effective average of 5.00%, comprised of inflation of 2.75% and 2.25% for real wage growth and for merit or seniority increases.
- Mortality rates were based on the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS’ experience and projected using a modified version of the MP-2015 Mortality Improvement Scale.
- PSERS’ Board approved new actuarial assumptions effective for the June 30, 2016 actuarial valuation. The new assumptions were used to calculate the net pension liability at June 30, 2016 and are reflected above.

Investments

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

The pension plan’s policy in regard to the allocation of invested plan assets is established and may be amended by the Board. Plan assets are managed with a long-term

Notes to Financial Statements (continued)

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Global public equity	22.5%	5.3%
Fixed income	28.5%	2.1%
Commodities	8.0%	2.5%
Absolute return	10.0%	3.3%
Risk parity	10.0%	3.9%
Infrastructure/MLPs	5.0%	4.8%
Real estate	12.0%	4.0%
Alternative investments	15.0%	6.6%
Cash	3.0%	0.2%
Financing (LIBOR)	(14.0%)	0.5%
	100.0%	

objective of achieving and maintaining a fully funded status for the benefits provided through the pension.

For the year ended June 30, 2016, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 1.11%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. The above was the Board's adopted asset allocation policy and best estimates of geometric real rates of return for each major asset class as of June 30, 2016.

Discount Rate

The discount rate used to measure the total pension liability was 7.25%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from employers will be made at contractually required rates, actuarially determined. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability

Table 5 presents the net pension liability, calculated using the discount rate of 7.25%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage point lower (6.25%) or 1-percentage point higher (8.25%) than the current rate:

Table 5 - Sensitivity of the Net Pension Liability

(Dollar amounts in thousands)

	1% Decrease	Current Discount Rate	1% Increase
	6.25%	7.25%	8.25%
Net pension liability \$	\$ 60,621,334	\$ 49,556,827	\$ 40,259,380

7. Pension Plan for Employees of the System

(A) SERS' Plan Description

The System contributes to SERS, a cost-sharing multiple-employer defined benefit pension plan established by the Commonwealth to provide pension benefits for employees of state government and certain independent agencies. SERS is a component unit of the Commonwealth and is included in the Commonwealth's financial report as a pension trust fund.

Membership in SERS is mandatory for most state employees. SERS provides retirement, death, and disability benefits. Article II of the Commonwealth's Constitution assigns the authority to establish and amend the benefit provision of the plan to the General Assembly.

(B) SERS' Benefits Provided to Employees of the System

SERS member retirement benefits are generally determined by taking years of credited service times final average salary times 2% or 2.5%, depending on date of hire. The normal retirement age ranges from 50 - 65, depending on the membership class.

According to the State Employees' Retirement Code (SERC), all obligations of SERS will be assumed by the Commonwealth should SERS terminate.

(C) Contributions to SERS

The contribution requirements of SERS plan members is mandated by Commonwealth statute. The member contribution rate for the majority of SERS' members is 6.25%. As of December 31, 2015 and 2014, the blended employer contribution rates were 22.77% and 18.29%, respectively. Contributions to SERS from PSERS were \$4.7 million for the year ended June 30, 2016.

Notes to Financial Statements (continued)

(D) Proportionate Share of Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources from SERS

At June 30, 2016, PSERS reported a liability of \$55.9 million for its proportionate share of the net pension liability for the SERS plan in accounts payable and accrued expenses on the Statement of Fiduciary Net Position. The net pension liability was measured as of December 31, 2015, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2015. PSERS’ proportion of the net pension liability was calculated utilizing a projected-contribution method. At December 31, 2015, PSERS’ proportion was 0.30753415 percent.

For the year ended June 30, 2016, PSERS recognized pension expense of \$7.2 million in administrative expenses on the Statement of Fiduciary Net Position. At June 30, 2016, PSERS reported \$11.3 million of deferred outflows of resources and \$1.3 million of deferred inflows of resources. Of the \$11.3 million of deferred outflows of resources, PSERS recorded \$2.4 million for contributions subsequent to the measurement date which will be recognized as a reduction of the net pension liability in the year ended June 30, 2017. The other amounts reported as deferred outflows of resources and deferred inflows of resources will be recognized over a range of 5 to 5.6 years closed amortization periods, dependent on the type of deferral.

(E) SERS’ Pension Plan Fiduciary Net Position

Detailed information about SERS’ fiduciary net position is available in SERS’ Comprehensive Annual Financial Report which can be found on SERS’ website at www.SERS.pa.gov.

8. Postemployment Healthcare Plan for Employees of the System

The System participates in the Commonwealth’s Retired Employees Health Program (REHP). The REHP is a single-employer plan and provides certain healthcare benefits to qualifying individuals meeting specified age and/or service requirements. The Commonwealth’s Office of Administration (OA), in its sole discretion, determines available REHP benefits on an ongoing basis. The Pennsylvania Employees Benefit Trust Fund (PEBTF) is a third-party administrator for the REHP under the provisions of an Administration Agreement between OA and PEBTF.

Employer costs for retiree healthcare benefits are charged as a component of payroll expenditures on a ‘pay-as-you-go’ basis. REHP funding is arranged between OA and the

Governor’s Budget Office. FY 2016 employer costs were charged at the rate of \$418/employee/bi-weekly pay period. Plan members who retired after June 30, 2005 contribute to the plan based on a percentage of their final annual gross base salary at the time of retirement. Plan member contribution rates vary based on their REHP enrollment date.

In August 2015, the Commonwealth released an Actuarial Valuation of its Post-Retirement Medical Plan with calculations made as of January 1, 2015. This valuation provided Other Postemployment Benefits (OPEB) reporting that was used for both FY 2014 and FY 2015. For FY 2015 and FY 2016, the System’s allocated Annual OPEB Cost (AOC) was \$5.2 million and \$5.3 million respectively. Based on the aggregate REHP qualifying contributions for FY 2015 and FY 2016, the net OPEB liability for the System was \$1.5 million and \$1.6 million, respectively.

The ARC/AOCs and OPEB for fiscal years 2016, 2015, and 2014 are illustrated in the following table:

(Dollar Amounts in Thousands)

Fiscal Year	Commonwealth ARC/AOC	PSERS’ ARC/AOC	PSERS’ Net OPEB
2016	\$ 1,169,885	\$ 5,307	\$ 1,607
2015	1,136,817	5,157	1,547
2014	898,330	4,099	948

9. Litigation and Contingencies

The System is subject to various threatened and pending lawsuits. These lawsuits include issues related to benefit calculations and eligibility. It is the opinion of management that the ultimate liability arising from such threatened and pending litigation will not have a material effect on the financial position of the System. The System is exposed to various other liabilities and risks related to fiduciary responsibilities of directors and officers.

10. Commitments

As of June 30, 2016, PSERS had commitments for the future purchase of investments in alternative investments of \$7.0 billion and real estate of \$2.2 billion.

11. Subsequent Events

The System has performed an evaluation of subsequent events through September 26, 2016, the date the basic financial statements were available to be issued. No material events were identified by the System.



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Required Supplementary Schedule 1
Schedule of Changes in the Employer Net Pension Liability
(Unaudited – See Accompanying Auditor’s Report)
(Dollar Amounts in Thousands)

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total pension liability			
Service cost	\$ 1,932,401	\$ 1,926,539	\$ 2,139,037
Interest	7,028,292	6,857,497	6,523,484
Changes of benefit terms	-	-	-
Differences between expected and actual experience	(348,429)	(223,437)	-
Changes of assumptions	2,236,118	-	-
Benefit payments	(6,360,325)	(6,220,601)	(6,053,505)
Net change in total pension liability	<u>4,488,057</u>	<u>2,339,998</u>	<u>2,609,016</u>
Total pension liability - beginning	<u>94,900,830</u>	<u>92,560,832</u>	<u>89,951,816</u>
Total pension liability - ending (a)	<u>\$ 99,388,887</u>	<u>\$ 94,900,830</u>	<u>\$ 92,560,832</u>
Plan fiduciary net position			
Contributions - employer	\$ 3,189,510	\$ 2,596,731	\$ 1,992,084
Contributions - member	989,266	984,634	966,926
Net investment income	473,206	1,328,516	7,097,761
Benefit payments	(6,360,325)	(6,220,601)	(6,053,505)
Administrative expense	(45,118)	(42,331)	(38,712)
Other	-	-	-
Net Change in plan fiduciary net position	<u>(1,753,461)</u>	<u>(1,353,051)</u>	<u>3,964,554</u>
Plan fiduciary net position - beginning	<u>51,585,521</u>	<u>52,980,115</u>	<u>49,015,561</u>
Effect of change in accounting principle	-	(41,543)	-
Plan fiduciary net position - beginning, as restated	-	52,938,572	-
Plan fiduciary net position - ending (b)	<u>\$ 49,832,060</u>	<u>\$ 51,585,521</u>	<u>\$ 52,980,115</u>
Employer net pension liability - ending (a) - (b)	<u>\$ 49,556,827</u>	<u>\$ 43,315,309</u>	<u>\$ 39,580,717</u>

Required Supplementary Schedule 2
Schedule of Employer Net Pension Liability
(Unaudited – See Accompanying Auditor’s Report)
(Dollar Amounts in Thousands)

	2016	2015	2014
Total pension liability	\$ 99,388,887	\$ 94,900,830	\$ 92,560,832
Plan fiduciary net position	(49,832,060)	(51,585,521)	(52,980,115)
Employer net pension liability	<u>\$ 49,556,827</u>	<u>\$ 43,315,309</u>	<u>\$ 39,580,717</u>
Plan fiduciary net position as a percentage of the total pension liability	50.14%	54.36%	57.24%
Covered payroll	\$ 12,951,077	\$ 12,866,473	\$ 12,760,785
Employer net pension liability as a percentage of covered payroll	382.65%	336.65%	310.17%

Required Supplementary Schedule 3
Schedule of Employer Contributions
(Unaudited – See Accompanying Auditor’s Report)
(Dollar Amounts in Thousands)

Pension			
	2016	2015	2014
Actuarially determined contribution	\$ 3,540,304	\$ 3,289,615	\$ 2,965,715
Contractually required contribution*	3,181,438	2,582,114	1,992,084
Contributions in relation to the actuarially determined contribution*	3,181,438	2,582,114	1,992,084
Contribution deficiency	<u>\$ 358,866</u>	<u>\$ 707,501</u>	<u>\$ 973,631</u>
Covered payroll	\$ 12,951,077	\$ 12,866,473	\$ 12,760,785
Contributions as a percentage of covered payroll	24.57%	20.07%	15.61%

*Amounts for 2016 and 2015 exclude purchase of service contributions.

Premium Assistance			
Year Ended June 30	Annual Required Contributions	Actual Employer Contributions	Percentage Contributed
2016	\$ 129,494	\$ 113,307	88%
2015	127,576	115,978	91%
2014	121,260	117,471	97%

**Required Supplementary Schedule 4
Schedule of Investment Returns
(Unaudited – See Accompanying Auditor’s Report)**

	2016	2015	2014
Annual money-weighted rate of return, net of investment expense	1.11%	3.08%	14.98%

**Required Supplementary Schedule 5
Schedule of Funding Progress*
(Unaudited – See Accompanying Auditor’s Report)
(Dollar Amounts in Millions)**

Premium Assistance							
	(1)	(2)	(3)	(4)	(5)	(6)	
Valuation as of June 30	Actuarial Accrued Liabilities (AAL)	Actuarial Value of Assets	Unfunded Actuarial Accrued Liabilities UAAL (1) - (2)	Ratio of Assets to AAL (2) / (1)	Annualized Salaries	UAAL as a Percentage of Covered Payroll (3) / (5)	
2015	\$ 1,368.1	\$ 120.6	\$ 1,247.5	8.8%	\$ 12,678.2	9.8%	
2014	1,374.1	112.1	1,262.0	8.2%	12,620.9	10.0%	
2013	1,385.0	100.3	1,284.7	7.2%	12,577.1	10.2%	

* The amounts reported above in the Schedule of Funding Progress do not include assets or liabilities for the HOP.

Notes to Required Supplementary Information for the Year Ended June 30, 2016

Changes in benefit terms

None

Changes in assumptions used in measurement of the Total Pension Liability beginning June 30, 2016

The Investment Rate of Return was adjusted from 7.50% to 7.25%. The inflation assumption was decreased from 3.0% to 2.75%.

Salary growth changed from an effective average of 5.50%, which was comprised of inflation of 3.00%, real wage growth and for merit or seniority increases of 2.50%, to an effective average of 5.00%, comprised of inflation of 2.75% and 2.25% for real wage growth and for merit or seniority increases.

Mortality rates were modified from the RP-2000 Combined Healthy Annuitant Tables (male and female) with age set back 3 years for both males and females to the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2015 Mortality Improvement Scale. For disabled annuitants the RP-2000 Combined Disabled Tables (male and female) with age set back 7 years for males and 3 years for females to the RP-2014 Mortality Tables for Males and Females, adjusted to reflect PSERS' experience and projected using a modified version of the MP-2015 Mortality Improvement Scale.

The GASB 67 accounting valuation can be found on PSERS' website at www.psers.state.pa.us.

Method and assumptions used in calculations of actuarially determined contributions

The actuarially determined contributions are calculated as of the June 30 preceding the fiscal year in which contributions are made. That is, the contribution calculated as of the June 30, 2015 actuarial valuation will be made during the fiscal year ended June 30, 2017. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule:

- Investment return - 7.50%, includes inflation at 3.00%
- Salary growth - Effective average of 5.50%, which reflects an allowance for inflation of 3.00%, real wage growth of 1%, and merit or seniority increases of 1.50%
- Benefit payments - no postretirement benefit increases assumed in the future
- Multiple decrement tables - mortality, vesting, retirement age, and withdrawal estimates are based upon tables provided by the actuary

10-year reporting requirements

Required Supplementary Schedules 1-4, as related to pensions, are intended to show information for 10 years. Additional years will be displayed as they become available.

Supplementary Schedule 1
Schedule of Operating Expenses
Year Ended June 30, 2016
(Dollar Amounts in Thousands)

	<u>Administrative Expenses</u>			<u>Total</u>
	<u>Pension</u>	<u>Post- employment Healthcare (1)</u>	<u>Investment Expenses (2)</u>	
Personnel costs:				
Salaries and wages	\$ 14,074	\$ 225	\$ 5,532	\$ 19,831
Employee benefits	5,922	682	1,187	7,791
Total personnel costs	<u>19,996</u>	<u>907</u>	<u>6,719</u>	<u>27,622</u>
Operating costs:				
Investment managers' fees	-	-	395,834	395,834
Custodian fees	-	-	2,331	2,331
Specialized services	562	32,663	862	34,087
Rental of real estate, electricity	2,134	218	341	2,693
Consultant and legal fees	2,505	1,320	7,948	11,773
Treasury and other Commonwealth services	2,210	-	387	2,597
Postage	1,207	-	-	1,207
Contracted maintenance and repair services	1,394	-	-	1,394
Office supplies	136	-	15	151
Rental of equipment and software	3,721	-	275	3,996
Printing	286	-	-	286
Travel and training	128	1	11	140
Telecommunications	420	-	-	420
Equipment (non-capital assets)	579	-	-	579
Miscellaneous expenses	728	4	1,059	1,791
Total operating costs	<u>16,010</u>	<u>34,206</u>	<u>409,063</u>	<u>459,279</u>
Other charges:				
Pension expense (3)	7,168	-	-	7,168
Depreciation	1,944	-	-	1,944
Total other charges	<u>9,112</u>	<u>-</u>	<u>-</u>	<u>9,112</u>
Total operating expenses	<u>\$ 45,118</u>	<u>\$ 35,113</u>	<u>\$ 415,782</u>	<u>\$ 496,013</u>

(1)Administrative expenses for Postemployment Healthcare includes \$1,656 related to Premium Assistance and \$33,457 related to Healthcare Health Options Program for the fiscal year ended June 30, 2016.

(2)Includes investment expenses of \$38 related to Postemployment Healthcare Premium Assistance and \$38 related to Health Options Program for the fiscal year ended June 30, 2016 and does not include \$5,092 in capitalized broker commissions for the fiscal year ended June 30, 2016.

(3)Pension expense of \$7.2 million represents the amount associated with GASB 68 and replaces the actual retirement contribution expense PSERS remits for its employees. Contribution expense of \$4.6 million for FY 2016 would have been classified as employee benefits in the above schedule.

Supplementary Schedule 2
Summary of Investment Expenses*
Year Ended June 30, 2016
(Dollar Amounts in Thousands)

	<u>Investment Management</u>		<u>Other Expenses</u>	<u>Total</u>
	<u>Base</u>	<u>Performance</u>		
External management:				
Domestic equity	\$ 1,461	\$ 1,736	\$ -	\$ 3,197
International equity	18,455	5,831	-	24,286
Fixed income	77,901	3,895	-	81,796
Real estate	52,006	-	-	52,006
Alternative investments	99,492	-	-	99,492
Absolute return	80,209	24,055	-	104,264
Commodities	4,304	(272)	-	4,032
Master limited partnership	6,956	1,377	-	8,333
Risk parity	18,428	-	-	18,428
Total external management	<u>359,212</u>	<u>36,622</u>	<u>-</u>	<u>395,834</u>
Total internal management	<u>-</u>	<u>-</u>	<u>9,669</u>	<u>9,669</u>
Total investment management	<u>359,212</u>	<u>36,622</u>	<u>9,669</u>	<u>405,503</u>
Custodian fees	-	-	2,331	2,331
Consultant and legal fees	-	-	7,948	7,948
Total investment expenses	<u>\$ 359,212</u>	<u>\$ 36,622</u>	<u>\$ 19,948</u>	<u>\$ 415,782</u>

* External investment management fees classified on an asset allocation basis.

Supplementary Schedule 3
Schedule of Payments to Non-Investment Consultants
Year Ended June 30, 2016
(Dollar Amounts Greater than \$100,000)

Consultant	Fees	Services Provided
CoreSource Inc.	\$ 23,460,388	Postemployment healthcare benefits administration and claims adjudication
Optum Rx, Inc.	6,806,395	Administration of postemployment healthcare benefits and prescription drug plan
ViTech Systems Group Inc.	5,500,000	Pension administration system services
The Segal Company, Inc.	2,588,395	Actuarial services and consulting for HOP and prescription drug plan
Healthways, Inc.	669,169	Administration of the Silver Sneakers Fitness Program
Buck Consultants LLC	644,679	Pension benefit actuarial services
Independent Pharmaceutical Consultants, Inc.	575,878	Pharmacy benefit consulting services
Gartner Group, Inc.	273,190	Information technology services
OST, Inc.	146,614	Webmaster consulting