



# Federated Annual Fee Report - 2017

## Executive Summary

This report marks the third anniversary of our annual Fee Report for the Federated City Employees' Retirement System ("Federated", "Plan"). The goal of the report is to provide transparency and insight into the fees and expenses paid to investment managers along with the costs of operating the investment program. Pension plan fee data is generally underreported by peers, and typically represents only the portion of fees that are observable. This excludes often sizable embedded fees (such as incentive fees) that are deducted from account values of certain fund structures.

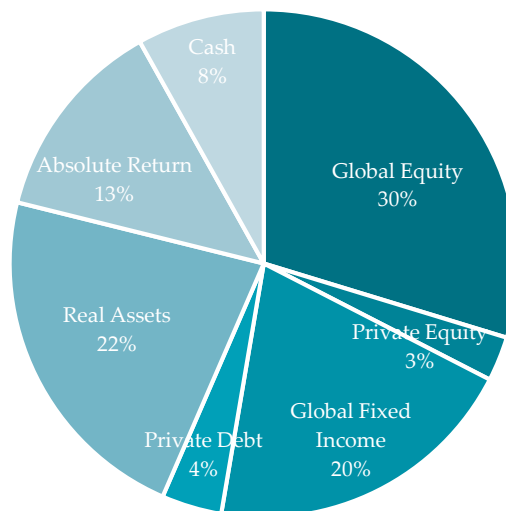
It is important to note that fees are a function of asset allocation and portfolio construction, which are byproducts of the Board's objectives, investment beliefs, and risk tolerance. Each year, the Board typically reviews the asset allocation considering updated capital market assumptions and the expected returns and volatility of the portfolio associated with those assumptions. The asset allocations in effect for the period covered by this report, as illustrated in tables 1 and 2, are an expression of the Board's Investment Policy Statement that "Investments shall be diversified with the intent to minimize the risk of large investment losses".

Asset allocation is typically one of the largest determinants of investment management fees at the portfolio level. Asset allocations that introduce alternative asset classes (Private Equity, Private Debt, Real Estate, Hedge Funds, etc.) will have higher levels of investment manager fees, because these asset classes or strategies have higher fee structures than traditional asset classes. In addition, asset class structuring can have a significant impact on fees. The use of active management versus passive management, as well as alternative strategies within traditional asset classes, will increase fees. When evaluating investment managers, staff places a significant emphasis on fees by negotiating for lower fees and analyzing that expected value or return is worth the expected cost.

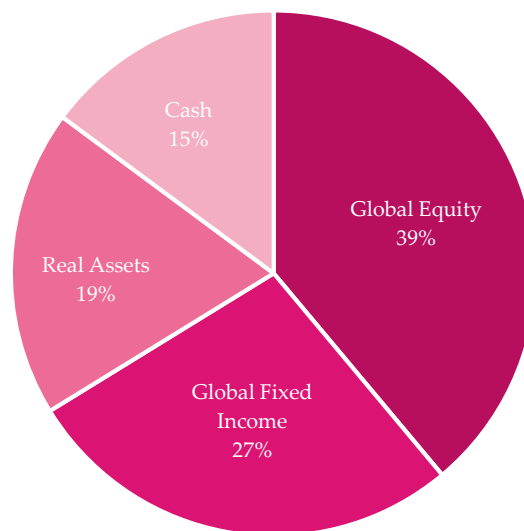
This year, the report introduces a new category of fees that was not previously captured (fund operating expenses) along with a disclosure in accordance with California Government Code §7514.7 (the result of Assembly Bill 2833), which requires annual reporting of fees paid by California public investment funds as a result of investing in alternative investment vehicles.

**For calendar year 2017, management and incentive fees for the pension plan totaled \$24.2 million with a fee ratio of 1.15% as compared to \$21.3 million and 1.07% for 2016 and \$22.2 million and 1.10% for 2015. Fund operating expenses were \$2.4 million in 2017 for a fee ratio of 0.11%. The health care trust management and incentive fees totaled \$0.7 million with a fee ratio of 0.32%, compared to \$0.6 million with a fee ratio of 0.36% in 2016 and \$0.3 million with a fee ratio of 0.24% in 2015. Other investment-related costs (staff, consultants, custodian bank, investment legal, etc.) for the pension plan in 2017 were \$1.9 million with a fee ratio of 0.09% as compared to \$1.6 million and 0.08% in 2016 and 2015. Other investment-related costs for the health care trust totaled \$0.2 million with a fee ratio of 0.10% as compared to \$0.2 million and 0.12% for 2016 and \$0.1 million and 0.12% for 2015.**

**Table 1 - Pension Average Asset Allocation for 2017**



**Table 2 - Health Care Trust Average Asset Allocation for 2017**



## Introduction

The fees in this report represent management fees, incentive fees, fund operating expenses, and other investment-related costs that were incurred during the calendar year. These amounts may include fees that were accrued for the year, but not paid out.

Management fees are fees charged by fund managers to invest and manage assets. Incentive fees are performance-based fees for exceeding a hurdle return and are only applicable to certain fund structures. It is important to note that incentive fees are a form of shared economics that are only paid if the manager has produced positive returns or exceeded a predetermined hurdle rate. In some situations, incentive fees can be negative, reflecting the complexity of fee agreements. Operating expenses include overhead related to managing a fund that are indirectly borne by investors, which may include professional, administration, research, tax, legal, custodial and audit expenses for a fund. Trading expenses such as broker commissions are excluded from this report. Other costs include salary and benefits compensation for investment staff (including a 50% allocation for the CEO), cost of consultants (general, absolute return, risk), custodian, other third party vendors utilized by the investment program, and investment staff travel.

Though best efforts have been made to capture all material fees and expenses, this report may not include all indirect expenses and charges that may be paid to managers' affiliates, consultants, or entities for services rendered to the managers, the funds or portfolio entities held by certain funds. Future iterations of this report will continue to grow in sophistication, benefiting from industry-wide initiatives to gain additional transparency, such as the increasing adoption of the Institutional Limited Partners Association ("ILPA") fee reporting template.

## Data Sources

Staff compiled this fee report using the best available information for each fund manager in order to develop a comprehensive view of fees. Fee amounts were reviewed for reasonableness and reconciled to fee schedules. Fees for all managers active at any point during the year are included in this report, including those that were initially funded or terminated mid-year.

Fees for mutual funds, short term investment funds (Cash), and certain public markets commingled funds that deduct fees directly from the funds were calculated by multiplying each funds' fee ratio by the funds' average monthly balance for the year. The average balances were sourced from the Plan custodian bank, State Street.

Absolute Return management and incentive fees were provided by managers with independent re-calculations and reconciliations completed by Plan consultant Albourne. Operating expenses were calculated by Albourne using audited financial statements for each fund. Fees for Private funds were gathered by asking managers to complete the ILPA fee reporting template. The ILPA template is intended to standardize and codify the presentation of fees, expenses, and carried interest information by fund managers to Limited Partners. The remaining manager fees were obtained by having the fund managers fill out a fee template designed by staff.

Within the Other Costs section, consultants, custodian, and other vendor costs were sourced from fee invoices from the vendors. Investment staff salary and benefits were allocated to each of the four San Jose plans by pro-rating the total costs by the average balance of each plan. Similarly, legal costs incurred by Federated were allocated between the pension plan and health care trust by pro-rating the total costs by the average monthly balance of each plan.

## Changes from 2016 Report

This years report includes a new category of manager fees that was not previously reported – operating expenses. As previously mentioned, operating expenses generally represent overhead related to managing a fund, which may include professional, administration, research, tax, legal, custodial and audit expenses for a fund.

The year-over-year attribution is more detailed and now breaks out yearly changes from three categories – weight changes, management fee ratio changes, and incentive fee ratio changes. The 2016 report attribution did not distinguish between management fee and incentive fee ratio changes.

Finally, the plan Overlay base fee has now been moved to the Other Vendors category with asset-based fees captured in their respective asset classes.

## Total Portfolio Fee Summaries

The tables in this report present fees by asset class and management type. Fees by management type are presented by segregating investments into four “fund type” categories: passive, active, hedged, and private. Passive strategies are intended to generate a return that emulates an index. Active strategies include investment managers that attempt to outperform an index on a long only basis. Hedged strategies generally seek to achieve an absolute return (“alpha”) regardless of market direction (“beta”) by employing

various strategies including long and short positions. Private strategies utilize a diverse set of approaches to invest in illiquid assets, such as equity of privately held companies or real estate.

## Year-over-Year Comparisons

The year-over-year comparison tables in this report present a time series of changes in average weights, fees, fee ratios, contribution to total plan fee ratios, and a year-over-year attribution. The year-over-year attribution uses the Brinson-Fachler methodology to decompose the change in contribution to total plan fee ratio into 1) impact due to weight changes, 2) impact due to management fee ratio changes, and 3) impact due to incentive fee ratio changes

## California Government Code §7514.7 (AB 2833)

Assembly Bill 2833 (“AB 2833”) was approved on September 14, 2016 adding Section 7514.7 to California Government Code. The addition to the Code requires California public investment funds to make annual disclosures of fees for alternative investment vehicles at a public meeting.

Tables 15-18 of this report are intended to comply with the law.

*Note: Some values on the report may not sum due to rounding.*

Table 3 - Pension Fees by Asset Class and Management Type

Asset Class	Management				Mgmt, Incent, and Op Exp (\$ mm)	Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp		
	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)								% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio	
Global Equity	4.1	2.3	0.2	6.4	6.6	625	29.7%	0.66%	0.37%	0.03%	1.03%	1.06%	24.9%	0.31%
Passive	0.1	-	0.0	0.1	0.1	220	10.5%	0.05%	0.00%	0.02%	0.05%	0.07%	0.6%	0.01%
Active	2.2	-	0.0	2.2	2.2	312	14.9%	0.70%	0.00%	0.01%	0.70%	0.71%	8.3%	0.10%
Hedged	1.8	2.3	0.1	4.1	4.3	92	4.4%	1.98%	2.48%	0.16%	4.46%	4.62%	16.0%	0.20%
Private Equity	1.6	1.1	0.5	2.7	3.2	60	2.8%	2.75%	1.81%	0.79%	4.56%	5.35%	12.0%	0.15%
Private	1.6	1.1	0.5	2.7	3.2	60	2.8%	2.75%	1.81%	0.79%	4.56%	5.35%	12.0%	0.15%
Global Fixed Income	1.3	0.6	0.1	1.9	2.0	423	20.1%	0.30%	0.14%	0.02%	0.44%	0.46%	7.4%	0.09%
Passive	0.1	-	0.0	0.1	0.1	263	12.5%	0.05%	0.00%	0.00%	0.05%	0.05%	0.5%	0.01%
Active	0.6	-	0.0	0.6	0.6	119	5.6%	0.49%	0.00%	0.03%	0.49%	0.53%	2.3%	0.03%
Hedged	0.6	0.6	0.1	1.2	1.2	41	2.0%	1.40%	1.45%	0.13%	2.84%	2.97%	4.6%	0.06%
Private Debt	1.0	-0.8	0.1	0.2	0.4	81	3.8%	1.26%	-0.98%	0.17%	0.28%	0.45%	1.3%	0.02%
Private	1.0	-0.8	0.1	0.2	0.4	81	3.8%	1.26%	-0.98%	0.17%	0.28%	0.45%	1.3%	0.02%
Real Assets	3.7	1.0	0.6	4.7	5.2	470	22.4%	0.78%	0.21%	0.12%	0.99%	1.12%	19.7%	0.25%
Passive	0.2	-	-	0.2	0.2	217	10.3%	0.07%	0.00%	0.00%	0.07%	0.07%	0.6%	0.01%
Active	0.4	-	0.1	0.4	0.5	95	4.5%	0.39%	0.00%	0.10%	0.39%	0.49%	1.7%	0.02%
Hedged	1.0	0.2	0.2	1.2	1.4	36	1.7%	2.65%	0.61%	0.53%	3.26%	3.79%	5.2%	0.07%
Private	2.2	0.8	0.3	3.0	3.3	122	5.8%	1.80%	0.62%	0.24%	2.43%	2.67%	12.2%	0.15%
Absolute Return	4.3	3.9	0.9	8.2	9.0	274	13.0%	1.56%	1.42%	0.31%	2.98%	3.29%	33.9%	0.43%
Hedged	4.3	3.9	0.9	8.2	9.0	274	13.0%	1.56%	1.42%	0.31%	2.98%	3.29%	33.9%	0.43%
Cash	0.2	-	-	0.2	0.2	171	8.1%	0.12%	0.00%	0.00%	0.12%	0.12%	0.7%	0.01%
Passive	0.2	-	-	0.2	0.2	171	8.1%	0.12%	0.00%	0.00%	0.12%	0.12%	0.7%	0.01%
Total Plan	16.2	8.0	2.4	24.2	26.6	2,102	100.0%	0.77%	0.38%	0.11%	1.15%	1.26%	100.0%	1.26%

The table above illustrates that management, incentive, and operating expenses for the pension plan totaled \$26.6 million for 2017 which equated to a total plan fee ratio of 1.26%. The Absolute Return and Global Equity asset classes contributed the most to the total plan fee ratio at 0.43% and 0.31%, respectively. The Private Debt and Global Fixed Income asset classes contributed the least to the total plan fee ratio at 0.02% and 0.09%, respectively.

**Table 4 - Pension Fees by Management Type**

Fund Type	Management					Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp	% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio
	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)	Mgmt, Incent, and Op Exp (\$ mm)									
Passive	0.6	-	0.0	0.6	0.6	871	41.4%	0.07%	0.00%	0.00%	0.07%	0.07%	2.4%	0.03%
Active	3.1	-	0.2	3.1	3.3	525	25.0%	0.59%	0.00%	0.03%	0.59%	0.63%	12.4%	0.16%
Hedged	7.6	7.0	1.2	14.6	15.9	443	21.1%	1.72%	1.57%	0.28%	3.30%	3.58%	59.7%	0.75%
Private	4.9	1.0	0.9	5.9	6.8	262	12.5%	1.85%	0.40%	0.34%	2.25%	2.60%	25.6%	0.32%
Total Plan	16.2	8.0	2.4	24.2	26.6	2,102	100.0%	100.0%	0.38%	0.11%	1.15%	1.26%	100.0%	1.26%

For the total pension plan, hedged management strategies accounted for 0.75% of the total plan fee ratio and represented about 21% of average plan assets. Private management strategies were the next largest contributor to the total plan fee ratio accounting for 0.32% of the total plan fee ratio and represented 13% of average plan assets. Passive and active management strategies accounted for 0.03% and 0.16% of the total plan fee ratio and represented 41% and 25% of plan assets, respectively.

**Table 5 - Pension Other Investment Costs**

Investment Staff		Other Vendors		Total Other	
Salary and Benefits (\$ mm)	Consultants (\$ mm)	Custodian (\$ mm)	and Travel (\$ mm)	Costs (\$ mm)	Other Costs Fee Ratio
0.5	0.6	0.3	0.4	1.9	0.09%

Other investment costs for the pension plan equated to a total fee ratio of 0.09%. As previously discussed, other costs include salary and benefits compensation for investment staff, cost of consultants, custodian, third party vendors utilized by the investment program, and investment staff travel.



Table 6 - Health Care Fees by Asset Class and Management Type

Asset Class	Management				Mgmt, Incent, and Op Exp (\$ mm)	Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp	% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio
	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)										
Global Equity	0.42	-	0.01	0.42	0.42	89	38.9%	0.47%	0.00%	0.01%	0.47%	0.48%	54.0%	0.19%
Passive	0.03	-	0.01	0.03	0.03	51	22.5%	0.05%	0.00%	0.01%	0.05%	0.06%	4.1%	0.01%
Active	0.39	-	-	0.39	0.39	37	16.5%	1.04%	0.00%	0.00%	1.04%	1.04%	49.9%	0.17%
Global Fixed Income	0.02	-	0.00	0.02	0.02	62	27.3%	0.03%	0.00%	0.01%	0.03%	0.04%	3.0%	0.01%
Passive	0.02	-	0.00	0.02	0.02	62	27.3%	0.03%	0.00%	0.01%	0.03%	0.04%	3.0%	0.01%
Real Assets	0.24	0.02	0.04	0.26	0.29	43	18.9%	0.56%	0.04%	0.09%	0.60%	0.69%	37.8%	0.13%
Passive	0.01	-	-	0.01	0.01	20	8.8%	0.07%	0.00%	0.00%	0.07%	0.07%	1.8%	0.01%
Active	0.04	-	0.01	0.04	0.05	9	4.1%	0.39%	0.00%	0.10%	0.39%	0.49%	5.9%	0.02%
Hedged	0.07	0.02	0.01	0.09	0.10	3	1.2%	2.65%	0.61%	0.53%	3.26%	3.79%	13.2%	0.05%
Private	0.12	-	0.01	0.12	0.13	11	4.8%	1.07%	0.00%	0.13%	1.07%	1.20%	16.9%	0.06%
Cash	0.04	-	-	0.04	0.04	34	14.9%	0.12%	0.00%	0.00%	0.12%	0.12%	5.2%	0.02%
Passive	0.04	-	-	0.04	0.04	34	14.9%	0.12%	0.00%	0.00%	0.12%	0.12%	5.2%	0.02%
Total Plan	0.72	0.02	0.05	0.73	0.78	228	100.0%	0.31%	0.01%	0.02%	0.32%	0.34%	100.0%	0.34%

The table above illustrates that management, incentive, and operating expenses for the health care trust totaled \$0.8 million for 2017 which equated to a total plan fee ratio of 0.34%. The Global Equity asset class contributed the most to the total plan fee ratio at 0.19%. The Global Fixed Income asset class contributed the least to the total plan fee ratio at 0.01%.

Table 7 - Health Care Fees by Management Type

Fund Type	Management				Mgmt, Incent, and Op Exp (\$ mm)	Average Balance (\$ mm)	Average Weight	Fee Ratio - Management Fees	Fee Ratio - Incentive Fees	Fee Ratio - Operating Expenses	Fee Ratio - Mgmt and Incent Fees	Fee Ratio - Mgmt, Incent, and Op Exp	% of Total Plan Fee Ratio	Contribution to Total Plan Fee Ratio
	Management Fees (\$ mm)	Incentive Fees (\$ mm)	Operating Expenses (\$ mm)	and Incentive Fees (\$ mm)										
Passive	0.10	-	0.01	0.10	0.11	167	73.4%	0.06%	0.00%	0.01%	0.06%	0.07%	14.2%	0.05%
Active	0.43	-	0.01	0.43	0.44	47	20.6%	0.91%	0.00%	0.02%	0.91%	0.93%	55.8%	0.19%
Hedged	0.07	0.02	0.01	0.09	0.10	3	1.2%	2.65%	0.61%	0.53%	3.26%	3.79%	13.2%	0.05%
Private	0.12	-	0.01	0.12	0.13	11	4.8%	1.07%	0.00%	0.13%	1.07%	1.20%	16.9%	0.06%
Total Plan	0.72	0.02	0.05	0.73	0.78	228	100.0%	0.31%	0.01%	0.02%	0.32%	0.34%	100.0%	0.34%

For the total health care trust, active management strategies accounted for 0.19% of the total plan fee ratio and represented 21% of average plan assets. Passive strategies accounted for 0.05% of the total plan fee ratio and represented 73% of plan assets.

**Table 8 - Health Care Other Investment Costs**

<b>Investment Staff Salary and Benefits (\$ mm)</b>	<b>Consultants (\$ mm)</b>	<b>Custodian (\$ mm)</b>	<b>Other Vendors and Travel (\$ mm)</b>	<b>Total Other Costs (\$ mm)</b>	<b>Other Costs Fee Ratio</b>
0.1	0.0	0.1	0.0	0.2	0.10%

Other investment costs for the health care trust equated to a total fee ratio of 0.10%.

Table 9 - Pension Year-over-Year Comparison by Asset Class and Management Type

Asset Class	Average Weight			Management Fees			Incentive Fees			Mgmt and Incent Fees			Fee Ratio (Mgmt and Incent)			Contrib to Total Plan Fee Ratio			YoY Attribution		
	2016	2017	Change	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016	2017	Change	2016	2017	Change	Due to Weight	Due to Mgmt Fee Ratio	Due to Incent Fee Ratio
Global Equity	30.3%	29.7%	-0.6%	4.3	4.1	-0.2	0.2	2.3	2.1	4.5	6.4	1.9	0.74%	1.03%	0.28%	0.23%	0.30%	0.08%	0.00%	-0.02%	0.10%
Passive	12.9%	10.5%	-2.4%	0.3	0.1	-0.1	-	-	-	0.3	0.1	-0.1	0.10%	0.05%	-0.05%	0.01%	0.01%	-0.01%	0.02%	0.00%	0.00%
Active	11.6%	14.9%	3.3%	1.7	2.2	0.4	-	-	-	1.7	2.2	0.4	0.75%	0.70%	-0.05%	0.09%	0.10%	0.02%	-0.01%	-0.01%	0.00%
Hedged	5.8%	4.4%	-1.4%	2.3	1.8	-0.5	0.2	2.3	2.1	2.5	4.1	1.6	2.15%	4.46%	2.31%	0.13%	0.20%	0.07%	-0.02%	0.00%	0.10%
Private Equity	3.6%	2.8%	-0.8%	1.4	1.6	0.2	0.5	1.1	0.6	1.9	2.7	0.8	2.60%	4.56%	1.96%	0.09%	0.13%	0.03%	-0.01%	0.02%	0.03%
Private	3.6%	2.8%	-0.8%	1.4	1.6	0.2	0.5	1.1	0.6	1.9	2.7	0.8	2.60%	4.56%	1.96%	0.09%	0.13%	0.03%	-0.01%	0.02%	0.03%
Global Fixed Income	18.4%	20.1%	1.8%	1.3	1.3	-0.1	0.6	0.6	-0.0	1.9	1.9	-0.1	0.53%	0.44%	-0.09%	0.10%	0.09%	-0.01%	-0.01%	-0.01%	0.00%
Passive	10.7%	12.5%	1.8%	0.2	0.1	-0.0	-	-	-	0.2	0.1	-0.0	0.07%	0.05%	-0.03%	0.01%	0.01%	0.00%	-0.02%	0.00%	0.00%
Active	5.4%	5.6%	0.3%	0.5	0.6	0.1	-	-	-	0.5	0.6	0.1	0.50%	0.49%	-0.01%	0.03%	0.03%	0.00%	0.00%	0.00%	0.00%
Hedged	2.3%	2.0%	-0.3%	0.7	0.6	-0.1	0.6	0.6	-0.0	1.3	1.2	-0.1	2.81%	2.84%	0.03%	0.06%	0.06%	-0.01%	-0.01%	0.00%	0.00%
Private Debt	4.9%	3.8%	-1.1%	1.2	1.0	-0.2	-0.2	-0.8	-0.6	1.1	0.2	-0.9	1.12%	0.28%	-0.84%	0.05%	0.01%	-0.04%	0.00%	0.00%	-0.03%
Private	4.9%	3.8%	-1.1%	1.2	1.0	-0.2	-0.2	-0.8	-0.6	1.1	0.2	-0.9	1.12%	0.28%	-0.84%	0.05%	0.01%	-0.04%	0.00%	0.00%	-0.03%
Real Assets	23.3%	22.4%	-1.0%	3.6	3.7	0.1	1.7	1.0	-0.7	5.3	4.7	-0.6	1.14%	0.99%	-0.15%	0.27%	0.22%	-0.04%	0.00%	0.00%	-0.04%
Passive	11.1%	10.3%	-0.8%	0.2	0.2	-0.0	-	-	-	0.2	0.2	-0.0	0.08%	0.07%	-0.01%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%
Active	4.0%	4.5%	0.5%	0.3	0.4	0.1	-	-	-	0.3	0.4	0.1	0.39%	0.39%	0.00%	0.02%	0.02%	0.00%	0.00%	0.00%	0.00%
Hedged	2.0%	1.7%	-0.2%	1.0	1.0	-0.1	0.6	0.2	-0.4	1.6	1.2	-0.5	4.18%	3.26%	-0.92%	0.08%	0.06%	-0.03%	-0.01%	0.00%	-0.02%
Private	6.3%	5.8%	-0.5%	2.0	2.2	0.2	1.1	0.8	-0.4	3.2	3.0	-0.2	2.55%	2.43%	-0.12%	0.16%	0.14%	-0.02%	-0.01%	0.01%	-0.02%
Absolute Return	12.6%	13.0%	0.4%	4.3	4.3	-0.0	2.1	3.9	1.8	6.4	8.2	1.7	2.56%	2.98%	0.42%	0.32%	0.39%	0.06%	0.01%	-0.02%	0.08%
Hedged	12.6%	13.0%	0.4%	4.3	4.3	-0.0	2.1	3.9	1.8	6.4	8.2	1.7	2.56%	2.98%	0.42%	0.32%	0.39%	0.06%	0.01%	-0.02%	0.08%
Cash	6.8%	8.1%	1.3%	0.1	0.2	0.0	-	-	-	0.1	0.2	0.0	0.11%	0.12%	0.01%	0.01%	0.01%	0.00%	-0.01%	0.00%	0.00%
Passive	6.8%	8.1%	1.3%	0.1	0.2	0.0	-	-	-	0.1	0.2	0.0	0.11%	0.12%	0.01%	0.01%	0.01%	0.00%	-0.01%	0.00%	0.00%
Total Plan	100.0%	100.0%	0.0%	16.3	16.2	-0.1	4.9	8.0	3.1	21.2	24.2	3.0	1.07%	1.15%	0.08%	1.07%	1.15%	0.08%	-0.03%	-0.02%	0.14%

Table 10 - Pension Year-over-Year Comparison by Management Type

	Average Weight			Management Fees			Incentive Fees			Mgmt and Incent Fees			Fee Ratio (Mgmt and Incent)			Contrib to Total Plan Fee Ratio			YoY Attribution		
Type	2016	2017	Change	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016	2017	Change	2016	2017	Change	Due to Weight	Due to Mgmt Fee Ratio	Due to Incent Fee Ratio
Passive	41.6%	41.4%	-0.1%	0.7	0.6	-0.1	-	-	-	0.7	0.6	-0.1	0.09%	0.07%	-0.02%	0.04%	0.03%	-0.01%	0.00%	-0.01%	0.00%
Active	20.9%	25.0%	4.1%	2.6	3.1	0.6	-	-	-	2.6	3.1	0.6	0.62%	0.59%	-0.02%	0.13%	0.15%	0.02%	-0.02%	-0.01%	0.00%
Hedged	22.7%	21.1%	-1.6%	8.3	7.6	-0.7	3.5	7.0	3.5	11.8	14.6	2.8	2.62%	3.30%	0.68%	0.59%	0.70%	0.10%	-0.02%	-0.03%	0.17%
Private	14.8%	12.5%	-2.3%	4.7	4.9	0.2	1.4	1.0	-0.4	6.1	5.9	-0.2	2.09%	2.25%	0.16%	0.31%	0.28%	-0.03%	-0.02%	0.03%	-0.01%
Total Plan	100.0%	100.0%	0.0%	16.3	16.2	-0.1	4.9	8.0	3.1	21.2	24.2	3.0	1.07%	1.15%	0.08%	1.07%	1.15%	0.08%	-0.07%	-0.01%	0.16%

Table 11 - Pension Year-over-Year Comparison of Other Costs

	Inv Staff Salary and Benefits (\$ mm)	Consultants (\$ mm)	Custodian (\$ mm)	Other Vendors and Travel (\$ mm)	Total Other Costs (\$ mm)	Other Costs Fee Ratio
2016	0.60	0.43	0.36	0.17	1.57	0.08%
2017	0.49	0.64	0.29	0.44	1.86	0.09%
Change	-0.11	0.21	-0.07	0.26	0.29	0.01%

Table 12 - Health Care Year-over-Year Comparison by Asset Class and Management Type

Asset Class	Average Weight			Management Fees			Incentive Fees			Mgmt and Incent Fees			Fee Ratio (Mgmt and Incent)			Contrib to Total Plan Fee Ratio			YoY Attribution		
	2016	2017	Change	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016	2017	Change	2016	2017	Change	Due to Weight	Due to Mgmt Fee Ratio	Due to Incent Fee Ratio
Global Equity	40.5%	38.9%	-1.6%	0.31	0.42	0.11	-	-	-	0.31	0.42	0.11	0.45%	0.47%	0.01%	0.18%	0.18%	0.00%	0.00%	0.01%	0.00%
Passive	24.5%	22.5%	-2.1%	0.02	0.03	0.00	-	-	-	0.02	0.03	0.00	0.05%	0.05%	0.00%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%
Active	16.0%	16.5%	0.5%	0.29	0.39	0.10	-	-	-	0.29	0.39	0.10	1.07%	1.04%	-0.03%	0.17%	0.17%	0.00%	0.00%	-0.01%	0.00%
Global Fixed Income	28.2%	27.3%	-0.9%	0.02	0.02	0.00	-	-	-	0.02	0.02	0.00	0.04%	0.03%	-0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%
Passive	28.2%	27.3%	-0.9%	0.02	0.02	0.00	-	-	-	0.02	0.02	0.00	0.04%	0.03%	-0.01%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%
Real Assets	20.1%	18.9%	-1.2%	0.21	0.24	0.03	0.04	0.02	-0.03	0.25	0.26	0.01	0.74%	0.60%	-0.15%	0.15%	0.11%	-0.04%	0.00%	-0.01%	-0.02%
Passive	9.0%	8.8%	-0.3%	0.01	0.01	0.00	-	-	-	0.01	0.01	0.00	0.08%	0.07%	0.00%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%
Active	4.3%	4.1%	-0.2%	0.03	0.04	0.01	-	-	-	0.03	0.04	0.01	0.40%	0.39%	-0.01%	0.02%	0.02%	0.00%	0.00%	0.00%	0.00%
Hedged	1.7%	1.2%	-0.5%	0.08	0.07	-0.01	0.04	0.02	-0.03	0.12	0.09	-0.03	4.14%	3.26%	-0.88%	0.07%	0.04%	-0.03%	-0.02%	0.00%	-0.01%
Private	5.1%	4.8%	-0.3%	0.09	0.12	0.03	0.00	-	-0.00	0.09	0.12	0.03	1.05%	1.07%	0.02%	0.05%	0.05%	0.00%	0.00%	0.00%	0.00%
Cash	11.1%	14.9%	3.7%	0.02	0.04	0.02	-	-	-	0.02	0.04	0.02	0.11%	0.12%	0.01%	0.01%	0.02%	0.01%	-0.01%	0.00%	0.00%
Passive	11.1%	14.9%	3.7%	0.02	0.04	0.02	-	-	-	0.02	0.04	0.02	0.11%	0.12%	0.01%	0.01%	0.02%	0.01%	-0.01%	0.00%	0.00%
Total Plan	100.0%	100.0%	0.0%	0.55	0.72	0.16	0.04	0.02	-0.03	0.60	0.73	0.13	0.36%	0.32%	-0.03%	0.36%	0.32%	-0.03%	-0.01%	0.00%	-0.02%

Table 13 - Health Care Year-over-Year Comparison by Management Type

Type	Average Weight			Management Fees			Incentive Fees			Mgmt and Incent Fees			Fee Ratio			Contrib to Total Plan Fee Ratio			YoY Attribution		
	2016	2017	Change	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016 (\$ mm)	2017 (\$ mm)	Change (\$ mm)	2016	2017	Change	2016	2017	Change	Due to Weight	Due to Mgmt Fee Ratio	Due to Incent Fee Ratio
Passive	72.9%	73.4%	0.5%	0.07	0.10	0.03	-	-	-	0.07	0.10	0.03	0.06%	0.06%	0.00%	0.04%	0.04%	0.00%	0.00%	0.00%	0.00%
Active	20.3%	20.6%	0.3%	0.32	0.43	0.11	-	-	-	0.32	0.43	0.11	0.93%	0.91%	-0.02%	0.19%	0.19%	0.00%	0.00%	0.00%	0.00%
Hedged	1.7%	1.2%	-0.5%	0.08	0.07	-0.01	0.04	0.02	-0.03	0.12	0.09	-0.03	4.14%	3.26%	-0.88%	0.07%	0.04%	-0.03%	-0.02%	0.00%	-0.01%
Private	5.1%	4.8%	-0.3%	0.09	0.12	0.03	0.00	-	-0.00	0.09	0.12	0.03	1.05%	1.07%	0.02%	0.05%	0.05%	0.00%	0.00%	0.00%	0.00%
Total Plan	100.0%	100.0%	0.0%	0.55	0.72	0.16	0.04	0.02	-0.03	0.60	0.73	0.13	0.36%	0.32%	-0.03%	0.36%	0.32%	-0.03%	-0.02%	0.00%	-0.01%

Table 14 - Health Care Year-over-Year Comparison of Other Costs

	Inv Staff Salary and Benefits (\$ mm)		Consultants (\$ mm)	Custodian (\$ mm)	Other Vendors and Travel (\$ mm)		Total Other Costs (\$ mm)	Other Costs Fee Ratio
2016	0.05	0.03	0.12	0.01	0.21	0.12%		
2017	0.05	0.04	0.10	0.03	0.23	0.10%		
Change	0.00	0.02	-0.01	0.02	0.02	-0.02%		

## Analysis of Pension Year-over-Year Changes by Asset Class

As presented in Table 9, the pension total plan fee ratio (management and incentive fees only) increased by +8 bps from 1.07% in 2016 to 1.15% in 2017. Operating expenses are excluded from this analysis since 2017 is the first year this expense category has been reported.

The largest drivers of the increase from an asset class perspective were Global Equity (+8 bps contribution), Absolute Return (+6 bps contribution), and Private Equity (+3 bps), partially offset by a decrease in Private Debt (-4 bps) and Real Assets (-4 bps).

Asset class weight changes contributed -3 bps to the year-over-year change in total plan fee ratio. Private Equity, Global Fixed Income, and Cash each contributed -1 bp.

Changes in management fee ratios contributed -2 bps to the year-over-year change in total plan fee ratio. The largest reductions were in Global Equity (-2 bps) and Absolute Return (-2 bps) which were partially offset by an increase in Private Equity (+2 bps).

Changes in incentive fee ratios contributed +14 bps to the year-over-year change in total plan fee ratio. Global Equity (+10 bps), Absolute Return (+8 bps), and Private Equity (+3 bps) were the largest contributors, partially offset by a decrease in Real Assets (-4 bps) and Private Debt (-3 bps).

A summary of the key drivers in year-over-year changes to pension fee ratios from 2016 to 2017 for each asset class is below along with comparisons of performance net of fees. The pension plan return increased from 6.3% in calendar year 2016 to 10.6% in 2017.

The **Global Equity** fee ratio increased from 0.74% in 2016 to 1.03% in 2017 due to higher incentive fees to hedged long/short equity managers. The Marketable Alternative Equity composite return increased from 0.7% in 2016 to 12.0% in 2017 leading to higher incentive fees and bringing the fee ratio for hedged Global Equity managers up from 2.15% in 2016 to 4.46% in 2017. Global Equity asset class performance improved from 6.1% in 2016 to 21.7% in 2017.

**Private Equity** saw an increase from 2.60% in 2016 to 4.56% in 2017 from higher incentive fees and management fees. The performance of Private Equity improved on a time-weighted return basis from 5.3% in 2016 to 15.3% in 2017.

**Global Fixed Income** decreased from 0.53% in 2016 to 0.44% in 2017. The performance of Global Fixed Income increased from 2.8% in 2016 to 5.1% in 2017.

**Private Debt** decreased from 1.12% in 2016 to 0.28% in 2017 due to a reduction in incentive fees. The performance of Private Debt on a time-weighted basis declined from 1.4% in 2016 to -6.2% in 2017.

**Real Assets** was decreased from 1.14% in 2016 to 0.99% in 2017. Incentive fees declined for both hedged and private funds. The performance of Real Assets on a time-weighted basis declined from 13.9% in 2016 to 12.2% in 2017.

**Absolute Return** increased from 2.56% in 2016 to 2.98% in 2017 due to higher incentive fees. The performance of Absolute Return increased from 1.5% in 2016 to 2.8% in 2017.

**Cash** was nearly unchanged year over year.

## Analysis of Pension Year-over-Year Changes by Management Type and Other Costs

As shown in the Table 10 contribution to total plan fee ratio change column, the largest driver of the +8 bps total plan fee ratio increase was hedge funds (+10 bps change in contribution). The hedge fund increase can be attributed to higher incentive fee ratios (+17 bps) which were partially offset by lower management fee ratios (-3 bps) and a lower weight (-2 bps).

As displayed in Table 11, **Other Costs** increased slightly from 0.08% in 2016 to 0.09% in 2017.

## Analysis of Health Care Year-over-Year Changes by Asset Class, Management Type and Other Costs

As seen in Tables 12 and 13, the Health Care total plan fee ratio declined from 0.36% in 2016 to 0.32% in 2017 due to a reduction in weighting toward hedge funds (-2 bps) and reduction in incentive fee ratios for hedge funds (-1 bp).

As displayed in Table 14, **Other Costs** decreased from 0.12% to 0.10% in 2017.



**Table 15 – California Government Code §7514.7 Disclosure, Private Equity**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2017 (\$)	2017 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2017 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2017 (\$)	Fees and expenses paid from the Fund to GP and related parties 2017 (\$)					Fees and expenses paid by all portfolio companies 2017 (\$)	Carried Interest Paid 2017 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
Pathway Private Equity Fund VIII	2211 Michelson Drive, Ninth Floor Irvine, CA 92612	2004	40,000,000	39,713,457	5,051,203	3,831,575	8,882,778	2,240,018	6.90%	1.48	-	130,384	97,499	-	-	305,282	-	488,266
Pantheon Global Secondary Fund III 'B'	600 Montgomery Street, 23rd Floor San Francisco, CA 94111	2006	40,000,000	37,840,000	5,540,830	3,680,000	9,220,830	-	1.89%	1.11	-	259,744	15,374	-	-	-	-	-
Pantheon USA Fund VII	600 Montgomery Street, 23rd Floor San Francisco, CA 94111	2006	40,000,000	36,960,000	23,780,070	7,480,002	31,260,072	3,996,413	10.18%	1.71	-	270,000	10,527	-	-	40,051	-	-
Great Hill Equity Partners IV	One Liberty Square Boston, Massachusetts 02109	2008	5,000,000	4,966,250	3,640,060	1,293,682	4,933,742	715,207	21.57%	2.01	-	64,637	34,799	-	-	473,786	-	568,701
Partners Group Secondary 2008	1660 17th Street, Suite 201 Denver, CO 80202	2008	10,443,016	9,200,259	1,764,255	1,293,581	3,057,836	113,500	9.59%	1.52	-	77,573	415	-	-	27,647	-	-
Partners Group Secondary 2011, L.P.	1660 17th Street, Suite 201 Denver, CO 80202	2011	20,000,000	12,680,419	11,664,941	2,745,624	14,410,565	680,586	20.36%	1.72	-	250,000	5,917	-	-	230,874	-	-
SJFED Private Equity Strategic Partnership, L.P.	325 N. Saint Paul St., Ste. 4900 Dallas, TX 75201	2017	225,305,373	11,392,873	11,458,986	-	11,458,986	-	2.70%	1.00	-	590,715	121,766	-	186,293	-	-	-

Source: Fund managers, Meketa Investment Group

**Table 16 – California Government Code §7514.7 Disclosure, Private Debt**

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2017 (\$)	2017 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2017 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2017 (\$)	Fees and expenses paid from the Fund to GP and related parties 2017 (\$)					Fees and expenses paid by all portfolio companies 2017 (\$)	Carried Interest Paid 2017 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
GSO SJ Partners	345 Park Avenue New York, NY 10154	2010	50,000,000	42,508,660	11,814,303	295,026	12,109,329	264,194	7.43%	1.23	-	186,690	59,079	-	-	(894,687)	-	-
Medley Opportunity Fund II, L.P.	280 Park Avenue, 6th Floor East New York, NY 10017	2010	50,000,000	51,718,681	33,430,285	6,454,138	39,884,423	3,872,483	6.23%	1.30	-	482,136	153,120	(160,799)	-	(1,585)	-	-
White Oak Direct Lending	3 Embarcadero Center, 5th Floor San Francisco, CA 94111	2010	50,000,000	88,171,628	22,820,256	1,022,496	23,842,752	-	4.24%	1.10	281,449	-	28,410	-	-	-	-	-
Cross Ocean USD ESS Fund II, L.P.	11 Charles II St. London, SW1Y4QU	2016	15,000,000	9,007,402	9,874,875	285,851	10,160,726	-	16.65%	1.13	-	61,475	56,593	-	-	104,272	-	-

Source: Fund managers, Meketa Investment Group



Table 17 – California Government Code §7514.7 Disclosure, Private Real Assets

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2017 (\$)	2017 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2017 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2017 (\$)	Fees and expenses paid from the Fund to GP and related parties 2017 (\$)					Fees and expenses paid by all portfolio companies 2017 (\$)	Carried Interest Paid 2017 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
DRA Growth and Income Fund V	220 East 42nd Street, 27th Floor New York, NY 10017	2005	20,000,000	30,475,996	150,142	1,621,508	1,771,650	751,970	5.25%	1.32	-	-	6,522	-	-	-	-	-
DRA Growth and Income Fund VI	220 East 42nd Street, 27th Floor New York, NY 10017	2007	9,709,422	10,556,217	1,587,324	1,446,446	3,033,770	1,215,992	10.88%	1.67	-	37,333	3,039	-	-	(1,106)	-	234,934
Fidelity Real Estate Growth Fund III, L.P.	One Federal Street, 26th Floor Boston, MA 02110	2007	17,850,728	17,850,728	-	1,438,421	1,438,421	-	7.34%	1.33	-	10,864	2,535	-	459	-	-	-
DRA Growth and Income Fund VII, LLC	220 East 42nd Street, 27th Floor New York, NY 10017	2011	15,000,000	15,714,494	10,036,478	8,871,392	18,907,870	3,819,935	19.53%	1.86	-	204,828	40,408	-	-	475,034	-	-
DRA Growth and Income Fund VIII, LLC	220 East 42nd Street, 27th Floor New York, NY 10017	2014	15,000,000	17,060,326	13,659,044	2,935,494	16,594,538	1,100,795	13.00%	1.22	-	300,632	37,715	-	-	284,876	-	-
European Property Investors Special Opportunities 4, L.P.	Berkeley Square House (8th Floor) Berkeley Square, London W1J6DB, UK	2015	14,306,285	6,841,327	6,934,090	265,852	7,199,942	-	12.57%	1.10	-	183,625	16,351	-	-	-	-	-
DRA Growth and Income Fund IX, LLC	220 East 42nd Street, 27th Floor New York, NY 10017	2016	20,000,000	7,195,348	7,079,966	852,277	7,932,243	389,446	20.43%	1.10	-	128,342	21,488	-	-	-	-	-
Global Infrastructure Partners III, L.P.	1345 Avenue of the Americas, 30th Floor, New York, NY 10105	2016	25,000,000	7,314,270	5,622,992	358,587	5,981,579	316,767	-14.27%	0.88	-	436,007	31,873	-	-	-	-	11,992
GEM Realty Fund VI, L.P.	900 North Michigan Avenue #1450, Chicago, IL 60611	2017	10,000,000	500,000	289,617	-	289,617	-	N/A	0.58	-	112,875	19,238	-	21,631	-	7,093	-

Source: Fund managers, Meketa Investment Group

Table 18 – California Government Code §7514.7 Disclosure, Hedge Funds

Fund Name	Address	Vintage Year	Commitment Amount (\$)	Contributions Since Inception (\$)	Remaining Value (\$)	Distributions for Calendar year 2017 (\$)	2017 Distributions + Remaining Value of Partnership (\$)	Cash Profit Distributed for Calendar Year 2017 (\$)	Net IRR Since Incept (%)	Investment Multiple Since Incept	Fees and expenses paid directly to GP and related parties 2017 (\$)	Fees and expenses paid from the Fund to GP and related parties 2017 (\$)					Fees and expenses paid by all portfolio companies 2017 (\$)	Carried Interest Paid 2017 (\$)
												Management Fees	Partnership Expenses	Offsets	Other Expenses	Incentive/Carried Interest Allocation		
Arrowgrass International Fund Ltd	1330 Avenue of the Americas, 32nd Floor New York, NY 10019	N/A	N/A	30,000,000	-	19,311,405	19,311,405	N/A	5.86%	1.24	-	111,767	7,295	-	-	92,779	-	92,779
BlueTrend Fund Limited	650 Fifth Ave New York, NY 10019	N/A	N/A	20,000,000	-	16,334,905	16,334,905	N/A	-4.65%	0.82	-	129,047	13,350	-	-	-	-	-
Brevan Howard Fund Ltd	590 Madison Ave., 9th Floor New York, NY 10022	N/A	N/A	31,121,198	5,534,963	20,054,269	25,589,232	N/A	-1.20%	0.82	-	265,180	87,057	-	-	-	-	-
Claren Road Credit Master Fund Ltd	51 Astor Place, 12th Floor New York, NY 10003	N/A	N/A	50,000,000	213,520	5,623,853	5,837,374	N/A	-10.48%	0.79	-	-	24,895	-	-	-	-	-
Davidson Kempner Institutional Partners, L.P.	520 Madison Avenue, 30th Floor New York, NY 10022	N/A	N/A	30,000,000	38,890,241	-	38,890,241	N/A	5.52%	1.30	-	572,261	26,611	-	-	592,836	-	592,836
DE Shaw Composite International Fund	1166 Avenue of the Americas, 9th Floor New York, NY 10036	N/A	N/A	30,000,000	41,257,998	2,000,993	43,258,991	N/A	12.17%	1.44	-	1,033,294	48,646	-	-	1,389,606	-	1,389,606
Dymon Asia Macro	1 Temasek Avenue #11-01 Millenia Tower, Singapore 039192	N/A	N/A	25,000,000	25,888,599	-	25,888,599	N/A	1.69%	1.04	-	396,282	32,191	-	-	-	-	-
Horizon Portfolio I Limited	16 New Burlington Place, London, W1S 2HX, United Kingdom	N/A	N/A	27,500,000	17,603,890	15,000,000	32,603,890	N/A	5.01%	1.19	-	412,357	39,379	-	-	261,791	-	261,791
Hudson Bay Cap Structure Arbitrage Enhanced Fund	777 Third Ave. 30th Floor, New York, NY 10017	N/A	N/A	30,000,000	30,424,416	-	30,424,416	N/A	4.76%	1.01	-	150,915	48,437	-	-	249,517	-	249,517
Kepos Alpha Fund	620 8th Ave., 44th Floor, New York, NY 10018	N/A	N/A	18,000,000	15,179,819	-	15,179,819	N/A	-3.84%	0.84	-	285,806	37,156	-	-	-	-	-
Keynes Leveraged Quantitative Strategies Fund	9th Floor Orion House, 5 Upper St Martin's Lane London WC2H 9EA	N/A	N/A	20,000,000	19,793,600	-	19,793,600	N/A	-0.54%	0.99	-	141,129	49,809	-	-	-	-	-
Man AHL Evolution Frontier	100 St. Paul Street, Suite 800, Denver, CO 80206	N/A	N/A	13,000,000	15,303,172	-	15,303,172	N/A	13.31%	1.18	-	278,688	31,045	-	-	524,547	-	524,547
MKP Opportunity	600 Lexington Avenue New York, NY 10022	N/A	N/A	10,000,000	-	9,951,702	9,951,702	N/A	-0.27%	1.00	-	62,531	4,961	-	-	-	-	-
MW Eureka Fund Ltd	350 Park Avenue, 18th Floor New York, NY 10022	N/A	N/A	25,000,000	21,662,441	10,000,000	31,662,441	N/A	8.78%	1.27	-	371,567	12,260	-	-	502,032	-	455,560
Pharo Macro Fund, Ltd	1370 Avenue of the Americas, 26th Floor New York, NY 10019	N/A	N/A	30,000,000	31,231,571	4,388,017	35,619,588	N/A	12.75%	1.19	-	693,264	28,734	-	-	1,294,157	-	1,294,157
Pine River Fund Ltd	580 California Street, San Francisco, CA 94104	N/A	N/A	30,000,000	6,540,230	17,375,009	23,915,239	N/A	2.79%	1.13	-	230,591	223,069	-	-	-	-	-
Pine River Volatility Arbitrage Fund	580 California Street, San Francisco, CA 94104	N/A	N/A	25,000,000	24,646,000	-	24,646,000	N/A	-2.11%	0.99	-	102,228	112,221	-	-	-	-	-
Pinnacle Natural Resources Fund (Federated Pension investment)	712 Fifth Avenue, 29th Floor New York, NY 10019	N/A	N/A	40,000,000	36,495,040	-	36,495,040	N/A	-4.67%	0.91	-	959,896	191,979	-	-	220,957	-	220,957
Pinnacle Natural Resources Fund (Federated Health Care investment)	712 Fifth Avenue, 29th Floor New York, NY 10019	N/A	N/A	3,000,000	2,737,128	-	2,737,128	N/A	-4.67%	0.91	-	71,992	14,398	-	-	16,572	-	16,572
Sandler Plus Fund	711 5th Ave #15, New York, NY 10022	N/A	N/A	20,000,000	18,261,975	10,000,000	28,261,975	N/A	8.28%	1.41	-	404,668	58,420	-	-	716,332	-	716,332
Senator Global Opportunity Offshore Fund Ltd	510 Madison Ave # 28, New York, NY 10022	N/A	N/A	31,200,000	25,767,983	15,000,000	40,767,983	N/A	7.61%	1.31	-	644,718	36,105	-	-	806,901	-	488,979
Systematica Alternative Markets Master Fund	650 Fifth Ave New York, NY 10019	N/A	N/A	5,000,000	5,463,748	-	5,463,748	N/A	42.73%	1.09	-	35,411	3,261	-	-	115,937	-	115,937
Systematica Trend Following Fund	650 Fifth Ave New York, NY 10019	N/A	N/A	20,000,000	20,910,515	-	20,910,515	N/A	11.21%	1.05	-	48,988	94,846	-	-	-	-	-
Tempo Volatility Fund	1 Greenwich Plaza, Greenwich, CT 06830	N/A	N/A	20,000,000	21,123,071	-	21,123,071	N/A	4.98%	1.06	-	308,250	113,654	-	-	210,609	-	210,609

Source: Fund managers, Albourne, State Street, ORS