



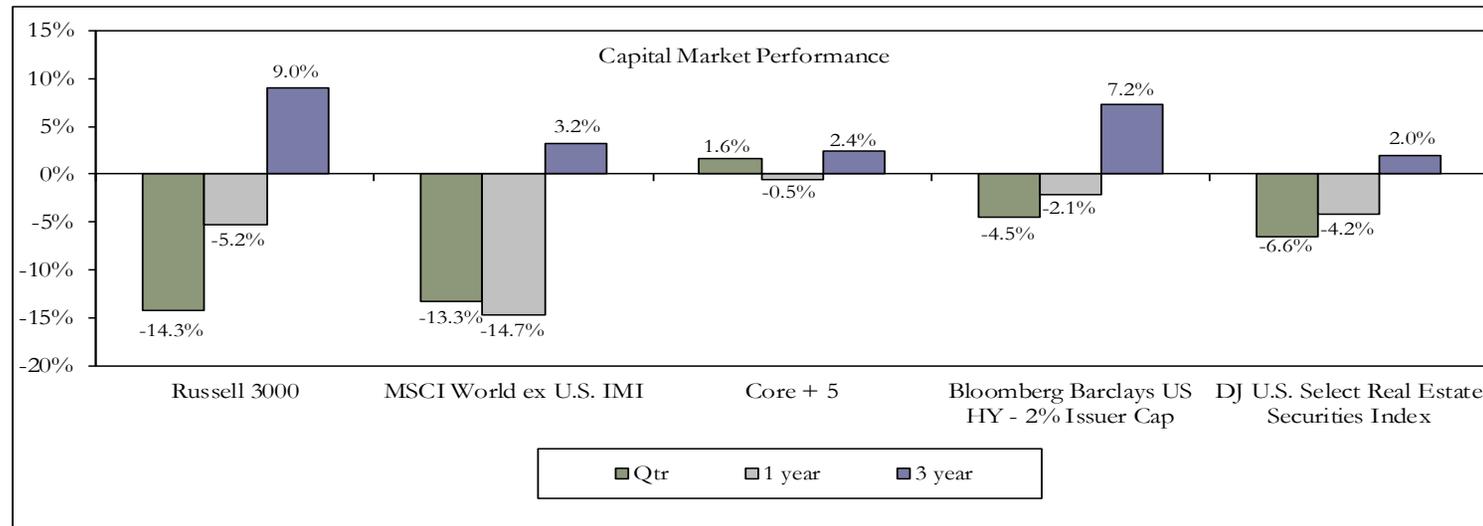
Teachers' Retirement System
of New York City
Performance Overview as of December 31, 2018

Total Fund Overview

Teachers' Retirement System of New York City

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Market Backdrop: Global equity markets closed the fourth quarter with poor performance. U.S. equity markets were incredibly volatile throughout the fourth quarter, finished the quarter down 14.3% (proxied by the Russell 3000 Index). Non-U.S. developed equity markets outperformed the U.S. market in the quarter and emerging markets significantly outperformed U.S. markets. Developed international equity returned -13.3% (MSCI World ex U.S. Index in USD terms) during the quarter while emerging markets returned -7.4% (MSCI Emerging Markets Index in USD terms). During the quarter, U.S. REITs returned -6.6% as measured by the DJ U.S. Select Real Estate Securities Index. The broad fixed income market, as proxied by the Core +5 Index, rebounded to return 1.6% in the quarter as interest rates fell. Below investment grade corporate bonds underperformed in the quarter, as the Bloomberg Barclays High Yield Index returned -4.5% and the Credit Suisse Leveraged Loan Index returned -3.1%. For the calendar year 2018 U.S. equity markets finished the year negative, returning -5.2% as proxied by the Russell 3000 Index. International developed equities also had poor performance for the year, returning -14.7% as measured by the MSCI World ex U.S. IMI index. Broad fixed income finished the year down 0.5%, as measured by the Core +5 Index.

Total Fund Performance: The Teachers' Total Fund returned -6.02% (net of fees) for the quarter ending December 31, 2018, outperforming the policy benchmark by 12 basis points. Asset Allocation contributed 36 basis points to the total fund relative performance largely due to an underweight to U.S. Equity. Weak returns for global public equity markets led to the Total Fund experiencing negative absolute returns for the one-year period ending December 31, 2018, returning -3.18% net of fees, outperforming the policy benchmark by 23 basis points. For the three-year period ending December 31, 2018, the Total Fund underperformed its benchmark, with a return of 7.04%, net of fees, versus the benchmark return of 7.27%. Please note that all composite and manager performance data in the sections below is reported net of fees. The Total Fund fees for public market assets for the calendar year-to-date ending December 31, 2018 have been estimated at approximately 11 basis points.

- **Total Fund Asset Allocation - \$69.1 Billion:** As of December 31, 2018, the Fund had total assets of \$69.1 billion, down from \$74.0 billion on September 30, 2018. In the Growth segment of the Total Fund, underweights to non-core private real estate and opportunistic fixed income of 5.0% were offset by an overweight to REITs, consistent with the strategy to invest assets in more liquid assets while awaiting private real estate commitments to be drawn down. In the Deflation Protection segment of the Fund, U.S. Treasuries were 5.0% above long-term targets. Finally, within the Inflation Protection segment of the Fund, core real estate and infrastructure remain about 3.3% below target in aggregate, pending new commitments to and capital calls from private funds. As of December 31, 2018, the total private equity, infrastructure, and private real estate invested allocation was 11.0% versus their aggregate long-term allocation of 17.0%.
- **U.S. Equity - \$18.6 Billion, 27% of Fund:** The U.S. equity composite performed in line with the broad U.S. equity market, returning -14.29% against the Russell 3000 Index return of -14.30%. Approximately 97% of the U.S. equity composite is allocated to passively managed mandates. The actively managed portion of the U.S. equity composite returned -22.34% during the quarter, trailing the Russell 3000 by 804 basis points. For the one-year ending December 31, 2018 the U.S. equity composite outperformed the index, returning -4.89% versus the Russell 3000 Index's return of -5.24%. Over the three-year period ending December 31, 2018, the total U.S. equity composite outperformed the Russell 3000 index return of 8.97% by 28 basis points.
- **Developed International Equity - \$7.3 Billion, 11% of Fund:** Non-U.S. developed equity markets, as measured by the MSCI World ex U.S. IMI Net Dividends Index, returned -13.28% in U.S. dollar terms during the quarter (-12.54% in local currency terms). For the same time-period, the Fund's total developed international equity composite returned -14.60%, trailing its Custom MSCI World ex U.S. benchmark by 131 basis points, driven primarily by significant underperformance during the quarter by Baillie Gifford. In contrast with the U.S. equity composite, as of December 31, 2018, the developed international equity composite was approximately 76% actively managed. For the one-year period ending December 31, 2018, the overall composite returned -14.46%, outperforming the Custom MSCI World ex U.S. benchmark by 23 basis points. Over the three-year period ending December 31, 2018, the total developed international composite outperformed the benchmark return of 2.94% by 168 basis points.

- **Emerging Markets Equity - \$6.1 Billion, 9% of Fund:** Emerging market equities, as measured by the TRS Custom EM Index, returned -5.79% during the fourth quarter. Over the trailing one-year, the TRS Custom EM returned -13.39%. For the fourth quarter of 2018, the emerging markets equity composite, which is about 71% actively managed, returned -5.72%, slightly outperforming the TRS Custom EM Benchmark's return of -5.79% over the same period. For the one-year period ending December 31, 2018, the emerging markets equity composite returned -13.94%, underperforming the benchmark return of -13.39%. For the three-year period ending December 31, 2018, the emerging markets equity composite returned 9.11%, trailing the benchmark return of 9.80%.
- **REITs - \$1.1 Billion, 2% of Fund:** The U.S. REIT market, as measured by the Dow Jones U.S. Select Real Estate Securities Index, returned -6.61% during the fourth quarter of 2018. The Fund's REITs composite, which is fully actively managed, trailed the benchmark during the fourth quarter of 2018, returning -7.43%, primarily due to poor performance in the Morgan Stanley portfolio. Over the three-year period ending December 31, 2018, this composite returned 2.00%, slightly outperforming the index return of 1.96%.
- **Structured Fixed Income – \$16.0 Billion, 23% of Fund:** The structured fixed income composite returned 2.04% during the fourth quarter of 2018, trailing the custom structured benchmark return of 2.95% over the same time period. Over the one-year period ending December 31, 2018 the composite outperformed the benchmark return of -1.23% by 40 basis points. For the three-year period ending December 31, 2018, the program returned 2.58%.
- **Enhanced Yield - \$3.4 Billion, 5% of Fund:** This asset class, is measured by the Bloomberg Barclays US Corporate High Yield - 2% Issuer Cap which returned -4.54% during the fourth quarter of 2018. The actively managed enhanced yield composite outperformed the benchmark, returning -4.21% over the same time period. For the one-year period ending December 31, 2018, this composite returned -2.39% while the High Yield Custom Benchmark returned -2.34%. Over the three-year period ending December 31, 2018, the enhanced yield composite returned 5.81%, trailing its custom benchmark by 66 basis points.
- **Bank Loans - \$1.7 Billion, 3% of Fund:** The bank loan composite performed in-line with the Credit Suisse Leveraged Loan Index for the fourth quarter of 2018 with the composite and benchmark both returning -3.08%. For the one-year period ending December 31, 2018, the bank loans composite returned 0.74%, underperformed the Credit Suisse Leveraged Loan Index by 41 basis points. For the three-year period ending December 31, 2018, the bank loans composite underperformed the Credit Suisse Leveraged Loan Index by 75 basis points, returning 4.27%.

- **TIPS - \$3.1 Billion, 5% of Fund:** The broad U.S. TIPS market returned -0.42% during the fourth quarter of 2018. The composite of TIPS managers (75% passive/25% active) performed in line with its benchmark, returning -0.45% for the quarter. For the one-year period ending December 31, 2018, the TIPS composite returned -1.27%, performing in line with its benchmark which returned -1.26%. For the three-year period ending December 31, 2018, the composite and benchmark both returned 2.11%.
- **Convertibles - \$187 Million, 0.3% of Fund:** The ICE BofA ML All Convertibles ex-Mandatories Index, a measure of the broad convertibles market, returned -9.24% during the fourth quarter of 2018. The Fund's entirely actively managed convertibles composite returned -4.70% over the quarter, outperforming its benchmark by 454 basis points. For the one-year period ending December 31, 2018, the Fund's convertibles composite returned -0.41%, trailing the benchmark by 106 basis points. For the three-year period ending December 31, 2018, this composite returned 5.49%, underperforming the benchmark by approximately 367 basis points.
- **Opportunistic Fixed Income - \$1.9 Billion, 3% of Fund:** The opportunistic fixed income composite is comprised of investments in 9 funds, representing about 20% of this composite's assets, and nine strategic separate account mandates, representing 80% of composite assets. These strategic mandates and funds call down capital as opportunities are identified and are still in the process of being funded. For the one-year period ending December 31, 2018, the overall composite returned 6.37%, outperforming the blended benchmark of 50%/50% J.P Morgan Global High Yield Index and Credit Suisse Leveraged Loan Index +3% by almost 400 basis points. During the fourth quarter of 2018, the overall composite returned -0.23% versus the blended benchmark which returned -2.79% over the same period. Over the longer three-year period ending December 31, 2018, the opportunistic fixed income composite returned 7.23% versus the benchmark return of 9.56%.
- **Private Equity - \$4.1 Billion, 6% of Fund:** At the end of the fourth quarter of 2018, the private equity portfolio had \$4.1 billion in invested capital. The Fund currently has investments in 164 partnerships. Performance is reported separately by Teachers' Private Equity consultant.
- **Private Real Estate - \$2.7 Billion, 4% of Fund:** At the end of the fourth quarter of 2018, the private real estate portfolio had \$2.7 billion in invested capital. The composite has investments in 65 partnerships. Performance is reported separately by Teachers' Private Real Estate consultant.
- **Private Infrastructure - \$766 Million, 1% of Fund:** At the end of the fourth quarter of 2018, the private infrastructure portfolio had \$766 million in invested capital, up from its allocation at the end of the first quarter of 2018. The composite has investments in 11 partnerships. Performance is reported separately by Teachers' Infrastructure consultant.

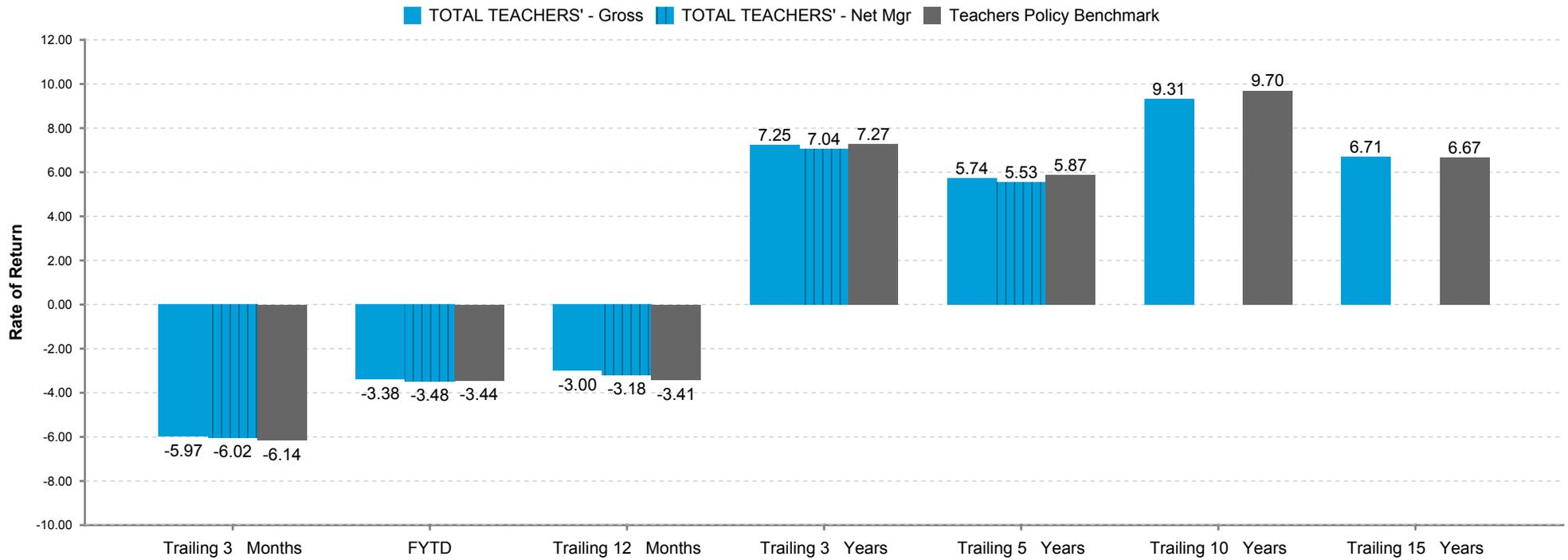
Total Portfolio Returns: December 31, 2018



Market Value (Billions)

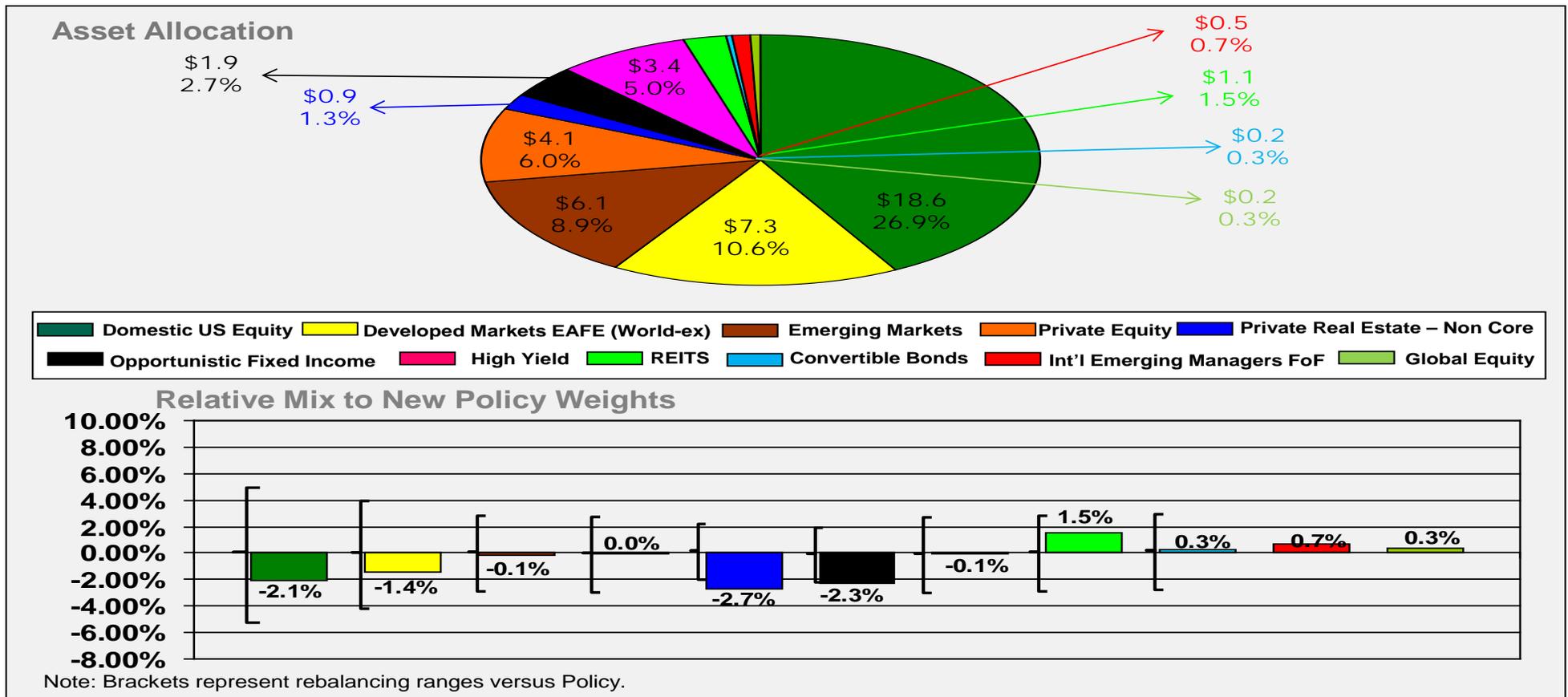
\$69.1

TOTAL TEACHERS'

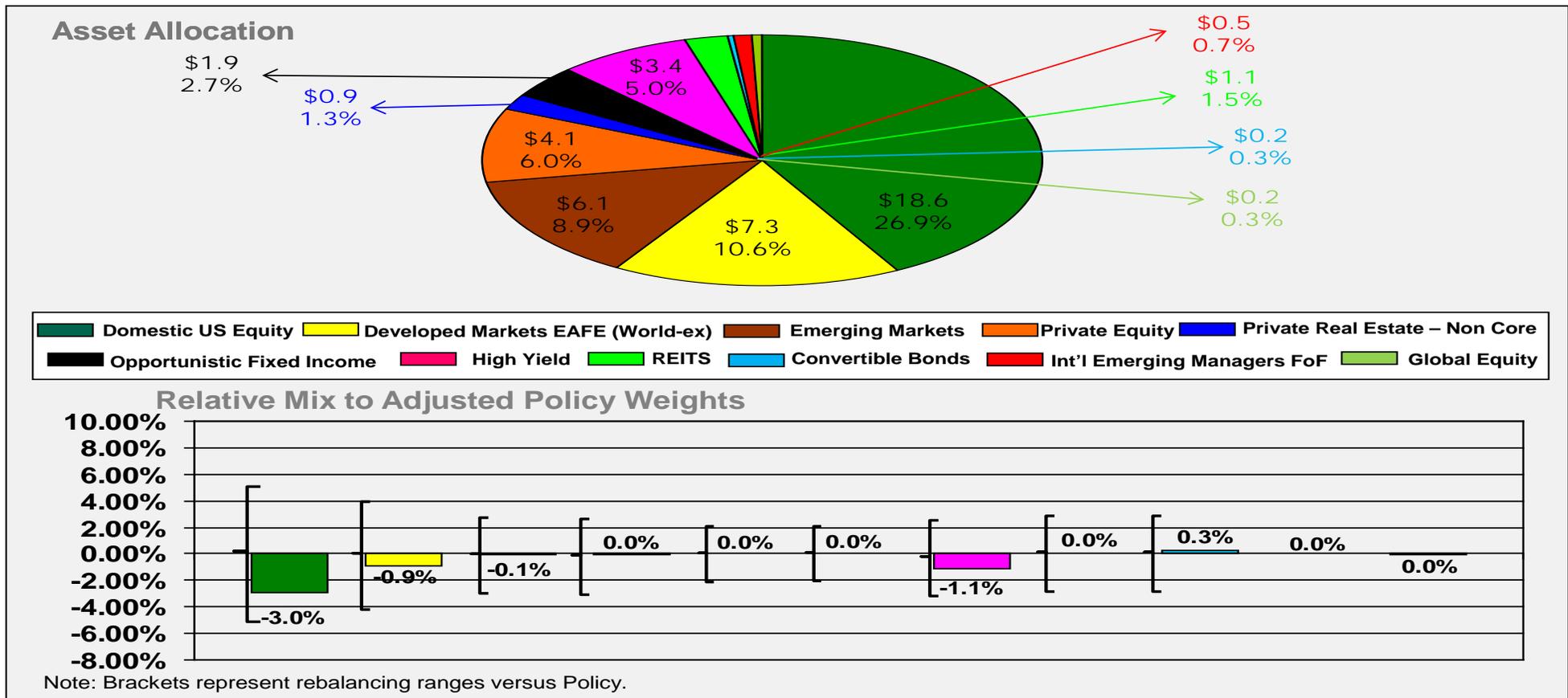


	Plan 3 Years	Benchmark 3 Years	Plan 5 Years	Benchmark 5 Years	Plan 7 Years	Benchmark 7 Years	Plan 10 Years
Standard Deviation							
TOTAL TEACHERS'	6.1	6.1	5.7	6.3	6.5	6.4	8.5

Portfolio Asset Allocation – Growth

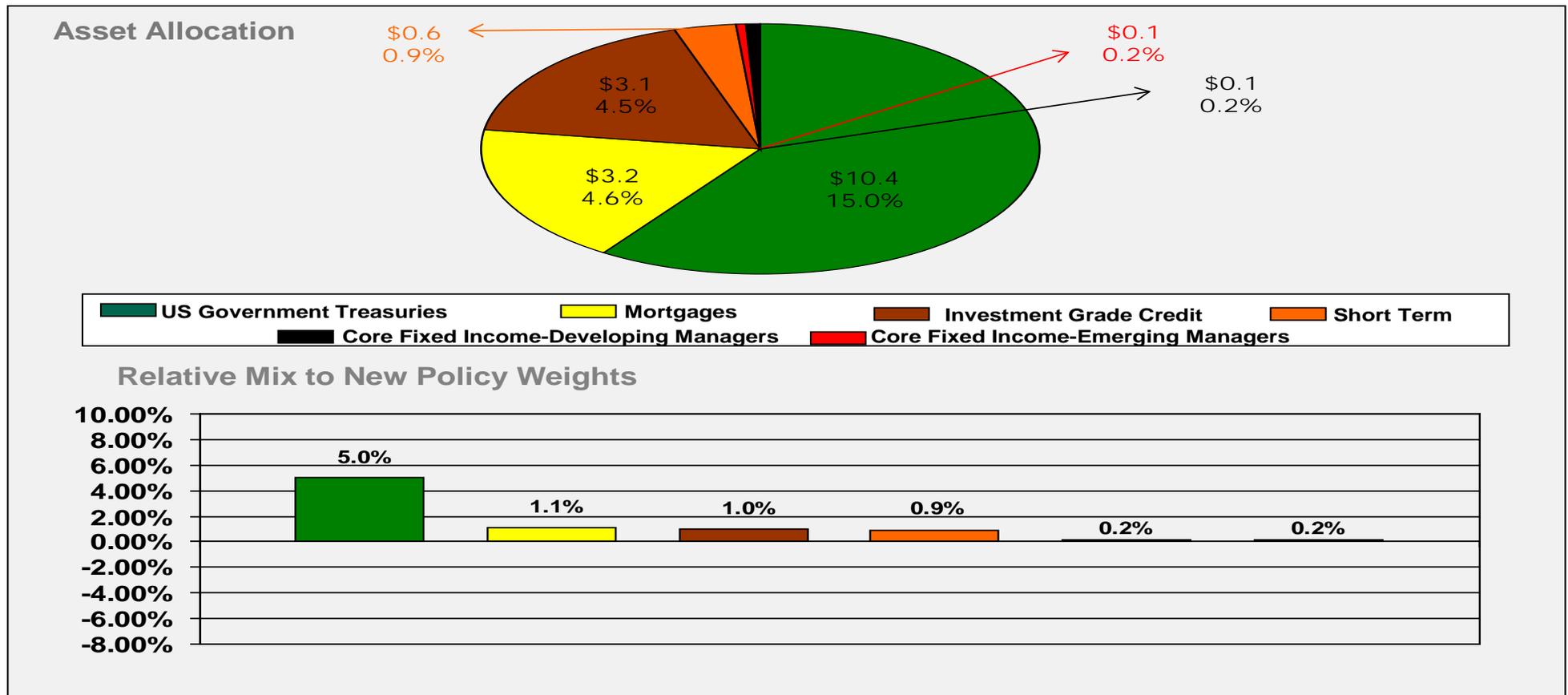


Portfolio Asset Allocation – Growth

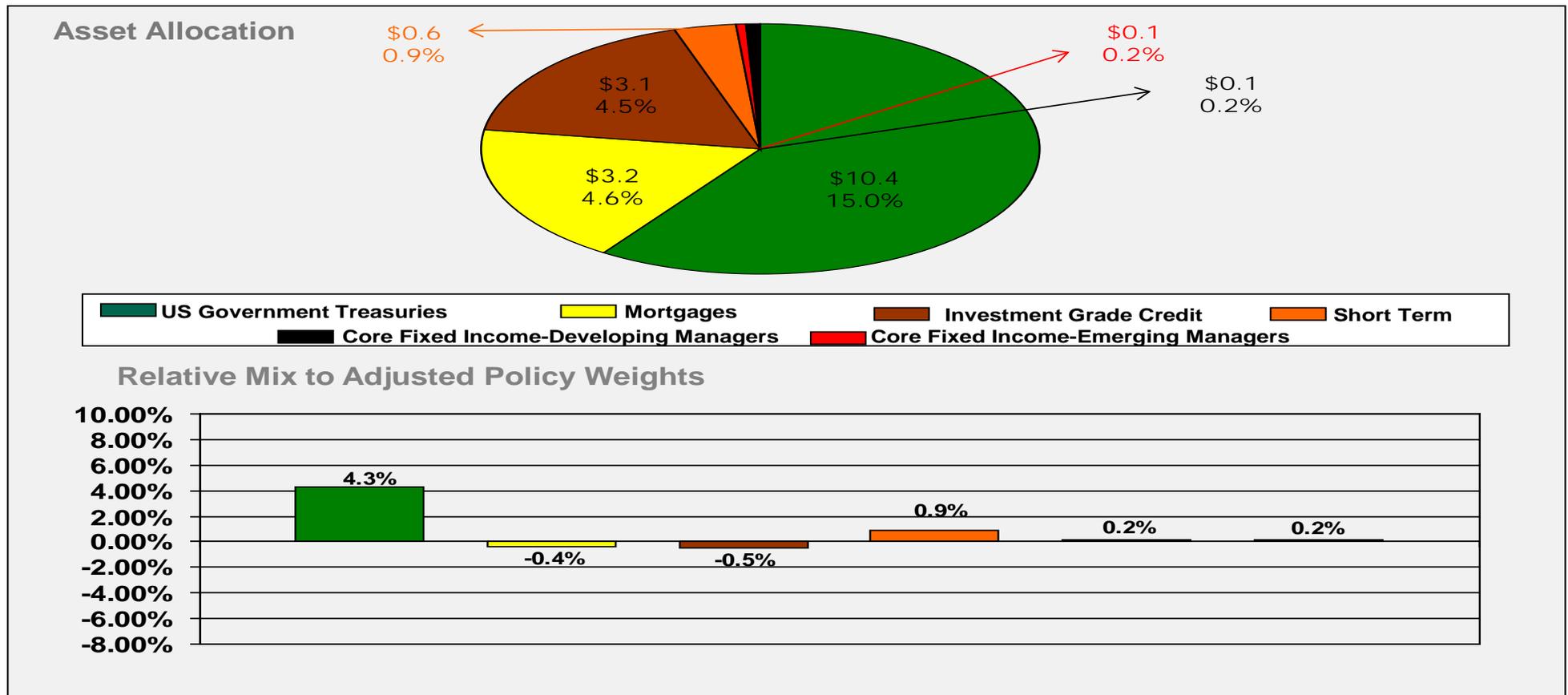


Note: On December 31, 2018 TRS' combined Fixed Income and Cash portfolios have a duration of 6.6 years. The duration of the Barclays US Aggregate Index was 5.9 years on that date.

Portfolio Asset Allocation – Deflation Protection

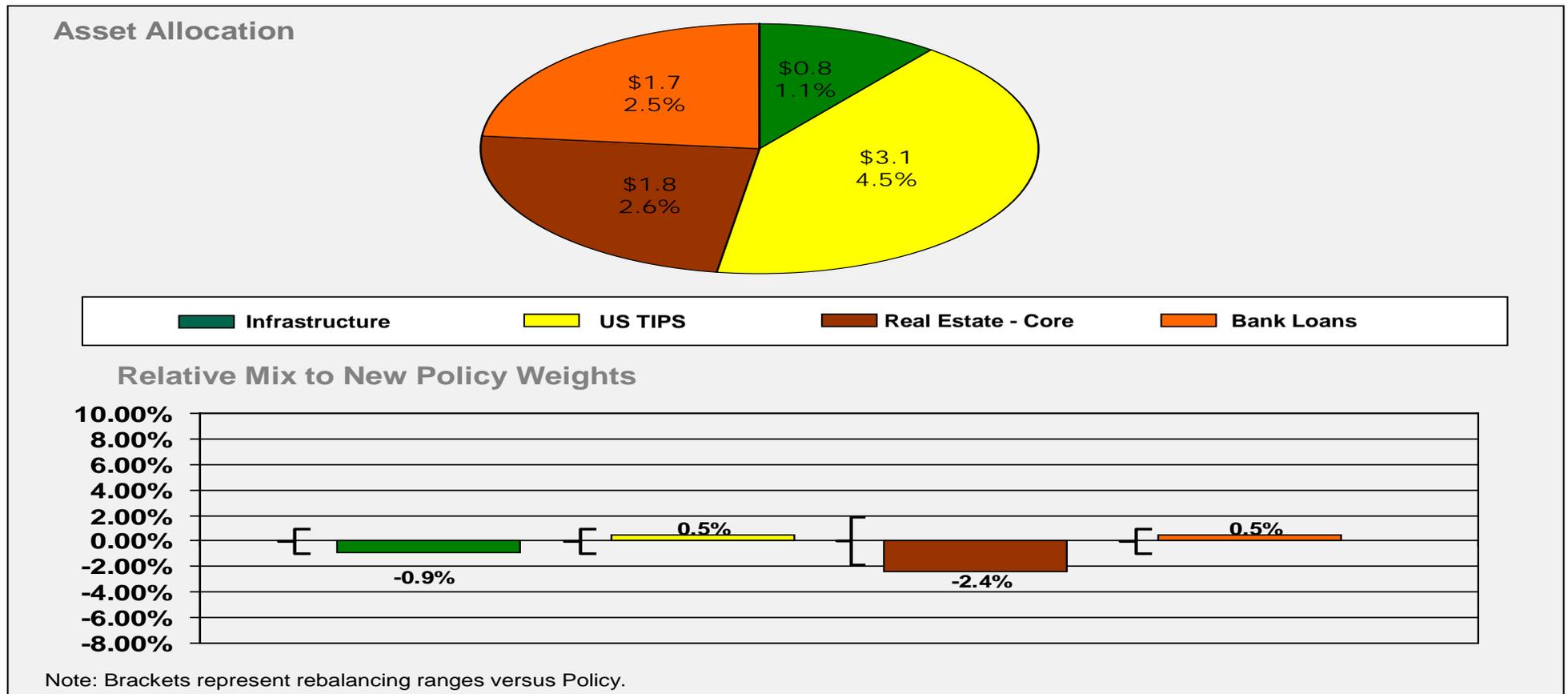


Portfolio Asset Allocation – Deflation Protection

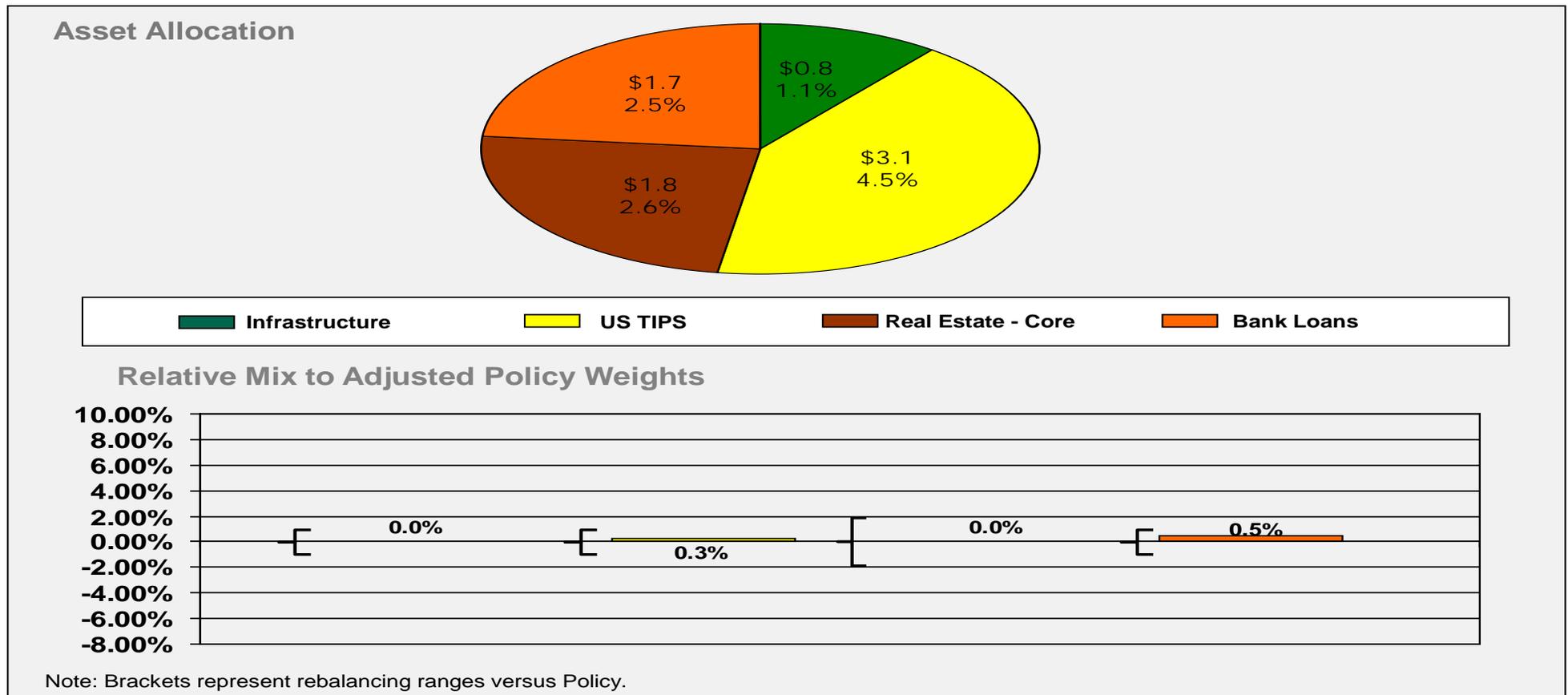


Note: On December 31, 2018 TRS' combined Fixed Income and Cash portfolios have a duration of 6.6 years. The duration of the Barclays US Aggregate Index was 5.9 years on that date.

Portfolio Asset Allocation – Inflation Protection

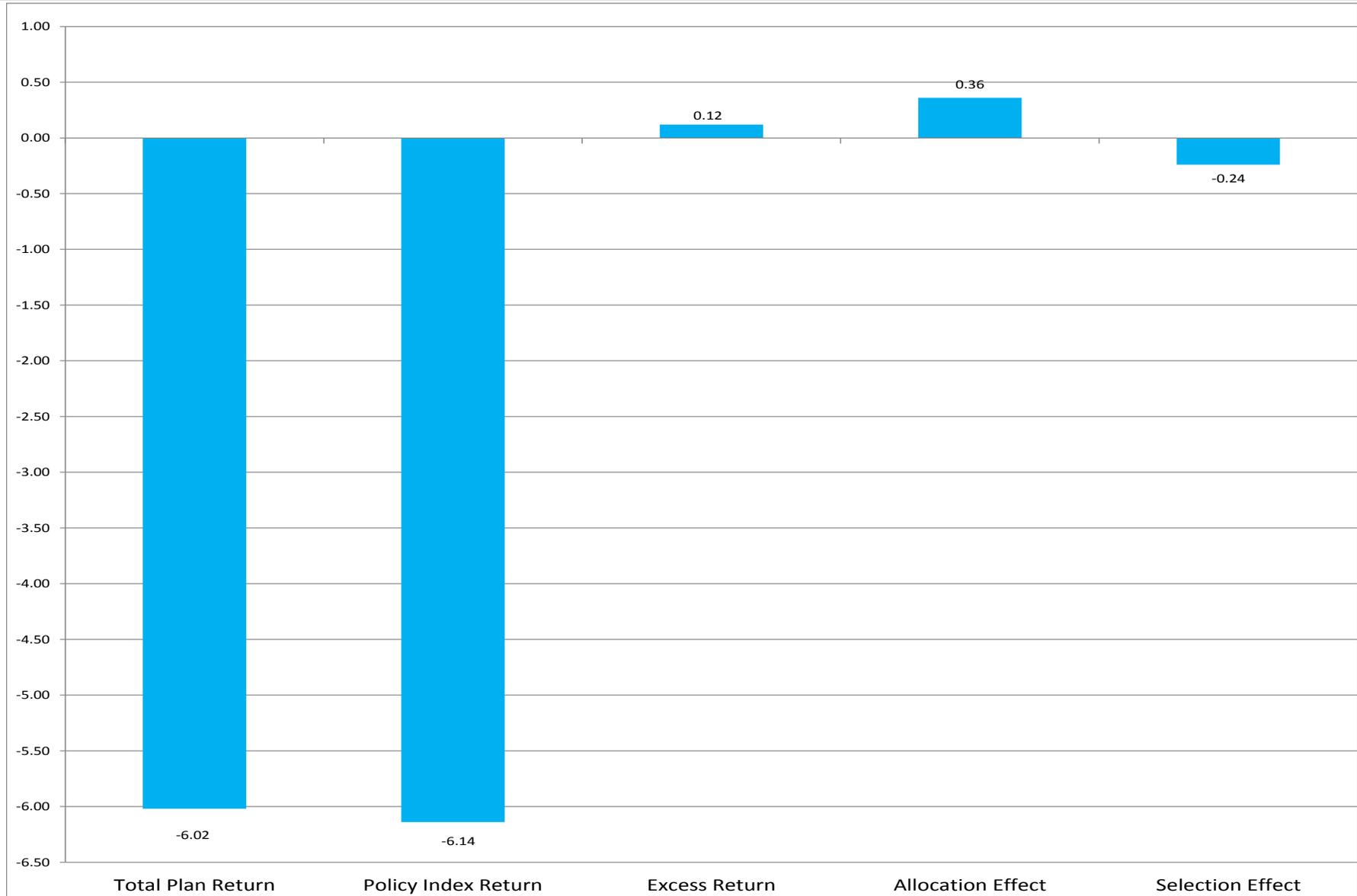


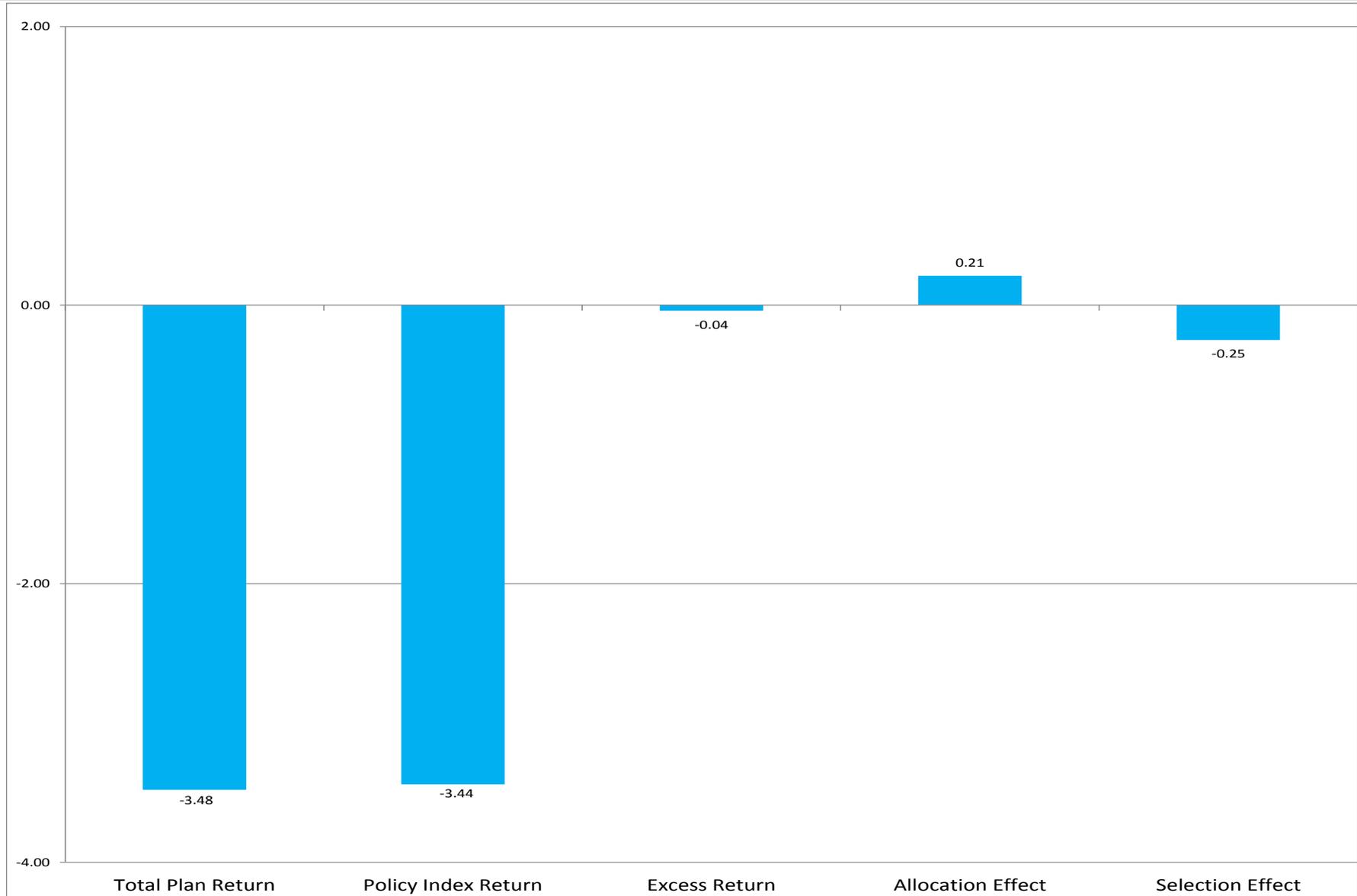
Portfolio Asset Allocation – Inflation Protection



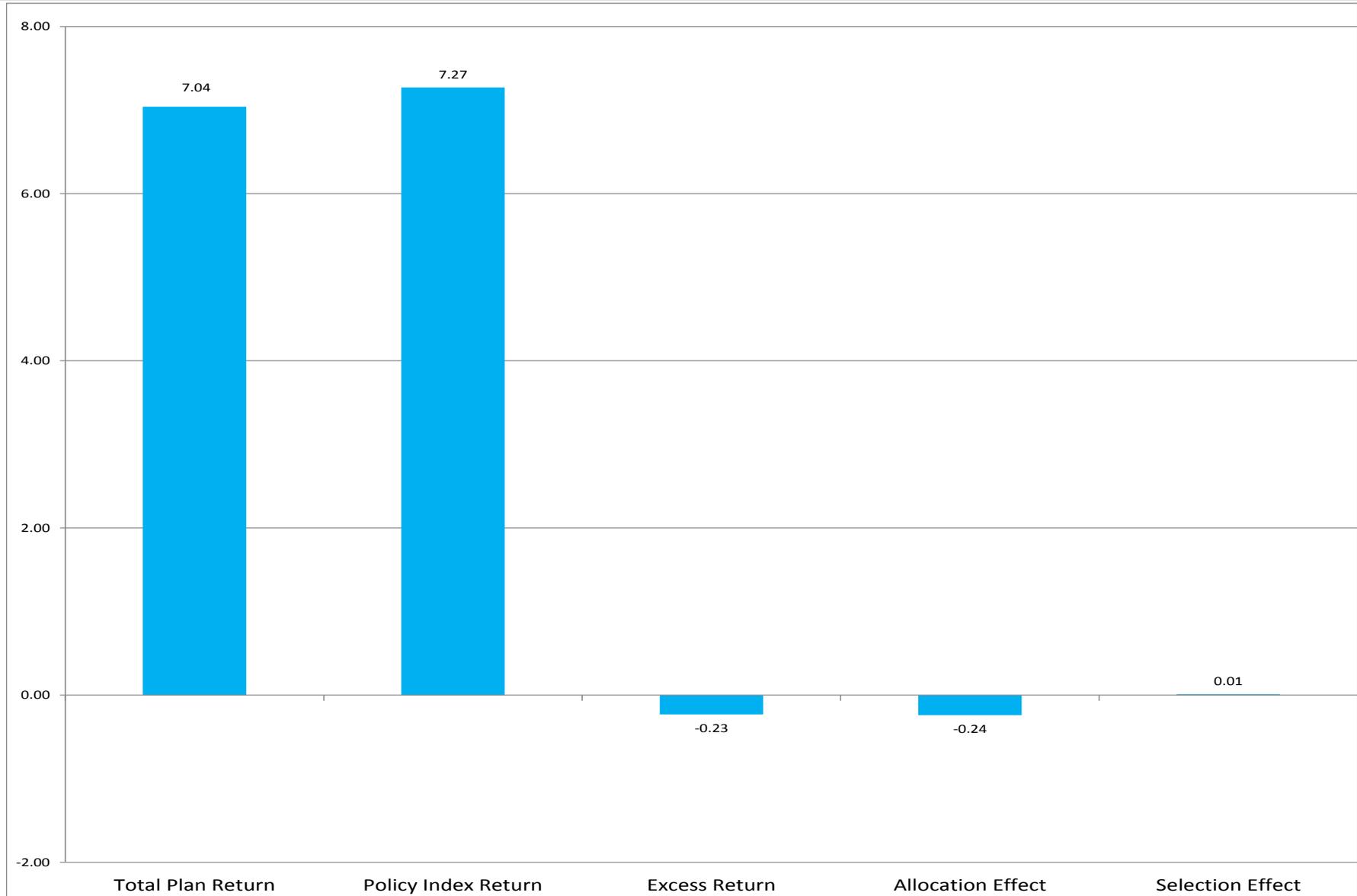
Note: On December 31, 2018 TRS' combined Fixed Income and Cash portfolios have a duration of 6.6 years. The duration of the Barclays US Aggregate Index was 5.9 years on that date.

Performance Attribution: Total Plan - Quarter Ending: December 31, 2018





Performance Attribution: Total Plan - 3 Years Ending: December 31, 2018





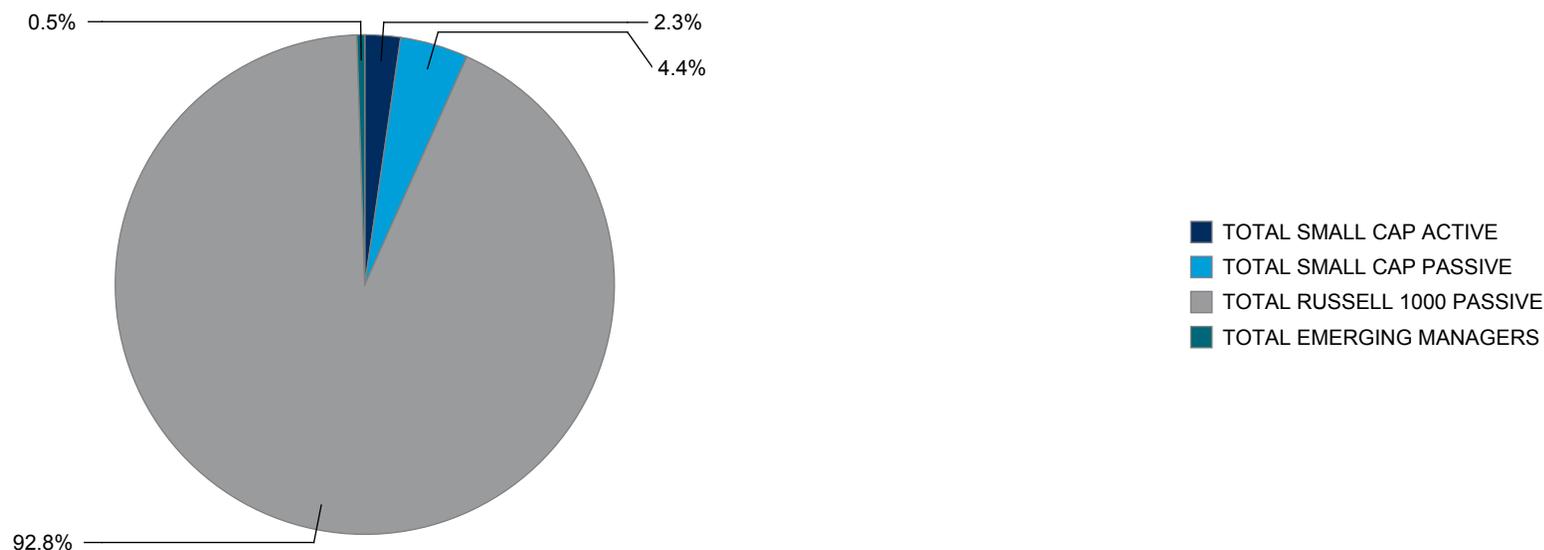
Allocation Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL TEACHERS'	0.36	0.21	-0.24	Teachers Policy Benchmark
TOTAL DOMESTIC EQUITY	0.28	0.13	-0.06	RUSSELL 3000
TOTAL DEVELOPED MARKETS	0.02	0.02	-0.03	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.00	-0.01	0.00	MSCI World Index
TOTAL EMERGING MARKETS	-0.01	-0.02	-0.04	Teachers Custom EM Index
TOTAL INTERNATIONAL FOF	-0.01	-0.01	0.00	NYC Blended Custom Benchmark for FoF
TOTAL REAL ESTATE SECURITIES	-0.01	-0.04	-0.11	Dow Jones US Select Securities Index
TOTAL PRIVATE EQUITY	-0.05	-0.05	-0.02	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	-0.01	-0.02	-0.01	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	-0.01	-0.01	0.00	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.00	0.00	0.00	CPI + 4%
TOTAL US TREASURY SHORT TERM	0.49	0.37	0.05	FTSE USBIG Treasury 1-3 Y Index
TOTAL US TREASURY INTERMEDIATE	0.00	0.00	-0.02	FTSE USBIG Treasury/Agency 1-10 y
TOTAL ACTIVE GOVERNMENT	0.38	0.25	-0.09	NYC - Treasury Agency Plus Five
TOTAL US TREASURY LONG DURATION	-0.66	-0.36	0.21	FTSE Treasury 10+
TOTAL INVESTMENT GRADE CREDIT	-0.05	-0.04	-0.05	NYC - Investment Grade Credit
TOTAL MORTGAGES	-0.06	-0.04	0.03	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	0.01	0.01	-0.01	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	0.01	0.01	-0.01	BBG BARC Agg
TOTAL HIGH YIELD	-0.03	-0.02	0.02	High Yield Custom Benchmark
TOTAL BANK LOANS	0.01	0.01	-0.02	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	0.00	0.00	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CONVERTIBLE BONDS	-0.01	-0.01	-0.01	Merrill All US Converts
TOTAL OPPORTUNISTIC FIXED	-0.01	-0.01	0.00	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	0.05	0.04	-0.10	

Selection Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL TEACHERS'	-0.24	-0.25	0.01	Teachers Policy Benchmark
TOTAL DOMESTIC EQUITY	0.00	0.04	0.08	RUSSELL 3000
TOTAL DEVELOPED MARKETS	-0.15	-0.20	0.20	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.01	0.01	0.00	MSCI World Index
TOTAL EMERGING MARKETS	0.00	-0.05	-0.06	Teachers Custom EM Index
TOTAL INTERNATIONAL FOF	-0.01	-0.02	0.00	NYC Blended Custom Benchmark for FoF
TOTAL REAL ESTATE SECURITIES	-0.01	-0.01	0.00	Dow Jones US Select Securities Index
TOTAL PRIVATE EQUITY	-0.20	-0.17	-0.28	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.02	0.03	0.03	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	0.01	0.00	0.02	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.03	0.04	0.05	CPI + 4%
TOTAL US TREASURY SHORT TERM	0.00	0.00	0.00	FTSE USBIG Treasury 1-3 Y Index
TOTAL US TREASURY INTERMEDIATE	0.00	0.00	0.01	FTSE USBIG Treasury/Agency 1-10 y
TOTAL ACTIVE GOVERNMENT	0.00	0.00	0.00	NYC - Treasury Agency Plus Five
TOTAL US TREASURY LONG DURATION	0.00	0.00	0.00	FTSE Treasury 10+
TOTAL INVESTMENT GRADE CREDIT	-0.01	-0.01	0.01	NYC - Investment Grade Credit
TOTAL MORTGAGES	0.00	0.00	0.00	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.01	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	0.00	0.00	0.00	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	0.00	0.00	0.00	BBG BARC Agg
TOTAL HIGH YIELD	0.02	0.01	-0.03	High Yield Custom Benchmark
TOTAL BANK LOANS	0.00	0.00	-0.02	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	0.00	0.00	0.00	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CONVERTIBLE BONDS	0.01	0.01	-0.06	Merrill All US Converts
TOTAL OPPORTUNISTIC FIXED	0.06	0.06	-0.01	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	0.00	0.00	0.01	

Total Domestic Equity Asset Allocation: December 31, 2018



	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL DOMESTIC EQUITY	\$18.6	26.9

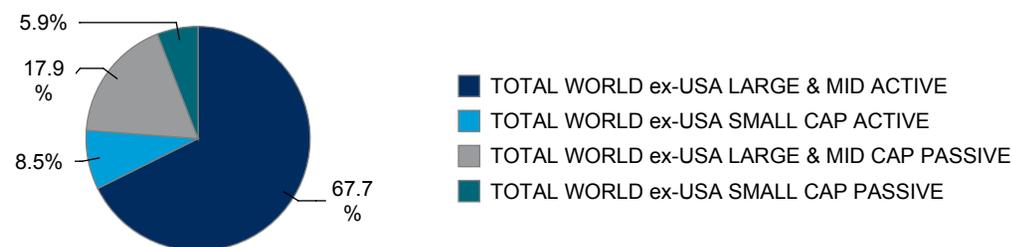
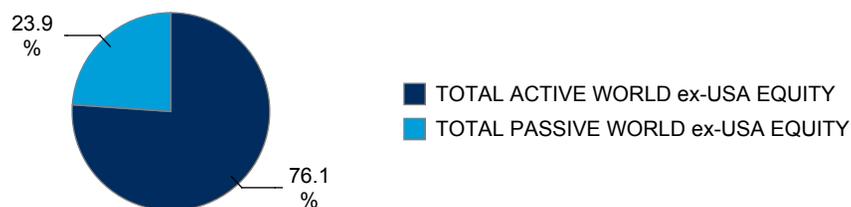


	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL SMALL CAP ACTIVE	2.0	2.3	0.3	(23.2)	(20.2)	(3.0)
TOTAL SMALL CAP PASSIVE	5.0	4.4	(0.6)	(19.4)	(20.2)	0.8
TOTAL RUSSELL 1000 PASSIVE	92.4	92.7	0.3	(13.7)	(13.8)	0.1
TOTAL EMERGING MANAGERS	0.6	0.5	(0.1)	(18.2)	(20.2)	2.0

World ex-USA Equity Asset Allocation: December 31, 2018



	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL WORLD ex-USA	\$7.3	10.6

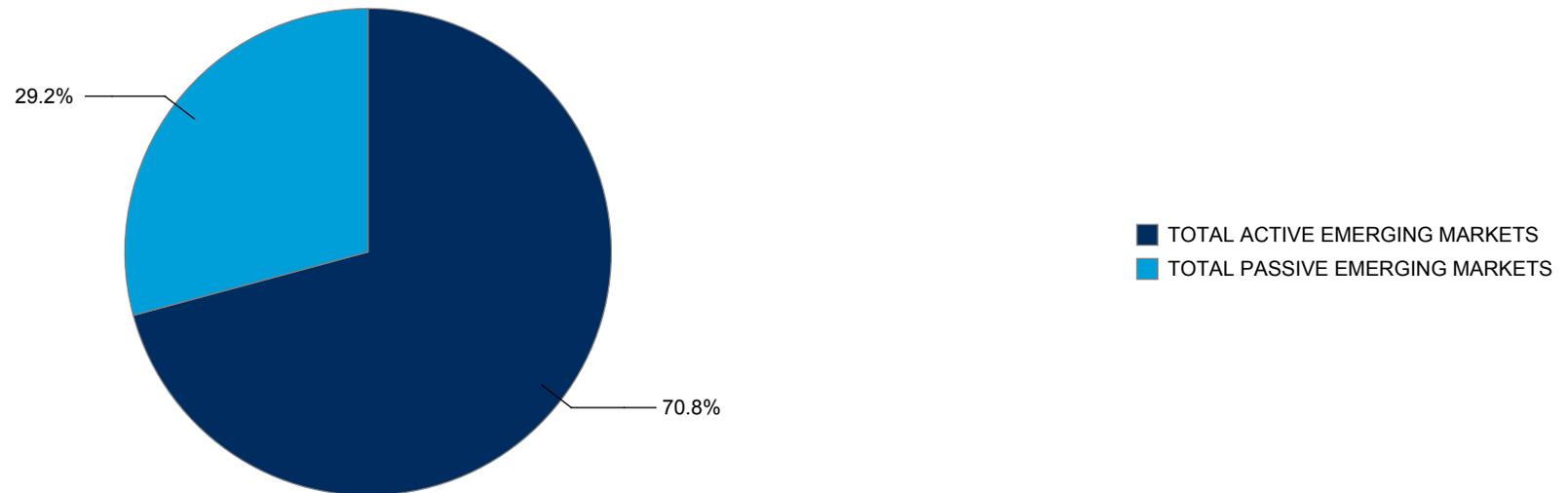


	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL WORLD ex-USA LARGE & MID ACTIVE	67.62	(14.79)	(12.78)	(2.01)
TOTAL WORLD ex-USA SMALL CAP ACTIVE	8.51	(16.00)	(16.42)	0.42
TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE	17.93	(12.66)	(12.78)	0.13
TOTAL WORLD ex-USA SMALL CAP PASSIVE	5.93	(16.05)	(16.16)	0.12
TOTAL WORLD ex-USA	100.00	(14.60)	(13.28)	(1.31)

Emerging Market Equity Asset Allocation: December 31, 2018



	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL EMERGING MARKETS	\$6.1	8.9

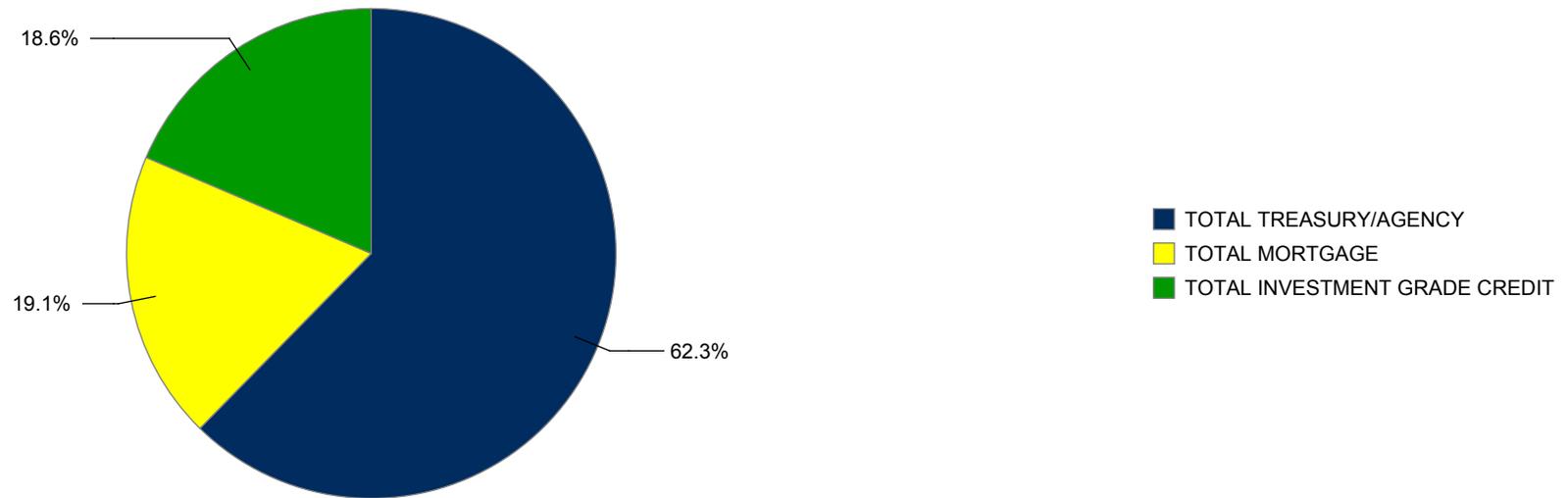


	<u>Asset Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL ACTIVE EMERGING MARKETS	70.81	(5.64)	(5.79)	0.15
TOTAL PASSIVE EMERGING MARKETS	29.19	(5.91)	(5.79)	(0.12)
TOTAL EMERGING MARKETS	100.00	(5.72)	(5.79)	0.07

Structured Fixed Income Asset Allocation: December 31, 2018



	<u>Market Value (Billions)</u>	<u>% of plan</u>
TOTAL STRUCTURED+ETI	\$16.6	24.0

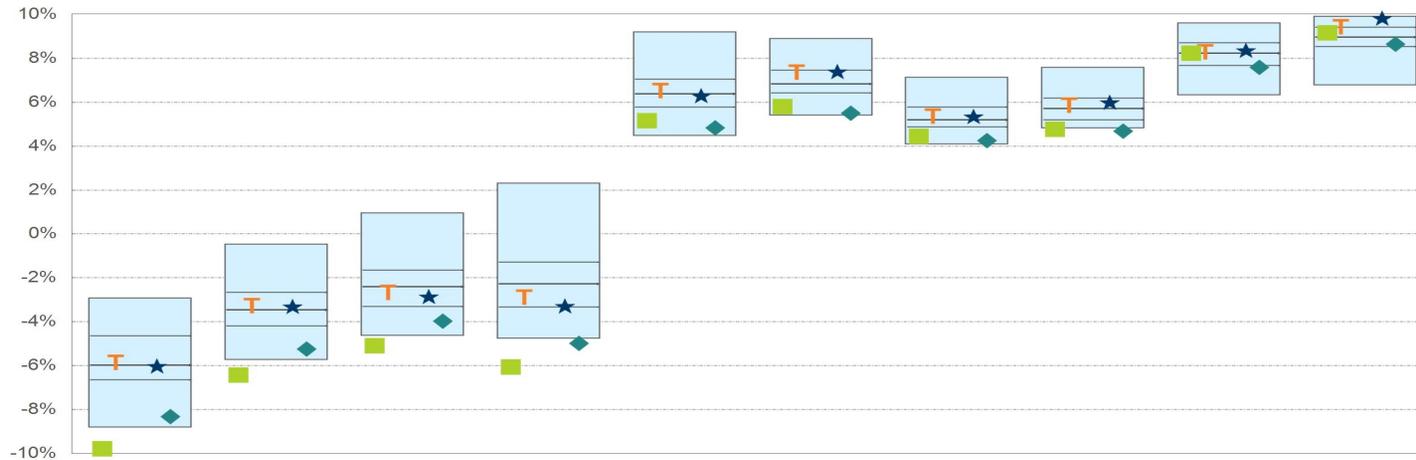


	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL TREASURY/AGENCY	61.54	62.35	0.81	2.68	4.17	(1.49)
TOTAL MORTGAGE	19.23	19.09	(0.14)	2.05	2.09	(0.04)
TOTAL INVESTMENT GRADE CREDIT	19.23	18.56	(0.67)	(0.18)	0.17	(0.35)



City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$10 Billion
Cumulative Periods Ending : December 31, 2018

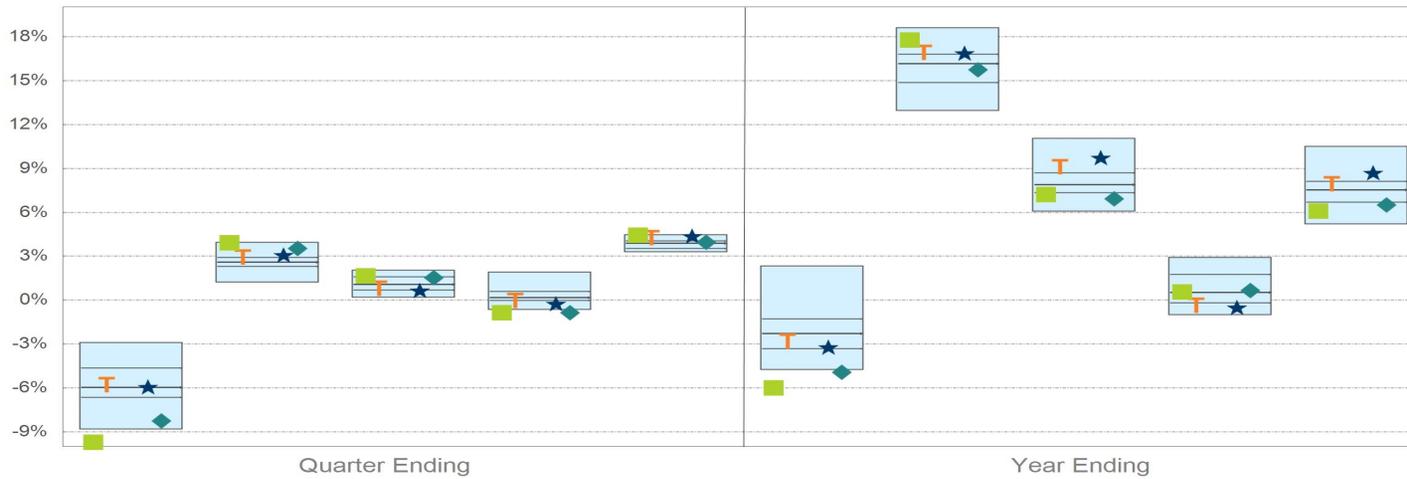


Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	-2.91	-0.47	0.95	2.32	9.21	8.90	7.14	7.58	9.62	9.91
25th	-4.64	-2.65	-1.64	-1.29	7.04	7.45	5.79	6.19	8.70	9.41
50th	-5.97	-3.46	-2.39	-2.27	6.39	6.83	5.20	5.71	8.23	8.97
75th	-6.64	-4.19	-3.31	-3.33	5.78	6.42	4.87	5.20	7.67	8.53
95th	-8.79	-5.71	-4.61	-4.75	4.48	5.42	4.11	4.84	6.33	6.79
No. Of Obs	46	46	46	46	46	46	45	45	45	42
T Total System - Teacher	-5.97 (52)	-3.38 (47)	-2.79 (65)	-3.00 (68)	6.41 (45)	7.25 (29)	5.24 (47)	5.74 (47)	8.17 (56)	9.31 (32)
★ Teachers Policy Benchm	-6.14 (61)	-3.44 (47)	-2.99 (72)	-3.41 (75)	6.16 (65)	7.27 (27)	5.22 (47)	5.87 (43)	8.23 (52)	9.70 (10)
■ Public Mkt Equiv 25	-9.91 (99)	-6.56 (100)	-5.21 (99)	-6.20 (100)	5.02 (90)	5.68 (94)	4.32 (94)	4.63 (96)	8.10 (56)	9.04 (47)
◆ Public Mkt Equiv 35	-8.45 (92)	-5.38 (90)	-4.10 (85)	-5.12 (100)	4.70 (90)	5.37 (96)	4.12 (94)	4.56 (96)	7.47 (77)	8.51 (77)



City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$10 Billion
Consecutive Time Periods: December 31, 2018



Percentile Rankings	Dec 18	Sep 18	Jun 18	Mar 18	Dec 17	Dec 18	Dec 17	Dec 16	Dec 15	Dec 14
5th	-2.91	3.94	2.06	1.90	4.48	2.32	18.61	11.06	2.93	10.51
25th	-4.64	2.93	1.59	0.58	4.06	-1.29	16.81	8.70	1.75	8.11
50th	-5.97	2.61	1.07	0.18	3.90	-2.27	16.16	7.88	0.54	7.55
75th	-6.64	2.29	0.70	-0.03	3.52	-3.33	14.85	7.34	-0.17	6.68
95th	-8.79	1.25	0.20	-0.65	3.31	-4.75	12.95	6.08	-1.00	5.21
No. Of Obs	46	46	46	46	46	46	46	46	45	45
T Total System - Teacher	-5.97 (52)	2.75 (40)	0.61 (79)	-0.21 (85)	4.09 (23)	-3.00 (68)	16.74 (31)	8.93 (17)	-0.54 (82)	7.75 (36)
★ Teachers Policy Benchm	-6.14 (61)	2.88 (27)	0.47 (88)	-0.44 (92)	4.17 (13)	-3.41 (75)	16.67 (34)	9.53 (7)	-0.70 (84)	8.50 (21)
■ Public Mkt Equiv 25	-9.91 (99)	3.72 (7)	1.45 (31)	-1.05 (96)	4.25 (11)	-6.20 (100)	17.58 (13)	7.01 (83)	0.35 (61)	5.88 (84)
◆ Public Mkt Equiv 35	-8.45 (92)	3.35 (17)	1.35 (34)	-1.06 (96)	3.77 (52)	-5.12 (100)	15.53 (59)	6.73 (88)	0.46 (54)	6.31 (77)

Actual and Estimated Fees



TEACHERS' RETIREMENT SYSTEM ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018

INVESTMENT STYLE (EQUITIES)	Avg. MV FY 2018 (\$MM)	Mgmt. Fees (\$M)	Partnership Expenses (\$M)	Actual 2018				Estimates 2019			
				Mgmt. Fees / Partnership Expenses in BPS	Incentive Fees in (\$M)	Incentive Fees in BPS	Total Fees & Expenses in (\$M)	Total Fees & Expenses in BPS	Avg. MV FYTD 09-30-18 (\$MM)	Mgmt. Fees (\$M)	Mgmt. Fees in BPS
Total US Equities	33,921.68	5,853.90	-	1.73	-	-	5,853.90	1.73	20,781.12	6,600.88	3.18
Small Cap Active	446.74	4,441.80	-	99.43	-	-	4,441.80	99.43	557.05	5,568.50	99.96
Small Cap Growth	446.74	4,441.80	-	99.43	-	-	4,441.80	99.43	557.05	5,568.50	99.96
Active Emerging Managers (U.S. Equities)	115.55	538.31	-	46.59	-	-	538.31	46.59	122.07	609.20	49.90
U.S. Environmental Managers	-	-	-	-	-	-	-	-	-	-	-
Total US Active Equities	562.29	4,980.10	-	88.57	-	-	4,980.10	88.57	679.12	6,177.70	90.97
Small Cap Passive	-	-	-	-	-	-	-	-	-	-	-
Small Cap Passive	725.71	30.78	-	0.42	-	-	30.78	0.42	1,020.49	43.32	0.42
Russell / S&P Passive	-	-	-	-	-	-	-	-	-	-	-
Russell 1000 Growth Passive	4,150.23	187.01	-	0.45	-	-	187.01	0.45	6.35	-	-
Russell 1000 Value Passive	3,843.34	173.38	-	0.45	-	-	173.38	0.45	6.13	-	-
Russell 1000 Core Passive	18,626.89	90.66	-	0.05	-	-	90.66	0.05	19,069.02	379.86	0.20
Passive Russell 3000	6,013.22	391.97	-	0.65	-	-	391.97	0.65	-	-	-
Passive S&P 500	-	-	-	-	-	-	-	-	-	-	-
Passive Russell Top 200	-	-	-	-	-	-	-	-	-	-	-
Total US Passive Equities	33,359.39	873.80	-	0.26	-	-	873.80	0.26	20,102.00	423.18	0.21
Total International Equities	16,114.71	44,372.46	-	27.54	-	-	44,372.46	27.54	15,563.43	43,021.33	27.64
Global Equity	-	-	-	-	-	-	-	-	253.56	915.53	36.11
Total Global Equities	-	-	-	-	-	-	-	-	253.56	915.53	36.11
Active EAFE Equities	6,503.22	19,388.08	-	29.81	-	-	19,388.08	29.81	6,572.93	19,720.93	30.00
World Ex-USA Large & Mid Active	5,737.69	15,818.81	-	27.57	-	-	15,818.81	27.57	5,828.15	16,167.67	27.74
World Ex-USA Small Cap Active	765.31	3,569.27	-	46.64	-	-	3,569.27	46.64	744.59	3,553.26	47.72
Total World Ex USA	0.22	-	-	-	-	-	-	-	0.19	-	-
Active Emerging Markets	4,790.75	21,744.66	-	45.39	-	-	21,744.66	45.39	4,683.51	20,449.89	43.66
Total Active Int'l Fund of Funds	369.51	1,896.40	-	51.32	-	-	1,896.40	51.32	362.58	1,890.16	52.13
Total Active International Equities	11,663.48	43,029.14	-	36.89	-	-	43,029.14	36.89	11,619.02	42,060.99	36.20
Int'l Passive Equities	-	-	-	-	-	-	-	-	-	-	-
World Ex-USA Small Cap Passive	527.74	263.33	-	4.99	-	-	263.33	4.99	519.92	260.34	5.01
World Ex-USA Large & Mid Cap Passive	1,693.94	199.61	-	1.18	-	-	199.61	1.18	1,500.96	174.48	1.16
Passive Global	0.01	-	-	-	-	-	-	-	0.00	-	-
Passive Emerging Markets	2,229.54	880.38	-	3.95	-	-	880.38	3.95	1,923.53	525.52	2.73
Total Int'l Passive Equities	4,451.23	1,343.32	-	3.02	-	-	1,343.32	3.02	3,944.41	960.35	2.43
REITS Active Equities	1,453.42	5,878.71	-	40.45	-	-	5,878.71	40.45	1,153.83	4,873.99	42.24

Actual and Estimated Fees



TEACHERS RETIREMENT SYSTEM ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018

INVESTMENT STYLE (FIXED INCOME)	Avg. MV FY 2018 (\$MM)	Mgmt. Fees (\$M)	Partnership Expenses (\$M)	Actual 2018			Estimates 2019				
				Mgmt. Fees / Partnership Expenses in BPS	Incentive Fees in (\$M)	Incentive Fees in BPS	Total Fees & Expenses in (\$M)	Total Fees & Expenses in BPS	Avg. MV FYTD 09-30-18 (\$MM)	Mgmt. Fees (\$M)	Mgmt. Fees in BPS
Total Fixed Income	23,610.58	27,994.66		11.86	154.10	0.07	28,148.76	11.92	26,663.64	26,312.62	9.87
Structured Program	13,681.13	6,578.54		4.81	154.10	0.11	6,732.64	4.92	16,642.89	6,730.06	4.04
Government Treas/Agency Sector	4,926.61	1,366.70		2.77	-	-	1,366.70	2.77	8,192.09	1,809.25	2.21
Long Duration Treasury	2,773.96	269.71		0.97			269.71	0.97	2,856.52	289.56	1.01
Mortgage Sector	2,459.05	1,455.69		5.92	154.10	0.63	1,609.79	6.55	2,503.95	1,457.22	5.82
Investment Grade Credit Sector	3,521.51	3,486.43		9.90	-	-	3,486.43	9.90	3,090.34	3,174.04	10.27
Developing Managers	122.48	231.85		18.93	-	-	231.85	18.93	121.93	232.94	19.10
Emerging Managers	122.69	420.23		34.25	-	-	420.23	34.25	122.36	423.15	34.58
TIPS	2,936.84	512.09		1.74	-	-	512.09	1.74	3,116.18	552.03	1.77
Active TIPS Managers	731.75	402.96		5.51	-	-	402.96	5.51	776.66	433.91	5.59
Passive TIPS Managers	2,205.09	109.13		0.49	-	-	109.13	0.49	2,339.52	118.12	0.50
High Yield	3,492.77	11,547.63		33.06	-	-	11,547.63	33.06	3,552.76	10,381.41	29.22
Bank Loans	1,712.91	5,708.61		33.33	-	-	5,708.61	33.33	1,763.70	5,840.49	33.11
Convertible Bonds	338.66	1,600.60		47.26	-	-	1,600.60	47.26	195.97	741.72	37.85
ETI - Access - RBC	137.86	255.76		18.55	-	-	255.76	18.55	147.20	271.48	18.44
ETI - AFL-CIO HIT	282.10	1,139.34		40.39	-	-	1,139.34	40.39	279.97	1,139.34	40.70
Total Public Markets (Externally managed)	74,317.27	84,099.74		11.32	154.10	0.02	84,253.84	11.34	63,694.90	81,724.34	12.83
Other ETI Programs	196.43	-		-	-	-	-	-	190.35	-	-
In-House Short Term	586.70	-		-	-	-	-	-	530.32	-	-
Total Public Markets	75,100.40	84,099.74		11.20	154.10	0.02	84,253.84	11.22	64,415.58	81,724.34	12.69

TEACHERS RETIREMENT SYSTEM
ACTUAL FEES FOR FISCAL YEAR ENDED JUNE 30, 2018 AND ESTIMATED FEES FOR FY 2019 UPDATED THROUGH SEPTEMBER 2018

	Actual 2018								Estimates 2019		
INVESTMENT STYLE (PRIVATE MARKETS)											
Private Equity	3,649.28	46,144.28	15,622.44	169.26	67,129.53	183.95	128,896.24	353.21	3,965.28	38,994.04	98.34
Private Real Estate	2,549.81	24,661.40	8,558.15	130.28	18,824.58	73.83	52,044.12	204.11	2,665.55	30,926.69	116.02
Infrastructure	517.79	11,361.84	4,663.28	138.79	1,611.11	31.12	17,636.23	152.75	675.79	13,983.43	113.56
Opportunistic Fixed Income	1,766.24	15,568.54	11,572.21	153.66	3,913.69	22.16	31,054.44	175.82	1,854.44	15,726.10	84.80
Total Private Markets	8,483.11	97,736.05	40,416.08	162.86	91,478.91	107.84	229,631.04	270.69	9,161.07	99,630.26	108.75
Total Overall	69,476.72	181,835.78	40,416.08	31.99	91,633.01	13.19	313,884.88	45.18	73,576.65	181,354.60	24.65

The overall carried interest and incentive fees paid by TEACHERS in Fiscal Year 2018: 13.19 BPS

General Footnotes:

- 1) Private Markets data reflect: carried interest realized and/or Incentive fees as stated by its corresponding partnership. Management fees reported are inclusive of partnership expenses associated with the partnership for the stated fiscal year.
- 2) Infrastructure's expense data is based off the total committed amounts rather than current market value due to its early fund life juncture.
- 3) Estimated Fees for the Public Markets data does not take into account major rebalancing shifts and is calculated at a fixed NAV. Estimates fees for the Private Markets data is based solely off gross management fee data and is not inclusive of any offsets. Both estimates are considered to be equitably conservative and should be construed as such. Estimates for FY 2018 for Private Equity is provided by the Consultant.

NYC TEACHERS' RETIREMENT SYSTEM
SECURITIES LENDING INCOME
December 31, 2018

	U. S. FIXED INCOME	U. S. EQUITY	INTERNATIONAL EQUITY	TOTAL
1989	1,185,000	-	-	1,185,000
1990	885,000	-	-	885,000
1991	898,000	-	-	898,000
1992	1,692,000	193,000	300,000	2,185,000
1993	3,701,000	694,000	508,000	4,903,000
1994	4,314,000	1,360,000	696,000	6,370,000
1995	3,395,000	1,621,000	520,000	5,536,000
1996	2,874,000	1,738,000	879,000	5,491,000
1997	2,943,000	3,430,000	1,158,000	7,531,000
1998	4,793,000	4,549,000	1,499,000	10,841,000
1999	4,329,000	4,830,000	1,772,000	10,931,000
2000	4,282,000	4,963,000	2,300,000	11,545,000
2001	7,435,000	6,744,000	3,489,000	17,668,000
2002	4,401,000	5,578,000	2,530,000	12,509,000
2003	2,156,000	3,467,000	2,662,000	8,285,000
2004	2,949,000	4,413,000	2,550,000	9,912,000
2005	4,427,000	6,136,000	3,201,000	13,764,000
2006	4,282,000	9,789,000	2,868,000	16,939,000
2007	9,618,000	15,962,000	3,088,000	28,668,000
2008	27,299,000	27,400,000	5,129,000	59,828,000
2009	10,039,000	17,682,000	3,834,000	31,555,000
2010	4,271,000	11,122,000	3,200,000	18,593,000
2011	5,880,000	15,051,000	6,082,000	27,013,000
2012	8,113,000	18,853,000	4,915,000	31,881,000
2013	5,208,000	21,196,000	3,803,000	30,207,000
2014	2,195,000	9,191,000	6,079,000	17,465,000
2015	2,510,000	6,924,000	7,135,000	16,569,000
2016	2,861,000	10,325,000	5,376,000	18,562,000
2017	3,776,000	5,982,000	4,196,000	13,954,000
2018	3,302,655	3,899,058	6,252,432	13,454,145
Since Inception	146,013,655	223,092,058	86,021,432	455,127,145

**Teachers' Retirement System
of New York City**

Appendix A

Consolidated Performance Report

Consolidated Performance Report

Through December 31, 2018



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
SYSTEM RETURN SUMMARY																
5	TRS-TOTAL PORTFOLIO - GROSS	69,147	100.00	(5.97)	(3.38)	(3.00)	16.74	8.93	(0.55)	7.75	15.91	7.25	5.74	9.31	8.27	07/01/1987
	TRS - ESTIMATED INVESTMENT FEES			(0.05)	(0.09)	(0.17)	(0.25)	(0.21)	(0.20)	(0.22)		(0.21)	(0.21)			
	EST MANAGEMENT FEES - PUBLIC MARKET (ACCRUAL)			(0.03)	(0.05)	(0.11)	(0.12)	(0.12)	(0.13)	(0.14)		(0.12)	(0.13)			
	EST MANAGEMENT FEES - ALTERNATIVE MARKETS (CASH)			(0.02)	(0.04)	(0.06)	(0.13)	(0.09)	(0.07)	(0.08)		(0.09)	(0.08)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	TRS-TOTAL PORTFOLIO - NET MGR			(6.02)	(3.48)	(3.18)	16.49	8.73	(0.75)	7.53		7.04	5.53			
	TRS POLICY BENCHMARK			(6.14)	(3.44)	(3.41)	16.67	9.53	(0.70)	8.50	14.99	7.27	5.87	9.70		
	EXCESS RETURN			0.12	(0.04)	0.23	(0.18)	(0.80)	(0.05)	(0.97)	0.92	(0.23)	(0.34)	(0.39)		
EQUITY RETURN SUMMARY																
18	TRS-TOTAL EQUITY (INCL PE & RA) - GROSS	41,397	59.87	(10.00)	(6.02)	(5.19)	23.48	10.82	(0.93)	8.64	23.03	9.07	6.90	11.10	7.27	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.06)	(0.12)	(0.21)	(0.33)	(0.24)	(0.24)	(0.25)		(0.25)	(0.25)			
	EST MANAGEMENT FEES			(0.06)	(0.12)	(0.21)	(0.33)	(0.24)	(0.24)	(0.25)		(0.25)	(0.25)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	TRS-TOTAL EQUITY (INCL PE & RA) - NET MGR			(10.05)	(6.14)	(5.40)	23.15	10.58	(1.18)	8.39		8.81	6.65			
26	TRS-TOTAL DOMESTIC EQUITY - GROSS	18,625	26.94	(14.28)	(8.04)	(4.87)	21.26	13.15	0.30	11.93	33.81	9.28	7.94	13.21	10.00	12/01/1990
	ESTIMATED INVESTMENT FEES			(0.01)	(0.01)	(0.03)	(0.03)	(0.04)	(0.04)	(0.05)		(0.04)	(0.04)			
	TRS-TOTAL DOMESTIC EQUITY - NET MGR			(14.29)	(8.05)	(4.89)	21.22	13.10	0.26	11.88		9.25	7.90			
	RUSSELL 3000 (DAILY)			(14.30)	(8.20)	(5.24)	21.13	12.74	0.48	12.56	33.55	8.97	7.91	13.18	10.01	
	EXCESS RETURN			0.01	0.15	0.35	0.09	0.37	(0.22)	(0.67)	0.25	0.28	(0.01)	0.03	(0.01)	
36	TRS-TOTAL SMALL CAP - GROSS	1,255	1.82	(20.73)	(16.10)	(6.38)	19.45	18.93	0.79	4.31	51.12	9.97	6.93		17.17	05/01/2009
	ESTIMATED INVESTMENT FEES			(0.07)	(0.15)	(0.34)	(0.47)	(0.48)	(0.42)	(0.37)		(0.43)	(0.41)			
	TRS-TOTAL SMALL CAP - NET MGR			(20.80)	(16.25)	(6.72)	18.98	18.45	0.37	3.93		9.55	6.52			
	RUSSELL 2000 (DAILY)			(20.20)	(17.35)	(11.01)	14.65	21.31	(4.41)	4.89	38.82	7.36	4.41			
	EXCESS RETURN			(0.60)	1.10	4.30	4.33	(2.86)	4.78	(0.96)	12.30	2.18	2.11			4.56
46	TRS-TOTAL RUSSELL 1000 - GROSS	17,270	24.98	(13.73)	(7.33)										(3.96)	04/01/2018
	ESTIMATED INVESTMENT FEES			(0.00)	(0.00)										(0.00)	
	TRS-TOTAL RUSSELL 1000 - NET MGR			(13.73)	(7.33)										(3.96)	
	RUSSELL 1000 (DAILY)			(13.82)	(7.42)										(4.12)	
	EXCESS RETURN			0.09	0.10										0.16	
56	TRS-TOTAL EMERGING MANAGER - GROSS	100	0.14	(18.05)	(14.06)	(7.78)									(0.21)	05/01/2017
	ESTIMATED INVESTMENT FEES			(0.10)	(0.21)	(0.46)									(0.51)	
	TRS-TOTAL EMERGING MANAGER - NET MGR			(18.15)	(14.27)	(8.24)									(0.73)	
	RUSSELL 2000 (DAILY)			(20.20)	(17.35)	(11.01)									(0.91)	
	EXCESS RETURN			2.05	3.08	2.77									0.18	

Consolidated Performance Report

Through December 31, 2018



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
EQUITY RETURN SUMMARY																
68	TRS-TOTAL WORLD ex-USA - GROSS	7,304	10.56	(14.55)	(13.85)	(14.26)	29.77	3.69	(0.60)	(4.85)	23.92	4.88	1.76	7.81	5.82	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.05)	(0.10)	(0.20)	(0.28)	(0.28)	(0.27)	(0.25)		(0.25)	(0.25)			
	TRS-TOTAL WORLD ex-USA - NET MGR			(14.60)	(13.95)	(14.45)	29.49	3.42	(0.86)	(5.11)		4.63	1.51			
	WORLD EX USA CUSTOM BM			(13.28)	(12.43)	(14.68)	26.40	1.15	0.49	(4.90)	23.54	2.94	0.84	6.79	4.79	
	EXCESS RETURN			(1.31)	(1.52)	0.23	3.09	2.27	(1.36)	(0.20)	0.38	1.69	0.67	1.02	1.03	
78	TRS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - GROSS	4,939	7.14	(14.73)	(13.81)	(13.53)	30.68	3.99	(2.42)	(5.17)		5.52	1.69		2.20	11/01/2013
	ESTIMATED INVESTMENT FEES			(0.06)	(0.12)	(0.24)	(0.36)	(0.29)	(0.27)	(0.26)		(0.29)	(0.28)		(0.28)	
	TRS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - NET MGR			(14.79)	(13.93)	(13.77)	30.32	3.70	(2.69)	(5.43)		5.23	1.41		1.92	
	NYC CUSTOM WORLD EX-USA LG & MID ACT INDEX			(12.78)	(11.64)	(14.09)	25.18	1.00	(0.81)	(4.90)		2.79	0.49		0.91	
	EXCESS RETURN			(2.01)	(2.28)	0.32	5.14	2.70	(1.88)	(0.53)		2.44	0.92		1.01	
88	TRS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - GROSS	621	0.90	(15.90)	(16.93)	(18.62)	35.63	2.89	11.87	(3.38)		4.33	4.19		6.54	05/01/2013
	ESTIMATED INVESTMENT FEES			(0.10)	(0.20)	(0.38)	(0.61)	(0.50)	(0.55)	(0.48)		(0.49)	(0.50)			
	TRS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - NET MGR			(16.00)	(17.13)	(19.00)	35.02	2.38	11.32	(3.86)		3.84	3.69			
	S&P EPAC SMALL CAP USD NET			(16.42)	(16.80)	(18.58)	33.47	1.34	8.58	(3.43)		3.27	2.92		5.10	
	EXCESS RETURN			0.42	(0.33)	(0.42)	1.55	1.05	2.74	(0.43)		0.58	0.77		1.44	
98	TRS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - GROSS	433	0.63	(16.04)	(16.72)	(17.78)	33.71	2.95	9.97			4.21			3.91	02/01/2014
	ESTIMATED INVESTMENT FEES			(0.01)	(0.02)	(0.04)	(0.07)	(0.02)	(0.02)			(0.04)			(0.03)	
	TRS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - NET MGR			(16.05)	(16.74)	(17.82)	33.64	2.93	9.95			4.17			3.88	
	WORLD EX USA SC PASSIVE CUSTOM BM			(16.16)	(16.88)	(18.07)	33.31	2.18	9.59			3.73			3.44	
	EXCESS RETURN			0.12	0.14	0.25	0.33	0.75	0.37			0.44			0.44	
108	TRS-TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE - GROSS	1,310	1.89	(12.65)	(11.46)	(13.54)	24.52	1.35	(0.28)	(5.41)	22.92	2.95	0.58		3.00	07/01/2011
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)		(0.01)	(0.02)			
	TRS-TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE - NET MGR			(12.66)	(11.46)	(13.55)	24.51	1.34	(0.30)	(5.43)		2.94	0.56			
	NYC CUSTOM WORLD EX US INDEX			(12.78)	(11.64)	(14.09)	24.12	1.00	(0.81)	(4.90)	22.78	2.50	0.31		2.74	
	EXCESS RETURN			0.13	0.18	0.54	0.40	0.34	0.52	(0.52)	0.14	0.44	0.25		0.26	

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date
EQUITY RETURN SUMMARY															
120	TRS-TOTAL ACTIVE EMERGING MARKETS - GROSS	4,341	6.28	(5.54)	(4.62)	(14.05)	36.26	12.09	(18.05)	0.27	(4.66)	9.49	1.53	1.02	04/01/2012
	ESTIMATED INVESTMENT FEES			(0.10)	(0.21)	(0.37)	(0.68)	(0.54)	(0.44)	(0.53)		(0.52)	(0.51)		
	TRS-TOTAL ACTIVE EMERGING MARKETS - NET MGR			(5.64)	(4.83)	(14.43)	35.58	11.55	(18.49)	(0.26)		8.98	1.02		
	TRS CUSTOM EM INDEX			(5.79)	(4.09)	(13.39)	34.19	13.91	(17.04)	0.67	(4.65)	9.80	2.03	1.23	
	EXCESS RETURN			0.15	(0.74)	(1.03)	1.38	(2.36)	(1.45)	(0.93)	(0.01)	(0.83)	(1.01)	(0.21)	
130	TRS-TOTAL PASSIVE EMERGING MARKETS - GROSS	1,789	2.59	(5.91)	(4.18)	(12.87)	33.14	12.98	(17.94)	(1.76)	(5.25)	9.44	1.11	(0.83)	04/01/2011
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	0.00	(0.14)	(0.06)	(0.05)	(0.06)		(0.06)	(0.06)		
	TRS-TOTAL PASSIVE EMERGING MARKETS - NET MGR			(5.91)	(4.19)	(12.87)	32.99	12.92	(17.99)	(1.82)		9.38	1.05		
	MSCI CUSTOM TRS EMERGING MARKETS (NET)			(5.79)	(4.09)	(12.99)	33.05	13.10	(17.81)			9.40			
	EXCESS RETURN			(0.12)	(0.11)	0.12	(0.05)	(0.18)	(0.17)			(0.02)			
140	TRS-TOTAL INTERNATIONAL FUND OF FUNDS - GROSS	482	0.70	(13.81)	(13.15)	(15.05)								(1.45)	05/01/2017
	ESTIMATED INVESTMENT FEES			(0.11)	(0.22)	(0.44)								(0.51)	
	TRS-TOTAL INTERNATIONAL FUND OF FUNDS - NET MGR			(13.92)	(13.37)	(15.50)								(1.96)	
	NYC BLENDED CUSTOM BENCHMARK FOR FOF (TRS)			(12.18)	(11.21)	(14.39)								(1.07)	
	EXCESS RETURN			(1.74)	(2.16)	(1.11)								(0.89)	
150	TRS-TOTAL GLOBAL EQUITY - GROSS	229	0.33	(10.40)										(7.57)	08/01/2018
	ESTIMATED INVESTMENT FEES			(0.11)										(0.18)	
	TRS-TOTAL GLOBAL EQUITY - NET MGR			(10.51)										(7.75)	
	MSCI WORLD INDEX			(13.42)										(11.86)	
	EXCESS RETURN			2.91										4.11	

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
EQUITY RETURN SUMMARY																
162	TRS-TOTAL REAL ESTATE SECURITIES - GROSS ESTIMATED INVESTMENT FEES	1,059	1.53	(7.33)	(6.24)	(5.39)	7.95	5.09	2.84	30.64	2.86	2.39	7.60	12.59	10.60	01/01/2003
	TRS-TOTAL REAL ESTATE SECURITIES - NET MGR			(0.10)	(0.20)	(0.40)	(0.45)	(0.30)	(0.37)	(0.48)		(0.38)	(0.40)			
	DJ US SELECT REAL ESTATE SECURITIES INDEX			(7.43)	(6.44)	(5.79)	7.50	4.79	2.47	30.16		2.00	7.20			
	EXCESS RETURN			(6.61)	(5.93)	(4.22)	3.76	6.65	4.46	31.85	1.31	1.96	7.86	12.07	9.73	
				(0.82)	(0.51)	(1.57)	3.74	(1.86)	(1.99)	(1.69)	1.54	0.04	(0.66)	0.52	0.87	
172	TRS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) NYC R3000 +3% LAGGED	4,123	5.96	4.01	10.29	18.45	19.65	10.55	9.78	13.95	8.13	16.15	14.41	11.54	12.51	04/01/2004
	EXCESS RETURN			7.90	12.92	21.06	22.22	18.37	2.49	21.24	24.53	20.54	16.83	16.03	13.56	
				(3.90)	(2.63)	(2.61)	(2.57)	(7.83)	7.29	(7.29)	(16.40)	(4.39)	(2.42)	(4.49)	(1.05)	
182	TRS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) NCREIF NFI-ODCE NET + 100 BP	2,678	3.87	2.59	5.07	11.16	11.17	12.36	15.09	14.68	10.97	11.56	12.88	5.75	10.04	04/01/2004
	EXCESS RETURN			1.77	3.93	8.43	7.72	8.86	15.08	12.56	14.02	8.34	10.50			
				0.81	1.14	2.73	3.45	3.50	0.00	2.11	(3.05)	3.22	2.38			
192	TRS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) CPI + 4%	766	1.11	4.62	7.43	15.69	20.50	9.47	12.33	18.76		15.13	15.28		15.00	12/01/2013
	EXCESS RETURN			1.28	2.74	6.02	6.20	6.17	4.69	4.69		6.13	5.55		5.58	
				3.33	4.69	9.66	14.30	3.30	7.64	14.07		9.00	9.73		9.43	

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
FIXED INCOME RETURN SUMMARY																
204	TRS-TOTAL FIXED INCOME - GROSS	27,744	40.12	0.45	0.65	(0.18)	5.32	5.66	(0.13)	6.01	1.58	3.56	3.30	5.52	7.86	02/01/1980
	ESTIMATED INVESTMENT FEES			(0.03)	(0.05)	(0.11)	(0.14)	(0.15)	(0.14)	(0.17)		(0.13)	(0.14)			
	EST MANAGEMENT FEES			(0.03)	(0.05)	(0.11)	(0.14)	(0.15)	(0.14)	(0.17)		(0.13)	(0.14)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	TRS-TOTAL FIXED INCOME - NET MGR			0.43	0.60	(0.28)	5.17	5.50	(0.27)	5.84		3.43	3.15			
212	TRS-TOTAL STRUCTURED FIXED INCOME - GROSS	15,993	23.13	2.05	1.50	(0.78)	5.03	3.75	0.23	7.54	(1.78)	2.63	3.11	4.57	7.27	01/01/1985
	ESTIMATED INVESTMENT FEES			(0.01)	(0.02)	(0.04)	(0.06)	(0.07)	(0.07)	(0.08)		(0.06)	(0.07)			
	TRS-TOTAL STRUCTURED FIXED INCOME - NET MGR			2.04	1.48	(0.83)	4.97	3.68	0.16	7.46		2.58	3.04			
	NYC CUSTOM STRUCTURED INDEX-TRS			2.95	1.31	(1.23)	6.80									
	EXCESS RETURN			(0.90)	0.17	0.40	(1.83)									
222	TRS-TOTAL CORE FI- DEVELOPING MGRS - GROSS	122	0.18	0.38	0.90	(1.03)	4.27	4.00				2.38			1.84	06/01/2015
	ESTIMATED INVESTMENT FEES			(0.05)	(0.10)	(0.19)	(0.19)	(0.20)				(0.19)			(0.19)	
	TRS-TOTAL CORE FI- DEVELOPING MGRS - NET MGR			0.33	0.80	(1.22)	4.08	3.79				2.19			1.65	
	BBG BARC AGG (DLY)			1.64	1.65	0.01	3.54	2.65				2.06			1.59	
	EXCESS RETURN			(1.30)	(0.85)	(1.23)	0.54	1.15				0.13			0.06	
232	TRS-TOTAL CORE FI- EMERGING MGRS - GROSS	124	0.18	1.51	1.65	0.29	4.51	3.19	1.00	6.21	(1.58)	2.65	3.02		2.40	06/01/2012
	ESTIMATED INVESTMENT FEES			(0.09)	(0.18)	(0.34)	(0.48)	(0.22)	(0.35)	(0.38)		(0.35)	(0.35)			
	TRS-TOTAL CORE FI- EMERGING MGRS - NET MGR			1.42	1.47	(0.05)	4.02	2.97	0.65	5.83		2.30	2.66			
	BBG BARC AGG (DLY)			1.64	1.65	0.01	3.54	2.65	0.55	5.97	(2.02)	2.06	2.52		1.87	
	EXCESS RETURN			(0.21)	(0.19)	(0.06)	0.48	0.32	0.10	(0.13)	0.45	0.24	0.14		0.53	
242	TRS-TOTAL TIPS - GROSS	3,087	4.46	(0.44)	(1.27)	(1.25)	3.06	4.67	(1.22)	3.50	(8.53)	2.13	1.72	3.58	3.54	06/01/2005
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)	(0.07)		(0.02)	(0.03)			
	TRS-TOTAL TIPS - NET MGR			(0.45)	(1.28)	(1.27)	3.04	4.65	(1.25)	3.43		2.11	1.69			
	BBG BARC GBL INF-LK: US TIPS (DLY)			(0.42)	(1.24)	(1.26)	3.01	4.68	(1.44)	3.64	(8.61)	2.11	1.69	3.64	3.40	
	EXCESS RETURN			(0.03)	(0.04)	(0.01)	0.04	(0.03)	0.19	(0.21)	0.08	(0.00)	(0.00)	(0.06)	0.14	
252	TRS-TOTAL HIGH YIELD - GROSS	3,424	4.95	(4.14)	(1.94)	(2.09)	6.92	14.28	(3.27)	2.46	7.37	6.16	3.47	9.16	5.75	08/01/1998
	ESTIMATED INVESTMENT FEES			(0.07)	(0.14)	(0.31)	(0.35)	(0.39)	(0.34)	(0.35)		(0.35)	(0.35)			
	TRS-TOTAL HIGH YIELD - NET MGR			(4.21)	(2.08)	(2.39)	6.57	13.89	(3.60)	2.10		5.81	3.12			
	HIGH YIELD CUSTOM BENCHMARK			(4.54)	(2.24)	(2.34)	7.03	15.48	(4.21)	2.78	6.17	6.47	3.51	9.37	5.47	
	EXCESS RETURN			0.32	0.16	(0.06)	(0.46)	(1.59)	0.61	(0.68)	1.20	(0.66)	(0.39)	(0.20)	0.28	
262	TRS- TOTAL BANK LOANS - GROSS	1,720	2.49	(3.00)	(1.03)	1.07	4.38	8.55	1.84	2.78	6.38	4.62	3.69		4.12	11/01/2012
	ESTIMATED INVESTMENT FEES			(0.08)	(0.16)	(0.33)	(0.35)	(0.37)	(0.35)	(0.35)		(0.35)	(0.35)			
	TRS-TOTAL BANK LOANS - NET MGR			(3.08)	(1.19)	0.74	4.04	8.18	1.49	2.43		4.27	3.34			
	CSFB LEVERAGED LOAN INDEX			(3.08)	(1.21)	1.14	4.25	9.88	(0.38)	2.06	6.15	5.03	3.33		3.88	
	EXCESS RETURN			0.00	0.01	(0.41)	(0.21)	(1.70)	1.87	0.37	0.23	(0.75)	0.01		0.25	

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2017	2016	2015	2014	2013	3 Year	5 Year	10 Year	ITD	Inception Date	
FIXED INCOME RETURN SUMMARY																
274	TRS-TOTAL CONVERTIBLE BONDS - GROSS	187	0.27	(4.61)	(2.12)	(0.06)	11.75	6.38	0.17	8.57	15.96	5.91	5.26	9.28	6.33	07/01/2008
	ESTIMATED INVESTMENT FEES			(0.09)	(0.19)	(0.35)	(0.46)	(0.45)	(0.43)	(0.47)		(0.42)	(0.43)			
	TRS-TOTAL CONVERTIBLE BONDS - NET MGR			(4.70)	(2.31)	(0.41)	11.29	5.93	(0.25)	8.09		5.49	4.83			
	BOFAML ALL CONVERTIBLE EX M AI (DAILY)			(9.24)	(5.59)	0.65	15.70	11.71	(2.75)	9.33	25.00	9.16	6.70	12.60	8.10	
	EXCESS RETURN			4.54	3.28	(1.06)	(4.41)	(5.78)	2.49	(1.24)	(9.04)	(3.67)	(1.88)	(3.32)	(1.77)	
284	TRS-TOTAL OPPORTUNISTIC FIXED INCOME	1,866	2.70	(0.23)	2.27	6.37	8.01	7.31	(1.24)	9.07	17.03	7.23	5.84	10.18	7.14	10/01/2007
	OPPORTUNISTIC FIXED INCOME JPMGHY / CSFB 50/50 BLEND PLUS 300			(2.79)	(0.05)	2.36	9.42	17.40	0.63	4.93	9.99	9.56	6.78	13.12	8.72	
	EXCESS RETURN			2.56	2.32	4.01	(1.42)	(10.10)	(1.87)	4.14	7.04	(2.33)	(0.95)	(2.94)	(1.59)	
294	TRS-TOTAL TARGETED INVESTMENTS (NO CASH) - GROSS	626	0.90	2.27	2.66	1.00	3.70	2.53	3.65	8.22	1.02	2.40	3.79	4.66	7.83	12/01/1984
	ESTIMATED INVESTMENT FEES			(0.07)	(0.12)	(0.24)	(0.24)	(0.25)	(0.25)	(0.27)	(0.27)	(0.24)	(0.25)	(0.27)	(0.13)	
	TRS-TOTAL TARGETED INVESTMENTS (NO CASH) - NET MGR			2.20	2.54	0.77	3.46	2.28	3.40	7.95	0.75	2.16	3.54	4.40	7.70	
	TEACHERS CUSTOM BENCHMARK (NO CASH)			1.92	1.95	0.86	3.11	2.39	1.30	6.00	(1.67)	2.12	2.71	3.41		
	EXCESS RETURN			0.28	0.59	(0.09)	0.35	(0.12)	2.10	1.95	2.42	0.05	0.83	0.98		
CASH SUMMARY																
306	TEACHERS' SHORT TERM - GROSS	596	0.86	0.59	1.10	1.96	1.21	0.78	0.48	0.32	0.25	1.31	0.95	0.76		04/01/1982
	ESTIMATED INVESTMENT FEES			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
	TEACHERS' SHORT TERM - NET MGR			0.59	1.10	1.96	1.21	0.78	0.48	0.32	0.25	1.31	0.95	0.76		
310	KKR SP CASH ACCOUNT	5	0.01													08/01/2017
312	CASH ACCOUNTS	1	-													
314	SECURITIES LENDING	-	-													

**Teachers' Retirement System
of New York City**

Appendix B

Public Markets Manager Performance Detail

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
EQUITY SUMMARY									
US EQUITY									
BLACKROCK INST R 2000 GROWTH	207	0.30	(21.62)	(17.25)	(9.26)	22.34	11.26	(1.51)	5.90
RUSSELL 2000 GROWTH DAILY			(21.65)	(17.33)	(9.31)	22.17	11.32	(1.38)	5.60
Excess			0.04	0.07	0.05	0.18	(0.06)	(0.13)	0.30
BLACKROCK INST R 2000 VALUE	611	0.88	(18.66)	(17.33)	(12.74)	7.86	31.73	(7.49)	4.25
RUSSELL 2000 VALUE DAILY			(18.67)	(17.36)	(12.86)	7.84	31.74	(7.47)	4.22
Excess			0.01	0.04	0.13	0.02	(0.01)	(0.02)	0.03
Brown AM - SCG	438	0.63	(23.24)	(14.20)	1.18	29.74	10.35	8.62	2.92
RUSSELL 2000 GROWTH DAILY			(21.65)	(17.33)	(9.31)	22.17	11.32	(1.38)	5.60
Excess			(1.58)	3.12	10.49	7.57	(0.97)	10.00	(2.68)
BLACKROCK INST R 1000 GROWTH	0	0.00				30.18	7.06	5.61	13.03
RUSSELL 1000 GROWTH - DAILY						30.21	7.08	5.67	13.05
Excess						(0.03)	(0.01)	(0.06)	(0.02)
Blackrock Inst R 1000 Value	0	0.00				13.61	17.41	(3.84)	13.56
RUSSELL 1000 VALUE (DAILY)						13.66	17.34	(3.83)	13.45
Excess						(0.05)	0.07	(0.01)	0.11
NYC TRS BLACKROCK R1000 CORE	17,270	24.98	(13.73)	(7.32)					
RUSSELL 1000 (DAILY)			(13.82)	(7.42)					
Excess			0.09	0.10					
EMERGING MANAGERS									
TOTAL EMERGING MANAGERS	100	0.14	(18.15)	(14.27)	(8.24)				
RUSSELL 2000 (DAILY)			(20.20)	(17.35)	(11.01)				
Excess			2.05	3.08	2.77				

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
TRS-TOTAL LEGATO	100	0.14	(18.15)	(14.27)	(8.17)				
RUSSELL 2000 (DAILY)			(20.20)	(17.35)	(11.01)				
Excess			2.05	3.08	2.84				
NON - US EQUITY									
TRS-Causeway	1,092	1.58	(15.03)	(14.04)	(18.74)	26.91	(0.79)	(2.05)	(5.72)
NYC Developed Value Benchmark			(12.78)	(11.64)	(14.09)	22.77	5.02	(5.68)	(5.39)
Excess			(2.25)	(2.39)	(4.65)	4.15	(5.81)	3.63	(0.32)
TRS-Sprucegrove	1,241	1.79	(12.69)	(11.87)	(14.09)	26.17	8.56	(6.95)	(4.06)
NYC Developed Value Benchmark			(12.78)	(11.64)	(14.09)	22.77	5.02	(5.68)	(5.39)
Excess			0.10	(0.23)	(0.00)	3.40	3.53	(1.27)	1.34
TRS-Baillie Gifford	1,319	1.91	(20.67)	(20.71)	(14.96)	39.93	2.04	(2.85)	(7.83)
NYC Developed Growth Benchmark			(12.78)	(11.64)	(14.09)	27.77	(3.04)	4.09	(4.43)
Excess			(7.89)	(9.06)	(0.87)	12.16	5.09	(6.94)	(3.40)
TRS-Walter Scott	1,287	1.86	(9.83)	(7.84)	(7.69)	27.53	4.37	1.60	(3.66)
NYC Developed Growth Benchmark			(12.78)	(11.64)	(14.09)	27.77	(3.04)	4.09	(4.43)
Excess			2.96	3.80	6.40	(0.24)	7.41	(2.49)	0.77
TRS-Acadian	336	0.49	(15.76)	(16.64)	(19.67)	38.42	5.46	10.97	(2.33)
S&P EPAC Small Cap USD NET			(16.42)	(16.80)	(18.58)	33.47	1.34	8.58	(3.43)
Excess			0.66	0.16	(1.09)	4.96	4.12	2.38	1.10
TRS-Pyramis	285	0.41	(16.28)	(17.69)	(18.23)	31.25	(0.81)	11.69	(5.41)
S&P EPAC Small Cap USD NET			(16.42)	(16.80)	(18.58)	33.47	1.34	8.58	(3.43)
Excess			0.14	(0.89)	0.35	(2.21)	(2.15)	3.11	(1.98)
TRS-SSGA	1,310	1.89	(12.66)	(11.46)	(13.55)	24.51	1.34	(0.30)	(5.43)
NYC Custom World ex US Index			(12.78)	(11.64)	(14.09)	24.12	1.00	(0.81)	(4.90)
Excess			0.13	0.18	0.54	0.40	0.34	0.52	(0.52)

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
TRS-SSGA World ex USA Small Cap ¹	433	0.63	(16.05)	(16.74)	(17.82)	33.64	2.93	9.95	
World ex USA SC PASSIVE CUSTOM BM			(16.16)	(16.88)	(18.07)	33.31	2.18	9.59	
Excess			0.12	0.14	0.25	0.33	0.75	0.37	
EMERGING MARKETS									
Acadian EM	219	0.32	(7.83)	(5.93)					
MSCI CUSTOM TRS EMERGING MARKETS (NET)			(5.79)	(4.09)					
Excess			(2.04)	(1.85)					
TRS-Baillie Gifford EM Equities	1,501	2.17	(5.66)	(5.06)	(14.39)	41.33	4.02	(14.09)	4.83
TRS Custom EM Index			(5.79)	(4.09)	(13.39)	34.19	13.91	(17.04)	0.67
Excess			0.13	(0.97)	(1.00)	7.13	(9.90)	2.95	4.16
TRS-DFA MTA	1,198	1.73	(6.19)	(4.22)	(13.17)	34.29	20.88	(21.72)	(4.59)
TRS Custom EM Index			(5.79)	(4.09)	(13.39)	34.19	13.91	(17.04)	0.67
Excess			(0.40)	(0.13)	0.23	0.09	6.97	(4.68)	(5.26)
TRS-PARAMETRIC EM	1,118	1.62	(5.40)	(5.02)	(14.52)	32.02	11.47	(19.97)	(0.80)
TRS Custom EM Index			(5.79)	(4.09)	(13.39)	34.19	13.91	(17.04)	0.67
Excess			0.39	(0.94)	(1.12)	(2.17)	(2.44)	(2.94)	(1.47)
TRS-Lazard Emerging Markets	305	0.44	(2.59)	(4.57)	(17.29)	28.26			
TRS Custom EM Index			(5.79)	(4.09)	(13.39)	34.19			
Excess			3.20	(0.48)	(3.89)	(5.94)			
TRS-CONY GT EM Blackrock	1,789	2.59	(5.91)	(4.19)	(12.87)	32.99	12.92	(17.99)	(1.82)
MSCI CUSTOM TRS EMERGING MARKETS (NET)			(5.79)	(4.09)	(12.99)	33.05	13.10	(17.81)	
Excess			(0.12)	(0.11)	0.12	(0.05)	(0.18)	(0.17)	
INTERNATIONAL FOF									
TRS-TOTAL INTERNATIONAL FOF	482	0.70	(13.92)	(13.37)	(15.50)				
NYC Blended Custom Benchmark for FoF (TRS)			(12.18)	(11.21)	(14.39)				
Excess			(1.74)	(2.16)	(1.11)				

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
TRS-TOTAL INTERNATIONAL BIVIUM	160	0.23	(15.43)	(15.28)	(18.16)				
NYC Blended Custom Benchmark for FoF (TRS)			(12.18)	(11.21)	(14.39)				
Excess			(3.25)	(4.07)	(3.77)				
TRS-TOTAL INTERNATIONAL FIS	163	0.24	(12.19)	(11.68)	(14.12)				
NYC Blended Custom Benchmark for FoF (TRS)			(12.18)	(11.21)	(14.39)				
Excess			(0.01)	(0.48)	0.27				
TRS-TOTAL INTERNATIONAL LEADING EDGE	159	0.23	(14.07)	(13.09)	(14.15)				
NYC Blended Custom Benchmark for FoF (TRS)			(12.18)	(11.21)	(14.39)				
Excess			(1.89)	(1.88)	0.24				
GLOBAL EQUITY									
FIERA CAPITAL-WORLD	229	0.33	(10.51)						
MSCI World Index			(13.42)						
Excess			2.91						
REAL ESTATE SECURITIES									
Adelante Capital Mgt. - REIT	307	0.44	(6.33)	(5.69)	(5.32)	7.32	3.90	4.81	33.05
DJ US SELECT REAL ESTATE SECURITIES INDEX			(6.61)	(5.93)	(4.22)	3.76	6.65	4.46	31.85
Excess			0.28	0.24	(1.10)	3.56	(2.75)	0.36	1.20
Center Square Investment Mgt. - REIT	228	0.33	(7.39)	(6.27)	(5.07)	5.96	7.98	5.87	32.56
DJ US SELECT REAL ESTATE SECURITIES INDEX			(6.61)	(5.93)	(4.22)	3.76	6.65	4.46	31.85
Excess			(0.78)	(0.34)	(0.85)	2.20	1.33	1.41	0.71
Cohen & Steers - REIT	217	0.31	(6.60)	(5.47)	(3.88)	7.44	4.96	5.59	31.67
DJ US SELECT REAL ESTATE SECURITIES INDEX			(6.61)	(5.93)	(4.22)	3.76	6.65	4.46	31.85
Excess			0.01	0.46	0.33	3.68	(1.69)	1.13	(0.18)
Morgan Stanley - REIT	308	0.44	(9.10)	(7.95)	(7.88)	9.25	3.49	(1.63)	30.72
Morgan Stanley Custom RESI Index			(5.09)	(5.51)	(5.46)	10.27	2.37	(1.53)	31.85
Excess			(4.01)	(2.45)	(2.42)	(1.02)	1.13	(0.11)	(1.13)

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
FIXED INCOME SUMMARY									
STRUCTURED FIXED INCOME									
Blackrock - Mortgage	1,809	2.62	1.99	1.93	1.00	2.63	2.17	1.76	6.56
FTSE MORTGAGE INDEX			2.09	2.00	1.01	2.47	1.59	1.56	6.12
Excess			(0.10)	(0.07)	(0.01)	0.16	0.58	0.20	0.44
Blackrock - Special Purpose Mtge	6	0.01							
FTSE MORTGAGE INDEX									
Excess									
Neuberger Berman - Mortgage	732	1.06	2.01	1.88	0.82	2.42	1.49	1.37	6.66
FTSE MORTGAGE INDEX			2.09	2.00	1.01	2.47	1.59	1.56	6.12
Excess			(0.08)	(0.12)	(0.19)	(0.05)	(0.09)	(0.19)	0.54
Amundi Smith Breeden - Mortgage	-0	-0.00				2.27	2.02	1.68	6.41
FTSE MORTGAGE INDEX						2.47	1.59	1.56	6.12
Excess						(0.19)	0.44	0.12	0.29
Blackrock - Credit	388	0.56	(0.41)	0.72	(1.99)	6.31	5.57	(0.71)	7.43
NYC - Investment Grade Credit			0.17	1.05	(1.90)	6.04	5.56	(0.65)	7.04
Excess			(0.58)	(0.32)	(0.09)	0.27	0.01	(0.06)	0.39
Taplin Canida Habacht - Credit	286	0.41	(1.25)	(0.33)	(3.43)	7.99	9.02	(4.10)	7.34
NYC - Investment Grade Credit			0.17	1.05	(1.90)	6.04	5.56	(0.65)	7.04
Excess			(1.42)	(1.37)	(1.53)	1.95	3.46	(3.46)	0.30
T. Rowe Price - Credit	1,168	1.69	0.06	0.91	(2.41)	6.85	5.96	0.09	7.82
NYC - Investment Grade Credit			0.17	1.05	(1.90)	6.04	5.56	(0.65)	7.04
Excess			(0.11)	(0.14)	(0.51)	0.81	0.41	0.73	0.77
Prudential - Credit	743	1.07	0.07	0.98	(1.94)	6.17	5.84	(0.16)	7.19
NYC - Investment Grade Credit			0.17	1.05	(1.90)	6.04	5.56	(0.65)	7.04
Excess			(0.10)	(0.07)	(0.03)	0.13	0.28	0.49	0.14

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Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
Barrow Hanley - Credit	500	0.72	(0.34)	0.85	(2.41)	6.16	5.88	(0.11)	7.39
NYC - Investment Grade Credit			0.17	1.05	(1.90)	6.04	5.56	(0.65)	7.04
Excess			(0.51)	(0.19)	(0.51)	0.12	0.32	0.54	0.35
State Street - Gov't	1,962	2.84	3.57	2.03	(0.20)	5.13	1.48	0.50	12.08
NYC - Treasury Agency Plus Five			3.69	2.12	(0.05)	4.66	1.21	0.72	12.38
Excess			(0.12)	(0.10)	(0.15)	0.48	0.26	(0.23)	(0.29)
Blackrock - Gov't	1,131	1.64	3.60	2.02	(0.18)	4.97	1.25	0.69	11.96
NYC - Treasury Agency Plus Five			3.69	2.12	(0.05)	4.66	1.21	0.72	12.38
Excess			(0.09)	(0.11)	(0.13)	0.31	0.03	(0.03)	(0.42)
SSGA 1-3 Treasury Index	4,335	6.27	1.28	1.48	1.51	0.40			
FTSE USBIG Treasury 1-3 Y Index			1.27	1.47	1.56	0.42			
Excess			0.01	0.00	(0.05)	(0.02)			
SSGA Long Duration Treasury	2,933	4.24	4.21	1.14	(1.84)	8.44			
FTSE Treasury 10+			4.17	1.09	(1.89)	8.60			
Excess			0.04	0.06	0.05	(0.17)			
SSGA Int Gov Bond Index ²	1	0.00	0.60	1.14	2.05				
FTSE USBIG Treasury/Agency 1-10 y			2.18	2.08	1.42				
Excess			(1.58)	(0.94)	0.63				
91 DAY TREASURY BILL (DAILY)			0.56	1.06	1.87				
Excess			0.03	0.08	0.17				
HIGH YIELD									
Brigade Capital	216	0.31							
BBG BARC US HY - 2% Issr Cap									
Excess									

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
Eaton Vance - HY	390	0.56							
BBG BARC US HY - 2% Issr Cap									
Excess									
Loomis Sayles - High Yield	0	0.00				7.01	18.62	(6.49)	3.55
BofAML HIGH YIELD MASTER II (DAILY)						7.48	17.49	(4.64)	2.50
Excess						(0.48)	1.13	(1.85)	1.04
Neuberger Berman - High Yield	680	0.98	(4.10)	(1.93)	(2.01)	5.74	14.89	(3.96)	1.85
BBG BARC US HY - 2% Issr Cap			(4.54)	(2.24)	(2.08)	7.50	17.13	(4.43)	2.46
Excess			0.44	0.31	0.08	(1.76)	(2.24)	0.47	(0.60)
Nomura HY	222	0.32							
BBG BARC US HY - 2% Issr Cap									
Excess									
Oaktree - High Yield	335	0.48	(4.84)	(2.65)	(3.49)	5.75	14.96	(4.70)	1.33
BBG BARC US HY - 2% Issr Cap			(4.54)		(2.08)	7.50	17.13	(4.43)	2.46
Excess			(0.31)		(1.41)	(1.75)	(2.17)	(0.26)	(1.13)
Stone Harbor - High Yield	498	0.72	(4.77)	(2.21)	(2.65)	5.85	13.10	(4.47)	0.79
BBG BARC US HY - 2% Issr Cap			(4.54)	(2.24)	(2.08)	7.50	17.13	(4.43)	2.46
Excess			(0.23)	0.04	(0.56)	(1.65)	(4.03)	(0.04)	(1.67)
T. Rowe Price - High Yield	750	1.08	(3.65)	(1.45)	(2.30)	7.70	12.17	(1.17)	2.96
BBG BARC US HY - 2% Issr Cap			(4.54)	(2.24)	(2.08)	7.50	17.13	(4.43)	2.46
Excess			0.89	0.79	(0.22)	0.19	(4.96)	3.26	0.50
Penn Capital Mgt - High Yield	-0	-0.00				6.62	11.96	(1.32)	0.92
FTSE BB & B						7.03	15.48	(4.21)	2.78
Excess						(0.41)	(3.52)	2.89	(1.86)

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
Fort Washington - High Yield	0	0.00				7.38	12.71	(4.37)	2.37
FTSE BB & B						7.03	15.48	(4.21)	2.78
Excess						0.35	(2.76)	(0.16)	(0.42)
MacKay Shields	327	0.47							
BBG BARC US HY - 2% Issr Cap									
Excess									
Shenkman - High Yield	0	0.00				6.60	11.64	(2.16)	2.75
BBG BARC US HY - 2% Issr Cap						7.50	17.13	(4.43)	2.46
Excess						(0.90)	(5.49)	2.28	0.29
HIGH YIELD TRANSITION	5	0.01							
BANK LOANS									
Babson BL	425	0.61	(3.89)	(1.69)	0.38	4.47	8.47	0.12	1.99
CSFB LEVERAGED LOAN INDEX			(3.08)	(1.21)	1.14	4.25	9.88	(0.38)	2.06
Excess			(0.81)	(0.49)	(0.76)	0.22	(1.41)	0.50	(0.07)
Credit Suisse BL	441	0.64	(2.90)	(1.00)	1.04	4.66	8.96	2.57	2.67
CSFB LEVERAGED LOAN INDEX			(3.08)	(1.21)	1.14	4.25	9.88	(0.38)	2.06
Excess			0.19	0.21	(0.10)	0.41	(0.92)	2.96	0.61
Guggenheim BL	438	0.63	(2.47)	(0.73)	1.24	3.82	7.84	2.07	2.88
CSFB LEVERAGED LOAN INDEX			(3.08)	(1.21)	1.14	4.25	9.88	(0.38)	2.06
Excess			0.61	0.48	0.10	(0.43)	(2.03)	2.45	0.83
TRS-Voya BL	212	0.31	(3.51)	(1.56)	0.33	3.19	7.71	1.21	2.66
CSFB LEVERAGED LOAN INDEX			(3.08)	(1.21)	1.14	4.25	9.88	(0.38)	2.06
Excess			(0.43)	(0.35)	(0.81)	(1.06)	(2.17)	1.60	0.60
TRS-Wells BL	204	0.29	(2.62)	(1.17)	0.17	3.18	7.18	1.17	1.68
CSFB LEVERAGED LOAN INDEX			(3.08)	(1.21)	1.14	4.25	9.88	(0.38)	2.06
Excess			0.46	0.04	(0.98)	(1.07)	(2.70)	1.55	(0.38)

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
TIPS									
State Street TIPS Passive	2,318	3.35	(0.45)	(1.28)	(1.30)	3.06	4.66	(1.35)	3.57
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			(0.42)	(1.24)	(1.26)	3.01	4.68	(1.44)	3.64
Excess			(0.03)	(0.04)	(0.04)	0.05	(0.03)	0.09	(0.07)
Blackrock TIPS	770	1.11	(0.44)	(1.28)	(1.18)	2.98	4.64	(1.24)	3.74
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			(0.42)	(1.24)	(1.26)	3.01	4.68	(1.44)	3.64
Excess			(0.02)	(0.05)	0.08	(0.02)	(0.05)	0.20	0.10
CONVERTIBLE BONDS									
Advent Conv Bonds	89	0.13	(5.29)	(2.72)	(1.65)	7.45	7.34	(1.98)	4.63
BofA ML U.S. Convertible Yield Alternative			(4.96)	(3.79)	(0.42)	9.45	9.96	(8.77)	2.75
Excess			(0.33)	1.07	(1.23)	(2.00)	(2.62)	6.80	1.88
Victory - Conv Bonds	98	0.14	(4.14)	(1.95)	0.68	20.13	6.47	(0.20)	13.72
BofA Merrill Lynch US Investment Grade Convertible Bond Index			(3.19)	(0.80)	3.35	20.99	14.23	1.68	15.69
Excess			(0.96)	(1.15)	(2.67)	(0.87)	(7.76)	(1.88)	(1.98)
CORE FI - EMERGING MANAGERS									
Hillswick	12	0.02	2.41	2.06	0.33	2.64	2.61	0.61	7.08
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65	0.55	5.97
Excess			0.78	0.41	0.32	(0.90)	(0.03)	0.06	1.11
Integrity	11	0.02	1.44	1.53	(0.03)	3.93			
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54			
Excess			(0.20)	(0.13)	(0.04)	0.39			
NEW CENTURY	32	0.05	1.56	1.50	0.12	4.04	2.37	(0.30)	6.51
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65	0.55	5.97
Excess			(0.08)	(0.15)	0.11	0.50	(0.28)	(0.85)	0.55

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	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
Ramirez Asset	31	0.04	1.06	1.28	0.07	4.47	3.64	1.12	
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65	0.55	
Excess			(0.58)	(0.37)	0.06	0.93	0.99	0.57	
PUGH CAP	37	0.05	1.30	1.39	(0.42)	4.12	3.48	0.79	5.86
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65	0.55	5.97
Excess			(0.34)	(0.27)	(0.43)	0.58	0.84	0.24	(0.10)
CORE FI - DEVELOPING MANAGERS									
TRS-LM CAPITAL	74	0.11	0.35	0.88	(1.35)	3.89	3.50		
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65		
Excess			(1.29)	(0.78)	(1.36)	0.35	0.86		
GIA	48	0.07	0.31	0.68	(1.01)	4.37	4.24		
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65		
Excess			(1.33)	(0.97)	(1.02)	0.82	1.59		
ECONOMICALLY TARGETED INVESTMENTS									
AFL-CIO HOUSING INV TRUST	285	0.41	1.95	1.77	0.16	3.17	1.94	1.13	6.10
BBG BARC Agg (Dly)			1.64	1.65	0.01	3.54	2.65	0.55	5.97
Excess			0.31	0.11	0.15	(0.38)	(0.71)	0.58	0.14
ACCESS RBC	146	0.21	2.04	1.88	0.49	2.64	1.61	1.83	6.66
Access RBC Benchmark			2.11	1.98	1.17	1.96	1.52	1.40	5.08
Excess			(0.07)	(0.10)	(0.69)	0.69	0.09	0.43	1.58
CPC CONST FACILITY	9	0.01	1.49	2.05	4.14	6.07	(3.95)	12.90	
CPC CONST BENCHMARK			1.05	2.05	3.99	3.34	3.03	2.90	
Excess			0.44	(0.00)	0.15	2.73	(6.99)	10.00	
BOA-PPAR (FNMA)	8	0.01	3.34	3.90	2.33	5.21	4.07	42.03	13.31
FNMA Plus 85bps			2.33	2.41	1.86	3.61	2.38	2.50	7.13
Excess			1.01	1.49	0.47	1.60	1.69	39.53	6.19

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	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
CCD-PPAR (FNMA)	14	0.02	4.21	4.93	2.63	5.26	3.71	6.69	25.71
FNMA Plus 85bps			2.33	2.41	1.86	3.61	2.38	2.50	7.13
Excess			1.88	2.52	0.77	1.65	1.33	4.20	18.58
CCD-PPAR (GNMA)	5	0.01	1.96	4.55	1.90	3.10	2.78	5.08	15.37
GNMA Plus 65bps			2.16	2.30	1.63	2.53	2.28	2.02	6.65
Excess			(0.20)	2.25	0.27	0.57	0.50	3.06	8.72
CFSB-PPAR (GNMA)	2	0.00	2.53	3.98	0.99	3.83	3.21	5.90	15.34
GNMA Plus 65bps			2.16	2.30	1.63	2.53	2.28	2.02	6.65
Excess			0.37	1.68	(0.65)	1.30	0.93	3.88	8.69
CPC-PPAR (FNMA)	74	0.11	3.26	4.45	2.31	5.06	6.15	8.96	13.91
FNMA Plus 85bps			2.33	2.41	1.86	3.61	2.38	2.50	7.13
Excess			0.93	2.04	0.45	1.45	3.77	6.46	6.78
CPC - PPAR (GNMA)	64	0.09	1.77	3.94	0.77	2.85	1.83	5.33	11.79
GNMA Plus 65bps			2.16	2.30	1.63	2.53	2.28	2.02	6.65
Excess			(0.39)	1.63	(0.86)	0.32	(0.44)	3.31	5.14
LIIF-PPAR (FNMA)	10	0.02	4.02	4.70	2.27	9.55	5.03	6.29	38.12
FNMA Plus 85bps			2.33	2.41	1.86	3.61	2.38	2.50	7.13
Excess			1.68	2.29	0.41	5.94	2.65	3.79	30.99
LIIF-PPAR (GNMA)	2	0.00	2.32	3.49	2.53	2.52	3.88	3.92	9.74
GNMA Plus 65bps			2.16	2.30	1.63	2.53	2.28	2.02	6.65
Excess			0.16	1.19	0.89	(0.01)	1.61	1.91	3.09
LISC-PPAR ETI MTA 2013	1	0.00							
FNMA Plus 85bps									
Excess									

Public Markets Manager Performance Detail



Net Returns Through December 31, 2018

	Market Value (\$MM)	% of Total	3 Months	FYTD	CYTD	2017	2016	2015	2014
NCBCI-PPAR (FNMA)	0	0.00	0.75	5.02	2.00	1.75	3.46	4.97	14.93
FNMA Plus 85bps			2.33	2.41	1.86	3.61	2.38	2.50	7.13
Excess			(1.58)	2.61	0.15	(1.86)	1.07	2.47	7.81
NCBCI-PPAR (GNMA)	1	0.00	1.43	4.02	1.23	3.01	3.51	5.53	16.66
GNMA Plus 65bps			2.16	2.30	1.63	2.53	2.28	2.02	6.65
Excess			(0.73)	1.72	(0.41)	0.48	1.23	3.52	10.01
NHS-PPAR (GNMA)	0	0.00	0.40	3.43	0.54	(2.93)	3.58	4.90	13.73
GNMA Plus 65bps			2.16	2.30	1.63	2.53	2.28	2.02	6.65
Excess			(1.77)	1.13	(1.09)	(5.46)	1.30	2.89	7.08
WELLS FARGO-PPAR MTA 2013 (FNMA)	1	0.00	3.19	5.86					
FNMA Plus 85bps			2.33	2.41					
Excess			0.86	3.44					
CASH									
TEACHERS' SHORT TERM	596	0.86	0.59	1.10	1.96	1.21	0.78	0.48	0.32
91 DAY TREASURY BILL (DAILY)			0.56	1.06	1.87	0.86	0.33	0.05	0.03
Excess			0.03	0.05	0.09	0.35	0.45	0.43	0.29
KKR SP CASH ACCOUNT	5	0.01							
Cash Accounts	1	0.00							
SECURITY LENDING	0	0.00							

**Teachers' Retirement System
of New York City**

Appendix C

Alternative Assets Manager Performance Detail

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
TOTAL PRIVATE EQUITY		8,982,729,505	6,811,356,282	5,620,896,056	4,130,007,316	1.43	10.3%
TOTAL LIQUIDATED		580,402,290	546,941,234	705,864,326	-	1.29	
TOTAL ACTIVE		8,402,327,215	6,264,415,048	4,915,031,730	4,130,007,316	1.44	

TOTAL ACTIVE							
Cypress Merchant Banking Partners II, LP	1999	50,000,000	53,983,573	50,623,035	27,648	0.94	-1.2%
Lincolnshire Equity Fund II, L.P.	1999	15,000,000	14,446,100	28,031,474	511,987.00	1.98	24.6%
SCP Private Equity Partners II, L.P.	2000	20,000,000	22,196,012	8,429,680	2,368,764	0.49	-8.2%
Solera Partners, L.P.	2000	15,000,000	19,928,151	31,226,365	354,746	1.58	7.5%
Apollo Investment Fund V, L.P.	2001	30,000,000	46,758,049	92,209,122	496,424	1.98	38.8%
RRE Ventures III, L.P.	2001	20,000,000	26,269,971	34,025,652	1,269,911	1.34	5.5%
Landmark Equity Partners XI, L.P.	2002	20,000,000	21,259,356	31,467,979	47,701	1.48	23.3%
Thomas McNerney & Partners, L.P.	2002	15,000,000	15,000,000	7,543,579	1,585,176.00	0.61	-8.1%
Ares Corporate Opportunities Fund, L.P.	2003	15,000,000	18,004,666	26,835,382	909,222	1.54	13.4%
Blackstone Capital Partners IV, L.P.	2003	30,000,000	30,690,321	75,255,862	2,668,596	2.54	37.8%
FS Equity Partners V, L.P.	2003	25,000,000	20,204,332	40,645,843	1,886,516	2.11	15.4%
Leeds Weld Equity Partners IV, L.P.	2003	15,000,000	15,441,454	20,171,550	48,455	1.31	4.2%
Aurora Equity Partners III, L.P.	2004	20,000,000	21,708,976	35,032,609	150,369	1.62	13.5%
FdG Capital Partners II, L.P.	2004	35,000,000	37,720,808	43,606,491	2,632,880	1.23	3.9%
Lincolnshire Equity Fund III, L.P.	2004	25,000,000	24,939,425	35,333,008	9,755,258	1.81	28.7%
Markstone Capital Partners, L.P.	2004	35,000,000	40,766,689	17,074,753	163,685	0.42	-50.8%
New York/Fairview Emerging Managers (Tranche A), L.P.	2004	24,000,000	24,646,553	22,992,979	5,554,768	1.16	2.5%
Paladin Homeland Security Fund (NY), L.P.	2004	15,000,000	16,550,584	6,248,770	106,759	0.38	-14.2%
Trilantic Capital Partners III (fka LBMB III), L.P.	2004	30,000,000	23,796,780	35,812,350	64,112	1.51	12.4%
Yucaipa American Alliance Fund I, L.P.	2004	55,000,000	80,828,995	69,748,176	29,114,942	1.22	4.7%
Blackstone Mezzanine Partners II, L.P.	2005	20,000,000	19,342,116	25,639,056	200,107	1.34	7.8%
GI Partners Fund II, L.P.	2005	25,000,000	25,329,874	40,707,249	38,578	1.61	7.7%
JP Morgan Fleming (Tranche A), L.P.	2005	31,000,000	30,841,719	29,623,879	12,086,509	1.35	5.9%
NB NYC Growth Fund, LLC	2005	30,000,000	26,117,536	27,479,875	-	1.05	0.9%
New Mountain Partners II, L.P.	2005	23,225,800	21,482,843	40,969,939	437,757	1.93	13.7%
Palladium Equity Partners III, L.P.	2005	35,000,000	37,593,060	67,135,451	5,257,608.00	1.93	15.2%
Prism Venture Partners V-A, L.P.	2005	20,000,000	20,931,568	13,131,156	280,272.00	0.64	-8.9%
Psilos Group Partners III, L.P.	2005	25,000,000	26,575,585	12,820,541	15,994,851	1.08	1.3%

Information provided by the New York City Teachers' Retirement System Consultants

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Snow Phipps Group, L.P.	2005	15,000,000	17,775,294	15,574,032	7,665,906	1.31	6.1%
USPF II Institutional Fund, L.P.	2005	35,000,000	46,164,567	45,578,814	15,270,616	1.32	4.7%
VSS Communications Partners IV, L.P.	2005	10,000,000	11,363,507	8,394,944	16,419	0.74	-5.1%
Aisling Capital II, L.P.	2006	4,500,000	5,099,072	4,499,292	959,385	1.07	1.2%
Ampersand 2006, L.P.	2006	15,000,000	15,000,000	24,873,025	15,106,619	2.67	16.2%
Apollo Investment Fund VI, L.P.	2006	35,000,000	45,048,207	60,555,386	7,804,267	1.52	8.8%
Ares Corporate Opportunities Fund II, L.P.	2006	30,000,000	32,905,774	53,060,554	2,166,397	1.68	13.2%
Arsenal Capital Partners II, L.P.	2006	13,500,000	16,509,280	26,215,566	3,562,279	1.80	11.4%
Avista Capital Partners, L.P.	2006	30,000,000	39,559,256	48,949,013	893,300	1.26	4.9%
BDCM Opportunity Fund II, L.P.	2006	25,000,000	37,160,726	58,739,441	28,673,488	2.35	17.5%
Blackstone Capital Partners V, L.P.	2006	75,600,000	76,437,046	122,602,033	6,479,427	1.69	8.5%
Catterton Partners VI, L.P.	2006	30,000,000	34,300,531	48,511,240	16,198,676	1.89	12.0%
CCMP Capital Investors II, L.P.	2006	20,000,000	21,912,981	37,723,530	20,148	1.72	13.5%
Cinven Fourth Fund	2006	43,848,796	45,626,561	65,854,533	33,615	1.44	7.4%
CLP 2014 (fka Perseus VII)	2006	381,908	22,731,970	8,532,664	(22,220)	0.37	-20.8%
Fairview Ventures Fund III, L.P.	2006	20,000,000	21,036,759	24,710,119	17,758,042	2.02	14.0%
First Reserve Fund XI, L.P.	2006	30,000,000	34,241,400	21,730,022	2,427,771.00	0.71	-8.2%
GF Capital Private Equity Fund, L.P.	2006	15,000,000	15,547,039	19,565,381	9,120,915.00	1.85	13.4%
GSC Recovery III, L.P.	2006	10,000,000	11,260,507	13,252,348	107,149	1.19	4.3%
InterMedia Partners VII, L.P.	2006	25,000,000	29,198,197	29,591,746	1,583,730	1.07	1.0%
Landmark Equity Partners XIII, L.P.	2006	25,000,000	23,654,752	23,545,524	6,884,830	1.29	4.7%
MidOcean Partners III, L.P.	2006	40,000,000	46,322,006	80,658,432	15,059,104	2.07	13.1%
RRE Ventures IV, L.P.	2006	25,000,000	31,632,272	17,548,042	30,155,714	1.51	6.3%
Terra Firma Capital Partners III, L.P.	2006	31,061,447	31,575,601	9,044,147	5,461,201	0.46	-9.7%
Thomas, McNerney & Partners II, L.P.	2006	15,000,000	14,867,607	30,264,518	2,595,868	2.21	16.4%
Carlyle Partners V, L.P.	2007	50,000,000	50,406,980	80,435,953	9,619,490	1.79	13.5%
Co-Investment Partners Europe, L.P.	2007	26,446,132	29,174,532	33,266,148	3,493,622	1.26	4.6%
Constellation Ventures III, L.P.	2007	15,000,000	17,145,021	8,397,431	5,425,479	0.81	-3.6%
Craton Equity Investors I, L.P.	2007	10,000,000	9,266,168	1,076,950	124,183	0.13	-29.7%
FTVentures III, L.P.	2007	14,081,947	14,882,466	21,850,436	6,206,540	1.89	11.4%
GSO Capital Opportunities Fund, L.P.	2007	30,000,000	48,291,339	67,124,625	624,086	1.40	17.4%
Halyard Capital Fund II, L.P.	2007	15,000,000	12,941,475	15,730,000	2,844,920	1.44	6.7%
Montreux Equity Partners IV, L.P.	2007	15,000,000	14,930,359	11,239,048	13,781,645	1.68	9.5%

Information provided by the New York City Teachers' Retirement System Consultants

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Nautic Partners VI, L.P.	2007	20,000,000	21,704,723	46,407,733	5,985,598	2.41	19.0%
New Mountain Partners III, L.P.	2007	35,000,000	35,890,312	45,972,470	25,163,534	1.98	13.6%
PCG Clean Energy & Technology Fund East, L.P.	2007	60,000,000	51,863,265	9,342,077	13,337,369	0.44	-12.2%
Pegasus Partners IV, L.P.	2007	20,000,000	26,000,840	17,737,171	7,452,064	0.97	-0.7%
Pine Brook Capital Partners, L.P.	2007	22,500,000	24,633,664	29,296,773	4,843,499	1.39	8.7%
Quaker BioVentures II, L.P.	2007	15,000,000	14,752,775	11,471,810	4,930,650	1.11	2.5%
RLJ Equity Partners Fund I, L.P.	2007	15,000,000	15,340,537	16,822,292	8,455,286	1.65	11.4%
SCP Vitalife Partners II, L.P.	2007	15,000,000	15,074,774	1,184	7,465,495	0.50	-9.1%
StarVest Partners II, L.P.	2007	20,000,000	20,106,956	4,182,594	11,882,047	0.80	-3.6%
Trilantic Capital Partners IV L.P.	2007	53,311,339	55,862,852	82,613,079	7,854,945	1.62	14.4%
USPF III Institutional Fund, L.P.	2007	30,000,000	35,493,985	35,705,098	10,699,652	1.31	4.9%
Vista Equity Partners Fund III, L.P.	2007	25,000,000	26,827,735	61,640,412	7,190,876	2.57	27.4%
Aisling Capital III, L.P.	2008	10,500,000	11,846,013	20,119,207	6,517,781	2.25	26.1%
Apollo Investment Fund VII, L.P.	2008	50,000,000	60,121,264	94,508,132	11,435,698	1.76	23.8%
Ares Corporate Opportunities Fund III, L.P.	2008	60,000,000	70,262,990	105,373,394	46,702,496	2.16	21.7%
Avista Capital Partners II, L.P.	2008	50,000,000	65,011,431	100,313,615	12,617,352	1.74	15.7%
Blue Wolf Capital Fund II, L.P.	2008	20,000,000	21,768,204	25,173,874	4,940,888	1.38	7.8%
Bridgepoint Europe IV, L.P.	2008	26,630,745	24,402,227	24,759,570	10,925,609	1.46	9.2%
First Reserve Fund XII, L.P.	2008	30,000,000	33,919,785	17,020,011	7,122,341	0.71	-8.7%
GCM Grosvenor TRSCNY Emerging Manager Fund, L.P.	2008	59,373,737	70,942,778	58,022,407	43,388,172	1.43	10.9%
GI Partners III, L.P.	2008	30,000,000	32,406,721	48,784,738	2,066,091	1.57	13.0%
Landmark Equity Partners XIV, L.P.	2008	50,000,000	48,273,481	50,434,581	11,790,076	1.29	9.0%
Lee Equity Partners, L.P.	2008	30,000,000	35,293,165	42,970,110	211,294	1.22	6.3%
Leeds Equity Partners V, L.P.	2008	40,000,000	41,495,847	49,415,334	35,238,221	2.04	18.4%
Levine Leichtman Capital Partners IV, L.P.	2008	25,000,000	26,635,586	37,643,279	8,094,018	1.72	18.9%
New York/Fairview Emerging Managers (Tranche B), L.P.	2008	35,000,000	34,735,029	30,880,998	31,306,353	1.79	14.5%
NGN BioMed Opportunity II, L.P.	2008	15,000,000	14,363,866	10,009,657	7,877,370	1.25	3.5%
Onex Partners III, L.P.	2008	40,000,000	43,521,330	54,853,893	20,709,806	1.74	13.7%
Paladin III (NY City), L.P.	2008	20,000,000	25,429,265	19,044,204	18,622,262	1.48	8.8%
Relativity Fund, L.P.	2008	15,000,000	8,181,270	4,055,376	87,270	0.51	-10.8%
Riverstone/Carlyle Global Energy & Power Fund IV	2008	32,500,000	34,502,200	30,271,867	13,927,669	1.28	6.4%
Yucaipa American Alliance Fund II, L.P.	2008	75,000,000	102,882,362	70,305,991	105,694,085	1.71	11.2%
Yucaipa Corporate Initiatives Fund II, L.P.	2008	35,000,000	32,132,846	11,668,326	19,271,415	0.96	-0.6%

Information provided by the New York City Teachers' Retirement System Consultants

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Lincolnshire Equity Fund IV, L.P.	2009	12,500,000	12,655,981	10,763,209	9,190,689	1.58	11.1%
Welsh, Carson, Anderson & Stowe XI, L.P.	2009	30,000,000	30,000,000	38,582,287	11,370,047	1.67	13.0%
JP Morgan Fleming (Tranche B), L.P.	2010	10,000,000	10,212,868	6,771,471	7,497,899	1.40	8.4%
Trident V, L.P.	2010	35,000,000	39,574,635	38,253,514	26,101,518	1.63	11.8%
American Securities Partners VI, L.P.	2011	100,000,000	107,111,108	154,001,883	50,492,625	1.91	22.2%
Ampersand 2011, L.P.	2011	17,500,000	17,500,000	20,619,939	25,157,405	2.62	21.3%
AXA Secondary Fund V L.P.	2011	160,000,000	85,396,464	116,054,944	17,847,126	1.57	14.3%
BC European Capital IX, L.P.	2011	65,558,624	71,446,121	47,014,613	55,353,408	1.43	11.6%
Blackstone Capital Partners VI, L.P.	2011	60,000,000	58,821,505	31,264,209	60,391,932	1.56	13.5%
EQT VI, L.P.	2011	48,628,269	50,928,290	46,807,774	38,840,613	1.68	14.7%
Pegasus Partners V, L.P.	2011	20,789,916	24,341,154	6,888,058	29,993,199	1.52	12.6%
Vista Equity Partners IV, L.P.	2011	100,000,000	98,374,448	111,603,608	91,786,763	2.07	19.8%
Ares Corporate Opportunities Fund IV, L.P.	2012	105,000,000	111,164,973	59,873,939	98,603,291	1.43	13.5%
Green Equity Investors VI, L.P.	2012	100,000,000	108,095,649	64,244,357	105,244,363	1.57	16.1%
Platinum Equity Capital Partners III, L.P.	2012	115,000,000	108,504,147	116,425,298	82,831,271	1.84	40.2%
Trilantic Capital Partners V (North America), L.P.	2012	70,000,000	69,835,219	59,207,202	46,334,633	1.51	19.0%
Warburg Pincus Private Equity XI, L.P.	2012	175,000,000	177,485,089	76,947,867	184,898,812	1.48	13.1%
<u>NYCTRS - 2012 Emerging Manager Program</u>	<u>2012</u>	<u>165,050,000</u>	<u>155,354,396</u>	<u>52,493,932</u>	<u>164,349,456</u>	<u>1.40</u>	<u>14.1%</u>
Apollo Investment Fund VIII, L.P.	2013	200,000,000	172,594,137	52,402,798	178,994,213	1.34	14.9%
Carlyle Partners VI, L.P.	2013	125,000,000	128,753,303	47,863,191	119,421,320	1.30	13.1%
Crestview Partners III (Co-Investment B), L.P.	2013	25,000,000	19,580,946	1,250,794	22,926,126	1.23	11.7%
Crestview Partners III, L.P.	2013	75,000,000	37,787,429	5,777,966	44,546,813	1.33	15.5%
Landmark Equity Partners XV, L.P.	2013	113,000,000	77,894,354	46,546,705	53,429,942	1.28	15.0%
Landmark Equity Partners XV, L.P. - Side Car	2013	37,000,000	29,232,445	14,745,252	29,578,143	1.52	24.5%
ASF VI NYC Co-Invest, L.P.	2014	38,000,000	27,739,153	19,728,509	18,967,186	1.39	13.5%
ASF VI, L.P.	2014	112,000,000	73,134,822	32,096,717	73,948,262	1.45	15.1%
Carlyle Partners VI, L.P. - Side Car	2014	13,750,000	9,796,957	530,092	9,900,167	1.06	2.4%
CVC Capital Partners VI, L.P.	2014	175,299,740	153,636,336	37,470,540	152,565,508	1.24	11.6%
Lexington Capital Partners VIII, L.P.	2014	150,000,000	95,154,386	36,418,460	97,088,878	1.40	27.2%
Olympus Growth Fund VI, L.P.	2014	100,000,000	81,611,166	33,846,312	74,408,399	1.33	16.9%
Vista Equity Partners Fund V, L.P.	2014	125,000,000	143,630,888	84,362,678	166,746,864	1.75	24.2%
American Securities Partners VII, L.P.	2015	111,000,000	64,651,437	2,586,832	64,973,481	1.04	3.3%
ASF VII B NYC Co-Invest, L.P.	2015	67,000,000	28,751,476	-	44,790,637	1.56	64.3%

Information provided by the New York City Teachers' Retirement System Consultants

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
ASF VII, L.P.	2015	134,000,000	40,080,796	2,426,648	51,269,467	1.34	25.0%
Bridgepoint Europe V Co-Invest	2015	25,342,040	23,716,312	-	31,255,807	1.32	28.4%
Bridgepoint Europe V, L.P.	2015	88,665,607	65,312,121	7,924,248	73,645,675	1.25	17.9%
Centerbridge Capital Partners III, L.P.	2015	33,500,000	18,332,794	5,061,100	18,309,021	1.27	13.7%
Siris Partners III, L.P.	2015	45,000,000	32,724,925	11,092,724	30,919,323	1.28	15.7%
<u>NYCTRS - 2015 Emerging Manager Program</u>	<u>2015</u>	<u>209,950,000</u>	<u>47,640,043</u>	<u>2,104,551</u>	<u>56,900,579</u>	<u>1.24</u>	<u>31.0%</u>
Welsh, Carson, Anderson & Stowe XII, L.P.	2015	110,500,000	66,995,644	13,056,357	82,046,406	1.42	22.3%
Apax IX USD, L.P.	2016	178,000,000	78,815,083	1,688,183	94,637,514	1.22	23.2%
Platinum Equity Capital Partners IV, L.P.	2016	156,000,000	94,550,353	12,894,858	99,873,223	1.19	28.7%
Vista Equity Partners Fund VI, L.P.	2016	223,000,000	205,300,156	7,649,534	248,779,600	1.25	18.3%
Ares Corporate Opportunities Fund V, L.P.	2017	134,000,000	50,209,881	1,819,954	48,669,156	1.01	0.8%
BC European Capital X Metro Co-Investment L.P.	2017	51,762,300	30,131,960	-	30,232,571	1.00	0.6%
BC European Capital X, L.P.	2017	129,312,481	31,508,977	-	30,223,571	0.96	-4.1%
Green Equity Investors VII, L.P.	2017	134,000,000	60,155,011	530,624	60,155,504	1.01	1.1%
KKR Americas Fund XII, L.P.	2017	223,000,000	31,597,369	-	35,887,141	1.14	N/M
Apollo Investment Fund IX, L.P.	2018	256,000,000	-	-	(1,451,005)	N/A	N/A
Bridgepoint Europe VI Co-Invest	2018	24,805,041	-	-	-	N/A	N/A
Bridgepoint Europe VI, L.P.	2018	99,220,164	-	-	(379,651)	N/A	N/A
Crestview Partners IV (FF), L.P.	2018	19,000,000	-	-	-	N/A	N/A
Crestview Partners IV, L.P.	2018	57,000,000	-	-	-	N/A	N/A
CVC Capital Partners VII, L.P.	2018	158,799,783	-	-	2,142,144	N/A	N/M
EQT VIII SCSP	2018	90,516,259	783,920	-	115,296	0.15	N/M
EQT VIII SCSP (Co-Invest)	2018	32,915,142	-	-	-	N/A	N/A
Platinum Equity Capital Partners IV, L.P. (Co-Invest)	2018	22,000,000	15,400,000	-	11,211,531	0.73	N/M
Platinum Equity Small Cap Fund, L.P.	2018	32,500,000	1,404,000	-	1,169,971	0.83	N/M
Siris Partners IV, L.P.	2018	71,000,000	-	-	-	N/A	N/A
Vista Equity Partners Fund VII, L.P.	2018	142,000,000	-	-	(100,012)	N/A	N/A
WCAS XIII, L.P.	2019	71,000,000	-	-	-	N/A	N/A

Information provided by the New York City Teachers' Retirement System Consultants

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL PRIVATE REAL ESTATE			4,703,116,416	3,449,323,927	2,102,821,482	2,715,694,807	1.42	10.0%
TOTAL PRIVATE REAL ESTATE								
Colony Realty Partners II	2006	Core Portfolio	20,000,000	18,499,529	6,718,272	-	0.26	-13.3%
JP Morgan Strategic Property Fund	2006	Core Portfolio	86,000,000	150,087,256	55,460,816	192,434,271	2.03	8.1%
PRISA SA	2006	Core Portfolio	36,000,000	38,793,503	13,805,264	50,452,545	1.66	4.8%
Prologis Targeted U.S. Logistics Fund	2006	Core Portfolio	10,000,000	13,615,809	4,100,304	17,868,792	1.61	5.2%
RREEF America REIT II	2006	Core Portfolio	36,000,000	47,527,452	23,721,223	51,385,049	1.58	5.2%
UBS Trumbull Property Fund	2006	Core Portfolio	106,000,000	161,379,613	46,942,218	203,065,259	1.77	7.0%
Heitman HART	2007	Core Portfolio	48,000,000	74,544,527	26,544,527	105,079,185	2.19	8.1%
JP Morgan Special Situation Property Fund	2007	Core Portfolio	15,000,000	23,553,007	12,063,933	21,382,103	1.58	4.7%
PRISA II	2007	Core Portfolio	63,374,139	67,585,272	19,850,284	94,716,474	1.70	5.8%
RREEF America REIT III - 1410	2007	Core Portfolio	15,000,000	15,000,000	8,526,095	-	0.57	-7.5%
LaSalle Property Fund	2010	Core Portfolio	104,000,000	50,000,000	17,371,439	71,741,100	1.78	11.1%
Almanac Realty Securities VI	2012	Core Portfolio	100,000,000	61,981,188	58,771,391	28,455,688	1.37	13.3%
Almanac Realty Securities VI (Sidecar III)	2012	Core Portfolio	35,000,000	11,660,367	6,828,326	11,921,623	1.61	19.8%
NYC Asset Investor #2 LLC (Related)	2013	Core Portfolio	145,000,000	139,165,383	37,582,192	184,451,793	1.60	15.1%
MetLife Core Property Fund	2014	Core Portfolio	80,000,000	80,000,000	13,300,887	99,492,888	1.41	10.1%
Almanac Realty Securities VII	2015	Core Portfolio	65,000,000	43,730,588	10,164,161	44,767,127	1.23	14.6%
Almanac Realty Securities VII (Sidecar III)	2015	Core Portfolio	20,000,000	10,222,004	787,488	12,475,637	1.30	18.8%
USAA Eagle Real Estate Fund	2015	Core Portfolio	98,000,000	84,283,662	6,283,662	94,263,451	1.21	9.0%
Brookfield Premier Real Estate Partners	2016	Core Portfolio	119,000,000	125,691,739	6,691,739	144,931,274	1.22	12.7%
Exeter Industrial Core Club Fund II	2016	Core Portfolio	37,000,000	19,536,000	2,297,552	21,866,749	1.22	15.5%
Jamestown Premier Property Fund	2016	Core Portfolio	64,961,594	60,544,927	25,716,958	46,769,565	1.23	10.3%
NYCRS Artemis Co-Investment	2016	Core Portfolio	70,000,000	58,076,927	21,415,369	49,180,472	1.22	24.2%
Carlyle Property Investors	2017	Core Portfolio	119,000,000	122,881,426	3,881,426	126,613,663	1.06	6.6%
Lion Industrial Trust - 2007	2017	Core Portfolio	98,000,000	83,369,675	5,369,675	98,669,564	1.26	15.0%
Almanac Realty Securities VIII	2018	Core Portfolio	51,000,000	-	-	-	N/A	N/A
Almanac Realty Securities VIII Co-Invest	2018	Core Portfolio	34,000,000	-	-	-	N/A	N/A
Artemis Income and Growth Fund	2018	Core Portfolio	101,000,000	-	-	-	N/A	N/A
Heitman Core Real Estate Debt Income Trust	2018	Core Portfolio	59,000,000	-	-	-	N/A	N/A
Canyon-Johnson Urban	2002	Non-Core Portfolio	15,000,000	13,742,215	16,418,450	-	1.20	11.1%
OCM Real Estate Opportunities Fund IIIA	2003	Non-Core Portfolio	15,000,000	15,000,000	23,027,038	539,402	1.57	9.8%
Blackstone Fund IV	2004	Non-Core Portfolio	25,000,000	31,994,609	41,300,589	3,755,881	1.42	10.2%
The City Investment Fund I	2004	Non-Core Portfolio	120,000,000	118,337,757	119,671,892	247,697	1.01	0.3%
Tishman Speyer Citigroup Alt Inv V&VI NYC	2004	Non-Core Portfolio	100,000,000	72,402,952	252,300,326	-	3.52	57.5%
Canyon Johnson Urban Fund II	2005	Non-Core Portfolio	30,000,000	26,966,111	11,923,957	103,360	0.45	-10.5%
AREA Real Estate Investment Fund V, LP	2006	Non-Core Portfolio	5,000,000	5,000,000	3,785,344	1,436,110	1.05	0.6%

Information provided by the New York City Retirement Systems Consultants. Interim returns are subject to change and may differ due to differences in accounting and performance methodologies.

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
American Value Partners Fund I	2007	Non-Core Portfolio	25,000,000	17,872,806	18,594,499	2,493,568	1.18	3.5%
Blackstone Real Estate Partners VI	2007	Non-Core Portfolio	50,000,000	54,616,709	105,856,455	3,113,406	2.00	13.4%
Carlyle Realty Partners V	2007	Non-Core Portfolio	15,000,000	18,954,341	22,484,148	4,368,990	1.60	8.6%
Metropolitan Workforce Housing Fund	2007	Non-Core Portfolio	10,500,000	10,509,770	12,352,222	399,038	1.21	3.9%
Thor Urban Property Fund II	2007	Non-Core Portfolio	12,500,000	17,123,783	17,119,140	5,374,612	1.31	8.0%
UrbanAmerica II	2007	Non-Core Portfolio	11,000,000	10,218,031	1,155,798	-	0.11	-25.0%
Blackstone Real Estate Partners Europe III	2008	Non-Core Portfolio	50,000,000	42,717,897	68,776,171	4,325,951	1.71	16.3%
Capri Urban Investors	2008	Non-Core Portfolio	40,000,000	40,000,000	18,350,614	11,391,439	0.74	-4.3%
JPM Urban REN PTY FD	2008	Non-Core Portfolio	16,360,625	4,206,523	4,206,523	-	1.00	0.0%
Silverpeak Legacy Partners III	2008	Non-Core Portfolio	30,000,000	12,276,015	3,834,703	1,482,468	0.43	-13.6%
Stockbridge Real Estate Fund III	2008	Non-Core Portfolio	22,500,000	22,498,458	14,024,794	12,228,189	1.17	2.4%
BlackRock Carbon Capital III Co-Investments	2009	Non-Core Portfolio	40,000,000	43,757,162	53,189,633	-	1.24	8.9%
Westbrook Real Estate Fund VIII	2009	Non-Core Portfolio	50,000,000	59,549,711	67,851,469	10,977,673	1.32	11.7%
Canyon Johnson Urban Fund III	2010	Non-Core Portfolio	25,000,000	24,976,013	33,642,984	30,344	1.34	11.9%
Carlyle Realty Partners VI	2011	Non-Core Portfolio	70,000,000	76,081,008	105,730,419	10,712,225	1.54	21.5%
H/2 Special Opportunities Fund II	2011	Non-Core Portfolio	40,000,000	39,999,999	48,883,453	12,892,056	1.52	14.7%
Brookfield Strategic Real Estate Partners	2012	Non-Core Portfolio	125,000,000	129,286,607	86,759,639	122,498,232	1.67	17.0%
Taconic New York City Investment Fund LP	2012	Non-Core Portfolio	70,000,000	29,272,728	46,945,824	3,562,351	1.73	15.5%
KTR Industrial Fund III	2013	Non-Core Portfolio	70,000,000	31,827,047	49,651,783	-	1.56	40.5%
Lone Star Real Estate Fund III	2013	Non-Core Portfolio	190,000,000	178,108,941	196,330,368	44,740,474	1.32	15.2%
NYC Asset Investor #1 LLC (Vanbarton)	2013	Non-Core Portfolio	60,000,000	66,965,260	17,767,729	66,284,349	1.26	7.2%
NYC Asset Investor #3 LLC (Hudson)	2013	Non-Core Portfolio	96,000,000	60,242,841	10,583,936	66,834,057	1.29	10.7%
Carlyle Realty Partners VII	2014	Non-Core Portfolio	120,000,000	98,237,501	52,990,863	78,457,600	1.39	15.5%
Divco West Fund IV	2014	Non-Core Portfolio	25,000,000	24,276,592	34,813,107	5,650,145	1.67	26.6%
DRA Growth and Income Fund VIII	2014	Non-Core Portfolio	75,000,000	87,339,322	42,281,074	69,057,855	1.27	12.7%
H/2 Special Opportunities Fund III	2014	Non-Core Portfolio	65,000,000	65,000,000	27,103,518	55,971,647	1.27	12.6%
Avanath Affordable Housing Fund II	2015	Non-Core Portfolio	10,000,000	9,842,191	547,184	13,396,647	1.42	12.2%
European Property Investors Special Opp IV	2015	Non-Core Portfolio	64,826,199	38,949,109	2,851,980	40,199,667	1.11	8.6%
Divco West Fund V	2016	Non-Core Portfolio	78,000,000	28,536,647	55,991	30,003,702	1.05	4.7%
Exeter Industrial Value Fund IV	2016	Non-Core Portfolio	34,000,000	15,300,000	-	16,272,261	1.06	12.9%
H/2 Special Opportunities Fund IV	2016	Non-Core Portfolio	119,000,000	13,903,438	968,067	13,147,426	1.02	1.0%
Pramerica Real Estate Capital VI	2016	Non-Core Portfolio	69,690,400	27,494,906	10,837,917	21,117,043	1.24	18.3%
PW Real Estate Fund III LP	2016	Non-Core Portfolio	61,623,459	29,109,639	4,873,221	38,955,845	1.51	34.1%
Westbrook Real Estate Fund X Co-Investment	2016	Non-Core Portfolio	47,000,000	21,370,435	4,188,773	19,532,650	1.11	11.4%
Basis Investment Group Real Estate Fund I	2017	Non-Core Portfolio	19,400,000	7,220,494	1,781,777	6,029,216	1.09	17.3%
DRA Growth and Income Fund IX	2017	Non-Core Portfolio	56,000,000	26,407,258	6,590,589	25,005,819	1.20	22.4%
DRA Growth and Income Fund IX Co-investment	2017	Non-Core Portfolio	19,000,000	-	-	-	N/A	N/A
NYCRS-KKR CMBS Retention Partners	2017	Non-Core Portfolio	159,000,000	94,811,529	5,458,840	94,683,801	1.06	8.1%

Information provided by the New York City Retirement Systems Consultants. Interim returns are subject to change and may differ due to differences in accounting and performance methodologies.

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
Aermont Capital Real Estate Fund IV	2018	Non-Core Portfolio	88,000,000	-	-	-	N/A	N/A
Brookfield Strategic Real Estate Partners III	2018	Non-Core Portfolio	193,000,000	-	-	-	N/A	N/A
KKR Real Estate Partners Americas II	2018	Non-Core Portfolio	135,380,000	25,289,719	763,482	26,437,339	N/M	N/M

Information provided by the New York City Retirement Systems Consultants. Interim returns are subject to change and may differ due to differences in accounting and performance methodologies.

Alternative Assets Manager Performance Detail

Through September 30, 2018



	Vintage Year	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
TOTAL INFRASTRUCTURE		1,227,986,326	672,141,431	134,859,183	721,840,810	1.27	14.1%
TOTAL INFRASTRUCTURE INVESTMENTS							
Brookfield Infrastructure Fund II, L.P.	2013	140,000,000	110,049,295	26,207,257	131,233,009	1.43	12.6%
KKR Global Infrastructure Investors II L.P.	2014	100,000,000	85,804,530	8,579,318	93,214,873	1.19	11.8%
IFM Global Infrastructure Fund	2014	140,000,000	186,921,633	46,921,633	210,731,864	1.38	12.9%
Global Energy & Power Infrastructure Fund II	2014	90,000,000	67,199,627	42,933,320	53,569,277	1.44	41.2%
Global Infrastructure Partners III-A/B, L.P.	2016	139,000,000	101,997,446	2,009,645	110,211,822	1.10	11.8%
Brookfield Infrastructure Fund III, L.P.	2016	119,000,000	31,102,267	3,063,673	32,087,605	1.13	10.2%
Actis Energy 4	2016	72,600,000	21,515,426	3,777	22,561,000	NM	NM
NYCRS EIG Energy Partners, L.P.	2017	64,710,000	6,445,819	136,635	6,527,019	NM	NM
EQT Infrastructure III (No.2) SCSp	2017	64,186,086	30,431,304	2,639,560	31,746,258	NM	NM
Axiom Infrastructure North America	2017	67,310,240	26,259,104	125,771	26,310,141	NM	NM
ASF VII Infrastructure L.P.	2017	65,000,000	4,414,980	2,238,593	3,777,473	NM	NM
NYCRS EIG Energy Partners Co-Investment, L.P.	2018	16,180,000	-	-	-	NM	NM
KKR Global Infrastructure Investors III L.P.	2018	75,000,000	-	-	(129,532)	NM	NM
Global Energy & Power Infrastructure Fund III, L.P.	2018	75,000,000	-	-	-	NM	NM

Information provided by the New York City Teachers' Retirement System Consultants

Alternative Assets Manager Performance Detail

Through December 31, 2018



	Vintage Year	Commitment - Closing (Base)	Contributions Cumulative (Local)	Distributions Cumulative	Final Market Value	3 Month Base%	Inception IRR%
TOTAL OPPORTUNISTIC FIXED INCOME		2,614,217,449	2,451,660,018	1,206,495,465	1,868,707,051	-1.32%	7.13%
Avenue Special Situations Fund V, L.P.	2007	25,261,658	25,650,392	33,533,622	-		NM
Avenue Europe Special Sit. Fund, L.P.	2008	20,955,791	18,559,393	35,192,684	-		NM
PIMCO DiSCO Fund, L.P.	2008	150,000,000	150,427,750	204,457,599	-		11.23%
Torchlight Debt Opportunity Fund III, LLC	2009	50,000,000	53,337,506	79,307,054	39,120	0.00%	13.36%
Avenue Special Situations Fund VI (A), L.P.	2011	70,000,000	71,766,544	71,272,284	4,996,387	0.00%	1.42%
GoldenTree Managed Account	2011	140,000,000	131,253,192	-	199,098,755	-1.83%	6.72%
Marathon Centre Street Partnership, L.P. - Asset Class	2011	218,750,000	271,250,000	82,250,000	273,947,819	-1.82%	6.05%
AG Centre Street Partnership, L.P. - CC Asset Class	2012	180,000,000	153,000,000	47,626,130	153,264,856	-3.20%	5.88%
Apollo Centre Street Partnership, L.P.	2012	268,750,000	336,460,852	194,679,878	192,270,834	-0.61%	4.76%
FCO MA Centre Street L.P.	2012	140,000,000	253,103,337	151,807,541	155,479,972	0.00%	8.80%
OHA Centre Street Partnership, L.P.	2012	175,000,000	227,028,517	69,955,346	228,397,554	-0.59%	7.74%
Contrarian Centre Street Partnership, L.P. - Asset Class	2013	90,000,000	90,000,000	-	99,518,395	-9.32%	2.67%
Lone Star Fund VIII (U.S.), L.P.	2013	130,000,000	127,970,674	119,262,584	41,459,648	0.00%	13.89%
Oaktree Opportunities Fund IX, L.P.	2013	100,000,000	100,000,000	32,895,430	80,735,855	0.00%	3.07%
Ares Centre Street Partnership, L.P.	2014	140,000,000	128,117,072	-	173,807,299	1.06%	9.59%
Brightwood Capital Fund III, L.P.	2015	35,000,000	28,403,806	9,881,729	23,309,453	0.00%	5.38%
Torchlight Debt Opportunity Fund V, LP	2015	67,000,000	40,200,000	4,400,089	47,420,463	-0.77%	13.74%
Brightwood Capital Fund IV, LP	2016	87,500,000	35,000,000	2,906,248	35,310,864	0.00%	10.02%
ICG Centre Street Partnership, L.P.	2017	120,000,000	98,108,831	57,879,747	44,820,661	0.00%	6.60%
KKR OFI SMA	2017	294,000,000	77,175,000	9,187,500	79,617,340	0.00%	20.42%
Maranon Centre Street Partnership, L.P.	2018	112,000,000	34,847,152	-	35,211,776	1.00%	3.52%

Information provided by Alpha Frontier
Above data is not final and subject to change

**Teachers' Retirement System
of New York City**

Appendix D

Footnotes

- The Barclays Capital Aggregate (then known as the Lehman Brothers Aggregate) was used prior to 1/1/89. Effective 1/1/89, in the Government Sector, maturities of less than 5 years were dropped from the Salomon and Lehman indices. From that date until 7/1/99 the benchmark was the NYC Core + 5, from Lehman.
- Effective 7/1/94, the NYC Core + 5 Index includes BBB rated securities.
- Effective 7/1/99, the basis of the NYC Index was changed from Lehman Brothers to Salomon. Also effective 7/1/99, only Salomon indices have been used to compare all fixed income managers.
- Effective 4/1/03, the name of the benchmark provider was changed from Salomon to Citigroup.
- Effective 7/1/09, the Core+5 program was restructured.
- The U.S. Gov't sector benchmark Index was changed from the Citigroup Core+5 Treasury/Gov't Sponsored Index to the Citigroup Core+5 Treasury/Agency Index.
- The Corporate and Yankee sectors were combined to form the new Investment Grade Credit sector. The benchmark for the new combined sector is the customized Citigroup Credit Index. For historical performance purposes, the old Corporate sector Index is linked to the new Credit sector Index.
- There were no changes to the Mortgage sector Index.
- The total Core+5 results and benchmark returns combine the three sectors. Historical total Core+5 returns continue to include the old Corporate and Yankee sector returns.

General Notes

- Estimated management fees for public market investments are calculated on an accrual basis without adjustment for management fee caps. Alternative investment fees are recorded on a cash basis. Since not all alternative managers currently provide detailed fee disclosure, the alternative investment fees noted here are not comprehensive.
- Public Market returns are Net of Manager Fees for periods after January 2014 and Gross of investment advisory fees for other periods unless otherwise indicated.
- Public market excess returns for periods prior to 2014 are based on Gross performance.

Page Specific

Pages 8 - 13 - Portfolio Asset Allocation

- Rebalancing Ranges: the minimum and maximum weights that actual Asset Allocation may reach before rebalancing between Asset Classes is necessary.

Pages 14 - 16 - Performance Attribution: Total Plan

- Plan Return at Policy Weights: the return of the Total Plan assuming actual Asset Class results were maintained at target (Adjusted Policy) weights. *Figure = (Return of Asset Class 1 * Target Weight) plus (Return Of Asset Class 2 * Target Weight) plus (.....)*
- **Allocation Effect** = Total Plan Return minus Plan Return At Adjusted Policy Weights. Allocation is the Contribution to Performance resulting from an overweight or underweight to an asset class. E.g. an underweight to an Asset Class that under-performs results in a positive Allocation Effect and vice versa.
- **Selection Effect** = Equal to the Custom Benchmark (Adjusted Policy Index) Return minus Plan Return at Adjusted Policy Weights. This illustrates how the Managers have added or removed value based on their Security Selection decisions, e.g., *If the manager's Actual Returns are higher than the Implied Return there will be a positive Selection Effect.*
- **Policy Index = Custom Benchmark**
The "policy index" is a custom benchmark representing the weighted average return of the weighted benchmark indexes for each major investment program. Weights may reflect an adjustment of actual policy for outstanding commitments for new or revised programs, such as for private market programs, which are invested gradually, or for any new or updated program requiring the completion of RFPs and contracts. The policy index/custom benchmark is calculated monthly based on adjusted policy weights at the beginning of each month.

Glossary of Terms

Through December 31, 2018



The indexes and most recent policy weights are as follows:

*U.S. Equity: Russell 3000 * 31.50%*

*International Developed (EAFE) Markets: MSCI World ex USA IMI Net * 11.43%*

Int'l Active- Global: MSCI World Net Dividends Index 0.35%*

Emerging Markets: MSCI Custom TRS Emerging Markets (Net) 8.94%*

*International Emerging Managers FoF: NYC Blended Custom Benchmark for FoF * 0.71%*

*REITs: Dow Jones Real Estate Securities * 0.00%*

*Private Equity: Russell 3000 + 300 b.p. per annum * 6.00%*

*Private Real Estate – Core: NFI - ODCE Net * 2.67%*

*Private Real Estate – Non Core: NFI - ODCE Net + 200bps * 1.42%*

*Infrastructure: CPI + 4% * 1.10%*

*US Treasury Short Term: FTSE USBIG Treasury 1-3Y * 0.00%*

*US Treasury Intermediate: FTSE Treasury/Agency 1-10 Y * 0.00%*

*Total Active Government: NYC Treasury Agency + 5 * 0.00%*

*US Treasury Long Duration: FTSE Treasury 10+ * 10.75%*

*Core FI-Developing Managers: BBG Barc Agg * 0.00%*

*Core FI-Emerging Managers: BBG Barc Agg * 0.00%*

*Mortgage: FTSE Mortgage Index * 4.14%*

*ETI: ETI Custom Benchmark * 0.86%*

*Investment Grade Credit: NYC – Investment Grade Credit * 5.00%*

Glossary of Terms

Through December 31, 2018



*High Yield: Bloomberg Barclays US High Yield 2% Issuer Capped * 6.10%*

*Bank Loans: Credit Suisse Leveraged Loan * 2.00%*

*TIPS: BBG BARC Gbl Inf-Lk: US TIPS (Dly) * 4.23%*

*Convertible Bonds: BofAML All Convertibles Ex Mandatory * 0.00%*

*Opportunistic Fixed: OFI - JPMGHY / CSFB 50/50 Blend Plus 300 b.p. per annum * 2.80%*

Page 17 – Allocation and Selection Effects - Asset Class Breakdown

- This chart aims to break down the Allocation and Selection Effects shown on the Performance Attribution pages. The aim of the Page is to show the asset classes where Managers are either out performing or under performing their benchmark and to show the basis point effect that this is having on Plan performance.