



New York City  
Employees' Retirement System  
Performance Overview as of June 30, 2020

# Total Fund Overview

## New York City Employees' Retirement System

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Through June 30, 2020



### **City of New York Employees' Retirement System Second Quarter 2020 Summary**

**General Economic and Market Conditions:** Stock markets around the globe staged spectacularly swift recoveries in the second quarter from their sudden and equally spectacular plunge in the first quarter, providing investors with the hallowed V-shaped recovery that once seemed impossible. While major equity indices are headed back toward all-time highs, the economies underlying these markets face a path quite different from a V-shaped recovery. The sectors driving the U.S. stock market, technology in particular, are not the sectors like retail and hospitality that employ the largest number of workers.

The staggered reopening of states within the U.S. and economies around the globe drove a sharp rise in economic activity in May and June, but a range of high-frequency indicators suggests the pace of recovery has since softened following a resurgence in COVID-19 infections and deaths. The prospect for many locales to pause or roll back easing, and the observed retrenchment in spending by businesses and consumers, looms over the path to recovery. Government belt tightening may undermine the rebound, as tax revenues for localities have plummeted in the face of a surge in demand for services. Revenue shortfalls for state and local governments for fiscal year 2021 may total \$200 billion, according to IHS Markit. Consensus forecasts still call for a strong rebound in the third quarter followed by a more gradual recovery, but the risk has risen for a W-shaped trajectory, where a decline follows the third quarter pop, and then a more durable recovery begins with a delay, perhaps in the second half of 2021.

The word “unprecedented” to describe the current environment may seem overused, but the speed and depth of the economic disruption was indeed unprecedented. The total output of the U.S. economy as measured by GDP dropped 9.5% in the second quarter, or an annualized decline of 32.9%, unheard of in modern times. Approximately one quarter of all jobs disappeared in a matter of weeks.

GDP is an admittedly challenged measure of true economic activity even in normal times, and annualized percent changes around the chasm of the COVID-19 economic shutdown are problematic in context. Adding to the data confusion is the seasonal adjustment methodology, which under normal circumstances greatly reduces the signal-to-noise ratio in monthly and quarterly GDP estimates but exacerbates the severity of data swings in times of extreme stress. These limitations aside, GDP remains the most comprehensive metric for examining U.S. and global activity. For the whole year, projections by forecaster Capital Economics suggest a GDP decline of close to 5% in the U.S. and Japan, 7.5% in the euro zone, and greater than 10% in the U.K. Official estimates for China peg 2020 GDP growth at 2%, while unofficial estimates show a small loss (-1%). The focus going forward will be on the level of GDP,

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employment, unemployment, sales, and production, and when we can recover pre-pandemic levels of economic activity. Consensus estimates peg U.S. GDP regaining its pre-pandemic level in the second half of 2021, barring the appearance of the W-shaped recovery.

The most immediate and severe impact to the U.S. economy has been in the job market. Initial unemployment claims spiked to 6.9 million in the last week of March. The weekly claims have since subsided, but remain at levels unprecedented before the pandemic, topping 1 million every week since then. In addition to regular state unemployment programs, the CARES Act expanded benefits to many not typically covered by states and extended regular benefits for up to 13 weeks. The sum of these programs provided unemployment benefits for over 30 million persons through the end of June, off a starting job base of 155 million in February. The job market staged a surprising surge in May and June, but the high-frequency data are suggesting a marked softening into the summer.

U.S. inflation perked up in June following declines for three consecutive months, but year-over-year CPI is up just 0.6%, well below recent trends and the Fed's long-term target of 2%. By some measures, second quarter inflation fell to its lowest point in SEVEN decades. CPI measures consumer prices against a basket of typical goods and services purchased. GDP and consumption price deflators measure price changes of goods and services as actually transacted, and both measures saw almost 2% declines in the second quarter. While concerns are rising that the fiscal and monetary stimulus enacted to rescue the global economies will be highly inflationary, the prospect of near-term deflation is real, and holds the potential to derail the recovery - falling prices could slow consumer and business spending, especially if deflation becomes a spiral rather than a temporary dip.

*Please note that all return figures mentioned below are gross of fee.*

**Total Fund Performance:** For the quarter ended June 30, 2020, the Fund returned +9.92%, twenty basis points below the Policy Target return of +10.12%. Over the trailing year, NYCERS has earned a return of +3.79% versus the Policy Target return of +3.70%. Over three years, the total Fund has returned +6.62% annualized. Over the trailing five years, the Fund has gained 6.91% annualized. The trailing 10-year return is +9.00% annualized.

**Total Fund Assets:** The Fund's assets totaled \$68.9 billion as of the end of the second quarter of 2020.

**U.S. Equity:** The total domestic equity portion of the NYCERS Fund returned +21.47% for the quarter, below the +22.03% return of the Russell 3000 Index. For the trailing year, NYCERS underperformed the index, returning +4.29% versus +6.53% for the index. The Fund is below the benchmark over the trailing three, five and ten year periods.

Through June 30, 2020



In Large Cap, the Fund underperformed the Russell 1000 Index, returning +21.06% versus the Russell 1000's return of +21.82% during the second quarter. The Fund's one year return of +5.05% underperformed the +7.48% return of the Index.

In Small Cap, the Fund returned +27.72%, above the Russell 2000 return of +25.42% for the quarter. The Fund's one year return of -5.37% outperformed the -6.63% return of the Index.

**Developed International:** For the quarter, the Fund's Non-U.S. Developed Equity composite returned +20.71% (excluding NYCERS' historical non-U.S. Environmental manager), outperforming the Custom MSCI World ex-US Benchmark by 450 basis points. The Fund returned +0.69% for the trailing one year period, above the return of the benchmark (-5.11%). The Fund is above the benchmark over the trailing three, five, and ten year periods.

**Emerging Markets Equity:** The Fund's active emerging markets equity composite returned +26.77% in the quarter, outperforming the +20.33% return of NYCERS custom MSCI benchmark. The active portfolio outperformed the passive one for the quarter. The one year return for the active emerging markets composite is -11.15%, outperforming the -11.27% return for the benchmark. The active emerging markets equity composite is above the benchmark over the trailing ten year period.

**Core Fixed Income:** The composite of the Fund's core program returned +2.80% during the quarter, while the NYCERS Custom Structured Index returned +2.80%. For the past year, the core composite has returned +12.39%, while the benchmark's return is +14.00%. The Fund is below the benchmark over the trailing three year period.

**TIPS:** The Fund's TIPS composite delivered a +4.14% return in the quarter, below the +4.24% return for the Bloomberg Barclays Capital US TIPS Index. Over the past year, the Fund's TIPS managers have returned +8.26%, slightly below the benchmark's return of +8.28%. The Fund is ahead of the benchmark over the trailing three, five, and ten year periods.

**High Yield:** In high yield, the Fund's managers returned +9.78% for the quarter, while NYCERS High Yield Custom Benchmark posted a higher return of +10.14%. The Fund outperformed the custom benchmark over the past year, returning +0.58% as compared to the benchmark's return of -0.00%. The Fund is ahead of the benchmark over the trailing three, five, and ten year periods.

**Bank Loans:** The NYCERS bank loan composite returned +7.41% in the second quarter, below the Credit Suisse Leveraged Loan Index's return of +9.71%. The Fund outperformed the benchmark for the year returning -1.45% versus -2.27% for the benchmark. The Fund has outperformed the benchmark over the trailing three and five year periods.

Through June 30, 2020



**Convertibles:** The convertible portfolio returned +13.88% in the quarter, above the +11.03% return of the NYCERS Custom Convertible Bond Index. Over the past year, the convertibles portfolio has returned +5.87%, outperforming the +2.34% return for the benchmark. The Fund outperformed the custom benchmark over the trailing three, five and ten year periods.

**Opportunistic Fixed Income:** The opportunistic fixed income composite returned -4.76% over the second quarter, underperforming the blended benchmark of 50% JP Morgan Global High Yield / 50% Credit Suisse Leveraged Loan Index - Plus 300 bps (+11.06%). The Fund returned -1.85% for the trailing one year period, below the return of the blended benchmark (+0.88%). The Fund is below the blended benchmark over the trailing three, five, and ten year periods.

**Alternatives:** For the quarter, the Private Equity portfolio had approximately \$4.7 billion in invested capital, representing roughly 6.8% of the Total Fund. The Private Real Estate portfolio had approximately \$3.8 billion invested, accounting for roughly 5.5% of the Total Fund. The Infrastructure portfolio had approximately \$787 million invested, or 1.1%. Performance is reported separately by NYCERS' Private Equity and Real Estate consultants.

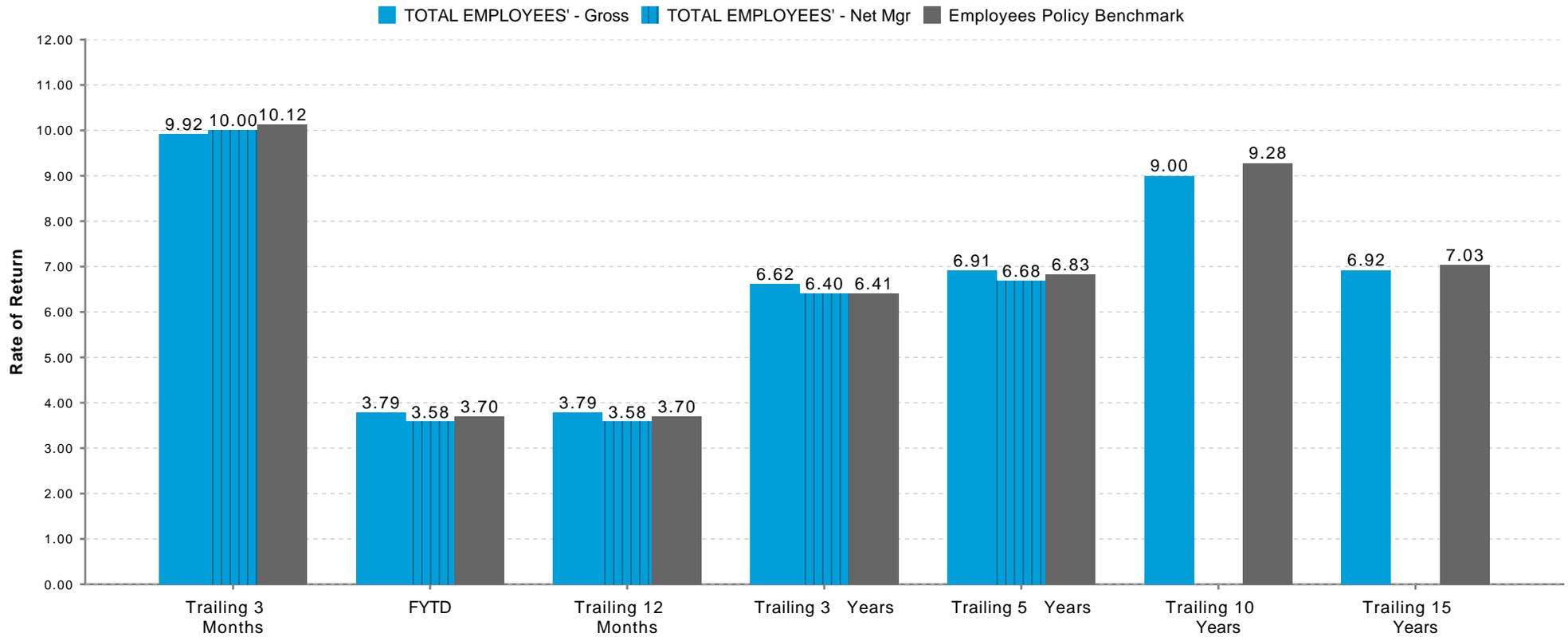
# Total Portfolio Returns: June 30, 2020



## Market Value (Billions)

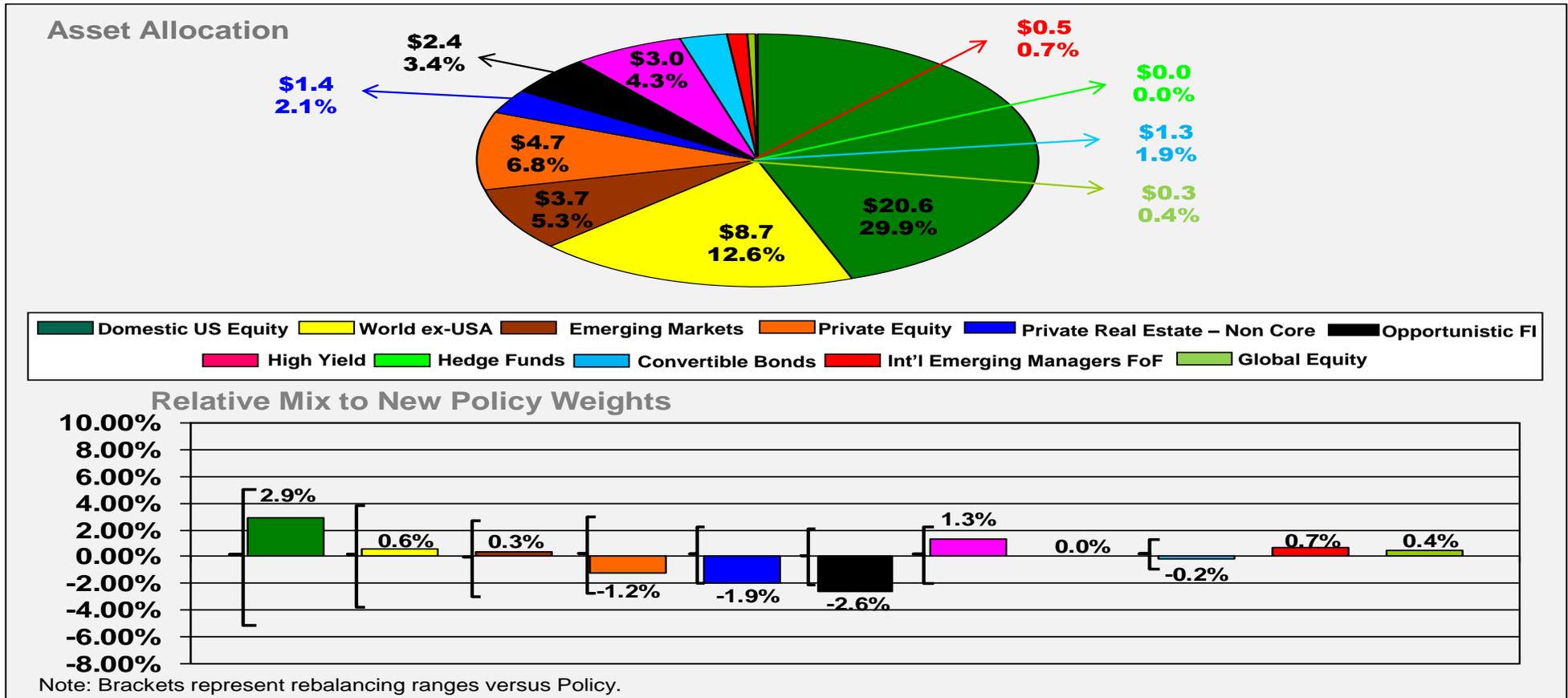
TOTAL EMPLOYEES'

\$68.9

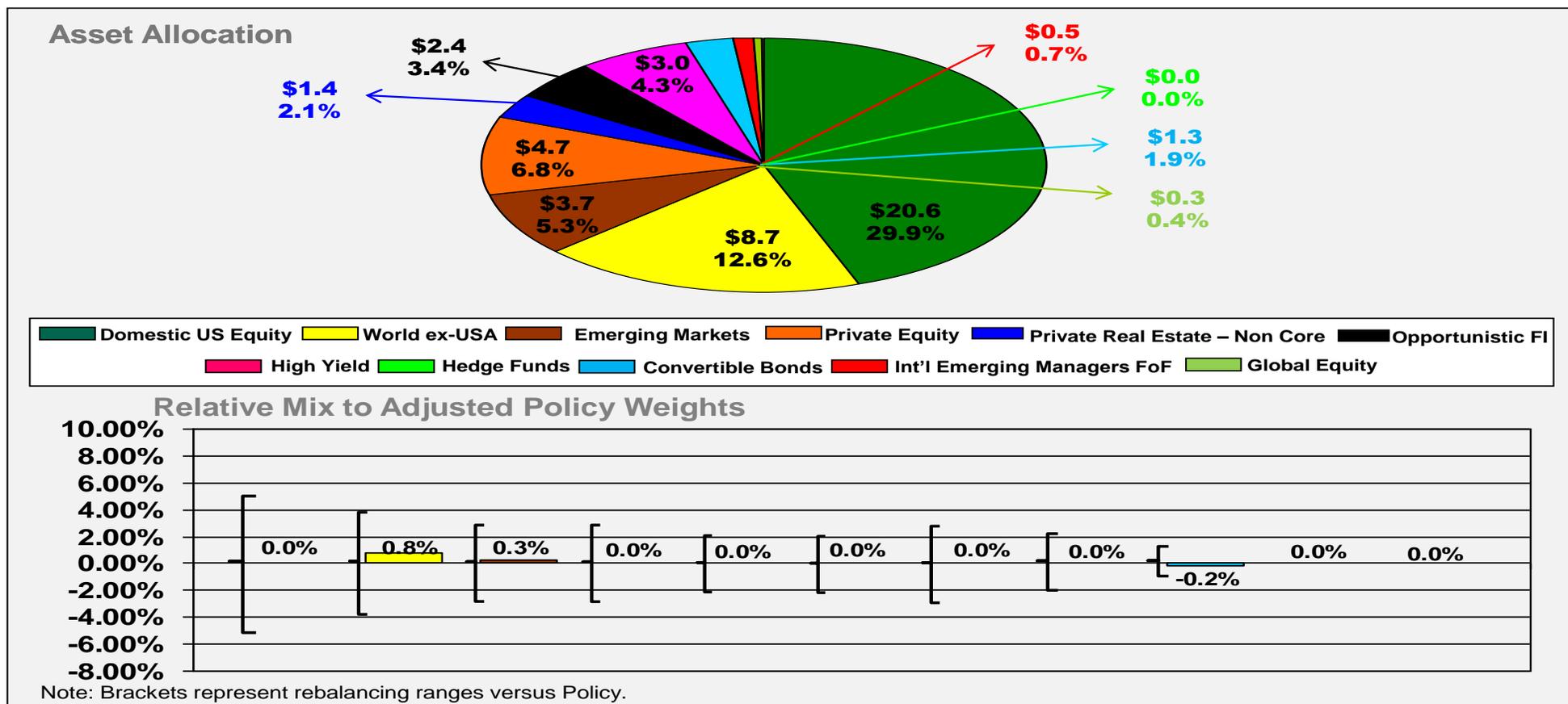


	Plan 3 Years	Benchmark 3 Years	Plan 5 Years	Benchmark 5 Years	Plan 10 Years	Benchmark 10 Years
Standard Deviation						
TOTAL EMPLOYEES'	8.6	9.1	6.9	8.0	7.7	8.0

## Portfolio Asset Allocation – Growth

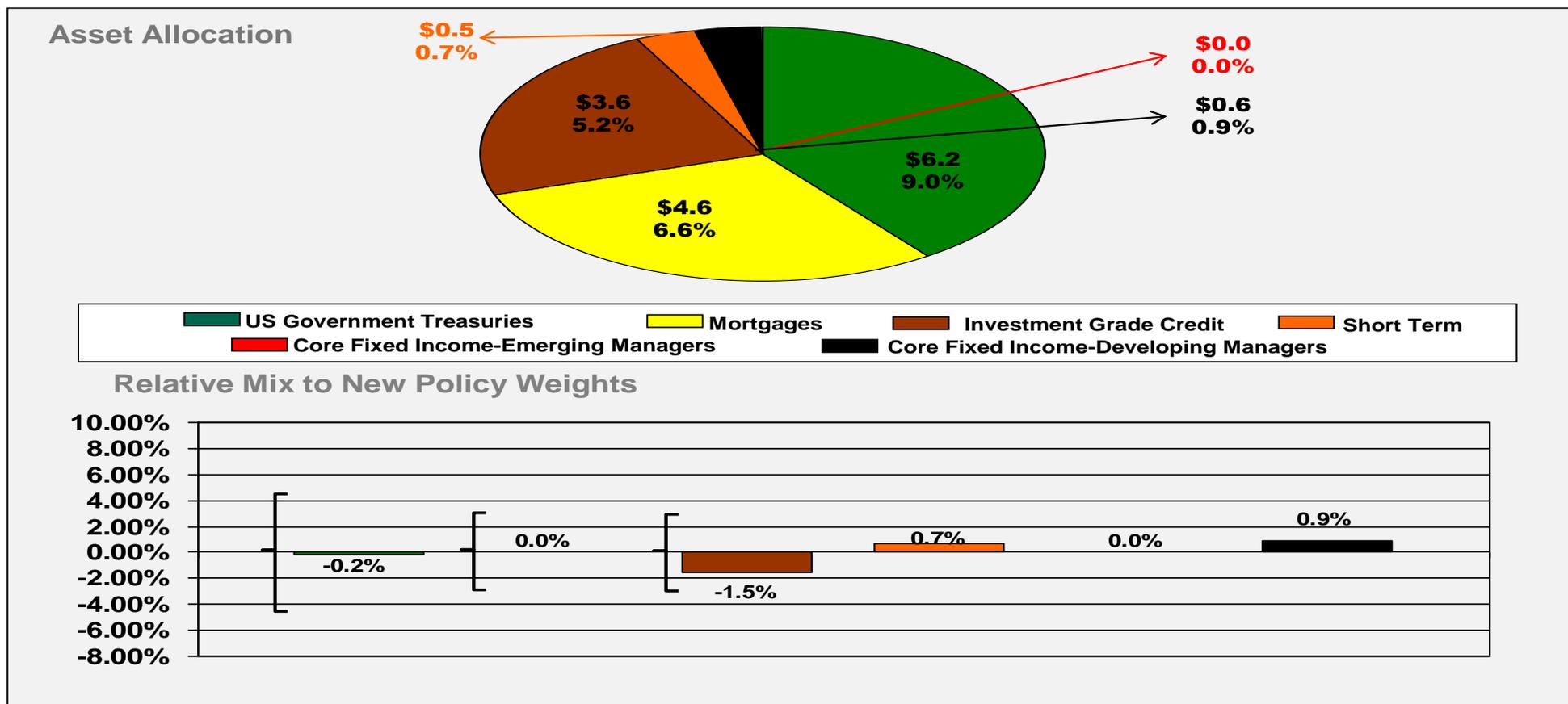


## Portfolio Asset Allocation – Growth

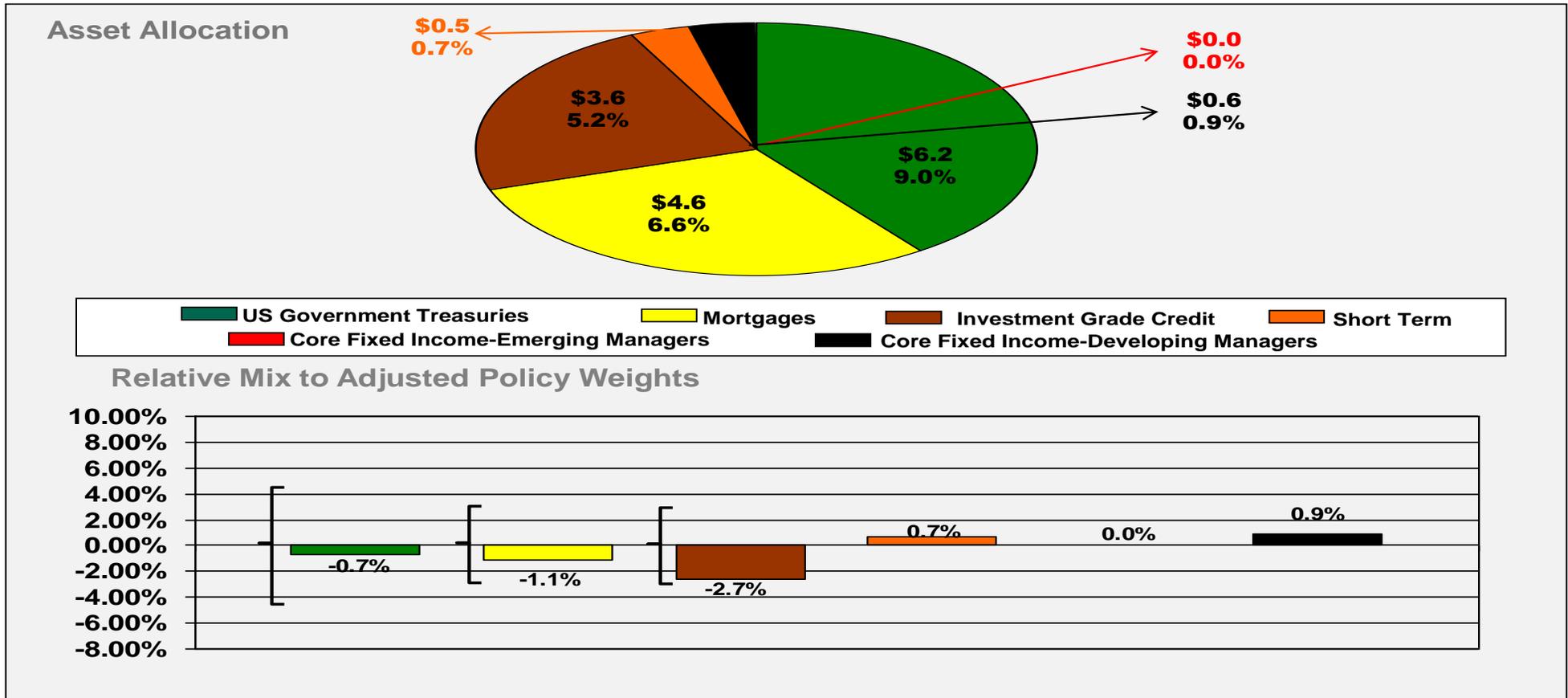


Note: On June 30, 2020 NYCERS' combined Fixed Income and Cash portfolios have a duration of 5.7 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

## Portfolio Asset Allocation – Deflation Protection

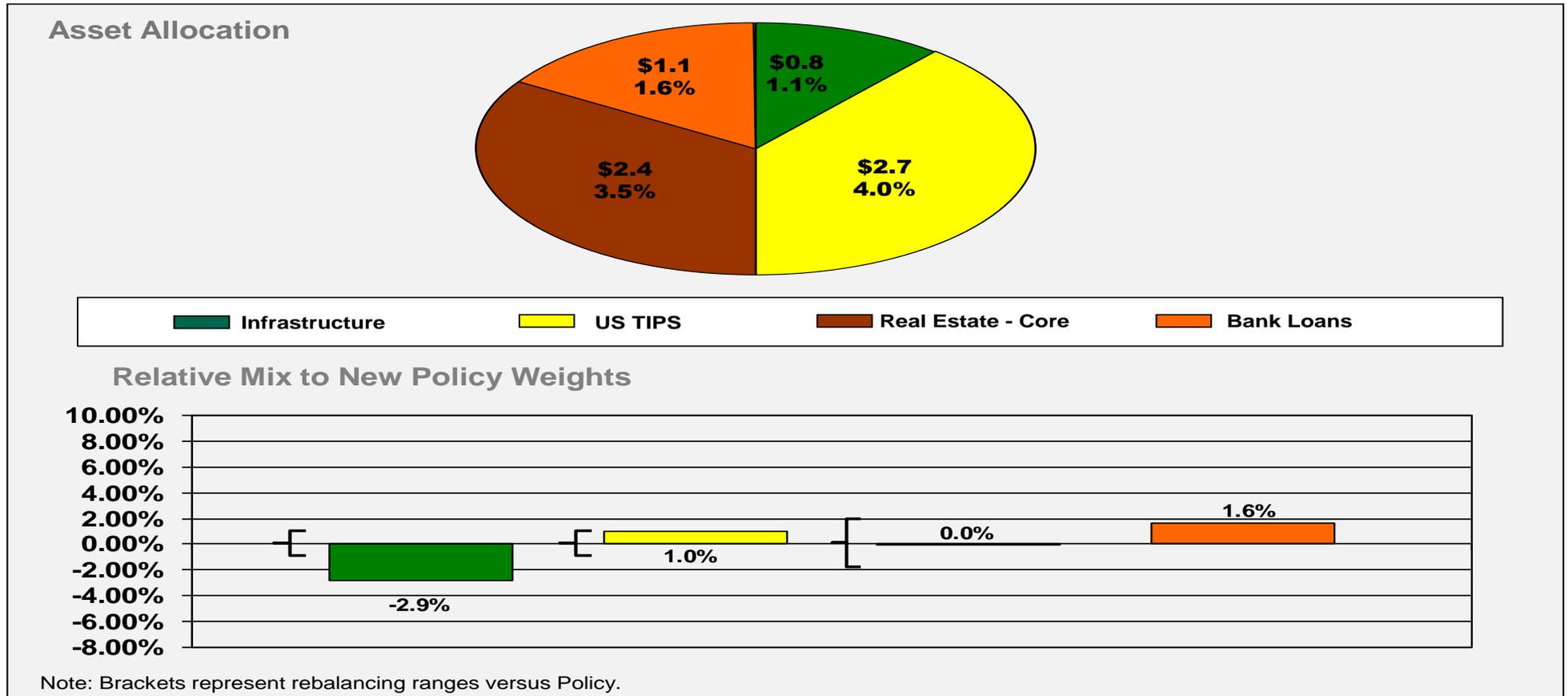


## Portfolio Asset Allocation – Deflation Protection

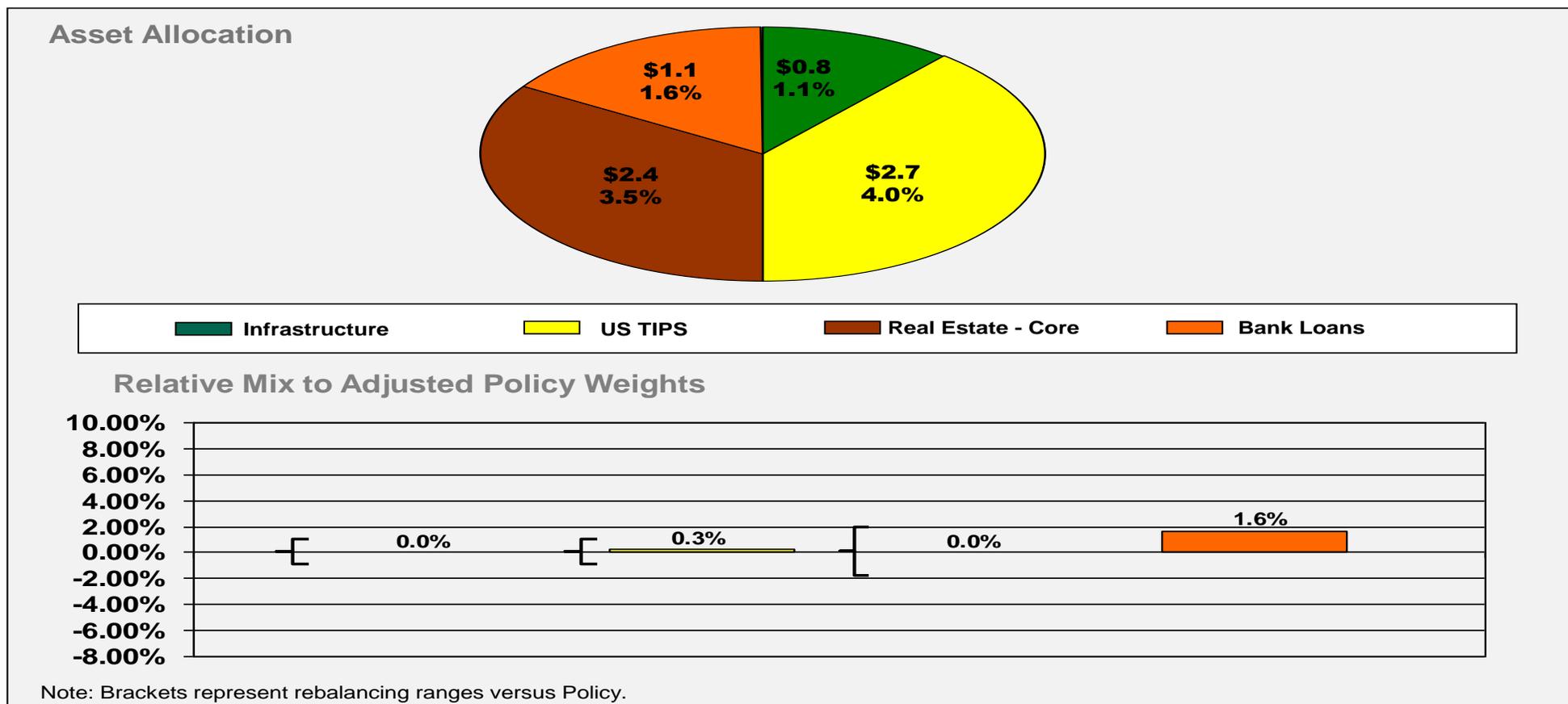


Note: On June 30, 2020 NYCERS' combined Fixed Income and Cash portfolios have a duration of 5.7 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

## Portfolio Asset Allocation – Inflation Protection

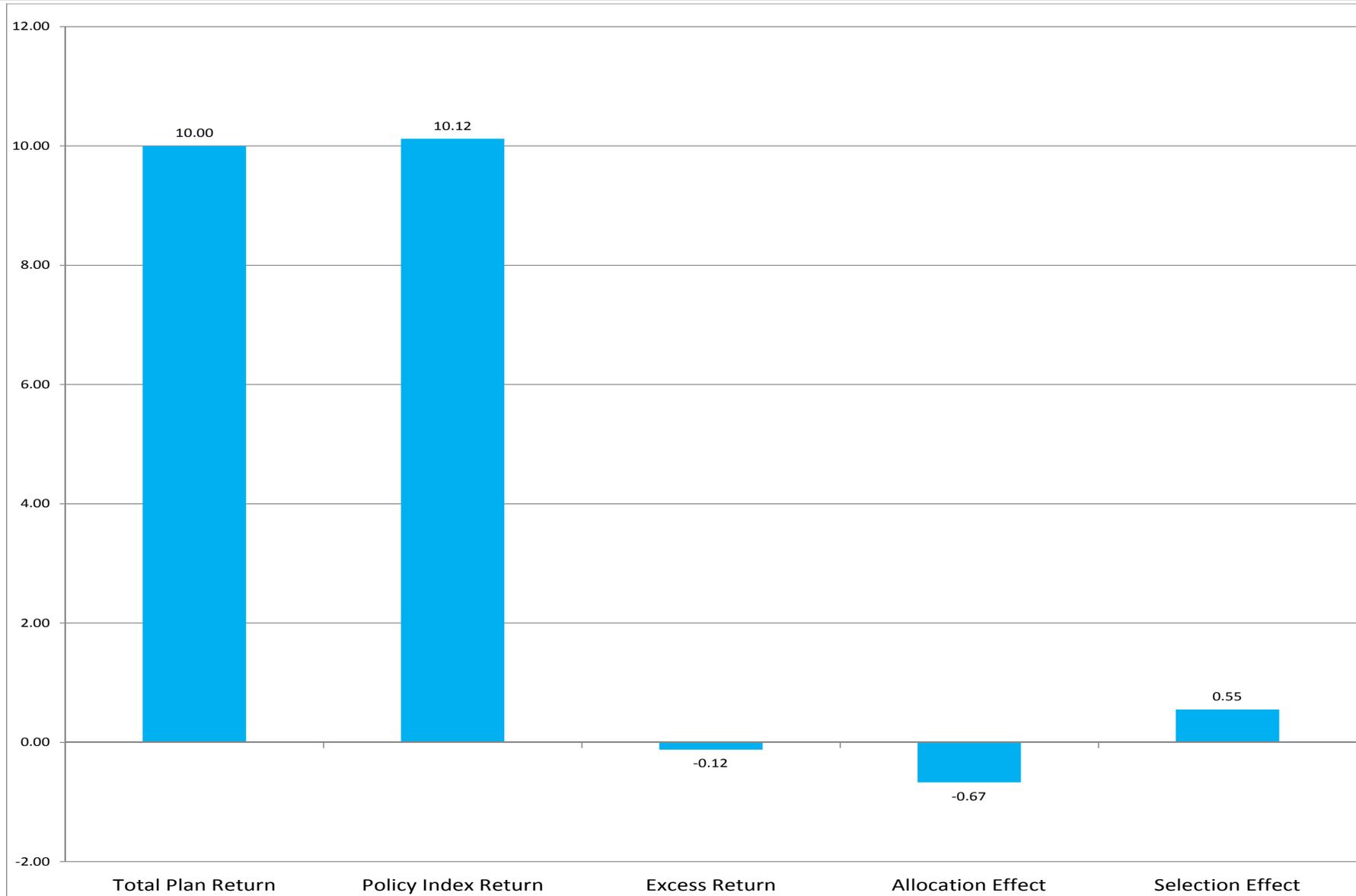


**Portfolio Asset Allocation – Inflation Protection**

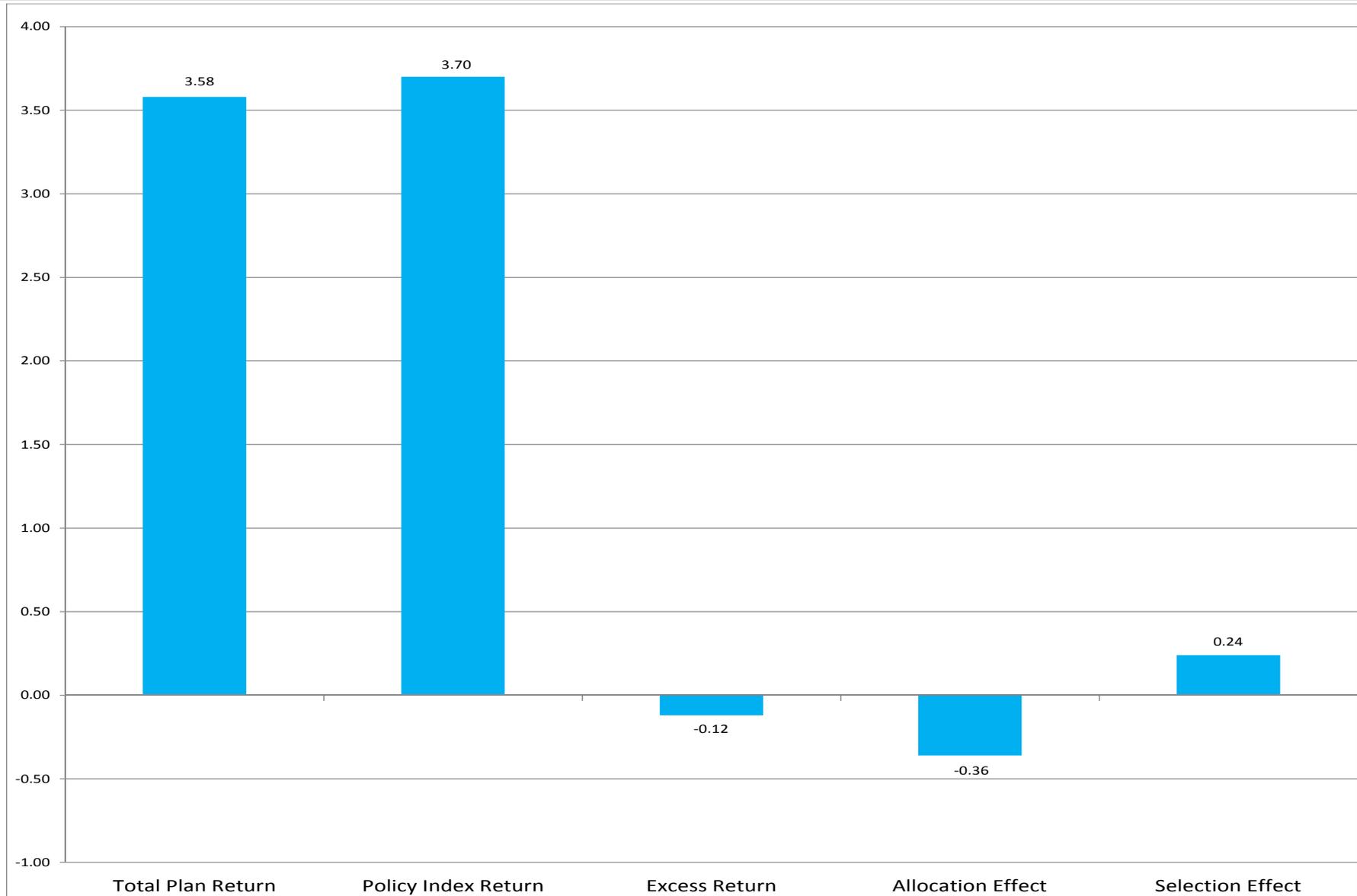


Note: On June 30, 2020 NYCERS' combined Fixed Income and Cash portfolios have a duration of 5.7 years. The duration of the Barclays US Aggregate Index was 6 years on that date.

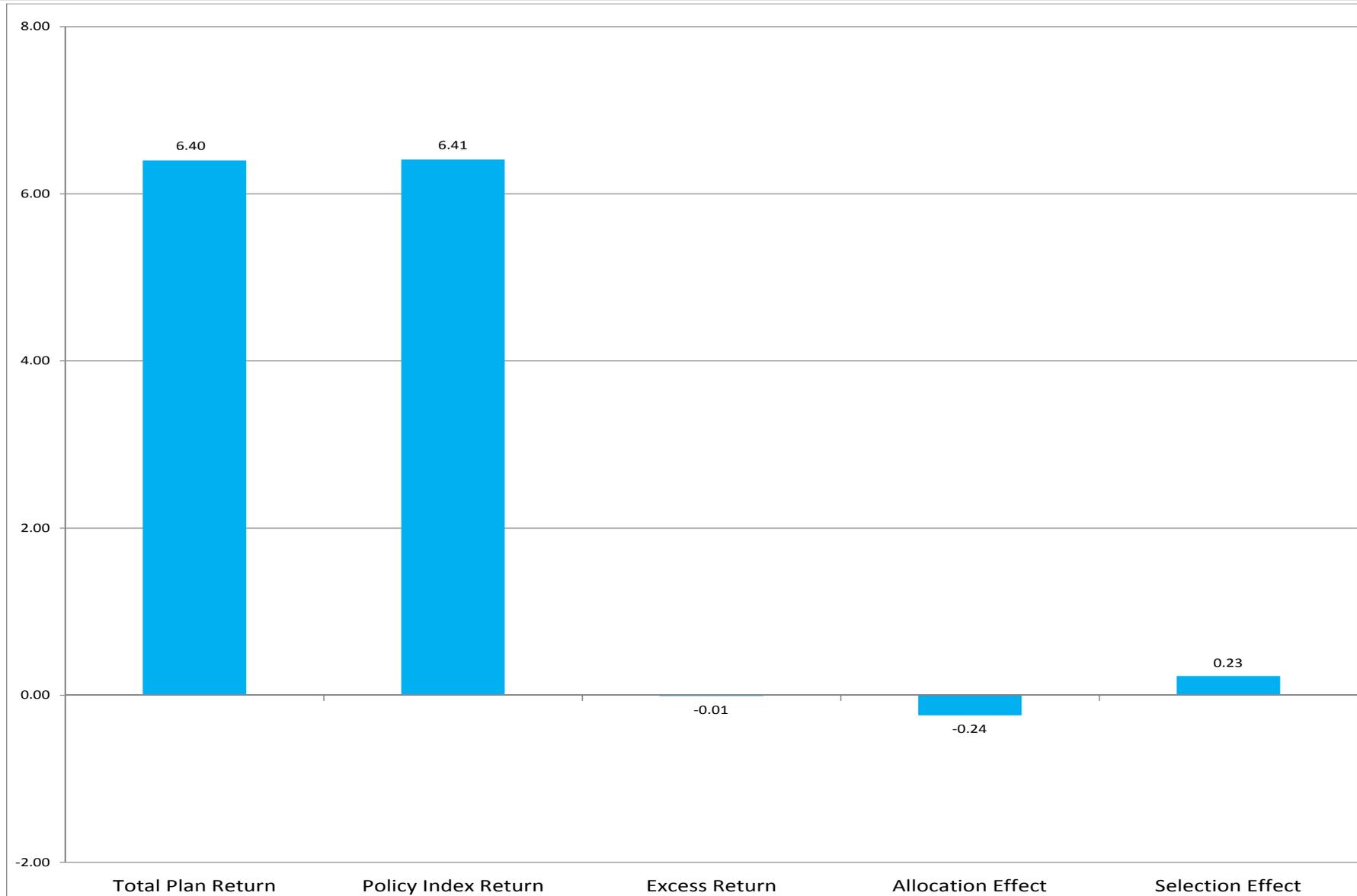
# Performance Attribution: Total Plan - Quarter Ending: June 30, 2020



**Performance Attribution: Total Plan - Fiscal Year to Date: June 30, 2020**



# Performance Attribution: Total Plan - 3 Years Ending: June 30, 2020





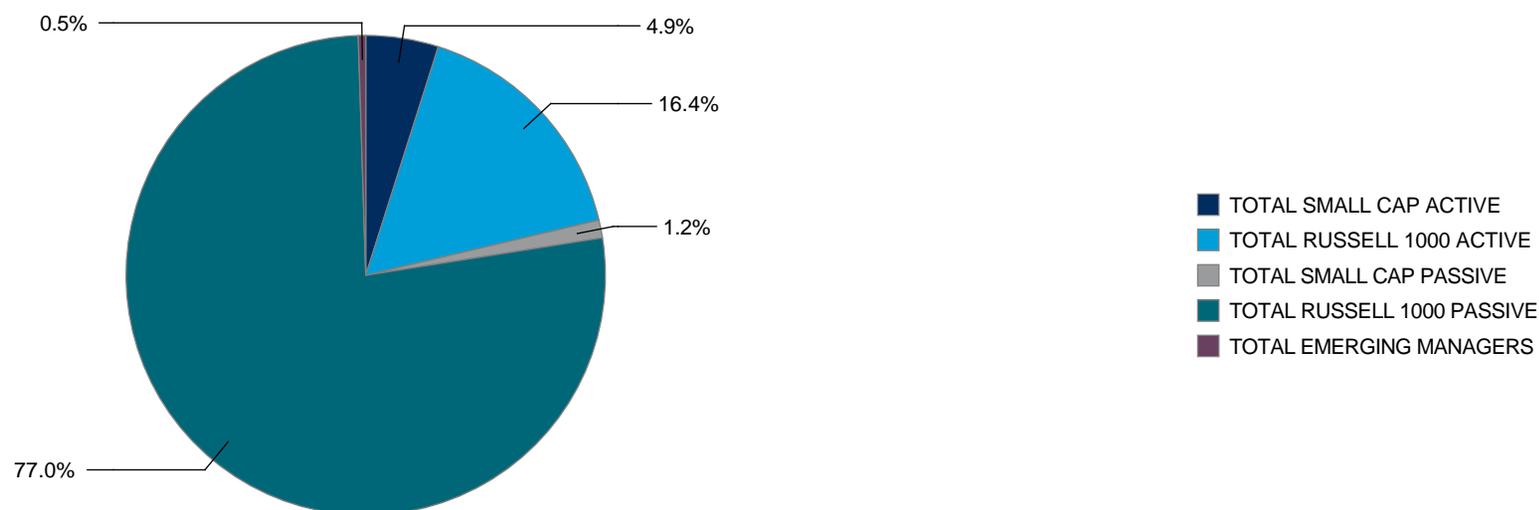
Allocation Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL EMPLOYEES'	-0.67	-0.36	-0.24	Employees Policy Benchmark
TOTAL DOMESTIC EQUITY	-0.21	-0.15	-0.11	RUSSELL 3000
TOTAL WORLD ex-USA	0.00	0.01	0.00	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	0.00	0.00	0.00	MSCI World Index
TOTAL EMERGING MARKETS	-0.05	0.00	-0.03	Employees Custom EM Index
TOTAL INTERNATIONAL FOF	0.00	0.00	0.00	NYC Blended Custom Benchmark for FoF
TOTAL HEDGE FUNDS	0.00	0.00	0.00	HFRI Fund of Funds Composite Index plus 1%
TOTAL PRIVATE EQUITY	-0.07	-0.04	-0.04	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.01	-0.01	0.00	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	0.00	-0.01	0.00	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	0.01	0.00	0.00	CPI + 4%
TOTAL US TREASURY SHORT TERM	-0.29	-0.03	-0.05	FTSE USBIG Treasury 1-3 Y Index
TOTAL US TREASURY INTERMEDIATE	0.16	0.16	0.04	FTSE USBIG Treasury/Agency 1-10 y
TOTAL ACTIVE GOVERNMENT	0.06	-0.20	-0.01	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	-0.03	-0.09	-0.05	NYC - Investment Grade Credit
TOTAL MORTGAGES	-0.12	-0.12	-0.03	FTSE MORTGAGE INDEX
TOTAL ETI	0.00	0.00	0.00	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	-0.05	0.03	-0.01	BBG BARC Agg
TOTAL CORE FI- EMERGING MGRS	-0.01	0.01	0.00	BBG BARC Agg
TOTAL HIGH YIELD	0.03	0.07	0.06	High Yield Custom Benchmark
TOTAL BANK LOANS	0.04	0.05	0.02	Credit Suisse Lev Loan Index
TOTAL TIPS MANAGERS	-0.01	0.02	0.01	BBG BARC Gbl Inf-Lk: US TIPS (Dly)
TOTAL CONVERTIBLE BONDS	-0.01	-0.01	0.02	ICE BoFA All US Conv Ex Mandatory
TOTAL OPPORTUNISTIC FIXED	0.00	0.01	0.00	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	-0.14	-0.08	-0.05	

Selection Effect - Asset Class Breakdown				
	Quarter	FYTD	3 Years	Benchmark
TOTAL EMPLOYEES'	0.55	0.24	0.23	Employees Policy Benchmark
TOTAL DOMESTIC EQUITY	-0.14	-0.62	-0.27	RUSSELL 3000
TOTAL WORLD ex-USA	0.46	0.69	0.40	MSCI World ex USA IMI Net
TOTAL GLOBAL EQUITY	-0.01	0.01	0.01	MSCI World Index
TOTAL EMERGING MARKETS	0.16	-0.03	-0.03	Employees Custom EM Index
TOTAL INTERNATIONAL FOF	0.01	0.03	0.01	NYC Blended Custom Benchmark for FoF
TOTAL HEDGE FUNDS	0.00	0.00	0.00	HFRI Fund of Funds Composite Index plus 1%
TOTAL PRIVATE EQUITY	0.87	0.42	0.15	Russell 3K + 300bps
TOTAL PRIVATE REAL ESTATE - CORE	0.05	0.03	0.04	NCREIF ODCE net
TOTAL PRIVATE REAL ESTATE - NON CORE	-0.15	-0.06	0.02	NCREIF ODCE net + 200bps
TOTAL INFRASTRUCTURE	-0.03	0.01	0.03	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	-0.02	-0.02	-0.01	NYC - Treasury Agency Plus Five
TOTAL INVESTMENT GRADE CREDIT	0.07	0.02	0.01	NYC - Investment Grade Credit
TOTAL MORTGAGES	0.03	0.01	0.00	FTSE MORTGAGE INDEX
TOTAL ETI	-0.01	0.00	0.01	ETI Custom Benchmark
TOTAL CORE FI- DEVELOPING MGRS	0.01	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	-0.01	High Yield Custom Benchmark
TOTAL BANK LOANS	-0.04	0.01	0.00	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	-0.13	-0.15	-0.08	ICE BoFA All US Conv Ex Mandatory
TOTAL OPPORTUNISTIC FIXED	-0.56	-0.13	-0.08	OFI - JPMGHY / CSFB 50/50 Blend Plus 300
TOTAL CASH	0.00	0.01	0.00	

# Total Domestic Equity Asset Allocations: Quarter Ending June 30, 2020



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL DOMESTIC EQUITY	\$20.6	29.9

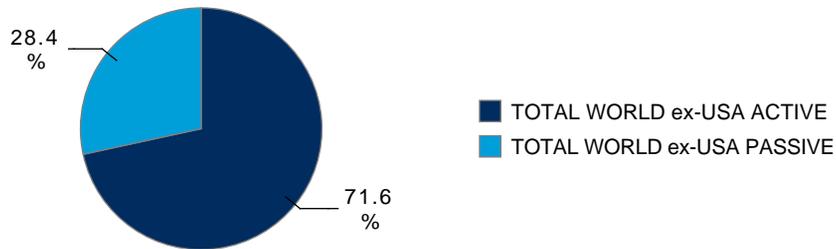


	Policy Weight	Actual Weight	Under/Over Weight	Quarterly Returns		
				Fund	Benchmark	Excess
TOTAL SMALL CAP ACTIVE	5.3	4.9	(0.4)	28.6	25.4	3.2
TOTAL RUSSELL 1000 ACTIVE	18.0	16.4	(1.6)	17.5	21.8	(4.4)
TOTAL SMALL CAP PASSIVE	1.2	1.2	0.0	23.5	25.4	(2.0)
TOTAL RUSSELL 1000 PASSIVE	75.0	77.0	2.0	21.9	21.8	0.0
TOTAL EMERGING MANAGERS	0.6	0.5	(0.1)	25.0	25.4	(0.4)

# World ex-USA Equity Asset Allocation: June 30, 2020



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL WORLD ex-USA	\$8.7	12.6

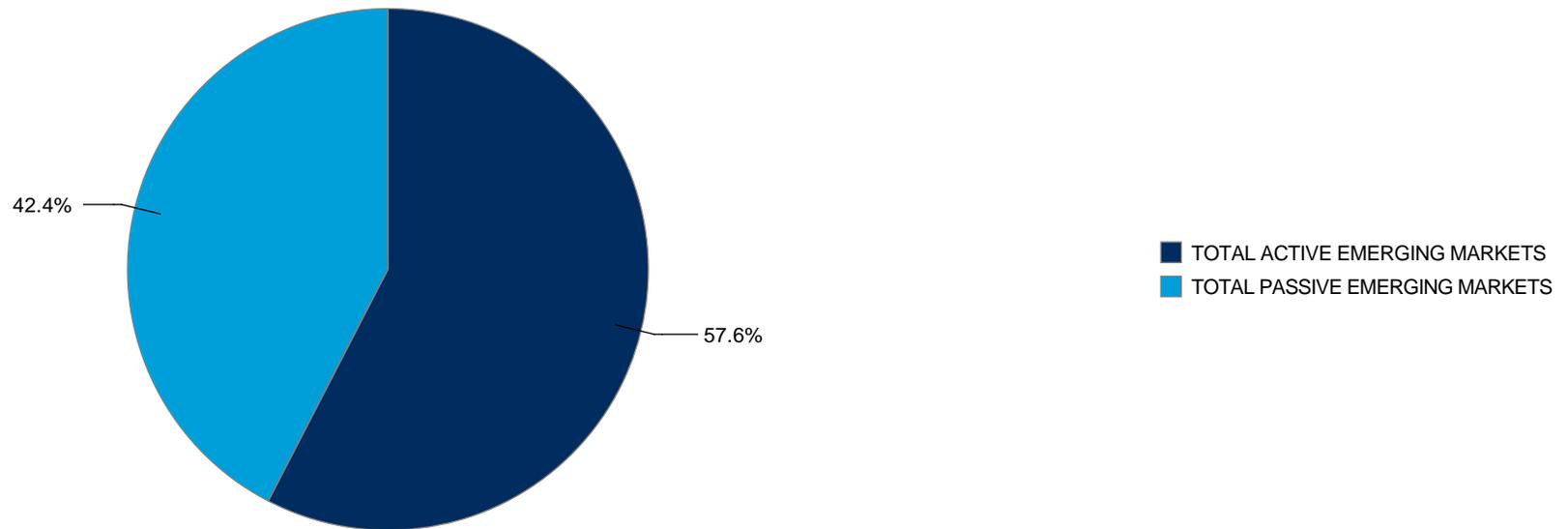


	<u>Asset Class Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL WORLD ex-USA LARGE & MID ACTIVE	65.48	22.26	15.34	6.91
TOTAL WORLD ex-USA SMALL CAP ACTIVE	6.08	21.88	20.83	1.05
TOTAL WORLD ex-USA LARGE & MID CAP PASSIVE	21.26	15.50	15.34	0.16
TOTAL WORLD ex-USA SMALL CAP PASSIVE	7.18	21.65	21.66	(0.02)
TOTAL WORLD ex-USA	100.00	20.65	16.21	4.44

# Emerging Markets Equity Asset Allocation: June 30, 2020



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL EMERGING MARKETS	\$3.7	5.3

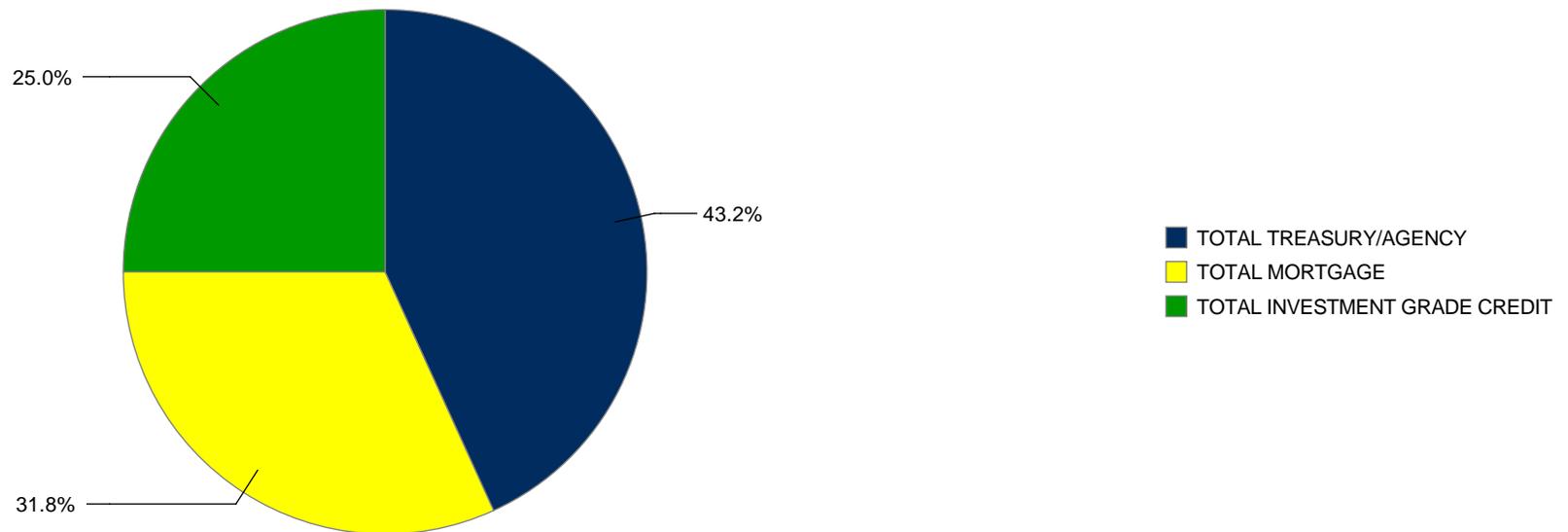


	<u>Asset Class Weight</u>	<u>Quarterly Returns</u>		
		<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL ACTIVE EMERGING MARKETS	57.63	26.63	20.33	6.30
TOTAL PASSIVE EMERGING MARKETS	42.37	20.42	20.33	0.09
TOTAL EMERGING MARKETS	100.00	23.82	20.33	3.49

# Structured Fixed Income Asset Allocation: June 30, 2020



	<u>Market Value (Billions)</u>	<u>% of Plan</u>
TOTAL STRUCTURED + ETI	\$14.4	20.8

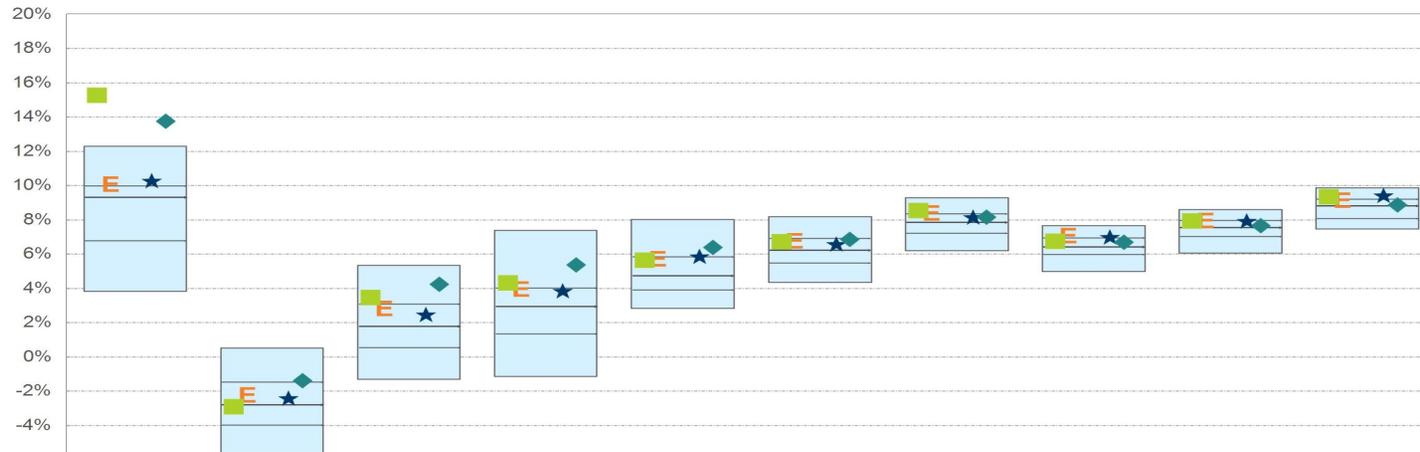


	<u>Policy Weight</u>	<u>Actual Weight</u>	<u>Under/Over Weight</u>	<u>Quarterly Returns</u>		
				<u>Fund</u>	<u>Benchmark</u>	<u>Excess</u>
TOTAL TREASURY/AGENCY	40.66	43.19	2.53	0.37	0.64	(0.27)
TOTAL MORTGAGE	29.38	31.81	2.43	0.98	0.32	0.66
TOTAL INVESTMENT GRADE CREDIT	29.96	25.00	(4.96)	9.80	8.28	1.52



### City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$10 Billion  
Cumulative Periods Ending : June 30, 2020



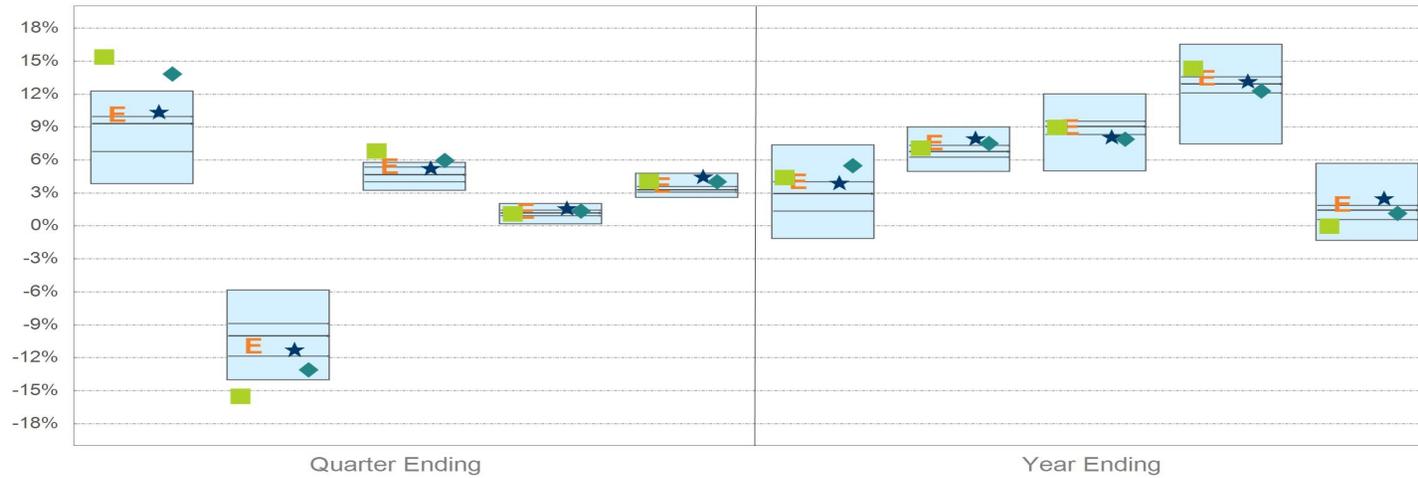
Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	12.29	0.52	5.35	7.39	8.02	8.18	9.28	7.66	8.60	9.87
25th	9.98	-1.47	3.09	4.01	5.84	6.91	8.34	6.95	7.96	9.21
50th	9.31	-2.80	1.79	2.95	4.73	6.23	7.85	6.43	7.54	8.83
75th	6.77	-3.99	0.55	1.35	3.92	5.48	7.22	5.97	7.04	8.08
95th	3.84	-5.64	-1.32	-1.14	2.84	4.35	6.21	4.98	6.06	7.46
No. Of Obs	50	50	50	48	47	47	47	47	47	45
<b>E</b> Total System - Employee	9.92 (27)	-2.37 (33)	2.67 (31)	3.79 (33)	5.56 (29)	6.62 (37)	8.24 (31)	6.91 (29)	7.79 (43)	9.00 (38)
<b>★</b> Employees Policy Bench	10.13 (19)	-2.57 (43)	2.30 (41)	3.70 (39)	5.70 (27)	6.41 (45)	8.00 (37)	6.83 (33)	7.77 (43)	9.27 (23)
<b>■</b> Public Mkt Equiv 25	15.12 (1)	-3.07 (54)	3.30 (19)	4.17 (23)	5.48 (33)	6.55 (43)	8.38 (23)	6.59 (47)	7.76 (43)	9.19 (25)
<b>◆</b> Public Mkt Equiv 35	13.60 (1)	-1.56 (25)	4.07 (11)	5.21 (13)	6.22 (13)	6.69 (35)	8.00 (37)	6.54 (47)	7.49 (54)	8.71 (59)

Wilshire Trust Universe Comparison Service® (TUCS®)



### City of New York Performance Comparison

Total Returns of Master Trusts - Public : Plans > \$10 Billion  
Consecutive Time Periods: June 30, 2020



Percentile Rankings	Jun 20	Mar 20	Dec 19	Sep 19	Jun 19	Jun 20	Jun 19	Jun 18	Jun 17	Jun 16
5th	12.29	-5.85	5.81	2.06	4.82	7.39	9.00	12.02	16.54	5.71
25th	9.98	-8.87	5.34	1.44	3.61	4.01	7.36	9.52	13.58	1.86
50th	9.31	-10.00	4.67	1.17	3.28	2.95	6.77	9.05	12.96	1.44
75th	6.77	-11.87	4.03	0.91	3.08	1.35	6.25	8.33	12.13	0.56
95th	3.84	-14.00	3.26	0.21	2.62	-1.14	4.98	5.00	7.49	-1.32
No. Of Obs	50	50	50	48	48	48	48	49	49	49
<b>E</b> Total System - Employee	9.92 (27)	-11.18 (66)	5.17 (33)	1.09 (60)	3.45 (37)	3.79 (33)	7.36 (25)	8.78 (56)	13.24 (37)	1.76 (33)
<b>★</b> Employees Policy Bench	10.13 (19)	-11.53 (66)	5.00 (37)	1.37 (31)	4.26 (7)	3.70 (39)	7.73 (17)	7.84 (83)	12.93 (50)	2.28 (16)
<b>■</b> Public Mkt Equiv 25	15.12 (1)	-15.79 (99)	6.57 (1)	0.84 (81)	3.83 (13)	4.17 (23)	6.81 (45)	8.70 (58)	14.09 (14)	-0.30 (83)
<b>◆</b> Public Mkt Equiv 35	13.60 (1)	-13.35 (87)	5.72 (9)	1.09 (60)	3.77 (15)	5.21 (13)	7.25 (27)	7.64 (85)	12.03 (77)	0.89 (62)

Wilshire Trust Universe Comparison Service® (TUCS®)

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

INVESTMENT STYLE (EQUITIES)	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
<b>Total US Equities</b>	<b>19,356.50</b>	<b>7,470.68</b>	-	<b>3.86</b>	-	-	<b>7,470.68</b>	<b>3.86</b>
<b>Small Cap Active:</b>	1,176.95	4,388.78	-	37.29	-	-	4,388.78	37.29
Small Cap Growth	-	-	-	-	-	-	-	-
Small Cap Value	216.63	1,143.17	-	52.77	-	-	1,143.17	52.77
Small Cap Core	237.05	1,689.57	-	71.28	-	-	1,689.57	71.28
Small Cap Fundamental Index	723.27	1,556.04	-	21.51	-	-	1,556.04	21.51
<b>Mid Cap Active:</b>	-	-	-	-	-	-	-	-
Mid Cap Growth	-	-	-	-	-	-	-	-
Mid Cap Value	-	-	-	-	-	-	-	-
Mid Cap Core	-	-	-	-	-	-	-	-
Russell 1000 Fundamental	2,714.84	2,193.58	-	8.08	-	-	2,193.58	8.08
Legato (Emerging Manager- Equity)	116.00	576.87	-	49.73	-	-	576.87	49.73
U.S. Environmental Managers	-	-	-	-	-	-	-	-
<b>Total US Active Equities</b>	<b>4,007.79</b>	<b>7,159.23</b>	-	<b>17.86</b>	-	-	<b>7,159.23</b>	<b>17.86</b>
<b>Small Cap Passive:</b>	-	-	-	-	-	-	-	-
Small Cap Passive	323.38	13.59	-	0.42	-	-	13.59	0.42
<b>Mid Cap Passive:</b>	-	-	-	-	-	-	-	-
Mid Cap Passive	-	-	-	-	-	-	-	-
<b>Russell / S&amp;P Passive:</b>	-	-	-	-	-	-	-	-
Russell 1000 Growth Passive	-	-	-	-	-	-	-	-
Russell 1000 Value Passive	-	-	-	-	-	-	-	-
Russell 1000 Core Passive	15,025.33	297.85	-	0.20	-	-	297.85	0.20
Passive Russell 3000	-	-	-	-	-	-	-	-
Passive S&P 500	-	-	-	-	-	-	-	-
Passive Russell Top 200	-	-	-	-	-	-	-	-
<b>Total US Passive Equities</b>	<b>15,348.71</b>	<b>311.45</b>	-	<b>0.20</b>	-	-	<b>311.45</b>	<b>0.20</b>

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
<b>Total International Equities</b>	<b>13,241.05</b>	<b>31,715.56</b>	-	<b>23.95</b>	-	-	<b>31,715.56</b>	<b>23.95</b>
Global Equity	254.92	1,392.14	-	54.61	-	-	1,392.14	54.61
<b>Active Total Global Equities</b>	<b>254.92</b>	<b>1,392.14</b>	-	<b>54.61</b>	-	-	<b>1,392.14</b>	<b>54.61</b>
<b>Active Total World Ex USA:</b>	<b>5,704.74</b>	<b>16,682.87</b>	-	<b>29.24</b>	-	-	<b>16,682.87</b>	<b>29.24</b>
World Ex-USA Large & Mid Active	4,999.51	13,912.50	-	27.83	-	-	13,912.50	27.83
World Ex-USA Small Cap Active	704.87	2,770.37	-	39.30	-	-	2,770.37	39.30
Total World Ex USA	0.36	-	-	-	-	-	-	-
Total Progress Intl.	0.00	-	-	-	-	-	-	-
NON-U.S. Activist	-	-	-	-	-	-	-	-
NON-U.S. Environmental Managers	-	-	-	-	-	-	-	-
Active Emerging Markets	2,837.10	11,385.12	-	40.13	-	-	11,385.12	40.13
International Fund of Funds	462.90	2,234.75	-	48.28	-	-	2,234.75	48.28
<b>Total Active International Equities</b>	<b>9,004.74</b>	<b>30,302.75</b>	-	<b>33.65</b>	-	-	<b>30,302.75</b>	<b>33.65</b>
<b>Int'l Passive Equities:</b>								
World Ex-USA Small Cap Passive	490.14	243.35	-	4.96	-	-	243.35	4.96
World Ex-USA Large & Mid Cap Passive	1,879.16	215.75	-	1.15	-	-	215.75	1.15
Passive Global	-	-	-	-	-	-	-	-
Passive Emerging Markets	1,867.00	509.19	-	2.73	-	-	509.19	2.73
<b>Total Int'l Passive Equities</b>	<b>4,236.31</b>	<b>968.28</b>	-	<b>2.29</b>	-	-	<b>968.28</b>	<b>2.29</b>
REITS Active Equities	-	-	-	-	-	-	-	-
<b>Total Equities</b>	<b>32,852.47</b>	<b>40,578.37</b>	-	<b>12.35</b>	-	-	<b>40,578.37</b>	<b>12.35</b>

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

INVESTMENT STYLE (FIXED INCOME)	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
<b>Total Fixed Income</b>	<b>23,882.07</b>	<b>24,096.38</b>	-	<b>10.09</b>	-	-	<b>24,096.38</b>	<b>10.09</b>
<b>Structured Program:</b>	13,238.64	5,829.19	-	4.40	-	-	5,829.19	4.40
Government Treas/Agency Sector	9,006.19	2,517.89	-	2.80	-	-	2,517.89	2.80
Long Duration Treasury	-	-	-	-	-	-	-	-
Mortgage Sector	1,773.79	907.39	-	5.12	-	-	907.39	5.12
Investment Grade Credit Sector	2,458.66	2,403.91	-	9.78	-	-	2,403.91	9.78
Developing Managers	409.06	721.07	-	17.63	-	-	721.07	17.63
Emerging Managers	120.97	412.20	-	34.07	-	-	412.20	34.07
<b>TIPS:</b>	4,072.73	497.20	-	1.22	-	-	497.20	1.22
Active TIPS Managers	706.83	389.50	-	5.51	-	-	389.50	5.51
Passive TIPS Managers	3,365.90	107.70	-	0.32	-	-	107.70	0.32
High Yield	2,766.04	8,391.43	-	30.34	-	-	8,391.43	30.34
Bank Loans	1,311.25	3,743.22	-	28.55	-	-	3,743.22	28.55
Convertible Bonds	759.02	3,007.92	-	39.63	-	-	3,007.92	39.63
ETI - Access - RBC	156.52	286.55	-	18.31	-	-	286.55	18.31
ETI - AFL-CIO HIT	311.23	1,207.60	-	38.80	-	-	1,207.60	38.80
Other ETI Programs	365.00	-	-	-	-	-	-	-
Short Term (Internal)	371.59	-	-	-	-	-	-	-
<b>Total Public Markets</b>	<b>56,734.54</b>	<b>64,674.75</b>	-	<b>11.40</b>	-	-	<b>64,674.75</b>	<b>11.40</b>

**NEW YORK CITY EMPLOYEE RETIREMENT SYSTEM  
INVESTMENT FEES INCURRED FOR FISCAL YEAR ENDED JUNE 30, 2019**

INVESTMENT STYLE (PRIVATE MARKETS)	Avg. Market Value FY 2019 (\$MM)	Base Mgr. Fees (\$M)	Partnership Expenses (\$M)	Base Mgr. Fees & Partnership Expenses in BPS	Performance / Carry Fees in (\$M)	Performance / Carry Fees in BPS	Total Net All Investment Mgr. Expenses in (\$M)	Total Net All in BPS
Hedge Funds	28.08	98.75	-	35.17	-	-	98.75	35.17
Private Equity	4,671.43	60,903.08	16,244.60	165.15	95,480.96	204.39	172,628.65	369.54
Private Real Estate	3,537.63	32,776.50	12,158.82	127.02	19,646.65	55.54	64,581.97	182.56
Infrastructure	577.89	10,460.85	2,037.67	90.15	1,807.70	31.28	14,306.23	103.19
Opportunistic Fixed Income	1,951.50	18,141.89	7,517.63	131.49	2,968.07	15.21	28,627.59	146.70
<b>Total Private Markets</b>	<b>10,766.52</b>	<b>122,381.07</b>	<b>37,958.73</b>	<b>148.92</b>	<b>119,903.39</b>	<b>111.37</b>	<b>280,243.19</b>	<b>260.29</b>
<b>Total Overall</b>	<b>67,501.05</b>	<b>187,055.82</b>	<b>37,958.73</b>	<b>33.33</b>	<b>119,903.39</b>	<b>17.76</b>	<b>344,917.94</b>	<b>51.10</b>

The overall carried interest and incentive fees paid by NYCERS in Fiscal Year : 17.76 BPS

**General Footnotes:**

1) Private Markets expense data is restricted to the partnerships that have provided expense templates. In the event where there is no expense data, financial statements are prorated for each of the participants of the LP and/or adjusted for cash flows as reported by our custodian bank for carried interest realized.

2) Infrastructure's expense data is based off the total committed amounts rather than current market value due to its early fund life juncture.

# Securities Lending Income

Through June 30, 2020



## NYC EMPLOYEES' RETIREMENT SYSTEM SECURITIES LENDING INCOME

June 30, 2020

	U. S. FIXED INCOME	U. S. EQUITY	INTERNATIONAL EQUITY	TOTAL
1989	-	-	-	-
1990	256,000	-	-	256,000
1991	754,000	48,000	-	802,000
1992	1,467,000	654,000	367,000	2,488,000
1993	3,445,000	1,308,000	732,000	5,485,000
1994	4,261,000	2,744,000	1,082,000	8,087,000
1995	3,727,000	3,191,000	745,000	7,663,000
1996	3,608,000	3,592,000	1,258,000	8,458,000
1997	3,924,000	5,921,000	1,533,000	11,378,000
1998	6,374,000	7,337,000	1,952,000	15,663,000
1999	6,643,000	6,718,000	2,175,000	15,536,000
2000	6,552,000	7,669,000	3,049,000	17,270,000
2001	10,335,000	10,394,000	4,435,000	25,164,000
2002	5,906,000	7,780,000	3,510,000	17,196,000
2003	2,442,000	4,766,000	3,603,000	10,811,000
2004	3,502,000	5,844,000	3,825,000	13,171,000
2005	5,229,000	8,264,000	4,471,000	17,964,000
2006	4,626,000	10,012,000	4,163,000	18,801,000
2007	9,445,000	15,100,000	4,510,000	29,055,000
2008	25,936,000	26,696,000	6,878,000	59,510,000
2009	8,149,000	16,388,000	4,305,000	28,842,000
2010	3,714,000	10,256,000	3,125,000	17,095,000
2011	4,834,000	12,861,000	5,163,000	22,858,000
2012	6,691,000	16,287,000	4,116,000	27,094,000
2013	5,051,000	17,973,000	3,014,000	26,038,000
2014	5,194,000	14,847,000	5,272,000	25,313,000
2015	5,010,000	16,300,000	6,124,000	27,434,000
2016	6,545,000	19,856,000	5,097,000	31,498,000
2017	9,452,000	16,246,000	4,295,000	29,993,000
2018	14,213,961	13,284,175	6,691,938	34,190,073
2019	9,221,733	12,445,312	4,805,756	26,472,801
2020 (6 months)	5,052,486	3,636,130	2,309,852	10,998,468
Since Inception	<u>191,560,180</u>	<u>298,417,617</u>	<u>102,606,546</u>	<u>592,584,343</u>

**New York City  
Employees' Retirement System**

# Appendix A

## Consolidated Performance Report

# Consolidated Performance Report

Through June 30, 2020



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>SYSTEM RETURN SUMMARY</b>																
5	NYCERS-TOTAL PORTFOLIO - GROSS	68,910	100.00	9.92	3.79	(2.37)	7.36	17.87	(2.51)	16.51	3.79	6.62	6.91	9.00	8.56	07/01/1987
	ESTIMATED INVESTMENT FEES			0.08	(0.21)	(0.08)	(0.23)	(0.27)	(0.19)	(0.26)	(0.21)	(0.22)	(0.23)			
	EST MANAGEMENT FEES - PUBLIC MARKET (ACCRUAL)			(0.02)	(0.10)	(0.05)	(0.10)	(0.10)	(0.10)	(0.11)	(0.10)	(0.10)	(0.11)			
	EST MANAGEMENT FEES - ALTERNATIVE MARKETS (CASH)			0.10	(0.11)	(0.03)	(0.13)	(0.17)	(0.09)	(0.15)	(0.11)	(0.12)	(0.12)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL PORTFOLIO - NET MGR			10.00	3.58	(2.46)	7.13	17.60	(2.70)	16.25	3.58	6.40	6.68			
	NYCERS POLICY BENCHMARK			10.12	3.70	(2.57)	7.73	18.42	(2.75)	15.98	3.70	6.41	6.83	9.28		
	EXCESS RETURN			(0.13)	(0.12)	0.11	(0.60)	(0.81)	0.04	0.27	(0.12)	(0.00)	(0.15)	(0.28)		
<b>EQUITY RETURN DETAIL</b>																
18	NYCERS-TOTAL EQUITY (INCLUDING ALTERNATIVES) - GROSS	42,986	62.38	14.23	1.41	(6.31)	7.18	22.90	(4.50)	22.77	1.41	6.93	7.78	10.77	7.51	04/01/2004
	ESTIMATED INVESTMENT FEES			0.17	(0.24)	(0.08)	(0.29)	(0.36)	(0.23)	(0.34)	(0.24)	(0.27)	(0.28)			
	EST MANAGEMENT FEES			0.17	(0.24)	(0.08)	(0.29)	(0.36)	(0.23)	(0.34)	(0.24)	(0.27)	(0.28)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL EQUITY (INCLUDING ALTERNATIVES) - NET MGR			14.40	1.16	(6.39)	6.89	22.54	(4.74)	22.43	1.16	6.66	7.50			
34	NYCERS-TOTAL DOMESTIC EQUITY - GROSS	20,615	29.92	21.47	4.29	(5.27)	8.42	29.99	(5.37)	20.07	4.29	9.07	9.31	13.19	11.10	08/01/1979
	ESTIMATED INVESTMENT FEES			(0.01)	(0.05)	(0.02)	(0.04)	(0.05)	(0.04)	(0.06)	(0.05)	(0.05)	(0.06)			
	NYCERS-TOTAL DOMESTIC EQUITY - NET MGR			21.45	4.25	(5.29)	8.37	29.95	(5.41)	20.01	4.25	9.03	9.25			
	RUSSELL 3000 (DAILY)			22.03	6.53	(3.48)	8.98	31.02	(5.24)	21.13	6.53	10.04	10.03	13.72	11.49	
	EXCESS RETURN			(0.57)	(2.28)	(1.82)	(0.61)	(1.07)	(0.17)	(1.12)	(2.28)	(1.02)	(0.79)	(0.53)	(0.39)	
44	NYCERS-TOTAL SMALL CAP - GROSS	1,248	1.81	27.72	(5.37)	(12.10)	(2.95)	24.73	(10.67)	12.91	(5.37)	2.61	4.78	10.94	7.45	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.14)	(0.34)	(0.19)	(0.28)	(0.36)	(0.26)	(0.33)	(0.34)	(0.32)	(0.31)			
	NYCERS-TOTAL SMALL CAP - NET MGR			27.58	(5.70)	(12.29)	(3.23)	24.37	(10.93)	12.58	(5.70)	2.29	4.47			
	RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	(3.31)	25.52	(11.01)	14.65	(6.63)	2.01	4.29	10.50	7.08	
	EXCESS RETURN			2.16	0.92	0.69	0.08	(1.15)	0.09	(2.07)	0.92	0.28	0.19	0.44	0.37	
54	NYCERS-TOTAL RUSSELL 1000 - GROSS	19,259	27.95	21.06	5.05	(4.76)	9.58	30.46			5.05				8.20	04/01/2018
	ESTIMATED INVESTMENT FEES			(0.01)	(0.02)	(0.01)	(0.02)	(0.02)			(0.02)				(0.02)	
	NYCERS-TOTAL RUSSELL 1000 - NET MGR			21.06	5.03	(4.77)	9.57	30.44			5.03				8.18	
	RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	10.02	31.43			7.48				9.43	
	EXCESS RETURN			(0.77)	(2.45)	(1.96)	(0.45)	(0.99)			(2.45)				(1.25)	
64	NYCERS-TOTAL FUND OF FUNDS - GROSS	108	0.16	25.15	(7.73)	(13.00)	0.49	24.02	(7.77)		(7.73)	2.22			2.33	05/01/2017
	ESTIMATED INVESTMENT FEES			(0.15)	(0.46)	(0.21)	(0.50)	(0.62)	(0.46)		(0.46)	(0.51)			(0.49)	
	NYCERS-TOTAL FUND OF FUNDS - NET MGR			24.99	(8.19)	(13.22)	(0.01)	23.40	(8.23)		(8.19)	1.72			1.84	
	RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	(3.31)	25.52	(11.01)		(6.63)	2.01			2.33	
	EXCESS RETURN			(0.42)	(1.56)	(0.24)	3.30	(2.12)	2.78		(1.56)	(0.29)			(0.49)	

# Consolidated Performance Report

Through June 30, 2020



	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>EQUITY RETURN DETAIL</b>																
76	NYCERS-TOTAL WORLD ex-USA - GROSS	8,661	12.57	20.71	0.69	(6.96)	0.79	25.54	(13.92)	29.77	0.69	4.17	5.12	7.42	5.79	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.06)	(0.20)	(0.09)	(0.22)	(0.26)	(0.19)	(0.32)	(0.20)	(0.22)	(0.25)			
	NYCERS-TOTAL WORLD ex-USA - NET MGR			20.65	0.49	(7.05)	0.57	25.28	(14.11)	29.45	0.49	3.95	4.87			
	WORLD EX-USA CUSTOM BM			16.21	(5.11)	(11.68)	0.16	22.91	(14.68)	26.40	(5.11)	0.82	2.32	6.03	4.87	
	EXCESS RETURN			4.44	5.59	4.63	0.41	2.38	0.57	3.05	5.59	3.13	2.55	1.39	0.92	
86	NYCERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - GROSS	5,671	8.23	22.34	3.59	(4.32)	2.27	26.92	(12.94)	31.04	3.59	6.14	6.10	4.82	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.08)	(0.29)	(0.13)	(0.28)	(0.35)	(0.24)	(0.36)	(0.29)	(0.30)	(0.30)	(0.29)		
	NYCERS-TOTAL WORLD ex-USA LARGE & MID ACTIVE - NET MGR			22.26	3.30	(4.45)	1.98	26.56	(13.18)	30.68	3.30	5.84	5.80	4.53		
	NYC CUSTOM WORLD EX-USA LG & MID ACT INDEX			15.34	(5.42)	(11.49)	1.29	22.49	(14.09)	25.18	(5.42)	0.81	2.05	1.93		
	EXCESS RETURN			6.91	8.72	7.04	0.70	4.07	0.91	5.49	8.72	5.03	3.75	2.60		
96	NYCERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - GROSS	526	0.76	21.98	(2.03)	(10.97)	(6.33)	24.40	(18.45)	34.86	(2.03)	0.98	4.66	6.23	05/01/2013	
	ESTIMATED INVESTMENT FEES			(0.10)	(0.34)	(0.14)	(0.40)	(0.48)	(0.37)	(0.62)	(0.34)	(0.42)	(0.46)			
	NYCERS-TOTAL WORLD ex-USA SMALL CAP ACTIVE - NET MGR			21.88	(2.37)	(11.11)	(6.72)	23.92	(18.82)	34.24	(2.37)	0.57	4.20			
	S&P EPAC SMALL CAP USD NET			20.83	(4.00)	(12.67)	(6.38)	23.71	(18.58)	33.47	(4.00)	0.00	3.21	5.14		
	EXCESS RETURN			1.05	1.63	1.56	(0.35)	0.21	(0.24)	0.78	1.63	0.56	0.99	1.08		
106	NYCERS-TOTAL WORLD ex-USA LARGE CAP PASSIVE - GROSS	1,841	2.67	15.51	(5.00)	(11.10)	1.50	22.57	(13.64)	24.54	(5.00)	1.21	2.23	3.65	02/01/2011	
	ESTIMATED INVESTMENT FEES			(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)			
	NYCERS-TOTAL WORLD ex-USA LARGE CAP PASSIVE - NET MGR			15.50	(5.01)	(11.10)	1.49	22.55	(13.65)	24.53	(5.01)	1.20	2.22			
	NYC CUSTOM WORLD EX US INDEX			15.34	(5.42)	(11.49)	1.29	22.49	(14.09)	24.12	(5.42)	0.84	1.88	3.33		
	EXCESS RETURN			0.16	0.41	0.38	0.20	0.06	0.44	0.41	0.41	0.35	0.34	0.32		
116	NYCERS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - GROSS	622	0.90	21.66	(2.68)	(12.49)	(5.95)	25.53	(17.68)	33.74	(2.68)	1.11	4.30	4.48	02/01/2014	
	ESTIMATED INVESTMENT FEES			(0.01)	(0.03)	(0.02)	(0.05)	(0.05)	(0.04)	(0.08)	(0.03)	(0.04)	(0.04)	(0.04)		
	NYCERS-TOTAL WORLD ex-USA SMALL CAP PASSIVE - NET MGR			21.65	(2.71)	(12.51)	(6.00)	25.48	(17.72)	33.66	(2.71)	1.07	4.26	4.45		
	WORLD EX USA SC PASSIVE CUSTOM BM			21.66	(3.20)	(12.87)	(6.17)	25.41	(18.07)	33.31	(3.20)	0.74	3.94	4.05		
	EXCESS RETURN			(0.02)	0.49	0.37	0.17	0.07	0.35	0.35	0.49	0.32	0.32	0.40		

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<b>EQUITY RETURN DETAIL</b>																
128	NYCERS-TOTAL EMERGING MARKETS - GROSS	3,678	5.34	23.90	(11.29)	(15.59)	4.32	15.07	(14.01)	34.83	(11.29)	(1.95)	1.02	2.71	5.72	09/01/2005
	ESTIMATED INVESTMENT FEES			(0.08)	(0.23)	(0.11)	(0.26)	(0.29)	(0.22)	(0.38)	(0.23)	(0.25)	(0.28)			
	NYCERS-TOTAL EMERGING MARKETS - NET MGR			23.82	(11.51)	(15.70)	4.06	14.78	(14.23)	34.45	(11.51)	(2.21)	0.75			
	NYCERS CUSTOM EM INDEX			20.33	(11.27)	(16.40)	4.05	15.10	(13.38)	34.18	(11.27)	(1.89)	1.27	2.43	5.58	
	EXCESS RETURN			3.49	(0.24)	0.70	0.01	(0.33)	(0.85)	0.27	(0.24)	(0.32)	(0.53)	0.28	0.14	
138	NYCERS-TOTAL ACTIVE EMERGING MARKETS - GROSS	2,120	3.08	26.77	(11.15)	(14.99)	4.48	15.02	(14.78)	36.08	(11.15)	(1.92)	1.21	3.13	6.06	11/01/2005
	ESTIMATED INVESTMENT FEES			(0.14)	(0.37)	(0.18)	(0.42)	(0.46)	(0.34)	(0.60)	(0.37)	(0.40)	(0.44)			
	NYCERS-TOTAL ACTIVE EMERGING MARKETS - NET MGR			26.63	(11.52)	(15.17)	4.06	14.56	(15.12)	35.48	(11.52)	(2.33)	0.77			
	NYCERS CUSTOM EM INDEX			20.33	(11.27)	(16.40)	4.05	15.10	(13.38)	34.18	(11.27)	(1.89)	1.27	2.43	5.46	
	EXCESS RETURN			6.30	(0.25)	1.23	0.01	(0.55)	(1.74)	1.30	(0.25)	(0.44)	(0.50)	0.70	0.60	
148	NYCERS-TOTAL PASSIVE EMERGING MARKETS - GROSS	1,558	2.26	20.43	(11.14)	(16.18)	4.08	15.14	(12.83)	32.97	(11.14)	(1.87)	0.83	(0.93)	04/01/2011	
	ESTIMATED INVESTMENT FEES			(0.01)	(0.02)	(0.01)	(0.03)	(0.03)	(0.03)	(0.07)	(0.02)	(0.03)	(0.04)			
	NYCERS-TOTAL PASSIVE EMERGING MARKETS - NET MGR			20.42	(11.16)	(16.19)	4.05	15.10	(12.86)	32.90	(11.16)	(1.91)	0.79			
	MSCI CUSTOM NYCERS EMERGING MARKETS (NET)			20.33	(11.27)	(16.40)	4.05	15.10	(12.97)	33.03	(11.27)	(1.92)	0.87			
	EXCESS RETURN			0.09	0.11	0.21	0.00	(0.00)	0.11	(0.13)	0.11	0.01	(0.08)			
158	NYCERS-TOTAL INTERNATIONAL FUND OF FUNDS - GROSS	461	0.67	18.65	(1.72)	(9.46)	(0.30)	25.68	(15.83)		(1.72)	2.10		3.02	05/01/2017	
	ESTIMATED INVESTMENT FEES			(0.18)	(0.53)	(0.25)	(0.51)	(0.64)	(0.44)		(0.53)	(0.53)		(0.54)		
	NYCERS-TOTAL INTERNATIONAL FUND OF FUNDS - NET MGR			18.47	(2.25)	(9.71)	(0.81)	25.04	(16.27)		(2.25)	1.56		2.48		
	NYC BLENDED CUSTOM BENCHMARK FOR FOF (ERS)			16.84	(5.98)	(12.36)	0.77	21.73	(14.39)		(5.98)	0.44		1.49		
	EXCESS RETURN			1.63	3.74	2.64	(1.58)	3.30	(1.88)		3.74	1.13		0.99		
168	NYCERS-TOTAL GLOBAL EQUITY - GROSS	296	0.43	16.42	5.84	(3.49)		34.95		5.84				10.18	08/01/2018	
	ESTIMATED INVESTMENT FEES			(0.17)	(0.61)	(0.28)		(0.85)		(0.61)				(0.64)		
	NYCERS-TOTAL GLOBAL EQUITY - NET MGR			16.25	5.24	(3.77)		34.10		5.24				9.54		
	MSCI WORLD INDEX			19.36	2.84	(5.77)		27.67		2.84				3.11		
	EXCESS RETURN			(3.11)	2.39	2.00		6.43		2.39				6.43		

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>ALTERNATIVE EQUITY RETURN DETAIL</b>															
186	NYCERS-TOTAL HEDGE FUND* - NET MGR	4	0.01	(2.11)	(23.15)	(18.41)	11.92	5.19	4.80	3.97	(23.15)	(2.30)	(1.62)	0.92	07/01/2011
	HFRI FUND OF FUNDS COMPOSITE INDEX + 1%			8.17	1.50	(1.08)	2.16	9.47	(3.06)	8.84	1.50	3.28	2.51	3.39	
	EXCESS RETURN			(10.28)	(24.65)	(17.33)	9.75	(4.27)	7.85	(4.87)	(24.65)	(5.58)	(4.13)	(2.47)	
196	NYCERS-TOTAL DIRECT HEDGE FUNDS* - NET MGR	4	0.01	(2.11)	(23.15)	(18.41)	11.92	5.19	4.80	4.30	(23.15)	(2.06)	(1.42)	1.64	01/01/2012
	HFRI FUND OF FUNDS COMPOSITE INDEX + 1%			8.17	1.50	(1.08)	2.16	9.47	(3.06)	8.84	1.50	3.28	2.51	4.22	
	EXCESS RETURN			(10.28)	(24.65)	(17.33)	9.75	(4.27)	7.85	(4.54)	(24.65)	(5.33)	(3.93)	(2.58)	

\* INFORMATION PROVIDED BY ALPHA FRONTIER

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>ALTERNATIVE EQUITY RETURN DETAIL</b>																
205	NYCERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - GROSS	4,677	6.79	(8.09)	2.77	(4.31)	14.66	12.46	16.96	19.65	2.77	11.56	11.45	11.82	11.90	04/01/2004
	ESTIMATED INVESTMENT FEES			(0.15)	(0.94)	(0.35)	(1.13)	(1.16)	(0.91)	(1.07)	(0.94)	(0.98)	(1.01)			
	NYCERS-TOTAL PRIVATE EQUITY (TIME WEIGHTED) - NET MGR			(8.25)	1.83	(4.66)	13.54	11.30	16.05	18.57	1.83	10.58	10.45			
	NYC R3000 +3% LAGGED			(20.26)	(6.37)	(12.38)	12.01	6.00	21.06	22.22	(6.37)	7.12	8.93	13.70	11.72	
	EXCESS RETURN			12.02	8.21	7.72	1.53	5.30	(5.01)	(3.64)	8.21	3.46	1.52	(1.88)	0.18	
215	NYCERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - GROSS	3,808	5.53	(4.97)	2.55	(0.83)	8.47	7.03	10.84	11.58	2.55	7.66	9.21	13.11	8.99	04/01/2004
	ESTIMATED INVESTMENT FEES			1.81	(0.74)	(0.31)	(0.59)	(0.78)	(0.61)	(0.72)	(0.74)	(0.68)	(0.67)			
	NYCERS-TOTAL PRIVATE REAL ESTATE (TIME WEIGHTED) - NET MGR			(3.17)	1.81	(1.13)	7.88	6.25	10.22	10.86	1.81	6.98	8.54			
	NCREIF NFI-ODCE NET + 100 BP			(1.51)	2.34	(0.52)	6.51	5.43	8.43	7.72	2.34	5.76	7.40			
	EXCESS RETURN			(1.66)	(0.53)	(0.62)	1.37	0.82	1.79	3.14	(0.53)	1.22	1.14			
225	NYCERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - GROSS	787	1.14	(1.34)	7.86	0.17	13.15	13.50	15.81	19.07	7.86	13.08	12.61	14.11	12/01/2013	
	ESTIMATED INVESTMENT FEES			(0.38)	(1.71)	(0.73)	(1.33)	(1.52)	(1.33)	(2.97)	(1.71)	(1.75)	(1.77)	(2.87)		
	NYCERS-TOTAL INFRASTRUCTURE (TIME WEIGHTED) - NET MGR			(1.72)	6.15	(0.56)	11.83	11.98	14.49	16.10	6.15	11.33	10.83	11.24		
	CPI + 4%			0.70	4.74	1.50	5.75	6.38	6.02	6.20	4.74	5.82	5.66	5.50		
	EXCESS RETURN			(2.42)	1.41	(2.06)	6.08	5.60	8.47	9.90	1.41	5.51	5.18	5.74		

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	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	FYE 2019	2019	2018	2017	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date	
<b>FIXED INCOME RETURN DETAIL</b>																
237	NYCERS-TOTAL FIXED INCOME - GROSS	25,924	37.62	3.35	7.74	4.81	7.33	9.56	0.09	4.93	7.74	5.46	4.81	5.09	8.16	02/01/1980
	ESTIMATED INVESTMENT FEES			(0.03)	(0.13)	(0.06)	(0.12)	(0.13)	(0.11)	(0.13)	(0.13)	(0.12)	(0.13)			
	EST MANAGEMENT FEES			(0.03)	(0.13)	(0.06)	(0.12)	(0.13)	(0.11)	(0.13)	(0.13)	(0.12)	(0.13)			
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL FIXED INCOME - NET MGR			3.32	7.61	4.75	7.21	9.43	(0.02)	4.80	7.61	5.33	4.68			
245	NYCERS-TOTAL FIXED INCOME (ex ALTERNATIVES & CASH) - GROSS	18,969	27.53	3.49	11.16	8.37	7.88	9.46	(0.36)	4.22	11.16	6.34	5.13	4.77	11/01/2013	
	ESTIMATED INVESTMENT FEES			(0.02)	(0.08)	(0.04)	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)	(0.09)	(0.09)		
	EST MANAGEMENT FEES			(0.02)	(0.08)	(0.04)	(0.07)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)	(0.09)	(0.09)		
	EST INCENTIVE FEES															
	EST OTHER FEES															
	EST FEE OFFSETS															
	NYCERS-TOTAL FIXED INCOME (ex ALTERNATIVES & CASH) - NET MGR			3.48	11.08	8.33	7.81	9.39	(0.43)	4.13	11.08	6.27	5.04	4.68		
253	NYCERS-TOTAL STRUCTURED FIXED INCOME - GROSS	13,427	19.49	2.80	12.39	9.73	8.50	9.33	(0.33)	4.39	12.39	6.74	5.42	5.03	7.75	01/01/1985
	ESTIMATED INVESTMENT FEES			(0.01)	(0.06)	(0.03)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.05)	(0.06)			
	NYCERS-TOTAL STRUCTURED FIXED INCOME - NET MGR			2.79	12.34	9.70	8.45	9.28	(0.37)	4.33	12.34	6.68	5.36			
	NYC CUSTOM STRUCTURED INDEX-ERS			2.80	14.00	11.13	9.51	10.25	(0.19)	4.47	14.00	7.43				
	EXCESS RETURN			(0.01)	(1.66)	(1.43)	(1.06)	(0.96)	(0.19)	(0.14)	(1.66)	(0.75)				
263	NYCERS-TOTAL GOVERNMENT - GROSS	6,201	9.00	0.38	13.89	11.85	8.33	8.37	(0.13)	3.43	13.89	7.06	5.31	4.98	7.30	01/01/1987
	ESTIMATED INVESTMENT FEES			(0.01)	(0.04)	(0.02)	(0.03)	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)	(0.04)			
	NYCERS-TOTAL GOVERNMENT - NET MGR			0.37	13.86	11.83	8.30	8.33	(0.16)	3.40	13.86	7.03	5.28			
	CUSTOM GOVERNMENT BENCHMARK - ERS			0.64	16.96	14.52	10.38	10.40	(0.05)	4.66	16.96	8.54	6.44	5.54		
	EXCESS RETURN			(0.27)	(3.11)	(2.69)	(2.08)	(2.07)	(0.10)	(1.26)	(3.11)	(1.51)	(1.16)	(0.55)		
273	NYCERS-TOTAL MORTGAGE - GROSS	3,636	5.28	0.99	6.09	3.80	6.57	6.85	0.96	2.59	6.09	4.20	3.36	3.51	6.46	03/01/1987
	ESTIMATED INVESTMENT FEES			(0.01)	(0.05)	(0.02)	(0.06)	(0.05)	(0.06)	(0.07)	(0.05)	(0.06)	(0.06)			
	NYCERS-TOTAL MORTGAGE - NET MGR			0.98	6.04	3.77	6.51	6.80	0.90	2.52	6.04	4.14	3.30			
	FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.39	6.68	1.01	2.47	5.96	4.11	3.29	3.09	6.11	
	EXCESS RETURN			0.66	0.07	0.17	0.12	0.13	(0.11)	0.05	0.07	0.03	0.00	0.42	0.34	
283	NYCERS-TOTAL INVESTMENT GRADE CREDIT - GROSS	3,590	5.21	9.83	9.62	5.01	10.51	14.40	(2.18)	6.57	9.62	6.42	5.82	5.71	7.10	01/01/1987
	ESTIMATED INVESTMENT FEES			(0.03)	(0.10)	(0.05)	(0.11)	(0.11)	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)			
	NYCERS-TOTAL INVESTMENT GRADE CREDIT - NET MGR			9.80	9.52	4.96	10.41	14.29	(2.27)	6.47	9.52	6.32	5.72			
	NYC - INVESTMENT GRADE CREDIT			8.28	9.26	5.02	10.13	13.40	(1.90)	6.04	9.26	6.11	5.48	5.16		
	EXCESS RETURN			1.52	0.25	(0.06)	0.28	0.89	(0.37)	0.43	0.25	0.21	0.24	0.54		
293	NYCERS-TOTAL CORE FI- DEVELOPING MGRS - GROSS	603	0.87	4.55	8.34	5.54	8.12	9.89	(0.87)	4.16	8.34	5.24	4.54	4.39	5.16	05/01/2009
	ESTIMATED INVESTMENT FEES			(0.05)	(0.19)	(0.09)	(0.19)	(0.19)	(0.18)	(0.18)	(0.19)	(0.19)	(0.18)			
	NYCERS-TOTAL CORE FI- DEVELOPING MGRS - NET MGR			4.51	8.15	5.45	7.93	9.70	(1.05)	3.98	8.15	5.06	4.36			
	BBG BARC AGG (DLY)			2.90	8.74	6.14	7.87	8.72	0.01	3.54	8.74	5.32	4.30	3.82	4.38	
	EXCESS RETURN			1.61	(0.59)	(0.69)	0.06	0.98	(1.06)	0.44	(0.59)	(0.27)	0.05	0.56	0.78	

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<b>FIXED INCOME RETURN DETAIL</b>															
305						8.29	9.32	0.32	4.66						01/01/1992
						(0.37)	(0.37)	(0.34)	(0.41)						
						7.92	8.95	(0.03)	4.25						
						7.87	8.72	0.01	3.54						
						0.05	0.23	(0.04)	0.71						
315	2,730	3.96	4.14	8.26	5.99	4.84	8.46	(1.26)	3.06	8.26	5.06	3.76	3.58	4.14	06/01/2005
			(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)			
			4.13	8.24	5.98	4.82	8.44	(1.27)	3.04	8.24	5.05	3.75			
			4.24	8.28	6.01	4.84	8.43	(1.26)	3.01	8.28	5.05	3.75	3.52	4.01	
			(0.11)	(0.04)	(0.02)	(0.02)	0.01	(0.01)	0.03	(0.04)	(0.00)	(0.00)	0.06	0.13	
325	1,278	1.85	13.88	5.87	(0.49)	7.01	16.42	(0.29)	13.11	5.87	6.87	6.35	8.16	6.55	06/01/2008
			(0.11)	(0.42)	(0.19)	(0.43)	(0.46)	(0.40)	(0.46)	(0.42)	(0.43)	(0.43)			
			13.77	5.46	(0.68)	6.59	15.95	(0.69)	12.65	5.46	6.44	5.92			
			25.92	17.79	9.64	8.00	22.89	0.65	15.70	17.79	12.99	10.45	11.65	9.30	
			(12.14)	(12.33)	(10.32)	(1.42)	(6.94)	(1.34)	(3.05)	(12.33)	(6.55)	(4.53)	(3.49)	(2.75)	
335	932	1.35	1.05	7.88	5.41	9.91	9.28	1.17	4.08	7.88	5.60	5.54	5.22	7.89	12/01/1984
			(0.04)	(0.16)	(0.08)	(0.20)	(0.17)	(0.20)	(0.20)	(0.16)	(0.18)	(0.19)	(0.21)	(0.10)	
			1.01	7.72	5.34	9.71	9.11	0.98	3.88	7.72	5.41	5.35	5.01	7.79	
			1.44	7.39	4.86	7.20	7.62	1.01	3.10	7.39	4.90	4.00	3.68		
			(0.43)	0.32	0.48	2.51	1.49	(0.03)	0.78	0.32	0.52	1.35	1.34		

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<b>ALTERNATIVE CREDIT INCOME RETURN DETAIL</b>															
347 NYCERS-TOTAL HIGH YIELD - GROSS	2,959	4.29	9.78	0.58	(3.58)	7.61	14.74	(2.38)	7.00	0.58	3.35	4.46	6.64	7.41	10/01/1994
ESTIMATED INVESTMENT FEES			(0.09)	(0.32)	(0.15)	(0.33)	(0.36)	(0.31)	(0.35)	(0.32)	(0.33)	(0.34)			
NYCERS-TOTAL HIGH YIELD - NET MGR			9.70	0.27	(3.73)	7.29	14.38	(2.69)	6.65	0.27	3.02	4.12			
HIGH YIELD CUSTOM BENCHMARK			10.14	(0.00)	(3.83)	7.48	14.32	(2.34)	7.03	(0.00)	3.25	4.35	6.34	6.63	
EXCESS RETURN			(0.44)	0.27	0.10	(0.19)	0.06	(0.35)	(0.38)	0.27	(0.23)	(0.22)	0.30	0.78	
357 NYCERS- TOTAL BANK LOANS - GROSS	1,128	1.64	7.41	(1.45)	(4.40)	3.87	8.35	0.99	4.52	(1.45)	2.34	3.18		3.77	12/01/2012
ESTIMATED INVESTMENT FEES			(0.08)	(0.32)	(0.15)	(0.33)	(0.35)	(0.33)	(0.34)	(0.32)	(0.33)	(0.33)			
NYCERS-TOTAL BANK LOANS - NET MGR			7.33	(1.77)	(4.55)	3.53	8.00	0.66	4.18	(1.77)	2.01	2.85			
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	4.15	8.17	1.14	4.25	(2.27)	2.13	2.94		3.50	
EXCESS RETURN			(2.38)	0.50	0.20	(0.61)	(0.17)	(0.48)	(0.07)	0.50	(0.12)	(0.09)		0.27	
367 NYCERS-TOTAL OPPORTUNISTIC FIXED INCOME - GROSS	2,365	3.43	(4.76)	(1.85)	(4.37)	5.22	5.49	6.46	7.69	(1.85)	3.38	3.89	6.98	6.79	10/01/2007
ESTIMATED INVESTMENT FEES			(0.03)	(0.16)	(0.07)	(0.15)	(0.18)	(0.15)	(0.09)	(0.16)	(0.16)	(0.16)			
NYCERS-TOTAL OPPORTUNISTIC FIXED INCOME - NET MGR			(4.80)	(2.01)	(4.43)	5.08	5.32	6.32	7.60	(2.01)	3.22	3.73			
OPPORTUNISTIC FIXED INCOME JPMGHY / CSFB 50/50 BLEND PLUS 300			11.06	0.88	(3.82)	9.26	14.66	2.36	9.42	0.88	5.56	6.89	8.66	8.49	
EXCESS RETURN			(15.85)	(2.89)	(0.62)	(4.18)	(9.35)	3.95	(1.82)	(2.89)	(2.34)	(3.16)	(1.68)	(1.70)	
<b>CASH SUMMARY</b>															
379 Short Term NYCERS - GROSS	503	0.73	0.05	1.44	0.42	2.36	2.30	1.95	1.09	1.44	1.76	1.30	0.87		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		
Short Term NYCERS - NET MGR			0.05	1.44	0.42	2.36	2.30	1.95	1.09	1.44	1.76	1.30	0.87		
383 Cash Account	0	0.00													
385 Securities Lending	0	0.00													
387 KKR Cash Account	0	0.00													

**New York City  
Employees' Retirement System**

# **Appendix B**

## **Public Markets Manager Performance Detail**

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
<b>EQUITY SUMMARY</b>										
<b>US EQUITY</b>										
BlackRock US SCG R2000	100	0.15	30.61	3.39	(3.18)	28.51	(9.18)	22.32	11.29	(1.54)
RUSSELL 2000 GROWTH DAILY			30.58	3.48	(3.06)	28.48	(9.31)	22.17	11.32	(1.38)
Excess			0.02	(0.09)	(0.12)	0.03	0.12	0.15	(0.03)	(0.16)
BlackRock US SCV R2000	138	0.20	18.76	(16.94)	(23.68)	23.52	(12.77)	7.95	31.61	(7.49)
RUSSELL 2000 VALUE DAILY			18.91	(17.48)	(23.50)	22.39	(12.86)	7.84	31.74	(7.47)
Excess			(0.15)	0.54	(0.19)	1.13	0.09	0.11	(0.13)	(0.02)
RAFI US SCE	1	0.00				20.92	(11.31)	9.63	27.57	(7.09)
RUSSELL 2000 (DAILY)						25.52	(11.01)	14.65	21.31	(4.41)
Excess						(4.60)	(0.29)	(5.01)	6.26	(2.68)
Ceredex US SCV	0	0.00				18.66	(11.97)	10.59	29.34	(4.74)
RUSSELL 2000 VALUE DAILY						22.39	(12.86)	7.84	31.74	(7.47)
Excess						(3.74)	0.89	2.75	(2.40)	2.73
Cooke and Bieler-US SCV	76	0.11	30.08		(16.33)					
RUSSELL 2000 VALUE DAILY			18.91		(23.50)					
Excess			11.18		7.17					
Pzena-US SCV	77	0.11	26.45		(28.65)					
RUSSELL 2000 VALUE DAILY			18.91		(23.50)					
Excess			7.54		(5.16)					
T Rowe Price-US SCV	87	0.13	19.31							
RUSSELL 2000 VALUE DAILY			18.91							
Excess			0.40							

1 Name changed from SSGA MSCI EAFE Small Cap Index 12.2017  
2 Assets were in transition from 9/29/17 to 2/11/19

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
PanAgora-US SCC	127	0.18	26.46							
RUSSELL 2000 (DAILY)			25.42							
Excess			1.04							
Wellington US SCC	260	0.38	28.75	(4.20)	(11.83)	32.98	(10.09)	19.90	19.25	(2.79)
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)	14.65	21.31	(4.41)
Excess			3.33	2.43	1.15	7.46	0.93	5.25	(2.05)	1.63
Wasatch-US SCG	197	0.29	33.71		2.56					
RUSSELL 2000 GROWTH DAILY			30.58		(3.06)					
Excess			3.12		5.62					
William Blair-US SCG	184	0.27	29.90							
RUSSELL 2000 GROWTH DAILY			30.58							
Excess			(0.68)							
BlackRock US LMC R1000 Core	15,872	23.03	21.85	7.60	(2.68)	31.44				
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	31.43				
Excess			0.03	0.12	0.13	0.02				
PIMCO RAFI US LMCE	1,801	2.61	16.40	(7.52)	(15.81)	25.33	(6.90)	16.94	15.71	(3.17)
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)	31.43	(4.78)	21.69	12.05	0.92
Excess			(5.42)	(15.00)	(13.00)	(6.09)	(2.11)	(4.74)	3.66	(4.09)
Legal General US LMCE	1,585	2.30	18.67	(3.32)	(10.78)					
RUSSELL 1000 (DAILY)			21.82	7.48	(2.81)					
Excess			(3.15)	(10.80)	(7.97)					
<b>FUND OF FUNDS</b>										
NYCERS-TOTAL FUND OF FUNDS	108	0.16	24.99	(8.19)	(13.22)	23.40	(8.23)			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)			
Excess			(0.42)	(1.56)	(0.24)	(2.12)	2.78			

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
NYCERS-TOTAL LEGATO	108	0.16	24.99	(8.19)	(13.22)	23.40	(8.17)			
RUSSELL 2000 (DAILY)			25.42	(6.63)	(12.98)	25.52	(11.01)			
Excess			(0.42)	(1.56)	(0.24)	(2.12)	2.84			
<b>NON - US EQUITY</b>										
Causeway WorldxUS LMCC	1,088	1.58	19.26	(10.72)	(18.62)	23.48	(18.52)	27.94	0.69	(2.41)
NYC Developed Value Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	22.77	5.02	(5.68)
Excess			3.92	(5.30)	(7.13)	0.99	(4.43)	5.18	(4.33)	3.28
Sprucegrove WorldxUS LMCC	1,293	1.88	12.31	(17.01)	(20.22)	17.97	(13.93)	27.61	11.10	(9.77)
NYC Developed Value Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	22.77	5.02	(5.68)
Excess			(3.04)	(11.59)	(8.74)	(4.52)	0.16	4.85	6.08	(4.08)
Baillie Gifford WorldxUS LMCC	1,784	2.59	40.78	30.67	19.14	36.40	(12.79)	39.40	2.12	(4.67)
NYC Developed Growth Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	27.77	(3.04)	4.09
Excess			25.44	36.09	30.63	13.91	1.30	11.63	5.16	(8.76)
Walter Scott WorldxUS LMCC	1,506	2.19	15.12	9.00	0.03	28.56	(7.16)	27.94	5.26	0.04
NYC Developed Growth Benchmark			15.34	(5.42)	(11.49)	22.49	(14.09)	27.77	(3.04)	4.09
Excess			(0.22)	14.43	11.52	6.07	6.93	0.17	8.31	(4.05)
Acadian WorldxUS SCC	413	0.60	21.95	(1.72)	(10.57)	24.57	(19.03)	37.50	5.15	8.71
S&P EPAC Small Cap USD NET			20.83	(4.00)	(12.67)	23.71	(18.58)	33.47	1.34	8.58
Excess			1.12	2.28	2.10	0.86	(0.45)	4.03	3.82	0.13
Fidelity WorldxUS SCC	2	0.00					(18.48)	31.22	(0.81)	11.68
S&P EPAC Small Cap USD NET							(18.58)	33.47	1.34	8.58
Excess							0.10	(2.25)	(2.15)	3.09
Algert EAFE SCC	111	0.16	22.01	(4.68)	(13.07)					
MSCI EAFE SMALL CAP NET (DAILY)			19.88	(3.52)	(13.11)					
Excess			2.13	(1.16)	0.04					

1 Name changed from SSGA MSCI EAFE Small Cap Index 12.2017  
2 Assets were in transition from 9/29/17 to 2/11/19

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
SSGA WorldxUS LMC NYC Custom IDX	1,841	2.67	15.50	(5.01)	(11.10)	22.55	(13.65)	24.53	1.28	(0.42)
NYC Custom World ex US Index			15.34	(5.42)	(11.49)	22.49	(14.09)	24.12	1.00	(0.81)
Excess			0.16	0.41	0.38	0.06	0.44	0.41	0.28	0.39
SSGA WorldxUS SC Custom IDX <sup>1</sup>	622	0.90	21.65	(2.75)	(12.51)	25.44	(17.72)	33.66	2.52	9.97
World ex USA SC PASSIVE CUSTOM BM			21.66	(3.20)	(12.87)	25.41	(18.07)	33.31	2.18	9.59
Excess			(0.02)	0.45	0.37	0.03	0.35	0.35	0.33	0.39
<b>EMERGING MARKETS</b>										
Baillie Gifford EM	853	1.24	35.09	3.02	(4.90)	24.53	(14.40)	41.25	4.20	(13.67)
NYCERS Custom EM Index			20.33	(11.27)	(16.40)	15.10	(13.38)	34.18	13.66	(16.80)
Excess			14.75	14.29	11.50	9.43	(1.02)	7.07	(9.46)	3.14
Acadian EM	609	0.88	19.74	(15.98)	(19.34)	12.83	(17.60)	36.05	12.66	(18.25)
NYCERS Custom EM Index			20.33	(11.27)	(16.40)	15.10	(13.38)	34.18	13.66	(16.80)
Excess			(0.59)	(4.71)	(2.94)	(2.28)	(4.22)	1.86	(1.00)	(1.45)
Parametric EM	42	0.06	18.79	(19.26)	(21.41)	10.92	(14.77)	30.24	11.58	(19.39)
NYCERS Custom EM Index			20.33	(11.27)	(16.40)	15.10	(13.38)	34.18	13.66	(16.80)
Excess			(1.54)	(7.99)	(5.01)	(4.18)	(1.38)	(3.95)	(2.09)	(2.59)
DFA EM	616	0.89	25.13	(19.99)	(21.04)	9.04	(13.70)	34.27	20.31	(22.06)
NYCERS Custom EM Index			20.33	(11.27)	(16.40)	15.10	(13.38)	34.18	13.66	(16.80)
Excess			4.80	(8.72)	(4.64)	(6.06)	(0.31)	0.09	6.65	(5.26)
BlackRock MSCI EM Core	1,558	2.26	20.42	(11.16)	(16.19)	15.10	(12.86)	32.90	12.49	(17.92)
MSCI CUSTOM NYCERS EMERGING MARKETS (NET)			20.33	(11.27)	(16.40)	15.10	(12.97)	33.03	12.68	(17.71)
Excess			0.09	0.11	0.21	(0.00)	0.11	(0.13)	(0.19)	(0.21)
<b>INTERNATIONAL FOF</b>										
NYCERS-TOTAL INTERNATIONAL FOF	461	0.67	18.47	(2.25)	(9.71)	25.04	(16.27)			
NYC Blended Custom Benchmark for FoF (ERS)			16.84	(5.98)	(12.36)	21.73	(14.39)			
Excess			1.63	3.74	2.64	3.30	(1.88)			

<sup>1</sup> Name changed from SSGA MSCI EAFE Small Cap Index 12.2017  
<sup>2</sup> Assets were in transition from 9/29/17 to 2/11/19

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
<b>NYCERS-TOTAL INTERNATIONAL BIVIUM</b>										
NYCERS-TOTAL INTERNATIONAL BIVIUM	147	0.21	17.33	(3.93)	(12.45)	25.89	(18.08)			
NYC Blended Custom Benchmark for FoF (ERS)			16.84	(5.98)	(12.36)	21.73	(14.39)			
Excess			0.48	2.06	(0.09)	4.15	(3.69)			
<b>NYCERS-TOTAL INTERNATIONAL FIS</b>										
NYCERS-TOTAL INTERNATIONAL FIS	150	0.22	16.49	(4.52)	(10.56)	21.96	(14.84)			
NYC Blended Custom Benchmark for FoF (ERS)			16.84	(5.98)	(12.36)	21.73	(14.39)			
Excess			(0.36)	1.46	1.79	0.23	(0.45)			
<b>NYCERS-TOTAL INTERNATIONAL LEADING EDGE</b>										
NYCERS-TOTAL INTERNATIONAL LEADING EDGE	164	0.24	21.44	1.56	(6.27)	27.30	(15.78)			
NYC Blended Custom Benchmark for FoF (ERS)			16.84	(5.98)	(12.36)	21.73	(14.39)			
Excess			4.60	7.55	6.09	5.56	(1.39)			
<b>GLOBAL EQUITY</b>										
Fiera-Global	296	0.43	16.25	5.24	(3.77)	34.10				
MSCI World Index			19.36	2.84	(5.77)	27.67				
Excess			(3.11)	2.39	2.00	6.43				
<b>FIXED INCOME SUMMARY</b>										
<b>STRUCTURED FIXED INCOME</b>										
Neuberger Berman Mortgages	573	0.83	0.59	5.39	3.27	6.34	0.82	2.43	1.50	1.42
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.68	1.01	2.47	1.59	1.56
Excess			0.27	(0.57)	(0.34)	(0.34)	(0.19)	(0.04)	(0.09)	(0.14)
BlackRock Mortgages	3,063	4.45	1.09	6.25	3.93	7.00	0.96	2.69	2.17	1.67
FTSE MORTGAGE INDEX			0.32	5.96	3.60	6.68	1.01	2.47	1.59	1.56
Excess			0.77	0.28	0.32	0.33	(0.05)	0.22	0.58	0.11
Prudential Credit	855	1.24	9.17	9.07	4.75	13.56	(1.91)	6.17	5.89	(0.32)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			0.89	(0.20)	(0.27)	0.17	(0.01)	0.13	0.33	0.33

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
T Rowe Price Credit	1,351	1.96	10.13	9.18	4.39	14.52	(2.41)	6.85	6.00	0.13
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.85	(0.08)	(0.62)	1.13	(0.51)	0.81	0.44	0.78
BlackRock Credit	719	1.04	9.31	9.49	5.16	13.98	(2.00)	6.38	5.50	(0.83)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.03	0.22	0.15	0.59	(0.10)	0.35	(0.06)	(0.18)
Taplin Credit	229	0.33	10.19	9.65	4.82	15.75	(3.47)	6.91	9.51	(4.37)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.91	0.39	(0.19)	2.35	(1.56)	0.87	3.95	(3.73)
Barrow Hanley Credit	436	0.63	10.27	10.72	6.09	14.78	(2.37)	6.06	5.88	(0.09)
NYC - Investment Grade Credit			8.28	9.26	5.02	13.40	(1.90)	6.04	5.56	(0.65)
Excess			1.99	1.45	1.07	1.38	(0.46)	0.02	0.32	0.56
BlackRock LI Treasury	1,099	1.59	0.56	16.45	13.94	10.41	(0.19)	4.76	1.24	0.69
NYC - Treasury Agency Plus Five			0.74	17.08	14.63	10.40	(0.05)	4.66	1.21	0.72
Excess			(0.19)	(0.63)	(0.69)	0.01	(0.14)	0.10	0.02	(0.03)
SSGA LI Treasury	3,043	4.42	0.38	17.11	14.43	10.53	(0.18)	4.93	1.57	0.46
NYC - Treasury Agency Plus Five			0.74	17.08	14.63	10.40	(0.05)	4.66	1.21	0.72
Excess			(0.37)	0.03	(0.20)	0.13	(0.13)	0.28	0.36	(0.26)
SSGA ST Treasury 1-3Y	2,052	2.98	0.13	4.06	2.93	3.54	1.52	0.40		
FTSE USBIG Treasury 1-3 Y Index			0.27	4.06	2.94	3.56	1.56	0.42		
Excess			(0.13)	(0.01)	(0.01)	(0.02)	(0.04)	(0.02)		
SSGA IT Treasury 1-10Y <sup>2</sup>	7	0.01	0.43	7.03	5.76	5.09	2.05			
FTSE USBIG Treasury/Agency 1-10 y			0.58	6.99	5.74	5.18	1.42			
Excess			(0.15)	0.03	0.02	(0.09)	0.63			

<sup>1</sup> Name changed from SSGA MSCI EAFE Small Cap Index 12.2017  
<sup>2</sup> Assets were in transition from 9/29/17 to 2/11/19

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
<b>HIGH YIELD</b>										
Oaktree High Yield	407	0.59	9.81	0.57	(3.30)	13.98	(3.46)	5.78	14.91	(4.77)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.33)	0.57	0.53	(0.34)	(1.38)	(1.72)	(2.22)	(0.33)
<b>Pinebridge High Yield</b>										
Pinebridge High Yield	236	0.34								
ICE BofA US High Yield Index										
Excess										
<b>Neuberger Berman High Yield</b>										
Neuberger Berman High Yield	435	0.63	9.61	(0.26)	(4.39)	14.15	(2.00)	5.78	14.70	(4.00)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.53)	(0.26)	(0.56)	(0.17)	0.08	(1.73)	(2.43)	0.43
<b>Stone Harbor High Yield</b>										
Stone Harbor High Yield	15	0.02				14.12	(2.62)	5.85	12.98	(4.54)
BBG BARC US HY - 2% Issr Cap						14.32	(2.08)	7.50	17.13	(4.43)
Excess						(0.20)	(0.53)	(1.65)	(4.15)	(0.10)
<b>T Rowe Price High Yield</b>										
T Rowe Price High Yield	658	0.96	10.05	0.88	(3.64)	15.63	(2.36)	7.03	12.32	(1.28)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.09)	0.88	0.19	1.32	(0.28)	(0.47)	(4.81)	3.16
<b>Shenkman High Yield</b>										
Shenkman High Yield	378	0.55	9.27	0.86	(3.28)	14.32	(3.21)	6.79	11.86	(2.24)
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32	(2.08)	7.50	17.13	(4.43)
Excess			(0.87)	0.86	0.55	0.01	(1.12)	(0.71)	(5.27)	2.20
<b>Eaton Vance High Yield</b>										
Eaton Vance High Yield	297	0.43	9.28	(0.28)	(4.35)	14.56				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			(0.86)	(0.28)	(0.52)	0.24				
<b>Mackay Shields High Yield</b>										
Mackay Shields High Yield	230	0.33	10.49	2.30	(1.81)	14.19				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			0.35	2.30	2.03	(0.13)				

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
Nomura High Yield	303	0.44	9.99	(1.40)	(4.85)	13.37				
BBG BARC US HY - 2% Issr Cap			10.14	(0.00)	(3.83)	14.32				
Excess			(0.15)	(1.40)	(1.01)	(0.95)				
<b>BANK LOANS</b>										
Barings Bank Loans	310	0.45	7.33	(3.08)	(5.83)	7.82	0.38	4.47	8.46	0.12
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	8.17	1.14	4.25	9.88	(0.38)
Excess			(2.38)	(0.81)	(1.07)	(0.36)	(0.76)	0.22	(1.42)	0.50
Credit Suisse Bank Loans	329	0.48	7.42	(0.96)	(4.00)	8.31	1.04	4.66	8.95	2.57
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	8.17	1.14	4.25	9.88	(0.38)
Excess			(2.29)	1.31	0.75	0.13	(0.10)	0.41	(0.92)	2.96
Guggenheim Bank Loans	1	0.00					1.24	3.82	7.84	2.07
CSFB LEVERAGED LOAN INDEX							1.14	4.25	9.88	(0.38)
Excess							0.10	(0.43)	(2.03)	2.45
Invesco Bank Loans	291	0.42	6.96	(1.41)	(3.96)	8.60	0.17	3.64	9.68	(0.91)
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)	8.17	1.14	4.25	9.88	(0.38)
Excess			(2.75)	0.85	0.80	0.42	(0.97)	(0.61)	(0.20)	(0.53)
Bain Bank Loans	196	0.29	7.77	(1.62)	(4.41)					
CSFB LEVERAGED LOAN INDEX			9.71	(2.27)	(4.76)					
Excess			(1.94)	0.65	0.35					
<b>TIPS</b>										
SSGA TIPS	1,931	2.80	4.08	8.18	5.92	8.44	(1.30)	3.06	4.73	(1.35)
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			4.24	8.28	6.01	8.43	(1.26)	3.01	4.68	(1.44)
Excess			(0.16)	(0.10)	(0.08)	0.02	(0.04)	0.05	0.04	0.09
BlackRock TIPS	798	1.16	4.25	8.39	6.12	8.42	(1.18)	2.98	4.71	(1.24)
BBG BARC Gbl Inf-Lk: US TIPS (Dly)			4.24	8.28	6.01	8.43	(1.26)	3.01	4.68	(1.44)
Excess			0.01	0.11	0.12	(0.01)	0.08	(0.02)	0.02	0.20

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
<b>CONVERTIBLE BONDS</b>										
Advent Convertible Bonds	821	1.19	13.28	4.39	0.31	12.71	(1.64)	7.75	7.35	(1.92)
ICE BofA US Convertibles - Yield Alter			12.47	2.92	(3.06)	15.40	(0.42)	9.45	9.96	(8.77)
Excess			0.80	1.47	3.37	(2.69)	(1.22)	(1.69)	(2.61)	6.85
<b>Victory Convertible Bonds</b>										
Victory Convertible Bonds	457	0.66	14.67	7.14	(1.79)	20.49	0.66	20.54	6.47	(0.24)
ICE BofA All IG US Convertibles			8.35	1.15	(6.78)	20.88	3.35	20.99	14.23	1.68
Excess			6.32	5.98	4.99	(0.39)	(2.69)	(0.45)	(7.77)	(1.92)
<b>CORE FI - EMERGING MANAGERS</b>										
<b>New Century-Core Plus</b>										
New Century-Core Plus	0	0.00				8.59	0.17	4.24	1.98	(0.04)
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						(0.13)	0.16	0.70	(0.67)	(0.59)
<b>Optimum Quantvest-Core</b>										
Optimum Quantvest-Core	0	0.00				7.88	0.22	2.56		
BBG BARC Agg (Dly)						8.72	0.01	3.54		
Excess						(0.84)	0.21	(0.98)		
<b>Integrity-Core</b>										
Integrity-Core	0	0.00				8.56	0.01	3.92		
BBG BARC Agg (Dly)						8.72	0.01	3.54		
Excess						(0.16)	(0.00)	0.38		
<b>Pugh-Core Plus</b>										
Pugh-Core Plus	0	0.00				8.92	(0.39)	4.25	3.13	0.69
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						0.21	(0.40)	0.71	0.49	0.14
<b>Ramirez-Core</b>										
Ramirez-Core	0	0.00				9.63	0.04	4.80	3.47	0.94
BBG BARC Agg (Dly)						8.72	0.01	3.54	2.65	0.55
Excess						0.91	0.03	1.25	0.82	0.39

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
<b>CORE FI - DEVELOPING MANAGERS</b>										
LM Capital-Core Plus	350	0.51	4.30	8.40	5.73	9.70	(1.14)	3.85	3.47	0.83
BBG BARC Agg (Dly)			2.90	8.74	6.14	8.72	0.01	3.54	2.65	0.55
Excess			1.40	(0.34)	(0.41)	0.99	(1.15)	0.31	0.82	0.28
GIA-Core Plus	200	0.29	5.20	7.58	4.78	9.69	(0.81)	4.35	4.00	
BBG BARC Agg (Dly)			2.90	8.74	6.14	8.72	0.01	3.54	2.65	
Excess			2.30	(1.16)	(1.35)	0.97	(0.82)	0.80	1.35	
Pugh-CorePlus	52	0.08								
BBG BARC Agg (Dly)										
Excess										
<b>ECONOMICALLY TARGETED INVESTMENTS</b>										
AFL-CIO Housing Investment Trust	351	0.51	1.80	7.03	5.29	7.78	0.16	3.17	1.94	1.13
BBG BARC Agg (Dly)			2.90	8.74	6.14	8.72	0.01	3.54	2.65	0.55
Excess			(1.10)	(1.70)	(0.85)	(0.94)	0.15	(0.38)	(0.71)	0.58
RBC Access MBS	165	0.24	2.04	7.55	5.19	7.21	0.49	2.64	1.61	1.83
Access RBC Benchmark			0.65	6.29	4.45	6.05	1.17	1.96	1.52	1.40
Excess			1.39	1.26	0.74	1.16	(0.69)	0.69	0.09	0.43
CPC Construction Facility	9	0.01	0.71	3.17	0.30	5.04	4.14	6.07	(3.95)	12.90
CPC CONST BENCHMARK			0.65	3.44	1.49	4.09	3.99	3.34	3.03	2.90
Excess			0.06	(0.26)	(1.19)	0.95	0.15	2.73	(6.99)	10.00
BOA PPAR FNMA	24	0.04	(1.18)	9.05	4.93	13.54	2.33	5.21	4.07	42.03
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.86)	1.85	0.78	5.74	0.47	1.60	1.69	39.53

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
BOA PPAR GNMA	16	0.02	0.51	6.70	5.55	8.44	2.42	4.08	3.13	8.04
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.15	0.70	1.77	1.70	0.79	1.56	0.85	6.03
Citibank PPAR FNMA	27	0.04	(0.40)	15.33	5.73	19.71	2.63	5.26	3.71	6.69
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.07)	8.12	1.58	11.91	0.77	1.65	1.33	4.20
Citibank PPAR GNMA	6	0.01	0.79	5.89	5.89	5.33	1.90	3.10	2.78	5.08
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.43	(0.10)	2.11	(1.41)	0.27	0.57	0.50	3.06
CFSB PPAR GNMA	3	0.00	0.81	5.97	5.63	5.91	0.99	3.83	3.21	5.90
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.45	(0.03)	1.85	(0.82)	(0.65)	1.30	0.93	3.88
CPC PPAR FNMA	94	0.14	(1.17)	7.80	4.72	13.18	2.31	5.06	6.15	8.96
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.84)	0.60	0.57	5.38	0.45	1.45	3.77	6.46
CPC PPAR GNMA	76	0.11	0.85	5.56	5.63	4.76	0.86	2.58	2.86	5.08
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.49	(0.44)	1.85	(1.97)	(0.77)	0.05	0.58	3.07
ECLF PPAR FNMA	3	0.00								
FNMA Plus 85bps										
Excess										
JPMC PPAR FNMA	97	0.14	0.16	10.58	6.31	14.68	1.68	9.96	7.94	6.18
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(0.51)	3.37	2.16	6.88	(0.18)	6.35	5.56	3.68

1 Name changed from SSGA MSCI EAFE Small Cap Index 12.2017  
2 Assets were in transition from 9/29/17 to 2/11/19

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
JPMC PPAR GNMA	32	0.05	1.15	6.64	5.84	5.77	1.99	2.63	2.99	6.04
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.79	0.64	2.06	(0.97)	0.36	0.11	0.72	4.03
LIIF PPAR FNMA	13	0.02	(1.11)	11.85	5.04	16.35	2.27	9.55	5.03	6.29
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			(1.78)	4.64	0.89	8.55	0.41	5.94	2.65	3.79
LIIF PPAR GNMA	3	0.00	0.85	5.68	4.50	5.54	2.53	2.52	3.88	3.92
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.49	(0.32)	0.72	(1.19)	0.89	(0.01)	1.61	1.91
LISC PPAR FNMA	2	0.00	(1.42)	14.27	9.13	14.95				
FNMA Plus 85bps			0.67	7.21	4.15	7.80				
Excess			(2.09)	7.06	4.98	7.15				
NCBCI PPAR FNMA	0	0.00	1.14	6.88	5.87	4.08	2.00	1.75	3.46	4.97
FNMA Plus 85bps			0.67	7.21	4.15	7.80	1.86	3.61	2.38	2.50
Excess			0.47	(0.33)	1.71	(3.72)	0.15	(1.86)	1.07	2.47
NCBCI PPAR GNMA	2	0.00	1.16	5.39	5.61	3.69	1.23	3.01	3.51	5.53
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			0.80	(0.61)	1.83	(3.04)	(0.41)	0.48	1.23	3.52
NHS PPAR GNMA	0	0.00	0.15	3.60	4.46	2.90	0.54	(2.93)	3.58	4.90
GNMA Plus 65bps			0.36	6.00	3.78	6.73	1.63	2.53	2.28	2.02
Excess			(0.21)	(2.40)	0.69	(3.84)	(1.09)	(5.46)	1.30	2.89
Wells Fargo PPAR FNMA	10	0.01	(1.42)	9.39	4.59	21.71				
FNMA Plus 85bps			0.67	7.21	4.15	7.80				
Excess			(2.09)	2.18	0.44	13.91				

# Public Markets Manager Performance Detail



Net Returns Through June 30, 2020

	Market Value (\$MM)	% of Total	3 Month	FYTD	CYTD	2019	2018	2017	2016	2015
<b>CASH</b>										
Short Term NYCERS	503	0.73	0.05	1.44	0.42	2.30	1.95	1.09	0.76	0.31
ICE BofA US 3-Month Treasury Bill			0.02	1.63	0.60	2.28	1.87	0.86	0.33	0.05
Excess			0.03	(0.19)	(0.18)	0.01	0.07	0.23	0.44	0.26
Cash Account	0	0.00								
Securities Lending	0	0.00								

**New York City  
Employees' Retirement System**

# Appendix C

## Alternative Assets Manager Performance Detail

# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
<b>TOTAL PRIVATE EQUITY</b>		12,292,776,649	10,180,786,334	9,711,879,533	4,617,317,461	1.41	9.3%
<b>TOTAL LIQUIDATED</b>		1,103,611,149	1,239,616,225	1,501,553,901	303,338	1.21	5.5%
<b>TOTAL ACTIVE</b>		11,189,165,500	8,941,170,108	8,210,325,632	4,617,014,123	1.43	9.9%

<b>TOTAL ACTIVE</b>							
Cypress Merchant Banking Partners II, L.P.	1999	45,172,972	53,944,269	50,584,154	24,183	0.94	-1.2%
Lincolnshire Equity Fund II, L.P.	1999	18,397,347	19,261,466	37,755,344	339,389	1.98	24.6%
SCP Private Equity Partners II, L.P.	2000	27,442,463	30,827,225	10,819,873	1,305,187	0.39	-12.0%
Solera Partners, L.P.	2000	19,999,779	26,739,017	41,635,156	155,897	1.56	7.4%
Apollo Investment Fund V, L.P.	2001	40,000,000	62,528,643	123,295,865	345,286	1.98	38.6%
RRE Ventures III, L.P.	2001	19,999,999	26,323,260	34,078,940	1,070,321	1.34	5.4%
Thomas, Mc Nerney & Partners, L.P.	2002	20,000,000	20,000,000	10,058,105	2,289,408	0.62	-7.3%
Ares Corporate Opportunities Fund, L.P.	2003	45,000,000	53,984,770	80,476,920	116,250	1.49	13.1%
Blackstone Capital Partners IV, L.P.	2003	34,418,762	38,818,072	100,181,154	3,872	2.58	39.7%
FS Equity Partners V, L.P.	2003	25,000,000	21,419,958	41,861,469	1,448,989	2.02	15.3%
FdG Capital Partners II LP	2004	35,000,000	37,714,408	43,600,092	2,046,805	1.21	3.7%
Lincolnshire Equity Fund III, L.P.	2004	55,000,000	55,006,941	78,246,227	20,586,813	1.80	28.0%
Markstone Capital Partners, LP	2004	40,000,000	46,899,103	19,822,611	272,215	0.43	-38.4%
New York/Fairview Emerging Managers Fund, L.P.-Tranche 1	2004	32,000,000	32,862,069	32,638,618	3,427,513	1.10	1.6%
Yucaipa American Alliance Fund I, LP	2004	90,000,000	114,094,892	137,148,067	6,234,228	1.26	4.6%
Blackstone Mezzanine Partners II, L.P.	2005	21,346,698	23,488,553	31,752,958	292,735	1.36	8.0%
JP Morgan Fleming (Tranche A)	2005	43,000,000	42,970,926	45,698,840	9,400,928	1.28	4.6%
NB New York City Growth Fund	2005	34,819,694	34,819,694	43,953,118	(491,971)	1.25	3.6%
New Mountain Partners II, L.P.	2005	46,451,615	42,071,397	81,045,604	723,899	1.94	13.6%
Palladium Equity Partners III, L.P.	2005	35,000,000	36,490,865	69,842,472	681,855	1.93	16.1%
Psilos Group Partners III, L.P.	2005	35,000,000	37,205,819	17,948,760	32,932,158	1.37	4.2%
Snow Phipps Group, L.P.	2005	20,000,000	23,827,483	20,914,615	6,392,685	1.15	3.1%
USPF II Institutional Fund, L.P.	2005	65,000,000	85,734,194	99,947,469	9,107,224	1.27	4.0%
Aisling Capital II, LP	2006	6,680,102	7,854,064	7,775,060	300,551	1.03	0.5%
Ampersand 2006	2006	25,000,000	25,000,000	55,468,323	19,884,774	3.01	16.8%
Apollo Investment Fund VI, L.P.	2006	90,000,000	115,838,240	173,338,314	1,712,766	1.51	8.7%

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

# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Ares Corporate Opportunities Fund II, L.P.	2006	50,000,000	54,760,870	91,354,618	86,418	1.67	13.1%
Arsenal Capital Partners II, LP	2006	22,500,000	27,438,944	53,113,671	193,886	1.94	12.1%
Avista Capital Partners, L.P.	2006	45,000,000	59,165,902	72,036,625	639,455	1.23	4.4%
BDCM Opportunity Fund II, L.P.	2006	25,000,000	37,091,747	77,430,266	22,260,627	2.69	18.3%
Blackstone Capital Partners V, L.P.	2006	121,624,827	129,501,303	205,725,229	3,501,417	1.62	7.9%
Catterton Partners VI, L.P.	2006	45,000,000	51,243,868	80,464,404	13,858,732	1.84	11.3%
Fairview Ventures Fund III, L.P.	2006	25,000,000	26,747,799	40,243,613	16,739,523	2.13	13.9%
First Reserve Fund XI, L.P.	2006	45,000,000	47,820,682	30,351,088	(13,432)	0.63	-10.7%
GF Capital Private Equity Fund, L.P.	2006	20,000,000	20,729,120	26,863,570	8,794,744	1.72	11.6%
InterMedia Partners VII, L.P.	2006	25,000,000	29,229,224	29,591,747	(31,027)	1.01	0.2%
Landmark Equity Partners XIII, L.P.	2006	50,000,000	48,059,342	61,032,858	2,519,819	1.32	5.4%
MidOcean Partners III, L.P.	2006	58,234,777	69,571,229	136,605,728	7,389,506	2.07	12.9%
RRE Ventures IV, L.P.	2006	35,000,000	44,486,047	32,241,398	27,949,448	1.35	4.2%
Terra Firma Capital Partners III, L.P.	2006	52,767,569	53,496,701	20,738,439	3,386,875	0.45	-9.5%
The Fourth Cinven Fund	2006	69,453,013	72,910,892	105,361,467	(43,654)	1.44	7.4%
Thomas, McNerney & Partners II, L.P.	2006	25,000,000	25,349,167	55,110,685	2,314,076	2.27	16.7%
Carlyle Partners V, L.P.	2007	70,000,000	72,144,879	119,299,326	8,598,817	1.77	13.6%
Co-Investment Partners Europe, L.P.	2007	39,950,623	42,601,283	52,846,040	922,308	1.26	4.5%
Constellation Venture Capital III, L.P.	2007	25,000,000	28,826,564	14,520,432	7,428,810	0.76	-4.2%
FTVentures III, LP	2007	24,201,990	26,802,873	51,561,752	5,710,194	2.14	15.6%
GSO Capital Opportunities Fund LP	2007	45,000,000	67,377,298	95,627,284	459,913	1.43	17.3%
Halyard Capital Fund II, L.P.	2007	25,000,000	21,642,962	26,458,033	5,694,238	1.49	6.9%
Montreux Equity Partners IV, L.P.	2007	20,000,000	20,000,000	11,044,696	15,575,155	1.33	4.1%
Nautic Partners VI, L.P.	2007	30,000,000	33,578,877	72,966,765	6,092,073	2.35	18.6%
New Mountain Partners III, L.P.	2007	100,000,000	101,866,058	135,606,735	69,284,489	2.01	12.8%
PCG Clean Energy & Technology Fund (East), LLC	2007	90,000,000	81,429,594	20,959,123	11,248,482	0.40	-12.2%
Pegasus Partners IV, L.P.	2007	30,000,000	36,450,033	27,600,933	6,152,133	0.93	-1.4%
Pine Brook Capital Partners, L.P.	2007	30,000,000	34,068,301	42,439,115	1,268,286	1.28	6.8%
Quaker BioVentures II, L.P.	2007	20,000,000	19,258,740	17,160,674	2,643,614	1.03	0.6%
RLJ Equity Partners Fund I, L.P.	2007	20,000,000	21,991,729	25,278,082	8,989,110	1.56	9.3%
SCP Vitalife Partners II Fund	2007	20,000,000	20,099,698	1,579	7,872,374	0.39	-10.1%

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

# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
StarVest Partners II, L.P.	2007	25,000,000	25,159,680	11,051,008	12,419,123	0.93	-1.0%
Trilantic Capital Partners IV L.P.	2007	69,028,637	72,053,009	106,275,810	5,679,456	1.55	13.3%
United States Power Fund III, L.P.	2007	65,000,000	76,903,642	79,335,129	14,034,471	1.21	3.5%
Vista Equity Partners Fund III, L.P.	2007	30,000,000	32,211,364	76,619,901	2,388,225	2.45	26.9%
Aisling Capital III, LP	2008	14,000,000	15,791,357	36,200,825	706,520	2.34	25.9%
Apollo Investment Fund VII, L.P.	2008	100,000,000	122,607,930	194,234,435	8,994,648	1.66	22.2%
Ares Corporate Opportunities Fund III, L.P.	2008	75,000,000	91,601,878	181,997,287	10,769,094	2.10	20.1%
Avista Capital Partners II, L.P.	2008	75,000,000	98,630,998	154,561,847	5,706,228	1.62	14.4%
Blue Wolf Capital Fund II, L.P.	2008	25,000,000	27,167,904	31,424,990	10,115,606	1.53	9.2%
Bridgepoint Europe IV	2008	26,651,054	27,047,550	36,527,697	3,811,459	1.49	9.5%
Crestview Partners II, L.P.	2008	50,000,000	58,173,241	75,111,544	17,311,065	1.59	11.8%
First Reserve Fund XII, L.P.	2008	45,000,000	49,986,866	24,984,152	4,956,451	0.60	-12.0%
GCM Grosvenor NYCERS Emerging Manager Fund, L.P.	2008	116,737,374	145,295,666	132,122,018	76,333,784	1.43	10.0%
GI Partners Fund III L.P.	2008	45,000,000	48,618,007	75,820,271	464,922	1.57	13.0%
Landmark Equity Partners XIV, L.P.	2008	109,120,000	106,281,905	122,818,826	16,801,573	1.31	9.5%
Leeds Equity Partners V, L.P.	2008	60,000,000	56,925,672	100,736,082	40,347,825	2.48	19.1%
Levine Leichtman Capital Partners IV, L.P.	2008	35,000,000	37,477,097	59,342,785	2,954,590	1.66	18.0%
New York/Fairview Emerging Managers Fund, L.P.-Tranche 2	2008	45,000,000	44,996,824	54,273,303	54,192,181	2.41	17.9%
NGN BioMed Opportunity II, L.P.	2008	20,000,000	19,151,821	13,346,209	10,514,622	1.25	3.2%
Onex Partners III LP	2008	75,000,000	82,021,561	109,150,924	16,167,791	1.53	10.6%
Paladin III (NY City), L.P.	2008	30,000,000	41,065,348	29,908,122	50,923,416	1.97	12.0%
Riverstone/Carlyle Global Energy & Power Fund IV, L.P.	2008	45,000,000	52,130,513	49,839,670	4,230,492	1.04	1.0%
Yucaipa American Alliance Fund II, LP	2008	120,000,000	164,699,094	158,448,212	105,253,991	1.60	8.5%
Yucaipa Corporate Initiatives Fund II, LP	2008	42,092,788	41,334,383	24,681,671	8,565,884	0.80	-3.2%
FS Equity Partners VI, L.P.	2009	32,500,000	32,686,538	77,082,403	15,960,061	2.85	22.9%
Lexington Capital Partners VII, L.P.	2009	50,000,000	44,615,537	59,452,193	10,358,588	1.56	13.7%
Lincolnshire Equity Fund IV, L.P.	2009	27,500,000	29,485,262	33,966,934	10,913,125	1.52	10.0%
Welsh, Carson, Anderson & Stowe XI, L.P.	2009	40,000,000	40,000,000	52,090,182	11,573,357	1.59	11.4%
JP Morgan Fleming (Tranche B)	2010	35,000,000	36,141,021	29,048,097	27,575,850	1.57	9.5%
Snow Phipps II, L.P.	2010	30,000,000	35,891,999	32,434,602	16,200,413	1.36	8.8%
Trident V, L.P.	2010	110,000,000	128,329,564	144,999,438	61,928,112	1.61	10.7%

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

# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
American Securities Partners VI, L.P.	2011	80,000,000	85,908,470	129,018,407	35,253,721	1.91	20.7%
Ampersand 2011	2011	25,000,000	25,000,000	46,117,873	30,415,541	3.06	21.7%
AXA Secondary Fund V B L.P.	2011	120,000,000	98,870,221	157,109,462	1,474,642	1.60	15.5%
BC European Capital IX	2011	132,133,462	146,211,707	138,406,454	82,843,880	1.51	11.3%
BDCM Opportunity Fund III, L.P.	2011	45,000,000	65,881,415	32,287,079	60,552,460	1.41	8.4%
Blackstone Capital Partners VI, L.P.	2011	120,000,000	127,987,911	114,135,328	65,859,652	1.41	9.2%
EQT VI, L.P.	2011	106,490,603	111,919,398	154,971,932	31,426,011	1.67	13.3%
Pegasus Partners V, L.P.	2011	20,789,916	25,856,859	22,559,841	17,848,366	1.56	11.1%
Vista Equity Partners Fund IV, L.P.	2011	100,000,000	104,549,412	133,471,050	60,107,233	1.85	15.9%
Wellspring Capital Partners V, L.P.	2011	40,000,000	42,023,571	47,277,738	16,060,184	1.51	14.1%
Ares Corporate Opportunities Fund IV, L.P.	2012	125,000,000	132,251,054	120,818,176	78,606,803	1.51	11.8%
Green Equity Investors VI, L.P.	2012	120,000,000	129,462,309	92,806,462	119,236,872	1.64	13.7%
<u>NYCERS - 2012 Emerging Manager Program</u>	<u>2012</u>	<u>128,600,000</u>	<u>128,796,046</u>	<u>78,030,310</u>	<u>124,725,177</u>	<u>1.57</u>	<u>13.8%</u>
Palladium Equity Partners IV, L.P.	2012	55,000,000	51,899,124	26,790,544	37,076,590	1.23	6.8%
Platinum Equity Capital Partners III, L.P.	2012	100,000,000	87,354,725	125,844,320	38,550,367	1.88	34.9%
Trilantic Capital Partners V L.P.	2012	70,000,000	76,687,671	73,826,525	37,612,371	1.45	15.2%
Warburg Pincus Private Equity XI, L.P.	2012	110,000,000	117,033,488	120,392,528	57,945,888	1.52	11.6%
Apollo Investment Fund VIII, L.P.	2013	140,000,000	129,404,273	62,886,790	96,015,667	1.23	7.2%
Carlyle Partners VI, L.P.	2013	75,000,000	79,281,529	34,086,091	66,161,908	1.26	8.0%
Crestview Partners III (Co-Investment B), L.P.	2013	22,000,000	22,781,960	1,085,940	19,074,430	0.88	-4.5%
Crestview Partners III, L.P.	2013	66,000,000	46,474,928	28,162,900	29,661,582	1.24	9.1%
Landmark - NYC Fund I, L.P.	2013	25,000,000	22,219,663	16,616,276	14,618,824	1.41	13.6%
Landmark Equity Partners XV, L.P.	2013	75,000,000	56,752,308	43,024,839	31,049,568	1.31	12.5%
ASF VI B L.P.	2014	83,000,000	67,031,813	71,760,775	20,780,699	1.38	11.5%
ASF VI B NYC Co-Invest L.P.	2014	27,000,000	21,668,384	21,416,763	8,916,076	1.40	11.8%
Carlyle Partners VI, L.P. (Side Car)	2014	8,250,000	5,998,063	345,832	5,043,829	0.90	-2.7%
CVC Capital Partners VI, L.P.	2014	123,407,118	124,240,622	60,304,450	125,453,687	1.50	15.2%
Lexington Capital Partners VIII, L.P.	2014	110,000,000	98,661,231	52,853,548	75,235,873	1.30	15.1%
Olympus Growth Fund VI, L.P.	2014	75,000,000	71,282,570	37,018,141	52,898,192	1.26	10.2%
Vista Equity Partners Fund V, L.P.	2014	125,000,000	152,463,346	149,982,525	123,792,608	1.80	20.3%
American Securities Partners VII, L.P.	2015	80,000,000	68,651,108	10,346,374	43,270,579	0.78	-12.0%
ASF VII B L.P.	2015	94,500,000	53,419,147	10,322,550	54,595,345	1.22	13.0%
ASF VII B NYC Co-Invest L.P.	2015	46,000,000	26,660,678	7,186,542	35,935,340	1.62	26.9%

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# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Bridgepoint Europe V Co-Invest	2015	18,298,705	17,018,173	7,473,389	21,607,973	1.71	24.6%
Bridgepoint Europe V L.P.	2015	61,924,721	60,753,881	21,805,063	53,844,848	1.25	10.1%
Centerbridge Capital Partners III, L.P.	2015	23,700,000	19,380,482	8,290,224	17,678,801	1.34	14.1%
EQT VII, L.P.	2015	162,492,318	158,776,533	73,762,723	136,490,020	1.32	13.5%
<u>NYCERS - 2015 Emerging Manager Program</u>	<u>2015</u>	<u>179,750,000</u>	<u>98,340,728</u>	<u>16,714,278</u>	<u>100,028,183</u>	<u>1.19</u>	<u>13.5%</u>
Siris Partners III, L.P.	2015	31,000,000	31,999,257	14,839,419	25,542,304	1.26	12.2%
Warburg Pincus Private Equity XII, L.P.	2015	205,500,000	196,742,711	19,394,745	220,622,848	1.22	10.1%
Welsh, Carson, Anderson & Stowe XII, L.P.	2015	78,500,000	69,158,151	39,614,098	67,566,572	1.55	21.4%
Apax IX USD, L.P.	2016	127,000,000	117,287,006	3,339,596	141,664,535	1.24	15.2%
Platinum Equity Capital Partners IV, L.P.	2016	111,000,000	97,345,592	28,667,835	76,321,093	1.08	5.4%
Vista Equity Partners Fund VI, L.P.	2016	158,000,000	173,834,706	39,435,462	191,512,439	1.33	13.2%
Ares Corporate Opportunities Fund V, L.P.	2017	95,000,000	81,836,517	10,184,606	71,994,525	1.00	0.3%
BC European Capital X	2017	88,157,240	75,467,200	1,474,643	74,264,396	1.00	0.3%
BCEC X Co-Investment	2017	35,746,976	33,034,003	225,066	36,425,142	1.11	7.0%
Green Equity Investors VII, L.P.	2017	95,000,000	73,725,205	850,979	83,273,691	1.14	8.3%
KKR Americas Fund XII, L.P.	2017	158,000,000	75,685,379	1,041,587	82,706,093	1.11	7.2%
Palladium Equity Partners V, L.P.	2017	33,333,333	11,134,423	111,150	8,926,724	0.81	NM
Warburg Pincus Financial Sector, L.P.	2017	104,000,000	57,377,156	5,304,000	54,569,359	1.04	4.0%
Apollo Investment Fund IX, L.P.	2018	256,000,000	46,414,106	373,941	41,913,758	0.91	NM
Bridgepoint Europe VI	2018	117,176,033	23,090,498	-	20,361,447	0.88	NM
Bridgepoint Europe VI Co-Invest	2018	29,372,115	6,924,585	-	5,809,841	0.84	NM
CVC Capital Partners VII, L.P.	2018	151,722,161	76,421,174	1,072,174	74,487,460	0.99	NM
EQT VIII Co-Investment	2018	39,269,784	21,743,982	-	23,105,010	1.06	NM
EQT VIII, L.P.	2018	107,842,262	48,342,363	1,344,326	50,924,736	1.08	NM
Platinum Equity Capital Partners IV Co-Investment, L.P.	2018	16,000,000	11,221,788	2,232,710	7,922,348	0.90	NM
Platinum Equity Small Cap Fund, L.P.	2018	41,000,000	9,211,894	-	3,257,270	0.35	NM
Siris Partners IV, L.P.	2018	89,000,000	40,933,612	-	33,611,267	0.82	NM
Vista Equity Partners Fund VII, L.P.	2018	177,500,000	44,802,080	136,669	41,661,343	0.93	NM
Apax X USD L.P.	2019	104,500,000	-	-	(1,796,098)	-	N/A
ASF VIII B L.P.	2019	174,000,000	41,293,567	510	44,522,233	1.08	NM
ASF VIII B NYC Co-Invest L.P.	2019	87,000,000	4,251,556	-	6,926,158	1.63	NM
Blackstone Capital Partners VIII L.P.	2019	109,000,000	-	-	(162,313)	-	N/A
Crestview Partners IV (Co-Investment), L.P.	2019	23,666,667	-	-	38,346	-	NM

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# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year (Cash Flow)	Commitments	Contributions	Distributions	Market Value	Investment Multiple	ITD IRR%
Crestview Partners IV, L.P.	2019	71,000,000	-	-	18,124	-	NM
KKR European Fund V (USD)	2019	83,250,000	9,477,280	-	5,787,551	0.61	NM
Lexington Capital Partners IX	2019	106,500,000	7,542,331	1,343,798	11,022,430	1.64	NM
Lexington IX Co-Invest	2019	35,500,000	-	-	(33,533)	-	N/A
Lindsay Goldberg V	2019	87,000,000	-	-	0	-	N/A
<u>NYCERS - 2019 Emerging Manager Program</u>	<u>2019</u>	<u>226,650,000</u>	<u>10,962,480</u>	<u>606,411</u>	<u>11,104,307</u>	<u>1.07</u>	<u>NM</u>
Platinum Equity Capital Partners V, L.P.	2019	157,000,000	17,911,975	-	13,467,004	0.75	NM
Trilantic Capital Partners VI (North America) L.P.	2019	51,000,000	10,232,641	11,199	7,475,637	0.73	NM
Warburg Pincus Global Growth, L.P.	2019	125,500,000	23,573,714	-	21,784,323	0.92	NM
Welsh, Carson, Anderson & Stowe XIII, L.P.	2019	89,000,000	5,566,090	-	2,787,561	0.50	NM
Clearlake Capital Partners VI, L.P.	2020	47,000,000	-	-	-	-	N/A
FTV VI	2020	21,500,000	1,720,000	-	1,635,110	0.95	NM
Green Equity Investors VIII Coinvest N, L.P.	2020	36,300,000	-	-	-	-	N/A
Green Equity Investors VIII, L.P.	2020	109,000,000	-	-	-	-	N/A
Platinum Equity Capital Partners V Co-Investment, L.P.	2020	39,250,000	-	-	-	-	N/A

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

# Alternative Assets Manager Performance Detail

Through March 30, 2020



	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
<b>TOTAL PRIVATE REAL ESTATE</b>			6,216,247,218	5,003,255,951	3,300,298,499	3,688,485,416	1.40	7.0%
<b>TOTAL PRIVATE REAL ESTATE</b>								
JP Morgan Strategic Property Fund	2006	Core Portfolio	136,000,000	183,466,289	116,500,472	235,652,892	1.92	6.8%
PRISA	2006	Core Portfolio	86,000,000	92,673,389	39,246,358	124,602,426	1.77	4.9%
Prologis Targeted US Logistics Fund	2006	Core Portfolio	25,000,000	34,540,366	13,015,886	52,730,016	1.90	6.3%
RREEF America REIT II	2006	Core Portfolio	86,000,000	113,537,802	62,665,130	127,658,198	1.68	5.3%
UBS Trumbull Property Fund	2006	Core Portfolio	156,000,000	250,781,632	263,381,168	121,221,476	1.53	5.8%
Heitman America Real Estate Trust, L.P.	2007	Core Portfolio	115,000,000	196,253,401	81,253,401	250,262,777	1.69	7.0%
JP Morgan Special Situation Property Fund	2007	Core Portfolio	90,000,000	114,214,259	50,117,806	133,772,774	1.61	4.8%
PRISA II	2007	Core Portfolio	141,518,761	150,922,667	55,249,040	219,207,016	1.82	5.8%
LaSalle Property Fund	2010	Core Portfolio	132,000,000	131,690,926	22,650,782	153,935,117	1.34	9.2%
NYC Asset Investor #2	2013	Core Portfolio	75,000,000	76,276,228	32,373,418	55,508,933	1.15	3.6%
MetLife Core Property Fund	2014	Core Portfolio	50,000,000	50,000,000	12,186,113	64,205,433	1.53	9.1%
Almanac Realty Securities VII	2015	Core Portfolio	65,000,000	52,484,831	42,894,117	26,611,982	1.32	12.9%
Almanac Realty Securities VII (Sidecar IV)	2015	Core Portfolio	20,000,000	12,111,124	10,017,361	7,299,674	1.43	16.4%
USAA Eagle Real Estate Fund	2015	Core Portfolio	90,000,000	97,729,074	7,737,118	109,444,851	1.20	7.1%
Artemis Co-Investment	2016	Core Portfolio	53,000,000	60,819,633	23,935,107	50,439,052	1.22	13.9%
Brookfield Premier Real Estate Partners	2016	Core Portfolio	91,000,000	103,268,842	12,268,842	125,590,858	1.33	10.7%
Exeter Core Industrial Club Fund II	2016	Core Portfolio	28,000,000	26,908,000	4,257,804	28,005,804	1.20	9.8%
Jamestown Premier Property Fund	2016	Core Portfolio	48,721,196	51,659,076	20,673,007	40,864,326	1.19	7.3%
Carlyle Property Investors	2017	Core Portfolio	91,000,000	100,515,208	9,515,208	107,255,890	1.16	6.9%
Lion Industrial Trust	2017	Core Portfolio	90,000,000	100,692,691	10,692,691	130,058,024	1.40	15.2%
Almanac Realty Securities VIII	2018	Core Portfolio	51,000,000	6,273,289	368,970	4,559,774	0.79	-39.9%
Almanac Realty Securities VIII (Sidecar II)	2018	Core Portfolio	34,000,000	3,995,312	148,087	3,592,518	0.94	-11.7%
Artemis Income and Growth Fund	2018	Core Portfolio	61,000,000	12,022,478	15,865	10,996,047	0.92	NM
Heitman Core Real Estate Debt Income Trust	2018	Core Portfolio	127,000,000	48,655,793	3,655,793	48,782,020	1.08	6.6%
Exeter Core Industrial Fund III	2019	Core Portfolio	72,100,000	8,291,500	-	7,053,006	0.85	NM
Harrison Street Core Property Fund	2019	Core Portfolio	90,000,000	91,428,332	1,428,332	92,919,725	1.03	NM
Harrison Street Core Property Fund Co-Investment	2019	Core Portfolio	45,000,000	28,794,439	399,533	29,549,110	1.04	NM
Blackstone Real Estate Partners IV L.P.	2004	Non-Core Portfolio	30,000,000	38,393,533	53,242,888	876,561	1.41	10.1%
The City Investment Fund I	2004	Non-Core Portfolio	225,000,000	221,883,300	224,384,800	357,714	1.01	0.3%
Canyon-Johnson Urban II	2005	Non-Core Portfolio	40,000,000	35,954,815	15,898,610	133,119	0.45	-10.4%
Apollo Real Estate Investment Fund V	2006	Non-Core Portfolio	25,000,000	25,000,000	28,596,713	517,247	1.16	1.9%
American Value Partners Fund I	2007	Non-Core Portfolio	55,000,000	39,320,163	41,373,738	3,520,185	1.14	2.8%
Blackstone Real Estate Partners VI L.P.	2007	Non-Core Portfolio	110,000,000	123,465,884	240,929,611	5,541,644	2.00	13.3%
Carlyle Realty Partners V, L.P.	2007	Non-Core Portfolio	20,000,000	25,849,528	33,549,331	3,668,605	1.44	8.5%
Metropolitan Workforce Housing Fund	2007	Non-Core Portfolio	14,000,000	14,013,027	16,744,531	262,023	1.21	3.9%
Thor Urban Property Fund II	2007	Non-Core Portfolio	40,000,000	54,796,108	54,781,253	10,398,381	1.19	5.1%
Westbrook Real Estate Fund VII, L.P.	2007	Non-Core Portfolio	40,000,000	43,967,777	42,237,578	9,278,562	1.17	2.7%

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 March 30, 2020



	Vintage Year	Style Sector	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
Ares European Real Estate Fund III	2008	Non-Core Portfolio	30,000,000	30,487,501	33,437,499	324,552	1.11	2.6%
Blackstone Real Estate Partners Europe III - USD	2008	Non-Core Portfolio	50,000,000	52,174,339	71,152,942	6,332,605	1.49	10.8%
Capri Urban Investors	2008	Non-Core Portfolio	60,000,000	60,000,000	27,538,270	14,127,912	0.69	-4.9%
PRISA III	2008	Non-Core Portfolio	50,000,000	86,984,255	26,585,756	178,650,120	2.36	11.8%
Silverpeak Legacy Partners III	2008	Non-Core Portfolio	50,000,000	23,542,869	4,469,259	2,982,966	0.32	-12.3%
Stockbridge Real Estate III	2008	Non-Core Portfolio	27,000,000	26,998,145	16,829,753	14,723,831	1.17	2.2%
Walton Street Real Estate Fund VI	2009	Non-Core Portfolio	50,000,000	44,323,933	50,723,633	15,670,036	1.50	8.0%
Westbrook Real Estate Fund VIII, L.P.	2009	Non-Core Portfolio	50,000,000	59,690,192	68,952,803	8,009,920	1.29	10.5%
Carlyle Realty Partners VI, L.P.	2011	Non-Core Portfolio	70,000,000	75,710,683	107,928,686	6,065,398	1.51	20.4%
H2 Special Opportunities Fund II	2011	Non-Core Portfolio	40,000,000	40,045,335	58,344,882	1,045,799	1.48	13.4%
Blackstone Real Estate Partners VII L.P.	2012	Non-Core Portfolio	170,000,000	212,052,406	272,936,010	70,971,892	1.62	15.9%
Brookfield Strategic Real Estate Partners	2012	Non-Core Portfolio	100,000,000	119,640,559	176,681,925	54,111,944	1.93	19.9%
Taconic New York City Investment Fund	2012	Non-Core Portfolio	70,000,000	29,272,728	47,515,256	4,762,846	1.79	15.9%
Blackstone Real Estate Partners Europe IV L.P. - USD	2013	Non-Core Portfolio	169,000,000	168,046,563	192,089,961	58,367,043	1.49	14.0%
Lone Star Real Estate Fund III, L.P.	2013	Non-Core Portfolio	100,000,000	95,639,471	118,107,588	9,723,255	1.34	14.1%
NYC Asset Investor #1	2013	Non-Core Portfolio	50,000,000	57,079,931	27,497,874	39,960,103	1.18	4.2%
NYC Asset Investor #3	2013	Non-Core Portfolio	50,000,000	32,949,424	5,788,910	39,698,068	1.38	9.3%
Carlyle Realty Partners VII, L.P.	2014	Non-Core Portfolio	80,000,000	72,791,840	66,681,222	33,516,992	1.38	13.5%
DivcoWest Fund IV	2014	Non-Core Portfolio	23,000,000	22,770,380	34,820,289	3,106,314	1.67	25.5%
H2 Special Opportunities III	2014	Non-Core Portfolio	65,000,000	65,000,000	57,415,260	17,363,592	1.15	5.7%
Avanath Affordable Housing II	2015	Non-Core Portfolio	8,000,000	8,191,825	2,550,102	10,591,573	1.60	11.8%
Blackstone Real Estate Partners VIII L.P.	2015	Non-Core Portfolio	151,000,000	159,033,965	62,281,023	140,886,296	1.28	12.6%
Tristan European Property Investors Special Opp IV	2015	Non-Core Portfolio	49,501,227	41,453,899	5,339,413	42,227,586	1.15	6.7%
DivcoWest Fund V	2016	Non-Core Portfolio	60,000,000	39,955,395	1,160,139	43,158,598	1.11	5.8%
Exeter Industrial Value Fund IV, L.P.	2016	Non-Core Portfolio	30,000,000	25,500,000	-	27,170,127	1.07	4.6%
H2 Special Opportunities IV	2016	Non-Core Portfolio	91,000,000	59,157,806	740,287	34,492,326	0.60	-63.0%
Pramerica Real Estate Capital VI	2016	Non-Core Portfolio	60,020,891	51,251,538	25,758,999	32,156,224	1.13	12.2%
PW Real Estate Fund III	2016	Non-Core Portfolio	49,476,463	33,348,258	13,781,368	42,359,599	1.68	27.5%
Westbrook Real Estate Fund X	2016	Non-Core Portfolio	36,000,000	31,040,465	15,711,534	19,987,098	1.15	11.0%
Basis Investment Group Real Estate Fund I	2017	Non-Core Portfolio	17,000,000	11,772,439	4,101,204	9,173,112	1.13	11.4%
DRA Growth and Income Fund IX	2017	Non-Core Portfolio	49,000,000	49,382,000	13,767,657	44,174,015	1.17	13.2%
NYCRS-KKR CMBS Retention Partners	2017	Non-Core Portfolio	122,000,000	109,061,014	17,476,505	100,393,829	1.08	4.6%
Aermont Capital Real Estate Fund IV	2018	Non-Core Portfolio	72,958,681	12,532,536	-	4,329,690	0.35	NM
Brookfield Strategic Real Estate Partners III, L.P.	2018	Non-Core Portfolio	170,000,000	55,820,471	1,574,977	53,324,697	0.98	NM
KKR Real Estate Partners Americas II	2018	Non-Core Portfolio	118,700,000	72,196,384	21,123,943	65,832,873	1.20	20.4%
Blackstone Real Estate Partners Europe VI L.P.	2019	Non-Core Portfolio	99,000,000	6,670,402	-	6,028,666	0.90	NM
Blackstone Real Estate Partners IX L.P.	2019	Non-Core Portfolio	166,000,000	29,922,337	1,047,106	27,810,189	0.96	NM
GreenOak Asia III	2019	Non-Core Portfolio	87,000,000	-	-	(581,612)	-	NM
Grosvenor Real Estate Emerging Manager SMA	2019	Non-Core Portfolio	236,000,000	-	-	-	-	NM
Westbrook Real Estate Fund XI	2019	Non-Core Portfolio	83,000,000	-	-	(72,779)	-	NM
DivcoWest Fund VI	2020	Non-Core Portfolio	82,000,000	-	-	(444,483)	-	NM

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 March 30, 2020



	<b>Vintage Year</b>	<b>Style Sector</b>	<b>Original Commitment</b>	<b>Total Contributions</b>	<b>Total Distributions</b>	<b>Market Value</b>	<b>Total Value Multiple</b>	<b>Net IRR%</b>
DRA Growth and Income Fund X	2020	Non-Core Portfolio	59,000,000	9,113,947	-	9,638,844	1.06	NM
Exeter Industrial Value Fund V, L.P.	2020	Non-Core Portfolio	49,000,000	-	-	-	-	NM
KKR Real Estate Partners Europe II	2020	Non-Core Portfolio	83,250,000	-	-	-	-	NM
Pramerica Real Estate Capital VII	2020	Non-Core Portfolio	85,000,000	-	-	-	-	NM

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 March 30, 2020



	Vintage Year	Original Commitment	Total Contributions	Total Distributions	Market Value	Total Value Multiple	Net IRR%
<b>TOTAL INFRASTRUCTURE</b>		1,402,399,896	829,560,907	176,264,931	817,254,932	1.20	9.8%
<b>TOTAL INFRASTRUCTURE INVESTMENTS</b>							
Brookfield Infrastructure Fund II, L.P.	2013	75,000,000	62,715,388	25,793,963	72,168,447	1.56	11.5%
IFM Global Infrastructure Fund	2014	75,000,000	100,136,579	37,106,368	108,673,478	1.46	10.6%
Global Energy & Power Infrastructure Fund II	2014	45,000,000	45,463,373	34,653,178	28,281,604	1.38	25.9%
KKR Global Infrastructure Investors II L.P.	2014	77,000,000	79,747,060	21,221,972	96,628,926	1.48	16.1%
Global Infrastructure Partners III-A/B, L.P.	2016	106,000,000	87,153,397	11,759,271	75,800,284	1.00	0.2%
Brookfield Infrastructure Fund III, L.P.	2016	91,000,000	54,978,553	11,687,231	51,992,412	1.16	8.3%
Actis Energy 4	2016	64,300,000	42,616,590	6,105,490	45,931,000	1.22	13.2%
EQT Infrastructure III (No.2) SCSp	2017	56,166,119	57,278,194	8,724,210	58,295,332	1.17	11.3%
ASF VII Infrastructure L.P.	2017	66,000,000	28,759,425	2,900,740	30,058,982	1.15	15.3%
Axiom Infrastructure North America	2017	67,104,915	68,242,994	7,862,042	65,228,004	1.07	5.3%
NYCRS EIG Energy Partners, L.P.	2017	65,880,000	18,491,222	2,373,451	17,391,631	1.07	6.0%
NYCRS EIG Energy Partners Co-Investment, L.P.	2018	16,470,000	-	-	-	-	0.0%
KKR Global Infrastructure Investors III L.P.	2018	87,500,000	32,255,429	646,407	28,600,944	0.91	-15.4%
Global Energy & Power Infrastructure Fund III, L.P.	2018	87,500,000	19,509,227	1,111,464	15,772,490	NM	NM
Cardinal NR Sidecar Holdings L.P.	2018	10,500,000	10,564,663	1,131,028	11,377,382	NM	NM
EQT Infrastructure IV (No.2) USD SCSp	2019	101,500,000	48,025,483	2,401,746	43,089,007	NM	NM
Ardian Infrastructure Fund V B	2019	73,678,863	14,503,879	361,657	13,475,853	NM	NM
Global Infrastructure Partners IV-A/B, L.P.	2019	117,400,000	2,032,600	-	(9,684)	NM	NM
Brookfield Infrastructure Fund IV, L.P.	2019	101,000,000	38,622,237	424,713	35,791,565	NM	NM
EQT Infrastructure IV Co-Investment (Saber)	2019	8,400,000	8,464,615	-	8,400,000	NM	NM
Brookfield Infrastructure Fund IV (BIF IV): Co-invest	2019	10,000,000	10,000,000	-	10,307,275	NM	NM

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

# Alternative Assets Manager Performance Detail

Through June 30, 2020



	Vintage Year	Commitment - Closing (Base)	Contributions Cumulative (Local)	Distributions Cumulative	Final Market Value	3 Month Base%	Inception IRR%
<b>TOTAL OPPORTUNISTIC FIXED INCOME</b>		2,856,366,205	3,324,609,747	1,613,716,779.53	2,428,242,852	5.53%	6.23%
Avenue Special Situations Fund V, L.P.	2007	75,784,973	76,951,175	100,600,875.00	-		NM
Avenue Europe Special Sit. Fund, L.P.	2008	30,883,739	27,839,090	53,703,162.08	-		NM
PIMCO DiSCO Fund, L.P.	2008	150,000,000	150,427,750	204,457,598.81	-		11.23%
Alliance Bernstein PPIP Fund, L.P.	2009	41,697,493	41,697,493	57,295,571.07	-		15.51%
AG GECC PPIP Fund, L.P.	2010	27,000,000	27,052,129	41,724,862.00	-		20.19%
Avenue Special Situations Fund VI (A), L.P.	2011	70,000,000	71,766,544	71,272,284.00	4,804,822.00	0.81%	1.34%
GoldenTree Managed Account	2011	140,000,000	140,878,192	-	219,808,243.14	10.08%	6.13%
Marathon Centre Street Partnership, L.P. - Asset Class	2011	218,750,000	355,250,000	168,000,000.00	291,251,907.93	6.43%	5.76%
AG Centre Street Partnership, L.P. - CC Asset Class	2012	180,000,000	190,800,000	47,626,130.00	181,449,250.00	4.83%	3.84%
Apollo Centre Street Partnership, L.P.	2012	268,750,000	533,893,782	289,507,117.00	323,719,838.30	5.23%	5.37%
FCO MA Centre Street L.P.	2012	140,000,000	271,574,306	185,597,645.44	144,880,351.00	5.74%	7.27%
OHA Centre Street Partnership, L.P.	2012	175,000,000	244,955,346	69,955,346.41	259,184,161.54	10.63%	6.70%
Contrarian Centre Street Partnership, L.P. - Asset Class	2013	90,000,000	90,000,000	-	80,565,343.44	3.56%	-2.08%
Lone Star Fund VIII (U.S.), L.P.	2013	100,000,000	98,438,980	93,209,839.75	23,271,138.26	4.12%	9.35%
Oaktree Opportunities Fund IX, L.P.	2013	100,000,000	100,000,000	47,895,430.47	63,416,072.00	10.50%	2.12%
Ares Centre Street Partnership, L.P.	2014	140,000,000	140,000,000	-	202,034,471.22	3.14%	8.49%
Brightwood Capital Fund III, L.P.	2015	35,000,000	28,403,806	14,452,878.60	18,688,557.00	2.11%	4.06%
Torchlight Debt Opportunity Fund V, LP	2015	67,000,000	53,600,000	49,477,192.00	18,176,055.00	-0.26%	10.73%
Brightwood Capital Fund IV, LP	2016	87,500,000	83,125,000	7,817,186.00	74,094,951.00	-0.72%	-0.97%
ICG Centre Street Partnership, L.P.	2017	120,000,000	140,256,085	80,273,169.18	73,012,283.13	1.08%	8.26%
KKR OFI SMA	2017	272,000,000	208,166,499	25,893,856.00	202,158,984.06	7.08%	8.44%
Maranon Centre Street Partnership, L.P.	2018	103,000,000	88,192,638	2,585,703.72	80,516,388.49	-5.50%	-5.43%
FCO MA Centre Street II (ER) LP	2019	140,000,000	74,970,000	-	84,091,198.00	7.96%	49.46%
Torchlight Debt Fund VI, LP	2019	84,000,000	86,370,932	2,370,932.00	83,118,836.00	0.00%	-2.21%

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

# Alternative Assets Manager Performance Detail

Through June 30, 2020



	Market Value	MTD Return%	3 Month Return%	FYTD Return%	YTD Return%	1 Year Return%	3 Year Return%	ITD Return%	ITD Cumulative Return%
<b>TOTAL HEDGE FUNDS</b>	3,801,869	1.73%	-2.11%	-23.15%	-18.41%	-23.15%	-2.30%	0.92%	8.61%
<b>TOTAL DIRECT HEDGE FUNDS</b>	3,801,869	1.73%	-2.11%	-23.15%	-18.41%	-23.15%	-2.06%	1.64%	14.82%
<b>FUND OF FUNDS HEDGE FUNDS</b>	-	0.00%		0.00%	0.00%		0.26%	1.83%	12.03%
<b>TOTAL DIRECT HEDGE FUNDS</b>									
Luxor Capital Partners Liquidating SPV, LLC.	1,297,636	-0.14%	-10.27%	-27.01%	-21.47%	-27.01%	-9.35%	-5.39%	-19.88%
Perry Partners L.P.	2,504,233	2.73%	2.73%	-20.68%	-16.23%	-20.68%	-5.47%	-4.14%	-25.87%
Event Driven	3,801,869	1.73%	-2.11%	-23.15%	-18.41%	-23.15%	-6.73%	-3.01%	-20.26%
<b>FUND OF FUNDS HEDGE FUNDS</b>									
Fund of Funds Hedge Funds	-	0.00%		0.00%	0.00%		0.26%	1.83%	12.03%

Information provided by Alpha Frontier

**New York City  
Employees' Retirement System**

# Appendix D

## Footnotes

Through June 30, 2020



- 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 7/1/03 the “NYC-Loomis” benchmark index for the Loomis Sayles Enhanced Yield portfolio reflects a change from the Citigroup BB&B Index to the more appropriate Merrill Lynch High Yield Master II Index.
- 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.
- Effective 11/1/10 The NCREIF NPI policy index was replaced with the NCREIF NFI ODEC net Index retroactively.
- Effective 6/1/11 The Opportunistic Fixed NYC-CORE PLUS 5 + 200BPS policy index was replaced with the NYC-10% ANNUAL RETURN primary and JP MORGAN GLOBAL HIGH YIELD PLUS 3% secondary indices retroactively.
- Effective 8/1/11 The Hedge Funds Primary benchmark is the 1 YEAR TREASURY BILL YIELD + 4% and the secondary benchmark is the HFRI FUND OF FUNDS COMPOSITE INDEX + 1%.
- Private market investment performance and valuations are generally reported with a quarter lag so data contained in this report does not reflect any impact from the COVID-19 outbreak.

## General Notes

- Estimated management fees for public market investments are calculated on an accrual basis without adjustment for management fee caps. Alternative investment (Private Market) fees are recorded on a cash basis and are not inclusive of carried interest paid. 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.
- Private market investment performance and valuations are generally reported with a quarter lag so data contained in this report does not reflect any impact from the COVID-19 outbreak.

## 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*

## Glossary of Terms

Through June 30, 2020



and contracts. The policy index/custom benchmark is calculated monthly based on adjusted policy weights at the beginning of each month.

The indexes and most recent policy weights are as follows:

U.S. Equity: Russell 3000 \* 29.83%

International Developed (EAFE) Markets: MSCI World ex USA IMI \* 11.80%

Int'l Active- Global: MSCI World Net Dividends Index \* 0.39%

Emerging Markets: MSCI Custom ERS Emerging Markets (Net) \* 5.04%

International Emerging Managers FOF: NYC Blended Custom Benchmark for FoF \* 0.65%

REITs: Dow Jones Real Estate Securities \* 0.00%

Private Equity: Russell 3000 + 300 b.p. per annum \* 6.85%

Private Real Estate – Core: NFI - ODCE Net \* 3.50%

Private Real Estate – Non Core: NFI - ODCE Net + 200bps \* 2.06%

Infrastructure: CPI + 4% \* 1.19%

Hedge Funds: HFRI Fund of Funds Composite Index plus 1% \* 0.00%

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

US Treasury Intermediate: FTSE USBIG Treasury/Agency 1-10Y \* 5.75%

Active Government: NYC Treasury Agency + 5 \* 3.95%

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

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

Mortgage: FTSE Mortgage Index \* 6.32%

## Glossary of Terms

Through June 30, 2020



*ETI: ETI Custom Benchmark \* 1.39%*

*Investment Grade Credit: NYC – Investment Grade Credit \* 7.84%*

*High Yield: Bloomberg Barclays US High Yield 2% Issuer Capped \* 4.28%*

*Bank Loans: Credit Suisse Leveraged Loan \* 0.00%*

*TIPS: BBG BARCGbl Inf-Lk: US TIPS \* 3.70%*

*Convertible Bonds: ICE BofA All US Conv Ex Mandatory \* 2.00%*

*Opportunistic Fixed: OFI - JPMGHY / CSFB 50/50 Blend Plus 300 b.p. per annum \* 3.45%*

### **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.